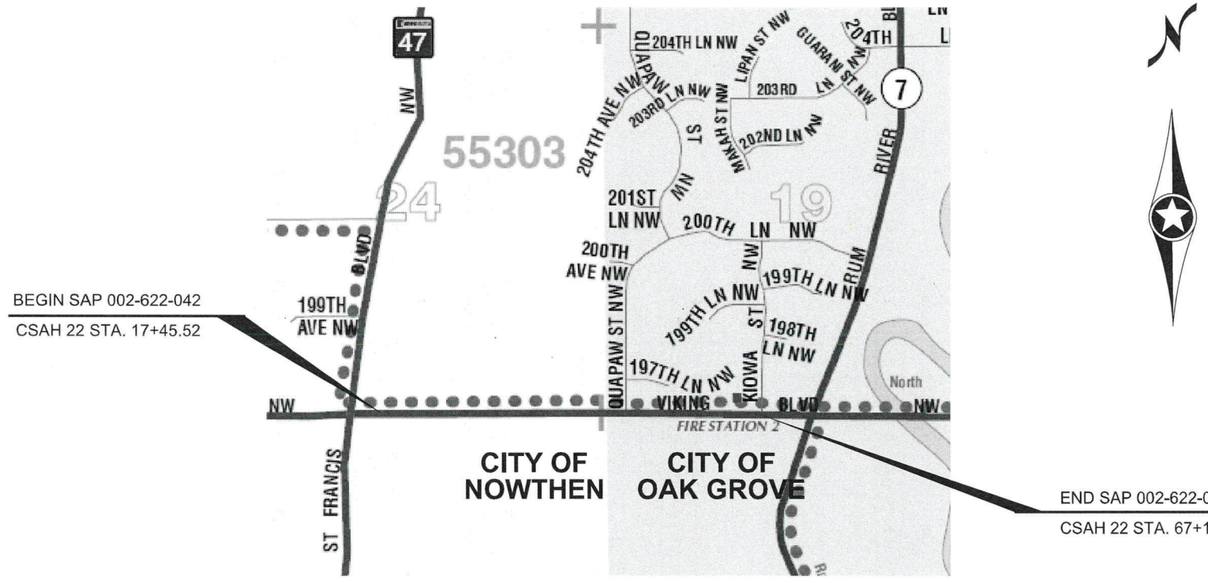
MINNESOTA DEPARTMENT OF TRANSPORTATION
ANOKA COUNTY

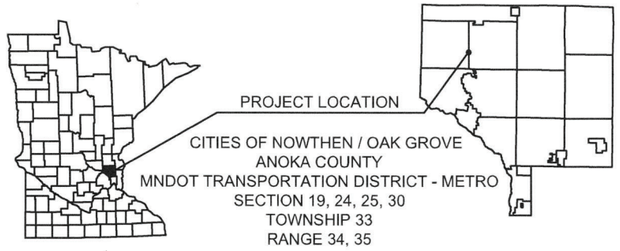
CONSTRUCTION PLAN FOR GRADING, AGGREGATE BASE, CONCRETE PAVING, BITUMINOUS SURFACING, DRAINAGE, PAVEMENT MARKINGS

LOCATED ON CSAH 22 BETWEEN 500 FEET EAST OF T.H. 47 AND 600 FEET WEST OF CSAH 7

STATE AID PROJ. NO. 002-622-042
CSAH 22

GROSS LENGTH	4971.01	FEET	0.941	MILES
BRIDGES-LENGTH	0.00	FEET	0.000	MILES
EXCEPTIONS-LENGTH	0.00	FEET	0.000	MILES
NET LENGTH	4971.01	FEET	0.941	MILES





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 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."

DESIGN DESIGNATION (CSAH 22)

ESAL 20	4,371,000	FUNCTIONAL CLASSIFICATION		MINOR ARTERIAL	
R VALUE	40	NO. OF TRAFFIC LANES	2	NO. OF PARKING LANES	0
ADT (2024)	7,410	DESIGN SPEED	55 MPH	SHOULDER WIDTH	10'
PROJ. ADT (2044)	8,041	BASED ON STOPPING SIGHT DISTANCE:			
PROJ. HCADT (2044)	571	HEIGHT OF EYE	3.5'	HEIGHT OF OBJECT	2.0'
10 TON DESIGN		DESIGN SPEED NOT ACHIEVED AT:			
		STA. ____ TO STA. ____ MPH ____			

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.

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90 - 123	CROSS SECTIONS

THIS PLAN CONTAINS 123 SHEETS

APPROVED _____ ANOKA COUNTY ENGINEER — DATE 1-10-24

APPROVED _____ CITY OF NOWTHEN ENGINEER — DATE 1/12/24

APPROVED Charles D. Schwartz, PE CITY OF OAK GROVE ENGINEER — DATE 1/11/24

Lucas Lortie
Digitally signed by Lucas Lortie
Date: 2024.02.06 11:46:13 -06'00'
For DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY — DATE

Lucas Lortie
Digitally signed by Lucas Lortie
Date: 2024.02.06 11:46:34 -06'00'
For STATE AID ENGINEER: APPROVED FOR STATE 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
CATCH BASIN
FIRE HYDRANT
CAST IRON MONUMENT
IRON PIN
GRAVEL PIT
SAND PIT
BORROW PIT
ROCK QUARRY

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
ELECTRIC MANHOLE
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' 2000'

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-622-042 Whitetopping\Plan\002622042_TSH.dgn 01/09/2024 1:01:47 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: NICHOLAS DOBDA
SIGNATURE:
DATE: 01/09/24 LICENSE NO. 49046

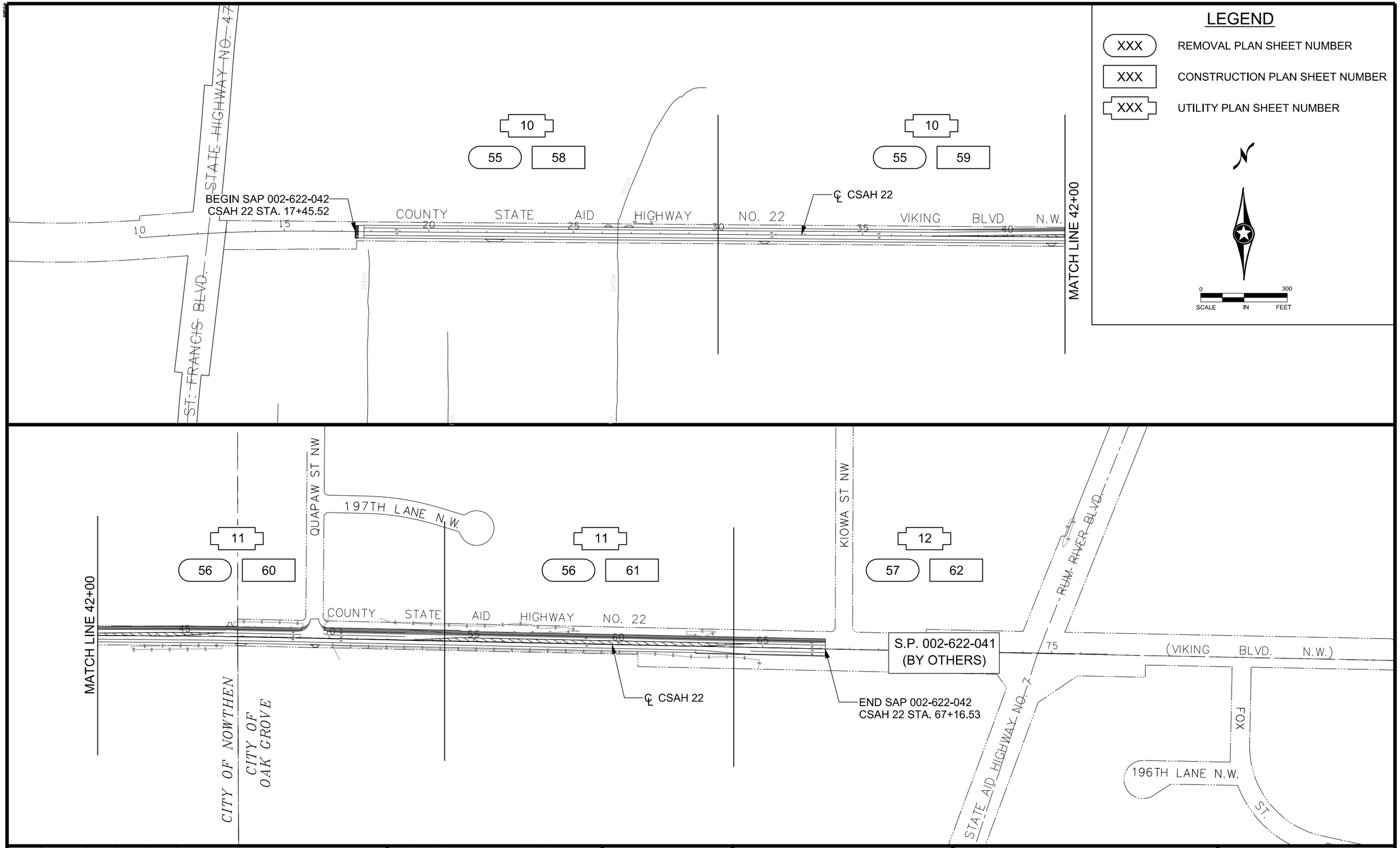
DRAWN BY MP DATE 01/09/24
DESIGN BY MP DATE 01/09/24
CHECKED BY ND DATE 01/09/24

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

TITLE SHEET

Sheet 1A of 123 Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-622-042 Whitetopping\Plan\002622042_GL.dgn 01/09/2024 1:02:06 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: NICHOLAS DOBDA

SIGNATURE:

DATE: 01/09/2024 LICENSE NO. 49046

DRAWN BY MP DATE 01/09/24

DESIGN BY MP DATE 01/09/24

CHECKED BY ND DATE 01/09/24

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

GENERAL LAYOUT

Sheet 2 of 123 Sheets

STATEMENT OF ESTIMATED QUANTITIES

TAB / NOTE	ITEM NO.	ITEM DESCRIPTION	UNIT	ANOKA COUNTY SAP 002-622-042 ROADWAY QUANTITIES ESTIMATED
	2021.501	MOBILIZATION	LUMP SUM	1
A	2101.502	GRUBBING	EACH	1
A	2101.505	GRUBBING	ACRE	0.15
M	2102.503	PAVEMENT MARKING REMOVAL	LIN FT	5044
I	2104.502	REMOVE SIGN TYPE C	EACH	8
I	2104.502	SALVAGE SIGN TYPE SPECIAL	EACH	2
C, D	2104.503	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LIN FT	178
B / [1]	2104.503	REMOVE PIPE CULVERTS	LIN FT	378
C	2104.503	REMOVE BITUMINOUS CURB	LIN FT	24
D	2104.504	REMOVE BITUMINOUS DRIVEWAY PAVEMENT	SQ YD	46
C	2104.504	REMOVE BITUMINOUS PAVEMENT	SQ YD	23254
AA	2106.507	EXCAVATION - COMMON	CU YD	13203
AA	2106.507	EXCAVATION - SUBGRADE (P)	CU YD	8961
AA	2106.507	SELECT GRANULAR EMBANKMENT (CV)	CU YD	9564
AA	2106.507	COMMON EMBANKMENT (CV) (P)	CU YD	3476
[2]	2123.510	DOZER	HOUR	10
[3]	2130.523	WATER	M GALLON	60
F / [4]	2211.507	AGGREGATE BASE (CV) CLASS 5 (P)	CU YD	7981
D / [5]	2211.509	AGGREGATE BASE CLASS 5	TON	56
F / [6]	2221.509	SHOULDER BASE AGGREGATE CLASS 5	TON	221
F	2232.504	MILL BITUMINOUS SURFACE (2.0")	SQ YD	48
E	2301.504	CONCRETE PAVEMENT 8.0"	SQ YD	18058
E	2301.508	SUPPLEMENTAL PAVEMENT REINFORCEMENT	POUND	1125
E	2301.602	1.25" DOWEL BAR	EACH	9167
E	2301.602	DRILL AND GROUT REINF BAR (EPOXY COATED)	EACH	60
[12]	2301.610	COARSE AGGREGATE QUALITY INCENTIVE/DISINCENTIVE	CU YD	4013
[12]	2301.611	OPTIMIZED AGGREGATE GRADATION INCENTIVE	CU YD	4013
[12]	2301.612	W/C RATIO INCENTIVE/DISINCENTIVE	CU YD	4013
F	2357.506	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	1037
D/ [7]	2360.509	TYPE SP 9.5 WEARING COURSE MIXTURE (2;B)	TON	7
F	2360.509	TYPE SP 12.5 BITUMINOUS MIXTURE FOR PATCHING	TON	256
F/ [8]	2360.509	TYPE SP 12.5 WEARING COURSE MIXTURE (4;C)	TON	2466
[9],[12]	2399.601	PAVEMENT SMOOTHNESS INCENTIVE/DISINCENTIVE	RD SEG	18.8
P	2501.502	36" RC PIPE APRON	EACH	2
P	2501.502	48" RC PIPE APRON	EACH	2
P	2501.502	15" CS SAFETY APRON	EACH	2
P	2501.502	18" RC SAFETY APRON	EACH	2
P	2501.502	24" RC SAFETY APRON	EACH	2
P	2501.503	18" RC PIPE CULVERT	LIN FT	100
P	2501.503	24" RC PIPE CULVERT	LIN FT	95
P	2501.503	36" RC PIPE CULVERT	LIN FT	96
P	2501.503	48" RC PIPE CULVERT	LIN FT	94

STATEMENT OF ESTIMATED QUANTITIES

TAB / NOTE	ITEM NO.	ITEM DESCRIPTION	UNIT	ANOKA COUNTY SAP 002-622-042 ROADWAY QUANTITIES ESTIMATED
N	2502.502	4" PRECAST CONCRETE HEADWALL	EACH	4
N	2502.503	4" TP PIPE DRAIN	LIN FT	69
N / [13]	2502.503	4" PERF TP PIPE DRAIN	LIN FT	768
P	2503.603	15" HDPE PIPE SEWER	LIN FT	30
P	2511.504	GEOTEXTILE FILTER TYPE 3	SQ YD	354
P	2511.507	RANDOM RIPRAP CLASS II	CU YD	78
P / [10]	2540.602	MAIL BOX SUPPORT	EACH	4
P / [10]	2540.602	RELOCATE MAIL BOX SUPPORT	EACH	4
P	2554.502	GUIDE POST TYPE B	EACH	6
	2563.601	TRAFFIC CONTROL SUPERVISOR	LUMP SUM	1
	2563.601	TRAFFIC CONTROL STG1	LUMP SUM	1
	2563.601	TRAFFIC CONTROL STG2	LUMP SUM	1
[12]	2563.613	PORTABLE CHANGEABLE MESSAGE SIGN	UNIT DAY	40
M	2564.518	SIGN PANELS TYPE C	SQ FT	66
I	2564.602	INSTALL SIGN TYPE SPECIAL	EACH	2
	2573.501	EROSION CONTROL SUPERVISOR	LUMP SUM	1
G	2573.502	CULVERT END CONTROLS	EACH	10
G	2573.503	SILT FENCE; TYPE MS	LIN FT	12107
P	2573.602	TEMPORARY STREAM DIVERSION SYSTEM	EACH	3
G	2574.508	FERTILIZER TYPE 3	POUND	886
G	2575.505	SEEDING	ACRE	2.8
G	2575.508	SEED MIXTURE 25-121	POUND	154
G	2575.508	HYDRAULIC REINFORCED FIBER MATRIX	POUND	9881
G	2575.523	RAPID STABILIZATION METHOD 3	M GALLON	16.8
K / [11]	2582.503	4" SOLID LINE PREFORM TAPE GROUND IN (WR)	LIN FT	12404
K / [11]	2582.503	4" BROKEN LINE PREFORM TAPE GROUND IN (WR)	LIN FT	410
K / [11]	2582.503	4" DOUBLE SOLID LINE PREFORM TAPE GROUND IN (WR)	LIN FT	4771
K / [11]	2582.518	PAVEMENT MESSAGE PREFORM THERMOPLASTIC	SQ FT	93
K / [11]	2582.603	24" SOLID LINE PREFORM THERMO GROUND IN	LIN FT	1008

NOTES:

[1] INCLUDES ALL PIPE AND APRON TYPES/MATERIALS.
[2] SHALL BE USED FOR MISCELLANEOUS GRADING ACTIVITIES AS DIRECTED BY ENGINEER.
[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 CONCRETE ROADWAY, BITUMINOUS SHOULDER AND TURN LANE AGGREGATE QUANTITIES.
[5] INCLUDES ALL BITUMINOUS AND AGGREGATE DRIVEWAY AND FIELD ENTRANCE AGGREGATE QUANTITIES.
[6] INCLUDES AGGREGATE SHOULDER QUANTITIES.
[7] INCLUDES BITUMINOUS DRIVEWAYS.
[8] INCLUDES SHOULDERS, MILL/TRANSITION AREA, RIGHT-TURN LANES AND INTERSECTIONS.
[9] ROAD SEGMENT REPRESENTS 528 FEET PER LANE (0.1 MILES).
[10] CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF TEMPORARY MAIL SERVICE AND FINAL MAIL BOX PLACEMENT.
[11] SEE TABULATION FOR COLOR.
[12] SEE SPECIAL PROVISIONS.
[13] PLACE ON FINE FILTER AGGREGATE BEDDING (INCIDENTAL), SEE MISC. DETAILS AND STANDARD PLAN 5-297.433
(P) PLAN QUANTITY.

NO	DATE	BY	CKD	APPR	REVISION
1	02/09/2024	MP	NJD		- ADDED 24" RC SAFETY APRON AND 24" RC PIPE CULVERT. - REVISED QUANTITIES FOR CULVERT END TREATMENT, GEOTEXTILE FILTER TYPE 3 AND RANDOM RIPRAP CLASS II. - CHANGED PAVEMENT MESSAGE PREFORM THERMO GROUND IN/ CONTRAST TO PAVEMENT MESSAGE PREFORM THERMO, CORRECTED NOTE TO K/ [11] FOR STRIPING ITEMS.
2	02/15/2024	MP	NJD		- REVISED ITEM 2301.61X ITEM NAMES: PAVEMENT SMOOTHNESS QTY., REVISED QTY. FOR 4" TP PIPE DRAIN AND PERF TP PIPE DRAIN, ADDED NOTE [13].

NAME: P:\002-622-042 Whitetopping\Plan\002622042_TAB.dgn 02/16/2024 3:07:40 PM

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PRINT NAME: NICHOLAS DOBDA
SIGNATURE:
DATE: 02/16/2024 LICENSE NO. 49046

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CHECKED BY ND DATE 01/09/24

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-622-042

STATEMENT OF ESTIMATED QUANTITIES

INDEX OF TABULATION CHARTS

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F	AGGREGATE AND BITUMINOUS SUMMARY	7
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P	CULVERT TABULATION	8
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BASIS OF QUANTITIES

SPEC NO.	DESCRIPTION	RATE
2357.506	BITUMINOUS MATERIAL FOR TACK COAT	0.05 GAL / SQ YD / LIFT
2360.509	TYPE SP 9.5 / SP 12.5 BITUMINOUS MIXTURE	115 LBS / SQ YD / IN
2574.508	FERTILIZER TYPE 3	350 LBS / ACRE
2575.508	SEED MIXTURE 25-121	61 LBS / ACRE
2575.508	HYDRAULIC REINFORCED FIBER MATRIX	3900 LBS / ACRE
2575.523	RAPID STABILIZATION METHOD 3	6 MGALLONS / ACRE

THE FOLLOWING STANDARD PLATES APPROVED BY 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)
3022C	PRECAST CONCRETE SAFETY APRON (3 SHEETS)
3100G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3128H	METAL SAFETY APRON & GRATE
3131C	PRECAST CONCRETE HEADWALL FOR SUBSURFACE DRAINS
3133D	RIPRAP AT RCP OUTLETS
3145G	CONCRETE PIPE OR PRECAST BOX CULVERT TIES
3148A	SAFETY SLOPE METAL END SECTION FOR CIRCULAR & ARCHED PIPES (2 SHEETS)
8000K	TEMPORARY CHANNELIZERS (3 SHEETS)
9000E	APPROACHES AND ENTRANCES - RECOMMENDED STANDARDS
9350C	MAILBOX SUPPORT - SWING-AWAY TYPE

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-622-042 Whitetopping\Plan\002622042_TAB.dgn 01/09/2024 1:02:23 PM

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PRINT NAME: NICHOLAS DOBDA

SIGNATURE:

DATE: 01/09/2024 LICENSE NO. 49046

DRAWN BY MP DATE 01/09/24

DESIGN BY MP DATE 01/09/24

CHECKED BY ND DATE 01/09/24

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

STANDARD PLATES, BASIS OF QUANTITIES, & TABULATIONS INDEX

EARTHWORK TABULATIONS — AA

STATION	EXCAVATION TOTALS		EMBANKMENT TOTALS	
	EXCAVATION - COMMON	EXCAVATION - SUBGRADE	COMMON EMBANKMENT	SELECT GRANULAR EMBANKMENT
	CY	CY	CY	CY
CSAH 22				
18+00.00				
18+50.00	111	86	4	86
19+00.00	121	86	6	86
19+50.00	129	86	5	86
19+77.73	76	48	4	48
20+00.00	60	38	4	38
20+50.00	125	86	5	86
21+00.00	117	86	6	86
21+50.00	112	86	5	86
22+00.00	115	86	4	86
22+10.00	25	17	1	17
22+50.00	115	69	3	69
23+00.00	139	86	5	86
23+50.00	112	86	6	86
24+00.00	106	86	5	86
24+50.00	104	86	8	86
25+00.00	104	86	7	86
25+50.00	105	86	6	86
26+00.00	108	86	8	86
26+13.60	35	23	2	23
26+27.14	35	23	1	23
26+50.00	49	39	2	39
26+53.38	7	6		6
26+83.79	64	52	2	52
27+00.00	33	28	1	28
27+50.00	98	86	2	86
28+00.00	92	86	2	86
28+50.00	94	86	5	86
29+00.00	98	86	5	86
29+50.00	105	86	4	86
30+00.00	113	86	6	86
30+50.00	118	86	7	86
31+00.00	119	86	7	86
31+50.00	117	86	4	86
31+71.00	49	36	1	36
32+00.00	68	50	2	50
32+50.00	117	86	4	86
33+00.00	121	86	4	86
33+50.00	122	86	5	86
34+00.00	119	86	5	86
34+50.00	109	86	4	86
35+00.00	100	86	3	86
SUBTOTAL (A)	**3,866**	**2,923**	**170**	**2,923**

EARTHWORK TABULATIONS — AA

STATION	EXCAVATION TOTALS		EMBANKMENT TOTALS	
	EXCAVATION - COMMON	EXCAVATION - SUBGRADE	COMMON EMBANKMENT	SELECT GRANULAR EMBANKMENT
	CY	CY	CY	CY
CSAH 22 (CONTINUED)				
35+50.00	93	86	4	86
36+00.00	91	86	4	86
36+50.00	95	86	4	86
37+00.00	97	86	5	86
37+50.00	158	86	16	86
38+00.00	216	87	27	87
38+50.00	209	89	29	89
39+00.00	199	91	31	91
39+50.00	188	92	34	92
40+00.00	173	93	41	94
40+50.00	160	94	46	96
41+00.00	155	95	49	97
41+45.69	142	88	45	90
41+50.00	14	8	4	9
41+61.55	37	22	11	23
42+00.00	118	74	41	78
42+50.00	147	95	60	102
43+00.00	141	96	69	104
43+50.00	136	97	71	106
44+00.00	139	98	75	108
44+50.00	139	97	81	109
45+00.00	136	95	77	110
45+50.00	139	95	64	110
46+00.00	139	94	60	110
46+50.00	130	102	34	110
46+62.50	32	28	3	28
46+85.38	72	48	15	50
47+00.00	52	28	17	32
47+06.97	25	13	8	15
47+50.00	146	81	53	95
48+00.00	160	94	62	110
48+50.00	151	95	57	110
49+00.00	143	97	51	110
49+35.00	118	75	17	79
49+50.00	61	35		35
49+62.89	55	30		30
50+00.00	132	81	26	86
50+50.00	136	100	93	116
51+00.00	128	96	121	116
51+50.00	120	95	112	116
52+00.00	120	96	86	116
52+50.00	128	97	67	116
SUBTOTAL (B)	**5,170**	**3,321**	**1,770**	**3,605**

EARTHWORK TABULATIONS — AA

STATION	EXCAVATION TOTALS		EMBANKMENT TOTALS	
	EXCAVATION - COMMON	EXCAVATION - SUBGRADE	COMMON EMBANKMENT	SELECT GRANULAR EMBANKMENT
	CY	CY	CY	CY
CSAH 22 (CONTINUED)				
53+00.00	134	98	58	116
53+50.00	144	97	56	116
54+00.00	152	98	56	116
54+50.00	163	100	59	116
55+00.00	169	102	54	113
55+50.00	170	102	42	110
56+00.00	168	101	39	110
56+50.00	156	101	43	110
56+73.60	72	47	23	52
57+00.00	81	53	25	58
57+50.00	157	102	41	110
58+00.00	162	104	38	110
58+50.00	164	104	36	110
59+00.00	165	102	37	110
59+50.00	160	99	40	110
60+00.00	151	99	44	110
60+50.00	147	99	49	110
61+00.00	142	99	52	110
61+50.00	138	97	67	110
62+00.00	136	95	68	110
62+50.00	134	96	65	110
63+00.00	138	98	96	113
63+50.00	141	100	108	116
64+00.00	149	102	94	116
64+50.00	161	105	75	116
65+00.00	171	107	57	116
65+50.00	174	106	53	116
66+00.00	168	104	61	116
SUBTOTAL (C)	**4,167**	**2,717**	**1,536**	**3,036**

EARTHWORK SUMMARY — AA

	EXCAVATION TOTALS		EMBANKMENT TOTALS	
	EXCAVATION - COMMON	EXCAVATION - SUBGRADE	COMMON EMBANKMENT	SELECT GRANULAR EMBANKMENT
	CY	CY	CY	CY
CSAH 22 SUBTOTAL (A)	3,866	2,923	170	2,923
CSAH 22 SUBTOTAL (B)	5,170	3,321	1,770	3,605
CSAH 22 SUBTOTAL (C)	4,167	2,717	1,536	3,036
PROJECT TOTAL	**13,203**	**8,961**	**3,476**	**9,564**

NO	DATE	BY	CKD	APPR	REVISION

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SIGNATURE:

DATE: 01/09/2024 LICENSE NO. 49046

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ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

EARTHWORK TABULATIONS AND SUMMARY

Sheet 5 of 123 Sheets

CLEAR AND GRUB — A

ALIGNMENT	STATION	TO	STATION	OFFSET	SPEC. 2101 GRUBBING (TREE)	SPEC. 2101 GRUBBING (ACRE)
<22E>	46+70	-	48+99	52' LT	1	0.05
<22E>	52+29	-	54+17	51' LT		0.05
<22E>	54+86	-	56+26	46' LT		0.05
TOTAL					1	0.15

GENERAL NOTES:
- REMOVAL OF MISCELLANEOUS SHRUBS AND LANDSCAPING SHALL BE CONSIDERED INCIDENTAL.
- STUMP GRINDING RESIDUE SHALL BE REMOVED TO THE SATISFACTION OF THE ENGINEER.

REMOVE EXISTING CULVERT — B

ALIGNMENT	LOCATION STATION TO STATION	OFFSET FROM TO	PIPE CULVERTS (LIN FT)	NOTES
<22E>	26+53	53' RT - 41' LT	94	[1]
<22E>	18+00	50' RT - 46' LT	96	[1]
<22E>	49+11 - 49+90	37' LT - 37' LT	79	[3]
<22E>	46+39 - 46+70	37' LT - 38' LT	30	[2]
<22E>	51+12	53' LT - * LT	79	[3], [4]
PROJECT TOTAL			378	

STORM REMOVAL NOTES:
[1] CENTERLINE CULVERT UNDER CSAH 22.
[2] CULVERT UNDER FIELD ENTRANCE.
[3] CULVERT UNDER QUAPAW STREET.
[4] SOUTH END OF CULVERT IS BURIED, PIPE LENGTH AND EXACT LOCATION IS UNKNOWN.

GENERAL NOTES:
- PIPE CULVERT REMOVAL INCLUDES APRON (INCIDENTAL).

REMOVALS AND SAWING — C

ALIGNMENT	LOCATION STATION TO STATION	REMOVE SPEC. 2104 BIT. PAVEMENT (SQ YD)	REMOVE SPEC. 2104 BIT. CURB (LIN FT)	SAWING SPEC. 2104 BIT. PAVEMENT (FULL DEPTH) (SQ YD)
<22E>	17+55.52 - 67+16.53	23254		
<22E>	17+55.52			43
<22E>	41+45.69 - 41+61.55			16
<22E>	49+34.44 - 49+62.84			28
<22E>	49+33.54 - 49+34.44		14	
<22E>	49+46.51 - 49+59.64			13
<22E>	49+62.90 - 49+64.03		10	
<22E>	67+21.68			47
PROJECT TOTAL		23254	24	148

DRIVEWAY REMOVAL, CONSTRUCTION & MAILBOXES — D

ALIGNMENT	STATION	LOCATION	DESCRIPTION	SAWING SPEC. 2104 BIT. PAVEMENT (FULL DEPTH) (LIN FT)	REMOVE SPEC. 2104 BIT. PAVEMENT (SQ YD)	CONSTRUCT SPEC. 2211 AGGREGATE BASE CLASS 5 (TON)	CONSTRUCT SPEC. 2360 TYPE SP 9.5 WEAR COURSE MIX (2;B) (3.0") (TON)	SPEC. 2540 MAIL BOX SUPPORT (EACH)	SPEC. 2540 RELOCATE MAIL BOX SUPPORT (EACH)
<22E>	22+63.40	RT	5160 VIKING BLVD NW			7		1	1
<22E>	26+20.37	LT	FIELD ENTRANCE			7			
<22E>	26+92.43	LT	FIELD ENTRANCE			7			
<22E>	31+62.12	RT	FIELD ENTRANCE			7			
<22E>	41+53.58	RT	4870 VIKING BLVD NW	17	24	7	4	1	1
<22E>	46+55.80	LT	FIELD ENTRANCE			7			
<22E>	46+96.33	RT	4768 VIKING BLVD NW			7		1	1
<22E>	49+53.08	RT	4744 VIKING BLVD NW	13	22	7	3	1	1
PROJECT TOTAL				30	46	56	7	4	4

GENERAL NOTES:
CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF TEMPORARY MAIL SERVICE AND FINAL MAIL BOX PLACEMENT.

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ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

TABULATIONS

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CONCRETE — E

ALIGNMENT	LOCATION			OFFSET		SPEC. 2211	SPEC. 2301			
						AGGREGATE BASE (CV) CLASS 5 8.0"	CONCRETE PAVEMENT 8.0"	SUPPLEMENTAL PAVEMENT REINFORCEMENT	1.25" DOWEL BAR	DRILL AND GROUT REINF BAR (EPOXY COATED)
	STATION	TO	STATION	FROM	TO	CU YD	SQ YD	POUND	EACH	EACH
<22E>	17+75.52	-	17+87.85	13' LT	13' RT	8	36		18	24
<22E>	17+87.85	-	18+11.85	13' LT	13' RT	15	69	400	35	
<22E>	18+11.85	-	22+00.00	13' LT	13' RT	249	1121		569	
<22E>	22+00.00	-	26+39.38	13' LT	13' RT	282	1269		644	
<22E>	26+39.38	-	26+67.38	13' LT	13' RT	18	81	475	41	
<22E>	26+67.38	-	34+00.00	13' LT	13' RT	470	2116		1075	
<22E>	34+00.00	-	37+39.44	13' LT	13' RT	218	981		498	
<22E>	37+39.44	-	44+54.44	13'-26' LT	13' RT	574	2582		1311	
<22E>	44+54.44	-	46+00.00	26' LT	13' RT	140	631		320	
<22E>	46+00.00	-	58+00.00	26' LT	13' RT	1156	5200	250	2640	
<22E>	58+00.00	-	67+16.53	26' LT	13' RT	883	3972		2016	36
PROJECT TOTAL						4013	18058	1125	9168	60

AGGREGATE AND BITUMINOUS SUMMARY — F

ALIGNMENT	LOCATION			SHOULDERS / RTL				MILL / TRANSITION AREA				NOTES
				SPEC. 2211		SPEC. 2357	SPEC. 2360	SPEC. 2232	SPEC. 2357	SPEC. 2360		
				AGGREGATE BASE (CV) CLASS 5 12.0" [1]	SHOULDER BASE AGGREGATE CLASS 5 (4.0") [2]	BITUMINOUS MATERIAL FOR TACK COAT	TYPE SP 12.5 WEARING COURSE MIX (4;C)	MILL BITUMINOUS SURFACE (2.0")	BITUMINOUS MATERIAL FOR TACK COAT	TYPE SP 12.5 WEARING COURSE MIX (4;C)	TYPE SP 12.5 BIT MIXTURE FOR PATCHING	
	STATION	TO	STATION	CU YD	TON	GALLON	TON	SQ YD	GALLON	TON	TON	
<22E>	17+45.52	-	17+75.52	1	2			48	2	12	1	[3], [4]
<22E>	17+75.52	-	22+00.00	328	19	85	202				62	[3], [5]
<22E>	22+00.00	-	34+00.00	927	54	240	570				126	[3], [5]
<22E>	34+00.00	-	46+00.00	925	53	240	570					[3], [5]
<22E>	46+00.00	-	58+00.00	1029	52	272	643				67	[3], [5]
<22E>	58+00.00	-	67+16.53	758	41	198	469					[3], [5]
PROJECT TOTAL				3968	221	1035	2454	48	2	12	256	

AGGREGATE AND BITUMINOUS SUMMARY NOTES:

[1] BITUMINOUS SHOULDER/RIGHT TURN LANE CONSTRUCTION.
[2] 1' AGGREGATE SHOULDER.
[3] INCLUDES MATERIAL FOR SAFETY EDGE. LABOR AND/OR EQUIPMENT NECESSARY TO FORM AND CONSTRUCT SAFETY EDGES ARE INCIDENTAL.
[4] BIT MIXTURE FOR PATCHING MILL AREA.
[5] BIT MIXTURE FOR PATCHING THRU LANE AFTER CULVERT REPLACEMENT.

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TABULATIONS

Sheet 7 of 123 Sheets

CULVERT TABULATION — P

ALIGNMENT	STATION AND OFFSET					SLOPE %	INVERT ELEVATION		15" HDPE PIPE SEWER	15" CS SAFETY APRON	18" RC PIPE CULVERT	18" RC SAFETY APRON	24" RC PIPE CULVERT	24" RC SAFETY APRON	36" RC PIPE CULVERT	36" RC PIPE APRON	48" RC PIPE CULVERT	48" RC PIPE APRON	RANDOM RIPRAP CL II	GUIDE POST TYPE B [6]	GEOTEXTILE FILTER TYPE 3	TEMPORARY STREAM DIVERSION SYSTEM	NOTES
							UPSTREAM	DOWNSTREAM	LIN FT	EACH	LIN FT	EACH	LIN FT	EACH	LIN FT	EACH	LIN FT	EACH	CU YD	EACH	SQ YD	EACH	
<22E>	17+95	50' RT	-	18+04	46' LT	0.35%	898.74	898.41							96	2			21	2	92	1	[1], [2]
<22E>	26+53	53' RT	-	26+54	41' LT	0.78%	897.66	896.91									94	2	30	2	122	1	[1], [2]
<22E>	46+41	53' LT	-	46+71	52' LT	0.32%	909.65	909.55	30	2									6		36		[3]
<22E>	49+00	50' LT	-	50+00	54' LT	0.80%	907.70	906.90			100	2							9		45		[4]
<22E>	51+12	53' RT	-	51+12	41' LT	0.35%	905.55	905.0					95	2					12	2	59	1	[1], [5]
								TOTAL	30	2	100	2	95	2	96	2	94	2	78	6	354	3	

NOTES:
[1] CENTERLINE CULVERT UNDER CSAH 22.
[2] CONTRACTOR TO FIELD VERIFY INVERTS AND REPLACE CULVERT AT SAME ELEVATION AS EXISTING.
[3] CULVERT UNDER FIELD ENTRANCE.
[4] CULVERT UNDER QUAPAW STREET.
[5] CONTRACTOR TO FIELD VERIFY **SOUTH** INVERT AND REPLACE CULVERT AT SAME ELEVATION AS EXISTING.
[6] USE AMBER COLORED REFLECTIVE PLATE.

GENERAL NOTES:
- STATION AND OFFSET FOR EACH CULVERT GIVEN AT APRON ENDS.
- INVERT ELEVATIONS GIVEN AT END OF APRON.
- FOR RIPRAP AND GEOTEXTILE FABRIC INSTALLATION SEE MnDOT STANDARD PLATE 3134.
- FOR BLANKET INSTALLATION SEE MnDOT STANDARD PLAN 5-297.404.
- TIE LAST THREE JOINTS AT APRON END. FURNISHING AND INSTALLING PIPE TIES SHALL BE CONSIDERED INCIDENTAL. SEE MnDOT STANDARD PLATE 3145.

TURF ESTABLISHMENT AND EROSION CONTROL — G

ALIGNMENT	LOCATION			SPEC. 2573		SPEC. 2574	SPEC. 2575			
				SILT FENCE TYPE MACHINE SLICED	CULVERT END CONTROLS	FERTILIZER TYPE 3 (22-5-10)	SEEDING	SEED MIXTURE 25-121	HYDRAULIC REINFORCED FIBER MATRIX	RAPID STABILIZATION METHOD 3
	STATION	TO	STATION	(LIN FT)	(EACH)	(POUND)	(ACRE)	(POUND)	(POUND)	(M GALLON)
<22E>	17+45.52	-	22+00.00	1027	1	41	0.2	7	461	1.2
<22E>	22+00.00	-	34+00.00	2424	4	87	0.3	15	973	1.8
<22E>	34+00.00	-	46+00.00	2699		259	0.8	45	2886	4.8
<22E>	46+00.00	-	58+00.00	3423	5	244	0.7	43	2723	4.2
<22E>	58+00.00	-	67+16.53	2534		255	0.8	44	2838	4.8
TOTAL				12107	10	886	2.8	154	9881	16.8

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, SEE SHEETS 69-71.
- DOUBLE ROW OF SILT FENCE TO BE USED ALONG WETLAND AND AS SHOWN ON PLANS.

SUBSURFACE DRAINAGE — N

ALIGNMENT	STATION TO STATION	FROM - TO	SPEC 2502		
			4" TP PIPE DRAIN	4" PERF TP PIPE DRAIN	PRECAST CONCRETE HEADWALL
			LIN FT	LIN FT	EACH
<22E>	18+77 - 20+78	23' RT - 23' RT		192	
<22E>	18+77 - 20+78	23' LT - 23' LT		192	
<22E>	19+73 - 19+82	23' RT - 30' RT	17		
<22E>	19+73 - 19+82	23' LT - 23' LT	19		
<22E>	19+78	32' RT			1
<22E>	19+78	34' LT			1
<22E>	55+74 - 57+75	24' RT - 24' RT		192	
<22E>	55+74 - 57+75	37' LT - 37' LT		192	
<22E>	56+79 - 56+70	24' RT - 24' RT	17		
<22E>	56+79 - 50+00	37' LT - 37' LT	16		
<22E>	56+74	32' RT			1
<22E>	56+74	44' LT			1
		TOTAL	69	768	4

GENERAL NOTES:
- SEE STANDARD PLAN 5-297.433 SUBSURFACE DRAINS.
- SEE STANDARD PLATE 3131 PRECAST CONCRETE HEADWALL FOR SUBSURFACE DRAINS.

UTILITY / CITY CONTACTS — T

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FIRE CHIEF
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NO	DATE	BY	CKD	APPR	REVISION
1	02/09/2024	MP	NJD		CORRECTED APRON UNITS AND REVISED CULVERT TAB QUANTITIES
					CHANGED 24" RC PIPE APRON TO 24" RC SAFETY APRON
					REMOVED ROLLED EROSION CONTROL PRODUCT (NOT IN PLAN)

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TABULATIONS
UTILITY / CITY CONTACTS

1. TOP OF THE GRADING SUBGRADE (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. WHERE MATCHING INTO INPLACE CROSSROADS, CUT VERTICALLY TO THE BOTTOM OF THE INPLACE SURFACING OR TO THE BOTTOM OF NEW SURFACING DESIGN, WHICHEVER IS DEEPER, THEN AT A 1:4 TAPER TO THE BOTTOM OF THE RECOMMENDED SUBGRADE EXCAVATION.

14. WHERE WIDENING ADJACENT TO EXISTING PAVEMENT, CUT VERTICALLY TO THE BOTTOM OF THE CLASS 5 AGGREGATE BASE AND THEN AT A 1V:1/2H SLOPE TO THE BOTTOM OF THE RECOMMENDED SUBGRADE EXCAVATION (AS SHOWN ON THE TYPICAL SECTIONS AND THE CROSS SECTIONS). BACKFILL PROMPTLY TO AVOID UNDERMINING THE EXISTING PAVEMENT.

15. 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.

16. 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.

17. EMBANKMENT QUANTITIES SHOWN ON THE EARTHWORK TABULATION REPRESENT ALL EARTHWORK QUANTITIES BELOW THE PROPOSED GRADING GRADE OF ALL PERMANENT ROADWAYS AND TOPSOIL DRESSING. QUANTITIES REQUIRED ABOVE THE GRADING GRADE ARE PROVIDED IN DETAIL ON THE BITUMINOUS SUMMARY TAB AND CONCRETE TAB.

18. 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.

19. 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.

20. 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.

21. 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.

22. INPLACE BITUMINOUS PAVEMENT RANGES FROM 1.5" TO 5.5" THICK (AVERAGE 3.5"). FOR INFORMATION ONLY, NO WARRANTY IS MADE OR IMPLIED WITH THIS INFORMATION. CONTRACTOR MAY VERIFY PAVEMENT DEPTH PRIOR TO PLACING BID.

23. COMPACTION OF AGGREGATE BASE SHOULD BE IN ACCORDANCE WITH MnDOT "MODIFIED PENETRATION INDEX METHOD." COMPACTION OF SELECT GRANULAR MATERIAL SHOULD BE IN ACCORDANCE WITH MnDOT "SPECIFIED DENSITY METHOD."

24. COMPACTION OF THE SHOULDER BINDER BITUMINOUS LIFTS SHALL BE BY THE "SPECIFIED DENSITY METHOD." COMPACTION OF MAINLINE WEAR AND ENTRANCES SHALL BE BY THE "QUALITY COMPACTION METHOD."

25. 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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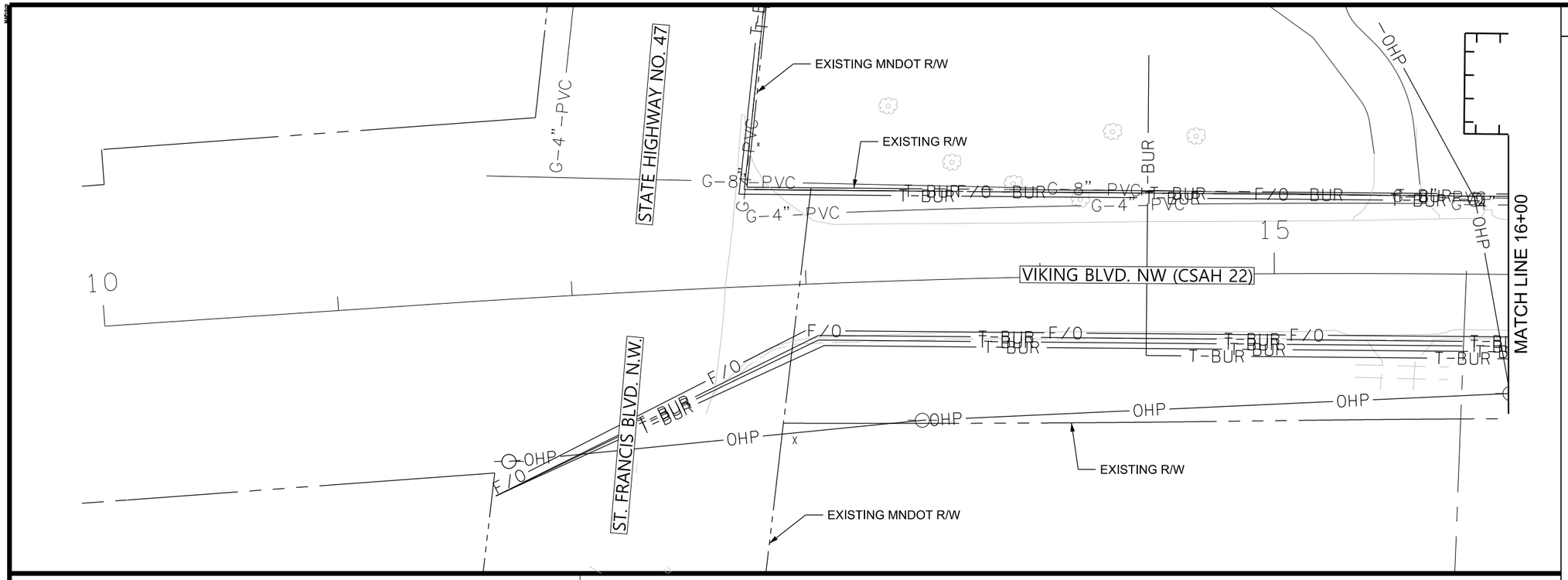
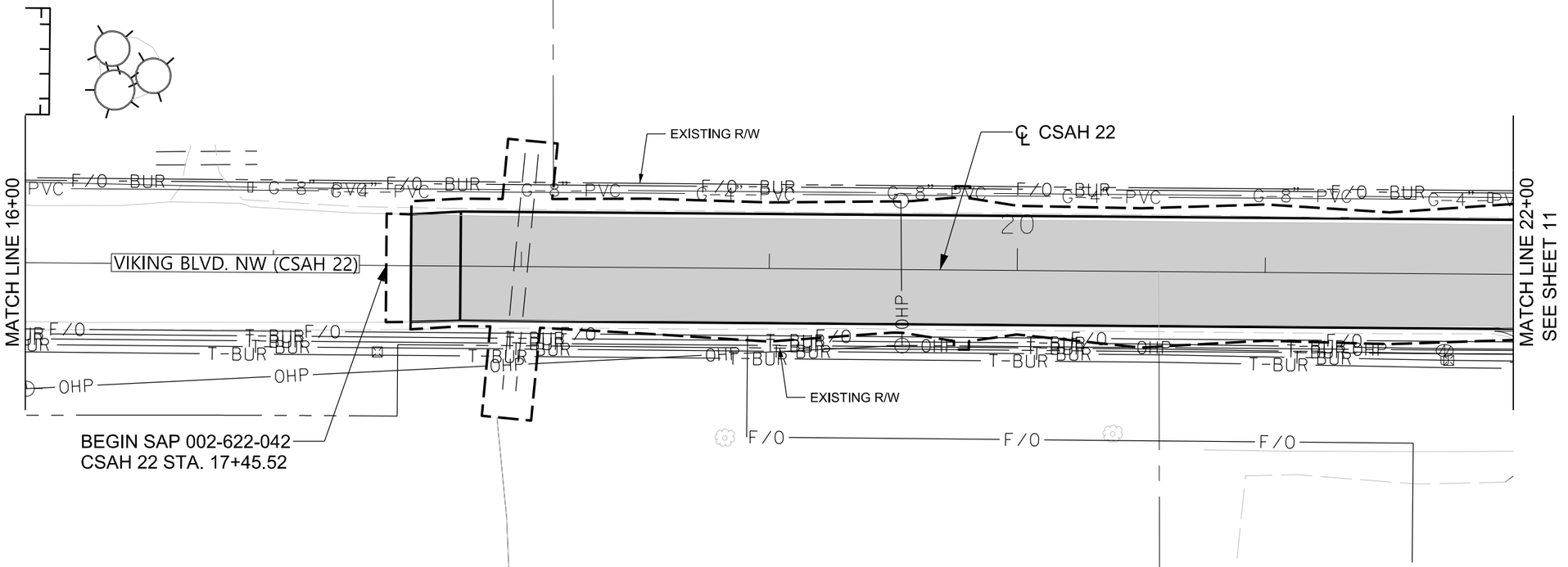
SOILS AND CONSTRUCTION NOTES

Sheet 9 of 123 Sheets





LEGEND

- CONSTRUCTION LIMITS
- G — CENTERPOINT ENERGY
- F/O — CENTURYLINK FIBER
- T-BUR — CENTURYLINK BURIED
- TV-BUR — COMCAST
- OHP — CONNEXUS
- F/O BUR — ZAYO
- PEDESTAL
- METER
- UTILITY POLE
- WETLAND BOUNDARIES
- INPLACE CULVERT
- PROPOSED ROADWAY
- EXISTING ROADWAY TO BE REMOVED

N

0 50
SCALE IN FEET

1 OF 5

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-622-042 Whitetopping\Plan\002622042_UT1_P1.dgn 01/09/2024 1:03:22 PM

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SIGNATURE:
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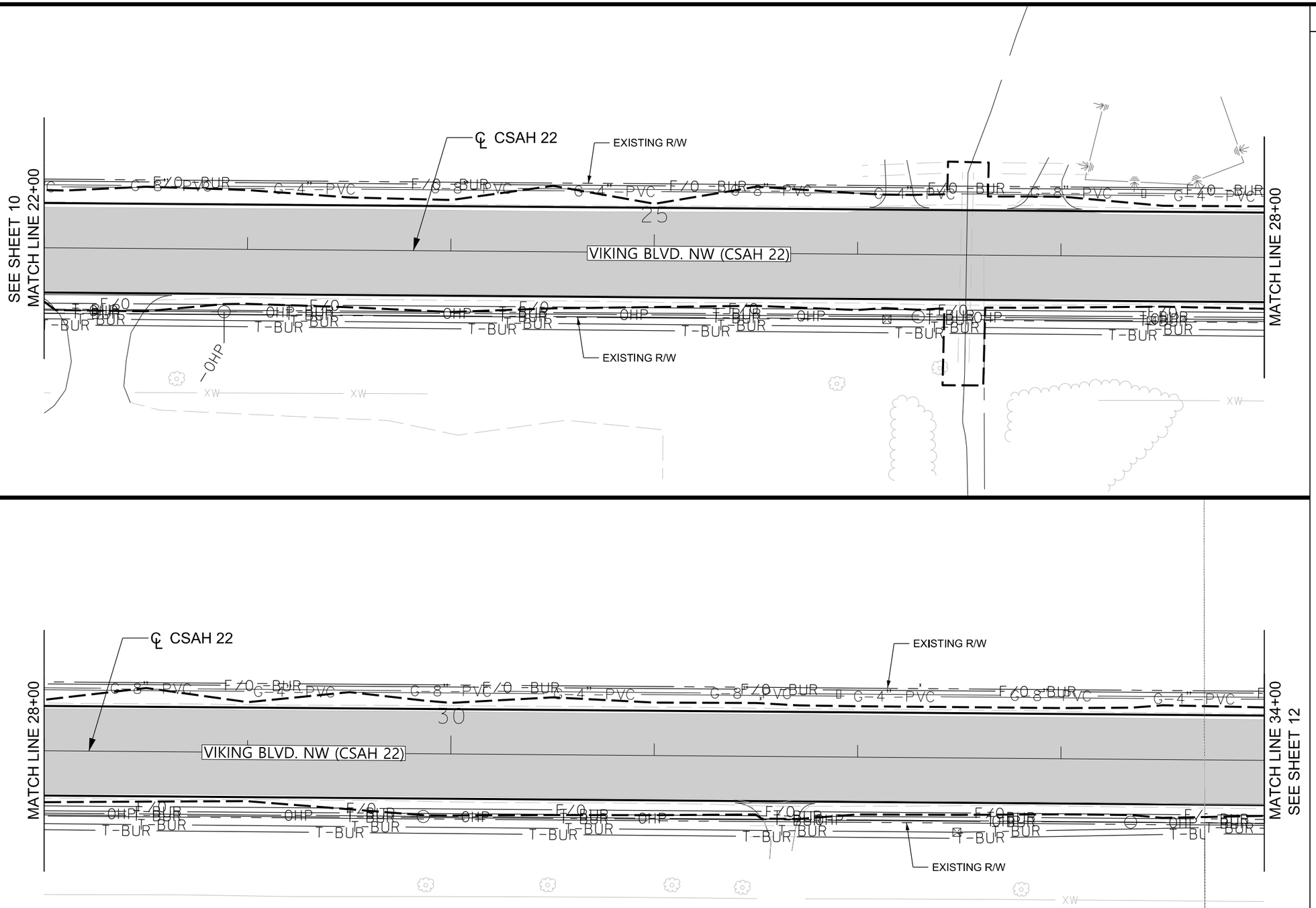
SAP 002-622-042

INPLACE UTILITIES
STA 17+45.52 TO 22+00

Sheet 10 of 123 Sheets



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- CONSTRUCTION LIMITS
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- CENTURYLINK BURIED
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- PROPOSED ROADWAY
- EXISTING ROADWAY TO BE REMOVED

0 50
SCALE IN FEET

2 OF 5

NO	DATE	BY	CKD	APPR	REVISION

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ANOKA COUNTY HIGHWAY DEPT.

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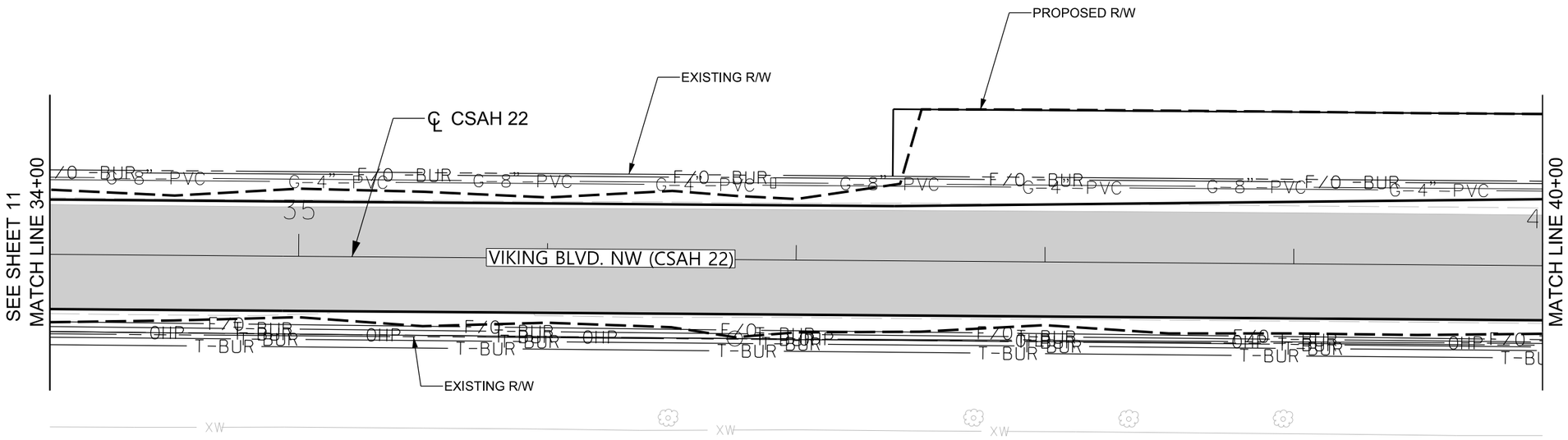
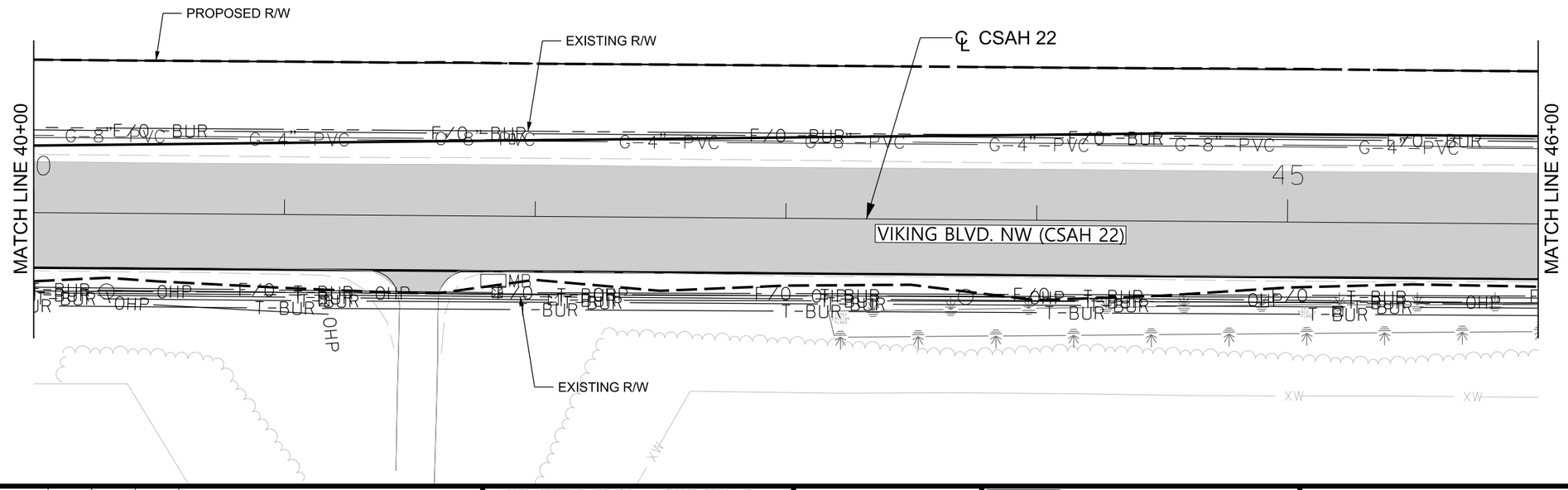
INPLACE UTILITIES

STA 22+00 TO 34+00

Sheet 11 of 123 Sheets





LEGEND

- CONSTRUCTION LIMITS
- CENTERPOINT ENERGY
- CENTURYLINK FIBER
- CENTURYLINK BURIED
- COMCAST
- CONNEXUS
- ZAYO
- PEDESTAL
- METER
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- WETLAND BOUNDARIES
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- PROPOSED ROADWAY
- EXISTING ROADWAY TO BE REMOVED

N

0 50
SCALE IN FEET

3 OF 5

NO	DATE	BY	CKD	APPR	REVISION

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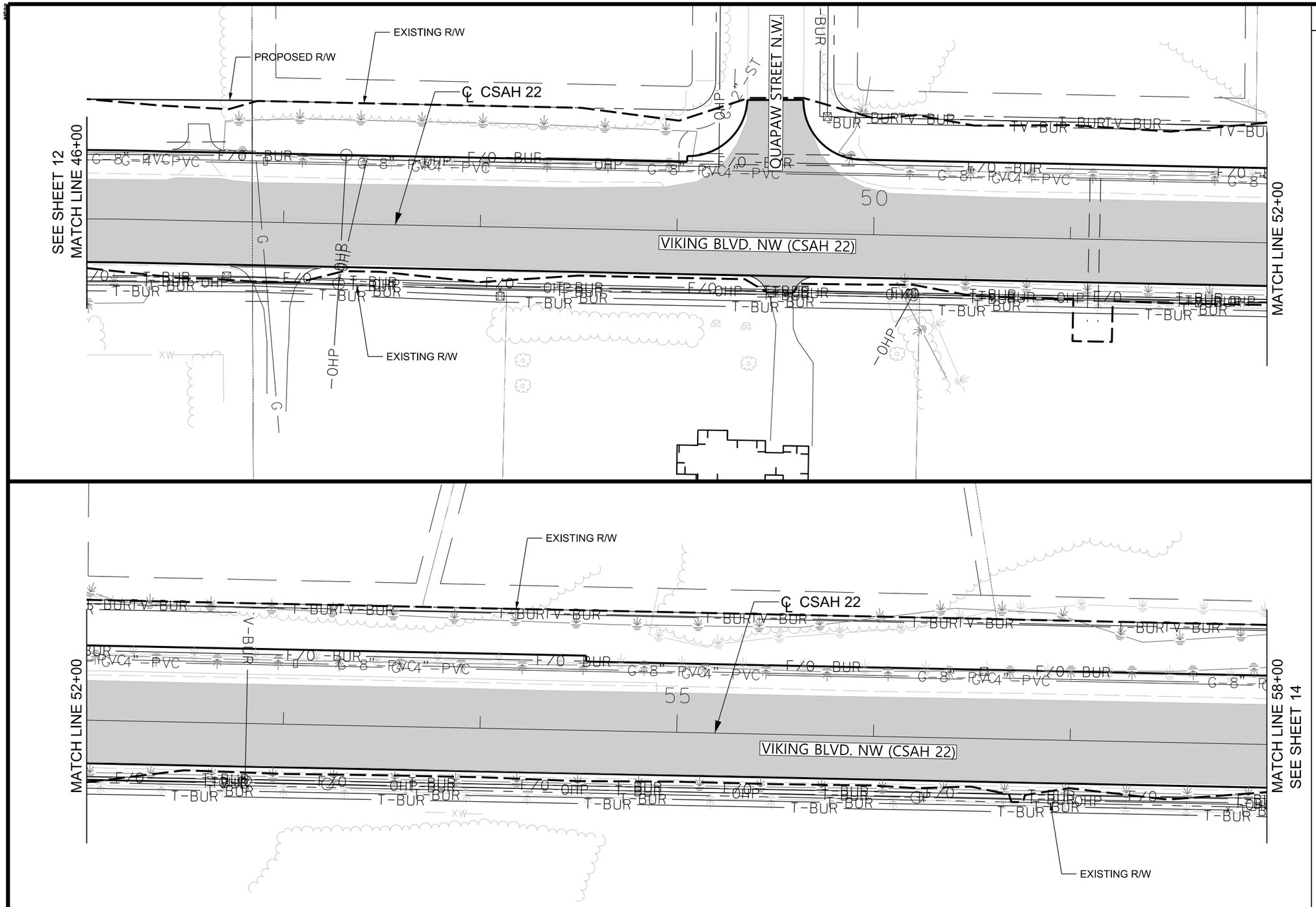
SAP 002-622-042

INPLACE UTILITIES

STA 34+00 TO 46+00

Sheet 12 of 123 Sheets



LEGEND

- CONSTRUCTION LIMITS
- G — CENTERPOINT ENERGY
- F/O — CENTURYLINK FIBER
- T-BUR — CENTURYLINK BURIED
- TV-BUR — COMCAST
- OHP — CONNEXUS
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- METER
- UTILITY POLE
- WETLAND BOUNDARIES
- INPLACE CULVERT
- PROPOSED ROADWAY
- EXISTING ROADWAY TO BE REMOVED

N

SCALE 0 50 IN FEET

4 OF 5

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-622-042 Whitetopping\Plan\002622042_UT1_P4.dgn 01/09/2024 1:04:00 PM

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ANOKA COUNTY

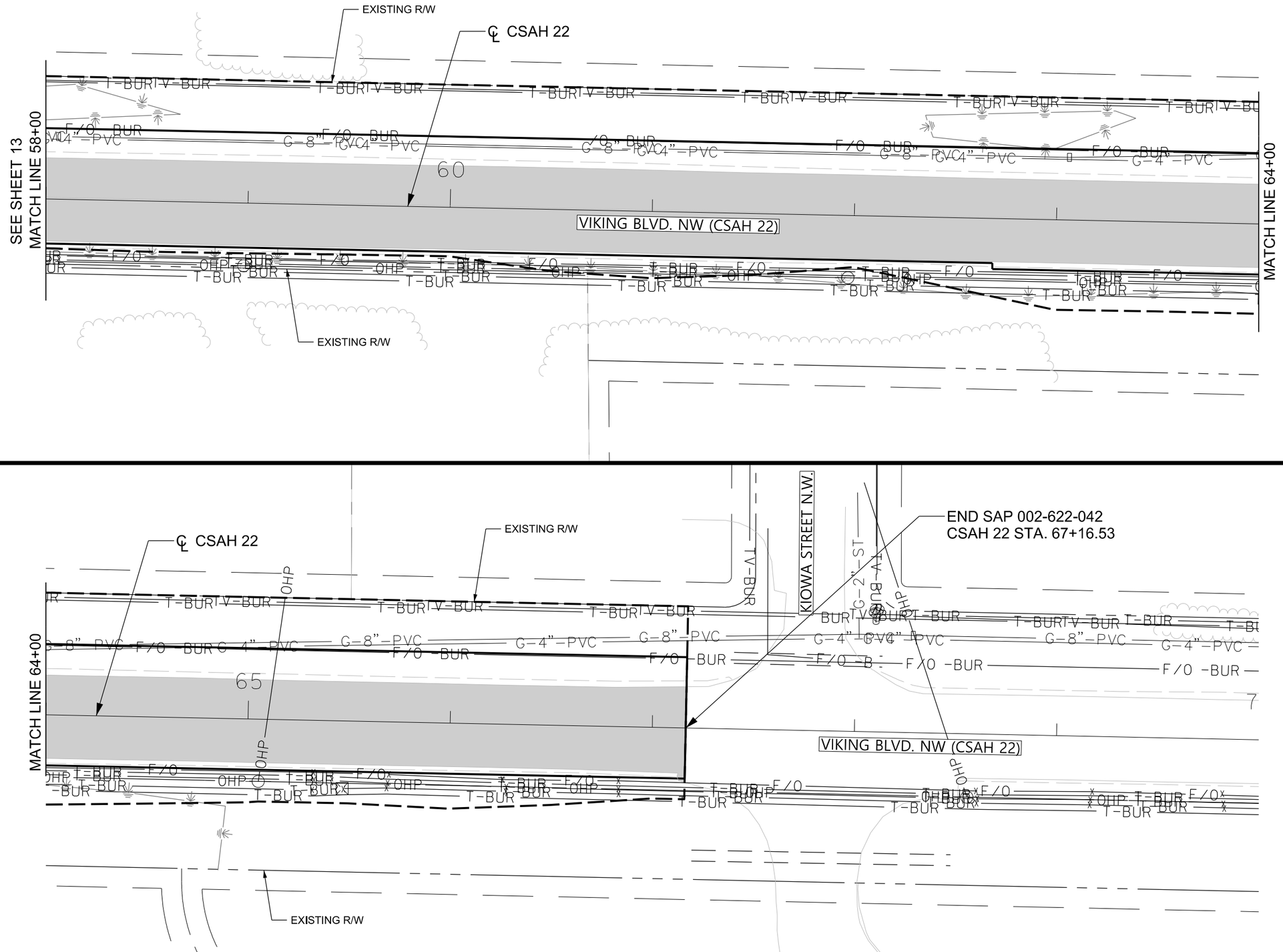
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

INPLACE UTILITIES

STA 46+00 TO 58+00

Sheet 13 of 123 Sheets



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- CONSTRUCTION LIMITS
- CENTERPOINT ENERGY
- CENTURYLINK FIBER
- CENTURYLINK BURIED
- COMCAST
- CONNEXUS
- ZAYO
- PEDESTAL
- METER
- UTILITY POLE
- WETLAND BOUNDARIES
- INPLACE CULVERT
- PROPOSED ROADWAY
- EXISTING ROADWAY TO BE REMOVED

SCALE 0 50 IN FEET

5 OF 5

NO	DATE	BY	CKD	APPR	REVISION

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ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

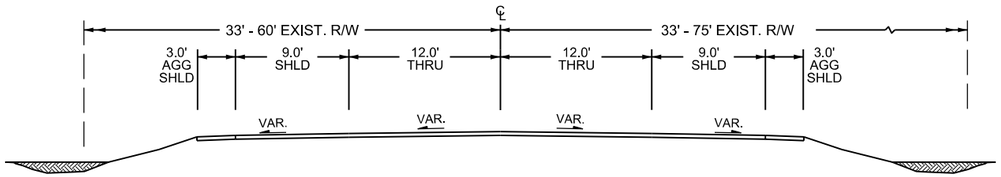
INPLACE UTILITIES

STA 58+00 TO 67+16.53

Sheet 14 of 123 Sheets

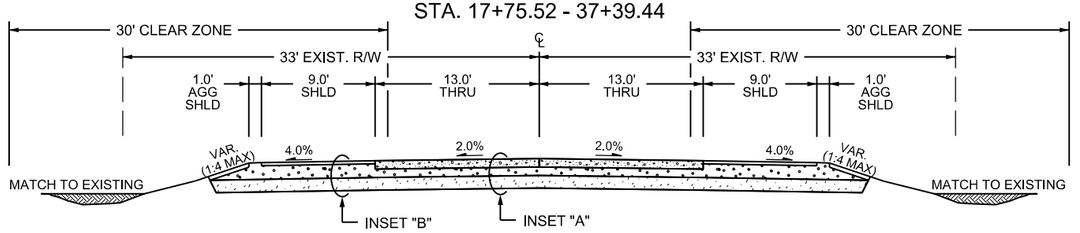
EXISTING CSAH 22

STA. 17+45.52 - 67+16.53



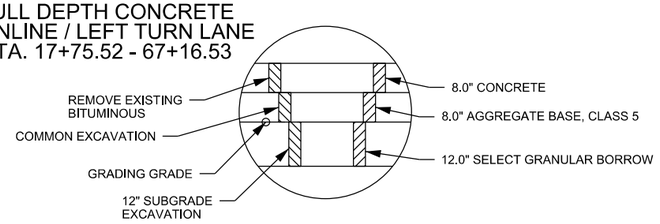
PROPOSED CSAH 22

STA. 17+75.52 - 37+39.44



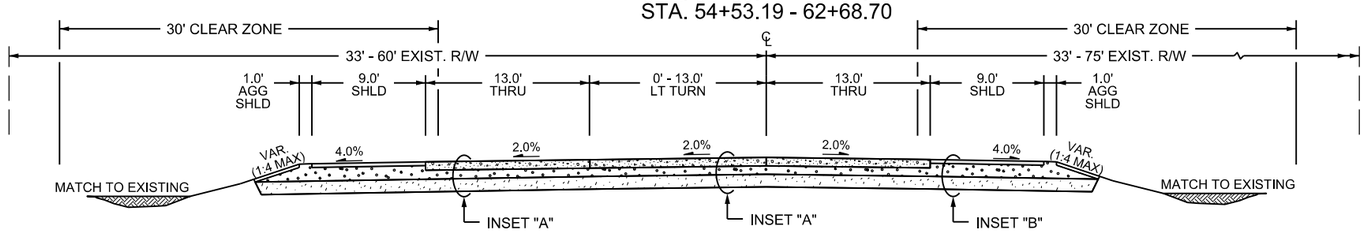
INSET "A"

FULL DEPTH CONCRETE
MAINLINE / LEFT TURN LANE
STA. 17+75.52 - 67+16.53



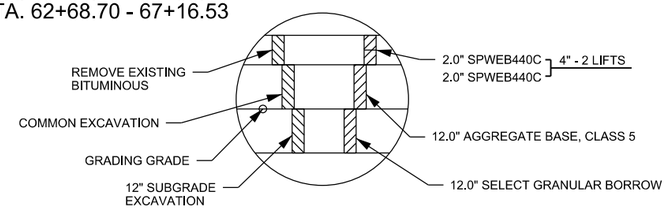
PROPOSED CSAH 22

STA. 37+39.44 - 49+04.45
STA. 54+53.19 - 62+68.70



INSET "B"

RIGHT TURN LANE / SHOULDER
STA. 49+04.45 - 54+53.19
STA. 62+68.70 - 67+16.53



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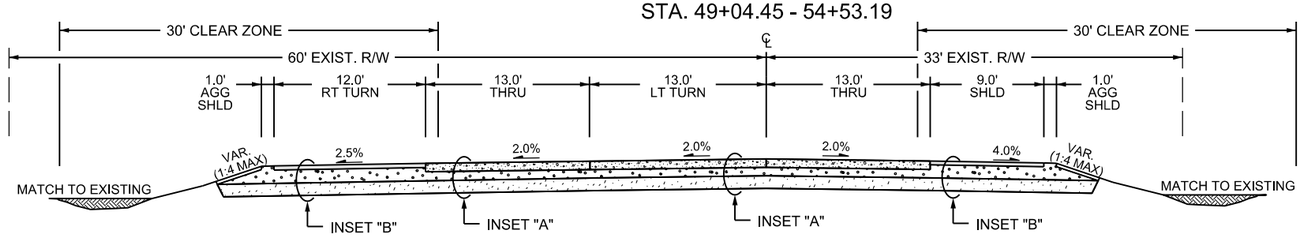
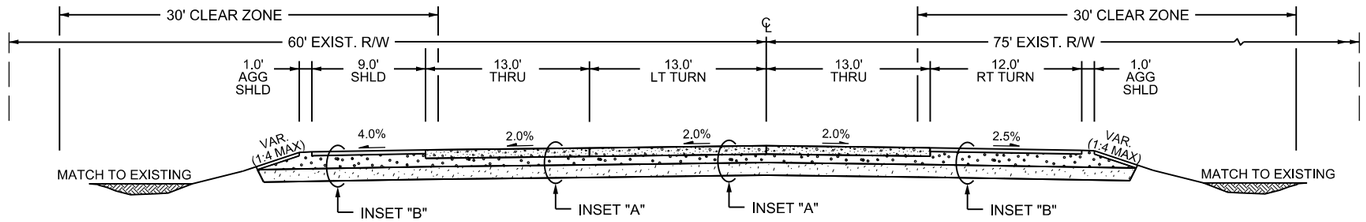


PROPOSED CSAH 22

STA. 62+68.70 - 67+16.53



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.
- CONCRETE LANE WIDTH DIMENSIONS ARE MEASURED FROM JOINT TO JOINT.
- BITUMINOUS AND AGGREGATE DIMENSIONS ARE MEASURED ACROSS SURFACE WIDTH.
- 4.0" TOPSOIL AND SEED ON ALL DISTURBED AREAS.
- SEE CONSTRUCTION PLAN AND CROSS SECTIONS FOR EXACT RIGHT OF WAY LOCATION.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-622-042 Whitetopping\Plan\002622042_TYP.dgn 01/09/2024 1:04:22 PM

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SIGNATURE:

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ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

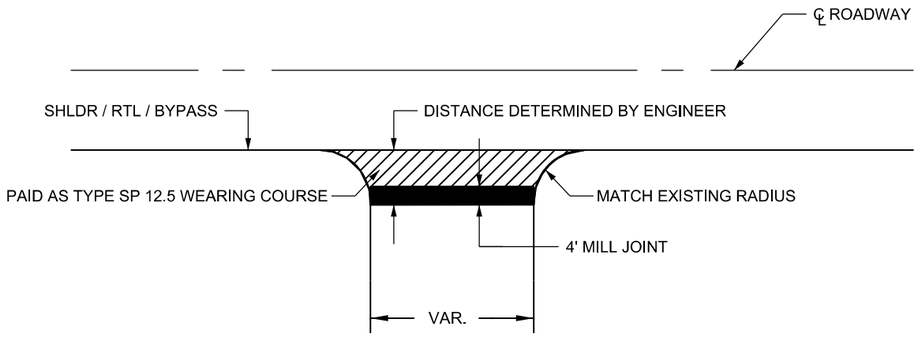
SAP 002-622-042

TYPICAL SECTIONS AND INSETS

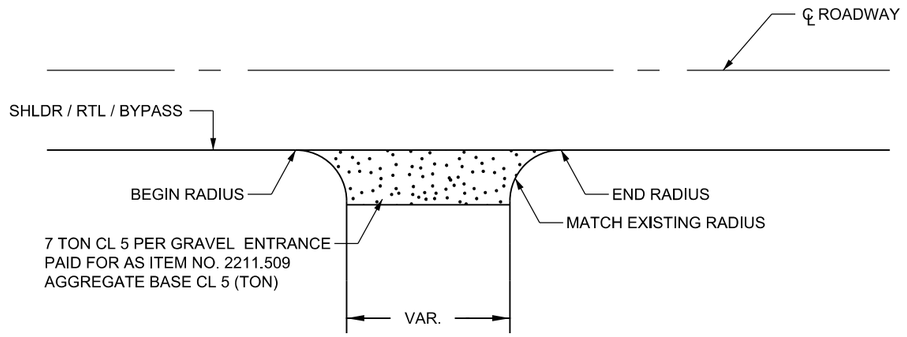
Sheet 15 of 123 Sheets

PAVED STREET APPROACHES

QUAPAW STREET



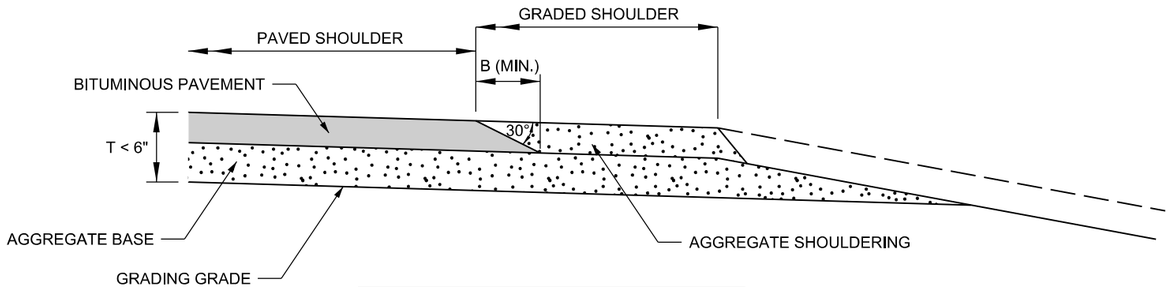
GRAVEL / FIELD ENT.



