MINNESOTA DEPARTMENT OF TRANSPORTATION
ANOKA COUNTY
CITY OF LINO LAKES

CONSTRUCTION PLAN FOR ROUNDABOUTS, GRADING, BITUMINOUS SURFACING, DRAINAGE, LIGHTING, AND ADA IMPROVEMENTS

LOCATED ON CSAH 34 (BIRCH STREET) FROM HOKAH DRIVE TO DEERWOOD LANE

PLAN SYMBOLS

STATE LINE
COUNTY LINE
TOWNSHIP OR RANGE LINE
SECTION LINE
QUARTER LINE
SIXTEENTH LINE
RIGHT-OF-WAY LINE
SLOPE EASEMENT (SE)
PRESENT RIGHT-OF-WAY
CONTROL OF ACCESS LINE
PROPERTY LINES (EXCEPT LAND LINES)
VACATED PLATTED PROPERTY
CORPORATE OR CITY LIMITS
TRUNK HIGHWAY CENTER LINE
RETAINING WALL
RAILROAD
RAILROAD RIGHT-OF-WAY
RIVER OR CREEK (NAME)
DRY RUN
DRAINAGE DITCH (SIZE)
DRAIN TILE
CULVERT
DROP INLET
GUARD RAIL
BARBED WIRE FENCE
WOVEN WIRE FENCE
CHAIN LINK FENCE
RAILROAD SNOW FENCE
STONE WALL OR FENCE
HEDGE
RAILROAD CROSSING SIGN
RAILROAD CROSSING BELL
ELECTRIC WARNING SIGN
CROSSING GATE
MEANDER CORNER
SPRINGS
MARSH
TIMBER
ORCHARD
BRUSH
NURSERY (TIMBER)
CATCH BASIN (CB)
FIRE HYDRANT
CATTLE GUARD (Y ROAD Y)
OVERPASS (HIGHWAY OVER)
UNDERPASS (HIGHWAY UNDER)
BRIDGE
BUILDING (ONE STORY FRAME) (1-S-F 35 / 75)
F - FRAME C - CONCRETE
S - STONE T - TILE
B - BRICK ST- STUCCO
IRON ROD OR PIPE
MONUMENT (STONE, CONCRETE, OR METAL) (MONU.)
WOODEN HUB
GRAVEL PIT (G)
SAND PIT (S)
BORROW PIT (B)
ROCK QUARRY (Q)

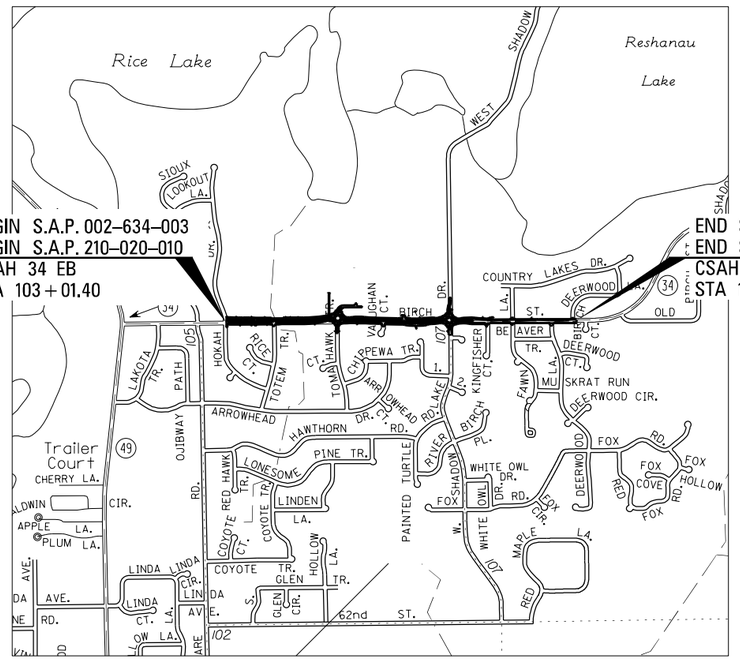
UTILITY SYMBOLS

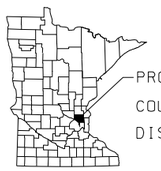
POWER POLE LINE
TELEPHONE OR TELEGRAPH POLE LINE
JOINT TELEPHONE AND POWER
ON POWER POLE
ON TELEPHONE POLES
ANCHOR
STREET LIGHT
PEDESTAL (TELEPHONE CABLE TERMINAL) (PED.)
GAS MAIN (G)
WATER MAIN
CONDUIT
TELEPHONE CABLE IN CONDUIT (T)
ELECTRIC CABLE IN CONDUIT (P)
TELEPHONE MANHOLE (T)
ELECTRIC MANHOLE (P)
BURIED TELEPHONE CABLE (T-BUR)
BURIED ELECTRIC CABLE (P-BUR)
AERIAL TELEPHONE CABLE (T-AE)
FIBER OPTICS (FO)
SEWER (SANITARY OR STORM)
SEWER MANHOLE

CSAH 34
S.A.P. 002-634-003

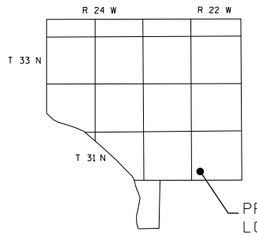
GROSS LENGTH	4,660.10	ft	0.883	miles
BRIDGES-LENGTH		ft		miles
EXCEPTIONS-LENGTH		ft		miles
NET LENGTH	4,660.10	ft	0.883	miles

NOTE: LENGTH AND DESCRIPTIONS BASED ON EB ALIGNMENTS





PROJECT LOCATION
COUNTY: ANOKA
DISTRICT: METRO



ANOKA COUNTY
S29 T31N R22W
PROJECT LOCATION

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

DESIGN DESIGNATION
CSAH 34 (BIRCH STREET)
S.A.P. 002-634-003

R VALUE	= 65
ADT (Current Year) 2021	= 12,400
ADT (Future Year) 2041	= 13,800
D (DIRECTIONAL DISTR.)	= 50/50
HCADT (Future Year) 2040	= 620
ESALS	1,746,000
DESIGN SPEED	50 MPH
BASED ON	STOPPING SIGHT DISTANCE
HEIGHT OF EYE	3.5 HEIGHT OF OBJECT 2.0
DESIGN SPEED NOT ACHIEVED AT:	ROUNDABOUT
FUNCTIONAL CLASSIFICATION:	MINOR ARTERIAL
NO. OF TRAFFIC LANES	2 - 12'
NO. OF PARKING LANES	N/A
SHOULDER WIDTH	6'-8'
TON DESIGN	10

DESIGN DESIGNATION
TRAIL
S.A.P. 002-634-003

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

PLAN REVISIONS

DATE	SHEET NO.	APPROVER

SCALES

PLAN	100'
PROFILE	100'
INDEX MAP	3000'
GENERAL LAYOUT	500'

GOVERNING SPECIFICATIONS

THE 2018 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM OT THE MNMUTCD INCLUDING THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONES.

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L1 - L5	LANDSCAPING PLAN
X1 - X35	CROSS SECTIONS

THIS PLAN CONTAINS 241 SHEETS

ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND ORDINANCES WILL BE COMPLIED WITHIN THE CONSTRUCTION OF THIS PROJECT.

wsb

SIGNATURE: _____ TYPED OR PRINTED NAME: ANDREW J. PLOWMAN, PE

DESIGN ENGINEER: I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

DATE: 11/30/2020 LICENSE NUMBER 44200

Joe MacPherson
Digitally signed by Joe MacPherson
Date: 2020.12.01 07:47:00 -06'00'

APPROVED: ANOKA COUNTY ENGINEER DATE _____

APPROVED: CITY OF LINO LAKES ENGINEER DATE 12/2/20

For DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY DATE 12/2/20

For STATE AID ENGINEER: APPROVED FOR STATE AID FUNDING DATE 12/2/20

Date Printed: 11/30/2020
WSB Filename: Projects\Minnesota\0\4400-000\Cad\Plan\4400-000_tsh01.dgn

PLOTTED/REVISED: 12/3/2020

SCHOOL PARKING LOT & POND - ADD ALTERNATE BID

112 96 154 190 177

ADD ALTERNATIVE TRAIL

ADD ALTERNATIVE PARKING LOT

ADD ALTERNATIVE POND

CITY OF LINO LAKES

N

SCALE IN FEET
0 250 500

106

107

BEGIN CONSTRUCTION
S.A.P. 002-634-003
S.A.P. 210-020-010
EB STA.103+01.40

INPLACE SIGNAL

STA 137+73.35
RECONSTRUCT RECLAIM & OVERLAY

END CONSTRUCTION
S.A.P. 002-634-003
S.A.P. 210-020-010
EB STA. 149+61.50

OLD BIRCH ST

DEERWOOD LN

BIRCH CT

WARE RD

HOKAH DR

TOTEM TR

TOMAHAWK TR

VAUGHAN CT

W SHADOW LAKE DR

KINGFISHER CT

FAWN LANE

BEAVER TR

DEERWOOD LN

101 102 103 104

90 93 153 187 164

91 94 154 188 165

92 95 105

LEGEND

SHEET NO.	DESCRIPTION
XX	INPLACE TOPOGRAPHY & UTILITY PLAN
XX	MISCELLANEOUS REMOVAL PLAN
XX	CONSTRUCTION PLAN & PROFILE
XX	DRAINAGE PLAN
XX	TURF ESTABLISHMENT PLAN
XX	SIGNING PLAN

NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

ANDREW J. PLOWMAN, PE

DATE 12/3/2020 LICENSE # 44200

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

GENERAL LAYOUT
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 2 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\0l4400-000\Cad\Plan\l4400-000_gl01.dgn

