MINNESOTA DEPARTMENT OF TRANSPORTATION
ANOKA COUNTY

CONSTRUCTION PLAN FOR ROUNDABOUT, GRADING, AGGREGATE BASE, CONCRETE AND BITUMINOUS SURFACING, CURB AND GUTTER, AND STORM SEWER

LOCATED ON CSAH 14 BETWEEN 425' W OF CR 53 (SUNSET AVE NE) AND 700' E OF CR 53 (SUNSET AVE NE)

AND ON CR 53 BETWEEN 420' S OF CSAH 14 AND CSAH 14

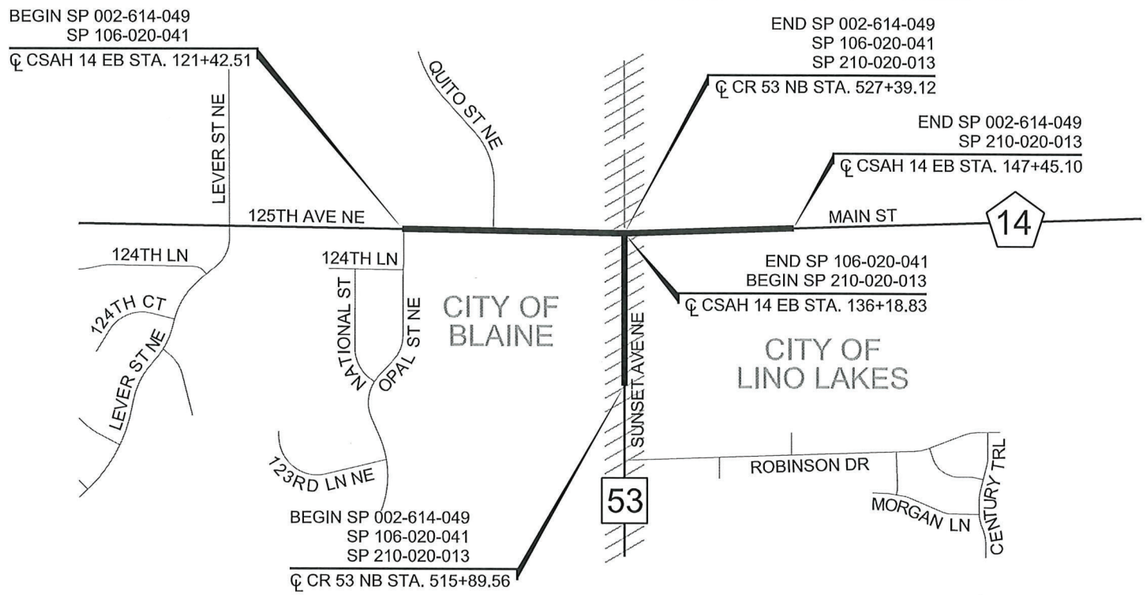
STATE PROJ. NO. 002-614-049

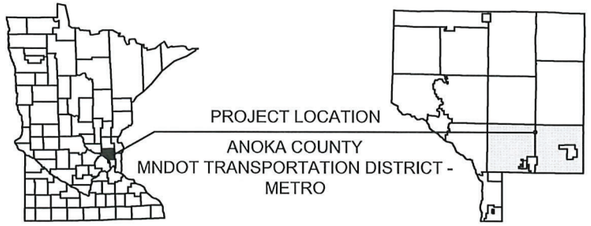
GROSS LENGTH	1275.33	FEET	0.242 MILES
BRIDGES-LENGTH	0.00	FEET	0.000 MILES
EXCEPTIONS-LENGTH	0.00	FEET	0.000 MILES
NET LENGTH	1275.33	FEET	0.242 MILES

CSAH 14

CR 53

GROSS LENGTH	564.42	FEET	0.107 MILES
BRIDGES-LENGTH	0.00	FEET	0.000 MILES
EXCEPTIONS-LENGTH	0.00	FEET	0.000 MILES
NET LENGTH	564.42	FEET	0.107 MILES





CITY OF BLAINE
SECTIONS 1, 12
TOWNSHIP 31
RANGE 23

CITY OF LINO LAKES
SECTIONS 6,7
TOWNSHIP 31
RANGE 22

UTILITY QUALITY LEVEL NOTE:

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 38-22, ENTITLED "STANDARD GUIDELINES FOR INVESTIGATING AND DOCUMENTING EXISTING UTILITIES."

DESIGN DESIGNATION (CSAH 14)

ESAL 20	2,501,000	FUNCTIONAL CLASSIFICATION	PRINCIPAL ARTERIAL
R VALUE	50	NO. OF TRAFFIC LANES 2	NO. OF PARKING LANES 0
ADT (2024)	13,840	SHOULDER WIDTH 2' - 12'	
PROJ. ADT (2044)	23,890	BASED ON STOPPING SIGHT DISTANCE:	
PROJ. HCADT (2044)	1,068	HEIGHT OF EYE 3.5'	HEIGHT OF OBJECT 2.0'
DESIGN SPEED	55 MPH	DESIGN SPEED NOT ACHIEVED AT:	ROUNDABOUT
10 TON DESIGN			

DESIGN DESIGNATION (CR 53)

ESAL 20	1,256,000	FUNCTIONAL CLASSIFICATION	MAJOR COLLECTOR
R VALUE	50	NO. OF TRAFFIC LANES 2	NO. OF PARKING LANES 0
ADT (2024)	3,210	SHOULDER WIDTH 2' - 12'	
PROJ. ADT (2044)	4,360	BASED ON STOPPING SIGHT DISTANCE:	
PROJ. HCADT (2044)	407	HEIGHT OF EYE 3.5'	HEIGHT OF OBJECT 2.0'
DESIGN SPEED	55 MPH	DESIGN SPEED NOT ACHIEVED AT:	ROUNDABOUT
10 TON DESIGN			

DESIGN DESIGNATION (TRAIL)

		BASED ON STOPPING SIGHT DISTANCE:	
		HEIGHT OF EYE 4.5'	HEIGHT OF OBJECT 0.0'
DESIGN SPEED	20 MPH	DESIGN SPEED NOT ACHIEVED AT:	

MINN. PROJECT NO. NHPP 0224 (108)

GOVERNING SPECIFICATIONS

THE 2020 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

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

INDEX

THIS PLAN CONTAINS 115 SHEETS

APPROVED Joseph MacPherson — Digitally signed by Joseph MacPherson Date: 2023.12.20 16:15:16 -06'00' — 12/20/23
ANOKA COUNTY ENGINEER — DATE

APPROVED [signature] — 12.22.23
CITY OF BLAINE ENGINEER — DATE

APPROVED [signature] — 12/27/2023
CITY OF LINO LAKES ENGINEER — DATE

Dan Erickson — Digitally signed by Dan Erickson Date: 2024.01.04 12:05:13 -06'00'
DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE AND FEDERAL AID RULES/POLICY — DATE

for Dan Erickson — Digitally signed by Dan Erickson Date: 2024.01.04 12:05:33 -06'00'
STATE AID ENGINEER: APPROVED FOR STATE AND FEDERAL AID FUNDING — DATE

PLAN SYMBOLS

COUNTY LINE
TOWNSHIP OR RANGE LINE
SECTION LINE
QUARTER LINE
SIXTEENTH LINE
RIGHT OF WAY LINE
SLOPE EASEMENT
EXISTING RIGHT OF WAY
PROPERTY LINE
CORPORATE OR CITY LIMITS
RETAINING WALL
RAILROAD
RAILROAD RIGHT OF WAY
RIVER OR CREEK
DRAINAGE DITCH
CULVERT
DROP INLET
GUARD RAIL
BARBED WIRE FENCE
WOVEN WIRE FENCE
CHAIN LINK FENCE
WOOD FENCE
STONE WALL OR FENCE
HEDGE
LOWLAND
TIMBER
ORCHARD
BRUSH
NURSERY
CATTLE GUARD
OVERPASS (Highway Over)
UNDERPASS (Highway Under)
BRIDGE
BUILDING (One Story Frame) 1-S-F
F-FRAME C-CONCRETE
S-STONE T-TILE
B-BRICK ST-STUCCO
RAILROAD CROSSING BELL
RAILROAD CROSSING GATE
MANHOLE M.H.
CATCH BASIN C.B.
FIRE HYDRANT
CAST IRON MONUMENT
IRON PIN
GRAVEL PIT G
SAND PIT S
BORROW PIT B
ROCK QUARRY Q

UTILITY SYMBOLS

POWER POLE LINE
TELEPHONE OR TELEGRAPH POLE LINE
JOINT TELEPHONE & POWER ON POWER POLES
ON TELEPHONE POLES
ANCHOR
STEEL TOWER
STREET LIGHT
PEDESTAL (Cable Terminal)
GAS MAIN
WATERMAIN
TELEPHONE CABLE IN CONDUIT
ELECTRIC CABLE IN CONDUIT
TELEPHONE MANHOLE T
ELECTRIC MANHOLE P
BURIED TELEPHONE CABLE T-BUR
BURIED ELECTRIC CABLE P-BUR
OVERHEAD UTILITY CABLE OHU
SEWER (Sanitary or Storm)
SEWER MANHOLE

SCALES

PLAN 0' 100'
PROFILE HORIZONTAL 0' 100'
VERTICAL 0' 10'
X-SECTIONS HORIZONTAL 0' 10'
VERTICAL 0' 10'
INDEX MAP 0' 1000'

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049 - Sunset RAB\Plan\002614049_TSH.dgn 12/07/2023 9:36:39 AM

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: AARON P. ANDERSON
SIGNATURE:
DATE: 12/06/23 LICENSE NO. 58657

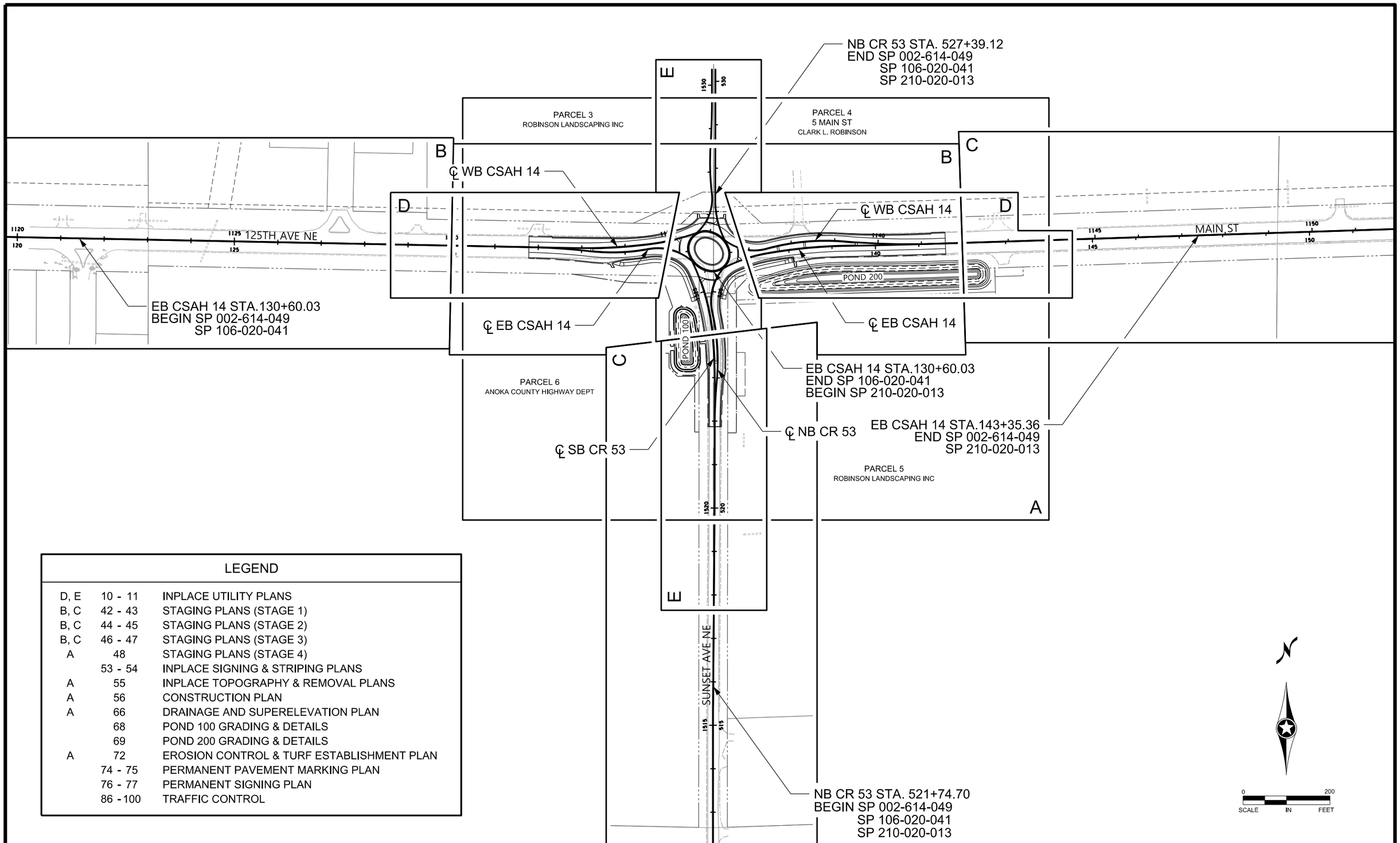
DRAWN BY BTU DATE 12/06/23
DESIGN BY BTU DATE 12/06/23
CHECKED BY APA DATE 12/06/23

ANOKA COUNTY HIGHWAY DEPT.

SP 002-614-049
SP 210-020-013
SP 106-020-041

TITLE SHEET

Sheet 1 of 115 Sheets



LEGEND

D, E	10 - 11	INPLACE UTILITY PLANS
B, C	42 - 43	STAGING PLANS (STAGE 1)
B, C	44 - 45	STAGING PLANS (STAGE 2)
B, C	46 - 47	STAGING PLANS (STAGE 3)
A	48	STAGING PLANS (STAGE 4)
	53 - 54	INPLACE SIGNING & STRIPING PLANS
A	55	INPLACE TOPOGRAPHY & REMOVAL PLANS
A	56	CONSTRUCTION PLAN
A	66	DRAINAGE AND SUPERELEVATION PLAN
	68	POND 100 GRADING & DETAILS
	69	POND 200 GRADING & DETAILS
A	72	EROSION CONTROL & TURF ESTABLISHMENT PLAN
	74 - 75	PERMANENT PAVEMENT MARKING PLAN
	76 - 77	PERMANENT SIGNING PLAN
	86 - 100	TRAFFIC CONTROL

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049 - Sunset RAB\Plan\002614049_GL.dgn 12/07/2023 9:36:42 AM

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SP 002-614-049
SP 210-020-013
SP 106-020-041

GENERAL LAYOUT

Sheet 2 of 115 Sheets

STATEMENT OF ESTIMATED QUANTITIES

TAB / NOTE	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL PROJECT QUANTITIES ESTIMATED	PARTICIPATING - FEDERAL FUNDS				NON-PARTICIPATING LOCAL FUNDS
					ANOKA COUNTY SP 002-614-049 ROADWAY QUANTITIES ESTIMATED	CITY OF BLAINE SP 106-020-041 ROADWAY QUANTITIES ESTIMATED	CITY OF LINO LAKES SP 210-020-013 ROADWAY QUANTITIES ESTIMATED	SP 002-614-049 STORM SEWER QUANTITIES ESTIMATED	CITY OF LINO LAKES ROADWAY QUANTITIES ESTIMATED
	2021.501	MOBILIZATION	LUMP SUM	1	0.809	0.016	0.017	0.145	0.013
A	2101.502	GRUBBING	EACH	55	55				
L / [10]	2102.503	PAVEMENT MARKING REMOVAL	LIN FT	1029	1029				
H	2104.502	REMOVE SIGN TYPE C	EACH	22	22				
H	2104.502	REMOVE SIGN TYPE D	EACH	1	1				
H	2104.502	SALVAGE SIGN TYPE C	EACH	7	7				
H	2104.502	SALVAGE SIGN TYPE D	EACH	3	3				
B	2104.503	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LIN FT	124	124				
B / [1]	2104.503	REMOVE PIPE CULVERTS	LIN FT	121	121				
C	2104.504	REMOVE BITUMINOUS DRIVEWAY PAVEMENT	SQ YD	119	119				
B	2104.504	REMOVE BITUMINOUS PAVEMENT	SQ YD	6370	6370				
	2105.601	DEWATERING	LUMP SUM	1	1				
AA / [2]	2106.507	EXCAVATION - COMMON	CU YD	4961	4961				
AA	2106.507	EXCAVATION - MUCK	CU YD	13828	13828				
AA	2106.507	EXCAVATION - SUBGRADE	CU YD	1710	1710				
AA / [2]	2106.507	EXCAVATION - CHANNEL AND POND	CU YD	2337	2337				
AA	2106.507	SELECT GRANULAR EMBANKMENT (CV)	CU YD	2824	2824				
AA / [2]	2106.507	COMMON EMBANKMENT (CV)	CU YD	18528	18528				
D	2112.603	SHOULDER PREPARATION	LIN FT	1160	1160				
D	2118.507	AGGREGATE SURFACING (CV) CLASS 2	CU YD	34	34				
[3]	2130.523	WATER	M GALLON	192	192				
D / [4]	2211.507	AGGREGATE BASE (CV) CLASS 5	CU YD	768	768				
C,D,E / [5]	2211.509	AGGREGATE BASE CLASS 5	TON	836	759	42	35		
E	2301.502	DOWEL BAR	EACH	1800	1800				
E / [11]	2301.504	CONCRETE PAVEMENT 7.0" SPECIAL	SQ YD	297	297				
E	2301.504	CONCRETE PAVEMENT 8.0"	SQ YD	1581	1581				
E	2301.602	DRILL & GROUT REINF BAR (EPOXY COATED)	EACH	88	88				
D	2357.506	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	460	460				
C, D	2360.509	TYPE SP 9.5 WEARING COURSE MIX (2,B)	TON	83	25	31	27		
D	2360.509	TYPE SP 9.5 WEARING COURSE MIX (3,C)	TON	1058	1058				
D	2360.509	TYPE SP 12.5 BITUMINOUS MIXTURE FOR PATCHING	TON	139	139				
D	2360.509	TYPE SP 12.5 NON WEAR COURSE MIX (3,C)	TON	530	530				
E	2411.502	CONCRETE FLUME	EACH	5	5				
[6]	2451.507	COARSE AGGREGATE BEDDING (CV)	CU YD	48				48	
J	2501.502	12" RC PIPE APRON	EACH	6				6	
J	2501.502	15" RC PIPE APRON	EACH	2				2	
J	2501.502	18" RC PIPE APRON	EACH	5				5	
	2503.503	18" PVC PIPE SEWER	LIN FT	140					140
J	2503.503	12" RC PIPE SEWER DES 3006 CLASS V	LIN FT	9				9	
J	2503.503	15" RC PIPE SEWER DES 3006 CLASS V	LIN FT	1038				1038	
J	2503.503	18" RC PIPE SEWER DES 3006 CLASS III	LIN FT	187				187	
J	2506.502	CONST. DRAINAGE STRUCTURE DESIGN SPECIAL	EACH	2				2	
J	2506.502	CASTING ASSEMBLY	EACH	25				25	
J	2506.503	CONST. DRAINAGE STRUCTURE DESIGN H	LIN FT	25.8				25.8	
J	2506.503	CONST. DRAINAGE STRUCTURE DES 48-4020	LIN FT	80.3				80.3	

NOTES:

[1] INCLUDES ALL PIPE AND APRON TYPES / MATERIALS
[2] INCLUDES POND AND ROADWAY EARTHWORK QUANTITIES
[3] WATER TO BE USED ONLY FOR DUST CONTROL AS DIRECTED BY ENGINEER IN THE FIELD. WATER USED FOR COMPACTION AND TURF ESTABLISHMENT SHALL BE INCIDENTAL
[4] INCLUDES ALL ROAD QUANTITIES
[5] INCLUDES TRAIL, STAGING, AND DRIVEWAY QUANTITIES.
[6] PROVIDE COARSE AGGREGATE BEDDING FOR LAST TWO RUNS OF PIPE GOING TO EACH POND, OR AS DIRECTED BY ENGINEER. PAID FOR AS COARSE AGGREGATE BEDDING (CV) 2451.507
[7] SEE STAGE 2 SHEETS FOR LOCATION DETAILS
[8] DOUBLE ROW OF SILT FENCE TO BE USED ALONG WETLAND AS SHOWN ON SHEET 72
[9] CROSSWALK MARKINGS SHALL BE 3' X 8'.
[10] INCLUDES ALL TYPES OF LINES AND WIDTHS
[11] COLORED CONCRETE, INTEGRAL RED (FS 31136).

NO	DATE	BY	CKD	APPR	REVISION
1	03/27/24	BTU	APA	APA	REVISED QUANTITIES AND NOTES PER ADDENDUM 1

NAME: P:\002-614-049 - Sunset RAB\Plan\002614049_TAB.dgn 03/28/2024 11:23:05 AM

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ANOKA COUNTY
ANOKA COUNTY HIGHWAY DEPT.

SP 002-614-049
SP 210-020-013
SP 106-020-041

STATEMENT OF ESTIMATED QUANTITIES

Sheet 3A of 115 Sheets

STATEMENT OF ESTIMATED QUANTITIES

TAB / NOTE	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL PROJECT QUANTITIES ESTIMATED	PARTICIPATING - FEDERAL FUNDS				NON-PARTICIPATING LOCAL FUNDS
					ANOKA COUNTY SP 002-614-049 ROADWAY QUANTITIES ESTIMATED	CITY OF BLAINE SP 106-020-041 ROADWAY QUANTITIES ESTIMATED	CITY OF LINO LAKES SP 210-020-013 ROADWAY QUANTITIES ESTIMATED	SP 002-614-049 STORM SEWER QUANTITIES ESTIMATED	CITY OF LINO LAKES ROADWAY QUANTITIES ESTIMATED
F, J	2511.504	GEOTEXTILE FILTER TYPE 3	SQ YD	235	235				
F, J	2511.507	RANDOM RIPRAP CLASS II	CU YD	54	54				
E	2521.518	4" CONCRETE WALK	SQ FT	4889	4889				
E	2521.518	6" CONCRETE WALK	SQ FT	1437	1437				
E	2531.503	CONCRETE CURB & GUTTER DESIGN R418	LIN FT	284	284				
E	2531.503	CONCRETE CURB & GUTTER DESIGN B418 (MOD)	LIN FT	1395	1395				
E	2531.503	CONCRETE CURB & GUTTER DESIGN B424	LIN FT	1587	794	351	442		
E	2531.503	CONCRETE CURB & GUTTER DESIGN B624	LIN FT	196	196				
E	2531.618	TRUNCATED DOMES	SQ FT	28	28				
G	2533.503	PORTABLE PRECAST CONC BARRIER DES 8337	LIN FT	1175	1175				
C	2540.602	MAIL BOX SUPPORT	EACH	1	1				
C	2540.602	RELOCATE MAIL BOX SUPPORT	EACH	1	1				
	2545.601	TEMPORARY LIGHTING SYSTEM	LUMP SUM	1		0.500	0.500		
	2563.601	TRAFFIC CONTROL SUPERVISOR	LUMP SUM	1	0.809	0.016	0.017	0.145	0.013
	2563.601	TRAFFIC CONTROL	LUMP SUM	1	0.809	0.016	0.017	0.145	0.013
L	2563.602	PORTABLE BARRIER DELINEATOR	EACH	93	93				
K	2563.613	PORTABLE CHANGEABLE MESSAGE SIGN	UNIT DAY	30	30				
G / [7]	2563.615	TEMPORARY IMPACT ATTENUATOR	ASSEMBLY	2	2				
M	2564.502	INSTALL SIGN TYPE C	EACH	7	7				
M	2564.502	INSTALL SIGN TYPE D	EACH	3	3				
M	2654.602	DELINEATOR / MARKER PANEL	EACH	6	6				
M	2564.618	SIGN	SQ FT	402	402				
F	2573.502	STORM DRAIN INLET PROTECTION	EACH	23	23				
F	2573.502	CULVERT END CONTROLS	EACH	6	6				
F / [8]	2573.503	SILT FENCE, TYPE MS	LIN FT	5171	5171				
F	2574.508	FERTILIZER TYPE 3	POUND	614	614				
F	2574.508	FERTILIZER TYPE 4	POUND	159	159				
F	2575.504	ROLLED EROSION PREVENTION CATEGORY 20	SQ YD	2147	2147				
F	2575.504	ROLLED EROSION PREVENTION CATEGORY 25	SQ YD	2987	2987				
F	2575.505	SEEDING	ACRE	2.8	2.8				
F	2575.508	SEED MIXTURE 25-121	POUND	107	107				
F	2575.508	SEED MIXTURE 33-261	POUND	22	22				
F	2575.508	SEED MIXTURE 35-241	POUND	27	27				
F	2575.508	HYDRAULIC REINFORCED FIBER MATRIX	POUND	6847	6847				
F	2575.523	RAPID STABILIZATION METHOD 3	M GALLON	17.0	17.0				
L	2581.503	4" REMOVABLE PREFORMED PAVEMENT MARKING TAPE	LIN FT	10886	10886				
L	2581.603	REMOVABLE PREFORMED PLASTIC MASK (BLACK)	LIN FT	2591	2591				
L	2582.503	4" SOLID LINE PAINT	LIN FT	6445	6445				
L	2582.503	4" DOUBLE SOLID LINE PAINT	LIN FT	1075	1075				
L	2582.503	4" SOLID LINE MULTI-COMPONENT	LIN FT	6524	6524				
L	2582.503	4" BROKEN LINE MULTI-COMPONENT	LIN FT	230	230				
L	2582.503	4" DOUBLE SOLID LINE MULTI-COMPONENT	LIN FT	1638	1638				
L	2582.503	4" SOLID LINE PREFORM THERMO GROUND IN	LIN FT	3109	3109				
L	2582.503	24" SOLID LINE PREFORM THERMO GROUND IN	LIN FT	30	30				
L	2582.503	8" DOTTED LINE PREFORM THERMO GROUND IN	LIN FT	45	45				
L / [9]	2582.518	CROSSWALK PREFORM THERMOPLASTIC GROUND IN	SQ FT	144	144				

NOTES:

[1] INCLUDES ALL PIPE AND APRON TYPES / MATERIALS
[2] INCLUDES POND AND ROADWAY EARTHWORK QUANTITIES
[3] WATER TO BE USED ONLY FOR DUST CONTROL AS DIRECTED BY ENGINEER IN THE FIELD. WATER USED FOR COMPACTION AND TURF ESTABLISHMENT SHALL BE INCIDENTAL
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[7] SEE STAGE 2 SHEETS FOR LOCATION DETAILS
[8] DOUBLE ROW OF SILT FENCE TO BE USED ALONG WETLAND AS SHOWN ON SHEET 72
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[11] COLORED CONCRETE, INTEGRAL RED (FS 31136).

NO	DATE	BY	CKD	APPR	REVISION
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ANOKA COUNTY HIGHWAY DEPT.

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SP 210-020-013
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STATEMENT OF ESTIMATED QUANTITIES

Sheet 4A of 115 Sheets

THE FOLLOWING STANDARD PLATES APPROVED BY THE DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION SHALL APPLY ON THIS PROJECT.

STANDARD PLATES

PLATE NO.	DESCRIPTION
1070N	SUPPLEMENTAL PAVEMENT REINFORCEMENT
1103L	TYPICAL DOWEL BAR ASSEMBLY (2 SHEETS)
3000M	REINFORCED CONCRETE PIPE (6 SHEETS)
3006H	GASKET JOINT FOR R.C. PIPE (2 SHEETS)
3007F	SHEAR REINFORCEMENT FOR PRECAST DRAINAGE STRUCTURES
3022C	PRECAST CONCRETE SAFETY APRON (3 SHEETS)
3100G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3133D	RIPRAP AT RCP OUTLETS
3145G	CONCRETE PIPE OR PRECAST CULVERT TIES
4006L	MANHOLE OR CATCH BASIN PRECAST - DESIGNS G AND H
4011E	PRECAST CONCRETE BASE
4020J	MANHOLE OR CATCH BASIN (FOR USE WITH OR WITHOUT TRAFFIC LOADS) (2 SHEETS)
4026B	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
4101D	RING CASTING FOR MANHOLE OR CATCH BASIN
4108F	ADJUSTING RINGS FOR CATCH BASINS AND MANHOLES
4125D	CATCH BASIN FRAME CASTING (FOR SQUARE GRATE) – CASTING NO. 806
4134A	CURB BOX CASTING FOR CATCH BASIN (FOR DESIGN B CURBS)- CASTING NO. 825
4143E	STOOL GRATE & CONCRETE FRAME (MEDIAN DRAINS) - CASTING NO. 731
4154B	CATCH BASIN GRATE CASTING - CASTING NO. 816
4180J	MANHOLE OR CATCH BASIN STEP
7038A	DETECTABLE WARNING SURFACE TRUNCATED DOMES
7100H	CONCRETE CURB AND GUTTER (DESIGN B AND DESIGN V)
7102K	CONCRETE CURB AND GUTTER (DESIGN D, DESIGN S, AND DESIGN R)
7111J	INSTALLATION OF CATCH BASIN CASTINGS (CONCRETE CURB AND GUTTER)
7113A	CONCRETE APPROACH NOSE DETAIL
8000K	TEMPORARY CHANNELIZERS (3 SHEETS)
8150C	INSTALLATION OF CULVERT MARKERS
8337D	TEMPORARY PORTABLE PRECAST CONCRETE BARRIER - TYPE F (3 SHEETS)
9350C	MAILBOX SUPPORT - SWING-AWAY TYPE

BASIS OF QUANTITIES

SPEC NO	DESCRIPTION	RATE
2357.506	BITUMINOUS MATERIAL FOR TACK COAT	0.05 GAL / SQ YD / LIFT
2360.509	BITUMINOUS PAVEMENT MIXTURES	115 LBS / SQ YD / IN
2574.508	FERTILIZER TYPE 3	350 LBS / ACRE
2574.508	FERTILIZER TYPE 4	150 LBS / ACRE
2575.508	SEED MIXTURE 25-121	61 LBS / ACRE
2575.508	SEED MIXTURE 33-261	35 LBS / ACRE
2575.508	SEED MIXTURE 35-241	36.5 LBS / ACRE
2575.508	HYDRAULIC REINFORCED FIBER MATRIX	3900 LBS / ACRE
2575.523	RAPID STABILIZATION METHOD 3	6 M GALLONS / ACRE

INDEX OF TABULATION CHARTS

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049 - Sunset RAB\Plan\002614049_TAB.dgn 12/07/2023 9:36:55 AM

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: AARON P. ANDERSON

SIGNATURE:

DATE: 12/06/23 LICENSE NO. 58657

DRAWN BY BTU DATE 12/06/23

DESIGN BY BTU DATE 12/06/23

CHECKED BY APA DATE 12/06/23

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SP 002-614-049
SP 210-020-013
SP 106-020-041

STANDARD PLATES, BASIS OF QUANTITIES, & TABULATIONS INDEX

EARTHWORK TABULATIONS

STATION	EXCAVATION TOTALS				EMBANKMENT TOTALS	
	EXCAVATION - COMMON	EXCAVATION - MUCK	EXCAVATION - SUBGRADE	EXCAVATION - CHANNEL AND POND	COMMON EMBANKMENT	SELECT GRANULAR EMBANKMENT
	CY	CY	CY	CY	CY	CY
CSAH 14 (125TH AVE / MAIN ST)						
132+00.00 - 132+50.00	89	78	95		109	109
132+50.00 - 133+00.00	105	95	94		139	113
133+00.00 - 133+27.62	65	58	52		88	66
133+27.62 - 133+50.00	58	45	42		77	55
133+50.00 - 134+00.00	131	131	88		263	105
134+00.00 - 134+50.00	131	196	83		372	85
ROUNDABOUT	904	5335	408	389	7275	955
137+50.00 - 138+00.00	159	132	83		263	89
138+00.00 - 138+30.24	119	41	54		81	60
138+30.24 - 138+50.00	81	14	37		27	44
138+50.00 - 139+00.00	188	55	98		88	109
139+00.00 - 139+50.00	176	79	106		117	110
139+50.00 - 139+63.40	41	20	30		27	30
139+63.40 - 140+00.00	100	55	80		70	80
140+00.00 - 140+50.00	110	72	107		94	108
140+50.00 - 141+00.00	88	71	105		95	107
141+00.00 - 141+50.00	75	126	100		152	107
141+50.00 - 142+00.00	35	90	48		103	53
142+00.00 - 142+50.00	3				2	
SUBTOTAL A	**2658**	**6693**	**1710**	**389**	**9442**	**2385**
CR 53 (SUNSET AVE)						
522+00.00 - 522+13.43	32	326			321	21
522+13.43 - 522+50.00	88	890			879	58
522+50.00 - 523+00.00	134	1376			1375	84
523+00.00 - 523+50.00	120	1588			1615	94
523+50.00 - 524+00.00	97	1557			1614	94
524+00.00 - 524+50.00	97	1398			1491	88
SUBTOTAL B	**568**	**7135**			**7295**	**439**
PONDS						
POND 100	957				131	
POND 200 + PARCEL 5 DITCH				1948	882	
SUBTOTAL C	**957**			**1948**	**1013**	
STAGING						
WB CSAH 14 TEMPORARY WIDENING	778				778	
SUBTOTAL D	**778**				**778**	

EARTHWORK SUMMARY — AA

SUBTOTALS	EXCAVATION TOTALS				EMBANKMENT TOTALS	
	EXCAVATION - COMMON	EXCAVATION - MUCK	EXCAVATION - SUBGRADE	EXCAVATION - CHANNEL AND POND	COMMON EMBANKMENT	SELECT GRANULAR EMBANKMENT
	CY	CY	CY	CY	CY	CY
SUBTOTAL A	**2658**	**6693**	**1710**	**389**	**9442**	**2385**
SUBTOTAL B	**568**	**7135**			**7295**	**439**
SUBTOTAL C	**957**			**1948**	**1013**	
SUBTOTAL D	**778**				**778**	
PROJECT TOTAL	**4961**	**13828**	**1710**	**2337**	**18528**	**2824**

SOILS AND CONSTRUCTION NOTES:

1. TOP OF THE GRADING GRADE IS DEFINED AS THE BOTTOM OF THE CLASS 5 AGGREGATE BASE LAYER
2. BOTTOM OF THE SUBBASE GRADE SHALL BE DEFINED AS THE BOTTOM OF THE 1' SUBGRADE EXCAVATION (SEE CROSS-SECTIONS FOR DETAILS).
3. CONSTRUCT EMBANKMENTS IN ACCORDANCE WITH SPECIFICATION 2106 AND THE MnDOT ROAD DESIGN MANUAL. ALL EMBANKMENT CORE-WIDENING MATERIAL SHALL BE SELECT GRADING MATERIAL OR COMMON EMBANKMENT (CV) IN ACCORDANCE WITH OTHER REQUIREMENTS PROVIDED IN SPEC. 2106.
4. SELECT GRANULAR MATERIAL SHALL MEET THE REQUIREMENTS OF MnDOT SPEC. 3149.2B2.
5. ALL TOPSOIL STRIPPING WILL BE CONSIDERED TO BE A PART OF EXCAVATION - COMMON. TOPSOIL SHALL BE DEFINED AS EXISTING SOILS WHICH MEET MnDOT SPEC. 3877 THAT WOULD BE SUITABLE FOR REUSE. STRIP ALL TOPSOIL AND INPLACE SLOPE DRESSING WHERE PRESENT IN AREAS TO BE DISTURBED BY CONSTRUCTION AND REUSE AS SLOPE DRESSING. FOR ESTIMATING PURPOSES, THE DEPTH OF TOPSOIL AVAILABLE IS CONSIDERED TO BE 4 INCHES. CONTRACTOR SHALL VERIFY PRIOR TO PLACING BID.
6. SUITABLE GRADING MATERIAL SHALL BE USED TO BACK FILL THE EMBANKMENT UNDER THE NEW ROADWAY CORE, UP TO THE BOTTOM OF THE GRADING SUBGRADE.
7. SLOPE DRESSING ON THE PROJECT IS DEFINED AS THE TOPSOIL OR OTHER SOIL PLACED DURING PREVIOUS CONSTRUCTION TO PROVIDE A MEDIUM FOR ESTABLISHING TURF.
8. UNSUITABLE SOILS ARE DEFINED AS SOILS WHICH DO NOT MEET OR ARE NOT MANUFACTURED TO MEET ANY OF THE ABOVE DEFINED CATEGORIES, AND ARE THEREFORE NOT REUSABLE AS STRUCTURAL BACKFILL OR EMBANKMENT WITHIN THE ROADWAY CORE.
9. SUITABLE GRADING MATERIAL OBTAINED FROM COMMON EXCAVATION NOT MEETING THE REQUIREMENTS OF MnDOT SPEC. 3149.2B1 SHALL BE USED OUTSIDE THE ROADWAY CORE ON THE PROJECT AS APPROVED BY THE ENGINEER.
10. UNSUITABLE MATERIALS ARE TOPSOIL, PAVEMENT OR CONCRETE DEBRIS, PEAT, MUCK AND ORGANIC OR OTHER UNSTABLE SOILS.
11. UNLESS OTHERWISE SPECIFICALLY ALLOWED OR REQUIRED BY THE CONTRACT, BITUMINOUS AND CONCRETE ITEMS DISTURBED BY CONSTRUCTION SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE RECYCLED TO THE EXTENT ALLOWED IN BASE AND SURFACING ITEMS OR DISPOSED OF OUTSIDE THE RIGHT-OF-WAY IN ACCORDANCE WITH SPEC. 2104.3C3
12. WHERE CONNECTING TO THE INPLACE ROADWAYS AT THE TERMINI OF PROPOSED NEW CONSTRUCTION, CUT VERTICALLY TO THE BOTTOM OF THE INPLACE SURFACING OR TO THE BOTTOM OF THE NEW SURFACING DESIGN, WHICHEVER IS DEEPER, THEN AT A 1:20 TAPER TO THE BOTTOM OF THE RECOMMENDED SUBGRADE EXCAVATION.
13. CONTRACTOR SHALL PROVIDE A FULL DEPTH SAWCUT WHERE PLACING NEW PAVEMENT ADJACENT TO INPLACE PAVEMENT TO ENSURE A UNIFORM JOINT. IF NO ITEM FOR THIS WORK IS SPECIFICALLY CALLED OUT, THEN THE WORK SHALL BE INCIDENTAL WITH NO DIRECT COMPENSATION.
14. CONTRACTOR SHALL PROVIDE A UNIFORM BITUMINOUS TACK COAT BETWEEN ALL BITUMINOUS LAYERS AND PRIOR TO PLACING ANY BITUMINOUS MIXTURES ON EXISTING PAVEMENT IN ACCORDANCE WITH SPEC. 2357. IF NO ITEM FOR THIS WORK IS SPECIFICALLY CALLED OUT, THEN THE WORK SHALL BE INCIDENTAL WITH NO DIRECT COMPENSATION.
15. EMBANKMENT QUANTITIES SHOWN ON THE EARTHWORK TABULATION REPRESENT ALL EARTHWORK QUANTITIES BELOW THE PROPOSED GRADING GRADE OF ALL PERMANENT ROADWAYS. QUANTITIES REQUIRED ABOVE THE GRADING GRADE ARE PROVIDED IN DETAIL ON THE BITUMINOUS SUMMARY TAB.
16. THE CONSTRUCTION LIMITS AS SHOWN IN THE PLANS REPRESENT THE POINT OF INTERSECTION BETWEEN THE REQUIRED FILL OR CUT SLOPE AND THE EXISTING GROUND LINE AS DEPICTED ON THE CROSS SECTIONS. THE CONSTRUCTION LIMITS DO NOT INCLUDE AREAS REQUIRED FOR SLOPE ROUNDING.
17. DITCH BOTTOMS, TOE OF FILL, CUT RUNOUTS AND THE TOP EDGE OF BACKSLOPES SHALL BE ROUNDED REGARDLESS OF THE SECTION USED ON THE CROSS SECTION SHEETS.
18. ANY DEBRIS WHICH MAY BE ENCOUNTERED DURING GRADING SHALL BE DISPOSED OF BY THE CONTRACTOR OFF THE PROJECT RIGHT-OF-WAY IN A SUITABLE DISPOSAL AREA AS APPROVED BY THE ENGINEER.
19. UNSUITABLE SOILS NOT USED ON THE PROJECT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE PROJECT AND DISPOSED OF IN ACCORDANCE WITH MnDOT SPECIFICATIONS.
20. INPLACE BITUMINOUS PAVEMENT IS AN AVERAGE OF 6" THICK. FOR INFORMATION ONLY, NO WARRANTY IS MADE OR IMPLIED WITH THIS INFORMATION. CONTRACTOR MAY VERIFY PAVEMENT DEPTH PRIOR TO PLACING BID.
21. AGGREGATE BASE MATERIAL SHALL MEET THE REQUIREMENTS OF MnDOT SPEC. 3138, CLASS 5.
22. COMPACTION OF THE GRADING AND AGGREGATE BASE SHALL BE IN ACCORDANCE WITH MnDOT "SPECIFIED DENSITY METHOD" COMPACTION REQUIREMENTS AS INDICATED IN 2211.
23. COMPACTION OF BITUMINOUS MATERIAL SHALL BE IN ACCORDANCE WITH MnDOT "MAXIMUM DENSITY METHOD" COMPACTION REQUIREMENTS.
24. NO OVER-EXCAVATION WILL BE ALLOWED INSIDE THE COUNTY'S RIGHT OF WAY OR POND LOCATIONS FOR THIS PROJECT.

NO	DATE	BY	CKD	APPR	REVISION

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SIGNATURE:

DATE: 12/06/23 LICENSE NO. 58657

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CHECKED BY APA DATE 12/06/23

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SP 002-614-049
SP 210-020-013
SP 106-020-041

EARTHWORK SUMMARY, SOILS & CONSTRUCTION NOTES

GRUBBING — A

ALIGNMENT	STATION	OFFSET	SPEC. 2101 GRUBBING (TREE)
<14E_4>	134+58.20	68.1 RT	1
<14E_4>	137+68.55	66.3 RT	1
<14E_4>	139+76.02	61.4 RT	1
<14E_4>	141+79.53	78.9 RT	1
<14E_4>	141+82.43	58.8 RT	1
<14E_4>	142+03.15	77.6 RT	1
<14E_4>	142+26.91	76.7 RT	1
<14W_4>	1135+87.25	42.1 LT	1
<14W_4>	1135+94.70	67.9 LT	1
<14W_4>	1135+95.27	66.4 LT	1
<14W_4>	1135+96.43	65.5 LT	1
<14W_4>	1135+97.39	52.2 LT	1
<14W_4>	1135+97.83	60.3 LT	1
<14W_4>	1135+98.63	57.2 LT	1
<14W_4>	1135+98.91	55.8 LT	1
<14W_4>	1135+97.93	66.3 LT	1
<14W_4>	1136+00.66	44.5 LT	1
<14W_4>	1136+01.18	42.5 LT	1
<53N_4>	522+95.98	45.2 RT	1
<53N_4>	522+96.51	45.6 RT	1
<53N_4>	523+03.88	44.6 RT	1
<53N_4>	523+05.38	42.6 RT	1
<53N_4>	523+06.91	43.8 RT	1
<53N_4>	523+08.55	42.1 RT	1
<53N_4>	523+14.28	45.6 RT	1
<53N_4>	523+23.10	47.9 RT	1
<53N_4>	523+15.77	46.7 RT	1
<53N_4>	523+20.95	40.8 RT	1
<53N_4>	523+21.85	50.7 RT	1
<53N_4>	523+24.06	50.5 RT	1
<53N_4>	523+26.30	44.9 RT	1
<53N_4>	523+26.96	42.4 RT	1
<53N_4>	523+28.26	51.2 RT	1
<53N_4>	523+28.27	39.3 RT	1
<53N_4>	523+31.80	53.0 RT	1
<53N_4>	523+35.98	38.8 RT	1
<53N_4>	523+36.97	40.4 RT	1
<53N_4>	523+37.92	39.1 RT	1
<53S_4>	1523+68.31	63.9 LT	1
<53S_4>	1523+71.91	43.4 LT	1
<53S_4>	1523+73.36	41.1 LT	1
<53S_4>	1523+75.31	65.0 LT	1
<53S_4>	1523+85.91	45.2 LT	1
<53S_4>	1523+87.90	47.9 LT	1
<53S_4>	1523+91.59	41.5 LT	1
<53S_4>	1524+00.00	63.0 LT	1
<53S_4>	1524+01.47	33.2 LT	1
<53S_4>	1524+04.25	43.3 LT	1
<53S_4>	1524+05.38	42.1 LT	1
<53S_4>	1524+08.10	48.6 LT	1
<53S_4>	1524+09.47	49.9 LT	1
<53S_4>	1524+69.47	27.3 LT	1
<53S_4>	1525+18.95	57.7 LT	1
<53S_4>	1525+20.42	59.0 LT	1
<53S_4>	1525+26.42	9.9 LT	1
PROJECT TOTAL			55

NOTES:
- REMOVAL OF MISCELLANEOUS SHRUBS AND LANDSCAPING SHALL BE CONSIDERED INCIDENTAL.
- STUMPS WITHIN PROPOSED ROADWAY SHALL BE FULLY GRUBBED - NO GRINDING ALLOWED.
- STUMP GRINDING RESIDUE SHALL BE REMOVED TO THE SATISFACTION OF THE ENGINEER.

REMOVALS AND SAWING — B

ALIGNMENT	LOCATION STATION	TO	STATION	OFFSET FROM	TO	REMOVE SPEC. 2104 PIPE CULVERTS (LIN FT)	REMOVE SPEC. 2104 BIT. PAVEMENT (SQ YD)	SAWING SPEC. 2104 BIT. PAVEMENT (LIN FT)	NOTES
<14E_4>	131+78.19	-	134+50.00				1456	50	
	134+50.00	-	137+50.00				1483		
	137+50.00	-	141+61.33				2230	49	
	142+53.90		143+25.94	68.9 RT	- 69' RT	72			[1]
	521+87.22	-	524+50.00				721	25	
	524+50.00	-	525+87.19				480		
	525+13.44	-	525+32.07	19' LT	- 26' RT	49			[1]
PROJECT TOTAL						121	6370	124	

REMOVALS NOTES:
[1] PIPE CULVERT REMOVAL INCLUDES APRON (INCIDENTAL).

DRIVEWAY REMOVAL, CONSTRUCTION & MAILBOXES — C

ALIGNMENT	LOCATION STATION	OFFSET FROM	TO	DESCRIPTION	REMOVE SPEC. 2104 BIT. PAVEMENT (SQ YD)	CONSTRUCT DRIVEWAY WIDTH (LIN FT)	CONSTRUCT SPEC. 2211 AGGREGATE BASE CLASS 5 (TON)	CONSTRUCT SPEC. 2360 TYPE SP 9.5 WEAR (2;B) (3.0") (TON)	MAILBOX SPEC. 2540 RELOCATE MAILBOX SUPPORT (EACH)	MAILBOX SPEC. 2540 MAILBOX SUPPORT (EACH)	NOTES
<14W_4>	1138+18.85	14' LT	- 45' LT	5 MAIN ST	119	21	43	25	1	1	[1]
PROJECT TOTAL					119		43	25	1	1	

DRIVEWAY NOTES:
[1] NO CONCRETE APRON.

TEMPORARY BARRIER — G

STAGE	ALIGNMENT	PORTABLE PRECAST CONC BARRIER DES 8337 LOCATION BEGINNING STATION	BEGINNING OFFSET	END STATION	END OFFSET	LENGTH [1] LIN FT	BARRIER SECTIONS	IMPACT ATTENUATOR [2] ASSEMBLY	NOTES
2	<14E_4>	130+70.65	7 RT	142+68.82	7 RT	1175	94	2	[3]
PROJECT TOTAL						1175		2	

NOTES:
[1] LENGTH OF BARRIER DOES NOT INCLUDE IMPACT ATTENUATOR
[2] TEMPORARY IMPACT ATTENUATOR TEST LEVEL 3. SHALL BE THE SAME CROSS SECTION OF BARRIER.
[3] USE 15:1 TAPER AT ENDS AS SHOWN IN STAGING PLAN

NO	DATE	BY	CKD	APPR	REVISION

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ANOKA COUNTY HIGHWAY DEPT.

SP 002-614-049
SP 210-020-013
SP 106-020-041

TABULATIONS

Sheet 7 of 115 Sheets

[A] CITY OF BLAINE
SP 106-020-041 QUANTITY

[B] CITY OF LINO LAKES
SP 210-020-013 QUANTITY

AGGREGATE AND BITUMINOUS SUMMARY — D

ALIGNMENT	LOCATION	MAINLINE					SIDEPATH				STAGING		
		SPEC. 2118	SPEC. 2211	SPEC. 2357	SPEC. 2360		SPEC. 2211		SPEC. 2360		SPEC. 2112	SPEC. 2211	SPEC. 2360
		AGGREGATE SURFACING (CV) CLASS 2	AGGREGATE BASE (CV) CLASS 5	BITUMINOUS MATERIAL FOR TACK COAT	TYPE SP 9.5 NON WEAR COURSE MIX (3,C)	TYPE SP 12.5 WEARING COURSE MIX (3,C)	AGGREGATE BASE CLASS 5		TYPE SP 9.5 WEARING COURSE MIX (2,B)		SHOULDER PREPARATION	AGGREGATE BASE CLASS 5	TYPE SP 12.5 BIT MIXTURE FOR PATCHING
	STATION TO STATION	(CU YD)	(CU YD)	(GALLON)	(TON)	(TON)	(TON)		(TON)		(LIN FT)	(TON)	(TON)
<14E_4>	131+78.19 - 134+88.86	6	130	78	89	179	18		13				
<14E_4>	ROUNDABOUT						24	22	18	17	217	46	39
<14E_4>	137+25.00 - 141+61.33	12	185	111	128	255		13		10			
<14W_4>	1130+60.03 - 1134+87.37	5	119	71	82	164					422	45	39
<14W_4>	1137+17.16 - 1142+39.31	1	158	95	109	218					521	71	61
<53N_4>	521+87.22 - 524+79.61	5	92	55	64	127							
<53S_4>	1521+87.22 - 1524+78.34	5	84	50	58	115							
PROJECT TOTAL		34	768	460	530	1058	42	35	31	27	1160	162	139
							[A]	[B]	[A]	[B]			

CONCRETE — E

ALIGNMENT	LOCATION	SPEC. 2211	SPEC. 2301				SPEC. 2411	SPEC. 2521		SPEC. 2531							NOTES
		AGGREGATE BASE CLASS 5 (4.0")	DOWEL BAR	8.0" CONCRETE PAVEMENT	7.0" CONCRETE PAVEMENT (SPECIAL)	DRILL & GROUT REINF BAR (EPOXY COATED)	CONCRETE FLUME	4" CONCRETE WALK [1]	6" CONCRETE WALK	CONCRETE CURB & GUTTER DESIGN B418 (MOD.)	CONCRETE CURB & GUTTER DESIGN B424			CONCRETE CURB & GUTTER DESIGN B624	CONCRETE CURB & GUTTER DESIGN R418	TRUNCATED DOMES [2]	
	STATION TO STATION	(TON)	(EACH)	(SQ YD)	(SQ YD)	(EACH)	(EACH)	(SQ FT)	(SQ FT)	(LIN FT)	(LIN FT)			(LIN FT)	(LIN FT)	(SQ FT)	
<14E_4>	131+78.19 - 134+88.86	55				10	1	1163	128	163	64	63				8	[3]
<14E_4>	ROUNDABOUT	438	1800	1581	297	49	2	1960	536	329	233	120	117	196	284	16	[3],[4]
<14E_4>	137+25.00 - 141+61.33	47				29	1	1323	746	229	46		45			4	[3],[4]
<14W_4>	1131+78.19 - 1134+87.37	1								162	101	100					
<14W_4>	1137+17.16 - 1141+55.22	1								230	203		202				
<53N_4>	521+87.22 - 524+79.61	11						443	27	141	79		78				[3]
<53S_4>	1521+87.22 - 1524+78.34	1					1			141	68	68					
PROJECT TOTAL		554	1800	1581	297	88	5	4889	1437	1395	794	351	442	196	284	28	
												[A]	[B]				

CONCRETE NOTES:
[1] MEDIAN PAID FOR AS 4" CONCRETE WALK.
[2] SEE STANDARD PLATE 7038 FOR DETAILS.
[3] CONCRETE NOSE DESIGN SPECIAL PAID FOR AS 6" CONCRETE WALK.
[4] DEPRESSED MEDIAN PAID FOR AS 6" CONCRETE WALK.

TURF ESTABLISHMENT AND EROSION CONTROL — F

ALIGNMENT	LOCATION	SPEC. 2511		SPEC. 2573			SPEC. 2574		SPEC. 2575							
		GEOTEXTILE FILTER TYPE 3	RANDOM RIPRAP CLASS II	STORM DRAIN INLET PROTECTION	CULVERT END CONTROLS	SILT FENCE TYPE MACHINE SLICED	FERTILIZER TYPE 3 (22-5-10)	FERTILIZER TYPE 4 (17-10-7)	SEEDING	SEED MIXTURE 25-121	SEED MIXTURE 33-261	SEED MIXTURE 35-241	HYDRAULIC REINFORCED FIBER MATRIX	RAPID STABILIZATION METHOD 3	ROLLED EROSION PREVENTION CATEGORY 20	ROLLED EROSION PREVENTION CATEGORY 25
	STATION TO STATION	(SQ YD)	(CU YD)	(EACH)	(EACH)	(LIN FT)	(POUND)	(POUND)	(ACRE)	(POUND)	(POUND)	(POUND)	(POUND)	(M GALLON)	SQ YD	SQ YD
CSAH 14																
<14E_4>	131+78.19 - 136+65.00	18	5	2		806	120		0.3	21			1341	2.1		
<14E_4>	136+65.00 - 143+35.29	23	6	2	4	780	154	114	1.2	27	14	22	1718	7.2	1736	1929
<14W_4>	1130+60.03 - 1142+39.31			7		2117	180	17	0.6	31	4		2009	3.8		559
CSAH 14																
	ROUNDABOUT CENTER	41	11	7			23		0.1	4			256	0.4		
CR 53																
<53N_4>	521+74.70 - 524+85.23			3	1	685	68		0.2	12			753	1.2		
<53S_4>	1521+78.26 - 1524+85.69	15	4	2	1	783	69	28	0.4	12	4	5	770	2.3	411	499
PROJECT TOTAL		97	26	23	6	5171	614	159	2.8	107	22	27	6847	17.0	2147	2987

GENERAL NOTES:
- RAPID STABILIZATION METHOD 3 TO BE APPLIED AS NECESSARY, AS DIRECTED BY ENGINEER.
- TURF ESTABLISHMENT TO BE COMPLETED AS DIRECTED IN THE SWPPP
- DOUBLE ROW OF SILT FENCE TO BE USED ALONG WETLAND AS SHOWN ON PLANS

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ANOKA COUNTY HIGHWAY DEPT.

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TABULATIONS

Sheet 8 of 115 Sheets

UTILITY OWNERS — P

CENTERPOINT ENERGY
700 WEST LINDON AVE
PO BOX 1165
MINNEAPOLIS, MN 55440-1165
CONTACT NICHOLAS LARSON
TEL: 612-321-5336

COMCAST
4255 LEXINGTON AVE, STE 100
ARDEN HILLS, MN 55126
CONTACT LUKE BASTIL
TEL: 651-493-5405

CONNEXUS ENERGY
14601 RAMSEY BLVD NW
RAMSEY, MN 55303
CONTACT CHRIS MILLER
TEL: 763-286-1451

GREAT RIVER ENERGY
12300 ELM CREEK BLVD
MAPLE GROVE, MN 55369-4718
CONTACT MICHELLE MACMILLAN
TEL: 763-445-5984

LUMEN / CENTURYLINK
TERRATECH LLC
CONTACT CHARLES DAHER
TEL: 612-298-2925

MCI-VERIZON
21330 JOHN MILLESS DR, STE 101
ROGERS, MN 55374
CONTACT STEVE HOTVEDT
TEL: 920-924-3690 x2800

POWER — R

ALIGNMENT	LOCATION STATION	TO	STATION	OFFSET FROM	TO	INPLACE ITEM	UTILITY OWNER	REMARKS
<14E_4>	130+00.00			58' LT		POLE	GREAT RIVER ENERGY	
<14E_4>	130+83.18			59' LT		POLE	GREAT RIVER ENERGY	
<14E_4>	133+27.62			68' LT		POLE	GREAT RIVER ENERGY	
<14E_4>	136+91.50			89' LT		POLE	GREAT RIVER ENERGY	[1]
<14E_4>	138+29.77	-	139+63.40	270' LT	- 60' LT	BURIED POWER LINE	GREAT RIVER ENERGY	
<14E_4>	139+63.40			60' LT		POLE	GREAT RIVER ENERGY	
<14E_4>	142+60.10			61' LT		POLE	GREAT RIVER ENERGY	
<14E_4>	145+52.56			61' LT		POLE	GREAT RIVER ENERGY	
<53N_4>	518+98.44			33' RT		POLE	CONNEXUS	
<53N_4>	522+13.43			34' RT		POLE	CONNEXUS	
<53N_4>	523+99.12			32' RT		POLE	CONNEXUS	
<53N_4>	525+10.63			41' RT		GUY ANCHOR	GREAT RIVER ENERGY	REMOVE
<53N_4>	525+21.50			39' RT		GUY ANCHOR	GREAT RIVER ENERGY	REMOVE
<53N_4>	525+46.28			29' RT		POLE	GREAT RIVER ENERGY	[2]
<53N_4>	525+64.60			17' RT		GUY ANCHOR	GREAT RIVER ENERGY	REMOVE
<53N_4>	525+67.61			15' RT		GUY ANCHOR	GREAT RIVER ENERGY	REMOVE

[1] POLE TO BE UPGRADED AND RAISED.
[2] ANCHOR POLE FOR GREAT RIVER ENERGY POLE ACROSS CSAH 14. TO BE REMOVED AS IT WILL NO LONGER BE NECESSARY. OTHER UTILITY LINES ON POLE TO BE RUN UNDERGROUND.

GAS — Q

ALIGNMENT	LOCATION STATION	TO	STATION	OFFSET FROM	TO	REMARKS	SIZE & ITEM
<14E_4>	127+85.44	-	136+83.45	35' LT	- 67' LT	RELOCATE	4" PVC
<14N_4>	518+00.29	-	526+40.82	22' RT	- 16' RT	RELOCATE	4" PVC

TELEPHONE / FIBER / CABLE TV — S

ALIGNMENT	LOCATION STATION	TO	STATION	OFFSET FROM	TO	INPLACE ITEM	UTILITY OWNER	REMARKS
<14E_4>	128+00.00	-	136+91.89	59' LT	- 90' LT	OVERHEAD CONDUIT	COMCAST	
<14E_4>	128+00.00	-	129+43.44	54' LT	- 58' LT	CONDUIT AND FIBER	LUMEN / CENTURYLINK	
<14E_4>	128+00.00	-	136+71.34	45' RT	- 15' RT	CONDUIT AND FIBER	MCI-VERIZON	[1]
<14E_4>	131+78.19	-	136+43.95	54' RT	- 31' RT	CONDUIT AND FIBER	LUMEN / CENTURYLINK	[2]
<14E_4>	128+00.00	-	136+57.96	59' RT	- 23' RT	CONDUIT AND FIBER	COMCAST	RELOCATE
<14E_4>	128+00.00	-	136+57.96	61' RT	- 23' RT	CONDUIT AND FIBER	COMCAST	RELOCATE
<14E_4>	136+57.96			23' RT		HANDHOLE	COMCAST	RELOCATE
<14E_4>	136+57.96	-	145+00.00	23' RT	- 55' RT	CONDUIT AND FIBER	COMCAST	RELOCATE
<14E_4>	136+57.96	-	145+00.00	23' RT	- 53' RT	CONDUIT AND FIBER	COMCAST	RELOCATE
<14E_4>	136+71.34			15' RT		HANDHOLE	MCI-VERIZON	[1]
<14E_4>	136+71.34	-	145+00.00	15' RT	- 41' RT	CONDUIT AND FIBER	MCI-VERIZON	[1]
<14E_4>	136+91.89	-	137+26.08	90' LT	- 52' LT	CONDUIT AND FIBER	COMCAST	
<14E_4>	137+26.08			52' LT		PEDESTAL	COMCAST	
<53N_4>	518+97.43	-	522+13.43	32' RT	- 34' RT	OVERHEAD CONDUIT	LUMEN / CENTURYLINK	
<53N_4>	522+13.43	-	525+45.21	34' RT	- 28' RT	OVERHEAD CONDUIT	LUMEN / CENTURYLINK	[3]

[1] MCI VERIZON TO BE ADJUSTED IN FIELD. CONTACT STEVE HOTVEDT FOR COORDINATION.
[2] LINE TO BE ABANDONED INPLACE
[3] OVERHEAD LINE TO BE RUN UNDERGROUND.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049 - Sunset RAB\Plan\002614049_TAB.dgn 12/07/2023 9:37:15 AM

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: AARON P. ANDERSON
SIGNATURE:
DATE: 12/06/23 LICENSE NO. 58657

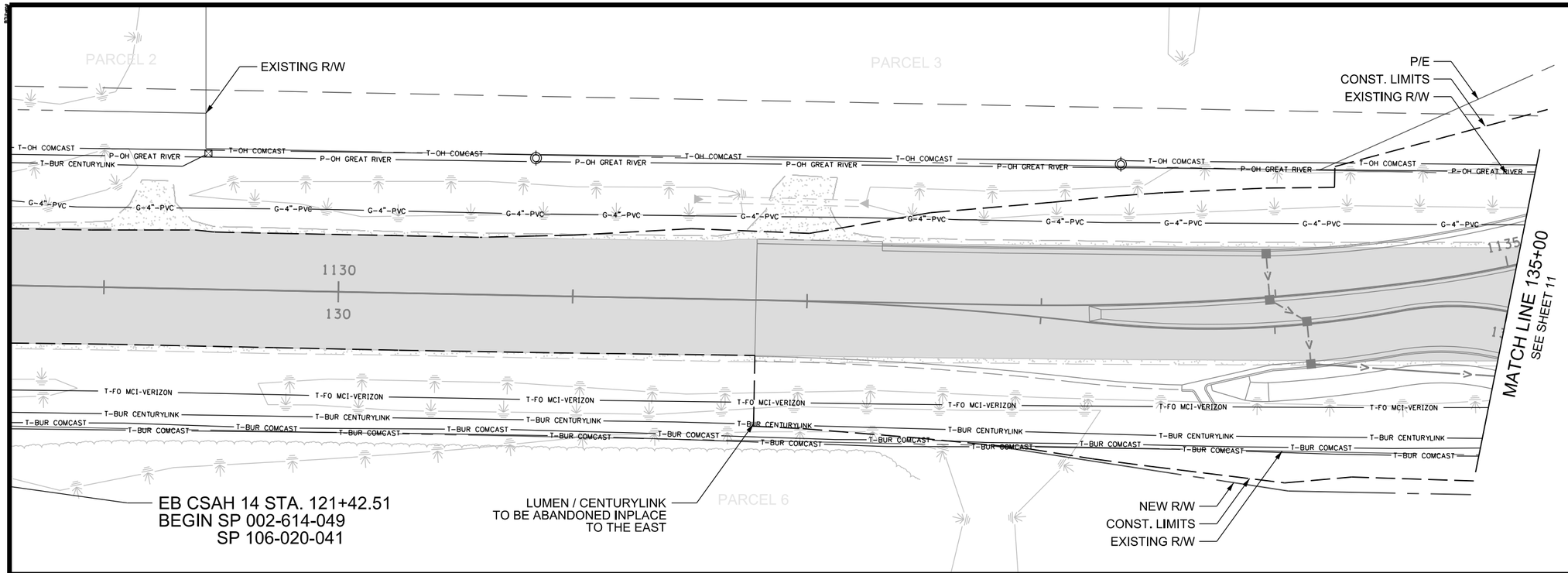
DRAWN BY BTU DATE 12/06/23
DESIGN BY BTU DATE 12/06/23
CHECKED BY APA DATE 12/06/23

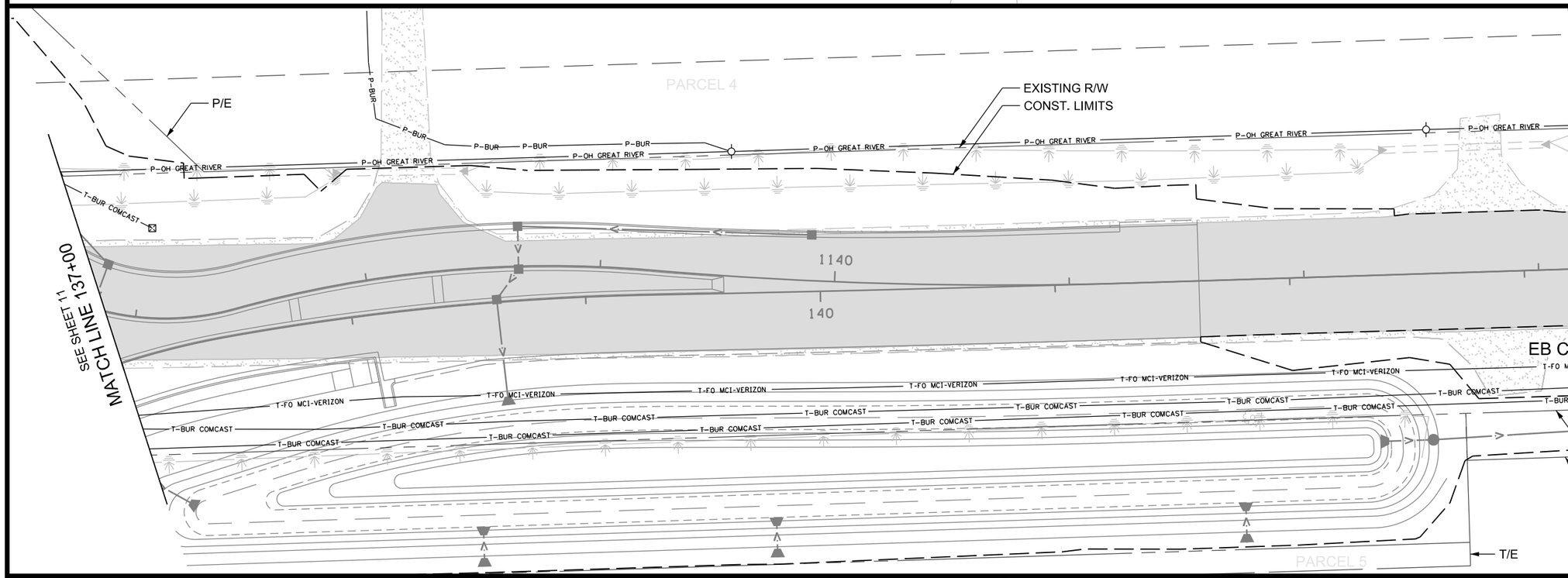
ANOKA COUNTY
ANOKA COUNTY HIGHWAY DEPT.

SP 002-614-049
SP 210-020-013
SP 106-020-041

INPLACE UTILITY TABULATIONS

Sheet 9 of 115 Sheets





LEGEND

- CENTERPOINT ENERGY (G-X"-XX / GAS-ABANDONED)
- COMCAST (T-BUR COMCAST / T-OH COMCAST)
- LUMEN / CENTURYLINK (T-BUR CENTURYLINK / T-OH CENTURYLINK)
- MCI-VERIZON (T-FO MCI-VERIZON)
- CONNEXUS ENERGY (P-BUR / P-OH)
- GREAT RIVER ENERGY (P-OH GREAT RIVER)
- EX. STORM SEWER
- PROP. STORM SEWER
- EXISTING SAN SEWER
- EXISTING WATER MAIN
- PROPOSED ROADWAY
- EXISTING ROADWAY
- EX. AGG. SHOULDER
- EXISTING HANDHOLE
- EXISTING UTILITY POLE
- EXISTING PEDESTAL

N

0 50
SCALE IN FEET

NOTE: UTILITIES ARE SHOWN AT APPROX. LOCATIONS. THE CONTRACTOR SHALL DETERMINE THE ACTUAL LOCATION OF ALL BURIED UTILITIES IN THE FIELD.

1 OF 2

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049 - Sunset RAB\Plan\002614049_UT-1.dgn 12/07/2023 9:37:23 AM

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.

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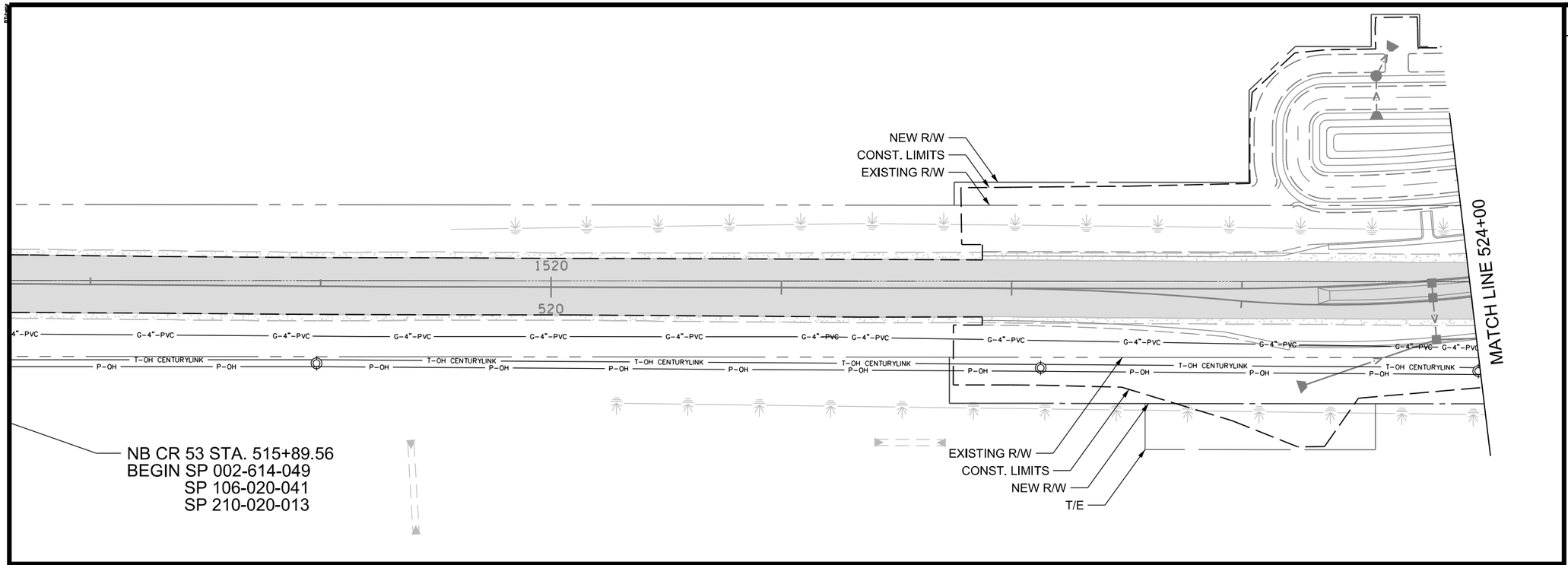
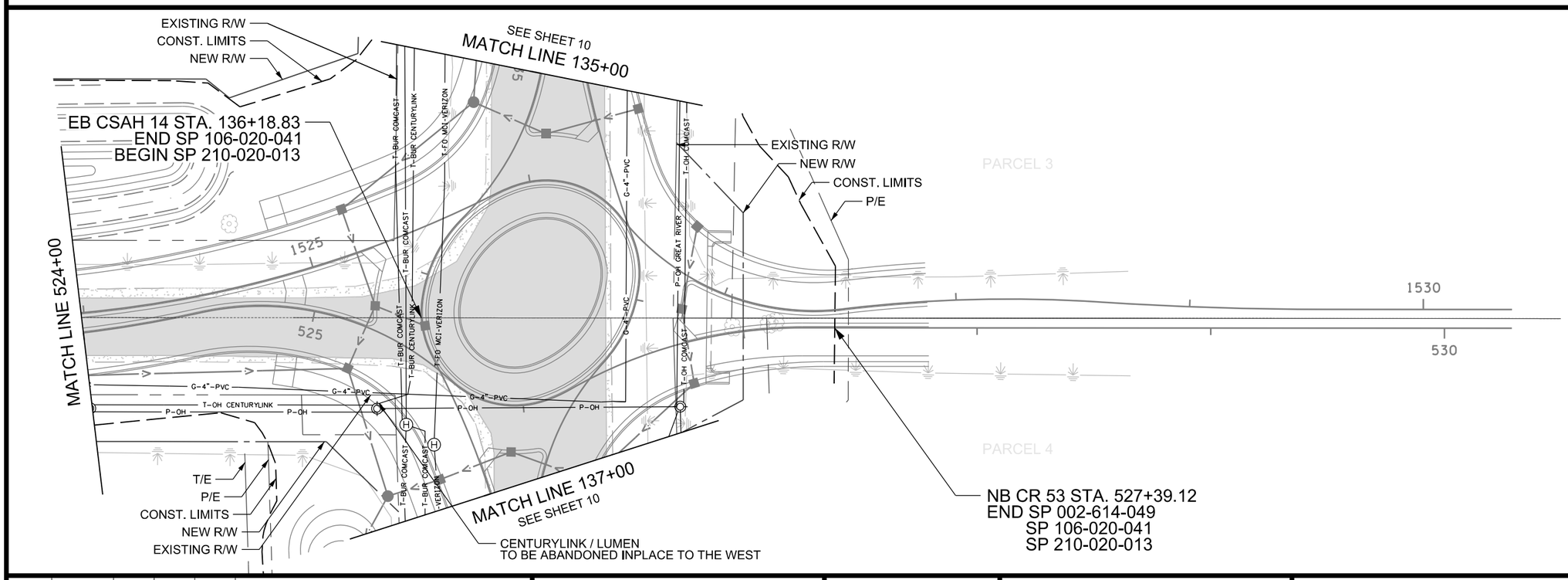
INPLACE UTILITY PLAN

Sheet 10 of 115 Sheets





LEGEND

- CENTERPOINT ENERGY (G-X"-XX / GAS-ABANDONED)
- COMCAST (T-BUR COMCAST / T-OH COMCAST)
- LUMEN / CENTURYLINK (T-BUR CENTURYLINK / T-OH CENTURYLINK)
- MCI-VERIZON (T-FO MCI-VERIZON)
- CONNEXUS ENERGY (P-BUR / P-OH)
- GREAT RIVER ENERGY (P-OH GREAT RIVER)
- EX. STORM SEWER
- PROP. STORM SEWER
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- PROPOSED ROADWAY
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- EXISTING UTILITY POLE
- EXISTING PEDESTAL

NOTE: UTILITIES ARE SHOWN AT APPROX. LOCATIONS. THE CONTRACTOR SHALL DETERMINE THE ACTUAL LOCATION OF ALL BURIED UTILITIES IN THE FIELD.

SCALE 0 50 IN FEET

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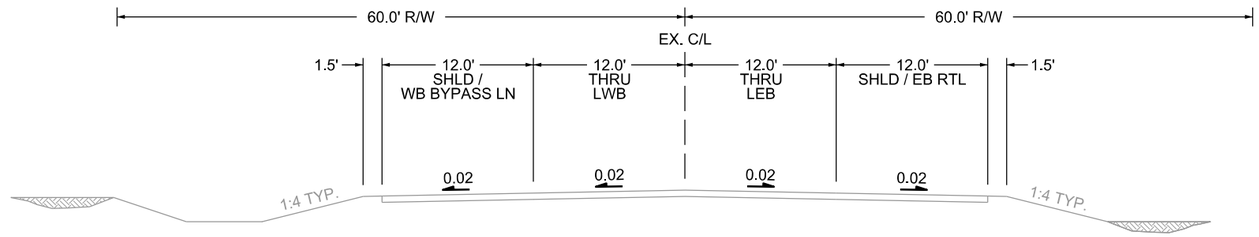
SP 002-614-049
SP 210-020-013
SP 106-020-041

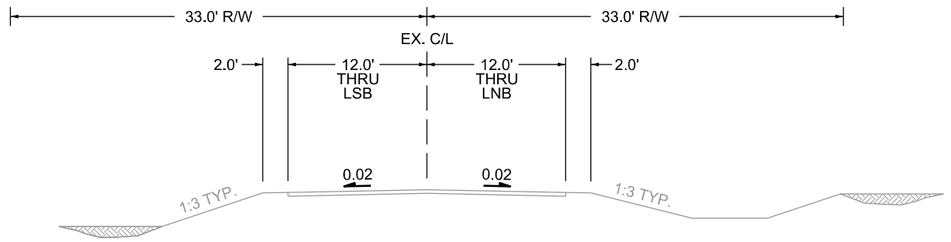
INPLACE UTILITY PLAN

Sheet 11 of 115 Sheets

CSAH 14 (125TH AVE NE / MAIN ST) EXISTING



CR 53 (SUNSET AVE NE) EXISTING



NO	DATE	BY	CKD	APPR	REVISION

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ANOKA COUNTY HIGHWAY DEPT.

SP 002-614-049
SP 210-020-013
SP 106-020-041

TYPICAL SECTIONS
EXISTING

Sheet 12 of 115 Sheets

GENERAL NOTES:

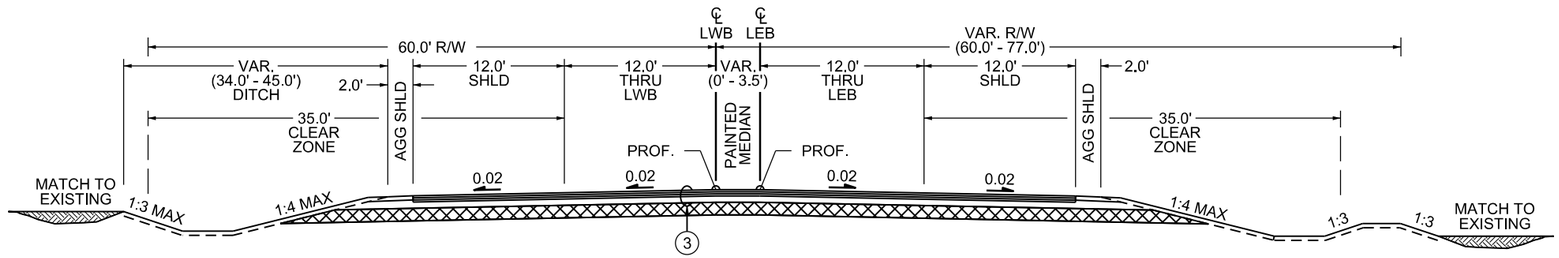
- ALL CROSS SLOPES ARE EXPRESSED IN FT/FT.
- UNLESS OTHERWISE SPECIFIED, THE GRADING GRADE CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE OF THE MAINLINE.
- UNLESS OTHERWISE SPECIFIED, CLASS 5 AGGREGATE WILL EXTEND 1' BEYOND BACK OF CURB.
- UNLESS OTHERWISE SPECIFIED, CLASS 5 AGGREGATE WILL EXTEND 6" BEYOND THE EDGE OF BITUMINOUS TRAIL.
- 4.0" TOPSOIL & SEED ON ALL DISTURBED AREAS.
- ALL STATIONING BASED ON EB ALIGNMENT OF CSAH 14 <14E_4> OR NB ALIGNMENT OF CR 53 <53N_4> UNLESS OTHERWISE NOTED.
- 1.0' SUBGRADE EXCAVATION SHALL BE THE BLENDING OF THE EXISTING SUBGRADE AS TO UNIFY THE SOILS AT LEAST 1.0' BENEATH THE GRADING GRADE. PAID FOR AS 2105.507 - SUBGRADE EXCAVATION.
- SEE PROFILE & X-SECTIONS FOR SPECIAL DITCH GRADES

NOTES:

1. SUITABLE MATERIAL
2. SEE DETAILS "A" & "B" AND INSET "E" PAGE 15
3. SEE INSET "A" PAGE 15
4. SEE INSET "B" PAGE 15
5. SEE INSET "C" PAGE 15
6. SEE INSET "D" PAGE 15
7. SEE INSET "E" PAGE 15

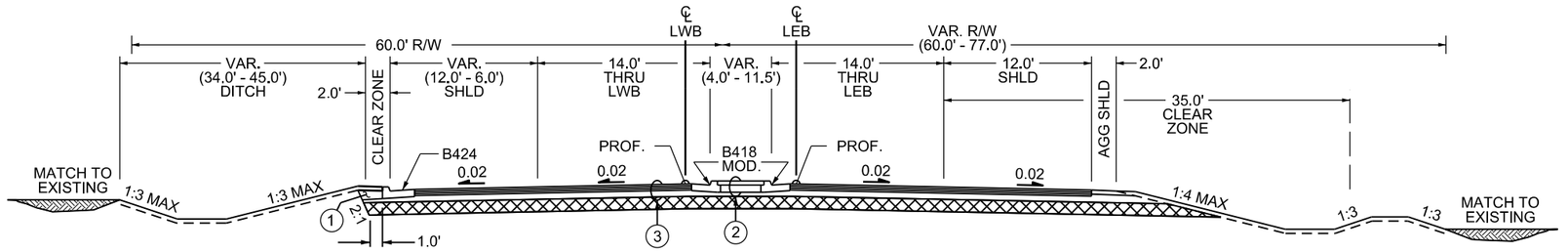
CSAH 14 (125TH AVE NE / MAIN ST) PROPOSED

EB STA. 131+78.19 - 132+79.90
EB STA. 141+28.29 - 141+61.33



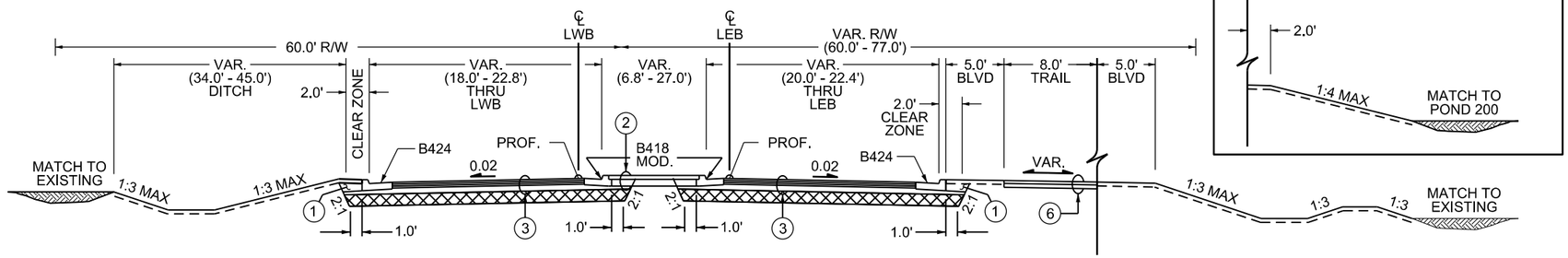
CSAH 14 (125TH AVE NE / MAIN ST) PROPOSED

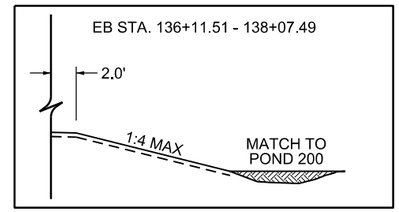
EB STA. 132+79.90 - 133+69.06
EB STA. 138+07.49 - 141+28.29



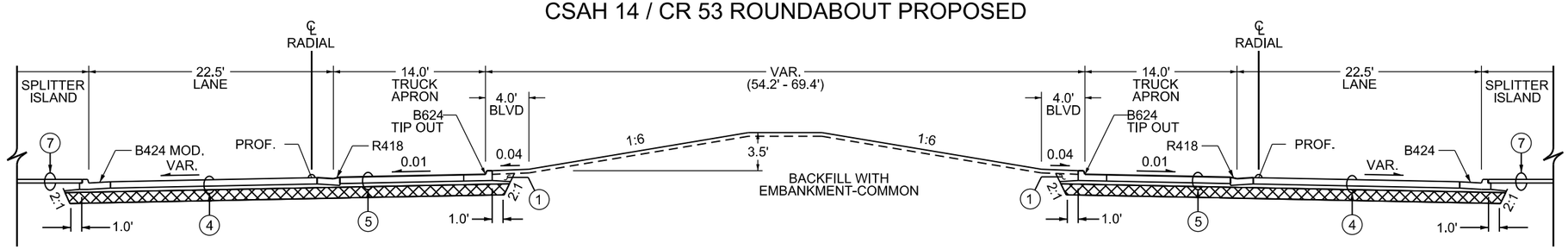
CSAH 14 (125TH AVE NE / MAIN ST) PROPOSED

EB STA. 133+69.06 - 138+07.49





CSAH 14 / CR 53 ROUNDABOUT PROPOSED



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049 - Sunset RAB\Plan\002614049_TYP.dgn 12/07/2023 9:37:30 AM

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ANOKA COUNTY
ANOKA COUNTY HIGHWAY DEPT.

SP 002-614-049
SP 210-020-013
SP 106-020-041

TYPICAL SECTIONS
PROPOSED (CSAH 14)

Sheet 13 of 115 Sheets

GENERAL NOTES:

- ALL CROSS SLOPES ARE EXPRESSED IN FT/FT.
- UNLESS OTHERWISE SPECIFIED, THE GRADING GRADE CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE OF THE MAINLINE.
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- SEE PROFILE & X-SECTIONS FOR SPECIAL DITCH GRADES

NOTES:

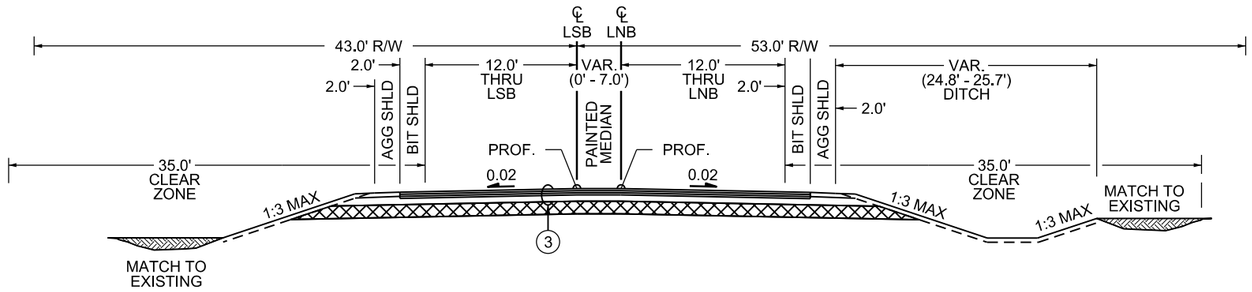
(1) SUITABLE MATERIAL

(2) SEE DETAILS "A" & "B" AND INSET "E" PAGE 15

(3) SEE INSET "A" PAGE 15

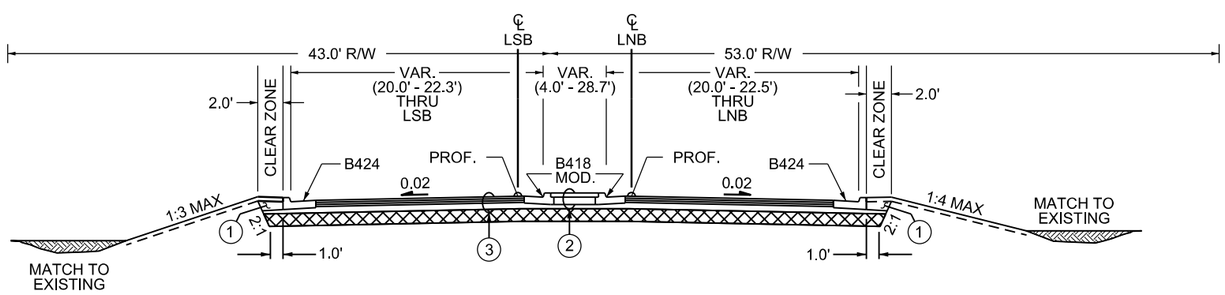
CR 53 (SUNSET AVE NE) PROPOSED

NB STA. 521+74.70 - 523+33.49



CR 53 (SUNSET AVE NE) PROPOSED

NB STA. 523+33.49 - 525+21.37



2 OF 2

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049 - Sunset RAB\Plan\002614049_TYP.dgn 12/07/2023 9:37:30 AM

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.