SAFETY EDGE

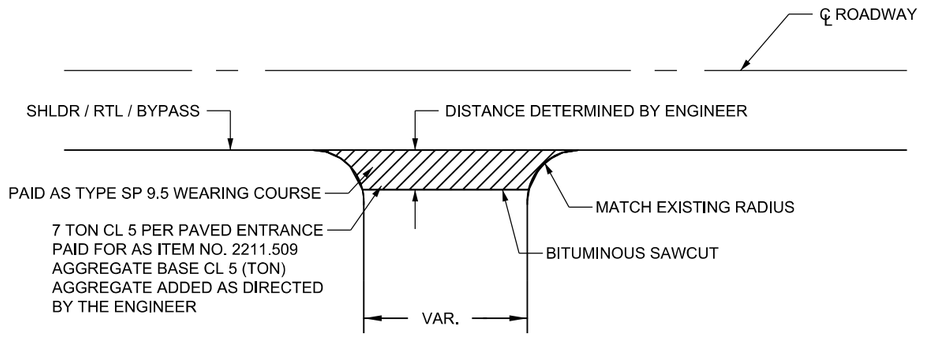
BITUMINOUS PAVEMENT < 6" THICK

SAFETY EDGE TO BE USED IN ALL NON-CURB AREAS
ON SHOULDER/RIGHT-TURN LANES



DEPTH, T (IN.)	B (IN.)	AREA (½T*B)
2	3.5	3.5 SQ. IN. (0.024 SQ. FT.)
3	5.2	7.8 SQ. IN. (0.054 SQ. FT.)
4	6.9	14 SQ. IN. (0.096 SQ. FT.)
5	8.7	22 SQ. IN. (0.15 SQ. FT.)

PAVED DRIVEWAY



NO	DATE	BY	CKD	APPR	REVISION

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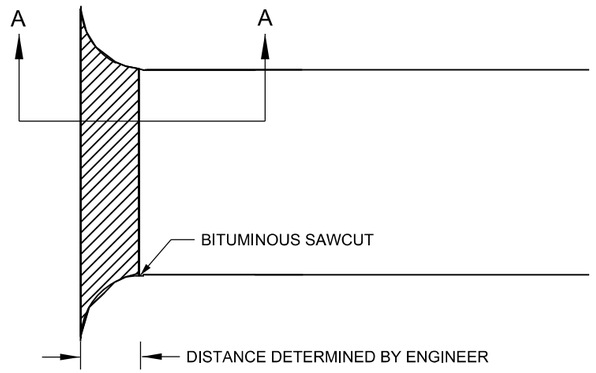
ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-622-042

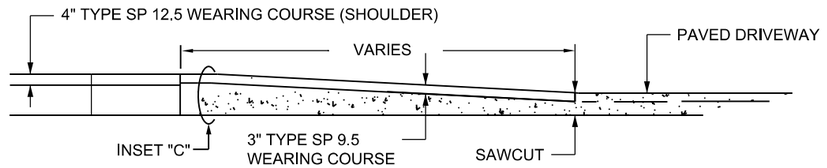
MISCELLANEOUS DETAILS

Sheet 16 of 123 Sheets

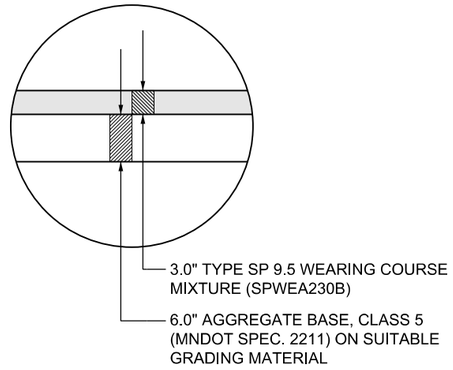
PAVED DRIVEWAYS JOINT DETAIL



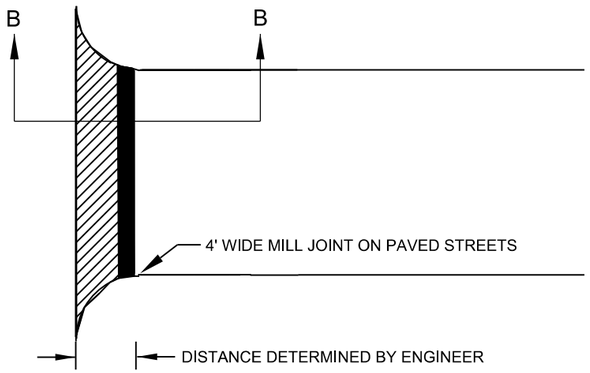
DRIVEWAY JOINT DETAIL A - A



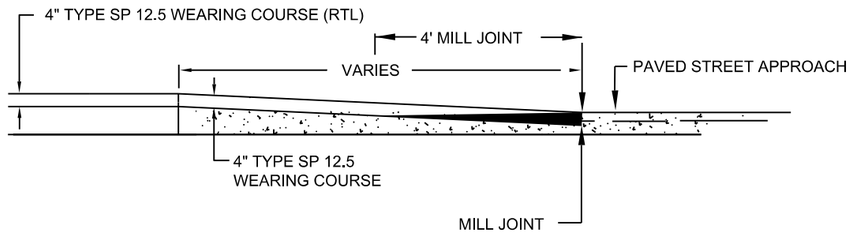
INSET "C"
BITUMINOUS DRIVEWAYS



PAVED STREET JOINT DETAIL

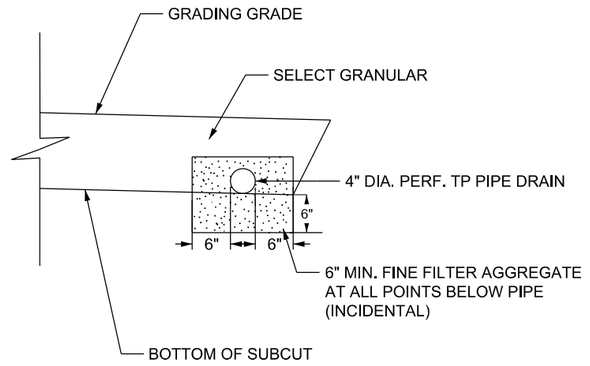


PAVED STREET JOINT DETAIL B - B



SUBSURFACE DRAIN DETAIL

SEE STANDARD PLAN 5-297.433 FOR MORE INFORMATION
SEE TABULATIONS FOR LOCATIONS



NO	DATE	BY	CKD	APPR	REVISION
2	02/16/2024	MP	NJD		ADDED SUBSURFACE DRAIN DETAIL

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ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

MISCELLANEOUS DETAILS

Sheet 17B of 123 Sheets

Minnesota Department of Transportation
Best Management Practices (BMP) for
Concrete Washout
May 2009, v5

The NPDES permit requires that concrete washout be managed on all construction projects. This document is Mn/DOT's interpretation of MPCA's guidance on concrete washout dated February 2009, and describes recommended best management practices for concrete washout. As improvements in technology occur for managing liquid and solid concrete washout materials, the department will amend this guidance document.

Mn/DOT Guidance: The NPDES construction permit requires concrete washout management (Part IV.F.4) on every project that uses concrete and concrete products, with SWPPP amendments (Part III.A.5 & Part III.A.7) as necessary to prevent the discharge of concrete liquids and uncured solids from making contact with soils unless in defined containment Best Management Practices (Part V.C & MS4 Permit).

- Accidental Discharge. If concrete washout makes accidental contact with soils or discharges to waters of the state, state law requires notifying (Minn R 7045.0468 Subp 6) the State duty Officer and immediately stop further discharge, remove discharge materials and restore the site to the pre-disturbance condition.
- Designated Area. The NPDES permit requires that designated concrete washout areas be posted with a sign or spray painted in a conspicuous manner, and inspected as often as necessary to function without discharge. Unless shown, the concrete washout location must be amended in the SWPPP.
- Special Location Restriction. Washout BMP must be sited more than 200 feet from a DNR public or permit listed Special Water unless robust, redundant best practice protection measures are installed and amended into the SWPPP.
- The Department reserves the right to indicate in the plans and final details where or where not concrete washout may occur.

The following options are recommended as best management practices for handling concrete truck, pump, mixer, chute, hand tools, concrete testing equipment and wheel barrow washout:

Option A: Lined Trap
Option B: Berm Trap
Option C: Dumpster
Option D: Chute Washout Systems
Option E: Concrete Truck & Pumper
Option F: Small Volume Systems

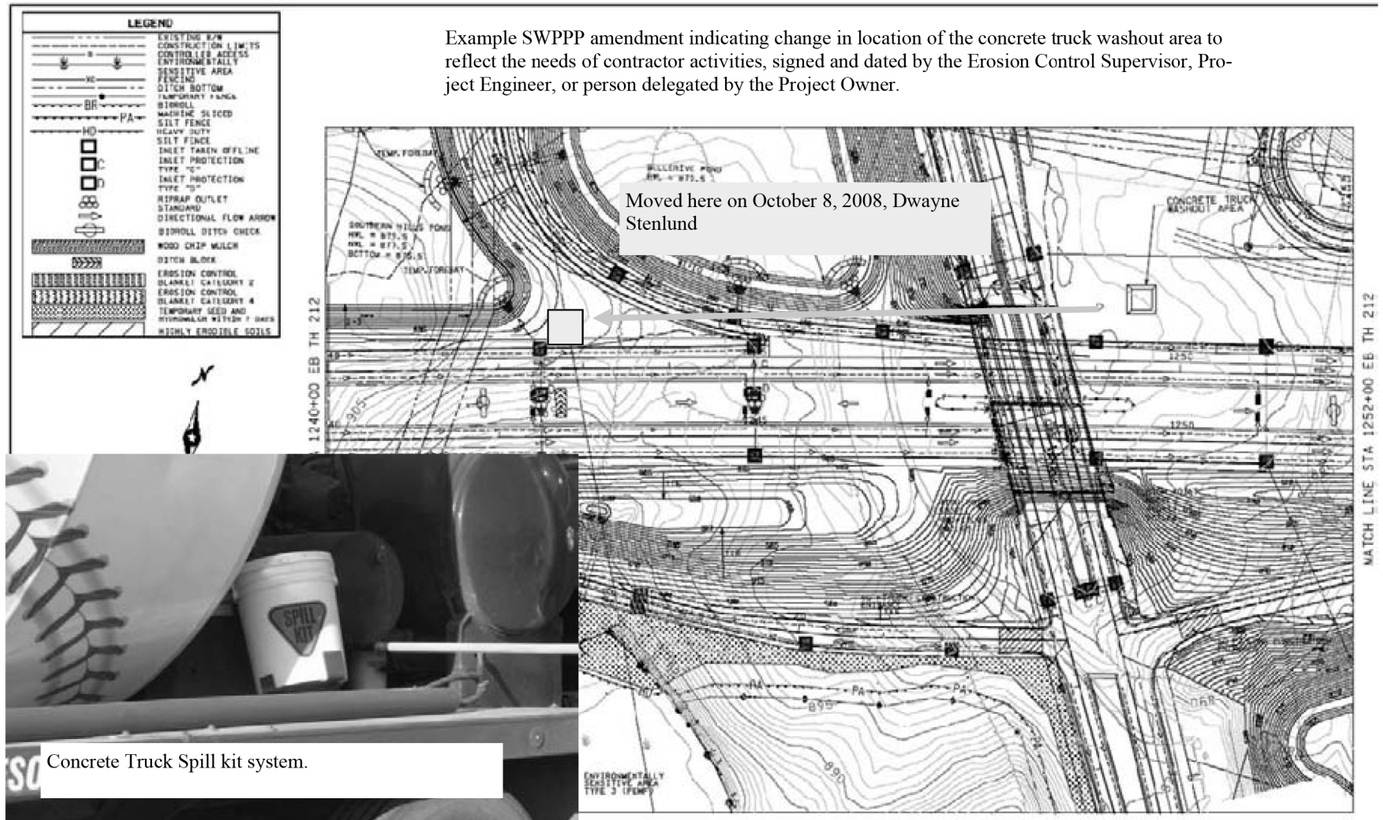
Spill Response Program: The contractor must have on hand the following items capable of capturing, containing or treating accidental discharge of concrete materials on ground and surface waters:
1. dry washed sand or wood slash mulch that can be used to temporarily solidify liquid concrete washout fluids to facilitate emergency pickup, and
2. Citric acid, dry ice or CO2 compressed gas cylinder (CO2 Sparging) to pH neutralize overflowing traps, berms, dumpsters or other emergency cementitious discharge due to weather or under-capacity trap containment conditions.

1. Prevent nuisance conditions as defined in Minn. R. 7050.0210, subp. 2
2. Compliance to the NPDES Construction and Minnesota State Disposal System (SDS) Permit of the Federal Clean Water Act, as amended, (33 U.S.C. 1251 et seq.), 40 CFR 122, 123, and 124, as amended, et seq.; Minn. Stat. chs. 115 and 116, as amended, Minn. R. chs. 7001 and 7090
3. Protection of ground and surface waters as defined in Minn. Stat. § 115.01, subd. 22
4. Beneficial reuse as defined in Minn. R. 7035.2850, subp. 4, item I

Photos shown throughout this guidance document does not constitute endorsement of any manufacturer by the Department.

Prepared by Dwayne Stenlund, CPESC #2052. Office of Environmental Services. 612-810-9409

Example SWPPP amendment indicating change in location of the concrete truck washout area to reflect the needs of contractor activities, signed and dated by the Erosion Control Supervisor, Project Engineer, or person delegated by the Project Owner.



Concrete Truck Spill kit system.


Excess and slump test solids placed on plastic until hardened. Contractor may consider installing wire or rebar hook for later pickup removal to crusher or recycling stockpile.


Discharge prevention pallet lined with disposable plastic for testing of concrete and washout of tools by Inspectors. Pallet may be made to accommodate skidsteer forks for quick pickup and discharge to defined washout trap areas until liquid evaporates and solids harden.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-622-042 Whitetopping\Plan\002622042_CONC.dgn 01/09/2024 1:04:57 PM

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ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-622-042

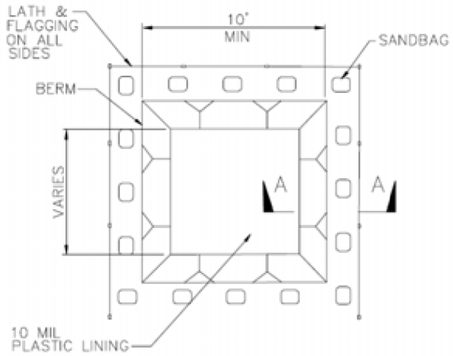
CONCRETE WASHOUT DETAILS

Sheet 18 of 123 Sheets

Minnesota Department of Transportation
BMP for Concrete Washout
May 2009, v5

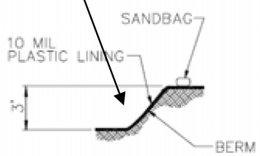
Option A: Lined Trap System.

A Lined Trap system is excavated in an area with storm water overflow protection and can consist of either a (1) plastic sheeting for all soil types that infiltrate or (2) constructed clay liner or other suitable zero infiltrating soil (Hydraulic Soil Group D). The goal is to retain the liquids until evaporation, CO_2 neutralization/settling or pump extraction. A maximum of 0.5 cu yd of cured material can be buried in trap area.



PLAN
NOT TO SCALE
TYPE "BELOW GRADE"

Slope less than maximum angle of repose for soil type, typically less than 1:2.



SECTION A–A
NOT TO SCALE

Plastic Liner with posted sign or spray painted notice for washout.

Option A, Type 1. Plastic liner for sandy soil, well head protections area, and critical soil shear area with side slope wall failure above MPCA/DNR Listed Special, or Impaired Waters. Trap size must be appropriate to expected washout volumes and allow suitable time for evaporation, or sufficient capacity for pump extraction. Sides of plastic liner can be held in place with any suitable material including sand, sand bags, rock, metal, wood logs, etc. The Type 1 Traps must be routinely maintained, and replaced as necessary to perform.

Areas with Clay soil that allow storage until evaporation of liquids

Conc Washout sign

Spray Paint 'Conc Washout' on inside poured wall containment area

Option A, Type 2. Compacted clay or Hydraulic Soils Group D Liner for low infiltration soils. Size of excavated and compacted trap must be commensurate with washout requirements for daily construction activities. Maintenance must be sufficient to prevent overflows due to excess washout, trackout and storm water. The contractor may washout concrete slurries behind poured walls as long as there is no connection to the soil below nor drain-tiled, and 100 percent of material remains contained until evaporation or extraction. No concrete washout may occur if dewatering is or may be required to complete the fill of abutment or footing.

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SIGNATURE:
DATE: 01/09/2024 LICENSE NO. 49046

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ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-622-042

CONCRETE WASHOUT DETAILS

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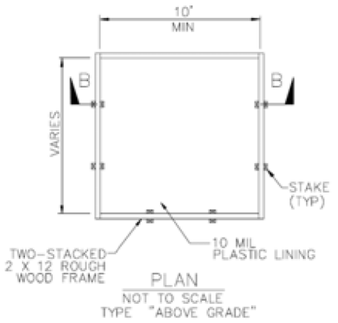
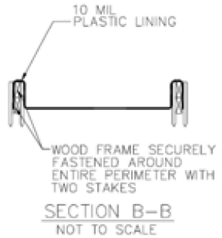
Option B: Berm Trap System.

A Berm Trap System may consist of raised walls constructed from wood or wood slash (3882 Type 5 Mulch Material), straw bales, Compost Filter Logs, sand bags, soil, lined concrete barriers, or any suitable strength materials to contain concrete washout liquids and solids until evaporation, curing, or extraction and final removal. No material can be left in place once operations are completed for that area.



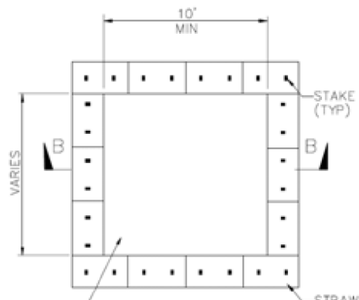
PLAN
NOT TO SCALE
TYPE "ABOVE GRADE"



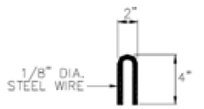
SECTION B–B
NOT TO SCALE

NOTES

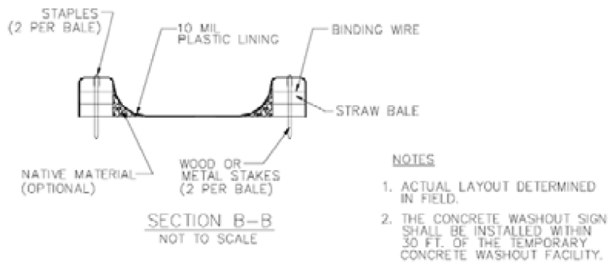
1. ACTUAL LAYOUT DETERMINED IN FIELD.
2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30 FT. OF THE TEMPORARY CONCRETE WASHOUT FACILITY.



PLAN
NOT TO SCALE
TYPE "ABOVE GRADE"
WITH STRAW BALES



STAPLE DETAIL



SECTION B–B
NOT TO SCALE

NOTES

1. ACTUAL LAYOUT DETERMINED IN FIELD.
2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30 FT. OF THE TEMPORARY CONCRETE WASHOUT FACILITY.

High cohesive, low infiltration soil berm

Concrete washout tote

Superduty washout berm

Sealed or plastic lined wood washout box

Slash mulch filter ring on low infiltration soils

Mixing sand berm with plastic liner

2x10 plastic and geotextile box, with 2x4 cleats for front loader pickup and movement

Granular berm and plastic liner

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ANOKA COUNTY
HIGHWAY DEPT.

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CONCRETE WASHOUT DETAILS

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BMP for Concrete Washout
May 2009, v5

Option C: Dumpster System.

A dumpster washout system is any commercial or retro-fitted leak-proof dumpster capable of holding liquid and solid concrete washout materials until final treatment and disposal. There are commercial companies available to manage and treat all liquid wastes and recycle all solids. Prevent comingling of other solid wastes with concrete washout materials.

Various concrete liquid and solid dumpster systems sized to store all materials until liquid evaporates or vacuum removed and treated by commercial operators. 4

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CONCRETE WASHOUT DETAILS

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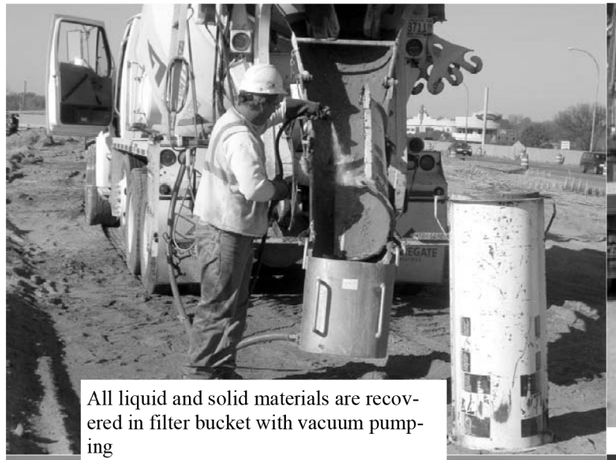
Option D: Chute Washout System

Two commercial types known include (1) a portable truck mounted pump recovery system, and (2) portable truck mounted pull behind wash tank. A locally manufactured system includes a portable truck mounted plastic trough and reinforced insulated wash box with sealed transport lid.

All devices appear capable of containing all concrete liquids and solids, or possess the ability to separate the liquids from the aggregate.

At the request of the ready mix operator, the clean washed aggregate may be left in suitable grade areas as determined by the Project Engineer or may be reused as concrete aggregate once processed to comply with Mn/DOT Specifications. At this time, all similar chute washout systems appear equal in ultimate performance goal of leaving no trace of concrete washout residues. Due to the nature of the liquid waste recovery system, there are no restrictions on where the operator may washout the chutes, tools, test equipment, and any portion of the truck that directly drains into to the filter apparatus. **A washout sign is not required for chute washout systems.** Mn/DOT concrete inspectors are allowed to deposit tool wash water into the filter bucket system at the discretion of the concrete producer. The contractor is advised not to wash-off truck parts and equipment that does not flow back into the chute system unless performed in designated equipment wash-off areas indicated in the SWPPP or SWPPP amendments.



All liquid and solid materials are recovered in filter bucket with vacuum pumping

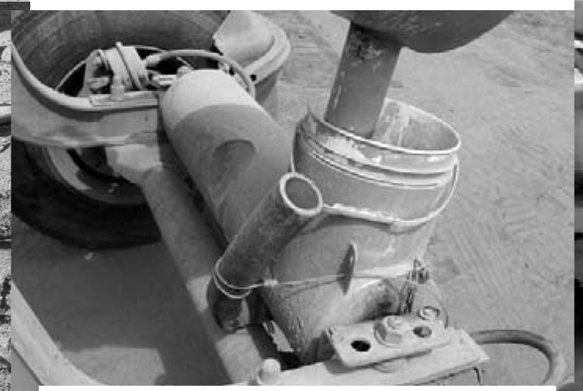
Chute funnel installed onto chute section, prior to lowering chute funnel port to tank opening.

Chute Washout System, mounted on metal carriage.

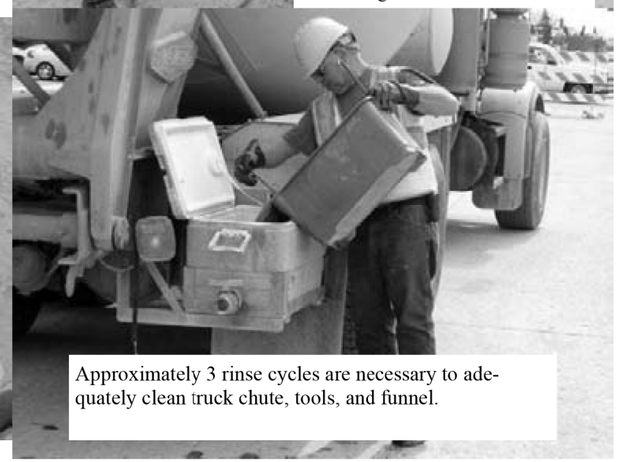
Wash tank with slotted filter bucket installed in tank port.

Plastic wash trough mounted with rebar hooks to chute, capable of containing rinse wash water and

Final rinsing of aggregate.



Gravity Drain tube for decanting liquid waste from tank into drum, secured during wash tank filling.



Approximately 3 rinse cycles are necessary to adequately clean truck chute, tools, and funnel.

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CONCRETE WASHOUT DETAILS

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Option E: Concrete Truck & Pumper

Certain operations involving pumper trucks that require priming and end flush cleaning will require special consideration of washout management. Empty concrete truck tank discharge is the process of total containment during high volume preparation and final cleaning of boom pipes and hoses. Final hopper and pump motor cleaning can use Options A through C, front loader bucket, or other Project Engineer accepted plan, and as amended in the SWPPP. Depending on concrete pumper location (ie. well head protection area, sand soils, etc.), concrete perimeter control using super duty barrier and liner, sand, sand bags and plastic or plywood liners may be required to prevent discharge to ground and surface waters during pump hopper loading. If liquid or solid material spills to the soil surface, remove at a frequency to prevent loss to ground or surface waters of the state, and clean by removal of contaminated soil areas to trap areas amended to the SWPPP.

Pumper grout slurry discharge form box

Plastic liner with 2x4 wood perimeter containment system during concrete transfer operations to pumper truck.

Priming or washing out of pumper truck into empty concrete truck for total containment of washout slurry.

Concrete Slurry Perimeter control using super duty barrier, aggregate filter toe, and slash mulch filter berms of pumper loading area

Final remnant of pumper hopper washout into designated and signed washout trap.

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CONCRETE WASHOUT DETAILS

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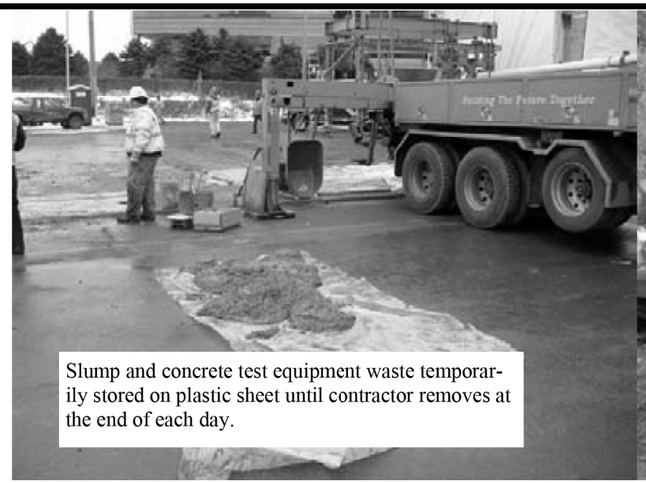
Minnesota Department of Transportation
BMP for Concrete Washout
May 2009, v5

Option F: Small Volume

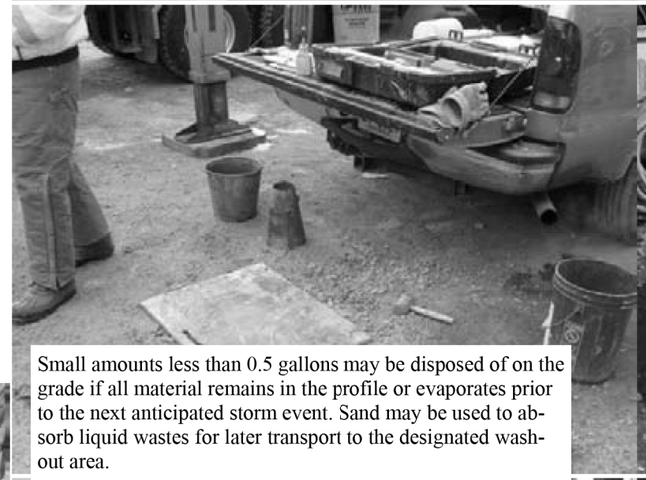
Concrete shaping, forming, and inspection operations involving concrete test equipment, tools, and other small items including trowels, forms, wheelbarrows, boots, and gloves that require washout and/or cleaning will require special consideration of washout management. All items must be cleaned or washed in a manner consistent with the requirements described in this guidance document such that liquids and solids from the cleaning operations do not enter ground or surface waters of the state. This can be accomplished by washing items by any method described in this guidance document, or other Project Engineer accepted plan, and as amended in the SWPPP. Less than 0.5 gallons of liquid wash waste may be disposed on the grade. If wash liquid or solid material spills to the soil surface, remove at a frequency to prevent loss to ground or surface waters of the state, and clean by removal of contaminated soil areas to concrete washout trap areas and as amended to the SWPPP.



Slump and concrete test equipment waste temporarily stored on plastic sheet until contractor removes at the end of each day.

Small quantity concrete wash water into bermed plastic lined trap

Traditional designated washout areas can be used for rinse water until evaporation.

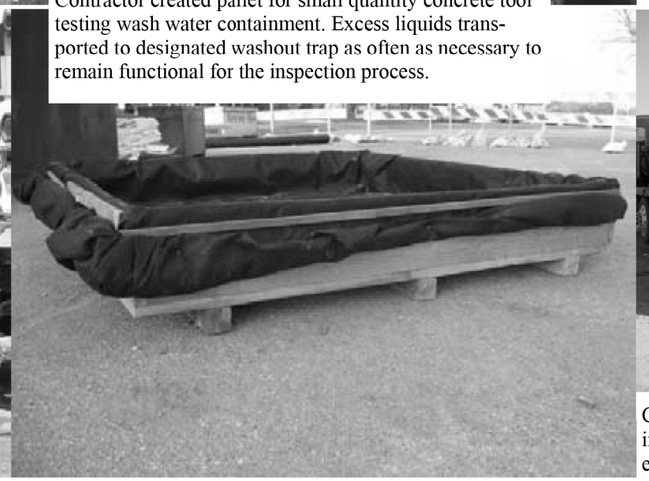


Small amounts less than 0.5 gallons may be disposed of on the grade if all material remains in the profile or evaporates prior to the next anticipated storm event. Sand may be used to absorb liquid wastes for later transport to the designated washout area.

Contractor created pallet for small quantity concrete tool testing wash water containment. Excess liquids transported to designated washout trap as often as necessary to remain functional for the inspection process.

Small quantity wash water placed on grade where equipment washoff has been designated in the SWPPP, in areas to receive permanent pavements.

Temporary rinse buckets used during testing operations, with liquids transported back into the ready mix truck to batch plant



Concrete bucket washout and solids management placed in contractor developed containment box, maintained each day of ready mix operations.

7

7 OF 7

NO	DATE	BY	CKD	APPR	REVISION

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ANOKA COUNTY
HIGHWAY DEPT.

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CONCRETE WASHOUT DETAILS

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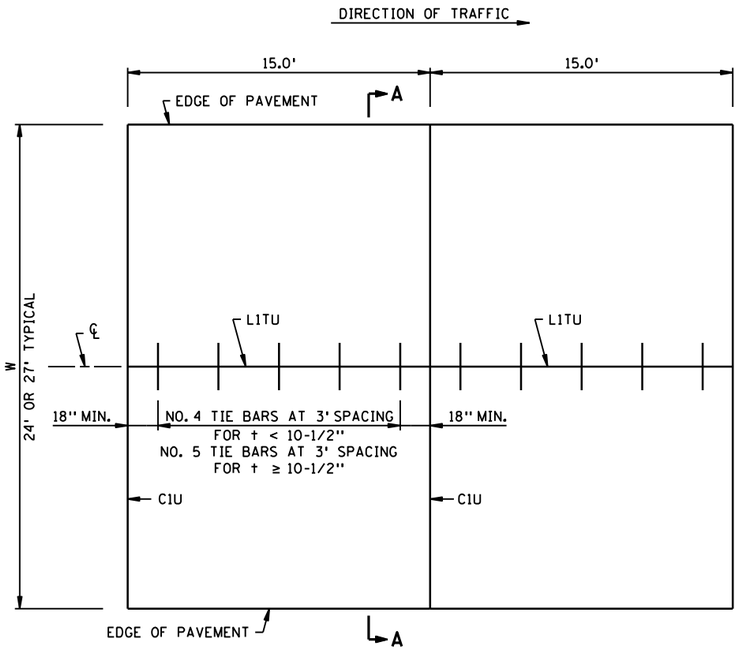

MAINLINE PAVEMENT
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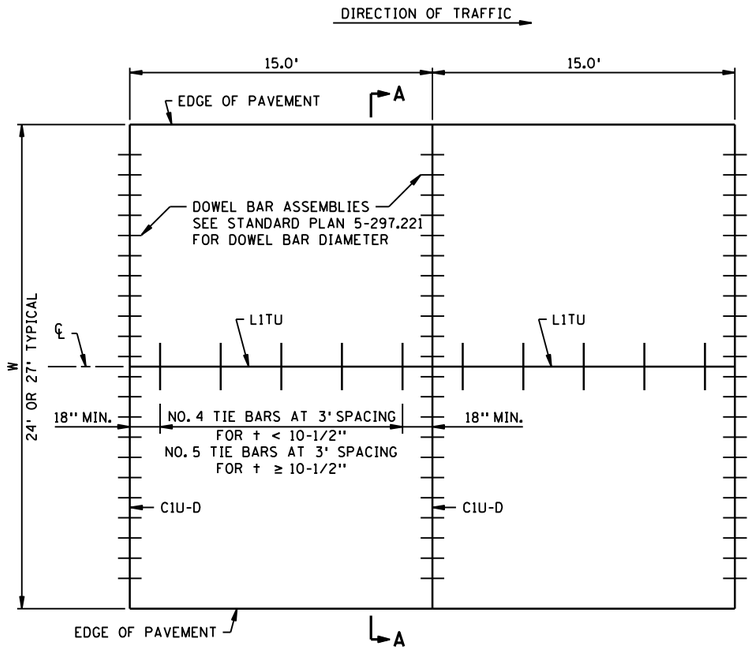

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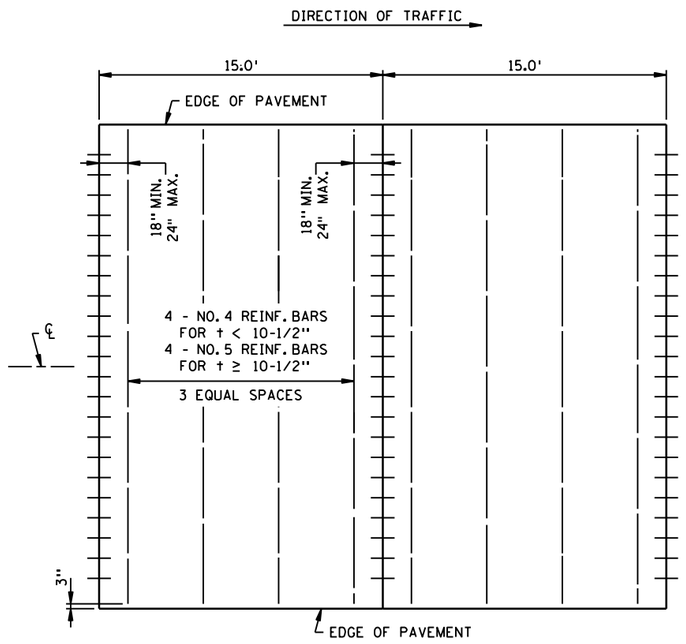
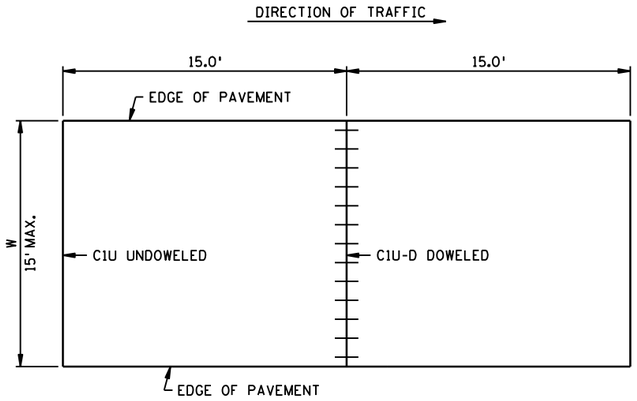
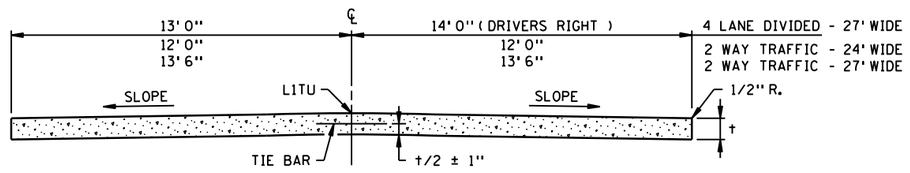
DOWELED



PANEL REINFORCEMENT



PAVEMENT 2 FT. THRU 15 FT. WIDTH
UNDOWELED OR DOWELED



SECTION A-A

GENERAL NOTES:

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

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.

PANEL REINFORCEMENT:
PLACE IN PANELS WHERE PAVEMENT WIDTH EXCEEDS 15.0' WITHOUT A LONGITUDINAL JOINT. PLACEMENT DEPTH SHALL BE PLANNED †/2 ± 1". IT IS PREFERRED TO ADD A LONGITUDIDNAL JOINT RATHER THAN PAVE GREATER THAN 15' IN WIDTH.

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

01/09/2024

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.217 | 1 OF 2

APPROVED: 2-16-2016
REVISED:

STATE DESIGN ENGINEER

CONCRETE MAINLINE PAVEMENT
15.0 FT. PANEL LENGTH
RURAL

SAP 002-622-042

SHEET NO. 25 OF 123 SHEETS

DISTRICT *:
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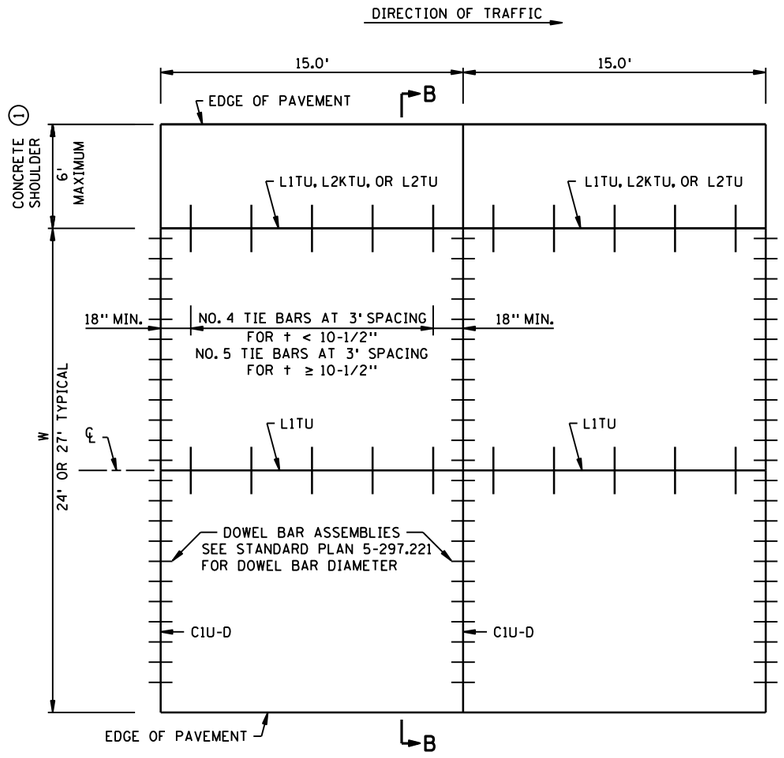
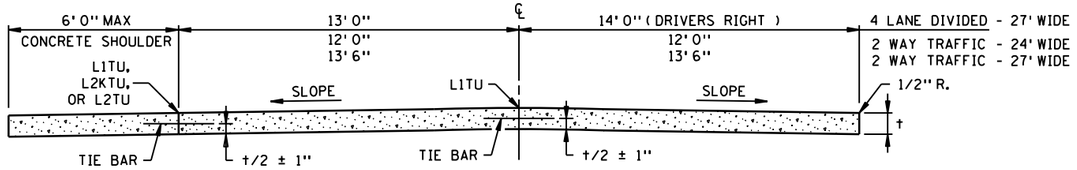
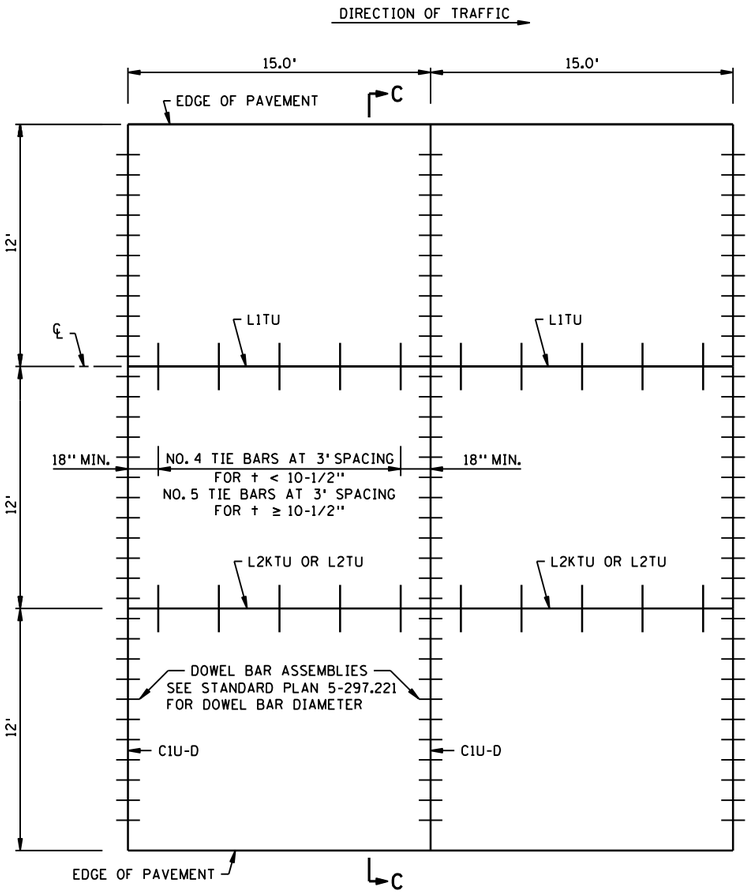


MAINLINE PAVEMENT WITH INSIDE CONCRETE SHOULDER

DOWELED

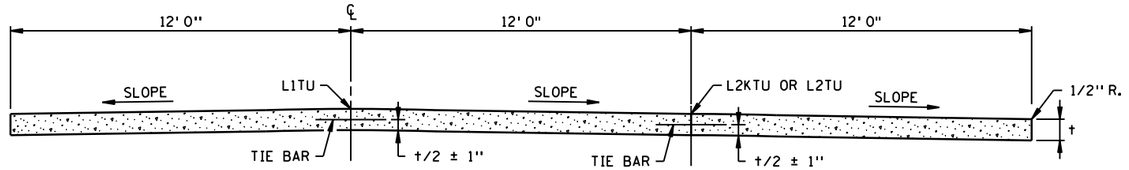


SECTION B-B



MAINLINE PAVEMENT URBAN

DOWELED



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

01/09/2024

MINNESOTA DEPARTMENT OF TRANSPORTATION

STATE DESIGN ENGINEER

STANDARD PLAN 5-297.217	2 OF 2
APPROVED: 2-16-2016	
REVISED:	

CONCRETE MAINLINE PAVEMENT

15.0 FT. PANEL LENGTH
URBAN OR CONCRETE SHOULDERS

SAP 002-622-042

SHEET NO. 26 OF 123 SHEETS

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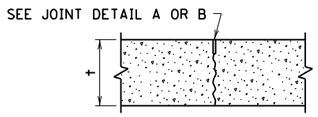
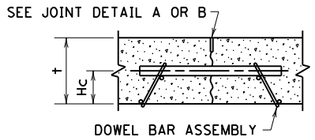
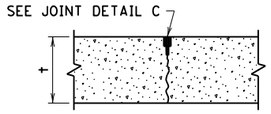


C1U & C2H



C1U-D & C2H-D (8)



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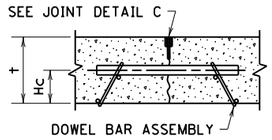
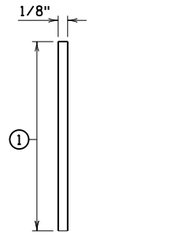
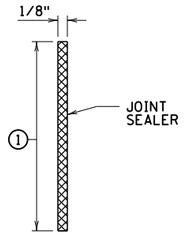


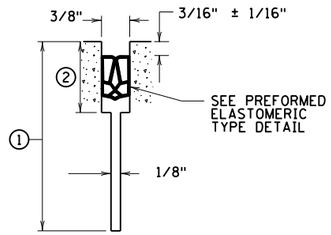
C3P-D (8)



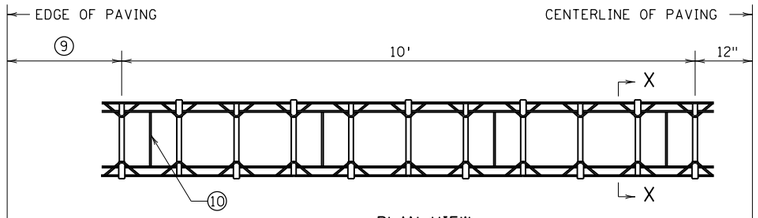
JOINT DETAIL A (3)(5)
SAWED & UNSEALED



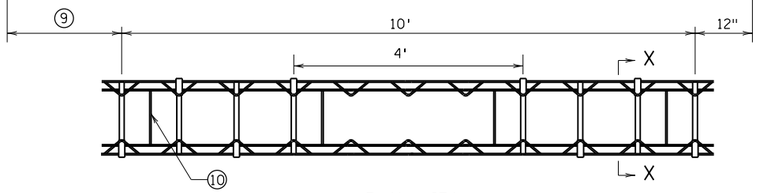
JOINT DETAIL B (4)(5)
SAWED & SEALED



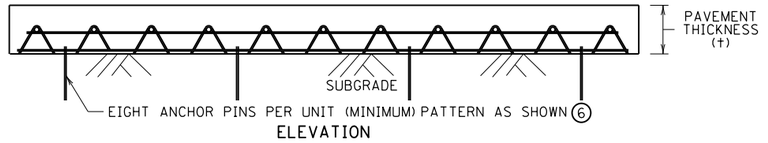
JOINT DETAIL C (4)(5)
SAWED AND SEALED



PLAN VIEW
ELEVEN DOWEL BASKET (SPACED AT 12")



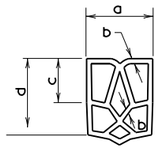
PLAN VIEW
EIGHT DOWEL BASKET (WHEEL PATH DOWELS SPACED AT 12")



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.



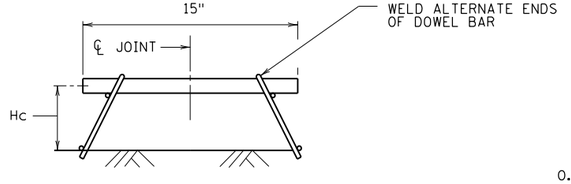
TYPICAL SHAPE FOR SATISFACTORY INSTALLATION IN JOINT (5 CELL MIN.)

PREFORMED ELASTOMERIC TYPE DETAIL (2)

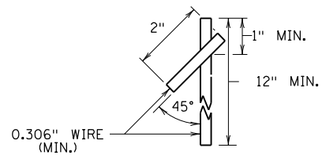
CONTRACTION JOINT REFERENCE, DETAIL & SEALER SPEC. TABLE				
JOINT REFERENCE		JOINT DETAIL	JOINT SEALER SPEC.	JOINT WIDTH
WITHOUT DOWELS	WITH DOWELS			
C1U	C1U-D	A	UNSEALED	1/8"
C2H	C2H-D	B	3725	1/8"
C3P	C3P-D	C	3721	3/8"

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

DOWEL BAR TABLE		
t 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: t/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 ±⅛" IN 15".
- PLACE DOWEL BARS PARALLEL TO THE CENTERLINE OF THE PAVEMENT ±¼" 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

01/09/2024

MINNESOTA DEPARTMENT OF TRANSPORTATION

THOMAS STYRBICKI
STATE DESIGN ENGINEER

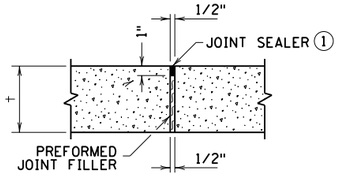
STANDARD PLAN 5-297.221 | 1 OF 4

APPROVED: 10-03-2022
REVISED:

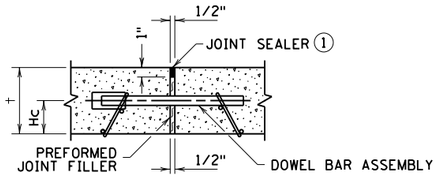
PAVEMENT JOINTS

CONTRACTION (DESIGN C)

SAP 002-622-042



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"

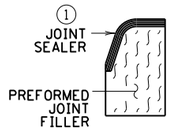
LEGEND — EXAMPLE

E = EXPANSION JOINT — E1H-D

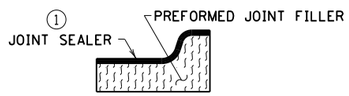
NO. = JOINT REFERENCE

H = HOT POURED

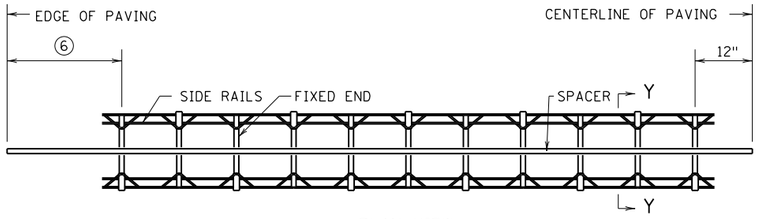
-D = DOWEL BARS



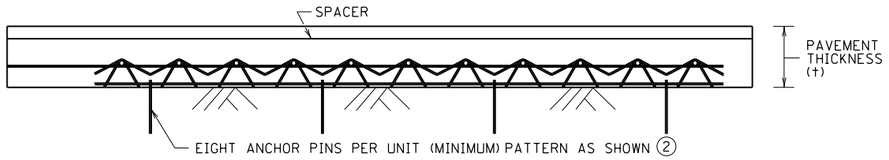
SECTION THRU CURB



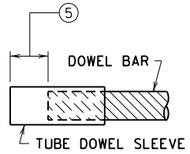
SECTION THRU CURB



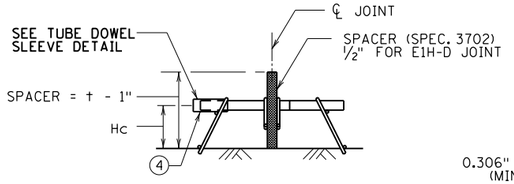
PLAN VIEW
EXPANSION JOINT DOWEL ASSEMBLY



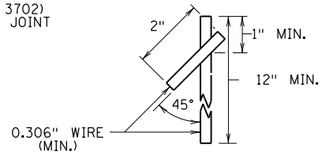
ELEVATION VIEW
EXPANSION JOINT DOWEL BAR ASSEMBLY



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 - 7½	1	3
8 - 10	1¼	4
≥ 10½	1½	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 ⅛" 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 ±⅛" IN 15".
- PLACE DOWEL BARS PARALLEL TO THE CENTERLINE OF THE PAVEMENT ±¼" IN 15"
- HEIGHT (hC) TO CENTER OF DOWEL BAR ± ½".

(4) PLACE METAL INSTALLATION SHIELDS FOR EXPANSION JOINTS PARALLEL TO THE PAVEMENT SURFACE AND THE PAVEMENT CENTERLINE WITHIN A TOLERANCE OF ¼" 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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01/09/2024

MINNESOTA DEPARTMENT OF TRANSPORTATION

THOMAS STYRBICKI
STATE DESIGN ENGINEER

STANDARD PLAN 5-297.221 | 2 OF 4

APPROVED: 10-03-2022
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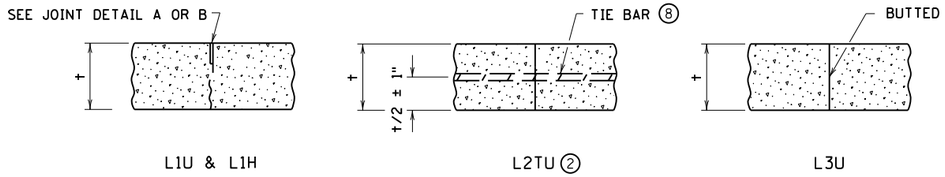
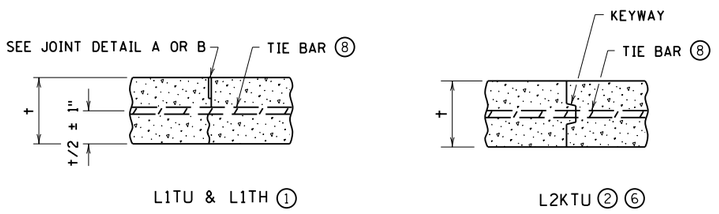
SAP 002-622-042

PAVEMENT JOINTS

EXPANSION (DESIGN E)

SHEET NO. 28 OF 123 SHEETS

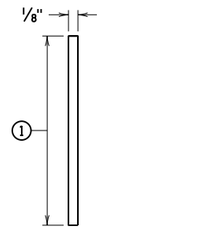


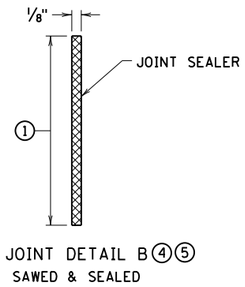


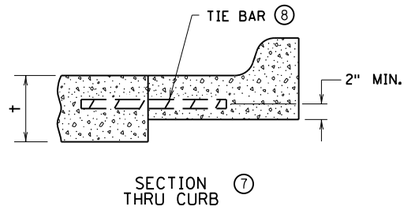
LONGITUDINAL JOINT REFERENCE, DETAIL & SEALER SPECIFICATION TABLE					
JOINT REFERENCE			JOINT DETAIL	JOINT SEALER SPEC	JOINT WIDTH
WITHOUT TIE BARS	WITH TIE BARS	WITH KEYWAY & TIE BARS			
L1U	L1TU		A	UNSEALED	1/8"
L1H	L1TH		B	3725	1/8"
	L2TU	L2KTU	NONE	UNSEALED	
L3U			NONE	UNSEALED	

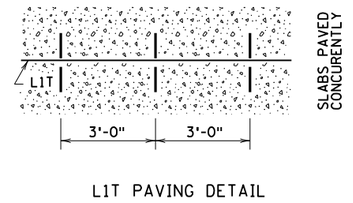
LEGEND — EXAMPLE: L2KTU

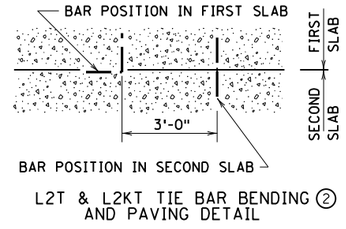
- L = LONGITUDINAL JOINT
- NO. = JOINT REFERENCE
  - 1 = PAVED CONSTRUCTION JOINT
  - 2 = TIED CONSTRUCTION JOINT
  - 3 = BUTTED CONSTRUCTION JOINT
- K = KEYWAY
- T = TIE BARS
- U = UNSEALED
- H = HOT POURED

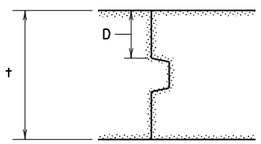












FIXED FORM KEYWAY TABLE (6)	
t PAVEMENT THICKNESS	D (MIN. DEPTH)
< 7"	2-1/2"
7" TO 7-1/2"	3"
8" TO 9-1/2"	4"
≥ 10"	5"

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

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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DIRECTOR
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01/09/2024

MINNESOTA DEPARTMENT OF TRANSPORTATION

THOMAS STYRBICKI
STATE DESIGN ENGINEER

STANDARD PLAN 5-297.221 | 3 OF 4

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PAVEMENT JOINTS

LONGITUDINAL (DESIGN L)

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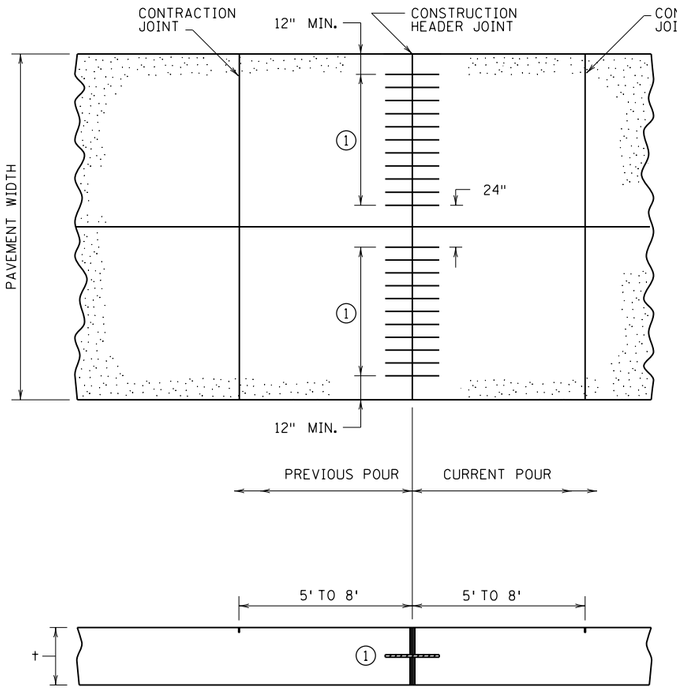
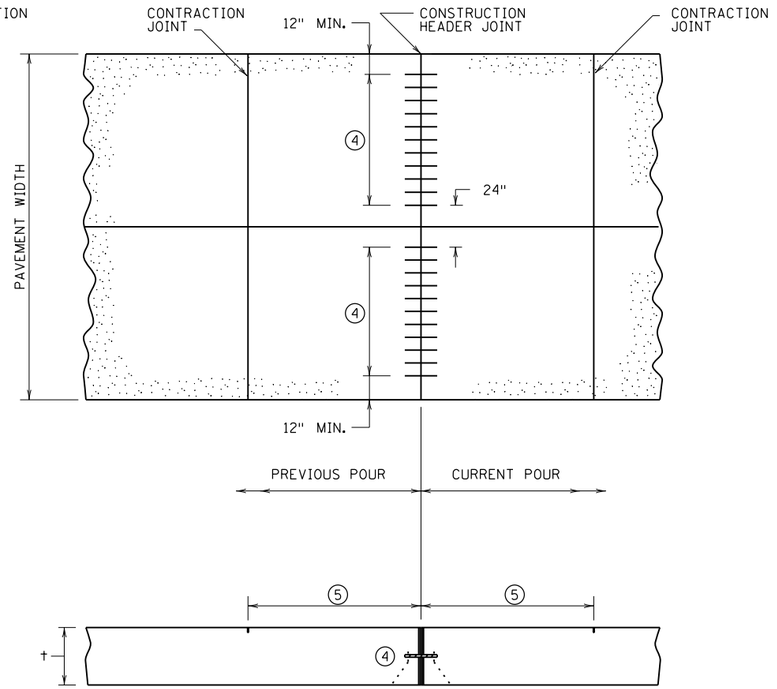
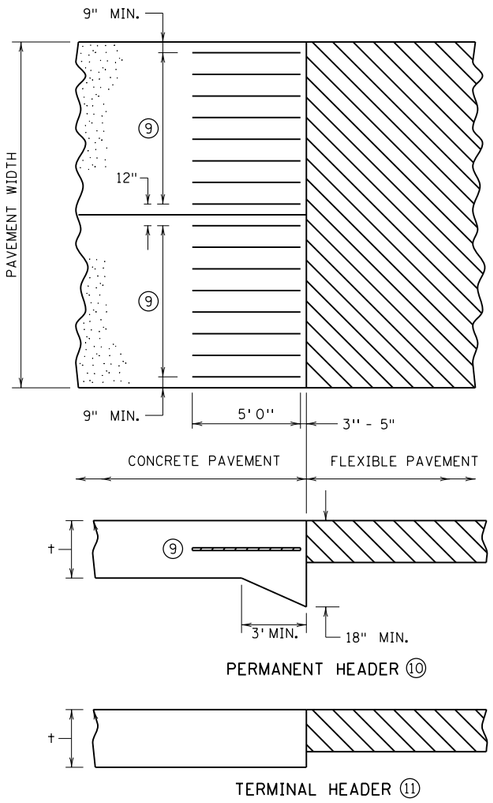


REINFORCEMENT BAR CONSTRUCTION HEADERS

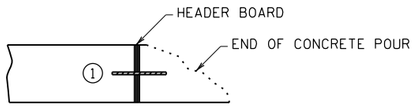


DOWEL BAR CONSTRUCTION HEADERS

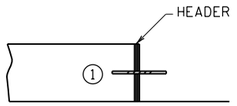


PERMANENT HEADER ⑩

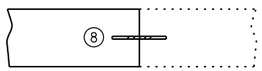
TERMINAL HEADER ⑪



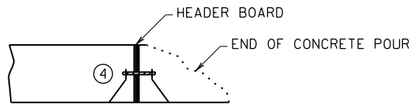
SLIPFORM PLACED REINFORCEMENT BAR HEADER ②



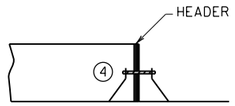
FIXED FORM PLACED REINFORCEMENT BAR HEADER ③



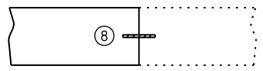
DRILL AND GROUT REINFORCEMENT BAR HEADER



SLIPFORM PLACED DOWEL BAR HEADER ⑥



FIXED FORM PLACED DOWEL BAR HEADER ⑦



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).