PLOTTED/REVISED: 12/5/2020

STATEMENT OF ESTIMATED QUANTITIES

TABLE	SHEET	ITEM NUMBER	DESCRIPTION	NOTES	UNITS	PROJECT TOTAL QUANTITY	ANOKA COUNTY ROADWAY S.A.P. 002-634-003 100% PARTICIPATING QUANTITY	CITY OF LINO LAKES ROADWAY S.A.P. 210-020-010 100% PARTICIPATING QUANTITY	STORM SEWER ANOKA COUNTY 90% S.A.P. 002-634-003 CITY OF LINO LAKES 10% S.A.P. 210-020-010 100% PARTICIPATING QUANTITY	ANOKA COUNTY FDR AND OVERLAY S.A.P. 002-634-003 100% PARTICIPATING QUANTITY	CITY OF LINO LAKES LOCAL FUNDS NON-PARTICIPATING QUANTITY	ANOKA COUNTY LOCAL FUNDS NON-PARTICIPATING QUANTITY
		2021.501	MOBILIZATION		LUMP SUM	1.00	0.68	0.03	0.15	0.05	0.09	
		2031.502	FIELD OFFICE TYPE D		EACH	1	1					
A	8	2101.505	CLEARING	1	ACRE	0.3	0.3					
A	8	2101.505	GRUBBING	1	ACRE	0.3	0.3					
A	8	2101.524	CLEARING	1	TREE	26	26					
A	8	2101.524	GRUBBING	1	TREE	26	26					
G	11	2104.502	REMOVE PIPE APRON	19	EACH	21	21					
G	11	2104.502	REMOVE DRAINAGE STRUCTURE		EACH	9	9					
	98 - 100	2104.502	REMOVE SIGN TYPE C		EACH	42	42					
J	97	2104.502	REMOVE SIGN TYPE D		EACH	1	1					
	98 - 100	2104.502	REMOVE SIGN TYPE SPECIAL		EACH	2	2					
	S2 - S6	2104.502	SALVAGE GATE VALVE AND BOX		EACH	7					7	
	S2 - S6	2104.502	SALVAGE HYDRANT AND VALVE		EACH	2					2	
S	180	2104.502	SALVAGE FLASHER SYSTEM		EACH	1	1					
K	97	2104.502	SALVAGE SIGN TYPE SPECIAL		EACH	4		4				
A	8	2104.502	SALVAGE MAIL BOX SUPPORT	2	EACH	13	13					
A	8	2104.503	SAWING CONCRETE PAVEMENT (FULL DEPTH)		LIN FT	45	45					
A,I	8 / 56	2104.503	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)		LIN FT	1494	1482			12		
G	11	2104.503	REMOVE PIPE CULVERTS	19	LIN FT	763	763					
	S2 - S6	2104.503	REMOVE WATER MAIN		LIN FT	1135					1135	
G	11	2104.503	REMOVE SEWER PIPE (STORM)	19	LIN FT	905	905					
A	8	2104.503	REMOVE CURB AND GUTTER		LIN FT	2103	2103					
	94	2104.503	REMOVE RETAINING WALL		LIN FT	50	50					
	94	2104.503	REMOVE CHAIN LINK FENCE		LIN FT	50	50					
	S2 - S6	2104.503	REMOVE WATER SERVICE PIPE		LIN FT	10					10	
A	8	2104.504	REMOVE CONCRETE DRIVEWAY PAVEMENT		SQ YD	200	200					
A	8	2104.504	REMOVE BITUMINOUS DRIVEWAY PAVEMENT		SQ YD	949	912			37		
A,I	8 / 56	2104.504	REMOVE BITUMINOUS PAVEMENT		SQ YD	23060	23060					
A	8	2104.518	REMOVE BITUMINOUS WALK		SQ FT	51294	51294					
A	8	2104.518	REMOVE CONCRETE WALK		SQ FT	758	758					
		2104.618	REMOVE BRICK PAVERS		SQ FT	58	58					
H	12	2106.507	EXCAVATION - COMMON		CU YD	15784	15674			110		
H	12	2106.507	EXCAVATION - SUBGRADE		CU YD	8884	8884					
H	12	2106.507	EXCAVATION - CHANNEL AND POND		CU YD	2452			2452			
H	12	2106.507	SELECT GRANULAR EMBANKMENT (CV)		CU YD	9322	9089		233			
H	12	2106.507	COMMON EMBANKMENT (CV)		CU YD	5913	5304		398	211		
B	8	2118.507	AGGREGATE SURFACING (CV) CLASS 2		CU YD	1149				1149		
		2123.510	COMMON LABORERS	3	HOUR	20	20					
		2123.510	DOZER	3	HOUR	80	80					
		2123.610	STREET SWEEPER (WITH PICKUP BROOM)	4	HOUR	75	40				35	
		2130.523	WATER	5	M GALLON	100	100					
B,D,I	8 9 56	2211.507	AGGREGATE BASE (CV) CLASS 5		CU YD	5852	5845			7		
B	9	2215.504	FULL DEPTH RECLAMATION		SQ YD	6529				6529		
		2215.507	HAUL FULL DEPTH RECLAMATION (LV)		CU YD	15				15		
A	8	2232.504	MILL BITUMINOUS SURFACE		SQ YD	621				621		
C	9	2301.502	DOWEL BAR		EACH	2408	2408					
C	9	2301.504	CONCRETE PAVEMENT 7.0"		SQ YD	3155	3155					
C	9	2301.504	CONCRETE PAVEMENT 7.0" SPECIAL	6	SQ YD	728	728					

NOTES

1. NO TREES SHALL BE CLEARED OR GRUBBED WITHOUT THE ENGINEER'S APPROVAL.
2. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF TEMPORARY MAIL SERVICE AND FINAL MAIL BOX PLACEMENT.
3. TO BE USED FOR MINOR DITCH CLEANING AND/OR AS DIRECTED BY THE ENGINEER.
4. TO BE USED FOR SURFACE CLEANING AND/OR AS DIRECTED BY THE ENGINEER (40 HOURS).
5. TO BE USED FOR DUST CONTROL AND/OR AS DIRECTED BY THE ENGINEER.
6. COLORED CONCRETE. SEE SPECIAL PROVISIONS.
7. TO BE USED IN PEDESTRIAN RAMP LANDINGS PER MNDOT STANDARD PLAN 5-297.250 (SHEET 6 OF 6).
8. TO BE USED FOR BITUMINOUS TRAILS AND PARKING LOT.
9. SEE SHEET 29 FOR STRUCTURE DETAILS.
10. TO BE TEST LEVEL 3.
11. SEE TABULATION FOR COLOR.
12. SEE TABULATION FOR COLOR AND SIZE.
13. THIS ITEM INCLUDES THE QUANTITY FOR CONCRETE MEDIANS AND BOULEVARDS.
14. INCLUDES BOTH MESSAGE BOARDS ON BOTH SIDES OF THE PROJECT FOR 10 DAY ADVANCE WARNING OF PROJECT BEGINNING AND TRAFFIC CONTROL CHANGE AHEAD ONCE ROUNDABOUTS ARE COMPLETE.
15. TO BE USED FOR BITUMINOUS DRIVEWAYS
16. SEE SHEET 30 FOR FENCE DETAILS AND SHEET 123 FOR PLACEMENT LOCATION.
17. DELETED.
18. SEE SHEET 31 FOR STRUCTURE DETAILS.
19. INCLUDES ALL PIPE AND APRON MATERIALS.
20. TO BE MEASURED BY THE NUMBER OF SYSTEMS REPAIRED, ONE SYSTEM PER PARCEL REPAIRED.
21. TREES SHALL BE 2" CALIPER OR BETTER IN SIZE
22. KRAFT PAPER, (2) LAYERS THICK.
23. SHREDDED DARK BROWN MULCH - MINIMUM 4" DEEP
24. REFER TO SPECIAL PROVISIONS FOR SPECIFIC SPECIES QUANTITIES
25. SEE SHEET 32 FOR STRUCTURE DETAILS.

BASIS FOR QUANTITIES

UNIT WEIGHT OF BITUMINOUS MIX:
- 2360 MIX.....113 LBS/SY/IN

TACK COAT:
- NEW SURFACES.....0.05 GAL/SY
- MILLED SURFACES.....0.085 GAL/SY

SEED MIXTURE APPLICATION RATE:
- 22-111.....30.5 LBS/ACRE
- 25-141.....59 LBS/ACRE
- 25-151.....120 LBS/ACRE
- 33-261.....35 LBS/ACRE

FERTILIZER APPLICATION RATE:
- TYPE 3.....200 LBS/ACRE
- TYPE 4.....180 LBS/ACRE

HYDRAULIC MATRIX:
- STABILIZED FIBER.....3000 LBS/ACRE

NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

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ANDREW J. PLOWMAN, PE
DATE 12/5/2020 LICENSE # 44200

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

ESTIMATED QUANTITIES
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 3 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\0\4400-000\Cad\Plan\14400-000_est.dgn

PLOTTED/REVISED: 12/5/2020

STATEMENT OF ESTIMATED QUANTITIES

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C	9	2302.602	DRILL & GROUT REINF BAR (EPOXY COATED)	7	EACH	168	168					
B	8	2357.506	BITUMINOUS MATERIAL FOR TACK COAT		GALLON	2194	1867			327		
D	9	2360.504	TYPE SP 12.5 WEARING COURSE MIXTURE (3:C) 3.0" THICK	15	SQ YD	375	337			38		
B	8	2360.509	TYPE SP 9.5 WEARING COURSE MIXTURE (2,B)	8	TON	1074	1074					
B,I	8 / 56	2360.509	TYPE SP 12.5 NON WEARING COURSE MIXTURE (3,B)		TON	2238	2238					
B	8	2360.509	TYPE SP 12.5 WEARING COURSE MIXTURE (3,F)		TON	5688	4211			1477		
E	9	2411.618	PREFABRICATED MODULAR BLOCK WALL		SQ FT	934	934					
M	162	2451.507	FINE AGGREGATE BEDDING (CV)		CU YD	42			42			
	161	2501.502	15" GS PIPE APRON		EACH	4	4					
M	162	2501.502	15" RC PIPE APRON		EACH	4			4			
M	162	2501.502	21" RC PIPE APRON		EACH	1			1			
M	162	2501.502	24" RC PIPE APRON		EACH	3			3			
M	162	2501.502	36" RC PIPE APRON		EACH	1			1			
M	162	2501.602	TRASH GUARD FOR 24" PIPE APRON		EACH	3			3			
M	162	2501.602	TRASH GUARD FOR 36" PIPE APRON		EACH	1			1			
	154	2502.503	6" PVC PIPE DRAIN		LIN FT	2			2			
	154	2502.503	4" PE PIPE DRAIN		LIN FT	60			60			
M	162	2503.503	15" RC PIPE SEWER DESIGN 3006 CLASS V		LIN FT	2464			2464			
M	162	2503.503	18" RC PIPE SEWER DESIGN 3006 CLASS III		LIN FT	454			454			
M	162	2503.503	21" RC PIPE SEWER DESIGN 3006 CLASS III		LIN FT	277			277			
M	162	2503.503	24" RC PIPE SEWER DESIGN 3006 CLASS III		LIN FT	459			459			
M	162	2503.503	33" RC PIPE SEWER DESIGN 3006 CLASS III		LIN FT	54			54			
M	162	2503.503	36" RC PIPE SEWER DESIGN 3006 CLASS III		LIN FT	16			16			
	S2 - S6	2503.602	CONNECT TO EXISTING SANITARY SEWER		EACH	2					2	
M	162	2503.602	CONNECT TO EXISTING STORM SEWER		EACH	2			2			
	154	2503.602	CONNECT TO INPLACE CULVERT		EACH	2			2			
	S2 - S6	2503.603	4" PVC SANITARY SERVICE PIPE		LIN FT	34					34	
	161	2503.603	15" HDPE PIPE SEWER		LIN FT	76	76					
	L1	2504.601	IRRIGATION SYSTEM		LUMP SUM	1					1	
	SW2 - SW6	2504.601	TEMPORARY WATER SERVICE		LUMP SUM	1					1	
		2504.602	IRRIGATION SYSTEM REPAIR	20	EACH	10	10					
	S2 - S6	2504.602	CONNECT TO EXISTING WATER MAIN		EACH	6					6	
	S2 - S6	2504.602	CONNECT TO EXISTING WATER SERVICE		EACH	2					2	
	S2 - S6	2504.602	HYDRANT		EACH	3					3	
	S2 - S6	2504.602	1" CORPORATION STOP		EACH	8					8	
	S2 - S6	2504.602	1.5" CORPORATION STOP		EACH	4					4	
	S2 - S6	2504.602	6" GATE VALVE AND BOX		EACH	4					4	
	S2 - S6	2504.602	8" GATE VALVE AND BOX		EACH	2					2	
	S2 - S6	2504.602	12" GATE VALVE AND BOX		EACH	1					1	
	S2 - S6	2504.602	16" GATE VALVE AND BOX		EACH	5					5	
	S2 - S6	2504.602	1" CURB STOP AND BOX		EACH	6					6	
	S2 - S6	2504.602	1.5" CURB STOP AND BOX		EACH	4					4	
	S2 - S6	2504.603	WATER SERVICE (DIRECTIONAL DRILLED)		LIN FT	372					372	
	S2 - S6	2504.603	1" TYPE K COPPER PIPE		LIN FT	282					282	
	S2 - S6	2504.603	1.5" TYPE K COPPER PIPE		LIN FT	10					10	
	S2 - S6	2504.603	6" WATERMAIN DUCTILE IRON CL 52		LIN FT	28					28	