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ANOKA COUNTY

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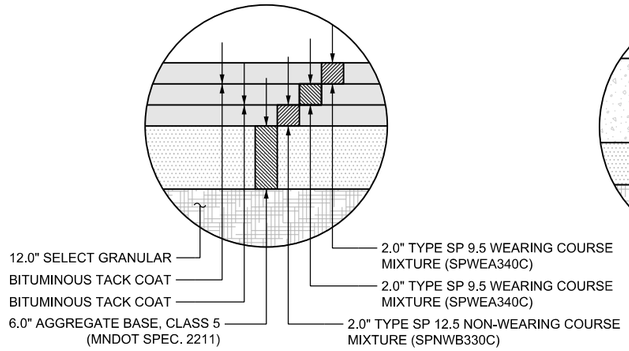
SP 002-614-049
SP 210-020-013
SP 106-020-041

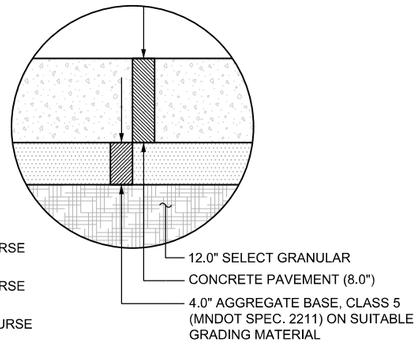
TYPICAL SECTIONS
PROPOSED (CR 53)

Sheet 14 of 115 Sheets

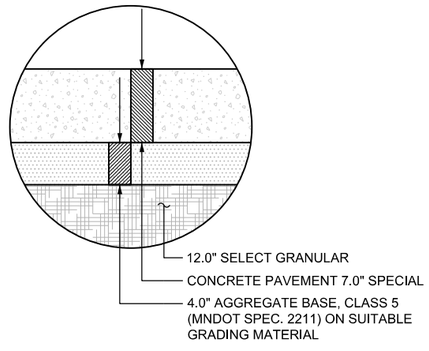
INSET "A"
RECONSTRUCTION
MAINLINE AND SHOULDERS



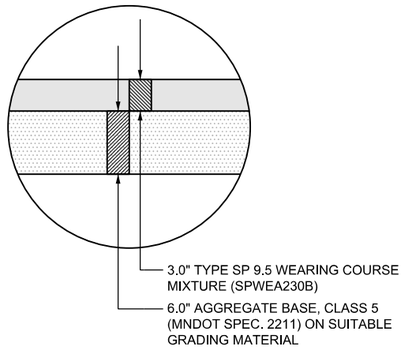
INSET "B"
CONCRETE
PAVEMENT



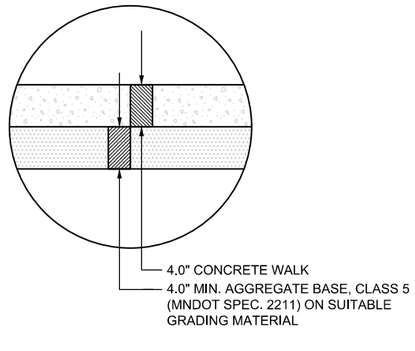
INSET "C"
CONCRETE
TRUCK APRON



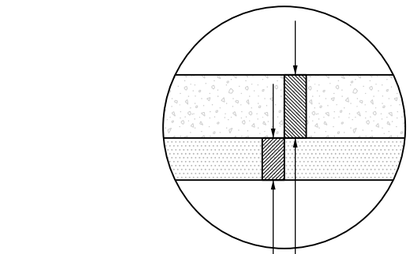
INSET "D"
BITUMINOUS TRAIL AND
DRIVEWAYS



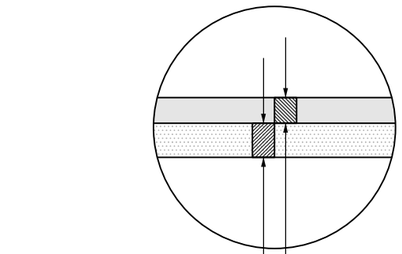
INSET "E"
CONCRETE WALK
OR MEDIAN



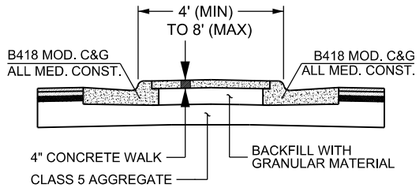
INSET "F"
CONCRETE WALK PED RAMP
OR DEPRESSED MEDIAN



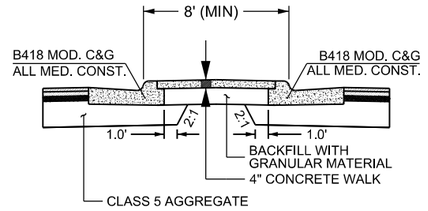
INSET "G"
TEMPORARY PAVEMENT
SEE STAGING PLANS



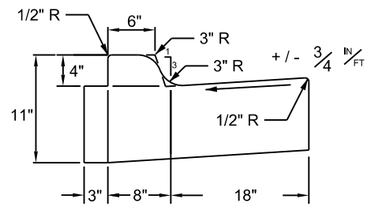
DETAIL "A"
4' TO 8' MEDIAN



DETAIL "B"
8' OR GREATER MEDIAN

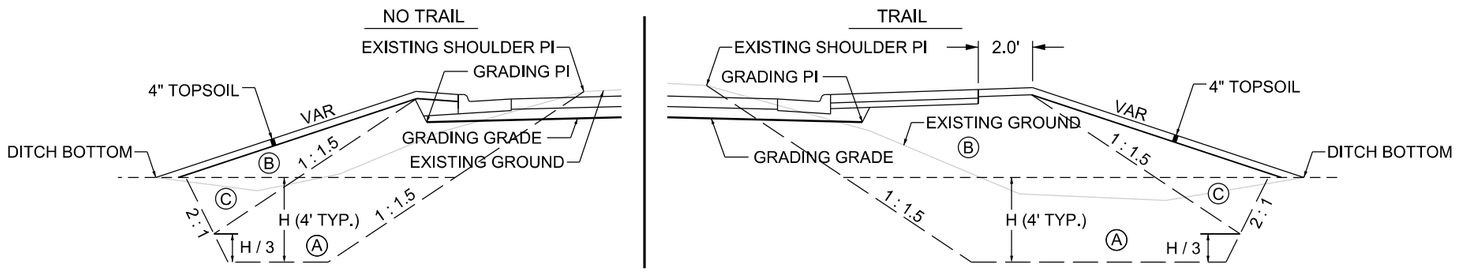


DETAIL "C"
B418 MODIFIED CURB & GUTTER

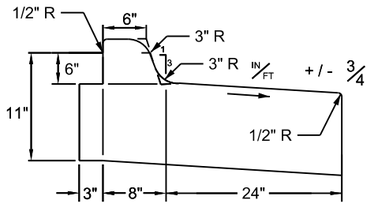


MUCK EXCAVATION
NOT TO SCALE

Ⓐ SEE PROFILES AND CROSS SECTIONS FOR MUCK EXCAVATION LOCATIONS AND DEPTH.
Ⓑ BACKFILL WITH GRANULAR MATERIAL.
Ⓒ DISPOSAL AREA FOR UNSUITABLE MATERIAL (EXCEPT FOR DEBRIS) LOCATIONS FOR DISPOSAL SHALL BE DETERMINED IN THE FIELD



DETAIL "D"
B624 MODIFIED CURB & GUTTER
TIP-OUT



1 OF 1

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049 - Sunset RAB\Plan\002614049_TYP.dgn 12/07/2023 9:37:30 AM

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: AARON P. ANDERSON
SIGNATURE:
DATE: 12/06/23 LICENSE NO. 58657

DRAWN BY BTU DATE 12/06/23
DESIGN BY BTU DATE 12/06/23
CHECKED BY APA DATE 12/06/23

ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

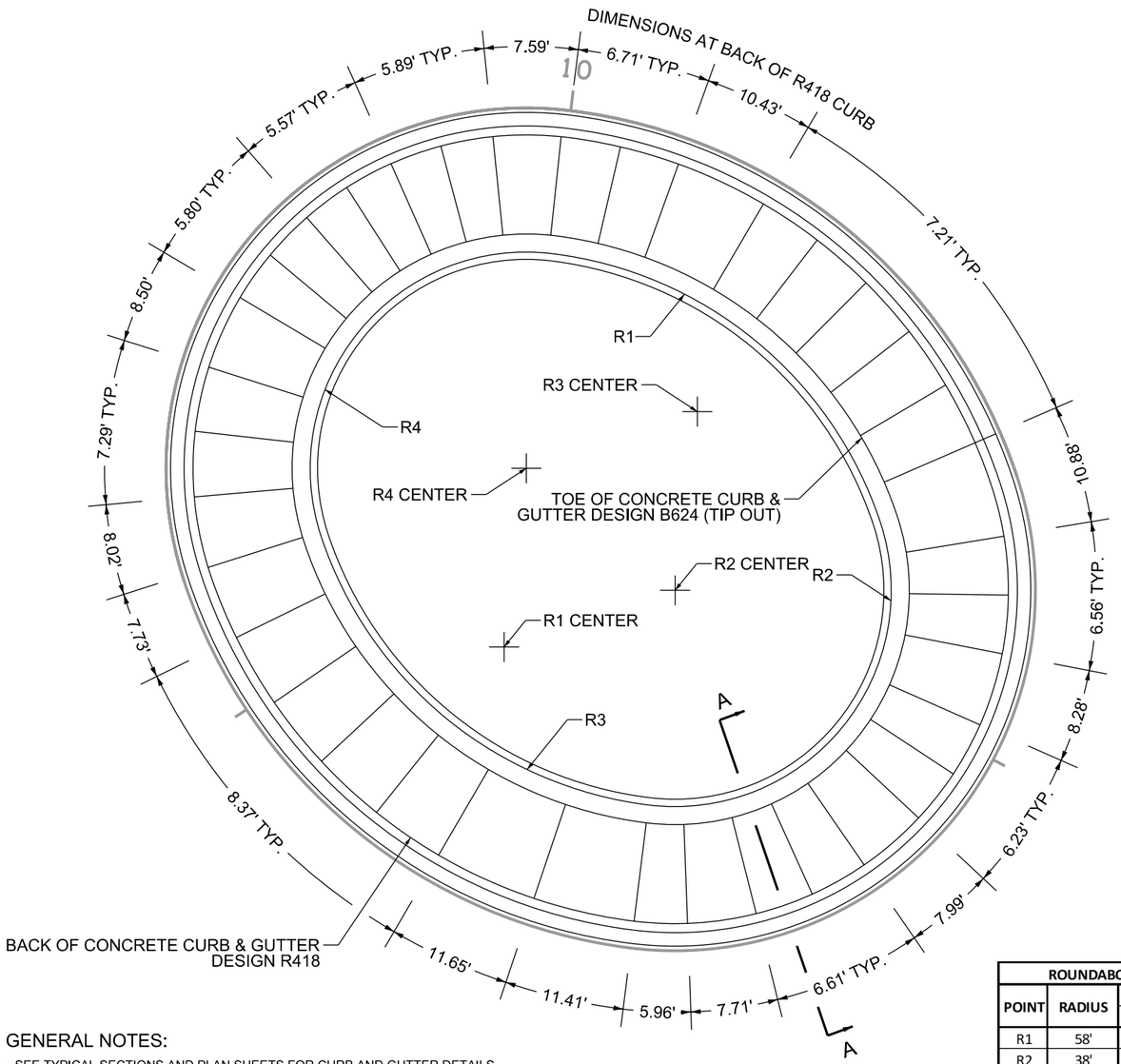
SP 002-614-049
SP 210-020-013
SP 106-020-041

TYPICAL SECTIONS
INSETS AND DETAILS

Sheet 15 of 115 Sheets

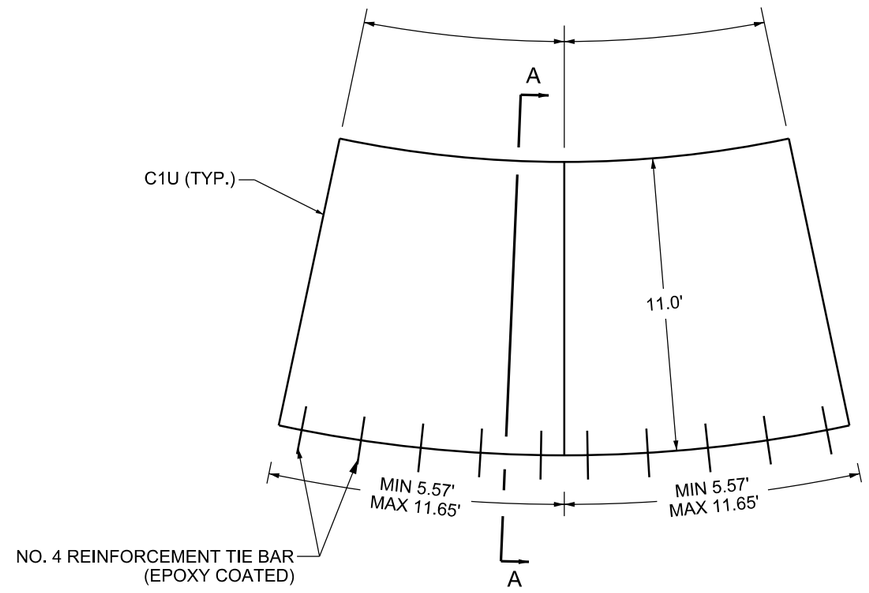
PLAN VIEW JOINT LAYOUT

NOT TO SCALE



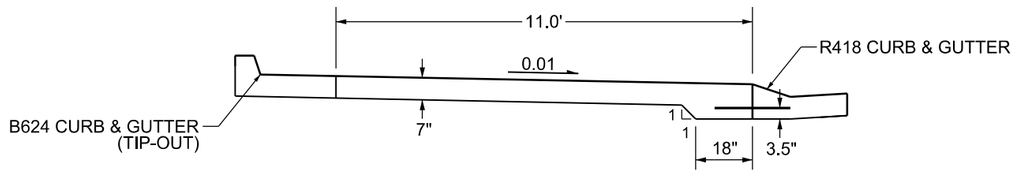
CONCRETE PANEL REINFORCEMENT

NOT TO SCALE



SECTION A-A

NOT TO SCALE



ROUNDABOUT STAKING POINTS			
POINT	RADIUS	CENTER	
		X	Y
R1	58'	531975.2400	158737.5733
R2	38'	531994.2252	158743.8633
R3	58'	531996.6899	158763.7109
R4	38'	531977.7047	158757.4209

GENERAL NOTES:

- SEE TYPICAL SECTIONS AND PLAN SHEETS FOR CURB AND GUTTER DETAILS.
- ALL REINFORCING BARS SHALL BE EPOXY COATED IN ACCORDANCE WITH SPEC. 3301 AND SHALL MEET THE REQUIREMENTS OF GRADE 60 FOR AASHTO M-31 OR M-53
- TIE BARS: USE NO. 4 BARS 2' LONG AT 3' SPACING.
- REINFORCEMENT BARS ARE CONSIDERED INCIDENTAL WITHIN THE TRUCK APRON.
- ADDITIONAL CONCRETE PAVEMENT DEPTH, ADJACENT TO CONCRETE CURB DESIGN R418, IS INCIDENTAL.
- LOCATION AND SPACING OF JOINTS MAY BE MODIFIED BY THE CONTRACTOR, AS APPROVED BY THE ENGINEER.
- C1U JOINT SHOULD EXTEND THROUGH CURB AND GUTTER

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049 - Sunset RAB\Plan\002614049_TYP.dgn 12/07/2023 9:37:31 AM

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: AARON P. ANDERSON

SIGNATURE:

DATE: 12/06/23 LICENSE NO. 58657

DRAWN BY BTU DATE 12/06/23

DESIGN BY BTU DATE 12/06/23

CHECKED BY APA DATE 12/06/23

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

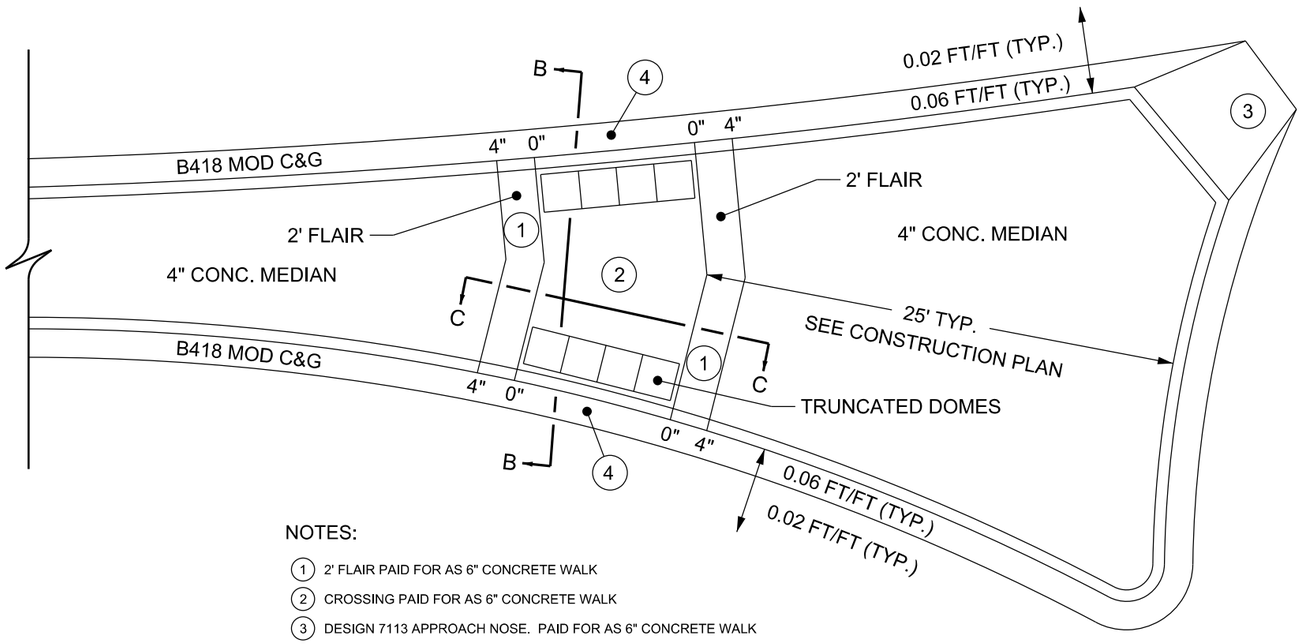
SP 002-614-049
SP 210-020-013
SP 106-020-041

MISCELLANEOUS DETAILS
TRUCK APRON DETAILS

Sheet 16 of 115 Sheets

SPLITTER ISLAND CROSSWALK DETAIL

NOT TO SCALE

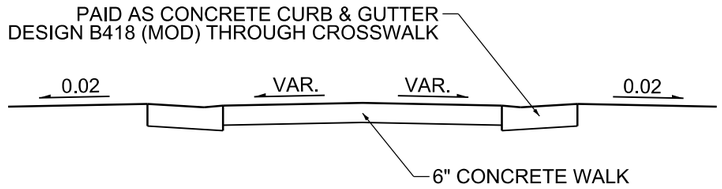


NOTES:

1. 2' FLAIR PAID FOR AS 6" CONCRETE WALK
2. CROSSING PAID FOR AS 6" CONCRETE WALK
3. DESIGN 7113 APPROACH NOSE. PAID FOR AS 6" CONCRETE WALK
4. MAINTAIN GUTTER THROUGH CURB OPENING
5. SEE DETAILS "A" AND "B" PAGE 15

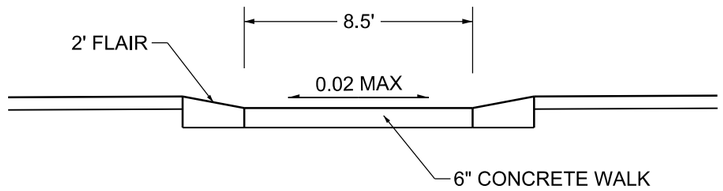
SECTION B-B

NOT TO SCALE



SECTION C-C

NOT TO SCALE



GENERAL NOTES:

- SEE TYPICAL SECTIONS AND PLAN SHEETS FOR CURB AND GUTTER DETAILS.
- FOR DEPRESSED MEDIAN, SEE SECTIONS B-B AND C-C, LENGTH VARIES.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049 - Sunset RAB\Plan\002614049_TYP.dgn 12/07/2023 9:37:31 AM

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: AARON P. ANDERSON

SIGNATURE:

DATE: 12/06/23 LICENSE NO. 58657

DRAWN BY BTU DATE 12/06/23

DESIGN BY BTU DATE 12/06/23

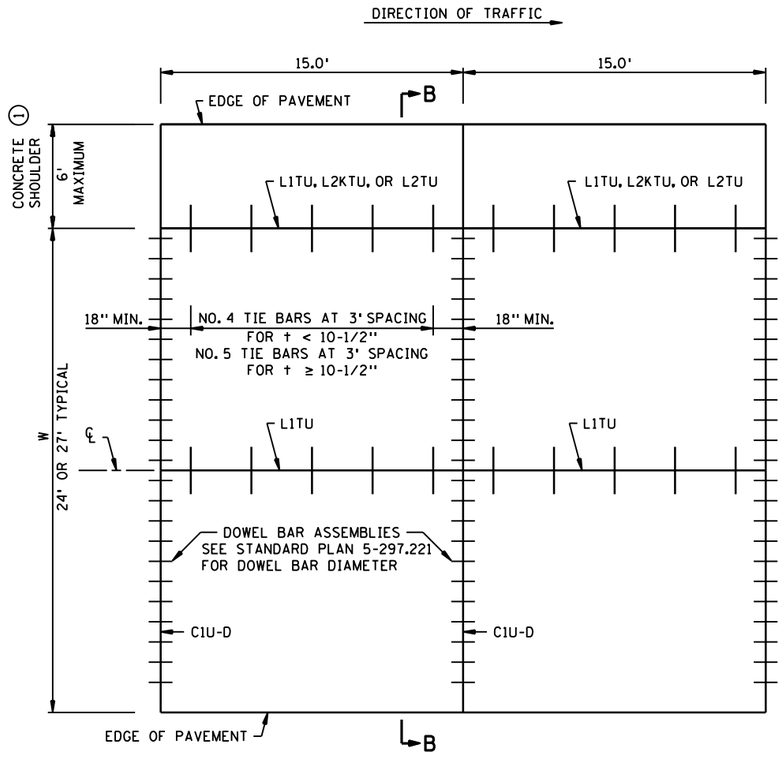
CHECKED BY APA DATE 12/06/23

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

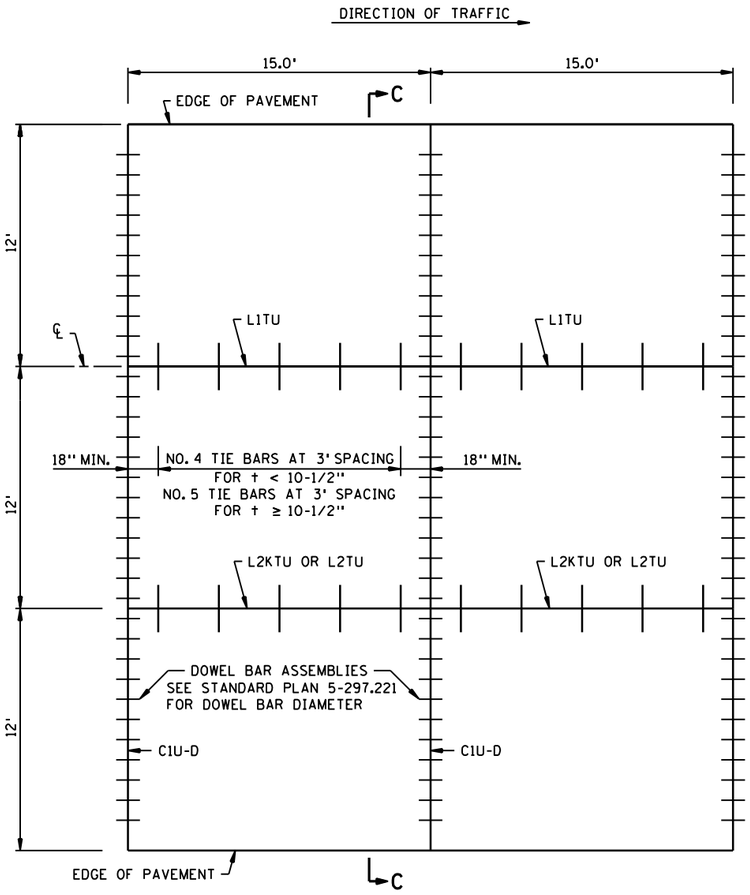
SP 002-614-049
SP 210-020-013
SP 106-020-041

MISCELLANEOUS DETAILS
SPLITTER ISLAND CROSSWALK DETAILS



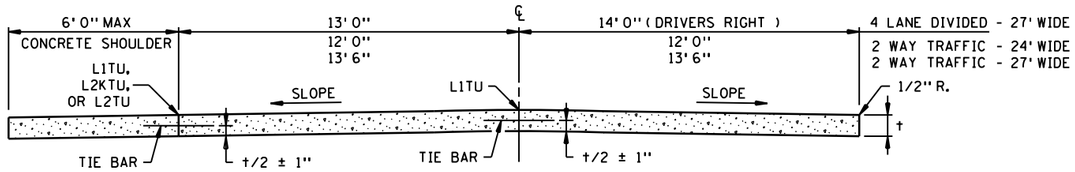
MAINLINE PAVEMENT WITH
INSIDE CONCRETE SHOULDER

DOWELED

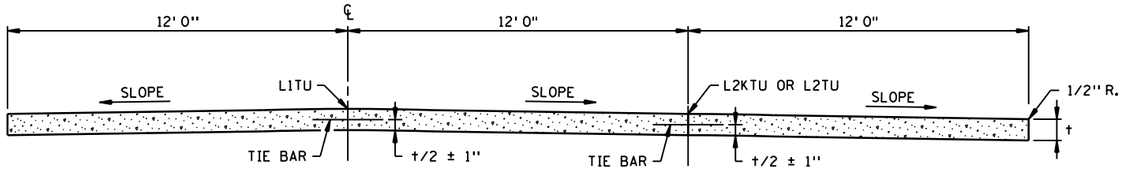


MAINLINE PAVEMENT URBAN

DOWELED



SECTION B-B



SECTION C-C

GENERAL NOTES:

SEE TYPICAL SECTIONS AND PLAN SHEETS FOR CROSS SLOPES AND PAVEMENT THICKNESS, t.

DOWEL BAR ASSEMBLIES, WHEN REQUIRED, SHALL BE SIMILAR TO THOSE SHOWN ON STANDARD PLATE 1103.

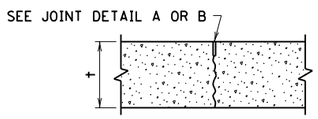
ALL REINFORCING BARS SHALL BE EPOXY COATED AND COMPLY WITH SPEC. 3301.

FOR SUPPLEMENTAL PAVEMENT REINFORCEMENT, SEE STANDARD PLATE 1070.

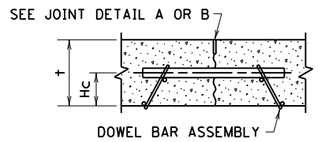
① CONTACT THE CONCRETE ENGINEER TO DISCUSS WHETHER TIE BARS AND SAWED JOINTS ARE NEEDED BASED ON CONCRETE SHOULDER WIDTH AND DEPTH.

REVISION:
APPROVED: FEBRUARY 16, 2016
DIRECTOR, OFFICE OF MATERIALS AND ROAD RESEARCH

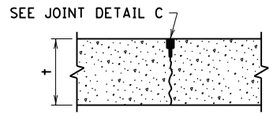
MINNESOTA DEPARTMENT OF TRANSPORTATION	STANDARD PLAN 5-297.217	2 OF 2
STATE DESIGN ENGINEER	APPROVED: 2-16-2016 REVISED:	CONCRETE MAINLINE PAVEMENT 15.0 FT. PANEL LENGTH URBAN OR CONCRETE SHOULDERS
	STATE PROJ. NO. SP 002-614-049 SP 210-020-013 SP 106-020-041	SHEET NO. 18 OF 115 SHEETS



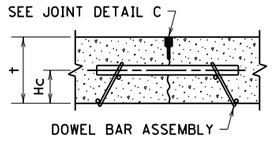
C1U & C2H



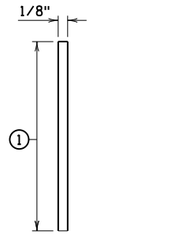
C1U-D & C2H-D (8)



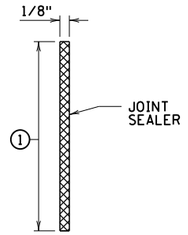
C3P



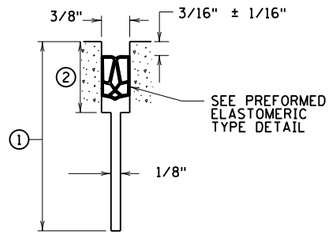
C3P-D (8)



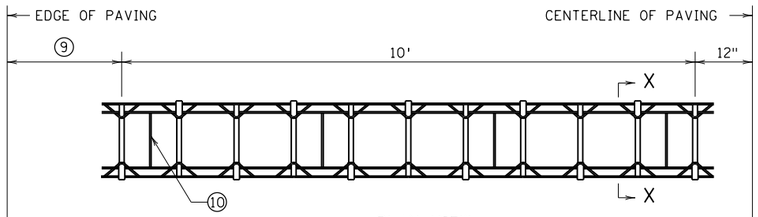
JOINT DETAIL A (3)(5)
SAWED & UNSEALED



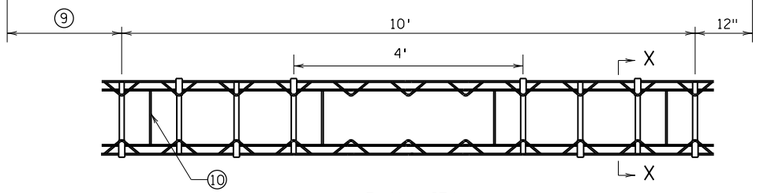
JOINT DETAIL B (4)(5)
SAWED & SEALED



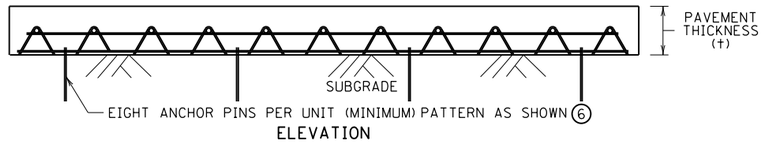
JOINT DETAIL C (4)(5)
SAWED AND SEALED



PLAN VIEW
ELEVEN DOWEL BASKET (SPACED AT 12")



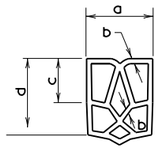
PLAN VIEW
EIGHT DOWEL BASKET (WHEEL PATH DOWELS SPACED AT 12")



ELEVATION

CONTRACTION JOINT DOWEL BAR ASSEMBLIES

REQUIRED DIMENSIONS (2)	
JOINT TYPE	TRANSVERSE
NOMINAL SEALER SIZE	11/16" USE IN ALL 3/8" JOINTS
a	0.69" + 0.13" - 0.05"
b	0.08" ± 0.02"
c	0.25" MIN.
d	0.63" MIN.



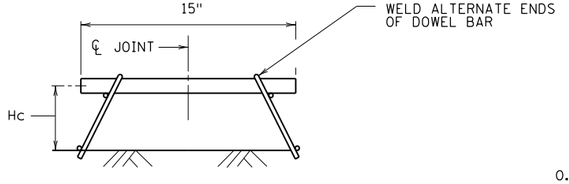
TYPICAL SHAPE FOR SATISFACTORY INSTALLATION IN JOINT (5 CELL MIN.)

PREFORMED ELASTOMERIC TYPE DETAIL (2)

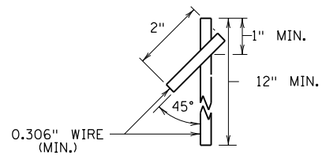
CONTRACTION JOINT REFERENCE, DETAIL & SEALER SPEC. TABLE				
JOINT REFERENCE		JOINT DETAIL	JOINT SEALER SPEC.	JOINT WIDTH
WITHOUT DOWELS	WITH DOWELS			
C1U	C1U-D	A	UNSEALED	1/8"
C2H	C2H-D	B	3725	1/8"
C3P	C3P-D	C	3721	3/8"

LEGEND — EXAMPLE
C = CONTRACTION JOINT — C2H-D
NO. = JOINT REFERENCE
U = UNSEALED
H = HOT POURED
P = PREFORMED
-D = DOWEL BARS

DOWEL BAR TABLE		
† PAVEMENT THICKNESS (IN.)	DOWEL BAR DIAMETER (IN.)	Hc HEIGHT TO CENTER OF DOWEL BAR (IN.)
7 - 7½	1	3
8 - 10	1¼	4
≥ 10½	1½	5



SECTION X-X (8)



ANCHOR PIN (7)

NOTES:

SEE STANDARD PLATE 1103 FOR DOWEL BAR ASSEMBLY.

FURNISH AND INSTALL ALL JOINT SEALER IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

SEE STANDARD PLANS 5-297.217 AND 5-297.219 FOR CONCRETE MAINLINE/RAMP PAVEMENT.

SEE PAVING LAYOUTS IN THE PLANS FOR JOINT CLASS DESIGNATION TO BE USED AND SPECIAL REINFORCEMENT REQUIRED.

(1) JOINT DEPTH AND TOLERANCE: †/3 ± ¼".

(2) JOINT DEPTH ¼" MORE THAN THE PREFORMED SEALER WHEN COMPRESSED TO FIT THE JOINT DESIGN WIDTH. "a" DIMENSION APPLIES AT ANY POINT THROUGHOUT "c" DEPTH. SHARP CORNERS NOT PERMITTED. PROVIDE CORNERS WITH SUITABLE FILLET.

(3) CLEAN JOINT FACES WITH WATER DURING THE SAW CUTTING OPERATION OR BY WATER BLASTING AFTER SAWING.

(4) CLEAN AND DRY JOINT FACES BY SANDBLASTING AND AIR BLASTING, WHEN SEALING IS REQUIRED.

(5) JOINT WIDTH TOLERANCE IS +1/16" TO -1/32".

(6) EVENLY SPACE A MINIMUM OF (8) ANCHOR PINS (4 PER SIDE) PER DOWEL ASSEMBLY. PROVIDE QUALITY CONTROL PLAN FOR ANCHORING THE DOWEL BAR ASSEMBLIES TO THE ENGINEER FOR ACCEPTANCE PER SPEC. 2301.

(7) ANCHOR PIN REQUIREMENTS FOR CONCRETE PAVEMENT ON GRADE CONSTRUCTION. FOR CONCRETE OVERLAYS, ANCHOR PIN REQUIREMENT AS APPROVED BY THE ENGINEER.

(8) TOLERANCES:
- PLACE DOWEL BARS PARALLEL TO THE SUBSTRATE SURFACE ±1/8" IN 15".
- PLACE DOWEL BARS PARALLEL TO THE CENTERLINE OF THE PAVEMENT ±1/4" IN 15"
- SAW CONTRACTION JOINTS PERPENDICULAR TO THE CENTERLINE OF THE PAVEMENT AND CENTERED ON THE DOWEL BAR ±3".
- HEIGHT (hC) TO CENTER OF DOWEL BAR ± ½".

(9) DISTANCE TO EDGE OF PAVEMENT FROM OUTSIDE DOWEL:
- 3'0" FOR 14'0" LANE.
- 2'6" FOR 13'6" LANE.
- 2'0" FOR 13'0" LANE.
- 1'0" FOR 12'0" LANE.

(10) CONTRACTOR OPTION TO CUT AND BEND SPACER WIRES AFTER STAKING.

LEAD EXPERT OFFICE
GLENN ENGSTROM
DIRECTOR
OFFICE OF MATERIALS AND ROAD RESEARCH

MINNESOTA DEPARTMENT OF TRANSPORTATION

THOMAS STYRBICKI
STATE DESIGN ENGINEER

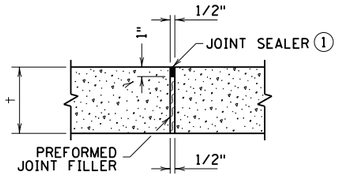
STANDARD PLAN 5-297.221 | 1 OF 4

APPROVED: 10-03-2022
REVISED:

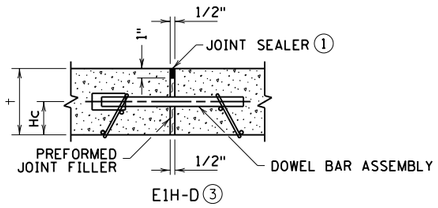
PAVEMENT JOINTS

CONTRACTION (DESIGN C)

STATE PROJ. NO. SP 002-614-049 SP 106-020-041 SHEET NO. 19 OF 115 SHEETS
SP 210-020-013



E1H



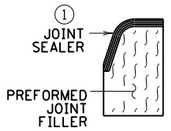
E1H-D (3)

EXPANSION JOINT REFERENCE, DETAIL & SEALER SPEC. TABLE				
JOINT REFERENCE		PREFORMED JOINT FILLER SPEC.	JOINT SEALER SPEC.	JOINT WIDTH
WITHOUT DOWELS	WITH DOWELS			
E1H	E1H-D	3702	3725	1/2"

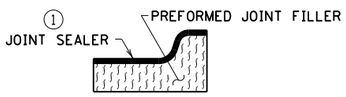
LEGEND — EXAMPLE

E = EXPANSION JOINT
NO. = JOINT REFERENCE
H = HOT POURED
-D = DOWEL BARS

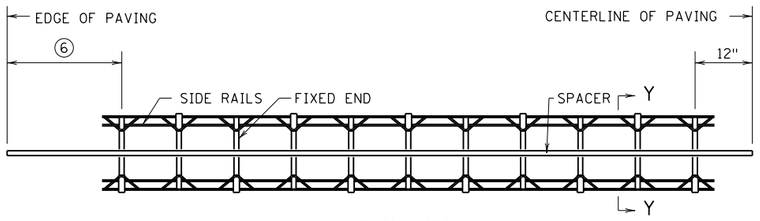
EXAMPLE: E1H-D



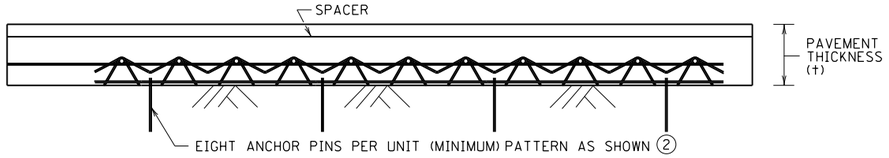
SECTION THRU CURB



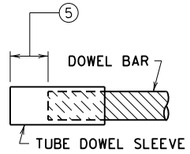
SECTION THRU CURB



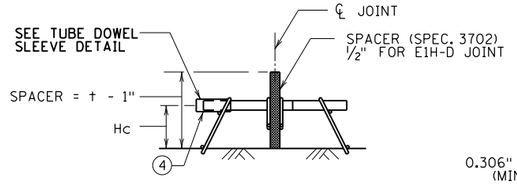
PLAN VIEW
EXPANSION JOINT DOWEL ASSEMBLY



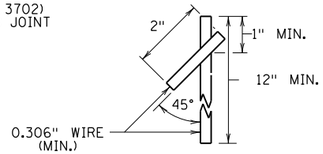
ELEVATION VIEW
EXPANSION JOINT DOWEL BAR ASSEMBLY



TUBE DOWEL SLEEVE DETAIL



SECTION Y-Y (3)



ANCHOR PIN

DOWEL BAR TABLE		
† PAVEMENT THICKNESS (IN.)	DOWEL BAR DIAMETER (IN.)	Hc HEIGHT TO CENTER OF DOWEL BAR (IN.)
7 - 7 1/2	1	3
8 - 10	1 1/4	4
≥ 10 1/2	1 1/2	5

NOTES:

WHEN USING THE EXPANSION JOINT DOWEL ASSEMBLY, CONTACT THE CONCRETE OFFICE.

SEE STANDARD PLATE 1103 FOR DOWEL BAR ASSEMBLY.

PROVIDE PREFORMED JOINT FILLER MATERIAL IN ACCORDANCE WITH SPEC. 3702.

FURNISH AND INSTALL ALL JOINT SEALER IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

(1) JOINT SEALER SPEC. 3725. CLEAN AND DRY JOINT FACES BY SANDBLASTING AND AIR BLASTING. TOP OF SEALER FLUSH TO 1/8" BELOW TOP OF PAVEMENT SURFACE.

(2) EVENLY SPACE A MINIMUM OF (8) ANCHOR PINS (4 PER SIDE) PER DOWEL ASSEMBLY. PROVIDE QUALITY CONTROL PLAN FOR ANCHORING THE DOWEL BAR ASSEMBLIES TO THE ENGINEER FOR ACCEPTANCE PER SPEC. 2301.

(3) TOLERANCES:
- PLACE DOWEL BARS PARALLEL TO THE SUBSTRATE SURFACE ±1/8" IN 15".
- PLACE DOWEL BARS PARALLEL TO THE CENTERLINE OF THE PAVEMENT ±1/4" IN 15"
- HEIGHT (hC) TO CENTER OF DOWEL BAR ± 1/2".

(4) PLACE METAL INSTALLATION SHIELDS FOR EXPANSION JOINTS PARALLEL TO THE PAVEMENT SURFACE AND THE PAVEMENT CENTERLINE WITHIN A TOLERANCE OF 1/4" WITHIN THE LENGTH OF BAR.

(5) SPACE FROM END OF DOWEL BAR TO END OF SLEEVE IS 1" MINIMUM.

(6) DISTANCE TO EDGE OF PAVEMENT FROM OUTSIDE DOWEL:
- 3'0" FOR 14'0" LANE.
- 2'6" FOR 13'6" LANE.
- 2'0" FOR 13'0" LANE.
- 1'0" FOR 12'0" LANE.

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LEAD EXPERT OFFICE

GLENN ENGSTROM
DIRECTOR
OFFICE OF MATERIALS AND ROAD RESEARCH

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.221 | 2 OF 4

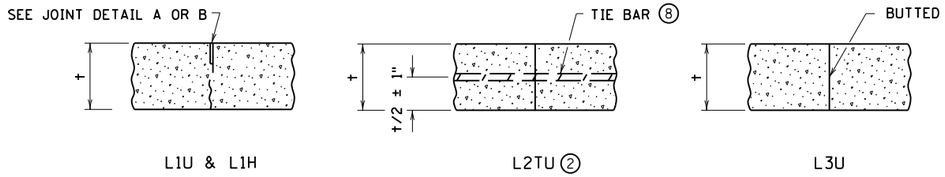
APPROVED: 10-03-2022
REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

STATE PROJ. NO. SP 002-614-049 SP 210-020-013 SP 106-020-041 SHEET NO. 20 OF 115 SHEETS

PAVEMENT JOINTS

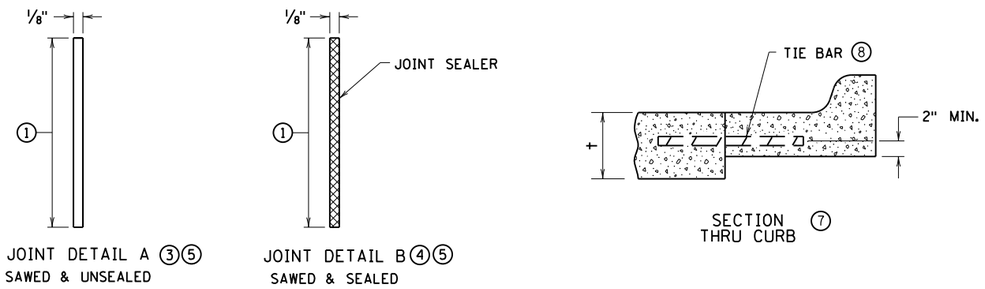
EXPANSION (DESIGN E)

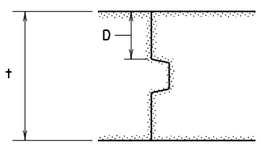


LONGITUDINAL JOINT REFERENCE, DETAIL & SEALER SPECIFICATION TABLE					
JOINT REFERENCE			JOINT DETAIL	JOINT SEALER SPEC	JOINT WIDTH
WITHOUT TIE BARS	WITH TIE BARS	WITH KEYWAY & TIE BARS			
L1U	L1TU		A	UNSEALED	1/8"
L1H	L1TH		B	3725	1/8"
	L2TU	L2KTU	NONE	UNSEALED	
L3U			NONE	UNSEALED	

LEGEND — **EXAMPLE** L2KTU

- L = LONGITUDINAL JOINT
- NO. = JOINT REFERENCE
- 1 = PAVED CONSTRUCTION JOINT
- 2 = TIED CONSTRUCTION JOINT
- 3 = BUTTED CONSTRUCTION JOINT
- K = KEYWAY
- T = TIE BARS
- U = UNSEALED
- H = HOT POURED

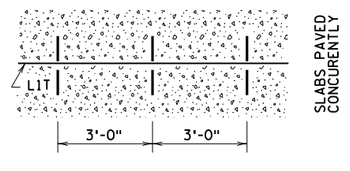




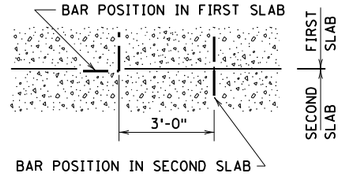
PAVEMENT KEYWAY DETAIL (6)

FIXED FORM KEYWAY TABLE (6)	
t PAVEMENT THICKNESS	D (MIN. DEPTH)
< 7"	2-1/2"
7" TO 7-1/2"	3"
8" TO 9-1/2"	4"
≥ 10"	5"

SLIPFORM KEYWAY TABLE (6)	
t PAVEMENT THICKNESS	D (MIN. DEPTH)
< 10"	NO KEYWAY
≥ 10"	5"



L1T PAVING DETAIL



L2T & L2KT TIE BAR BENDING (2) AND PAVING DETAIL

NOTES:

PROVIDE EPOXY-COATED TIE BARS COMPLYING WITH SPEC. 3301.

FURNISH AND INSTALL ALL JOINT SEALER IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

SEE STANDARD PLANS 5-297.217 AND 5-297.219 FOR CONCRETE MAINLINE AND RAMP PAVEMENT.

SEE PAVING LAYOUTS IN THE PLANS FOR JOINT CLASS DESIGNATION TO BE USED AND SPECIAL REINFORCEMENT REQUIRED.

LONGITUDINAL JOINTS SAWED WIDER THAN 1/8", CONTACT THE CONCRETE UNIT FOR SEALING RECOMMENDATIONS.

(1) JOINT DEPTH AND TOLERANCE: t/3 ± 1/4".

(2) BEND TIE BARS 90 DEGREES WHEN INSERTED IN THE L2 JOINTS, EXCEPT WHEN NOTED OTHERWISE IN THE PLANS.

(3) CLEAN JOINT FACES WITH WATER DURING THE SAW CUTTING OPERATION OR BY WATER BLASTING AFTER SAWING.

(4) CLEAN AND DRY JOINT FACES BY SANDBLASTING AND AIR BLASTING, WHEN SEALING IS REQUIRED.

(5) JOINT WIDTH TOLERANCE IS +1/16" TO -1/32".

(6) CONTRACTOR'S OPTION TO USE KEYWAY WHEN:
- PLACING FIXED FORM CONSTRUCTION.
- PLACING SLIPFORM CONSTRUCTION WHEN t ≥ 10".

USE OF KEYWAY FOR ANY OTHER APPLICATION REQUIRES APPROVAL BY THE ENGINEER. OTHER KEYWAY SHAPES MAY BE USED WITH THE APPROVAL OF THE CONCRETE ENGINEER.

(7) WHEN CURB AND GUTTER IS NOT CONSTRUCTED AT THE SAME DEPTH AS ADJACENT CONCRETE, PLACE TIE BAR MINIMUM OF 2" ABOVE THE CURB AND GUTTER GRADE.

(8) PROVIDE NO. 4 TIE BAR, 30" LONG, SPACED AT 3' ON CENTER.

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MINNESOTA DEPARTMENT OF TRANSPORTATION

THOMAS STYRBICKI
STATE DESIGN ENGINEER

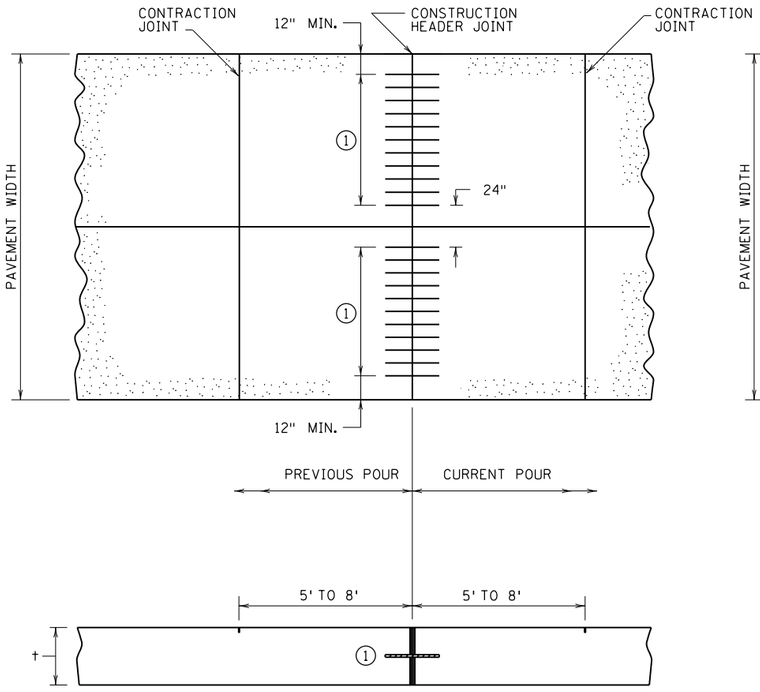
STANDARD PLAN 5-297.221 | 3 OF 4

APPROVED: 10-03-2022
REVISED:

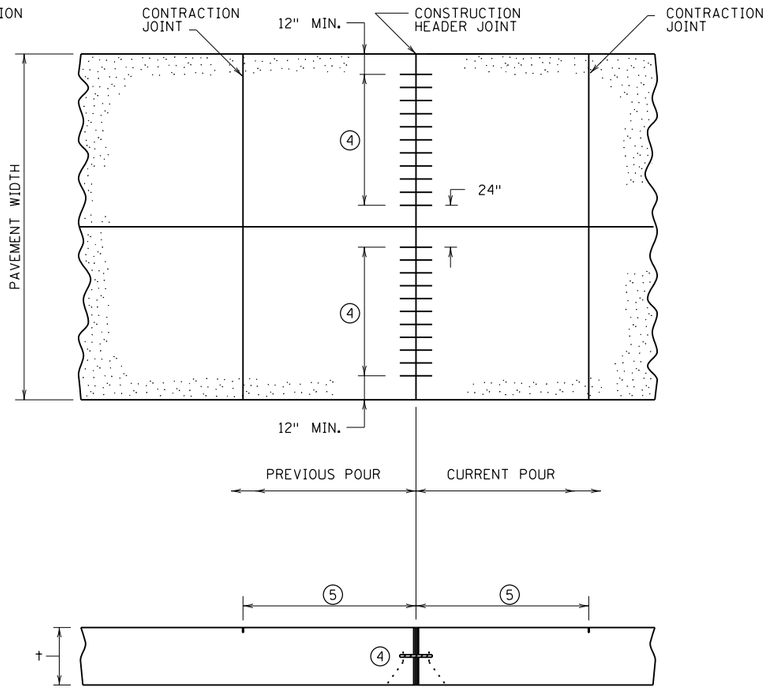
PAVEMENT JOINTS

LONGITUDINAL (DESIGN L)

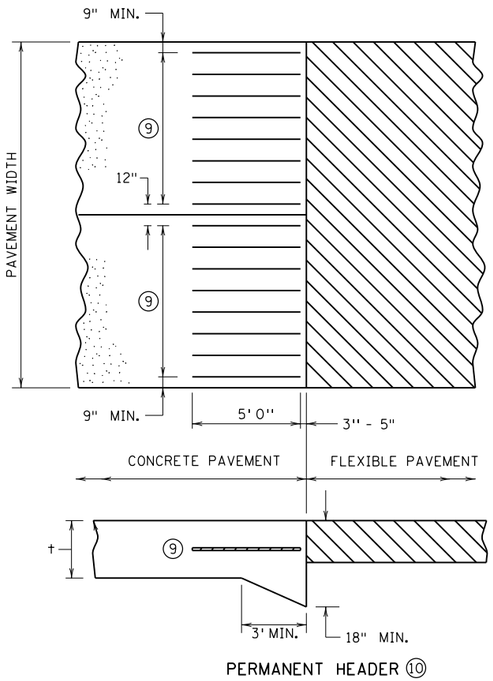
STATE PROJ. NO. SP 002-614-049 SP 210-020-013 SP 106-020-041 SHEET NO. 21 OF 115 SHEETS



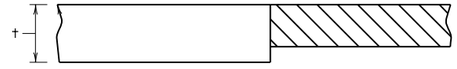
REINFORCEMENT BAR CONSTRUCTION HEADERS



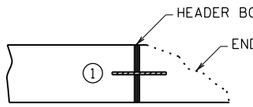
DOWEL BAR CONSTRUCTION HEADERS



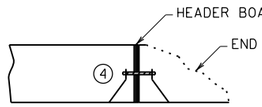
PERMANENT HEADER (10)



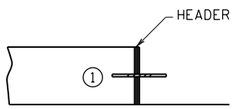
TERMINAL HEADER (11)



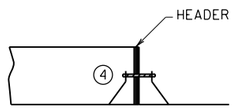
SLIPFORM PLACED REINFORCEMENT BAR HEADER (2)



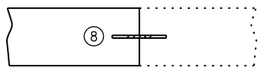
SLIPFORM PLACED DOWEL BAR HEADER (6)



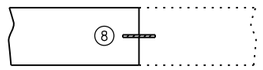
FIXED FORM PLACED REINFORCEMENT BAR HEADER (3)



FIXED FORM PLACED DOWEL BAR HEADER (7)



DRILL AND GROUT REINFORCEMENT BAR HEADER



DRILL AND GROUT DOWEL BAR HEADER

NOTES:

PROVIDE EPOXY-COATED REINFORCEMENT BARS IN ACCORDANCE WITH SPEC. 3301.

(1) PROVIDE NO. 4 REINFORCEMENT BARS, 30" LONG, SPREAD 12" ON CENTER AT DEPTH OF T/2 +/- 1".

(2) PAVE PAST THE HEADER LOCATION. REMOVE END OF CONCRETE POUR. SET HEADER BOARD SHAPED TO PAVEMENT CROSS SECTION AND SLOTTED OR DRILLED FOR REINFORCEMENT BARS. INSERT THE REINFORCEMENT BARS AND FINISH THE CONCRETE BEHIND THE BOARD.

(3) SET HEADER BOARD SHAPED TO PAVEMENT CROSS SECTION AND SLOTTED OR DRILLED FOR REINFORCEMENT BARS. PLACE THE CONCRETE BEHIND THE BOARD AND INSERT THE REINFORCEMENT BARS. CONSOLIDATE AND FINISH THE CONCRETE BEHIND THE HEADER BOARD.

(4) PROVIDE DOWEL BARS IN ACCORDANCE WITH SPEC. 3302 AND THE CONTRACT.

(5) DISTANCE EQUAL TO OR LESS THAN THE DESIGNED CONTRACTION JOINT SPACING IN ACCORDANCE WITH THE CONTRACT.

(6) PLACE DOWEL BAR BASKET AT DESIRED HEADER LOCATION. SET HEADER BOARD SHAPED TO PAVEMENT CROSS SECTION ABOVE AND BELOW THE DOWELS. PAVE PAST THE HEADER LOCATION AND FINISH CONCRETE BEHIND THE HEADER BOARD. THOROUGHLY REMOVE ALL CONCRETE FROM THE EXPOSED DOWELS.

(7) PLACE DOWEL BAR BASKET AT DESIRED HEADER LOCATION. SET HEADER BOARD SHAPED TO PAVEMENT CROSS SECTION ABOVE AND BELOW THE DOWELS. PLACE, CONSOLIDATE AND FINISH THE CONCRETE BEHIND THE HEADER BOARD.

(8) DRILL AND GROUT 18" LONG DOWEL OR REINFORCEMENT BARS SPACED AT 12" ON CENTER AT A DEPTH OF T/2 ± 1". DRILL THE HOLE 1/8" GREATER THAN THE NOMINAL OUTSIDE DIAMETER OF THE BAR BEING PLACED TO A DEPTH OF 9". INJECT A MnDOT-APPROVED EPOXY OR NON-SHRINK GROUT IN THE BACK OF THE DRILL HOLE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- FOR DOWEL BAR HEADERS, USE DOWEL BARS HAVING A DIAMETER IN ACCORDANCE WITH SPEC. 3302 AND THE CONTRACT.
- FOR REINFORCEMENT BAR HEADERS, USE NO. 4 REINFORCEMENT BARS.

(9) PROVIDE NO. 7 REINFORCEMENT BARS, 5' LONG, SPACED 18" ON CENTER AT DEPTH OF t/2 ± 1".

(10) USE PERMANENT HEADER WHEN LONG SECTIONS OF CONCRETE (400' OR GREATER) ABUT BITUMINOUS. CONTACT THE CONCRETE UNIT WHEN FUTURE CONCRETE IS BEING CONSTRUCTED ADJACENT TO AN EXISTING PERMANENT HEADER.

(11) USE TERMINAL HEADER WHEN SHORT SECTIONS OF CONCRETE (LESS THAN 400') ABUT BITUMINOUS (ON SIDE STREETS, FOR EXAMPLE).

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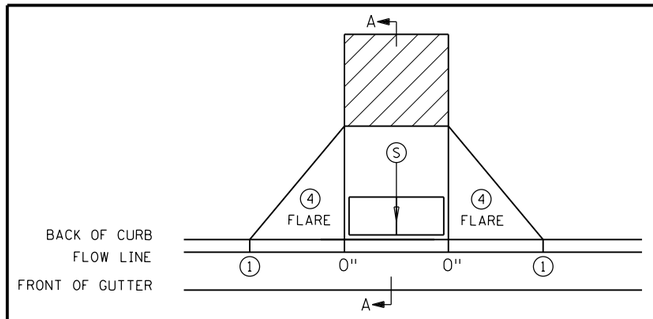
MINNESOTA DEPARTMENT OF TRANSPORTATION

THOMAS STYRBICKI
STATE DESIGN ENGINEER

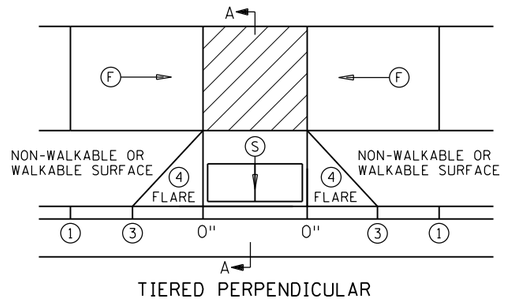
STANDARD PLAN 5-297.221	4 OF 4
APPROVED: 10-03-2022 REVISED:	
STATE PROJ. NO.	SP 002-614-049 SP 210-020-013 SP 106-020-041 SHEET NO. 22 OF 115 SHEETS

PAVEMENT JOINTS

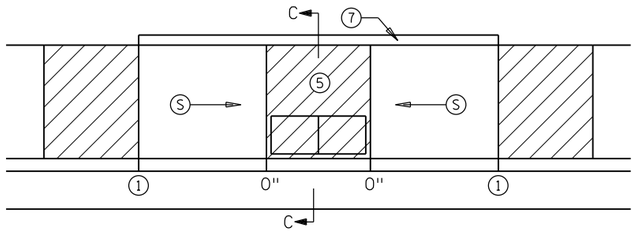
CONSTRUCTION AND TERMINAL HEADERS



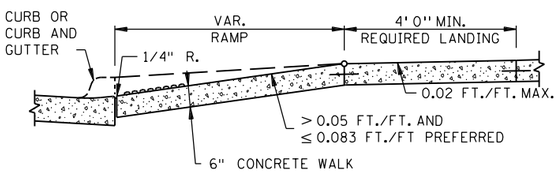
PERPENDICULAR



TIERED PERPENDICULAR

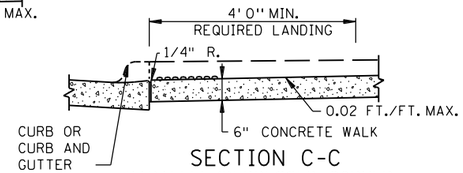


PARALLEL



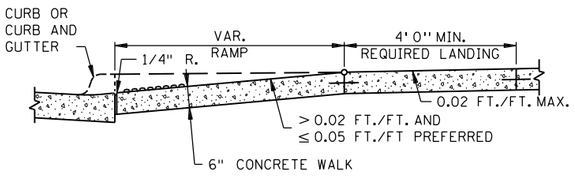
SECTION A-A

PERPENDICULAR/TIERED/DIAGONAL



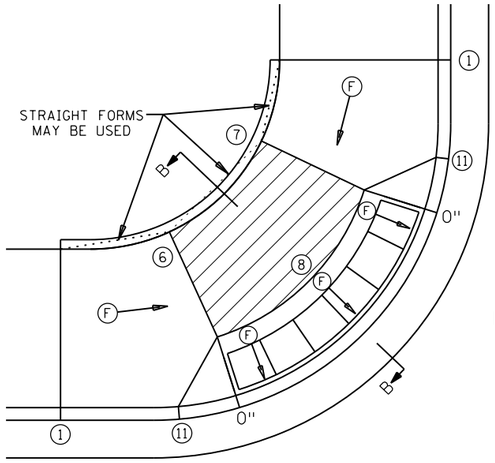
SECTION C-C

PARALLEL/DEPRESSED CORNER

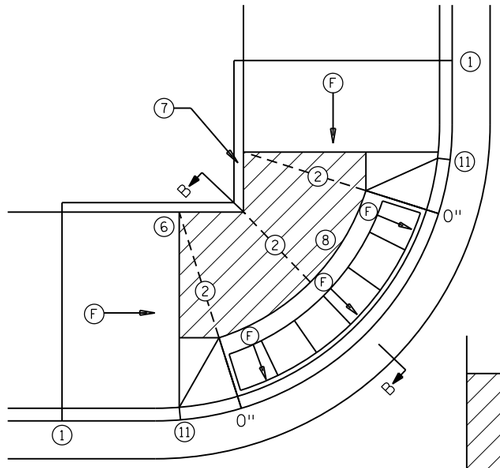


SECTION B-B

FAN

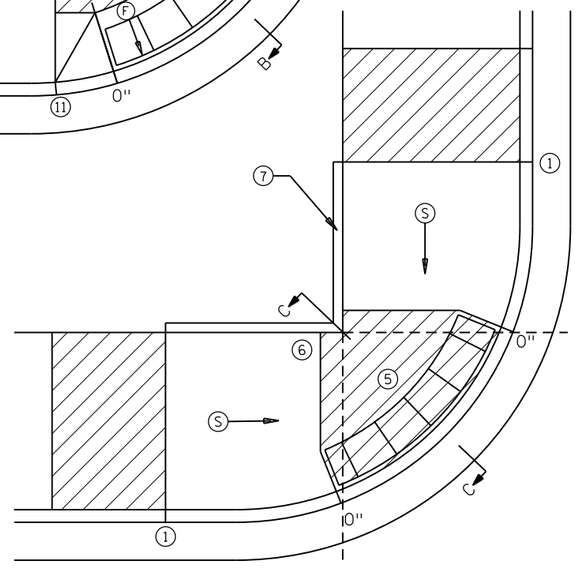


FAN (10)

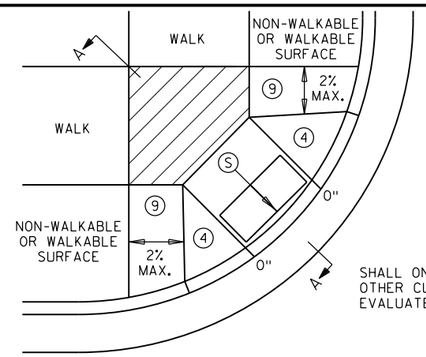


MODIFIED FAN (10)

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 RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, ALL INITIAL LANDINGS AT A TOP OF A RAMPED SURFACE (RUNNING SLOPE GREATER THAN 2%) SHALL BE FORMED AND PLACED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 6 OF 6 FOR ALL SEPARATELY POURED INITIAL LANDINGS.

WHEN SIDEWALK IS AT BACK OF CURB, TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

MAINTAIN POSITIVE BOULEVARD DRAINAGE TO TOP OF CURB.

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

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

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

RECTANGULAR DETECTABLE WARNINGS SHALL BE SETBACK 3" FROM THE BACK OF CURB. RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB.

(1) MATCH FULL HEIGHT CURB.

(2) 4' MINIMUM DEPTH LANDING REQUIRED ACROSS TOP OF RAMP.

(3) 3" HIGH CURB WHEN USING A 3' LONG RAMP, 4" HIGH CURB WHEN USING A 4' LONG RAMP.

(4) SEE SHEET 4 OF 6, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS.

(5) DETECTABLE WARNINGS MAY BE PART OF THE 4' X 4' MIN. LANDING AREA IF IT IS NOT FEASIBLE TO CONSTRUCT THE LANDING OUTSIDE OF THE DETECTABLE WARNING AREA.

(6) THE GRADE BREAK SHALL BE PERPENDICULAR TO THE BACK OF WALK. THIS WILL ENSURE THAT THE GRADE BREAK IS PERPENDICULAR TO THE DIRECTION OF TRAVEL. (TYPICAL FOR ALL)

(7) WHEN ADJACENT TO GRASS, GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS LESS THAN 5% RUNNING SLOPE SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.

(8) A 7' MIN TOP RADIUS GRADE BREAK IS REQUIRED TO BE CONSTRUCTIBLE.

(9) PAVE FULL WALK WIDTH.

(10) "S" SLOPES ON FANS SHALL ONLY BE USED WHEN ALL OTHER FEASIBLE OPTIONS HAVE BEEN EVALUATED AND DEEMED IMPRACTICAL.

(11) INTERMEDIATE CURB HEIGHTS TAPER SHALL RISE AT 8-10% TO A MINIMUM 3" CURB HEIGHT. REDUCE INTERMEDIATE CURB HEIGHT TO 2+ INCHES IF NECESSARY TO MATCH ADJACENT BOULEVARD OR SIDEWALK GRADES.

LEGEND

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

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

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

LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PARS.

X" CURB HEIGHT

REVISION:

APPROVED: 11-04-2021

JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA
DEPARTMENT OF TRANSPORTATION

THOMAS STYRBICKI
STATE DESIGN ENGINEER

STANDARD PLAN 5-297.250 | 1 OF 6

APPROVED: 11-04-2021
REVISED:

PEDESTRIAN CURB RAMP DETAILS

STATE PROJ. NO. SP 002-614-049 SP 210-020-013 SP 106-020-041 SHEET NO. 23 OF 115 SHEETS

DISTRICT #:
PLOT NAME: $$@PLOT$NAME@$$
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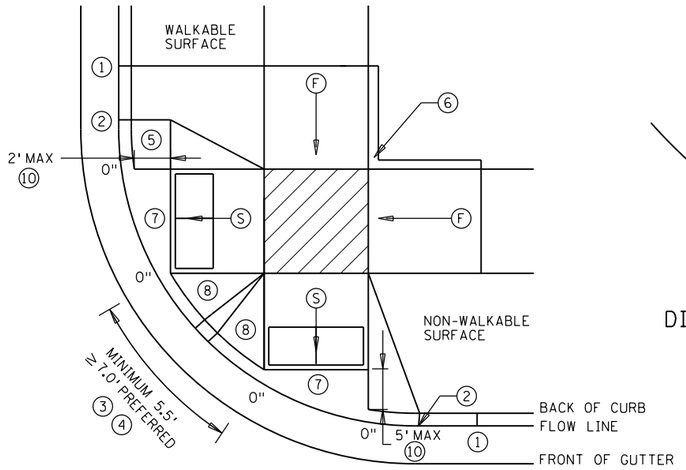
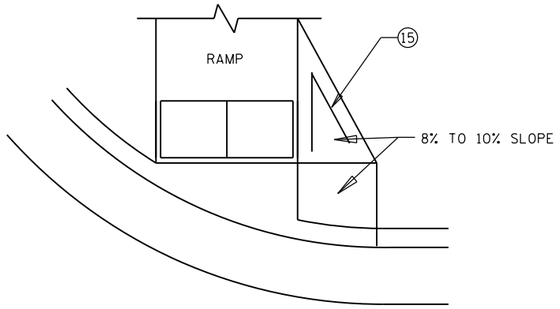
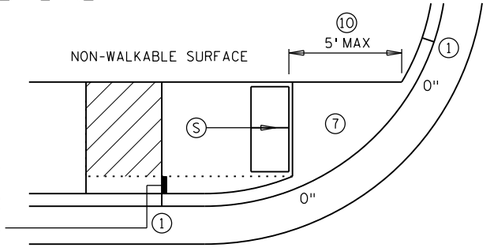


COMBINED DIRECTIONAL

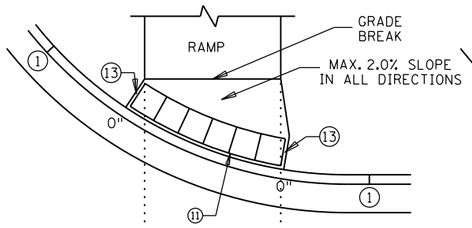


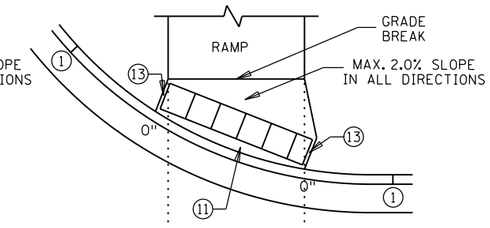
DIRECTIONAL RAMP WALKABLE FLARE

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



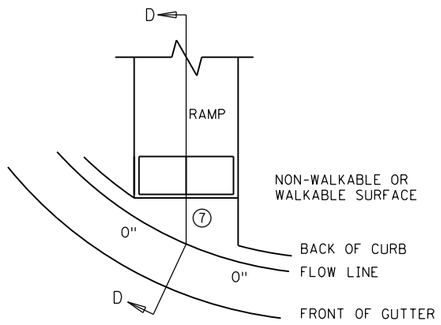
STANDARD ONE-WAY DIRECTIONAL ⑨

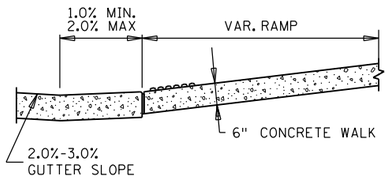




DETECTABLE WARNING PLACEMENT WHEN SETBACK CRITERIA IS EXCEEDED ⑫

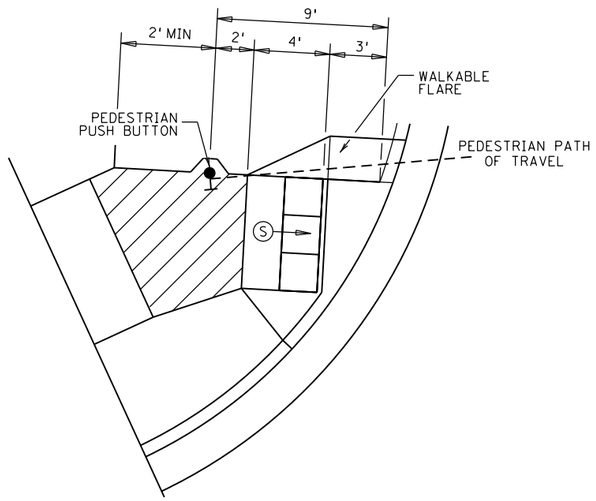
ONE-WAY DIRECTIONAL WITH DETECTABLE WARNING AT BACK OF CURB





SECTION D-D

CURB FOR DIRECTIONAL RAMPS ⑭



SEMI-DIRECTIONAL RAMP ③④⑨

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

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

NOTES:

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

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

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

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

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

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

TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

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

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

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

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

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

① MATCH FULL CURB HEIGHT.

② 3" HIGH CURB WHEN USING A 3' LONG RAMP
4" HIGH CURB WHEN USING A 4' LONG RAMP.

③ 3" MINIMUM CURB HEIGHT (5.5' MIN. DISTANCE REQUIRED BETWEEN DOMES)
4" PREFERRED (7' MIN. DISTANCE REQUIRED BETWEEN DOMES).

④ THE "BUMP" IN BETWEEN THE RAMPS SHOULD NOT BE IN THE PATH OF TRAVEL FOR COMBINED DIRECTIONAL RAMPS. IF THIS OCCURS MODIFY THE RAMP LOCATION OR SWITCH RAMP TO A FAN/DEPRESSED CORNER.

⑤ WHEN USING CONCRETE PAVED FLARES ON THE OUTSIDE OF DIRECTIONAL RAMPS, AND ADJACENT TO A WALKABLE SURFACE, DIRECTIONAL RAMP FLARES SHALL BE USED. SEE THE DETAIL ON THIS SHEET.

⑥ GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.

⑦ MAX. 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK AND DRAIN TO FLOW LINE. SHALL BE CONSTRUCTED INTEGRAL WITH CURB AND GUTTER.

⑧ 8% TO 10% WALKABLE FLARE.

⑨ PLACE DOMES AT THE BACK OF CURB WHEN ALLOWABLE SETBACK CRITERIA IS EXCEEDED.

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

⑪ RECTANGULAR DETECTABLE WARNINGS MAY BE SETBACK UP TO 9" FROM THE BACK OF CURB WITH CORNERS SET 3" FROM BACK OF CURB. IF 9" SETBACK IS EXCEEDED USE RADIAL DETECTABLE WARNINGS.

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

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

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

⑮ PLACE 2 NO. 4 BARS 4 INCHES FROM SIDE OF FORMS WITH A MINIMUM 2 INCHES OF CONCRETE COVER ALONG EACH SIDE OF FLARE (INCIDENTAL).

LEGEND

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

Ⓢ 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%.

Ⓕ 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: 11-04-2021
JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.250 | 2 OF 6

APPROVED: 11-04-2021
REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

STATE PROJ. NO. SP 002-614-049 SP 106-020-041 SHEET NO. 24 OF 115 SHEETS
SP 210-020-013

DISTRICT #:
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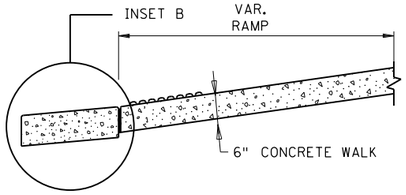
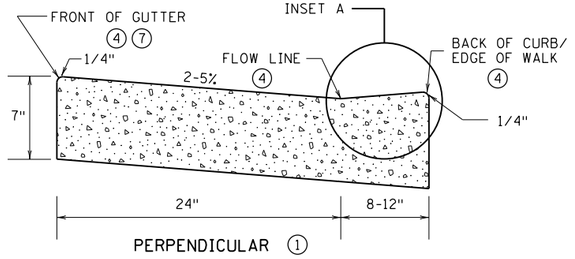
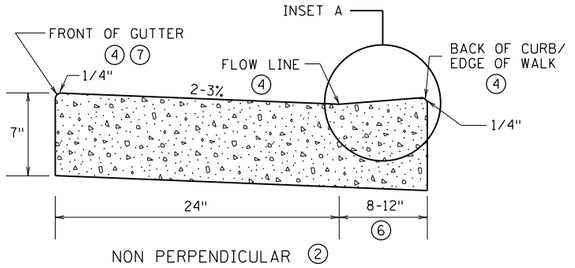
PLOTTED/REVISED: 12/07/2023

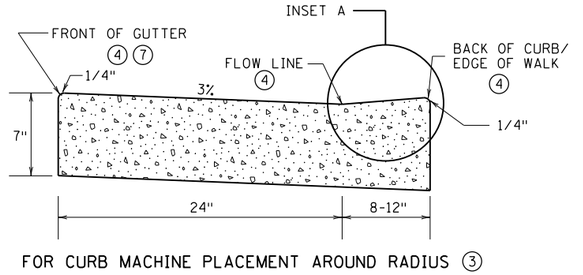




PERPENDICULAR (1)

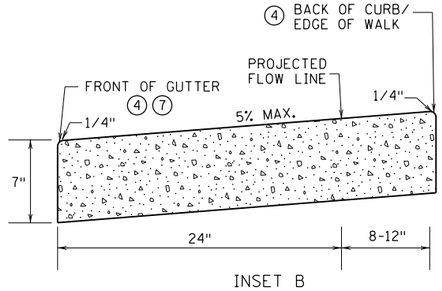


NON PERPENDICULAR (2)

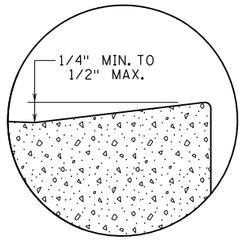


FOR CURB MACHINE PLACEMENT AROUND RADIUS (3)
(REGARDLESS OF RAMP TYPE)

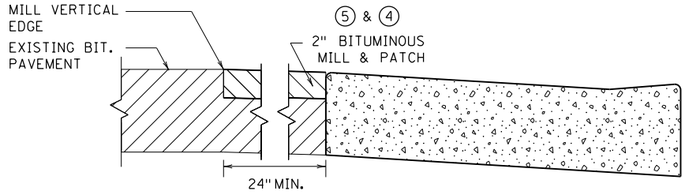
PEDESTRIAN ACCESS ROUTE CURB & GUTTER DETAIL

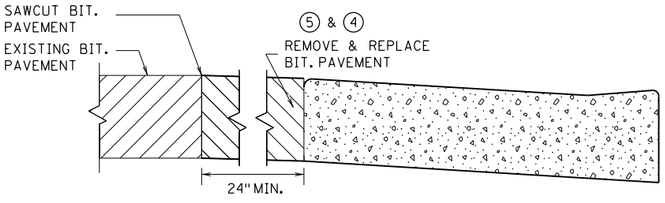


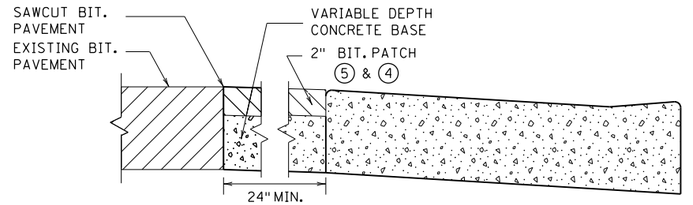
INSET B
OUTFLOW GUTTER (8)



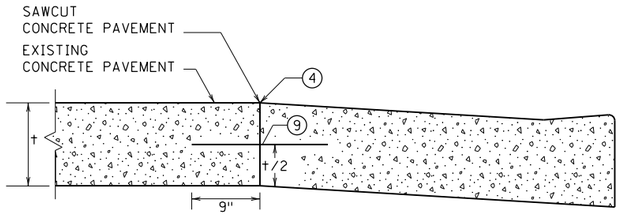
INSET A





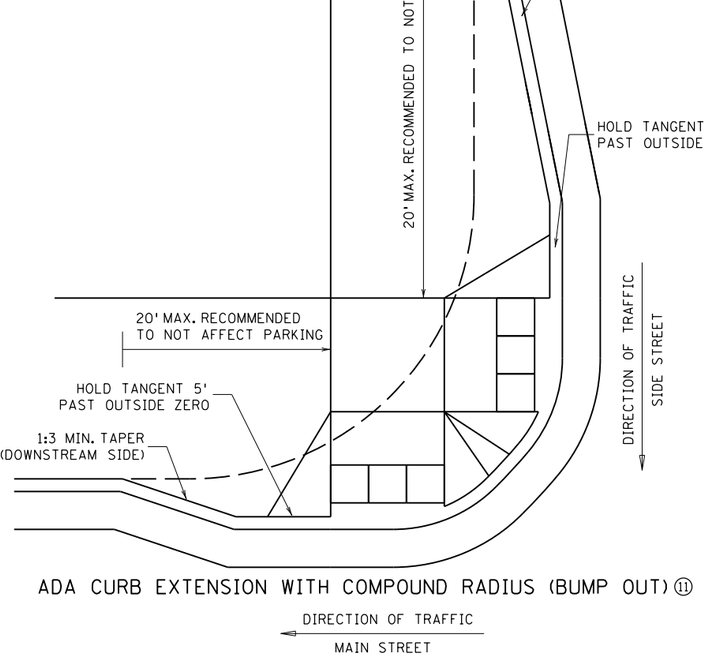


ONLY ALLOWED PER ENGINEER'S APPROVAL



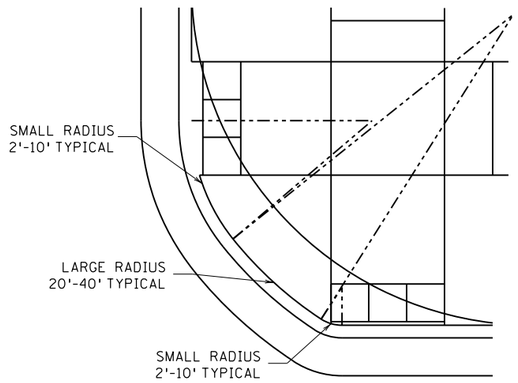
PAVEMENT TREATMENT OPTIONS IN FRONT OF CURB & GUTTER

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.

REVISION:

APPROVED: 11-04-2021
JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.250 | 3 OF 6

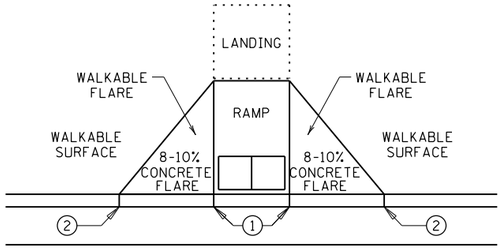
APPROVED: 11-04-2021
REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

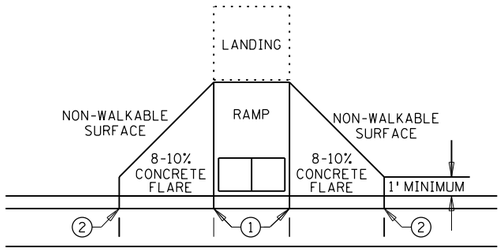
PEDESTRIAN CURB RAMP DETAILS

STATE PROJ. NO. SP 002-614-049 SP 210-020-013 SP 106-020-041 SHEET NO. 25 OF 115 SHEETS

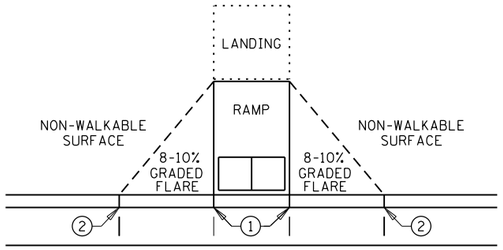
DISTRICT #:
PLOT NAME: $$@PLOT$NAME@$$
PATH & FILENAME: P:\002-614-049 - Sunset RAB\Plan\002614049_STD.dgn
PLOTTED/REVISED: 12/01/2023



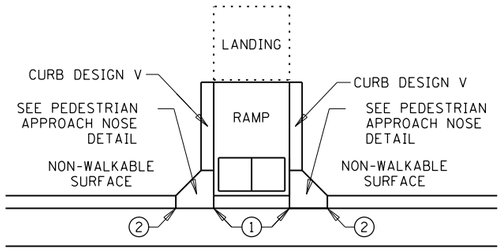
PAVED FLARES
ADJACENT TO WALKABLE SURFACE



PAVED FLARES
ADJACENT TO NON-WALKABLE SURFACE

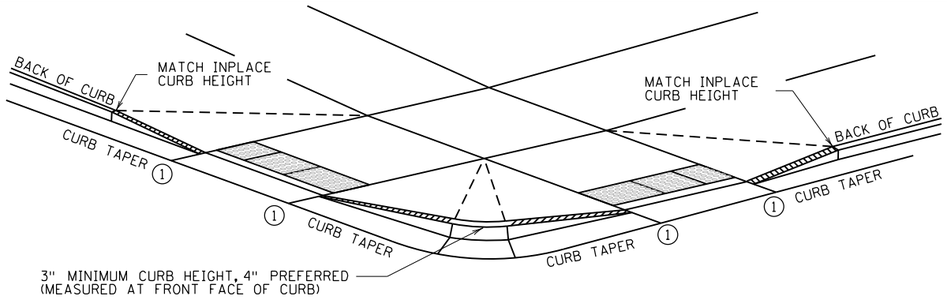


GRADED FLARES

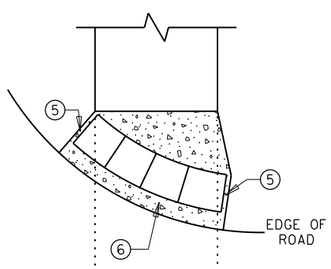


RETURNED CURB ④

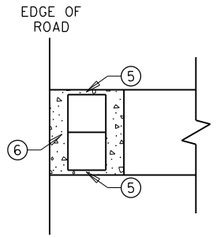
TYPICAL SIDE TREATMENT OPTIONS ③ ⑩



DETECTABLE EDGE WITH ⑦
CURB AND GUTTER

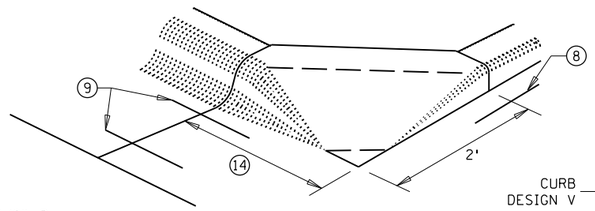


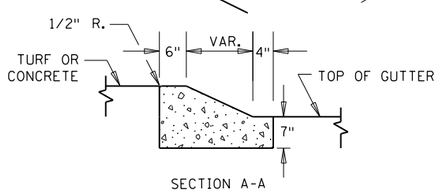
RADIAL DETECTABLE WARNING



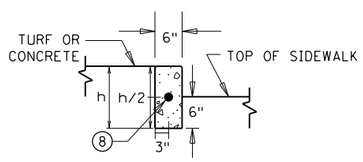
RECTANGULAR DETECTABLE WARNING

DETECTABLE EDGE WITHOUT CURB AND GUTTER

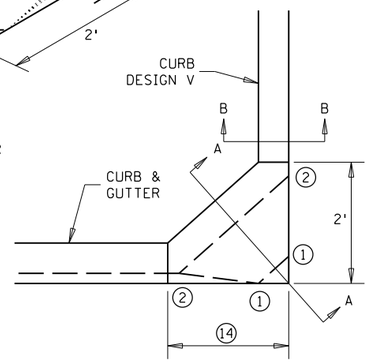




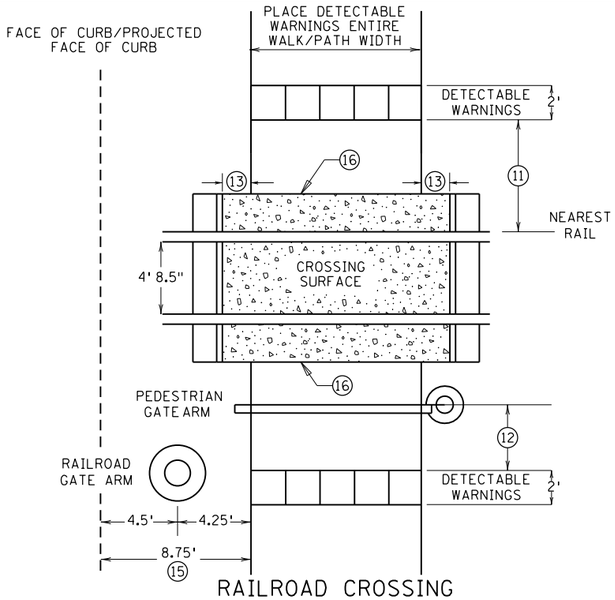
SECTION A-A



SECTION B-B



PEDESTRIAN APPROACH
NOSE DETAIL
(FOR RETURNED CURB
SIDE TREATMENT)



RAILROAD CROSSING
PLAN VIEW

NOTES:

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

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

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

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

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

② FULL CURB HEIGHT.

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

④ TYPICALLY USED FOR MEDIANS AND ISLANDS.