PLOTTED/REVISED: 01/09/2024
DISTRICT *:
IPLOT NAME: $$@IPLOT$NAME@$$
PATH & FILENAME: P:\002-622-042 Whitetopping\Plan\002622042_STD.dgn

LEAD EXPERT OFFICE

GLENN ENGSTROM
DIRECTOR
OFFICE OF MATERIALS AND ROAD RESEARCH

01/09/2024

MINNESOTA DEPARTMENT OF TRANSPORTATION

THOMAS STYRBICKI
STATE DESIGN ENGINEER

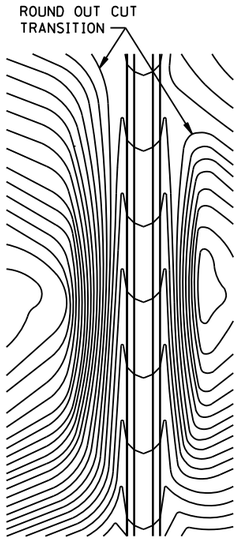
STANDARD PLAN 5-297.221 | 4 OF 4

APPROVED: 10-03-2022
REVISED:

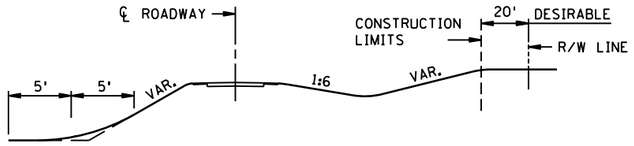
SAP 002-622-042

PAVEMENT JOINTS

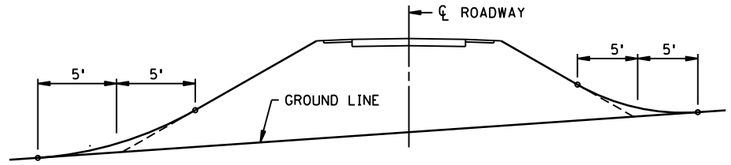
CONSTRUCTION AND TERMINAL HEADERS



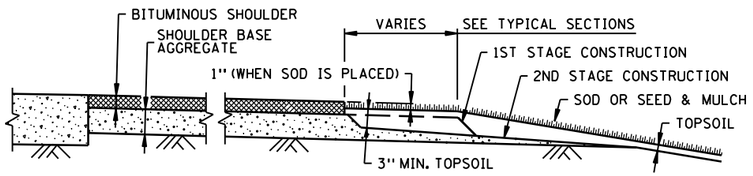
CONTOURING ROAD CUTS



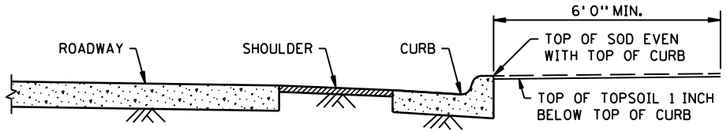
ROUNDING SHOULDERS AND BACKSLOPES



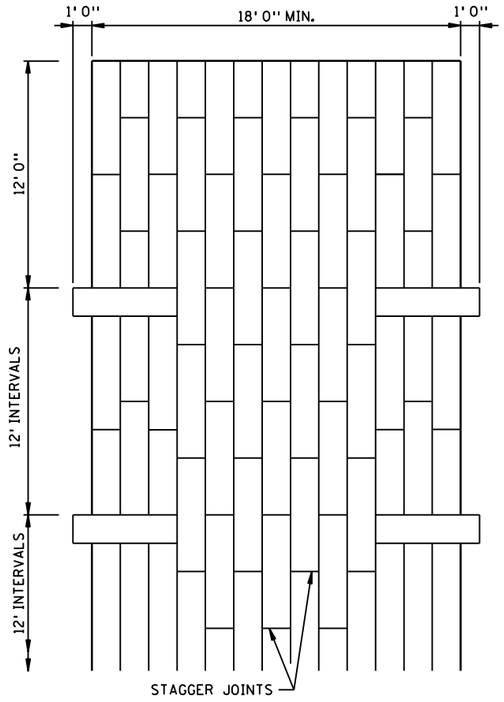
SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES



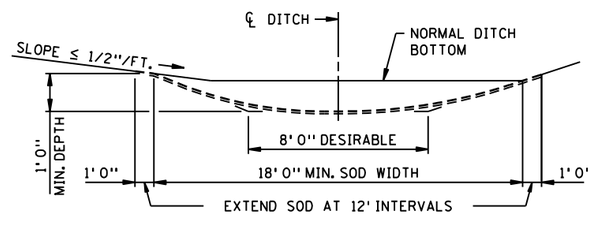
SHAPING AND TOPSOILING INSLOPES



SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED

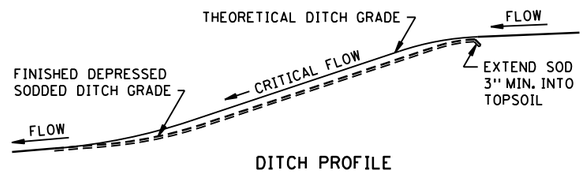


PLAN VIEW



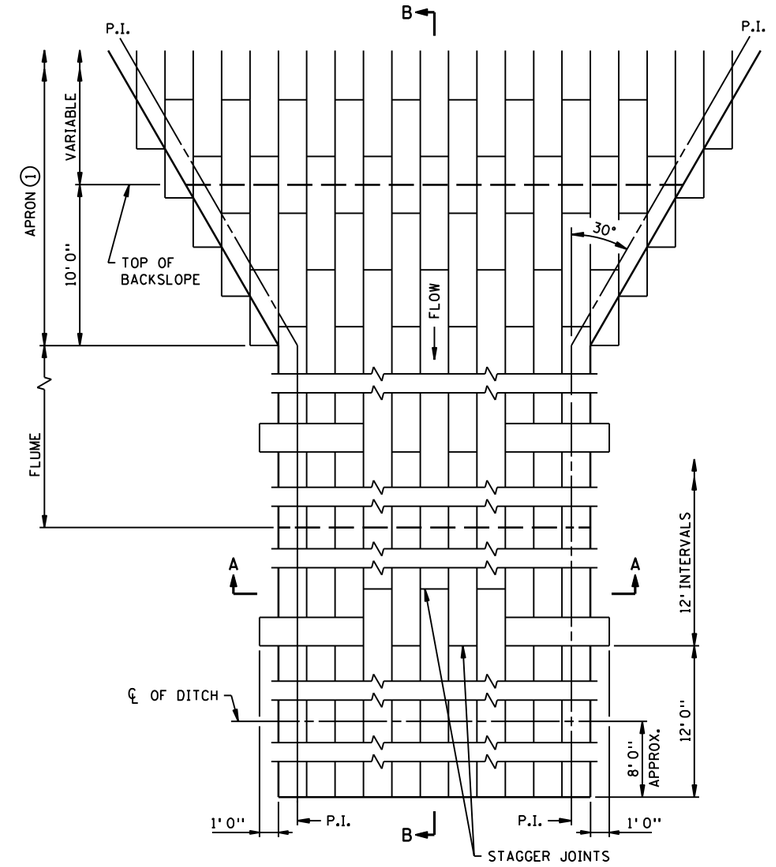
SODDED DITCH CROSS SECTION

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

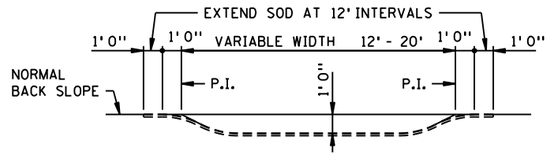


DITCH PROFILE

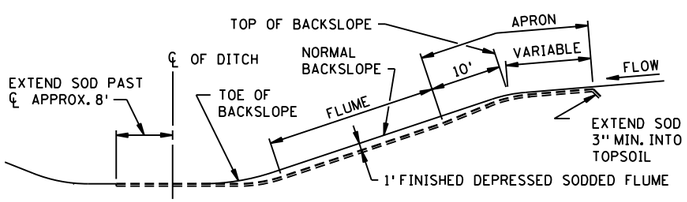
SODDED DITCH DETAILS



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.

01/09/2024

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

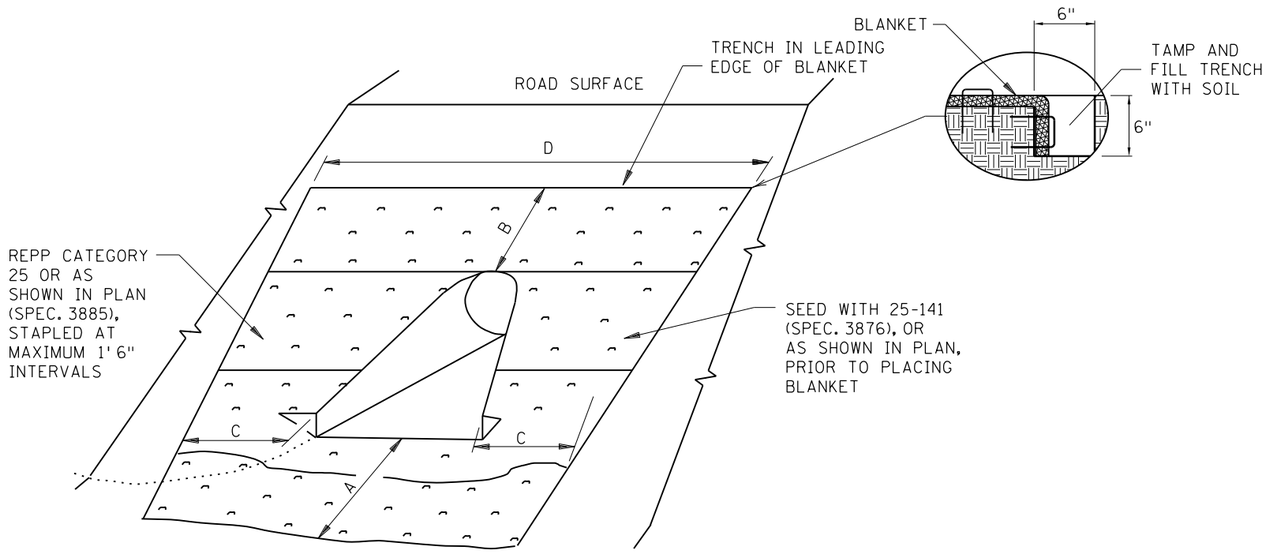
ALONG ROADWAYS, DITCHES AND FLUMES

SAP 002-622-042

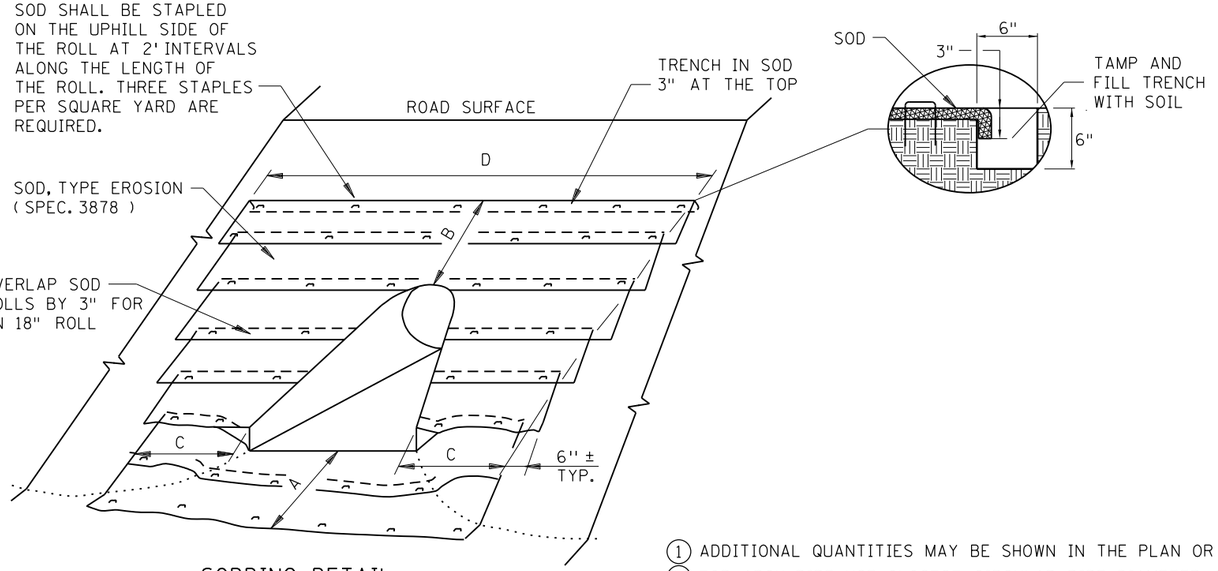
SHEET NO. 31 OF 123 SHEETS

PLOTTED/REVISED: 01/09/2024

DISTRICT *:
IPLOT NAME: $$@IPLOT$NAME@$$
PATH & FILENAME: P:\002-622-042 WhitetoppingPlan\002622042_STDdgn



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

01/09/2024

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.404 | 2 OF 3

APPROVED: 1-8-2020
REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

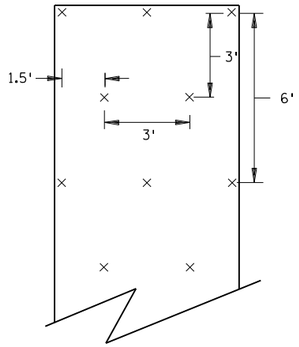
PERMANENT EROSION CONTROL

TURF ESTABLISHMENT DETAIL AT CULVERT ENDS

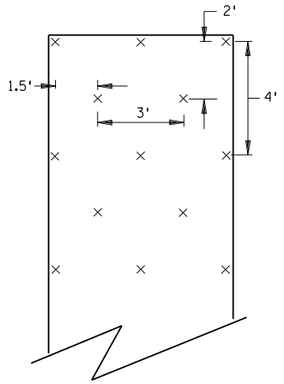
SAP 002-622-042

SHEET NO. 32 OF 123 SHEETS

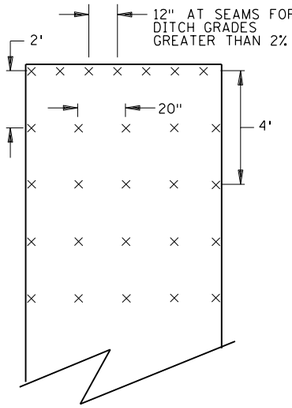
PLOTTED/REVISED: 01/09/2024
DISTRICT *:
IPLOT NAME: $$@IPLOT$NAME@$$
PATH & FILENAME: P:\002-622-042 Whitetopping\Plan\002622042_STD.dgn



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

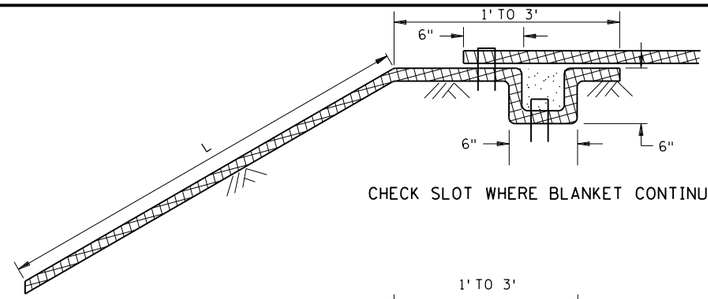


SLOPES 1:2 TO 1:1
170 STAPLES PER 100 SQ YD

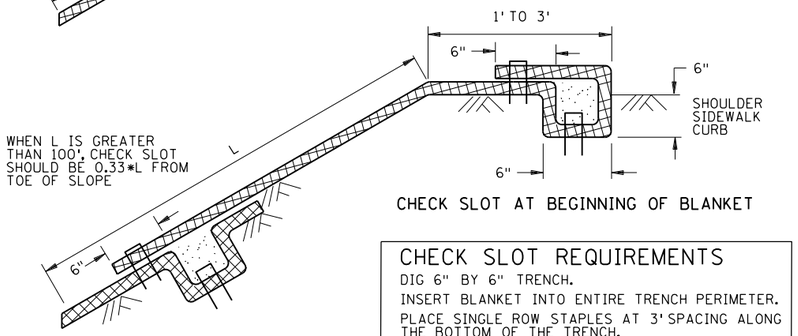


CHANNEL AND DITCH APPLICATIONS
350 STAPLES PER 100 SQ YD

BLANKET STAPLE PATTERN



CHECK SLOT WHERE BLANKET CONTINUES



CHECK SLOT AT BEGINNING OF BLANKET

CHECK SLOT REQUIREMENTS

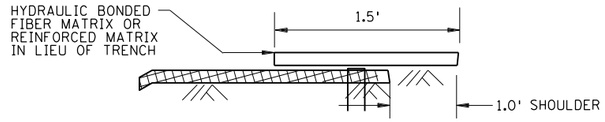
DIG 6" BY 6" TRENCH.

INSERT BLANKET INTO ENTIRE TRENCH PERIMETER.

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

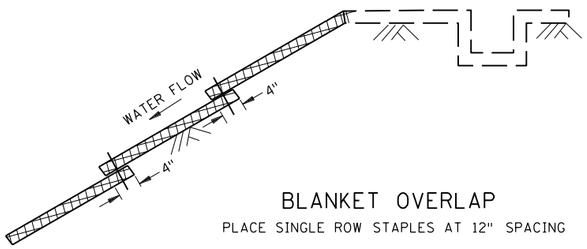
BACKFILL TRENCH WITH SOIL AND TAMP.

PLACE SINGLE ROW STAPLES AT 3' SPACING ON OVERLAP.

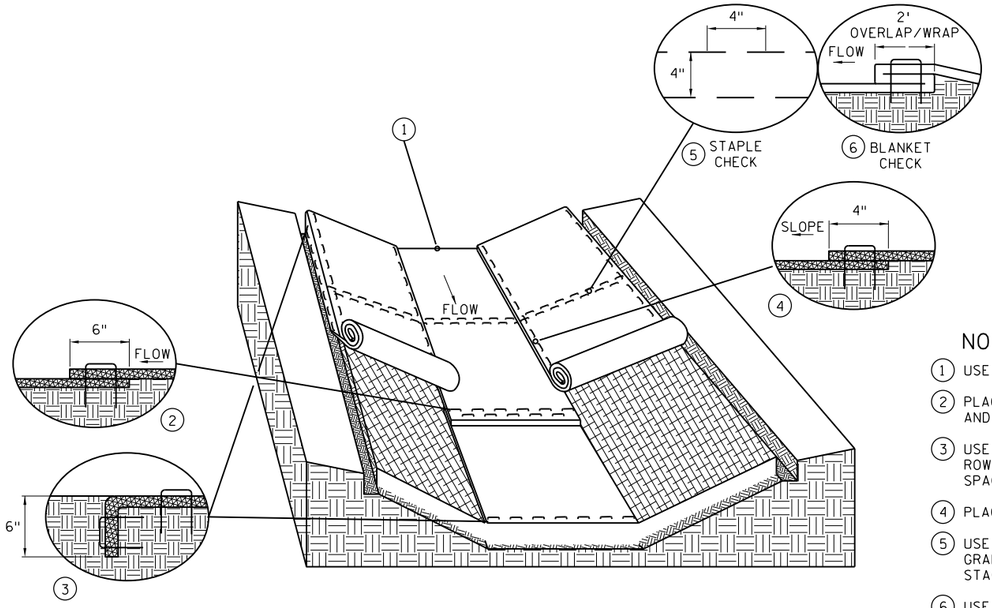


CHECK SLOT ALTERNATIVE
PLACE SINGLE ROW STAPLES AT 12" SPACING

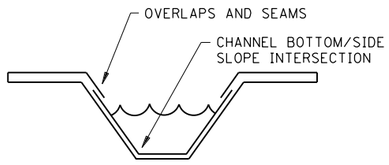
CHECK SLOT DETAILS



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.

PLOTTED/REVISED: 01/09/2024

DISTRICT *:
IPLOT NAME: $$@IPLOT$NAME@$$
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REVISION:

APPROVED: JANUARY 8, 2020
MARNI KARNOWSKI
CHIEF ENVIRONMENTAL OFFICER

01/09/2024

MINNESOTA DEPARTMENT OF TRANSPORTATION

THOMAS STYRBICKI
STATE DESIGN ENGINEER

STANDARD PLAN 5-297.404 | 3 OF 3

APPROVED: 1-8-2020
REVISED:

PERMANENT EROSION CONTROL

REPP (BLANKET) STAPLE PATTERN FOR SLOPES

SAP 002-622-042

SHEET NO. 33 OF 123 SHEETS

PLOTTED/REVISED: 01/09/2024
DISTRICT *:
IPLOT NAME: $$@IPLOT$NAME@$$
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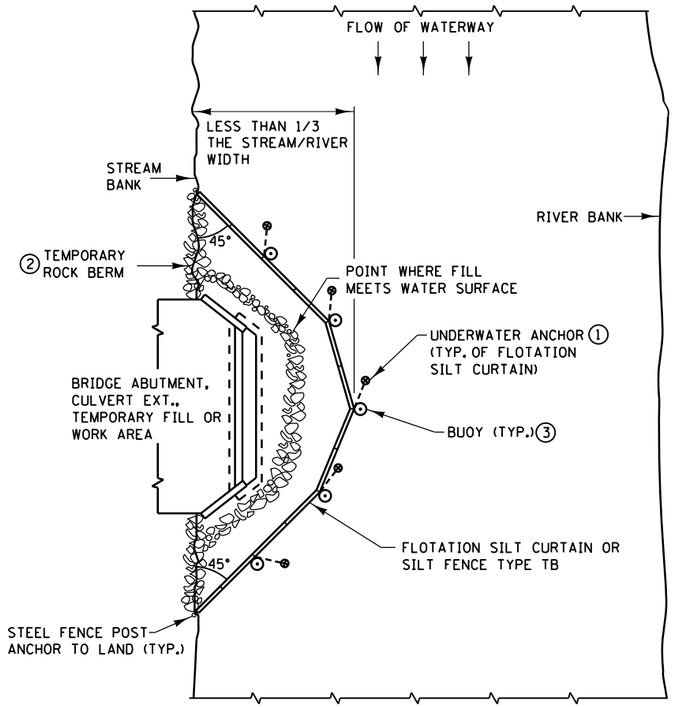
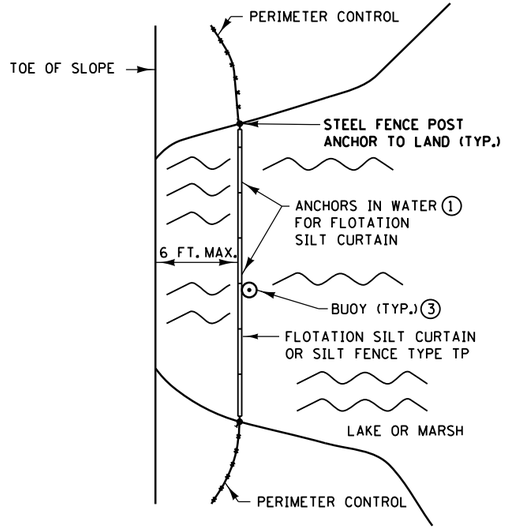
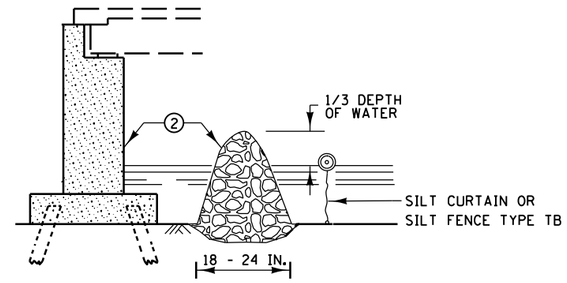


PLAN VIEW FOR STREAM ⑤



PLAN VIEW FOR LAKE OR MARSH ⑤

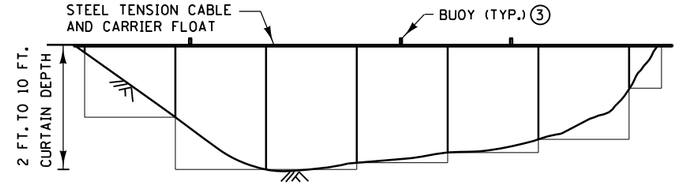


TEMPORARY ROCK BERM
FOR SEDIMENT CONTROL

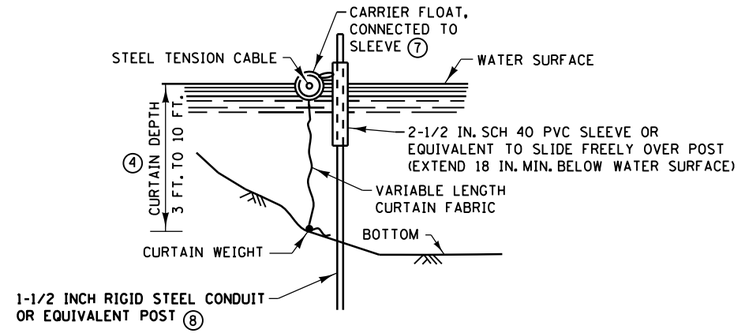
INSTALLATION GUIDELINES
SILT FENCE TYPE TB
MINIMUM WATER DEPTH: 1 FT.
MAXIMUM WATER DEPTH: 3 FT.
MAXIMUM WATER VELOCITY: 5 FT./SEC.

INSTALLATION GUIDELINES ④
FLOTATION SILT CURTAIN
TYPE: STILL WATER
MINIMUM WATER DEPTH: 3 FT.
MAXIMUM WATER DEPTH: 10 FT.
MAXIMUM WATER VELOCITY: 2 FT./SEC.
MAXIMUM WAVE HEIGHT: 1 FT

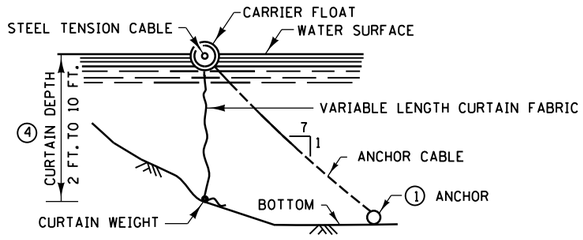
INSTALLATION GUIDELINES ④
FLOTATION SILT CURTAIN
TYPE: MOVING WATER
MINIMUM WATER DEPTH: 3 FT.
MAXIMUM WATER DEPTH: 10 FT.
MAXIMUM WATER VELOCITY: 5 FT./SEC.
MAXIMUM WAVE HEIGHT: 2 FT.



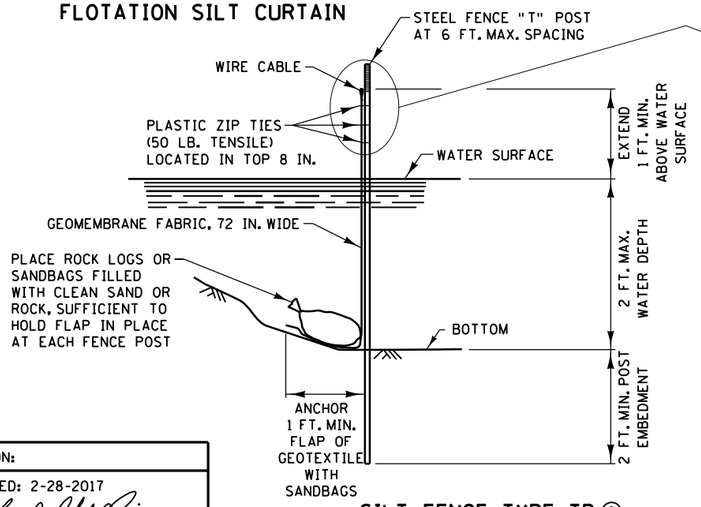
FRONT VIEW FOR FLOTATION SILT CURTAIN



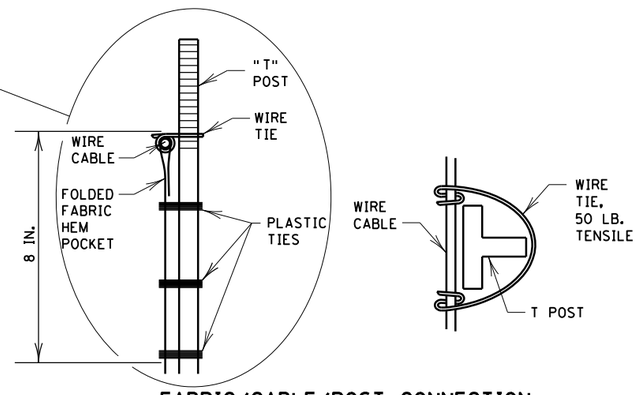
ALTERNATE FLOTATION SILT CURTAIN



FLOTATION SILT CURTAIN



SILT FENCE TYPE TB ⑥



FABRIC/CABLE/POST CONNECTION

NOTES:

SEE SPECS. 2573, 3886, 3887 & 3893.

1. FOR ANCHOR SPACING AND WEIGHT REQUIREMENTS, SEE SPEC. 2573.
2. IN AREAS WHERE THE PLAN CALLS FOR RIPRAP AT A BRIDGE, CULVERT, OR SLOPE, A TEMPORARY ROCK BERM CONSTRUCTED FROM THE RIPRAP CAN BE USED TO PROVIDE ADDITIONAL PROTECTION. WHEN THE WORK IS COMPLETE THE RIPRAP CAN THEN BE MOVED TO THE PERMANENT LOCATION INDICATED IN THE PLANS. THE TEMPORARY ROCK BERM IS INCIDENTAL.
3. ON U.S. COAST GUARD OR OTHER MOTORIZED WATERWAYS, BUOYS ARE REQUIRED TO MARK THE ENDS AND SPECIAL AREAS FOR VISIBILITY. PLACE BUOYS AS REQUIRED FOR NAVIGATIONAL PURPOSES.
4. MINIMUM WATER DEPTH APPLIES TO THE DEEPEST POINT ALONG THE FLOTATION SILT CURTAIN OR SILT FENCE TYPE TB FOR DETERMINING APPLICABILITY OF FLOTATION SILT CURTAIN OR SILT FENCE TYPE TB.
5. SILT CURTAIN SHOULD BE REMOVED WHEN THE AREA CONTRIBUTING DIRECT RUNOFF HAS BEEN TEMPORARILY OR PERMANENTLY STABILIZED. SILT CURTAIN SHOULD ALSO BE REMOVED BEFORE WINTER IF ICE UP OR ICE FLOW IS ANTICIPATED.
6. EMBED POST INTO BOTTOM A MINIMUM OF 40% OF THE WATER DEPTH (INCLUDING WAVE HEIGHT), BUT IN NO CASE SHALL EMBEDMENT BE LESS THAN 2 FEET.
7. ANCHOR FLOAT MUST BE CONNECTED SECURELY TO SLEEVE WITH A MINIMUM TENSILE STRENGTH OF 100 LBS. CONNECTION METHOD MUST ALLOW FOR SLEEVE TO MOVE FREELY ON POST.
8. PROVIDE SUFFICIENT NUMBER OF POST ANCHORS TO MAINTAIN SILT CURTAIN POSITION.

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CHIEF ENVIRONMENTAL OFFICER

01/09/2024

MINNESOTA DEPARTMENT OF TRANSPORTATION

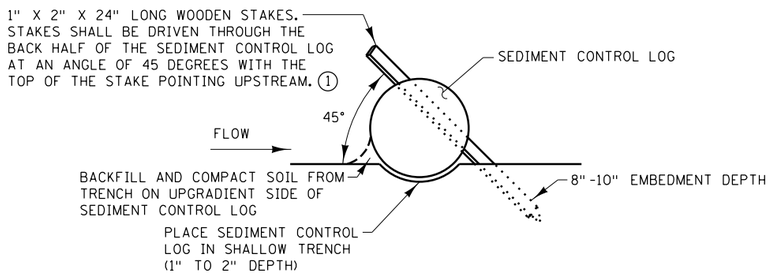
STANDARD PLAN 5-297.405 | 1 OF 8

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

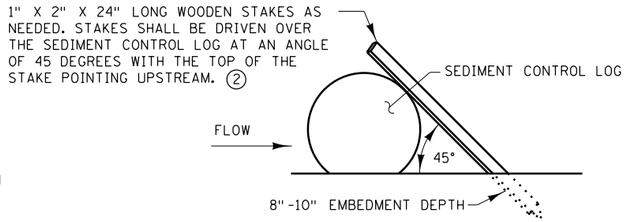
TEMPORARY SEDIMENT CONTROL
SILT CURTAIN OR SILT FENCE TYPE TB

SAP 002-622-042

SHEET NO. 34 OF 123 SHEETS

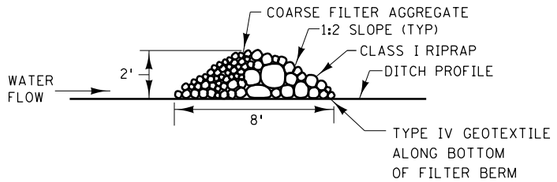


TYPES: STRAW, WOOD FIBER, OR COIR

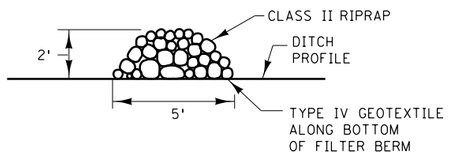


TYPES: WOOD CHIP, COMPOST, OR ROCK

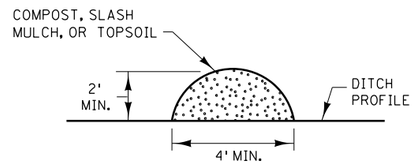
SEDIMENT CONTROL LOGS



TYPE 3 (ROCK WEEPER)

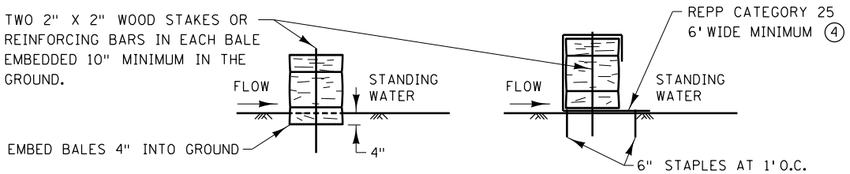


TYPE 5 (ROCK)



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

01/09/2024

MINNESOTA DEPARTMENT OF TRANSPORTATION

THOMAS STYRBICKI
STATE DESIGN ENGINEER

STANDARD PLAN 5-297.405 | 2 OF 8

APPROVED: 1-8-2020
REVISED:

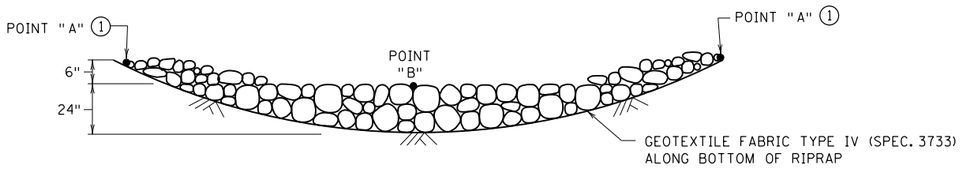
TEMPORARY SEDIMENT CONTROL

FILTER BERMS, SEDIMENT CONTROL LOGS, AND BALE BARRIERS

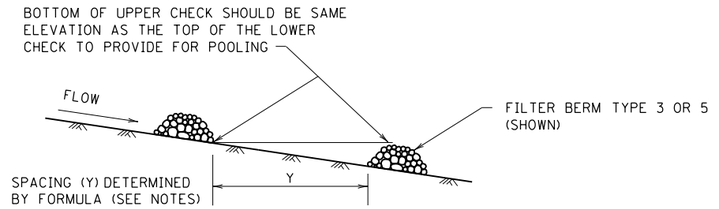
SAP 002-622-042

SHEET NO. 35 OF 123 SHEETS

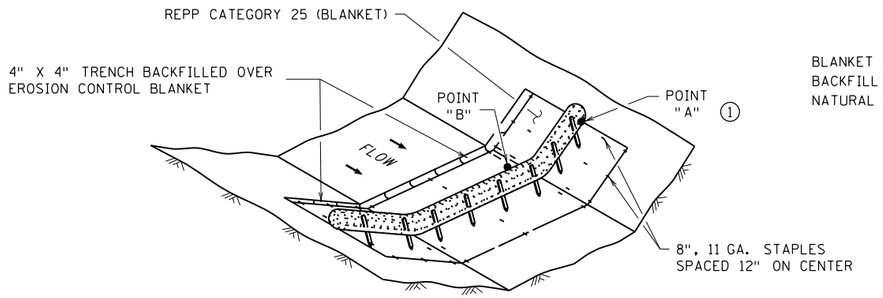
PLOTTED/REVISED: 01/09/2024
DISTRICT *:
IPLOT NAME: $$@IPLOT$NAME@$$
PATH & FILENAME: P:\002-622-042 Whitetopping\Plan\002622042_STD.dgn

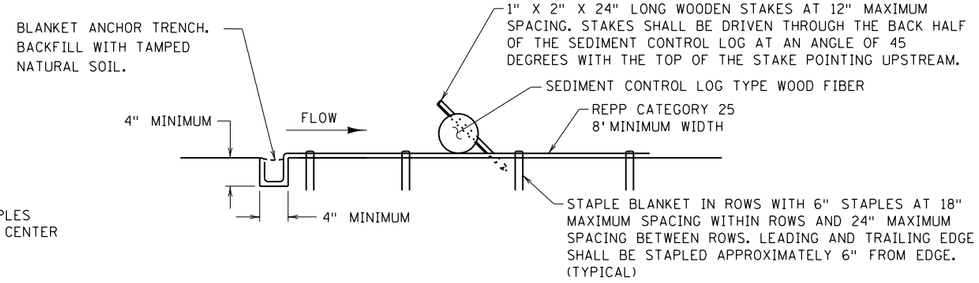


ROCK DITCH CHECKS
FILTER BERMS TYPE 3 (ROCK WEEPER) OR FILTER TYPE 5 (ROCK) ③
FOR USE ON ROUGH-GRADED AREAS
ONLY FOR USE OUTSIDE CLEAR ZONE ②

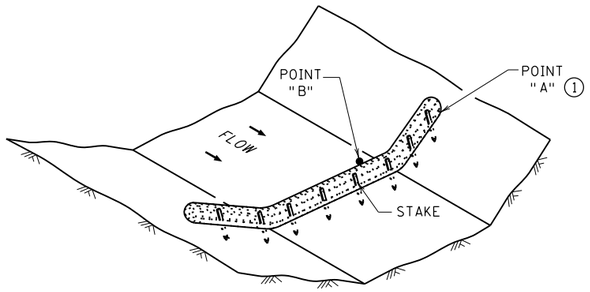


DITCH CHECK SPACING
FOR ALL FILTER BERM TYPES





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
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CHIEF ENVIRONMENTAL OFFICER

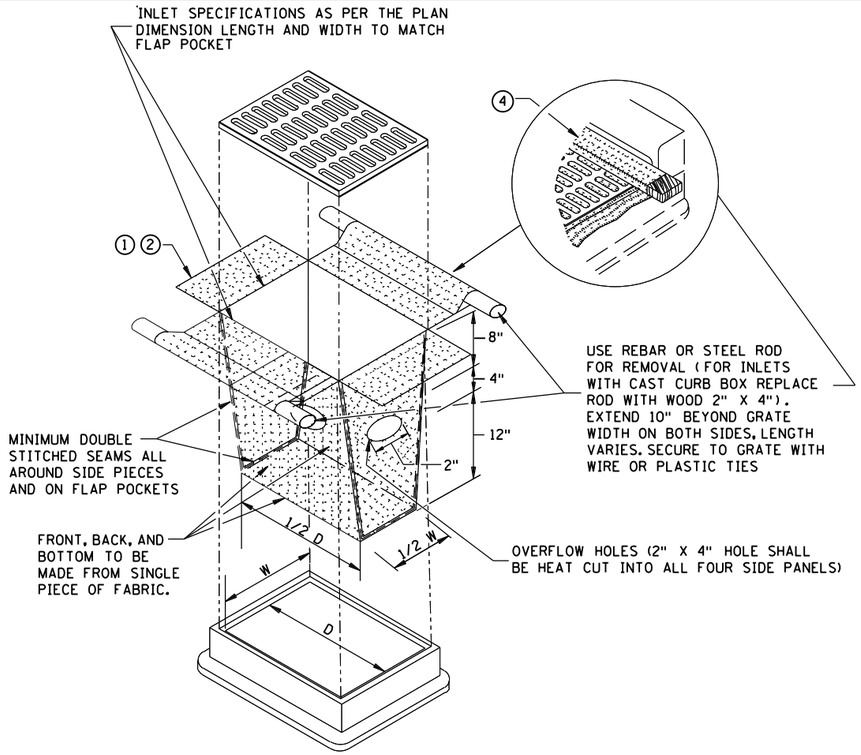
01/09/2024

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.405	3 OF 8
APPROVED: 1-8-2020	TEMPORARY SEDIMENT CONTROL
REVISED:	DITCH CHECK

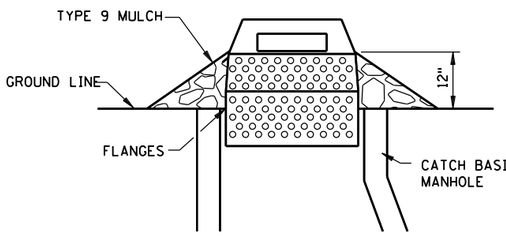
THOMAS STYRBICKI
STATE DESIGN ENGINEER

SAP 002-622-042



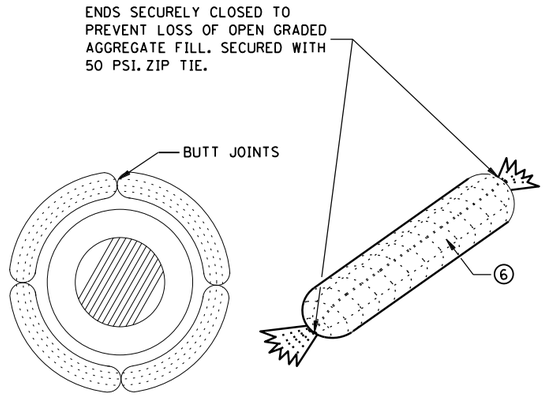
FILTER BAG INSERT ③

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

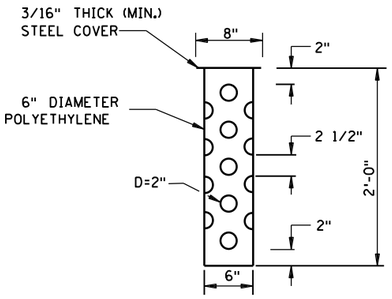


SEDIMENT CONTROL INLET HAT

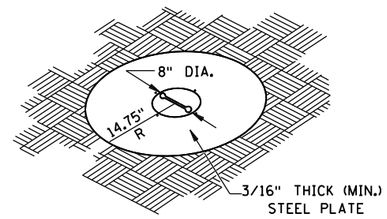
NOTE:
THE SEDIMENT CONTROL BARRIER SHALL BE A METAL OR PLASTIC/POLYETHYLENE RISER SIZED TO FIT INSIDE THE CATCH BASIN/MANHOLE; HAVE PERFORATIONS TO ALLOW FOR WATER INFILTRATION; HAVE AN OVERFLOW OPENING, FLANGES AND A LID/COVER.



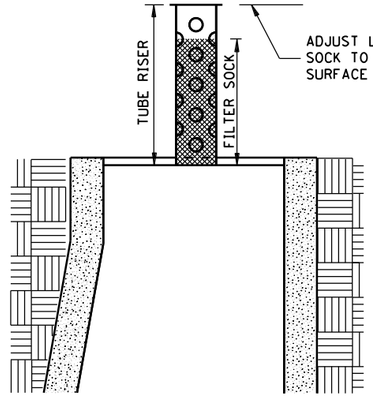
ROCK LOG/COMPOST LOG



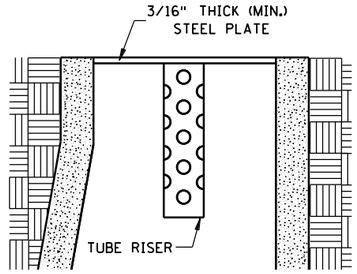
TUBE RISER



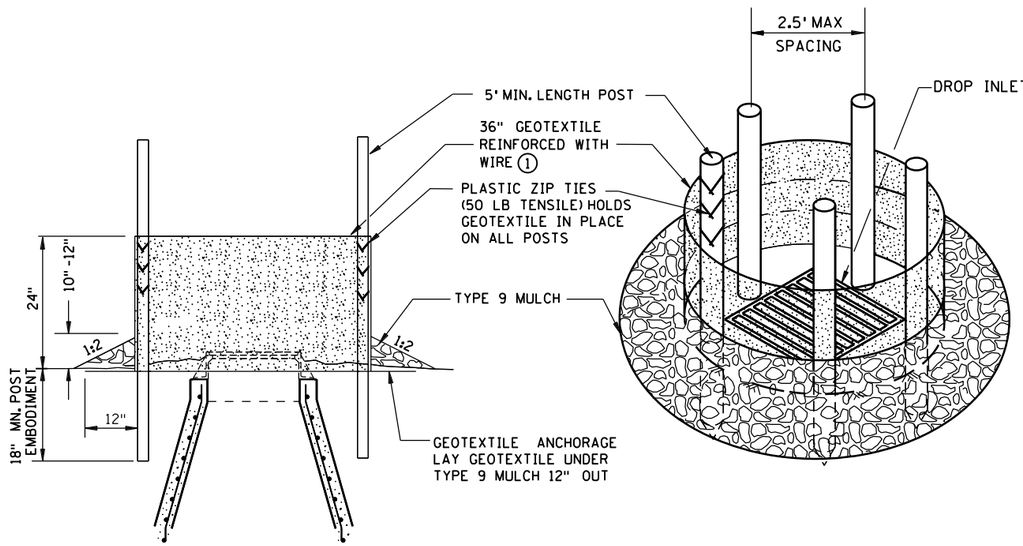
PERSPECTIVE VIEW



SECTION
(UP POSITION)



SECTION
(DOWN POSITION)



SILT FENCE RING AND ROCK FILTER BERM

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

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.

PLOTTED/REVISED: 01/09/2024

DISTRICT *:
IPLOT NAME: $$@IPLOT$NAME@$$
PATH & FILENAME: P:\002-622-042 Whitetopping\Plan\002622042_STD.dgn

REVISION:

APPROVED: 2-28-2017
CHIEF ENVIRONMENTAL OFFICER

01/09/2024

MINNESOTA DEPARTMENT OF TRANSPORTATION

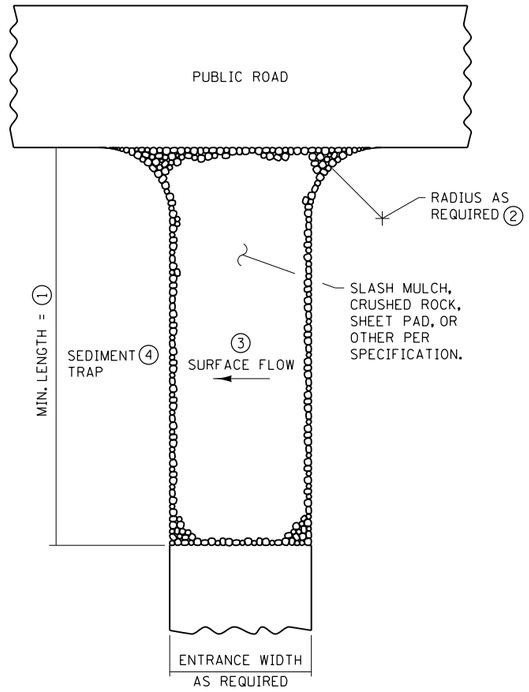
STANDARD PLAN 5-297.405 | 4 OF 8

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

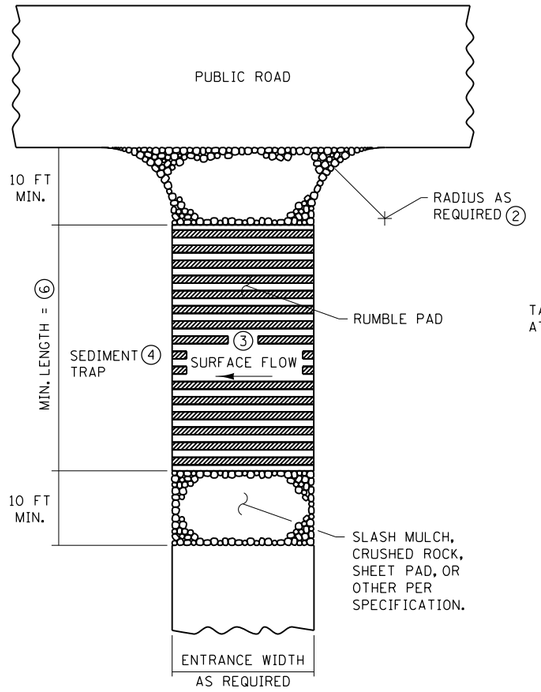
TEMPORARY SEDIMENT CONTROL

STORM DRAIN INLET PROTECTION

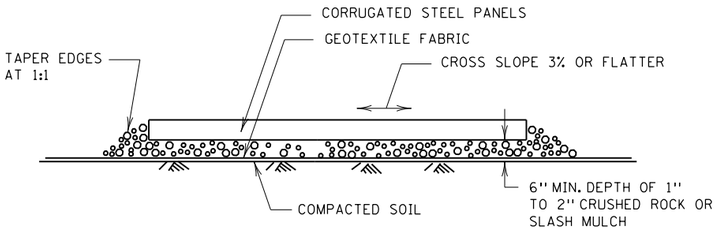
SAP 002-622-042



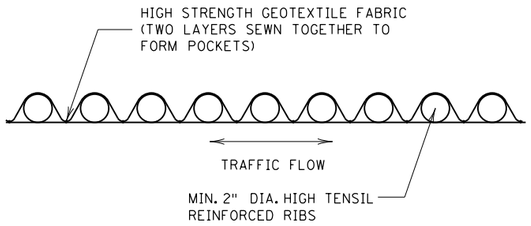
SLASH MULCH, CRUSHED ROCK, OR SHEET PAD CONSTRUCTION EXIT ⑤⑦



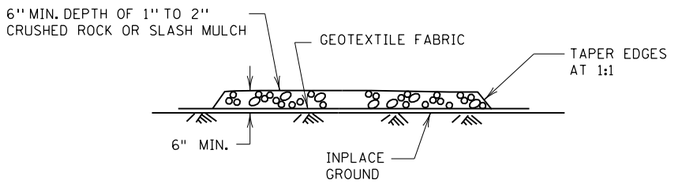
RUMBLE PAD CONSTRUCTION EXIT ⑤⑦



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:

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CHIEF ENVIRONMENTAL OFFICER

01/09/2024

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.405 | 5 OF 8

APPROVED: 2-28-2017

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STATE DESIGN ENGINEER

TEMPORARY SEDIMENT CONTROL

STABILIZED CONSTRUCTION EXIT

SAP 002-622-042

SHEET NO. 38 OF 123 SHEETS

PLOTTED/REVISED: 01/09/2024

DISTRICT *:
IPLOT NAME: $$@IPLOT$NAME@$$
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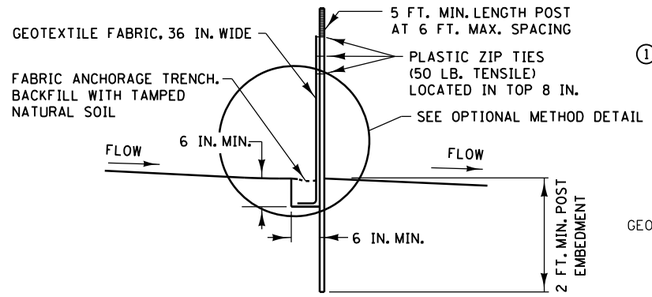
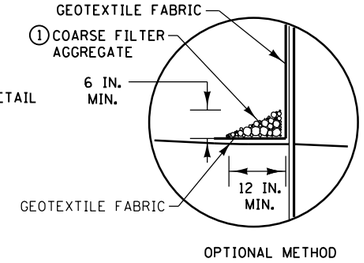
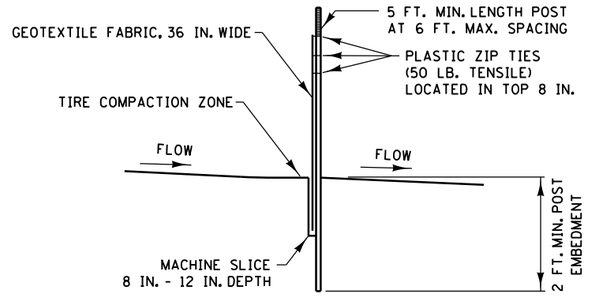
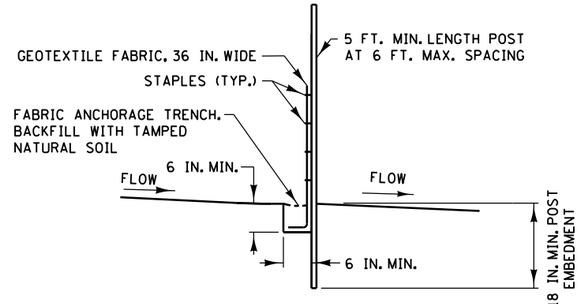




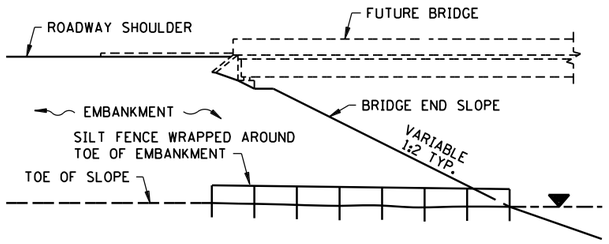
SILT FENCE TYPE HI ②
(HAND INSTALLED)



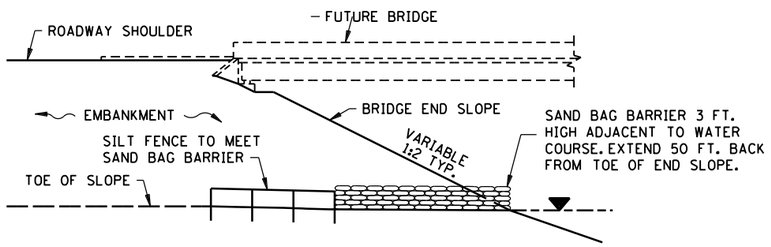
SILT FENCE TYPE MS ②
(MACHINE SLICED)



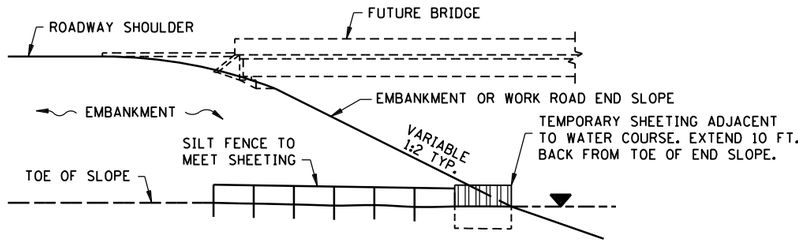
SILT FENCE TYPE PA ③
(PREASSEMBLED)



SILT FENCE ONLY ④

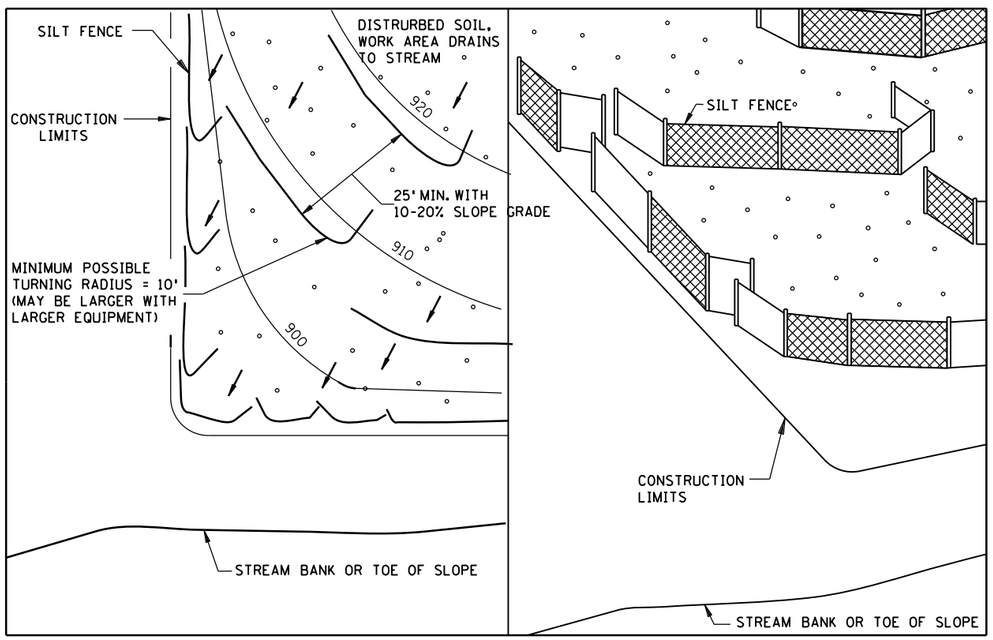


SILT FENCE WITH SAND BAGS ⑤



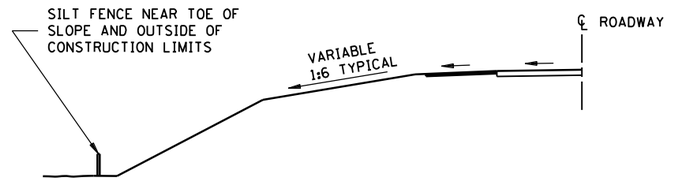
SILT FENCE WITH SHEETING ⑥

INSTALLATION AT BRIDGE EMBANKMENT ADJACENT TO WATER



PLAN VIEW PERSPECTIVE VIEW

J-HOOK INSTALLATION



LOCATION AT TOE OF ROADWAY EMBANKMENT

NOTES:

SEE SPECS. 2573, 3149 & 3886.

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

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

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

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

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

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

REVISION:

APPROVED: 2-28-2017

CHIEF ENVIRONMENTAL OFFICER

01/09/2024

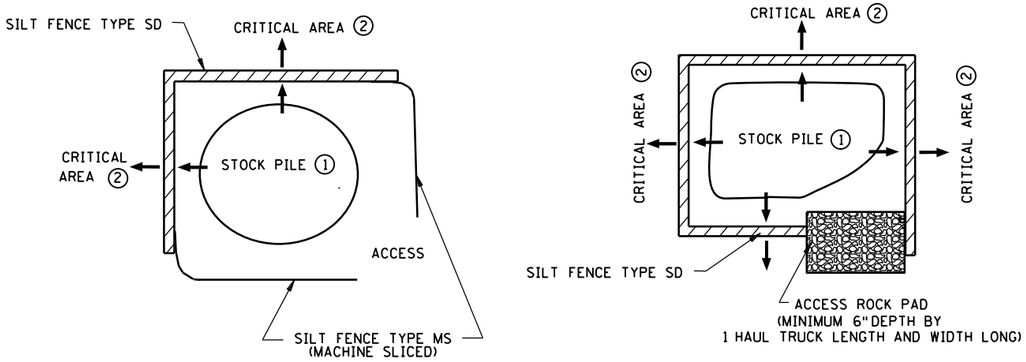
MINNESOTA DEPARTMENT OF TRANSPORTATION

STATE DESIGN ENGINEER

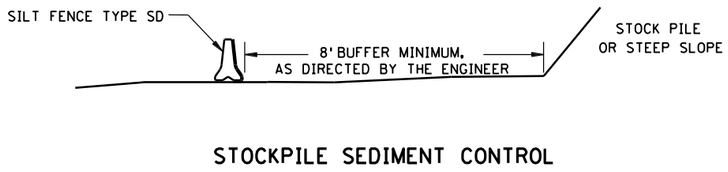
STANDARD PLAN 5-297.405	6 OF 8
APPROVED: 2-28-2017 REVISED:	
SAP 002-622-042	SHEET NO. 39 OF 123 SHEETS

TEMPORARY SEDIMENT CONTROL

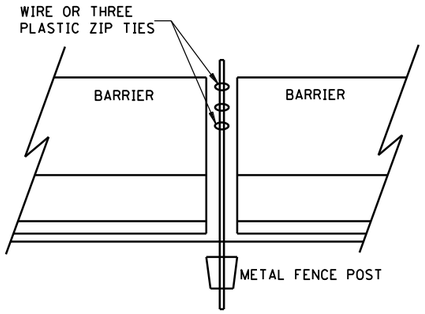
SILT FENCE



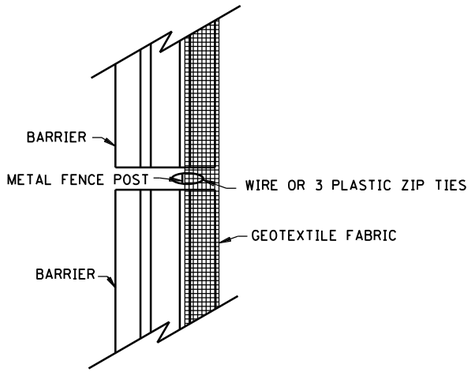
STOCK PILE CONTAINMENT



STOCKPILE SEDIMENT CONTROL

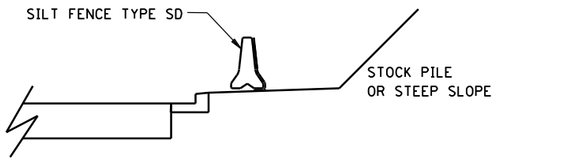


PROFILE VIEW

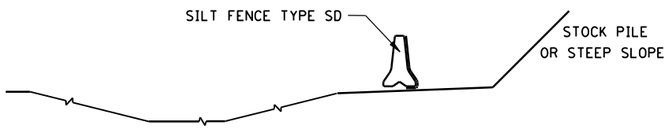


TOP VIEW

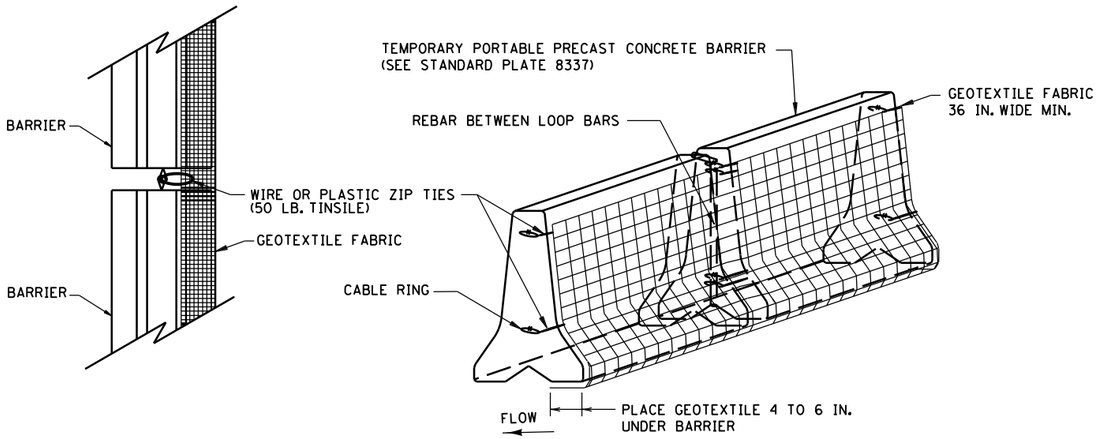
SILT FENCE TYPE SD (SUPER DUTY)
BARRIER WITHOUT LOOP BARS



CURB AND GUTTER PROTECTION SYSTEM



DITCH PROTECTION SYSTEM



TOP VIEW PERSPECTIVE VIEW

SILT FENCE TYPE SD (SUPER DUTY)
BARRIER WITH LOOP BARS

NOTES:

SEE SPECS. 2533, 2573 & 3886.

SILT FENCE TYPE SD USED TO PROTECT CRITICAL AREAS FROM SHEET FLOW, AND AREAS WHERE OTHER SILT FENCES CANNOT BE PLACED. MAXIMUM CONTRIBUTING AREA: 1 ACRE.

PLACE SILT FENCE TYPE SD ALONG A CONSTANT ELEVATION.

SILT FENCE TYPE SD CAN UTILIZE EITHER A CONCRETE, OR WATER FILLED, TEMPORARY MEDIAN BARRIER.

(1) PLACING STOCK PILES NEXT TO AN ENVIRONMENTALLY SENSITIVE AREA IS NOT RECOMMENDED. WHEN THERE ARE NO FEASIBLE ALTERNATIVES, PLACE SILT FENCE SD AS SHOWN OR AS DIRECTED BY THE ENGINEER.

(2) CRITICAL AREAS INCLUDE WETLANDS, JUDICIAL DITCHES, STREAMS, WATER BODIES, AND OTHER AREAS REQUIRING PROTECTION.

REVISION:

APPROVED: 2-28-2017
CHIEF ENVIRONMENTAL OFFICER

01/09/2024

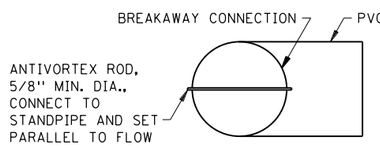
MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.405 | 7 OF 8

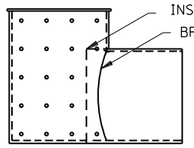
APPROVED: 2-28-2017
REVISED:
STATE DESIGN ENGINEER

TEMPORARY SEDIMENT CONTROL
SUPER DUTY SILT FENCE

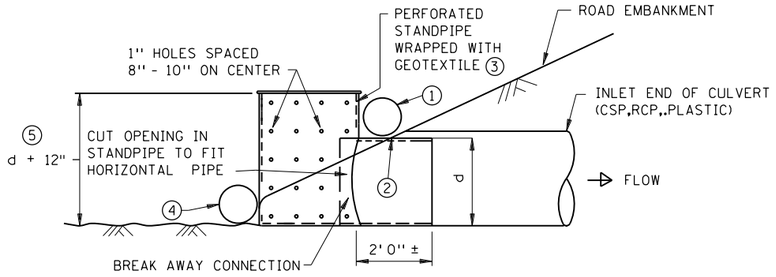
SAP 002-622-042



PLAN VIEW



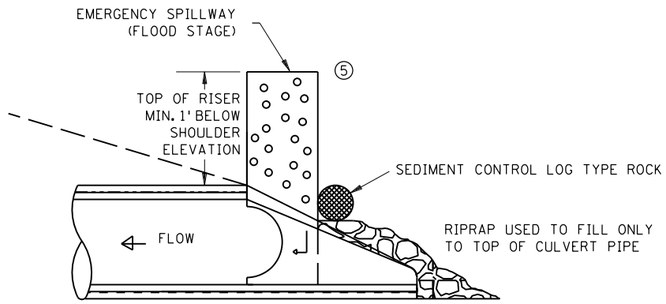
CULVERT STANDPIPE



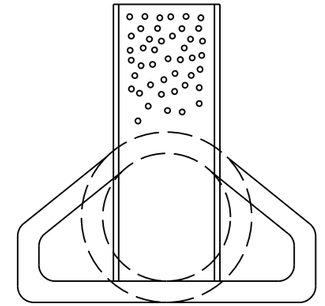
ELEVATION VIEW OF CULVERT INSTALLATION

CULVERT STANDPIPE INSERT (D-RISER)

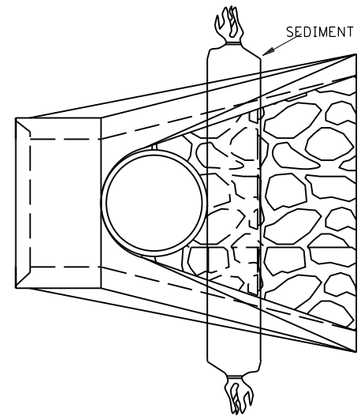
d= CULVERT SIZE: 12" - 36"



LONGITUDINAL SECTION



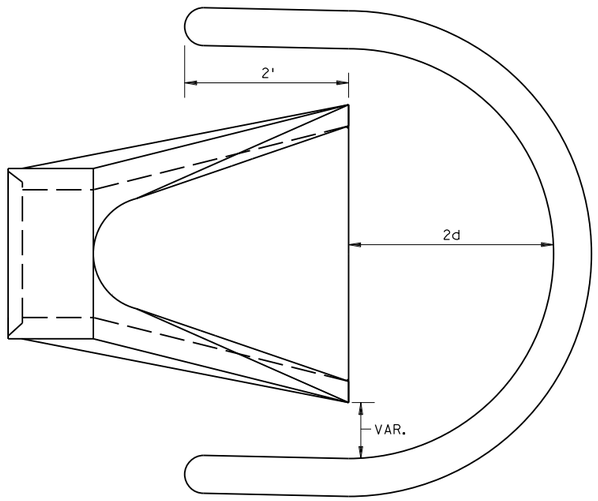
END VIEW



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

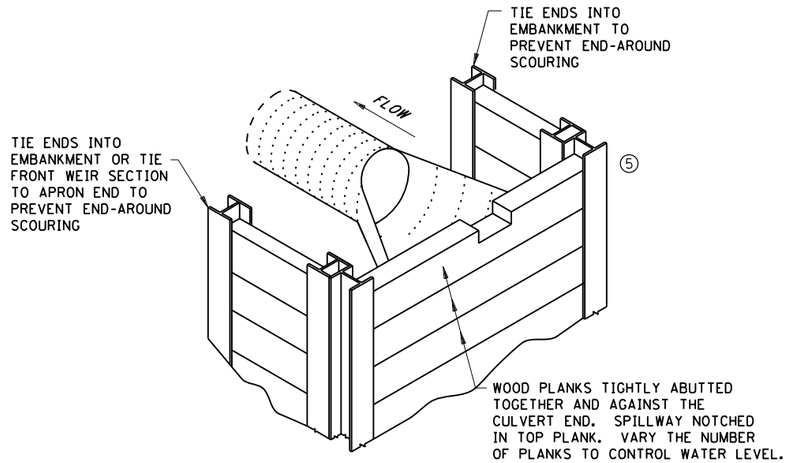
TOP VIEW

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

01/09/2024

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.405 | 8 OF 8

APPROVED: 2-28-2017

REVISED:

STATE DESIGN ENGINEER

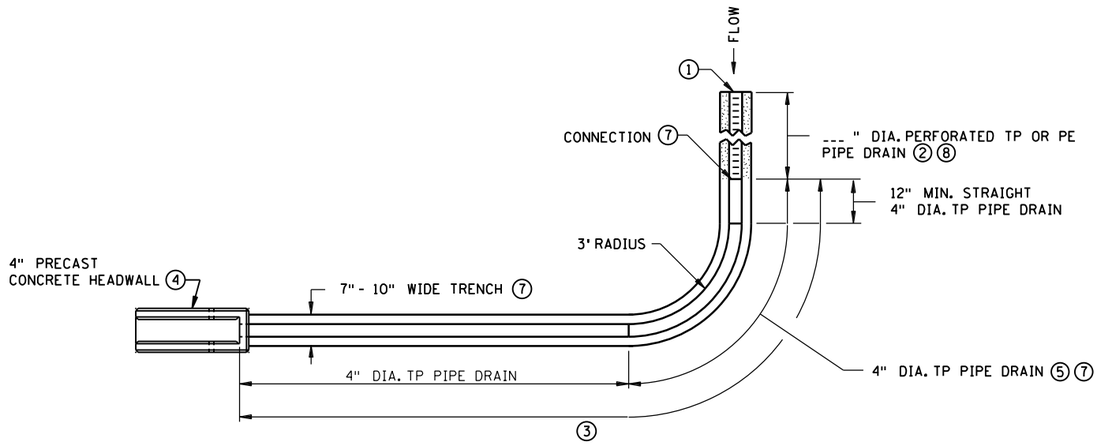
TEMPORARY SEDIMENT CONTROL

CULVERT END CONTROLS

SAP 002-622-042

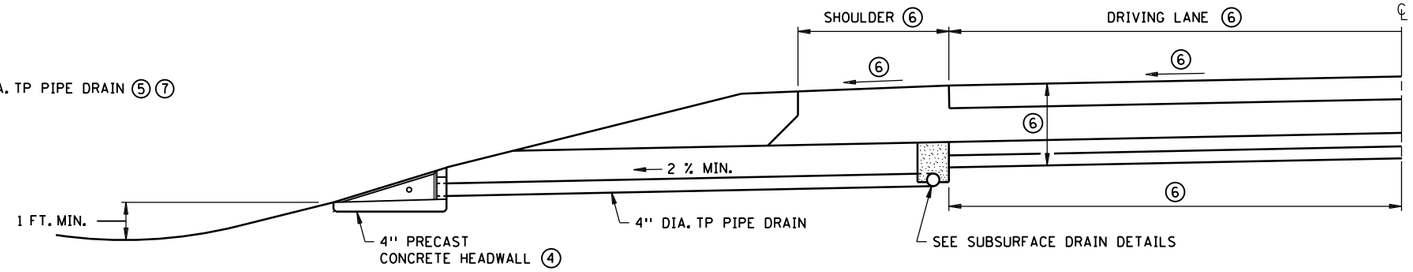
SHEET NO. 41 OF 123 SHEETS

PLOTTED/REVISED: 01/09/2024
DISTRICT *:
IPLOT NAME: $$@IPLOT$NAME@$$
PATH & FILENAME: P:\002-622-042 Whitetopping\Plan\002622042_STD.dgn



TYPICAL PLAN VIEW (SINGLE DISCHARGE) 7

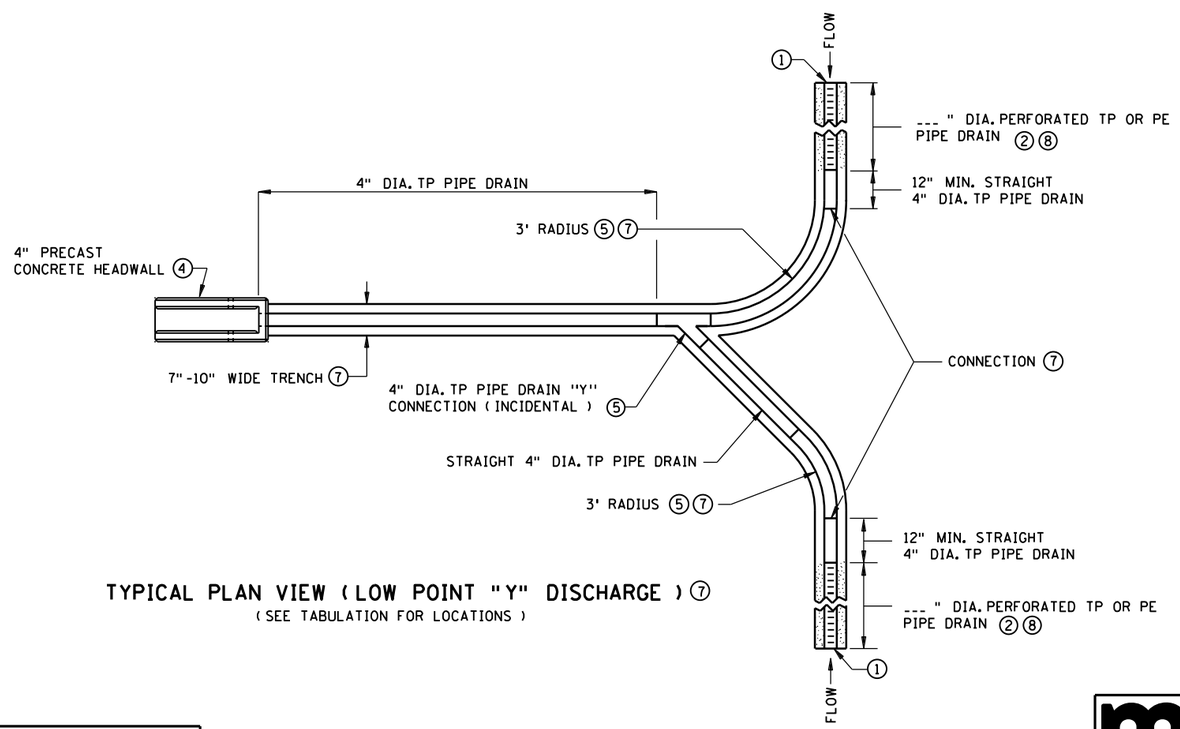
(SEE TABULATION FOR LOCATIONS)



SECTION VIEW

TYPICAL EDGE DRAIN AND DISCHARGE CROSS SECTION 7

(SEE TABULATION FOR LOCATIONS)



TYPICAL PLAN VIEW (LOW POINT "Y" DISCHARGE) 7

(SEE TABULATION FOR LOCATIONS)

NOTES:

1. THE UPSTREAM ENDS OF THE PERFORATED PIPE SHALL BE CAPPED AS APPROVED BY THE PROJECT ENGINEER. THE CAPS ARE INCIDENTAL. PLACE PERFORATED PIPE WITH THE PERFORATIONS DOWN.
2. MAXIMUM LENGTH 500 FT., EXCEPT 300 FT. MAXIMUM FOR GRADES LESS THAN 0.2% . LENGTH INCLUDED AND PAID FOR AS SPEC. 2502, __ INCH PERFORATED TP OR PE PIPE DRAIN.
3. LENGTH INCLUDED AND PAID FOR AS SPEC. 2502, 4 INCH DIA. TP PIPE DRAIN.
4. PRECAST CONCRETE HEADWALL STANDARD PLATE 3131 PAID FOR AS SPEC. 2502, 4 INCH PRECAST CONCRETE HEADWALL.
5. DETAILS OF CONNECTION AND COUPLING TO PIPE SHALL BE APPROVED BY THE ENGINEER. PAYMENT FOR " Y " AND EXTRA CONNECTION, 11 INCH TP PIPE AND COUPLING TO BE INCIDENTAL.
6. SEE ROADWAY TYPICAL SECTIONS FOR ADDITIONAL INFORMATION.
7. SEE SPECIAL PROVISIONS FOR MATERIAL AND CONSTRUCTION DETAILS.
8. 3 INCH OR 4 INCH DIAMETER.