NOTES

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3. TO BE USED FOR MINOR DITCH CLEANING AND/OR AS DIRECTED BY THE ENGINEER.
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6. COLORED CONCRETE. SEE SPECIAL PROVISIONS.
7. TO BE USED IN PEDESTRIAN RAMP LANDINGS PER MNDOT STANDARD PLAN 5-297.250 (SHEET 6 OF 6).
8. TO BE USED FOR BITUMINOUS TRAILS AND PARKING LOT.
9. SEE SHEET 29 FOR STRUCTURE DETAILS.
10. TO BE TEST LEVEL 3.
11. SEE TABULATION FOR COLOR.
12. SEE TABULATION FOR COLOR AND SIZE.
13. THIS ITEM INCLUDES THE QUANTITY FOR CONCRETE MEDIANS AND BOULEVARDS.
14. INCLUDES BOTH MESSAGE BOARDS ON BOTH SIDES OF THE PROJECT FOR 10 DAY ADVANCE WARNING OF PROJECT BEGINNING AND TRAFFIC CONTROL CHANGE AHEAD ONCE ROUNDABOUTS ARE COMPLETE.
15. TO BE USED FOR BITUMINOUS DRIVEWAYS
16. SEE SHEET 30 FOR FENCE DETAILS AND SHEET 123 FOR PLACEMENT LOCATION.
17. DELETED.
18. SEE SHEET 31 FOR STRUCTURE DETAILS.
19. INCLUDES ALL PIPE AND APRON MATERIALS.
20. TO BE MEASURED BY THE NUMBER OF SYSTEMS REPAIRED, ONE SYSTEM PER PARCEL REPAIRED.
21. TREES SHALL BE 2" CALIPER OR BETTER IN SIZE
22. KRAFT PAPER, (2) LAYERS THICK.
23. SHREDDED DARK BROWN MULCH - MINIMUM 4" DEEP
24. REFER TO SPECIAL PROVISIONS FOR SPECIFIC SPECIES QUANTITIES
25. SEE SHEET 32 FOR STRUCTURE DETAILS.

BASIS FOR QUANTITIES

UNIT WEIGHT OF BITUMINOUS MIX:
- 2360 MIX.....113 LBS/SY/IN

TACK COAT:
- NEW SURFACES.....0.05 GAL/SY
- MILLED SURFACES.....0.085 GAL/SY

SEED MIXTURE APPLICATION RATE:
- 22-111.....30.5 LBS/ACRE
- 25-141.....59 LBS/ACRE
- 25-151.....120 LBS/ACRE
- 33-261.....35 LBS/ACRE

FERTILIZER APPLICATION RATE:
- TYPE 3.....200 LBS/ACRE
- TYPE 4.....180 LBS/ACRE

HYDRAULIC MATRIX:
- STABILIZED FIBER.....3000 LBS/ACRE

NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

ANDREW J. PLOWMAN, PE
DATE 12/5/2020 LICENSE # 44200

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

ESTIMATED QUANTITIES
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 4 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\0\4400-000\Cad\Plan\4400-000_est.dgn

PLOTTED/REVISED: 12/5/2020

STATEMENT OF ESTIMATED QUANTITIES

TABLE	SHEET	ITEM NUMBER	DESCRIPTION	NOTES	UNITS	PROJECT TOTAL	ANOKA COUNTY ROADWAY S.A.P. 002-634-003 100% PARTICIPATING	CITY OF LINO LAKES ROADWAY S.A.P. 210-020-010 100% PARTICIPATING	STORM SEWER ANOKA COUNTY 90% S.A.P. 002-634-003 CITY OF LINO LAKES 10% S.A.P. 210-020-010 100% PARTICIPATING	ANOKA COUNTY FDR AND OVERLAY S.A.P. 002-634-003 100% PARTICIPATING	CITY OF LINO LAKES LOCAL FUNDS NON-PARTICIPATING	ANOKA COUNTY LOCAL FUNDS NON-PARTICIPATING
						QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY
	S2 - S6	2504.603	8" WATERMAIN DUCTILE IRON CL 52		LIN FT	10					10	
	S2 - S6	2504.603	12" WATERMAIN DUCTILE IRON CL 52		LIN FT	26					26	
	S2 - S6	2504.603	16" WATERMAIN DUCTILE IRON CL 52		LIN FT	1122					1122	
	S2 - S6	2504.603	8" WATERMAIN HDPE (DIRECTIONAL DRILLED)		LIN FT	270					270	
	S2 - S6	2504.604	4" POLYSTYRENE INSULATION		SQ YD	75					75	
	S2 - S6	2504.608	DUCTILE IRON FITTINGS		POUND	4000					4000	
L	162	2506.502	CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 2	9	EACH	1			1			
L	162	2506.502	CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 3	18	EACH	2			2			
L	162	2506.502	CASTING ASSEMBLY		EACH	63			63			
	S2 - S6	2506.502	ADJUST FRAME AND RING CASTING		EACH	2					2	
L	162	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN G		LIN FT	59.4			59			
L	162	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN H		LIN FT	6.6			6.6			
L	162	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN 48-4020		LIN FT	177.4			177.4			
L	162	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN 60-4020		LIN FT	71.5			71.5			
L	162	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN 72-4020		LIN FT	11.8			11.8			
M	162	2511.504	GEOTEXTILE FILTER TYPE 4		SQ YD	68			68			
M	162 / 147	2511.507	RANDOM RIPRAP CLASS III		CU YD	34			34			
C	9	2521.518	4" CONCRETE WALK	13	SQ FT	14832	14832					
C	9	2521.518	4" CONCRETE WALK SPECIAL	6	SQ FT	2779	2779					
C	9	2521.518	6" CONCRETE WALK		SQ FT	5308	5308					
C	9	2531.503	CONCRETE CURB AND GUTTER DESIGN R418		LIN FT	623	303	320				
C	9	2531.503	CONCRETE CURB AND GUTTER DESIGN B418 (MOD)	9	LIN FT	6600	6124	476				
C	9	2531.503	CONCRETE CURB AND GUTTER DESIGN B424		LIN FT	9183	4649	4534				
D	9	2531.504	6" CONCRETE DRIVEWAY PAVEMENT		SQ YD	575	575					
C	9	2531.618	TRUNCATED DOMES		SQ FT	791	791					
I	56	2533.503	PORTABLE PRECAST CONCRETE BARRIER DESIGN 8337		LIN FT	1489	1489					
I	56	2533.503	RELOCATE PORTABLE PRECAST CONCRETE BARRIER DESIGN 8337		LIN FT	822	822					
A	8	2540.602	RELOCATE MAIL BOX SUPPORT	2	EACH	13	13					
	L1	2540.603	LANDSCAPE EDGER (ALUMINUM)		LIN FT	580					580	
S	180	2545.502	LIGHTING UNIT TYPE 9-40		EACH	16	16					
S	180	2545.502	LIGHT FOUNDATION DESIGN E		EACH	16	16					
S	180	2545.502	SERVICE CABINET -TYPE L1		EACH	3	3					
S	180	2545.502	SERVICE EQUIPMENT		EACH	3	3					
S	180	2545.502	EQUIPMENT PAD B		EACH	3	3					
S	180	2545.502	HANDHOLE		EACH	2	2					
S	180	2545.503	1.5" NON-METALLIC CONDUIT		LIN FT	1650	1650					
S	180	2545.503	UNDERGROUND WIRE 1/C 8 AWG		LIN FT	6600	6600					
M	162	2554.502	GUIDE POST TYPE B		EACH	11			11			
E	9 / 103	2557.503	WIRE FENCE DESIGN 48V-9322		LIN FT	257	257					
	123	2557.603	WOODEN FENCE	16	LIN FT	56	56					
		2563.601	TRAFFIC CONTROL		LUMP SUM	1.00	0.68	0.03	0.15	0.05	0.09	

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BASIS FOR QUANTITIES

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NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

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ANDREW J. PLOWMAN, PE
DATE 12/5/2020 LICENSE # 44200

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

ESTIMATED QUANTITIES
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 5 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\0\4400-000\Cad\Plan\4400-000_est.dgn