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

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

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

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

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

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

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

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

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

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

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

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

REVISION:

APPROVED: 11-04-2021
JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.250 | 4 OF 6

APPROVED: 11-04-2021
REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

STATE PROJ. NO. SP 002-614-049 SP 106-020-041 SHEET NO. 26 OF 115 SHEETS
SP 210-020-013

DISTRICT #:
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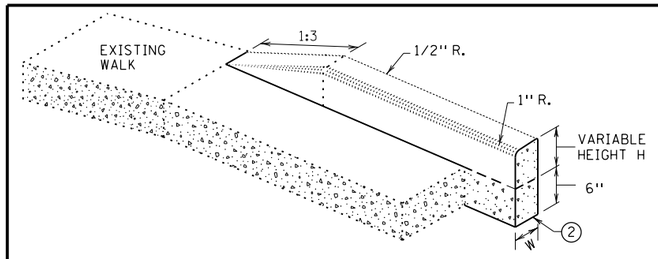
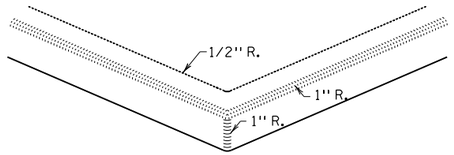


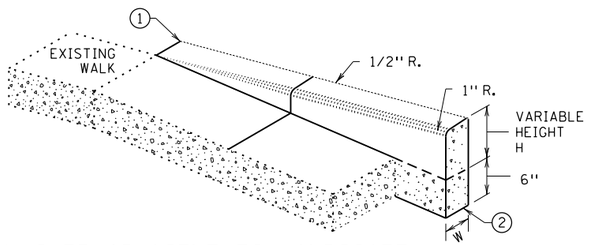
V CURB ADJACENT TO LANDSCAPE

CURB WITHIN SIDEWALK LIMITS



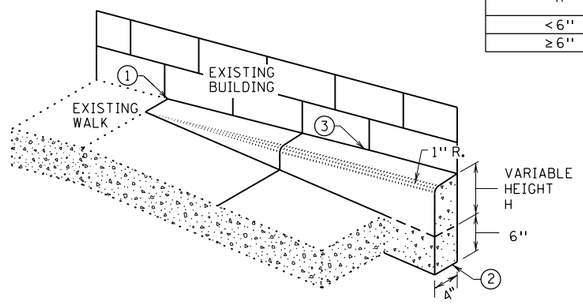
V CURB INTERSECTION

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

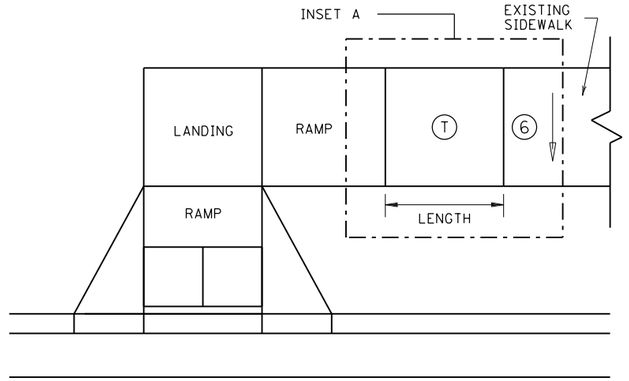


V CURB ADJACENT TO LANDSCAPE

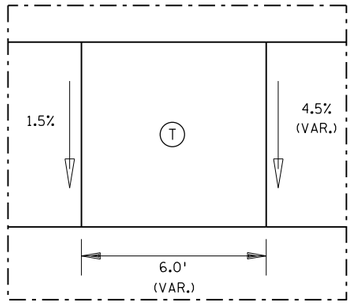
CURB OUTSIDE SIDEWALK LIMITS



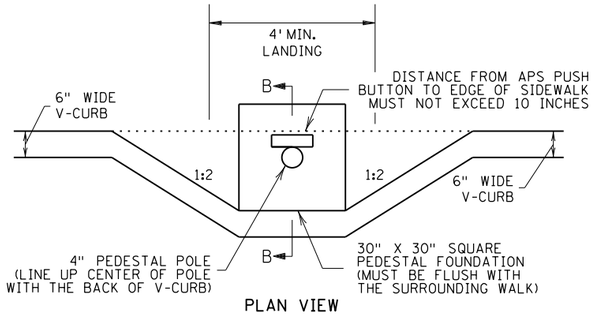
V CURB ADJACENT TO BUILDING OR BARRIER



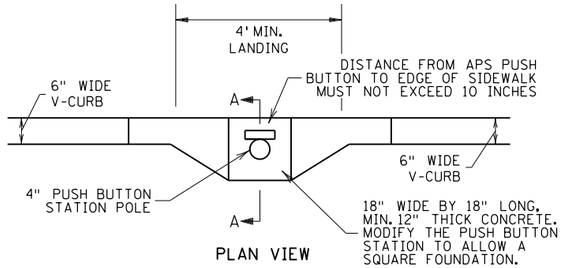
TRANSITION PANEL ④⑤



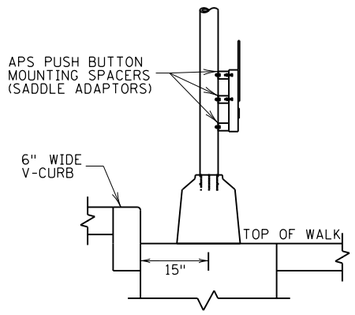
INSET A



PLAN VIEW

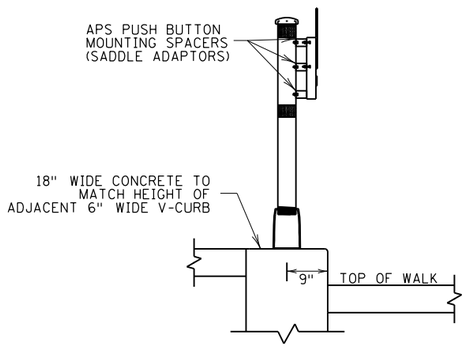


PLAN VIEW



SECTION B-B

SIGNAL PEDESTAL & PUSH BUTTON (V-CURB)



SECTION A-A

PUSH BUTTON STATION (V-CURB)

NOTES:

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

ALL V CURB CONTRACTION JOINTS SHALL MATCH CONCRETE WALK JOINTS.

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

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

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

① END TAPERS AT TRANSITION SECTION SHALL MATCH INPLACE SIDEWALK GRADES.

② ALL V CURB SHALL MATCH BOTTOM OF ADJACENT WALK.

③ CONSTRUCT USING APPROVED EXPANSION MATERIAL PER MNDOT TYPE A-E EXPANSION. LEAVE A MINIMUM ½" TOP GAP AND SEAL WITH MNDOT APPROVED SILICONE PER MNDOT SPEC 3722.

④ THE MAX. RATE OF CROSS SLOPE TRANSITIONING IS 1' LINEAR FOOT OF SIDEWALK PER HALF PERCENT CROSS SLOPE. WHEN PAR WIDTH IS GREATER THAN 6' OR THE RUNNING SLOPE IS GREATER THAN 5%, DOUBLE THE CALCULATED TRANSITION LENGTH.

⑤ TRANSITION PANELS ARE TO ONLY BE USED AFTER THE RAMP, OR IF NEEDED, LANDING ARE AT THE FULL CURB HEIGHT (TYPICAL SECTION).

⑥ EXISTING CROSS SLOPE GREATER THAN 2.0%.

LEGEND

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

Ⓢ 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.

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

REVISION:

APPROVED: 11-04-2021

JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

THOMAS STYRBICKI
STATE DESIGN ENGINEER

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

APPROVED: 11-04-2021
REVISED:

PEDESTRIAN CURB RAMP DETAILS

STATE PROJ. NO. SP 002-614-049 SP 106-020-041 SHEET NO. 27 OF 115 SHEETS
SP 210-020-013

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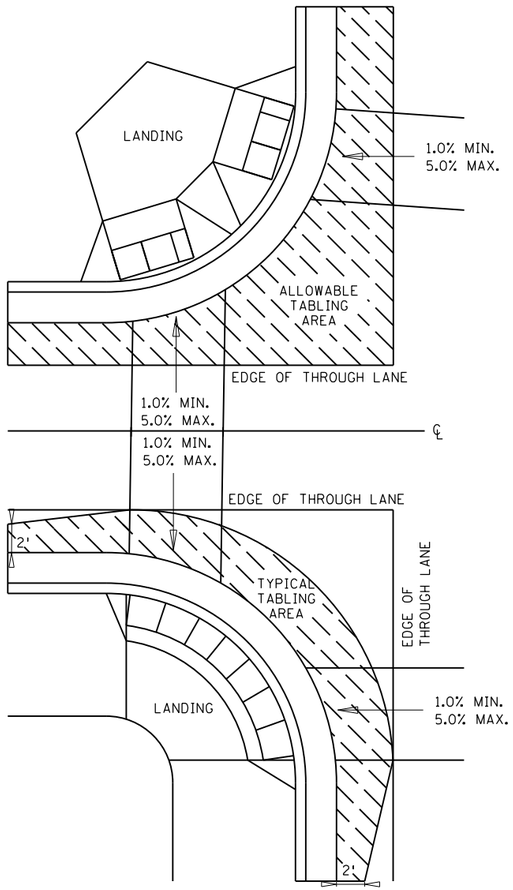
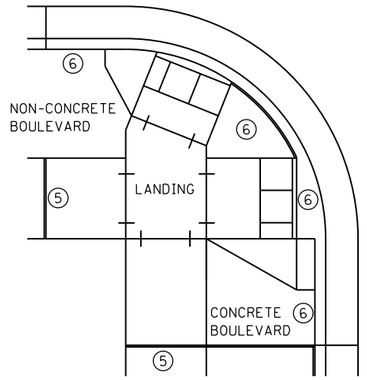
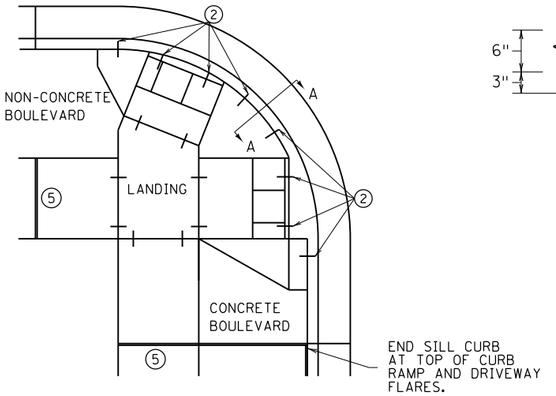


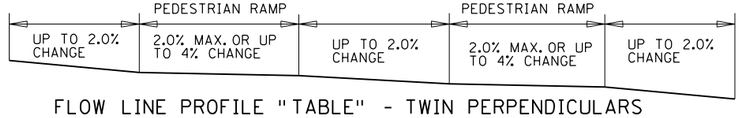
CURB LINE AND ROAD CROSSING ADJUSTMENTS



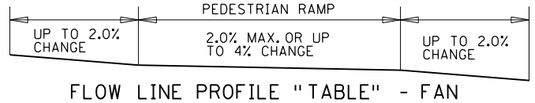
EXPANSION MATERIAL PLACEMENT
FOR CONCRETE ROADWAYS



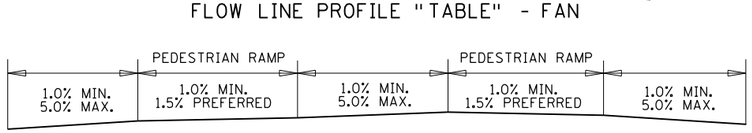
CURB LINE REINFORCEMENT ④
PLACEMENT ON BITUMINOUS ROADWAYS



FLOW LINE PROFILE "TABLE" - TWIN PERPENDICULARS

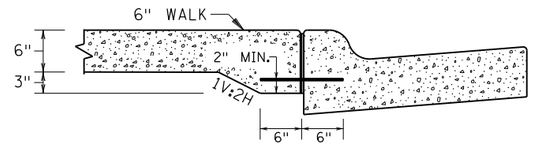


FLOW LINE PROFILE "TABLE" - FAN

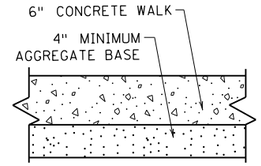


FLOW LINE PROFILE RAISE - TWIN PERPENDICULARS

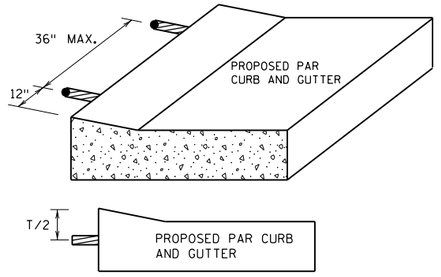
FLOW LINE PROFILE RAISE - FAN

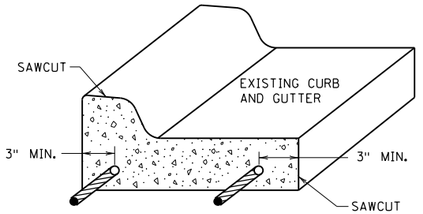


SECTION VIEW A-A
THICKENED SECTION
THROUGH CURB RAMP FLARES



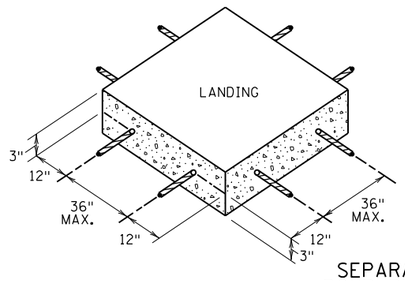
TYPICAL SIDEWALK SECTION
WITHIN INTERSECTION CORNER

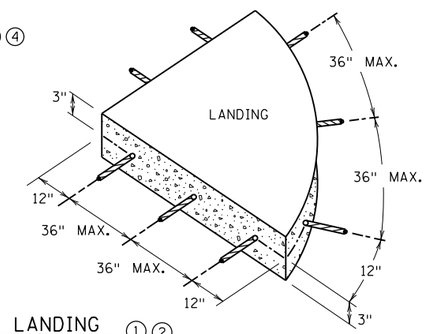




CURB AND GUTTER
REINFORCEMENT ③

CURB RAMP REINFORCEMENT DETAILS ②④





SEPARATE LANDING
POUR REINFORCEMENT ①②

GENERAL NOTES:

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

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

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

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

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

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

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

NOTES:

① TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, ALL INITIAL LANDINGS AT A TOP OF A RAMPED SURFACE (RUNNING SLOPE GREATER THAN 2%) SHALL BE FORMED AND PLACED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON THIS SHEET FOR ALL SEPARATELY POURED INITIAL LANDINGS.

② DRILL AND GROUT NO. 4 12" LONG REINFORCEMENT BARS (EPOXY COATED) AT 36" MAXIMUM CENTER TO CENTER MINIMUM 12" SPACING FROM CONSTRUCTION JOINTS. BARS TO BE ADJUSTED TO MATCH RAMP GRADE. BARS TO BE PAID BY EACH.

③ DRILL AND GROUT 2 - NO. 4 X 12" LONG (6" EMBEDDED) REINFORCEMENT BARS (EPOXY COATED). REINFORCEMENT REQUIRED FOR ALL CONSTRUCTION JOINTS. BARS TO BE PAID BY EACH.

④ THIS CURB LINE REINFORCEMENT DETAIL SHALL BE USED ON BITUMINOUS ROADWAYS. FOR CONCRETE ROADWAYS, SEE NOTE 6.

⑤ CONSTRUCT WITH EXPANSION MATERIAL PER MNDOT SPECIFICATION 3702 TYPES A-E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE.

⑥ USE AN APPROVED TYPE F (1/4 INCH THICK) SEPARATION MATERIAL. SEPARATION MATERIAL SHALL MATCH FULL HEIGHT DIMENSION OF ADJACENT CONCRETE.

REVISION:

APPROVED: 11-04-2021
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STANDARD PLAN 5-297.250 | 6 OF 6

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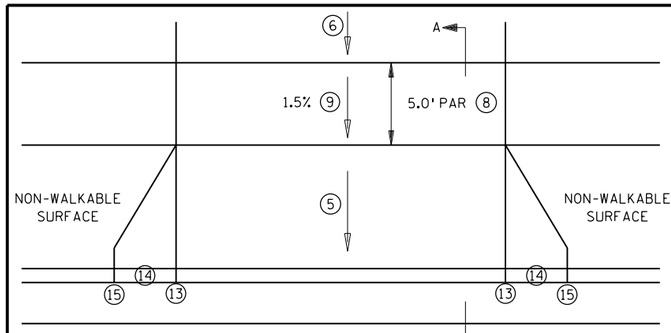
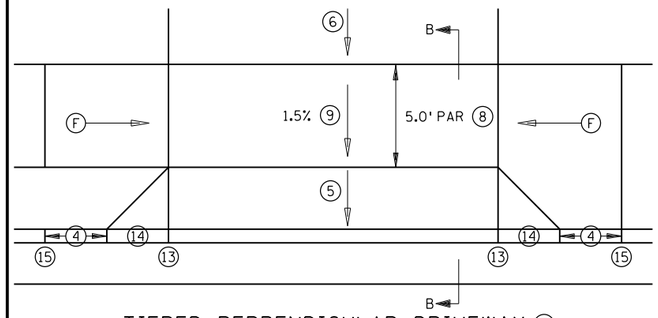
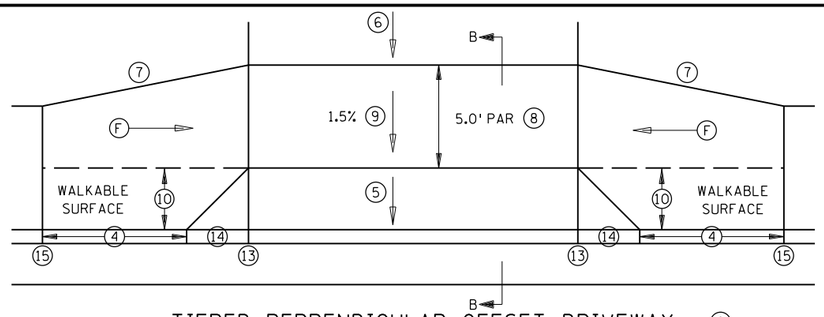


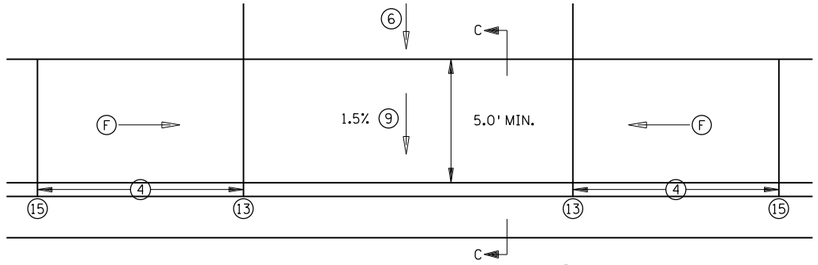
PERPENDICULAR DRIVEWAY ①



TIERED PERPENDICULAR DRIVEWAY ②



TIERED PERPENDICULAR OFFSET DRIVEWAY ②



PARALLEL DRIVEWAY ③

LEGEND

(F)	INDICATES DRIVEWAY 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%

NOTES:

ALL SIDEWALK AND BOULEVARD WIDTHS SHALL BE MEASURE FROM BACK OF CURB.

IN URBAN ROADWAY SECTIONS, 6" CURB HEIGHT SHOULD BE USED WHEN 6' OR GREATER BOULEVARD WIDTH IS PROPOSED. WHEN BOULEVARD IS LESS THAN 6' WIDE, 4" CURB HEIGHT SHOULD BE USED.

MAINTAIN EXISTING DRAINAGE PATTERNS FLOWING TO PUBLIC RIGHT OF WAY.

ACQUIRE ADEQUATE L3 TO ALLOW FOR A CONTINUOUS PAR PROFILE (UNIFORM TYPICAL SIDEWALK SECTION) THROUGH THE DRIVEWAY APRON.

IN NO CASE SHALL SIDEWALK PROFILES EXCEED 5.0%, EXCEPT SIDEWALK PROFILES CAN MATCH ROADWAY GRADE IF ROADWAY GRADE IS GREATER THAN 5.0%. RAMPS FOR DRIVEWAYS ARE REQUIRED TO FOLLOW THE ABOVE SIDEWALK CRITERIA.

CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PEDESTRIAN ACCESS ROUTE (PAR). 1/4" DEEP VISUAL JOINTS SHALL BE USED AT THE TOPS OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.

DRIVEWAY TYPES FROM MOST PREFERRED TO LEAST PREFERRED ARE AS FOLLOWS: PERPENDICULAR, TIERED PERPENDICULAR, TIERED PERPENDICULAR OFFSET & PARALLEL.

(1) PERPENDICULAR DRIVEWAYS ARE THE STANDARD AND STARTING POINT FOR ALL DRIVEWAY DESIGN AND CONSTRUCTION. SHOULD BE USED TO ACHIEVE CONTINUOUS PAR PROFILE THROUGH THE DRIVEWAY. OBTAINING A PERPENDICULAR DRIVEWAY DESIGN BECOMES MORE CRITICAL WITH STEEP ROADWAY PROFILES.

(2) TO BE USED WHEN PERPENDICULAR DRIVEWAY DESIGN CANNOT BE ACHIEVED, THE DRIVEWAY PAR IS BELOW ROADWAY CURB HEIGHT. THIS DRIVEWAY TYPE CAN BE USED FOR BOTH PAVED (AS SHOWN) AND GRASS BOULEVARDS.

(3) TO BE USED WHEN PERPENDICULAR AND TIERED PERPENDICULAR DRIVEWAY DESIGN CANNOT BE ACHIEVED. CAN BE USED FOR STEEP NEGATIVE SLOPED DRIVEWAYS. DW CURB TYPE 2 SHOULD BE USED TO RAISE PAR ABOVE GUTTER AND REDUCE "ROLLER COASTER" EFFECT. 4" HIGH ROADWAY CURB SHOULD BE USED TO REDUCE "ROLLER COASTER" EFFECT ESPECIALLY WHEN MULTIPLE DRIVEWAYS ARE PRESENT.

(4) TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

(5) 8% STANDARD, 10% MAX. FOR COMMERCIAL AND 12% MAX. FOR RESIDENTIAL. SEE GENERAL NOTES ON SHEET 2 FOR MORE INFORMATION.

(6) S3 8% MAXIMUM, IF THE SLOPE IS EXCEEDED OR CONTINUED FOR MORE THAN 5', ANALYZE VEHICLE TEMPLATES FOR VERTICAL CLEARANCE. IF EXISTING DRIVEWAY IS NEGATIVELY DRAINING, S3 CAN BECOME SLIGHTLY MORE NEGATIVE TO ACHIEVE PERPENDICULAR DRIVEWAY DESIGN IF THE VERTICAL CLEARANCE IS ACHIEVED IN VEHICLE TEMPLATES.

(7) 1:3 MIN. 1:5 PREFERRED FOR DRIVEWAY RETROFIT PROJECTS. 1:10 PREFERRED FOR SIDEWALK REPLACEMENT PROJECTS.

(8) 5.0' MIN. PAR WIDTH IS THE STANDARD THROUGH DRIVEWAYS. IF FEASIBLE WIDEN DRIVEWAY PAR WIDTH TO MATCH APPROACHING SIDEWALK PAR WIDTHS. IN VERTICALLY CONSTRAINED AREAS PAR WIDTHS CAN INCREMENTALLY BE REDUCED TO 4.5' OR 4' MIN AFTER ALL OTHER OPTIONS HAVE BEEN APPLIED.

(9) THE PEDESTRIAN ACCESS ROUTE, MAY NOT EXCEED 0.02 FT./FT. AS CONSTRUCTED.

(10) SIDEWALK OFFSET TO BE LESS THAN OR EQUAL TO HALF THE APPROACHING SIDEWALK WIDTH.

(11) INTEGRAL DRIVEWAY APRON TO BE POURED MONOLITHICALLY/INTEGRAL WITH THE CURB AND GUTTER. SEE SHEET 2 FOR MORE INFORMATION.

(12) SEE SHEET 2 FOR CURB TYPE INFORMATION.

(13) 0" CURB IS AT FLOW LINE. SEE DRIVEWAY TABLE FOR BACK OF CURB HEIGHTS.

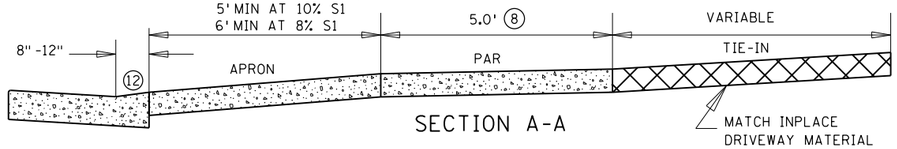
(14) 3' LONG AT 8-10% PREFERRED FOR INITIAL CURB TAPER. REDUCE CURB TAPER SLOPE IF NECESSARY TO MATCH ADJACENT SIDEWALK GRADES.

(15) MATCH FULL CURB HEIGHT.

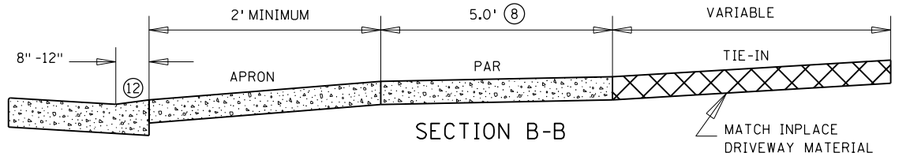
(16) 1:2 TAPER RATE ON INTEGRAL DRIVEWAY APRONS.

(17) SEE SHEET 4 FOR WHEN 6" WALK IS REQUIRED.

WITH 4" CURB HEIGHT;
3' MIN AT 10% S1
4' MIN AT 8% S1
WITH 6" CURB HEIGHT;
5' MIN AT 10% S1
6' MIN AT 8% S1



SECTION A-A



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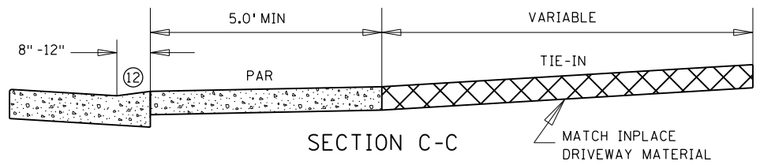
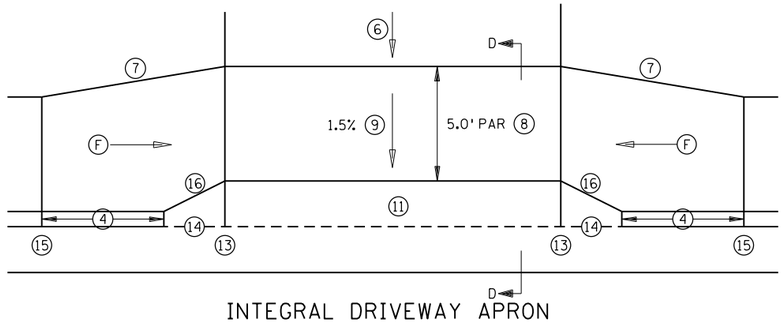
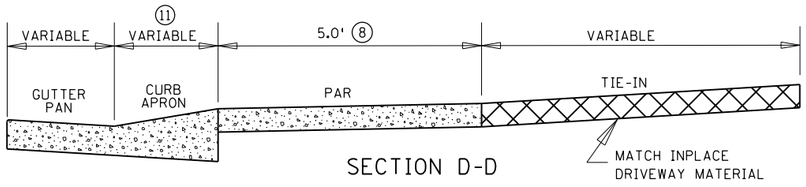


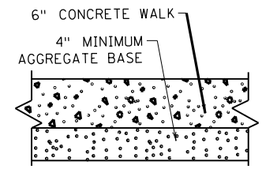
SECTION C-C



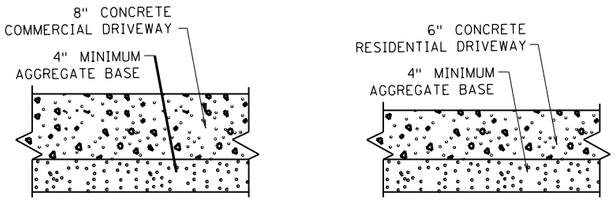
INTEGRAL DRIVEWAY APRON



SECTION D-D



TYPICAL SIDEWALK SECTION ⑰



TYPICAL DRIVEWAY SECTIONS

REVISION:

APPROVED: 11-04-2021

JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

THOMAS STYRBICKI
STATE DESIGN ENGINEER

STANDARD PLAN 5-297.254 | **1 OF 4**

APPROVED: 11-04-2021
REVISED:

DRIVEWAY AND SIDEWALK DETAILS

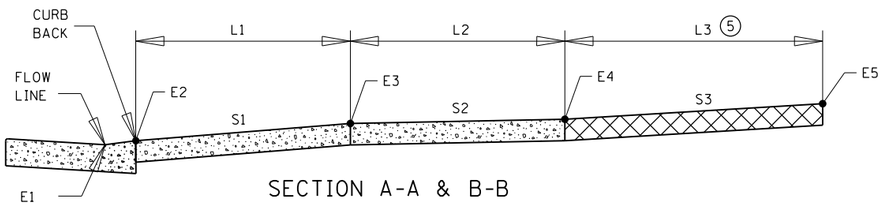
STATE PROJ. NO. SP 002-614-049 SP 210-020-013 SP 106-020-041 SHEET NO. 29 OF 115 SHEETS

PLOTTED/REVISED: 12/07/2023

DISTRICT #:
PLOT NAME: $$@PLOT$NAME@$$
PATH & FILENAME: P:\002-614-049 - Sunset RAB\Plan\002614049_STD.dgn

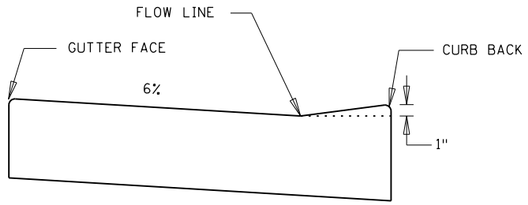
DRIVEWAY TABLE (1)

STATION	SIDE	DRIVEWAY TYPE (2)	CURB TYPE (3)	E1	E2	L1 FT	S1 %	E3	L2 FT	S2 (4) %	E4	L3 (5) FT	S3 %	EXISTING (6) %	E5	COMMENTS



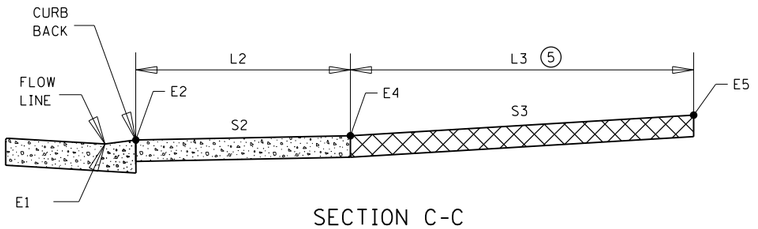
SECTION A-A & B-B

(REFER TO PREVIOUS SHEET)



DW CURB TYPE 1

STANDARD CURB AT DRIVEWAY



SECTION C-C

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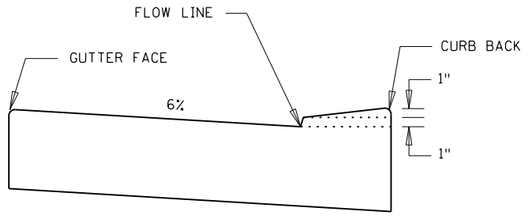
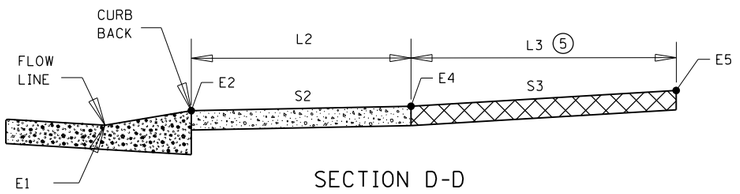


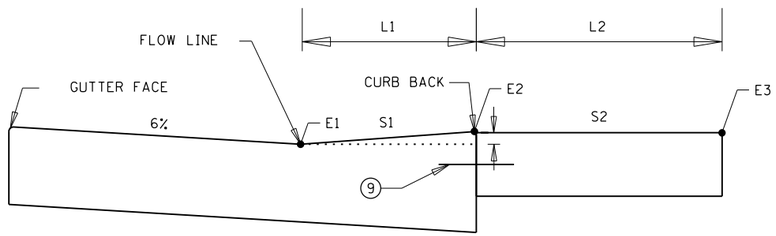
DW CURB TYPE 2

VERTICALLY CONSTRAINED



SECTION D-D

(REFER TO PREVIOUS SHEET)



INTEGRAL DRIVEWAY APRON (IDA)

NOTES:

ALL SIDEWALK AND BOULEVARD WIDTHS SHALL BE MEASURED FROM BACK OF CURB.

DW CURB TYPE 1 SHALL BE USED WHEN THE DRIVEWAY ACTS AS A PEDESTRIAN RAMP. THE MAX. APRON SLOPE MUST ADHERE TO ADA CRITERIA AS WELL. DW CURB TYPE 1 SHOULD BE USED IF THERE IS ON STREET PARKING.

WHERE ROADWAY DRAINAGE IS A CONCERN (NEGATIVE SLOPED APRON) DW CURB TYPE 2 CAN BE USED TO HELP KEEP THE WATER ON PUBLIC RIGHT OF WAY.

S1 8% STANDARD, 10% MAX. COMMERCIAL AND 12% MAX. RESIDENTIAL. IF EXISTING GRADES ARE STEEPER DO NOT MAKE GRADES APPRECIABLY WORSE BY USING BEST PRACTICES SUCH AS DRIVEWAY CURB HEIGHTS, EXTENDING L3 AND/OR STEEPEN S3.

S3 8% MAXIMUM, IF THIS SLOPE IS EXCEEDED OR CONTINUED FOR MORE THAN 5', ANALYZE VEHICLE TEMPLATES FOR VERTICAL CLEARANCE. SEE FACILITY DESIGN GUIDE, CHAPTER 6, FOR GEOMETRIC DESIGNS OF DRIVEWAYS.

(1) EXAMPLE SHOWN TO BE INCLUDED IN PLAN FOR EACH DRIVEWAY THAT HAS PAR THROUGH IT.

(2) REFERS TO THE FOLLOWING TYPES; PERPENDICULAR DRIVEWAY, TIERED PERPENDICULAR OFFSET DRIVEWAY, TIERED PERPENDICULAR DRIVEWAY, PARALLEL DRIVEWAY, AND INTEGRAL DRIVEWAY APRON.

(3) DW CURB TYPE 1 IS THE STANDARD AND SHALL BE THE STARTING POINT FOR ALL PERPENDICULAR AND TIERED DRIVEWAYS. DW CURB TYPE 2 SHALL ONLY BE USED AFTER UTILIZING BEST PRACTICES SUCH AS MAXIMIZING S1, S3, AND L3.

(4) SHOULD BE DESIGNED AT 1.5%.

(5) ACQUIRE ADEQUATE L3 TO ALLOW FOR CONTINUOUS PAR PROFILE (UNIFORM SIDEWALK SECTION) THROUGH THE DRIVEWAY APRON.

(6) PROVIDE INPLACE TIE-IN SLOPE INFORMATION AT BACK OF PROPOSED WALK (S3 AREA).

(7) INFORMATION TO BE INCORPORATED INTO DRIVEWAY TABLE WHEN INTEGRAL DRIVEWAY APRON IS USED. OTHER CURB HEIGHTS & CURB APRON LENGTHS CAN BE USED.

(8) L1 & S1 FOR INTEGRAL DRIVEWAY APRON IS TO FLOWLINE. 12.5% IS MAXIMUM PREFERRED SLOPE.

(9) TIE ADJACENT SECTIONS. CONCRETE DRIVEWAY APRON AND CONCRETE DRIVEWAY SIDEWALK SHALL BE CONSTRUCTED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. DRILL AND GROUT OR CAST IN-PLACE THROUGH HOLES IN THE FORMS NO. 4 X 12" LONG TIE BARS (EPOXY COATED). 36" MAXIMUM SPACING WITH 2" MINIMUM CONCRETE COVER PLACED 1' MINIMUM FROM ADJACENT CONSTRUCTION JOINT.

TYPICAL INTEGRAL DRIVEWAY APRON (7)			
CURB TYPE	L1 FT	E2	S1 (8) %
IDA 216	1.33	+0.16	12.5
IDA 220	1.67	+0.16	10
IDA 324	2	+0.24	12.5
IDA 432	2.67	+0.33	12.5

REVISION:

APPROVED: 11-04-2021

JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.254 | **2 OF 4**

APPROVED: 11-04-2021
REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

DRIVEWAY AND SIDEWALK DETAILS

STATE PROJ. NO. SP 002-614-049 SP 106-020-041 SHEET NO. 30 OF 115 SHEETS
SP 210-020-013

DISTRICT #:
PLOT NAME: $$@PLOT$NAME@$$
PATH & FILENAME: P:\002-614-049 - Sunset RAB\Plan\002614049_STD.dgn
PLOTTED/REVISED: 12/07/2023

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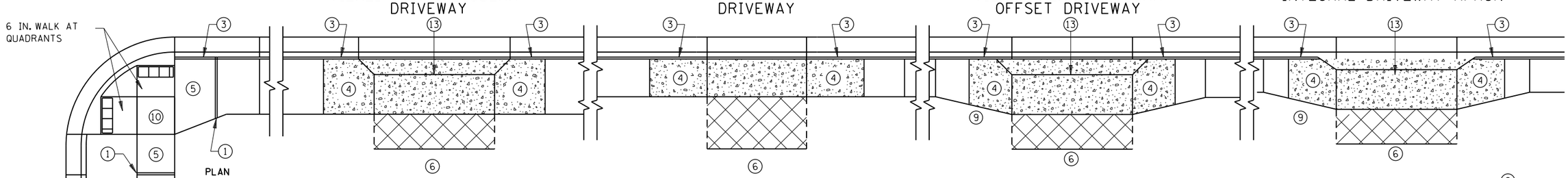
PATH & FILENAME: P:\002-614-049 - Sunset RAB\Plan\002614049_STD.dgn

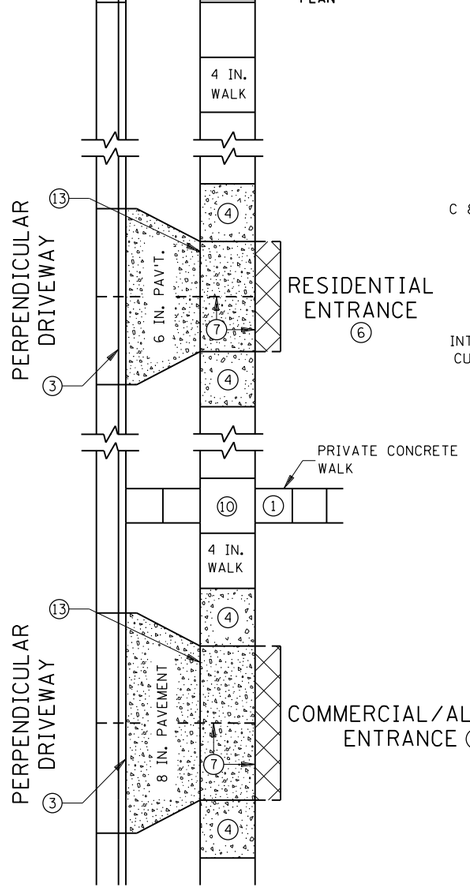
TIERED PERPENDICULAR DRIVEWAY

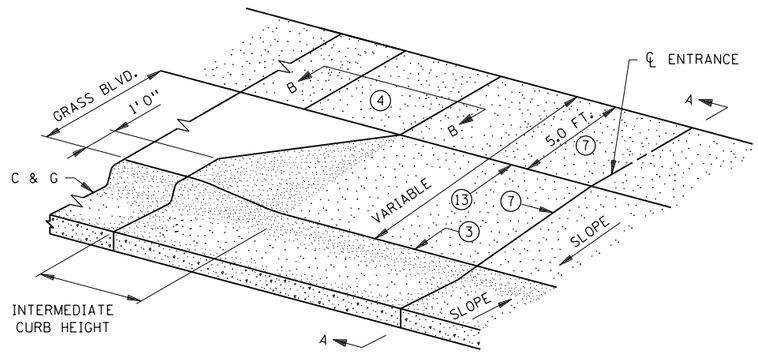
PARALLEL DRIVEWAY

TIERED PERPENDICULAR OFFSET DRIVEWAY

INTEGRAL DRIVEWAY APRON

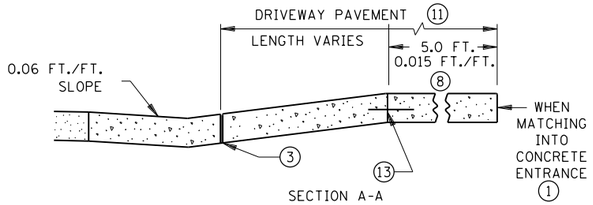




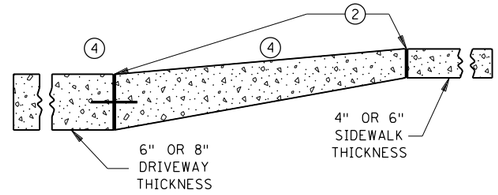


HALF PLAN PERSPECTIVE

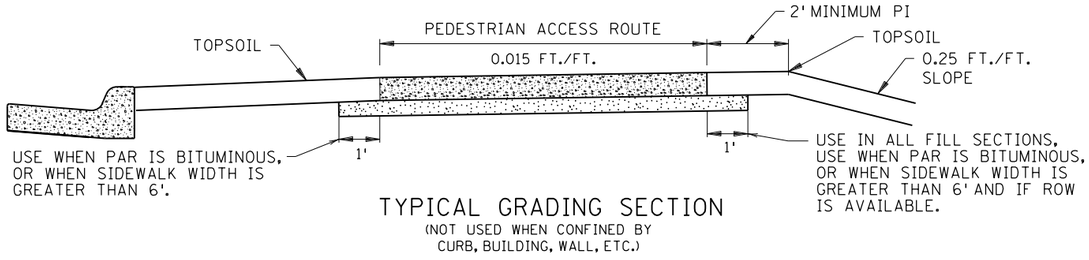
PERPENDICULAR DRIVEWAYS WITH GRASS BOULEVARDS



SECTION THRU DRIVEWAY

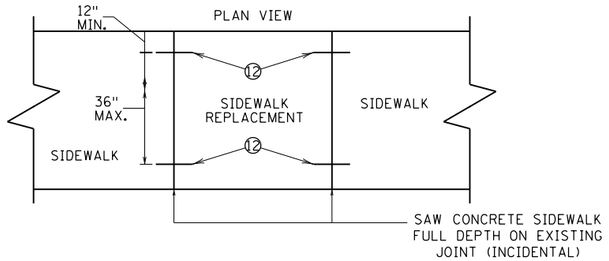


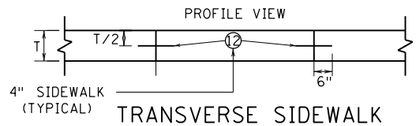
SECTION THRU SIDEWALK THICKNESS TRANSITION



TYPICAL GRADING SECTION

(NOT USED WHEN CONFINED BY CURB, BUILDING, WALL, ETC.)





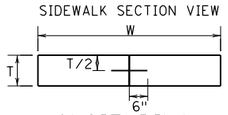
TRANSVERSE SIDEWALK TIE BAR REINFORCEMENT

RETROFITS ONLY

SIDEWALK LONGITUDINAL JOINT TIE BAR TABLE				
SIDEWALK WIDTH, W	SIDEWALK THICKNESS, T	TIE BAR SIZE	LENGTH	SPACING
> 7'	4"	No. 4	12"	24"
>10'	6"	No. 4	12"	36"

FOR 4" CONCRETE ONLY: CAST IN PLACE BARS MUST BE SUPPORTED WITH P-STAKES OR REINFORCEMENT BASKETS FOR FULL WIDTH CONCRETE PLACEMENTS.

FOR 6" CONCRETE ONLY: DRILL AND GROUT OR CAST IN PLACE THROUGH HOLES IN THE FORMS REQUIRED FOR STAGED ADJACENT CONCRETE PLACEMENTS.



LONGITUDINAL SIDEWALK REINFORCEMENT JOINTS

NOTES:

ALL SIDEWALK AND BOULEVARD WIDTHS SHALL BE MEASURED FROM BACK OF CURB.

TO MINIMIZE SIDEWALK "ROLLER COASTER" EFFECT IT IS DESIRABLE TO KEEP THE PAR ELEVATION CONTINUOUS OR AT LEAST IN THE UPPER HALF OF CURB HEIGHT. 4" HIGH CURB SHOULD BE USED INSTEAD OF 6" HIGH CURB TO HELP THIS PROBLEM WHEN APPLICABLE.

4" HIGH ADJACENT CURB IS PREFERRED WHEN BOULEVARDS 4' OR LESS ARE PRESENT MEASURED FROM THE BACK OF CURB. WHEN THE DRIVEWAY IS SLOPING DOWN FROM THE ROADWAY (NEGATIVE) 4" HIGH ADJACENT CURB SHOULD ALSO BE USED.

SEE FACILITY DESIGN GUIDE, CHAPTER 6, FOR GEOMETRIC DESIGN OF DRIVEWAYS.

(1) CONSTRUCT WITH EXPANSION MATERIAL PER MNDOT SPECIFICATION 3702 TYPES A-E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE. DRIVEWAY EXPANSION SHALL BE PLACED AT TOP OR BOTTOM OF TRANSITION PANEL.

(2) CONSTRUCT WITH EXPANSION MATERIAL MNDOT PER SPEC. 3702 TYPES A-E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE. MAXIMUM ONE EXPANSION PER DRIVEWAY PLACED AT EITHER TOP OR BOTTOM OF CONCRETE THICKNESS TRANSITION. IF MULTIPLE DRIVEWAYS EXIST PLACE ONE EXPANSION BETWEEN EACH DRIVEWAY. IF NO DRIVEWAY EXIST PLACE A MAXIMUM OF ONE EXPANSION PER 150' OF SIDEWALK RUN.

(3) USE AN APPROVED TYPE F (1/4 INCH THICK) SEPARATION MATERIAL. SEPARATION MATERIAL SHALL MATCH FULL HEIGHT DIMENSION OF ADJACENT CONCRETE.

(4) TRANSITION DRIVEWAY THICKNESS TO WALK THICKNESS. IF THERE IS A CONSTRUCTION JOINT AND NO EXPANSION IS USED, INSTALL TIE BARS.

(5) TRANSITION CURB RAMP THICKNESS TO WALK THICKNESS.

(6) MATCH INPLACE DRIVEWAY WIDTH, MATERIAL TYPE AND THICKNESS.

(7) FORM CONTRACTION JOINT AS NEEDED TO PRODUCE APPROXIMATELY SQUARE PANELS. CONCRETE PANEL SIZE SHOULD NOT EXCEED 1 1/2 : 1 LENGTH X WIDTH. 81 SF FOR 6" CONCRETE DRIVEWAY WITH 9'X9' MAXIMUM PANEL SIZE. 144 SF FOR 8" CONCRETE DRIVEWAY WITH 12'X12' MAXIMUM PANEL SIZE. MATCH DRIVEWAY APRON AND SIDEWALK JOINTS.

(8) THE PEDESTRIAN ACCESS ROUTE CROSS-SLOPE, SHALL NOT EXCEED 0.02 FT./FT. AS CONSTRUCTED.

(9) 1:10 MIN. SIDEWALK OFFSET TAPER REQUIRED FOR SIDEWALK REPLACEMENT PROJECTS. 1:3 MIN. AND 1:5 MIN. PREFERRED SIDEWALK OFFSET TAPER FOR DRIVEWAY REPLACEMENT.

(10) LANDING REQUIRED, SEE NEXT SHEET FOR MORE INFORMATION.

(11) CONCRETE DRIVEWAY APRON AND CONCRETE DRIVEWAY SIDEWALK SECTIONS SHALL BE CONSTRUCTED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. ENGINEER'S APPROVAL REQUIRED FOR MONOLITHIC PLACEMENTS.

(12) DRILL AND GROUT NO. 4 X 12" LONG TIE BARS (EPOXY COATED). 36" MAXIMUM SPACING BETWEEN BARS COVER PLACED 1' MINIMUM FROM ADJACENT CONSTRUCTION JOINTS. 1' MINIMUM FROM ADJACENT CONCRETE JOINTS. BARS TO BE ADJUSTED TO MATCH SIDEWALK GRADES. TO BE PAID BY EACH.

(13) DRILL AND GROUT OR CAST IN-PLACE THROUGH HOLES IN THE FORMS NO. 4 X 12" LONG TIE BARS (EPOXY COATED). 36" MAXIMUM SPACING BETWEEN BARS WITH 2" MINIMUM CONCRETE COVER PLACED 1' MINIMUM FROM ADJACENT CONSTRUCTION JOINTS. 1' MINIMUM FROM ADJACENT CONCRETE JOINTS.

REVISION: 12-23-2021

APPROVED: 11-04-2021

JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA
DEPARTMENT OF TRANSPORTATION

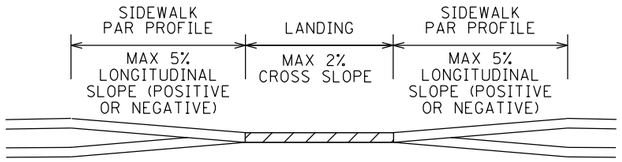
THOMAS STYRBICKI
STATE DESIGN ENGINEER

STANDARD PLAN 5-297.254 | 3 OF 4

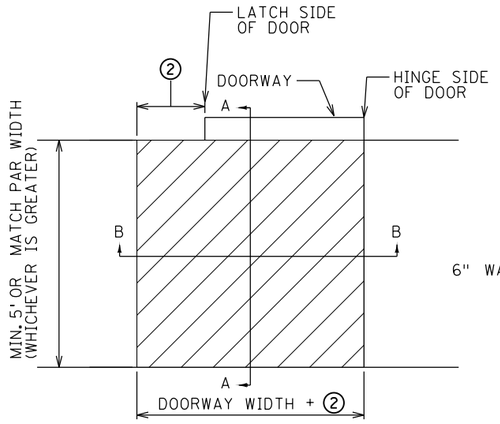
APPROVED: 11-04-2021
REVISED: 12-23-2021

DRIVEWAY AND SIDEWALK DETAILS

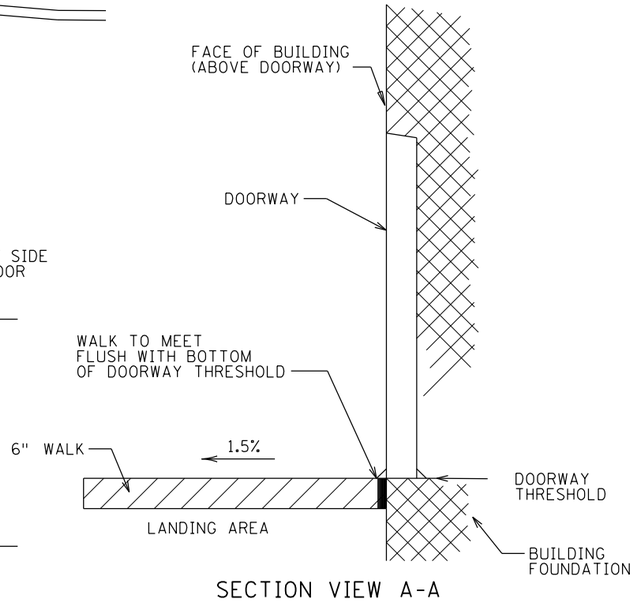
STATE PROJ. NO. SP 002-614-049 SP 106-020-041 SHEET NO. 31 OF 115 SHEETS
SP 210-020-013



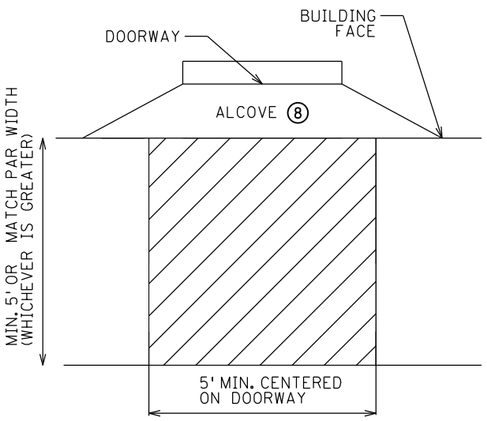
SECTION VIEW B-B



PLAN VIEW DOORWAY

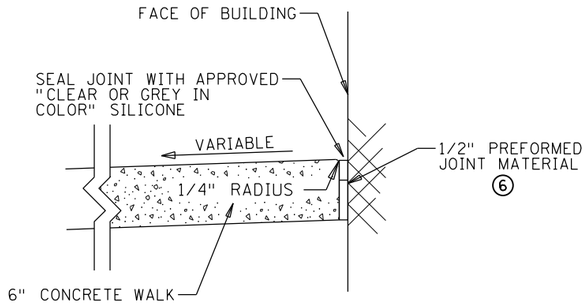


SECTION VIEW A-A

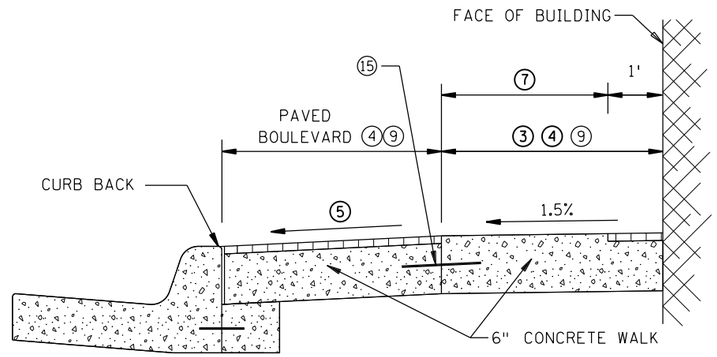


PLAN VIEW DOORWAY WITH ALCOVE

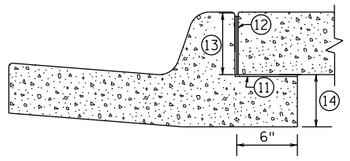
SIDEWALK LANDING REQUIREMENTS ①



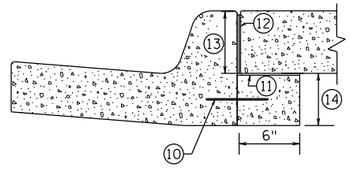
BUILDING JOINT SEAL (INCIDENTAL)



DOWNTOWN SIDEWALK TYPICAL SECTION



SLIP FORM SILL



FIXED FORM SILL

SILL CURB SHOULD BE USED AT ALL LOCATIONS WHEN CONCRETE WALK IS AT BACK OF CURB, INCLUDING PAVED BOULEVARD.

SILL CURB SHALL NOT BE USED IN CURB RAMP AND DRIVEWAY AREAS, INCLUDING CONCRETE FLARES.

SILL CURB WITH 4" WALK CAN USE FIXED OR SLIP FORM OPTIONS.

NOTES:

6" WALK IS REQUIRED:
1) IN ALL SIDEWALK LOCATIONS WHERE VARIABLE SLOPED CONCRETE BOULEVARDS ARE PAVED, SUCH AS COMMERCIAL (STORE FRONT, DOWNTOWN) AREAS.
2) ANYTIME DRILL AND REINFORCEMENT IS USED TO TIE LONGITUDINAL JOINTS TOGETHER.
3) TO ELIMINATE LONGITUDINAL JOINT WHEN INCREASING PANEL SIZE OVER 36SF.
4) AT LOCATIONS WHERE MAINTENANCE EQUIPMENT WILL SUBJECT CONCRETE TO HEAVY LOADS.

ALL SIDEWALK AND BOULEVARD WIDTHS SHALL BE MEASURED FROM BACK OF CURB.

FIELD ADJUST SIDEWALK PROFILES TO MEET ALL DOORWAY THRESHOLDS.

SIDEWALK MUST MAINTAIN POSITIVE DRAINAGE AWAY FROM THE BUILDING TO THE ROADWAY.

SEE SPECIAL PROVISIONS FOR SILICONE SPECIFICATIONS.

① LANDING CRITERIA IS REQUIRED FOR ALL DOORS, STEPS, AND PRIVATE WALKS. FEASIBILITY DECREASES WITH NARROWER BOULEVARDS AND STEEPER SIDEWALK PROFILES.

② 18" MIN. WHEN DOOR SWINGS OUTWARD FROM BUILDING. 12" MIN WHEN DOOR SWINGS INWARD FROM BUILDING.

③ 6' MIN. PAR REQUIRED WHEN ADJACENT TO BUILDINGS.

④ 2/3 PAR TO 1/3 BOULEVARD SHOULD BE USED WHEN FEASIBLE. HOLD UNIFORM BOULEVARD WIDTH. 4' PREFERRED MINIMUM BOULEVARD.

⑤ 1%-5% FOR THE MAJORITY OF THE BLOCK, WITH EXCEPTIONS UP TO 8% IN CONSTRAINED AREAS.

⑥ CONSTRUCT USING APPROVED EXPANSION MATERIAL PER MNDOT TYPE A-E EXPANSION. LEAVE A MINIMUM ½" TOP GAP AND SEAL WITH MNDOT APPROVED SILICONE PER MNDOT SPEC 3722.

⑦ TO MINIMIZE VIBRATION AND ROLLING RESISTANCE, AREA SHALL BE FREE OF PAVERS, STAMPED CONCRETE, AND/OR EXCESSIVE JOINTING.

⑧ 2% MAX. PER BUILDING CODE. IF GREATER THAN 2%, FLATTEN AS FEASIBLE.

⑨ FORM CONTRACTION JOINTS AS NEEDED TO PRODUCE APPROXIMATELY SQUARE PANEL SIZE. CONRETE PANEL SIZE SHOULD NOT EXCEED 1½ : 1 LENGTH X WIDTH.

⑩ DRILL AND GROUT NO. 4 X 8" LONG TIE BARS (EPOXY COATED). 36" MAXIMUM SPACING BETWEEN BARS WITH 2" MINIMUM CONCRETE COVER PLACED 1' MINIMUM FROM ADJACENT CONSTRUCTION JOINTS. 1' MINIMUM FROM ADJACENT CONCRETE JOINTS. TIE BARS SHALL BE EMBEDDED 4" WITH 2" MINIMUM CONCRETE COVER AND ARE INCIDENTAL TO SILL PLACEMENT.

⑪ FURNISH AND INSTALL THE FULL WIDTH OF THE TOP OF SILL A MINIMUM 2ML THICK POLYTHENE SHEETING.

⑫ USE AN APPROVED TYPE F (¼ INCH THICK) SEPARATION MATERIAL. SEPARATION MATERIAL SHALL MATCH FULL HEIGHT DIMENSION OF ADJACENT CONCRETE.

⑬ DIMENSION TO BE SAME AS SIDEWALK THICKNESS, 4" MIN.

⑭ 6" WALK: 5" MIN. FOR B424; 7" MIN. FOR B624
4" WALK: 7" MIN. FOR B424; 9" MIN. FOR B624

⑮ DRILL AND GROUT NO. 4 X 12" LONG TIE BARS (EPOXY COATED). 36" MAXIMUM SPACING BETWEEN BARS WITH 2" MINIMUM CONCRETE COVER PLACED 1' MINIMUM FROM ADJACENT CONCRETE JOINTS.

REVISION:

APPROVED: 11-04-2021

JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

THOMAS STYRBICKI
STATE DESIGN ENGINEER

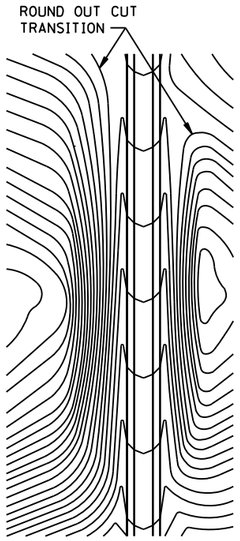
STANDARD PLAN 5-297.254 | 4 OF 4

APPROVED: 11-04-2021
REVISED:

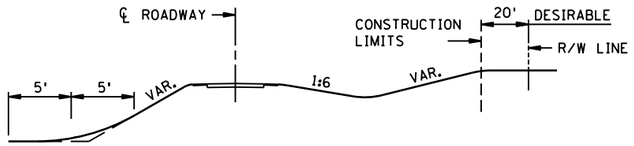
DRIVEWAY AND SIDEWALK DETAILS

STATE PROJ. NO. SP 002-614-049 SP 106-020-041 SHEET NO. 32 OF 115 SHEETS
SP 210-020-013

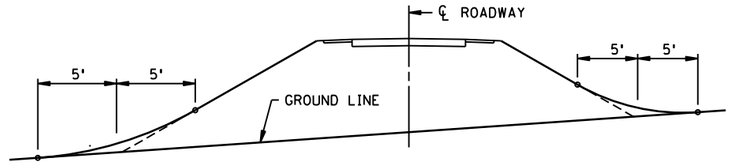
DISTRICT #:
PLOT NAME: $$@JPLOT$NAME@$$
PATH & FILENAME: P:\002-614-049 - Sunset RAB\Plan\002614049_STD.dgn
PLOTTED/REVISED: 12/01/2023



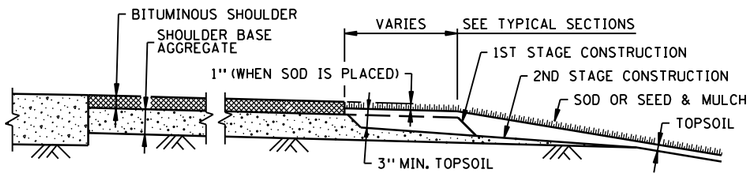
CONTOURING ROAD CUTS



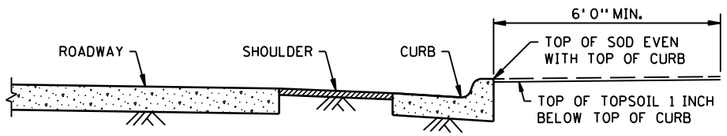
ROUNDING SHOULDERS AND BACKSLOPES



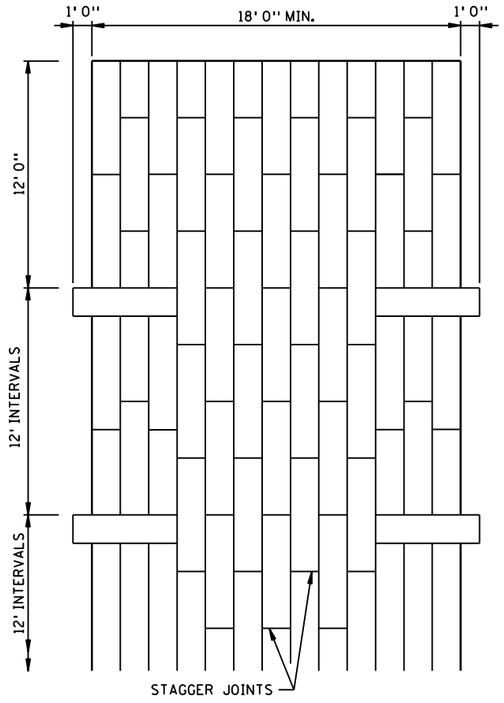
SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES



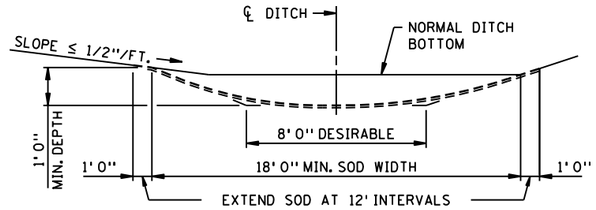
SHAPING AND TOPSOILING INSLOPES



SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED

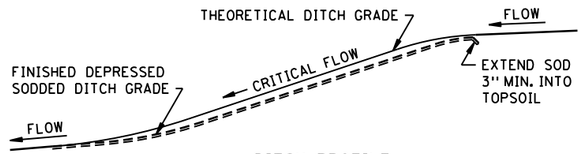


PLAN VIEW



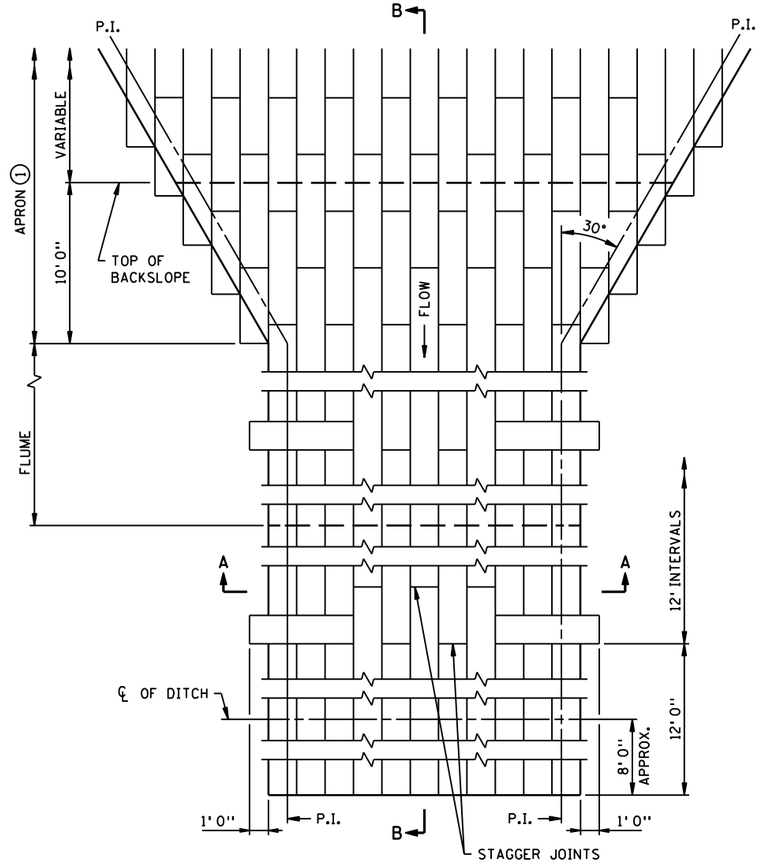
SODDED DITCH CROSS SECTION

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

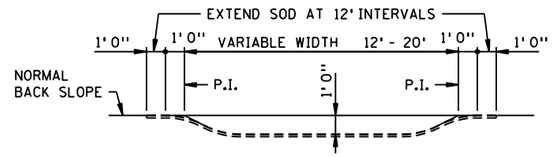


DITCH PROFILE

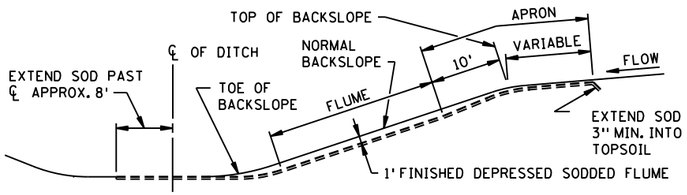
SODDED DITCH DETAILS



PLAN VIEW



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

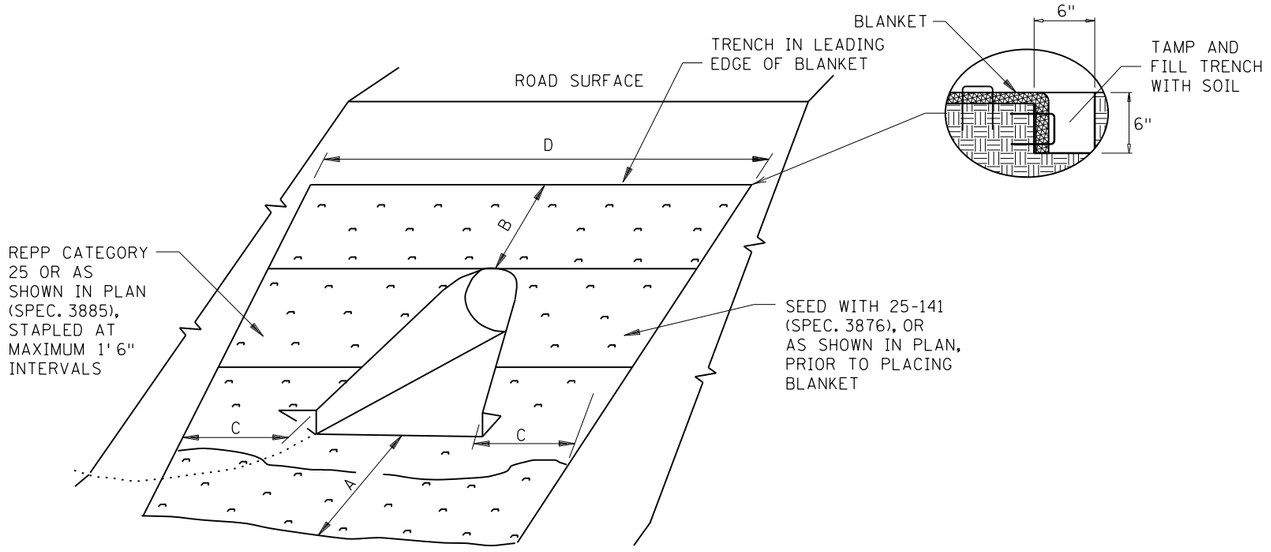
REVISED:

STATE DESIGN ENGINEER

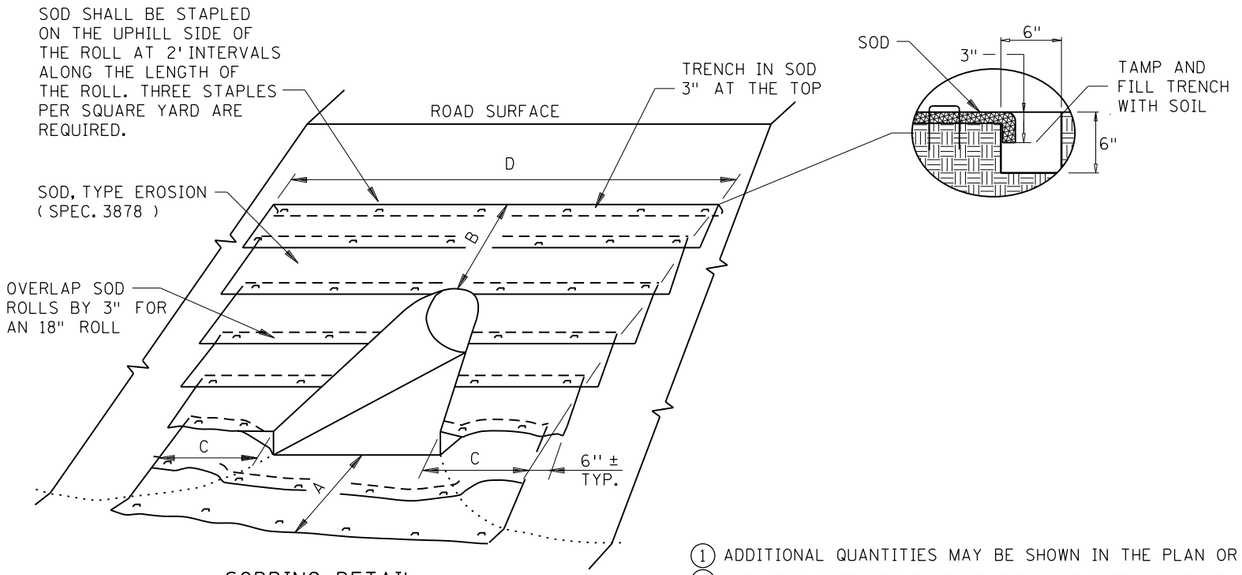
PERMANENT EROSION CONTROL
ALONG ROADWAYS, DITCHES AND FLUMES

SP 002-614-049
SP 210-020-013
SP 106-020-041

SHEET NO. 33 OF 115 SHEETS



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

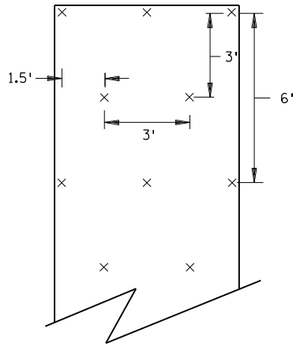
STANDARD PLAN 5-297.404 | 2 OF 3

APPROVED: 1-8-2020
REVISED:
THOMAS STYRBICKI
STATE DESIGN ENGINEER

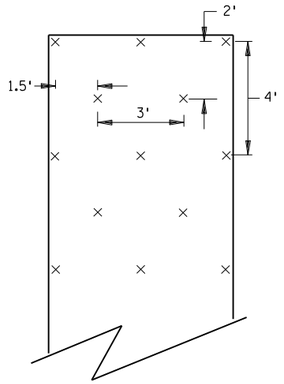
PERMANENT EROSION CONTROL
TURF ESTABLISHMENT DETAIL AT CULVERT ENDS

SP 002-614-049
SP 210-020-013
SP 106-020-041

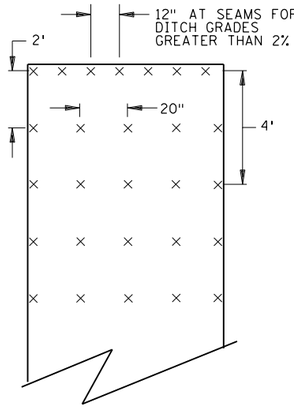
SHEET NO. 34 OF 115 SHEETS



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

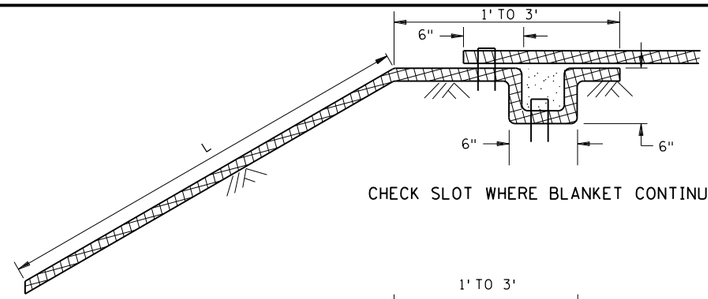


SLOPES 1:2 TO 1:1
170 STAPLES PER 100 SQ YD

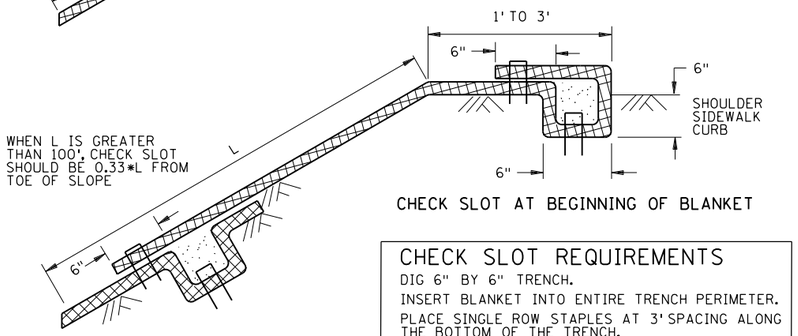


CHANNEL AND DITCH APPLICATIONS
350 STAPLES PER 100 SQ YD

BLANKET STAPLE PATTERN



CHECK SLOT WHERE BLANKET CONTINUES



CHECK SLOT AT BEGINNING OF BLANKET

CHECK SLOT REQUIREMENTS

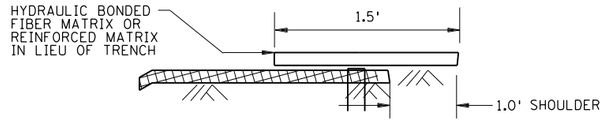
DIG 6" BY 6" TRENCH.

INSERT BLANKET INTO ENTIRE TRENCH PERIMETER.

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

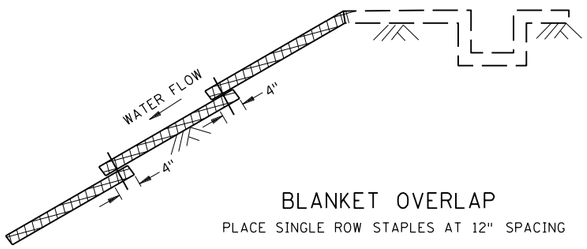
BACKFILL TRENCH WITH SOIL AND TAMP.

PLACE SINGLE ROW STAPLES AT 3' SPACING ON OVERLAP.

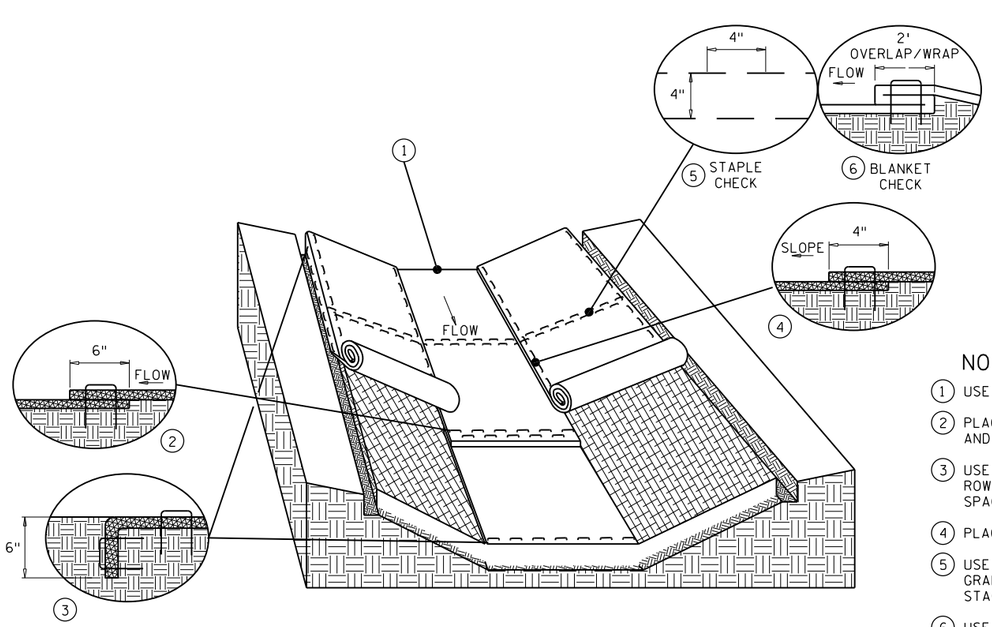


CHECK SLOT ALTERNATIVE
PLACE SINGLE ROW STAPLES AT 12" SPACING

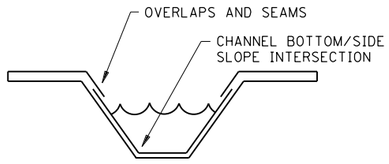
CHECK SLOT DETAILS



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

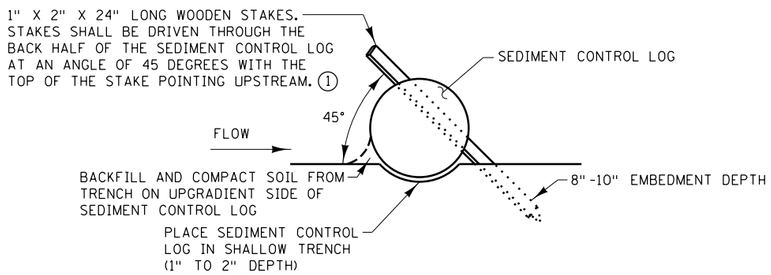
MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.404 | 3 OF 3

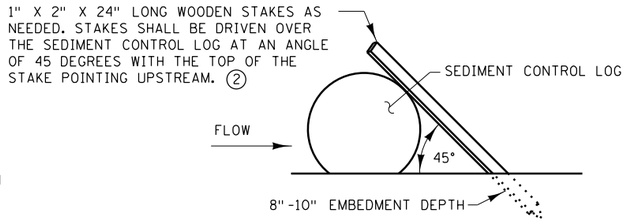
APPROVED: 1-8-2020
REVISED:
THOMAS STYRBICKI
STATE DESIGN ENGINEER

PERMANENT EROSION CONTROL
REPP (BLANKET) STAPLE PATTERN FOR SLOPES

SP 002-614-049
SP 210-020-013
SP 106-020-041

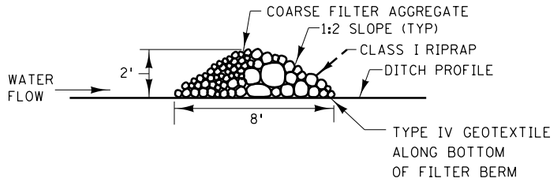


TYPES: STRAW, WOOD FIBER, OR COIR

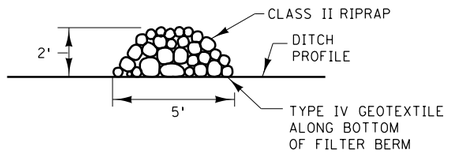


TYPES: WOOD CHIP, COMPOST, OR ROCK

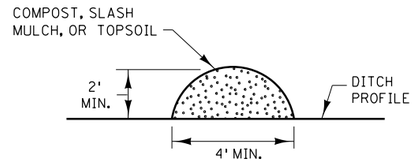
SEDIMENT CONTROL LOGS



TYPE 3 (ROCK WEEPER)

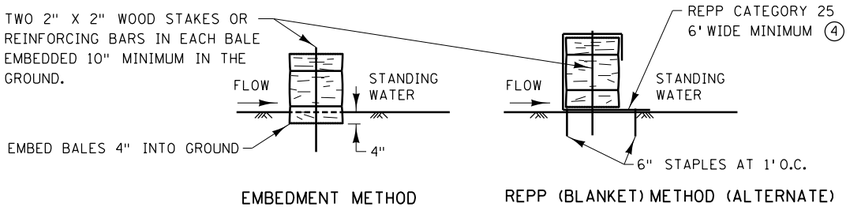


TYPE 5 (ROCK)



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

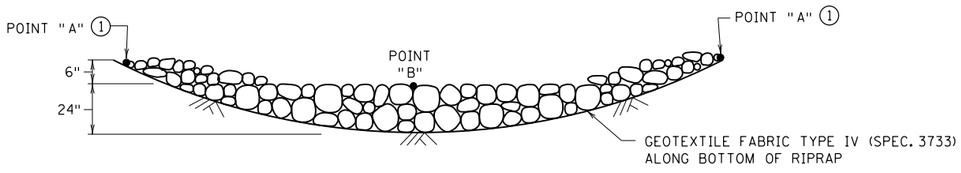
STANDARD PLAN 5-297.405 | 2 OF 8

APPROVED: 1-8-2020
REVISED:

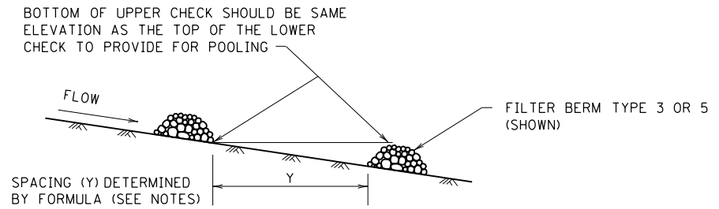
THOMAS STYRBICKI
STATE DESIGN ENGINEER

TEMPORARY EROSION CONTROL
FILTER BERMS, SEDIMENT CONTROL LOGS, AND BALE BARRIERS

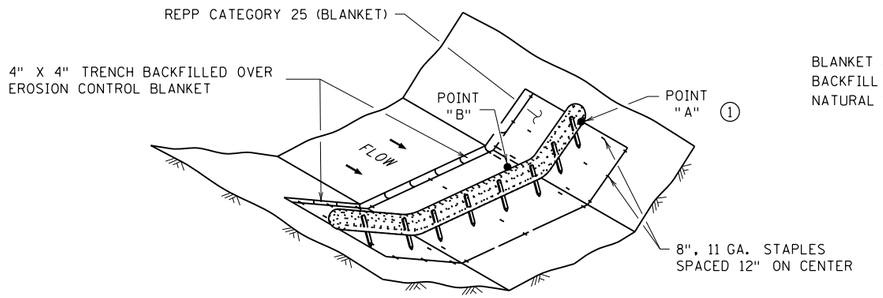
SP 002-614-049
SP 210-020-013
SP 106-020-041

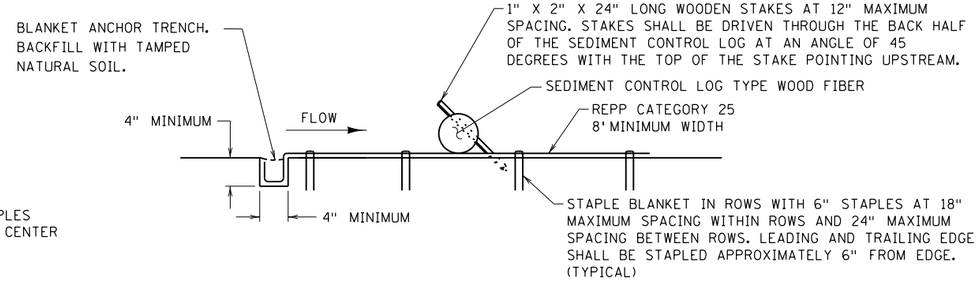


ROCK DITCH CHECKS
FILTER BERMS TYPE 3 (ROCK WEEPER) OR FILTER TYPE 5 (ROCK) ③
FOR USE ON ROUGH-GRADED AREAS
ONLY FOR USE OUTSIDE CLEAR ZONE ②

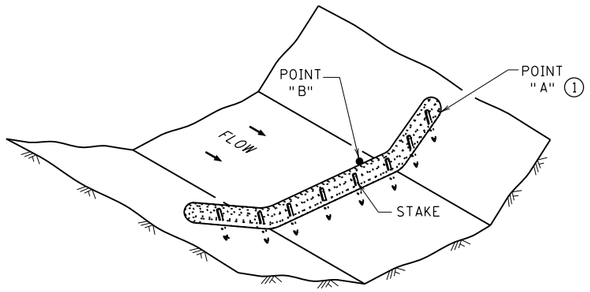


DITCH CHECK SPACING
FOR ALL FILTER BERM TYPES





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:

APPROVED: JANUARY 8, 2020
MARNI KARNOWSKI
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

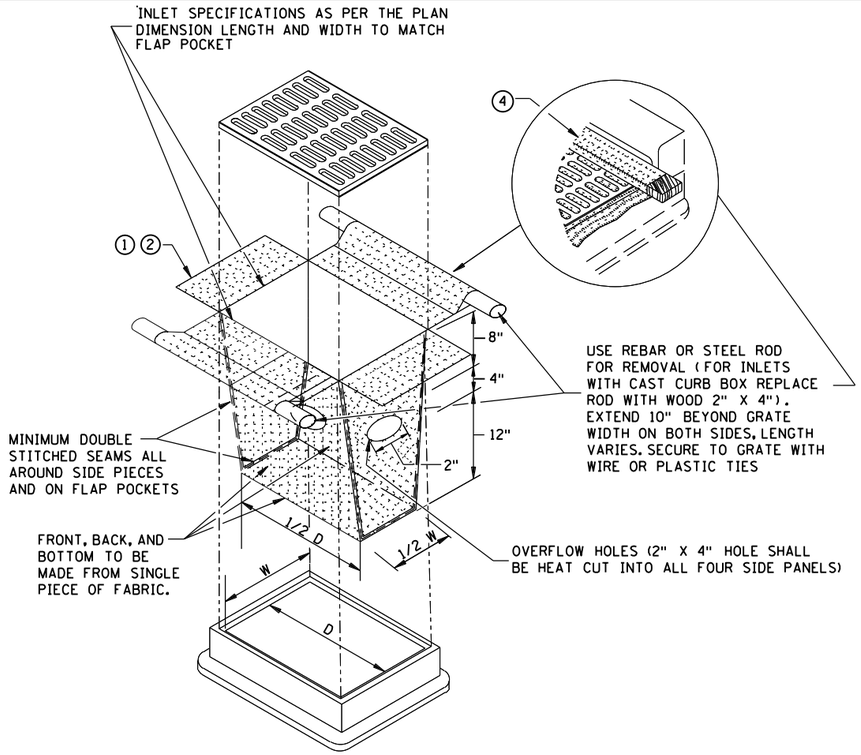
STANDARD PLAN 5-297.405 | 3 OF 8

APPROVED: 1-8-2020
REVISED:
THOMAS STYRBICKI
STATE DESIGN ENGINEER

TEMPORARY EROSION CONTROL
DITCH CHECK

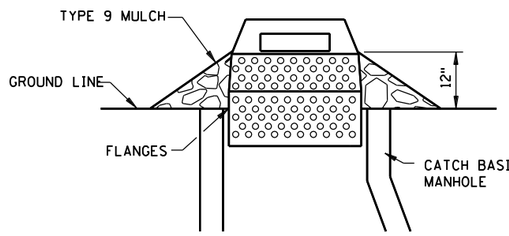
SP 002-614-049
SP 210-020-013
SP 106-020-041

SHEET NO. 37 OF 115 SHEETS



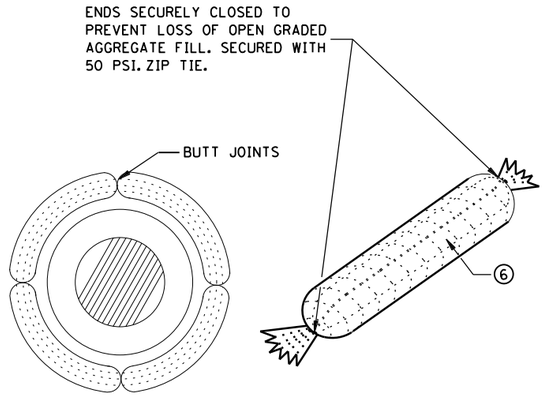
FILTER BAG INSERT ③

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

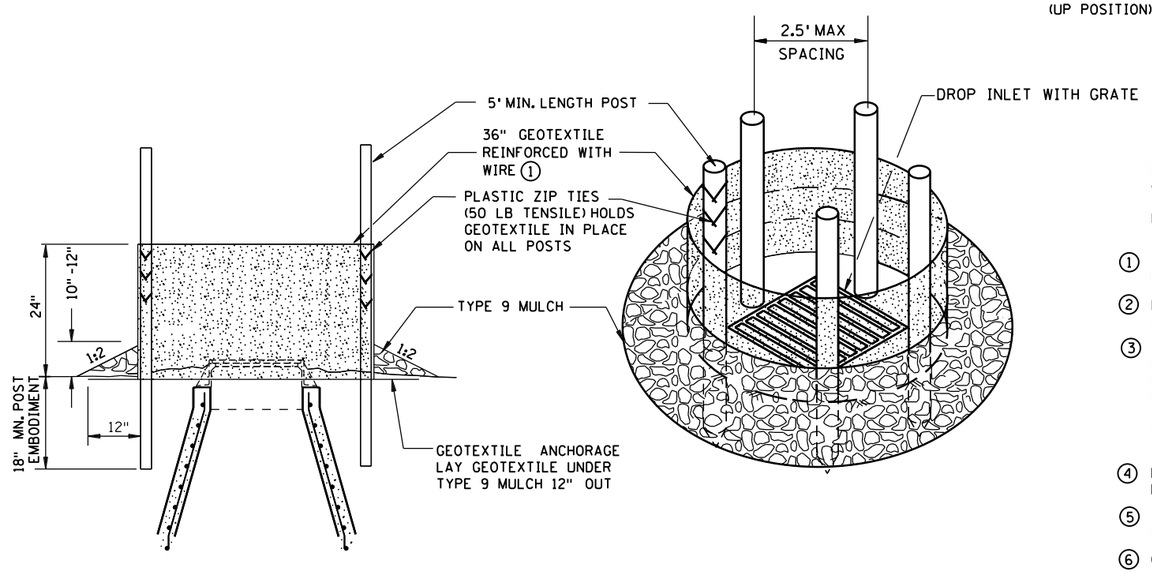


SEDIMENT CONTROL INLET HAT

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.