REVISION:

APPROVED: 8-6-2014

DIRECTOR, OFFICE OF MATERIALS AND ROAD RESEARCH

01/09/2024

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.433 | 1 OF 1

APPROVED: 8-6-2014

REVISED:

STATE DESIGN ENGINEER

SUBSURFACE DRAINS

OUTLET PIPES FOR EDGE AND SUBCUT DRAINS

SAP 002-622-042

SHEET NO. 42 OF 123 SHEETS

PLOTTED/REVISED: 01/09/2024

DISTRICT *:
IPLOT NAME: $$@IPLOT$NAME@$$
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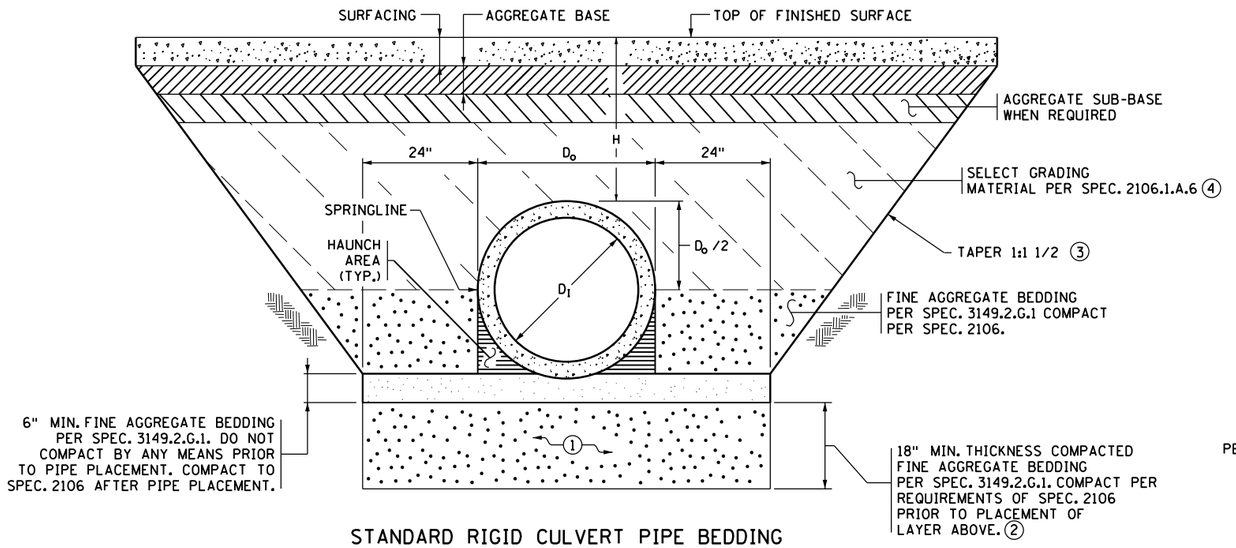
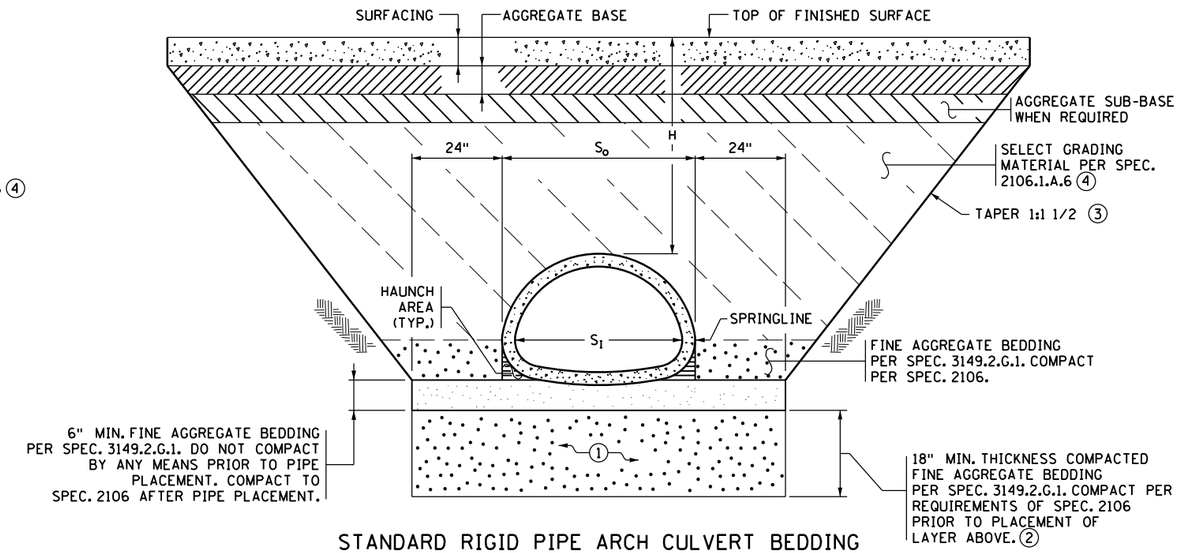


STANDARD RIGID CULVERT PIPE BEDDING



STANDARD RIGID PIPE ARCH CULVERT BEDDING

-LEGEND-

D_1 = INSIDE DIAMETER OF ROUND PIPE (INCHES).
D_o = OUTSIDE DIAMETER OF ROUND PIPE (INCHES).
S_1 = INSIDE SPAN OF PIPE-ARCH (INCHES).
S_o = OUTSIDE SPAN OF PIPE-ARCH (INCHES).
H = FILL COVER HEIGHT OVER PIPE (FEET).

= UNDISTURBED SOIL

= COMPACTED BEDDING

= LOOSE BEDDING, COMPACTED AFTER PIPE PLACEMENT

CONSTRUCTION SEQUENCE

1. PLACE AND COMPACT 18" OF FINE AGGREGATE BEDDING TO THE REQUIREMENTS OF SPEC. 2106.
2. LOOSELY PLACE 6" OF FINE AGGREGATE BEDDING MATERIAL (SPEC. 3149.2.G.1) TO GRADE. DO NOT COMPACT PRIOR TO PIPE PLACEMENT.
3. FOR PIPES WITH BELL, REMOVE MATERIAL IN BELL AREA PRIOR TO PLACEMENT.
4. FURNISH AND INSTALL PIPE TO GRADE.
5. AFTER PLACEMENT OF THE PIPE, PLACE ADDITIONAL BEDDING AND COMPACT THE FULL LENGTH ON BOTH SIDES OF THE PIPE UNDERNEATH THE HAUNCH AREA BY FIRST SHOVEL SLICING (MANUALLY SHOVE THE BLADE END OF A SHOVEL AT AN ANGLE DOWN THE ENTIRE LENGTH OF THE PIPE IN THE HAUNCHH AREA) THEN COMPACT THE HAUNCH AT AN ANGLE USING A POWERED MECHANICAL OR PNEUMATIC DEVICE (I.E. POLE TAMPER, JUMPING JACK, OR SIMILAR).
6. COMPACT THE REMAINING MATERIAL OUTSIDE THE HAUNCH AREA TO THE REQUIREMENTS OF SPEC. 2106 ENSURING THAT THE ENTIRE LENGTH OF PIPE IS SUPPORTED UNIFORMLY BY BEDDING.
7. PLACE AND COMPACT BACKFILL EVENLY AND SIMULTANEOUSLY IN 6" LIFTS ON EACH SIDE OF THE PIPE UP TO THE SPRINGLINE WHEN COMPACTED.
8. COMPLETE REMAINING BACKFILL.

NOTES

STANDARD BEDDING FOR RIGID PIPE CULVERTS WITHOUT TREATMENTS.

RIGID PIPE INCLUDES CONCRETE.

ENTRANCE CULVERTS (FIELD AND DRIVEWAY CULVERTS) DO NOT NEED BEDDING UNLESS SPECIFIED IN THE PLANS OR SPECIAL PROVISIONS.

UNLESS OTHERWISE NOTED IN THE PLAN, BEDDING QUANTITIES ARE COMPUTED FOR THE FULL LENGTH OF THE PIPE AND APRON, AND WILL NOT BE ADJUSTED FOR CHANGES TO MEET OSHA REQUIREMENTS.

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

CONTRACT PAY ITEM FOR FINE AGGREGATE BEDDING INCLUDES THE COST OF EXCAVATION, PLACEMENT AND COMPACTION.

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

EXCAVATE & CONSTRUCT ALL TRENCHES AND SLOPES PER OSHA REQUIREMENTS.

ALL SLOPES SHOWN AS (V) : (H).

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

PROTECT ALL PIPE DURING CONSTRUCTION PER SPEC. 2501.

PLACE MULTIPLE PIPE CULVERTS WITH A CLEARANCE OF 24 INCHES OR GREATER BETWEEN STRINGS OF PIPE.

(1) IF APPROVED BY THE ENGINEER, IN WET CONDITIONS THE CONTRACTOR MAY SUBSTITUTE 18" OF COARSE FILTER AGGREGATE PER SPEC. 3149.2.H COMPACTED TO THE QUALITY COMPACTION REQUIREMENTS OF SPEC. 2106. WRAP WITH GEOTEXTILE FABRIC TYPE IV PER SPEC. 3733. SEAM ALL FABRIC SIDES AND ENDS PER SPEC. TABLE 3733-1 INCLUDING FOOTNOTE (e) OR OVERLAP A MINIMUM OF 3 FT., ALL AT NO ADDITIONAL COST.

(2) FOR INSTALLATIONS ON INTACT BEDROCK, OMIT THIS LAYER.

(3) OVER-EXCAVATION BENEATH TAPERS IS NOT PERMITTED UNLESS REQUIRED BY OSHA. (TYP.)

(4) MAXIMUM EMBANKMENT PARTICLE SIZE WITHIN 2 FT. OF RIGID PIPE IS 3".

REVISION:

APPROVED: JANUARY 18, 2019
Kevin Western
STATE BRIDGE ENGINEER

01/09/2024

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.441 | 1 OF 1

APPROVED: 01-18-2019
REVISED:

Tom Sorel
STATE DESIGN ENGINEER

STANDARD CULVERT BEDDING FOR RIGID PIPE (WITHOUT TREATMENTS)

SAP 002-622-042

SHEET NO. 43 OF 123 SHEETS

PLOTTED/REVISED: 01/09/2024
DISTRICT #:
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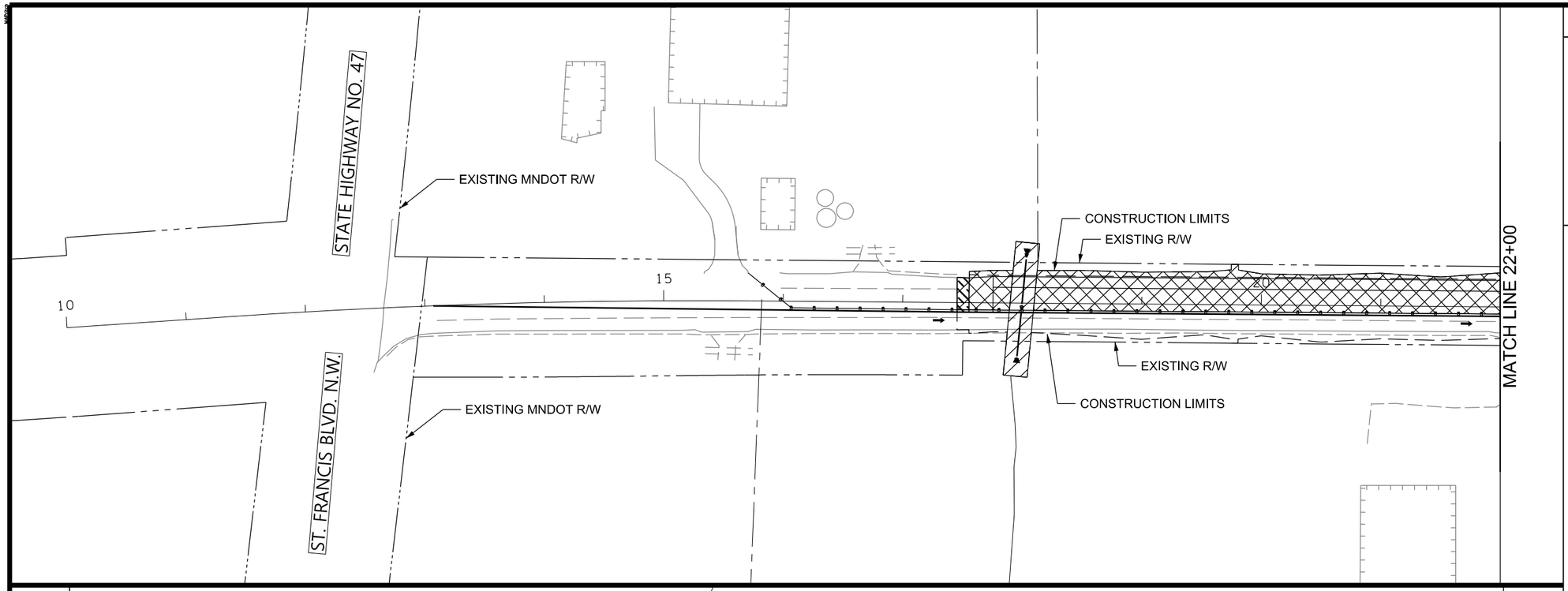
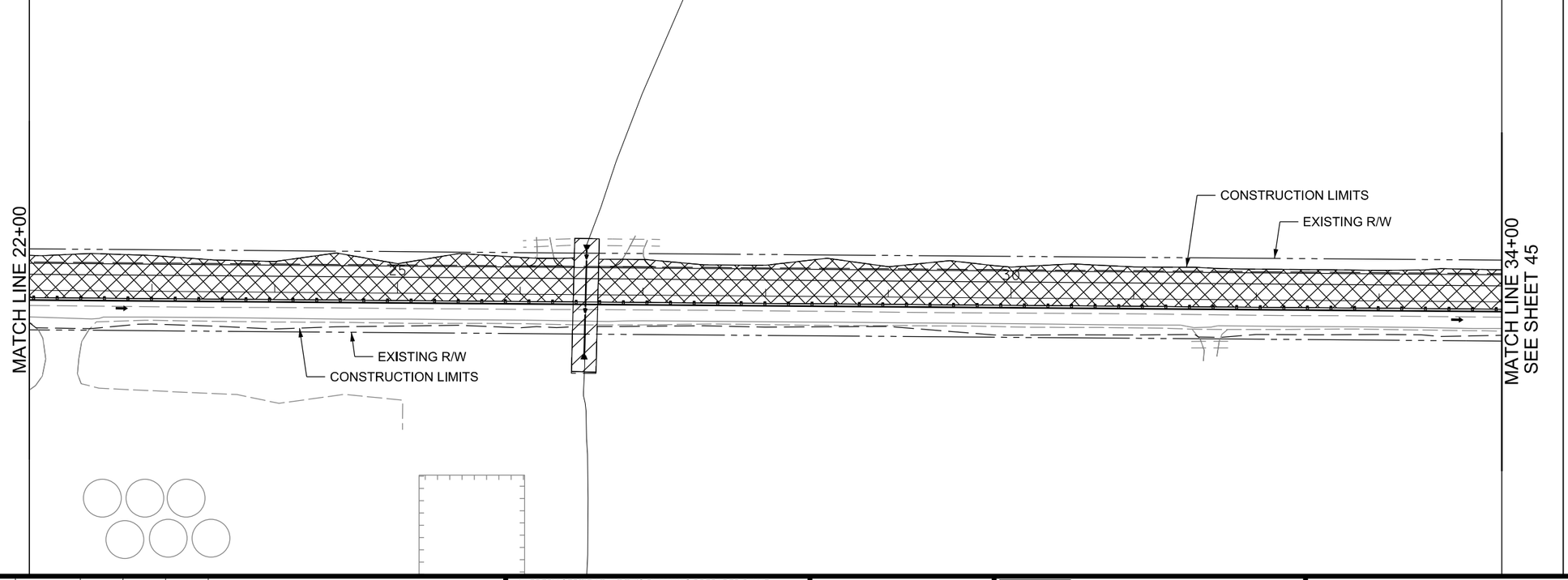




LEGEND

- STAGE 1 CONSTRUCTION
- STAGE 1 CONSTRUCTION UNDER TRAFFIC
- CURRENT STAGE STORM SEWER WORK
- CHANNELIZERS
- GENERAL TRAFFIC FLOW 12' MIN. LANE WIDTH. SEE TRAFFIC CONTROL PLAN FOR DETAILS

STAGE 1 CONSTRUCTION NOTES:

1. REMOVE AND REPLACE CULVERTS PRIOR TO BEGINNING PAVING.
2. PROVIDE MINIMUM 12' LANES IN EASTBOUND DIRECTION.
3. GRADE DITCHES AND INSTALL STORM SEWER AS SHOWN IN PLAN.
4. QUAPAW STREET TO BE FULLY CLOSED.
5. GRADE AND INSTALL CONCRETE PAVEMENT, AND PLACE BASE AND BINDER BITUMINOUS PAVEMENT COURSE ON CSAH 22 WHERE INDICATED ON NORTH SIDE.
6. STABILIZE VEGETATION AND SOIL STOCKPILES WITHIN 7 DAYS OF ROUGH GRADING OR INACTIVITY. ADDITIONAL TEMPORARY AND PERMANENT EROSION CONTROL AS DIRECTED BY ENGINEER.
7. CONTRACTOR TO COORDINATE STAGING WITH PROJECT SP 002-622-041 IN ORDER TO MAINTAIN TRAFFIC FLOW THROUGHOUT CONSTRUCTION.

N

0 100
SCALE IN FEET

1 OF 3

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-622-042 Whitetopping\Plan\002622042_STG-1_P1.dgn 01/09/2024 1:08:15 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: NICHOLAS DOBDA

SIGNATURE:

DATE: 01/09/2024 LICENSE NO. 49046

DRAWN BY MP DATE 01/09/24

DESIGN BY MP DATE 01/09/24

CHECKED BY ND DATE 01/09/24

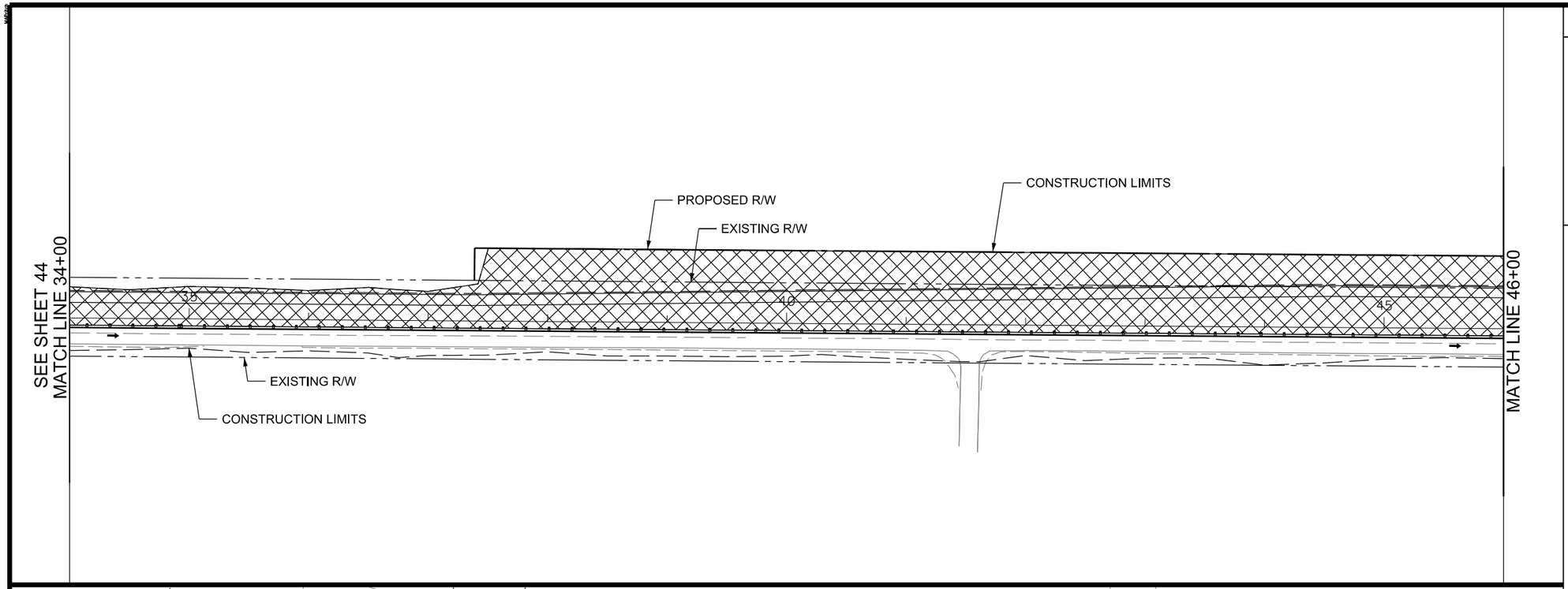
ANOKA COUNTY

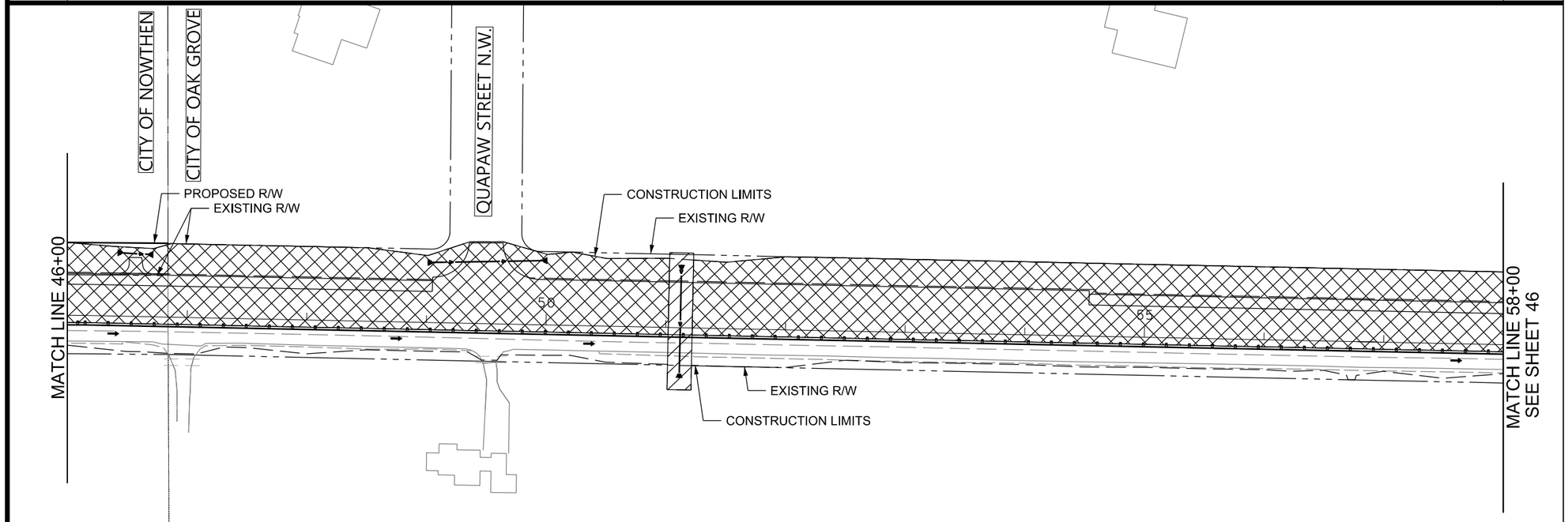
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

STAGING PLAN
STAGE 1

Sheet 44 of 123 Sheets





LEGEND

- STAGE 1 CONSTRUCTION
- STAGE 1 CONSTRUCTION UNDER TRAFFIC
- CURRENT STAGE STORM SEWER WORK
- CHANNELIZERS
- GENERAL TRAFFIC FLOW 12' MIN. LANE WIDTH. SEE TRAFFIC CONTROL PLAN FOR DETAILS

STAGE 1 CONSTRUCTION NOTES:

1. REMOVE AND REPLACE CULVERTS PRIOR TO BEGINNING PAVING.
2. PROVIDE MINIMUM 12' LANES IN EASTBOUND DIRECTION.
3. GRADE DITCHES AND INSTALL STORM SEWER AS SHOWN IN PLAN.
4. QUAPAW STREET TO BE FULLY CLOSED.
5. GRADE AND INSTALL CONCRETE PAVEMENT, AND PLACE BASE AND BINDER BITUMINOUS PAVEMENT COURSE ON CSAH 22 WHERE INDICATED ON NORTH SIDE.
6. STABILIZE VEGETATION AND SOIL STOCKPILES WITHIN 7 DAYS OF ROUGH GRADING OR INACTIVITY. ADDITIONAL TEMPORARY AND PERMANENT EROSION CONTROL AS DIRECTED BY ENGINEER.
7. CONTRACTOR TO COORDINATE STAGING WITH PROJECT SP 002-622-041 IN ORDER TO MAINTAIN TRAFFIC FLOW THROUGHOUT CONSTRUCTION.

N

0 100
SCALE IN FEET

2 OF 3

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-622-042 Whitetopping\Plan\002622042_STG-1_P2.dgn 01/09/2024 1:08:40 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: NICHOLAS DOBDA

SIGNATURE:

DATE: 01/09/2024 LICENSE NO. 49046

DRAWN BY MP DATE 01/09/24

DESIGN BY MP DATE 01/09/24

CHECKED BY ND DATE 01/09/24

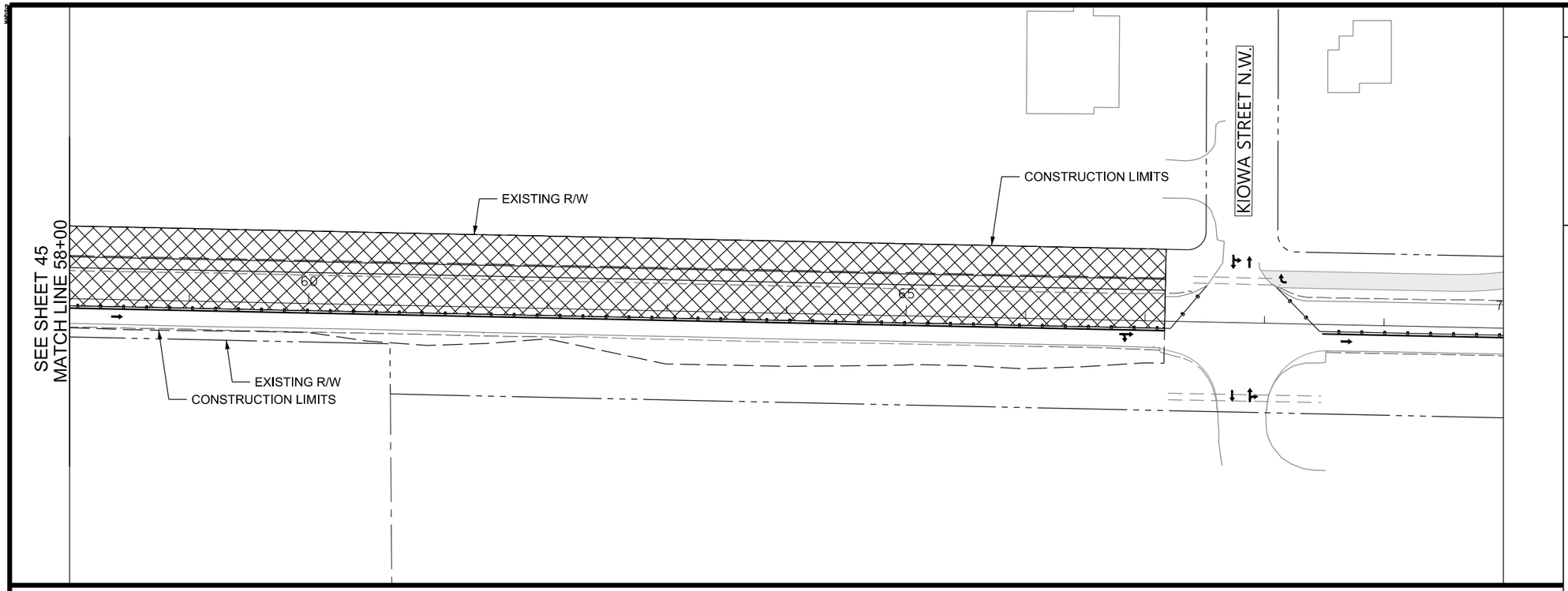
ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

STAGING PLAN
STAGE 1

Sheet 45 of 123 Sheets



LEGEND

- STAGE 1 CONSTRUCTION
- STAGE 1 CONSTRUCTION UNDER TRAFFIC
- CURRENT STAGE STORM SEWER WORK
- CHANNELIZERS
- GENERAL TRAFFIC FLOW 12' MIN. LANE WIDTH. SEE TRAFFIC CONTROL PLAN FOR DETAILS

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N

0 100
SCALE IN FEET

3 OF 3

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-622-042 Whitetopping\Plan\002622042_STG-1_P3.dgn 01/09/2024 1:10:03 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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CHECKED BY ND DATE 01/09/24

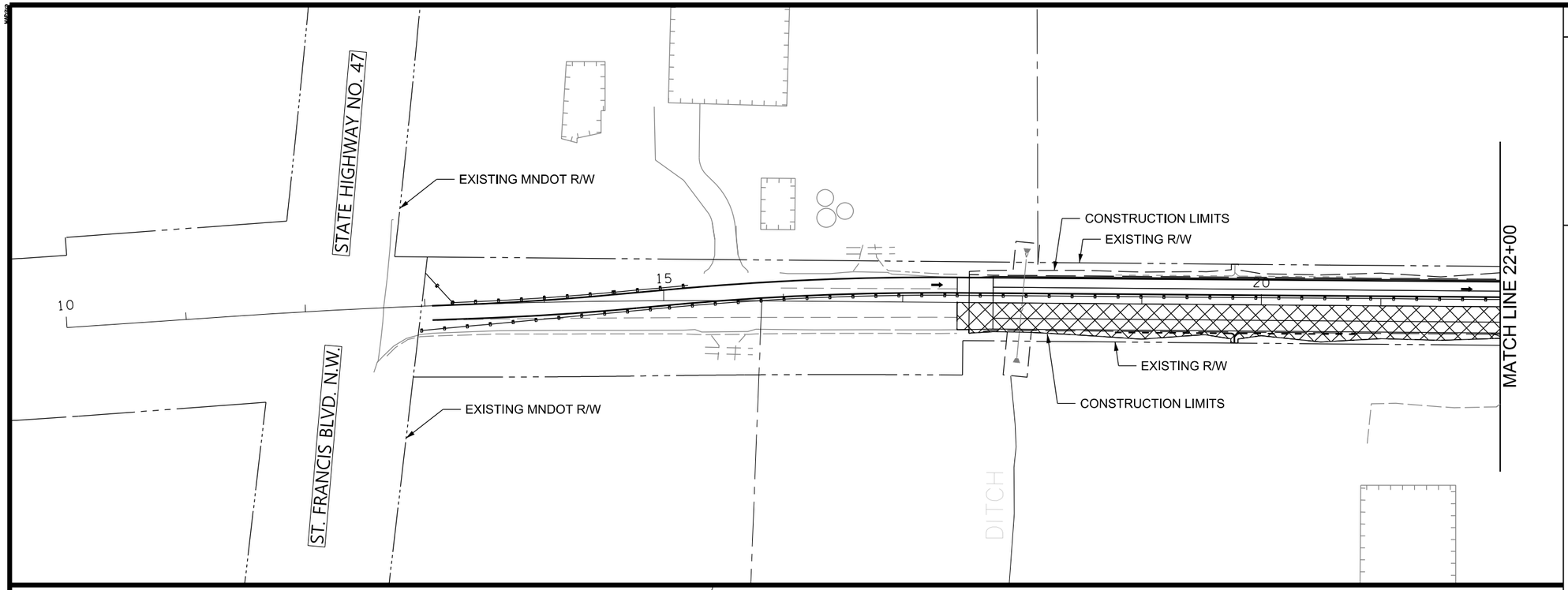
ANOKA COUNTY

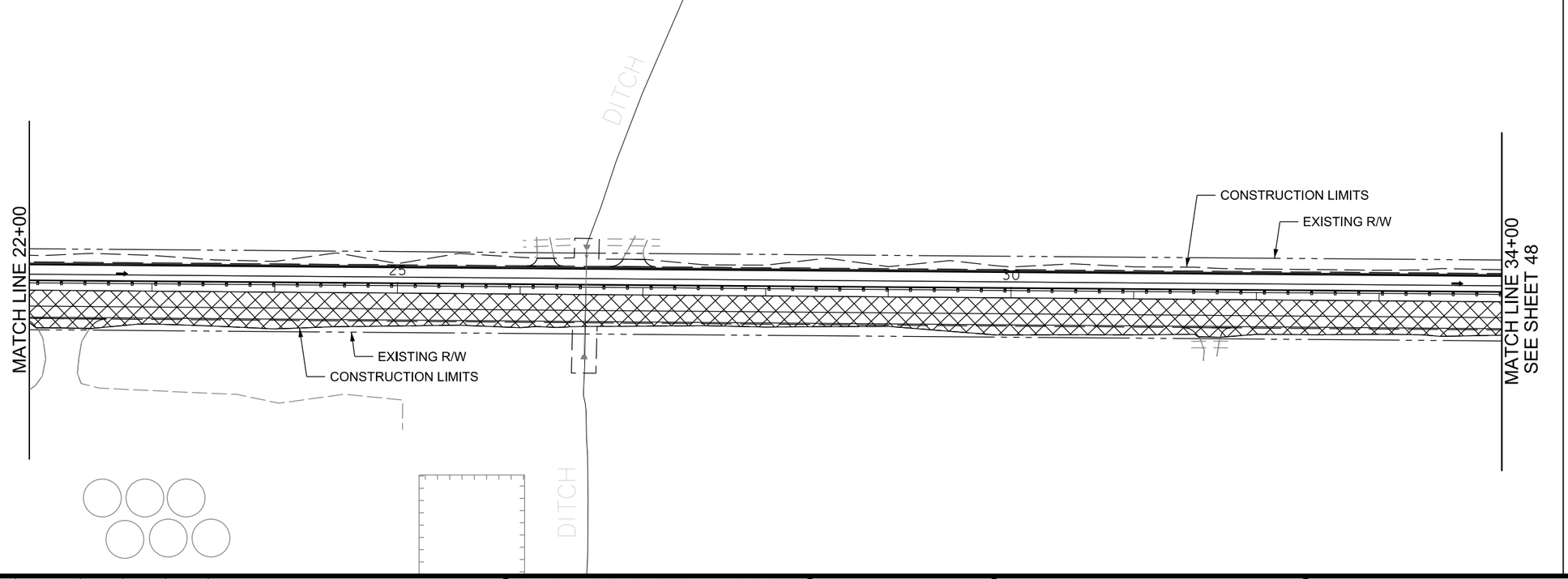
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

STAGING PLAN
STAGE 1

Sheet 46 of 123 Sheets





LEGEND

- STAGE 2 CONSTRUCTION
- PREVIOUS STAGE STORM SEWER WORK
- CHANNELIZERS
- GENERAL TRAFFIC FLOW 12' MIN. LANE WIDTH. SEE TRAFFIC CONTROL PLAN FOR DETAILS

STAGE 2 CONSTRUCTION NOTES:

1. REMOVE AND REPLACE CULVERTS PRIOR TO BEGINNING PAVING.
2. PROVIDE MINIMUM 12' LANES IN EASTBOUND DIRECTION.
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4. CONTRACTOR SHALL MAINTAIN ACCESS TO PARCELS ON THE SOUTH SIDE OF CSAH 22 AND COORDINATE WITH RESIDENTS DURING TEMPORARY RESTRICTIONS.
5. GRADE AND INSTALL CONCRETE PAVEMENT, AND PLACE BASE AND BINDER BITUMINOUS PAVEMENT COURSE ON CSAH 22 WHERE INDICATED ON SOUTH SIDE.
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N

0 100
SCALE IN FEET

1 OF 3

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-622-042 Whitetopping\Plan\002622042_STG-2_P1.dgn 01/09/2024 1:10:29 PM

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DRAWN BY MP DATE 01/09/24

DESIGN BY MP DATE 01/09/24

CHECKED BY ND DATE 01/09/24

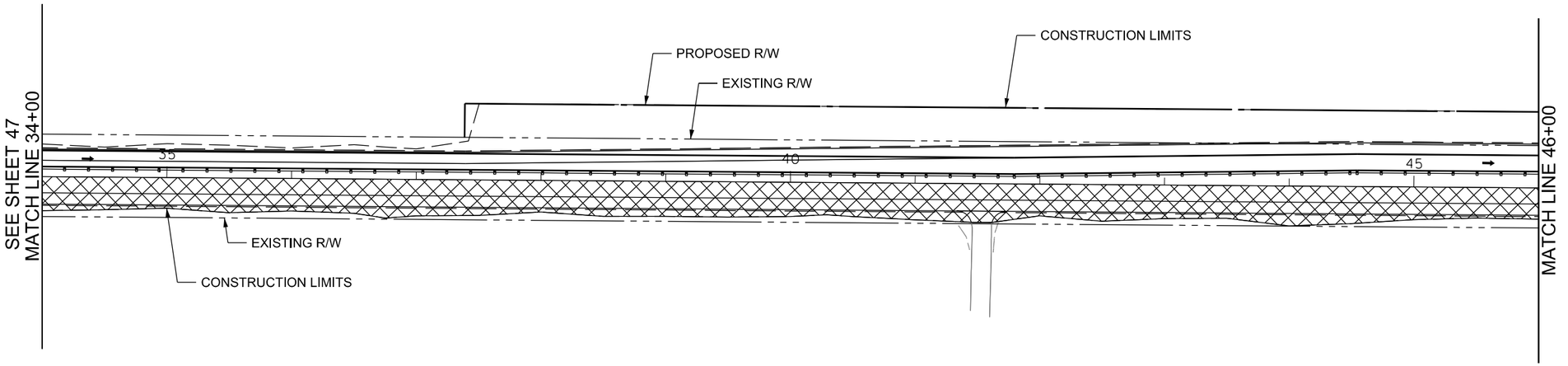
ANOKA COUNTY

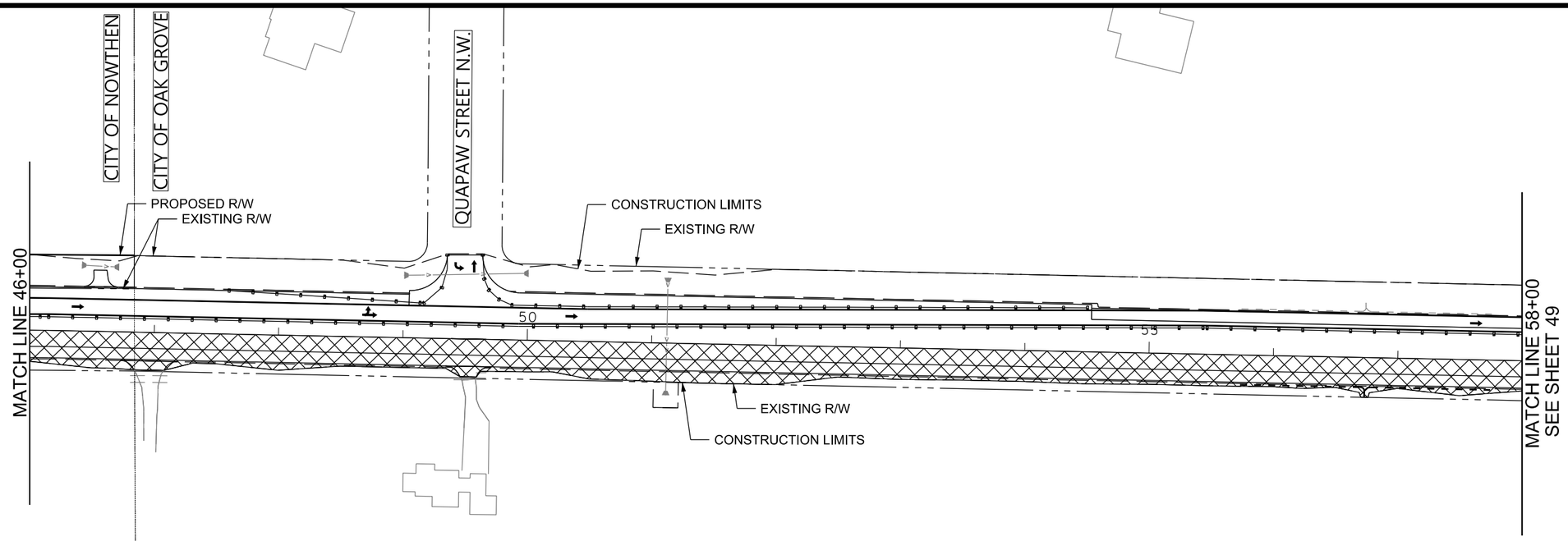
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

STAGING PLAN
STAGE 2

Sheet 47 of 123 Sheets





LEGEND

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0 100
SCALE IN FEET

2 OF 3

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-622-042 Whitetopping\Plan\002622042_STG-2_P2.dgn 01/09/2024 1:10:50 PM

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DATE: 01/09/2024 LICENSE NO. 49046

DRAWN BY MP DATE 01/09/24

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CHECKED BY ND DATE 01/09/24

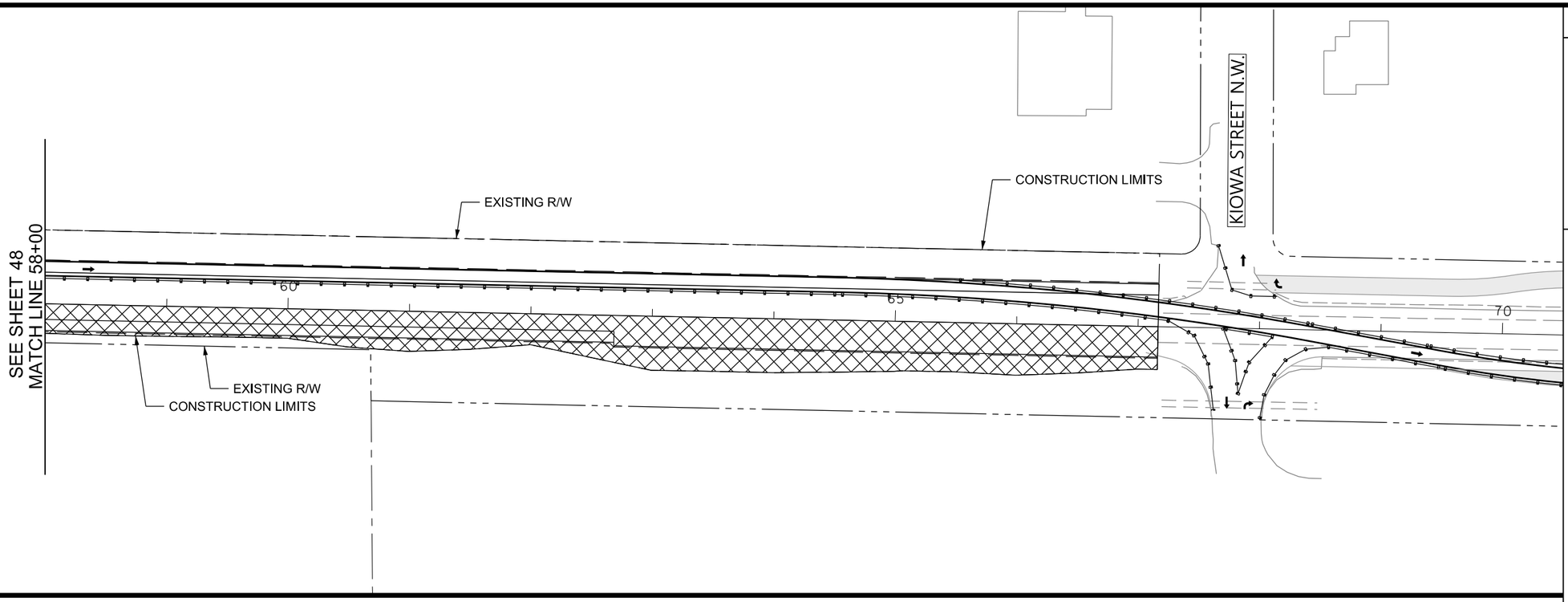
ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

STAGING PLAN
STAGE 2

Sheet 48 of 123 Sheets



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SCALE IN FEET

3 OF 3

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-622-042 Whitetopping\Plan\002622042_STG-2_P3.dgn 01/09/2024 1:11:15 PM

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PRINT NAME: NICHOLAS DOBDA

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DATE: 01/09/2024 LICENSE NO. 49046

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CHECKED BY ND DATE 01/09/24

ANOKA COUNTY

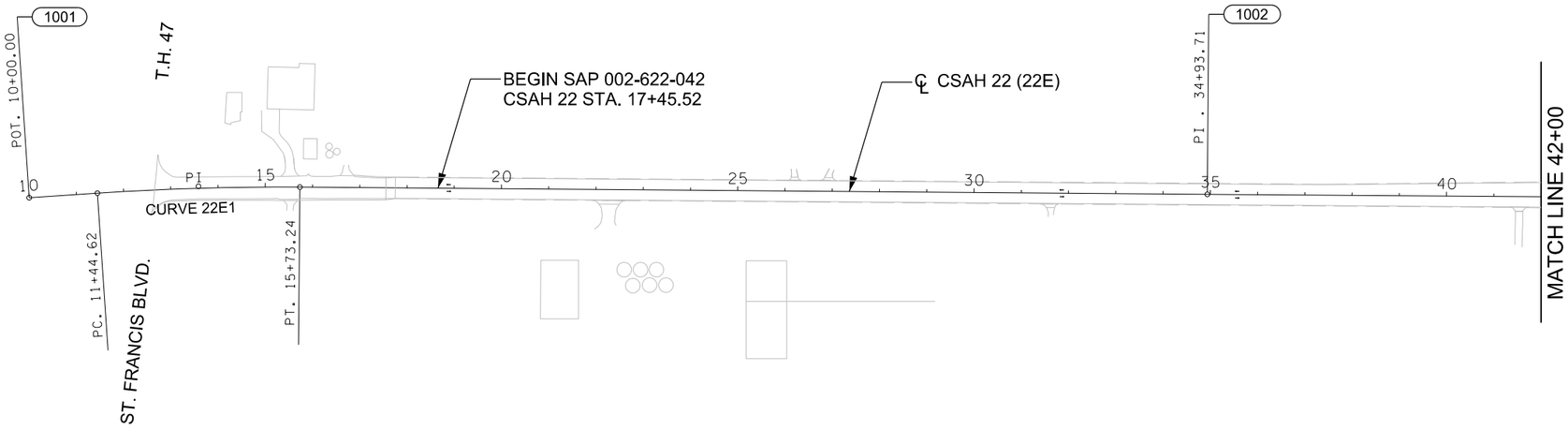
ANOKA COUNTY HIGHWAY DEPT.

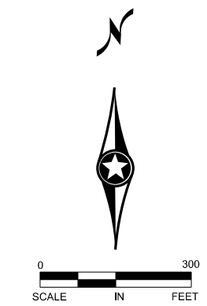
SAP 002-622-042

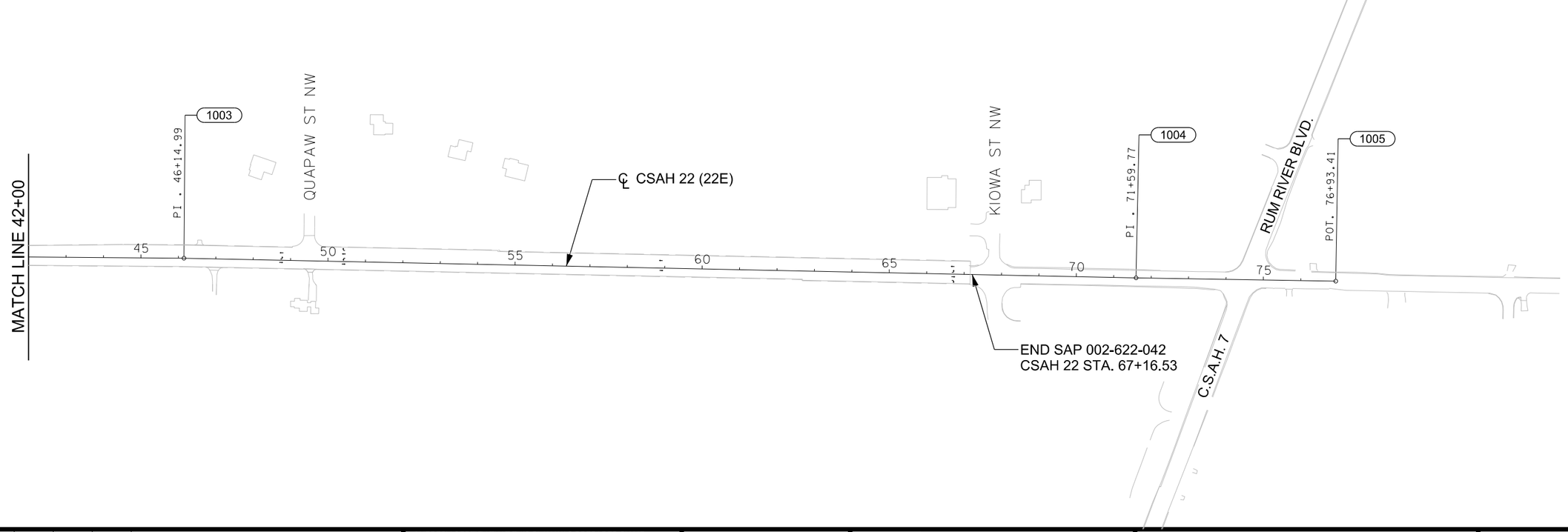
STAGING PLAN

STAGE 2

Sheet 49 of 123 Sheets







NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-622-042 Whitetopping\Plan\002622042_AL1_P1.dgn 01/09/2024 1:11:31 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: NICHOLAS DOBDA

SIGNATURE:

DATE: 01/09/2024 LICENSE NO. 49046

DRAWN BY MP DATE 01/09/24

DESIGN BY MP DATE 01/09/24

CHECKED BY ND DATE 01/09/24

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

ALIGNMENT PLAN

Sheet 50 of 123 Sheets

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	E	N	
℄ C.S.A.H. 22 EASTBOUND <22E>										
1001	POT	10+00.000						464,960.4900	206,657.2190	
	PC	11+44.620						465,104.7859	206,666.8910	N 86° 09' 54.88" E
22E1	PI	13+59.032	4° 17' 09.34" RT	0° 59' 59.73"	5,730.000'	214.412'	428.624'	465,318.7179	206,681.2307	PI
	CC							465,488.0034	200,949.7200	
	PT	15+73.244						465,533.1234	206,679.5424	S 89° 32' 55.78" E
1002	POT	34+93.706						467,453.5260	206,664.4200	
1003	POT	46+14.993						468,574.7808	206,655.9734	
1004	POT	71+59.774						471,119.0209	206,603.5108	
1005	POT	76+93.415						471,652.5883	206,594.6309	

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-622-042 Whitetopping\Plan\002622042_ALT.dgn 01/09/2024 1:11:35 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: 01/09/2024 LICENSE NO. 49046

DRAWN BY MP DATE 01/09/24

DESIGN BY MP DATE 01/09/24

CHECKED BY ND DATE 01/09/24

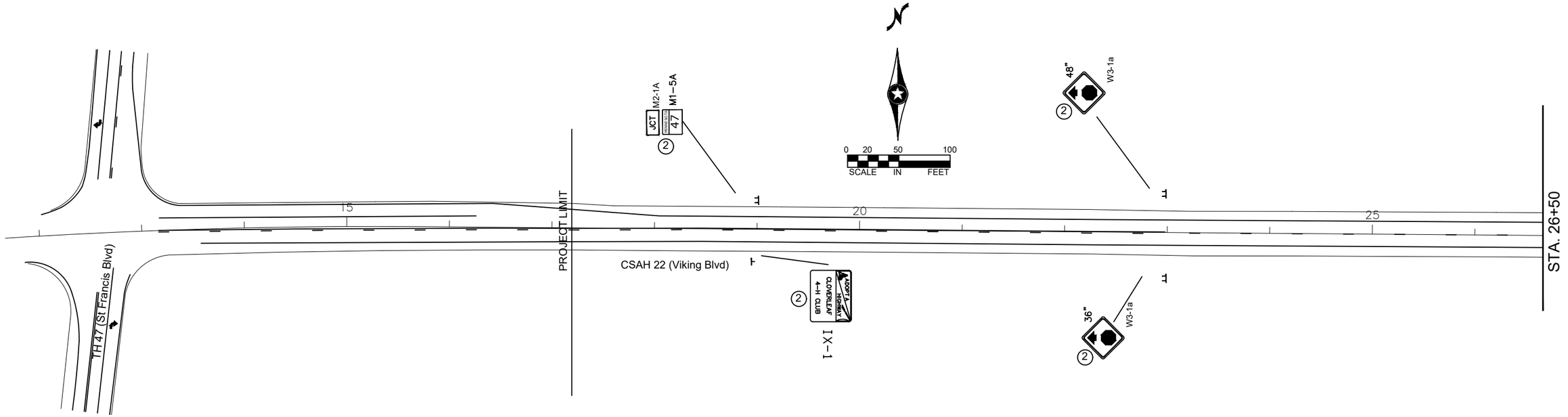
ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

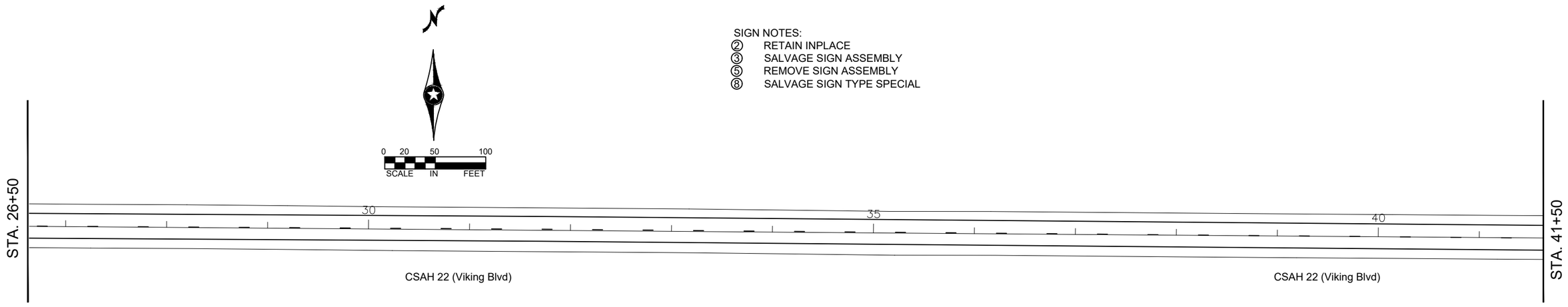
SAP 002-622-042

ALIGNMENT TABULATION

Sheet 51 of 123 Sheets



SIGN NOTES:
② RETAIN INPLACE
③ SALVAGE SIGN ASSEMBLY
⑤ REMOVE SIGN ASSEMBLY
⑧ SALVAGE SIGN TYPE SPECIAL



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-622-042 Whitetopping\Base\Traffic

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: 1/9/2024 LICENSE NO. 45129

DRAWN BY LJK DATE 05/16/23
DESIGN BY LJK DATE 05/16/23
CHECKED BY SRT DATE 01/09/24

ANOKA COUNTY HIGHWAY DEPT.

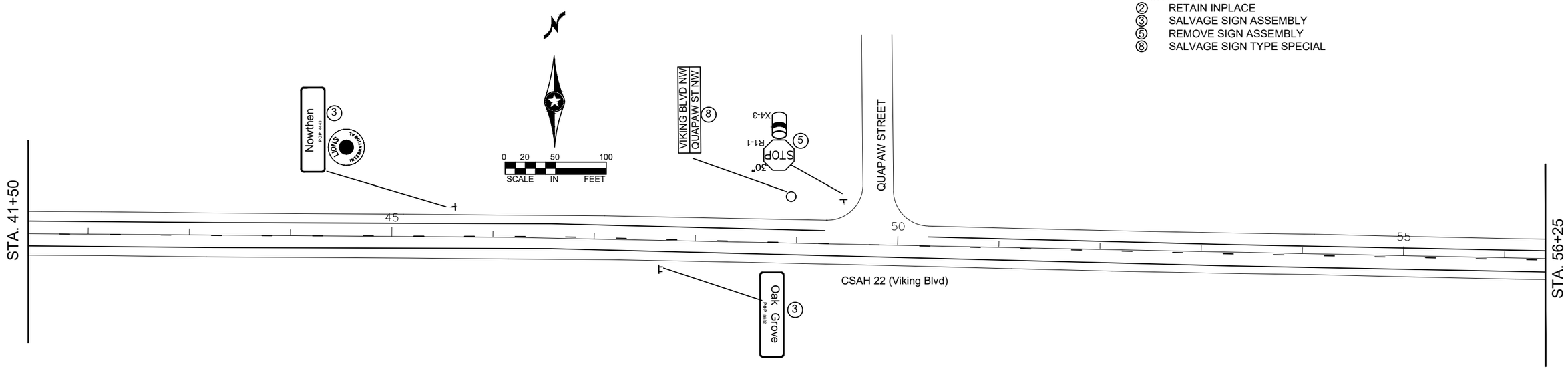
SAP 002-622-042

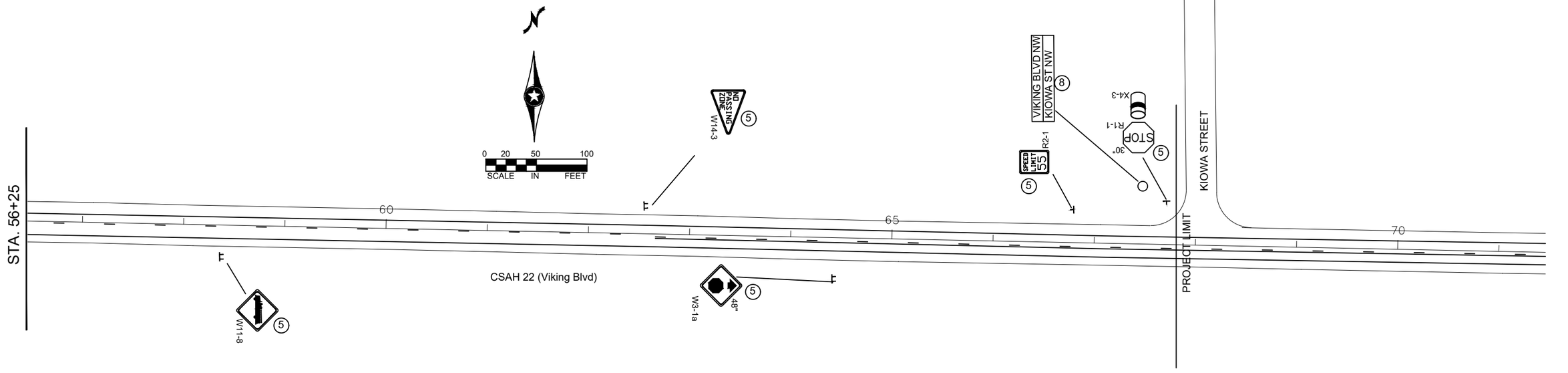
EXISTING SIGNING & STRIPING

Sheet 52 of 123 Sheets

01/09/2024

SIGN NOTES:
② RETAIN INPLACE
③ SALVAGE SIGN ASSEMBLY
⑤ REMOVE SIGN ASSEMBLY
⑧ SALVAGE SIGN TYPE SPECIAL





NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-622-042 Whitetopping\Base\Traffic

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SIGNATURE: Sean R. Thiel
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DRAWN BY LJK DATE 05/16/23
DESIGN BY LJK DATE 05/16/23
CHECKED BY SRT DATE 01/09/24

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-622-042

EXISTING
SIGNING & STRIPING

Sheet 53 of 123 Sheets

01/09/2024

EXISTING SIGN TAB					
STATION	**ADDRESS/ DESCRIPTION (NOTES)**	**REMOVE SIGN TYPE C**	**SIGN TYPE SPECIAL**	**SIGN NUMBER**	**SIGN LEGEND**
		EACH	**EACH**		
CSAH 22 (VIKING BLVD)					
19+00	LT			M2-1A	JCT
				M1-5A	MINNESOTA 47
19+00	RT			IX-1	ADOPT A HIGHWAY
22+00	LT			W3-1A	STOP AHEAD
	RT			W3-1A	STOP AHEAD
45+60	LT	1			NOWTHEN POP 4443
47+60	RT	1			OAK GROVE POP 8682
48+95	LT		1		VIKING BLVD NW QUAPAW ST NW
46+50	LT	1		R1-1	STOP
				X4-3	DELINEATOR
58+40	RT	1		W11-8	FIRE STATION
62+55	LT	1		W14-3	NO PASSING ZONE
64+45	RT	1		W3-1A	STOP AHEAD
66+80	LT	1		R2-1	SPEED LIMIT 55
67+50	LT		1		VIKING BLVD NW KIOWA ST NW
67+80	LT	1		R1-1	STOP
				X4-3	DELINEATOR
	TOTAL	8	2		

CONSTRUCTION NOTES:

1. SIGN TYPE SPECIAL ARE TO REMAIN VISIBLE AT ALL TIMES. SHALL BE PAID BY THE EACH, WHEN RELOCATION IS REQUIRED.

01/09/2024

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-622-042 Whitetopping\Base\Traffic

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: Sean R. Thiel

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DRAWN BY LJK DATE 05/16/23

DESIGN BY LJK DATE 05/16/23

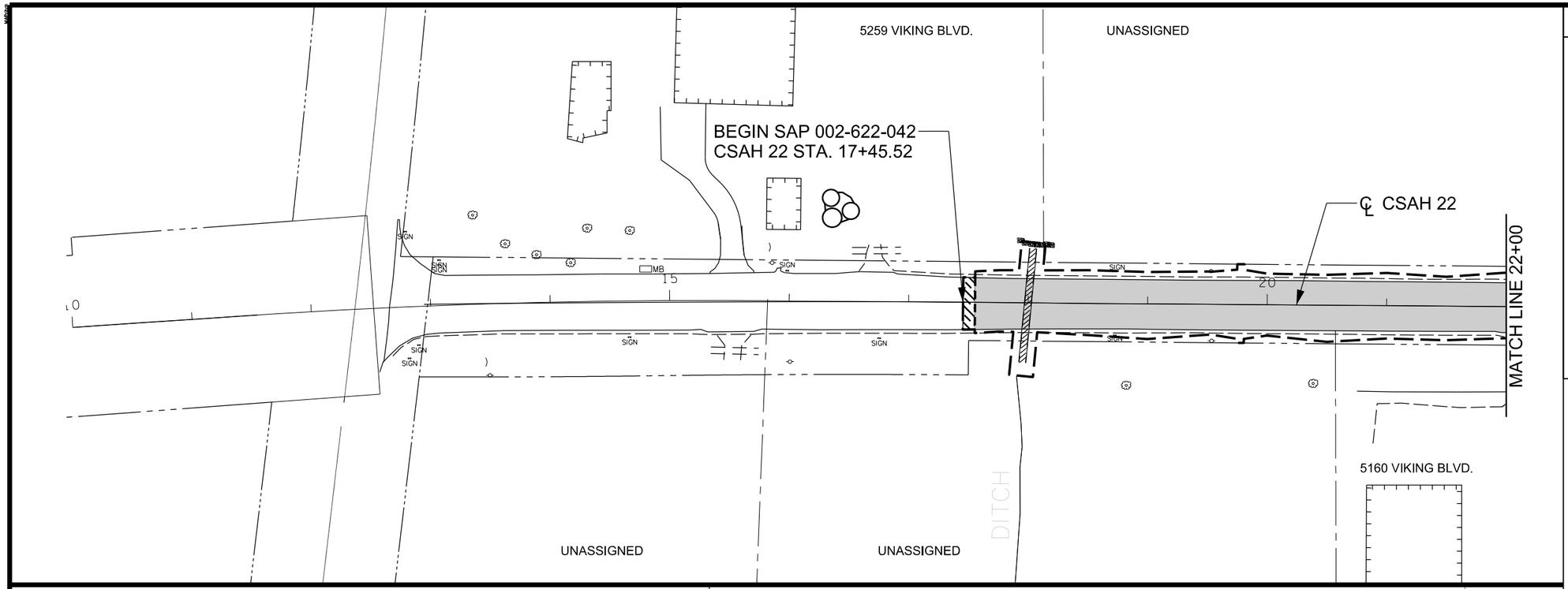
CHECKED BY SRT DATE 01/09/24

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

EXISTING SIGN REMOVAL QUANTITIES



LEGEND

- EXISTING RIGHT OF WAY
- WETLAND BOUNDARY
- CONSTRUCTION LIMITS
- REMOVE BITUMINOUS PAVEMENT
- REMOVE BITUMINOUS DRIVEWAY
- MILL AND OVERLAY BITUMINOUS PAVEMENT
- CLEAR & GRUB (ACRE)
- SAWING BITUMINOUS PAVEMENT
- REMOVE PIPE CULVERTS
- REMOVE CURB AND GUTTER
- TREE REMOVAL BY EACH

REMOVAL NOTES:

THE CONTRACTOR SHALL PERFORM ALL CLEARING AND 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. SEE EXISTING SIGNING & STRIPING PLAN.