PLOTTED/REVISED: 1/12/2021

STATEMENT OF ESTIMATED QUANTITIES

TABLE	SHEET	ITEM NUMBER	DESCRIPTION	NOTES	UNITS	PROJECT TOTAL QUANTITY	ANOKA COUNTY ROADWAY S.A.P. 002-634-003 100% PARTICIPATING QUANTITY	CITY OF LINO LAKES ROADWAY S.A.P. 210-020-010 100% PARTICIPATING QUANTITY	STORM SEWER ANOKA COUNTY 90% S.A.P. 002-634-003 CITY OF LINO LAKES 10% S.A.P. 210-020-010 100% PARTICIPATING QUANTITY	ANOKA COUNTY FDR AND OVERLAY S.A.P. 002-634-003 100% PARTICIPATING QUANTITY	CITY OF LINO LAKES LOCAL FUNDS NON-PARTICIPATING QUANTITY	ANOKA COUNTY LOCAL FUNDS NON-PARTICIPATING QUANTITY
		2563.601	ALTERNATE PEDESTRIAN ROUTE		LUMP SUM	1	1					
I	56	2563.602	RAISED PAVEMENT MARKER TEMPORARY		EACH	216	216					
I	56	2563.602	PORTABLE CONCRETE BARRIER DELINEATOR	11	EACH	93	93					
I	56	2563.613	PORTABLE CHANGEABLE MESSAGE SIGN	14	UNIT DAY	40	40					
I	56	2563.615	TEMPORARY IMPACT ATTENUATOR	10	ASSEMBLY	10	10					
I	56	2563.615	RELOCATE TEMPORARY IMPACT ATTENUATOR		ASSEMBLY	6	6					
Q	163	2564.502	OBJECT MARKER TYPE X4-2		EACH	16	16					
O	163	2564.518	SIGN PANELS TYPE C		SQ FT	735	730	5				
P	163	2564.518	SIGN PANELS TYPE D		SQ FT	75	75					
K	97	2564.602	INSTALL SIGN TYPE SPECIAL		EACH	4		4				
S	180	2565.601	INSTALL FLASHER SYSTEM		LUMP SUM	1	1					
S	180	2565.616	PEDESTRIAN CROSSWALK FLASHER SYSTEM		SYSTEM	1					1	
	191	2565.616	REVISE SIGNAL SYSTEM		SYSTEM	1	1					
	L1	2571.524	DECIDUOUS TREE 2" CAL B&B	21	TREE	6					6	
	L1	2571.525	CONIFEROUS SHRUB 15" HT CONT		SHRUB	6					6	
	L1	2571.527	PERENNIAL NO 1 CONT		PLANT	192					192	
	L1	2571.527	ORNAMENTAL GRASS NO 1 CONT		PLANT	48					48	
	L1	2571.604	GEOTEXTILE WEED BARRIER FABRIC	22	SQ YD	420					420	
		2573.501	STABILIZED CONSTRUCTION EXIT		LUMP SUM	1	1					
F	10	2573.502	STORM DRAIN INLET PROTECTION		EACH	43	43					
F	10	2573.502	CULVERT END CONTROLS		EACH	18	12			6		
F	10	2573.503	SILT FENCE, TYPE MS		LIN FT	468	468					
F	10 / L1	2573.503	SEDIMENT CONTROL LOG TYPE WOOD FIBER		LIN FT	8936	5343			3163	430	
	L1	2574.507	BOULEVARD TOPSOIL BORROW TYPE F (6" THICK)		CU YD	130					130	
F	10	2574.508	FERTILIZER TYPE 3		POUND	1042	847			195		
F	10	2574.508	FERTILIZER TYPE 4		POUND	241	241					
F	10	2575.504	SODDING TYPE LAWN		SQ YD	2265	2265					
	147	2575.504	TURF REINFORCEMENT MAT CATEGORY 4		SQ YD	120			120			
F	10	2575.505	SEEDING		ACRE	4.1	3.6			0.5		
	L1	2575.507	MULCH MATERIAL TYPE 6	23	CU YD	34					34	
F	10	2575.508	SEED MIXTURE 22-111		POUND	43	28			15		
F	10	2575.508	SEED MIXTURE 25-141		POUND	141	141					
F	10	2575.508	SEED MIXTURE 25-151		POUND	386	64			322		
F	10	2575.508	SEED MIXTURE 33-261		POUND	12	12					
F	10	2575.508	HYDRAULIC STABILIZED FIBER MATRIX		POUND	15779	15779					
F	10 / L1	2575.604	ROLLED EROSION PREVENTION CATEGORY 20		SQ YD	17227	12133			4729	365	
	L1	2575.608	SEED MIXTURE SPECIAL	24	POUND	20					20	
I	56	2581.503	REMOVABLE PREFORMED PAVEMENT MARKING TAPE	12	LIN FT	15529	15529					
2		2581.603	REMOVABLE PREFORMED PLASTIC MASK (BLACK)	26	LIN FT	6990	6990					
I	56	2582.503	4" SOLID LINE PAINT	11	LIN FT	17837	17837					
I	56	2582.503	4" DOUBLE SOLID LINE PAINT	11	LIN FT	3880	3880					
R	172	2582.503	4" SOLID LINE MULTI-COMPONENT	11	LIN FT	17633	17633					
R	172	2582.503	24" SOLID LINE MULTI-COMPONENT	11	LIN FT	41	41					
R	172	2582.503	4" BROKEN LINE MULTI-COMPONENT	11	LIN FT	220	220					
R	172	2582.503	4" DOUBLE SOLID LINE MULTI-COMPONENT	11	LIN FT	1220	1220					
R	172	2582.503	4" SOLID LINE PREFORM THERMO	11	LIN FT	4505	4505					
1 R	172	2582.503	24" SOLID LINE PREFORM THERMO	11	LIN FT	323	323					
R	172	2582.503	12" DOTTED LINE PREFORM THERMO	11	LIN FT	144	144					
R	172	2582.503	4" DOUBLE SOLID LINE PREFORM THERMO	11	LIN FT	125	125					
R	172	2582.518	PAVEMENT MESSAGE PREFORM THERMOPLASTIC		SQ FT	60	60					

NOTES

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24. REFER TO SPECIAL PROVISIONS FOR SPECIFIC SPECIES QUANTITIES
25. SEE SHEET 32 FOR STRUCTURE DETAILS.
26. TO BE USED TO MASK CONFLICTING PAVEMENT MARKINGS (2)

BASIS FOR QUANTITIES

UNIT WEIGHT OF BITUMINOUS MIX:
- 2360 MIX.....113 LBS/SY/IN

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- NEW SURFACES.....0.05 GAL/SY
- MILLED SURFACES.....0.085 GAL/SY

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- STABILIZED FIBER.....3000 LBS/ACRE

NO.	DATE	BY	CHK	REVISIONS
1	01/07/2021	AJF	AJP	CORRECT ITEM DESCRIPTION.
2	01/11/2021	AJF	AJP	ADD ITEM 2581.603 REMOVABLE PREFORMED PLASTIC MASK (BLACK).

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

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DATE 1/12/2021 LICENSE # 44200

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

ESTIMATED QUANTITIES
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 6R OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\01\44400-000\Cad\Plan\44400-000_est.dgn

PLOTTED/REVISED: 12/5/2020

STATEMENT OF ESTIMATED QUANTITIES

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R	172	2582.518	CROSSWALK PREFORM THERMOPLASTIC		SQ FT	1286	1286					
			ADD ALTERNATE									
A	8	2101.524	CLEARING	1	TREE	1						1
A	8	2101.524	GRUBBING	1	TREE	1						1
A	8	2104.503	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)		LIN FT	150						150
A	8	2104.503	REMOVE CURB AND GUTTER		LIN FT	78						78
A	8	2104.504	REMOVE BITUMINOUS PAVEMENT		SQ YD	112						112
A	8	2104.518	REMOVE BITUMINOUS WALK		SQ FT	310						310
A	8	2104.518	REMOVE CONCRETE WALK		SQ FT	272						272
H	12	2106.507	EXCAVATION - COMMON		CU YD	3977						3977
H	12	2106.507	EXCAVATION - SUBGRADE		CU YD	1512						1512
H	12	2106.507	EXCAVATION - CHANNEL AND POND		CU YD	2990						2990
H	12	2106.507	SELECT GRANULAR EMBANKMENT (CV)		CU YD	1512						1512
H	12	2106.507	COMMON EMBANKMENT (CV)		CU YD	282						282
B	8	2211.507	AGGREGATE BASE (CV) CLASS 5		CU YD	791						791
C	9	2302.602	DRILL & GROUT REINF BAR (EPOXY COATED)	7	EACH	5						5
B	8	2357.506	BITUMINOUS MATERIAL FOR TACK COAT		GALLON	213						213
B	8	2360.509	TYPE SP 9.5 WEARING COURSE MIXTURE (2,B)	8	TON	996						996
	160	2451.507	FINE AGGREGATE BEDDING (CV)		CU YD	3						3
	160	2503.503	12" RC PIPE SEWER DESIGN 3006 CLASS V		LIN FT	79						79
	160	2503.503	15" RC PIPE SEWER DESIGN 3006 CLASS V		LIN FT	192						192
	160	2506.502	CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 4	25	EACH	1						1
	160	2506.502	CASTING ASSEMBLY		EACH	5						5
	160	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN G		LIN FT	8.3						8.3
	160	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN SD-48		LIN FT	2.7						2.7
	160	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN 48-4020		LIN FT	6.9						6.9
C	8	2521.518	6" CONCRETE WALK		SQ FT	56						56
C	8	2531.503	CONCRETE CURB AND GUTTER DESIGN B612		LIN FT	993						993
D	163	2564.518	SIGN PANELS TYPE C		SQ FT	9						9
F	10	2573.502	STORM DRAIN INLET PROTECTION		EACH	3						3
F	10	2573.503	SEDIMENT CONTROL LOG TYPE WOOD FIBER		LIN FT	561						561
F	10	2574.508	FERTILIZER TYPE 3		POUND	63						63
F	10	2575.504	SODDING TYPE LAWN		SQ YD	277						277
F	10	2575.505	SEEDING		ACRE	0.3						0.3
F	10	2575.508	SEED MIXTURE 25-141		POUND	19						19
F	10	2575.508	SEED MIXTURE 25-151		POUND	38						38
F	10	2575.508	HYDRAULIC STABILIZED FIBER MATRIX		POUND	2071						2071
R	172	2582.503	4" SOLID LINE MULTI-COMPONENT	11	LIN FT	2634						2634

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4. TO BE USED FOR SURFACE CLEANING AND/OR AS DIRECTED BY THE ENGINEER (40 HOURS).
5. TO BE USED FOR DUST CONTROL AND/OR AS DIRECTED BY THE ENGINEER.
6. COLORED CONCRETE. SEE SPECIAL PROVISIONS.
7. TO BE USED IN PEDESTRIAN RAMP LANDINGS PER MNDOT STANDARD PLAN 5-297.250 (SHEET 6 OF 6).
8. TO BE USED FOR BITUMINOUS TRAILS AND PARKING LOT.
9. SEE SHEET 29 FOR STRUCTURE DETAILS.
10. TO BE TEST LEVEL 3.
11. SEE TABULATION FOR COLOR.
12. SEE TABULATION FOR COLOR AND SIZE.
13. THIS ITEM INCLUDES THE QUANTITY FOR CONCRETE MEDIANS AND BOULEVARDS.
14. INCLUDES BOTH MESSAGE BOARDS ON BOTH SIDES OF THE PROJECT FOR 10 DAY ADVANCE WARNING OF PROJECT BEGINNING AND TRAFFIC CONTROL CHANGE AHEAD ONCE ROUNDABOUTS ARE COMPLETE.
15. TO BE USED FOR BITUMINOUS DRIVEWAYS
16. SEE SHEET 30 FOR FENCE DETAILS AND SHEET 123 FOR PLACEMENT LOCATION.
17. DELETED.
18. SEE SHEET 31 FOR STRUCTURE DETAILS.
19. INCLUDES ALL PIPE AND APRON MATERIALS.
20. TO BE MEASURED BY THE NUMBER OF SYSTEMS REPAIRED, ONE SYSTEM PER PARCEL REPAIRED.
21. TREES SHALL BE 2" CALIPER OR BETTER IN SIZE
22. KRAFT PAPER, (2) LAYERS THICK.
23. SHREDDED DARK BROWN MULCH - MINIMUM 4" DEEP
24. REFER TO SPECIAL PROVISIONS FOR SPECIFIC SPECIES QUANTITIES
25. SEE SHEET 32 FOR STRUCTURE DETAILS.