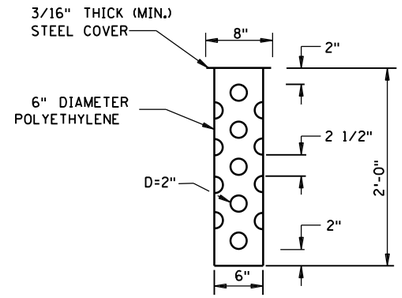


ROCK LOG/COMPOST LOG

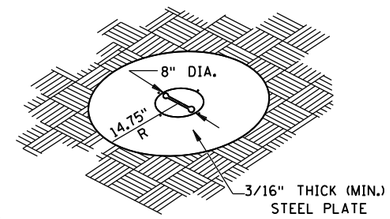


SILT FENCE RING AND ROCK FILTER BERM

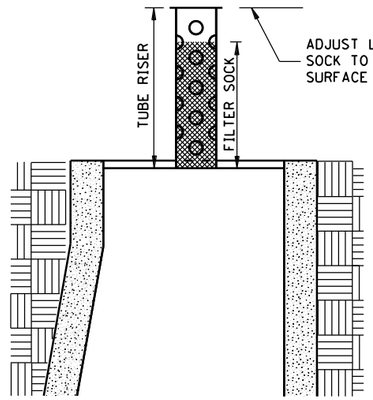
USE WHERE INLET DRAINS IN AN AREA WITH SLOPES AT 1:3 or LESS



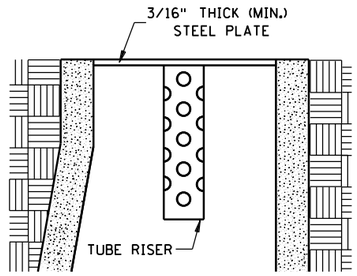
TUBE RISER



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:

APPROVED: 2-28-2017
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

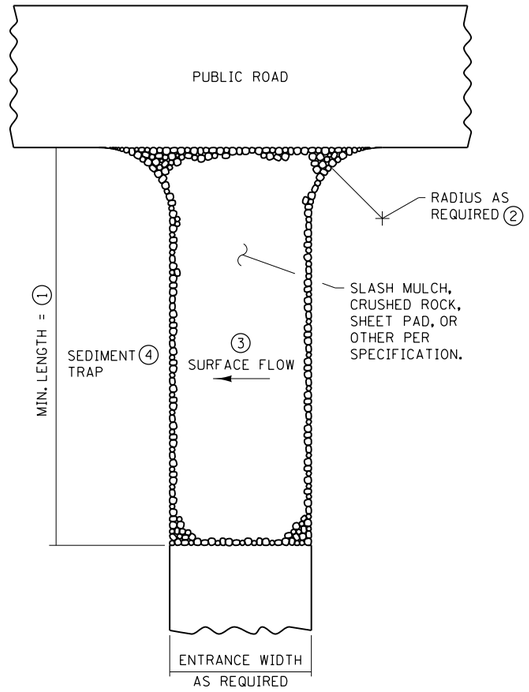
STANDARD PLAN 5-297.405 | 4 OF 8

APPROVED: 2-28-2017
REVISED:
STATE DESIGN ENGINEER

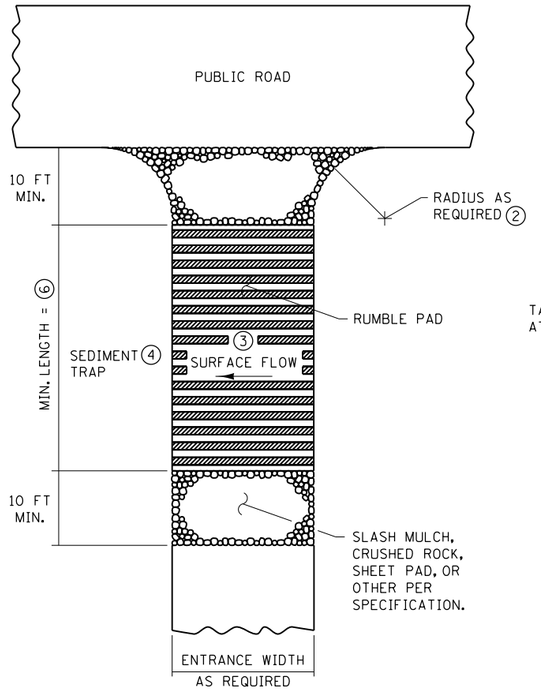
TEMPORARY EROSION CONTROL
STORM DRAIN INLET PROTECTION

SP 002-614-049
SP 210-020-013
SP 106-020-041

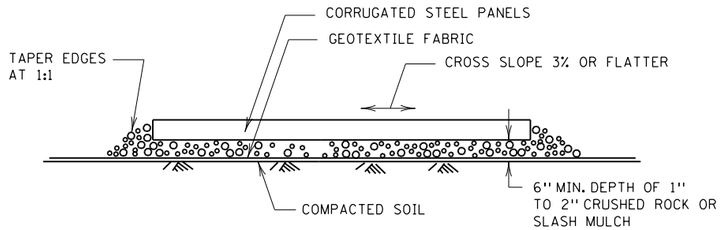
SHEET NO. 38 OF 115 SHEETS



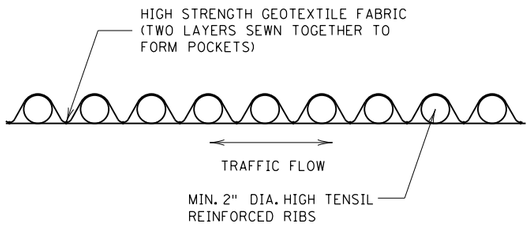
SLASH MULCH, CRUSHED ROCK, OR SHEET PAD CONSTRUCTION EXIT ⑤⑦



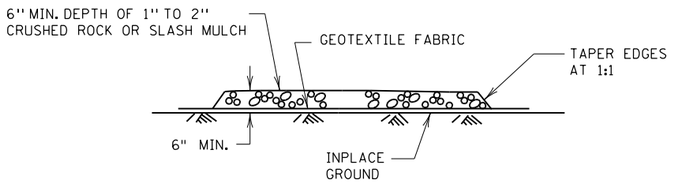
RUMBLE PAD CONSTRUCTION EXIT ⑤⑦



RUMBLE PAD



SHEET PAD



SLASH MULCH OR CRUSHED ROCK

NOTES:

SEE SPECS. 2573 & 3882.

(1) MINIMUM LENGTH SHALL BE THE GREATER OF 50 FEET OR A LENGTH SUFFICIENT TO ALLOW A MINIMUM OF 5 TIRE ROTATIONS ON THE PROVIDED PAD. MINIMUM LENGTH SHALL BE CALCULATED USING THE LARGEST TIRE WHICH WILL BE USED IN TYPICAL OPERATIONS.

(2) PROVIDE RADIUS OR WIDEN PAD SUFFICIENTLY TO PREVENT VEHICLE TIRES FROM TRACKING OFF OF PAD WHEN LEAVING SITE.

(3) IF RUNOFF FROM DISTURBED AREAS FLOWS TOWARD CONSTRUCTION EXITS, PREVENT RUNOFF FROM DRAINING DIRECTLY TO PUBLIC ROAD OVER CONSTRUCTION EXIT BY CROWNING THE EXIT OR SLOPING TO ONE SIDE. IF SURFACE GRADING IS INSUFFICIENT, PROVIDE OTHER MEANS OF INTERCEPTING RUNOFF.

(4) IF RUNOFF FROM CONSTRUCTION EXITS WILL DRAIN OFF OF PROJECT SITE, PROVIDE SEDIMENT TRAP WITH STABILIZED OVERFLOW.

(5) IF A TIRE WASH OFF IS REQUIRED THE CONSTRUCTION EXITS SHALL BE GRADED TO DRAIN THE WASH WATER TO A SEDIMENT TRAP.

(6) MINIMUM LENGTH OF RUMBLE PAD SHALL BE 20 FEET, OR AS REQUIRED TO REMOVE SEDIMENT FROM TIRES. IF SIGNIFICANT SEDIMENT IS TRACKED FROM THE SITE, THE RUMBLE PAD SHALL BE LENGTHENED OR THE DESIGN MODIFIED TO PROVIDE ADDITIONAL VIBRATION. WASH-OFF LENGTH SHALL BE AS REQUIRED TO EFFECTIVELY REMOVE CONSTRUCTION SEDIMENT FROM VEHICLE TIRES.

(7) MAINTENANCE OF CONSTRUCTION EXITS SHALL OCCUR WHEN THE EFFECTIVENESS OF SEDIMENT REMOVAL HAS BEEN REDUCED. MAINTENANCE SHALL CONSIST OF REMOVING SEDIMENT AND CLEANING THE MATERIALS OR PLACING ADDITIONAL MATERIAL (SLASH MULCH OR CRUSHED ROCK) OVER SEDIMENT FILLED MATERIAL TO RESTORE EFFECTIVENESS.

REVISION:

APPROVED: 2-28-2017

CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.405 | 5 OF 8

APPROVED: 2-28-2017

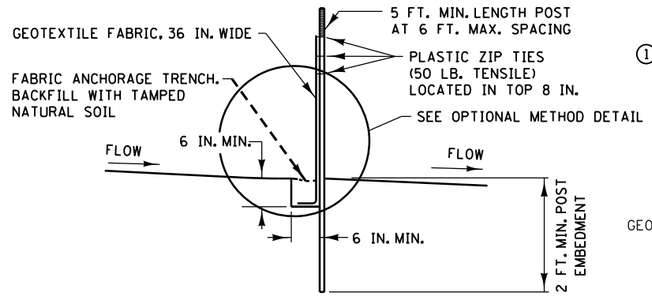
REVISED:

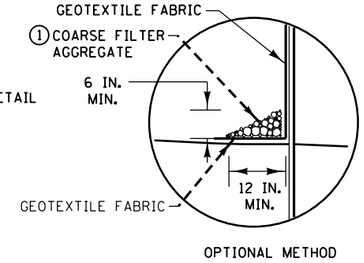
STATE DESIGN ENGINEER

TEMPORARY EROSION CONTROL
STABILIZED CONSTRUCTION EXIT

SP 002-614-049
SP 210-020-013
SP 106-020-041

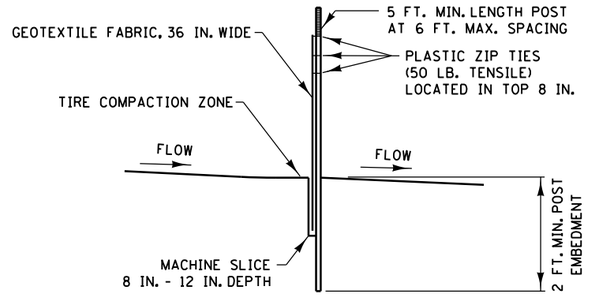
SHEET NO. 39 OF 115 SHEETS



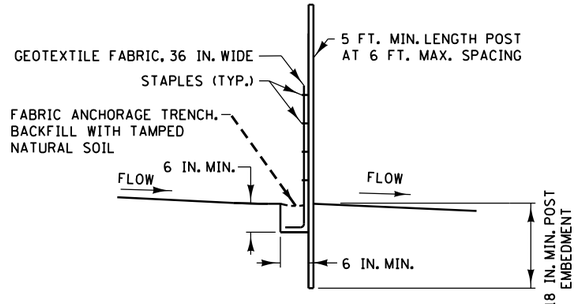


OPTIONAL METHOD

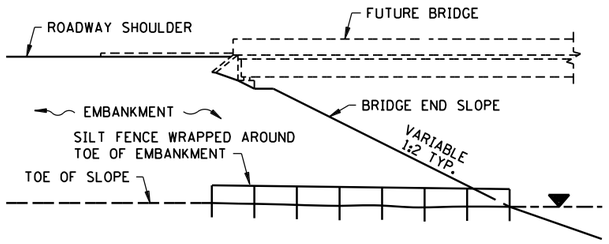
SILT FENCE TYPE HI ②
(HAND INSTALLED)



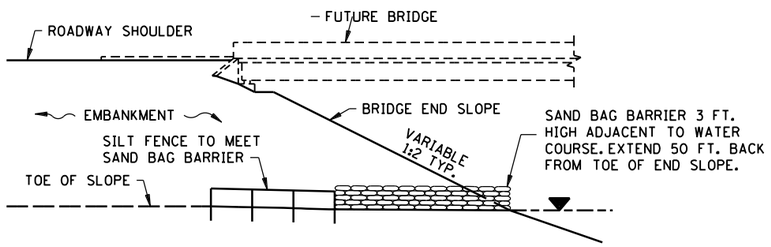
SILT FENCE TYPE MS ②
(MACHINE SLICED)



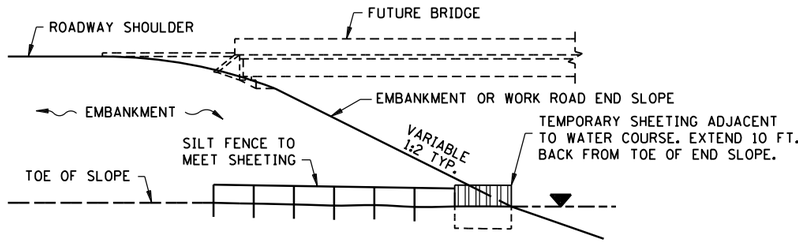
SILT FENCE TYPE PA ③
(PREASSEMBLED)



SILT FENCE ONLY ④

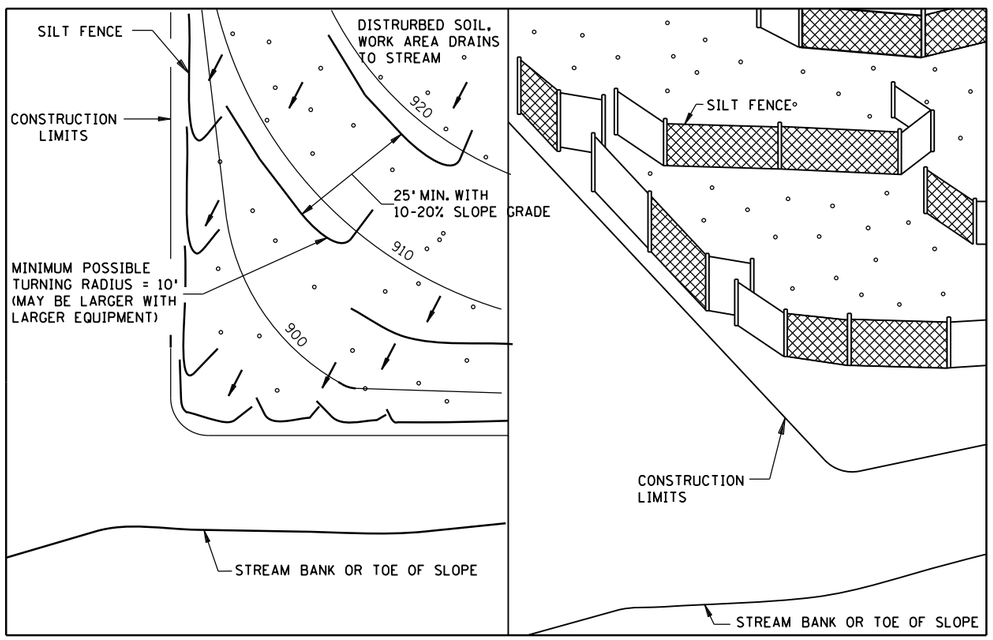


SILT FENCE WITH SAND BAGS ⑤



SILT FENCE WITH SHEETING ⑥

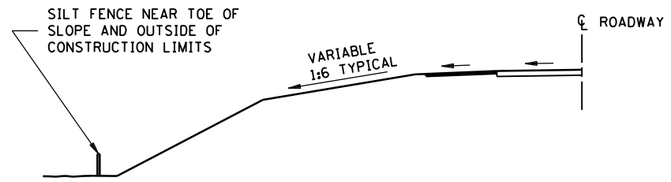
INSTALLATION AT BRIDGE EMBANKMENT ADJACENT TO WATER



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

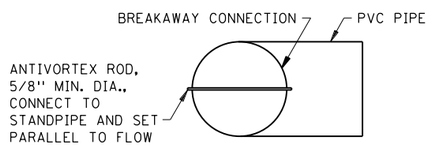
APPROVED: 2-28-2017
REVISED:

STATE DESIGN ENGINEER

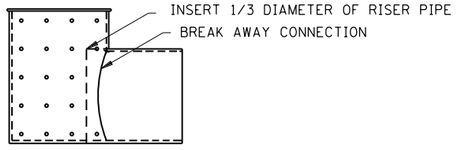
TEMPORARY EROSION CONTROL
SILT FENCE

SP 002-614-049
SP 210-020-013
SP 106-020-041

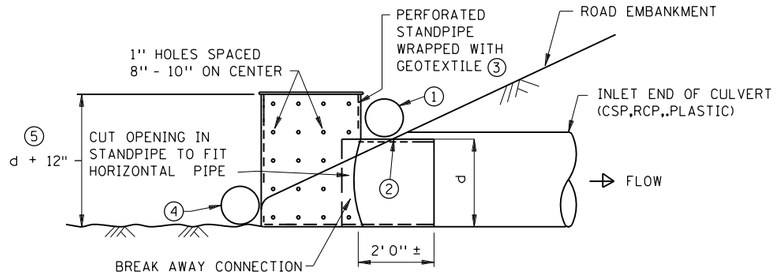
SHEET NO.40 OF 115 SHEETS



PLAN VIEW



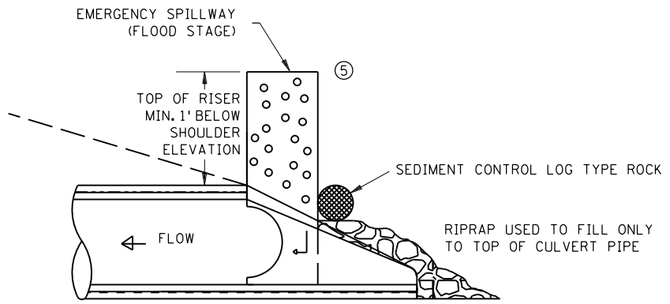
CULVERT STANDPIPE



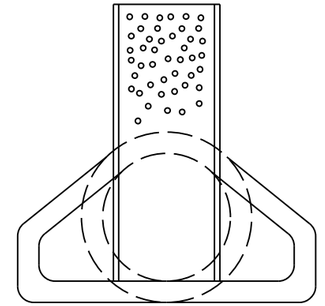
ELEVATION VIEW OF CULVERT INSTALLATION

CULVERT STANDPIPE INSERT (D-RISER)

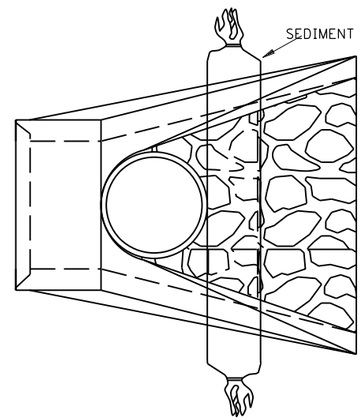
d= CULVERT SIZE: 12" - 36"



LONGITUDINAL SECTION



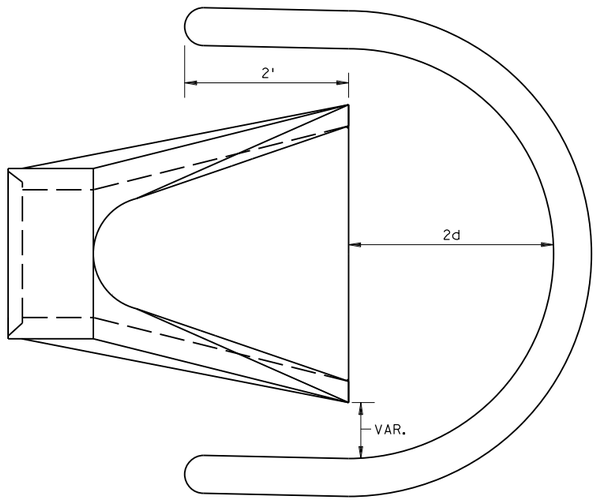
END VIEW



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

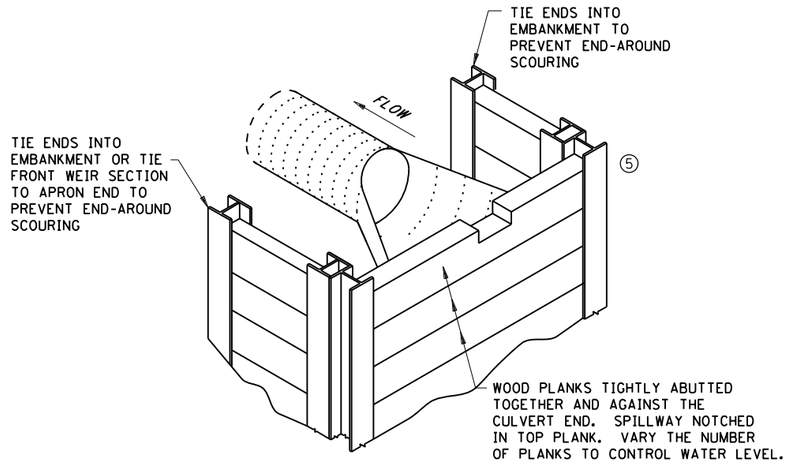
TOP VIEW

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

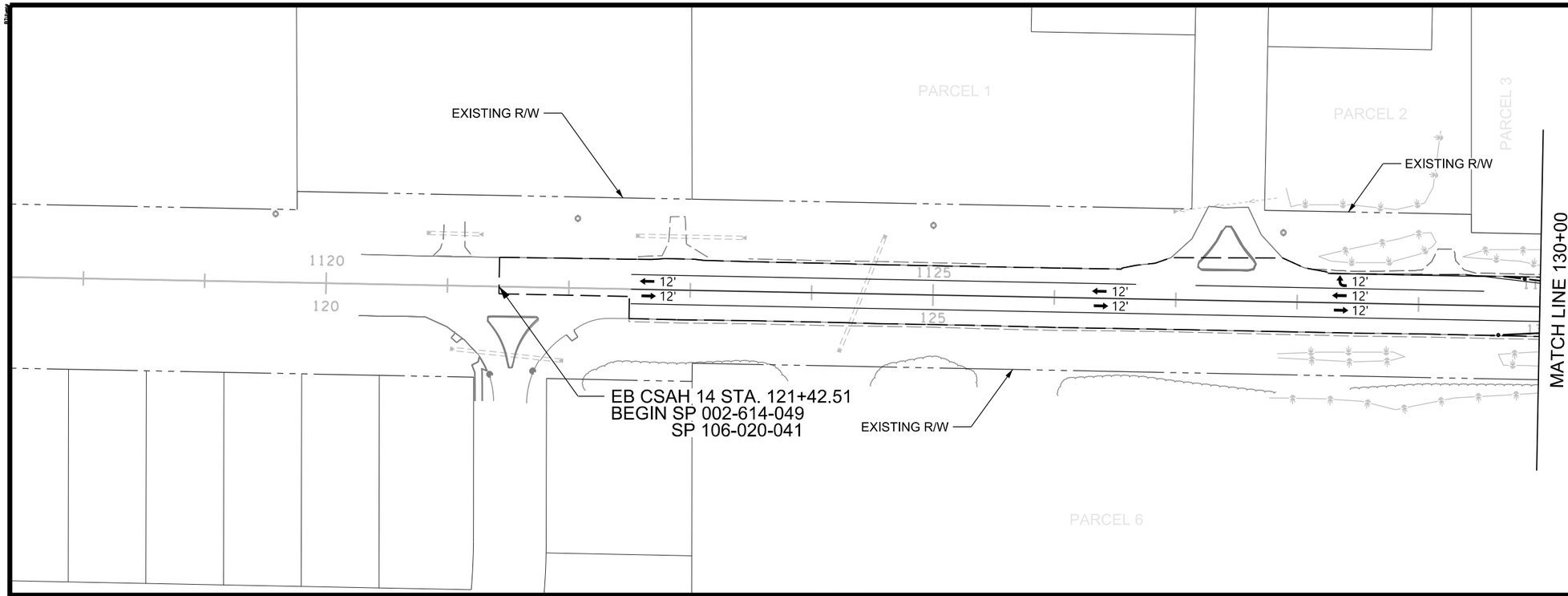
REVISED:

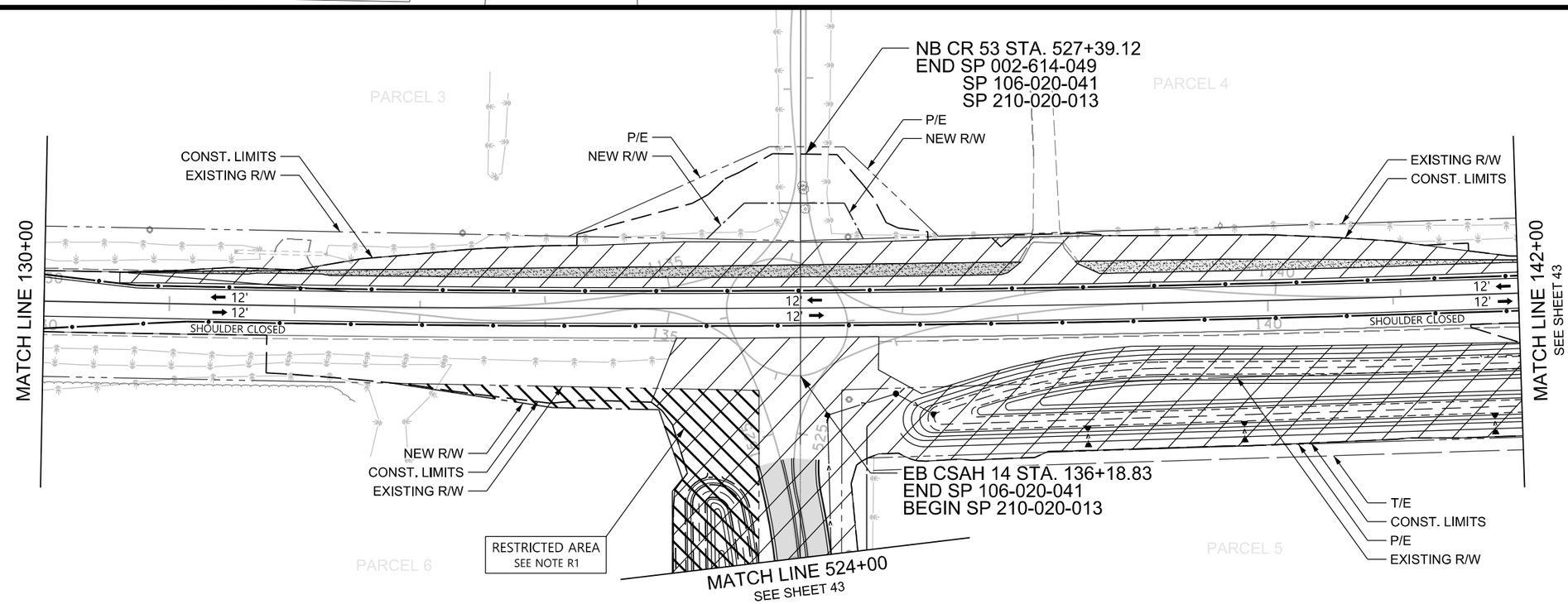
STATE DESIGN ENGINEER

TEMPORARY EROSION CONTROL
CULVERT END CONTROLS

SP 002-614-049
SP 210-020-013
SP 106-020-041

SHEET NO. 41 OF 115 SHEETS





LEGEND

- STAGE 1 CONSTRUCTION
- TEMPORARY BIT.PAVEMENT
- SEE NOTE R1
- STAGE 1 STORM SEWER WORK
- CHANNELIZERS
- GENERAL TRAFFIC FLOW 12' MIN. LANE WIDTH. SEE TRAFFIC CONTROL PLAN FOR DETAILS

STAGE 1 CONSTRUCTION NOTES:

1. PROVIDE MINIMUM 12' LANES IN BOTH DIRECTIONS
2. MUCK EXCAVATION ON CR 53 (SUNSET AVE).
3. GRADE PONDS AND INSTALL STORM SEWER AS SHOWN IN PLAN.
4. INSTALL TEMPORARY PAVEMENT ON NORTH SIDE OF CSAH 14 AT BYPASS LOCATIONS AS DIRECTED BY ENGINEER.
5. CR 53 (SUNSET AVE) TO BE FULLY CLOSED.
6. CONTRACTOR SHALL MAINTAIN ACCESS TO PARCELS 3, 4, AND 5 AND COORDINATE WITH RESIDENTS DURING TEMPORARY RESTRICTIONS.
7. GRADE AND INSTALL CONCRETE CURB AND GUTTER AND PLACE BASE AND BINDER BITUMINOUS PAVEMENT COURSE ON CR 53 WHERE INDICATED.
8. INSTALL INLET PROTECTION.
9. STABILIZE VEGETATION AND SOIL STOCKPILES WITHIN 7 DAYS OF ROUGH GRADING OR INACTIVITY. ADDITIONAL TEMPORARY AND PERMANENT EROSION CONTROL AS DIRECTED BY ENGINEER.

NOTE R1

CONTRACTOR CANNOT ACCESS OR DISTURB THIS AREA UNTIL AFTER JULY 15TH, 2024

N

0 100
SCALE IN FEET

1 OF 2

NO	DATE	BY	CKD	APPR	REVISION
1	03/05/2024	BTU	APA	APA	ADDED NOTE R1

NAME: P:\002-614-049 - Sunset RAB\Plan\002614049_STG1-1.dgn 03/05/2024 2:02:11 PM

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: AARON P. ANDERSON
SIGNATURE:
DATE: 12/06/23 LICENSE NO. 58657

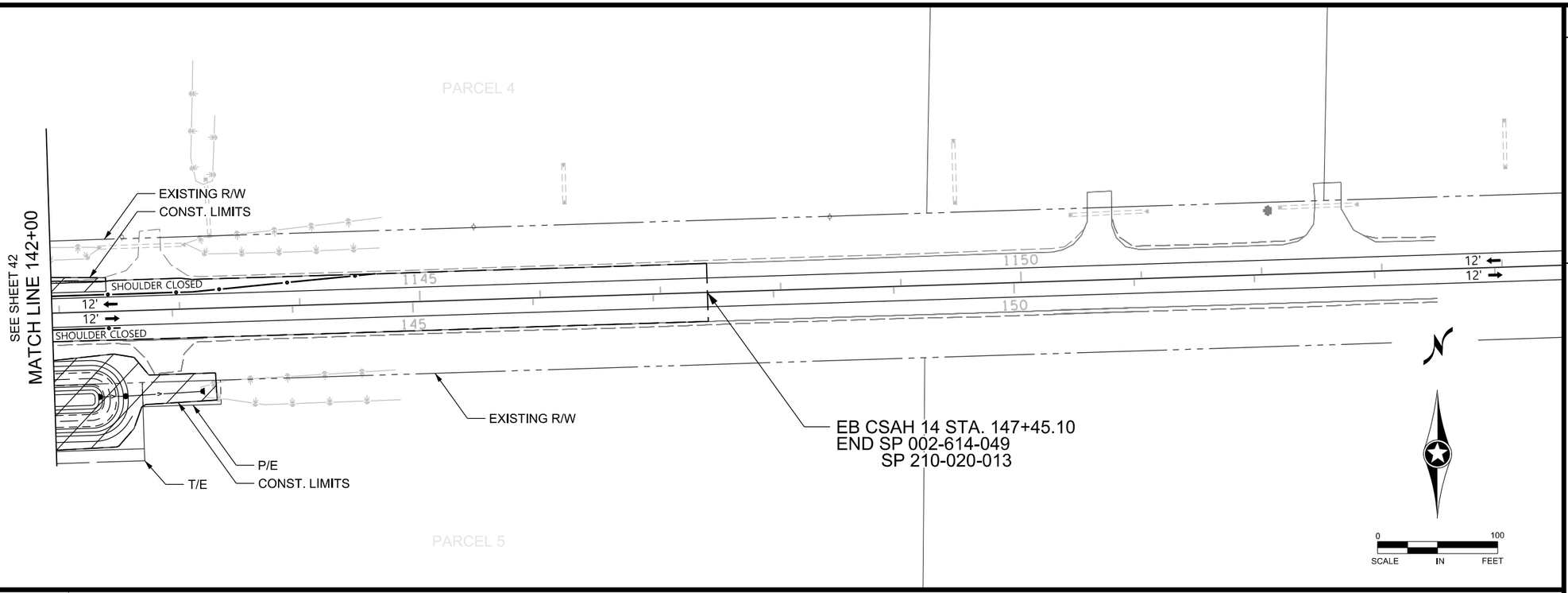
DRAWN BY BTU DATE 12/06/23
DESIGN BY BTU DATE 12/06/23
CHECKED BY APA DATE 12/06/23

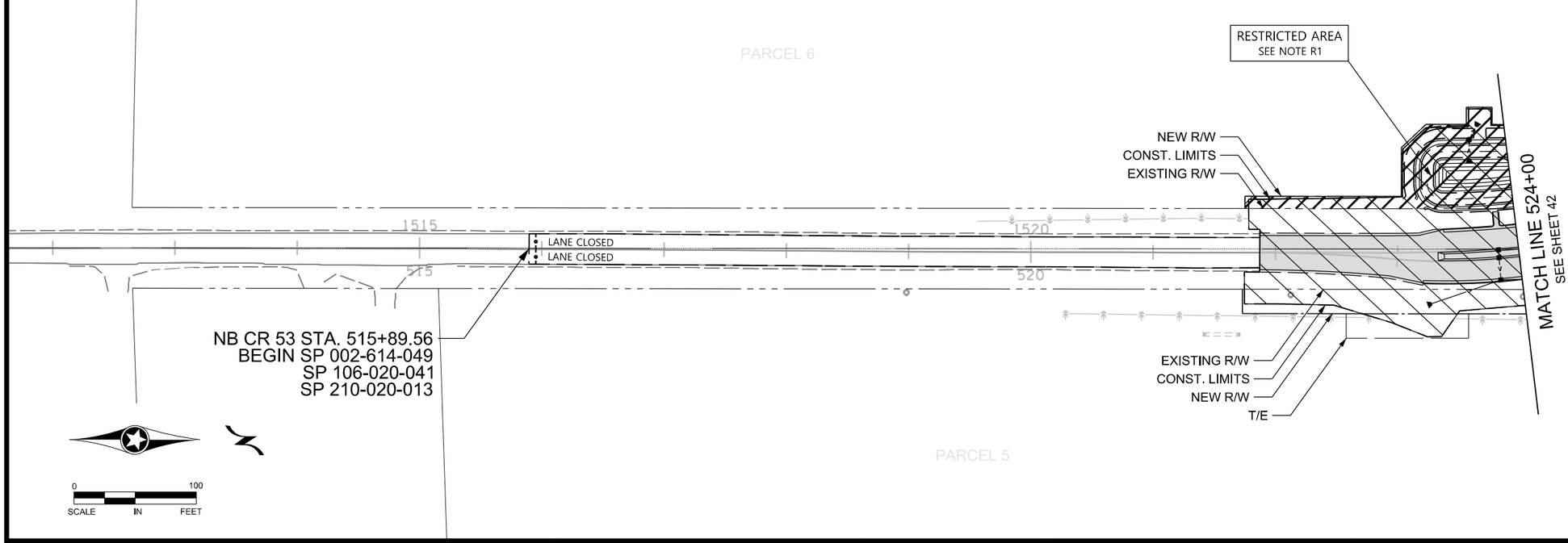
ANOKA COUNTY
ANOKA COUNTY HIGHWAY DEPT.

SP 002-614-049
SP 210-020-013
SP 106-020-041

STAGING PLAN
STAGE 1

Sheet 42 of 115 Sheets





LEGEND

- STAGE 1 CONSTRUCTION
- TEMPORARY BIT.PAVEMENT
- SEE NOTE R1.
- STAGE 1 STORM SEWER WORK
- CHANNELIZERS
- GENERAL TRAFFIC FLOW 12' MIN. LANE WIDTH. SEE TRAFFIC CONTROL PLAN FOR DETAILS

STAGE 1 CONSTRUCTION NOTES:

1. PROVIDE MINIMUM 12' LANES IN BOTH DIRECTIONS
2. MUCK EXCAVATION ON CR 53 (SUNSET AVE).
3. GRADE PONDS AND INSTALL STORM SEWER AS SHOWN IN PLAN.
4. INSTALL TEMPORARY PAVEMENT ON NORTH SIDE OF CSAH 14 AT BYPASS LOCATIONS AS DIRECTED BY ENGINEER.
5. CR 53 (SUNSET AVE) TO BE FULLY CLOSED.
6. CONTRACTOR SHALL MAINTAIN ACCESS TO PARCELS 3, 4, AND 5 AND COORDINATE WITH RESIDENTS DURING TEMPORARY RESTRICTIONS.
7. GRADE AND INSTALL CONCRETE CURB AND GUTTER AND PLACE BASE AND BINDER BITUMINOUS PAVEMENT COURSE ON CR 53 WHERE INDICATED.
8. INSTALL INLET PROTECTION.
9. STABILIZE VEGETATION AND SOIL STOCKPILES WITHIN 7 DAYS OF ROUGH GRADING OR INACTIVITY. ADDITIONAL TEMPORARY AND PERMANENT EROSION CONTROL AS DIRECTED BY ENGINEER.

NOTE R1

CONTRACTOR CANNOT ACCESS OR DISTURB THIS AREA UNTIL AFTER JULY 15TH, 2024

2 OF 2

NO	DATE	BY	CKD	APPR	REVISION
1	03/05/2024	BTU	APA	APA	ADDED NOTE R1

NAME: P:\002-614-049 - Sunset RAB\Plan\002614049_STG1-2.dgn 03/05/2024 2:02:17 PM

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.

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SIGNATURE:

DATE: 12/06/23 LICENSE NO. 58657

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CHECKED BY APA DATE 12/06/23

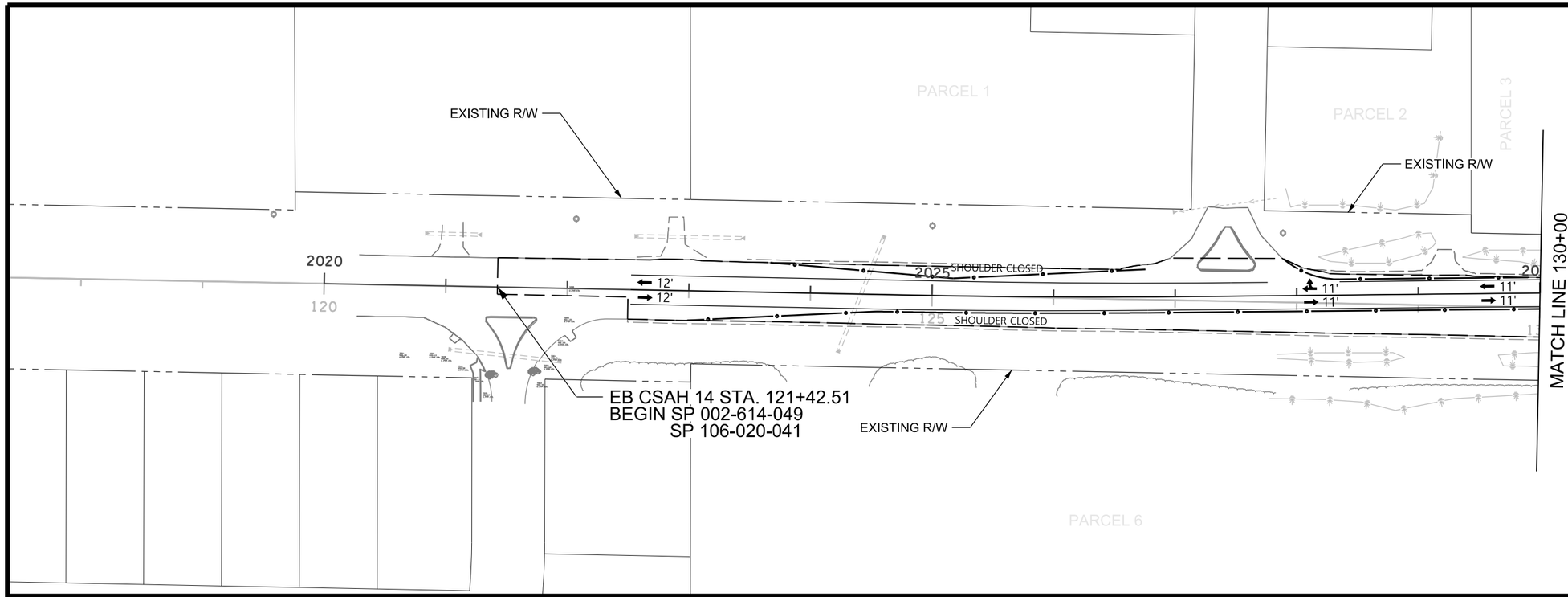
ANOKA COUNTY

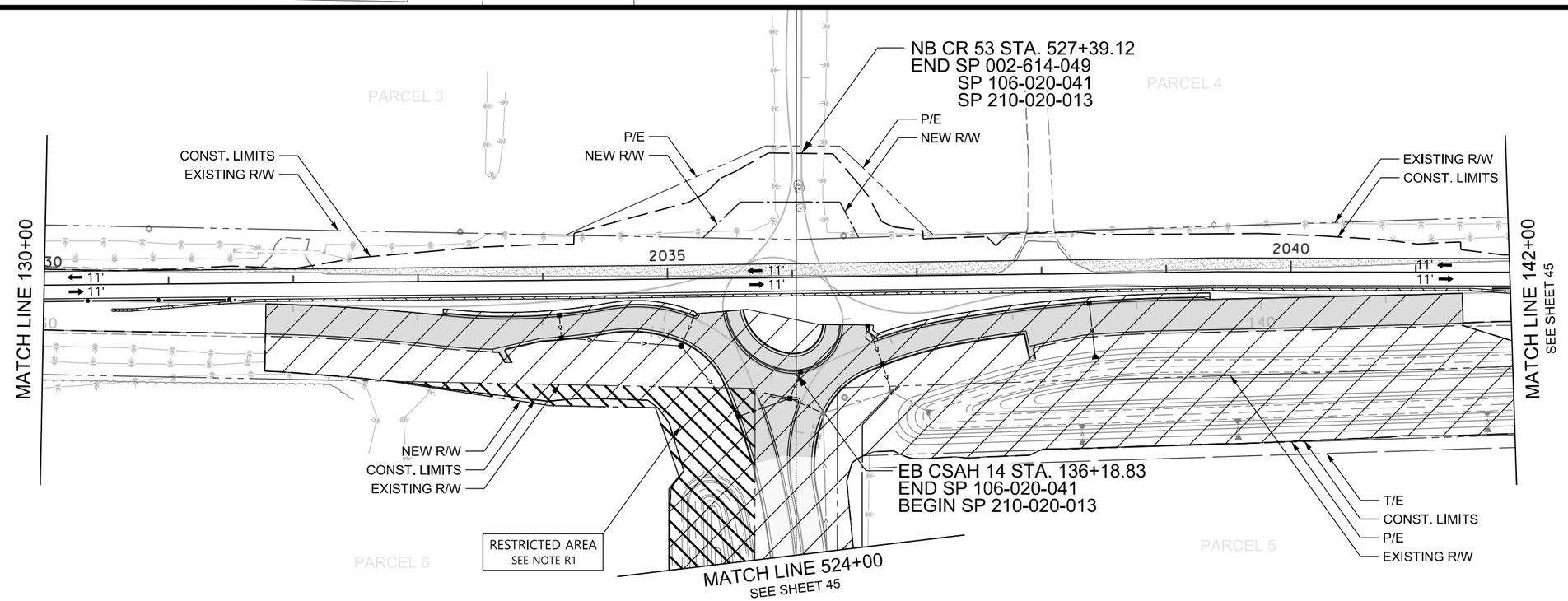
ANOKA COUNTY HIGHWAY DEPT.

SP 002-614-049
SP 210-020-013
SP 106-020-041

STAGING PLAN
STAGE 1

Sheet 43 of 115 Sheets





LEGEND

- STAGE 2 CONSTRUCTION
- TEMPORARY BIT.PAVEMENT
- SEE NOTE R1.
- STAGE 2 STORM SEWER WORK
- CHANNELIZERS
- GENERAL TRAFFIC FLOW 11' MIN. LANE WIDTH. SEE TRAFFIC CONTROL PLAN FOR DETAILS
- TEMPORARY PORTABLE CONCRETE BARRIER STAGE 2
- IMPACT ATTENUATOR

SEE SHEET 7 FOR BARRIER AND ATTENUATOR LOCATION DETAILS

STAGE 2 CONSTRUCTION NOTES:

1. PROVIDE MINIMUM 11' LANES IN BOTH DIRECTIONS
2. MUCK EXCAVATION ON SOUTH SIDE OF CSAH 14.
3. GRADE DITCHES AND INSTALL STORM SEWER AS SHOWN IN PLAN.
4. INSTALL PORTABLE CONCRETE BARRIER AND IMPACT ATTENUATORS AS SHOWN IN PLAN.
5. CR 53 TO BE FULLY CLOSED.
6. CONTRACTOR SHALL MAINTAIN ACCESS TO PARCELS 3, 4, AND 5 AND COORDINATE WITH RESIDENTS DURING TEMPORARY RESTRICTIONS.
7. GRADE AND INSTALL CONCRETE CURB AND GUTTER, CONCRETE PAVEMENT, AND PLACE BASE AND BINDER BIT. PAVEMENT COURSE ON CSAH 14 WHERE INDICATED ON SOUTH SIDE.
8. INSTALL INLET PROTECTION.
9. STABILIZE VEGETATION AND SOIL STOCKPILES WITHIN 7 DAYS OF ROUGH GRADING OR INACTIVITY. ADDITIONAL TEMPORARY AND PERMANENT EROSION CONTROL AS DIRECTED BY ENGINEER.

NOTE R1

CONTRACTOR CANNOT ACCESS OR DISTURB THIS AREA UNTIL AFTER JULY 15TH, 2024

N

0 100
SCALE IN FEET

1 OF 2

NO	DATE	BY	CKD	APPR	REVISION
1	03/05/2024	BTU	APA	APA	ADDED NOTE R1

NAME: P:\002-614-049 - Sunset RAB\Plan\002614049_STG2-1.dgn 03/05/2024 2:02:19 PM

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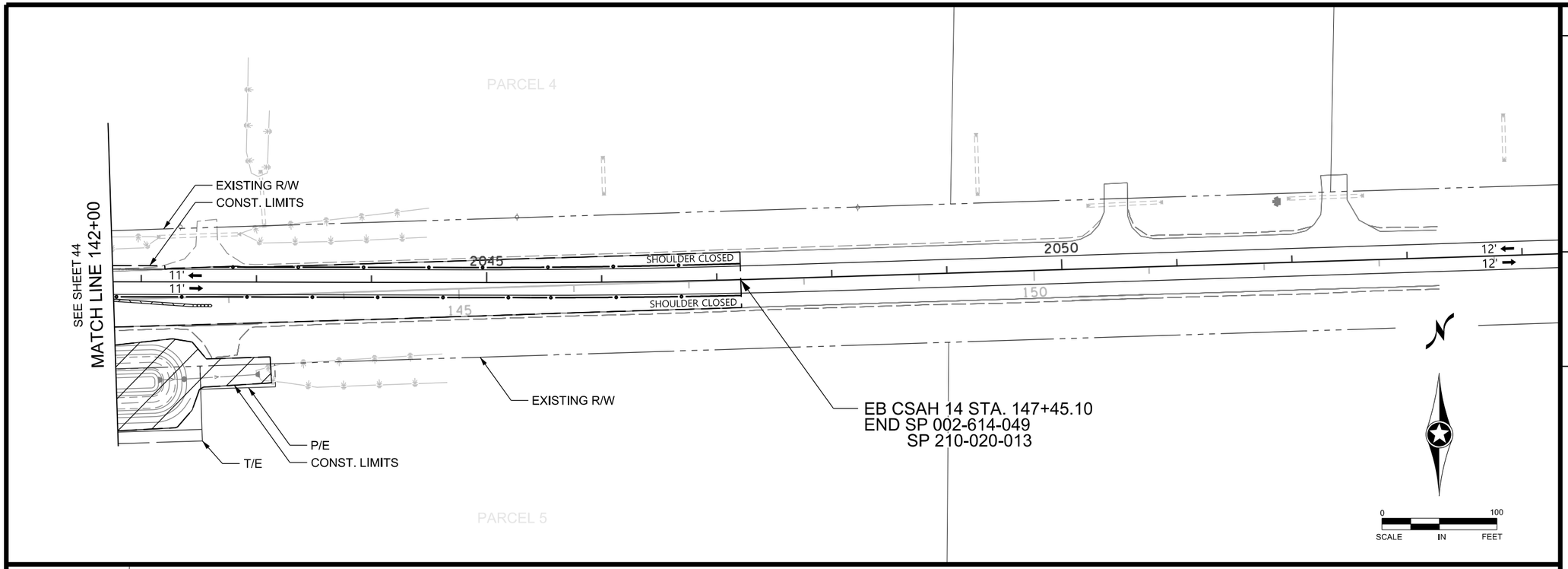
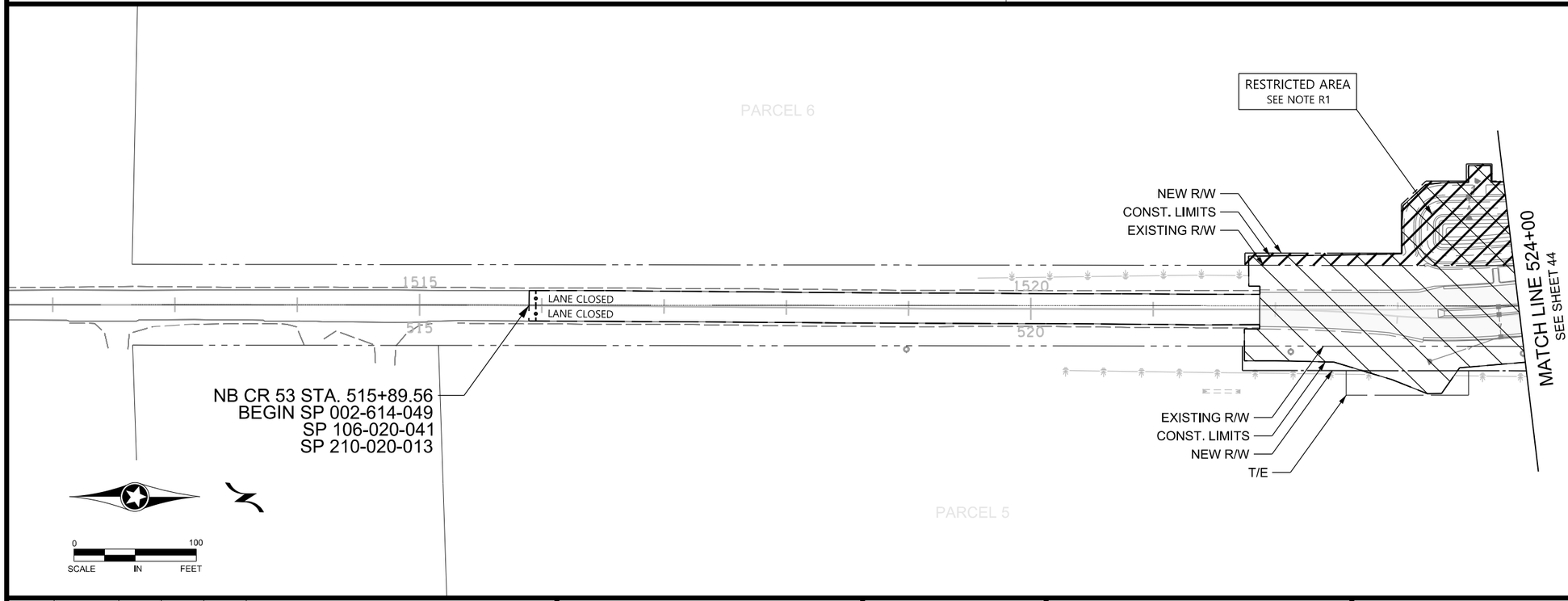
ANOKA COUNTY
ANOKA COUNTY HIGHWAY DEPT.

SP 002-614-049
SP 210-020-013
SP 106-020-041

STAGING PLAN
STAGE 2

Sheet 44 of 115 Sheets





LEGEND

- STAGE 2 CONSTRUCTION
- TEMPORARY BIT. PAVEMENT
- SEE NOTE R1.
- STAGE 2 STORM SEWER WORK
- CHANNELIZERS
- GENERAL TRAFFIC FLOW 11' MIN. LANE WIDTH. SEE TRAFFIC CONTROL PLAN FOR DETAILS
- TEMPORARY PORTABLE CONCRETE BARRIER STAGE 2
- IMPACT ATTENUATOR

SEE SHEET 7 FOR BARRIER AND ATTENUATOR LOCATION DETAILS

STAGE 2 CONSTRUCTION NOTES:

1. PROVIDE MINIMUM 11' LANES IN BOTH DIRECTIONS
2. MUCK EXCAVATION ON SOUTH SIDE OF CSAH 14.
3. GRADE DITCHES AND INSTALL STORM SEWER AS SHOWN IN PLAN.
4. INSTALL PORTABLE CONCRETE BARRIER AND IMPACT ATTENUATORS AS SHOWN IN PLAN.
5. CR 53 TO BE FULLY CLOSED.
6. CONTRACTOR SHALL MAINTAIN ACCESS TO PARCELS 3, 4, AND 5 AND COORDINATE WITH RESIDENTS DURING TEMPORARY RESTRICTIONS.
7. GRADE AND INSTALL CONCRETE CURB AND GUTTER, CONCRETE PAVEMENT, AND PLACE BASE AND BINDER BIT. PAVEMENT COURSE ON CSAH 14 WHERE INDICATED ON SOUTH SIDE.
8. INSTALL INLET PROTECTION.
9. STABILIZE VEGETATION AND SOIL STOCKPILES WITHIN 7 DAYS OF ROUGH GRADING OR INACTIVITY. ADDITIONAL TEMPORARY AND PERMANENT EROSION CONTROL AS DIRECTED BY ENGINEER.

NOTE R1

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NAME: P:\002-614-049 - Sunset RAB\Plan\002614049_STG2-2.dgn 03/05/2024 2:02:24 PM

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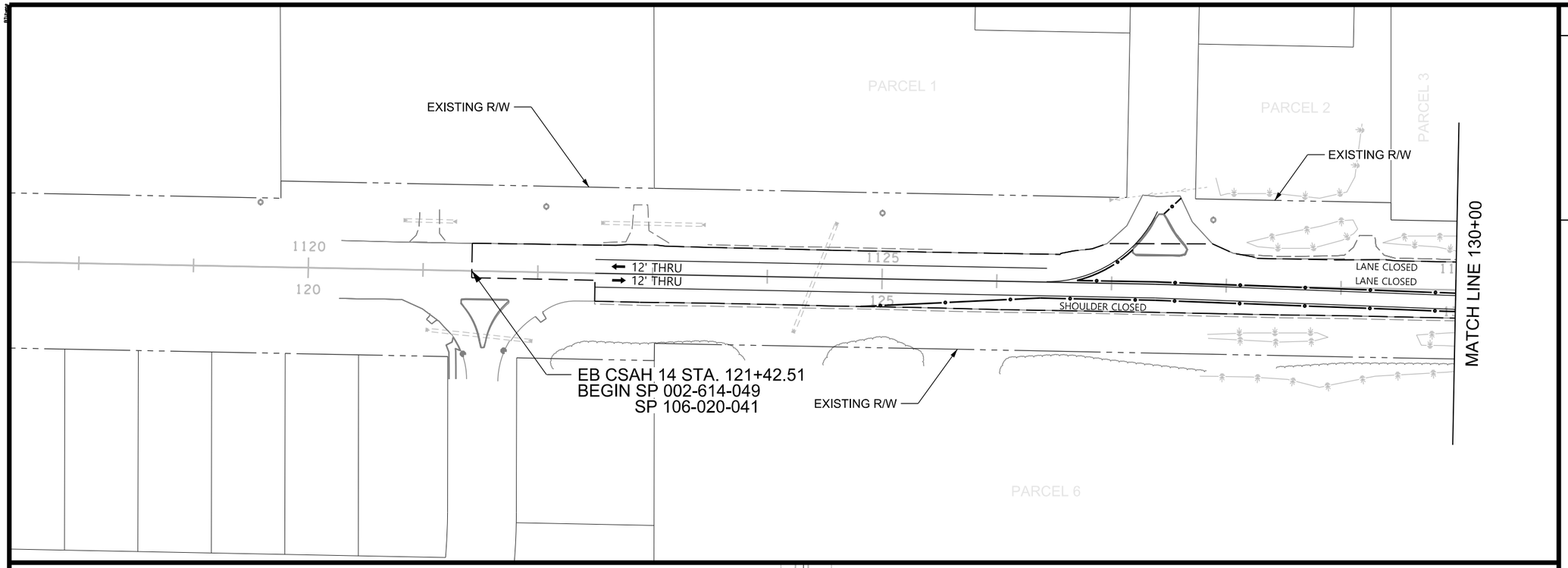
ANOKA COUNTY

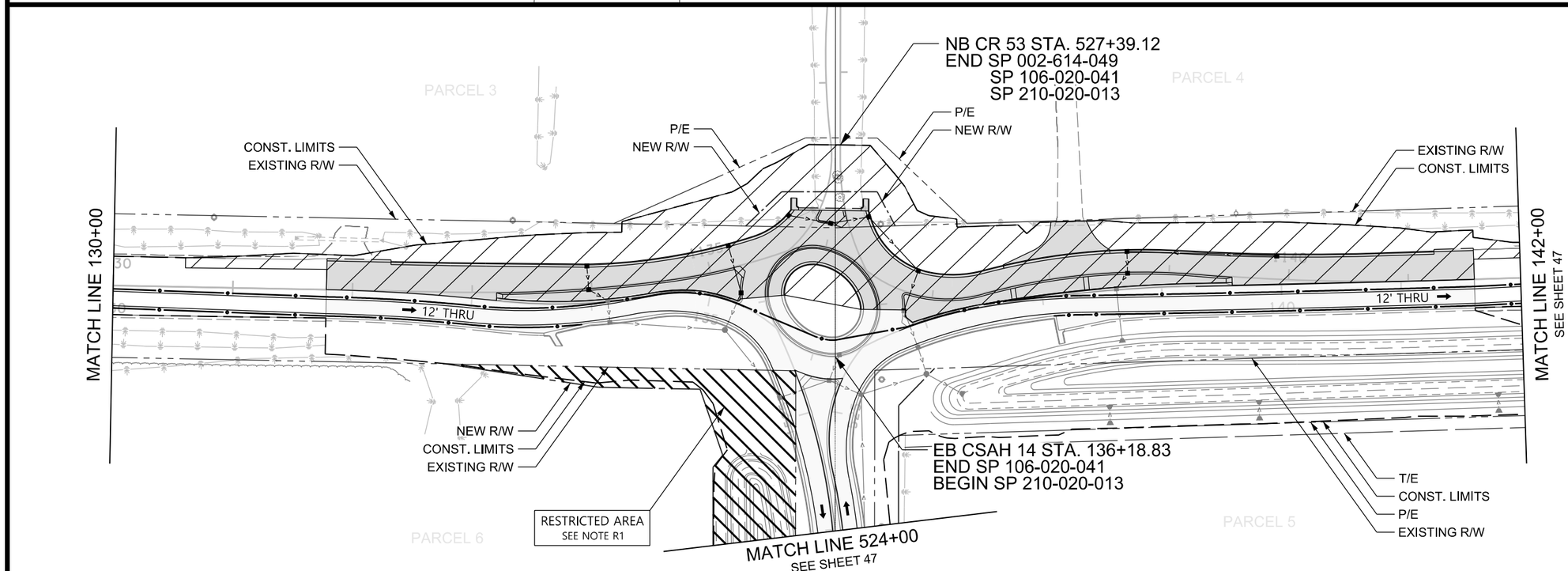
ANOKA COUNTY HIGHWAY DEPT.

SP 002-614-049
SP 210-020-013
SP 106-020-041

STAGING PLAN
STAGE 2

Sheet 45 of 115 Sheets





LEGEND

- STAGE 3 CONSTRUCTION
- SEE NOTE R1.
- STAGE 3 STORM SEWER WORK
- CHANNELIZERS
- GENERAL TRAFFIC FLOW 11' MIN. LANE WIDTH. SEE TRAFFIC CONTROL PLAN FOR DETAILS

STAGE 3 CONSTRUCTION NOTES:

1. PROVIDE MINIMUM 12' LANE IN EASTBOUND DIRECTION ON FINISHED SOUTH SIDE.
2. LANES GENERALLY FOLLOW <14E_4>, <53N_4>, AND <53S_4> ALIGNMENTS.
3. MUCK EXCAVATION ON NORTH SIDE OF CSAH 14.
4. REMOVE TEMPORARY PAVEMENT ON NORTH SIDE OF CSAH 14 AND RESTORE SLOPES TO ORIGINAL CONTOURS OUTSIDE OF ROUNDABOUT.
5. GRADE DITCHES AND INSTALL STORM SEWER AS SHOWN IN PLAN.
6. CR 53 (SUNSET AVE) TO BE OPEN.
7. CONTRACTOR SHALL MAINTAIN ACCESS TO PARCELS 3, 4, AND 5 AND COORDINATE WITH RESIDENTS DURING TEMPORARY RESTRICTIONS.
8. GRADE AND INSTALL CONCRETE CURB AND GUTTER, CONCRETE PAVEMENT, AND PLACE BASE AND BINDER BITUMINOUS PAVEMENT COURSE ON CSAH 14 WHERE INDICATED ON NORTH SIDE.
9. INSTALL INLET PROTECTION.
10. STABILIZE VEGETATION AND SOIL STOCKPILES WITHIN 7 DAYS OF ROUGH GRADING OR INACTIVITY. ADDITIONAL TEMPORARY AND PERMANENT EROSION CONTROL AS DIRECTED BY ENGINEER.

NOTE R1

CONTRACTOR CANNOT ACCESS OR DISTURB THIS AREA UNTIL AFTER JULY 15TH, 2024

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SCALE IN FEET

1 OF 2

NO	DATE	BY	CKD	APPR	REVISION
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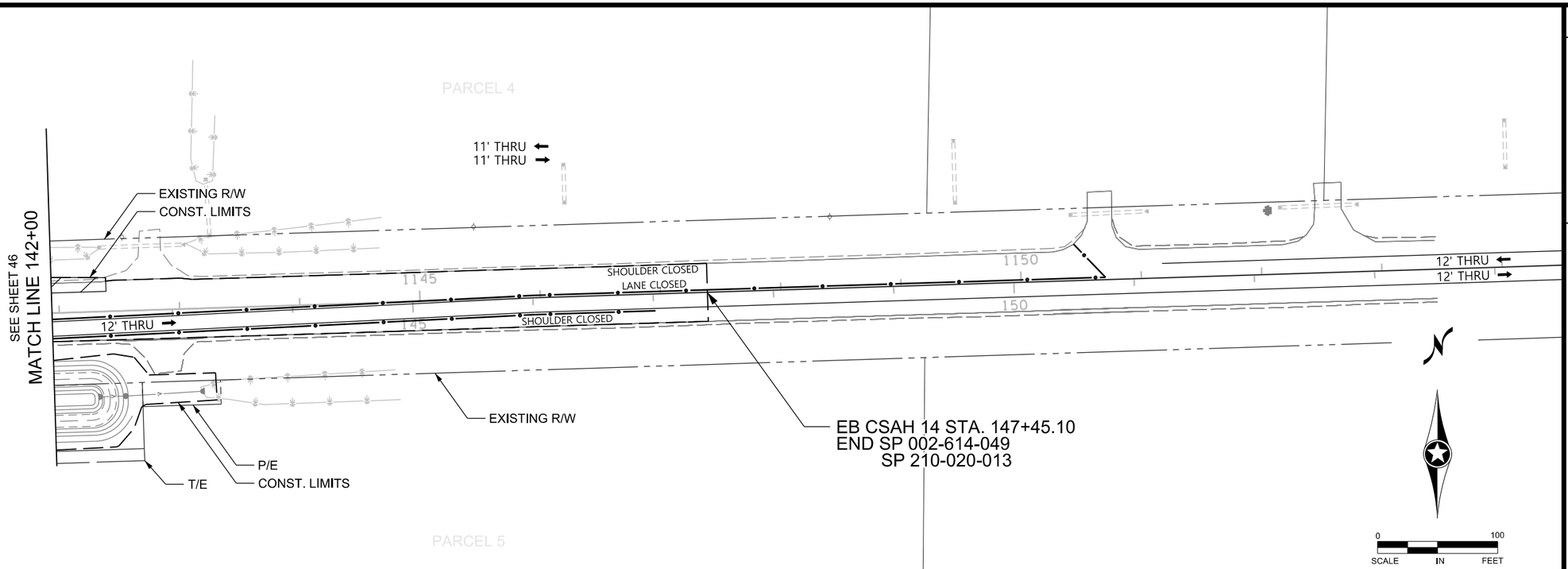
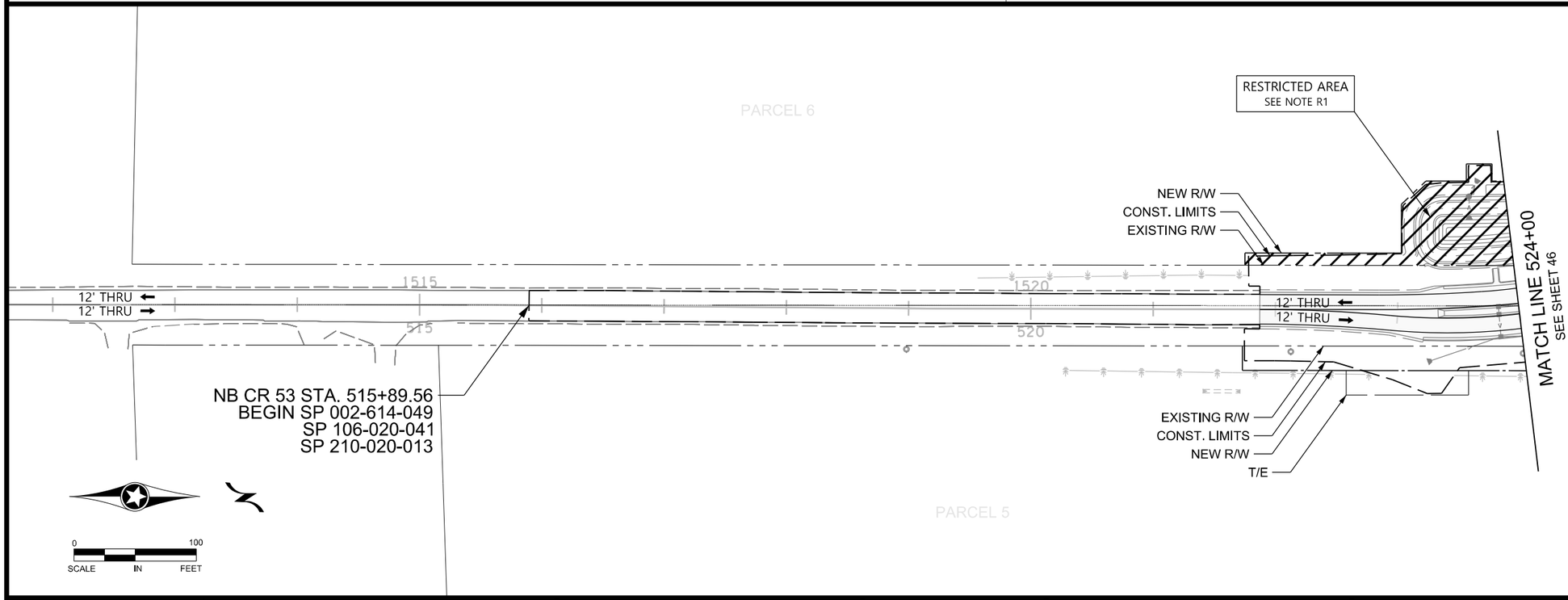
ANOKA COUNTY
HIGHWAY DEPT.

SP 002-614-049
SP 210-020-013
SP 106-020-041

STAGING PLAN
STAGE 3

Sheet 46 of 115 Sheets





LEGEND

- STAGE 3 CONSTRUCTION
- SEE NOTE R1.
- STAGE 3 STORM SEWER WORK
- CHANNELIZERS
- GENERAL TRAFFIC FLOW 11' MIN. LANE WIDTH. SEE TRAFFIC CONTROL PLAN FOR DETAILS

STAGE 3 CONSTRUCTION NOTES:

1. PROVIDE MINIMUM 12' LANE IN EASTBOUND DIRECTION ON FINISHED SOUTH SIDE.
2. LANES GENERALLY FOLLOW <14E_4>, <53N_4>, AND <53S_4> ALIGNMENTS.
3. MUCK EXCAVATION ON NORTH SIDE OF CSAH 14.
4. REMOVE TEMPORARY PAVEMENT ON NORTH SIDE OF CSAH 14 AND RESTORE SLOPES TO ORIGINAL CONTOURS OUTSIDE OF ROUNDABOUT.
5. GRADE DITCHES AND INSTALL STORM SEWER AS SHOWN IN PLAN.
6. CR 53 (SUNSET AVE) TO BE OPEN.
7. CONTRACTOR SHALL MAINTAIN ACCESS TO PARCELS 3, 4, AND 5 AND COORDINATE WITH RESIDENTS DURING TEMPORARY RESTRICTIONS.
8. GRADE AND INSTALL CONCRETE CURB AND GUTTER, CONCRETE PAVEMENT, AND PLACE BASE AND BINDER BITUMINOUS PAVEMENT COURSE ON CSAH 14 WHERE INDICATED ON NORTH SIDE.
9. INSTALL INLET PROTECTION.
10. STABILIZE VEGETATION AND SOIL STOCKPILES WITHIN 7 DAYS OF ROUGH GRADING OR INACTIVITY. ADDITIONAL TEMPORARY AND PERMANENT EROSION CONTROL AS DIRECTED BY ENGINEER.

NOTE R1

CONTRACTOR CANNOT ACCESS OR DISTURB THIS AREA UNTIL AFTER JULY 15TH, 2024

NO	DATE	BY	CKD	APPR	REVISION
1	03/05/2024	BTU	APA	APA	ADDED NOTE R1

NAME: P:\002-614-049 - Sunset RAB\Plan\002614049_STG3-2.dgn 03/05/2024 2:02:33 PM

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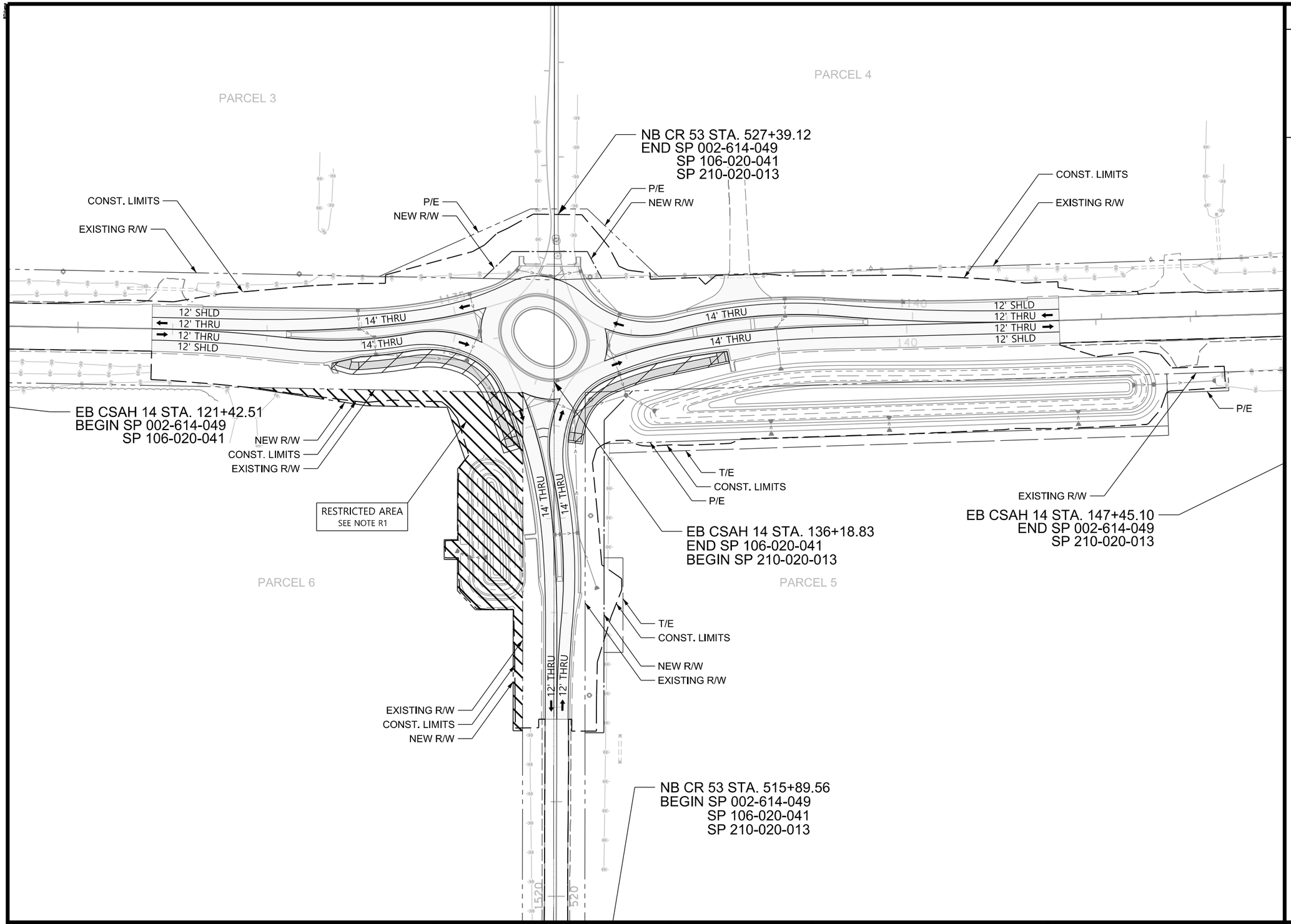
ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SP 002-614-049
SP 210-020-013
SP 106-020-041

STAGING PLAN
STAGE 3



LEGEND

- STAGE 4 CONSTRUCTION
- SEE NOTE R1.
- GENERAL TRAFFIC FLOW 11' MIN. LANE WIDTH, SEE TRAFFIC CONTROL PLAN FOR DETAILS

STAGE 4 CONSTRUCTION NOTES:

1. PROVIDE MINIMUM 12' THROUGH LANES IN EACH DIRECTION.
2. PAVE TRAIL AND CONSTRUCT PEDESTRIAN CURB RAMPS.
3. STABILIZE VEGETATION AND SOIL STOCKPILES WITHIN 7 DAYS OF ROUGH GRADING OR INACTIVITY. ADDITIONAL TEMPORARY AND PERMANENT EROSION CONTROL AS DIRECTED BY ENGINEER.
4. PLACE FINAL LIFT OF BITUMINOUS PAVEMENT UPON COMPLETION.

NOTE R1

CONTRACTOR CANNOT ACCESS OR DISTURB THIS AREA UNTIL AFTER JULY 15TH, 2024

N

0 100
SCALE IN FEET

1 OF 1

NO	DATE	BY	CKD	APPR	REVISION
1	03/05/2024	BTU	APA	APA	ADDED NOTE R1

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DATE: 12/06/23 LICENSE NO. 58657

DRAWN BY BTU DATE 12/06/23
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CHECKED BY APA DATE 12/06/23

ANOKA COUNTY HIGHWAY DEPT.

SP 002-614-049
SP 210-020-013
SP 106-020-041

STAGING PLAN
STAGE 4

Sheet 48 of 115 Sheets

ALIGNMENT NOTES:

1. EASTBOUND AND WESTBOUND ALIGNMENTS ARE NOT PARALLEL.
2. NORTHBOUND AND SOUTHBOUND ALIGNMENTS ARE NOT PARALLEL.
3. HORIZONTAL CONTROL IS BASED ON ANOKA COUNTY COORDINATE SYSTEM NAD 83 (1996 ADJUSTMENT)
4. CITY STREET ALIGNMENT AND FUTURE CR 53 ALIGNMENTS SHOWN FOR REFERENCE ONLY

℄ QUITO ST NE

℄ SB CR 53 (FUTURE)

℄ NB CR 53 (FUTURE)

END SP 002-614-049
SP 106-020-041
SP 210-020-013
℄ CR 53 NB STA. 527+39.12

BEGIN SP 002-614-049
SP 106-020-041
℄ CSAH 14 EB STA. 121+42.51

℄ WB CSAH 14

℄ EB CSAH 14

END SP 002-614-049
SP 210-020-013
℄ CSAH 14 EB STA. 147+45.10

END SP 106-020-041
BEGIN SP 210-020-013
℄ CSAH 14 EB STA. 136+18.83

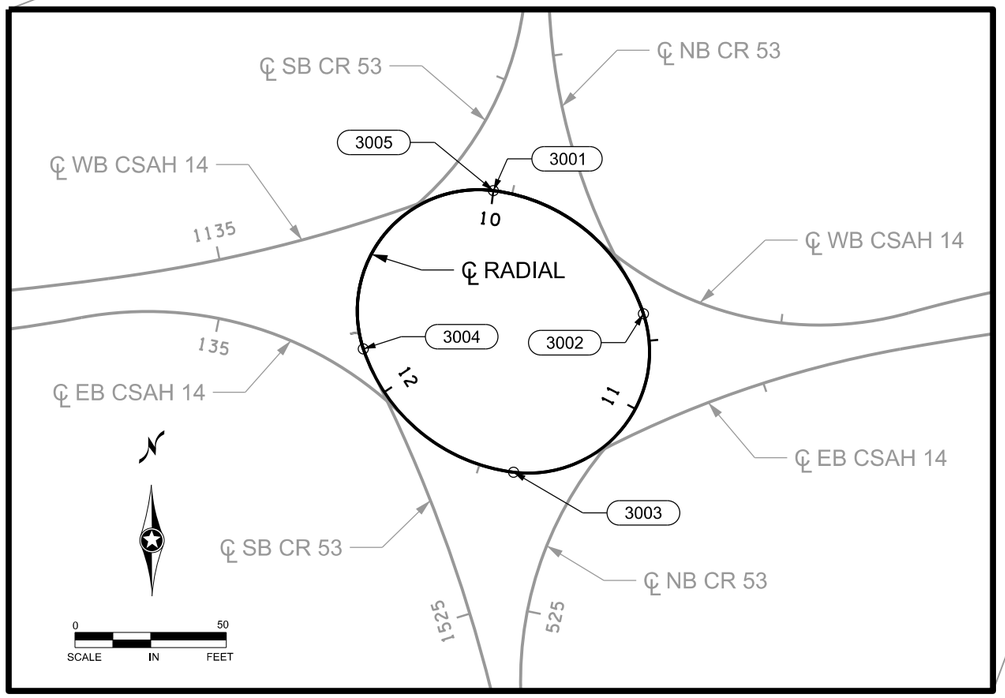
℄ SB CR 53

℄ NB CR 53

BEGIN SP 002-614-049
SP 106-020-041
SP 210-020-013
℄ CR 53 NB STA. 515+89.56

1530 530 1525 525 1520 520 1515 515 1510 510

1135 135 1140 140 1145 145 10



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NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049 - Sunset RAB\Plan\002614049_AL.dgn 12/07/2023 9:38:22 AM

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ANOKA COUNTY HIGHWAY DEPT.

SP 002-614-049
SP 210-020-013
SP 106-020-041

ALIGNMENT PLAN

Sheet 49 of 115 Sheets

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	E	N	
℄ C.S.A.H. 14 EASTBOUND										<14E_4>
1000	POT	110+00.000						529,393.6785	158,802.3656	
1001	PC	131+78.192						531,571.4574	158,759.9528	S 88° 53' 03.45" E
14E_41	PI	132+49.175	5° 25' 07.28" RT	3° 49' 10.99"	1,500.000'	70.983'	141.861'	531,642.4273	158,758.5706	PI
	CC							531,542.2501	157,260.2372	
1002	PRC	133+20.053						531,712.9496	158,750.4928	S 83° 27' 56.17" E
	PRC	133+20.053						531,712.9496	158,750.4928	S 83° 27' 56.17" E
14E_42	PI	133+87.686	17° 05' 40.89" LT	12° 43' 56.62"	450.000'	67.633'	134.261'	531,780.1434	158,742.7961	PI
	CC							531,764.1595	159,197.5694	
1003	PRC	134+54.314						531,846.6310	158,755.1913	N 79° 26' 22.94" E
	PRC	134+54.314						531,846.6310	158,755.1913	N 79° 26' 22.94" E
14E_43	PI	135+18.006	55° 54' 56.76" RT	47° 44' 47.34"	120.000'	63.692'	117.110'	531,909.2443	158,766.8641	PI
	CC							531,868.6234	158,637.2238	
1004	PRC	135+71.424						531,954.0011	158,721.5485	S 44° 38' 40.31" E
	PRC	135+71.424						531,954.0011	158,721.5485	S 44° 38' 40.31" E
14E_44	PI	135+92.246	38° 16' 34.72" LT	95° 29' 34.68"	60.000'	20.822'	40.083'	531,968.6325	158,706.7343	PI
	CC							531,996.6899	158,763.7109	
1005	PCC	136+11.507						531,989.2954	158,704.1683	S 82° 55' 15.03" E
	PCC	136+11.507						531,989.2954	158,704.1683	S 82° 55' 15.03" E
14E_45	PI	136+24.242	35° 19' 16.73" LT	143° 14' 16.47"	40.000'	12.736'	24.659'	532,001.9339	158,702.5987	PI
	CC							531,994.2251	158,743.8638	
1006	PRC	136+36.166						532,013.1533	158,708.6252	N 61° 45' 28.24" E
	PRC	136+36.166						532,013.1533	158,708.6252	N 61° 45' 28.24" E
14E_46	PI	136+91.817	18° 04' 08.97" RT	16° 22' 12.95"	349.999'	55.651'	110.378'	532,062.1793	158,734.9592	PI
	CC							532,178.7725	158,400.2915	
1007	PCC	137+46.544						532,116.9554	158,744.7883	N 79° 49' 37.21" E
	PCC	137+46.544						532,116.9554	158,744.7883	N 79° 49' 37.21" E
14E_47	PI	138+37.596	9° 03' 14.31" RT	4° 58' 56.04"	1,150.002'	91.052'	181.725'	532,206.5761	158,760.8700	PI
	CC							532,320.0697	157,612.8658	
1008	PRC	139+28.269						532,297.6109	158,762.6482	N 88° 52' 51.52" E
	PRC	139+28.269						532,297.6109	158,762.6482	N 88° 52' 51.52" E
14E_48	PI	140+44.799	0° 41' 56.83" LT	0° 17' 59.92"	19,099.978'	116.530'	233.057'	532,414.1185	158,764.9239	PI
	CC							531,924.6004	177,858.9831	
1009	PT	141+61.326						532,530.5896	158,768.6211	N 88° 10' 54.69" E
1010	POT	160+60.322						534,428.6294	158,828.8710	

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	E	N	
℄ C.S.A.H. 14 WESTBOUND										<14W_4>
1100	POT	1110+00.000						529,393.6785	158,802.3656	
1101	PC	1132+81.685						531,674.9305	158,757.9376	S 88° 53' 03.45" E
14W_41	PI	1133+72.352	8° 38' 30.21" LT	4° 46' 28.73"	1,200.000'	90.668'	180.992'	531,765.5811	158,756.1722	PI
	CC							531,698.2963	159,957.7101	
1102	PCC	1134+62.676						531,855.4679	158,768.0475	N 82° 28' 26.34" E
	PCC	1134+62.676						531,855.4679	158,768.0475	N 82° 28' 26.34" E
14W_42	PI	1135+18.835	12° 49' 01.00" LT	11° 27' 32.96"	500.000'	56.159'	111.849'	531,911.1430	158,775.4030	PI
	CC							531,789.9798	159,263.7403	
1103	PRC	1135+74.525						531,963.7992	158,794.9260	N 69° 39' 25.34" E
	PRC	1135+74.525						531,963.7992	158,794.9260	N 69° 39' 25.34" E
14W_43	PI	1135+84.284	27° 25' 18.22" RT	143° 14' 22.02"	40.000'	9.759'	19.144'	531,972.9495	158,798.3186	PI
	CC							531,977.7047	158,757.4209	
1104	PCC	1135+93.669						531,982.6341	158,797.1160	S 82° 55' 16.44" E
	PCC	1135+93.669						531,982.6341	158,797.1160	S 82° 55' 16.44" E
14W_44	PI	1136+12.885	35° 31' 02.45" RT	95° 29' 34.68"	60.000'	19.216'	37.194'	532,001.7038	158,794.7479	PI
	CC							531,975.2400	158,737.5733	
1105	PRC	1136+30.863						532,015.8496	158,781.7419	S 47° 24' 13.99" E
	PRC	1136+30.863						532,015.8496	158,781.7419	S 47° 24' 13.99" E
14W_45	PI	1136+92.033	58° 09' 23.12" LT	52° 05' 13.46"	110.000'	61.170'	111.652'	532,060.8798	158,740.3402	PI
	CC							532,090.3005	158,862.7176	
1106	PRC	1137+42.515						532,119.8082	158,756.7493	N 74° 26' 22.89" E
	PRC	1137+42.515						532,119.8082	158,756.7493	N 74° 26' 22.89" E
14W_46	PI	1138+32.781	20° 28' 01.06" RT	11° 27' 32.96"	500.000'	90.266'	178.608'	532,206.7657	158,780.9633	PI
	CC							532,253.9345	158,275.0750	
1107	PRC	1139+21.123						532,296.7008	158,773.2427	S 85° 05' 36.05" E
	PRC	1139+21.123						532,296.7008	158,773.2427	S 85° 05' 36.05" E
14W_47	PI	1140+23.940	6° 43' 29.26" LT	3° 16' 26.56"	1,750.000'	102.817'	205.397'	532,399.1406	158,764.4485	PI
	CC							532,446.3829	160,516.8296	
1108	PT	1141+26.520						532,501.9055	158,767.7106	N 88° 10' 54.69" E
1109	POT	1160+54.215						534,428.6294	158,828.8710	

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049 - Sunset RAB\Plan\002614049_ALT.dgn 12/07/2023 9:38:24 AM

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: AARON P. ANDERSON

SIGNATURE:

DATE: 12/06/23 LICENSE NO. 58657

DRAWN BY BTU DATE 12/06/23

DESIGN BY BTU DATE 12/06/23

CHECKED BY APA DATE 12/06/23

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SP 002-614-049
SP 210-020-013
SP 106-020-041

ALIGNMENT TABULATION
EB CSAH 14 & WB CSAH 14

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	E	N	
℄ C.R. 53 NORTHBOUND										<53N_4>
2000	POT	510+00.000						531,995.3916	157,159.7180	
2001	POT	515+28.664						531,995.5364	157,688.3821	
2002	POT	519+21.617						531,998.6412	158,081.3227	
2003	PC	521+86.891						531,999.3118	158,346.5959	N 0° 08' 41.48" E
53N_43	PI	522+40.689	5° 08' 01.88" RT	4° 46' 28.73"	1,200.000'	53.798'	107.523'	531,999.4479	158,400.3934	PI
	CC							533,199.3080	158,343.5621	
2004	PRC	522+94.414						532,004.3973	158,453.9628	N 5° 16' 43.37" E
	PRC	522+94.414						532,004.3973	158,453.9628	N 5° 16' 43.37" E
53N_44	PI	523+73.031	17° 52' 16.49" LT	11° 27' 32.96"	500.000'	78.616'	155.956'	532,011.6300	158,532.2458	PI
	CC							531,506.5178	158,499.9631	
2005	PRC	524+50.370						531,994.4904	158,608.9712	N 12° 35' 33.12" W
	PRC	524+50.370						531,994.4904	158,608.9712	N 12° 35' 33.12" W
53N_45	PI	525+13.375	55° 24' 07.58" RT	47° 44' 47.34"	120.000'	63.004'	116.034'	531,980.7544	158,670.4598	PI
	CC							532,111.6038	158,635.1331	
2006	PRC	525+66.404						532,023.5698	158,716.6808	N 42° 48' 34.46" E
	PRC	525+66.404						532,023.5698	158,716.6808	N 42° 48' 34.46" E
53N_46	PI	525+90.032	61° 08' 24.74" LT	143° 14' 22.02"	40.000'	23.628'	42.684'	532,039.6264	158,734.0145	PI
	CC							531,994.2252	158,743.8633	
2007	PCC	526+09.088						532,032.1955	158,756.4433	N 18° 19' 50.28" W
	PCC	526+09.088						532,032.1955	158,756.4433	N 18° 19' 50.28" W
53N_47	PI	526+15.114	11° 28' 15.34" LT	95° 29' 34.68"	60.000'	6.026'	12.012'	532,030.3002	158,762.1638	PI
	CC							531,975.2400	158,737.5733	
2008	PRC	526+21.100						532,027.3052	158,767.3932	N 29° 48' 05.62" W
	PRC	526+21.100						532,027.3052	158,767.3932	N 29° 48' 05.62" W
53N_48	PI	526+74.385	29° 50' 12.51" RT	28° 38' 52.40"	200.000'	53.285'	104.150'	532,000.8228	158,813.6311	PI
	CC							532,200.8555	158,866.7927	
2009	PT	527+25.251						532,000.8556	158,866.9157	N 0° 02' 06.89" E
2010	POT	530+28.883						532,001.0424	159,170.5481	

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	E	N	
℄ C.R. 53 SOUTHBOUND										<53S_4>
2100	POT	1510+00.000						531,995.3916	157,159.7180	
2101	POT	1515+28.664						531,995.5364	157,688.3821	
2102	POT	1519+21.617						531,998.6412	158,081.3227	
2103	PC	1522+84.876						531,999.5596	158,444.5801	N 0° 08' 41.48" E
53S_43	PI	1523+41.391	5° 23' 34.37" LT	4° 46' 28.73"	1,200.000'	56.516'	112.948'	531,999.7024	158,501.0958	PI
	CC							530,799.5634	158,447.6140	
2104	PCC	1523+97.824						531,994.5331	158,557.3747	N 5° 14' 52.89" W
	PCC	1523+97.824						531,994.5331	158,557.3747	N 5° 14' 52.89" W
53S_44	PI	1524+92.768	21° 30' 13.17" LT	11° 27' 32.96"	500.000'	94.945'	187.655'	531,985.8488	158,651.9212	PI
	CC							531,496.6291	158,511.6411	
2105	PRC	1525+85.479						531,943.1119	158,736.7034	N 26° 45' 06.06" W
	PRC	1525+85.479						531,943.1119	158,736.7034	N 26° 45' 06.06" W
53S_45	PI	1525+89.896	8° 25' 15.78" RT	95° 29' 34.68"	60.000'	4.417'	8.819'	531,941.1236	158,740.6478	PI
	CC							531,996.6899	158,763.7109	
2106	PCC	1525+94.297						531,939.7344	158,744.8409	N 18° 19' 50.28" W
	PCC	1525+94.297						531,939.7344	158,744.8409	N 18° 19' 50.28" W
53S_46	PI	1526+22.510	70° 23' 35.92" RT	143° 14' 22.02"	40.000'	28.213'	49.144'	531,930.8613	158,771.6227	PI
	CC							531,977.7047	158,757.4209	
2107	PRC	1526+43.441						531,953.1128	158,788.9682	N 52° 03' 45.64" E
	PRC	1526+43.441						531,953.1128	158,788.9682	N 52° 03' 45.64" E
53S_47	PI	1527+02.715	58° 53' 26.69" LT	54° 34' 02.67"	105.000'	59.274'	107.923'	531,999.8612	158,825.4099	PI
	CC							531,888.5588	158,871.7800	
2108	PRC	1527+51.364						531,992.8141	158,884.2635	N 6° 49' 41.06" W
	PRC	1527+51.364						531,992.8141	158,884.2635	N 6° 49' 41.06" W
53S_48	PI	1528+06.721	10° 33' 05.17" RT	9° 33' 26.14"	599.500'	55.358'	110.402'	531,986.2326	158,939.2286	PI
	CC							532,588.0621	158,955.5383	
2109	PRC	1528+61.766						531,989.8275	158,994.4694	N 3° 43' 24.11" E
	PRC	1528+61.766						531,989.8275	158,994.4694	N 3° 43' 24.11" E
53S_49	PI	1529+10.060	3° 41' 17.22" LT	3° 49' 10.99"	1,500.000'	48.294'	96.555'	531,992.9637	159,042.6615	PI
	CC							530,492.9937	159,091.8783	
2110	PT	1529+58.321						531,992.9934	159,090.9555	N 0° 02' 06.89" E
2111	POT	1530+37.918						531,993.0424	159,170.5531	

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049 - Sunset RAB\Plan\002614049_ALT.dgn 12/07/2023 9:38:24 AM

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: AARON P. ANDERSON

SIGNATURE:

DATE: 12/06/23 LICENSE NO. 58657

DRAWN BY BTU DATE 12/06/23

DESIGN BY BTU DATE 12/06/23

CHECKED BY APA DATE 12/06/23

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SP 002-614-049
SP 210-020-013
SP 106-020-041

ALIGNMENT TABULATION
NB CR 53 & SB CR 53

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	E	N	
℄ RADIAL										<14C_4>
3001	PC	10+00.000						531,982.6341	158,797.1160	S 82° 55' 16.44" E
14C_41	PI	10+37.924	64° 35' 26.16" RT	95° 29' 34.68"	60.000'	37.924'	67.639'	532,020.2685	158,792.4425	PI
	CC							531,975.2400	158,737.5733	
3002	PCC	10+67.639						532,032.1955	158,756.4433	S 18° 19' 50.28" E
	PCC	10+67.639						532,032.1955	158,756.4433	S 18° 19' 50.28" E
14C_42	PI	11+30.924	115° 24' 33.84" RT	143° 14' 22.02"	40.000'	63.285'	80.571'	532,052.0987	158,696.3693	PI
	CC							531,994.2252	158,743.8633	
3003	PCC	11+48.210						531,989.2958	158,704.1682	N 82° 55' 16.44" W
	PCC	11+48.210						531,989.2958	158,704.1682	N 82° 55' 16.44" W
14C_43	PI	11+86.134	64° 35' 26.16" RT	95° 29' 34.68"	60.000'	37.924'	67.639'	531,951.6614	158,708.8417	PI
	CC							531,996.6899	158,763.7109	
3004	PCC	12+15.849						531,939.7344	158,744.8409	N 18° 19' 50.28" W
	PCC	12+15.849						531,939.7344	158,744.8409	N 18° 19' 50.28" W
14C_44	PI	12+79.135	115° 24' 33.84" RT	143° 14' 22.02"	40.000'	63.285'	80.571'	531,919.8312	158,804.9149	PI
	CC							531,977.7047	158,757.4209	
3005	PT	12+96.420						531,982.6341	158,797.1160	S 82° 55' 16.44" E

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	E	N	
℄ WB CSAH 14 - STAGE 2										<14W-STG2>
4530	POT	2020+00.000						530,393.4889	158,782.8940	
4531	POT	2022+39.620						530,633.0637	158,778.2283	
	PC	2024+88.678						530,882.0742	158,773.3787	S 88° 53' 03.45" E
14W-STG21	PI	2026+00.199	1° 40' 22.04" LT	0° 45' 00.15"	7,639.000'	111.521'	223.026'	530,993.5738	158,771.2072	PI
	CC							531,030.8174	166,410.9304	
	PT	2027+11.704						531,105.0892	158,772.2915	N 89° 26' 34.51" E
4532	POT	2034+73.638						531,866.9878	158,779.6996	
4533	POT	2039+40.576						532,333.8845	158,785.8803	
	PC	2045+08.993						532,902.3005	158,784.7606	S 89° 53' 13.68" E
14W-STG22	PI	2046+37.731	1° 55' 51.63" LT	0° 45' 00.15"	7,639.000'	128.739'	257.453'	533,031.0389	158,784.5070	PI
	CC							532,917.3485	166,423.7457	
	PT	2047+66.446						533,159.7128	158,788.5915	N 88° 10' 54.69" E
4534	POT	2060+36.002						534,428.6294	158,828.8710	

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049 - Sunset RAB\Plan\002614049_ALT.dgn 12/07/2023 9:38:25 AM

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: AARON P. ANDERSON

SIGNATURE:

DATE: 12/06/23 LICENSE NO. 58657

DRAWN BY BTU DATE 12/06/23

DESIGN BY BTU DATE 12/06/23

CHECKED BY APA DATE 12/06/23

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SP 002-614-049
SP 210-020-013
SP 106-020-041

ALIGNMENT TABULATION
RADIAL & WB CSAH 14 - STAGE 2

TRAFFIC CONTROL NOTES: (TYP.)