N

SCALE 0 100 IN FEET

1 OF 3

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-622-042 Whitetopping\Plan\002622042_RM1_P1.dgn 01/09/2024 1:12:01 PM

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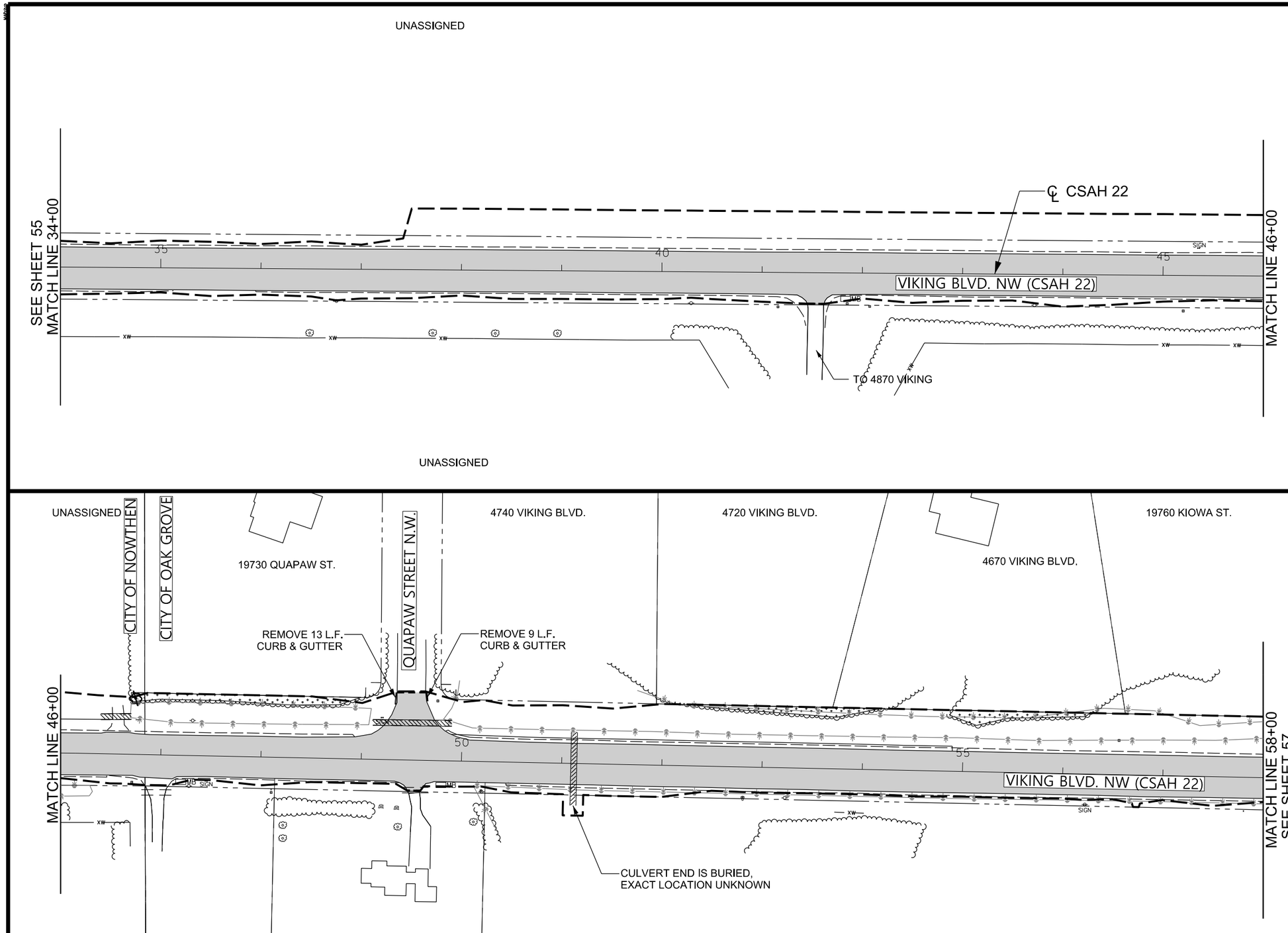
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

INPLACE TOPOGRAPHY AND REMOVAL PLAN

STA 17+45.52 TO 34+00

Sheet 55 of 123 Sheets



LEGEND

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2 OF 3

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-622-042 Whitetopping\Plan\002622042_RM1_P2.dgn 01/09/2024 1:12:11 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: NICHOLAS DOBDA

SIGNATURE:

DATE: 01/09/2024 LICENSE NO. 49046

DRAWN BY MP DATE 01/09/24

DESIGN BY MP DATE 01/09/24

CHECKED BY ND DATE 01/09/24

ANOKA COUNTY

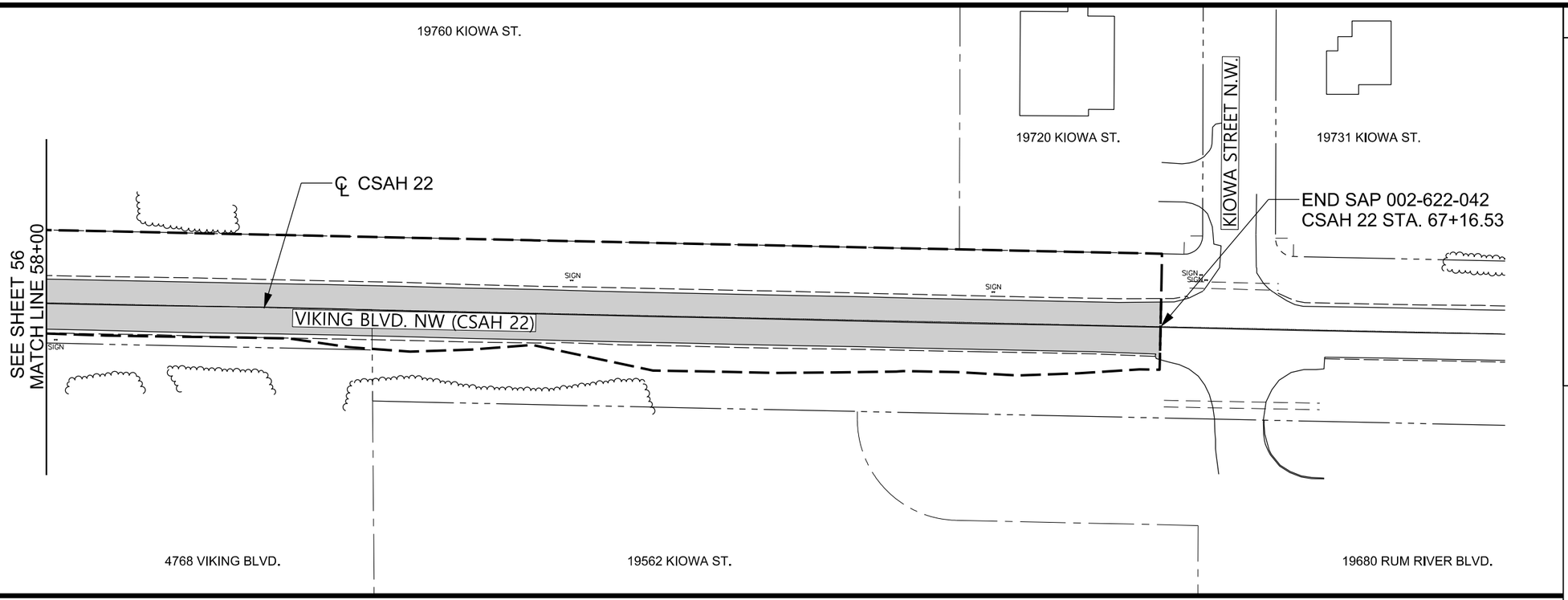
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

INPLACE TOPOGRAPHY AND REMOVAL PLAN

STA 34+00 TO 58+00

Sheet 56 of 123 Sheets



LEGEND

- EXISTING RIGHT OF WAY
- WETLAND BOUNDARY
- CONSTRUCTION LIMITS
- REMOVE BITUMINOUS PAVEMENT
- REMOVE BITUMINOUS DRIVEWAY
- MILL AND OVERLAY BITUMINOUS PAVEMENT
- CLEAR & GRUB (ACRE)
- SAWING BITUMINOUS PAVEMENT
- REMOVE PIPE CULVERTS
- REMOVE CURB AND GUTTER
- TREE REMOVAL BY EACH

REMOVAL NOTES:

THE CONTRACTOR SHALL PERFORM ALL CLEARING AND 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. SEE EXISTING SIGNING & STRIPING PLAN.

N

0 100
SCALE IN FEET

3 OF 3

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-622-042 Whitetopping\Plan\002622042_RM1_P3.dgn 01/09/2024 1:12:25 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: NICHOLAS DOBDA

SIGNATURE:

DATE: 01/09/2024 LICENSE NO. 49046

DRAWN BY MP DATE 01/09/24

DESIGN BY MP DATE 01/09/24

CHECKED BY ND DATE 01/09/24

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

INPLACE TOPOGRAPHY AND REMOVAL PLAN

STA 58+00 TO 67+16.53

Sheet 57 of 123 Sheets

5259 VIKING BLVD.

UNASSIGNED

STATE HIGHWAY NO. 47

BEGIN SAP 002-622-042
CSAH 22 STA. 17+45.52

EXISTING MNDOT R/W

36" RCP CULVERT

CONSTRUCTION LIMITS

EXISTING R/W

℄ CSAH 22

TP PIPE DRAIN, SEE SUBSURFACE DRAINAGE TAB N AND STANDARD PLANS

MATCH LINE 22+00
SEE SHEET 59

10

15

20

VIKING BLVD. NW (CSAH 22)

13' THRU

13' THRU

+45.5
+55.5

+75.5

EXISTING R/W

CONSTRUCTION LIMITS

TP PIPE DRAIN, SEE SUBSURFACE DRAINAGE TAB N AND STANDARD PLANS

ST. FRANCIS BLVD. N.W.

EXISTING MNDOT R/W

DITCH

5160 VIKING BLVD.

UNASSIGNED

UNASSIGNED

CONSTRUCTION NOTES

- (A) AGGREGATE DRIVEWAY
- (B) BITUMINOUS DRIVEWAY
- (C) 9' BITUMINOUS SHOULDER
- (D) 1' AGGREGATE SHOULDER
- (F) FIELD ENTRANCE
- PROPOSED CULVERT
- MILL AND OVERLAY BITUMINOUS PAVEMENT
- BITUMINOUS TRANSITION
- 8" CONCRETE PAVEMENT
- 4" BITUMINOUS PAVEMENT

ALL DIMENSIONS ARE TO EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

N

0 100
SCALE IN FEET

CSAH 22

TRAFFIC

920

910

900

CONSTRUCT PERMANENT CONCRETE HEADER
STA. 17+75.52

20' BITUMINOUS TRANSITION

10' MILL JOINT

BEGIN CONSTRUCTION
STA. 17+45.52

1:4 BACKFILL

1:20 BACKFILL

909.64

VPI +75.52
EL. 909.33

K = 198
220.00' V.C.

908.30

EL.

PROFILE GRADE
TOP FINISHED SURFACE
C/L

1.02%

-1.02%

+0.09%

GRADING GRADE

1.0' SUBGRADE TREATMENT

VPC +75.52
EL. 909.33

36" RCP
INV. 898.58

VPI +85.52
EL. 908.20

VPT +95.52

EXISTING ELEVATION (TYPICAL)

PROPOSED ELEVATION (TYPICAL)

913.05	912.86	912.73	912.60	912.35	912.09	911.70	911.27	910.70	910.11	909.59	**909.59**	909.15	**909.09**	908.88	**908.71**	908.74	**908.45**	908.71	**908.31**	908.65	**908.31**	908.56	**908.35**	908.52	**908.40**	908.57	**908.44**	908.68	**908.49**

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-622-042 Whitetopping\Plan\002622042_PP1_P1.dgn 01/09/2024 1:12:41 PM

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PRINT NAME: NICHOLAS DOBDA

SIGNATURE:

DATE: 01/09/2024 LICENSE NO. 49046

DRAWN BY MP DATE 01/09/24

DESIGN BY MP DATE 01/09/24

CHECKED BY ND DATE 01/09/24

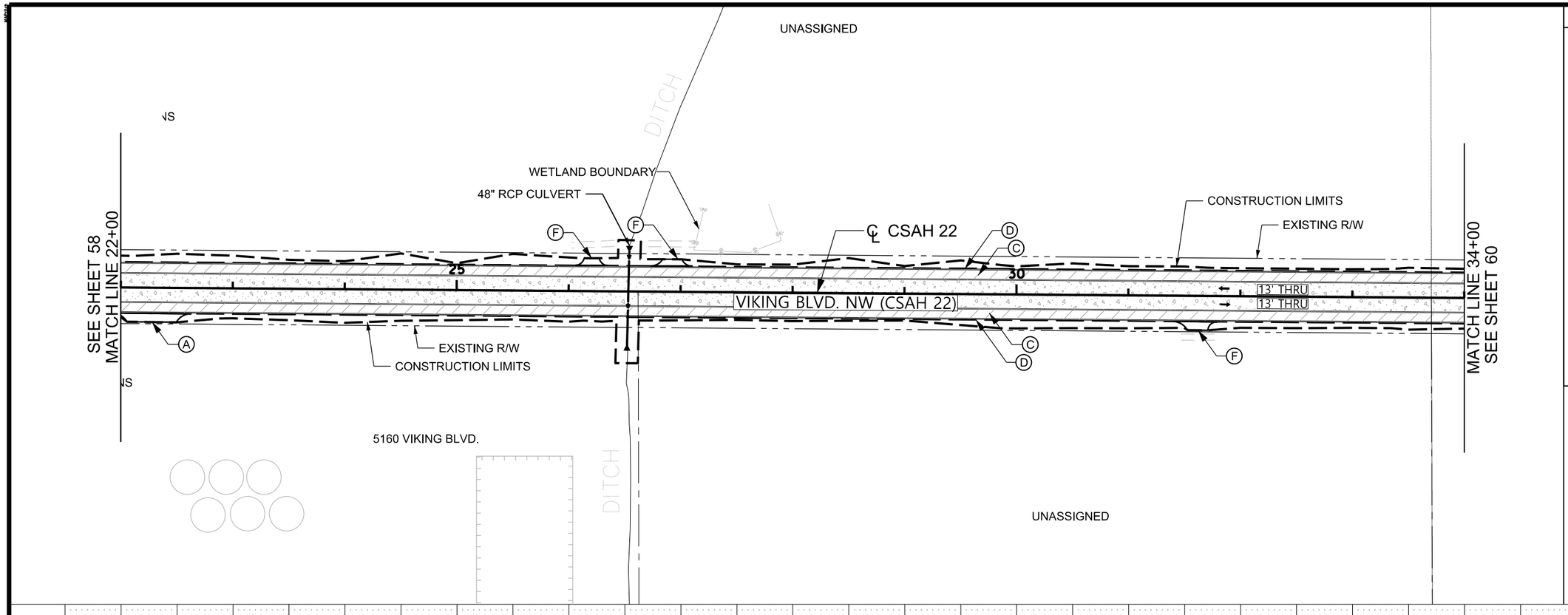
ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

CONSTRUCTION PLAN

STA 17+45.52 TO 22+00



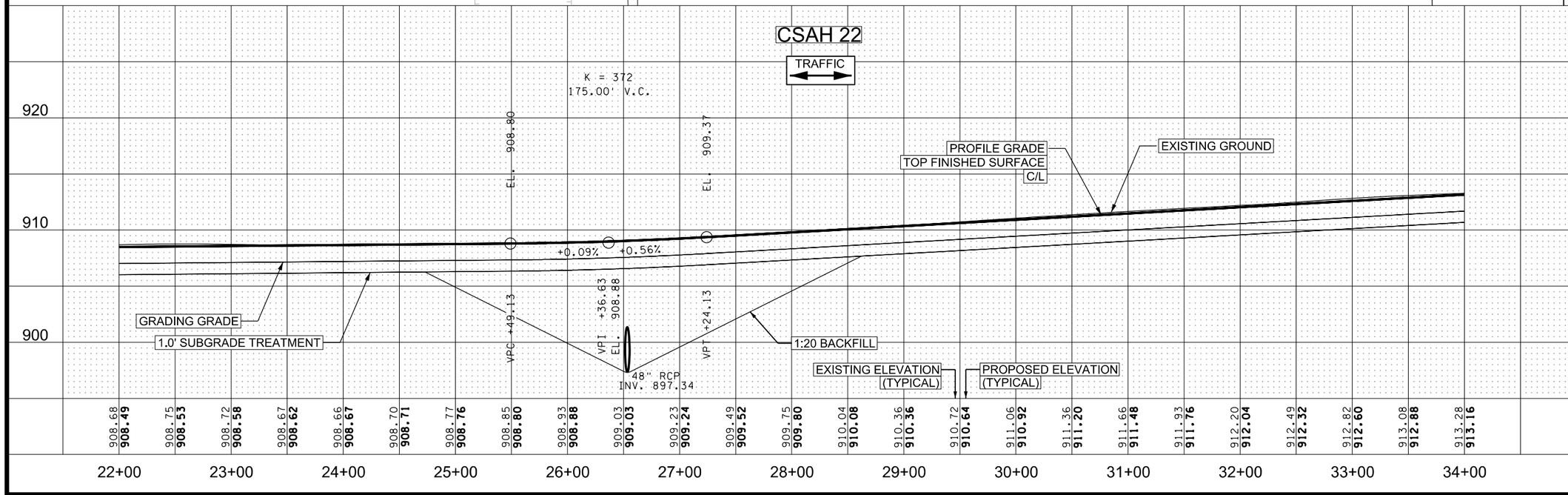
CONSTRUCTION NOTES

- (A) AGGREGATE DRIVEWAY
- (B) BITUMINOUS DRIVEWAY
- (C) 9' BITUMINOUS SHOULDER
- (D) 1' AGGREGATE SHOULDER
- (F) FIELD ENTRANCE
- PROPOSED CULVERT
- MILL AND OVERLAY BITUMINOUS PAVEMENT
- BITUMINOUS TRANSITION
- 8" CONCRETE PAVEMENT
- 4" BITUMINOUS PAVEMENT

ALL DIMENSIONS ARE TO EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

N

0 100
SCALE IN FEET



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-622-042 Whitetopping\Plan\002622042_PP1_P2.dgn 01/09/2024 1:12:51 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: NICHOLAS DOBDA

SIGNATURE:

DATE: 01/09/2024 LICENSE NO. 49046

DRAWN BY MP DATE 01/09/24

DESIGN BY MP DATE 01/09/24

CHECKED BY ND DATE 01/09/24

ANOKA COUNTY HIGHWAY DEPT.

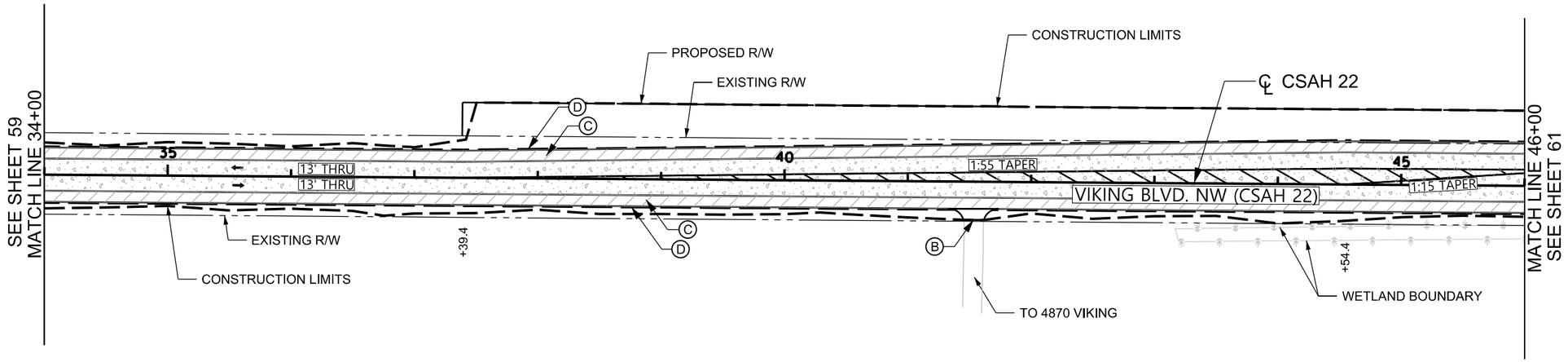
SAP 002-622-042

CONSTRUCTION PLAN

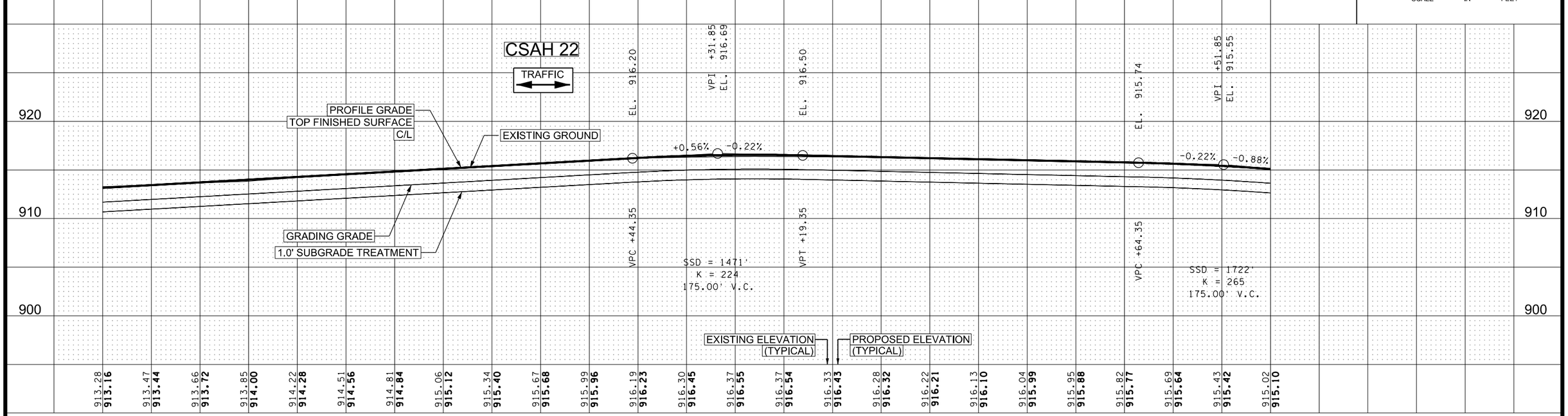
STA 22+00 TO 34+00

Sheet 59 of 123 Sheets

UNASSIGNED



UNASSIGNED



CONSTRUCTION NOTES

- (A) AGGREGATE DRIVEWAY
- (B) BITUMINOUS DRIVEWAY
- (C) 9' BITUMINOUS SHOULDER
- (D) 1' AGGREGATE SHOULDER
- (F) FIELD ENTRANCE
- PROPOSED CULVERT
- MILL AND OVERLAY BITUMINOUS PAVEMENT
- BITUMINOUS TRANSITION
- 8" CONCRETE PAVEMENT
- 4" BITUMINOUS PAVEMENT

ALL DIMENSIONS ARE TO EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

N

0 100
SCALE IN FEET

3 OF 5

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-622-042 Whitetopping\Plan\002622042_PP1_P3.dgn 01/09/2024 1:13:04 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: NICHOLAS DOBDA

SIGNATURE:

DATE: 01/09/2024 LICENSE NO. 49046

DRAWN BY MP DATE 01/09/24

DESIGN BY MP DATE 01/09/24

CHECKED BY ND DATE 01/09/24

ANOKA COUNTY

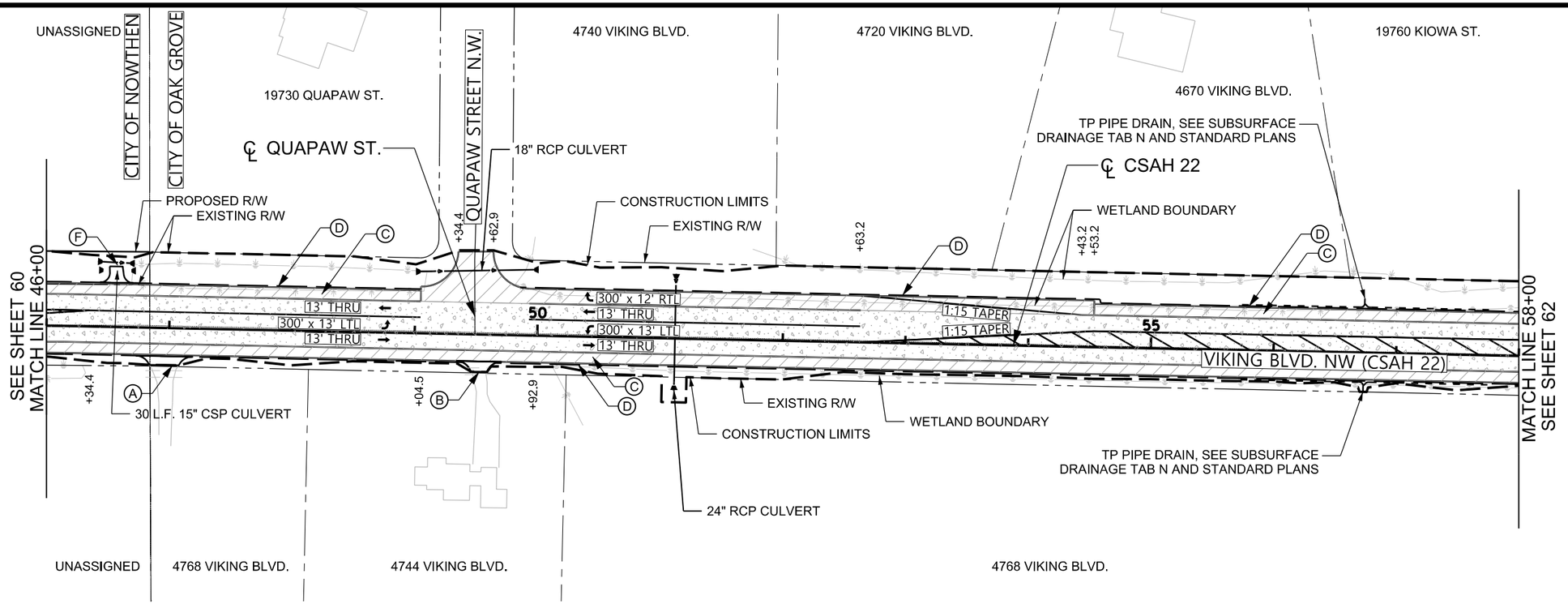
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

CONSTRUCTION PLAN

STA 34+00 TO 46+00

Sheet 60 of 123 Sheets

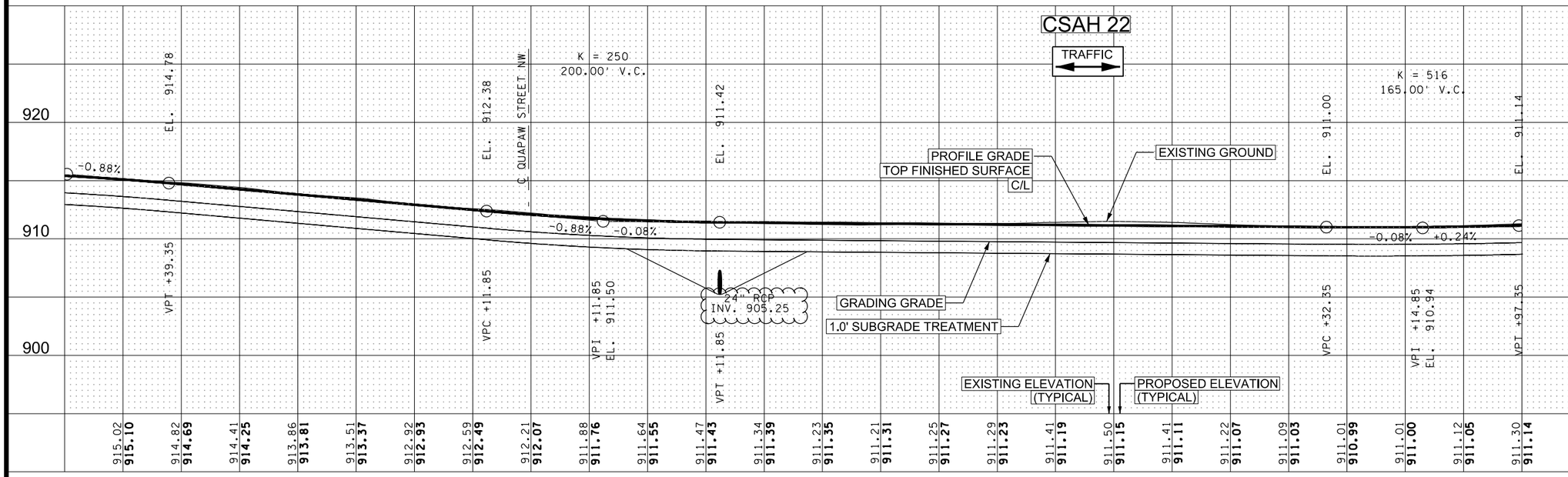


CONSTRUCTION NOTES

- (A) AGGREGATE DRIVEWAY
- (B) BITUMINOUS DRIVEWAY
- (C) 9' BITUMINOUS SHOULDER
- (D) 1' AGGREGATE SHOULDER
- (F) FIELD ENTRANCE
- PROPOSED CULVERT
- MILL AND OVERLAY BITUMINOUS PAVEMENT
- BITUMINOUS TRANSITION
- 8" CONCRETE PAVEMENT
- 4" BITUMINOUS PAVEMENT

ALL DIMENSIONS ARE TO EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

SCALE 0 100 IN FEET



4 OF 5

NO	DATE	BY	CKD	APPR	REVISION
2	02/16/2024	MP	NJD		CORRECTED CULVERT INVERT ELEVATION

NAME: P:\002-622-042 Whitetopping\Plan\002622042_PP1_P4.dgn 02/16/2024 3:08:21 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: NICHOLAS DOBDA

SIGNATURE:

DATE: 02/16/2024 LICENSE NO. 49046

DRAWN BY MP DATE 01/09/24

DESIGN BY MP DATE 01/09/24

CHECKED BY ND DATE 01/09/24

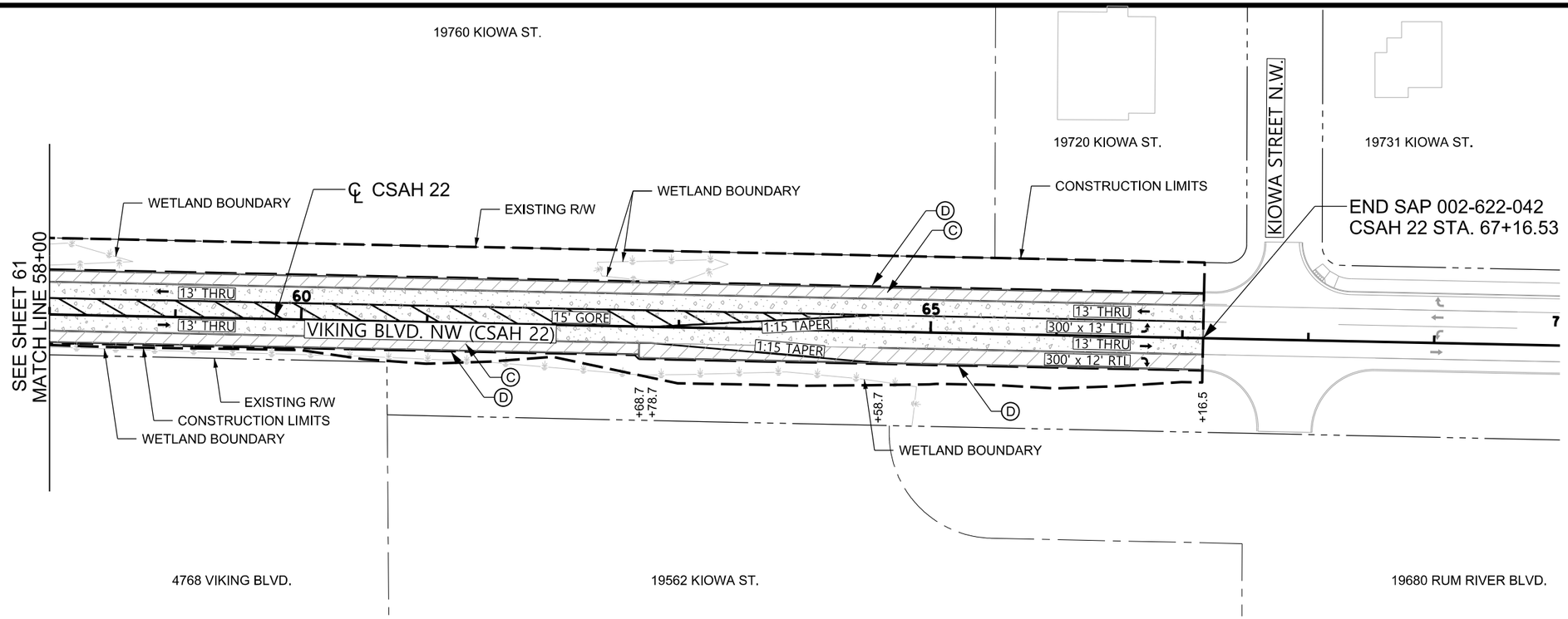
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

CONSTRUCTION PLAN

STA 46+00 TO 58+00

Sheet 61B of 123 Sheets



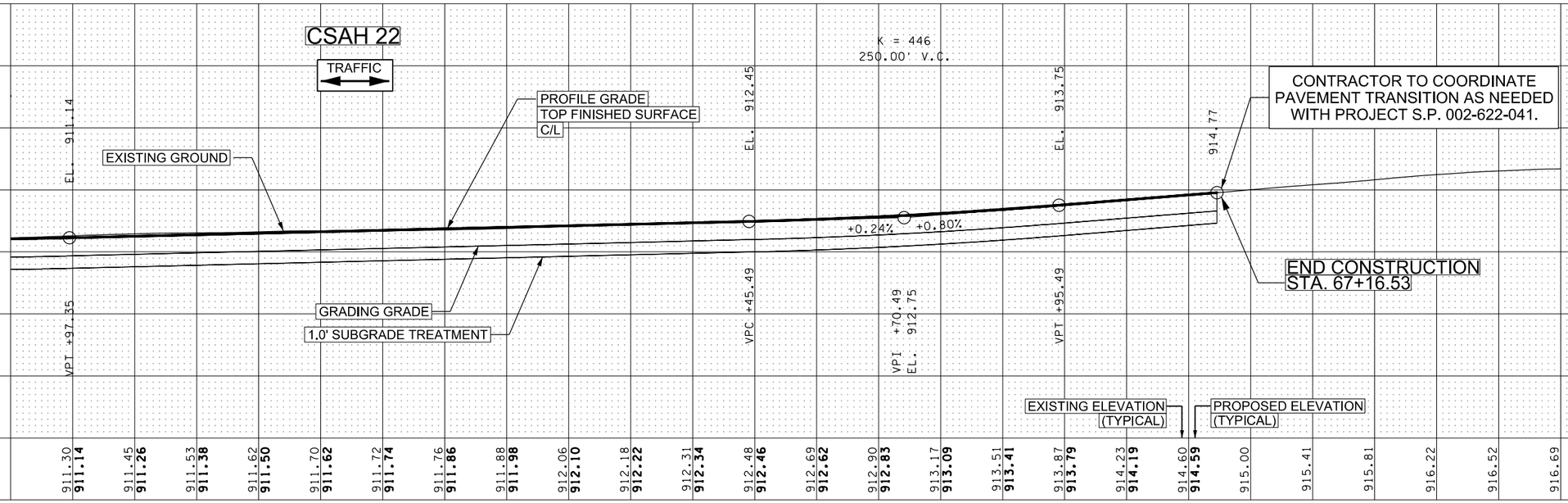
CONSTRUCTION NOTES

- (A) AGGREGATE DRIVEWAY
- (B) BITUMINOUS DRIVEWAY
- (C) 9' BITUMINOUS SHOULDER
- (D) 1' AGGREGATE SHOULDER
- (F) FIELD ENTRANCE
- PROPOSED CULVERT
- MILL AND OVERLAY BITUMINOUS PAVEMENT
- BITUMINOUS TRANSITION
- 8" CONCRETE PAVEMENT
- 4" BITUMINOUS PAVEMENT
- PROPOSED GEOMETRICS (BY OTHERS)

ALL DIMENSIONS ARE TO EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

N

0 100
SCALE IN FEET



5 OF 5

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-622-042 Whitetopping\Plan\002622042_PP1_P5.dgn 01/09/2024 1:13:40 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: NICHOLAS DOBDA

SIGNATURE:

DATE: 01/09/2024 LICENSE NO. 49046

DRAWN BY MP DATE 01/09/24

DESIGN BY MP DATE 01/09/24

CHECKED BY ND DATE 01/09/24

ANOKA COUNTY

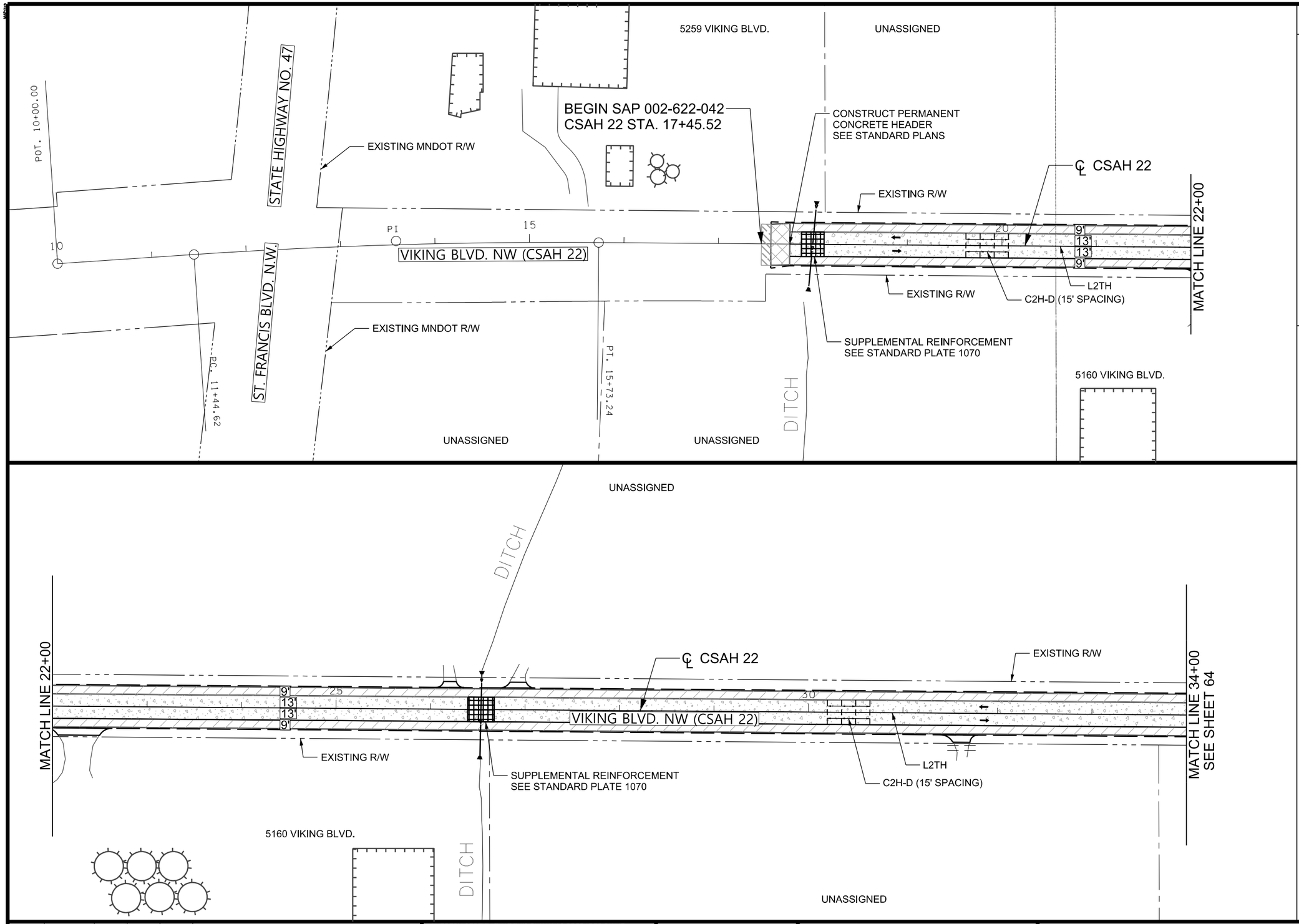
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

CONSTRUCTION PLAN

STA 58+00 TO 67+16.53

Sheet 62 of 123 Sheets



LEGEND

- PROPOSED CULVERT
- MILL AND OVERLAY BITUMINOUS PAVEMENT
- BITUMINOUS TRANSITION
- 8" CONCRETE PAVEMENT
- 4" BITUMINOUS PAVEMENT

ALL DIMENSIONS ARE TO EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

REINFORCEMENT BARS FOR ALL LONGITUDINAL JOINTS ARE CONSIDERED INCIDENTAL.

JOINTS MAY BE CHANGED IN THE FIELD BY THE CONTRACTOR WITH APPROVAL OF THE ENGINEER.

N

0 100
SCALE IN FEET

1 OF 3

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-622-042 Whitetopping\Plan\002622042_CPP1_P1.dgn 01/09/2024 2:59:45 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: NICHOLAS DOBDA

SIGNATURE:

DATE: 01/09/2024 LICENSE NO. 49046

DRAWN BY MP DATE 01/09/24

DESIGN BY MP DATE 01/09/24

CHECKED BY ND DATE 01/09/24

ANOKA COUNTY

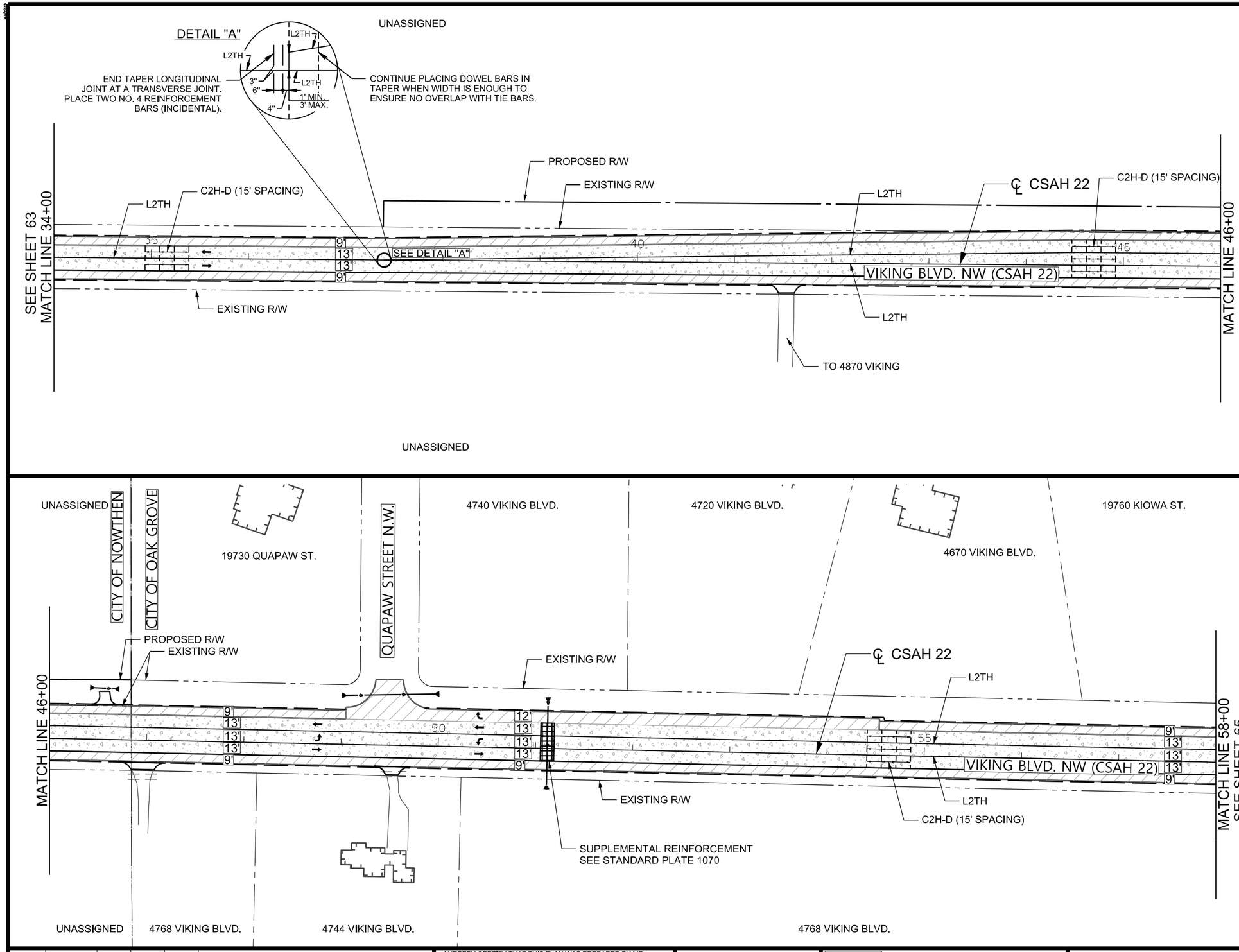
ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-622-042

CONCRETE PAVING PLAN

STA 17+45.52 TO 34+00

Sheet 63 of 123 Sheets



LEGEND

- PROPOSED CULVERT
- MILL AND OVERLAY BITUMINOUS PAVEMENT
- BITUMINOUS TRANSITION
- 8" CONCRETE PAVEMENT
- 4" BITUMINOUS PAVEMENT

ALL DIMENSIONS ARE TO EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

REINFORCEMENT BARS FOR ALL LONGITUDINAL JOINTS ARE CONSIDERED INCIDENTAL.

JOINTS MAY BE CHANGED IN THE FIELD BY THE CONTRACTOR WITH APPROVAL OF THE ENGINEER.

SCALE IN FEET 0 100

2 OF 3

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-622-042 Whitetopping\Plan\002622042_CPP1_P2.dgn 01/09/2024 3:02:46 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: NICHOLAS DOBDA

SIGNATURE:

DATE: 01/09/2024 LICENSE NO. 49046

DRAWN BY MP DATE 01/09/24

DESIGN BY MP DATE 01/09/24

CHECKED BY ND DATE 01/09/24

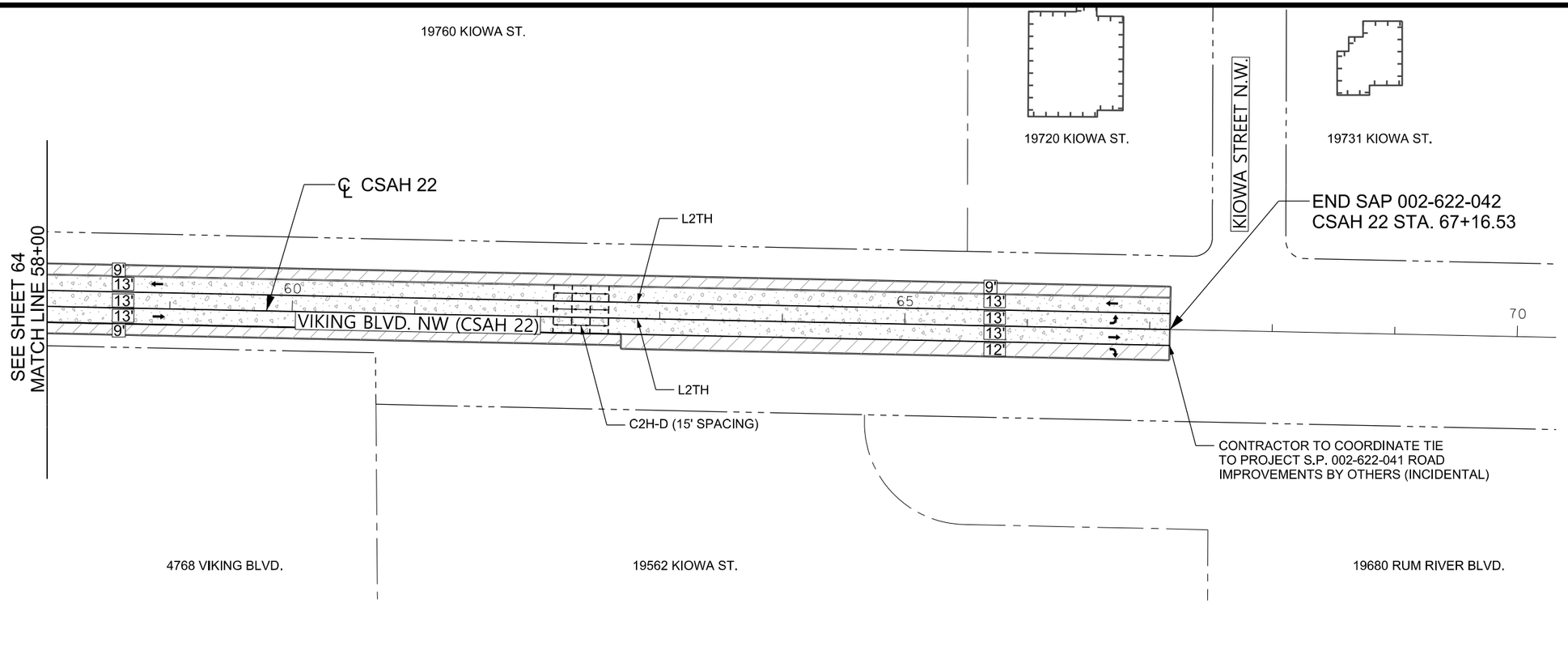
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

CONCRETE PAVING PLAN

STA 34+00 TO 58+00

Sheet 64 of 123 Sheets



LEGEND

- PROPOSED CULVERT
- MILL AND OVERLAY BITUMINOUS PAVEMENT
- BITUMINOUS TRANSITION
- 8" CONCRETE PAVEMENT
- 4" BITUMINOUS PAVEMENT

ALL DIMENSIONS ARE TO EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

REINFORCEMENT BARS FOR ALL LONGITUDINAL JOINTS ARE CONSIDERED INCIDENTAL.

JOINTS MAY BE CHANGED IN THE FIELD BY THE CONTRACTOR WITH APPROVAL OF THE ENGINEER.

N

0 100
SCALE IN FEET

3 OF 3

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-622-042 Whitetopping\Plan\002622042_CPP1_P3.dgn 01/09/2024 3:03:49 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: 01/09/2024 LICENSE NO. 49046

DRAWN BY MP DATE 01/09/24

DESIGN BY MP DATE 01/09/24

CHECKED BY ND DATE 01/09/24

ANOKA COUNTY

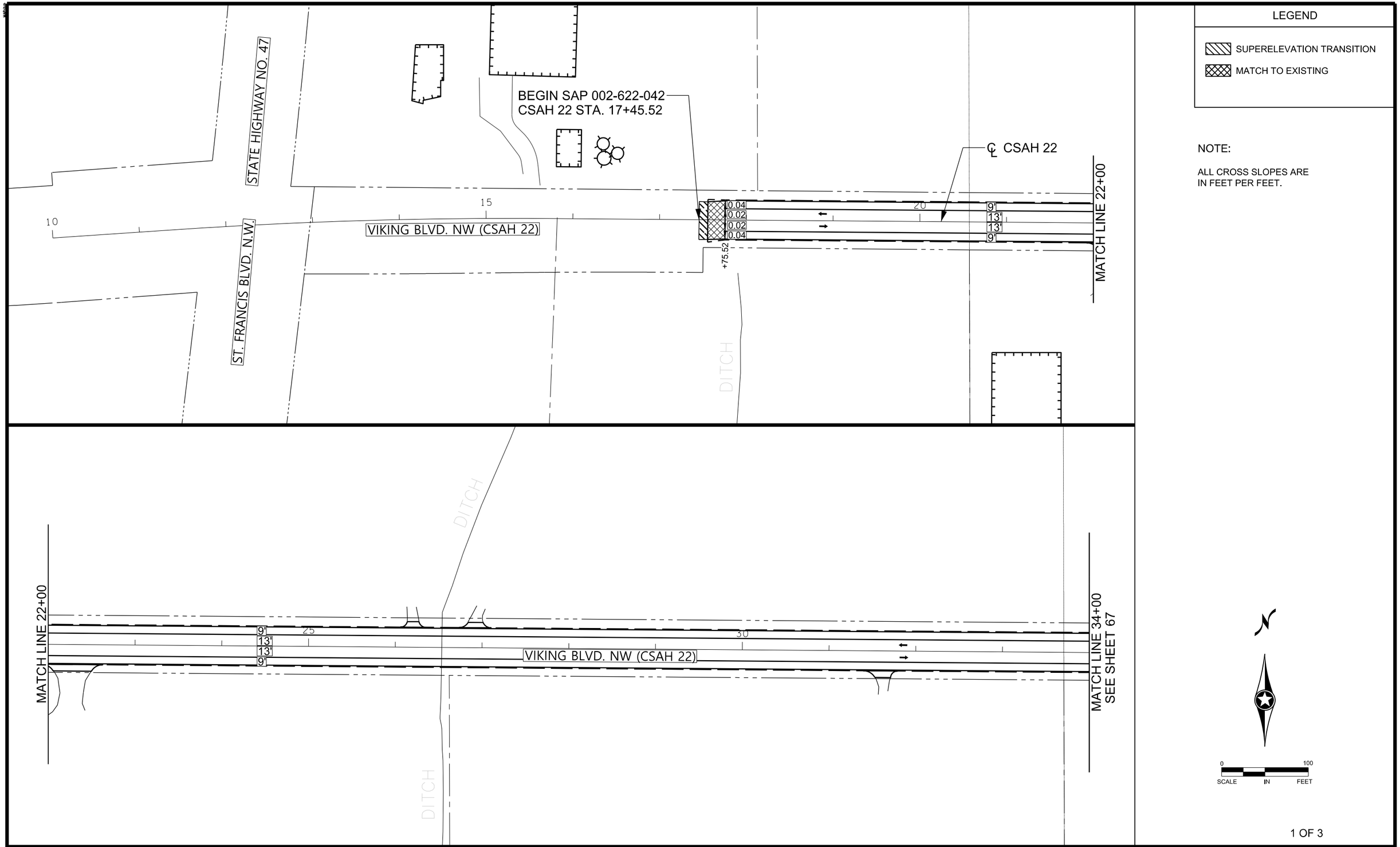
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

CONCRETE PAVING PLAN

STA 58+00 TO 67+16.53

Sheet 65 of 123 Sheets



LEGEND

- SUPERELEVATION TRANSITION
- MATCH TO EXISTING

NOTE:

ALL CROSS SLOPES ARE IN FEET PER FEET.

N

0 100
SCALE IN FEET

1 OF 3

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-622-042 Whitetopping\Plan\002622042_SE1_P1.dgn 01/09/2024 1:15:16 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: 01/09/2024 LICENSE NO. 49046

DRAWN BY MP DATE 01/09/24

DESIGN BY MP DATE 01/09/24

CHECKED BY ND DATE 01/09/24

ANOKA COUNTY

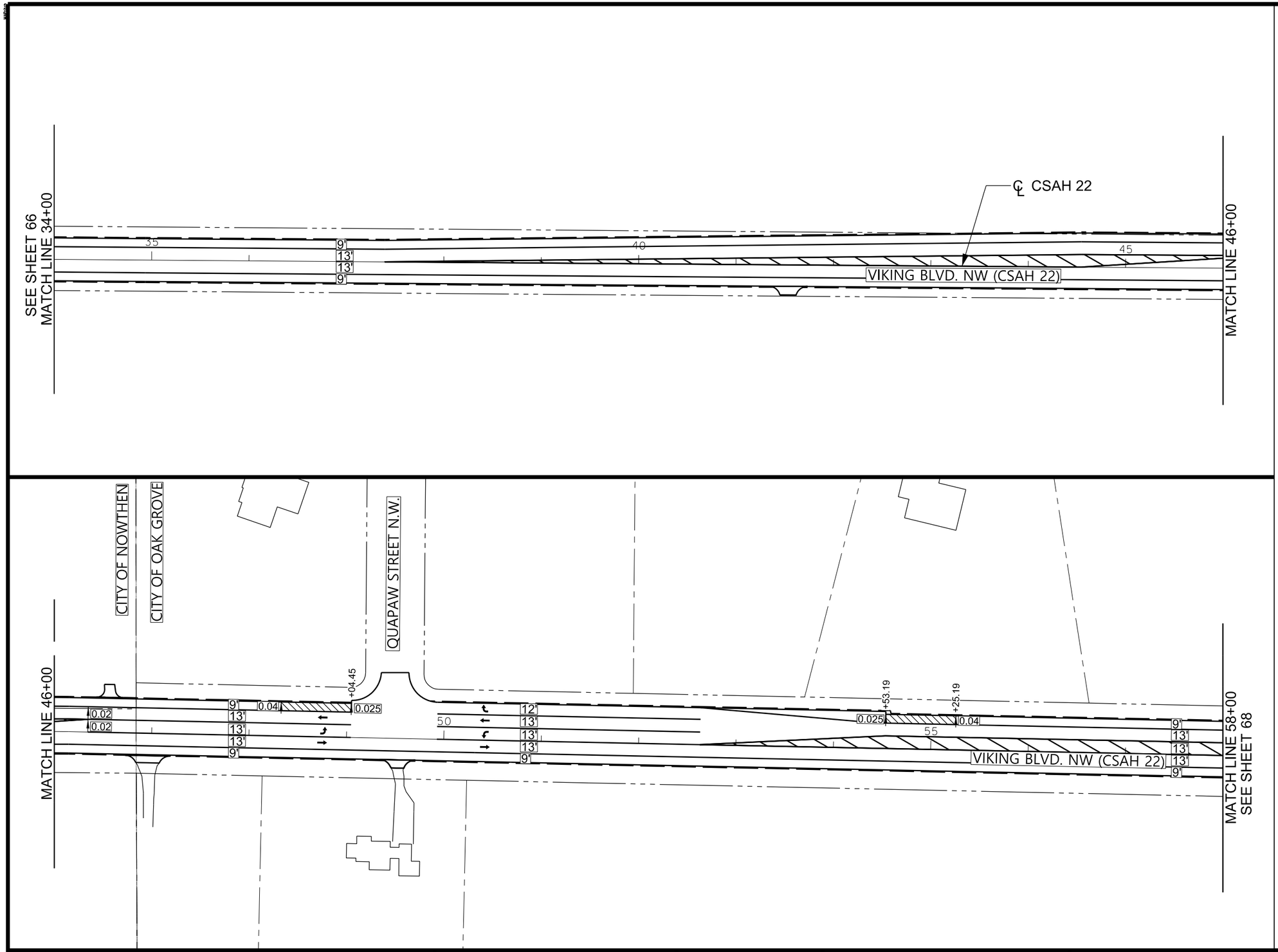
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

SUPERELEVATION PLAN

STA 17+45.52 TO 34+00

Sheet 66 of 123 Sheets



LEGEND

SUPERELEVATION TRANSITION

MATCH TO EXISTING

NOTE:

ALL CROSS SLOPES ARE
IN FEET PER FEET.

0 100
SCALE IN FEET

2 OF 3

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-622-042 Whitetopping\Plan\002622042_SE1_P2.dgn 01/09/2024 1:15:23 PM

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SIGNATURE:

DATE: 01/09/2024 LICENSE NO. 49046

DRAWN BY MP DATE 01/09/24

DESIGN BY MP DATE 01/09/24

CHECKED BY ND DATE 01/09/24

ANOKA COUNTY

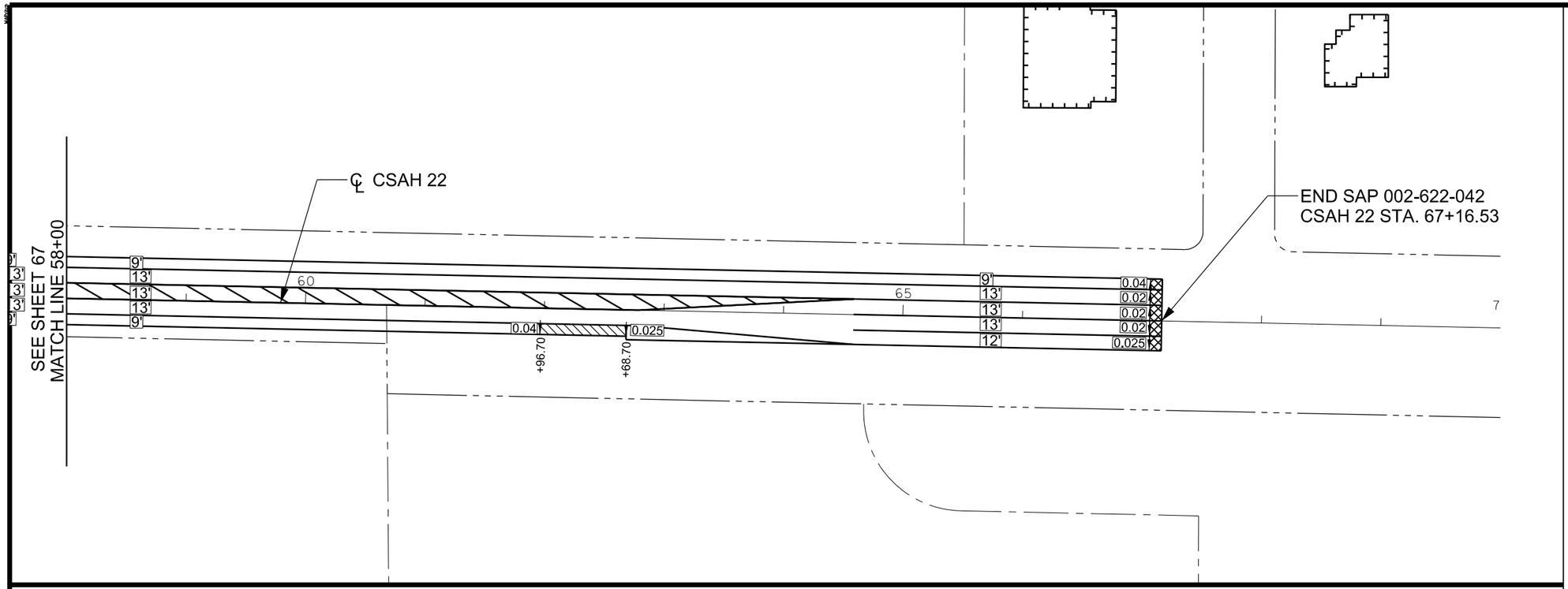
ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-622-042

SUPERELEVATION PLAN

STA 34+00 TO 58+00

Sheet 67 of 123 Sheets



LEGEND

SUPERELEVATION TRANSITION

MATCH TO EXISTING

NOTE:

ALL CROSS SLOPES ARE
IN FEET PER FEET.

N

0 100

SCALE IN FEET

3 OF 3

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-622-042 Whitetopping\Plan\002622042_SE1_P3.dgn 01/09/2024 1:15:30 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: NICHOLAS DOBDA

SIGNATURE:

DATE: 01/09/2024 LICENSE NO. 49046

DRAWN BY MP DATE 01/09/24

DESIGN BY MP DATE 01/09/24

CHECKED BY ND DATE 01/09/24

ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-622-042

SUPERELEVATION PLAN

STA 58+00 TO 67+16.53

Sheet 68 of 123 Sheets

STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE

PROJECT DESCRIPTION/LOCATION

SAP 002-622-042 IS LOCATED ON CSAH 22 (VIKING BLVD.) BETWEEN T.H. 47 AND CSAH 7 (RUM RIVER BLVD.) IN THE CITIES OF NOWTHEN AND OAK GROVE. THE PLANNED SCOPE OF THE PROJECT INCLUDES: GRADING, AGGREGATE BASE, CONCRETE PAVING, BITUMINOUS SURFACING, DRAINAGE, AND PAVEMENT MARKINGS.

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.

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. THE CONSTRUCTION PROJECT ENGINEER WILL ENSURE THAT THE CONTRACTOR'S EROSION AND SEDIMENT CONTROL SUPERVISOR FULFILLS THEIR DUTIES.

LAND FEATURE CHANGES

TOTAL DISTURBED AREA	8.70 ACRES
WITHIN THE DISTURBED AREA: TOTAL EXISTING IMPERVIOUS SURFACE AREA	5.42 ACRES
WITHIN THE DISTRUBED AREA: TOTAL PROPOSED IMPERVIOUS SURFACE AREA	6.15 ACRES
TOTAL PROPOSED NET CHANGE IN IMPERVIOUS SURFACE AREA	0.73 ACRES

SWPPP SHEET DESCRIPTIONS	LOCATION
TEMPORARY EROSION CONTROL MEASURES	SHEETS NO. 72 - 74
PERMANENT EROSION CONTROL MEASURES	SHEETS NO. 72 - 74
DIRECTION OF FLOW	SHEETS NO. 72 - 74
FINAL STABILIZATION	SHEETS NO. 72 - 74
SOILS AND CONSTRUCTION NOTES	SHEETS NO. 9
DRAINAGE STRUCTURES	SHEETS NO. 58 - 62
DRAINAGE TABULATION	SHEETS NO. 8
EROSION AND SEDIMENT CONTROL DETAILS	SHEETS NO. 31 - 41
EROSION CONTROL TABULATION	SHEETS NO. 8
TURF ESTABLISHMENT TABULATION	SHEETS NO. 8
SITE MAP	SHEETS NO. 71
STORMWATER TREATMENT CONSTRUCTION STAGING	SHEETS NO. 71
STORMWATER CALCULATIONS	AVAILABLE ON REQUEST

SOIL TYPES

SOIL TYPES TYPICALLY FOUND ON THIS PROJECT ARE SILTY SAND AND CLAYEY SAND.

ENVIRONMENTAL REVIEW

THERE ARE NO 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.

WATER RELATED PERMITS

AGENCY	TYPE OF PERMIT
MINNESOTA POLLUTION CONTROL AGENCY (MPCA)	NPDES CONSTRUCTION PERMIT
WATERSHED DISTRICT	UPPER RUM RIVER WMO
ARMY CORPS OF ENGINEERS	SECTION 404 WETLAND PERMIT

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
*RUM RIVER	SCENIC RECREATIONAL RIVER SEGMENT AND RESTRICTED WATER, NOT IMPAIRED.
FORD BROOK	N/A

*RUM RIVER IS WITHIN ONE MILE OF PROJECT LIMITS, BUT DOES NOT RECEIVE STORMWATER RUNOFF FROM THE PROJECT AREA.

AREAS OF ENVIRONMENTAL SENSITIVITY (AES)

WETLANDS WITHIN AND NEAR THE PROJECT BOUNDARY ARE SHOWN ON CONSTRUCTION PLANS.

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
UPPER RUM RIVER WATERSHED MANAGEMENT ORGANIZATION	SHANE NELSON (NOWTHEN)	763-441-1347
	CHUCK SCHWARTZ (OAK GROVE)	612-548-3141
MPCA DUTY OFFICER 24 HR EMERGENCY NOTIFICATION	651-649-5451 OR 1(800)-422-0798	
ARMY CORP OF ENGINEERS		
CERTIFIED SWPPP DESIGNER	MICHELLE PRITCHARD	763-324-3162

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.

TREATMENT BMPS INCLUDED WITH THIS PROJECT ARE:

SILT FENCE, CULVERT END TREATMENTS.

BASED ON SOIL BORINGS OBTAINED FROM THE SITE, THE SEASONAL HIGH WATER TABLE IS TOO HIGH TO ALLOW THREE (3) FEET OF SEPARATION FOR AN INFILTRATION BASIN. BECAUSE INFILTRATION IS INFEASIBLE, ALTERNATIVE TREATMENT WILL BE PROVIDED IN GRASS INSLOPES AND DITCHES ALONG THE PROJECT CORRIDOR. MIDS CALCULATIONS PROVIDED UPON REQUEST.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-622-042 Whitetopping\Plan\002622042_SWP.dgn 01/09/2024 1:15:43 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: NICHOLAS DOBDA

SIGNATURE:

DATE: 01/09/2024 LICENSE NO. 49046

DRAWN BY MP DATE 01/09/24

DESIGN BY MP DATE 01/09/24

CHECKED BY ND DATE 01/09/24

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

STORM WATER POLLUTION PREVENTION PLAN

Sheet 69 of 123 Sheets

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

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%), DISK-ANCHORED MULCH (SLOPE>2%), TACKIFIER AND POLYACRYLAMIDE ARE NOT ACCEPTABLE STABILIZATION METHODS IN DITCHES AND SWALES.

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). IN 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 ANOKA COUNTY.
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.

NO	DATE	BY	CKD	APPR	REVISION

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ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

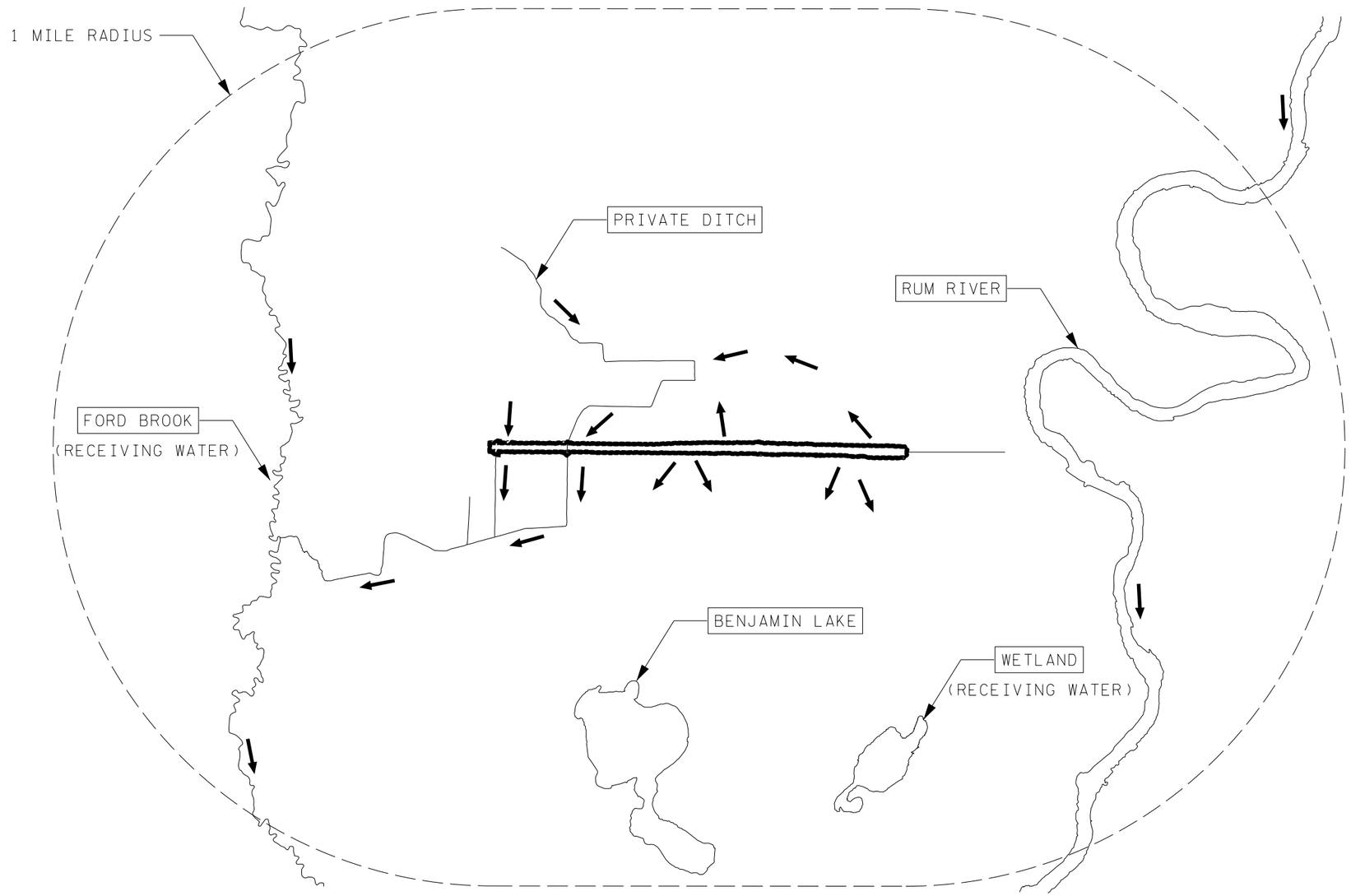
STORM WATER POLLUTION PREVENTION PLAN

Sheet 70 of 123 Sheets

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

OFFSITE FLOW INFORMATION

NOWTHEN/OAK GROVE



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SCALE IN FEET

3 OF 3

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-622-042 Whitetopping\Plan\002622042_SWP.dgn 01/09/2024 1:15:44 PM

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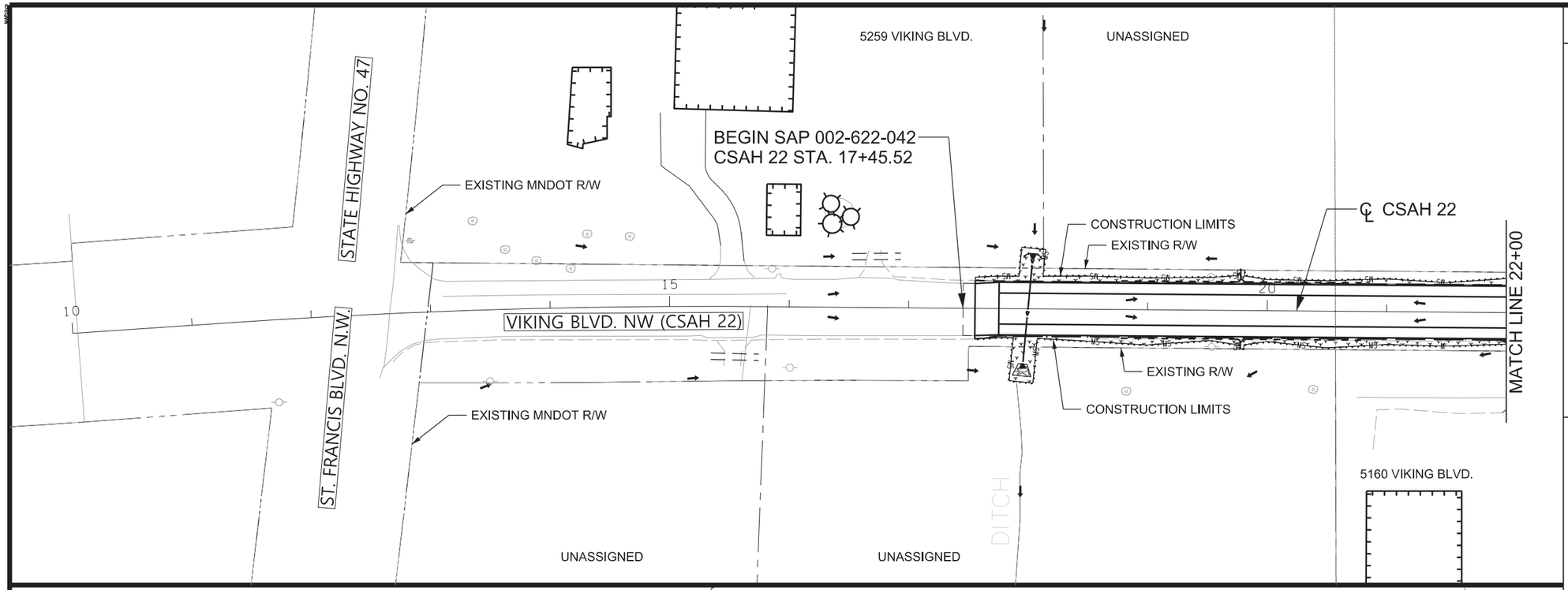
ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

STORM WATER POLLUTION PREVENTION PLAN

Sheet 71 of 123 Sheets



LEGEND

- PROPOSED APRON
- INPLACE APRON
- INPLACE CULVERT
- PROPOSED CULVERT
- SILT FENCE, TYPE MACHINE SLICED
- WETLAND BOUNDARIES
- RIPRAP (CLASS II UNLESS OTHERWISE NOTED)
- CULVERT END TREATMENT
- SURFACE FLOW ARROW
- SEEDING MIX 25-121
  FERT. TYPE 3 (22-5-10)
  HYDRAULIC REINFORCED FIBER MATRIX

EROSION CONTROL NOTES:

1. THE CONTRACTOR SHALL CONSTRUCT WASHED GRAVEL ENTRANCES AT POINTS OF EXIT FROM THE WORK AREA ONTO EXISTING 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 1/3 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.