BASIS FOR QUANTITIES

UNIT WEIGHT OF BITUMINOUS MIX:
- 2360 MIX.....113 LBS/SY/IN

TACK COAT:
- NEW SURFACES.....0.05 GAL/SY
- MILLED SURFACES.....0.085 GAL/SY

SEED MIXTURE APPLICATION RATE:
- 22-111.....30.5 LBS/ACRE
- 25-141.....59 LBS/ACRE
- 25-151.....120 LBS/ACRE
- 33-261.....35 LBS/ACRE

FERTILIZER APPLICATION RATE:
- TYPE 3.....200 LBS/ACRE
- TYPE 4.....180 LBS/ACRE

HYDRAULIC MATRIX:
- STABILIZED FIBER.....3000 LBS/ACRE

NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

ANDREW J. PLOWMAN, PE
DATE 12/5/2020 LICENSE # 44200

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

ESTIMATED QUANTITIES
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 7 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\0\4400-000\Cad\Plan\4400-000_est.dgn

PLOTTED/REVISED: 12/3/2020

REMOVALS

A

LOCATION	REMOVE BITUMINOUS PAVEMENT	REMOVE CONCRETE DRIVEWAY PAVEMENT	REMOVE BITUMINOUS DRIVEWAY PAVEMENT		REMOVE CONCRETE WALK	REMOVE BITUMINOUS WALK	REMOVE CURB AND GUTTER	SAWING BIT PAVEMENT (FULL DEPTH)		SAWING CONC PAVEMENT (FULL DEPTH)	SALVAGE & INSTALL MAILBOX SUPPORT	MILL BITUMINOUS SURFACE SPECIAL (1)	CLEARING	GRUBBING	CLEARING	GRUBBING
	SQ YD	SQ YD	SQ YD		SQ FT	SQ FT	LIN FT	LIN FT		LIN FT	EACH	SQ YD	ACRE	ACRE	TREE	TREE
	(A)	(A)	(A)	(B)	(A)	(A)	(A)	(A)	(B)	(A)	(A)	(B)	(A)	(A)	(A)	(A)
BASE BID																
CSAH 34																
STA 103+01.40 TO 110+00.00	4372	166	292		230	9632	1179	322		25	7		0.1	0.1	7	7
STA 110+00.00 TO 116+66.66	3353		288			9788		39			3		0.1	0.1	6	6
STA 116+66.66 TO 118+98.30	1286					3481									1	1
STA 118+98.30 TO 122+00.00	2652		34		232	4311	385	200			1					
STA 122+00.00 TO 131+60.49	5599		30		152	14810	77	99					0.1	0.1	4	4
STA 131+60.49 TO 133+83.12	1785		124		144	2833	60	28							4	4
STA 133+83.12 TO 145+00.00	2087		82	37		6439	21	117	12		1	347				
STA 145+00.00 TO 149+61.50												274				
SUBTOTAL CSAH 34	21134	166	850	37	758	51294	1722	805	12	25	12	621	0.3	0.3	22	22
TOMAHAWK TRAIL/SCHOOL ENTRANCE																
STA 201+35.22 TO 202+36.73	327		34				203	52								
STA 204+58.80 TO 207+61.93																
SUBTOTAL TOMAHAWK TRAIL	327		34				203	52								
WEST SHADOW LAKE DRIVE																
STA 301+27.90 TO 302+22.15	477	34					178	66		20						
STA 304+37.04 TO 306+42.08	537		28					41			1				4	4
SUBTOTAL WEST SHADOW LAKE DRIVE	1014	34	28				178	107		20	1				4	4
BASE BID SUBTOTAL	22475	200	912	37	758	51294	2103	964	12	45	13	621	0.3	0.3	26	26
BASE BID TOTAL	22475	200	949		758	51294	2103	976		45	13	621	0.3	0.3	26	26
ADD ALTERNATE BID																
PARKING LOT & SCHOOL TRAIL	112				272	310	78	150							1	1
ADD ALTERNATE BID TOTAL	112				272	310	78	150							1	1

NOTES:
- REMOVAL OF MISCELLANEOUS SHRUBS SHALL BE INCIDENTAL.
- SAWING OF EXISTING BITUMINOUS TRAIL AND CONCRETE CURB & GUTTER IS INCIDENTAL

(1) SEE SHEET 28 FOR DETAILS.
(A) 100% COUNTY (S.A.P. 002-634-003)
(B) 100% COUNTY (FULL DEPTH RECLAMATION)

BITUMINOUS & AGGREGATE

B

LOCATION	TYPE SP 12.5 WEARING COURSE MIX (3,F)		TYPE SP 12.5 NON-WEARING COURSE MIX (3,B)	TYPE SP 9.5 WEARING COURSE MIX (2,B)	AGGREGATE BASE (CV) CLASS 5	BITUMINOUS MATERIAL FOR TACK COAT		FULL DEPTH RECLAMATION	AGGREGATE SURFACING (CV) CLASS 2
	TON		TON	TON	CU YD	GALLON		SQ YD	CU YD
	(A)	(B)	(A)	(A)	(A)	(A)	(B)	(B)	(B)
BASE BID									
CSAH 34									
STA 103+01.40 TO 110+00.00	1046		523	189	1080	464			
STA 110+00.00 TO 116+66.66	739		369	191	845	327			
STA 116+66.66 TO 118+98.30				50	476				
STA 118+98.30 TO 122+00.00	304		153	85	356	135			
STA 122+00.00 TO 131+60.49	1109		555	274	1249	491			
STA 131+60.49 TO 133+83.12				51	456				
STA 133+83.12 TO 145+00.00	439	908	220	134	498	195	201	4014	702
STA 145+00.00 TO 149+61.50		569					126	2515	447
SUBTOTAL CSAH 34	3637	1477	1820	974	4960	1612	327	6529	1149
TOMAHAWK TRAIL/SCHOOL ENTRANCE									
STA 201+35.22 TO 202+36.73	69		34		68	31			
STA 204+58.80 TO 207+61.93	248		124	54	269	110			
TRAIL CONNECTION				46	38				
SUBTOTAL TOMAHAWK TRAIL	317		158	100	375	141			
WEST SHADOW LAKE DRIVE									
STA 301+27.90 TO 302+22.15	117		58		103	52			
STA 304+37.04 TO 306+42.08	140		70		125	62			
SUBTOTAL WEST SHADOW LAKE DRIVE	257		128		228	114			
BASE BID SUBTOTAL	4211	1477	2106	1074	5563	1867	327	6529	1149
BASE BIDTOTAL	5688		2106	1074	5563	2194		6529	1149
ADD ALTERNATE BID									
PARKING LOT & SCHOOL TRAIL				996	791	213			
ADD ALTERNATE BID TOTAL				996	791	213			

NOTES:
(A) 100% COUNTY (S.A.P. 002-634-003)
(B) 100% COUNTY (FULL DEPTH RECLAMATION)

TABULATION INDEX

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B	8	BITUMINOUS & AGGREGATE
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E	9	RETAINING WALL TABULATION
F	10	TURF ESTABLISHMENT & EROSION CONTROL
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BASIS FOR QUANTITIES

UNIT WEIGHT OF BITUMINOUS MIX:
- 2360 MIX.....113 LBS/SY/IN

TACK COAT:
- NEW SURFACES.....0.05 GAL/SY
- MILLED SURFACES.....0.085 GAL/SY

NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
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ANDREW J. PLOWMAN, PE
DATE 12/3/2020 LICENSE # 44200

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

QUANTITY TABULATIONS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 8 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\14400-000_tab01.dgn

PLOTTED/REVISED: 12/3/2020

CONCRETE

C

LOCATION	CONCRETE CURB AND GUTTER								4" CONCRETE WALK (4)	4" CONCRETE WALK SPECIAL	6" CONCRETE WALK	CONCRETE PAVEMENT 7.0" SPECIAL (1)	CONCRETE PAVEMENT 7.0"	DOWEL BAR	DRILL & GROUT REINFORCEMENT BARS	TRUNCATED DOMES
	DESIGN B612	DESIGN B418 (MOD)		DESIGN B424			DESIGN R418									
	LIN FT	LIN FT		LIN FT			LIN FT		SQ FT	SQ FT	SQ FT	SQ YD	SQ YD	EACH	EACH	SQ FT
	(A)	(A)	(C)	(A)	(C)	(D)	(A)	(C)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)
BASE BID																
CSAH 34																
STA 103+01.40 TO 110+00.00		1361				1424			3108		451				13	119
STA 110+00.00 TO 116+66.66		1360				1350			4338		44					
STA 116+66.66 TO 118+98.30		207	134	238	127	528	147	168	25	1466	2191	369	1610	1214	74	311
STA 118+98.30 TO 122+00.00		617				607			2217		49					
STA 122+00.00 TO 131+60.49		1962				2063			3063		434				15	82
STA 131+60.49 TO 133+83.12		181	127	117	114	498	156	152	28	1313	1973	359	1545	1194	62	262
STA 133+83.12 TO 145+00.00		436				829			1456		166				4	17
STA 145+00.00 TO 149+61.50																
SUBTOTAL CSAH 34		6124	261	355	241	7299	303	320	14235	2779	5308	728	3155	2408	168	791
TOMAHAWK TRAIL/SCHOOL ENTRANCE																
STA 201+35.22 TO 202+36.73			14			198			26							
STA 204+58.80 TO 207+61.93			110			644			387							
SUBTOTAL TOMAHAWK TRAIL			124			842			413							
WEST SHADOW LAKE DRIVE																
STA 301+27.90 TO 302+22.15			65			182			128							
STA 304+37.04 TO 306+42.08			26			264			56							
SUBTOTAL WEST SHADOW LAKE DRIVE			91			446			184							
BASE BID SUBTOTAL		6124	476	355	241	8587	303	320	14832	2779	5308	728	3155	2408	168	791
BASE BID TOTAL		6600			9183			623	14832	2779	5308	728	3155	2408	168	791
ADD ALTERNATE BID																
PARKING LOT & SCHOOL TRAIL	993										56				5	
ADD ALTERNATE BID TOTAL	993										56				5	

NOTES:
(1) SEE SHEET 26 AND 27 FOR TRUCK APRON CONCRETE AND JOINT DETAIL.
(2) REINFORCEMENT TIE BARS WITHIN THE CONCRETE PAVEMENT ARE INCIDENTAL.
(3) TO BE USED AT PEDRESTRIAN RAMP LANDINGS AS PER MNDOT STANDARD PLAN 5-297-250.
(4) TO BE USED FOR CONCRETE MEDIANS AND BOULEVARDS.
(5) TRAIL-DRIVEWAY CROSSINGS TO BE CONCRETE AND PAID AS 6" CONCRETE DRIVEWAY PAVEMENT. SEE DRIVEWAY DETAILS.
(A) 100% COUNTY (S.A.P. 002-634-003)
(C) 100% CITY OF LINO LAKES (S.A.P. 210-020-010)
(D) 50% COUNTY (S.A.P. 002-634-003) / 50% CITY OF LINO LAKES (S.A.P. 210-020-010)