1. SALVAGED SIGNS ARE TO BE KEPT IN PRISTINE CONDITION. ANY DAMAGED SIGN SHALL BE REPLACED IN KIND AT THE EXPENSE OF THE CONTRACTOR.
2. ALL SALVAGED SIGNS SHALL BE INSTALLED USING NEW POSTS AND HARDWARE.

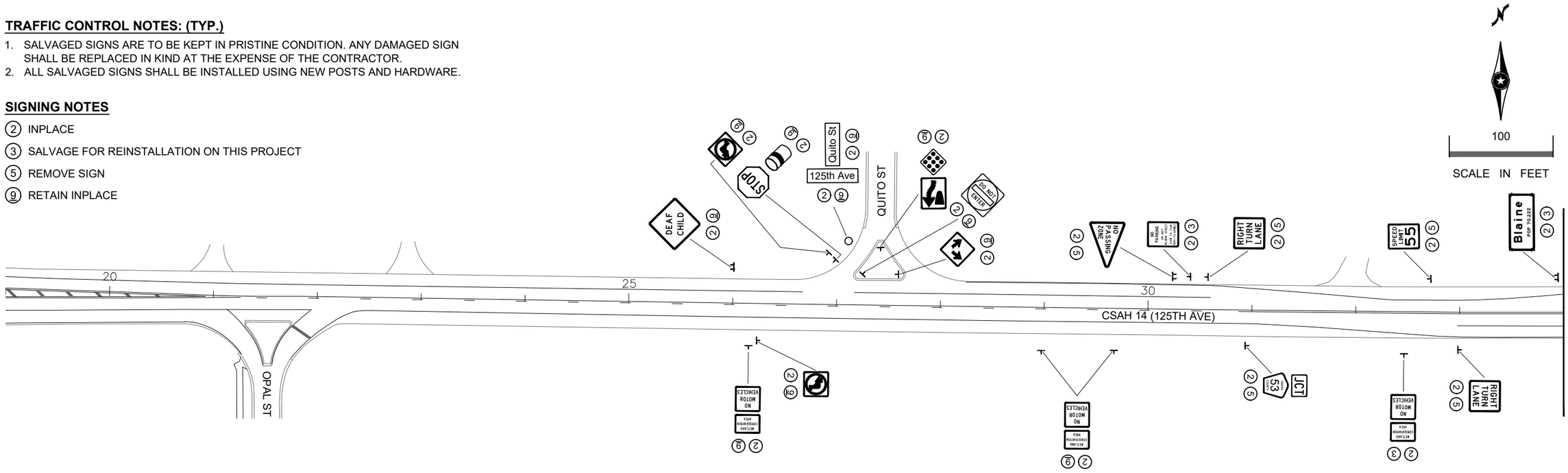
SIGNING NOTES

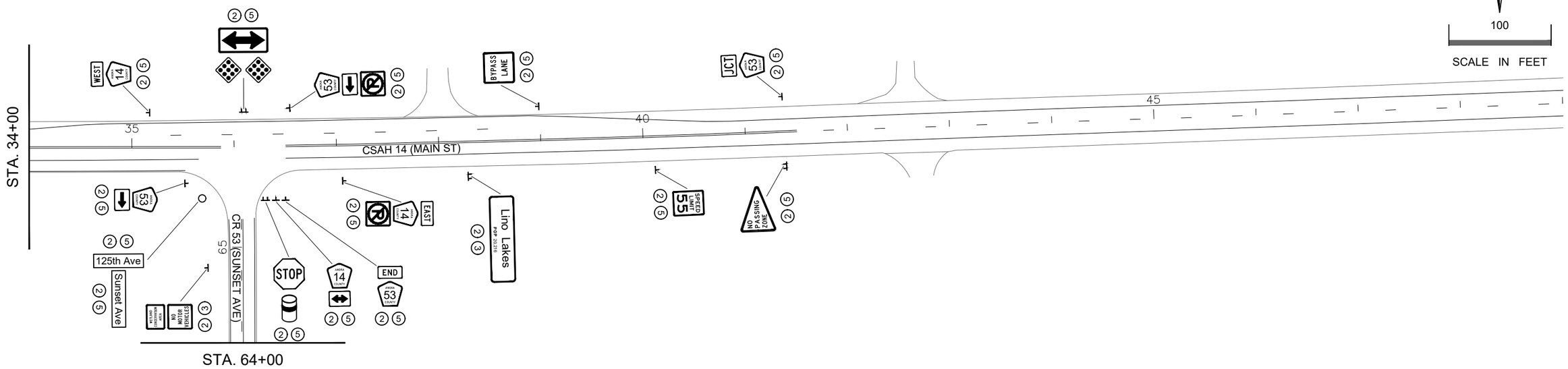
(2) INPLACE

(3) SALVAGE FOR REINSTALLATION ON THIS PROJECT

(5) REMOVE SIGN

(9) RETAIN INPLACE





NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049\Base\Traffic\Existing Signing and Striping.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: SEAN R. THIEL

SIGNATURE: Sean R. Thiel

DATE: 12/07/2023 LICENSE NO. 45129

DRAWN BY FL DATE 05/31/23

DESIGN BY FL DATE 05/31/23

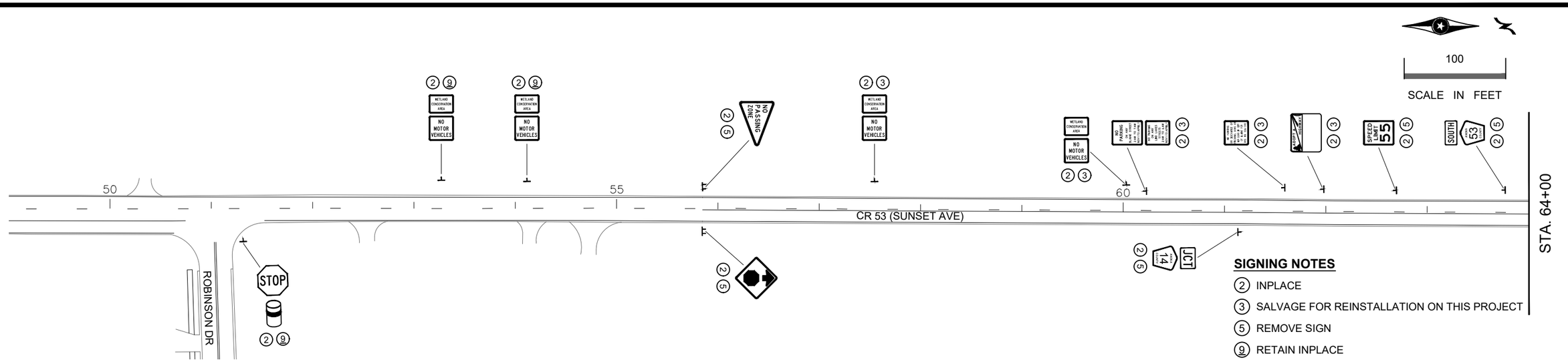
CHECKED BY SRT DATE

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-614-049

EXISTING SIGNING & STRIPING

Sheet 53 of 115 Sheets



EXISTING SIGN TAB

H

STATION	ADDRESS / DESCRIPTION (NOTES)	REMOVE SIGN TYPE C EACH	REMOVE SIGN TYPE D EACH	SALVAGE SIGN TYPE C EACH	SALVAGE SIGN TYPE D EACH	INSTALL SALVAGE SIGN TYPE C EACH	INSTALL SALVAGE SIGN TYPE D EACH	SIGN CODE	PANEL LEGEND
30+23	EB	1						W14-3	NO PASSING ZONE
30+40	WB			1		1			NO PARKING BLAINE STREET
30+57	WB	1						R3-X1	RIGHT TURN LANE
30+94	EB	1						M2-1	JCT
								M1-6M	ANOKA COUNTY 53
32+47	EB			1		1			WETLAND CONSERVATION AREA
								R5-3	NO MOTOR VEHICLES
32+72	WB	1						R2-1	SPEED LIMIT 55
32+97	EB	1						R3-X1	RIGHT TURN LANE
33+95	WB				1		1	I2-X4	BLAINE
35+18	WB	1						M3-4	WEST
								M1-6M	ANOKA COUNTY 14
35+52	EB	1						M1-6M	ANOKA COUNTY 53
								M6-1	RIGHT ARROW
35+68	EB		1						125TH AVE
									SUNSET AVE
36+10	WB	1						W1-7	DOUBLE ARROW
								OM1-1	TYPE 1 OBJECT MARKER
								OM1-1	TYPE 1 OBJECT MARKER
36+55	WB	1						M1-6M	ANOKA COUNTY 53
								M6-1	LEFT ARROW
								R8-3	NO PARKING
37+06	EB	1						M3-2	EAST
								M1-6M	ANOKA COUNTY 14
								R8-3	NO PARKING
38+28	WB				1		1	I2-X4	LINO LAKES
38+99	WB	1						R4-X8	BYPASS LANE
40+11	EB	1						R2-1	SPEED LIMIT 55
41+36	WB	1						M2-1	JCT
								M1-6M	ANOKA COUNTY 53
41+37	EB	1						W14-3	NO PASSING ZONE

STATION	ADDRESS / DESCRIPTION (NOTES)	REMOVE SIGN TYPE C EACH	REMOVE SIGN TYPE D EACH	SALVAGE SIGN TYPE C EACH	SALVAGE SIGN TYPE D EACH	INSTALL SALVAGE SIGN TYPE C EACH	INSTALL SALVAGE SIGN TYPE D EACH	SIGN CODE	PANEL LEGEND
55+85	NB	1						W3-1	STOP AHEAD
55+85	SB	1						W14-3	NO PASSING ZONE
57+54	SB			1		1			WETLAND CONSERVATION AREA
								R5-3	NO MOTOR VEHICLES
60+03	SB			1		1			WETLAND CONSERVATION AREA
								R5-3	NO MOTOR VEHICLES
60+23	SB			1		1			NO PARKING BLAINE
									NO PARKING LINO LAKES
61+13	NB	1						M2-1	JCT
								M1-6M	ANOKA COUNTY 14
61+59	SB				1		1		NO HUNTING
61+98	SB			1		1		D14-X1	ADOPT A HIGHWAY
62+70	SB	1						R2-1	SPEED LIMIT 55
63+77	SB	1						M3-3	SOUTH
								M1-6M	ANOKA COUNTY 53
64+80	SB			1		1			WETLAND CONSERVATION AREA
								R5-3	NO MOTOR VEHICLES
65+45	NB	1						R1-1	STOP
								X4-3	CIRCULAR DELINEATOR
65+45	NB	1						M1-6M	ANOKA COUNTY 14
								M6-4	DOUBLE ARROW
65+45	NB	1						M4-6	END
								M1-6M	ANOKA COUNTY 53
	TOTAL =	22	1	7	3	7	3		

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049\Base\Traffic\Existing Signing and Striping.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: SEAN R. THIEL

SIGNATURE: Sean R. Thiel

DATE: 12/07/2023 LICENSE NO. 45129

DRAWN BY FL DATE 05/31/23

DESIGN BY FL DATE 05/31/23

CHECKED BY SRT DATE

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-614-049

EXISTING SIGNING & STRIPING

Sheet 54 of 115 Sheets

PARCEL 3
ROBINSON LANDSCAPING INC

PARCEL 4
5 MAIN ST
CLARK L. ROBINSON

℄ WB CSAH 14
CONST. LIMITS
WETLAND BOUNDARY
EXISTING R/W

P/E
NEW R/W

NB CR 53 STA. 527+39.12
END SP 002-614-049
SP 106-020-041
SP 210-020-013

POLE TO BE REMOVED (BY OTHERS)

℄ WB CSAH 14
CONST. LIMITS
WETLAND BOUNDARY
EXISTING R/W

1135
1140
125TH AVE NE
MAIN ST
135
140

EB CSAH 14 STA. 121+42.51
BEGIN SP 002-614-049
SP 106-020-041

NEW R/W
CONST. LIMITS
EXISTING R/W
WETLAND BOUNDARY
℄ EB CSAH 14

RESTRICTED AREA
SEE NOTE R1

525
525

T/E
CONST. LIMITS
P/E
WETLAND BOUNDARY
℄ EB CSAH 14

EB CSAH 14 STA. 136+18.83
END SP 106-020-041
BEGIN SP 210-020-013

P/E

EXISTING R/W

EB CSAH 14 STA. 147+45.10
END SP 002-614-049
SP 210-020-013

PARCEL 6
ANOKA COUNTY HIGHWAY DEPT

PARCEL 5
ROBINSON LANDSCAPING INC

T/E
CONST. LIMITS
WETLAND BOUNDARY
NEW R/W
EXISTING R/W
℄ NB CR 53

℄ SB CR 53
WETLAND BOUNDARY
EXISTING R/W
CONST. LIMITS
NEW R/W

SUNSET AVE NE

NB CR 53 STA. 515+89.56
BEGIN SP 002-614-049
SP 106-020-041
SP 210-020-013

1520
520

LEGEND

- REMOVE BITUMINOUS PAVEMENT
- REMOVE DRIVEWAY
- SEE NOTE R1.
- REMOVE STORM SEWER / PIPE CULVERTS
- TREE GRUBBING BY EACH

REMOVAL NOTES:

THE CONTRACTOR SHALL PERFORM ALL GRUBBING AS DIRECTED AND MARKED IN THE FIELD BY THE ENGINEER. THE CONTRACTOR SHALL OTHERWISE PROTECT ALL EXISTING TREES NOT SPECIFICALLY MARKED FOR REMOVAL.

ALL PRIVATE UTILITIES TO BE RELOCATED BY OTHERS AS REQUIRED.

ALL ROADWAY SIGNS WITHIN THE CONSTRUCTION LIMITS AND CONFLICTING SIGNS SHALL BE SALVAGED BY THE CONTRACTOR.

NOTE R1
CONTRACTOR CANNOT ACCESS OR DISTURB THIS AREA UNTIL AFTER JULY 15TH, 2024

N

0 100
SCALE IN FEET

1 OF 1

NO	DATE	BY	CKD	APPR	REVISION
1	03/05/2024	BTU	APA	APA	ADDED NOTE R1

NAME: P:\002-614-049 - Sunset RAB\Plan\002614049_RM.dgn 03/05/2024 2:02:38 PM

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: AARON P. ANDERSON
SIGNATURE:
DATE: 12/06/23 LICENSE NO. 58657

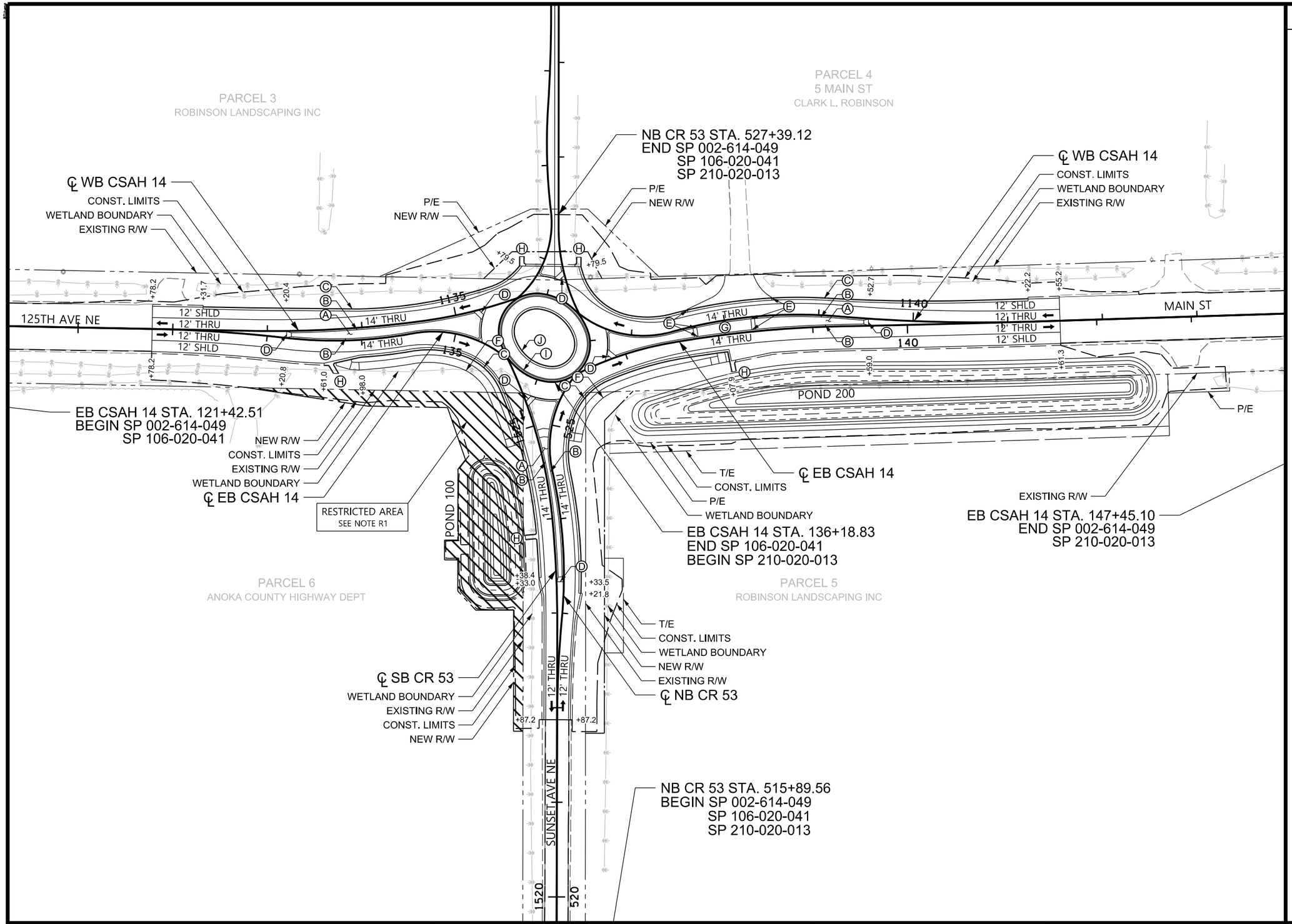
DRAWN BY BTU DATE 12/06/23
DESIGN BY BTU DATE 12/06/23
CHECKED BY APA DATE 12/06/23

ANOKA COUNTY HIGHWAY DEPT.

SP 002-614-049
SP 210-020-013
SP 106-020-041

INPLACE TOPOGRAPHY AND REMOVAL PLAN

Sheet 55 of 115 Sheets



CONSTRUCTION NOTES

- SEE NOTE R1.
- (A) CONCRETE MEDIAN (4" CONC. WALK)
- (B) B418 MOD. CURB & GUTTER
- (C) B424 CURB & GUTTER
- (D) CONC. MEDIAN NOSE (STD. PLAN 7113)
- (E) CURB DROP
- (F) 8' BITUMINOUS SIDEPATH
- (G) DEPRESSED CONCRETE MEDIAN
- (H) CONCRETE FLUME
- (I) R418 CURB & GUTTER
- (J) B624 CURB & GUTTER (TIP OUT)

ALL DIMENSIONS ARE TO FACE OF CURB OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

SEE INTERSECTION DETAILS (SHEET 63) FOR PEDESTRIAN RAMP CURB DROPS

NOTE R1

CONTRACTOR CANNOT ACCESS OR DISTURB THIS AREA UNTIL AFTER JULY 15TH, 2024

SCALE 0 100 IN FEET

1 OF 1

NO	DATE	BY	CKD	APPR	REVISION
1	03/05/2024	BTU	APA	APA	ADDED NOTE R1

NAME: P:\002-614-049 - Sunset RAB\Plan\002614049_PP.dgn 03/05/2024 2:02:51 PM

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: AARON P. ANDERSON
SIGNATURE:
DATE: 12/06/23 LICENSE NO. 58657

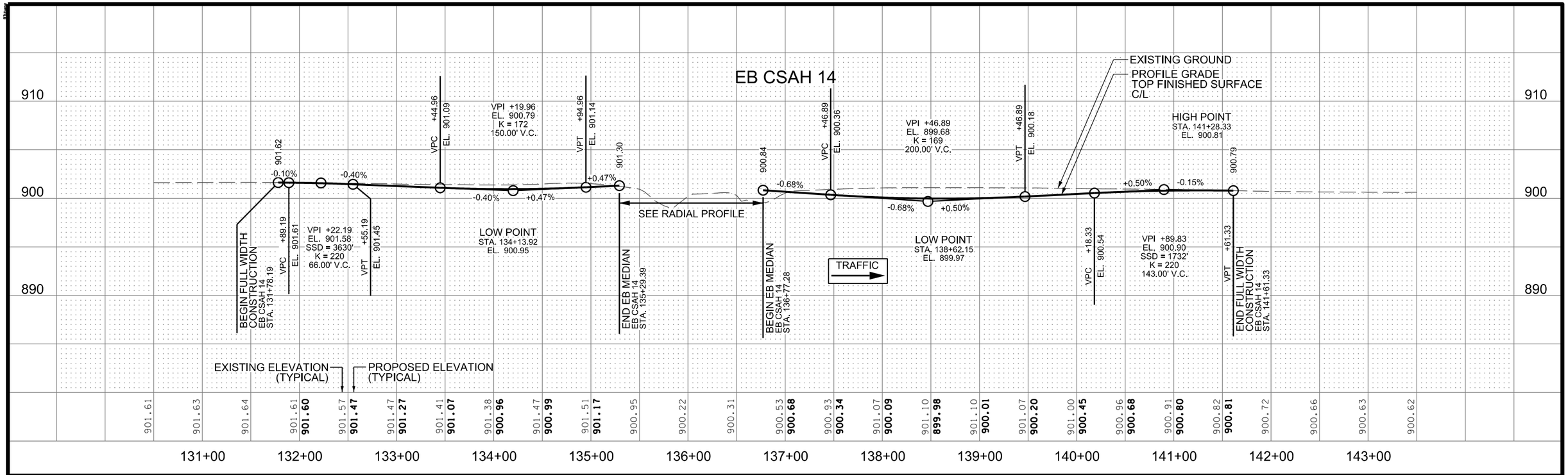
DRAWN BY BTU DATE 12/06/23
DESIGN BY BTU DATE 12/06/23
CHECKED BY APA DATE 12/06/23

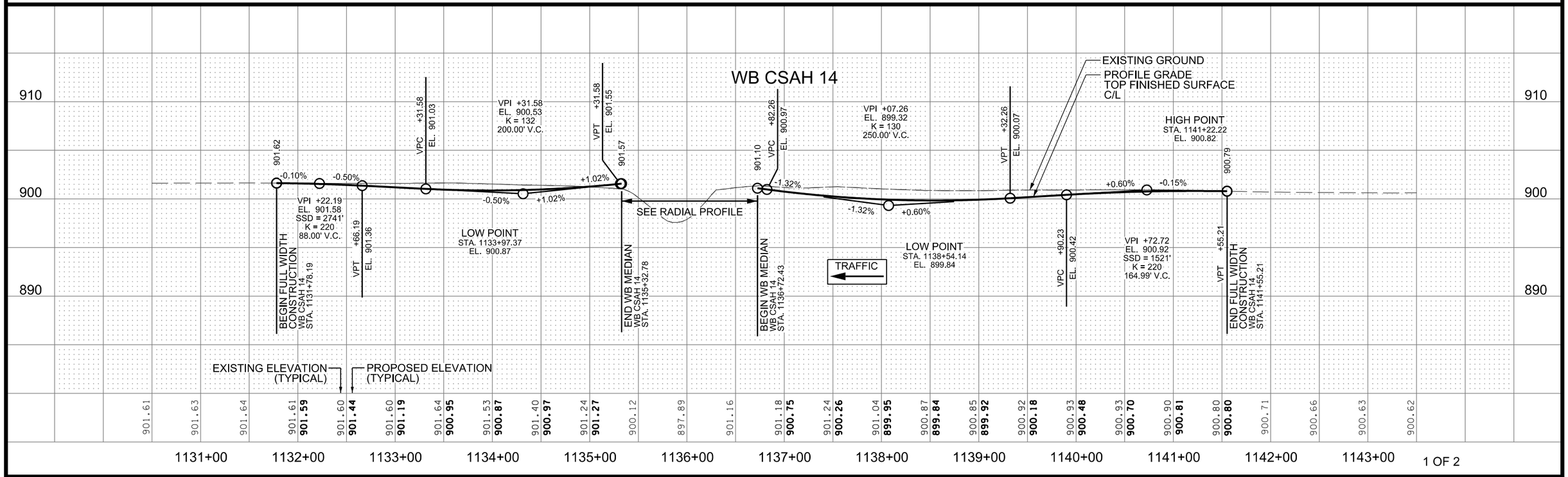
ANOKA COUNTY HIGHWAY DEPT.

SP 002-614-049
SP 210-020-013
SP 106-020-041

CONSTRUCTION PLAN

Sheet 56 of 115 Sheets





1 OF 2

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049 - Sunset RAB\Plan\002614049_PR-1.dgn 12/07/2023 9:38:32 AM

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: AARON P. ANDERSON

SIGNATURE:

DATE: 12/06/23 LICENSE NO. 58657

DRAWN BY BTU DATE 12/06/23

DESIGN BY BTU DATE 12/06/23

CHECKED BY APA DATE 12/06/23

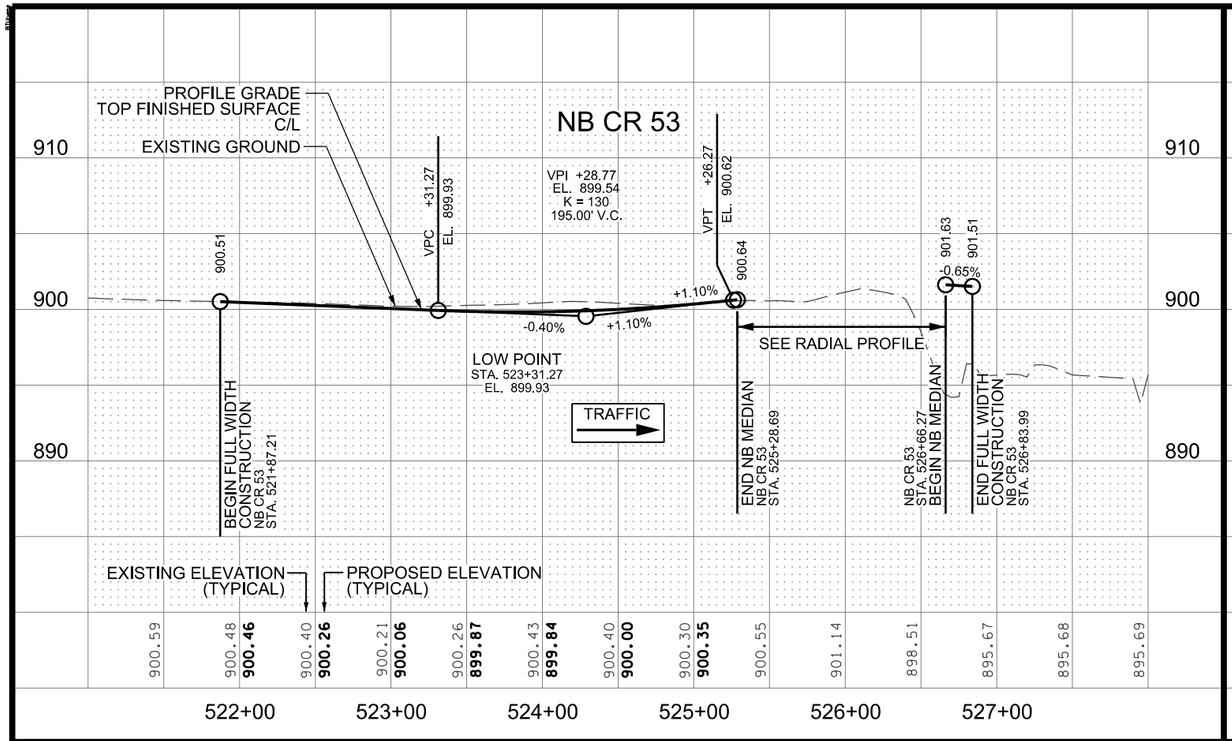
ANOKA COUNTY

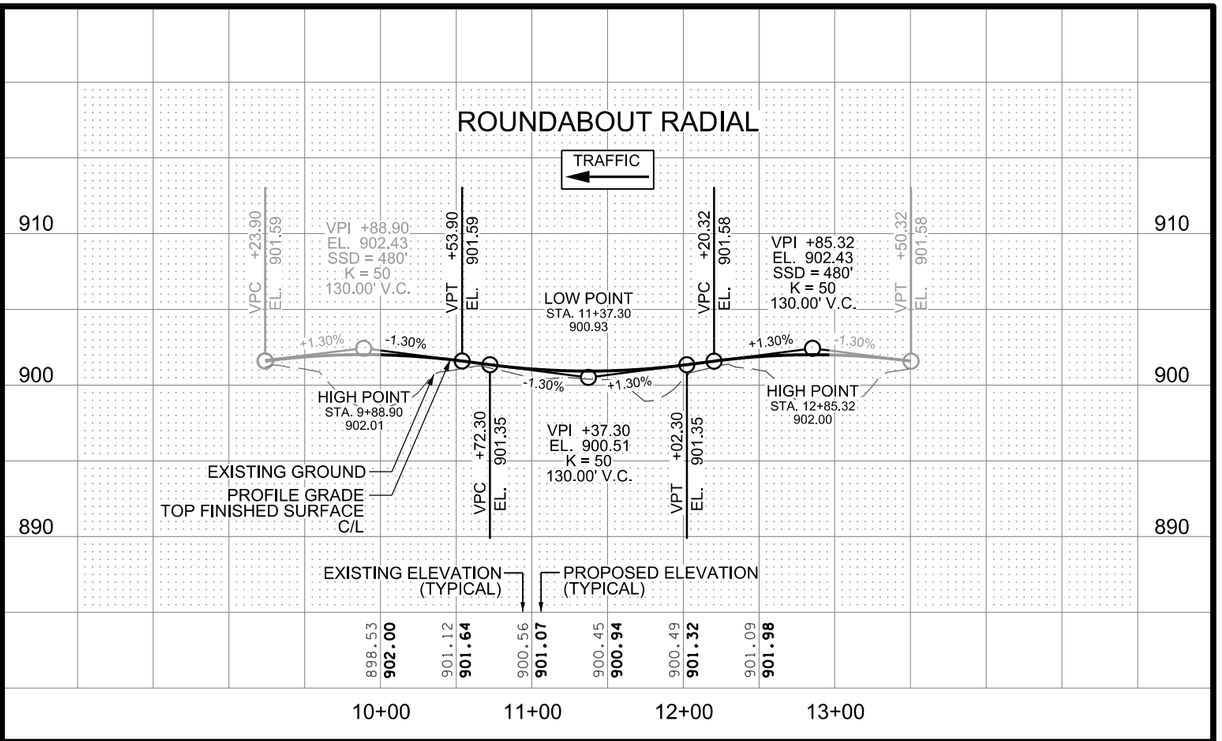
ANOKA COUNTY HIGHWAY DEPT.

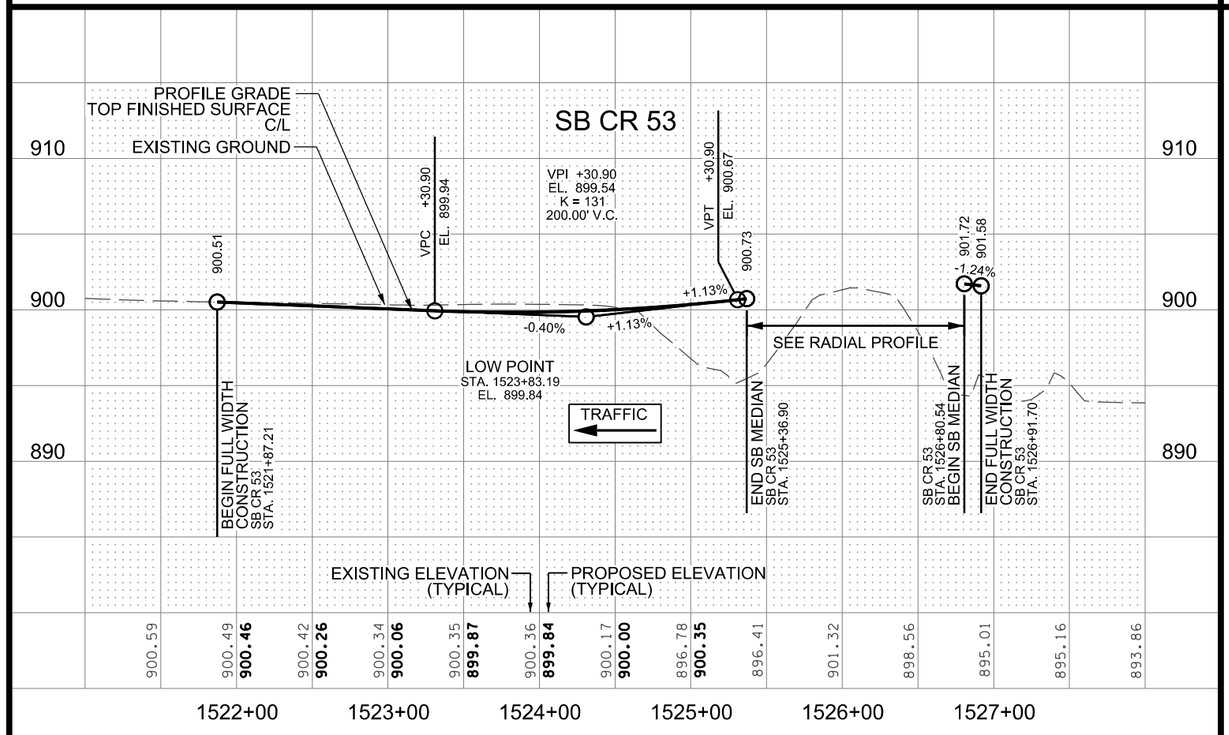
SP 002-614-049
SP 210-020-013
SP 106-020-041

PROFILE
CSAH 14

Sheet 57 of 115 Sheets







2 OF 2

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049 - Sunset RAB\Plan\002614049_PR-2.dgn 12/07/2023 9:38:33 AM

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: AARON P. ANDERSON

SIGNATURE:

DATE: 12/06/23 LICENSE NO. 58657

DRAWN BY BTU DATE 12/06/23

DESIGN BY BTU DATE 12/06/23

CHECKED BY APA DATE 12/06/23

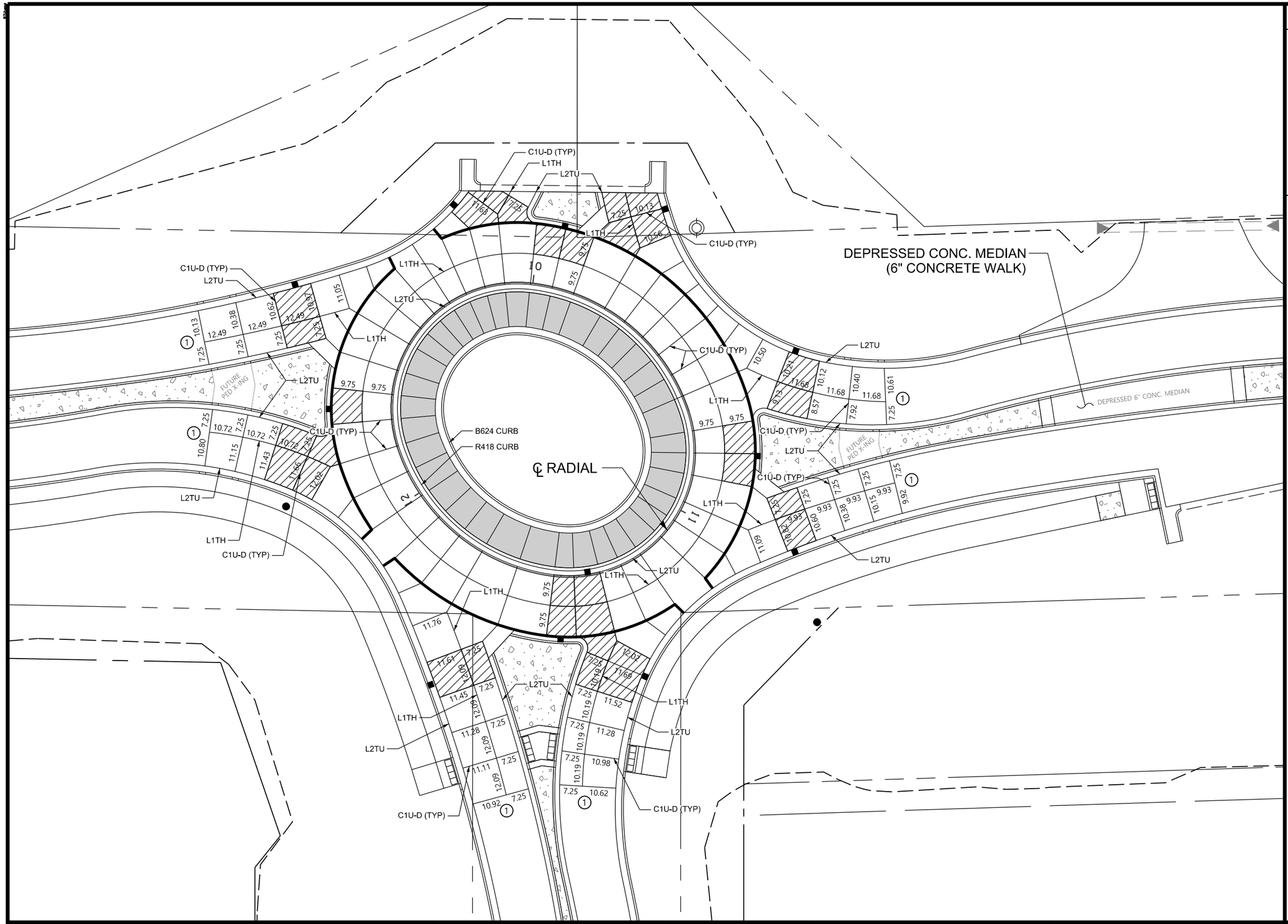
ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SP 002-614-049
SP 210-020-013
SP 106-020-041

PROFILE
CR 53 & RADIAL

Sheet 58 of 115 Sheets



LEGEND

- CONCRETE PAVEMENT 7.0" (SPECIAL)
- SUPPLEMENTAL REINF. REQUIRED SEE MNDOT STANDARD PLATE 1070 (INCIDENTAL)
- 4" CONCRETE WALK
- E1H JOINT
- (1) PERMANENT HEADER (INCIDENTAL) SEE STANDARD PLAN 5-297.221

NOTES:

1. ALL L1TH JOINTS ARE 7.25' OFFSET FROM SPLITTER ISLAND CURB & GUTTER UNLESS OTHERWISE NOTED.
2. JOINT LAYOUTS MAY BE CHANGED IN THE FIELD BY THE CONTRACTOR WITH THE APPROVAL OF THE ENGINEER.
3. CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL PROPOSED AND EXISTING STRUCTURES ARE LOCATED AND RAISED DURING PAVING.
4. IT IS ASSUMED A PORTION OF THE REINFORCEMENT BARS WILL NEED TO BE DRILLED AND GROUTED IN THE SPLITTER ISLANDS DUE TO STAGING. REINFORCEMENT BARS WILL BE INCIDENTAL.
5. JOINT LOCATIONS SHALL MATCH EXISTING JOINTS INCLUDING CURB & GUTTER JOINTS.
6. REFER TO TEMPORARY TRAFFIC CONTROL PLAN FOR CONCRETE PAVEMENT STAGING DETAILS. USE BENT TIE BARS TO TIE STAGED PAVEMENT AREAS TOGETHER.
7. ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE NOTED.
8. SEE SHEET 15 FOR TRUCK APRON DETAILS

N

0 30
SCALE IN FEET

1 OF 5

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049 - Sunset RAB\Plan\002614049_INT-1.dgn 12/07/2023 9:38:37 AM

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: AARON P. ANDERSON

SIGNATURE:

DATE: 12/06/23 LICENSE NO. 58657

DRAWN BY BTU DATE 12/06/23

DESIGN BY BTU DATE 12/06/23

CHECKED BY APA DATE 12/06/23

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SP 002-614-049
SP 210-020-013
SP 106-020-041

INTERSECTION DETAILS
CONCRETE PAVING PLAN

Sheet 59 of 115 Sheets

NW QUAD. STA. 3011+84.44
SB CR 53 STA. 1526+81.07
18.30' LT
℄ CSAH 14 WB
NW QUAD. STA. 3011+32.30
EB CSAH 14 STA. 1135+32.78
17.76' LT
DEPRESSED CONC. MEDIAN
(6" CONCRETE WALK)
NE QUAD. STA. 3110+00.00
NB CR 53 STA. 526+80.01
16.59' LT
NE QUAD. STA. 3111+25.79
WB CSAH 14 STA. 1137+47.62
16.00' LT
SW QUAD. STA. 3210+44.25
EB CSAH 14 STA. 135+00.00
17.91' RT
℄ CSAH 14 EB
℄ CR 53 SB
SW QUAD. STA. 3211+25.30
SB CR 53 STA. 1525+36.90
18.47' RT
℄ RADIAL
SE QUAD. STA. 3311+67.48
EB CSAH 14 STA. 137+25.00
16.67' RT
℄ CR 53 NB
SE QUAD. STA. 3310+68.88
NB CR 53 STA. 525+25.00
18.56' RT
DEPRESSED 6" CONC. MEDIAN
FUTURE PED X-ING
2.00%
HP
LP

LEGEND

- 0.2' CONTOURS
- HP LOCAL HIGH POINT
- LP LOCAL LOW POINT
- DRAINAGE FLOW ARROW

NOTES:

SEE SHEET 61 FOR QUADRANT TOE / LIP OF GUTTER PROFILES

SEE SHEET 58 FOR RADIAL PROFILE

N

SCALE 0 30 IN FEET

2 OF 5

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049 - Sunset RAB\Plan\002614049_INT-2.dgn 12/07/2023 9:38:38 AM

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: AARON P. ANDERSON
SIGNATURE:
DATE: 12/06/23 LICENSE NO. 58657

DRAWN BY BTU DATE 12/06/23
DESIGN BY BTU DATE 12/06/23
CHECKED BY APA DATE 12/06/23

ANOKA COUNTY HIGHWAY DEPT.

SP 002-614-049
SP 210-020-013
SP 106-020-041

INTERSECTION DETAILS
ROUNDABOUT COUNTOURS

Sheet 60 of 115 Sheets

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	E	N	
℄ C.S.A.H. 14 / C.R. 53 ROUNDABOUT NW QUADRANT <53QNW_4>										
2366	POT	3010+00.000						531,789.0328	158,778.6987	
	PC	3010+00.000						531,789.0328	158,778.6987	N 88° 48' 19.57" E
53QNW_41	PI	3010+71.618	16° 37' 51.18" LT	11° 41' 34.86"	490.000'	71.618'	142.229'	531,860.6353	158,780.1918	PI
	CC							531,778.8175	159,268.5922	
	PCC	3011+42.229						531,928.8154	158,802.1154	N 72° 10' 28.39" E
	PCC	3011+42.229						531,928.8154	158,802.1154	N 72° 10' 28.39" E
53QNW_42	PI	3011+64.059	36° 05' 35.72" LT	85° 30' 57.92"	67.000'	21.830'	42.206'	531,949.5973	158,808.7979	PI
	CC							531,908.3054	158,865.8989	
	PT	3011+84.436						531,962.4536	158,826.4404	N 36° 04' 52.68" E

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	E	N	
℄ C.S.A.H. 14 / C.R. 53 ROUNDABOUT NE QUADRANT <53QNE_4>										
	PC	3110+00.000						532,022.0968	158,825.7665	S 15° 18' 06.55" E
53QNE_41	PI	3110+04.581	2° 45' 45.35" LT	30° 09' 20.42"	190.000'	4.581'	9.161'	532,023.3059	158,821.3474	PI
	CC							532,205.3611	158,875.9082	
	PCC	3110+09.161						532,024.7265	158,816.9918	S 18° 03' 51.90" E
	PCC	3110+09.161						532,024.7265	158,816.9918	S 18° 03' 51.90" E
53QNE_42	PI	3110+48.524	60° 52' 08.11" LT	85° 30' 57.92"	67.000'	39.363'	71.178'	532,036.9324	158,779.5692	PI
	CC							532,088.4240	158,837.7676	
	PCC	3110+80.339						532,075.5633	158,772.0135	S 78° 56' 00.01" E
	PCC	3110+80.339						532,075.5633	158,772.0135	S 78° 56' 00.01" E
53QNE_43	PI	3111+03.465	26° 02' 31.11" LT	57° 17' 44.81"	100.000'	23.125'	45.452'	532,098.2587	158,767.5745	PI
	CC							532,094.7584	158,870.1539	
	PT	3111+25.791						532,120.5987	158,773.5502	N 75° 01' 28.88" E

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	E	N	
℄ C.S.A.H. 14 / C.R. 53 ROUNDABOUT SW QUADRANT <53QSW_4>										
	PC	3210+00.000						531,844.6122	158,738.5669	N 80° 03' 30.02" E
53QSW_41	PI	3210+31.174	31° 38' 44.16" RT	52° 05' 13.46"	110.000'	31.174'	60.755'	531,875.3182	158,743.9489	PI
	CC							531,863.6032	158,630.2186	
	PCC	3210+60.755						531,904.2823	158,732.4204	S 68° 17' 45.82" E
	PCC	3210+60.755						531,904.2823	158,732.4204	S 68° 17' 45.82" E
53QSW_42	PI	3210+88.555	45° 04' 08.76" RT	85° 30' 57.92"	67.000'	27.800'	52.702'	531,930.1112	158,722.1398	PI
	CC							531,879.5050	158,670.1702	
	PCC	3211+13.458						531,941.0747	158,696.5933	S 23° 13' 37.06" E
	PCC	3211+13.458						531,941.0747	158,696.5933	S 23° 13' 37.06" E
53QSW_43	PI	3211+54.751	9° 26' 31.91" RT	11° 27' 32.96"	500.000'	41.293'	82.399'	531,957.3595	158,658.6472	PI
	CC							531,481.5997	158,499.4061	
	PT	3211+95.856						531,967.1986	158,618.5437	S 13° 47' 05.15" E

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	E	N	
℄ C.S.A.H. 14 / C.R. 53 ROUNDABOUT SE QUADRANT <53QSE_4>										
	PC	3310+00.000						532,011.1952	158,607.4651	N 12° 01' 29.72" W
53QSE_41	PI	3310+32.686	33° 05' 53.02" RT	52° 05' 13.46"	110.000'	32.686'	63.544'	532,004.3856	158,639.4338	PI
	CC							532,118.7815	158,630.3822	
	PCC	3310+63.544						532,016.1381	158,669.9337	N 21° 04' 23.31" E
	PCC	3310+63.544						532,016.1381	158,669.9337	N 21° 04' 23.31" E
53QSE_42	PI	3310+91.449	45° 13' 22.14" RT	85° 30' 57.92"	67.000'	27.905'	52.882'	532,026.1716	158,695.9726	PI
	CC							532,078.6573	158,645.8432	
	PCC	3311+16.426						532,051.7224	158,707.1907	N 66° 17' 45.45" E
	PCC	3311+16.426						532,051.7224	158,707.1907	N 66° 17' 45.45" E
53QSE_43	PI	3311+58.652	14° 09' 32.54" RT	16° 51' 06.12"	340.000'	42.226'	84.021'	532,090.3858	158,724.1660	PI
	CC							532,188.4066	158,395.8751	
	PCC	3312+00.447						532,132.0271	158,731.1680	N 80° 27' 17.99" E
	PCC	3312+00.447						532,132.0271	158,731.1680	N 80° 27' 17.99" E
53QSE_44	PI	3312+24.261	2° 24' 21.81" RT	5° 03' 09.14"	1,134.000'	23.814'	47.621'	532,155.5113	158,735.1169	PI
	CC							532,320.0695	157,612.8675	
	PT	3312+48.068						532,179.1406	158,738.0764	N 82° 51' 39.79" E

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049 - Sunset RAB\Plan\002614049_INT-3.dgn 12/07/2023 9:38:40 AM

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: AARON P. ANDERSON

SIGNATURE:

DATE: 12/06/23 LICENSE NO. 58657

DRAWN BY BTU DATE 12/06/23

DESIGN BY BTU DATE 12/06/23

CHECKED BY APA DATE 12/06/23

ANOKA COUNTY

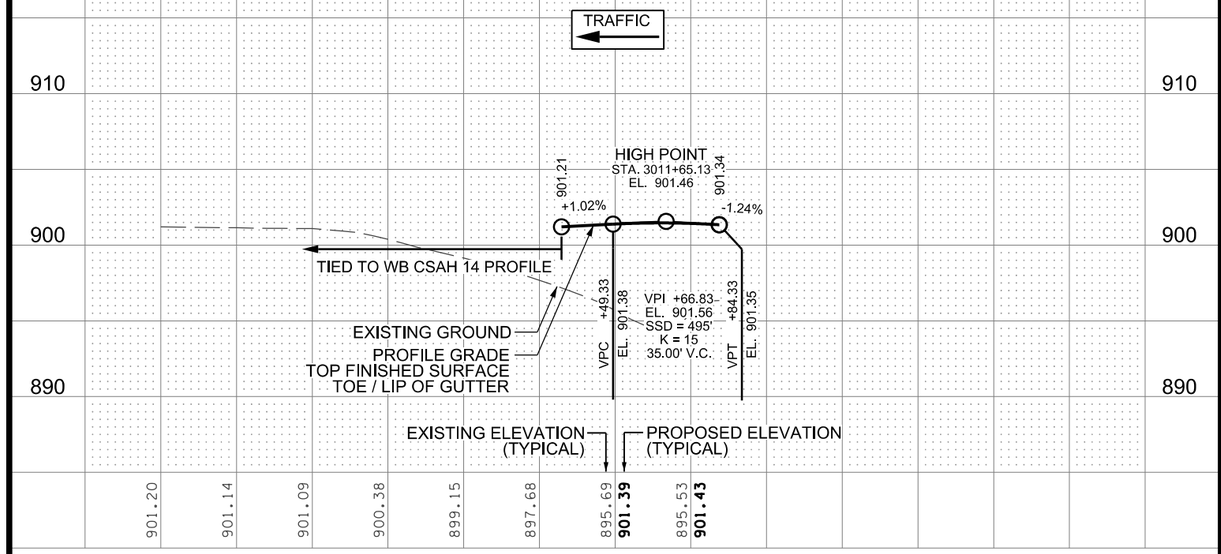
ANOKA COUNTY HIGHWAY DEPT.

SP 002-614-049
SP 210-020-013
SP 106-020-041

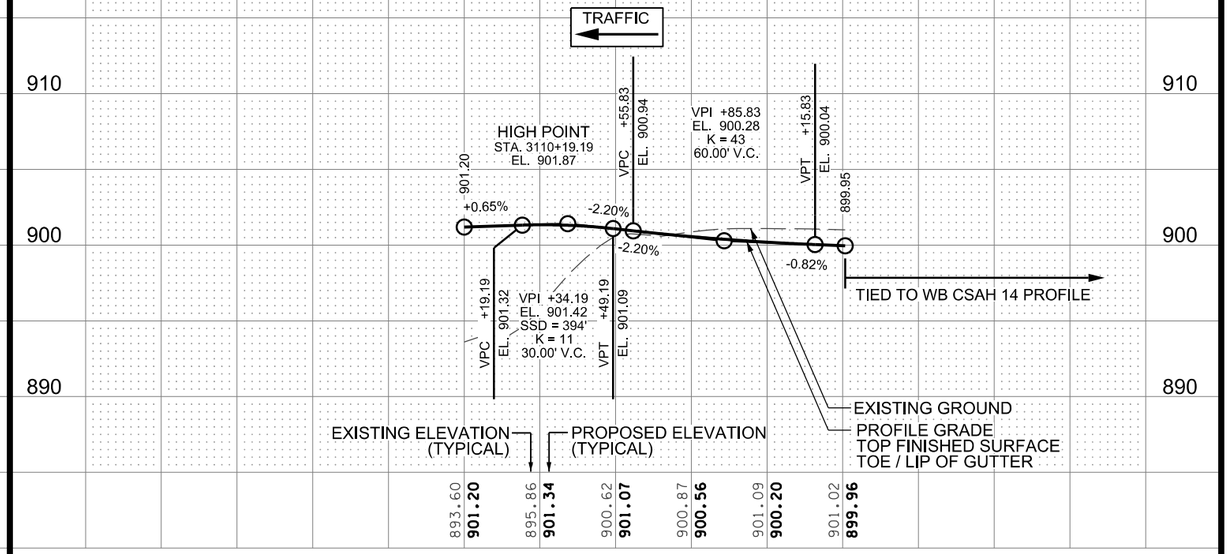
INTERSECTION DETAILS
ROUNDABOUT QUADRANT ALIGNMENT TABULATIONS

Sheet 61 of 115 Sheets

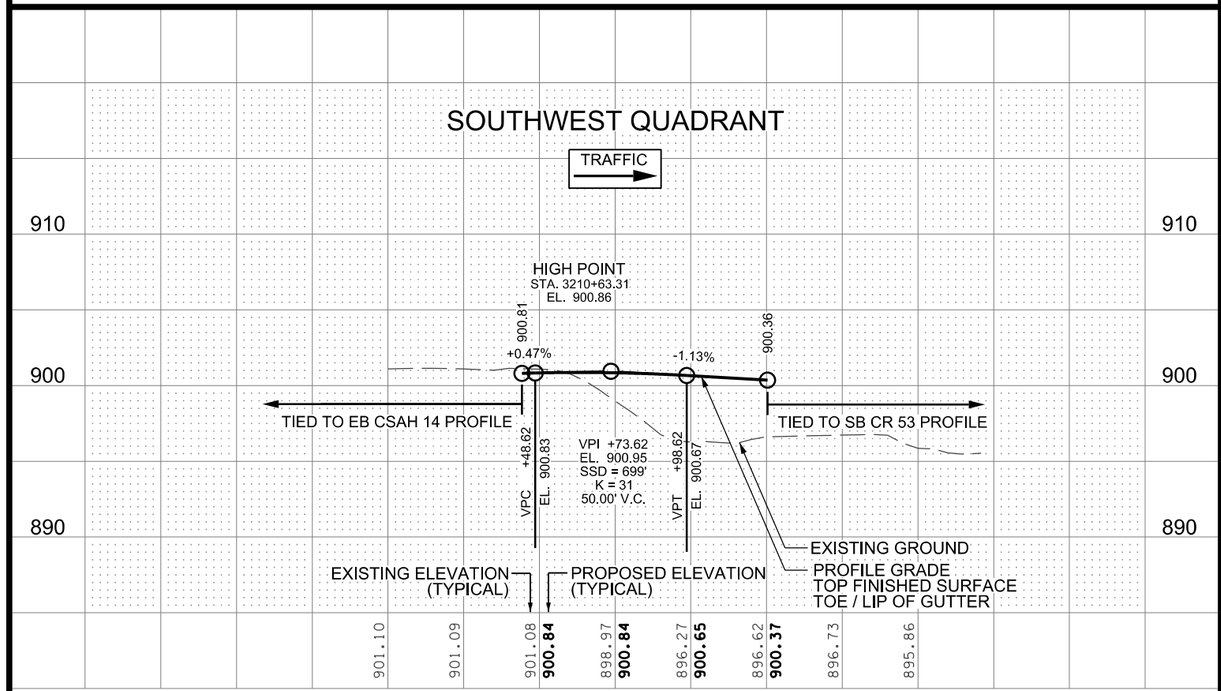
NORTHWEST QUADRANT



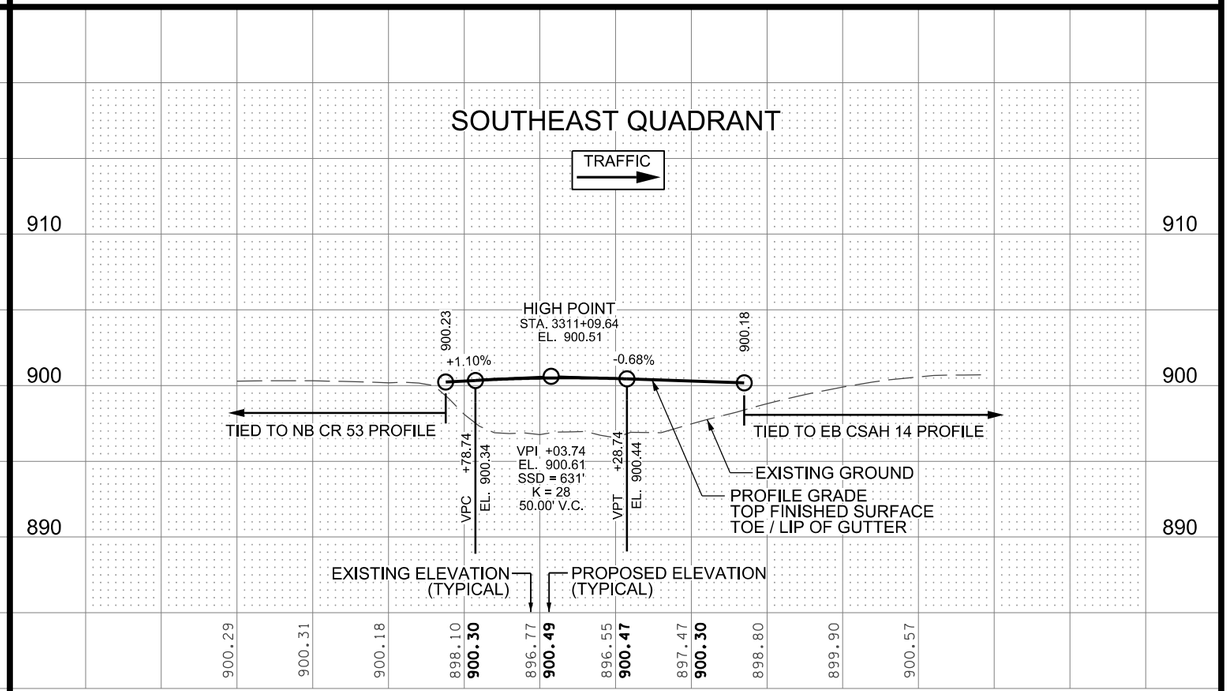
NORTHEAST QUADRANT



SOUTHWEST QUADRANT



SOUTHEAST QUADRANT



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049 - Sunset RAB\Plan\002614049_INT-4.dgn 12/07/2023 9:38:42 AM

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: AARON P. ANDERSON

SIGNATURE:

DATE: 12/06/23 LICENSE NO. 58657

DRAWN BY BTU DATE 12/06/23

DESIGN BY BTU DATE 12/06/23

CHECKED BY APA DATE 12/06/23

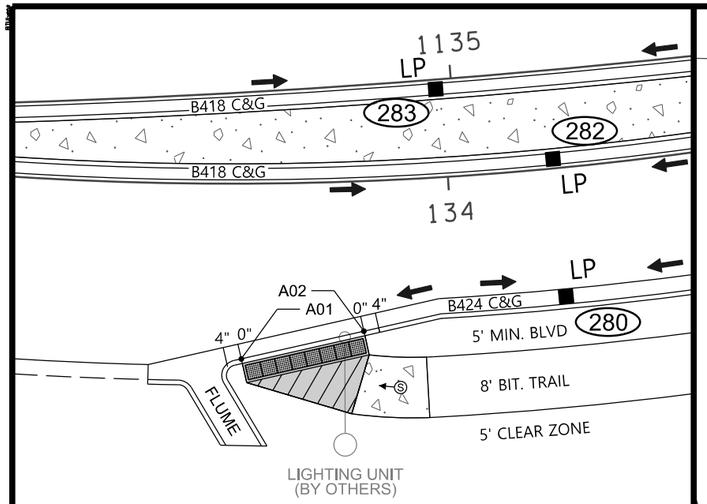
ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SP 002-614-049
SP 210-020-013
SP 106-020-041

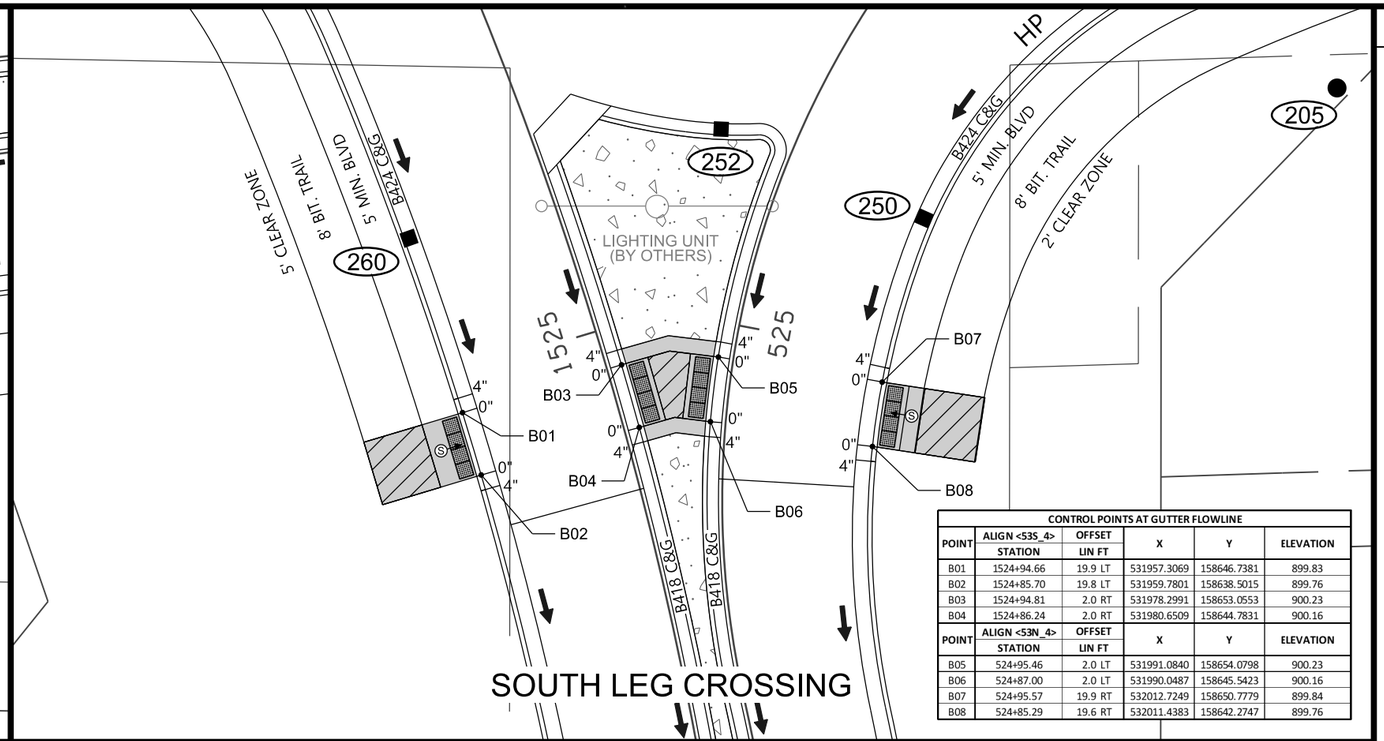
INTERSECTION DETAILS
ROUNDABOUT QUADRANT PROFILES

Sheet 62 of 115 Sheets



CONTROL POINTS AT GUTTER FLOWLINE					
POINT	ALIGN <14E_4> STATION	OFFSET LIN FT	X	Y	ELEVATION
A01	133+72.64	23.1 RT	531765.4867	158724.4268	900.46
A02	133+88.16	19.8 RT	531781.6781	158728.0872	900.50

SOUTHEAST TRAIL CONNECTION

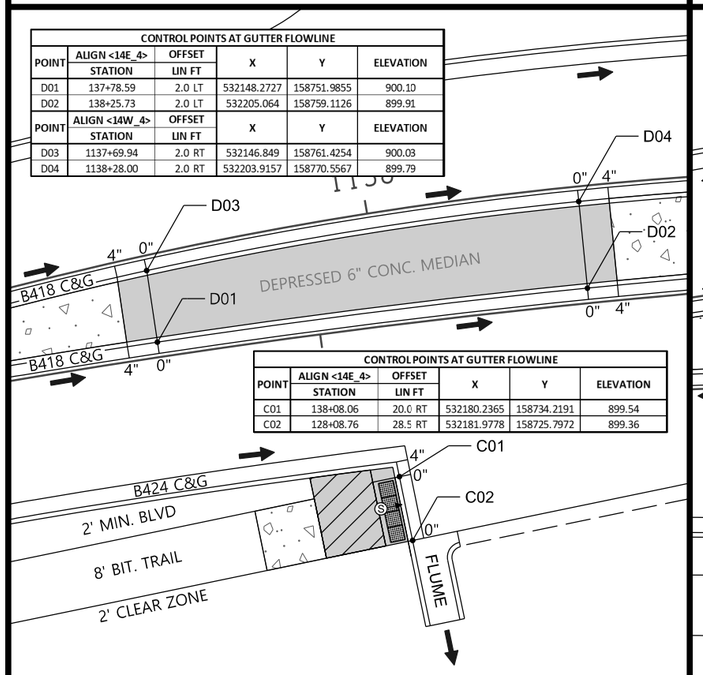


CONTROL POINTS AT GUTTER FLOWLINE					
POINT	ALIGN <53S_4> STATION	OFFSET LIN FT	X	Y	ELEVATION
B01	1524+94.66	19.9 LT	531957.3069	158646.7381	899.83
B02	1524+85.70	19.8 LT	531959.7801	158638.5015	899.76
B03	1524+94.81	2.0 RT	531978.2991	158653.0553	900.23
B04	1524+86.24	2.0 RT	531980.6509	158644.7831	900.16
POINT	ALIGN <53N_4> STATION	OFFSET LIN FT	X	Y	ELEVATION
B05	524+95.46	2.0 LT	531991.0840	158654.0798	900.23
B06	524+87.00	2.0 LT	531990.0487	158645.5423	900.16
B07	524+95.57	19.9 RT	532012.7249	158650.7779	899.84
B08	524+85.29	19.6 RT	532011.4383	158642.2747	899.76

SOUTH LEG CROSSING

LEGEND

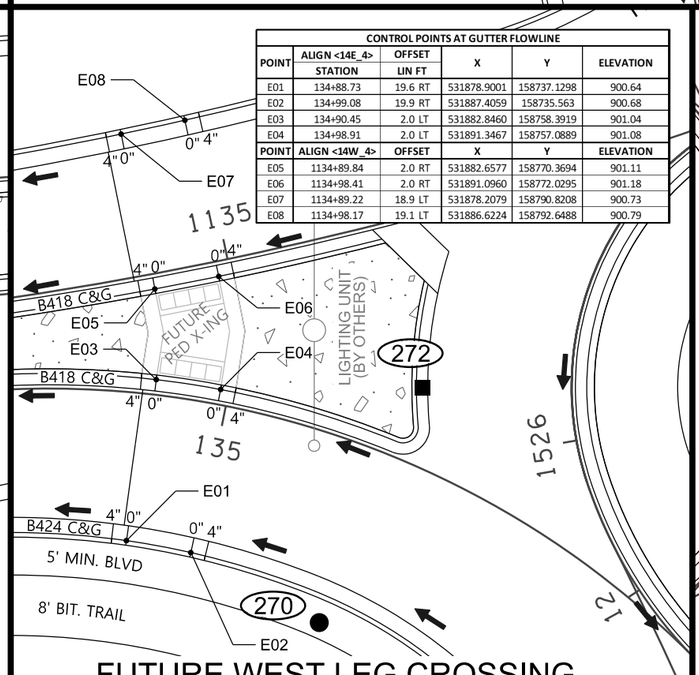
- 4" CONCRETE WALK
- 6" CONCRETE WALK
- LANDING AREA - 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
- CATCH BASIN
- XXX — CONTROL POINTS AT GUTTER FLOW LINE
- TRUNCATED DOMES (STANDARD PLATE 7038)
- X" CURB HEIGHT
- DRAINAGE FLOW ARROW
- Ⓢ INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%



CONTROL POINTS AT GUTTER FLOWLINE					
POINT	ALIGN <14E_4> STATION	OFFSET LIN FT	X	Y	ELEVATION
D01	137+78.59	2.0 LT	532148.2727	158751.9855	900.10
D02	138+25.73	2.0 LT	532205.064	158759.1126	899.91
POINT	ALIGN <14W_4> STATION	OFFSET LIN FT	X	Y	ELEVATION
D03	1137+69.94	2.0 RT	532146.849	158761.4254	900.03
D04	1138+28.00	2.0 RT	532203.9157	158770.5567	899.79

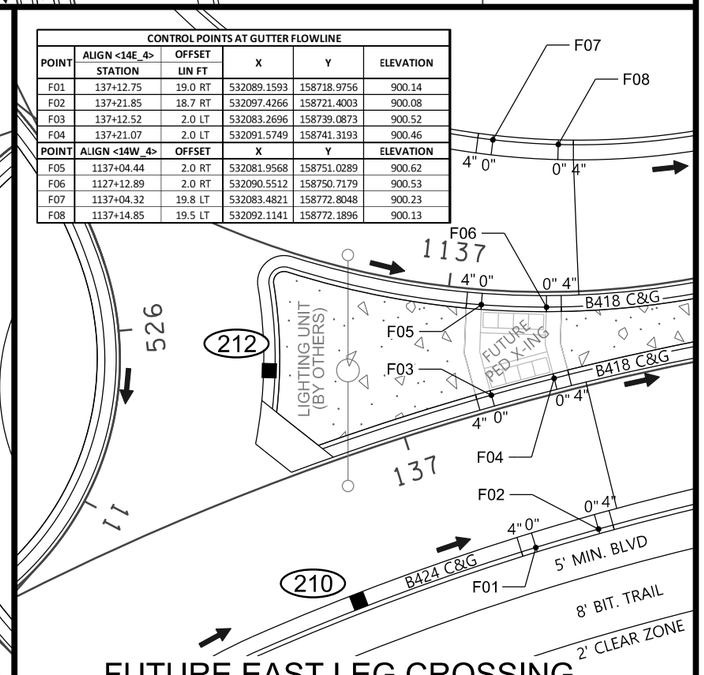
CONTROL POINTS AT GUTTER FLOWLINE					
POINT	ALIGN <14E_4> STATION	OFFSET LIN FT	X	Y	ELEVATION
C01	138+08.06	20.0 RT	532180.2365	158734.2191	899.54
C02	128+08.76	28.5 RT	532181.9778	158725.7972	899.36

SOUTHWEST TRAIL CONNECTION



CONTROL POINTS AT GUTTER FLOWLINE					
POINT	ALIGN <14E_4> STATION	OFFSET LIN FT	X	Y	ELEVATION
E01	134+88.73	19.6 RT	531878.9001	158737.1298	900.64
E02	134+99.08	19.9 RT	531887.4059	158735.563	900.68
E03	134+90.45	2.0 LT	531882.8460	158758.3919	901.04
E04	134+98.91	2.0 LT	531891.3467	158757.0889	901.08
POINT	ALIGN <14W_4> STATION	OFFSET LIN FT	X	Y	ELEVATION
E05	1134+89.84	2.0 RT	531882.6577	158770.3694	901.11
E06	1134+98.41	2.0 RT	531891.0960	158772.0295	901.18
E07	1134+89.22	18.9 LT	531878.2079	158790.8208	900.73
E08	1134+98.17	19.1 LT	531886.6224	158792.6488	900.79

FUTURE WEST LEG CROSSING



CONTROL POINTS AT GUTTER FLOWLINE					
POINT	ALIGN <14E_4> STATION	OFFSET LIN FT	X	Y	ELEVATION
F01	137+12.75	19.0 RT	532089.1593	158718.9756	900.14
F02	137+21.85	18.7 RT	532097.4266	158721.4003	900.08
F03	137+12.52	2.0 LT	532083.2696	158739.0873	900.52
F04	137+21.07	2.0 LT	532091.5749	158741.3193	900.46
POINT	ALIGN <14W_4> STATION	OFFSET LIN FT	X	Y	ELEVATION
F05	1137+04.44	2.0 RT	532081.9568	158751.0289	900.62
F06	1127+12.89	2.0 RT	532090.5512	158750.7179	900.53
F07	1137+04.32	19.8 LT	532083.4821	158772.8048	900.23
F08	1137+14.85	19.5 LT	532092.1141	158772.1896	900.13

FUTURE EAST LEG CROSSING

N

0 20
SCALE IN FEET

5 OF 5

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049 - Sunset RAB\Plan\002614049_INT-5.dgn 12/07/2023 9:38:45 AM

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: AARON P. ANDERSON

SIGNATURE:

DATE: 12/06/23 LICENSE NO. 58657

DRAWN BY BTU DATE 12/06/23

DESIGN BY BTU DATE 12/06/23

CHECKED BY APA DATE 12/06/23

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SP 002-614-049
SP 210-020-013
SP 106-020-041

INTERSECTION DETAILS
PEDESTRIAN RAMP DETAILS

Sheet 63 of 115 Sheets

DRAINAGE TABULATION SUMMARY

J

	DRAINAGE STRUCTURES				STORM SEWER							
	PAY HEIGHT		DESIGN SPECIAL	CASTING ASSEMBLY	12" RCP CL V	12" RCP APRON	15" RCP CL V	15" RCP APRON	18" RCP CL III	18" RCP APRON	RIPRAP CLASS II	GEOTEXTILE FILTER TYPE 3
	H	48-4020										
	LIN FT	LIN FT	EACH	EACH	LIN FT	EACH	LIN FT	EACH	LIN FT	EACH	CU YD	SQ YD
SYSTEM 100 SUBTOTAL (A)			1						23	2	8	22
SYSTEM 200 SUBTOTAL (B)	25.8	80.3	1	25	9	6	1038	2	164	3	20	116
PROJECT TOTAL	**25.8**	**80.3**	**2**	**25**	**9**	**6**	**1038**	**2**	**187**	**5**	**28**	**138**

GENERAL NOTES:

- PIPE LENGTHS DO NOT INCLUDE APRON LENGTH.
- SLOPES CALCULATED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE, OR CENTER OF STRUCTURE TO END OF APRON.
- STATION AND OFFSET FOR EACH STRUCTURE GIVEN AT CENTER OF GRATE/CASTING FOR CATCH BASINS AND MANHOLES, AND AT APRON ENDS FOR APRONS.
- INVERT ELEVATIONS GIVEN AT CENTER OF STRUCTURE OR END OF APRON.
- IF STEPS REQUIRED, STRUCTURE TO INCLUDE MANHOLE STEPS 16" ON CENTER. SEE MnDOT STANDARD PLATE 4180.
- SEE TAB P FOR CULVERT INFORMATION.
- TIE LAST THREE JOINTS AT APRON END. FURNISHING AND INSTALLING PIPE TIES SHALL BE CONSIDERED INCIDENTAL. SEE MnDOT STANDARD PLATE 3145.
- PROVIDE COARSE AGGREGATE BEDDING AS DIRECTED BY ENGINEER. PAID FOR AS COARSE AGGREGATE BEDDING (CV) 2451.507.
- FOR MORE INFORMATION ON DESIGN SPECIAL 1 STRUCTURES, SEE POND GRADING SHEETS 68 - 69
- PAY HEIGHT = TOP OF PRECAST - LOWEST INVERT + 0.7' FOR BASE.
- **ADJUSTING RINGS ARE INCIDENTAL.**

CASTING ASSEMBLY SUMMARY

ASSEMBLY	DESCRIPTION	RING OR FRAME CASTING	COVER OR GRATE CASTING	STANDARD PLATE NO.	QUANTITY	NOTES
B	MEDIAN W/O CURB BOX		R-3448-C		11	
C	OUTER W/ CURB BOX		R-3250-DVSP		4	
D	OUTER W/O CURB BOX		R-3250-EVSP		8	
E	BEEHIVE	700-7	720	4140	0	
F	MANHOLE	700-7	716	4101, 4110	2	
G	SPECIAL				2	[1]

NOTES:

[1] CASTING ASSEMBLY TYPE G PAID FOR AS PART OF CONSTRUCT DRAINAGE STRUCTURE - DESIGN SPECIAL. SEE POND GRADING SHEETS FOR GRATE INFORMATION.