N

0 100
SCALE IN FEET

1 OF 3

NO	DATE	BY	CKD	APPR	REVISION
1	02/09/2024	MP	NJD		UPDATED TO SHOW SURFACE FLOW ARROWS

NAME: P:\002-622-042 Whitetopping\Plan\002622042_EC1_P1.dgn 02/12/2024 9:32:15 AM

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ANOKA COUNTY

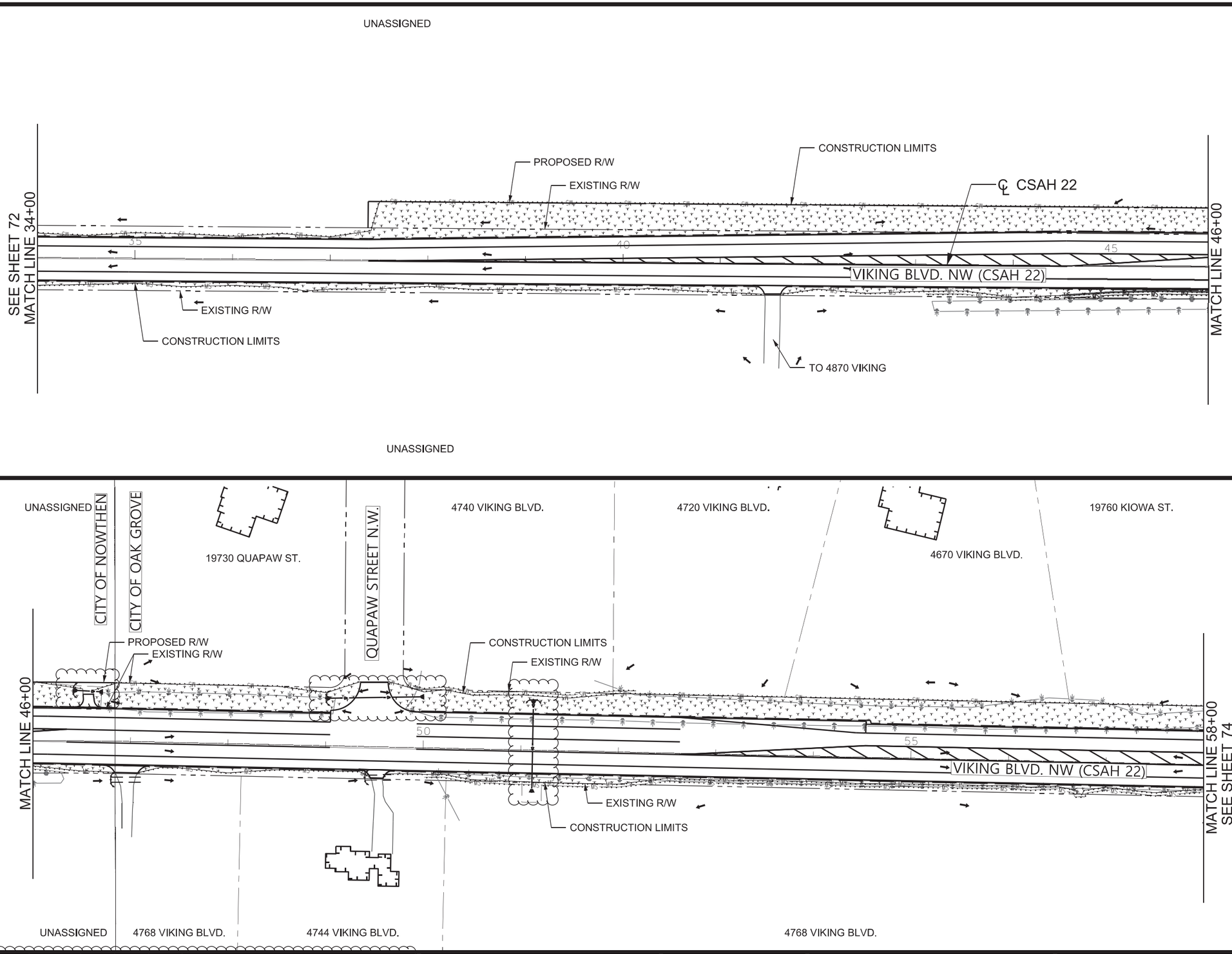
ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-622-042

TURF ESTABLISHMENT AND EROSION CONTROL PLAN

STA 17+45.52 TO 34+00

Sheet 72A of 123 Sheets



LEGEND

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- INPLACE CULVERT
- PROPOSED CULVERT
- SILT FENCE, TYPE MACHINE SLICED
- WETLAND BOUNDARIES
- RIPRAP (CLASS II UNLESS OTHERWISE NOTED)
- CULVERT END TREATMENT
- SURFACE FLOW ARROW
- SEEDING MIX 25-121
  FERT. TYPE 3 (22-5-10)
  HYDRAULIC REINFORCED FIBER MATRIX

EROSION CONTROL NOTES:

1. THE CONTRACTOR SHALL CONSTRUCT WASHED GRAVEL ENTRANCES AT POINTS OF EXIT FROM THE WORK AREA ONTO EXISTING 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 1/3 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.

N

0 100
SCALE IN FEET

NO	DATE	BY	CKD	APPR	REVISION
1	02/09/2024	MP	NJD		UPDATED TO SHOW SURFACE FLOW ARROWS, CULVERTS AND CULVERT END TREATMENTS

NAME: P:\002-622-042 Whitetopping\Plan\002622042_EC1_P2.dgn 02/12/2024 9:32:16 AM

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DATE: 02/12/2024 LICENSE NO. 49046

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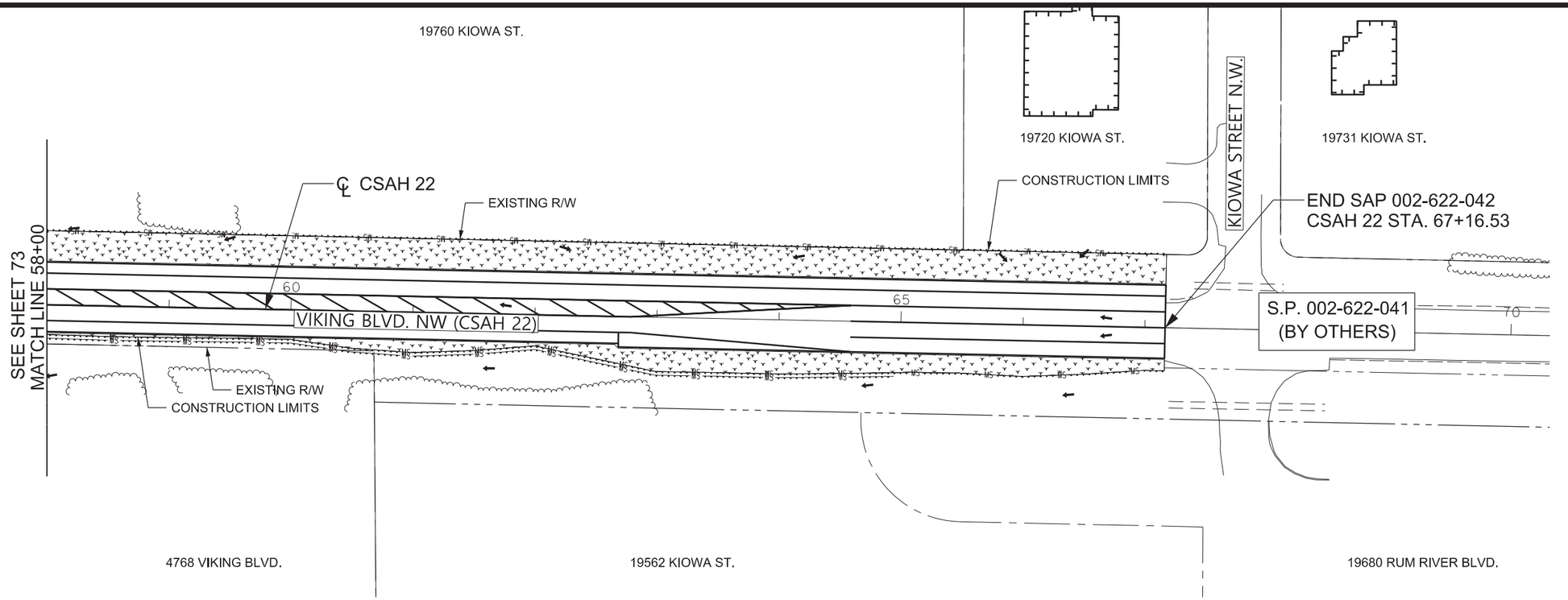
CHECKED BY ND DATE 01/09/24

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-622-042

TURF ESTABLISHMENT AND EROSION CONTROL PLAN
STA 34+00 TO 58+00

Sheet 73A of 123 Sheets



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  FERT. TYPE 3 (22-5-10)
  HYDRAULIC REINFORCED FIBER MATRIX

EROSION CONTROL NOTES:

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

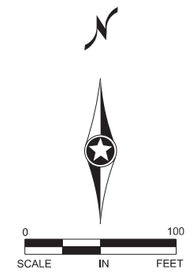
2. SILT FENCE SHALL FOLLOW A SINGLE CONTOUR AS CLOSELY AS POSSIBLE.

3. SILT FENCE SHALL BE CLEANED OUT OR REPLACED WHEN SEDIMENT REACHES 8" OR 1/3 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.



NO	DATE	BY	CKD	APPR	REVISION
1	02/09/2024	MP	NJD		UPDATED TO SHOW SURFACE FLOW ARROWS

NAME: P:\002-622-042 Whitetopping\Plan\002622042_EC1_P3.dgn 02/12/2024 9:32:17 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: NICHOLAS DOBDA

SIGNATURE:

DATE: 02/12/2024 LICENSE NO. 49046

DRAWN BY MP DATE 01/09/24

DESIGN BY MP DATE 01/09/24

CHECKED BY ND DATE 01/09/24

ANOKA COUNTY

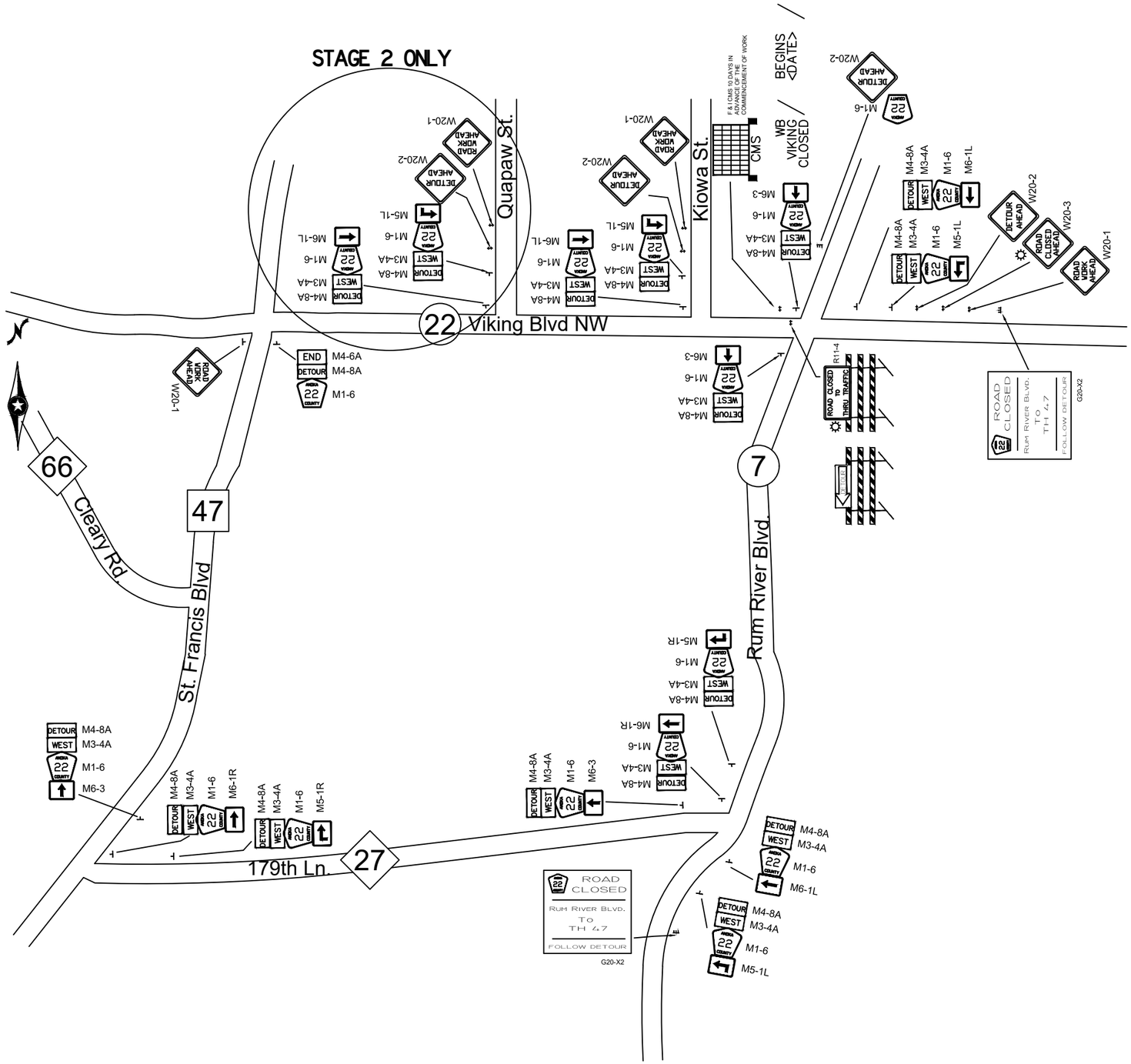
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

TURF ESTABLISHMENT AND EROSION CONTROL PLAN

STA 58+00 TO 67+16.53

Sheet 74A of 123 Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-622-042 Whitetopping\Base\Traffic

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: 1/9/2024 LICENSE NO. 45129

DRAWN BY LJK DATE 05/18/23

DESIGN BY LJK DATE 05/18/23

CHECKED BY SRT DATE 01/09/24

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

DETOUR PLAN

Sheet 75 of 123 Sheets

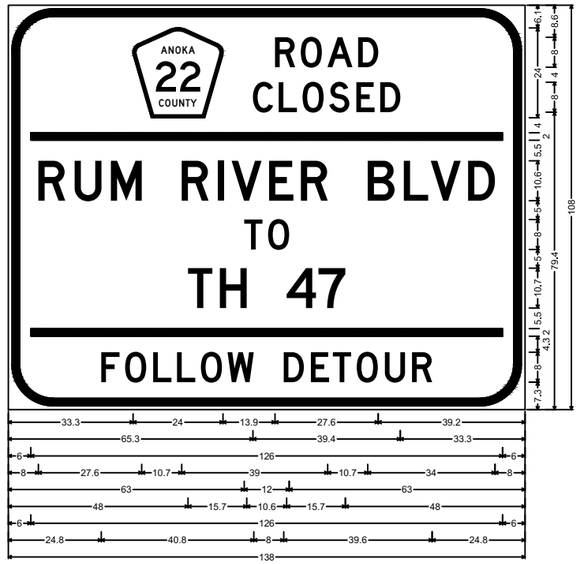
01/09/2024

M.U.T.C.D. CODE	SIZE	INSERT	QUANTITY
W20-1	36" x 36"	ROAD WORK AHEAD	4
W20-2	36" x 36"	ANOKA 22 COUNTY; DETOUR AHEAD	1 4
W20-3	36" x 36"	ROAD CLOSED AHEAD	1
M4-10L TYPE III	48" x 18" 8 FOOT	DETOUR	1
M4-8	24" x 12"	DETOUR	16
M3-4A	24" x 12"	WEST	16
M1-6A	24" x 24"	ANOKA 22 COUNTY	16
	21" X 15"	M5-1L	4
		M6-1L	4
		M5-1R	2
		M6-1R	2
		M6-3	4
M4-6	24" x 12"	END DETOUR ANOKA 22 COUNTY	1
M4-8	24" x 12"		1
M1-6M	24" x 24"		1

K

M.U.T.C.D. CODE	SIZE	INSERT	QUANTITY
G20-X2	132" x 108"	ANOKA 22 COUNTY ROAD CLOSED RUM RIVER BLVD. TO TH 47 FOLLOW DETOUR G20-X2	2
R11-4 TYPE III	48" x 18" 8 FOOT	ROAD CLOSED TO THRU TRAFFIC R11-4	1
TYPE B REFLECTORIZED REBOUNDABLE DRUM			5
		CMS	✳ 1 (1 @ 10 = 10 DAY)

✳ SIGNS TO BE INSTALLED A MINIMUM OF TEN DAYS PRIOR TO ACTUAL CLOSING DATE OF ROAD CLOSURE AND IMPLEMENTATION OF DETOUR SIGNING. SIGNS TO BE REMOVED AT TIME OF DETOUR INSTALLATION. THESE SIGNS ARE INCIDENTAL TO DETOUR PAY ITEM.



G20-X2_132x108;
12.0" Radius, 2.0" Border, 1.0" Indent, Black on, Orange;
Pentagonal County 22 M1-6; "ROAD", D; "CLOSED", D; "RUM RIVER BLVD", D; "TO", D; "TH 47", D; "FOLLOW", D; "DETOUR", D;

CHANGEABLE MESSAGE BOARD - MESSAGE SEQUENCE LAYOUT

			W	B			
	V	I	K	I	N	G	
	C	L	O	S	E	D	

	B	E	G	I	N	S	
	<	D	A	T	E	>	

CMS sign to be installed a minimum of ten days prior to actual commencement of road work. Signs to be removed when road work begins.

NOTES:

1) ALL BARRICADES SHALL BE PROPERLY WEIGHTED WITH SANDBAGS.
2) ALL BARRICADES SHALL HAVE REFLECTIVE MATERIAL ON BOTH SIDES.
3) ALL BARRICADE MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES INCLUDING MOST RECENT FIELD MANUAL
4) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MOST RECENT EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE MOST RECENT FIELD MANUAL
5) ADDITIONS OR CHANGES TO THIS PLAN MAY BE MADE AS DETERMINED BY THE ENGINEER.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-622-042 Whitetopping\Base\Traffic

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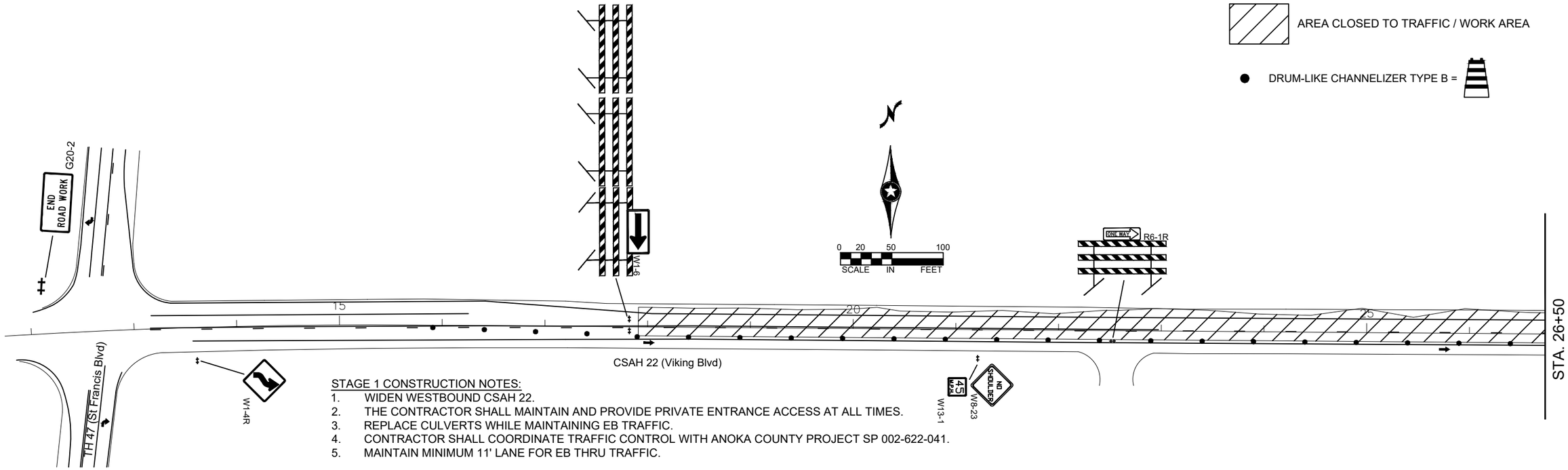
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

DETOUR PLAN

Sheet 76 of 123 Sheets

01/09/2024

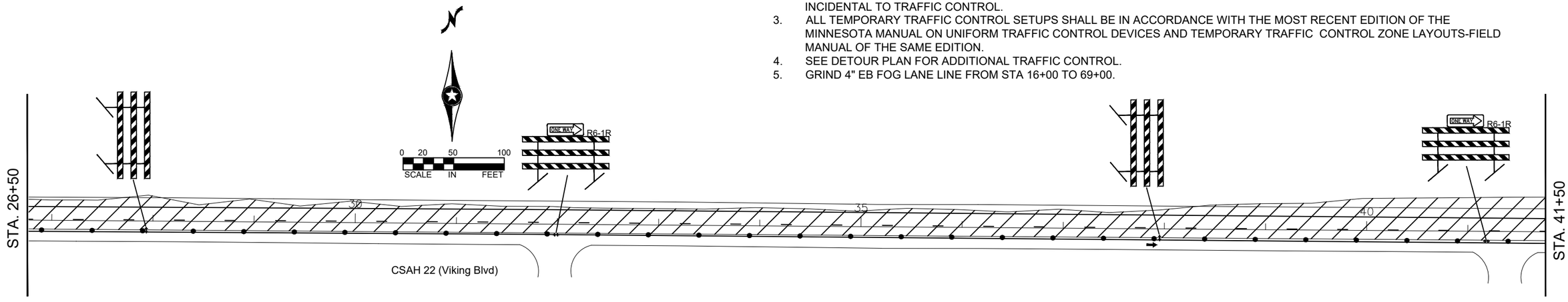


STAGE 1 CONSTRUCTION NOTES:

1. WIDEN WESTBOUND CSAH 22.
2. THE CONTRACTOR SHALL MAINTAIN AND PROVIDE PRIVATE ENTRANCE ACCESS AT ALL TIMES.
3. REPLACE CULVERTS WHILE MAINTAINING EB TRAFFIC.
4. CONTRACTOR SHALL COORDINATE TRAFFIC CONTROL WITH ANOKA COUNTY PROJECT SP 002-622-041.
5. MAINTAIN MINIMUM 11' LANE FOR EB THRU TRAFFIC.

STAGE 1 TRAFFIC CONTROL NOTES:

1. TRAFFIC REMAINS IN THE EASTBOUND LANE OF CSAH 22.
2. FOR RELOCATING TRAFFIC SIGNS DURING CONSTRUCTION, AS DIRECTED BY THE ENGINEER, RELOCATION INCIDENTAL TO TRAFFIC CONTROL.
3. 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 EDITION.
4. SEE DETOUR PLAN FOR ADDITIONAL TRAFFIC CONTROL.
5. GRIND 4" EB FOG LANE LINE FROM STA 16+00 TO 69+00.



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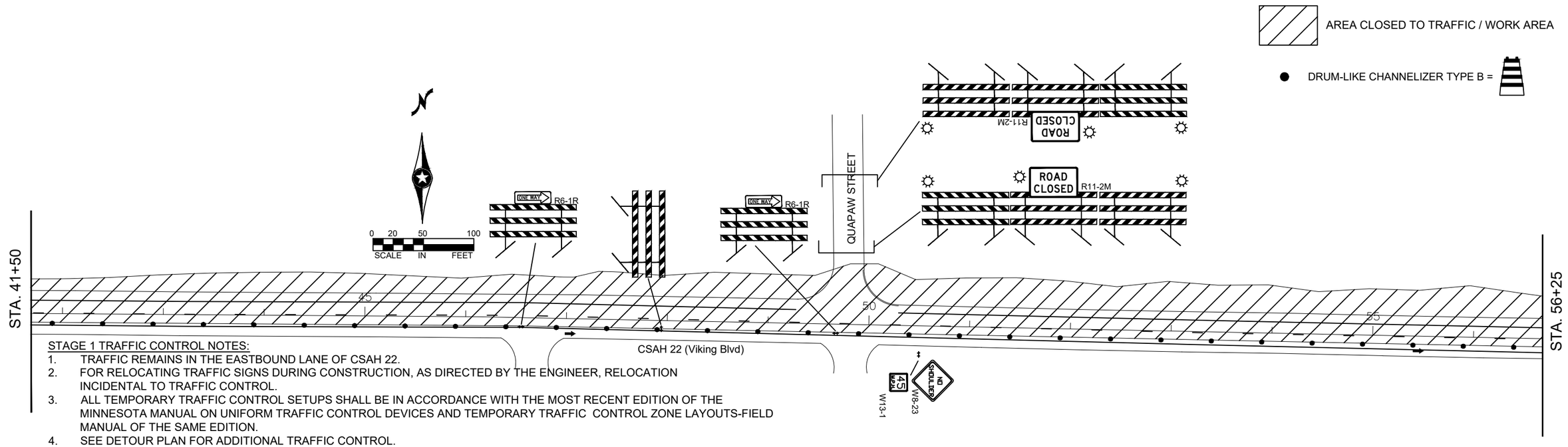
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

STAGE 1 TRAFFIC CONTROL PLAN

Sheet 77 of 123 Sheets

01/09/2024



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2. FOR RELOCATING TRAFFIC SIGNS DURING CONSTRUCTION, AS DIRECTED BY THE ENGINEER, RELOCATION INCIDENTAL TO TRAFFIC CONTROL.
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4. SEE DETOUR PLAN FOR ADDITIONAL TRAFFIC CONTROL.
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1. WIDEN WESTBOUND CSAH 22.
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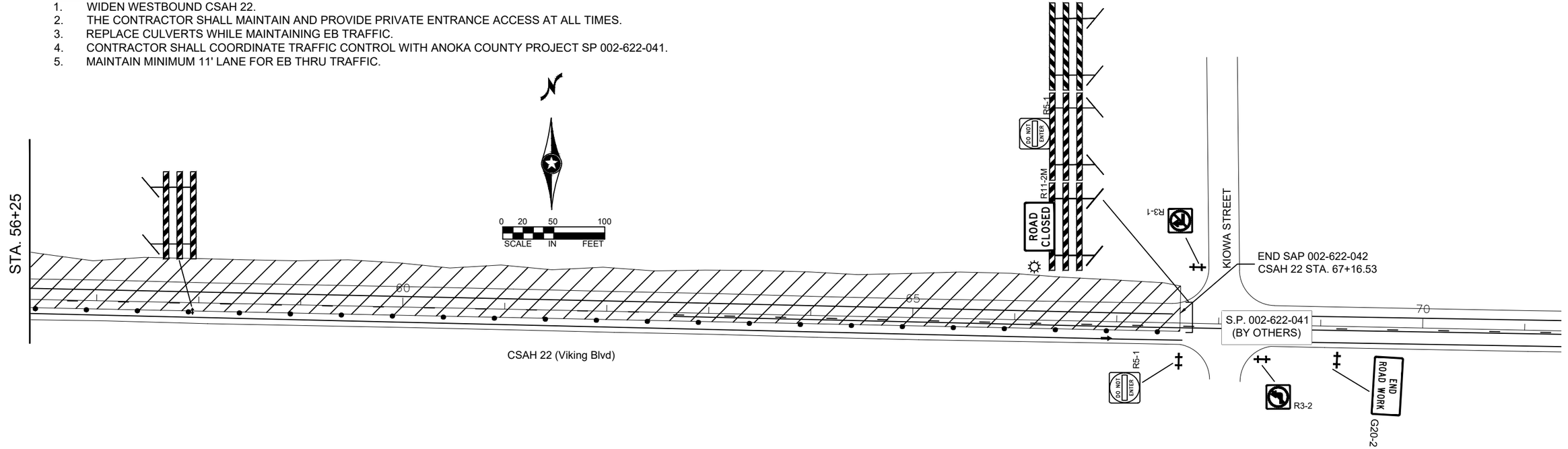
5. MAINTAIN MINIMUM 11' LANE FOR EB THRU TRAFFIC.



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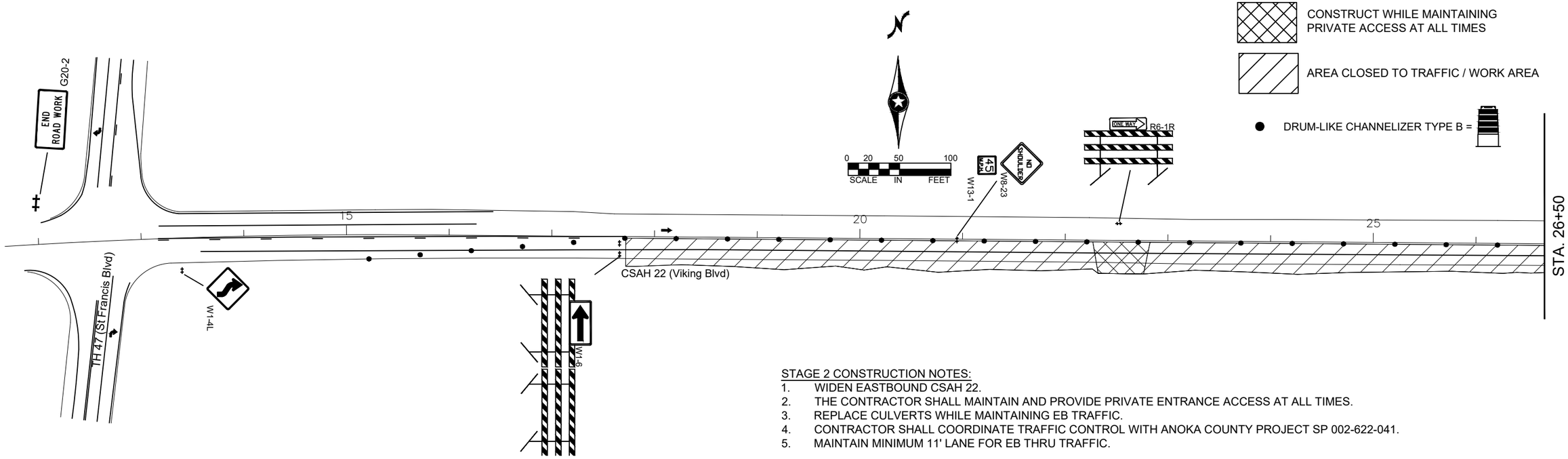
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

STAGE 1 TRAFFIC CONTROL PLAN

Sheet 78 of 123 Sheets

01/09/2024



STAGE 2 CONSTRUCTION NOTES:

1. WIDEN EASTBOUND CSAH 22.
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3. REPLACE CULVERTS WHILE MAINTAINING EB TRAFFIC.
4. CONTRACTOR SHALL COORDINATE TRAFFIC CONTROL WITH ANOKA COUNTY PROJECT SP 002-622-041.
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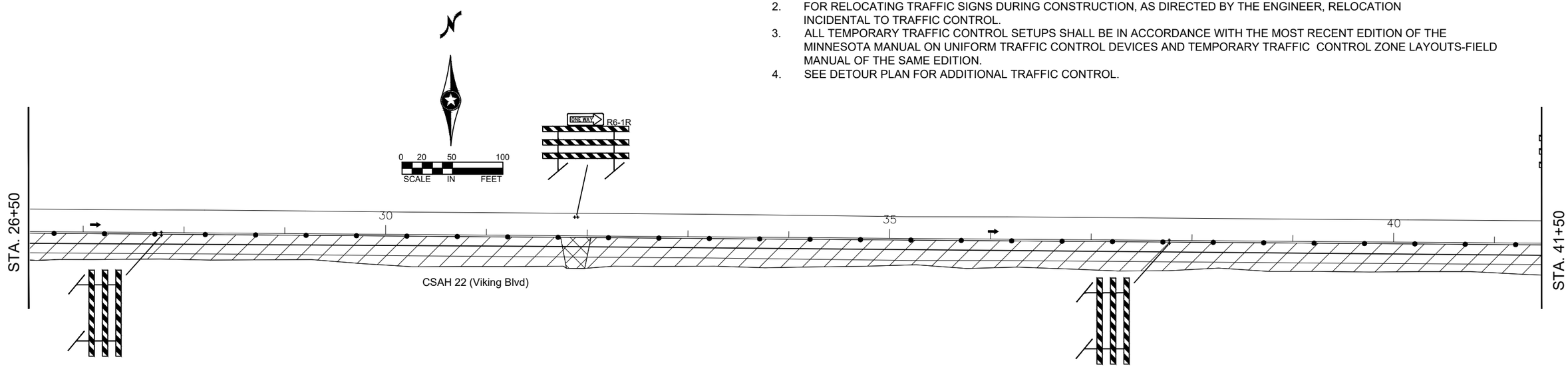
1. TRAFFIC IS SHIFTED TO THE WESTBOUND LANE OF CSAH 22.
2. FOR RELOCATING TRAFFIC SIGNS DURING CONSTRUCTION, AS DIRECTED BY THE ENGINEER, RELOCATION INCIDENTAL TO TRAFFIC CONTROL.
3. ALL TEMPORARY TRAFFIC CONTROL SETUPS SHALL BE IN ACCORDANCE WITH THE MOST RECENT EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS-FIELD MANUAL OF THE SAME EDITION.
4. SEE DETOUR PLAN FOR ADDITIONAL TRAFFIC CONTROL.



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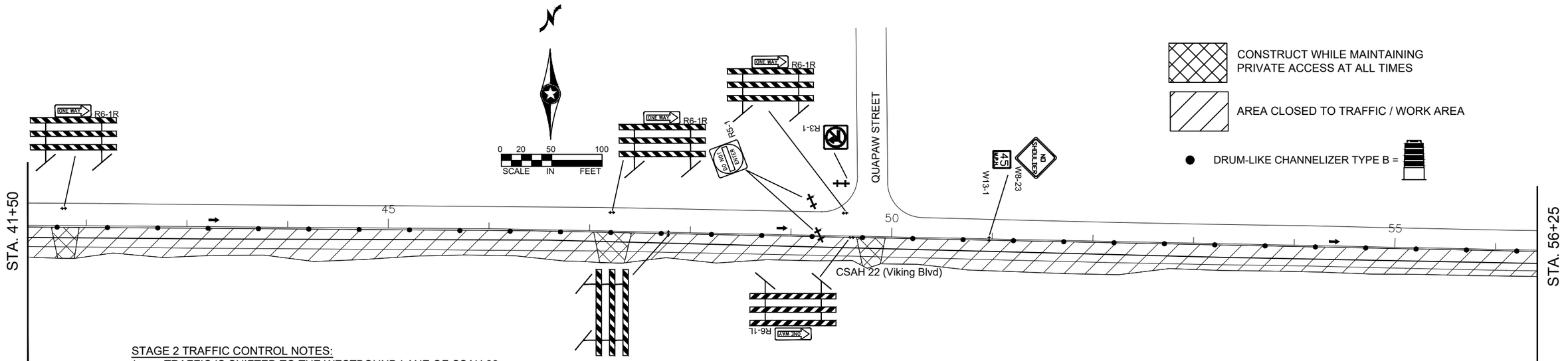
SAP 002-622-042

STAGE 2 TRAFFIC CONTROL PLAN

Sheet 79 of 123 Sheets

01/09/2024



STAGE 2 TRAFFIC CONTROL NOTES:

1. TRAFFIC IS SHIFTED TO THE WESTBOUND LANE OF CSAH 22.
2. FOR RELOCATING TRAFFIC SIGNS DURING CONSTRUCTION, AS DIRECTED BY THE ENGINEER, RELOCATION INCIDENTAL TO TRAFFIC CONTROL.
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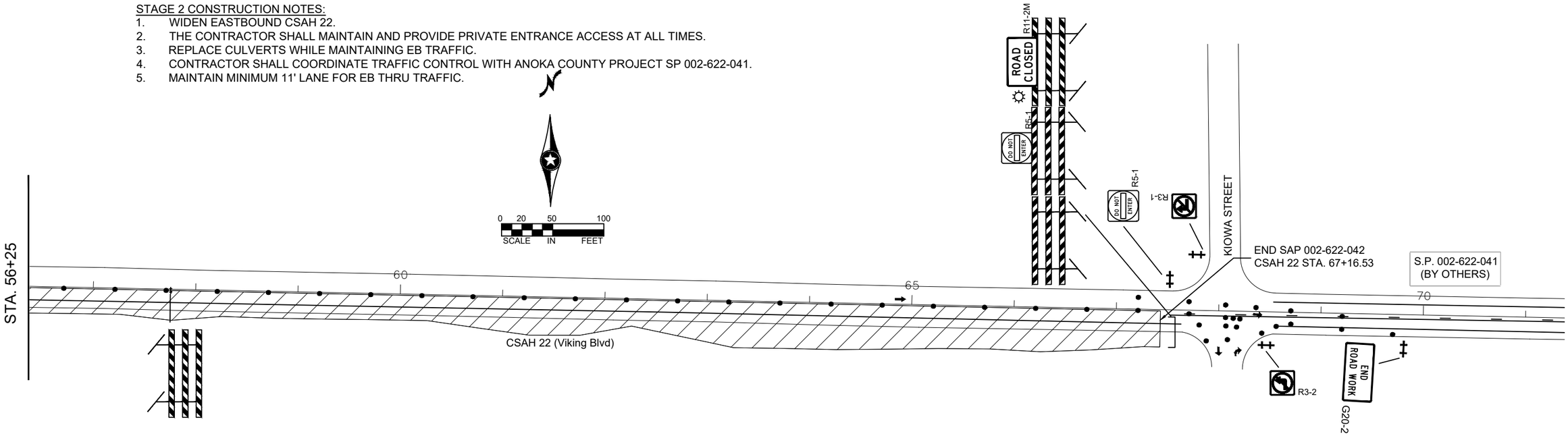

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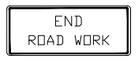
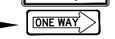
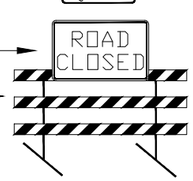
ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-622-042

STAGE 2 TRAFFIC CONTROL PLAN

Sheet 80 of 123 Sheets

01/09/2024

M.U.T.C.D. CODE	SIZE	INSERT	QTY. STG. 1	QTY. STG. 2
G20-2A	48" x 24"		2	2
FLASHER			3	0
W1-6	48" x 24"		1	0
R6-1R	36" x 12"		7	5
R5-1	30" x 30"		1	1
R11-2	48" x 30"		1	0
TYPE III	8 FOOT		16	7
FLASHER			4	1
W1-6	48" x 24"		0	1
R6-1L	36" x 12"		0	1
R11-2	48" x 30"		2	1
TYPE III	8 FOOT		5	8
W1-4R	48" x 48"		1	0
W1-4L	48" x 48"		0	1
W8-23	48" x 48"		2	2
W13-1P	24" x 24"		2	2

M.U.T.C.D. CODE	SIZE	INSERT	QTY. STG. 1	QTY. STG. 2
R3-1	24" x 24"		1	2
R3-1	24" x 24"		1	1
R5-1	30" x 30"		1	3
REFLECTORIZED REBOUNDABLE DRUM			104	100
W8-1A	48" x 48"		AS NEEDED	
R11-2	48" x 48"		AS NEEDED	
W8-8	48" x 48"		AS NEEDED	
W8-9	48" x 48"		AS NEEDED	
W8-23	48" x 48"		AS NEEDED	

NOTES:

- FOR ANY TRAFFIC CONTROL NOT SHOWN, REFER TO THE LATEST FIELD MANUAL AND/OR M.U.T.C.D. FOR LAYOUTS. ANY CHANGES SHALL REQUIRE APPROVAL BY THE ENGINEER.
- 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.
- ALL TYPE III BARRICADES SHALL BE REFLECTORIZED ON BOTH SIDES. BARRICADE MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE M.U.T.C.D.

01/09/2024

NO	DATE	BY	CKD	APPR	REVISION

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SIGNATURE: Sean R. Thiel

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ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

TRAFFIC CONTROL QUANTITIES

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.

PREFORMED TAPE LAY APPLICATION:

1. APPLY THE PREFORMED PAVEMENT MARKING TAPE AS RECOMMENDED BY THE MANUFACTURER TO PROVIDE A NEAT, DURABLE MARKING THAT WILL NOT FLOW OR DISTORT DUE TO TEMPERATURE IF THE PAVEMENT SURFACE REMAINS STABLE. USE EQUIPMENT AND APPLICATION METHODS SPECIFIED BY THE MANUFACTURER.

PREFORMED THERMOPLASTIC:

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

PAVEMENT MARKING TABULATION - ANOKA COUNTY CSAH 22		K
TEMPORARY		
ITEM	UNIT	TOTAL QUANTITY
PAVEMENT MARKING REMOVAL 4" SOLID WHITE PAINT	Lin Ft	5044
PERMANENT		
ITEM	UNIT	TOTAL QUANTITY
4" SOLID LINE PREF TAPE GROUND IN (WR) (WHITE)	Lin Ft	11392
4" BROKEN LINE PREF TAPE GROUND IN (WR) (YELLOW)	Lin Ft	410
4" SOLID LINE PREF TAPE GROUND IN (WR) (YELLOW)	Lin Ft	1012
4" DOUBLE LINE PREF TAPE GROUND IN (WR) (YELLOW)	Lin Ft	4771
24" SOLID LINE - PREFORMED THERMOPLASTIC GROUND IN (WR) (YELLOW)	Lin Ft	1008
PAVEMENT MESSAGE - PREFORMED THERMOPLASTIC (LEFT ARROW)	Sq Ft	62
PAVEMENT MESSAGE - PREFORMED THERMOPLASTIC (RIGHT ARROW)	Sq Ft	31

PAVEMENT MARKING SYMBOLS & MATERIALS LEGEND

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

PAVEMENT MESSAGE (LEFT ARROW)

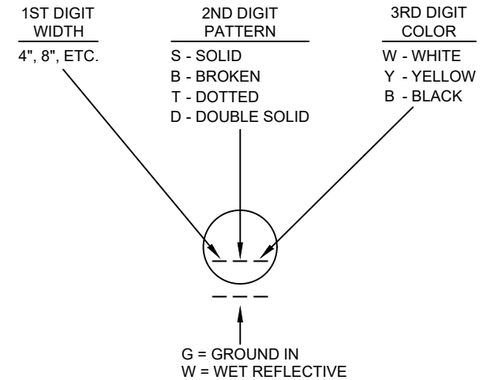
STRIPING KEY

CIRCLE - MULTI-COMP

TRIANGLE - PAINT

SQUARE - PREF TAPE

OCTAGON - PREF THERMO



EXAMPLE: 4SW / GW = 4" SOLID LINE WHITE PREF TAPE GROUND IN, WET REFLECTIVE

01/09/2024

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-622-042 Whitetopping\Base\Traffic

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: 1/9/2024 LICENSE NO. 45129

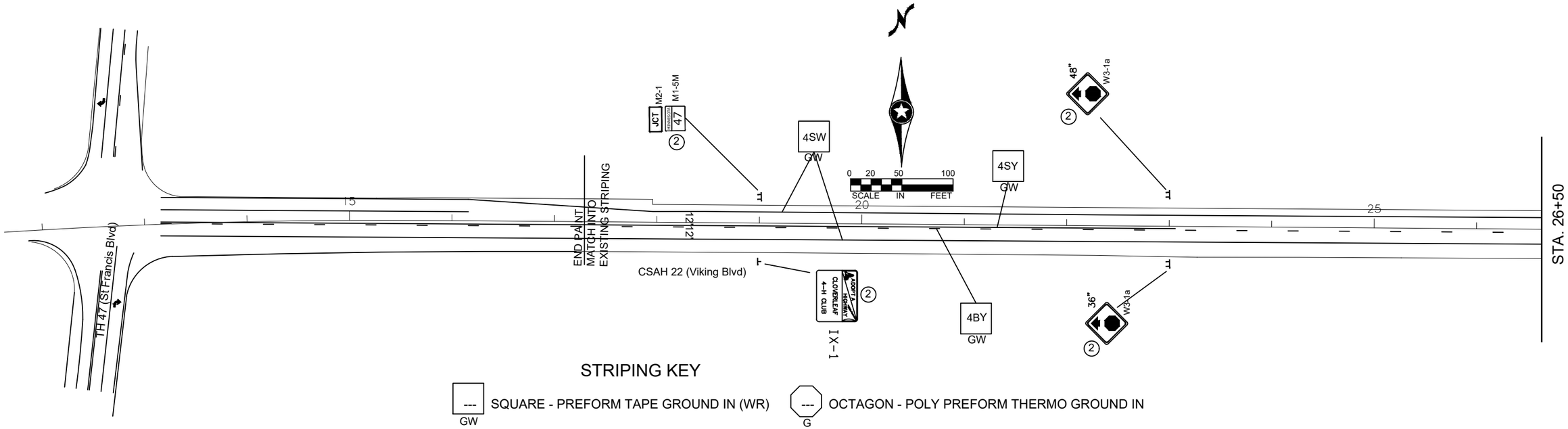
DRAWN BY LJK DATE 05/31/23
DESIGN BY LJK DATE 05/31/23
CHECKED BY SRT DATE 01/09/24

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

PERMANENT PAVEMENT MARKING PLAN DETAILS

Sheet 82 of 123 Sheets



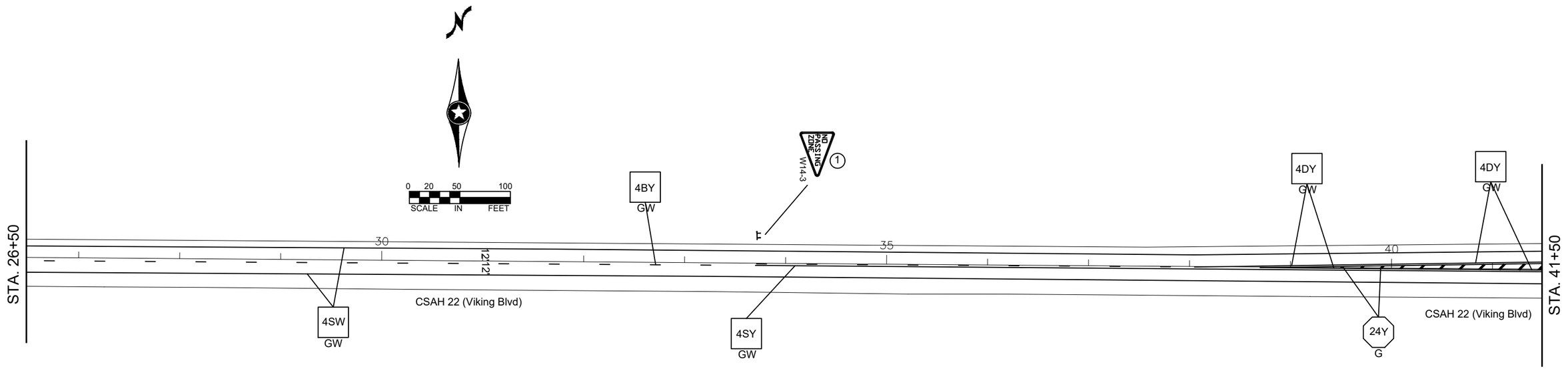
STRIPING KEY

--- GW — SQUARE - PREFORM TAPE GROUND IN (WR)

--- G — OCTAGON - POLY PREFORM THERMO GROUND IN

SIGN NOTES:
① FURNISH & INSTALL
② INPLACE
⑥ INSTALL

NOTES:
- LOCATIONS OF PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- ALL PERMANENT STRIPING AND PAVEMENT MESSAGES SHALL BE PLACED WITHIN 72 HOURS OF MAINLINE PAVING.
- MATCH INTO EXISTING STRIPING.
- TOUCH UP ALL EXISTING STRIPING THAT WAS MARRED/DAMAGED FROM LANE TAPE.



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ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

PERMANENT SIGNING & STRIPING

Sheet 83 of 123 Sheets

01/09/2024

NOTES:

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- MATCH INTO EXISTING STRIPING.
- TOUCH UP ALL EXISTING STRIPING THAT WAS MARRED/DAMAGED FROM LANE TAPE.

SIGN NOTES:
① FURNISH & INSTALL
② INPLACE
⑥ INSTALL

STRIPING KEY

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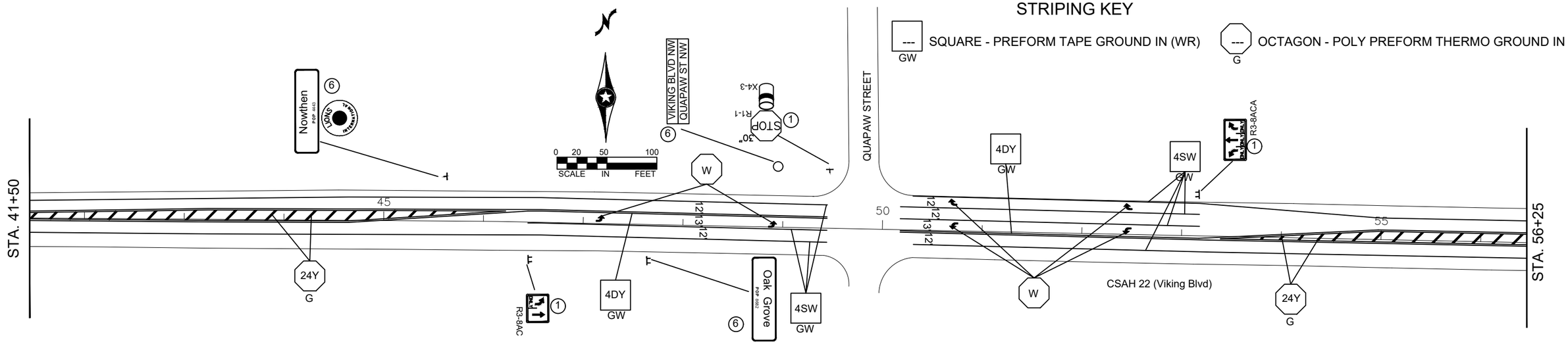
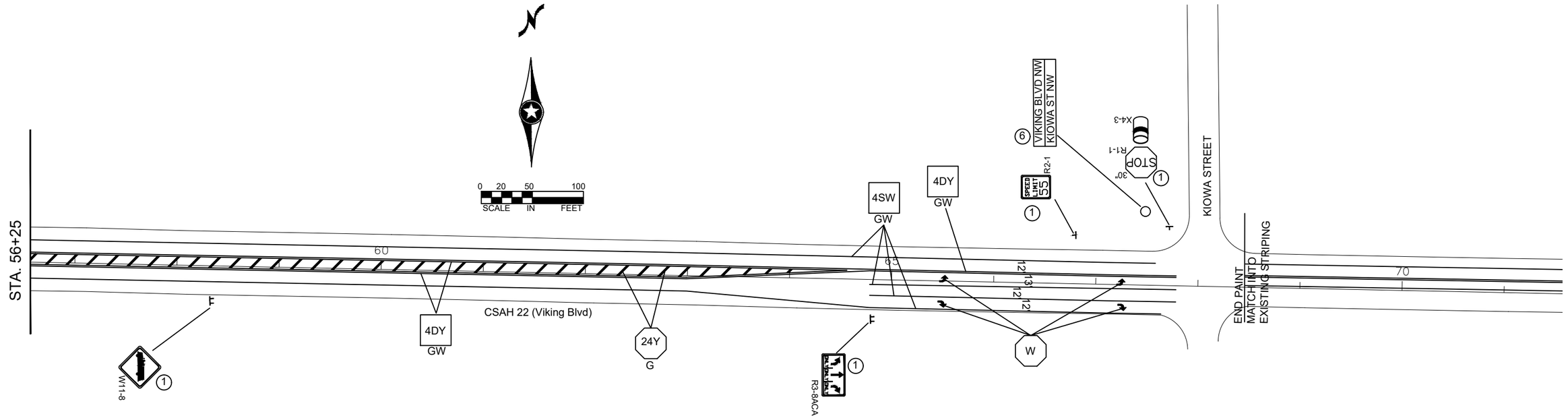
--- G OCTAGON - POLY PREFORM THERMO GROUND IN





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ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

PERMANENT SIGNING & STRIPING

Sheet 84 of 123 Sheets

01/09/2024

TYPE C SIGN PANELS - ANOKA COUNTY CSAH 22							M
M.U.T.C.D. CODE	SIZE	INSERT	QUANTITY	SQ FT PANEL AREA	SQ FT TOTAL AREA	MOUNTING POST PER INSTALLATION	MOUNTING HEIGHT
R1-1	36" x 36"		2	6.25	12.5	1	7.0'
X4-3	H:9" D:6"		2	1.18	2.36		
R3-8AC	36" x 30"		1	7.5	7.5	2	7.0'
R3-8ACA	54" x 30"		2	11.25	22.50	2	7.0'
R2-1	24" x 30"		1	5	5	1	7.0'
W14-3	64" x 64" x 48"		1	9.89	9.89	2	7.0'
W11-8	30" x 30"		1	6.25	6.25	2	7.0'
TYPE C SIGN PANEL TOTALS			10		66.00		

01/09/2024

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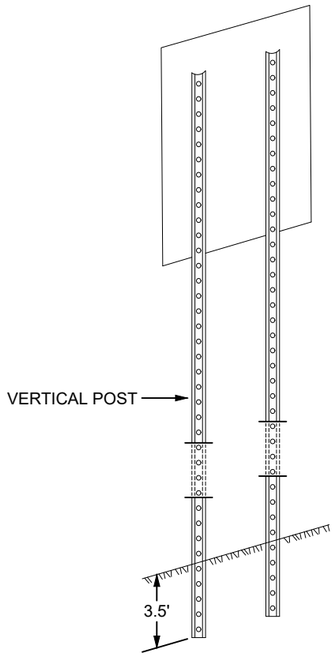
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

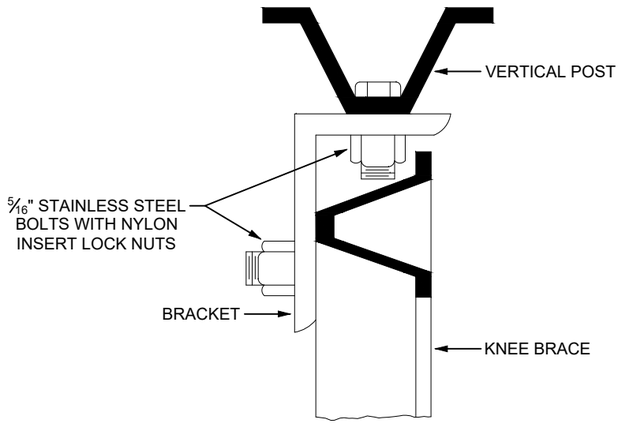
PERMANENT SIGNING QUANTITIES

TYPE C & D SIGN STRUCTURAL DETAILS

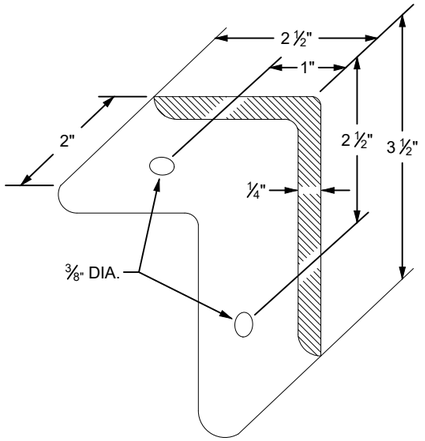
TYPICAL INSTALLATION 36" AND LARGER TYPE "C" SIGNS



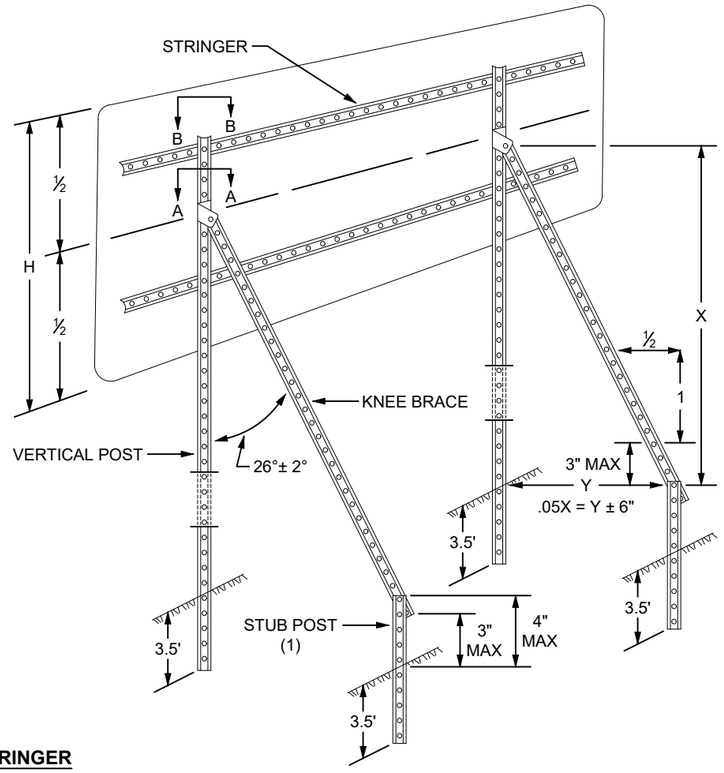
SECTION A-A



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

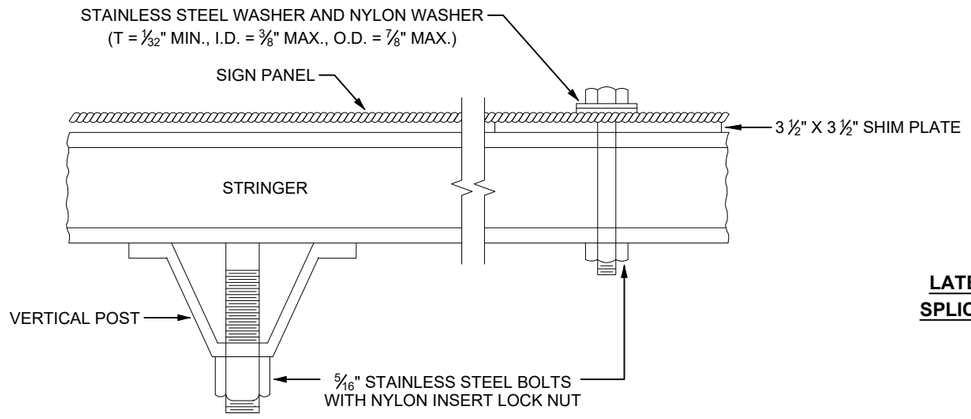


TYPICAL "A-FRAME" INSTALLATION TYPE "D" SIGNS

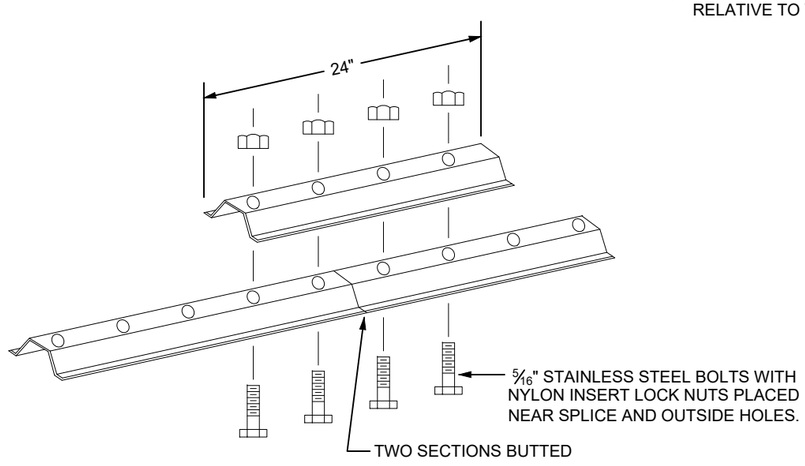


(1) OFFSET STUB POST 1' TOWARD ROADWAY RELATIVE TO VERTICAL POST.

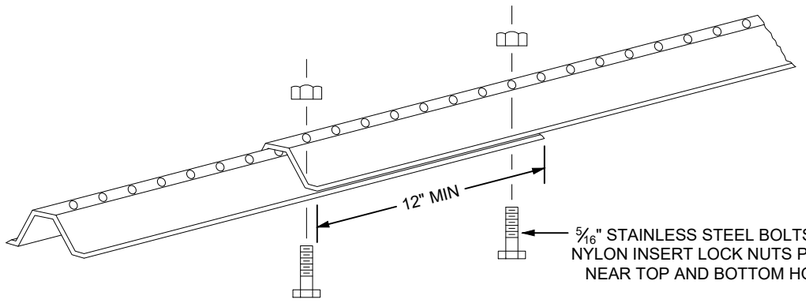
SECTION B-B



LATERAL BRACE OR STRINGER SPLICE DETAIL (EXPLODED VIEW)



KNEE BRACE SPLICE



01/09/2024

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ANOKA COUNTY HIGHWAY DEPT.

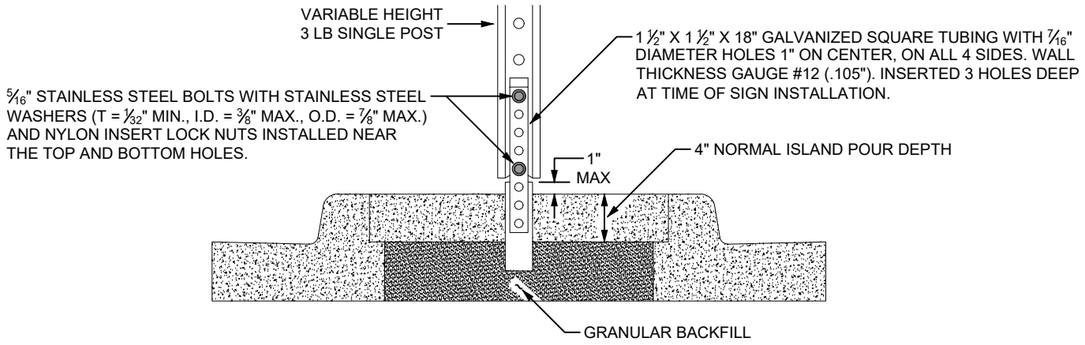
SAP 002-622-042

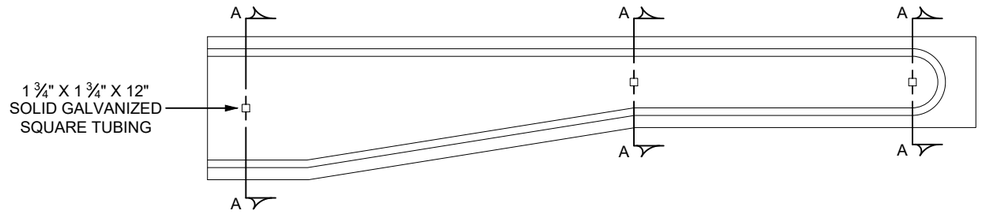
SIGNING & STRIPING DETAILS

Sheet 86 of 123 Sheets

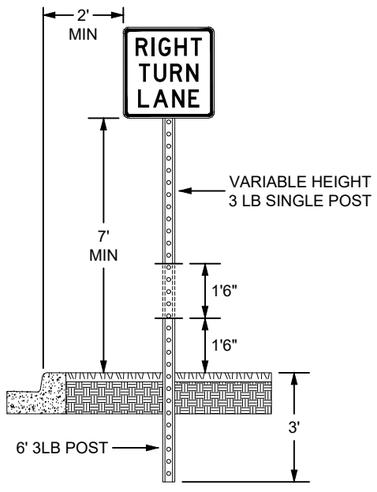
SIGN INSTALLATION TYPICALS

SECTION A-A

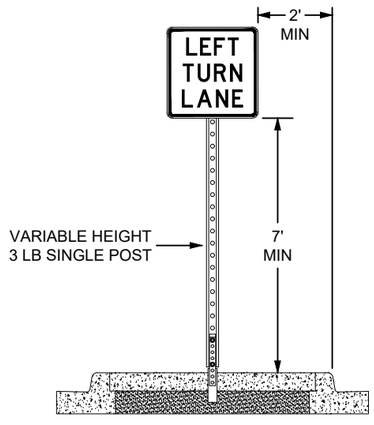




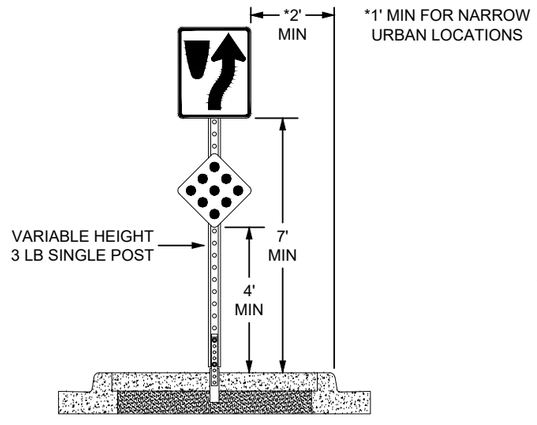
GROUND POST MOUNT SIGN INSTALLATION TYPICAL



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.

01/09/2024

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ANOKA COUNTY HIGHWAY DEPT.