DRIVEWAY TABULATION

D

ALIGNMENT	STA	LT/RT	HOUSE NO.	TYPE SP 12.5 WEARING COURSE MIXTURE (3;C) 3.0" THICK		6" CONCRETE DRIVEWAY PAVEMENT	AGGREGATE BASE (CV) CLASS 5	
				SQ YD		SQ YD	CU YD	
				(A)	(B)	(A)	(A)	(B)
BASE BID								
CSAH 34 EB	103+11	RT	6498	16		14	5	
CSAH 34 EB	104+32	LT	441			43	5	
CSAH 34 EB	104+85	RT	416	30		31	9	
CSAH 34 EB	106+32	RT	424	33		32	9	
CSAH 34 EB	106+32	LT	453			41	5	
CSAH 34 EB	106+96	RT	432	44		32	11	
CSAH 34 EB	108+10	LT	461	18		28	6	
CSAH 34 EB	108+40	RT	440	15		25	6	
CSAH 34 EB	110+87	LT	485	13		27	6	
CSAH 34 EB	111+45	LT	495	12		27	5	
CSAH 34 EB	112+50	LT	495	9		26	5	
CSAH 34 EB	114+63	RT	510	31		35	9	
CSAH 34 EB	115+08	RT	PARCEL 58			38	5	
TOMAHAWK TRAIL NB	201+53	RT	6498			38	5	
TOMAHAWK TRAIL NB	201+62	LT	PARCEL 58	11		19	4	
CSAH 34 EB	120+42	RT	552	22		26	7	
WEST SHADOW LAKE DR NB	301+75	LT	6499			37	5	
WEST SHADOW LAKE DR NB	304+77	RT	3508	48		11	10	
CSAH 34 EB	137+24	LT	681	35		45	11	
CSAH 34 EB	143+70	LT	695		38			7
BASE BID SUBTOTAL				337	38	575	128	7
BASE BID TOTAL				375		575	135	

NOTES:
(A) 100% COUNTY (S.A.P. 002-634-003)
(B) 100% COUNTY (FULL DEPTH RECLAMATION)

RETAINING WALL TABULATION

E

LOCATION	PREFAB MODULAR BLOCK RETAINING WALL	WIRE FENCE DESIGN 48V-9322
	SQ FT	LIN FT
BASE BID		
CSAH 34		
RETAINING WALL NO. 1	934	148
BASE BID TOTAL	934	148

GENEAL NOTES:
- MODULAR BLOCK RETAINING WALL AREA IS MEASURED BY THE SQUARE FOOT OF THE FACE OF THE BLOCK ON A VERTICAL PLANE BETWEEN A LINE 2 FEET BELOW THE FINISHED GOUND LINE IN FRONT OF THE WALL AND THE TOP OF THE WALL OR COPING AS SHOWN IN THE PLANS. ADDITIONAL VARIATIONS OF THE LEVELING PAD AND/OR BLOCK PLACEMENT SHALL BE CONSIDERED INCIDENTAL.
- THE FOLLOWING SHALL BE INCLUDED IN THE PAY ITEM PREFABRICATED MODULAR BLOCK WALL (2411):
  - WALL BLOCKS
  - CONNECTION DEVICES
  - LEVELING PAD
  - WALL DRAINAGE SYSTEM
  - STRUCTURE EXCAVATION CLASS U
  - SLECT GRANULAR EMBANKMENT MOD 10%

PATH & FILENAME: Projects\Minnesota\0\4400-000\Cad\Plan\4400-000_tab01.dgn

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wsb

ANOKA COUNTY

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ANOKA COUNTY, MINNESOTA

QUANTITY TABULATIONS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 9 OF 195 SHEETS

TURF ESTABLISHMENT & EROSION CONTROL

F

LOCATION	SEED MIXTURE 22-111 POUNDS (A)	SEED MIXTURE 22-111 POUNDS (B)	SEED MIXTURE 25-141 POUNDS (A)	SEED MIXTURE 25-141 POUNDS (B)	SEED MIXTURE 25-151 POUNDS (A)	SEED MIXTURE 25-151 POUNDS (B)	SEED MIXTURE 33-261 POUNDS (A)	SEEDING ACRE (A)	SEEDING ACRE (B)	SODDING TYPE LAWN SQ YD (A)	FERTILIZER TYPE 3 POUNDS (A)	FERTILIZER TYPE 3 POUNDS (B)	FERTILIZER TYPE 4 POUNDS (A)	HYDRAULIC MULCH MATRIX POUNDS (A)	ROLLED EROSION PREVENTION PRODUCT CATEGORY 20 SQ YD (A)	ROLLED EROSION PREVENTION PRODUCT CATEGORY 20 SQ YD (B)	SILT FENCE; TYPE MS LIN FT (A)	SEDIMENT CONTROL LOG TYPE WOOD FIBER LIN FT (A)	SEDIMENT CONTROL LOG TYPE WOOD FIBER LIN FT (B)	CULVERT END CONTROLS EACH (A)	CULVERT END CONTROLS EACH (B)	STORM DRAIN INLET PROTECTION EACH (A)
BASE BID																						
CSAH 34																						
STA 103+01.40 TO 110+00.00	1		15		30			0.3		52	65		53	1531	372			581				10
STA 110+00.00 TO 116+66.66	13		26		53		5	1.0			265		68	2654	5691		468	1149		2		4
STA 116+66.66 TO 118+98.30			11		23		7	0.4		66	38			1175	1821			324				5
STA 118+98.30 TO 122+00.00			14		28			0.2		217	47			1547				295				5
STA 122+00.00 TO 131+60.49	11		29		80			0.9		865	245			3508	3529			1807		2		13
STA 131+60.49 TO 133+83.12			4		8			0.1		435	13			665				250				2
STA 133+83.12 TO 145+00.00	2	9	19		48	31		0.4	0.3	315	96	113		2173	720	2723		938	1367	5	3	
STA 145+00.00 TO 149+61.50		6				3			0.2			83	121			2006			1796	3	3	
POND																						
SUBTOTAL CSAH 34	28	15	118		271	35	12	3.3	0.5	1950	769	195	241	13253	12133	4729	468	5343	3163	12	6	39
TOMAHAWK TRAIL / SCHOOL ENTRANCE																						
STA 201+35.22 TO 202+36.73			2		3						5			156								2
STA 204+58.80 TO 207+61.93			16		33			0.3		151	54			1726								
SUBTOTAL TOMAHAWK TRAIL			18		36			0.3		151	60			1882								2
WEST SHADOW LAKE DRIVE																						
STA 301+27.90 TO 302+22.15										164				102								
STA 304+37.04 TO 306+42.08			5		11			0.1			18			542								2
SUBTOTAL WEST SHADOW LAKE DRIVE			5		11			0.1		164	18			644								2
BASE BID SUBTOTAL	28	15	141		317	35	12	3.6	0.5	2265	847	195	241	15779	12133	4729	468	5343	3163	12	6	43
BASE BID TOTAL	43		141		352		12	4.1		2265	1042		241	15779	16862		468	8506		18		43
ADD ALTERNATE BID																						
PARKING LOT & SCHOOL TRAIL			19		38			0.3		277	63			2071				561				3
POND																						
ADD ALTERNATE BID TOTAL			19		38			0.3		277	63			2071				561				3

NOTES:
(A) 100% COUNTY (S.A.P. 002-634-003)
(B) 100% COUNTY (FULL DEPTH RECLAMATION)

BASIS FOR QUANTITIES

SEED MIXTURE APPLICATION RATE:
- 22-111.....30.5 LBS/ACRE

FERTILIZER APPLICATION RATE:
- TYPE 3.....200 LBS/ACRE

HYDRAULIC MATRIX:
- STABILIZED FIBER.....3000 LBS/ACRE

NO.	DATE	BY	CHK	REVISIONS

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QUANTITY TABULATIONS
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SHEET 10 OF 195 SHEETS

PLOTTED/REVISED: 12/3/2020

EXISTING STORM SEWER TABULATION

G

EX. STRUCTURE NO.	DRAINS TO STRUCTURE	ALIGNMENT	STATION	OFFSET	SIDE	EXISTING TOP OF CASTING	ELEVATION		CASTING TYPE	PIPE SIZE	PIPE TYPE	REMOVE			
							OUTLET	INLET				SEWER PIPE (STORM) LIN FT	PIPE CULVERTS LIN FT	PIPE APRON EACH	DRAINAGE STRUCTURE EACH
4000	4001	CSAH 34 EB	102+36.95	43.39	LT	900.63	894.63		CB	18"	RCP				
4001	4003	CSAH 34 EB	106+08.91	42.45	LT	898.86	893.27		CB	24"	RCP	188			1
4002	4001	CSAH 34 EB	106+09.07	15.32	RT	899.02	894.9		CB	15"	RCP	54			1
4003	4004	CSAH 34 EB	107+35.80	31.57	LT	898.08	892.74		CB	24"	RPC	38			1
4005	4004	CSAH 34 EB	108+78.85	16.94	RT	897.52	893.59		CB	15"	RCP	68			1
4004	4006	CSAH 34 EB	108+32.60	33.57	LT	897.45	892.63		MH	24"	RCP	9			1
4007	4008	CSAH 34 EB	109+00.30	29.21	RT			894.81		15"	CMP	74		1	
4010	4009	CSAH 34 EB	111+04.98	59.9	RT			886.05		36"	CMP	19		1	
4009	4008	CSAH 34 EB	111+04.10	29.21	RT	894.37			MH	36"	CMP	131			1
4008	4011	CSAH 34 EB	109+73.42	35.04	RT	895.96			MH	36"	CMP	90			1
4011		CSAH 34 EB	109+50.62	51.68	LT		895.85							1	
4014	4013	CSAH 34 EB	111+57.91	43.03	LT			894.52		12"	CMP	79		1	
4013	4012	CSAH 34 EB	110+61.42	48.62	LT	986.05			MH	12"	CMP	28			1
4012		CSAH 34 EB	110+39.68	64.74	LT		891.5							1	
4016	4015	CSAH 34 EB	112+66.16	40.86	LT			895.82		12"	CMP		35		
4015		CSAH 34 EB	112+31.47	40.13	LT		895.49								
4018	4017	CSAH 34 EB	113+71.48	39.8	LT			897.47		12"	CMP		32		
4017		CSAH 34 EB	113+38.75	40.09	LT		897.05								
4019	4020	CSAH 34 EB	120+07.58	35.33	LT			900.77		18"	CMP		114		
4020		CSAH 34 EB	121+19.34	27.46	LT		899.9								
4021	4022	CSAH 34 EB	123+65.37	33.49	RT			899.07		12"	RCP		56	1	
4022		CSAH 34 EB	124+25.20	31.34	RT		898.86							1	
4023	4024	CSAH 34 EB	123+64.21	35.94	RT			899.11		12"	RCP		56	1	
4024		CSAH 34 EB	124+25.17	33.77	RT		898.92							1	
4025	4026	CSAH 34 EB	125+91.75	40.57	LT			897.83		18"	CMP		129	1	
4026		CSAH 34 EB	127+18.84	56.54	LT		896.51							1	
4027	4028	CSAH 34 EB	127+15.95	64.7	RT			894.34		24"	RCP		147	1	
4028		CSAH 34 EB	127+63.33	72.91	LT		887.98							1	
4030	4029	CSAH 34 EB	129+35.67	47.04	LT			897.31		15"	RCP		28	1	
4029		CSAH 34 EB	129+16.37	67.01	LT		896.15							1	
4032	4031	CSAH 34 EB	130+80.31	36.98	LT					15"	CMP		24		
4031		CSAH 34 EB	130+56.15	38.34	LT										
4033	4044	CSAH 34 EB	134+06.71	47.56	RT			893.42		15"	RCP		27	1	
4044		CSAH 34 EB	134+29.04	66.74	RT		893.14							1	
4045	4046	CSAH 34 EB	134+71.4	62.47	RT			891.73		24"	RCP		115	1	
4046		CSAH 34 EB	134+68.44	51.73	LT		889.57							1	
4049	4048	CSAH 34 EB	137+44.58	36.28	LT			897.86		15"	CMP	80		1	
4048	4047	CSAH 34 EB	136+65.07	29.57	LT	898.99			MH	15"	CMP	47			1
4047		CSAH 34 EB	136+27.12	57.19	LT		895.61							1	
4050	4051	CSAH 34 EB	140+87.89	45.6	RT			897.12		21"	RCP				
4051		CSAH 34 EB	141+45.53	44.21	RT		897.06								
4053	4052	CSAH 34 EB	143+82.7	41.67	LT			985.81		15"	CMP				
4052		CSAH 34 EB	143+56.88	41.67	LT		895.65								
4054	4055	CSAH 34 EB	145+98.99	46.81	RT			893.08		21"	RCP				
4055		CSAH 34 EB	146+58.32	46.98	RT		892.15								
4056	4057	CSAH 34 EB	147+51.82	52	LT			889.8		15"	CMP				
4057		CSAH 34 EB	147+52.89	74.34	LT		889.01								
4059	4058	CSAH 34 EB	149+45.48	41.16	LT			890.92		18"	CMP				
4058		CSAH 34 EB	148+75.94	42.96	LT		890.51								
											PROJECT TOTAL	905	763	21	9