DRAINAGE TAB - POND 100

STRUCTURE NO.		CENTER OF CASTING				DRAINAGE STRUCTURES			STORM SEWER						RIPRAP CLASS II	GEOTEXTILE FILTER TYPE 3
FLOWS FROM	FLOWS TO	ALIGN	STATION	O/S	L / R	TYPE	DESIGN	DESIGN SPECIAL 1	TOP OF CASTING ELEVATION	OUTLET ELEVATION	DOWN STREAM INVERT	SLOPE	18" RCP CL III	18" RCP APRON		
								EACH				%	LIN FT	EACH	CU YD	SQ YD
100	**DITCH**	<53S_4>	1523+73.07	103.87	L	OUTLET	APRON			893.84				1	4	22
105	**100**	<53S_4>	1523+64.04	90.20	L	MH	SPECIAL	1	896.00	894.00	893.84	1.00	10			
109	**105**	<53S_4>	1523+62.99	71.22	L	INLET	APRON			892.00	892.19	-1.00	13	1		
EMERGENCY SPILLWAY										896.00					4	
DRAINAGE SUBTOTAL (A)								**1**					**23**	**2**	**8**	**22**

NOTES:

- PROVIDE COARSE AGGREGATE BEDDING FOR LAST TWO RUNS OF PIPE PRIOR TO ENTERING POND 100, OR AS DIRECTED BY ENGINEER. PAID FOR AS COARSE AGGREGATE BEDDING (CV) 2451.507

NO	DATE	BY	CKD	APPR	REVISION
1	03/27/24	BTU	APA	APA	REVISED QUANTITIES PER ADDENDUM 1

NAME: P:\002-614-049 - Sunset RAB\Plan\002614049_DRT.dgn 03/28/2024 8:29:21 AM

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: AARON P. ANDERSON

SIGNATURE:

DATE: 12/06/23 LICENSE NO. 58657

DRAWN BY BTU DATE 12/06/23

DESIGN BY BTU DATE 12/06/23

CHECKED BY APA DATE 12/06/23

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SP 002-614-049
SP 210-020-013
SP 106-020-041

DRAINAGE TABULATIONS

DRAINAGE TAB - POND 200

STRUCTURE NO.		CENTER OF CASTING				DRAINAGE STRUCTURES							STORM SEWER										RIPRAP CLASS II	GEOTEXTILE FILTER TYPE 3
								PAY HEIGHT		DESIGN SPECIAL 1	CASTING ASSEMBLY TYPE	STEPS REQ'D	TOP OF CASTING ELEVATION	OUTLET ELEVATION	DOWN STREAM INVERT	SLOPE	12" RCP CL V	12" RCP APRON	15" RCP CL V	15" RCP APRON	18" RCP CL III	18" RCP APRON		
FLOWS FROM	FLOWS TO	ALIGN	STATION	O/S	L / R	TYPE	DESIGN	H	48-4020															
								LIN FT	LIN FT	EACH						%	LIN FT	LIN FT	LIN FT	EACH	LIN FT	EACH	CU YD	SQ YD
350	**DITCH**	<14E_4>	143+24.90	68.80	R	OUTLET	APRON							893.34								1	4	22
355	**350**	<14E_4>	142+59.08	70.80	R	MH	SPECIAL			1			896.50	894.00	893.34	1.00					60			
359	**355**	<14E_4>	142+36.58	70.80	R	INLET	APRON							892.00	892.23	-1.00					17	1		
200	**POND**	<14E_4>	137+14.85	67.66	R	OUTLET	APRON							894.00								1	4	22
205	200	<14E_4>	136+85.80	41.87	R	MH	48-4020		4.6		F	YES	898.64	894.11	894.00	0.30					30			
210	205	<14E_4>	136+86.92	18.52	R	CB	48-4020		4.6		D	YES	900.25	895.60	895.37	1.00			23					
212	210	<14C_4>	10+81.46	19.75	L	CB	48-4020		5.0		B	YES	900.82	895.93	895.60	1.00			33					
215	212	<14W_4>	1136+82.69	19.65	L	CB	48-4020		4.1		D		900.43	896.28	895.93	1.00			35					
225	215	<53N_4>	526+73.94	17.82	R	CB	48-4020		3.8		D		901.08	897.20	896.28	1.50			61					
232	225	<14C_4>	13+02.36	19.75	L	CB	48-4020		4.2		B		901.56	897.52	897.20	1.00			32					
235	232	<53S_4>	1526+73.26	19.89	L	CB	H	3.2			D		901.13	897.88	897.52	1.00			36					
250	205	<53N_4>	525+22.32	19.47	R	CB	48-4020		5.7		D	YES	900.04	894.28	894.11	0.30					57			
252	250	<14C_4>	11+45.12	19.75	L	CB	48-4020		6.0		B	YES	900.52	894.62	894.53	0.30			29					
253	252	<14C_4>	11+37.30	1.25	R	CB	H	5.8			B	YES	900.81	895.19	894.62	2.50			23					
260	252	<53S_4>	1525+19.75	19.61	L	CB	48-4020		5.2		D	YES	900.01	894.75	894.62	0.30			44					
270	260	<14E_4>	135+22.23	24.00	R	MH	48-4020		6.1		F	YES	900.98	894.97	894.75	0.30			73					
272	270	<14C_4>	9+32.13	19.75	L	CB	48-4020		5.8		B	YES	901.27	895.64	894.97	2.00			34					
275	272	<14W_4>	1135+19.98	18.52	L	CB	H	4.4			D		900.93	896.46	895.64	2.00			41					
280	270	<14E_4>	134+13.92	17.00	R	CB	48-4020		5.2		C	YES	900.47	895.25	894.97	0.30			96					
282	280	<14E_4>	134+13.92	1.25	L	CB	48-4020		5.6		B	YES	900.83	895.35	895.25	0.50			18					
283	282	<14W_4>	1133+97.37	1.25	R	CB	48-4020		5.4		B	YES	900.75	895.44	895.35	0.50			18					
285	283	<14W_4>	1133+97.37	18.50	L	CB	H	4.8			C	YES	900.36	895.54	895.44	0.50			20					
290	250	<53N_4>	523+83.27	17.00	R	CB	48-4020		4.4		C		899.35	894.91	894.53	0.30			128					
292	290	<53N_4>	523+83.27	1.25	L	CB	48-4020		4.6		B	YES	899.71	895.28	894.91	2.00			18					
293	292	<53S_4>	1523+82.41	1.25	R	CB	H	4.4			B		899.71	895.41	895.28	2.00			6					
299	290	<53N_4>	523+25.80	35.95	R	INLET	APRON							895.10	894.91	0.30			57	1				
300	**POND**	<14E_4>	138+62.15	53.07	R	OUTLET	APRON							894.00						1			3	18
312	300	<14E_4>	138+62.15	1.25	L	CB	48-4023				B		899.85	895.84	894.00	3.38			54					
313	312	<14W_4>	1138+65.16	1.25	R	CB	48-4024				B		899.72	895.92	895.84	0.50			16					
315	313	<14W_4>	1138+65.16	17.00	L	CB	48-4025				C		899.36	896.01	895.92	0.50			18					
325	315	<14W_4>	1139+89.36	19.53	L	CB	H	3.2			D		899.89	896.64	896.01	0.50			125					
400	**POND**	<14E_4>	138+47.90	94.79	R	OUTLET	APRON							894.50				1					3	18
401	400	<14E_4>	138+46.81	111.76	R	INLET	APRON							895.50	894.50	5.88	3	1						
410	**POND**	<14E_4>	139+79.23	95.91	R	OUTLET	APRON							894.50				1					3	18
411	410	<14E_4>	139+79.39	112.91	R	INLET	APRON							895.50	894.50	5.88	3	1						
420	**POND**	<14E_4>	141+78.32	95.04	R	OUTLET	APRON							894.50				1					3	18
421	420	<14E_4>	141+78.32	112.04	R	INLET	APRON							895.50	894.50	5.88	3	1						
DRAINAGE SUBTOTAL (B)								**25.8**	**80.3**	**1**	**25**						**9**	**6**	**1038**	**2**	**164**	**3**	**20**	**116**

NOTES:
- PROVIDE COARSE AGGREGATE BEDDING FOR LAST TWO RUNS OF PIPE PRIOR TO ENTERING POND 200, OR AS DIRECTED BY ENGINEER. PAID FOR AS COARSE AGGREGATE BEDDING (CV) 2451.507
- CASTING ASSEMBLY TYPE "G" PAID FOR AS PART OF CONSTRUCT DRAINAGE STRUCTURE - DESIGN SPECIAL

NO	DATE	BY	CKD	APPR	REVISION
1	03/27/24	BTU	APA	APA	REVISED QUANTITIES PER ADDENDUM 1

NAME: P:\002-614-049 - Sunset RAB\Plan\002614049_DRT.dgn 03/28/2024 8:26:30 AM

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: AARON P. ANDERSON

SIGNATURE:

DATE: 12/06/23 LICENSE NO. 58657

DRAWN BY BTU DATE 12/06/23

DESIGN BY BTU DATE 12/06/23

CHECKED BY APA DATE 12/06/23

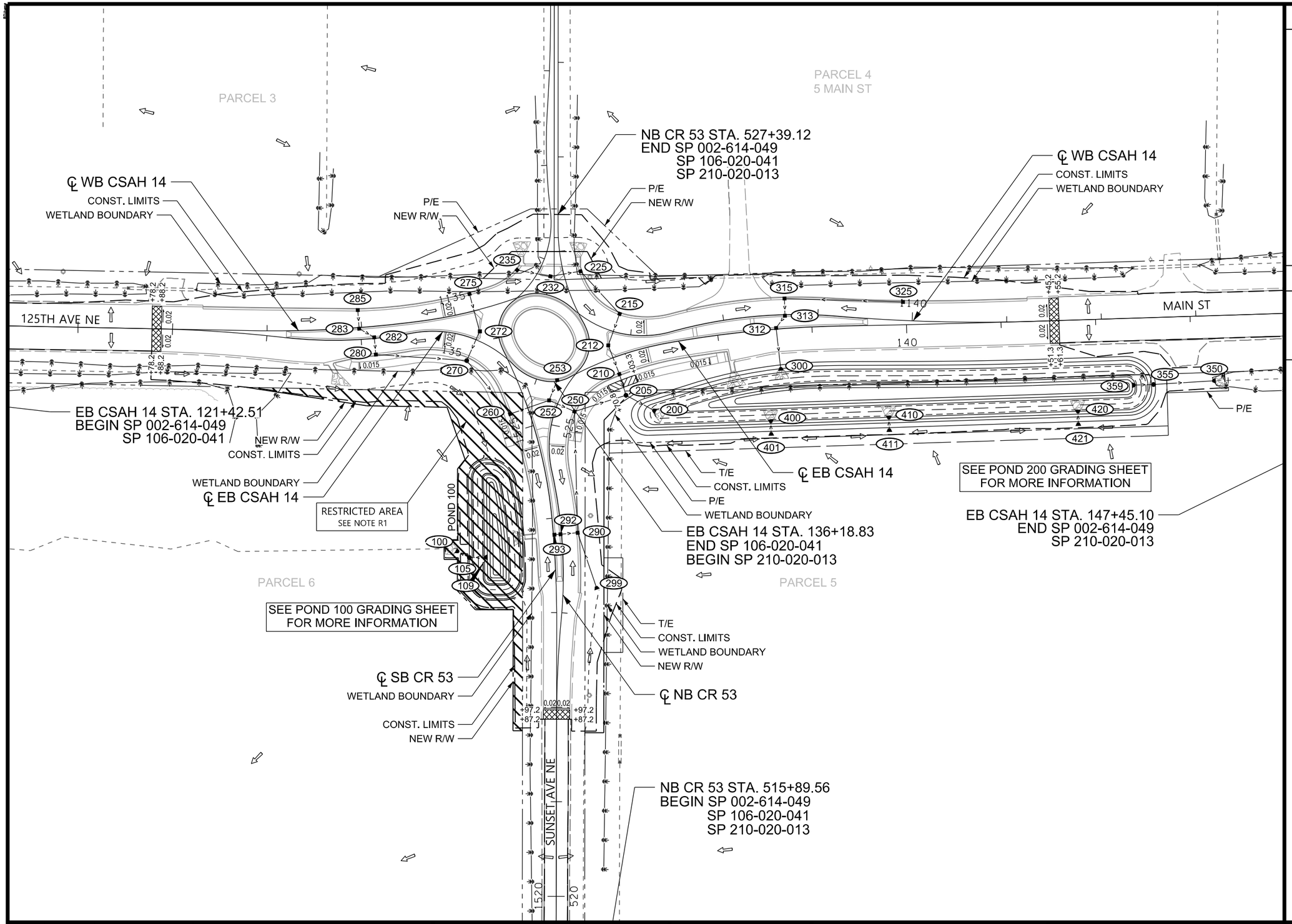
ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SP 002-614-049
SP 210-020-013
SP 106-020-041

DRAINAGE TABULATIONS

Sheet 65A of 115 Sheets



DRAINAGE LEGEND

- SEE NOTE R1.
- PROPOSED CATCH BASIN
- PROPOSED MANHOLE
- PROPOSED APRON
- INPLACE CULVERT
- PROPOSED STORM SEWER
- INPLACE DITCH ALIGNMENT
- PROPOSED DITCH ALIGNMENT
- WETLAND BOUNDARIES
- SURFACE FLOW ARROW

SUPERELEVATION LEGEND

- MATCH TO EXISTING
- SUPERELEVATION TRANSITION

SUPERELEVATION NOTES:

1. ALL CROSS SLOPES ARE IN FEET PER FEET.
2. STATIONING FOR CSAH 14 BASED ON EASTBOUND ALIGNMENT.
3. STATIONING FOR CR 53 BASED ON NORTHBOUND ALIGNMENT.
4. SEE INTERSECTION DETAIL PLANS FOR MORE INFORMATION. ROUNDABOUT CONTOURS ARE SHOWN ON SHEET 60

NOTE R1

CONTRACTOR CANNOT ACCESS OR DISTURB THIS AREA UNTIL AFTER JULY 15TH, 2024

N

0 100
SCALE IN FEET

1 OF 1

NO	DATE	BY	CKD	APPR	REVISION
1	03/05/24	BTU	APA	APA	ADDED NOTE R1

NAME: P:\002-614-049 - Sunset RAB\Plan\002614049_DR-1.dgn 03/05/2024 2:02:54 PM

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: AARON P. ANDERSON
SIGNATURE:
DATE: 12/06/23 LICENSE NO. 58657

DRAWN BY BTU DATE 12/06/23
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SP 002-614-049
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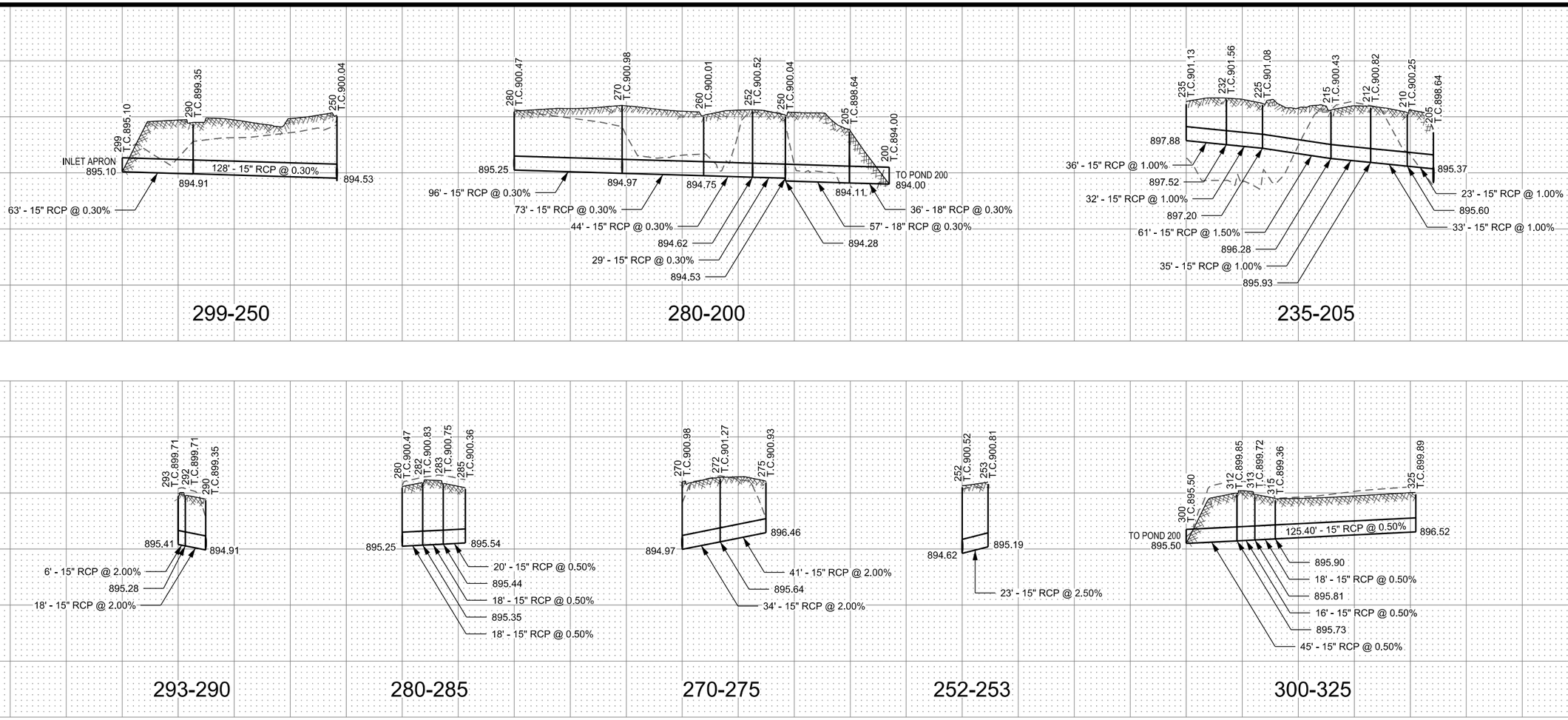
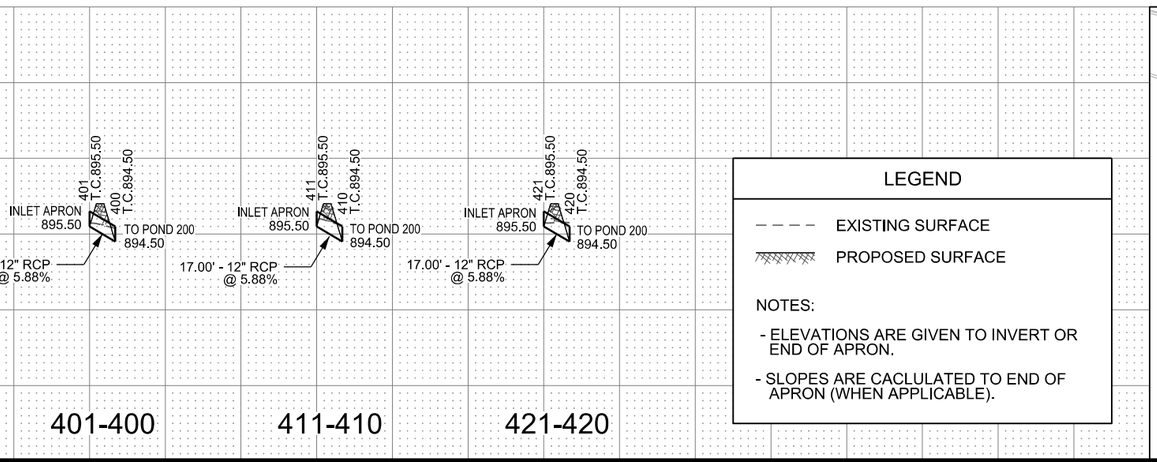
DRAINAGE AND SUPERELEVATION PLAN

Sheet 66 of 115 Sheets





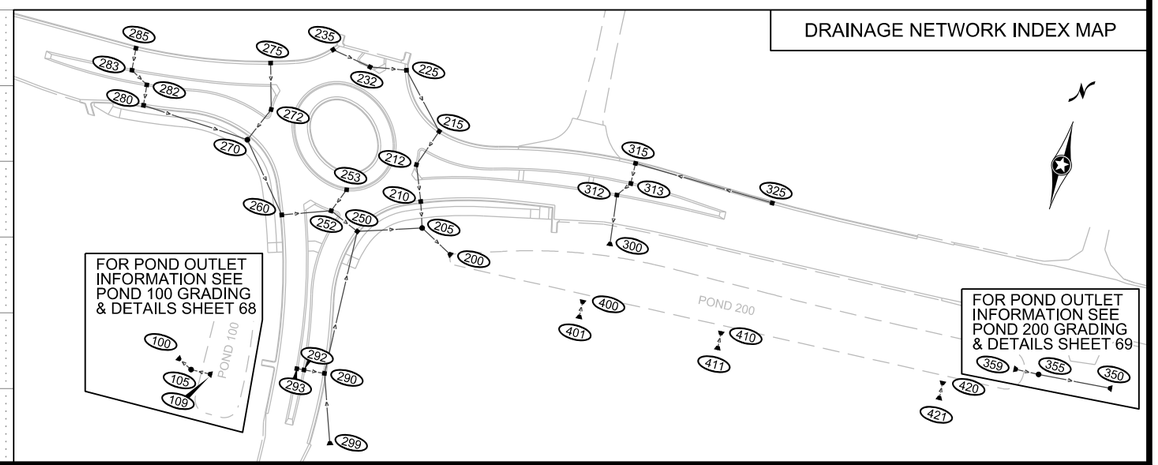
LEGEND

- EXISTING SURFACE
- PROPOSED SURFACE

NOTES:

- ELEVATIONS ARE GIVEN TO INVERT OR END OF APRON.
- SLOPES ARE CACLULATED TO END OF APRON (WHEN APPLICABLE).

DRAINAGE NETWORK INDEX MAP



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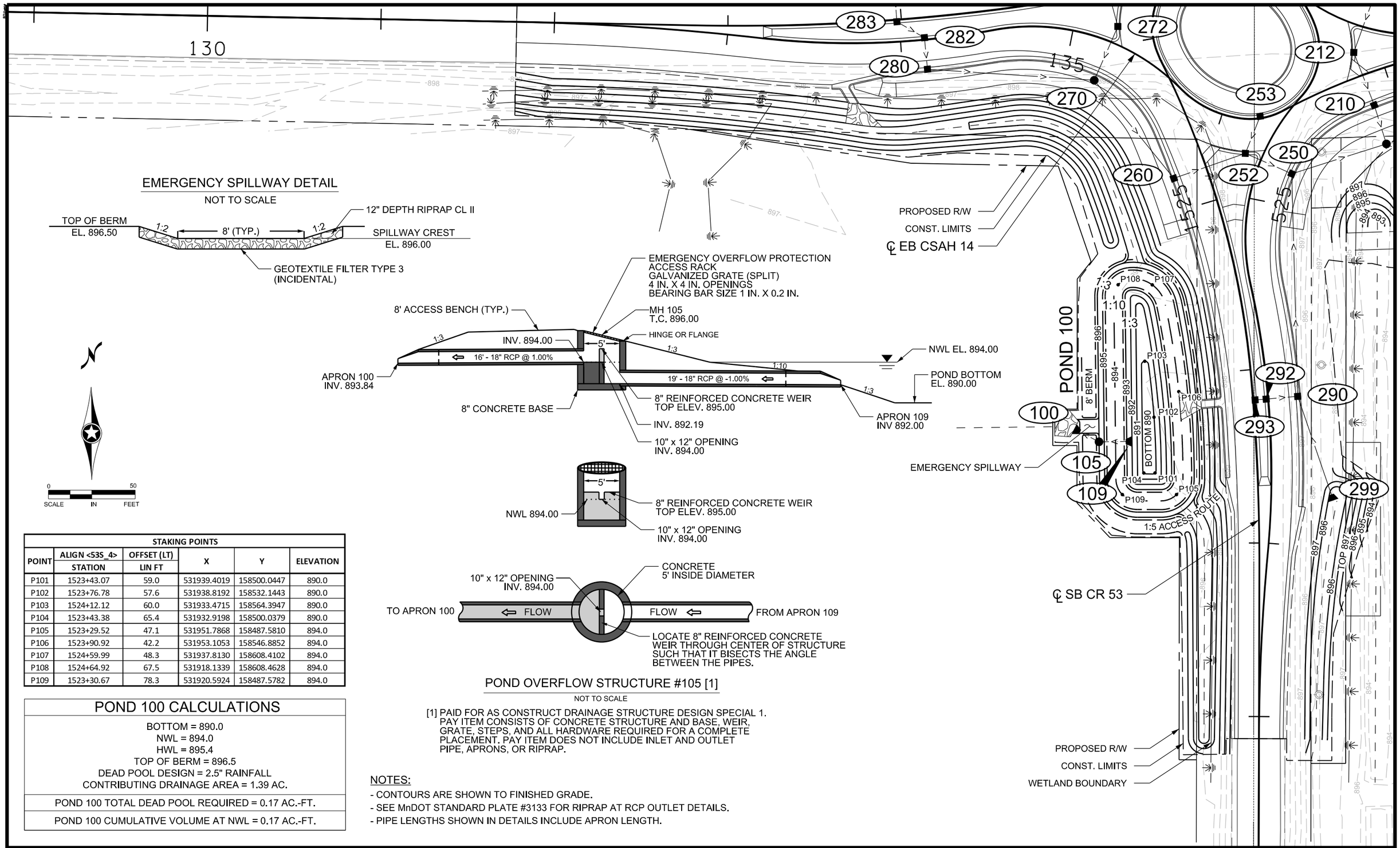
DRAINAGE PROFILES AND LEADS

Sheet 67 of 115 Sheets



POND OVERFLOW STRUCTURE #105 [1]

NOT TO SCALE

[1] PAID FOR AS CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 1. PAY ITEM CONSISTS OF CONCRETE STRUCTURE AND BASE, WEIR, GRATE, STEPS, AND ALL HARDWARE REQUIRED FOR A COMPLETE PLACEMENT. PAY ITEM DOES NOT INCLUDE INLET AND OUTLET PIPE, APRONS, OR RIPRAP.

STAKING POINTS					
POINT	ALIGN <53S_4> STATION	OFFSET (LT) LIN FT	X	Y	ELEVATION
P101	1523+43.07	59.0	531939.4019	158500.0447	890.0
P102	1523+76.78	57.6	531938.8192	158532.1443	890.0
P103	1524+12.12	60.0	531933.4715	158564.3947	890.0
P104	1523+43.38	65.4	531932.9198	158500.0379	890.0
P105	1523+29.52	47.1	531951.7868	158487.5810	894.0
P106	1523+90.92	42.2	531953.1053	158546.8852	894.0
P107	1524+59.99	48.3	531937.8130	158608.4102	894.0
P108	1524+64.92	67.5	531918.1339	158608.4628	894.0
P109	1523+30.67	78.3	531920.5924	158487.5782	894.0

POND 100 CALCULATIONS

BOTTOM = 890.0
NWL = 894.0
HWL = 895.4
TOP OF BERM = 896.5
DEAD POOL DESIGN = 2.5" RAINFALL
CONTRIBUTING DRAINAGE AREA = 1.39 AC.

POND 100 TOTAL DEAD POOL REQUIRED = 0.17 AC.-FT.

POND 100 CUMULATIVE VOLUME AT NWL = 0.17 AC.-FT.

NOTES:

- CONTOURS ARE SHOWN TO FINISHED GRADE.
- SEE MnDOT STANDARD PLATE #3133 FOR RIPRAP AT RCP OUTLET DETAILS.
- PIPE LENGTHS SHOWN IN DETAILS INCLUDE APRON LENGTH.

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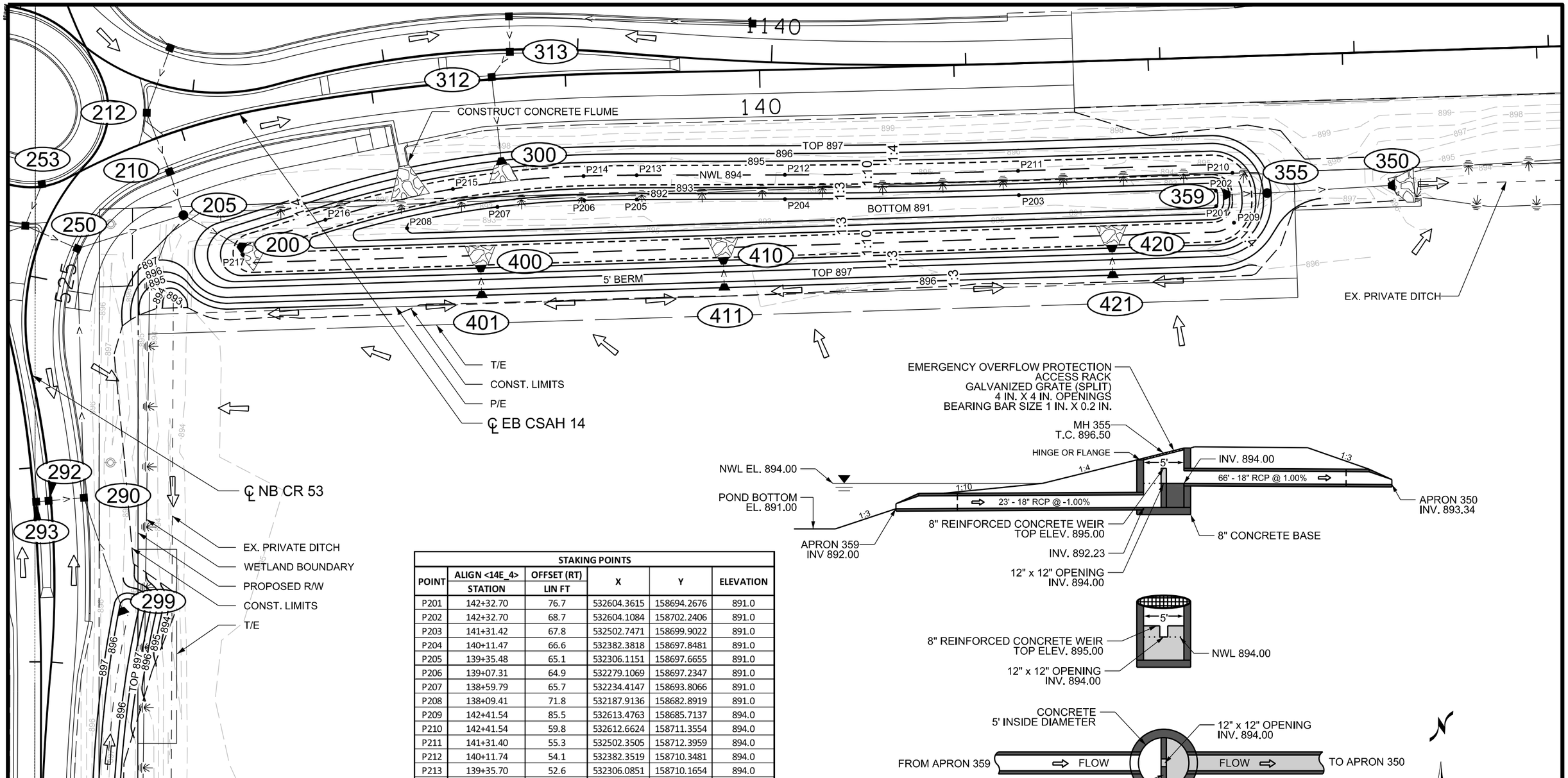
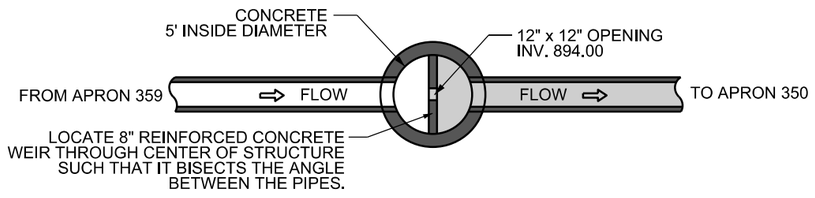
POND 100
GRADING & DETAILS

Sheet 68 of 115 Sheets





POND 200 CALCULATIONS

BOTTOM = 891.0 NWL = 894.0 HWL = 895.4 TOP OF BERM = 897.0 DEAD POOL DESIGN = 2.5" RAINFALL CONTRIBUTING DRAINAGE AREA = 3.20 AC.
POND 200 TOTAL DEAD POOL REQUIRED = 0.45 AC.-FT.
POND 200 CUMULATIVE VOLUME AT NWL = 0.63 AC.-FT.

STAKING POINTS

POINT	ALIGN <14E_4> STATION	OFFSET (RT) LIN FT	X	Y	ELEVATION
P201	142+32.70	76.7	532604.3615	158694.2676	891.0
P202	142+32.70	68.7	532604.1084	158702.2406	891.0
P203	141+31.42	67.8	532502.7471	158699.9022	891.0
P204	140+11.47	66.6	532382.3818	158697.8481	891.0
P205	139+35.48	65.1	532306.1151	158697.6655	891.0
P206	139+07.31	64.9	532279.1069	158697.2347	891.0
P207	138+59.79	65.7	532234.4147	158693.8066	891.0
P208	138+09.41	71.8	532187.9136	158682.8919	891.0
P209	142+41.54	85.5	532613.4763	158685.7137	894.0
P210	142+41.54	59.8	532612.6624	158711.3554	894.0
P211	141+31.40	55.3	532502.3505	158712.3959	894.0
P212	140+11.74	54.1	532382.3519	158710.3481	894.0
P213	139+35.70	52.6	532306.0851	158710.1654	894.0
P214	139+07.42	52.4	532278.7382	158709.7292	894.0
P215	138+36.60	54.4	532211.5214	158703.0786	894.0
P216	137+65.87	61.6	532145.8622	158687.2290	894.0
P217	137+13.12	70.6	532103.4364	158669.2999	894.0

NOTES:
- CONTOURS ARE SHOWN TO FINISHED GRADE.
- SEE MnDOT STANDARD PLATE #3133 FOR RIPRAP AT RCP OUTLET DETAILS.
- PIPE LENGTHS SHOWN IN DETAILS INCLUDE APRON LENGTH.

POND OVERFLOW STRUCTURE #355 [1]

NOT TO SCALE

[1] PAID FOR AS CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 1. PAY ITEM CONSISTS OF CONCRETE STRUCTURE AND BASE, WEIR, GRATE, STEPS, AND ALL HARDWARE REQUIRED FOR A COMPLETE PLACEMENT. PAY ITEM DOES NOT INCLUDE INLET AND OUTLET PIPE, APRONS, OR RIPRAP.

SCALE 0 50 IN FEET

NO	DATE	BY	CKD	APPR	REVISION

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ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SP 002-614-049
SP 210-020-013
SP 106-020-041

POND 200
GRADING & DETAILS

Sheet 69 of 115 Sheets

STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE

PROJECT DESCRIPTION/LOCATION

SP 002-614-049 IS LOCATED ON CSAH 14 AT THE INTERSECTION WITH CR 53 (SUNSET AVE) IN THE CITIES OF BLAINE AND LINO LAKES.
THE PLANNED SCOPE OF THE PROJECT INCLUDES: ROUNDABOUT, GRADING, AGGREGATE BASE, CONCRETE AND BITUMINOUS SURFACING, CURB AND GUTTER, AND STORM SEWER.

THE SWPPP MUST BE AMENDED TO DOCUMENT ANY CHANGES TO EROSION AND SEDIMENT CONTROLS, METHODS OR PRACTICES. THESE AMENDMENTS MUST BE TIMELY TO KEEP THE SWPPP UPDATED AND NEED TO BE KEPT ON SITE.

RESPONSIBILITIES

PROVIDE A CERTIFIED EROSION CONTROL SUPERVISOR PER MNDOT SPECIFICATION 2573.3.A.1.
EROSION CONTROL SUPERVISOR WILL WORK WITH PROJECT ENGINEER TO OVERSEE IMPLEMENTATION OF SWPPP AND INSTALLATION, INSPECTION, AND MAINTENANCE OF THE EROSION PREVENTION AND SEDIMENT CONTROL BMPS BEFORE, DURING AND AFTER CONSTRUCTION UNTIL PERMIT TERMINATION CONDITIONS HAVE BEEN MET. EROSION CONTROL SUPERVISOR IS INCIDENTAL.

PROVIDE AT LEAST ONE CERTIFIED INSTALLER PER MNDOT SPECIFICATION 2573.3.A.2. FOR EACH CONTRACTOR OR SUBCONTRACTOR THAT PLACES THE PRODUCTS LISTED IN MNDOT SPECIFICATION SECTION 2573.3.A.2.

CHAIN OF RESPONSIBILITY

ANOKA COUNTY AND THE CONTRACTOR ARE CO-PERMITEES FOR THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) CONSTRUCTION PERMIT. THE CONTRACTOR IS RESPONSIBLE TO COMPLY WITH ALL ASPECTS OF THE NPDES CONSTRUCTION PERMIT AT ALL TIMES UNTIL THE NOTICE OF TERMINATION (NOT) HAS BEEN FILED WITH THE MPCA. MNDOT'S CONSTRUCTION PROJECT ENGINEER WILL ENSURE THAT THE CONTRACTOR'S EROSION AND SEDIMENT CONTROL SUPERVISOR FULFILLS THEIR DUTIES.

PROJECT ORGANIZATION CONTACTS	NAME	PHONE
CONTRACTOR'S EROSION AND SEDIMENT CONTROL SUPERVISOR		
CONTRACTOR'S EROSION AND SEDIMENT CONTROL INSTALLER		
ANOKA COUNTY PROJECT REPRESENTATIVE	CHRIS OSTERHUS	763-324-3189
RICE CREEK WATERSHED DISTRICT	PATRICK HUGHES	763-389-3080
ARMY CORP OF ENGINEERS	SAMANTHA COUNGERIS	651-290-5268
MPCA DUTY OFFICER 24 HR EMERGENCY NOTIFICATION	651-649-5451 OR 1(800)-422-0798	
CERTIFIED SWPPP DESIGNER	MICHELLE PRITCHARD	763-324-3162

LAND FEATURE CHANGES

TOTAL DISTURBED AREA	4.69 ACRES
WITHIN THE DISTURBED AREA: TOTAL EXISTING IMPERVIOUS SURFACE AREA	1.55 ACRES
WITHIN THE DISTURBED AREA: TOTAL PROPOSED IMPERVIOUS SURFACE AREA	1.87 ACRES
TOTAL PROPOSED NET CHANGE IN IMPERVIOUS SURFACE AREA	0.32 ACRES

SOIL TYPES

SOIL TYPES TYPICALLY FOUND ON THIS PROJECT ARE ORGANIC SOILS.

ENVIRONMENTAL REVIEW

THERE ARE NOT STORMWATER MITIGATION MEASURES REQUIRED AS A RESULT OF AN ENVIRONMENTAL, ARCHEOLOGICAL OR AGENCY REVIEW. ALL MITIGATION MEASURES HAVE BEEN ADDRESSED IN THIS PLAN SET OR THE SPECIAL PROVISIONS.

THIS PROJECT **IS NOT** LOCATED IN A WELL HEAD PROTECTION AREA.

THIS PROJECT **IS NOT** LOCATED IN A DRINKING WATER SUPPLY MANAGEMENT AREA (DWSMA).

THIS PROJECT **IS NOT** LOCATED IN A KARST AREA.

THIS PROJECT **IS NOT** LOCATED IN AN EMERGENCY RESPONSE AREA (ERA) PER DEPARTMENT OF HEALTH.

SWPPP SHEET DESCRIPTIONS	SHEET NO.	TITLE
TEMPORARY EROSION CONTROL MEASURES	72	EROSION CONTROL PLAN
PERMANENT EROSION CONTROL MEASURES	72	EROSION CONTROL PLAN
DIRECTION OF FLOW	72	EROSION CONTROL PLAN
FINAL STABILIZATION	72	EROSION CONTROL PLAN
SOILS AND CONSTRUCTION NOTES	6	EARTHWORK SUMMARY, SOILS & CONSTRUCTION NOTES
DRAINAGE STRUCTURES	66	DRAINAGE AND SUPERELEVATION PLAN
DRAINAGE TABULATION	64 - 65	DRAINAGE TABULATIONS
STORM SEWER PROFILE SHEETS	67	DRAINAGE PROFILES AND LEADS
STORM SEWER TABULATION	64 - 65	DRAINAGE TABULATIONS
EROSION AND SEDIMENT CONTROL DETAILS	33 - 41	EROSION CONTROL STANDARD PLANS AND DETAILS
EROSION CONTROL TABULATION	8	TABULATIONS
TURF ESTABLISHMENT TABULATION	8	TABULATIONS
SITE MAP	71	STORM WATER POLLUTION PREVENTION PLAN
STORMWATER TREATMENT CONSTRUCTION STAGING	70 - 71	STORM WATER POLLUTION PREVENTION PLAN
STORMWATER CALCULATIONS		AVAILABLE ON REQUEST

WATER RELATED PERMITS

AGENCY	TYPE OF PERMIT
MINNESOTA POLLUTION CONTROL AGENCY (MPCA)	NPDES CONSTRUCTION PERMIT
WATERSHED DISTRICT	RICE CREEK WATERSHED DISTRICT
ARMY CORPS OF ENGINEERS	TRGP

READ AND REVIEW ALL PERMITS FOR SPECIAL CONDITIONS THAT WILL AFFECT CONSTRUCTION OF THE PROJECT.

IF IT BECOMES NECESSARY TO DISTURB AREAS OUTSIDE OF THE CONSTRUCTION LIMITS, OPERATIONS SHOULD CEASE AND DETERMINATION MADE IF ADDITIONAL PERMITS ARE NEEDED OR EXISTING PERMITS NEED TO BE MODIFIED.

TEMPORARY DEWATERING ACTIVITIES MAY BE REQUIRED FOR ROADWAY CONSTRUCTION AND UTILITY WORK. CONTRACTOR IS RESPONSIBLE FOR OBTAINING THE PERMIT. SUBMIT A SITE MANAGEMENT PLAN TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCING WORK.

SPECIAL AND IMPAIRED WATERS THAT ARE LOCATED WITHIN ONE MILE (AERIAL RADIUS) OF THE PROJECT LIMITS AND RECEIVE RUNOFF FROM THE PROJECT SITE.

WATERBODY NAME	IMPAIRMENT(S) OR SPECIAL STATUS
N/A	

WATERBODY	NO WORK DURING
LAKES	APRIL 1 - JUNE 30
NON-TROUT STREAMS	MARCH 15 - JUNE 15
TROUT STREAMS	SEPTEMBER 1 - APRIL 1

AREAS OF ENVIRONMENTAL SENSITIVITY (AES)

WETLANDS AND EXISTING STORMWATER FACILITIES WITHIN AND NEAR THE PROJECT BOUNDARY ARE SHOWN ON DRAINAGE PLANS.

INSPECTION TIMEFRAMES

INSPECT THE ENTIRE CONSTRUCTION SITE A MINIMUM OF ONCE EVERY SEVEN DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS. INSPECT ALL TEMPORARY AND PERMANENT WATER QUALITY MANAGEMENT, EROSION PREVENTION AND SEDIMENT CONTROL BMPS, SURFACE WATERS AND CONSTRUCTION SITE EXITS UNTIL ALL CONSTRUCTION IS COMPLETE AND THE SITE HAS UNDERGONE FINAL STABILIZATION. RECORD ALL INSPECTIONS AND MAINTENANCE ACTIVITIES IN WRITING WITHIN 24 HOURS. SUBMIT INSPECTION REPORTS IN A FORMAT THAT IS ACCEPTABLE TO THE PROJECT ENGINEER.

EROSION AND SEDIMENT CONTROL MEASURES

AREA	TIME FRAME
ESTABLISH SEDIMENT CONTROL DEVICES ON ALL DOWN GRADIENT PERIMETERS AND UPGRADIENT OF ANY BUFFER ZONES	BEFORE ANY UP GRADIENT LAND DISTURBING ACTIVITIES BEGIN
REPAIR, REPLACE OR SUPPLEMENT PERIMETER CONTROL BMPS	WHEN BMP BECOMES NONFUNCTIONAL OR SEDIMENT REACHES 1/2 THE HEIGHT OF THE BMP BY THE END OF THE NEXT BUSINESS DAY AFTER DISCOVERY.
REPLACE, REPAIR OR SUPPLEMENT ALL NONFUNCTIONAL BMPS	BY THE END OF THE NEXT BUSINESS DAY AFTER DISCOVERY.
REPAIR, REPLACE, OR SUPPLEMENT INLET PROTECTION BMPS	WHEN THEY BECOME NONFUNCTIONAL OR SEDIMENT REACHES 1/2 THE HEIGHT AND/OR DEPTH OF THE BMP BY THE END OF THE NEXT BUSINESS DAY AFTER DISCOVERY.
REMOVE TRACKED SEDIMENT FROM PAVED SURFACES BOTH ON AND OFF SITE (LIGHTLY WET PRIOR TO SWEEPING)	WITHIN 24 HOURS OF DISCOVERY
REMOVE ALL DELTAS AND SEDIMENT DEPOSITED IN SURFACE WATERS AND RESTABILIZE	WITHIN 7 DAYS OF DISCOVERY

1. PROVIDE PERIMETER CONTROL AROUND ALL STOCKPILES AND DO NOT PLACE THEM IN NATURAL BUFFER AREAS, SURFACE WATERS OR STORMWATER CONVEYANCES. TOPSOIL BERMS MUST BE STABILIZED IN ORDER TO BE CONSIDERED PERIMETER CONTROL BMPS.
2. PROTECT STORM SEWER INLETS AT ALL TIMES WITH THE APPROPRIATE INLET PROTECTION BMP AND PROVIDE EMERGENCY OVERFLOW CAPABILITIES. SILT FENCE PLACED IN THE INLET GRATE IS NOT AN ACCEPTABLE INLET PROTECTION BMP FOR GRADING OPERATIONS.
3. PLACE AND MAINTAIN CONSTRUCTION EXITS OF SUFFICIENT SIZE TO PREVENT TRACKING OF SEDIMENT ONTO PAVED SURFACES BOTH ON AND OFF THE PROJECT SITE. REGULAR STREET SWEEPING IS NOT AN ACCEPTABLE ALTERNATIVE TO PROPER CONSTRUCTION EXIT INSTALLATION AND MAINTENANCE.
4. PROVIDE SCOUR PROTECTION AT OUTFALL OF DEWATERING ACTIVITIES. PROVIDE STABILIZATION IN TRENCHES CUT FOR DEWATERING OR SITE DRAINING PURPOSES.
5. PREPARE AND SUBMIT A SITE MANAGEMENT PLAN AND CONTACT ALL APPROPRIATE AUTHORITIES PRIOR TO WORKING IN SURFACE WATERS.
6. MAINTAIN ALL BMPS UNTIL WORK HAS BEEN COMPLETED, SITE HAS GONE UNDER FINAL STABILIZATION FOR PERMIT TERMINATION, AND THE NOTICE OF TERMINATION (NOT) HAS BEEN SUBMITTED TO THE MPCA.

STABILIZATION

AREA	TIME FRAME	NOTES
LAST 200 LINEAL FEET OF DRAINAGE DITCH OR SWALE	WITHIN 24 HOURS OF CONNECTION TO SURFACE WATER OR PROPERTY EDGE	2A, 3A
REMAINING PORTIONS OF DRAINAGE DITCH OR SWALE	7 DAYS	3A
PIPE AND CULVERT OUTLETS	24 HOURS	
EXPOSED SOILS AND STOCKPILES	7 DAYS	1A
WHEN CONSTRUCTION HAS TEMP. OR PERM. CEASED	IMMEDIATELY	

1A. TEMPORARY SOIL STOCKPILES WITHOUT SIGNIFICANT CLAY OR SILT AND STOCKPILED AND CONSTRUCTED ROAD BASE ARE EXEMPT FROM THE STABILIZATION REQUIREMENT.

2A. STABILIZE WETTED PERIMETER OF DITCH (I.E. WHERE THE DITCH GETS WET).

3A. APPLICATION OF MULCH, HYDROMULCH (SLOPE>2%), DISCANCHORED MULCH (SLOPE>2%),TACKIFIER AND POLYACRYLAMIDE ARE NOT ACCEPTABLE STABILIZATION METHODS IN DITCHES AND SWALES.

NO	DATE	BY	CKD	APPR	REVISION

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STORM WATER POLLUTION PREVENTION PLAN

Sheet 70 of 115 Sheets

STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE (CONTINUED)

MATERIAL STORAGE, WASTE MANAGEMENT, FUELING AND DUST CONTROL

1. PROVIDE A SPILL KIT AT EACH WORK LOCATION ON THE SITE. ENSURE ALL SPILLS ARE CLEANED UP IMMEDIATELY.
2. STORE ALL LIQUID CHEMICALS UNDER COVER WITH SECONDARY CONTAINMENT. CREATE AND FOLLOW A WRITTEN DISPOSAL PLAN FOR ALL WASTE MATERIALS. STORE, COLLECT AND DISPOSE OF ALL SOLID WASTE.
3. FUEL AND MAINTAIN VEHICLES IN A DESIGNATED CONTAINED AREA WHENEVER FEASIBLE. USE DRIP PANS OR ABSORBENT MATERIALS TO PREVENT SPILLS OR LEAKED CHEMICALS FROM DISCHARGING TO SURFACE WATER OR STORMWATER CONVEYANCES.
4. PROVIDE EFFECTIVE CONTAINMENT FOR ALL LIQUID AND SOLID WASTES GENERATED BY WASHOUT OF CONCRETE, STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS AND OTHER CONSTRUCTION MATERIALS. LIQUID AND SOLID WASHOUT WASTES MUST NOT CONTACT THE GROUND. DESIGN THE CONTAINMENT SO THAT IT DOES NOT RESULT IN RUNOFF FROM THE WASHOUT OPERATIONS OR CONTAINMENT AREA.
5. 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 FROM ALL WATER CONVEYANCE SYSTEMS, INCLUDING INLETS, DITCHES AND CURB FLOW LINES.
6. USE METHODS AND OPERATIONAL PROCEDURES THAT PREVENT CONCRETE DUST, STREET SWEEPING DUST, SAWCUT SLURRY, PLANING WASTE, CONCRETE WASH OUT, AND OTHER CONCRETE WASTES FROM LEAVING ANOKA COUNTY RIGHT OF WAY, DEPOSITING IN EXISTING OR FUTURE VEGETATED AREAS, AND FROM ENTERING STORMWATER CONVEYANCE SYSTEMS, INCLUDING INLETS, DITCHES AND CURB FLOW LINES.
7. PORTABLE TOILETS MUST BE POSITIONED SO THAT THEY ARE SECURE AND WILL NOT BE TIPPED OR KNOCKED OVER. SANITARY WASTE MUST BE DISPOSED OF PROPERLY IN ACCORDANCE WITH MINN. R. CHAPTER 7041.

IMPORTANT SWPPP NOTES FOR CONSTRUCTION ACTIVITY

1. PREPARE AND SUBMIT A SITE MANAGEMENT PLAN FOR THE ENGINEER'S ACCEPTANCE FOR CONCRETE MANAGEMENT, CONCRETE SLURRY APPLICATION AREAS, WORK IN AND NEAR AREAS OF ENVIRONMENTAL SENSITIVITY, AREAS IDENTIFIED IN THE PLANS AS "SITE MANAGEMENT PLAN AREA", ANY WORK THAT WILL REQUIRE DEWATERING, AND AS REQUESTED BY THE ENGINEER. SUBMIT ALL SITE MANAGEMENT PLANS TO THE ENGINEER IN WRITING. ALLOW A MINIMUM OF 7 DAYS FOR ANOKA COUNTY TO REVIEW AND ACCEPT SITE MANAGEMENT PLAN SUBMITTALS. WORK WILL NOT BE ALLOWED TO COMMENCE IF A SITE MANAGEMENT PLAN IS REQUIRED UNTIL ACCEPTANCE HAS BEEN GRANTED BY THE ENGINEER. THERE WILL BE NO EXTRA TIME ADDED TO THE CONTRACT DUE TO THE UNTIMELY SUBMITTAL.
2. DO NOT BUILD INFILTRATION AREAS OR PLACE FINAL FILTRATION MEDIA UNTIL THE PROJECT IS NEARLY COMPLETE. PROTECT THESE AREAS FROM COMPACTION AND FROM CONSTRUCTION STORMWATER RUNOFF.
3. ROUTE STORMWATER AROUND UNSTABILIZED AREAS OF THE SITE WHENEVER FEASIBLE.
4. CONSTRUCTION PROJECT SHOULD BE PHASED TO MINIMIZE THE DURATION OF EXPOSED SOILS.
5. MINIMIZE COMPACTION OF SOILS AND PRESERVE TOPSOIL IN AREAS WHERE VEGETATION WILL BE ESTABLISHED.
6. DIRECT DISCHARGES FROM BMPS TO VEGETATED AREAS WHENEVER FEASIBLE. PROVIDE VELOCITY DISSIPATION DEVICES AS NEEDED TO PREVENT EROSION
7. FLOATING SILT CURTAIN IS ALLOWED AS PERIMETER CONTROL FOR IN WATER WORK ONLY. PLACE THE FLOATING SILT CURTAIN AS CLOSE TO SHORE AS POSSIBLE. PLACE PERIMETER CONTROL BMP ON LAND IMMEDIATELY AFTER THE IN WATER WORK IS COMPLETED.
8. DISCHARGE TURBID OR SEDIMENT LADEN WATER TO TEMPORARY SEDIMENT BASINS WHENEVER FEASIBLE. (REQUIRED IF DRAINAGE AREA IS 10 ACRES OR LARGER OR 5 ACRES OR LARGER AND WITHIN 1 MILE OF IMPAIRED WATER) THE EVENT THAT IT IS NOT FEASIBLE TO DISCHARGE THE SEDIMENT LADEN WATER TO A TEMPORARY SEDIMENT BASIN, THE WATER MUST BE TREATED SO THAT IT DOES NOT CAUSE A NUISANCE CONDITION IN THE RECEIVING WATERS OR TO DOWNSTREAM LANDOWNERS. MUST DOCUMENT WHY SEDIMENT BASIN IS NOT FEASIBLE
9. PROVIDE STABILIZATION IN ANY TRENCHES CUT FOR DEWATERING OR SITE DRAINING PURPOSES.
10. PROVIDE A 50 FOOT NATURAL BUFFER OR, IF BUFFER IS INFEASIBLE, PROVIDE A DOUBLE ROW OF SEDIMENT CONTROLS SPACED AT LEAST 5' APART WHEN A SURFACE WATER IS LOCATED WITHIN 50 FEET OF LAND DISTURBANCE AND STORMWATER FLOWS TO THE SURFACE WATER.
11. PROVIDE A 100 FOOT NATURAL BUFFER OR, IF BUFFER IS INFEASIBLE, PROVIDE A DOUBLE ROW OF SEDIMENT CONTROLS SPACED AT LEAST 5' APART WHEN A SPECIAL WATER IS LOCATED WITHIN 100 FEET OF THE LAND DISTURBANCE AND STORMWATER FLOWS TO THE SPECIAL WATER.
12. SUBSOIL ALL DISTURBED GREEN SPACES EXCEPT AS LISTED IN 2574.3A.5.

PIPE AND STRUCTURE NOTES

1. SIZE AND ELEVATION OF CULVERTS, STORM SEWER PIPES, CATCH BASINS, PONDS, INFILTRATION/FILTRATION BASINS, PERMEABLE DITCH BLOCKS AND OVERFLOW DEVICES HAVE BEEN SPECIFICALLY DESIGNED TO CONFORM TO MNDOT DESIGN STANDARDS AND PERMIT REQUIREMENTS. THE DESIGN COMPUTATIONS ARE ON FILE WITH ANOKA COUNTY. CHANGING THESE ITEMS OR THE DIRECTION OF FLOW FROM WHAT IS SHOWN ON THE PLANS MAY CAUSE PROBLEMS OFF THE PROJECT AND COULD MEAN THE PROJECT IS OUT OF COMPLIANCE WITH APPROVED DRAINAGE PERMITS. ANY CHANGES OF THE DRAINAGE SYSTEM MUST BE APPROVED BY THE ANOKA COUNTY DESIGNER.
2. PERFORM POST INSTALLATION MANDREL TESTING OF ALL PLASTIC PIPE.
3. SUBSURFACE DRAINAGE TILES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED, REPLACED OR REROUTED, AND CONNECTED TO THE EXISTING TILE OR DRAINAGE SYSTEM TO ENSURE THAT EXISTING UPLAND DRAINAGE IS PERPETUATED. THIS SHALL BE DONE TO THE APPROVAL AND SATISFACTION OF THE ENGINEER.

NPDES PERMIT TERMINATION CONDITIONS

1. CONTRACTOR MUST COMPLETE ALL CONSTRUCTION ACTIVITY AND MUST INSTALL PERMANENT COVER OVER ALL AREAS PRIOR TO SUBMITTING NOT. VEGETATIVE COVER MUST CONSIST OF A UNIFORM PERENNIAL VEGETATION WITH A DENSITY OF 70% OF ITS EXPECTED FINAL GROWTH.
2. CONTRACTOR MUST REMOVE ANY ACCUMULATED SEDIMENT AND STABILIZE THE PERMANENT STORMWATER TREATMENT SYSTEM(S) AND MUST ENSURE THE SYSTEM(S) ARE OPERATING AS DESIGNED.
3. CONTRACTOR MUST REMOVE ALL SEDIMENT FROM CONVEYANCE SYSTEMS PRIOR TO SUBMITTING THE NOT.
4. CONTRACTOR MUST REMOVE ALL TEMPORARY SYNTHETIC EROSION PREVENTION AND SEDIMENT CONTROL BMPS PRIOR TO SUBMITTING THE NOT. CONTRACTOR MAY LEAVE BMPS DESIGNED TO DECOMPOSE ON-SITE IN PLACE.
5. FOR CONSTRUCTION PROJECTS ON AGRICULTURAL LAND, CONTRACTOR MUST RETURN THE DISTURBED LAND TO ITS PRECONSTRUCTION AGRICULTURAL USE PRIOR TO SUBMITTING THE NOT.

TREATMENT BMPS INCLUDED WITH THIS PROJECT ARE:

STORM DRAIN INLET PROTECTION, SILT FENCE, CULVERT END TREATMENTS, TWO WET PONDS.

POND CONSTRUCTION NOTES

1. DO NOT STOCKPILE MATERIALS OR PARK EQUIPMENT OR VEHICLES IN A DRY POND.
2. WET PONDS MAY BE USED AS TEMPORARY SEDIMENT TRAPS OR TEMPORARY SEDIMENT BASINS AS LONG AS SEDIMENT IS REMOVED AT THE END OF CONSTRUCTION.
3. THE CONTRACTOR MAY NOT DRIVE ANY EQUIPMENT ON FINISHED POND BOTTOMS OR POND CORNERS. IF DISTURBED, POND BOTTOM AND POND CORNERS MUST BE RESTORED TO PRE-EXISTING CONDITIONS WITHIN 24 HOURS. ANY RUTS OR DAMAGED TURF THAT COULD CREATE SEDIMENT DISCHARGE TO POND BOTTOMS MUST BE REPAIRED WITHIN 24 HOURS.

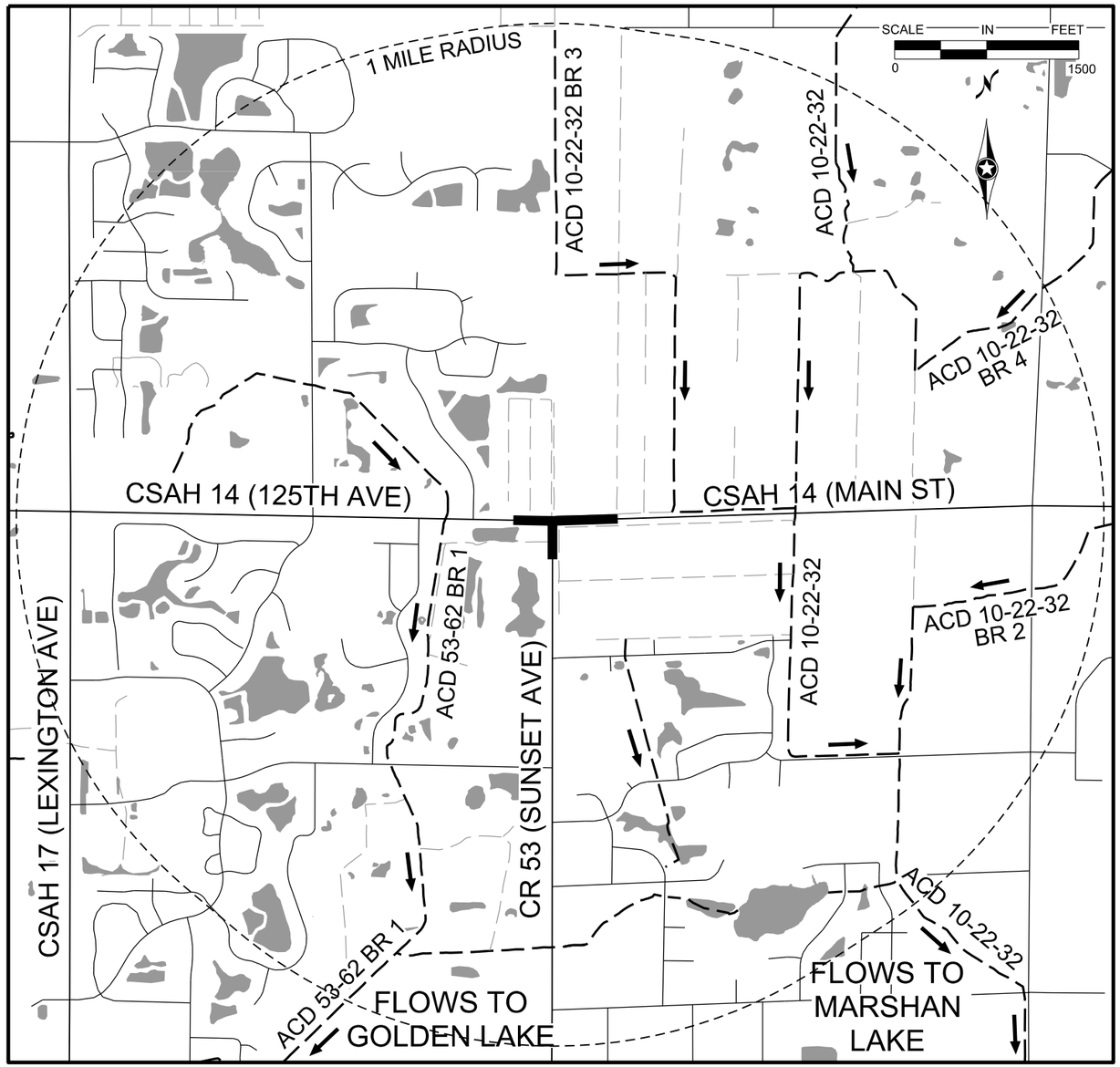
LONG TERM MAINTENANCE AND OPERATION

THE CITIES OF BLAINE AND LINO LAKES ARE RESPONSIBLE FOR THE LONG TERM OPERATION AND MAINTENANCE OF THE PERMANENT STORMWATER MANAGEMENT AND SNOW REMOVAL OPERATIONS ALONG THE PROPOSED TRAIL AND WITHIN THEIR RESPECTIVE CITY LIMITS

CITY OF BLAINE
DAN SCHLUENDER
CITY ENGINEER
10801 TOWN SQUARE DRIVE NE
BLAINE, MN 55449
PHONE: 763-785-6158

CITY OF LINO LAKES
DIANE HANKEE
CITY ENGINEER
600 TOWN CENTER PARKWAY
LINO LAKES, MN 55014
PHONE: 651-982-2430

OFFSITE FLOW INFORMATION DRAWING



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049 - Sunset RAB\Plan\002614049_SWP.dgn 12/07/2023 9:39:13 AM

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: AARON P. ANDERSON
SIGNATURE:
DATE: 12/06/23 LICENSE NO. 58657

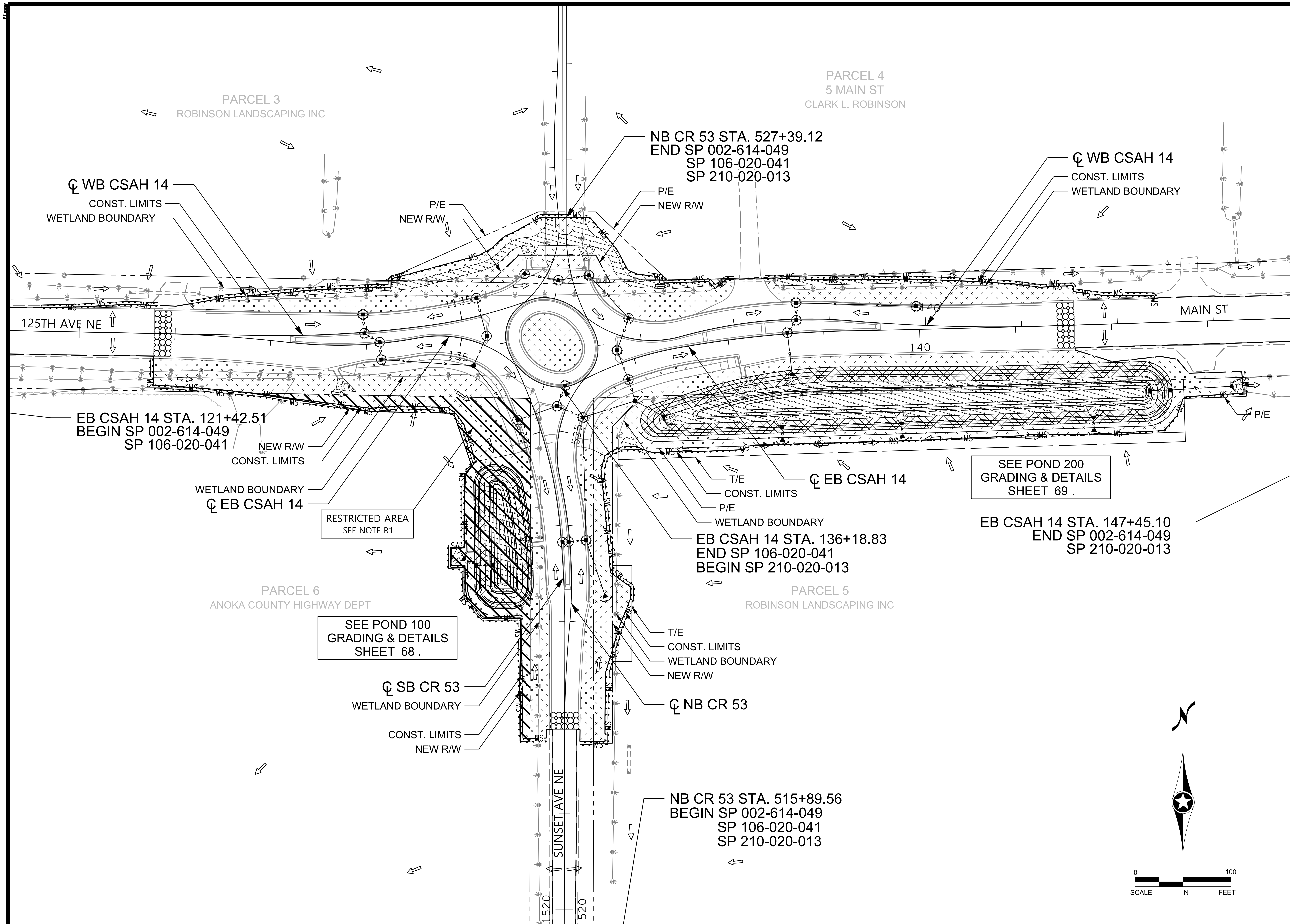
DRAWN BY BTU DATE 12/06/23
DESIGN BY BTU DATE 12/06/23
CHECKED BY APA DATE 12/06/23

ANOKA COUNTY
ANOKA COUNTY HIGHWAY DEPT.

SP 002-614-049
SP 210-020-013
SP 106-020-041

STORM WATER POLLUTION PREVENTION PLAN

Sheet 71 of 115 Sheets



LEGEND

- SEE NOTE R1.
- PROPOSED CATCH BASIN
- PROPOSED MANHOLE
- PROPOSED APRON
- INPLACE CULVERT
- INPLACE STORM SEWER
- PROPOSED STORM SEWER
- WETLAND BOUNDARIES
- SILT FENCE, MACHINE SLICED
- RIPRAP (CLASS II UNLESS OTHERWISE NOTED)
- CULVERT END TREATMENT
- STORM DRAIN INLET PROTECTION
- SURFACE FLOW ARROW
- STABLIZED CONSTRUCTION EXIT
- SEEDING MIX 25-121 FERTILIZER TYPE 3 (22-5-10) HYDRAULIC REINF. FIBER MATRIX
- SEEDING MIX 33-261 FERTILIZER TYPE 4 (17-10-7) EROSION CTRL. BLANKET CAT. 20
- SEEDING MIX 35-241 FERTILIZER TYPE 4 (17-10-7) EROSION CTRL. BLANKET CAT. 25

EROSION CONTROL NOTES:

1. THE CONTRACTOR SHALL CONSTRUCT WASHED GRAVEL ENTRANCES AT POINTS OF EXIT FROM THE WORK AREA ONTO EX. BITUMINOUS PAVEMENT AS DIRECTED BY THE ENGINEER

2. SILT FENCE SHALL FOLLOW A SINGLE CONTOUR AS CLOSELY AS POSSIBLE.

3. SILT FENCE SHALL BE CLEANED OUT OR REPLACED WHEN SEDIMENT REACHES 8" OR ⅓ OF SILT FENCE HEIGHT.

4. WHEN SEDIMENT DEPOSITS IN A WATER OF THE STATE, THE MATERIAL MUST BE REMOVED WITHIN 7 DAYS.

5. IF SILT DEPOSITS IN THE ANOKA COUNTY RIGHT-OF-WAY, THE CONTRACTOR IS RESPONSIBLE FOR ITS REMOVAL.

6. STABILIZE VEGETATION AND SOIL STOCKPILES WITHIN 7 DAYS OF ROUGH GRADING OR INACTIVITY. ADDITIONAL TEMPORARY AND PERMANENT EROSION CONTROL AS DIRECTED BY ENGINEER.

NOTE R1

CONTRACTOR CANNOT ACCESS OR DISTURB THIS AREA UNTIL AFTER JULY 15TH, 2024

1 OF 1

NO	DATE	BY	CKD	APPR	REVISION
1	03/05/2024	BTU	APA	APA	ADDED NOTE R1

NAME: P:\002-614-049 - Sunset RAB\Plan\002614049_EC.dgn 03/05/2024 2:03:01 PM

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.

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SIGNATURE:
DATE: 12/06/23 LICENSE NO. 58657

DRAWN BY BTU DATE 12/06/23
DESIGN BY BTU DATE 12/06/23
CHECKED BY APA DATE 12/06/23

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SP 002-614-049
SP 210-020-013
SP 106-020-041

EROSION CONTROL & TURF ESTABLISHMENT

PERMANENT PAVEMENT MARKING PLAN
NOTES & GUIDELINES

GENERAL INFORMATION:

1. THE 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 FOR STRIPING AND TO DETERMINE NECESSARY STARTING AND CUTOFF POINTS. LONGITUDINAL JOINTS, PAVEMENT EDGES AND EXISTING MARKINGS MAY SERVE AS HORIZONTAL CONTROL WHEN SO DIRECTED.
2. EDGE LINES AND LANE LINES ARE TO BE BROKEN ONLY AT INTERSECTIONS WITH PUBLIC ROADS AND AT PRIVATE ENTRANCES IF THEY ARE CONTROLLED BY A YIELD SIGN, STOP SIGN OR TRAFFIC SIGNAL. THE BREAK POINT IS TO BE AT THE START OF THE RADIUS FOR THE INTERSECTION OR AT MARKED STOP LINES OR CROSSWALKS.
3. 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 APPEARANCE. 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 SHALL NOT EXCEED 1 INCH. MATERIAL SHALL NOT BE APPLIED OVER LONGITUDINAL JOINTS. ESTABLISHMENT OF APPLICATION TOLERANCES SHALL NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY TO COMPLY AS CLOSELY AS PRACTICABLE WITH THE PLANNED DIMENSIONS.
4. PERMANENT PAVEMENT MARKINGS SHALL NOT BE PLACED OVER TEMPORARY TAPE MARKINGS.
5. THE FILLING OF TANKS, POURING OF MATERIALS OR CLEANING OF EQUIPMENT SHALL NOT BE PERFORMED ON UNPROTECTED PAVEMENT SURFACES UNLESS ADEQUATE PROVISIONS ARE MADE TO PREVENT SPILLAGE OF MATERIAL.

PAINT:

1. AT THE TIME OF APPLYING THE MARKING MATERIAL, THE APPLICATION AREA SHALL BE FREE OF CONTAMINATION. THE CONTRACTOR SHALL CLEAN THE ROADWAY SURFACE PRIOR TO THE LINE APPLICATION IN A MATTER AND TO THE EXTENT REQUIRED BY THE ENGINEER.
2. GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE PAINT LINE.
3. EXCEPT WHEN USED AS A TEMPORARY MARKING, PAVEMENT MARKINGS SHALL ONLY BE APPLIED IN SEASONABLE WEATHER WHEN AIR AND PAVEMENT SURFACE TEMPERATURES ARE 50°F OR HIGHER AND SHALL NOT BE APPLIED WHEN THE WIND OR OTHER CONDITIONS CAUSE A FILM OR DUST TO BE DEPOSITED ON THE PAVEMENT SURFACE AFTER CLEANING AND BEFORE THE MARKING MATERIAL CAN BE APPLIED.

MULTI-COMPONENT (MULTI-COMP):

1. 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 MARKINGS.
2. 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.
3. 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 25 LBS POUNDS PER GALLON RATE SUFFICIENT TO ACHIEVE AN ACCEPTABLE NO-TRACK SYSTEM.
4. PAVEMENT MARKINGS SHALL ONLY BE APPLIED IN SEASONABLE WEATHER WHEN AIR AND PAVEMENT SURFACE TEMPERATURES ARE 40° OR HIGHER AND SHALL NOT BE APPLIED WHEN THE WIND OR OTHER CONDITIONS CAUSE A FILM OR DUST TO BE DEPOSITED ON THE PAVEMENT SURFACE AFTER CLEANING AND BEFORE THE MARKING MATERIAL CAN BE APPLIED.

PREFORMED THERMOPLASTIC:

1. 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 MARKING SPECIFICATIONS.

PAVEMENT MARKING TABULATION — L

TEMPORARY

ITEM DESCRIPTION	UNIT	TOTAL			CSAH 14 (125TH AVE / MAIN ST)									CR 53 (SUNSET AVE)	
					STAGE 1			STAGE 2			STAGE 3			STAGE 3	
		WHITE	YELLOW	BLACK	WHITE	YELLOW	BLACK	WHITE	YELLOW	BLACK	WHITE	YELLOW	BLACK	WHITE	YELLOW
PAVEMENT MARKING REMOVAL 4" SOLID LINE PAINT	LIN FT	959						959							
PAVEMENT MARKING REMOVAL 4" SOLID DOUBLE LINE PAINT	LIN FT														
PAVEMENT MARKING REMOVAL 4" BROKEN LINE PAINT	LIN FT	70						70							
4" REMOVABLE PREFORMED PAVEMENT MARKING TAPE	LIN FT	3525	7361		303	4133		2244	2072		978	1156			
REMOVABLE PAVEMENT MARKING TAPE (BLACK)	LIN FT			2591			106			1593			892		
PORTABLE CONCRETE BARRIER DELINEATOR - SPACED EVERY 12'6"	EACH	93						93							
4" SOLID LINE PAINT	LIN FT	4886	1559		1114			2119			968	974		685	585
4" SOLID DOUBLE LINE PAINT	LIN FT		1075			63			958						54

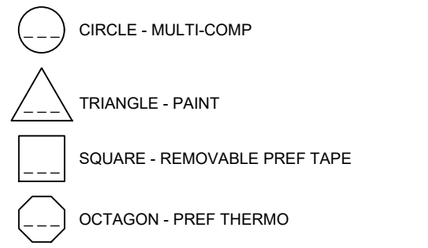
PERMANENT

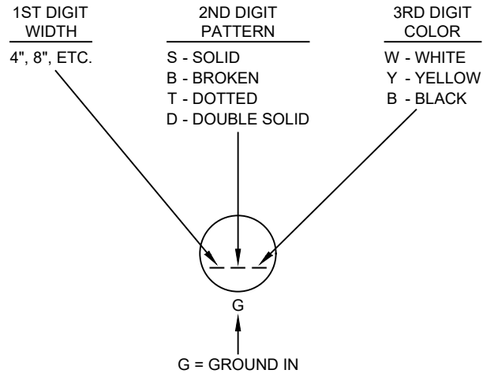
ITEM DESCRIPTION	UNIT	TOTAL		CSAH 14 (125TH AVE / MAIN ST)		CR 53 (SUNSET AVE)	
		WHITE	YELLOW	WHITE	YELLOW	WHITE	YELLOW
4" SOLID LINE MULTI-COMP	LIN FT	5336	1188	3839	586	1497	602
4" DOUBLE LINE MULTI-COMP	LIN FT		1638		1428		210
4" BROKEN LINE MULTI-COMP	LIN FT		230		110		120
4" SOLID LINE PREFORMED THERMOPLASTIC - GROUND IN	LIN FT	1724	1385	1237	985	487	400
8" DOTTED LINE PREFORMED THERMOPLASTIC - GROUND IN	LIN FT	45		30		15	
24" SOLID LINE PREFORMED THERMOPLASTIC - GROUND IN	LIN FT		30		20		11
3' X 8' PREFORMED THERMOPLASTIC - GROUND IN	SQ FT	144				144	

PAVEMENT MARKING SYMBOLS & MATERIALS LEGEND

- BROKEN LINE - 50' CYCLE (10' LINE, 40' GAP)
- DOTTED LINE - 15' CYCLE (3' LINE, 12' GAP) UNLESS SHOWN OTHERWISE IN THE PLAN
- DOTTED LINE - 6' CYCLE (3' LINE, 3' GAP)
- CROSSWALK BLOCK
- PAVEMENT MESSAGE (LEFT ARROW)

STRIPING KEY





EXAMPLE: (4SW / G) = 4" SOLID LINE WHITE MULTI-COMP GROUND IN

1 OF 1

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049\Base\Traffic\Permanent Pavement Marking Plan Notes & Tabulations.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: SEAN R. THIEL

SIGNATURE: Sean R. Thiel

DATE: 12/07/2023 LICENSE NO. 45129

DRAWN BY FL DATE 05/31/23

DESIGN BY FL DATE 05/31/23

CHECKED BY SRT DATE

ANOKA COUNTY HIGHWAY DEPT.

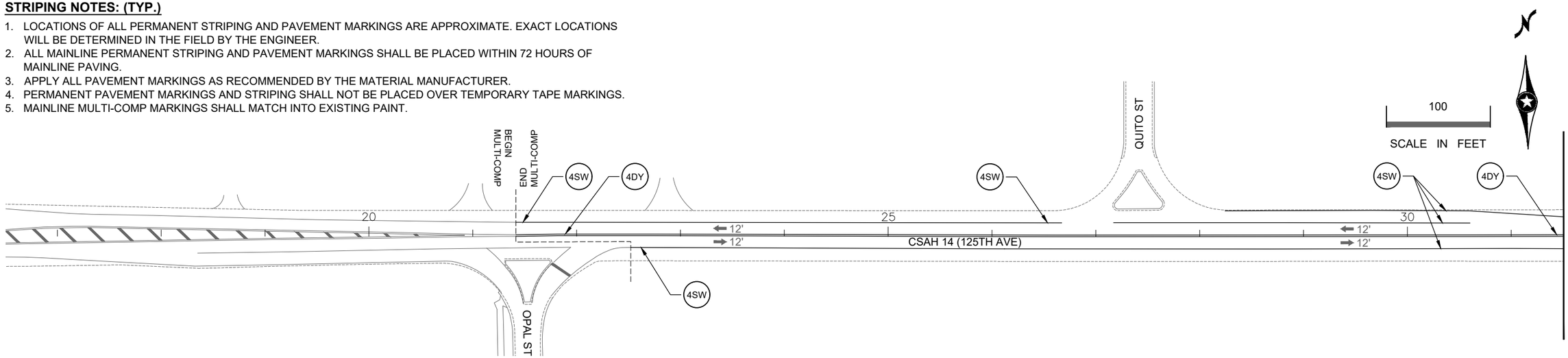
SAP 002-614-049

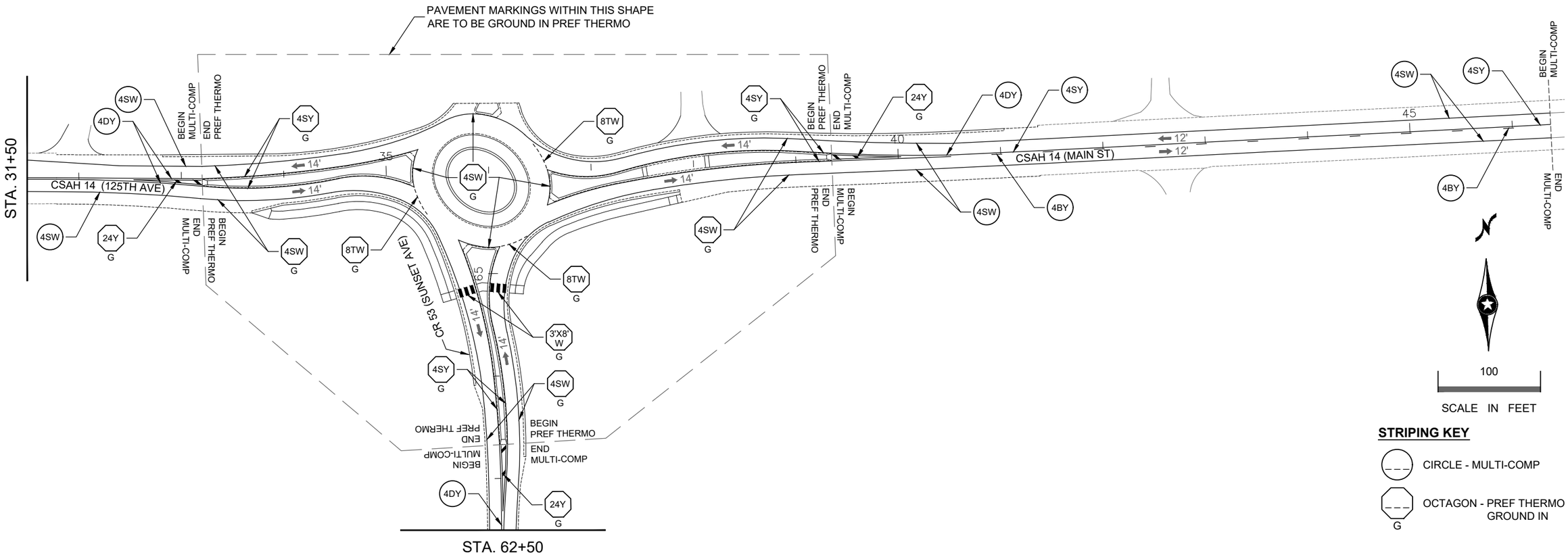
PERMANENT PAVEMENT MARKING PLAN NOTES & TABULATIONS

Sheet 73 of 115 Sheets

STRIPING NOTES: (TYP.)

1. LOCATIONS OF ALL PERMANENT STRIPING AND PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
2. ALL MAINLINE PERMANENT STRIPING AND PAVEMENT MARKINGS SHALL BE PLACED WITHIN 72 HOURS OF MAINLINE PAVING.
3. APPLY ALL PAVEMENT MARKINGS AS RECOMMENDED BY THE MATERIAL MANUFACTURER.
4. PERMANENT PAVEMENT MARKINGS AND STRIPING SHALL NOT BE PLACED OVER TEMPORARY TAPE MARKINGS.
5. MAINLINE MULTI-COMP MARKINGS SHALL MATCH INTO EXISTING PAINT.





STRIPING KEY

- CIRCLE - MULTI-COMP
- OCTAGON - PREF THERMO GROUND IN

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049\Base\Traffic\Permanent Pavement Marking Plan.dwg

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PRINT NAME: SEAN R. THIEL

SIGNATURE:

DATE: 12/07/2023 LICENSE NO. 45129

DRAWN BY FL DATE 06/30/23

DESIGN BY FL DATE 06/30/23

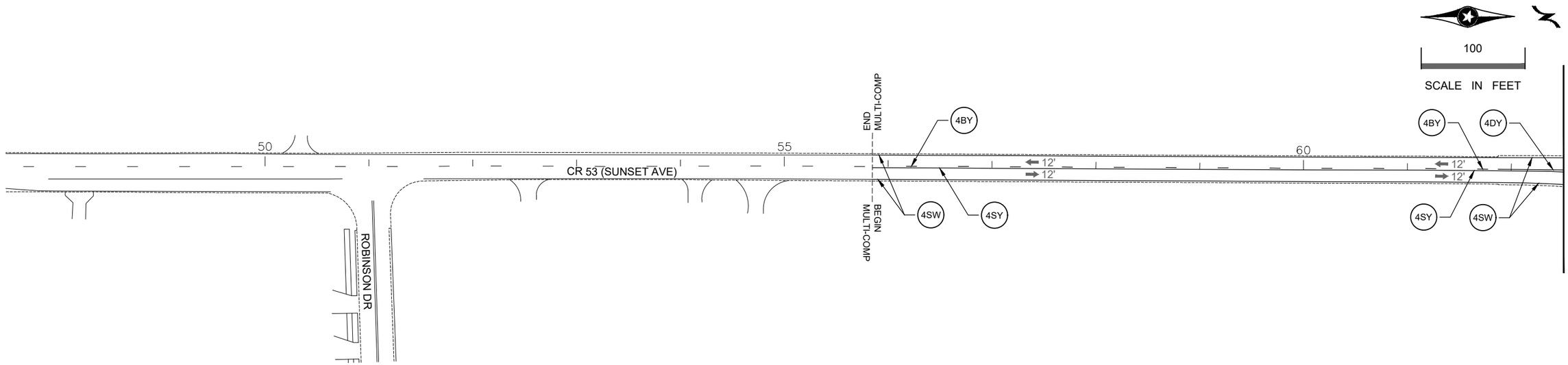
CHECKED BY SRT DATE

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-614-049

PERMANENT PAVEMENT MARKING PLAN

Sheet 74 of 115 Sheets



STRIPING KEY

CIRCLE - MULTI-COMP

2 OF 2

NO	DATE	BY	CKD	APPR	REVISION

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ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-614-049

PERMANENT PAVEMENT MARKING PLAN

Sheet 75 of 115 Sheets

TRAFFIC CONTROL NOTES: (TYP.)

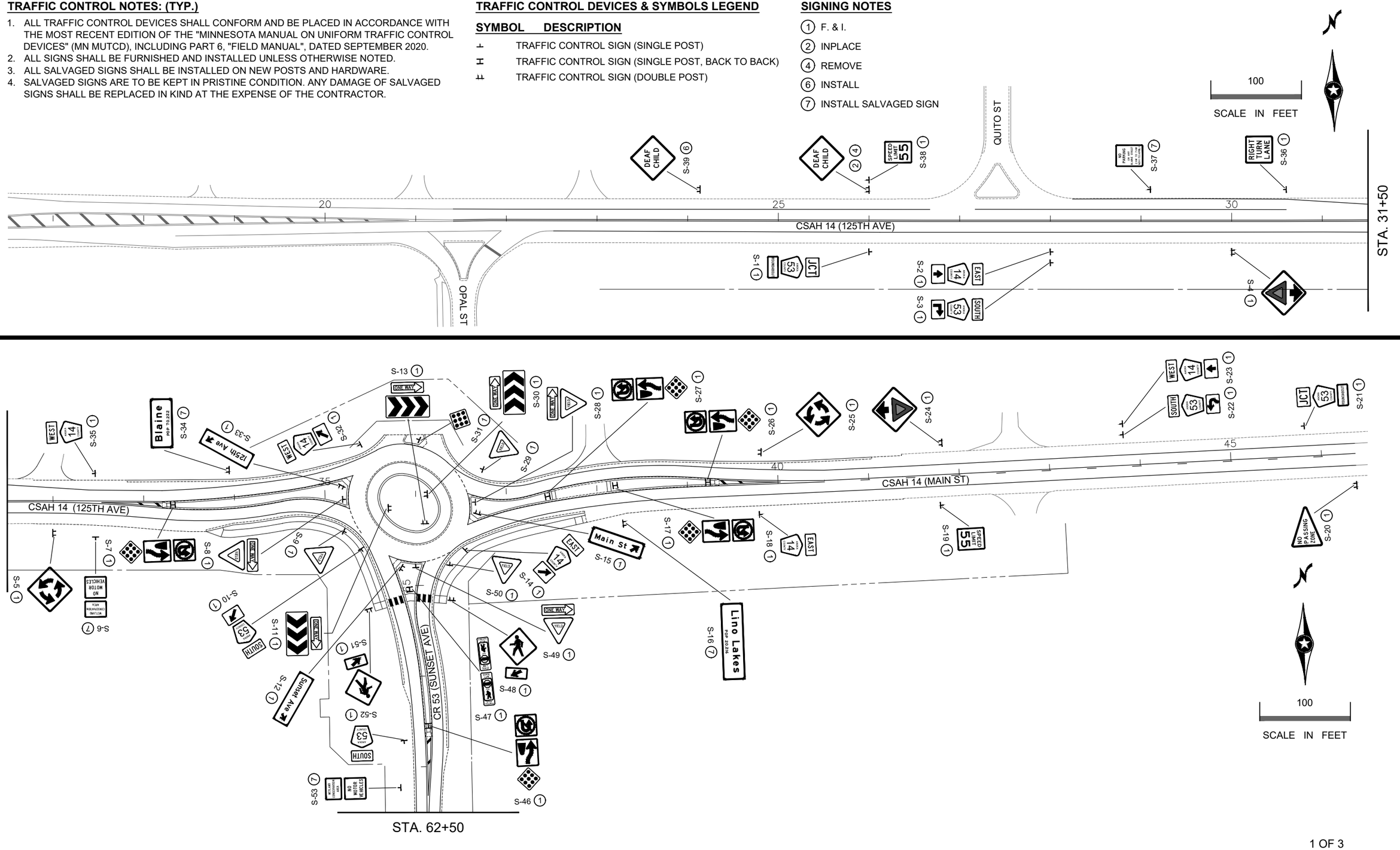
1. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE WITH THE MOST RECENT EDITION OF THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING PART 6, "FIELD MANUAL", DATED SEPTEMBER 2020.
2. ALL SIGNS SHALL BE FURNISHED AND INSTALLED UNLESS OTHERWISE NOTED.
3. ALL SALVAGED SIGNS SHALL BE INSTALLED ON NEW POSTS AND HARDWARE.
4. SALVAGED SIGNS ARE TO BE KEPT IN PRISTINE CONDITION. ANY DAMAGE OF SALVAGED SIGNS SHALL BE REPLACED IN KIND AT THE EXPENSE OF THE CONTRACTOR.

TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND

SYMBOL	DESCRIPTION
⊥	TRAFFIC CONTROL SIGN (SINGLE POST)
⊥H⊥	TRAFFIC CONTROL SIGN (SINGLE POST, BACK TO BACK)
⊥⊥	TRAFFIC CONTROL SIGN (DOUBLE POST)

SIGNING NOTES

1. F. & I.
2. INPLACE
4. REMOVE
6. INSTALL
7. INSTALL SALVAGED SIGN



1 OF 3

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049\Base\Traffic\Permanent Signing and Tabulations.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: SEAN R. THIEL

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DRAWN BY FL DATE 05/31/23

DESIGN BY FL DATE 05/31/23

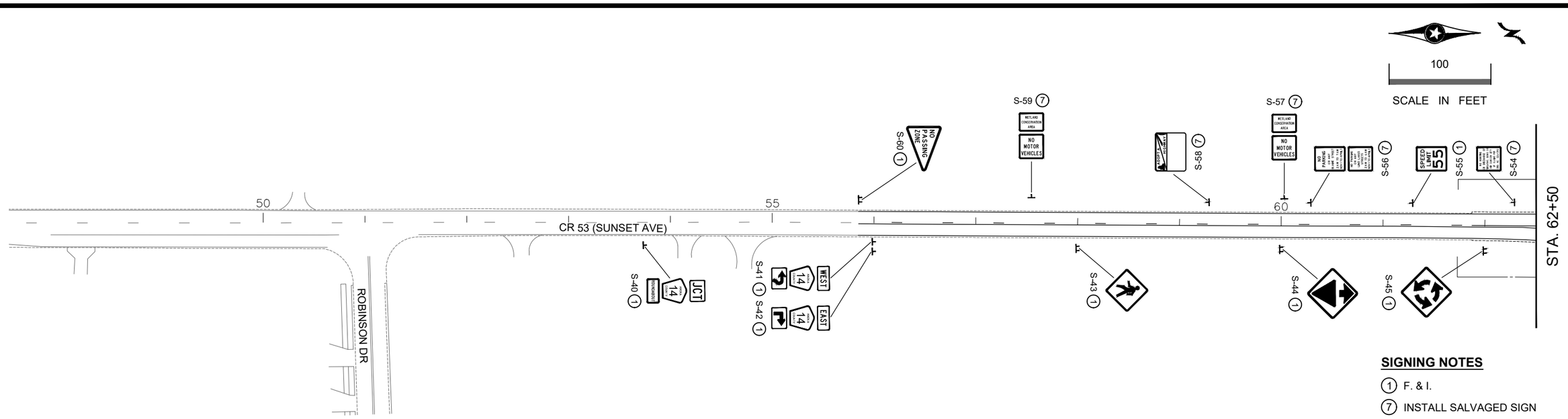
CHECKED BY SRT DATE

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-614-049

PERMANENT SIGNING AND TABULATIONS

Sheet 76 of 115 Sheets



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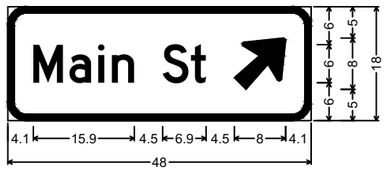
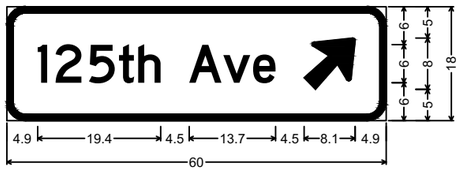


Roundabout Exit Destination;
3.0" Radius, 1.0" Border, White on, Green;
"Main", D 2K; "St", D 2K;
Arrow 3 - 10.0" 45';
Table of letter and object lefts

M	a	i	n	S	t	↗
4.1	9.8	14.3	16.5	24.5	29.0	35.9



3.0" Radius, 1.0" Border, White on, Green;
"125th", D 2K; "Ave", D 2K; Arrow 3 - 10.0" 45';
Table of letter and object lefts

1	2	5	t	h	A	v	e	↗
4.9	7.7	13.0	17.7	20.8	28.8	34.2	39.0	47.0

3.0" Radius, 1.0" Border, White on, Green;
"Sunset", D 2K; "Ave", D 2K; Arrow 3 - 10.0" 45';
Table of letter and object lefts

S	u	n	s	e	t	A	v	e	↗
5.8	10.7	15.5	19.8	23.2	27.0	33.9	39.3	44.0	52.1

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049\Base\Traffic\Permanent Signing and Tabulations.dwg

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ANOKA COUNTY HIGHWAY DEPT.