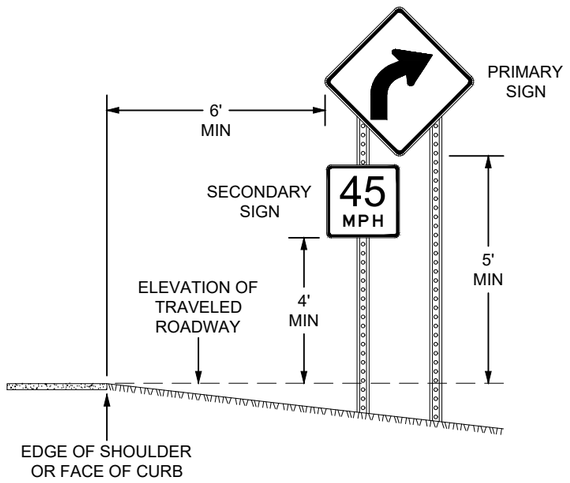
SAP 002-622-042

SIGNING & STRIPING DETAILS

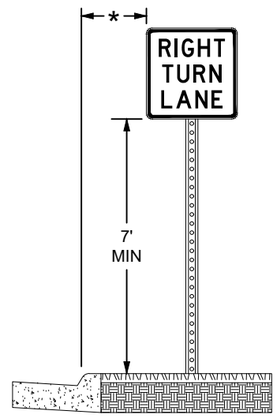
Sheet 87 of 123 Sheets

SIGN PLACEMENT TYPICALS

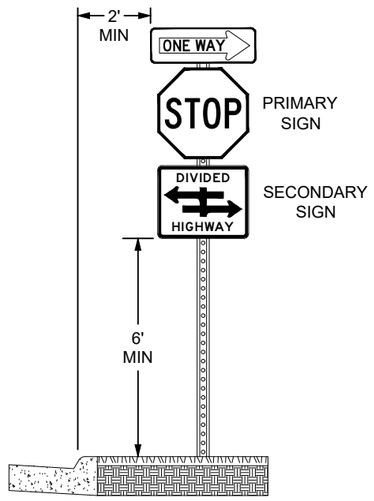
RURAL

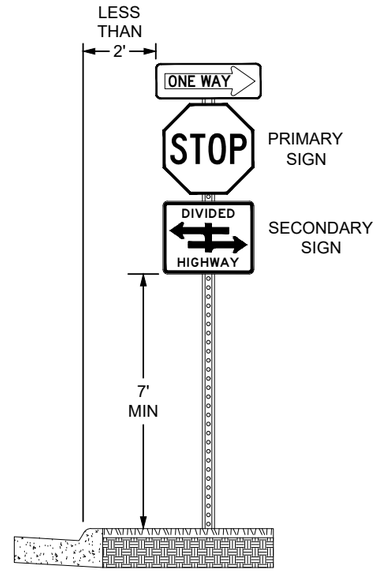


URBAN

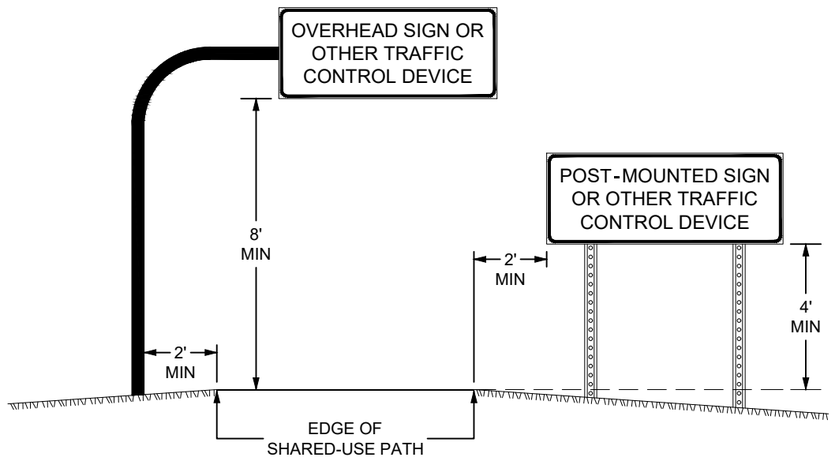


* 2' - NARROW BOULEVARD (≤ 8' WIDE)
  6' - WIDE BOULEVARD





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

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SAP 002-622-042

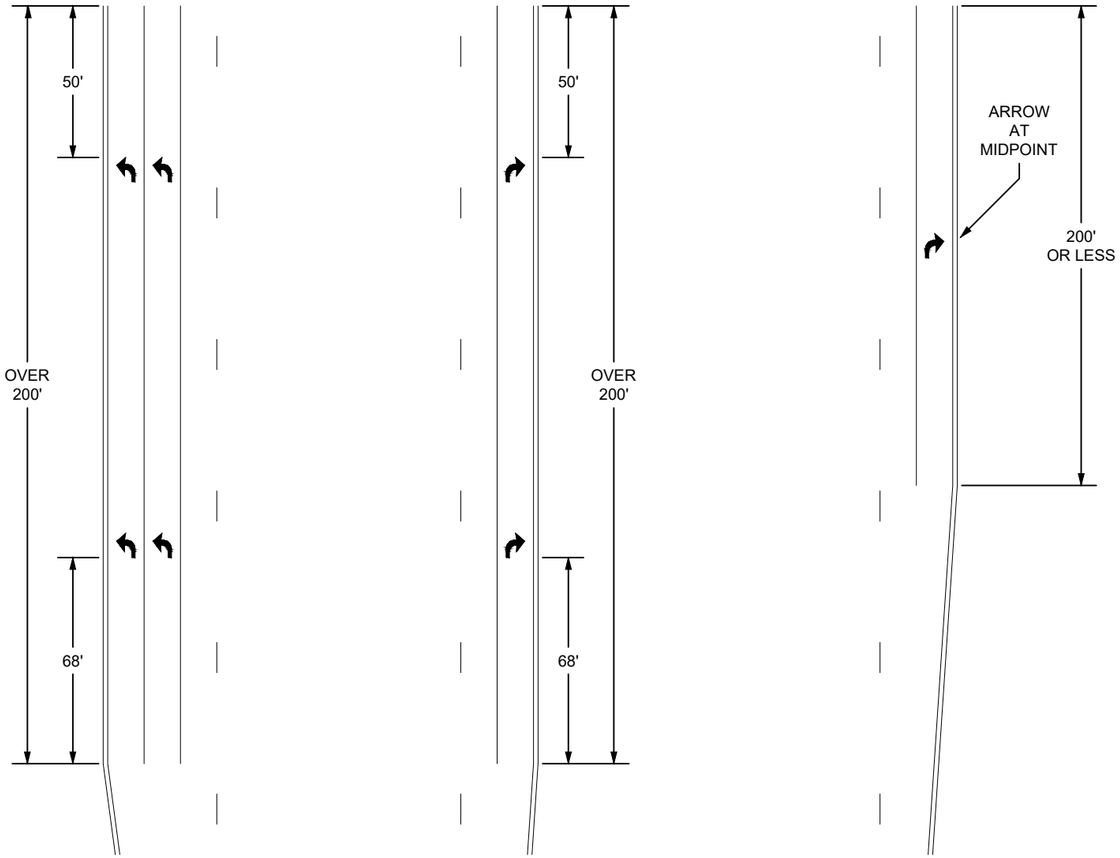
SIGNING & STRIPING DETAILS

Sheet 88 of 123 Sheets

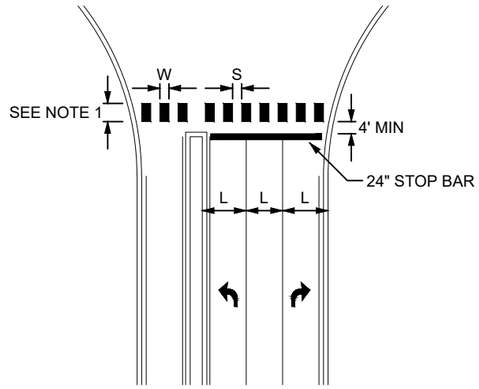
01/09/2024

PAVEMENT MARKING TYPICALS

TURN LANE ARROW PLACEMENT

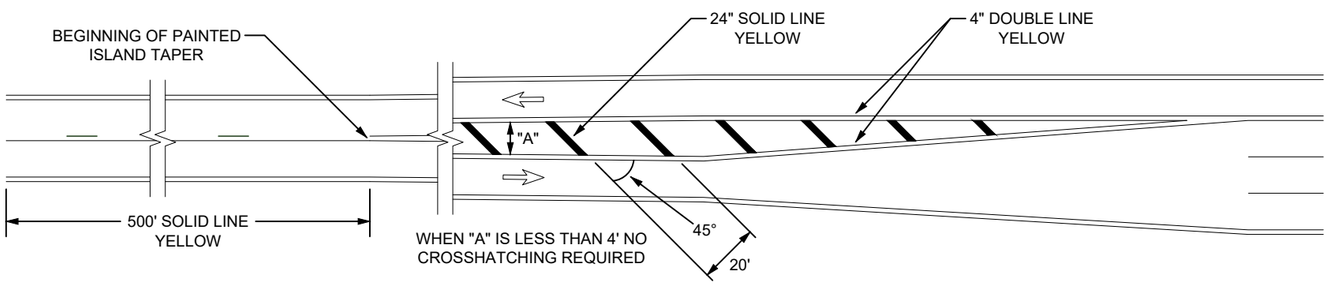


PEDESTRIAN CROSSWALK



(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

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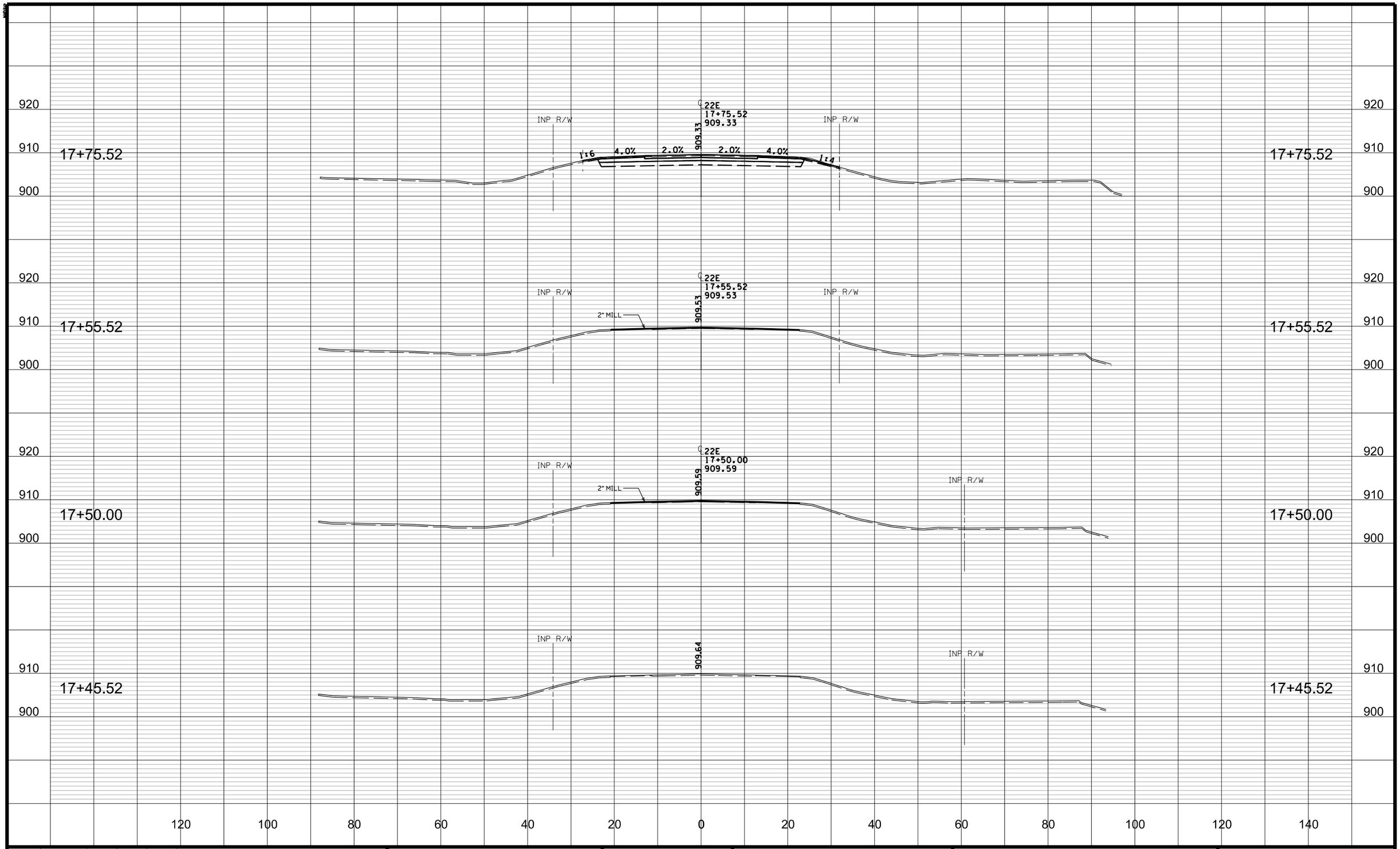
SAP 002-622-042

SIGNING & STRIPING DETAILS

Sheet 89 of 123 Sheets

01/09/2024



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-622-042 Whitetopping\Plan\002622042_XS1_P1.dgn 01/09/2024 1:18:02 PM

01/09/2024

DRAWN BY MP DATE 01/09/24

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CHECKED BY ND DATE 01/09/24

ANOKA COUNTY

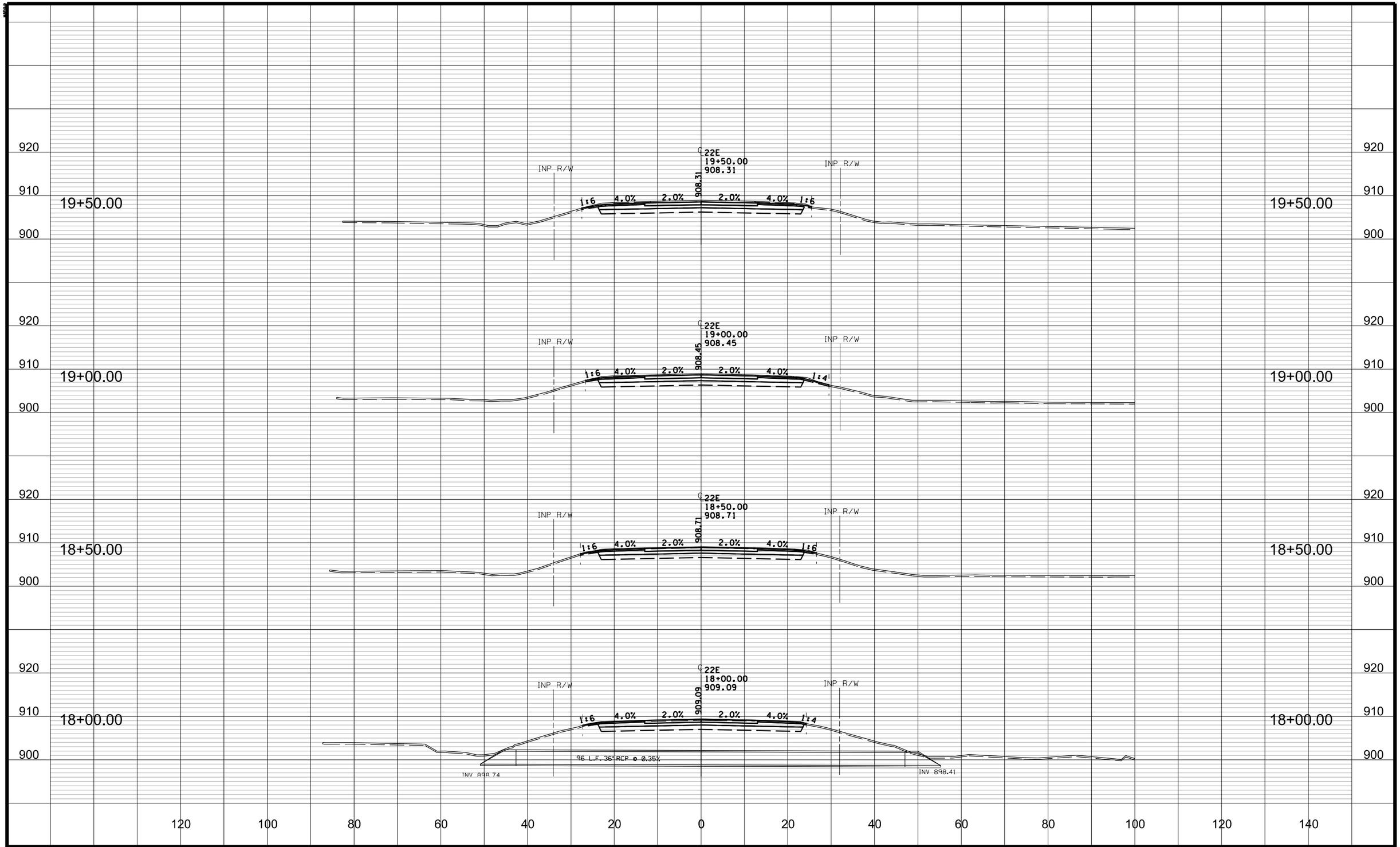
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

CROSS SECTIONS

STA 17+45.52 TO 17+75.52

Sheet 90 of 123 Sheets



NO	DATE	BY	CKD	APPR	REVISION

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ANOKA COUNTY

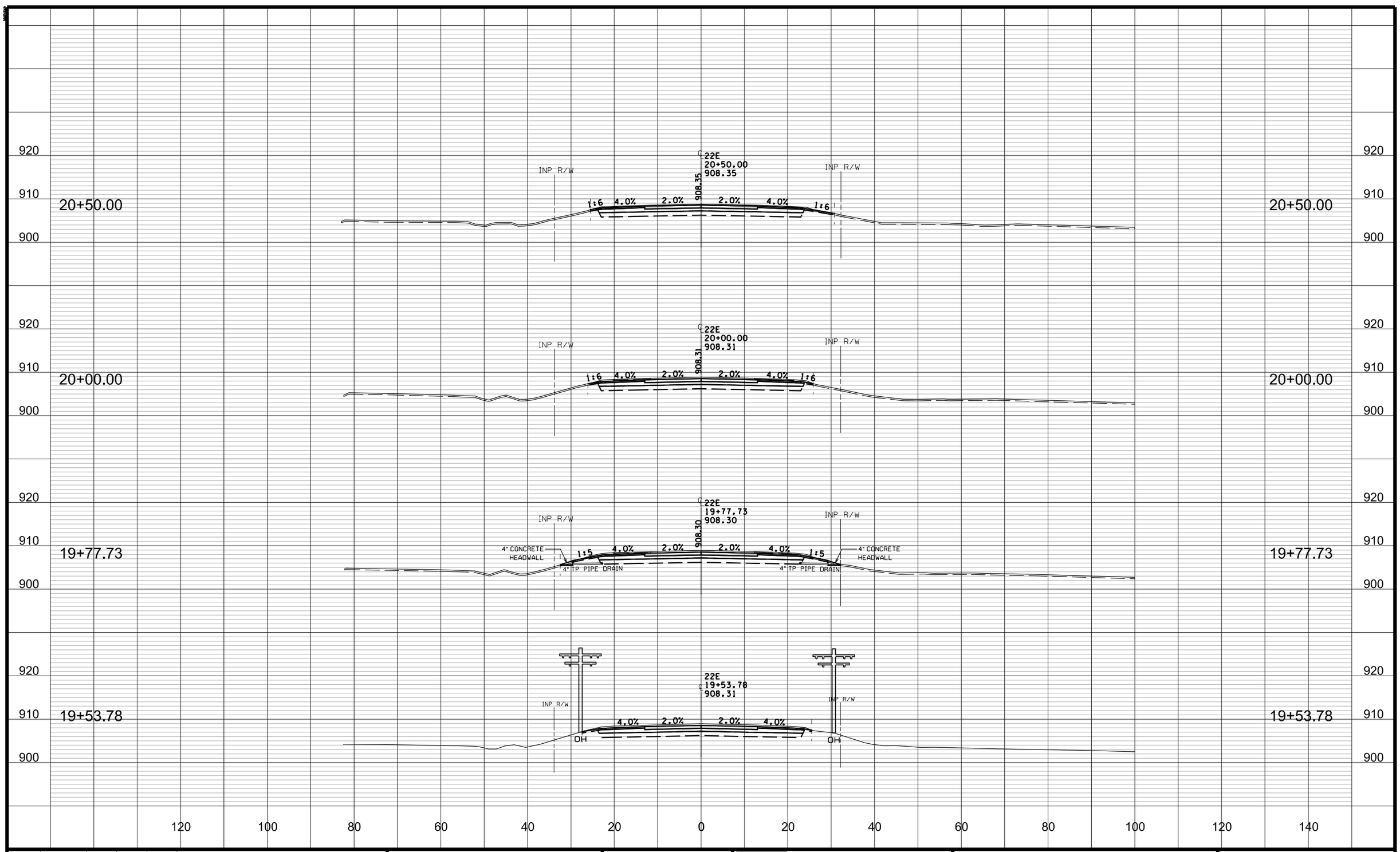
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

CROSS SECTIONS

STA 18+00.00 TO 19+50.00

Sheet 91 of 123 Sheets



NO	DATE	BY	CKD	APPR	REVISION

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01/09/2024

DRAWN BY MP DATE 01/09/24
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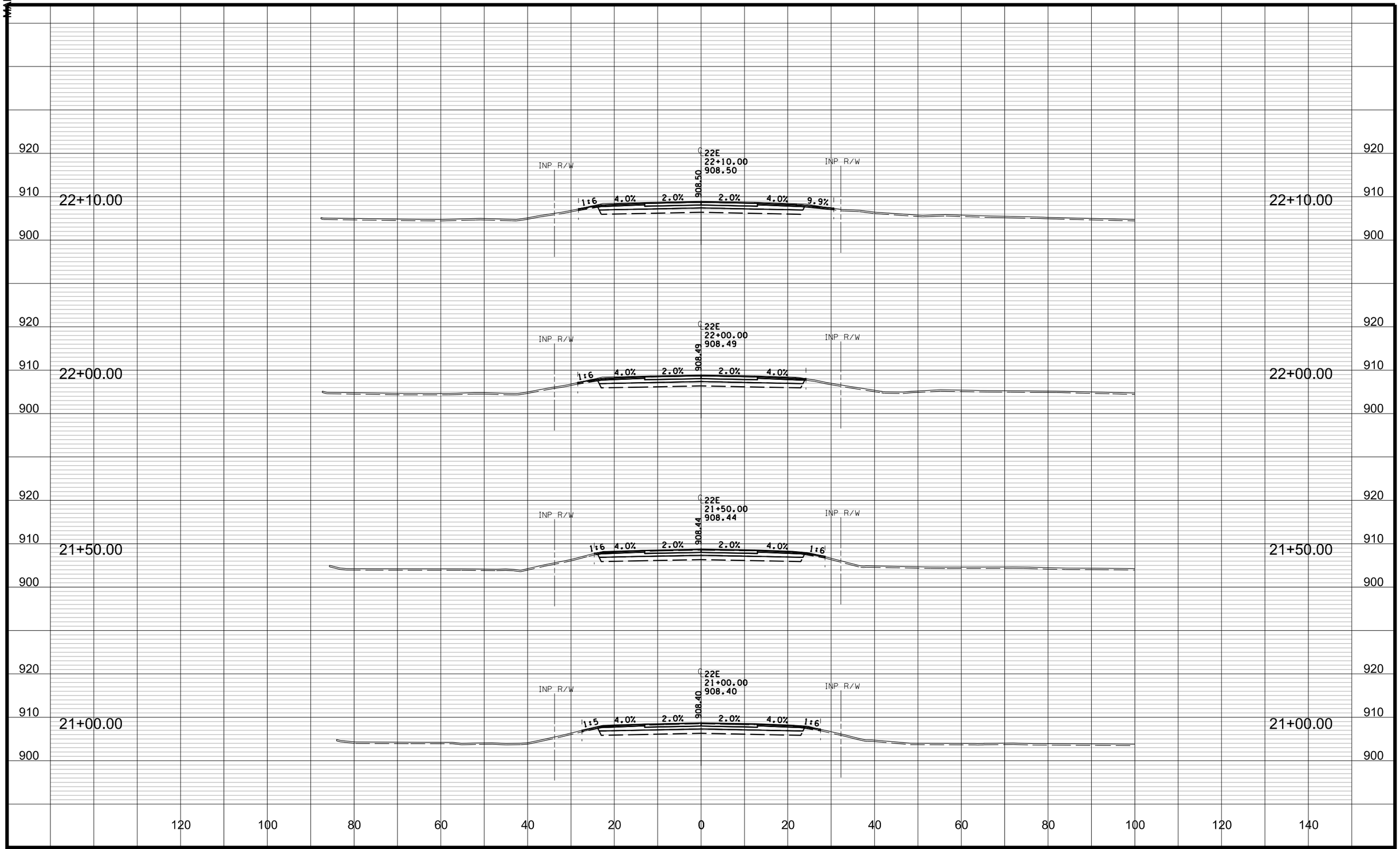
ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-622-042

CROSS SECTIONS
STA 19+53.78 TO 20+50.00

Sheet 92 of 123 Sheets



NO	DATE	BY	CHKD	REVISION

NAME: P:\002-622-042 Whitetopping\Plan\002622042_XS101.dgn 01/09/2024 1:18:04 PM

01/09/2024

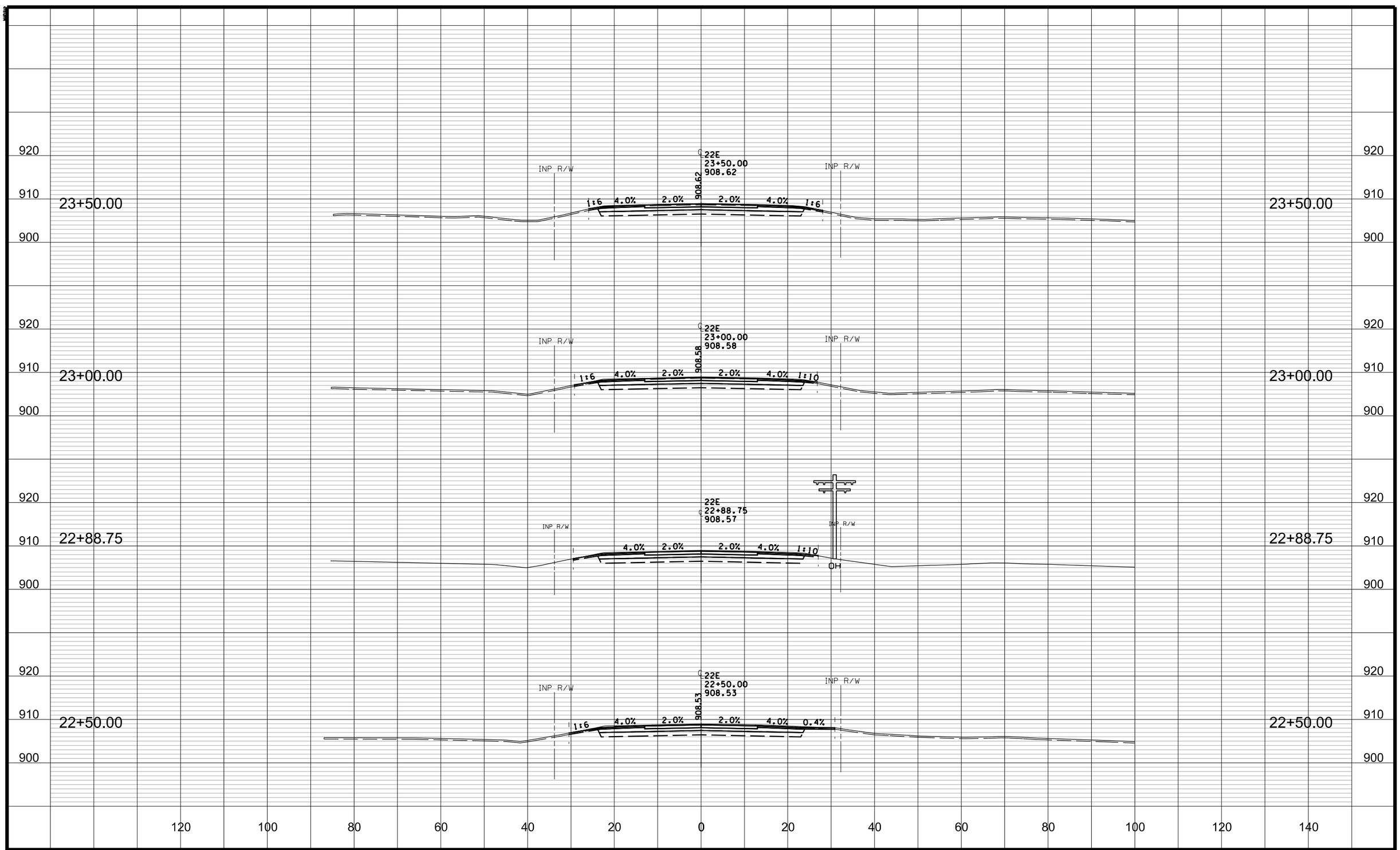
DRAWN BY MP DATE 01/09/24
DESIGN BY MP DATE 01/09/24
CHECKED BY NB DATE 01/09/24

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-622-042

CROSS SECTIONS
STA 21+00.00 TO 22+10.00

Sheet 93 of 123 Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-622-042 Whitetopping\Plan\002622042_XS1_P1.dgn 01/09/2024 1:18:04 PM

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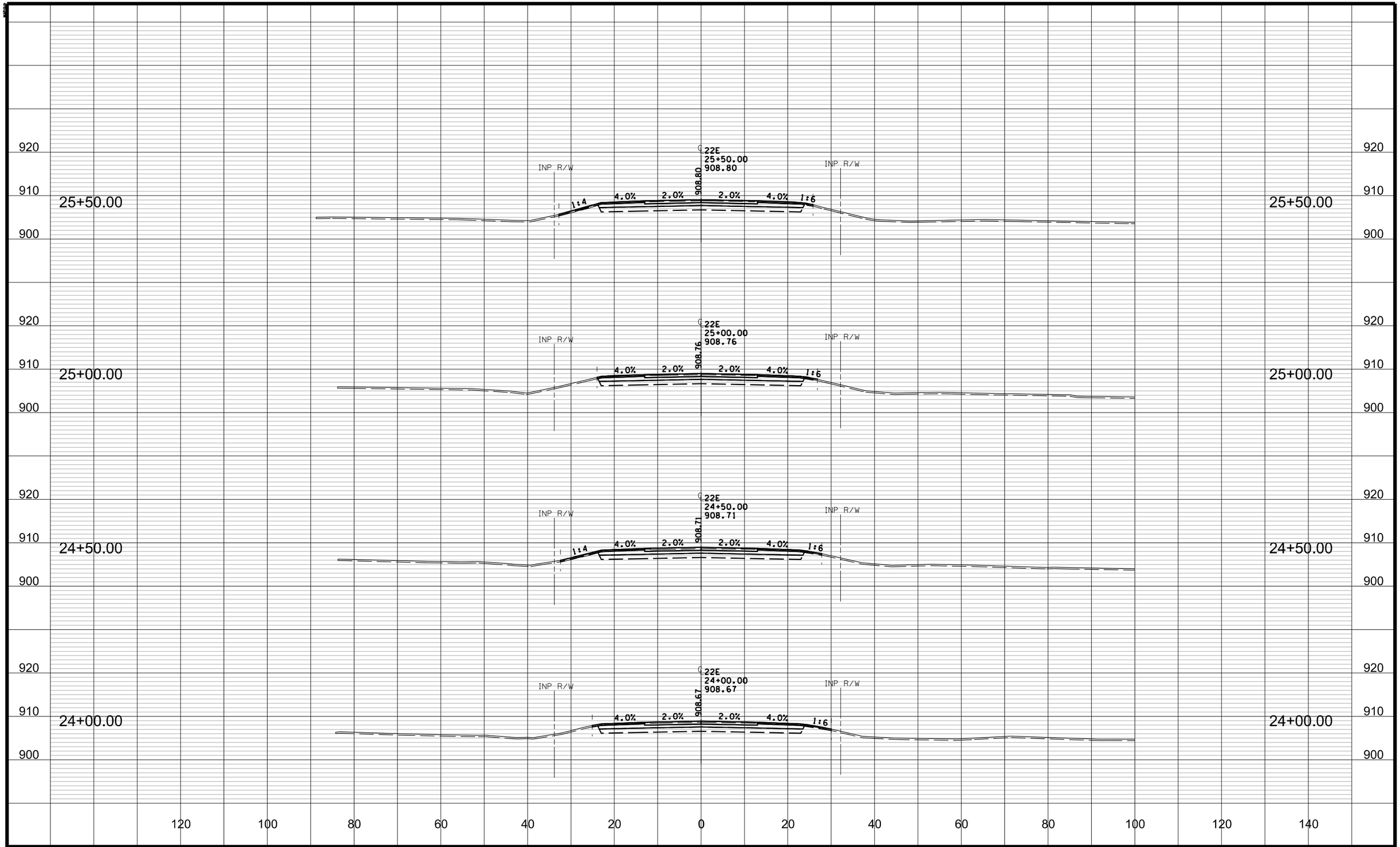
SAP 002-622-042

CROSS SECTIONS
STA 22+50.00 TO 23+50.00

Sheet 94 of 123 Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-622-042 Whitetopping\Plan\002622042_XS1_P1.dgn 01/09/2024 1:18:05 PM

01/09/2024

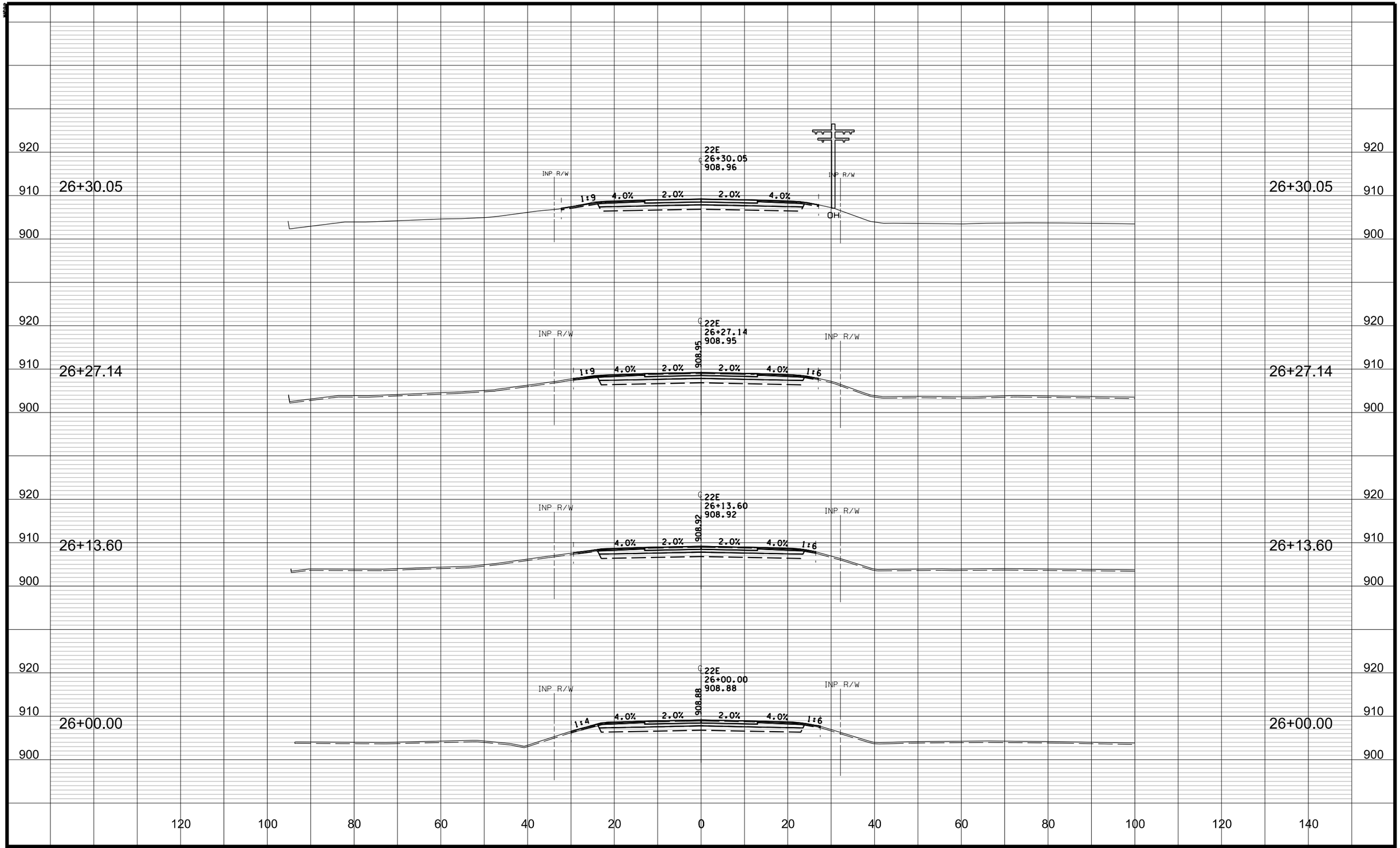
DRAWN BY MP DATE 01/09/24
DESIGN BY MP DATE 01/09/24
CHECKED BY ND DATE 01/09/24

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-622-042

CROSS SECTIONS
STA 24+00.00 TO 25+50.00

Sheet 95 of 123 Sheets



NO	DATE	BY	CKD	APPR	REVISION

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01/09/2024

DRAWN BY MP DATE 01/09/24

DESIGN BY MP DATE 01/09/24

CHECKED BY ND DATE 01/09/24

ANOKA COUNTY

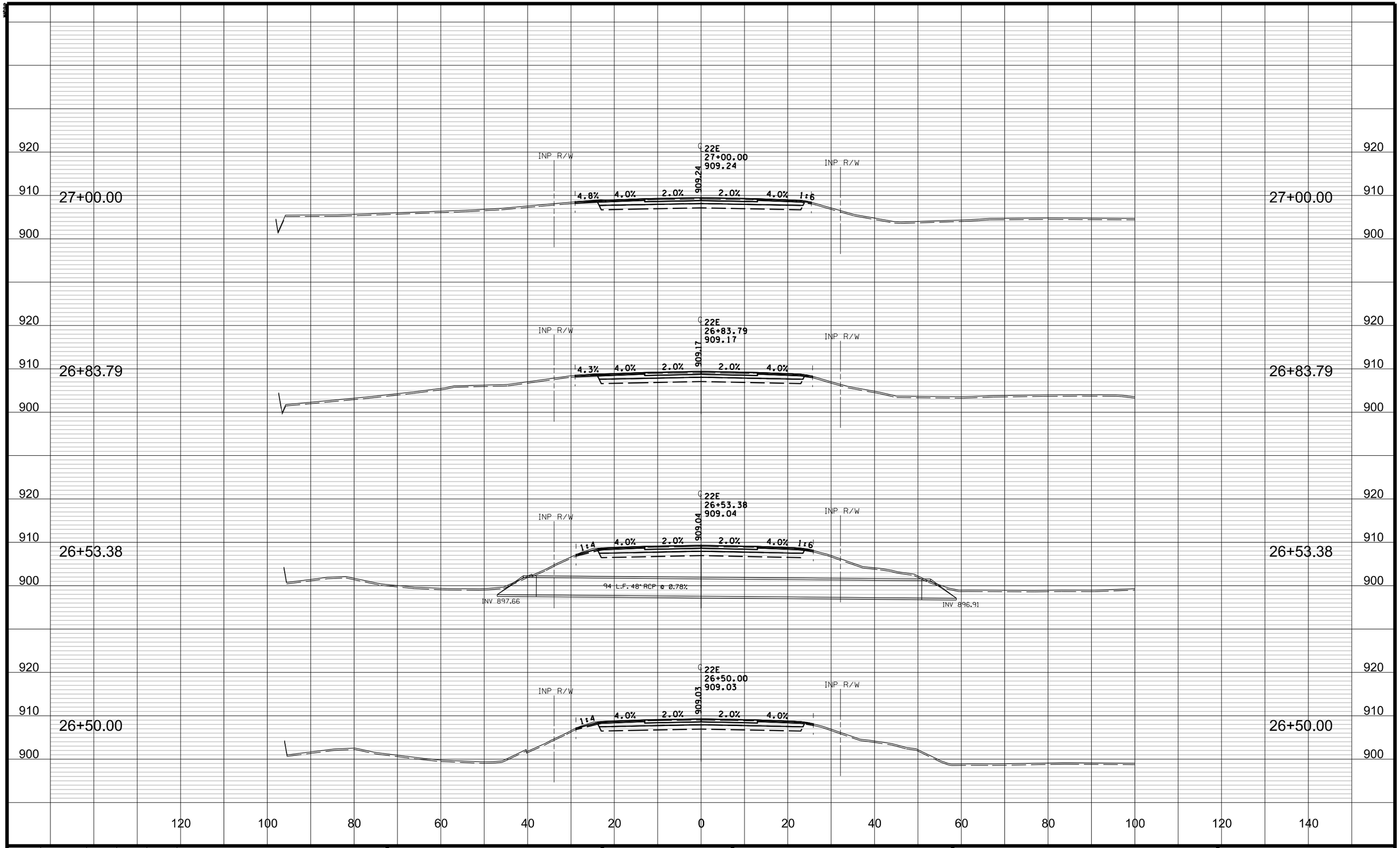
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

CROSS SECTIONS

STA 26+00.00 TO 26+30.05

Sheet 96 of 123 Sheets



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01/09/2024

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DESIGN BY MP DATE 01/09/24

CHECKED BY ND DATE 01/09/24

ANOKA COUNTY

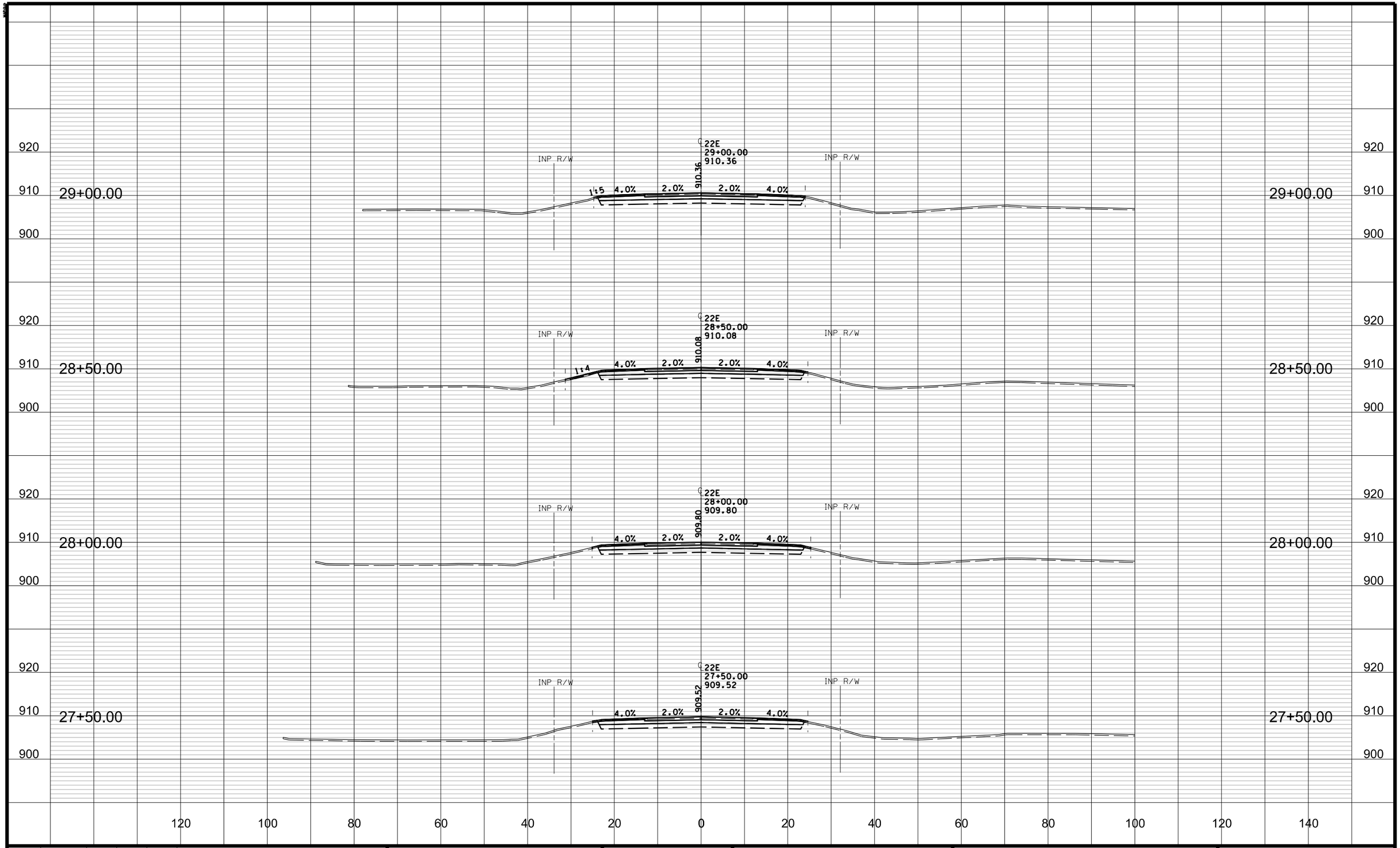
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

CROSS SECTIONS

STA 26+50.00 TO 27+00.00

Sheet 97 of 123 Sheets



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CHECKED BY ND DATE 01/09/24

ANOKA COUNTY

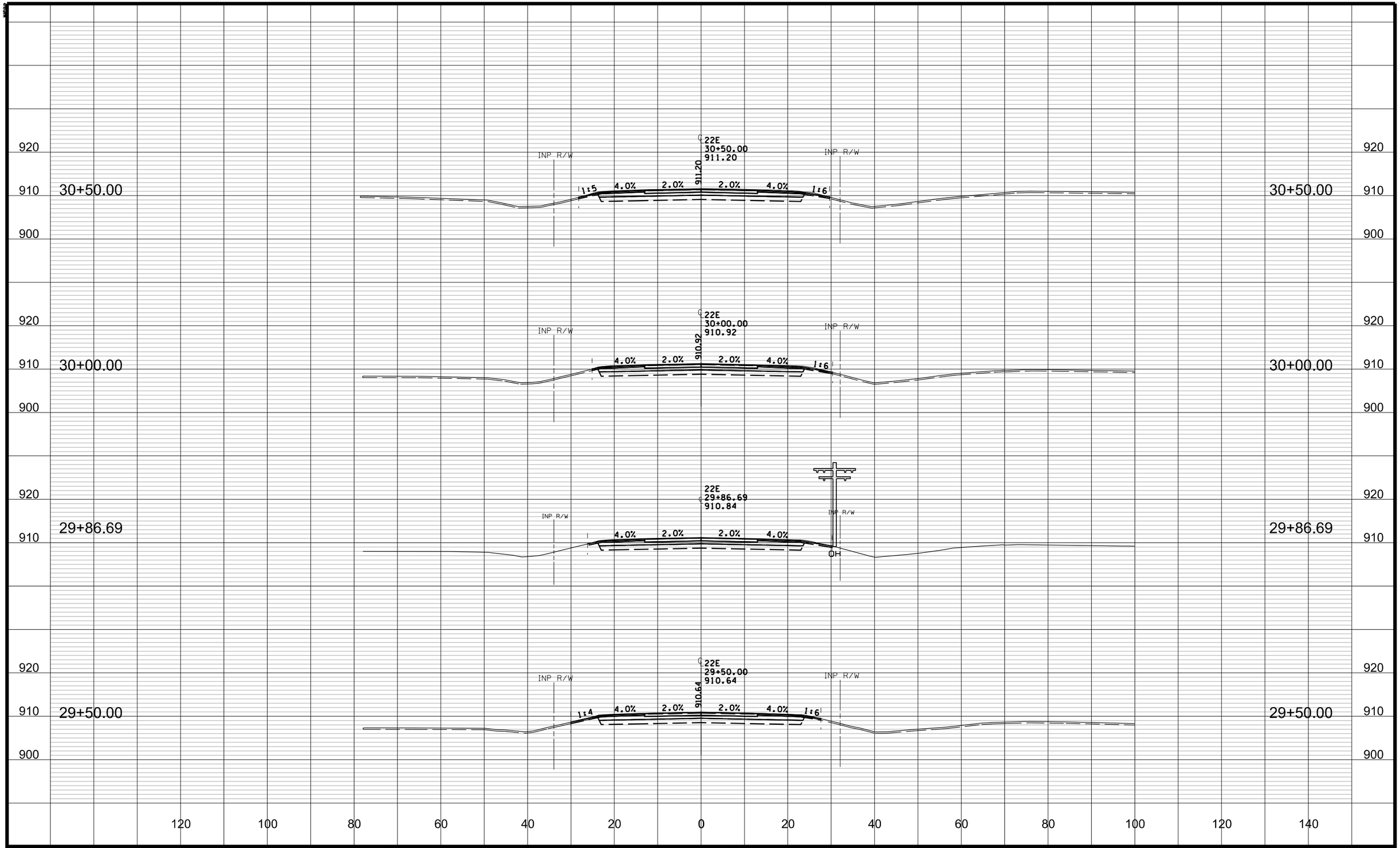
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

CROSS SECTIONS

STA 27+50.00 TO 29+00.00

Sheet 98 of 123 Sheets



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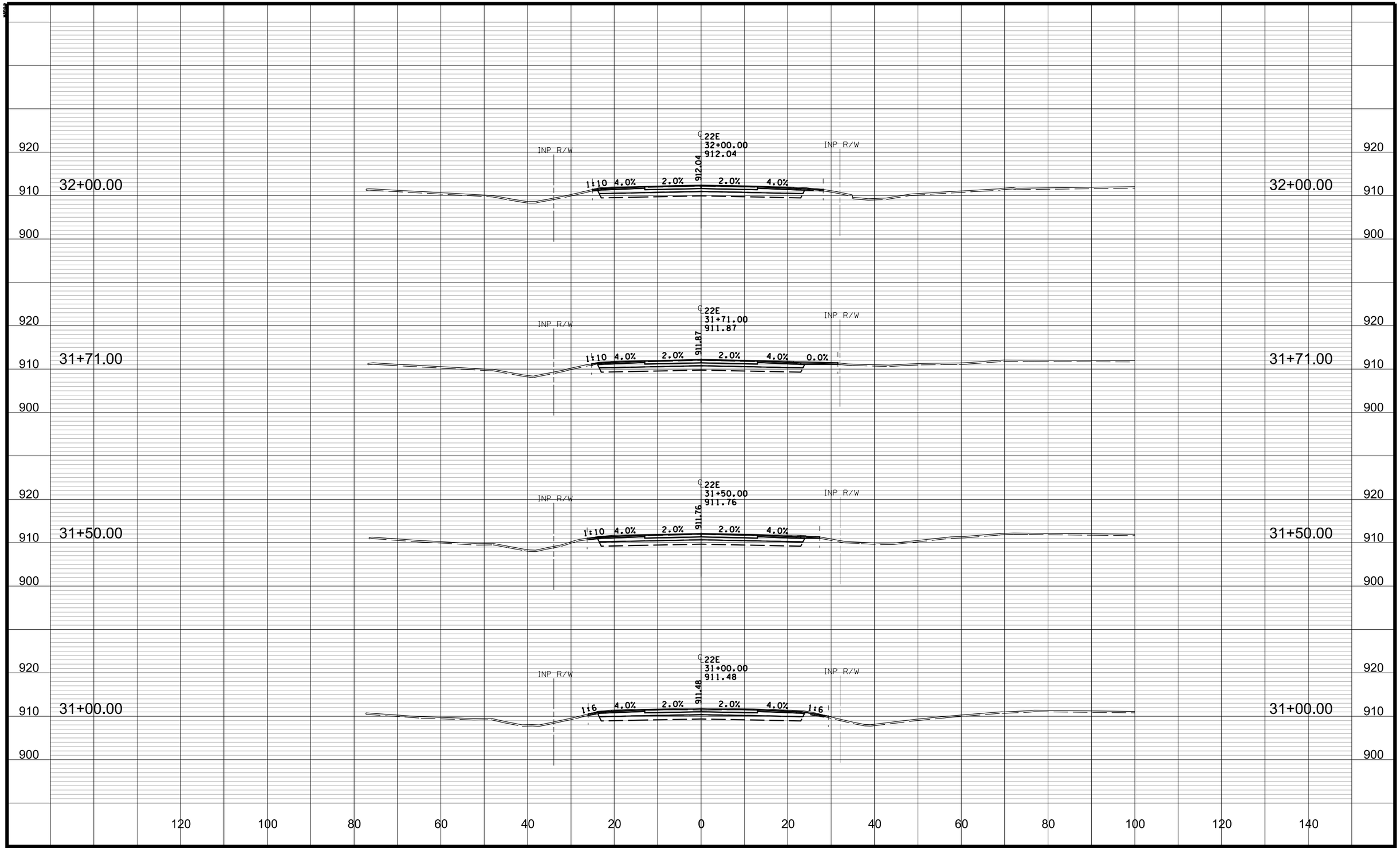
CHECKED BY ND DATE 01/09/24

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-622-042

CROSS SECTIONS
STA 29+50.00 TO 30+50.00

Sheet 99 of 123 Sheets



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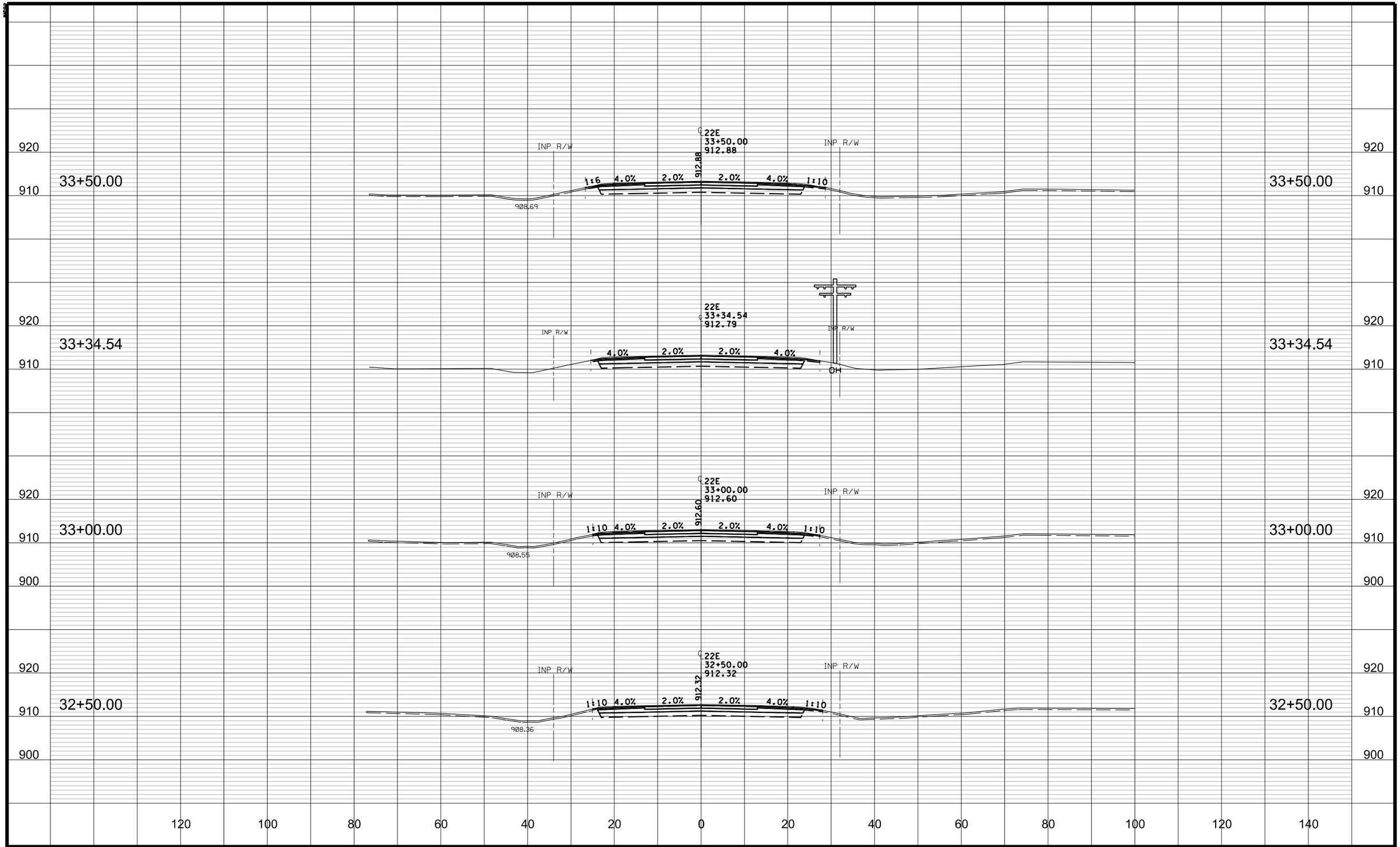
CHECKED BY ND DATE 01/09/24

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-622-042

CROSS SECTIONS
STA 31+00.00 TO 32+00.00

Sheet 100 of 123 Sheets



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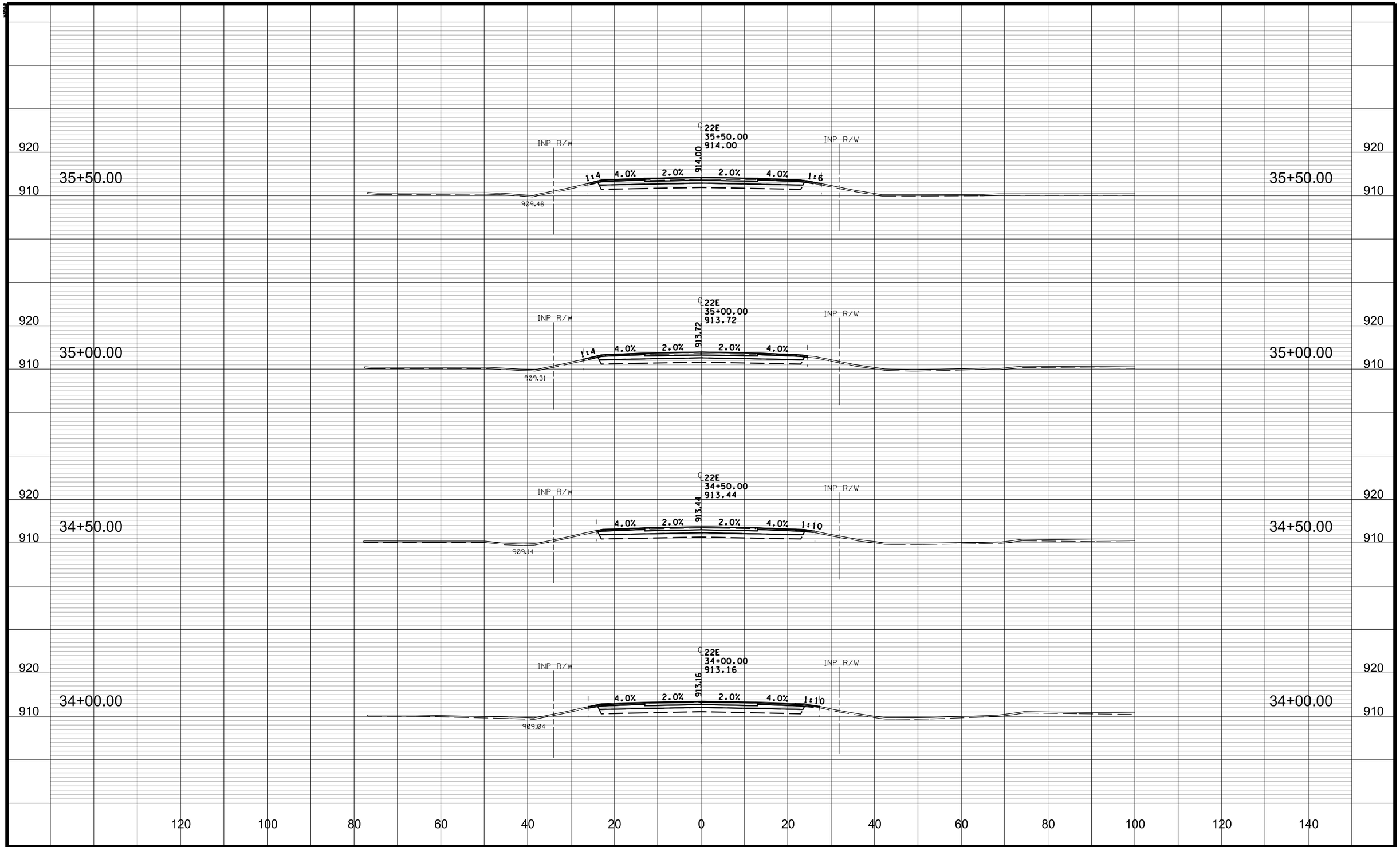
CHECKED BY ND DATE 01/09/24

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-622-042

CROSS SECTIONS
STA 32+50.00 TO 33+50.00
Sheet 101 of 123 Sheets



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CHECKED BY ND DATE 01/09/24

ANOKA COUNTY

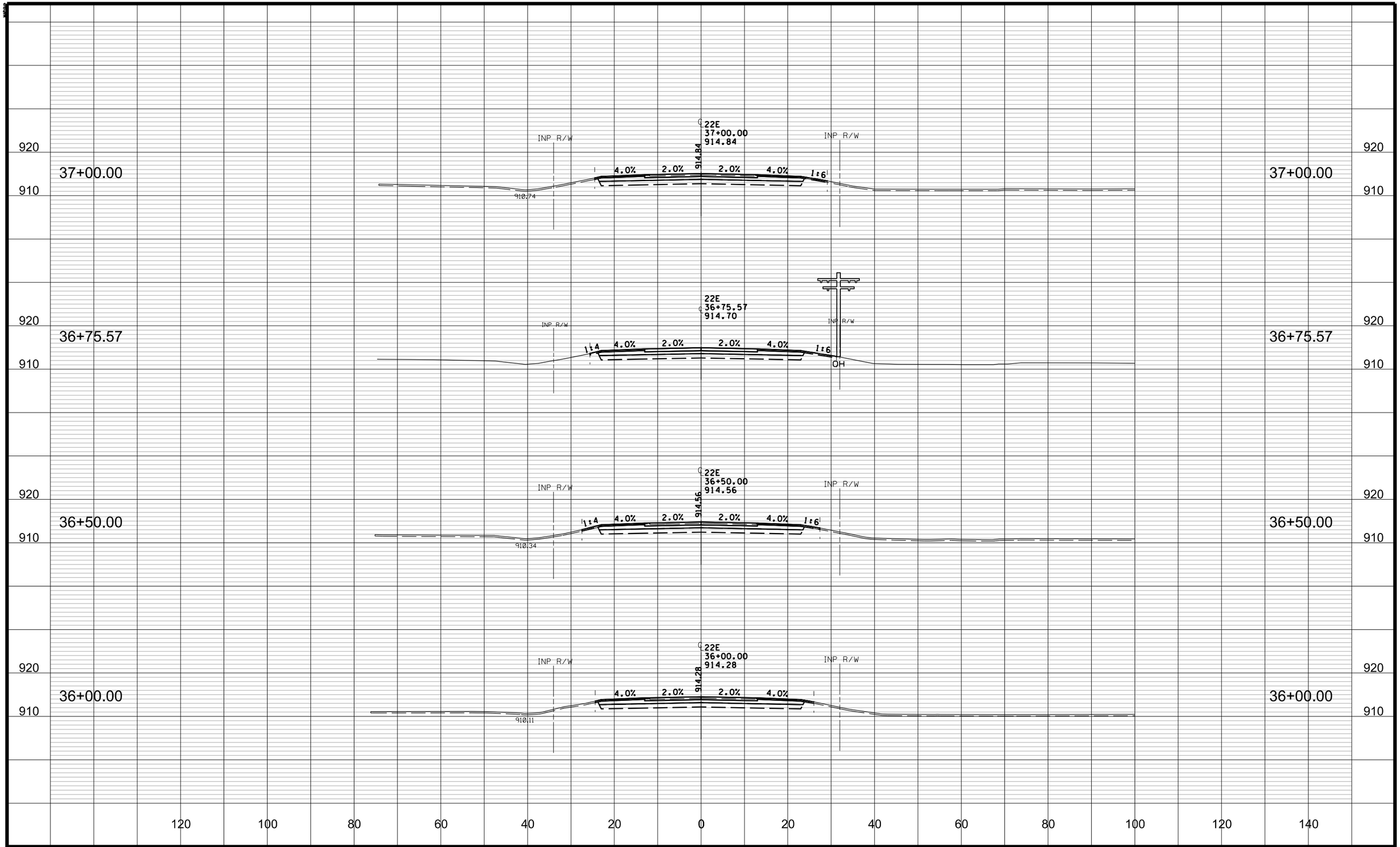
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

CROSS SECTIONS

STA 34+00.00 TO 35+50.00

Sheet 102 of 123 Sheets



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DESIGN BY MP DATE 01/09/24

CHECKED BY ND DATE 01/09/24

ANOKA COUNTY

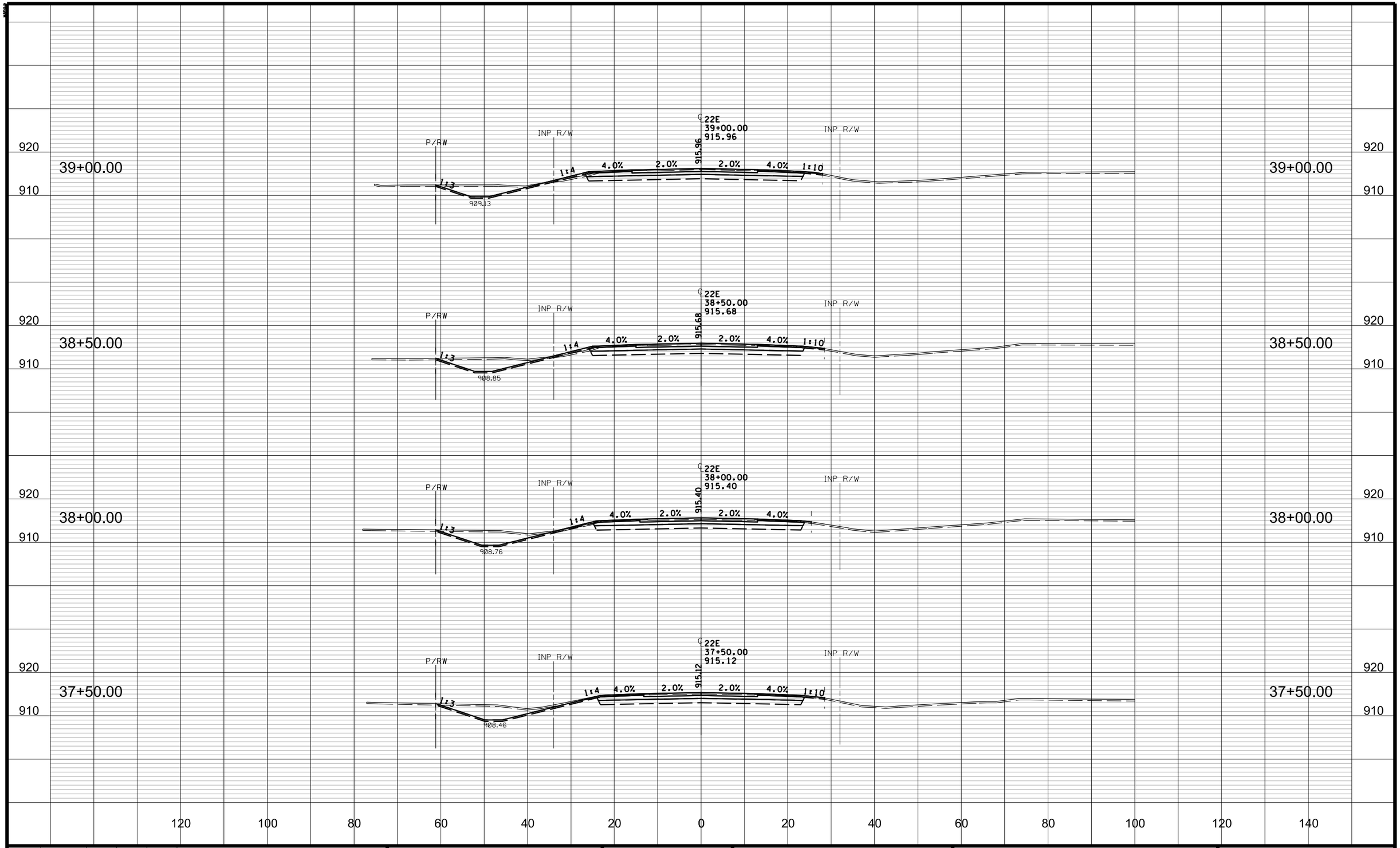
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

CROSS SECTIONS

STA 36+00.00 TO 37+00.00

Sheet 103 of 123 Sheets



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ANOKA COUNTY

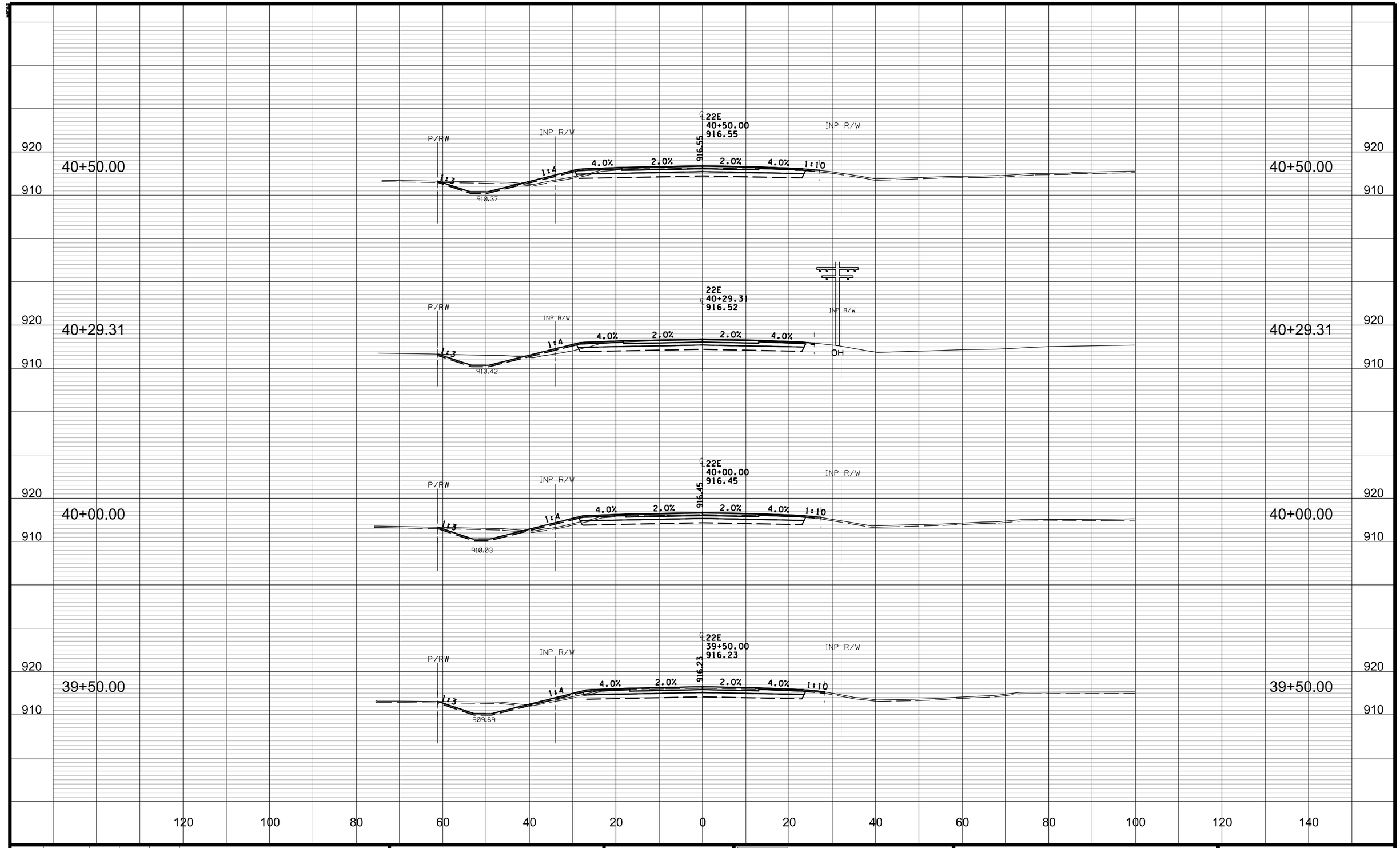
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