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NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

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ANDREW J. PLOWMAN, PE
DATE 12/3/2020 LICENSE # 44200

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

QUANTITY TABULATIONS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 11 OF 195 SHEETS

PLOTTED/REVISED: 12/3/2020

EARTH WORK TABULATION

H

STA. - STA.	EXCAVATION COMMON CU YD (EV)	EXCAVATION SUBGRADE CU YD (EV)	EXCAVATION POND & CHANNEL	EMBANKMENT COMMON CU YD (CV)	EMBANKMENT SELECT GRANULAR CU YD (CV)
BASE BID					
CSAH 34					
103+04 - 103+50	116	115		41	115
103+50 - 104+00	141	135		36	135
104+00 - 104+31	91	84		22	84
104+31 - 104+50	54	51		12	51
104+50 - 104+86	111	98		15	98
104+86 - 105+00	51	38		3	38
105+00 - 105+50	184	135		10	135
105+50 - 106+00	190	135		11	135
106+00 - 106+50	205	133		12	133
106+50 - 107+00	226	128		12	128
107+00 - 107+50	232	125		11	125
107+50 - 108+00	196	121		27	121
108+00 - 108+11	39	25		6	25
108+11 - 108+40	109	65		9	65
108+40 - 108+50	38	22		3	22
108+50 - 109+00	178	103		28	103
109+00 - 109+27	79	64		20	64
109+27 - 109+50	69	59		16	59
109+50 - 110+00	183	116		40	116
110+00 - 110+50	213	116		59	116
110+50 - 110+88	216	88		53	88
110+88 - 111+00	78	28		24	28
111+00 - 111+41	225	95		71	95
111+41 - 111+50	42	21		7	21
111+50 - 112+00	194	116		39	116
112+00 - 112+50	175	116		35	116
112+50 - 112+51	4	2		1	2
112+51 - 113+00	145	111		36	111
113+00 - 113+50	106	107		48	107
113+50 - 114+00	99	98		55	101
114+00 - 114+50	108	94		36	97
114+50 - 114+65	43	29		4	29
114+65 - 115+00	124	67		5	67
115+00 - 115+10	40	19		1	19
115+10 - 115+50	172	77		9	77
115+50 - 116+00	245	96		15	96
116+00 - 116+50	283	96		16	96
TOMAHAWK ROUNDABOUT	978	918		452	918
119+00 - 119+50	170	93		28	94
119+50 - 120+00	154	89		30	92
120+00 - 120+44	116	82		23	85
120+44 - 120+50	14	12		4	12
120+50 - 121+00	85	92		60	103
121+00 - 121+50	56	78		112	106
121+50 - 122+00	46	77		164	107
122+00 - 122+50	42	86		170	107
122+50 - 123+00	47	95		150	105
123+00 - 123+50	56	100		144	105
123+50 - 124+00	68	98		130	100
124+00 - 124+50	71	94		113	96
124+50 - 125+00	75	95		107	96
125+00 - 125+50	85	96		111	96
125+50 - 126+00	94	96		102	96
126+00 - 126+50	109	120		79	120
126+50 - 126+65	41	42		23	42
126+65 - 127+00	93	85		68	85
127+00 - 127+50	122	107		88	107
127+50 - 128+00	192	105		66	105
128+00 - 128+50	293	105		63	105
128+50 - 129+00	291	105		72	105
129+00 - 129+50	261	105		85	105
129+50 - 130+00	277	105		69	105
130+00 - 130+50	309	104		54	104
130+50 - 131+00	337	98		43	98

EARTH WORK TABULATION

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STA. - STA.	EXCAVATION COMMON CU YD (EV)	EXCAVATION SUBGRADE CU YD (EV)	EXCAVATION POND & CHANNEL	EMBANKMENT COMMON CU YD (CV)	EMBANKMENT SELECT GRANULAR CU YD (CV)
BASE BID					
CSAH 34					
131+00 - 131+50	169	46		16	46
WEST SHADOW ROUNDABOUT	1012	946		488	946
134+00 - 134+50	250	101		120	102
134+50 - 135+00	273	92		160	99
135+00 - 135+50	292	86		206	98
135+50 - 136+00	275	101		200	109
136+00 - 136+50	233	108		166	110
136+50 - 137+00	195	102		130	102
137+00 - 137+22	73	43		38	43
137+22 - 137+24	7	4		3	4
137+24 - 137+50	83	51		64	51
137+50 - 137+72	59	40		59	41
CSAH 34 SUBTOTAL	12407	8130		5108	8284
TOMAHAWK/SCHOOL ENTRANCE					
201+35 - 201+50	6	9		1	9
201+50 - 201+60	8	12		1	12
201+60 - 202+00	34	49		6	49
204+50 - 205+00	319	93		16	93
205+00 - 205+50	372	75		18	75
205+50 - 206+00	485	61		23	61
206+00 - 206+50	595	61		27	61
206+50 - 207+00	637	61		29	61
TOMAHAWK/SCHOOL SUBTOTAL	2456	421		121	421
TRAIL CONNECTION					
700+00 - 700+25	31				
700+25 - 700+50	25				
700+50 - 700+75	17				
700+75 - 701+00	15				
701+00 - 701+25	22				
701+25 - 701+50	69				
701+50 - 701+75	76				
701+75 - 702+00	56				
702+00 - 702+25	55				
702+25 - 702+50	30			2	
702+50 - 702+75	11			2	
702+75 - 703+00	3				
703+00 - 703+13	2				
TRAIL CONNECTION SUBTOTAL	412			4	
WEST SHADOW DRIVE					
301+27 - 301+50	15	20		6	41
301+50 - 301+78	50	50		8	50
301+78 - 302+00	52	38		6	38
304+50 - 304+77	60	38		7	41
304+77 - 305+00	51	27		4	31
305+00 - 305+50	86	53		11	66
305+50 - 306+00	44	58		16	67
306+00 - 306+40	41	49		13	50
WEST SHADOW DRIVE SUBTOTAL	399	333		71	384
CSAH 34 RECLAMATION					
138+00 - 138+50	9			12	
138+50 - 139+00	13			15	
139+00 - 139+50	11			16	
139+50 - 140+00	12			21	
140+00 - 140+50	15			26	
140+50 - 141+00	15			26	
141+00 - 141+50	15			23	
141+50 - 142+00	15			28	
142+00 - 142+50	13			26	
142+50 - 143+00	14			24	
143+00 - 143+50	15			28	
143+50 - 144+00	15			29	
144+00 - 144+50	13			33	

EARTH WORK TABULATION

H

STA. - STA.	EXCAVATION COMMON CU YD (EV)	EXCAVATION SUBGRADE CU YD (EV)	EXCAVATION POND & CHANNEL	EMBANKMENT COMMON CU YD (CV)	EMBANKMENT SELECT GRANULAR CU YD (CV)
BASE BID					
CSAH 34 RECLAMATION					
144+50 - 145+00	14			32	
145+00 - 145+50	17			24	
145+50 - 146+00	17			19	
146+00 - 146+50	14			23	
146+50 - 147+00	13			28	
147+00 - 147+50	14			30	
147+50 - 148+00	12			27	
148+00 - 148+50	11			26	
148+50 - 149+00	13			30	
149+00 - 149+50	14			25	
149+50 - 149+62	2			3	
CSAH 34 RECLAMATION SUBTOTAL	110			211	
CSAH 34 POND			2452	398	233
BASE BID TOTAL	15784	8884	2452	5913	9322
ADD ALTERNATE BID					
SCHOOL TRAIL					
800+00 - 800+25	4				
800+25 - 800+50	6				
800+50 - 800+75	7				
800+75 - 801+00	6				
801+00 - 801+25	4				
801+25 - 801+50	3				
801+50 - 801+75	3				
801+75 - 802+00	3				
802+00 - 802+25	1			1	
802+25 - 802+50				6	
802+50 - 802+75				9	
802+75 - 803+00				9	
803+00 - 803+25				8	
803+25 - 803+50	1			3	
803+50 - 803+61	1				
SCHOOL TRAIL SUBTOTAL	39			36	
PARKING LOT	3938	1512		246	1512
POND			2990		
ADD ALTERNATE BID TOTAL	3977	1512	2990	282	1512

NOTES:

1. THE EXCAVATION - COMMON QUANTITY INCLUDES TOPSOIL STRIPPING.
2. EXISTING PAVEMENT DEPTHS ARE ASSUMED TO BE APPROXIMATELY AS FOLLOWS:
   CSAH 34 MAINLINE - 6"
   SIDE STREETS - 4"
   PAVEMENT REMOVAL HAS BEEN SUBTRACTED FROM THE COMMON EXCAVATION AND/OR SUBGRADE EXCAVATION QUANTITIES.
3. TOP SOIL IS INCLUDED IN COMMON EMBANKMENT.
4. PLACING, HAULING AND DISPOSING OF EXCAVATED MATERIALS IS CONSIDERED INCIDENTAL.
5. ALL STOCKPILE AREAS SHALL BE APPROVED BY THE ENGINEER.
6. SOILS NOT USED ON THE PROJECT SHALL BECOME PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OUTSIDE OF THE RIGHT OF WAY. NO DIRECT COMPENSATION WILL BE PAID FOR THE PREPARATION OF AN ACCEPTABLE DISPOSAL PLAN OR FOR OFF-PROJECT DISPOSAL OF MATERIALS. DISPOSAL SITES SHALL BE LEFT IN A WELL GRADED CONDITION WITH ALL SOLID WASTES AND BOULDERS ADEQUATELY COVERED.
7. UNLESS DIRECTED OTHERWISE BY THE PROJECT ENGINEER, ANY MATERIAL THAT IS FOUND TO BE UNNECESSARY FOR THE CONSTRUCTION OF THE ROADWAY EMBANKMENT AND DISPOSAL OF SAME BECOMES NECESSARY, ON OR OFF THE PROJECT, THE DISPOSAL AND ALL RELATED ITEMS WILL BE CONSIDERED INCIDENTAL.