SAP 002-614-049

PERMANENT SIGNING AND TABULATIONS

Sheet 77 of 115 Sheets

PERMANENT SIGN AND DELINEATOR / MARKER

M

	SIGN NUMBER	PANEL CODE	PANEL LEGEND	PANEL SIZE (W X H) INCHES	PANEL MOUNTING HEIGHT FEET	SUPPORT TYPE (1)	SUPPORT NUMBER OF POSTS	INSTALL SIGN TYPE C EACH	INSTALL SIGN TYPE D EACH	SIGN SQ FT	DELINEATOR / MARKER PANEL EACH
	S-1	M2-1a	JCT	21 X 15	7	U-SOIL	1	1		2.19	
		M1-6M	ANOKA COUNTY 53	24 X 24						4	
		W16-17P	ROUNDABOUT	24 X 12						2	
	S-2	M3-2a	EAST	24 X 12	7	U-SOIL	1	1		2	
		M1-6M	ANOKA COUNTY 14	24 X 24						4	
		M6-3a	DIRECTIONAL ARROW UP	21 X 15						2.19	
	S-3	M3-3a	SOUTH	24 X 12	7	U-SOIL	1	1		2	
		M1-6M	ANOKA COUNTY 53	24 X 24						4	
		M5-1aR	ADVANCE TURN ARROW RIGHT	21 X 15						2.19	
	S-4	W3-2	YIELD AHEAD	36 X 36	7	U-SOIL	2	1		9	
	S-5	M2-6a	ROUNDABOUT	36 X 36	7	U-SOIL	2	1		9	
(2)	S-6		WETLAND CONSERVATION AREA	24 X 18	7	U-SOIL	1				
		R5-3	NO MOTOR VEHICLES	24 X 24							
	S-7	R3-4	NO U-TURN	24 X 24	7	U-CONC	1	1		4	
		R4-7	KEEP RIGHT	24 X 30						5	
		OM1-1	TYPE 1 OBJECT MARKER	18 X 18	4						1
	S-8	R6-1R	ONE WAY RIGHT	36 X 12	7	U-CONC	1	1		3	
		R1-2	YIELD	30 X 30 X 30						6.25	
	S-9	R1-2	YIELD	30 X 30 X 30	7	U-SOIL	1	1		6.25	
	S-10	M3-3a	SOUTH	24 X 12	7	U-SOIL	1	1		2	
		M1-6M	ANOKA COUNTY 53	24 X 24						4	
		M6-2R	DIRECTIONAL ARROW RIGHT	21 X 15						2.19	
	S-11	R6-1R	ONE WAY RIGHT	54 X 18	7	U-CONC	2	1		6.75	
		R6-4a	ROUNDABOUT DIRECTIONAL	48 X 24			2	1		8	
	S-12	D1-1d	SUNSET AVE	66 X 18	7	U-CONC	2		1	8.25	
	S-13	R6-1R	ONE WAY RIGHT	54 X 18	7	U-CONC	2	1		6.75	
		R6-4a	ROUNDABOUT DIRECTIONAL	48 X 24						8	
	S-14	M3-2a	EAST	24 X 12	7	U-SOIL	1	1		2	
		M1-6M	ANOKA COUNTY 14	24 X 24						4	
		M6-2R	DIRECTIONAL ARROW RIGHT	21 X 15						2.19	
	S-15	D1-1d	MAIN ST	48 X 18	7	U-CONC	2		1	6	
(2)	S-16	I2-X4	LINO LAKES	84 X 24	7	U-SOIL	2				
	S-17	R3-4	NO U-TURN	24 X 24	7	U-CONC	1	1		4	
		R4-7	KEEP RIGHT	24 X 30						5	
		OM1-1	TYPE 1 OBJECT MARKER	18 X 18	4						1
	S-18	M3-2a	EAST	24 X 12	7	U-SOIL	1	1		2	
		M1-6M	ANOKA COUNTY 14	24 X 24						4	
	S-19	R2-1	SPEED LIMIT 55	24 X 30	7	U-SOIL	1	1		5	
	S-20	W14-3	NO PASSING ZONE	36 X 48 X 48	7	U-SOIL	2	1		6	
	S-21	M2-1a	JCT	21 X 15	7	U-SOIL	1	1		2.19	
		M1-6M	ANOKA COUNTY 53	24 X 24						4	
		W16-17P	ROUNDABOUT	24 X 12						2	
	S-22	M3-3a	SOUTH	24 X 12	7	U-SOIL	1	1		2	
		M1-6M	ANOKA COUNTY 53	24 X 24						4	
		M5-3	ADVANCE TURN ARROW LEFT	21 X 15						2.19	
	S-23	M3-4a	WEST	24 X 12	7	U-SOIL	1	1		2	
		M1-6M	ANOKA COUNTY 14	24 X 24						4	
		M6-3a	DIRECTIONAL ARROW UP	21 X 15						2.19	
	S-24	W3-2	YIELD AHEAD	36 X 36	7	U-SOIL	2	1		9	
	S-25	M2-6a	ROUNDABOUT	36 X 36	7	U-SOIL	2	1		9	
	S-26	R3-4	NO U-TURN	24 X 24	7	U-CONC	1	1		4	
		R4-7	KEEP RIGHT	24 X 30						5	
		OM1-1	TYPE 1 OBJECT MARKER	18 X 18	4						1
	S-27	R3-4	NO U-TURN	24 X 24	7	U-CONC	1	1		4	
		R4-7	KEEP RIGHT	24 X 30						5	
		OM1-1	TYPE 1 OBJECT MARKER	18 X 18	4						1
	S-28	R6-1R	ONE WAY RIGHT	36 X 12	7	U-CONC	1	1		3	
		R1-2	YIELD	30 X 30 X 30						6.25	
	S-29	R1-2	YIELD	30 X 30 X 30	7	U-SOIL	1	1		6.25	
	S-30	R6-1R	ONE WAY RIGHT	54 X 18	7	U-CONC	2	1		6.75	
		R6-4a	ROUNDABOUT DIRECTIONAL	48 X 24						8	
	S-31	OM1-1	TYPE 1 OBJECT MARKER	18 X 18	4	U-CONC	1	1			1
	S-32	M3-4a	WEST	24 X 12	7	U-SOIL	1	1		2	
		M1-6M	ANOKA COUNTY 14	24 X 24						4	
		M6-2R	DIRECTIONAL ARROW RIGHT	21 X 15						2.19	
	S-33	D1-1d	125TH AVE	60 X 18	7	U-CONC	2		1	7.5	
(2)	S-34	I2-X4	BLAINE	54 X 24	7	U-SOIL	2				
	S-35	M3-4a	WEST	24 X 12	7	U-SOIL	1	1		2	
		M1-6M	ANOKA COUNTY 14	24 X 24						4	
	S-36	R3-7R	RIGHT LANE MUST TURN RIGHT	30 X 30	7	U-SOIL	1	1		6.25	
(2)	S-37		NO PARKING BLAINE STREETS	24 X 30	7	U-SOIL	1				
	S-38	R2-1	SPEED LIMIT 55	24 X 30	7	U-SOIL	1	1		5	
(3)	S-39		DEAF CHILD	36 X 36	7	U-SOIL	2	1			
	S-40	M2-1a	JCT	21 X 15	7	U-SOIL	1	1		2.19	
		M1-6M	ANOKA COUNTY 14	24 X 24						4	
		W16-17P	ROUNDABOUT	24 X 12						2	
	S-41	M3-4a	WEST	24 X 12	7	U-SOIL	1	1		2	
		M1-6M	ANOKA COUNTY 14	24 X 24						4	
		M5-3	ADVANCE TURN ARROW LEFT	21 X 15						2.19	
	S-42	M3-2a	EAST	24 X 12	7	U-SOIL	1	1		2	
		M1-6M	ANOKA COUNTY 14	24 X 24						4	
		M5-1aR	ADVANCE TURN ARROW RIGHT	21 X 15						2.19	
	S-43	W11-2	PEDESTRIAN CROSSING	36 X 36	7	U-SOIL	2	1		9	
	S-44	W3-2	YIELD AHEAD	36 X 36	7	U-SOIL	2	1		9	
	S-45	W2-6a	ROUNDABOUT	36 X 36	7	U-SOIL	2	1		9	
	S-46	R3-4	NO U-TURN	24 X 24	7	U-CONC	1	1		4	
		R4-7	KEEP RIGHT	24 X 30						5	
		OM1-1	TYPE 1 OBJECT MARKER	18 X 18	4						1
	S-47	R1-6a	STATE LAW STOP FOR PEDS W/I X-WALK	12 X 36	1	U-CONC	1	1		3	
		R1-6a	STATE LAW STOP FOR PEDS W/I X-WALK	12 X 36						3	
	S-48	W11-2	PEDESTRIAN CROSSING	36 X 36	7	U-SOIL	2	1		9	
		W16-7PL	DOWNWARD DIAGONAL ARROW LEFT	30 X 18						3.75	
	S-49	R6-1R	ONE WAY RIGHT	36 X 12	7	U-CONC	1	1		3	
		R1-2	YIELD	30 X 30 X 30						6.25	
	S-50	R1-2	YIELD	30 X 30 X 30	7	U-SOIL	1	1		6.25	
	S-51	W11-2	PEDESTRIAN CROSSING	36 X 36	7	U-SOIL	2	1		9	
		W16-7PL	DOWNWARD DIAGONAL ARROW LEFT	30 X 18						3.75	
	S-52	M3-3a	SOUTH	24 X 12	7	U-SOIL	1	1		2	
		M1-6M	ANOKA COUNTY 53	24 X 24						4	
(2)	S-53		WETLAND CONSERVATION AREA	24 X 18	7	U-SOIL	1				
		R5-3	NO MOTOR VEHICLES	24 X 24							
(2)	S-54		NO HUNTING	24 X 24	7	U-SOIL	1				
	S-55	R2-1	SPEED LIMIT 55	24 X 30	7	U-SOIL	1	1		5	
(2)	S-56		NO PARKING BLAINE STREETS	24 X 30	7	U-SOIL	1				
			NO PARKING LINO LAKES STREETS	24 X 24							
(2)	S-57		WETLAND CONSERVATION AREA	24 X 18	7	U-SOIL	1				
		R5-3	NO MOTOR VEHICLES	24 X 24							
(2)	S-58	D14-X1	ADOPT A HIGHWAY	30 X 24	7	U-SOIL	1				
(2)	S-59		WETLAND CONSERVATION AREA	24 X 18	7	U-SOIL	1				
		R5-3	NO MOTOR VEHICLES	24 X 24							
	S-60	W14-3	NO PASSING ZONE	36 X 48 X 48	7	U-SOIL	2	1		6	
							TOTAL =	48	3	401.53	6

SPECIFIC NOTES:

(1) U-CHANNEL 3 LBS PER FOOT BLACK POST
(2) REFERENCE EXISTING SIGNING & STRIPING TABULATION, SHEET 54.
(3) RELOCATE

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049\Base\Traffic\Permanent Signing and Tabulations.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: SEAN R. THIEL
SIGNATURE: Sean R. Thiel
DATE: 12/07/2023 LICENSE NO. 45129

DRAWN BY FL DATE 05/31/23
DESIGN BY FL DATE 05/31/23
CHECKED BY SRT DATE

ANOKA COUNTY HIGHWAY DEPT.

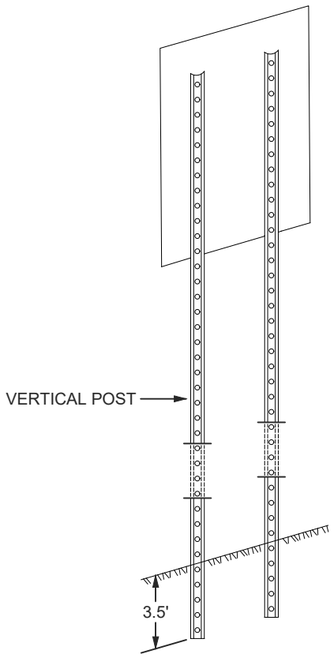
SAP 002-614-049

PERMANENT SIGNING AND TABULATIONS

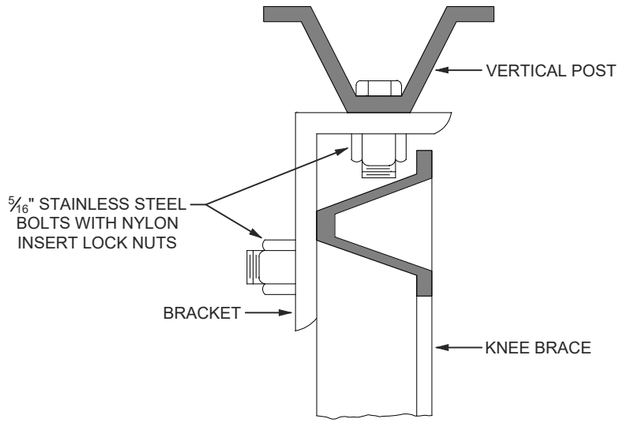
Sheet 78 of 115 Sheets

TYPE C & D SIGN STRUCTURAL DETAILS

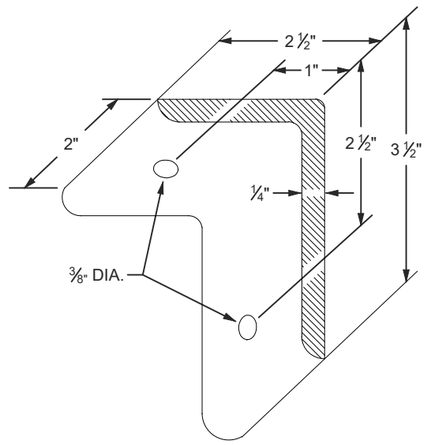
TYPICAL INSTALLATION 36" AND LARGER TYPE "C" SIGNS



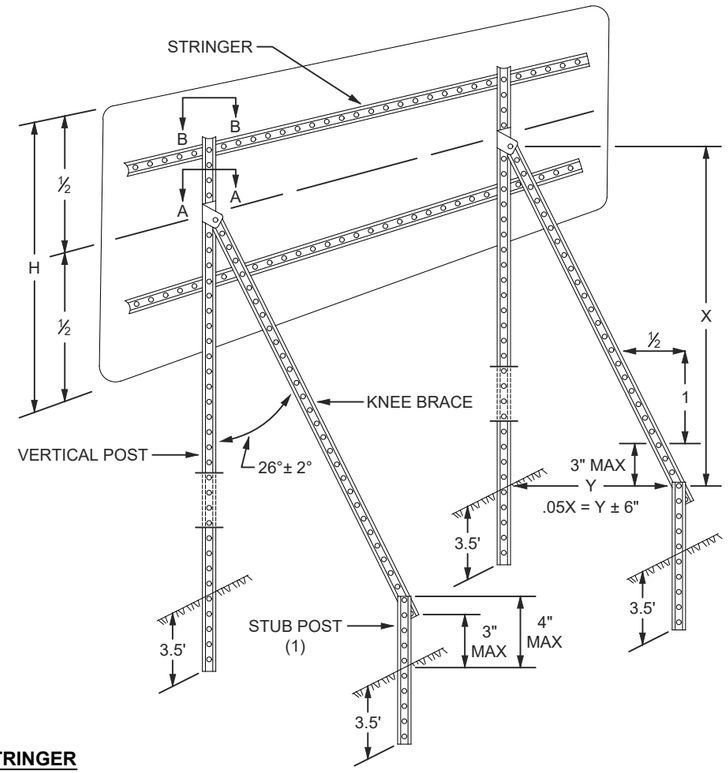
SECTION A-A



A-FRAME BRACKET (STEEL MN/DOT 3306 GALVANIZED PER MN/3394)

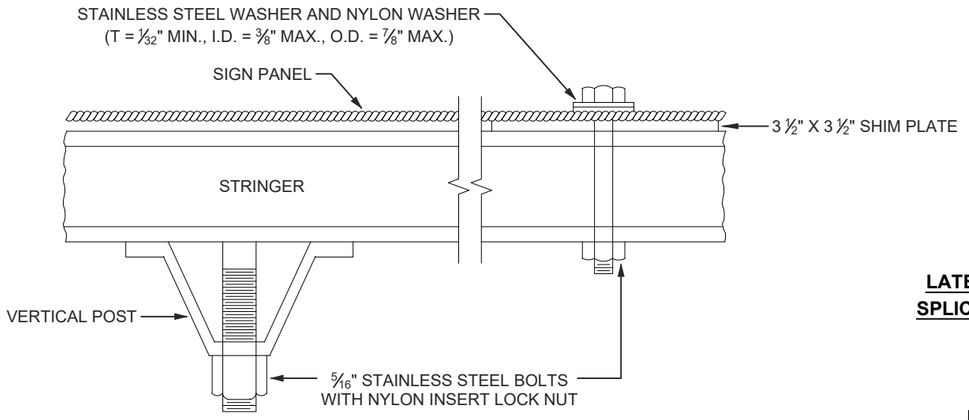


TYPICAL "A-FRAME" INSTALLATION TYPE "D" SIGNS

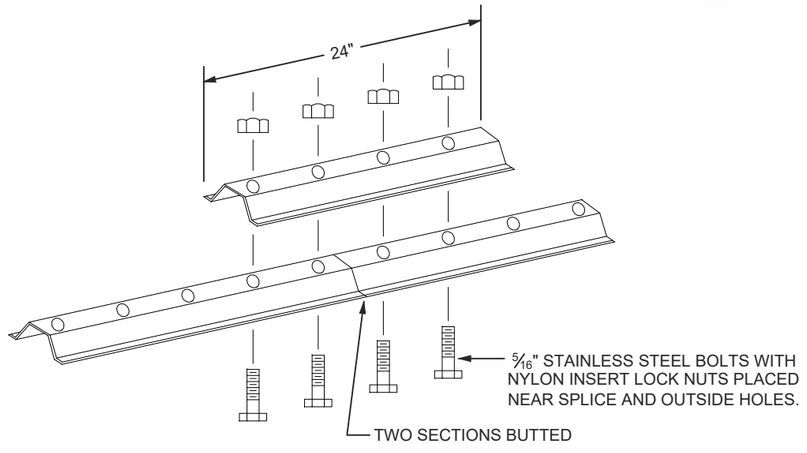


(1) OFFSET STUB POST 1' TOWARD ROADWAY RELATIVE TO VERTICAL POST.

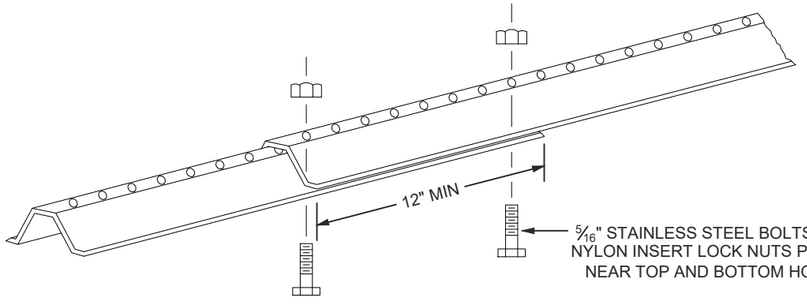
SECTION B-B



LATERAL BRACE OR STRINGER SPLICE DETAIL (EXPLODED VIEW)



KNEE BRACE SPLICE



NO	DATE	BY	CKD	APPR	REVISION

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ANOKA COUNTY HIGHWAY DEPT.

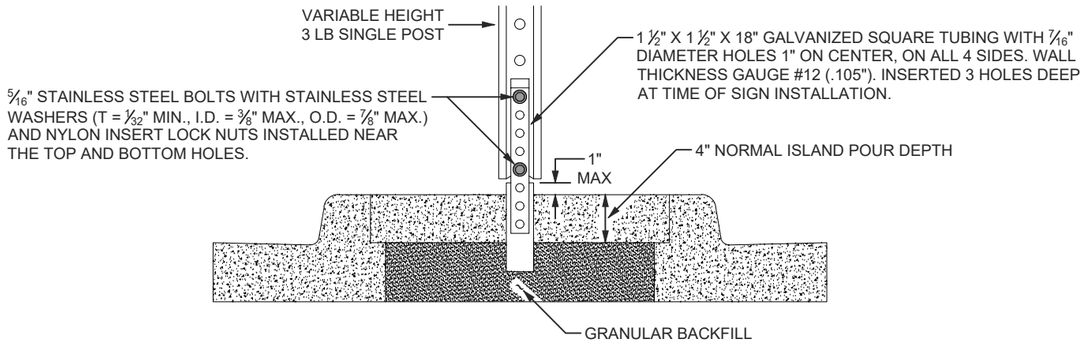
SAP 002-614-049

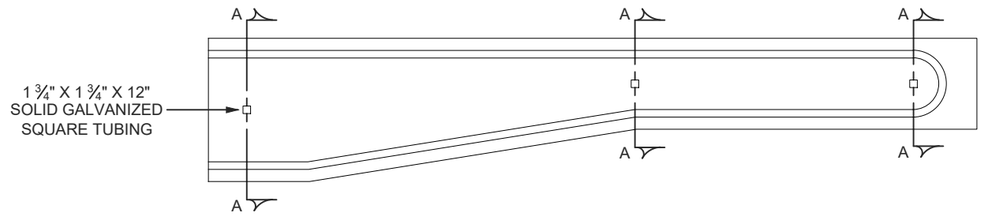
SIGNING & STRIPING DETAILS

Sheet 79 of 115 Sheets

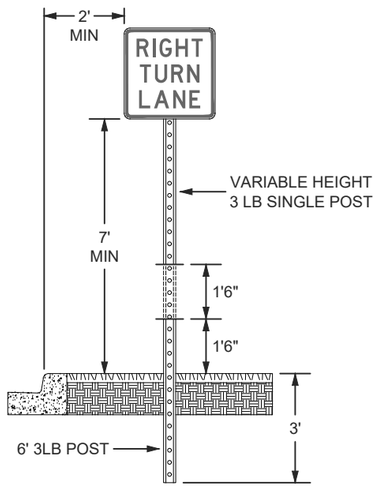
SIGN INSTALLATION TYPICALS

SECTION A-A

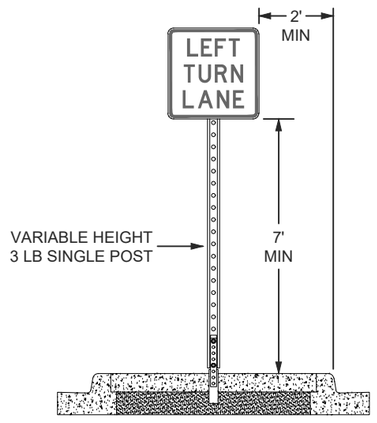




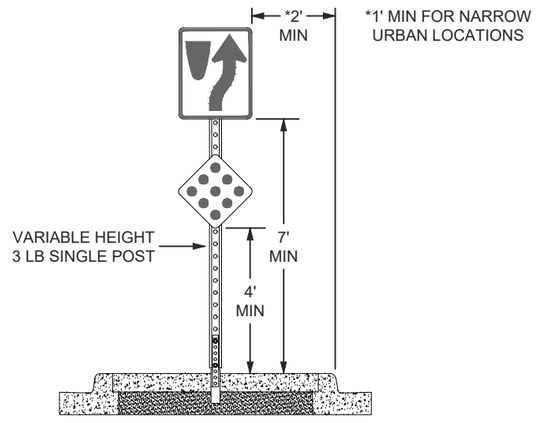
GROUND POST MOUNT SIGN INSTALLATION TYPICAL



ISLAND MOUNT, BREAK-AWAY SIGN INSTALLATION TYPICAL



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



SIGN NOTES:

- TELESPAR INSERT NOT TO BE INSERTED MORE THAN 3 MOUNTING HOLES DEEP INTO BASE. TYPICAL ON ALL SIGN INSTALLATIONS.

INSTALLATION NEAR SHARED-USE PATHWAY (MN MUTCD):

- THE MINIMUM HEIGHT MEASURED VERTICALLY FROM THE SHARED-USE PATHWAY TO THE BOTTOM OF THE SIGN SHALL BE 7 FEET. IF A SECONDARY SIGN IS MOUNTED BELOW THE PRIMARY SIGN AND IS MOUNTED LESS THAN 7 FEET, IT SHALL NOT PROJECT MORE THAN 4 INCHES INTO THE SHARED-USE PATHWAY.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049\Base\Traffic\Signing & Striping Details.dwg

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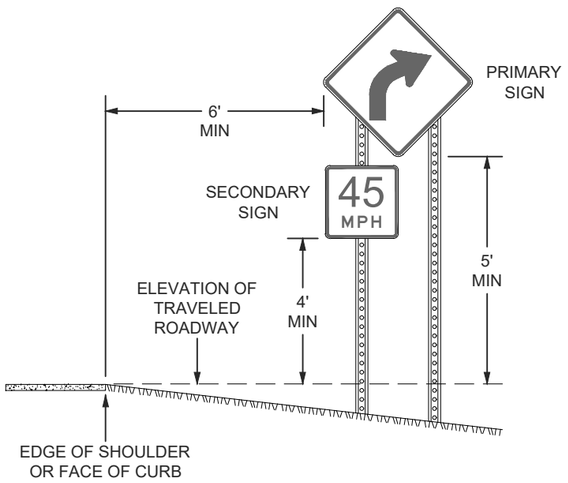
SAP 002-614-049

SIGNING & STRIPING DETAILS

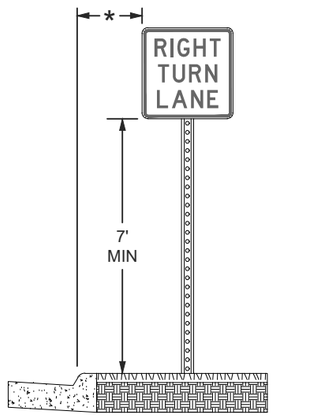
Sheet 80 of 115 Sheets

SIGN PLACEMENT TYPICALS

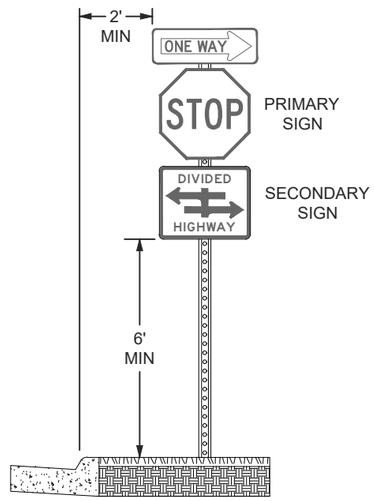
RURAL

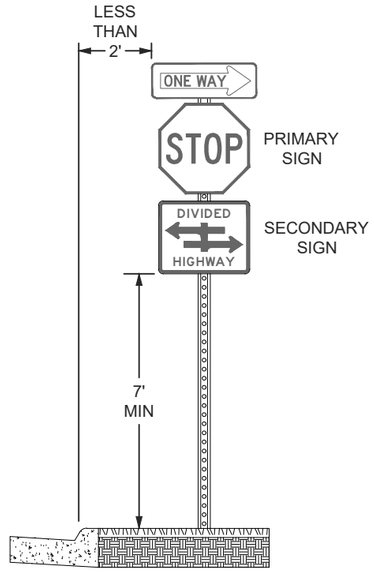


URBAN

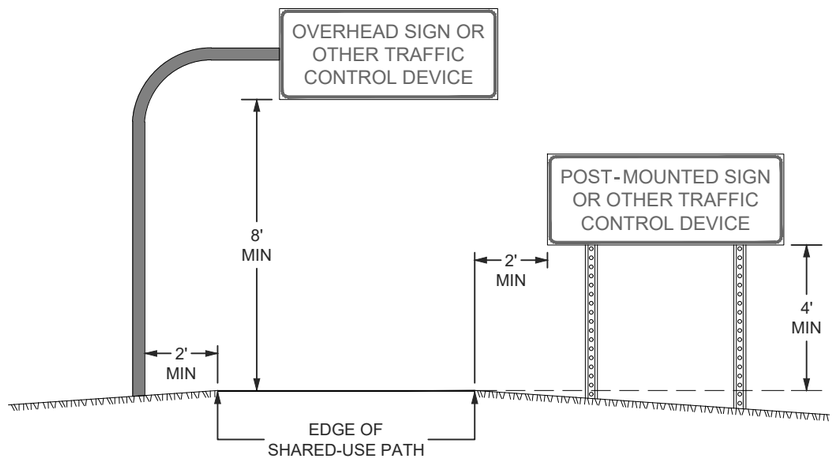


* 2' - NARROW BOULEVARD (≤ 8' WIDE)
6' - WIDE BOULEVARD





SHARED-USE PATH



NOTES:
- ALL DIMENSIONS ARE MINIMUMS.
- MAINTAIN A DISTANCE OF 2' BETWEEN TRAFFIC CONTROL DEVICE AND SHARED-USE PATH.
- 7' SIGN CLEARANCE IF 2' DISTANCE BETWEEN SIGN AND SHARED-USE PATH CANNOT BE MAINTAINED.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049\Base\Traffic\Signing & Striping Details.dwg

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ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

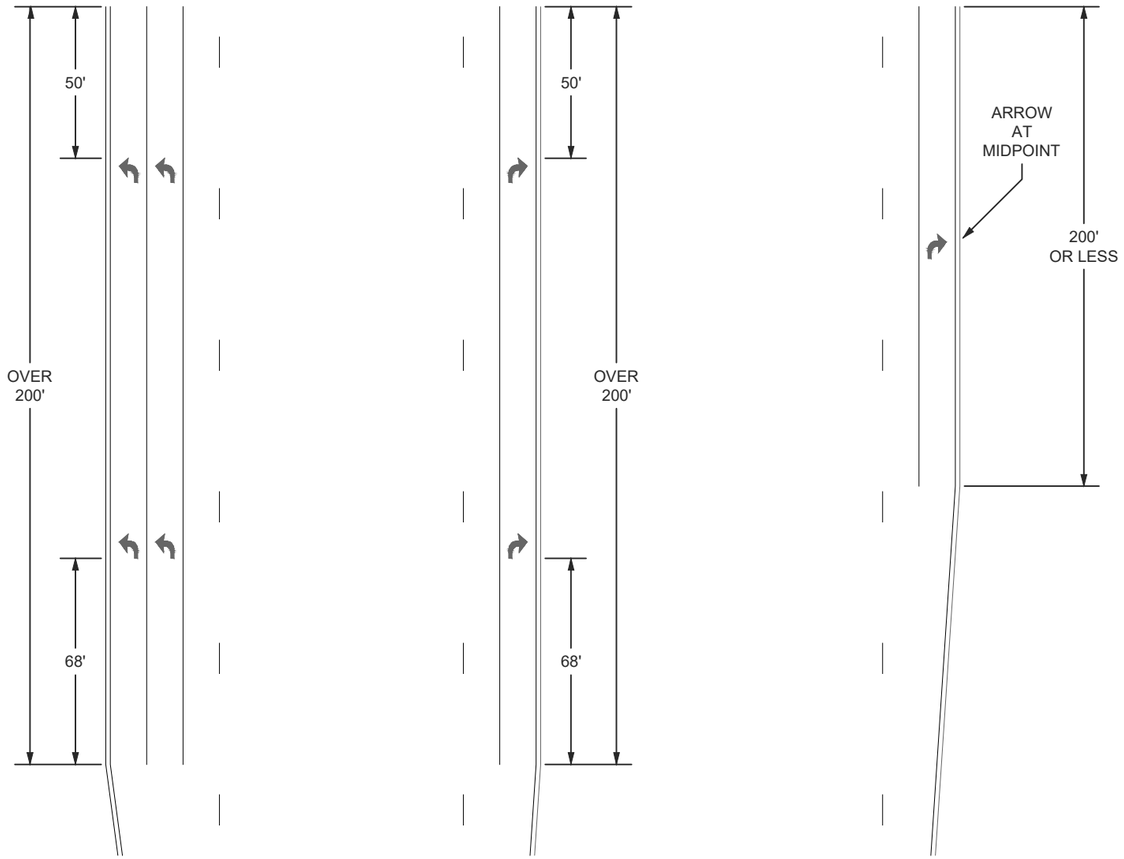
SAP 002-614-049

SIGNING & STRIPING DETAILS

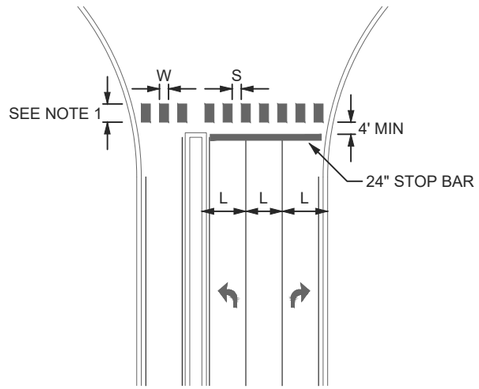
Sheet 81 of 115 Sheets

PAVEMENT MARKING TYPICALS

TURN LANE ARROW PLACEMENT

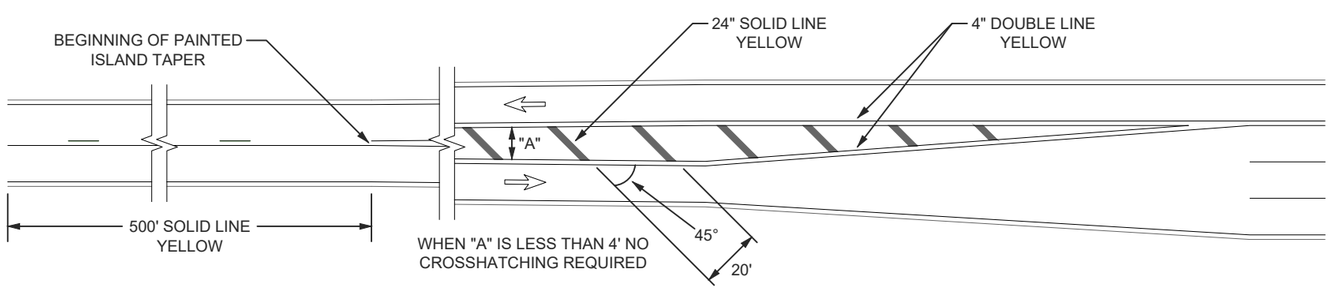


PEDESTRIAN CROSSWALK



(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'

LEFT TURN ISLAND MARKINGS



CROSSWALK NOTES:

1. THE BLOCKS SHALL BE A MINIMUM OF 6' AND AT LEAST AS LONG AS THE TRUNCATED DOMES. FOR FANNED TRUNCATED DOMES THE BLOCKS SHALL BE AT LEAST AS LONG AS THE APPROACHING SIDEWALK OR SHARED-USE PATH.
2. BLOCKS TO BE CENTERED ON CENTERLINE AND LANE LINES.
3. A MINIMUM OF 1.5' CLEAR DISTANCE SHALL BE LEFT ADJACENT TO THE CURB FACE. IF BLOCK FALLS INTO THIS DISTANCE IT MUST BE OMITTED.
4. ON TWO LANE TWO WAY STREETS, USE SPACING SHOWN FOR AN 11' INSIDE LANE.
5. FOR DIVIDED ROADWAYS, ADJUSTMENTS IN SPACING OF THE BLOCKS SHOULD BE MADE IN THE MEDIAN SO THAT THE BLOCKS ARE MAINTAINED IN THEIR PROPER LOCATION ACROSS THE TRAVELED PORTION OF THE ROADWAY.
6. AT SKEWED CROSSWALKS, THE BLOCKS ARE TO REMAIN PARALLEL TO THE LANE LINES.
7. THE BLOCKS SHALL BE PLACED SO THAT THEY ARE NOT LOCATED IN THE WHEEL PATH OF THE VEHICLES.
8. LOCATION OF CROSSWALK BLOCKS, STOP BARS, SIGNAL LOOPS AND PEDESTRIAN RAMPS ARE APPROXIMATE. FINAL LOCATIONS TO BE DETERMINED AND FIELD VERIFIED DURING CONSTRUCTION BY THE FIELD ENGINEER.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049\Base\Traffic\Signing & Striping Details.dwg

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DRAWN BY FL DATE 05/09/23

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CHECKED BY SRT DATE

ANOKA COUNTY

HIGHWAY DEPT.

SAP 002-614-049

SIGNING & STRIPING DETAILS

Sheet 82 of 115 Sheets

TEMPORARY TRAFFIC CONTROL QUANTITIES

K

"M" SERIES

SIGN	MUTCD CODE	COLOR	SIZE INCHES	STAGE / QUANTITY 1	2	3	4
DETOUR	M4-8	BLACK ON ORANGE	24 X 12	30	30	27	
END DETOUR	M4-8a	BLACK ON ORANGE	30 X 24	2	2	1	
JCT	M2-1a	WHITE ON BLUE	21 X 15			2	
NORTH	M3-1a	WHITE ON BLUE	24 X 12	18	18		
EAST	M3-2a	WHITE ON BLUE	24 X 12			1	
SOUTH	M3-3a	WHITE ON BLUE	24 X 12	14	14	1	
WEST	M3-4a	WHITE ON BLUE	24 X 12			28	
ANOKA 14 COUNTY	M1-6M	WHITE AND YELLOW ON BLUE	24 X 24			35	
ANOKA 53 COUNTY	M1-6M	WHITE AND YELLOW ON BLUE	24 X 24	43	43	3	
	M5-1aL	WHITE ON BLUE	21 X 15	6	6	2	
	M5-1aR	WHITE ON BLUE	21 X 15	6	6	7	
	M5-3	WHITE ON BLUE	21 X 15	1	1	1	
	M6-1aL	WHITE ON BLUE	21 X 15	3	3		
	M6-1aR	WHITE ON BLUE	21 X 15	3	3	4	
	M6-2R	WHITE ON BLUE	21 X 15	2	2	5	
	M6-2L	WHITE ON BLUE	21 X 15	1	1	1	
	M6-3a	WHITE ON BLUE	21 X 15	8	8	8	

"W" SERIES

SIGN	MUTCD CODE	COLOR	SIZE INCHES	STAGE / QUANTITY 1	2	3	4
	W1-4R	BLACK ON ORANGE	48 X 48		2		
	W1-4L	BLACK ON ORANGE	48 X 48		2		
	W1-5L	BLACK ON ORANGE	48 X 48			1	
	W6-3	BLACK ON ORANGE	48 X 48	2			
BUMP	W8-1	BLACK ON ORANGE	48 X 48		4	4	
BUMP AHEAD	W8-1M	BLACK ON ORANGE	48 X 48	AS NEEDED			
25 MPH / 45 MPH	W13-1P	BLACK ON ORANGE	24 X 24			1	
				2	8	2	
NO PASSING ZONE	W14-3	BLACK ON ORANGE		1	1	1	
500 FEET	W16-2P	BLACK ON ORANGE	24 X 18	2	2	1	
1000 FEET	W16-2P	BLACK ON ORANGE	24 X 18	2	2	1	
	W16-7PL	BLACK ON ORANGE	30 X 18		4	4	
ROAD WORK AHEAD	W20-1	BLACK ON ORANGE	48 X 48	7	7	4	
DETOUR AHEAD	W20-2	BLACK ON ORANGE	48 X 48	6	6	3	

"W" SERIES

SIGN	MUTCD CODE	COLOR	SIZE INCHES	STAGE / QUANTITY 1	2	3	4
ROAD CLOSED AHEAD	W20-3	BLACK ON ORANGE	48 X 48	9	9	4	

"R" SERIES

SIGN	MUTCD CODE	COLOR	SIZE INCHES	STAGE / QUANTITY 1	2	3	4
STOP	R1-1	WHITE ON RED	48 X 48			2	
SPEED LIMIT 55	R2-1	BLACK ON WHITE	24 X 30			2	
	R3-1	BLACK AND RED ON WHITE	24 X 24	1			
	R3-2	BLACK AND RED ON WHITE	24 X 24	1		1	
ONLY	R3-5R	BLACK ON WHITE	30 X 36			1	
RIGHT TURN LANE	R3-X1R	BLACK ON WHITE	30 X 30	1			
DO NOT PASS	R4-1	BLACK ON WHITE	24 X 30	1	1	1	
PASS WITH CARE	R4-2	BLACK ON WHITE	24 X 30	1	1	1	
	R4-7	BLACK ON WHITE	24 X 30				
DO NOT ENTER	R5-1	RED ON WHITE	30 X 30			3	
ONE WAY	R6-1R	BLACK ON WHITE	36 X 12			1	
			54 X 18			1	

NOTES:

1. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.
2. STAGE 4 QUANTITIES IN ACCORDANCE WITH THE MOST RECENT VERSION OF THE MINNESOTA TEMPORARY TRAFFIC CONTROL FIELD MANUAL.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049\Base\Traffic\Temporary Traffic Control Quantities.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: SEAN R. THIEL

SIGNATURE: Sean R. Thiel

DATE: 12/11/2023 LICENSE NO. 45129

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ANOKA COUNTY HIGHWAY DEPT.

SAP 002-614-049

TEMPORARY TRAFFIC CONTROL QUANTITIES

Sheet 83 of 115 Sheets

TEMPORARY TRAFFIC CONTROL QUANTITIES

K

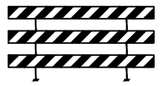
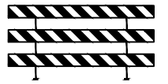
"G" SERIES

SIGN	MUTCD CODE	COLOR	SIZE INCHES	STAGE / QUANTITY 1	2	3	4
END ROAD WORK	G20-2	BLACK ON ORANGE	48 X 24	2	2	3	
ROAD CLOSED BEGINNING MTH DAY	G20-X1	BLACK ON ORANGE	54 X 48	2		1	
ROAD CLOSED 4th Ave TO Quito St FOLLOW DETOUR	G20-X2	BLACK ON ORANGE	96 X 90			4	
ROAD CLOSED 125th Ave TO Robinson Dr FOLLOW DETOUR	G20-X2	BLACK ON ORANGE	96 X 90	3	3		
ROAD CLOSED Robinson Dr TO 125th Ave FOLLOW DETOUR	G20-X2	BLACK ON ORANGE	96 X 90	4	4		
(4) BEGINS MTH DAY			72 X 12	7		4	

BARRICADE MOUNTED

SIGN	MUTCD CODE	COLOR	SIZE INCHES	STAGE / QUANTITY 1	2	3	4
DETOUR	M4-10R	BLACK ON ORANGE	48 X 18	1			
DETOUR	M4-10L	BLACK ON ORANGE	48 X 18	1		1	
LANE CLOSED	R11-2M	BLACK ON ORANGE	48 X 30				
ROAD CLOSED	R11-2M	BLACK ON ORANGE	48 X 30	2	2	1	
ROAD CLOSED — MILES AHEAD LOCAL TRAFFIC ONLY	R11-3a	BLACK ON WHITE	60 X 30				
1.5				1	1		
2						1	
ROAD CLOSED TO THRU TRAFFIC	R11-4	BLACK ON WHITE	60 X 30				
	W1-6R	BLACK ON ORANGE	48 X 24			1	
	W1-6L	BLACK ON ORANGE	48 X 24		1		

DEVICES

DEVICE	MUTCD CODE	COLOR	SIZE	STAGE / QUANTITY 1	2	3	4
	DRUM			78	59	100	
	TYPE III LEFT		8 FOOT	11	8	4	
	TYPE III RIGHT		8 FOOT	6	3	4	
	FLASHER TYPE C			12	11	6	
(5) 	PCMS TYPE C			STAGE 1: 2 (10 DAYS)		STAGE 3: 1 (10 DAYS)	

NOTES:

1. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.
2. ALL TYPE III BARRICADES SHALL BE REFLECTORIZED ON BOTH SIDES. BARRICADE MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE M.U.T.C.D.
3. STAGE 4 QUANTITIES IN ACCORDANCE WITH THE MOST RECENT VERSION OF THE MINNESOTA TEMPORARY TRAFFIC CONTROL FIELD MANUAL.
4. BEGINS DATE PLAQUE SHALL COVER FOLLOW DETOUR BEFORE WORK BEGINS AND BE REMOVED WHEN WHEN WORK BEGINS.
5. PCMS TO BE INSTALLED A MINIMUM OF 10 DAYS PRIOR TO COMMENCEMENT OF ROAD WORK AND REMOVED WHEN ROAD WORK BEGINS.

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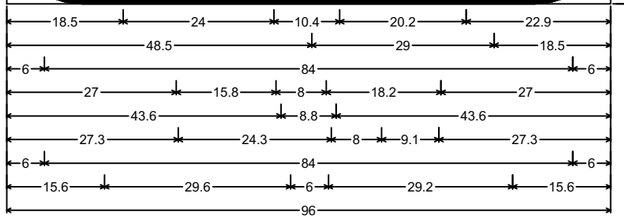
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-614-049

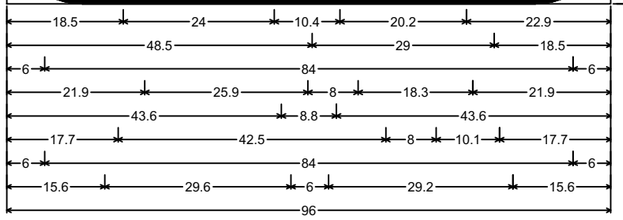
TEMPORARY TRAFFIC CONTROL QUANTITIES

"G" SERIES SIGN DESIGN



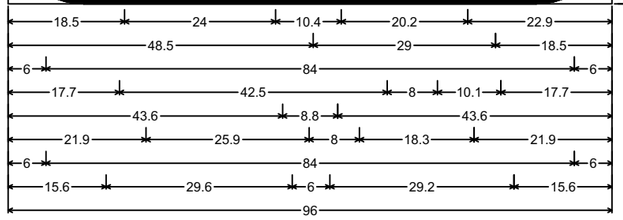
12.0" Radius, 2.0" Border, Black on, Orange;
Pentagonal County 14 M1-6; "ROAD", D 2K; "CLOSED", D 2K; "4th Ave", D 2K;
"TO", D 2K; "Quito St", D 2K; "FOLLOW DETOUR", D 2K;
Table of letter and object lefts

18.5	R 53.0	O 57.9	A 63.0	D 69.0	
C 48.5	L 53.9	O 58.4	S 63.6	E 68.7	D 73.4
6.0					
4 27.0	t 34.0	h 38.1	A 50.8	v 58.0	e 64.3
T 43.6	O 48.1				
Q 27.3	u 34.5	i 40.8	t 43.0	o 46.7	S 59.6	t 65.5
6.0					
F 15.6	O 20.1	L 25.7	L 30.3	O 34.8	W 39.8	D 51.2	E 56.6	T 60.8	O 65.3	U 70.8	R 76.4



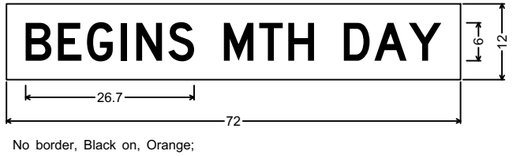
12.0" Radius, 2.0" Border, Black on, Orange;
Pentagonal County 53 M1-6; "ROAD", D 2K; "CLOSED", D 2K; "125th Ave", D 2K;
"TO", D 2K; "Robinson Dr", D 2K; "FOLLOW DETOUR", D 2K;
Table of letter and object lefts

18.5	R 53.0	O 57.9	A 63.0	D 69.0	
C 48.5	L 53.9	O 58.4	S 63.6	E 68.7	D 73.4
6.0					
1 21.9	2 25.7	5 32.7	t 39.0	h 43.1	A 55.8	v 63.0	e 69.4
T 43.6	O 48.1				
R 17.7	o 24.0	b 30.2	i 36.2	n 39.1	s 44.9	o 49.4	n 55.5	D 68.2	r 75.3
6.0					
F 15.6	O 20.1	L 25.7	L 30.3	O 34.8	W 39.8	D 51.2	E 56.6	T 60.8	O 65.3	U 70.8	R 76.4



12.0" Radius, 2.0" Border, Black on, Orange;
Pentagonal County 53 M1-6; "ROAD", D 2K; "CLOSED", D 2K; "Robinson Dr", D 2K;
"TO", D 2K; "125th Ave", D 2K; "FOLLOW DETOUR", D 2K;
Table of letter and object lefts

18.5	R 53.0	O 57.9	A 63.0	D 69.0	
C 48.5	L 53.9	O 58.4	S 63.6	E 68.7	D 73.4
6.0					
R 17.7	o 24.0	b 30.2	i 36.2	n 39.1	s 44.9	o 49.4	n 55.5	D 68.2	r 75.3
T 43.6	O 48.1				
1 21.9	2 25.7	5 32.7	t 39.0	h 43.1	A 55.8	v 63.0	e 69.4
6.0					
F 15.6	O 20.1	L 25.7	L 30.3	O 34.8	W 39.8	D 51.2	E 56.6	T 60.8	O 65.3	U 70.8	R 76.4



No border, Black on, Orange;
"BEGINS", D 2K

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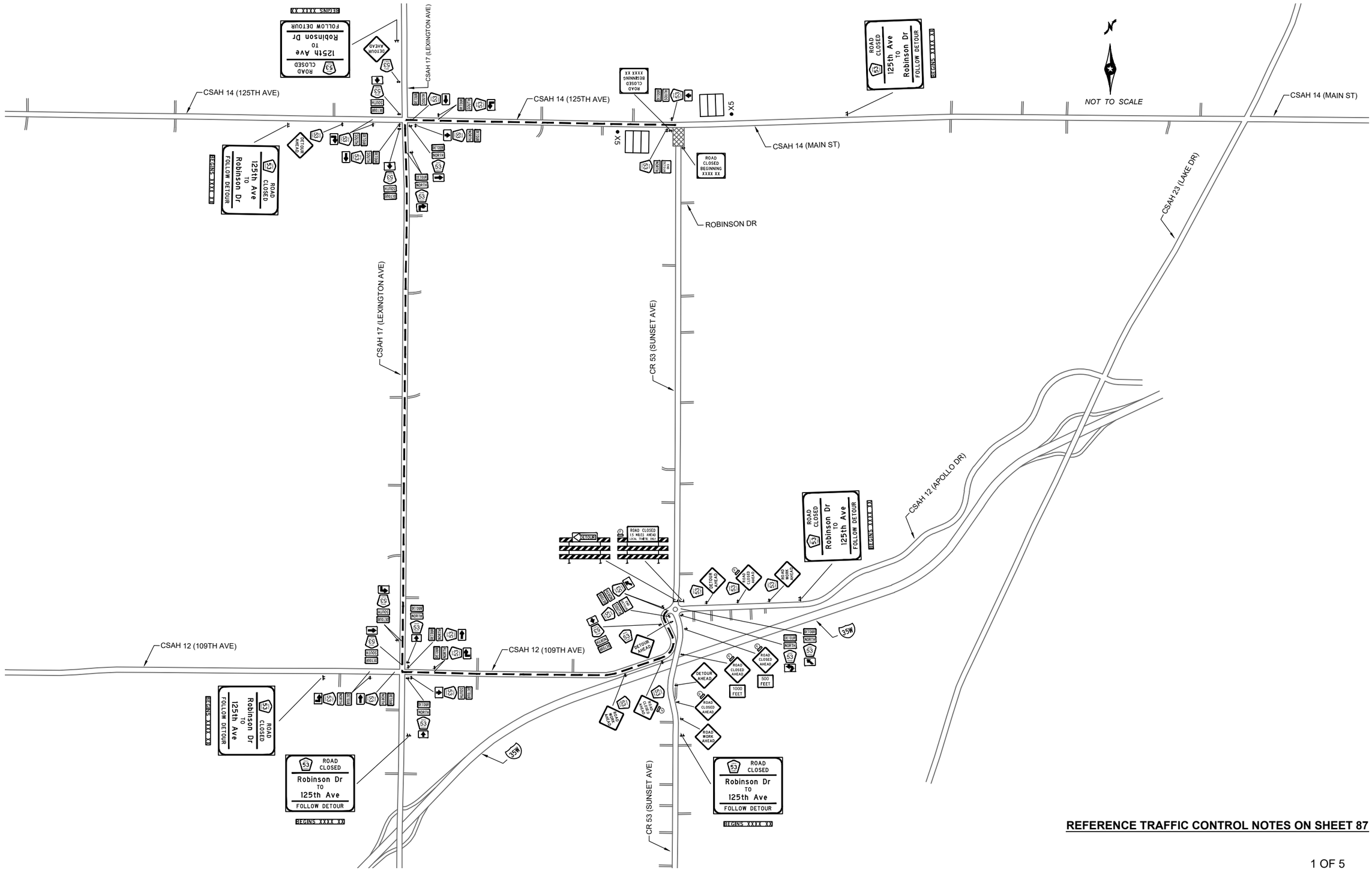
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-614-049

TEMPORARY TRAFFIC CONTROL QUANTITIES

Sheet 85 of 115 Sheets



REFERENCE TRAFFIC CONTROL NOTES ON SHEET 87

1 OF 5

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049\Base\Traffic\Traffic Control Stage 1.dwg

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SAP 002-614-049

TRAFFIC CONTROL STAGE 1

Sheet 86 of 115 Sheets

STAGE 1 CONSTRUCTION NOTES:

1. PROVIDE MINIMUM 12' LANES IN BOTH DIRECTIONS.
2. INSTALL TEMPORARY PAVEMENT ON NORTH SIDE OF CSAH 14 AT BYPASS LOCATION AS DIRECTED BY ENGINEER.
3. CR 53 (SUNSET AVE) TO BE FULLY CLOSED.
4. GRADE AND INSTALL CONCRETE CURB AND GUTTER AND PLACE BASE AND BINDER BITUMINOUS PAVEMENT COURSE ON CR 53 WHERE INDICATED.
5. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL STREETS AND DRIVEWAYS IN CONSTRUCTION AREA AND COORDINATE WITH RESIDENTS DURING TEMPORARY RESTRICTIONS.
6. CONTRACTOR SHALL COMPLY WITH THE LONGITUDINAL DROP-OFF GUIDELINES AS PER THE FIELD MANUAL.

STAGE 1 TRAFFIC CONTROL NOTES:

1. DETOUR CR 53 (SUNSET AVE) ONTO CSAH 12 (109TH AVE) AND CSAH 17 (LEXINGTON AVE).
2. G20-X1 SIGNS SHALL BE INSTALLED A MINIMUM OF 10 DAYS PRIOR TO ACTUAL COMMENCEMENT OF ROAD CLOSURE AT A LOCATION AS SPECIFIED ON PLAN. G20-X1 SIGNS TO BE REMOVED WHEN ROAD CLOSURE COMMENCES.
3. G20-X2 ADVANCE CLOSURE NOTICE SIGNS SHALL BE INSTALLED 10 DAYS PRIOR TO THE WORK STARTING DATE. ONCE WORK BEGINS, REMOVE BEGINS DATE PLAQUE AS SHOWN IN PLAN.
4. ALL SIGNS SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.
5. SIGN COVERING SHALL BE A RIGID PANEL. NO PLASTIC, BURLAP, ROPE, ETC.
6. FOR RELOCATING TRAFFIC SIGNS DURING CONSTRUCTION, AS DIRECTED BY THE ENGINEER, RELOCATION INCIDENTAL TO TRAFFIC CONTROL.
7. ALL TEMPORARY TRAFFIC CONTROL SETUPS SHALL BE IN ACCORDANCE WITH THE MOST RECENT EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS - FIELD MANUAL OF THE SAME MANUAL.
8. CONTRACTOR SHALL SUPPLY AND ERECT THE TEMPORARY TRAFFIC CONTROL SIGNS AS SHOWN IN THIS DRAWING AND DETAILED IN THE SPECIAL PROVISIONS FROM THE TIME WORK COMMENCES ON THIS ROADWAY UNTIL THE ROADWAY IS PERMANENTLY STRIPED. ALL NECESSARY TEMPORARY TRAFFIC CONTROL SIGNS SHALL BE PAID FOR AS PART OF TRAFFIC CONTROL LUMP SUM.
9. REMOVE ALL CONFLICTING PAVEMENT MARKINGS WITHIN THE CONSTRUCTION LIMITS. BLACK REMOVABLE TAPE SHALL BE USED ON ALL CONFLICTING PAVEMENT MARKINGS OUTSIDE OF THE CONSTRUCTION LIMITS AND AS INDICATED ON THE PLAN SHEETS.

TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND

SYMBOL	DESCRIPTION
	AREA CLOSED TO TRAFFIC / WORK AREA
	TEMPORARY BITUMINOUS PAVEMENT
	TRAFFIC CONTROL SIGN (DOUBLE POST)
	TRAFFIC CONTROL SIGN (TEMPORARY)
	TYPE III BARRICADE =
	DRUM-LIKE CHANNELIZER TYPE B =
F	TYPE A FLASHING WARNING LIGHT
	PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

PCMS - MESSAGE SEQUENCE LAYOUT

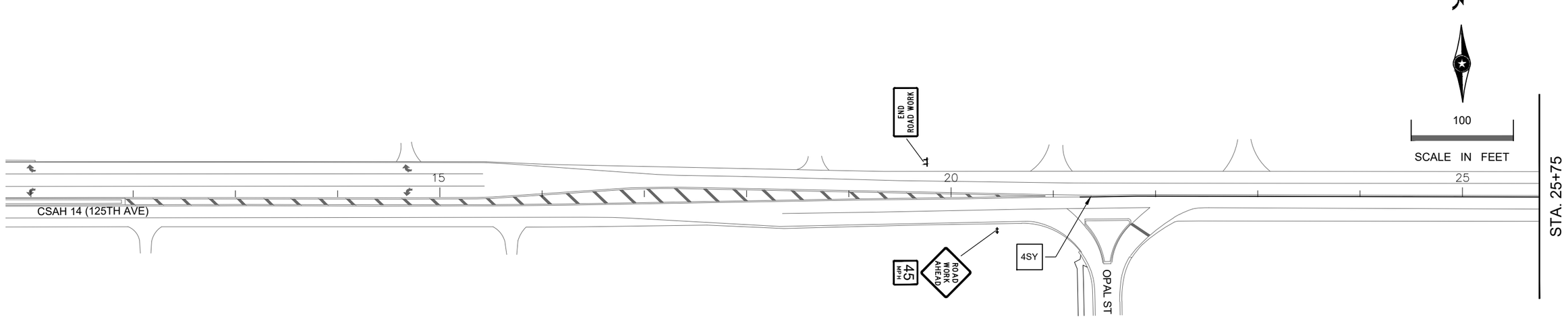
		R	O	A	D			
		W	O	R	K			
	B	E	G	I	N	S		

	<	D	A	T	E	>		
	E	X	P	E	C	T		
	D	E	L	A	Y	S		

STRIPING KEY

TRIANGLE - PAINT

SQUARE - REMOVABLE PREF TAPE



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049\Base\Traffic\Traffic Control Stage 1.dwg

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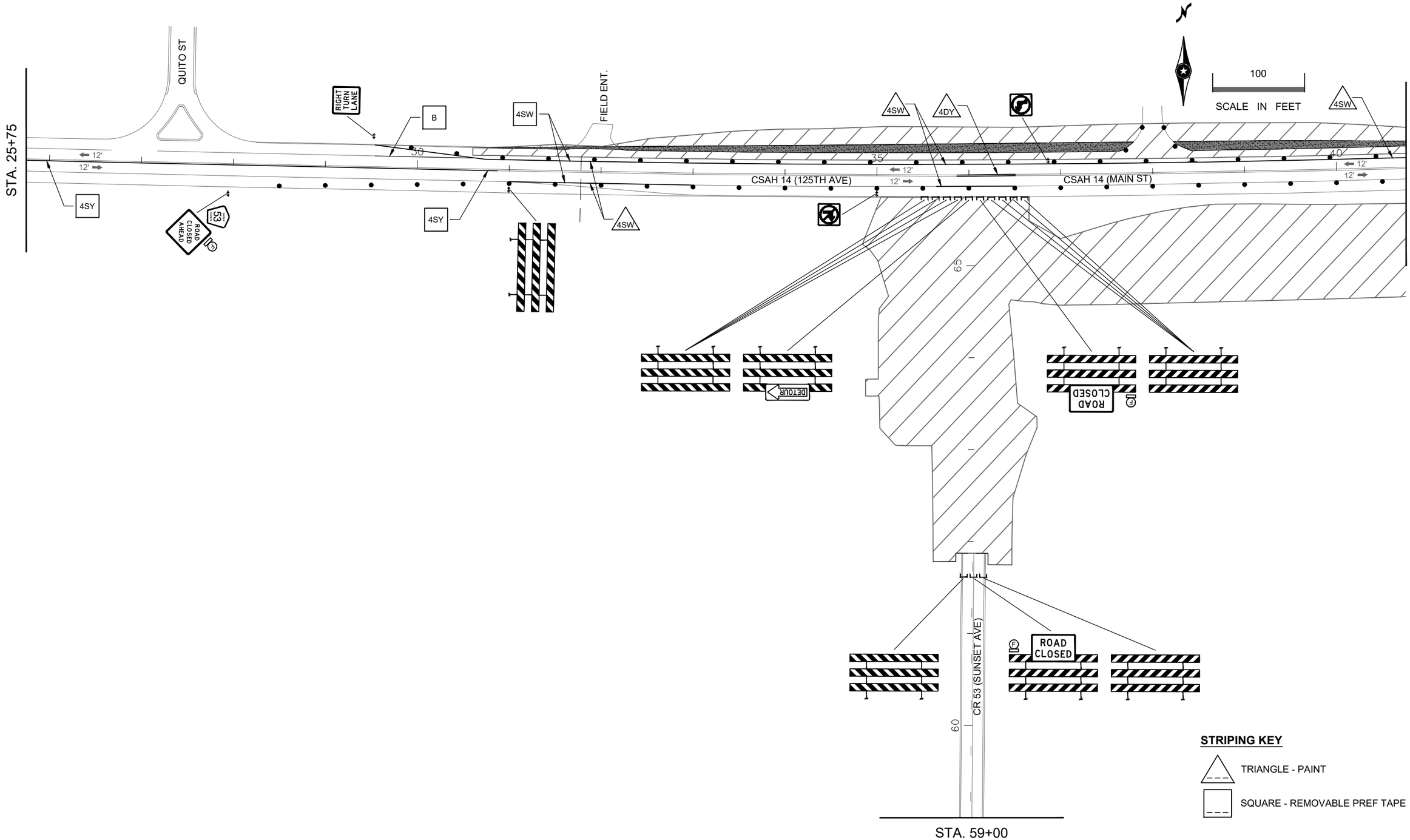
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-614-049

TRAFFIC CONTROL STAGE 1

Sheet 87 of 115 Sheets



STRIPING KEY

TRIANGLE - PAINT

SQUARE - REMOVABLE PREF TAPE

NO	DATE	BY	CKD	APPR	REVISION

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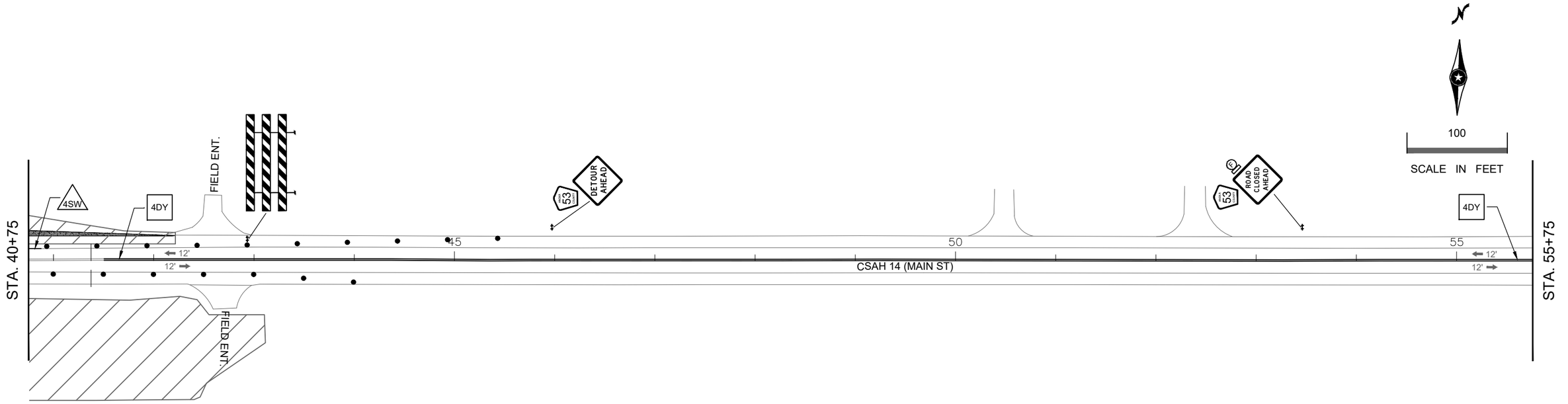
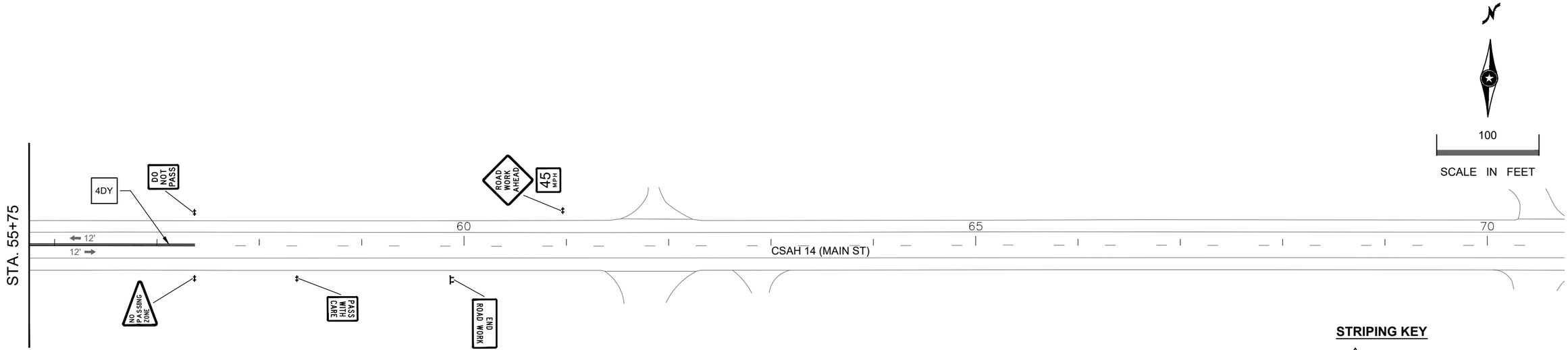
SAP 002-614-049

TRAFFIC CONTROL STAGE 1

Sheet 88 of 115 Sheets





STRIPING KEY

TRIANGLE - PAINT

SQUARE - REMOVABLE PREF TAPE

NO	DATE	BY	CKD	APPR	REVISION

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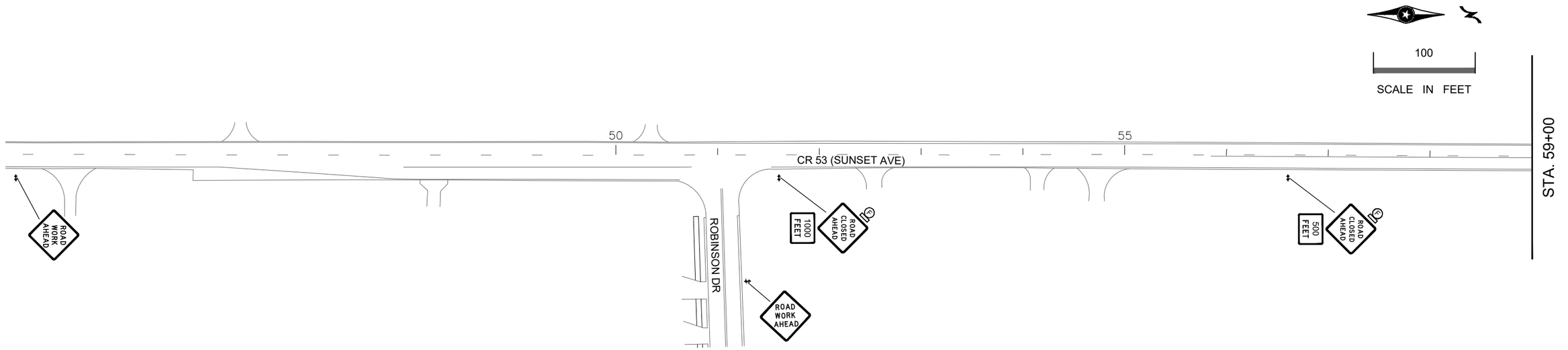
TRAFFIC CONTROL STAGE 1

Sheet 89 of 115 Sheets



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NAME: P:\002-614-049\Base\Traffic\Traffic Control Stage 1.dwg

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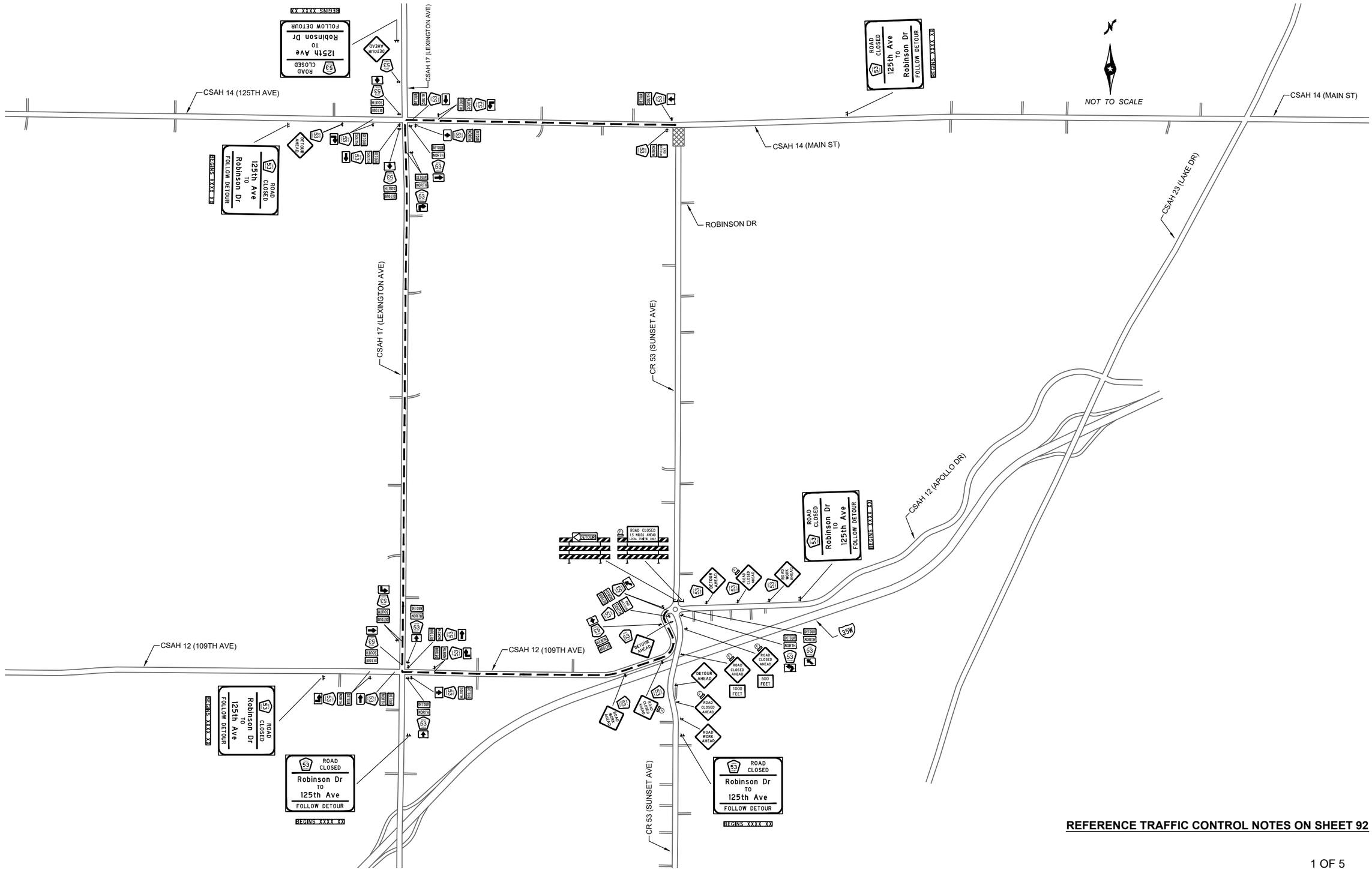
SAP 002-614-049

TRAFFIC CONTROL
STAGE 1

Sheet 90 of 115 Sheets



REFERENCE TRAFFIC CONTROL NOTES ON SHEET 92

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049\Base\Traffic\Traffic Control Stage 2.dwg

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SAP 002-614-049

TRAFFIC CONTROL
STAGE 2

Sheet 91 of 115 Sheets

STAGE 2 CONSTRUCTION NOTES:

1. PROVIDE MINIMUM 11' LANES IN BOTH DIRECTIONS.
2. CR 53 (SUNSET AVE) TO BE FULLY CLOSED.
3. INSTALL PORTABLE CONCRETE BARRIER AND IMPACT ATTENUATORS AS SHOWN ON PLAN. BARRIER SHALL BE PLACED IN ACCORDANCE WITH THE MOST RECENT EDITION OF THE MN MUTCD. IF A 2' MINIMUM SPACE BETWEEN BARRIER AND EDGELINE CANNOT BE MET, BARRIER MUST BE ANCHORED 6" MINIMUM. BARRIER SHALL BE PLACED IN ACCORDANCE WITH THE MOST RECENT EDITION OF THE MN MUTCD.
4. GRADE AND INSTALL CONCRETE CURB AND GUTTER AND CONCRETE PAVEMENT.
5. PLACE BASE AND BINDER BITUMINOUS PAVEMENT COURSE ON CSAH 14 WHERE INDICATED ON SOUTH SIDE.
6. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL STREETS AND DRIVEWAYS IN CONSTRUCTION AREA AND COORDINATE WITH RESIDENTS DURING TEMPORARY RESTRICTIONS.
7. CONTRACTOR SHALL COMPLY WITH THE LONGITUDINAL DROP-OFF GUIDELINES AS PER THE FIELD MANUAL.

STAGE 2 TRAFFIC CONTROL NOTES:

1. DETOUR CR 53 (SUNSET AVE) ONTO CSAH 12 (109TH AVE) AND CSAH 17 (LEXINGTON AVE).
2. WHITE TRPM'S SHALL BE PLACE ON THE CONCRETE BARRIER SPACED EVERY 12'6".
3. ALL SIGNS SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.
4. SIGN COVERING SHALL BE A RIGID PANEL. NO PLASTIC, BURLAP, ROPE, ETC.
5. FOR RELOCATING TRAFFIC SIGNS DURING CONSTRUCTION, AS DIRECTED BY THE ENGINEER, RELOCATION INCIDENTAL TO TRAFFIC CONTROL.
6. ALL TEMPORARY TRAFFIC CONTROL SETUPS SHALL BE IN ACCORDANCE WITH THE MOST RECENT EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS - FIELD MANUAL OF THE SAME MANUAL.
7. CONTRACTOR SHALL SUPPLY AND ERECT THE TEMPORARY TRAFFIC CONTROL SIGNS AS SHOWN IN THIS DRAWING AND DETAILED IN THE SPECIAL PROVISIONS FROM THE TIME WORK COMMENCES ON THIS ROADWAY UNTIL THE ROADWAY IS PERMANENTLY STRIPED. ALL NECESSARY TEMPORARY TRAFFIC CONTROL SIGNS SHALL BE PAID FOR AS PART OF TRAFFIC CONTROL LUMP SUM.
8. REMOVE ALL CONFLICTING PAVEMENT MARKINGS WITHIN THE CONSTRUCTION LIMITS. BLACK REMOVABLE TAPE SHALL BE USED ON ALL CONFLICTING PAVEMENT MARKINGS OUTSIDE OF THE CONSTRUCTION LIMITS AND AS INDICATED ON THE PLAN SHEETS.

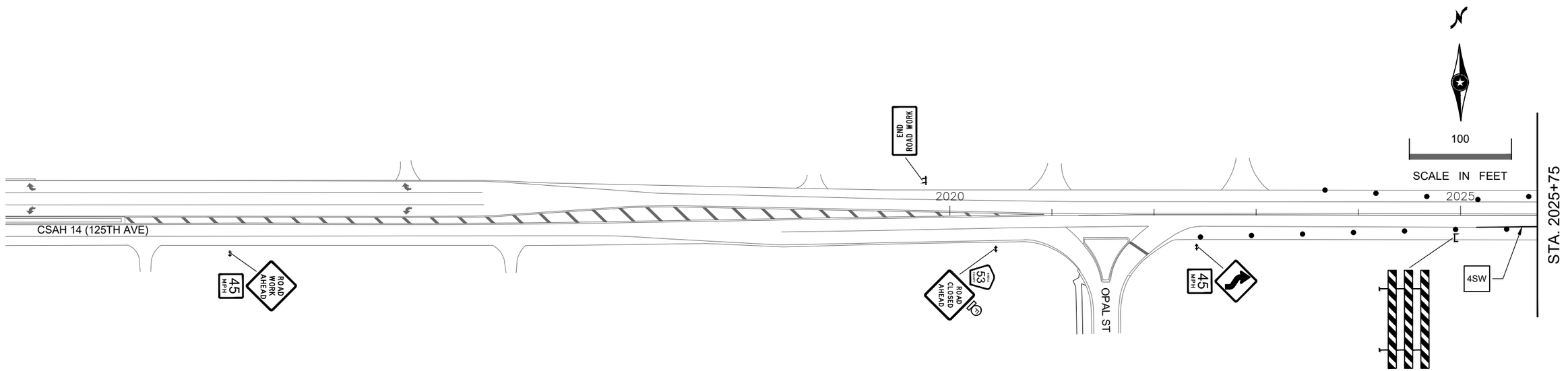
TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND

SYMBOL	DESCRIPTION
	AREA CLOSED TO TRAFFIC / WORK AREA
	TEMPORARY BITUMINOUS PAVEMENT
	TRAFFIC CONTROL SIGN (DOUBLE POST)
	TRAFFIC CONTROL SIGN (TEMPORARY)
	TYPE III BARRICADE =
	DRUM-LIKE CHANNELIZER TYPE B =
F	TYPE A FLASHING WARNING LIGHT
	TEMPORARY PORTABLE CONCRETE BARRIER
	IMPACT ATTENUATOR

STRIPING KEY

TRIANGLE - PAINT

SQUARE - REMOVABLE PREF TAPE



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049\Base\Traffic\Traffic Control Stage 2.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: SEAN R. THIEL

SIGNATURE: Sean R. Thiel

DATE: 12/11/2023 LICENSE NO. 45129

DRAWN BY FL DATE 06/16/23

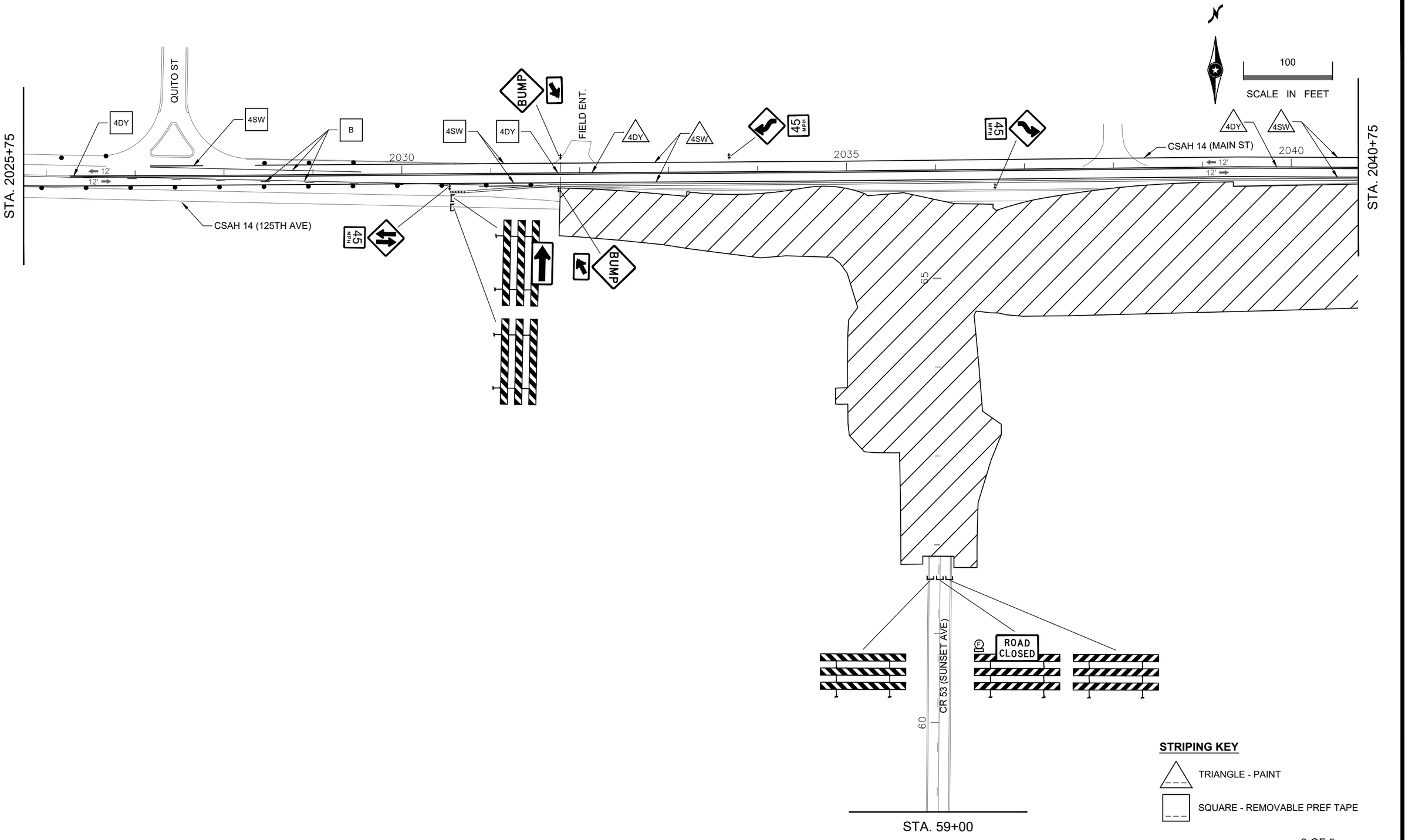
DESIGN BY FL DATE 06/16/23

CHECKED BY SRT DATE

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-614-049

TRAFFIC CONTROL STAGE 2



3 OF 5

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049\Base\Traffic\Traffic Control Stage 2.dwg

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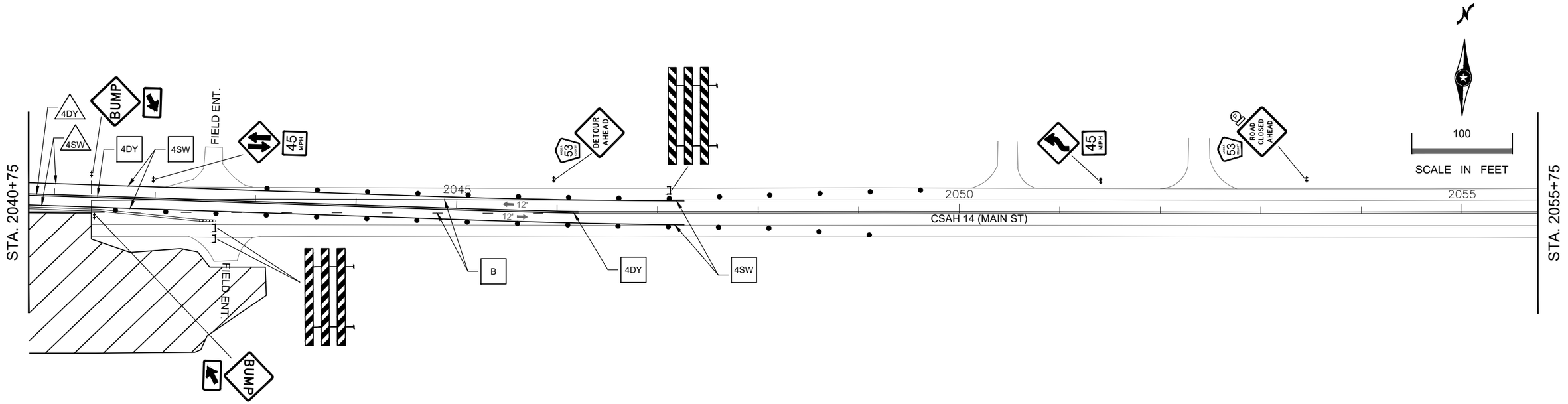
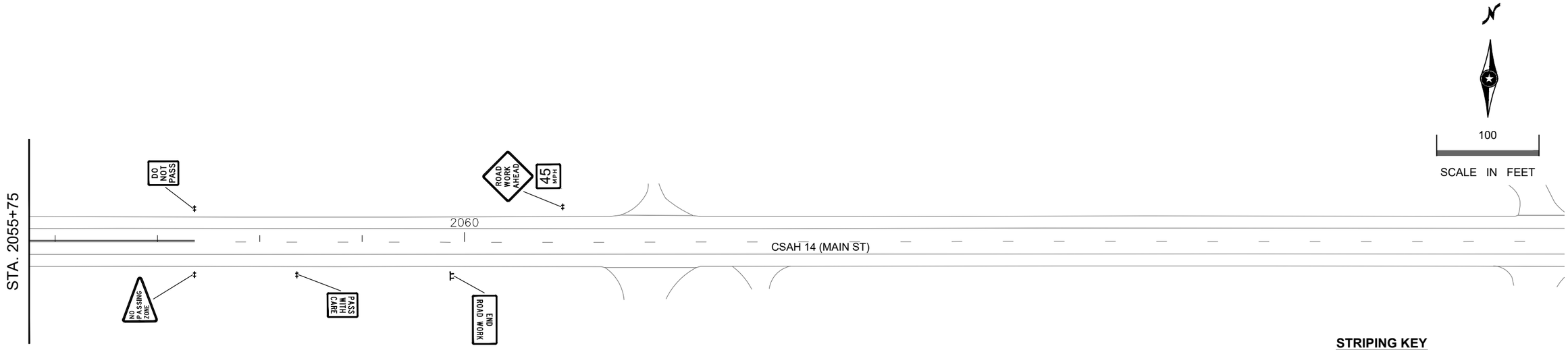
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-614-049

TRAFFIC CONTROL STAGE 2

Sheet 93 of 115 Sheets





STRIPING KEY

TRIANGLE - PAINT

SQUARE - REMOVABLE PREF TAPE

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049\Base\Traffic\Traffic Control Stage 2.dwg

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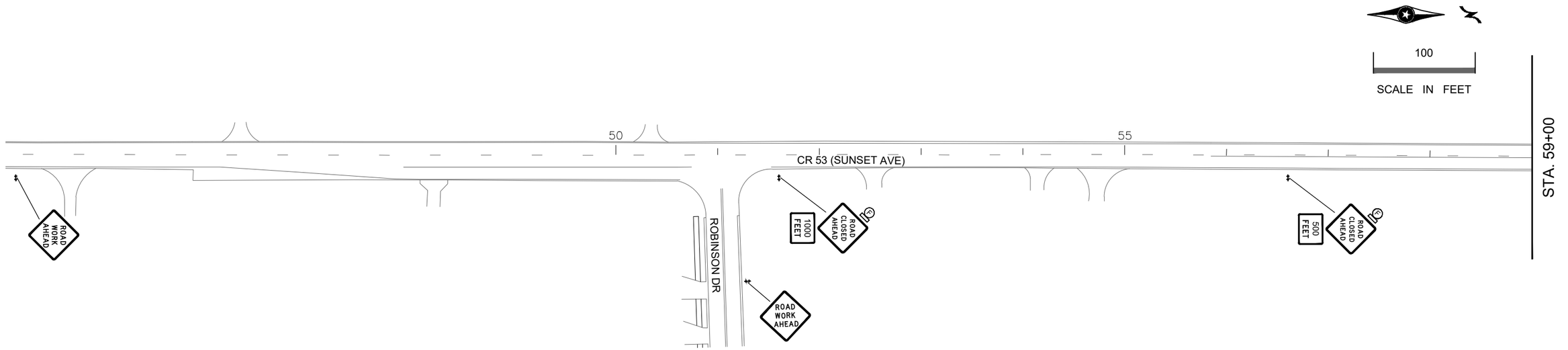
ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-614-049

TRAFFIC CONTROL STAGE 2

Sheet 94 of 115 Sheets



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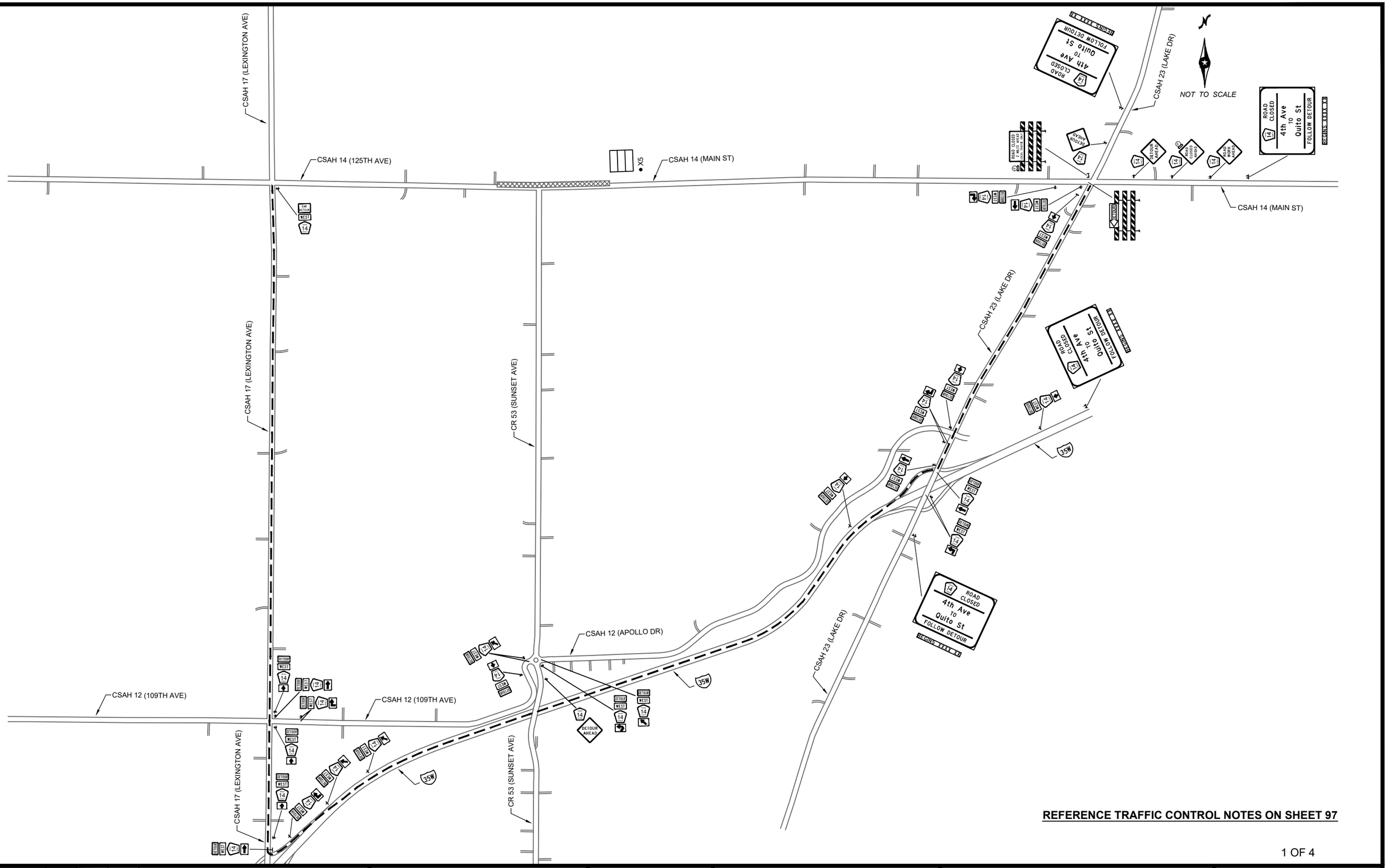
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-614-049

TRAFFIC CONTROL
STAGE 2

Sheet 95 of 115 Sheets



1 OF 4

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049\Base\Traffic\Traffic Control Stage 3.dwg

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ANOKA COUNTY HIGHWAY DEPT.