CROSS SECTIONS

STA 37+50.00 TO 39+00.00

Sheet 104 of 123 Sheets



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CHECKED BY ND DATE 01/09/24

ANOKA COUNTY

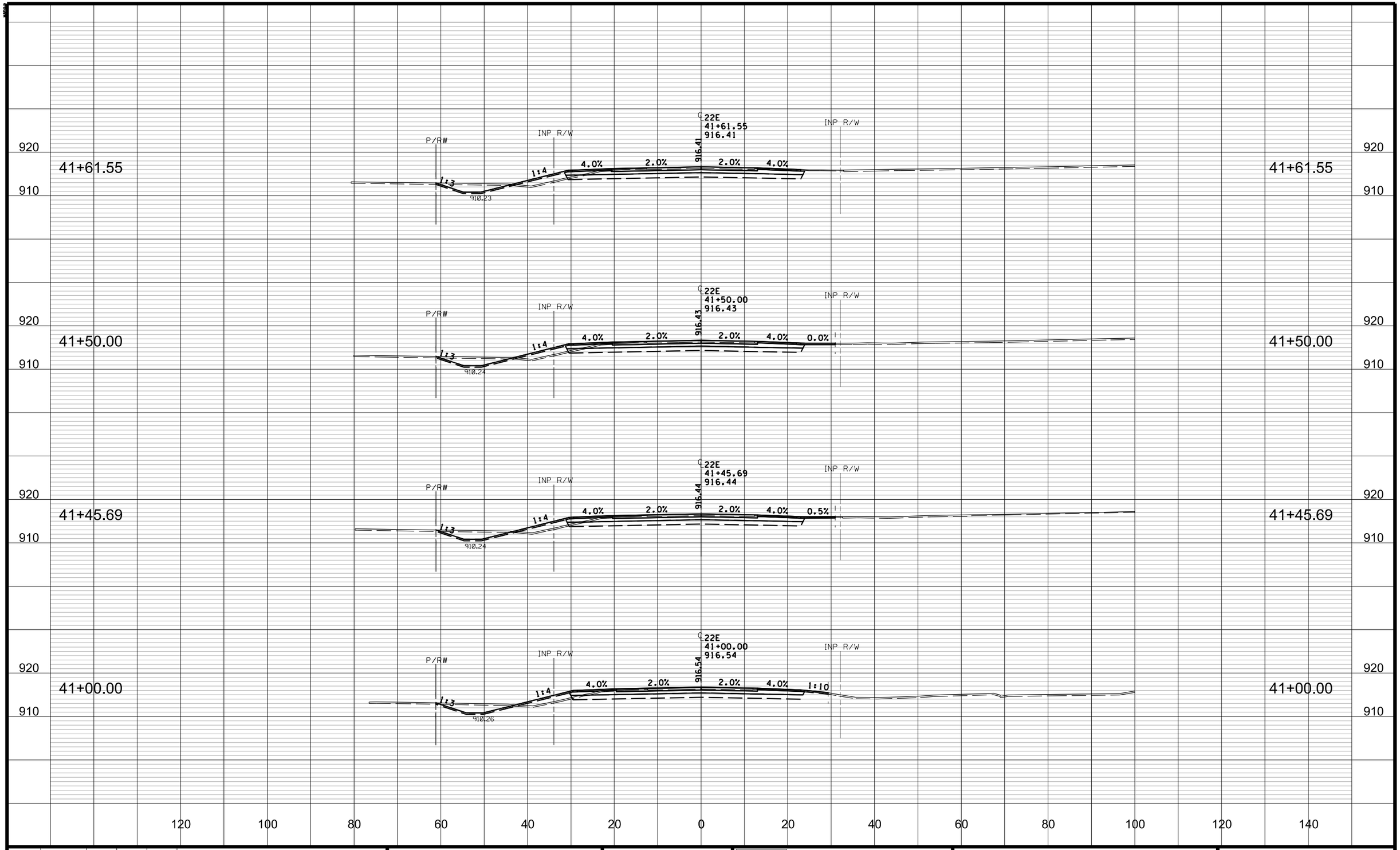
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

CROSS SECTIONS

STA 39+50.00 TO 40+50.00

Sheet 105 of 123 Sheets



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CHECKED BY ND DATE 01/09/24

ANOKA COUNTY

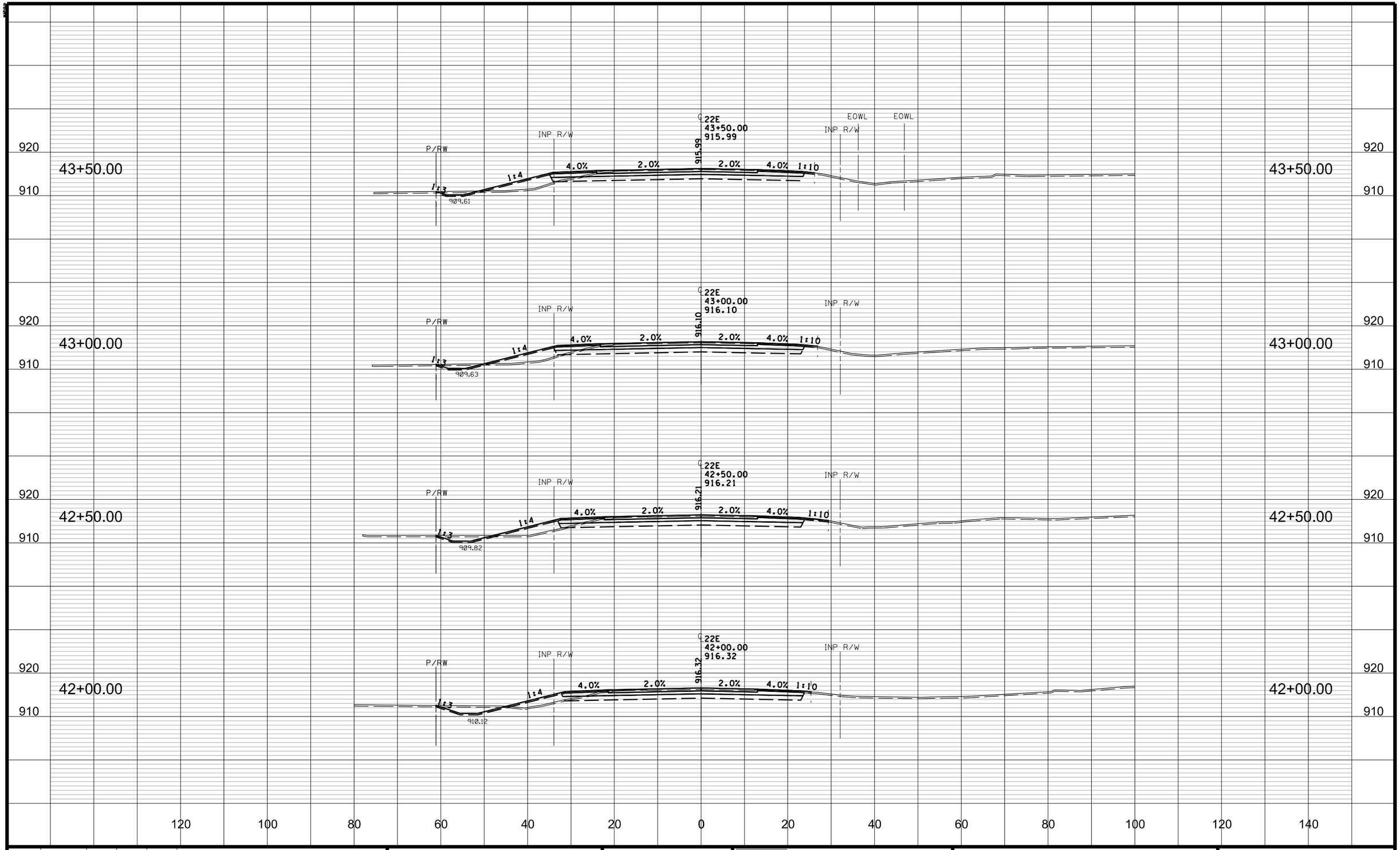
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

CROSS SECTIONS

STA 41+00.00 TO 41+61.55

Sheet 106 of 123 Sheets



NO	DATE	BY	CKD	APPR	REVISION

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DESIGN BY MP DATE 01/09/24

CHECKED BY ND DATE 01/09/24

ANOKA COUNTY

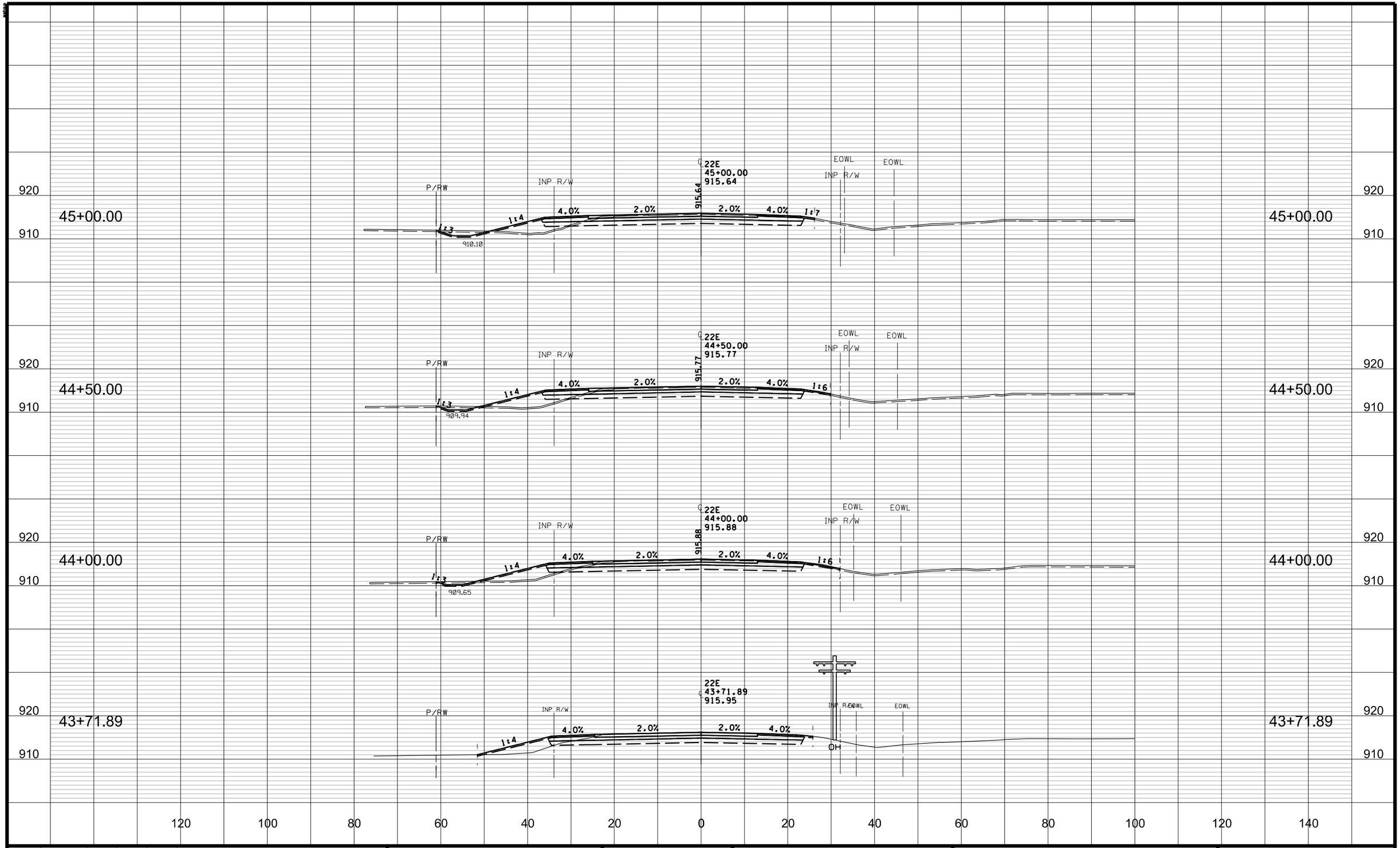
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

CROSS SECTIONS

STA 42+00.00 TO 43+50.00

Sheet 107 of 123 Sheets



NO	DATE	BY	CKD	APPR	REVISION

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DESIGN BY MP DATE 01/09/24

CHECKED BY ND DATE 01/09/24

ANOKA COUNTY

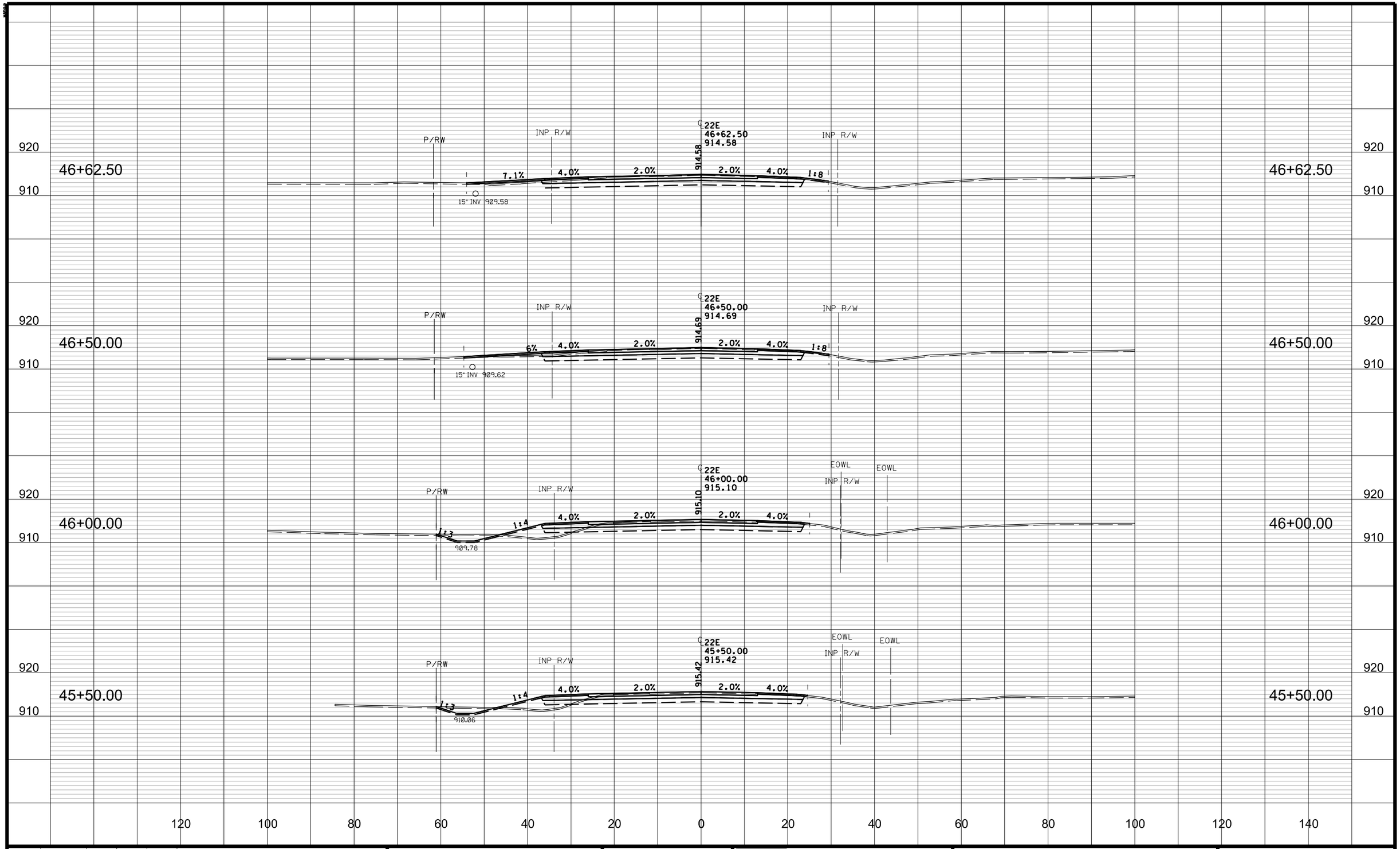
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

CROSS SECTIONS

STA 43+71.89 TO 45+00.00

Sheet 108 of 123 Sheets



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CHECKED BY ND DATE 01/09/24

ANOKA COUNTY

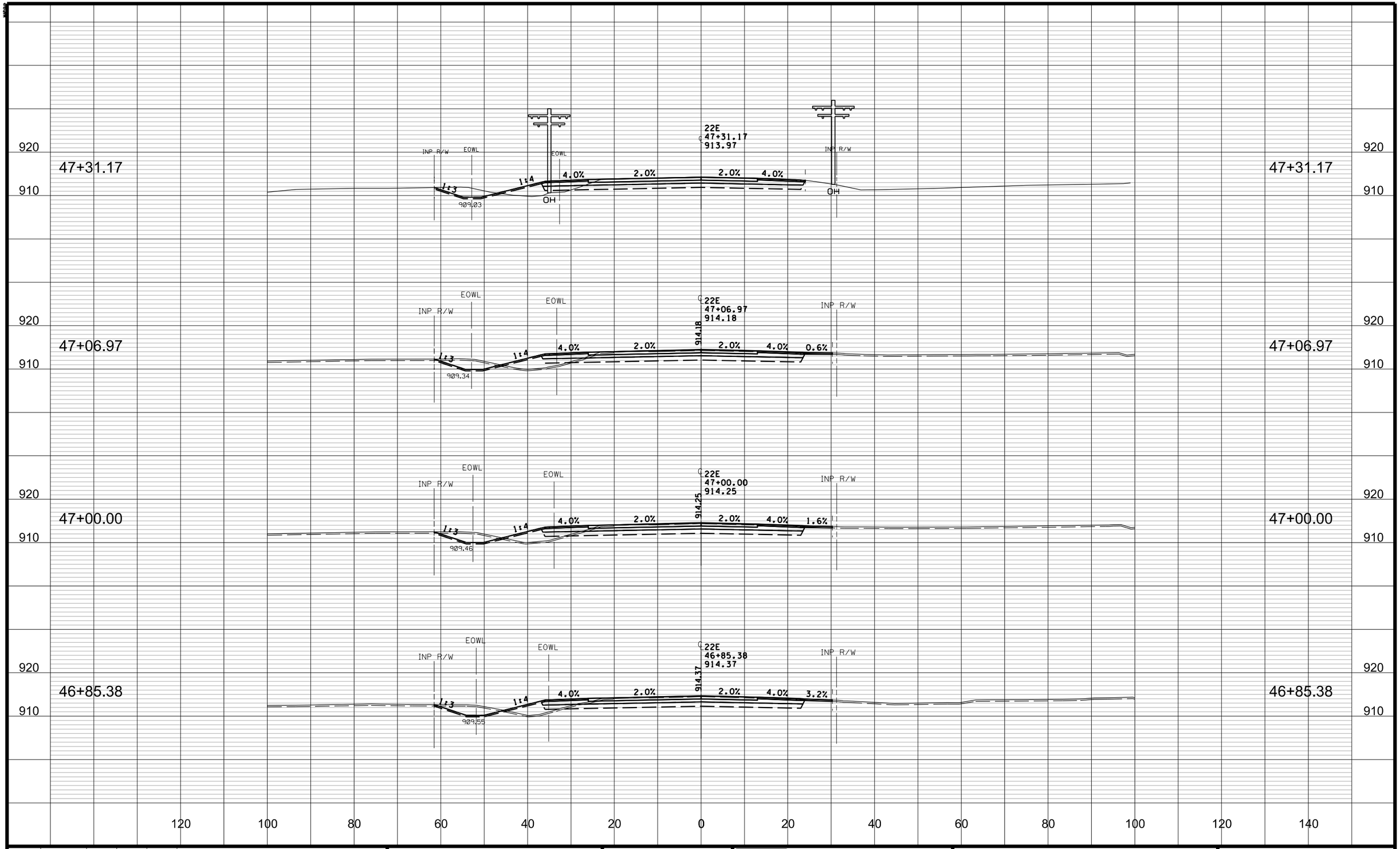
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

CROSS SECTIONS

STA 45+50.00 TO 46+62.50

Sheet 109 of 123 Sheets



NO	DATE	BY	CKD	APPR	REVISION

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CHECKED BY ND DATE 01/09/24

ANOKA COUNTY

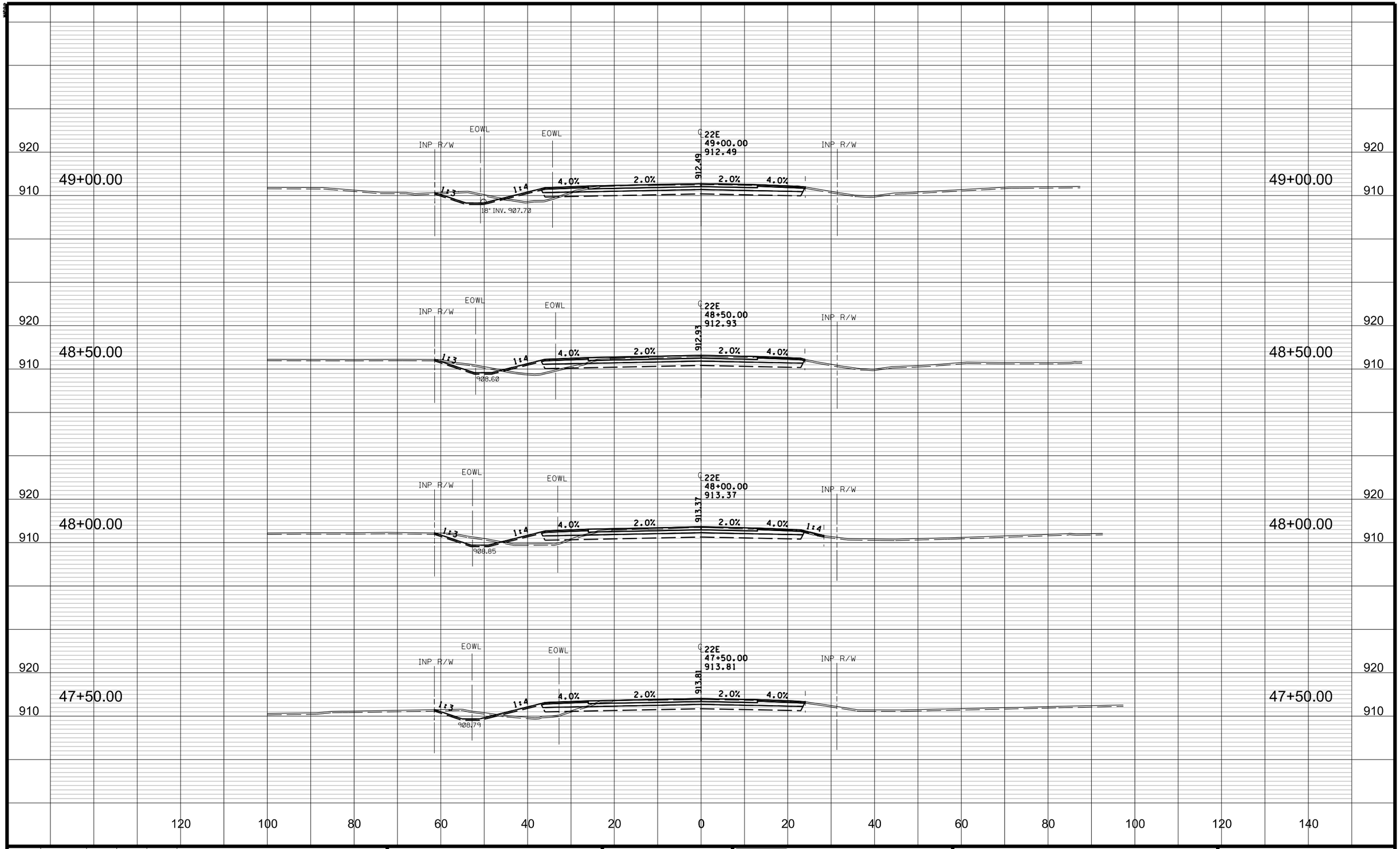
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

CROSS SECTIONS

STA 46+85.38 TO 47+31.17

Sheet 110 of 123 Sheets



NO	DATE	BY	CKD	APPR	REVISION

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CHECKED BY ND DATE 01/09/24

ANOKA COUNTY

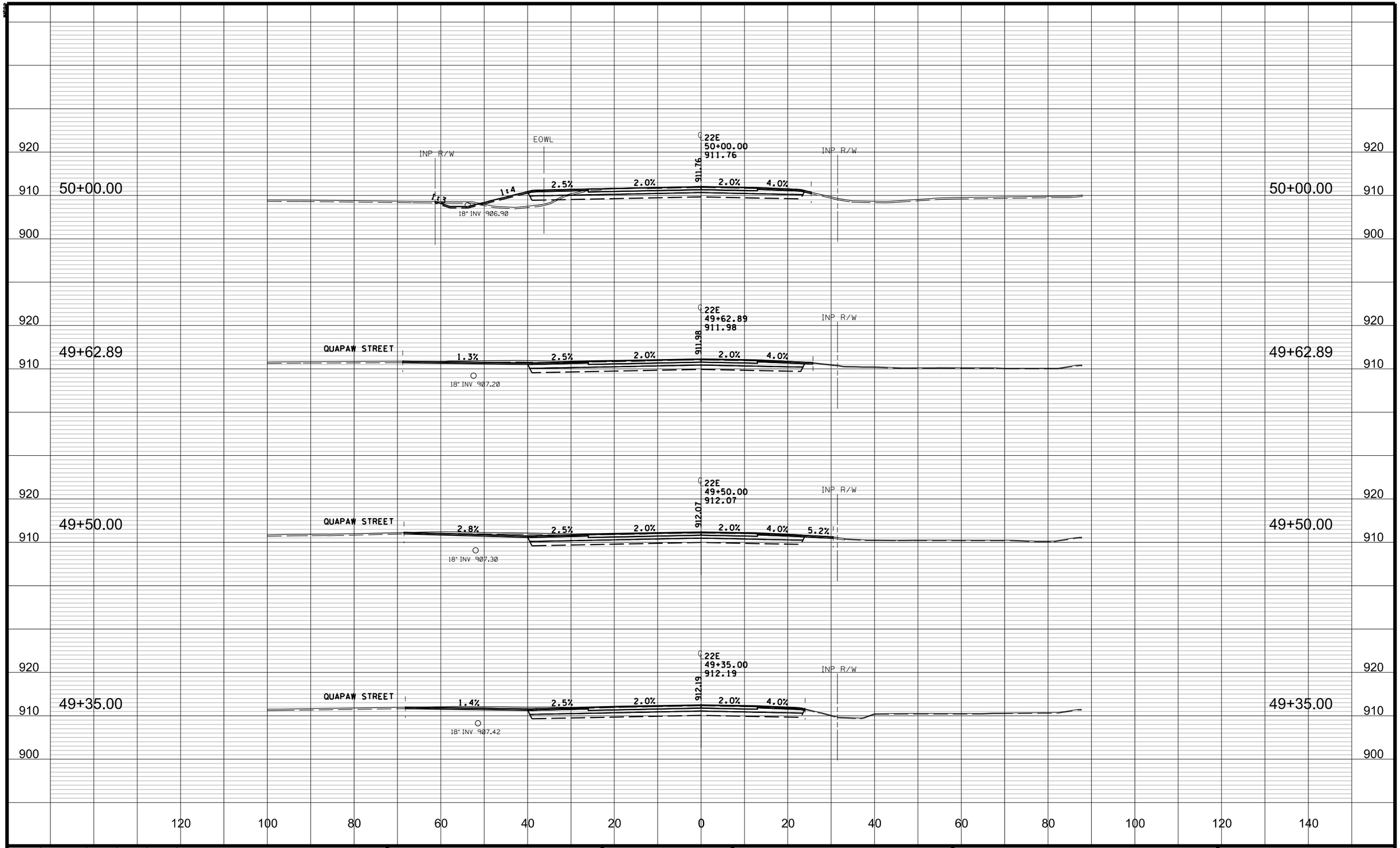
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

CROSS SECTIONS

STA 47+50.00 TO 49+00.00

Sheet 111 of 123 Sheets



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CHECKED BY ND DATE 01/09/24

ANOKA COUNTY

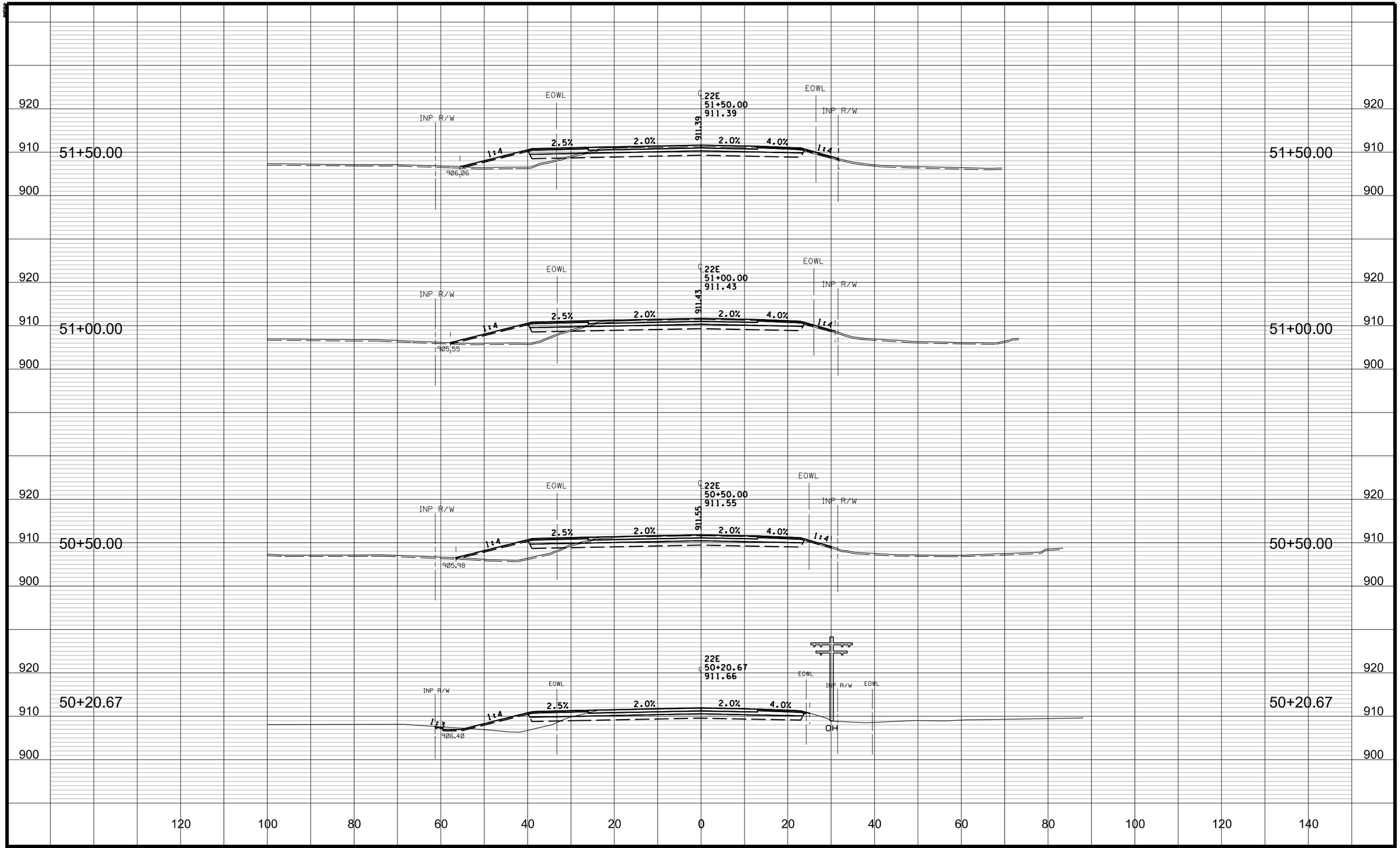
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

CROSS SECTIONS

STA 49+35.00 TO 50+00.00

Sheet 112 of 123 Sheets



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ANOKA COUNTY

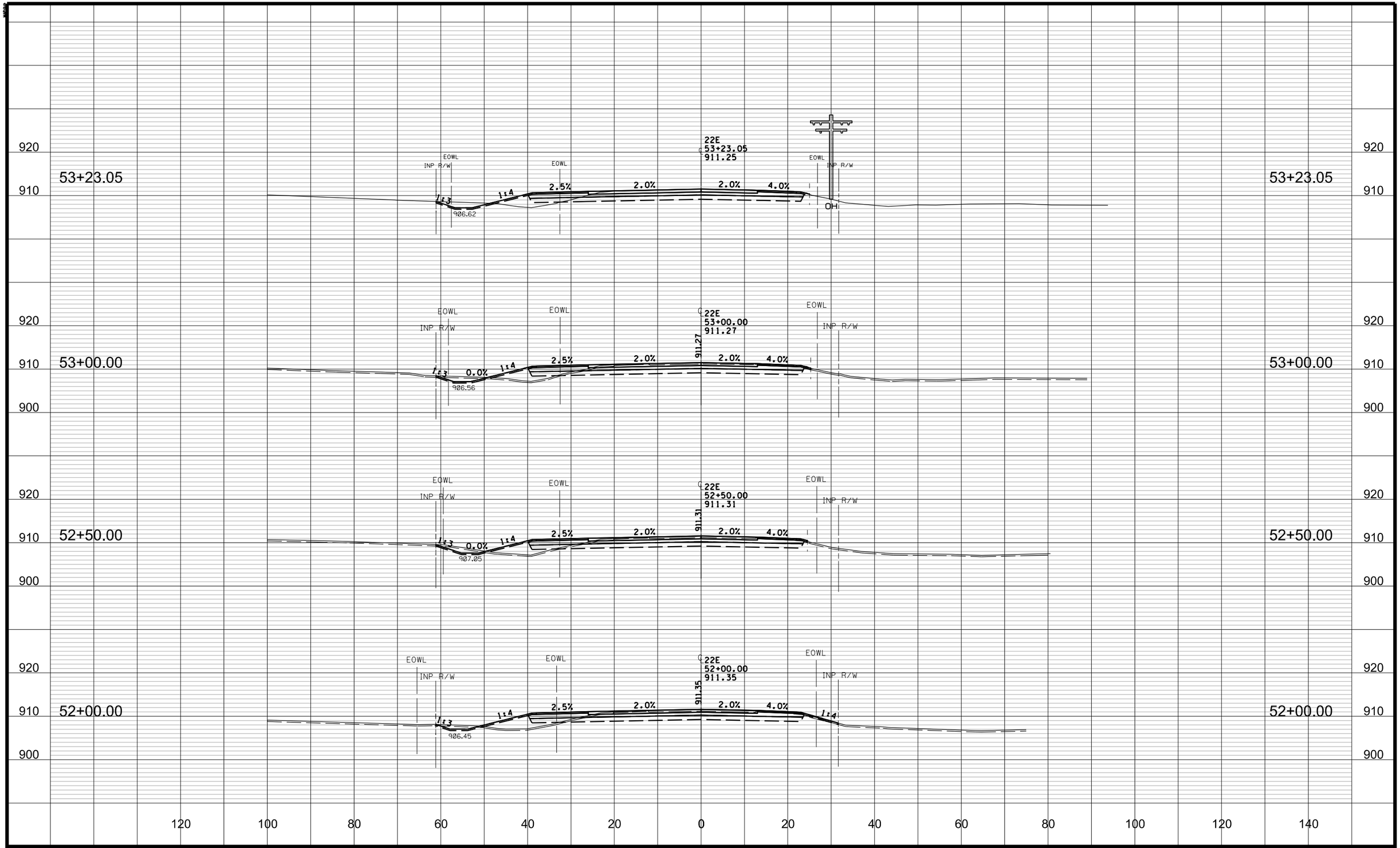
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

CROSS SECTIONS

STA 50+20.67 TO 51+50.00

Sheet 113 of 123 Sheets



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CHECKED BY ND DATE 01/09/24

ANOKA COUNTY

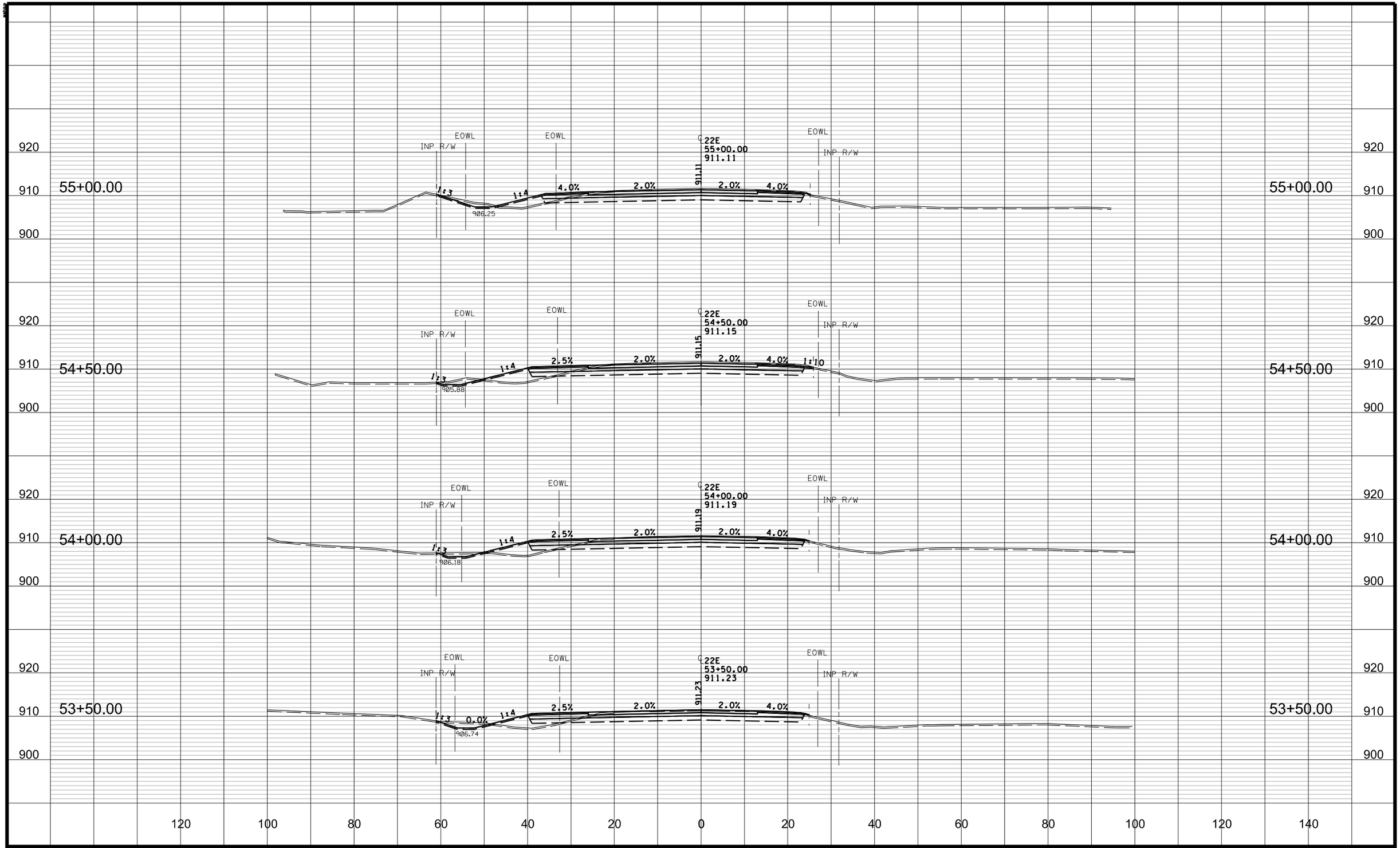
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

CROSS SECTIONS

STA 52+00.00 TO 53+23.05

Sheet 114 of 123 Sheets



NO	DATE	BY	CKD	APPR	REVISION

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DESIGN BY MP DATE 01/09/24

CHECKED BY ND DATE 01/09/24

ANOKA COUNTY

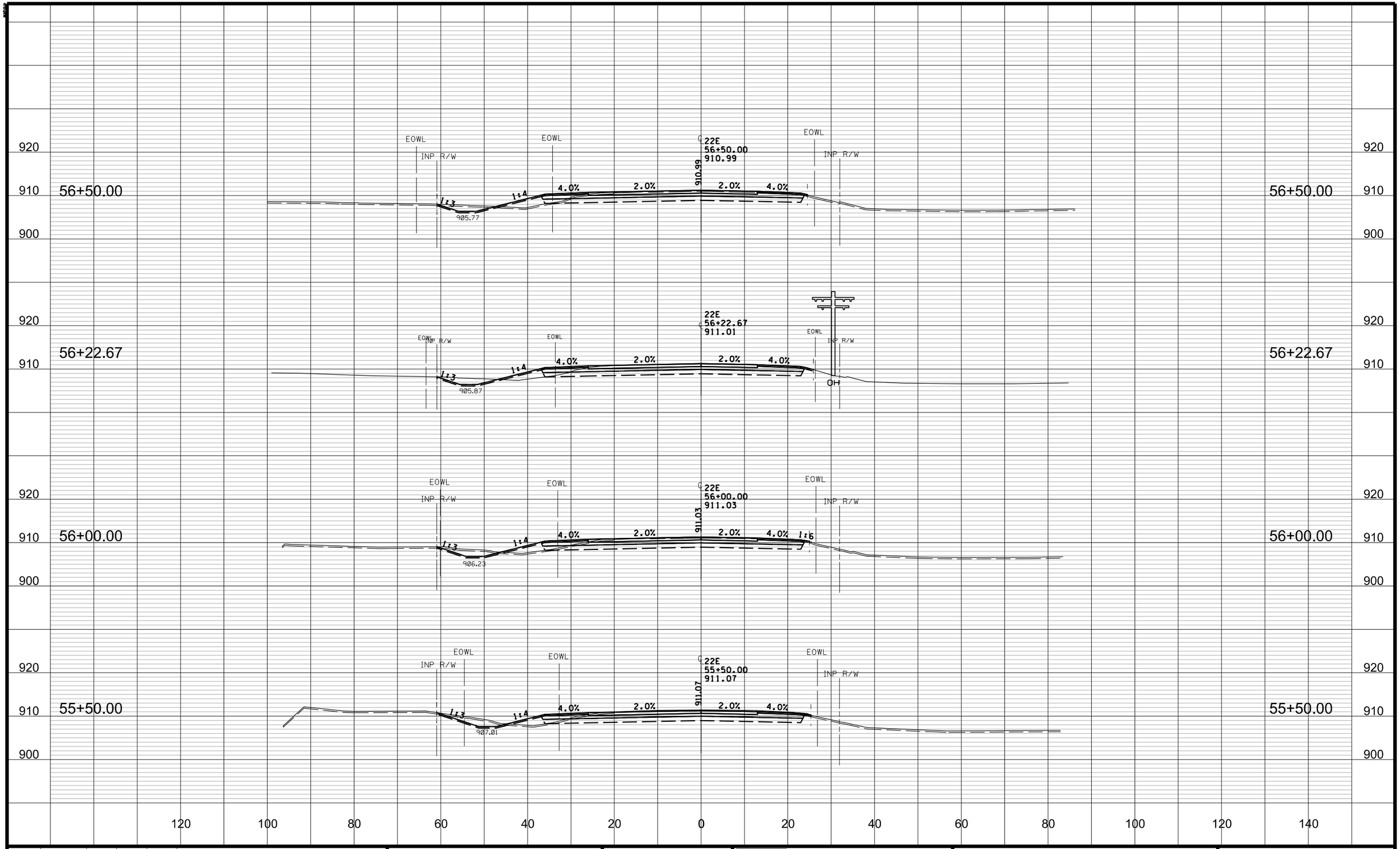
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

CROSS SECTIONS

STA 53+50.00 TO 55+00.00

Sheet 115 of 123 Sheets



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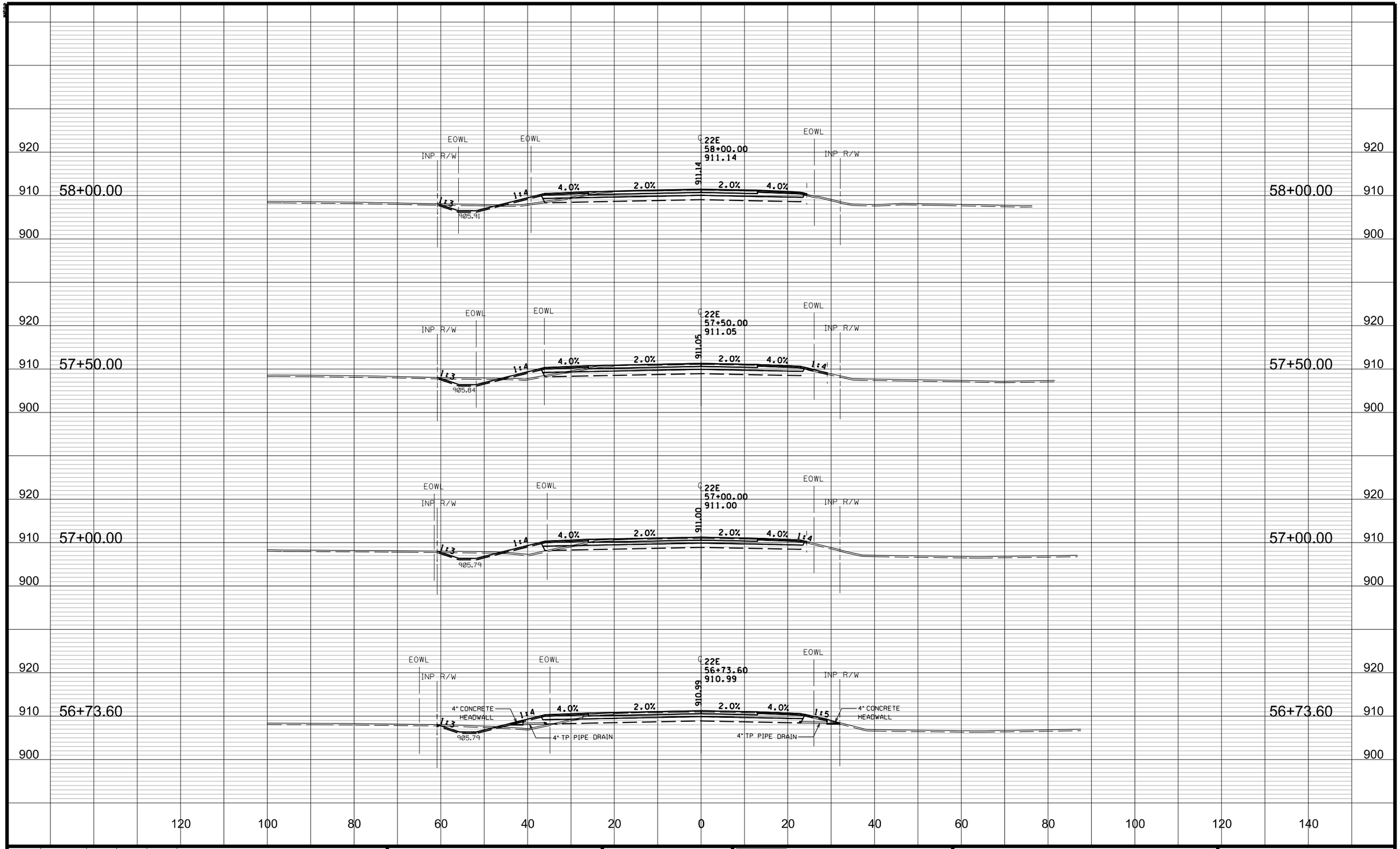
DESIGN BY MP DATE 01/09/24
CHECKED BY ND DATE 01/09/24

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-622-042

CROSS SECTIONS
STA 55+50.00 TO 56+50.00

Sheet 116 of 123 Sheets



NO	DATE	BY	CKD	APPR	REVISION

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ANOKA COUNTY

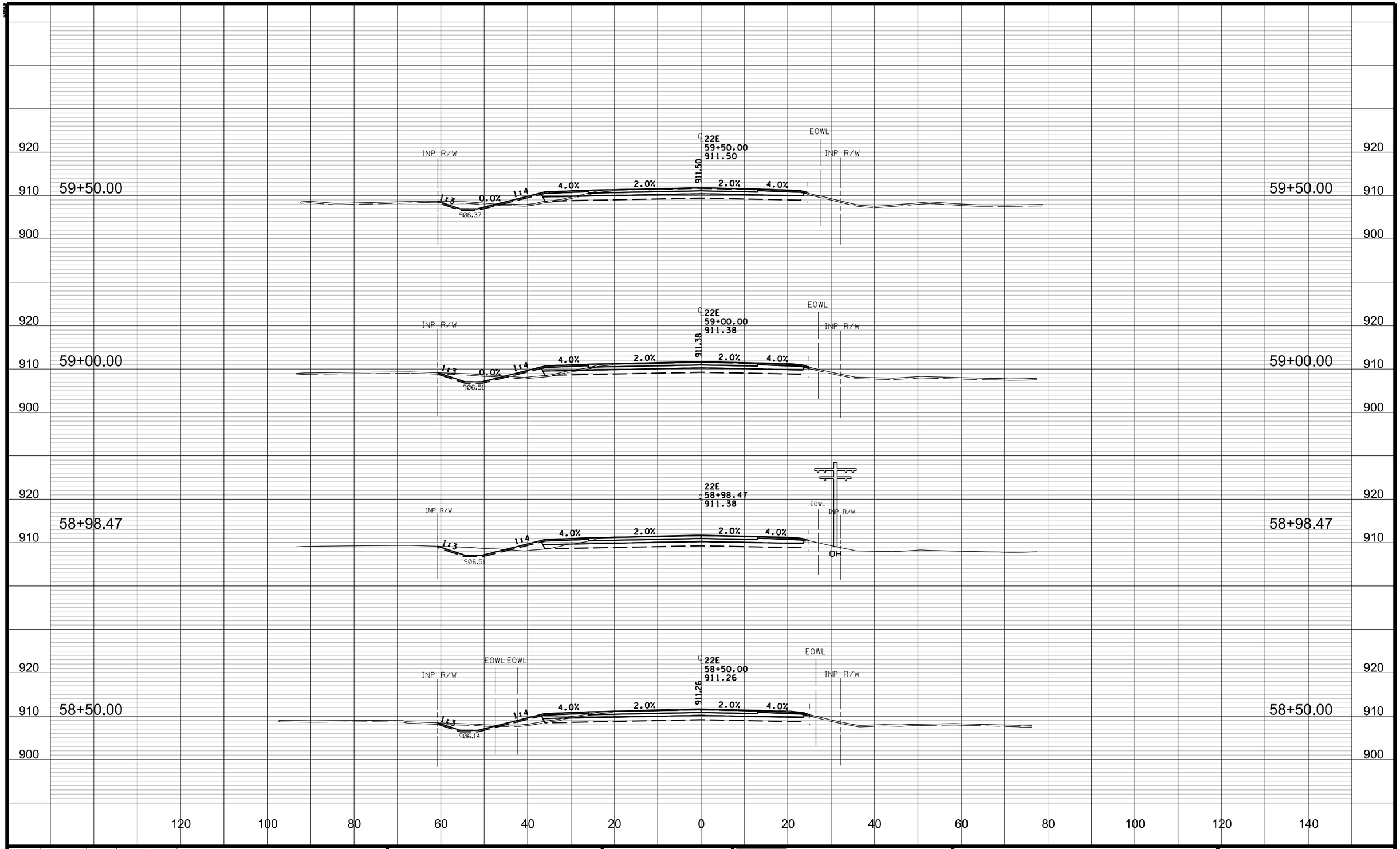
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

CROSS SECTIONS

STA 56+73.60 TO 58+00.00

Sheet 117 of 123 Sheets



NO	DATE	BY	CKD	APPR	REVISION

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ANOKA COUNTY

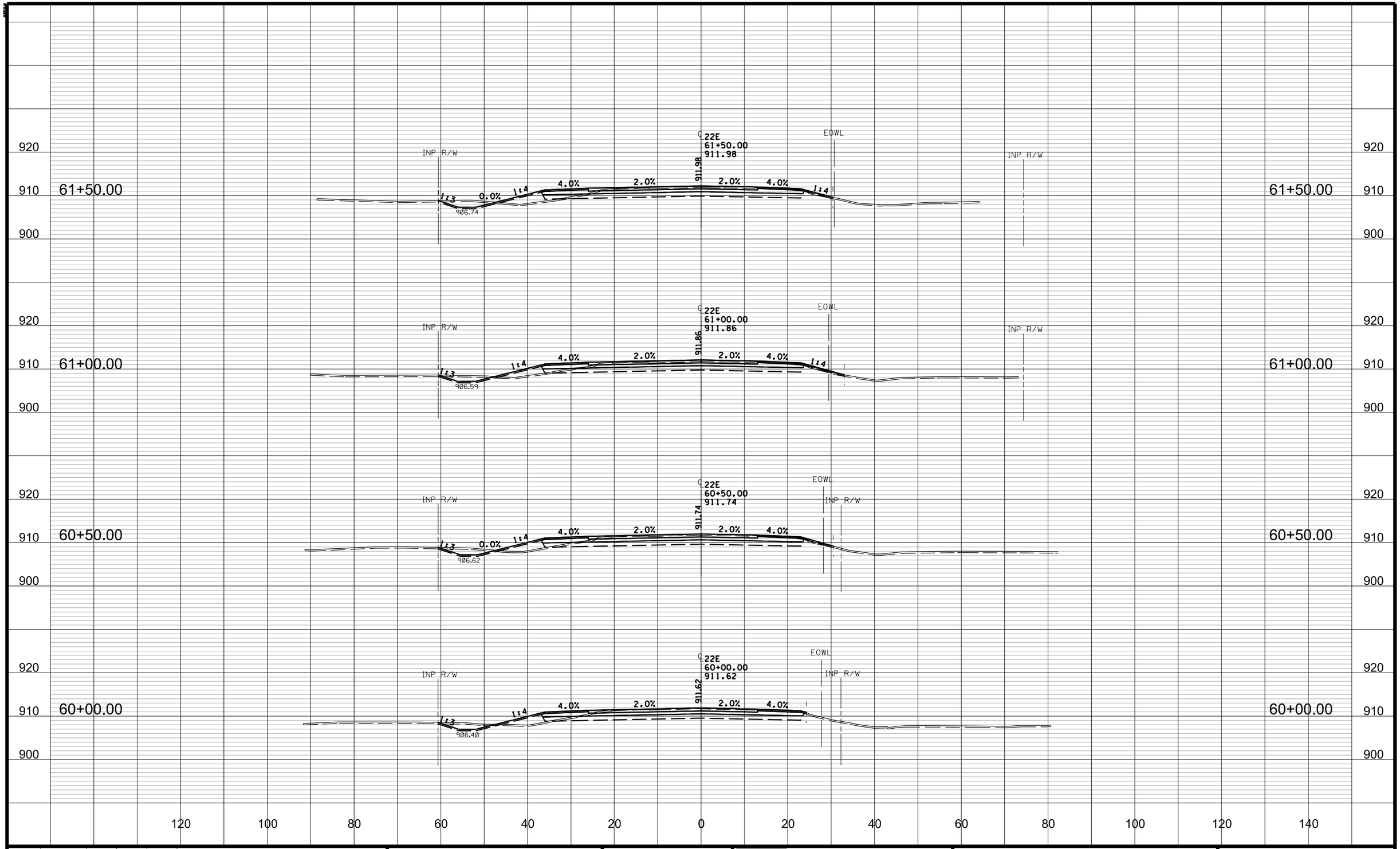
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

CROSS SECTIONS

STA 58+50.00 TO 59+50.00

Sheet 118 of 123 Sheets



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CHECKED BY ND DATE 01/09/24

ANOKA COUNTY

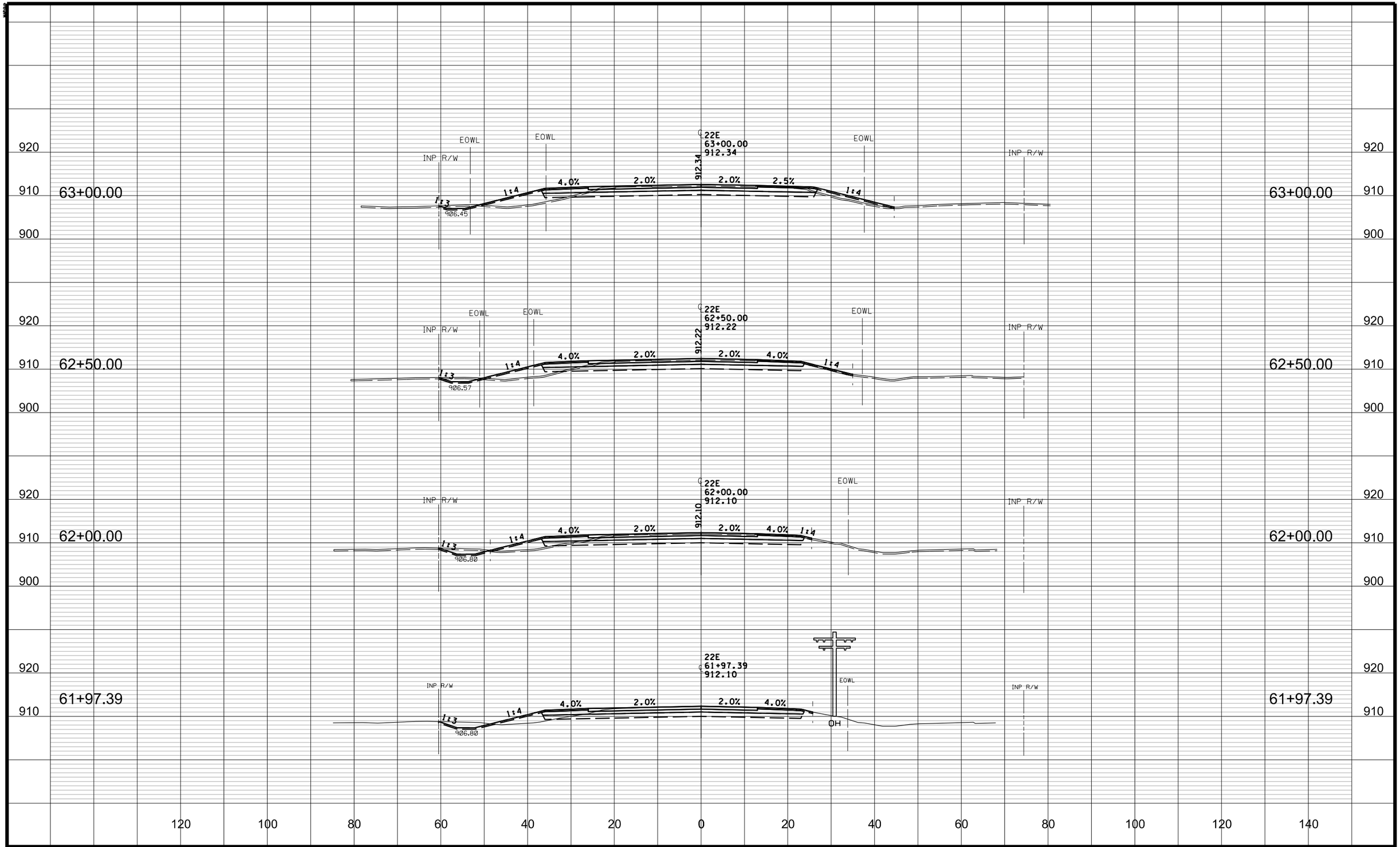
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

CROSS SECTIONS

STA 60+00.00 TO 61+50.00

Sheet 119 of 123 Sheets



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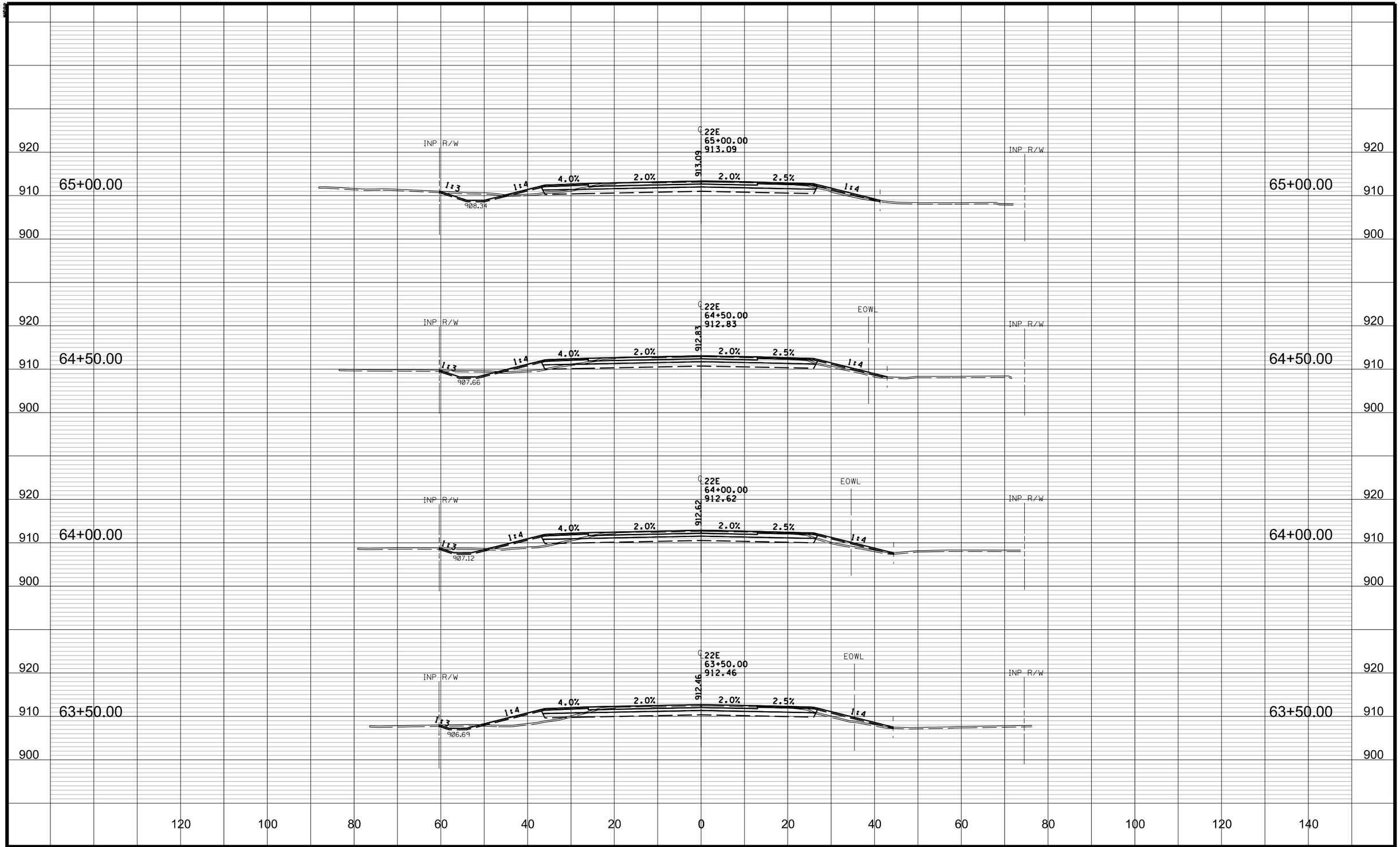
CHECKED BY ND DATE 01/09/24

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-622-042

CROSS SECTIONS
STA 61+97.39 TO 63+00.00

Sheet 120 of 123 Sheets



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ANOKA COUNTY

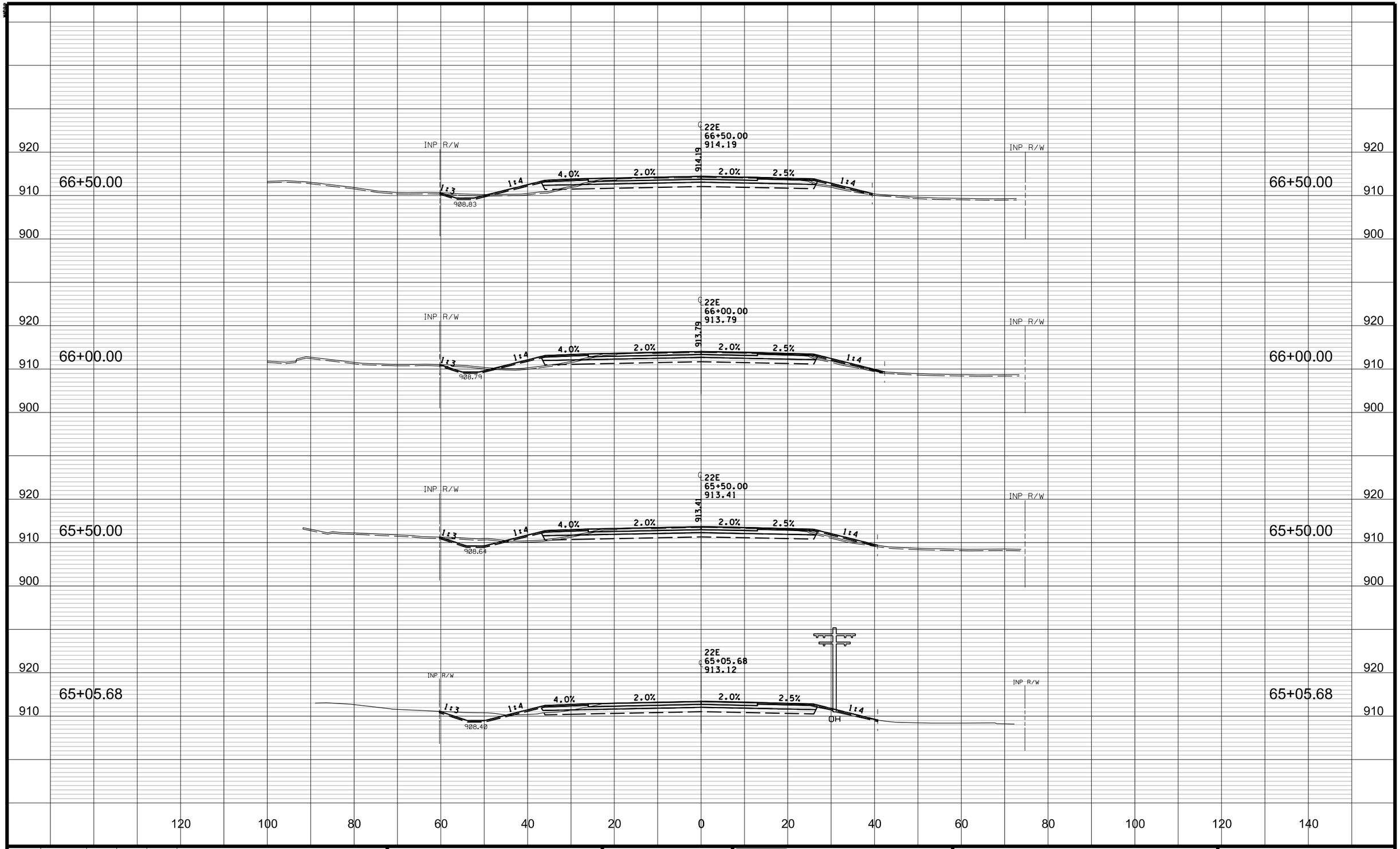
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

CROSS SECTIONS

STA 63+50.00 TO 65+00.00

Sheet 121 of 123 Sheets



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ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

CROSS SECTIONS

STA 65+05.68 TO 66+50.00

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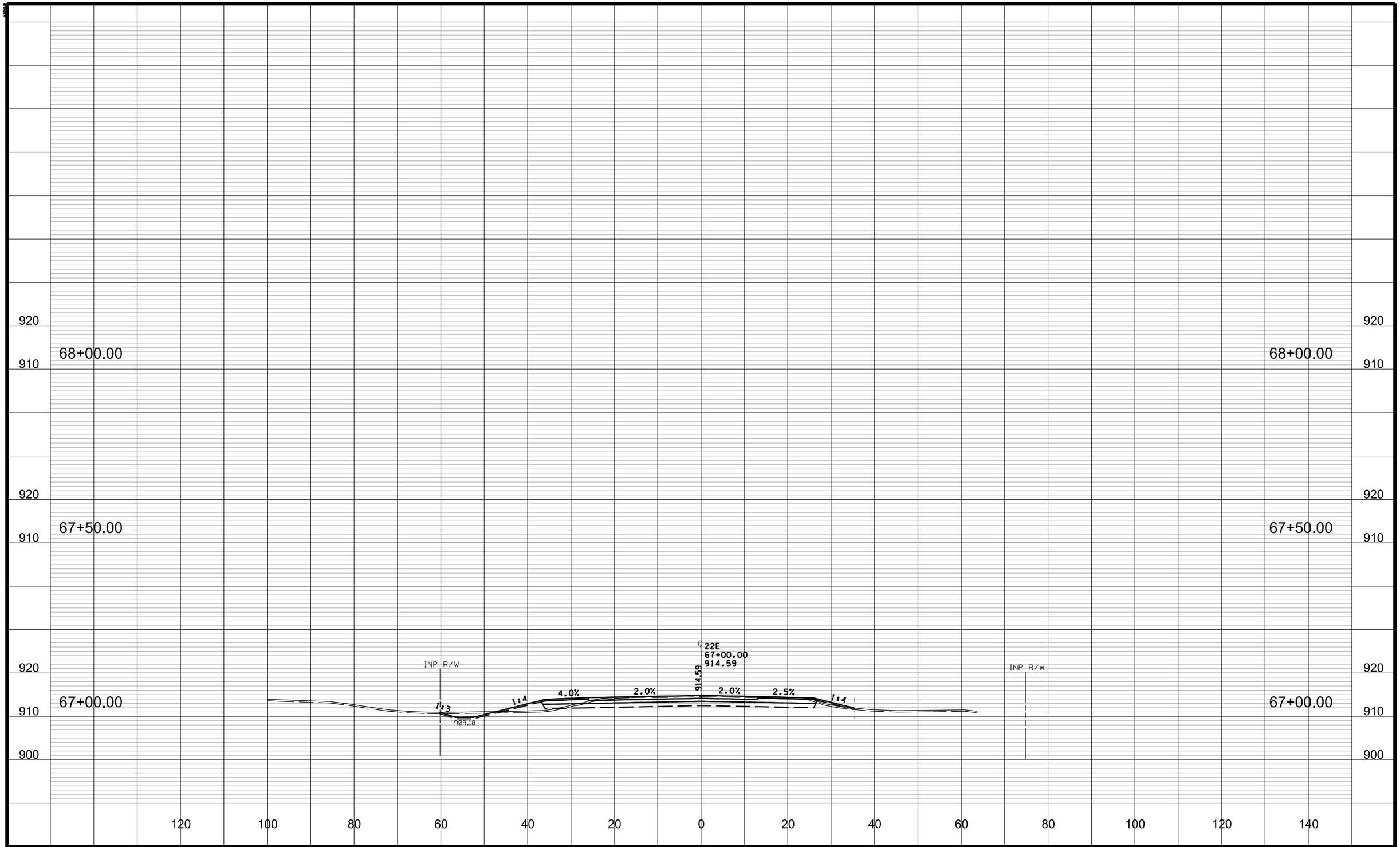

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-622-042 Whitetopping\Plan\002622042_XS1_P1.dgn 01/09/2024 1:19:15 PM

01/09/2024

DRAWN BY MP DATE 01/09/24

DESIGN BY MP DATE 01/09/24

CHECKED BY ND DATE 01/09/24

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-622-042

CROSS SECTIONS

STA 67+00.00 TO 68+00.00

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