SAP 002-614-049

TRAFFIC CONTROL STAGE 3

Sheet 96 of 115 Sheets

STAGE 3 CONSTRUCTION NOTES:

1. PROVIDE MINIMUM 12' LANE IN EASTBOUND DIRECTION ON FINISHED SOUTH SIDE OF CSAH 14.
2. WESTBOUND CSAH 14 TO BE CLOSED BETWEEN QUITO ST AND APPROXIMATELY 1400' EAST OF CR 53 (SUNSET AVE).
3. CR 53 (SUNSET AVE) TO BE OPENED TO EASTBOUND CSAH 14.
4. GRADE AND INSTALL CONCRETE CURB AND GUTTER AND CONCRETE PAVEMENT.
5. PLACE BASE AND BINDER BITUMINOUS PAVEMENT COURSE ON CSAH 14 WHERE INDICATED ON NORTH SIDE.
6. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL STREETS AND DRIVEWAYS IN CONSTRUCTION AREA AND COORDINATE WITH RESIDENTS DURING TEMPORARY RESTRICTIONS.
7. CONTRACTOR SHALL COMPLY WITH THE LONGITUDINAL DROP-OFF GUIDELINES AS PER THE FIELD MANUAL.

STAGE 3 TRAFFIC CONTROL NOTES:

1. DETOUR WESTBOUND CSAH 14 USING CSAH 23 (LAKE DR) TO TH 35 TO CSAH 17 (LEXINGTON AVE).
2. ALL SIGNS SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.
3. SIGN COVERING SHALL BE A RIGID PANEL. NO PLASTIC, BURLAP, ROPE, ETC.
4. FOR RELOCATING TRAFFIC SIGNS DURING CONSTRUCTION, AS DIRECTED BY THE ENGINEER, RELOCATION INCIDENTAL TO TRAFFIC CONTROL.
5. ALL TEMPORARY TRAFFIC CONTROL SETUPS SHALL BE IN ACCORDANCE WITH THE MOST RECENT EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS - FIELD MANUAL OF THE SAME MANUAL.
6. CONTRACTOR SHALL SUPPLY AND ERECT THE TEMPORARY TRAFFIC CONTROL SIGNS AS SHOWN IN THIS DRAWING AND DETAILED IN THE SPECIAL PROVISIONS FROM THE TIME WORK COMMENCES ON THIS ROADWAY UNTIL THE ROADWAY IS PERMANENTLY STRIPED. ALL NECESSARY TEMPORARY TRAFFIC CONTROL SIGNS SHALL BE PAID FOR AS PART OF TRAFFIC CONTROL LUMP SUM.
7. REMOVE ALL CONFLICTING PAVEMENT MARKINGS WITHIN THE CONSTRUCTION LIMITS. BLACK REMOVABLE TAPE SHALL BE USED ON ALL CONFLICTING PAVEMENT MARKINGS OUTSIDE OF THE CONSTRUCTION LIMITS AND AS INDICATED ON THE PLAN SHEETS.

TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND

SYMBOL	DESCRIPTION
	AREA CLOSED TO TRAFFIC / WORK AREA
	TEMPORARY BITUMINOUS PAVEMENT
	TRAFFIC CONTROL SIGN (DOUBLE POST)
	TRAFFIC CONTROL SIGN (TEMPORARY)
	TYPE III BARRICADE =
	DRUM-LIKE CHANNELIZER TYPE B =
F	TYPE A FLASHING WARNING LIGHT
	PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

PCMS - MESSAGE SEQUENCE LAYOUT

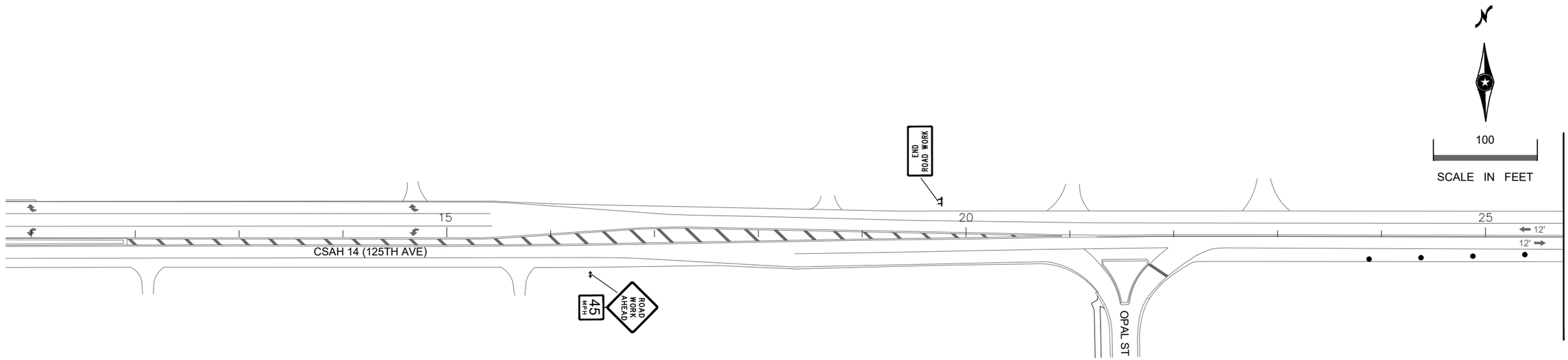
		R	O	A	D		
	C	L	O	S	E	D	

	<	D	A	T	E	>	
	F	O	L	L	O	W	
	D	E	T	O	U	R	

STRIPING KEY

TRIANGLE - PAINT

SQUARE - REMOVABLE PREF TAPE



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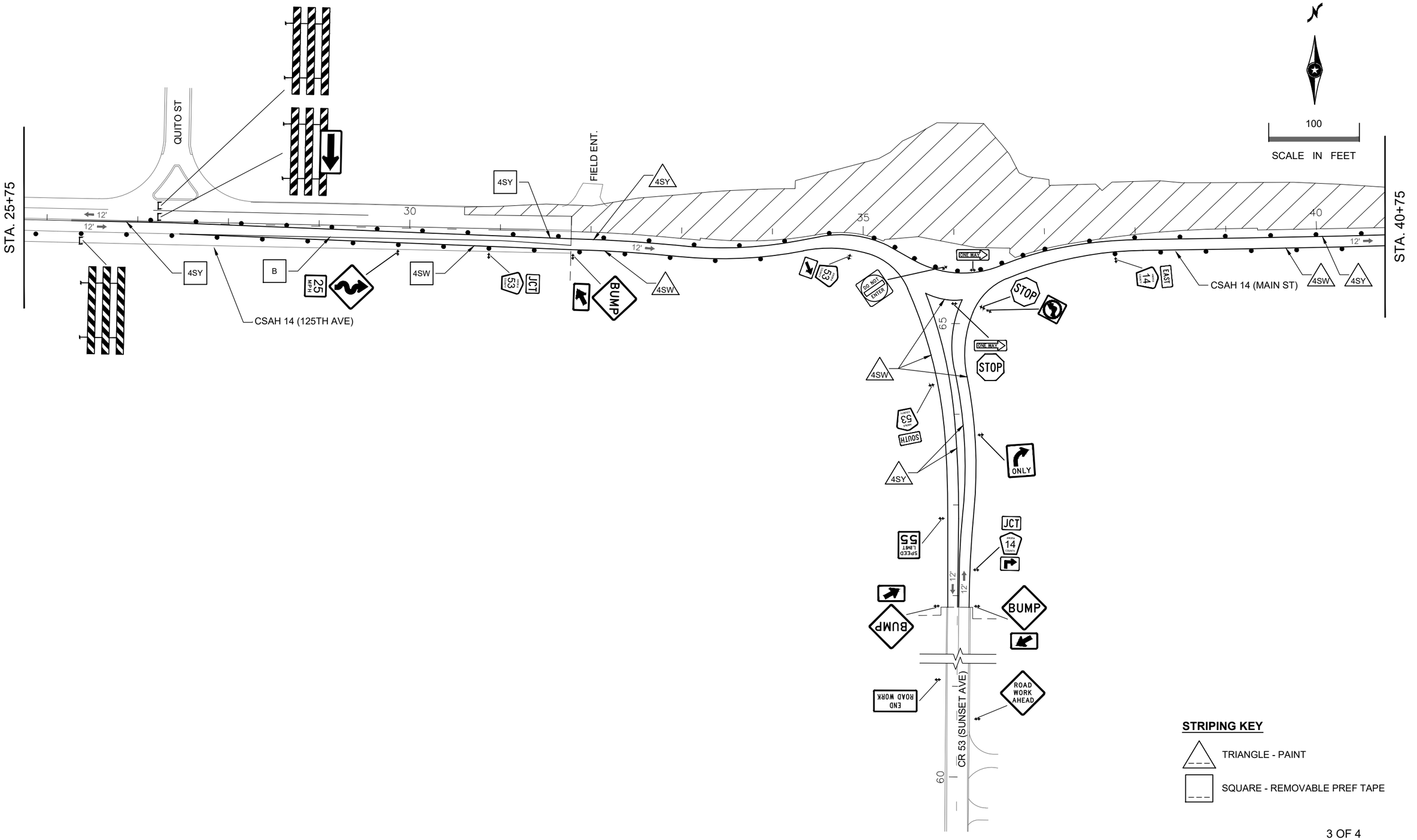
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-614-049

TRAFFIC CONTROL STAGE 3

Sheet 97 of 115 Sheets



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TRIANGLE - PAINT

SQUARE - REMOVABLE PREF TAPE

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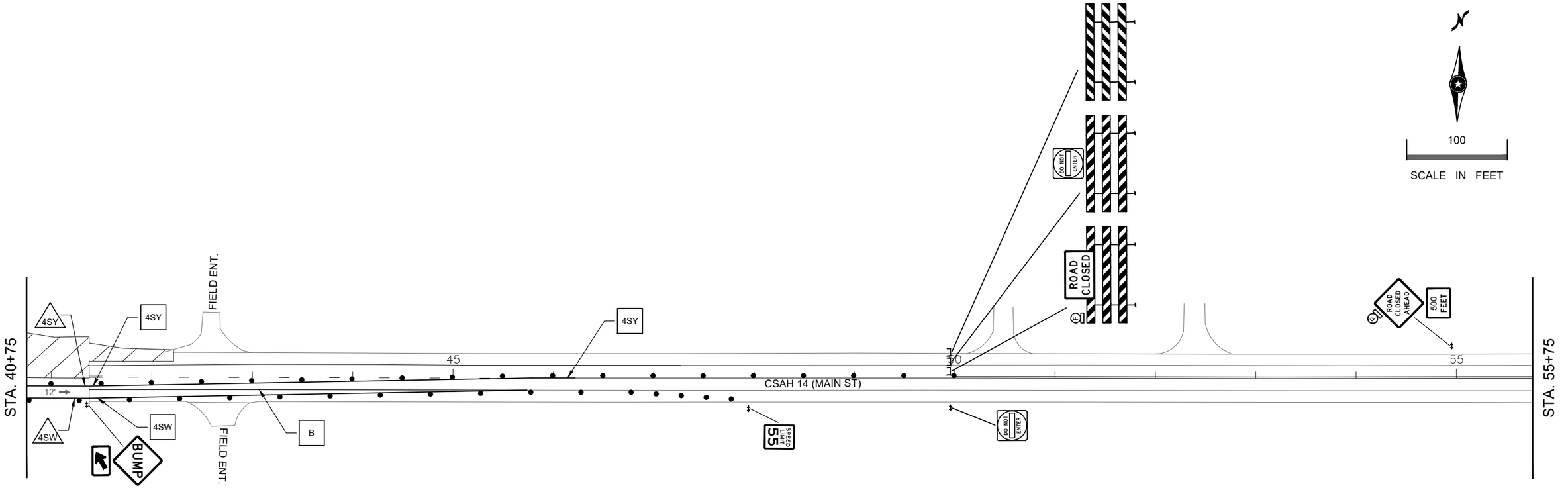
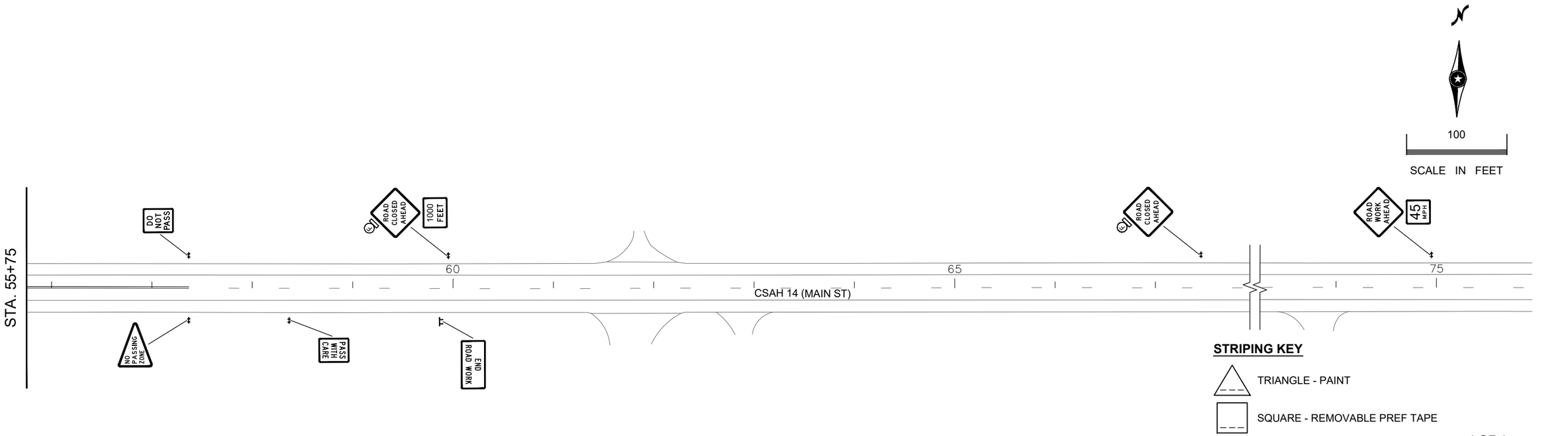
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-614-049

TRAFFIC CONTROL STAGE 3

Sheet 98 of 115 Sheets





4 OF 4

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049\Base\Traffic\Traffic Control Stage 3.dwg

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ANOKA COUNTY HIGHWAY DEPT.

SAP 002-614-049

TRAFFIC CONTROL STAGE 3

Sheet 99 of 115 Sheets

STAGE 4 CONSTRUCTION NOTES:

1. PROVIDE MINIMUM 12' THROUGH LANES IN EACH DIRECTION.
2. PAVE TRAIL ON SOUTH SIDE.
3. PLACE FINAL LIFT OF BITUMINOUS PAVEMENT UPON COMPLETION.
4. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL STREETS AND DRIVEWAYS IN CONSTRUCTION AREA AND COORDINATE WITH RESIDENTS DURING TEMPORARY RESTRICTIONS.
5. CONTRACTOR SHALL COMPLY WITH THE LONGITUDINAL DROP-OFF GUIDELINES AS PER THE FIELD MANUAL.

STAGE 4 TRAFFIC CONTROL NOTES:

1. SHORT TERM LANE CLOSURES PER MOST RECENT EDITION OF THE MN MUTCD FIELD MANUAL.
2. ALL SIGNS SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.
3. SIGN COVERING SHALL BE A RIGID PANEL. NO PLASTIC, BURLAP, ROPE, ETC.
4. FOR RELOCATING TRAFFIC SIGNS DURING CONSTRUCTION, AS DIRECTED BY THE ENGINEER, RELOCATION INCIDENTAL TO TRAFFIC CONTROL.
5. ALL TEMPORARY TRAFFIC CONTROL SETUPS SHALL BE IN ACCORDANCE WITH THE MOST RECENT EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS - FIELD MANUAL OF THE SAME MANUAL.
6. CONTRACTOR SHALL SUPPLY AND ERECT THE TEMPORARY TRAFFIC CONTROL SIGNS AS SHOWN IN THIS DRAWING AND DETAILED IN THE SPECIAL PROVISIONS FROM THE TIME WORK COMMENCES ON THIS ROADWAY UNTIL THE ROADWAY IS PERMANENTLY STRIPED. ALL NECESSARY TEMPORARY TRAFFIC CONTROL SIGNS SHALL BE PAID FOR AS PART OF TRAFFIC CONTROL LUMP SUM.

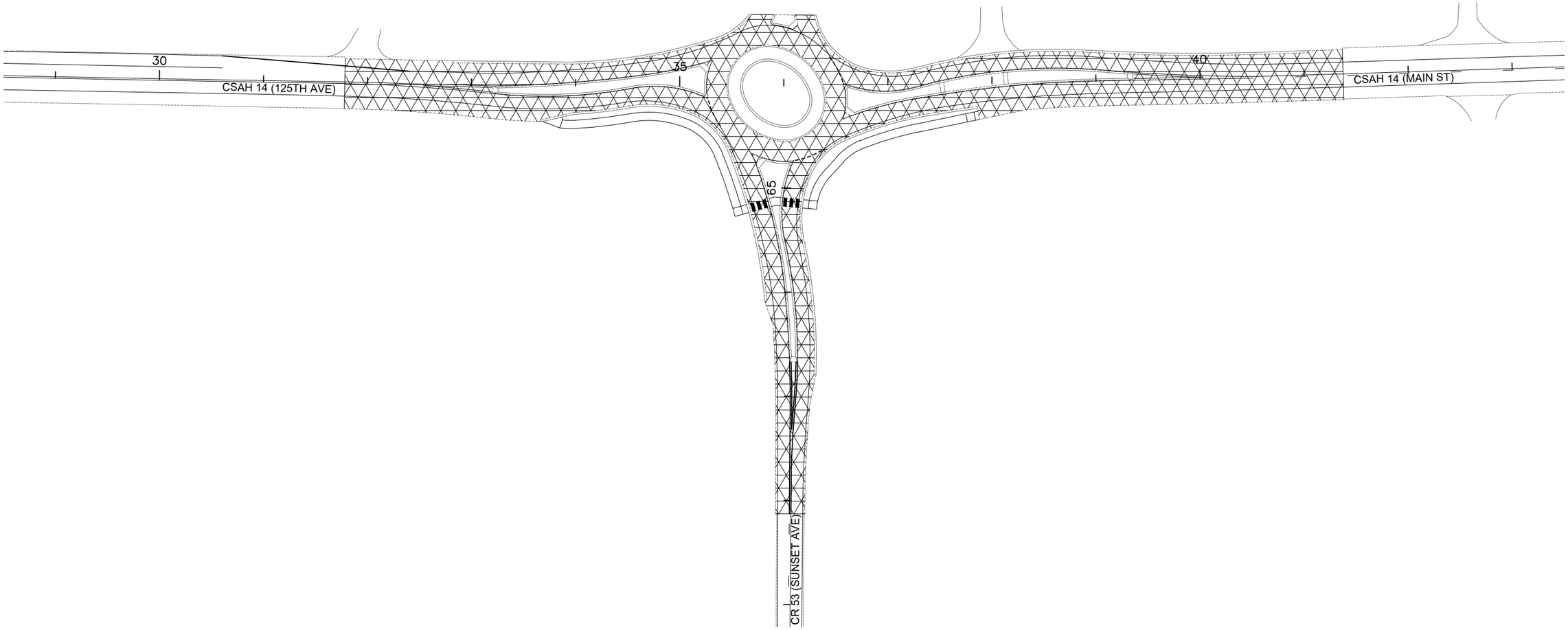
TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND

SYMBOL	DESCRIPTION
	WORK AREA

N

100

SCALE IN FEET



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049\Base\Traffic\Traffic Control Stage 4.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: SEAN R. THIEL

SIGNATURE: Sean R. Thiel

DATE: 12/07/2023 LICENSE NO. 45129

DRAWN BY FL DATE 06/29/23

DESIGN BY FL DATE 06/29/23

CHECKED BY SRT DATE

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

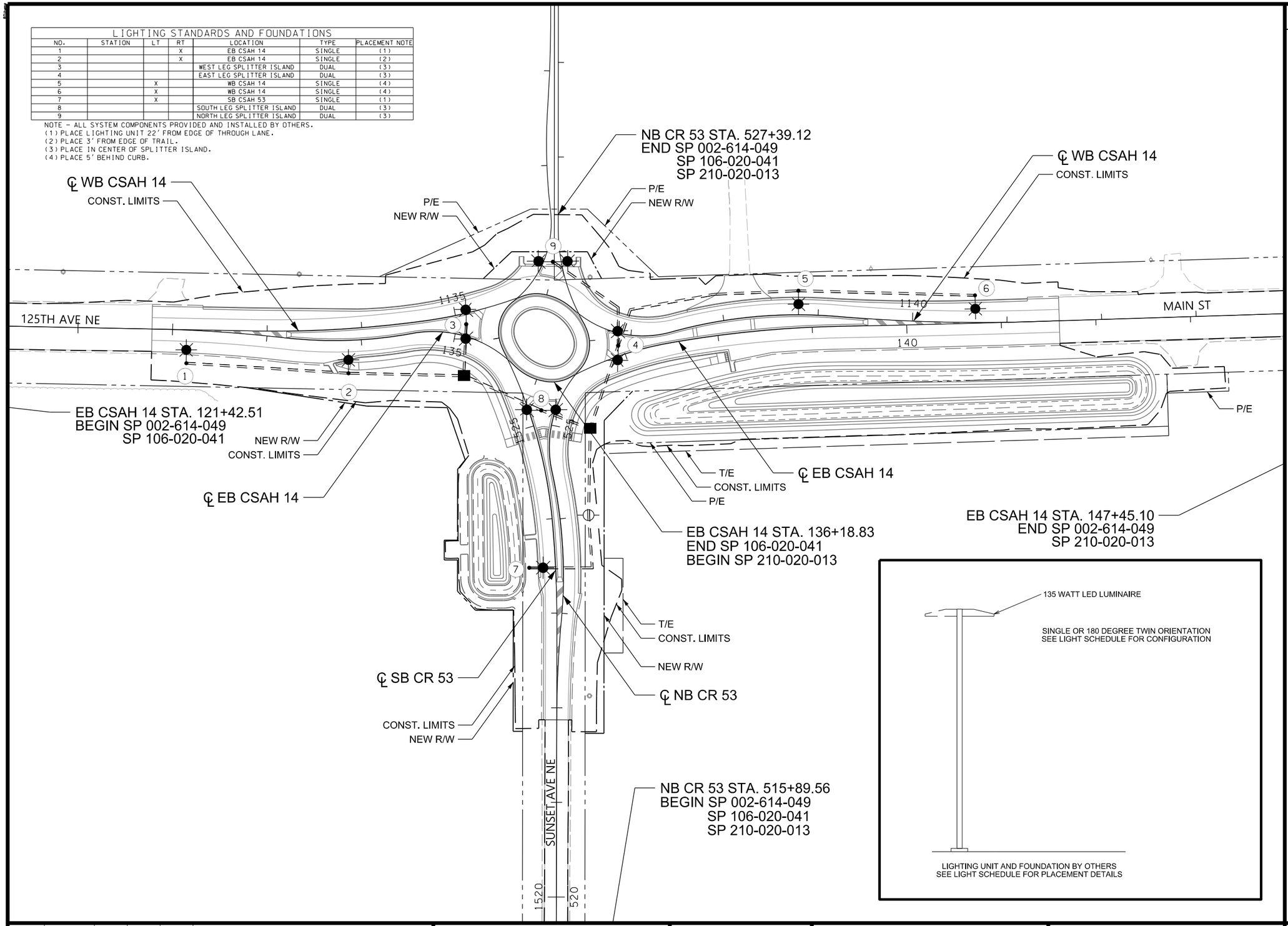
SAP 002-614-049

TRAFFIC CONTROL
STAGE 4

Sheet 100 of 115 Sheets

LIGHTING STANDARDS AND FOUNDATIONS						
NO.	STATION	LT	RT	LOCATION	TYPE	PLACEMENT NOTE
1			X	EB CSAH 14	SINGLE	(1)
2			X	EB CSAH 14	SINGLE	(2)
3				WEST LEG SPLITTER ISLAND	DUAL	(3)
4				EAST LEG SPLITTER ISLAND	DUAL	(3)
5		X		WB CSAH 14	SINGLE	(4)
6		X		WB CSAH 14	SINGLE	(4)
7		X		SB CSAH 53	SINGLE	(1)
8				SOUTH LEG SPLITTER ISLAND	DUAL	(3)
9				NORTH LEG SPLITTER ISLAND	DUAL	(3)

NOTE - ALL SYSTEM COMPONENTS PROVIDED AND INSTALLED BY OTHERS.
(1) PLACE LIGHTING UNIT 22' FROM EDGE OF THROUGH LANE.
(2) PLACE 3' FROM EDGE OF TRAIL.
(3) PLACE IN CENTER OF SPLITTER ISLAND.
(4) PLACE 5' BEHIND CURB.



LEGEND

- SINGLE LIGHTING UNIT (BY OTHERS)
- DUAL LIGHTING UNIT (BY OTHERS)
- HANDHOLE (BY OTHERS)
- CONDUIT AND CONDUCTOR (BY OTHERS)
- SOURCE OF POWER
- (X) SOURCE OF POWER

FOR REFERENCE ONLY. LIGHTING WORK TO BE PERFORMED BY OTHERS

N

SCALE 0 100 IN FEET

1 OF 1

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049 - Sunset RAB\Plan\002614049_LP.dgn 12/07/2023 9:39:25 AM

FOR REFERENCE ONLY

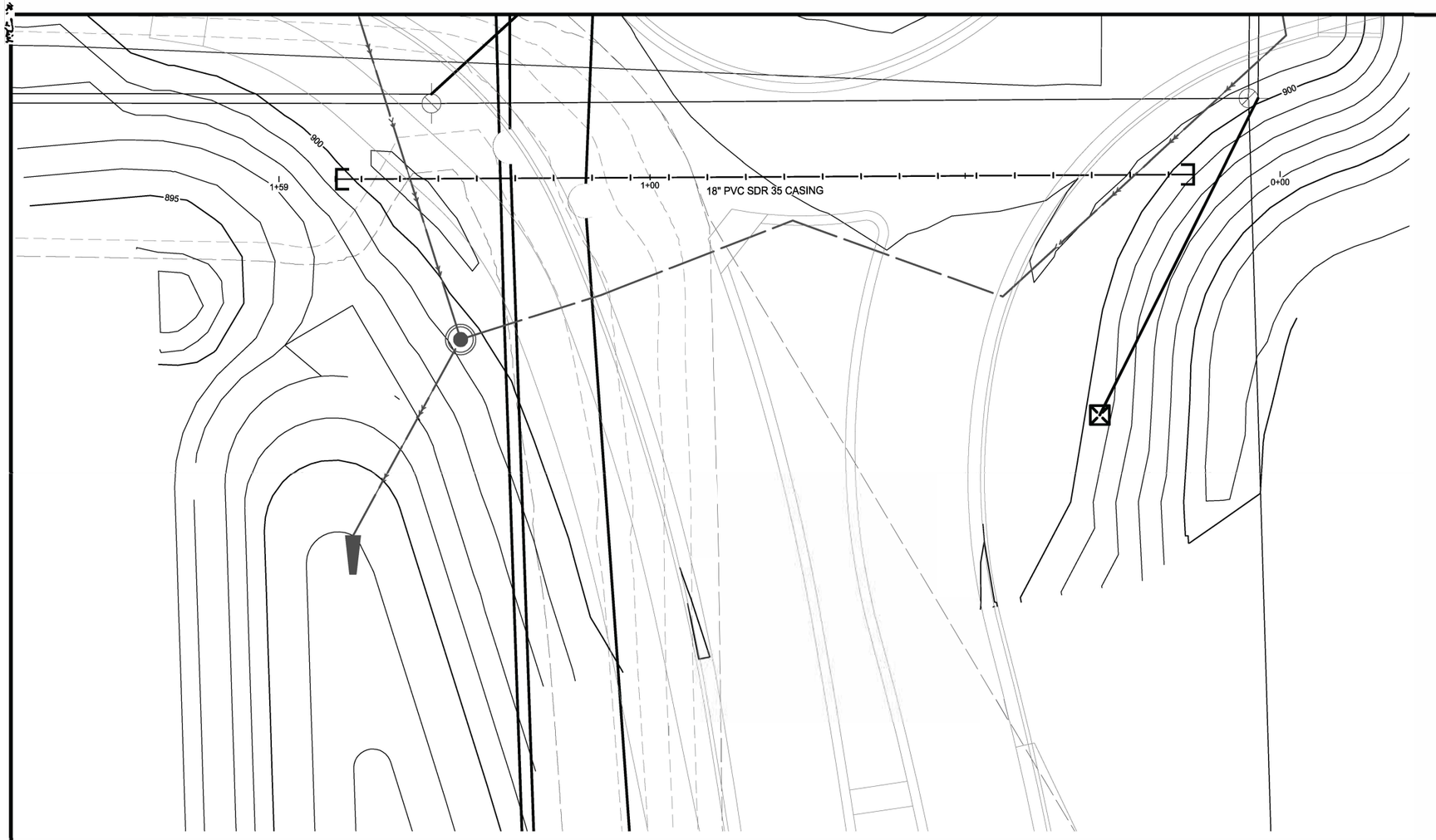
DRAWN BY _____ DATE _____
DESIGN BY _____ DATE _____
CHECKED BY _____ DATE _____

ANOKA COUNTY
HIGHWAY DEPT.

SP 002-614-049
SP 210-020-013
SP 106-020-041

LIGHTING PLAN
(FOR REFERENCE ONLY)

Sheet 101 of 115 Sheets



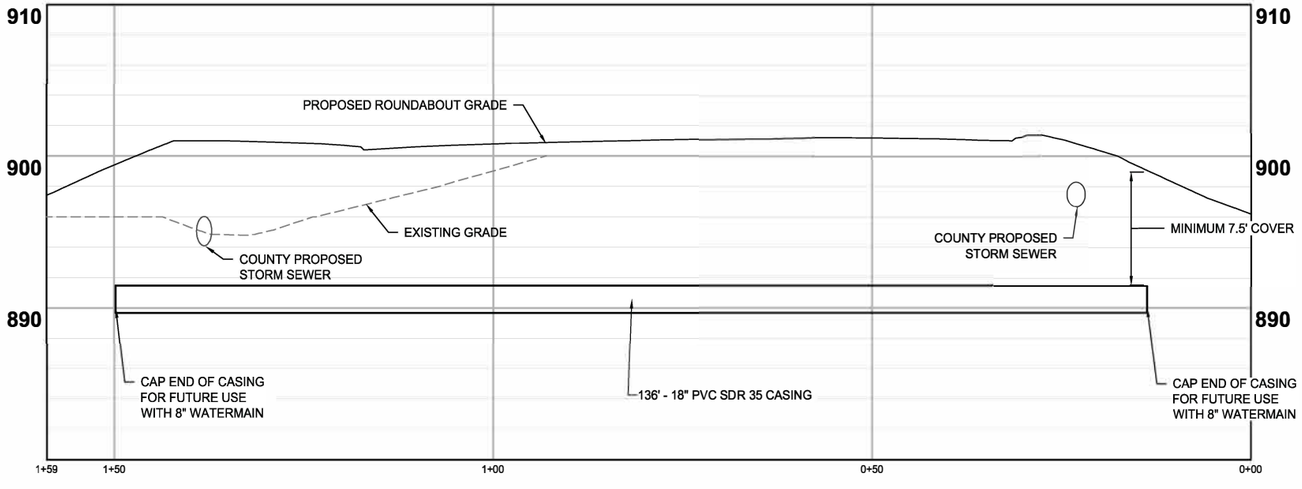
LEGEND

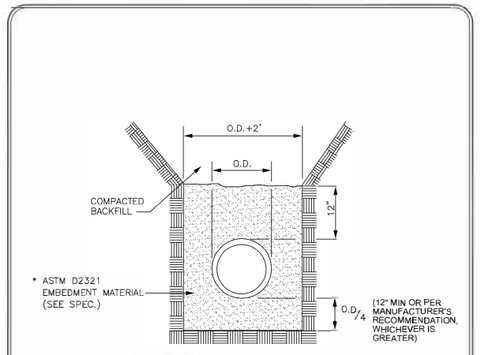
- APPROX. CONSTRUCTION LIMITS
- PROPOSED WATERMAIN
- 1019 EXISTING CONTOUR (MAJOR)
- 1019 EXISTING CONTOUR (MINOR)
- 1019 PROPOSED CONTOUR (MAJOR)
- 1019 PROPOSED CONTOUR (MINOR)

N

H: 0 10 20 SCALE IN FEET

V: 0 5 10 SCALE IN FEET





CITY OF LINO LAKES

GRANULAR MATERIAL BEDDING METHOD (FOR PVC PIPE)

MAY, 2013

GEN-14

wsb

SCALE: ######## DESIGN BY: ###

PLAN BY: ### CHECK BY: ###

REVISIONS

NO.	DATE	DESCRIPTION

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.

Diane L. Hankee, PE

DATE: 12/15/2023 LIC. NO: 43338

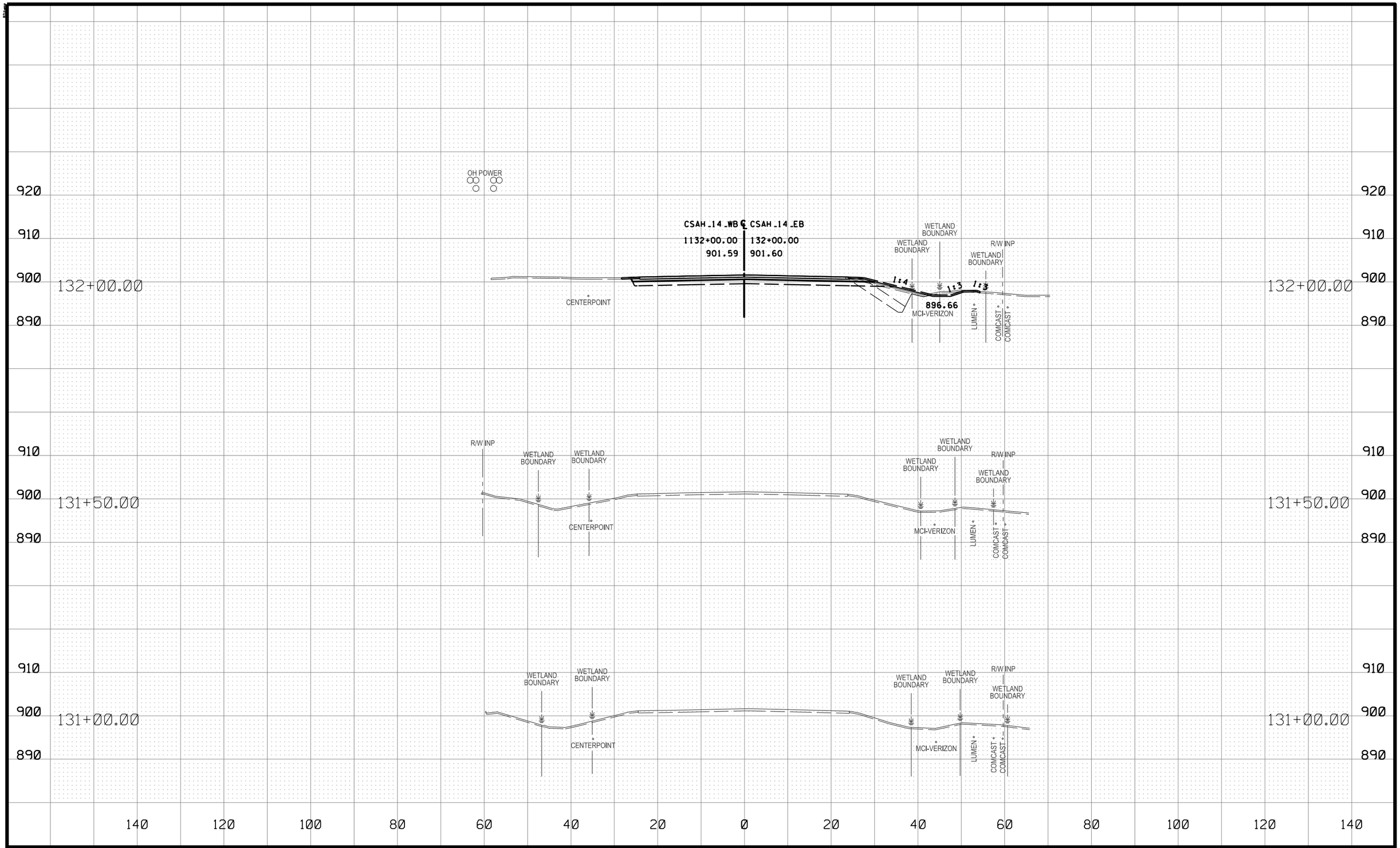
S.A.P. 210 - 020 - 013

CSAH 14 MAIN ST AND CR 53 SUNSET AVE ROUNDABOUT PROJECT

WSB PROJECT NO. 023248-000

SHEET 102 OF 115

K:\023248-000\Cad\Plan\FIGURE 1.dwg 10/13/2023 10:30:39 AM



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-049 - Sunset RAB\Plan\002614049_XP.dgn 12/07/2023 9:39:35 AM

DRAWN BY BTU DATE 12/06/23

DESIGN BY BTU DATE 12/06/23

CHECKED BY APA DATE 12/06/23

ANOKA COUNTY

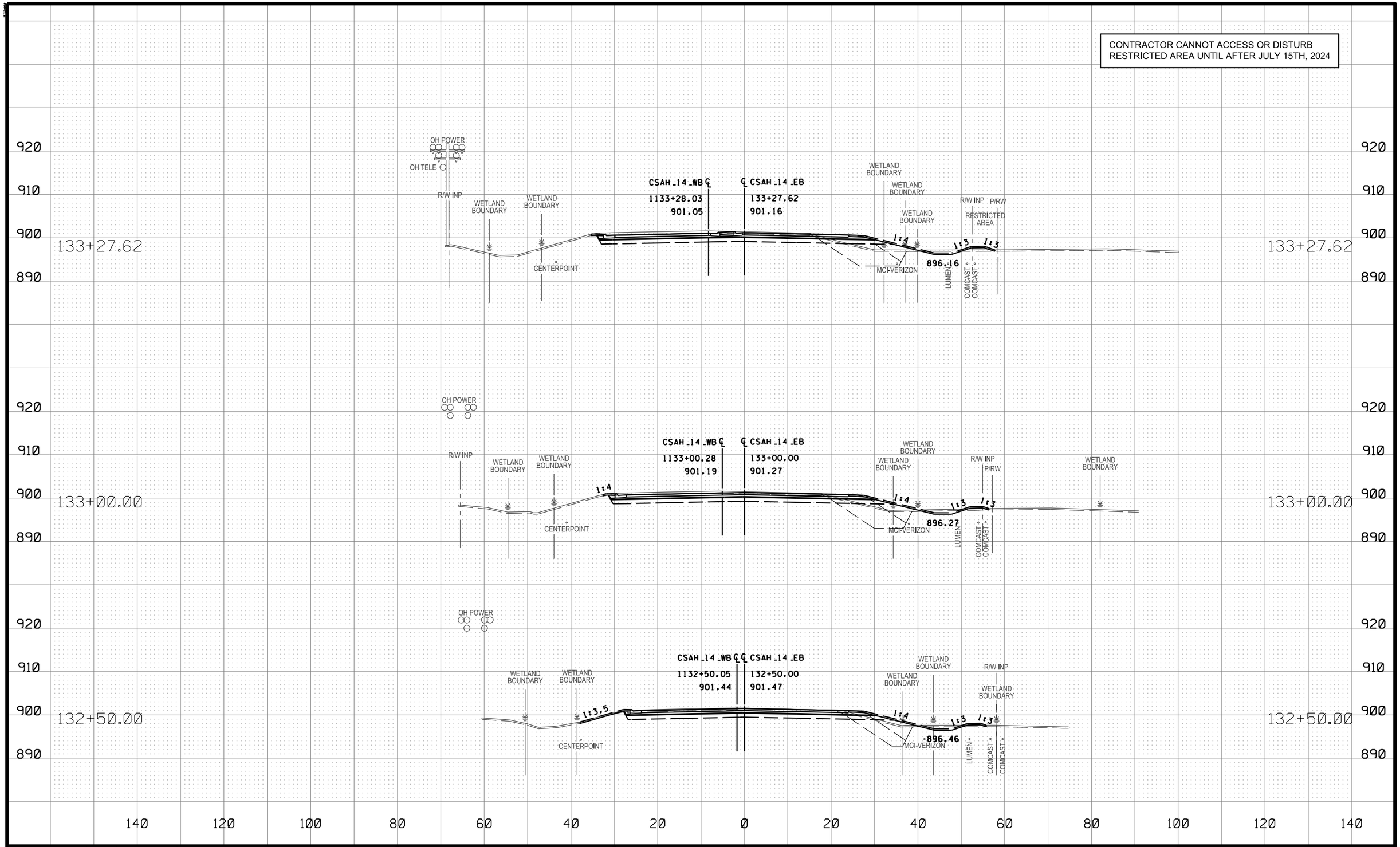
ANOKA COUNTY HIGHWAY DEPT.

SP 002-614-049
SP 210-020-013
SP 106-020-041

CROSS SECTIONS
CSAH 14
STA 131+00.00 TO 132+00.00

Sheet 103 of 115 Sheets

CONTRACTOR CANNOT ACCESS OR DISTURB
RESTRICTED AREA UNTIL AFTER JULY 15TH, 2024



NO	DATE	BY	CKD	APPR	REVISION
1	03/04/2024	BTU	APA	APA	ADDED RESTRICTED AREA TO CROSS-SECTIONS

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DRAWN BY BTU DATE 12/06/23
DESIGN BY BTU DATE 12/06/23
CHECKED BY APA DATE 12/06/23

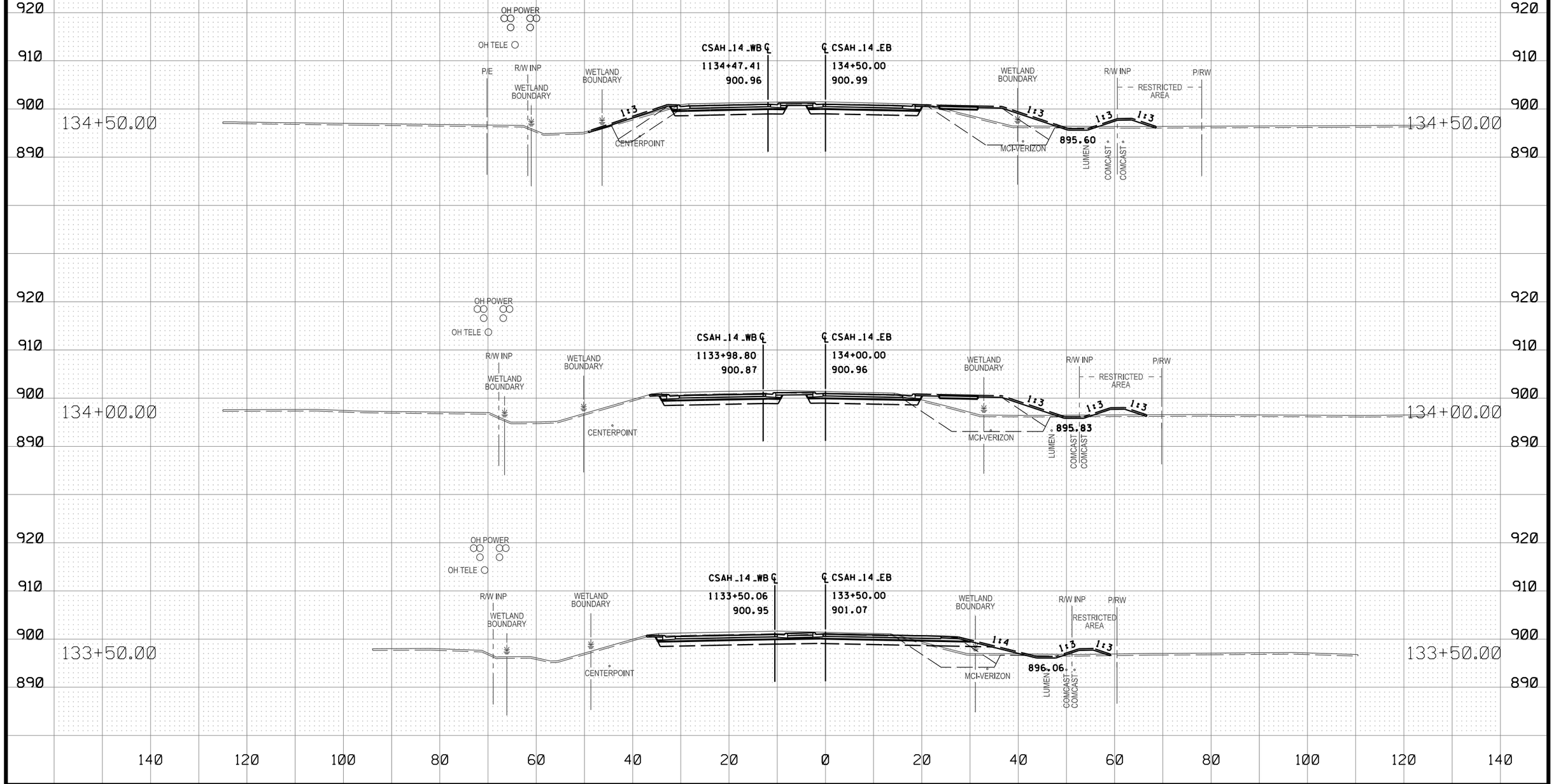
ANOKA COUNTY
ANOKA COUNTY HIGHWAY DEPT.

SP 002-614-049
SP 210-020-013
SP 106-020-041

CROSS SECTIONS
CSAH 14
STA 132+50.00 TO 133+27.62

Sheet 104 of 115 Sheets

CONTRACTOR CANNOT ACCESS OR DISTURB
RESTRICTED AREA UNTIL AFTER JULY 15TH, 2024



NO	DATE	BY	CKD	APPR	REVISION
1	03/04/2024	BTU	APA	APA	ADDED RESTRICTED AREA TO CROSS-SECTIONS

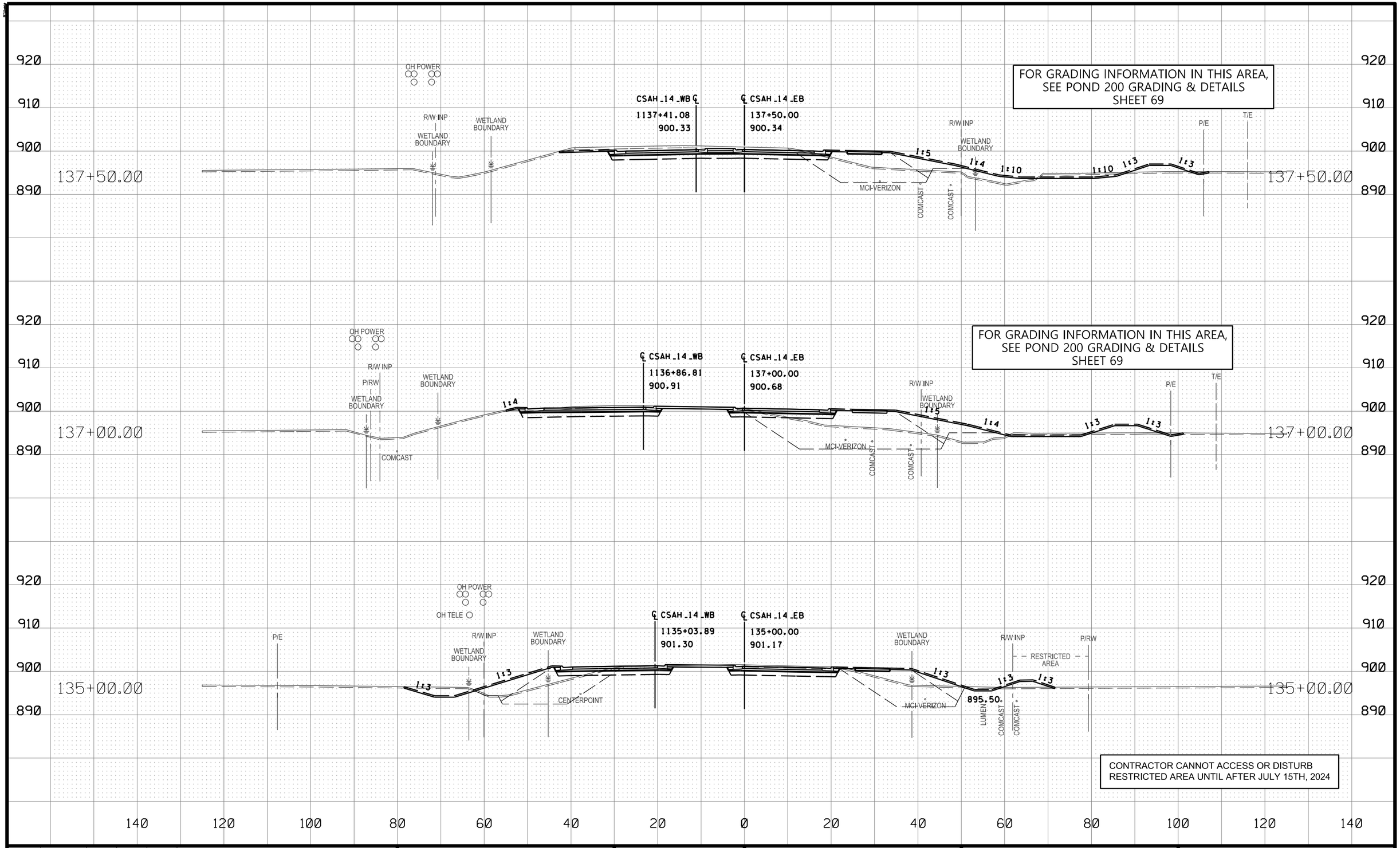
NAME: P:\002-614-049 - Sunset RAB\Plan\002614049_XP.dgn 03/05/2024 2:03:09 PM

DRAWN BY BTU DATE 12/06/23
DESIGN BY BTU DATE 12/06/23
CHECKED BY APA DATE 12/06/23

ANOKA COUNTY
HIGHWAY DEPT.

SP 002-614-049
SP 210-020-013
SP 106-020-041

CROSS SECTIONS
CSAH 14
STA 133+50.00 TO 134+50.00



NO	DATE	BY	CKD	APPR	REVISION
1	03/04/2024	BTU	APA	APA	ADDED RESTRICTED AREA TO CROSS-SECTIONS

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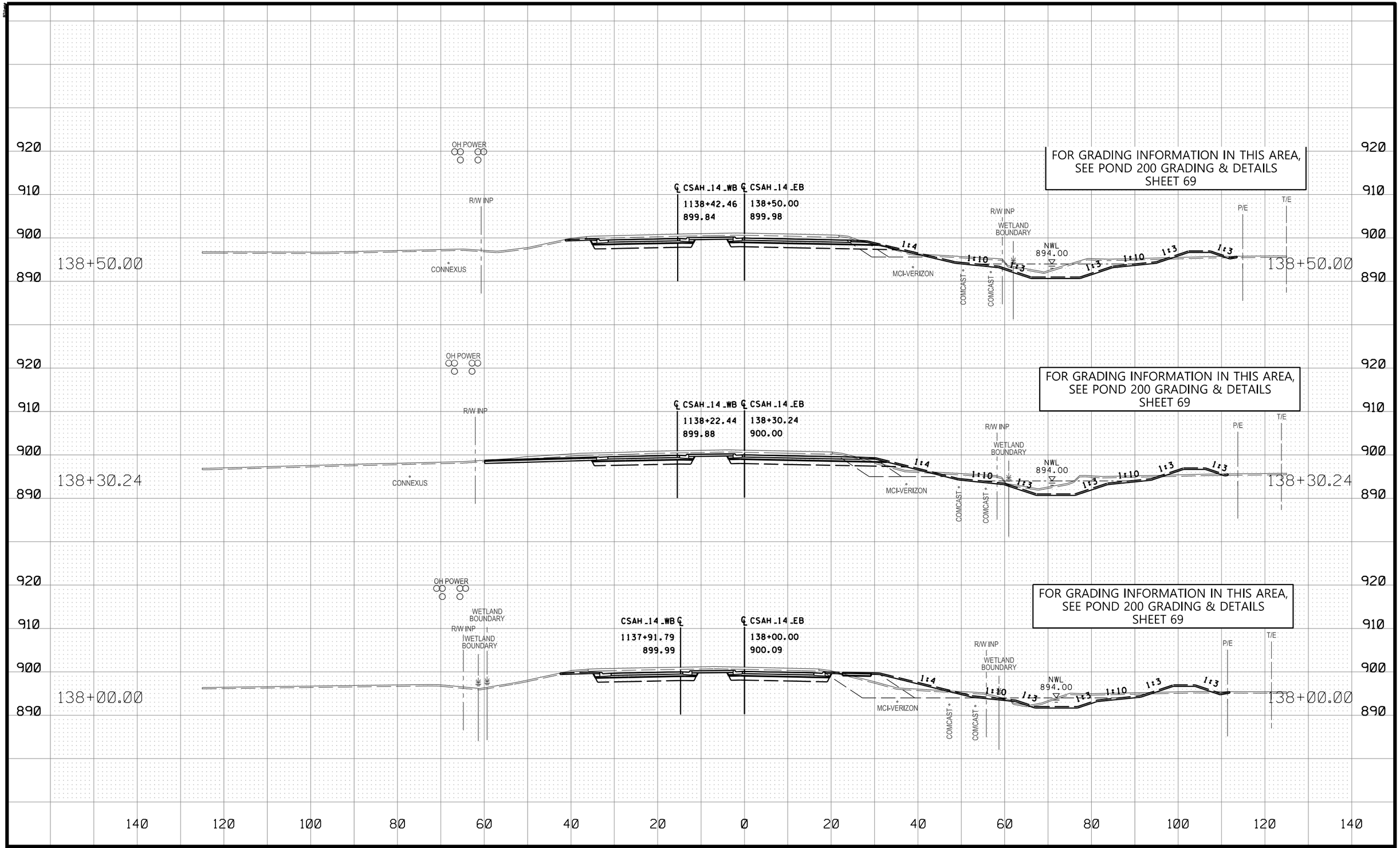
SP 002-614-049
SP 210-020-013
SP 106-020-041

CROSS SECTIONS
CSAH 14
STA 135+00.00 TO 137+50.00

Sheet 106 of 115 Sheets



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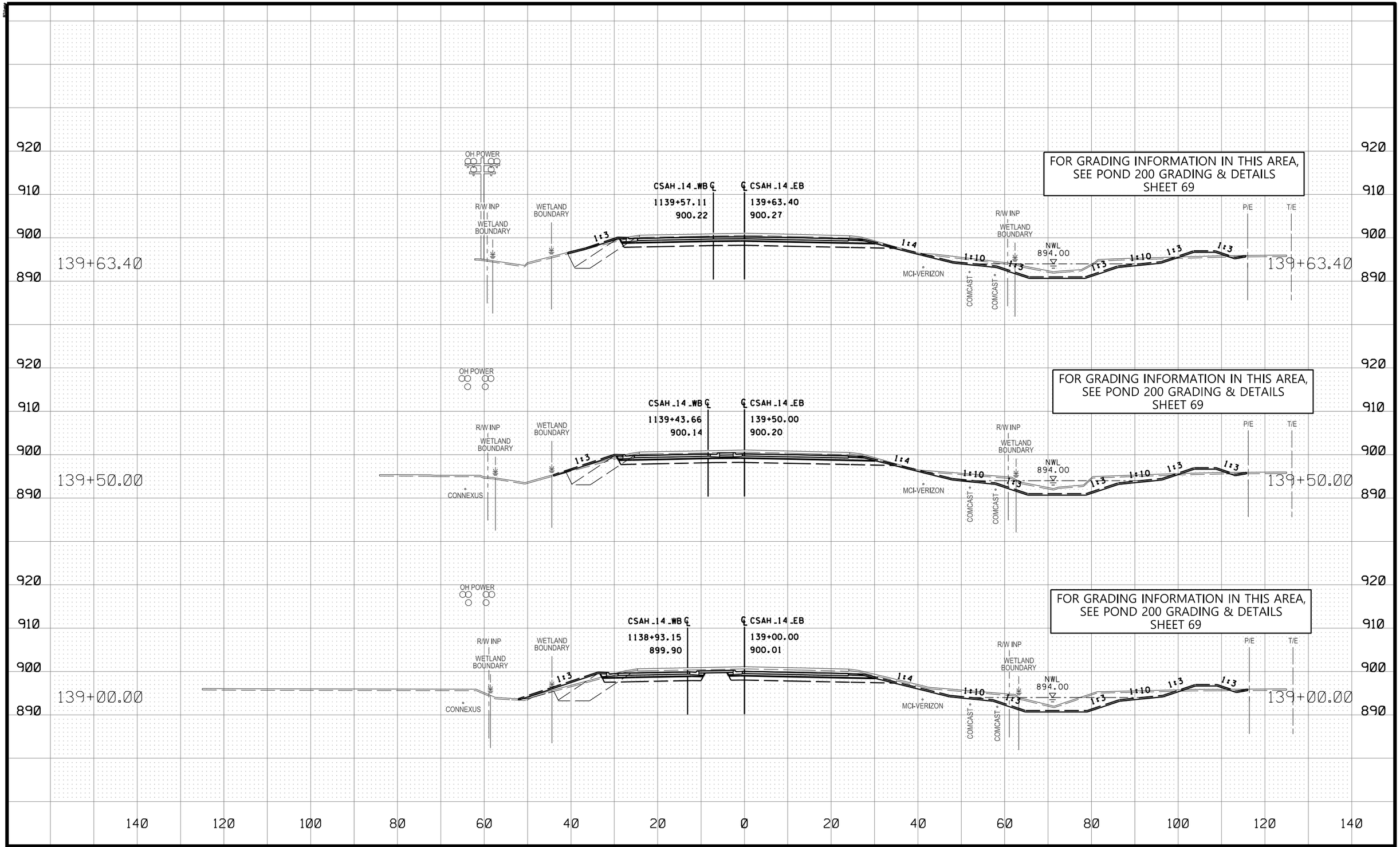
SP 106-020-041

CROSS SECTIONS
CSAH 14
STA 138+00.00 TO 138+50.00

Sheet 107 of 115 Sheets



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SP 002-614-049
SP 210-020-013
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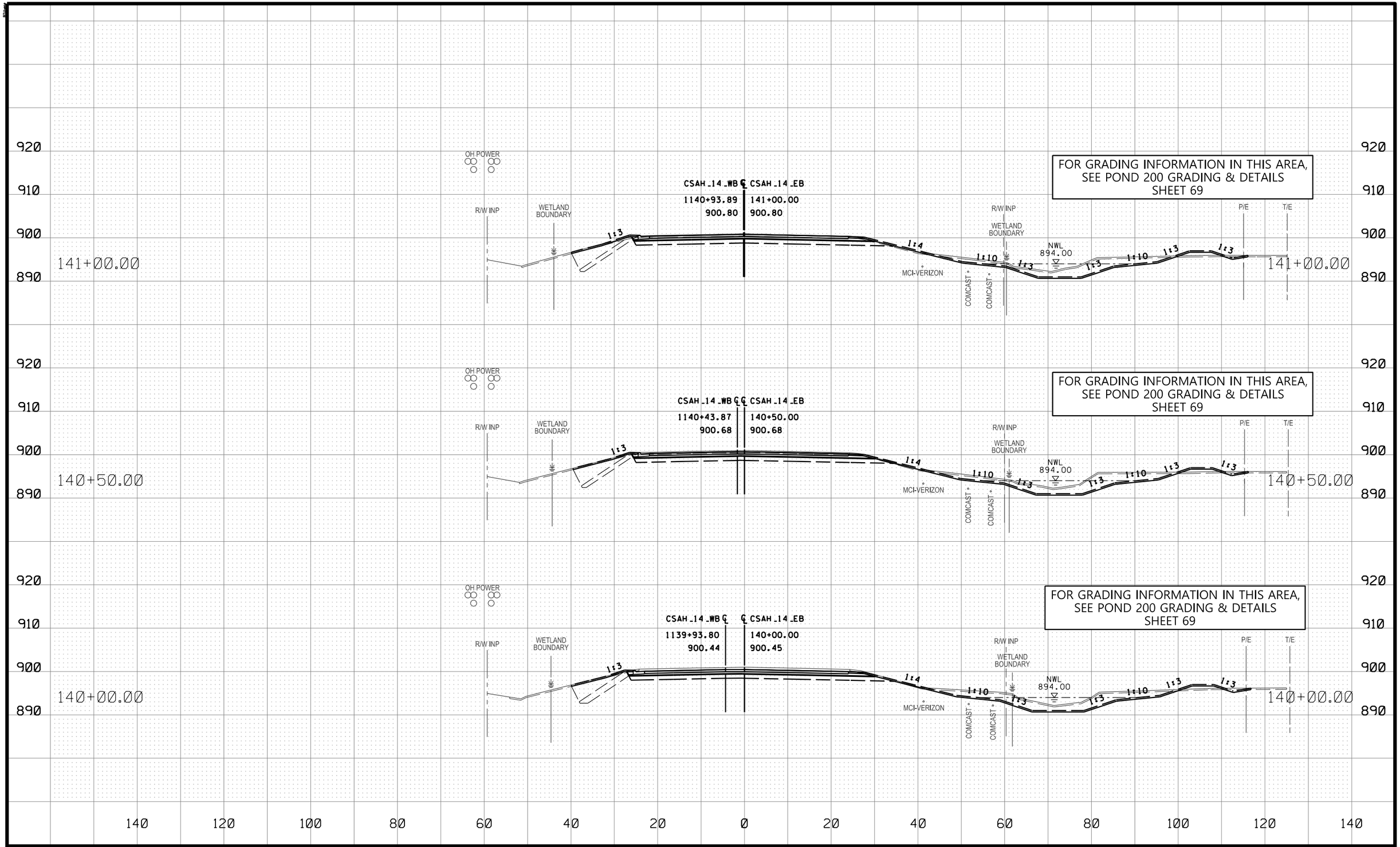
CROSS SECTIONS
CSAH 14
STA 139+00.00 TO 139+63.40

Sheet 108 of 115 Sheets



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SP 002-614-049
SP 210-020-013
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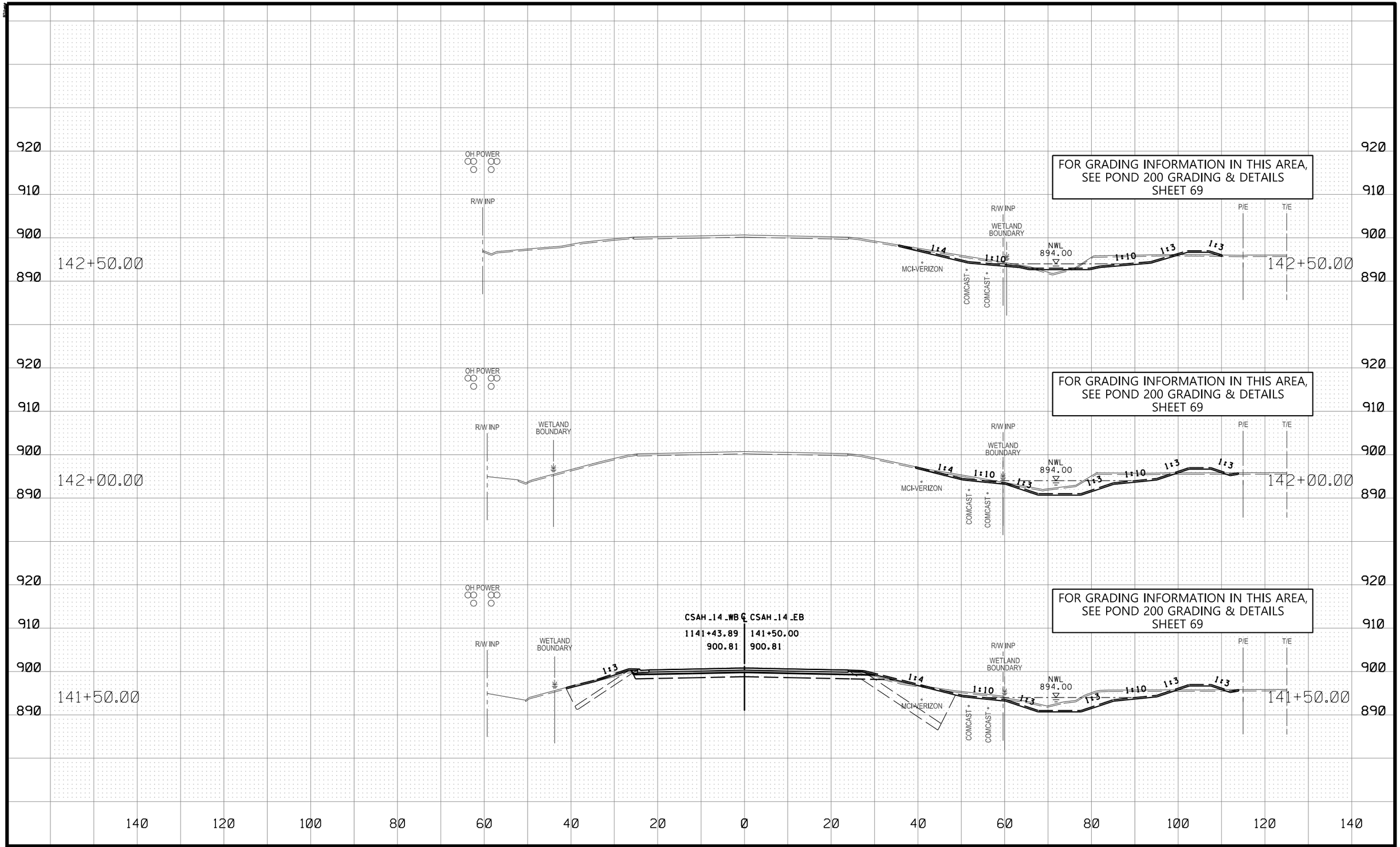
CROSS SECTIONS
CSAH 14
STA 140+00.00 TO 141+00.00

Sheet 109 of 115 Sheets



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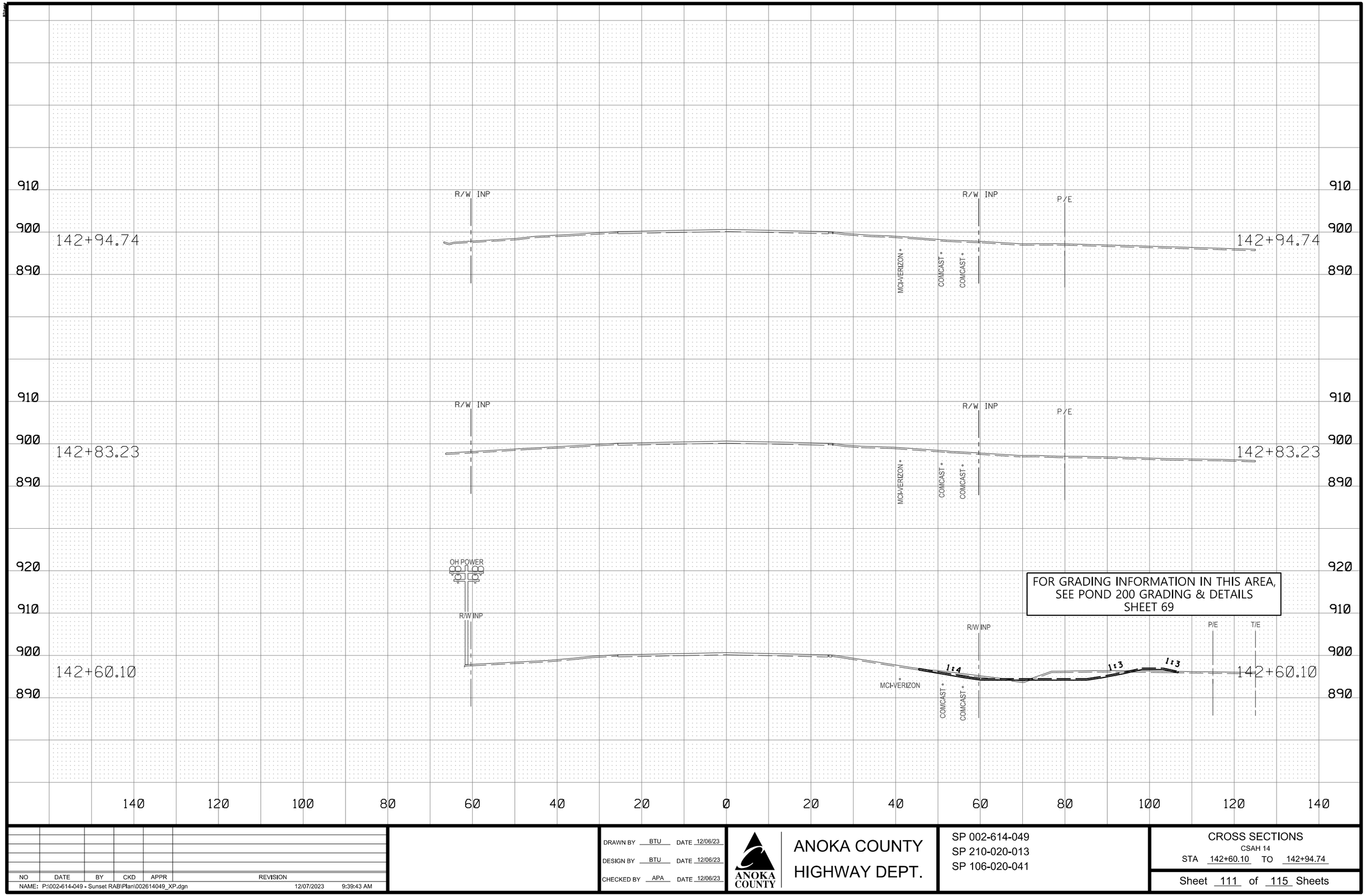
CROSS SECTIONS
CSAH 14
STA 141+50.00 TO 142+50.00

Sheet 110 of 115 Sheets



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ANOKA COUNTY
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CROSS SECTIONS
CSAH 14
STA 142+60.10 TO 142+94.74

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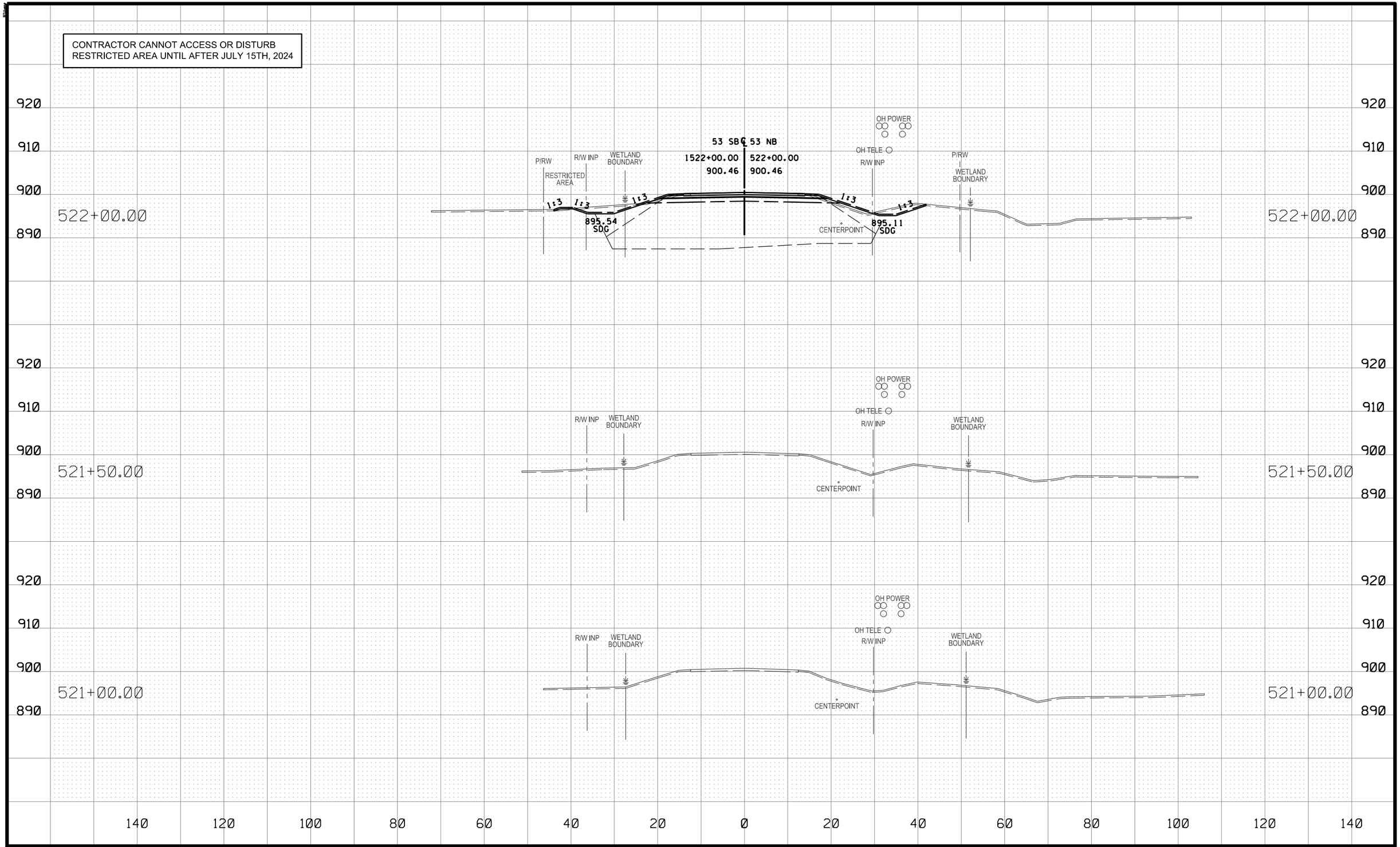
CONTRACTOR CANNOT ACCESS OR DISTURB
RESTRICTED AREA UNTIL AFTER JULY 15TH, 2024



NO	DATE	BY	CKD	APPR	REVISION
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ANOKA COUNTY
HIGHWAY DEPT.

SP 002-614-049
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CROSS SECTIONS
CR 53
STA 521+00.00 TO 522+00.00

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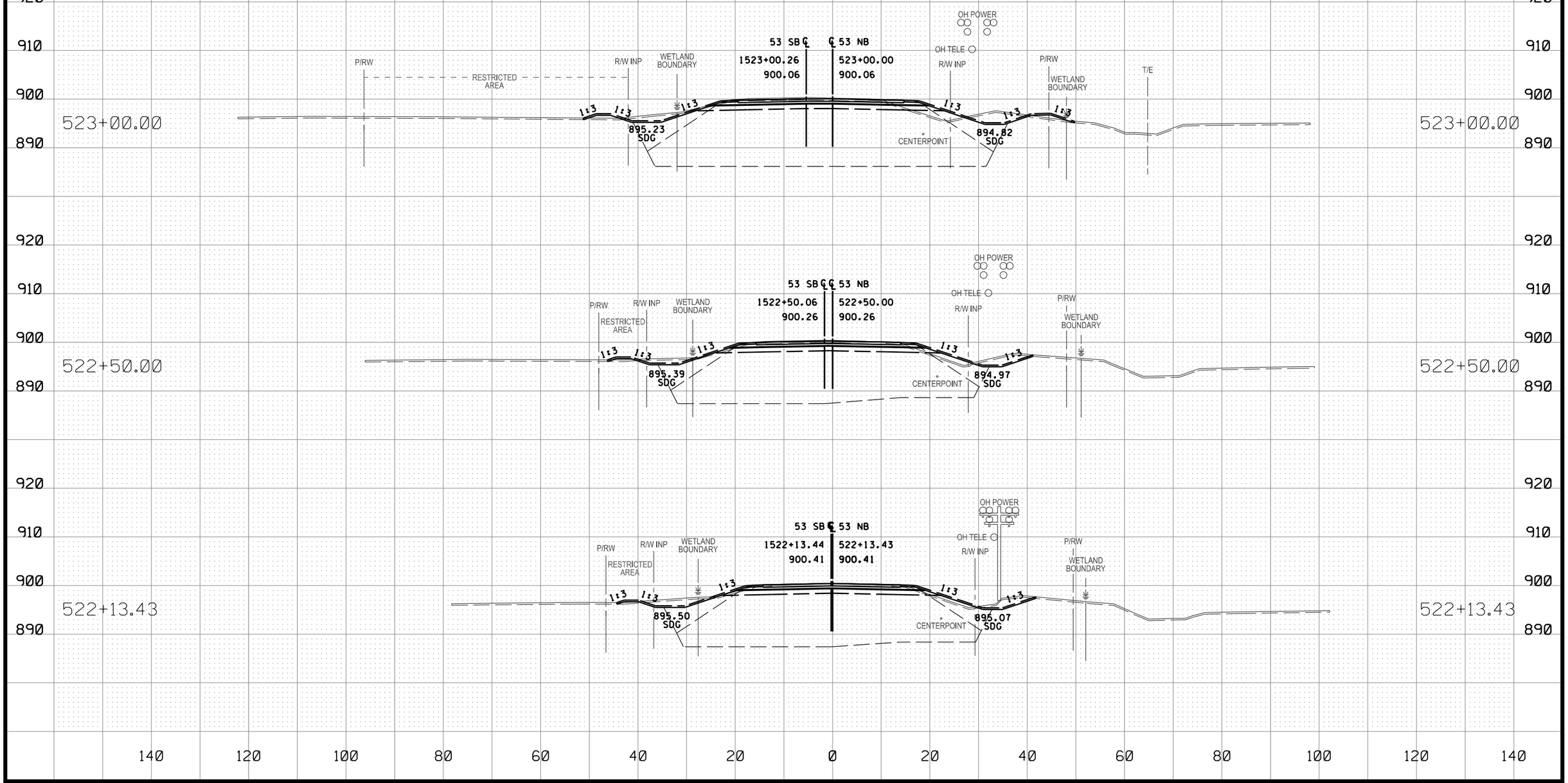
CONTRACTOR CANNOT ACCESS OR DISTURB
RESTRICTED AREA UNTIL AFTER JULY 15TH, 2024



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1	03/04/2024	BTU	APA	APA	ADDED RESTRICTED AREA TO CROSS-SECTIONS

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ANOKA COUNTY
HIGHWAY DEPT.

SP 002-614-049
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CROSS SECTIONS
CR 53
STA 522+13.43 TO 523+00.00

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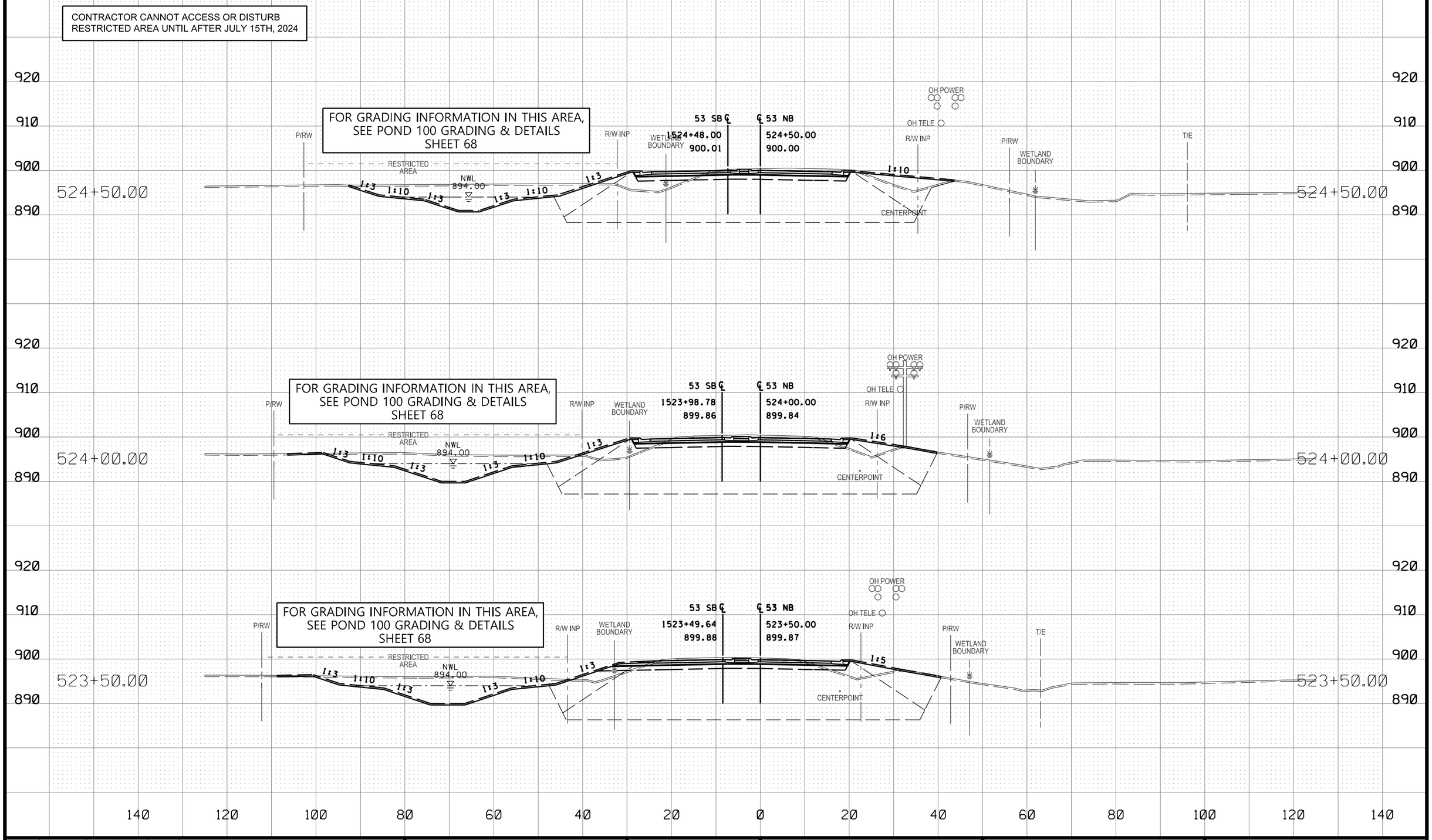
CONTRACTOR CANNOT ACCESS OR DISTURB RESTRICTED AREA UNTIL AFTER JULY 15TH, 2024



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ANOKA COUNTY HIGHWAY DEPT.

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CROSS SECTIONS
CR 53
STA 523+50.00 TO 524+50.00

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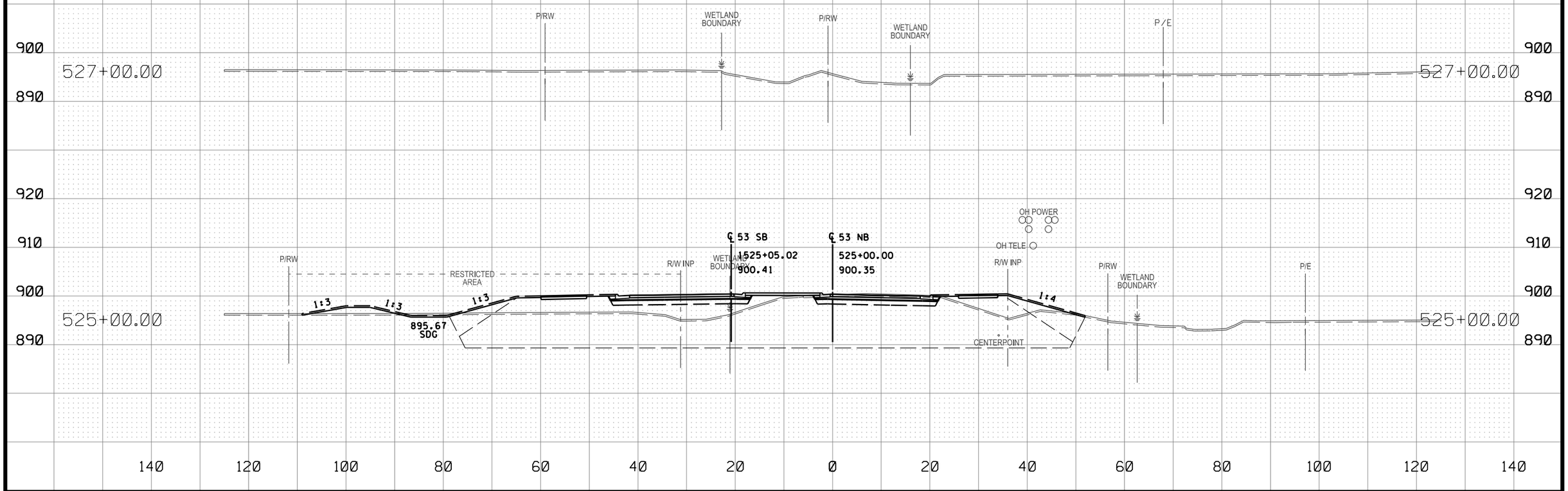
CONTRACTOR CANNOT ACCESS OR DISTURB
RESTRICTED AREA UNTIL AFTER JULY 15TH, 2024



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CROSS SECTIONS
CR 53
STA 525+00.00 TO 527+00.00

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