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NO.	DATE	BY	CHK	REVISIONS

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Plan By: CWK
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ANDREW J. PLOWMAN, PE

DATE 12/3/2020 LICENSE # 44200

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

EARTHWORK TABULATION
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 12 OF 195 SHEETS

CONSTRUCTION AND SOIL NOTES

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

2. PROOF ROLLING OF THE SUBGRADE WILL BE REQUIRED AS SPECIFIED BY 2111.2 (INCIDENTAL).

3. WHERE CONNECTING TO IN-PLACE ROADWAYS AT THE TERMINI OF PROPOSED NEW CONSTRUCTION, CUT VERTICALLY TO THE BOTTOM OF THE IN-PLACE SURFACING, THEN AT A 1(V):20(H) TAPER TO THE BOTTOM OF THE RECOMMENDED SUBGRADE EXCAVATION.

4. THE INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF PRIVATE UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL-INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING THEIR OWN DETERMINATIONS AS TO THE TYPE AND LOCATION OF PRIVATE UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO. CONTRACTOR WILL CALL GOPHER STATE ONE A MINIMUM OF 48 HOURS PRIOR TO EXCAVATION.

5. 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.

6. 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 (INCIDENTAL).

7. OBTAIN COMPACTION OF THE GRADING AND AGGREGATE PORTIONS OF CONSTRUCTION IN ACCORDANCE WITH THE "SPECIFIED DENSITY METHOD" REQUIREMENTS AS INDICATED IN 2211. IF RECYCLED MATERIAL IS USED FOR AGGREGATE BASE, THE "PENETRATION INDEX METHOD" WILL BE USED.

8. NO EXTRA PAYMENT WILL BE MADE FOR MOVING, PLACING, OR TEMPORARY STOCKPILING OF EXCAVATION, EMBANKMENT AND/OR BORROW MATERIAL.

9. UNLESS OTHERWISE SPECIFICALLY ALLOWED OR REQUIRED BY THE CONTRACT, BITUMINOUS AND CONCRETE ITEMS DISTURBED BY CONSTRUCTION SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND MAY BE RECYCLED OR DISPOSED OF OFF THE RIGHT OF WAY.

10. PROVIDE A UNIFORM TACK COAT AS DOCUMENTED IN THE MOST CURRENT SPEC. 2357 - BITUMINOUS TACK COAT REQUIREMENTS

11. PIPE SEWERS CONNECTING MANHOLES AND CATCH BASINS SHALL BE IN ACCORDANCE WITH SPEC. 2503. BEDDING AND BACKFILL SHALL CONSIST OF UNIFORM COMMON EMBANKMENT MATCHING ADJACENT SOILS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

12. TEMPORARY EROSION CONTROL - TEMPORARY EROSION CONTROL DEVICES AND THEIR SUGGESTED LOCATIONS HAVE BEEN SHOWN IN THE PLANS ALONG WITH PAY ITEMS FOR THEIR USE. THIS DOES NOT HOWEVER RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITIES TO CONDUCT HIS CONSTRUCTION IN A MANNER THAT WILL CONTROL EROSION. RESPONSIBILITY FOR CONTROLLING EROSION AND MAINTENANCE OF EROSION CONTROL AS SET IN MNDOT SPECIFICATIONS 1717, 1803, 2101, 2106, 2573, 2575, AND IS AMENDED BY THE SPECIAL PROVISIONS.

13. 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.

14. EXCESS GRANULAR MATERIAL MUST BE DEEMED EXCESS BY THE ENGINEER BEFORE REMOVED FROM THE PROJECT.

15. NO OVER-EXCAVATION WILL BE ALLOWED ON THIS PROJECT.

16. OBTAIN COMPACTION ON ALL BITUMINOUS PORTIONS OF CONSTRUCTION IN ACCORDANCE WITH THE "MAXIMUM DENSITY METHOD" REQUIREMENTS.

17. OBTAIN COMPACTION ON GRADING PORTIONS OF CONSTRUCTION IN ACCORDANCE WITH THE "MODIFIED PENETRATION INDEX" REQUIREMENTS.

18. BITUMINOUS MATERIAL MUST BE REMOVED FROM THE PROJECT AND CANNOT BE USED AS EMBANKMENT.

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

MNDOT STANDARD PLATES

PLATE NO.	DESCRIPTION
1070M	SUPPLEMENTAL PAVEMENT REINFORCEMENT
1103L	TYPICAL DOWEL BAR ASSEMBLY (2 SHEETS)
3000M	REINFORCED CONCRETE PIPE (6 SHEETS)
3006H	GASKET JOINT FOR R.C. PIPE (2 SHEETS)
3007F	SHEAR REINFORCEMENT FOR PRECAST DRAINAGE STRUCTURES
3040F	CORRUGATED METAL PIPE CULVERT (STANDARD 2-2/3" X 1/2" CORRUGATION)
3100G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3133D	RIPRAP AT RCP OUTLETS
3145G	CONCRETE PIPE OR PRECAST BOX CULVERT TIES
4011E	PRECAST CONCRETE BASE
4020J	MANHOLE OR CATCH BASIN (FOR USE WITH OR WITHOUT TRAFFIC LOADS) (2 SHEETS)
4022A	MANHOLE OR CATCH BASIN COVER (3 FT. X 2 FT. OPENING)
4180J	MANHOLE OR CATCH BASIN STEP
7038A	DETECTABLE WARNING SURFACE TRUNCATED DOMES
7100H	CONCRETE CURB AND GUTTER (DESIGN B AND DESIGN V)
7102K	CONCRETE CURB AND GUTTER (DESIGN D, DESIGN S, AND DESIGN R)
7111J	INSTALLATION OF CATCH BASIN CASTINGS (CONCRETE CURB AND GUTTER)
7113A	CONCRETE APPROACH NOSE DETAIL
8000J	CHANNELIZERS
8106D	EQUIPMENT PAD B
8127E	LIGHT FOUNDATION - DESIGN E PRECAST/CAST-IN-PLACE (40 FT. POLE OR LESS) (2 SHEETS)
9000E	APPROACHES AND ENTRANCES - RECOMMENDED STANDARDS
9322K	CHAIN LINK FENCE (2 SHEETS)

SEE SHEET 182 AND 191 FOR ADDITIONAL STANDARD PLATES.

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SOIL AND CONSTRUCTION NOTES
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **13** OF **195** SHEETS

GENERAL NOTES:

- THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02 ENTITLED STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA.
- THE CONTRACTOR WILL BE RESPONSIBLE TO COORDINATE WITH THE UTILITY COMPANIES. CALL GOPHER STATE ONE CALL AT 1-800-252-1166 AT LEAST 48 HOURS PRIOR TO EXCAVATION OR CONSTRUCTION.
- ALL UTILITY WORK SHOWN ON THESE UTILITY PLANS SHALL BE DONE BY OTHERS UNLESS OTHERWISE NOTED. SEE REMARKS COLUMN.
- THE REMARKS COLUMN IS BASED UPON THE BEST INFORMATION AVAILABLE AND MAY NOT REFLECT THE ACTUAL EFFECTS ON THE UTILITIES BY CONSTRUCTION. ACTUAL DETERMINATIONS WILL BE MADE IN THE FIELD DURING CONSTRUCTION.
- SEE SPECIAL PROVISIONS SECTION 1507 (UTILITY PROERTY SERVICE) FOR CONTRACTOR REQUIREMENTS FOR PLACING EMBANKMENT MATERIALS FOR PRIVATE UTILITY RELOCATIONS.

UTILITY ABBREVIATIONS

T-BUR	= BURIED TELEPHONE LINE
2, T-BUR	= BURIED TELEPHONE LINE (2 LINES)
PED	= PEDESTAL
HH	= HANDHOLE
3, T-BUR	= BURIED TELEPHONE LINE (3 LINES)
F/O	= AERIAL FIBER OPTIC LINE
F/O-BUR	= BURIED FIBER OPTIC LINE
COMM-BUR	= BURRIED COMMUNICATION LINE
GAS	= UNDERGROUND GAS MAIN
P-BUR	= BURIED POWER LINE
OHP	= OVERHEAD POWER LINE
GV	= GATE VALVE
PWR PT	= POWER POINT
PP	= POWER POLE

UTILITY OWNERS
THE FOLLOWING IS A LIST OF UTILITY COMPANIES INVOLVED IN THIS PROJECT
CENTERPOINT = CENTERPOINT ENERGY MINNESOTA GAS
CTL = CENTURYLINK
CITY = CITY OF LINO LAKES
COMCAST = COMCAST CABLE, LLC
XCEL = XCEL ENERGY
VERIZON = MCI COMMUNICATIONS SERVICES, INC.

COMMUNICATIONS - CENTURYLINK

ALIGNMENT	STATION TO STATION	OFFSETS	DESCRIPTION	OWNER	ACTION				REMARKS
					ADJUST	RELOCATE	REMOVE	LEAVE AS IS	
CSAH 34 EB	100+00 TO 105+14	195' LT TO 52' RT	F/O-BUR	CTL				X	
CSAH 34 EB	100+00 TO 100+94	52' RT TO 92' RT	T-BUR	CTL				X	
CSAH 34 EB	100+00 TO 132+43	19' RT TO 75' RT	T-BUR	CTL	X				ADJUST FOR GRADING.
CSAH 34 EB	100+00 TO 100+72	419' LT TO 60' LT	F/O-BUR	CTL				X	
CSAH 34 EB	100+27 TO 101+38	37' RT TO 509' RT	F/O-BUR	CTL		X			RELOCATE FOR TRAIL.
CSAH 34 EB	100+55	68' LT	PED	CTL				X	
CSAH 34 EB	101+11 TO 103+10	70' LT TO 69' LT	T-BUR	CTL		X			RELOCATE FOR TRAIL
CSAH 34 EB	101+15	36' RT	PED	CTL		X			RELOCATE AS NEEDED FOR ROUND-A-BOUT.
CSAH 34 EB	101+24	34' RT	PED	CTL		X			RELOCATE FOR ROADWAY.
CSAH 34 EB	101+33	34' RT	PED	CTL		X			RELOCATE AS NEEDED FOR ROUND-A-BOUT.
CSAH 34 EB	101+42	34' RT	PED	CTL				X	
CSAH 34 EB	101+54 TO 105+61	64' LT TO 35' RT	F/O-BUR	CTL				X	
CSAH 34 EB	101+54 TO 142+86	28' RT TO 49' RT	F/O-OH	CTL				X	
CSAH 34 EB	102+39 TO 102+63	165' LT TO 69' LT	T-BUR	CTL				X	
CSAH 34 EB	102+85 TO 103+10	163' LT TO 69' LT	T-BUR	CTL		X			RELOCATE AS NEEDED FOR ROUND-A-BOUT.
CSAH 34 EB	103+10 TO 106+56	69' LT TO 57' LT	T-BUR	CTL		X			RELOCATE FOR ROADWAY.
CSAH 34 EB	103+11	71' LT	PED	CTL		X			RELOCATE AS NEEDED FOR ROUND-A-BOUT.
CSAH 34 EB	103+26	34' RT	PED	CTL		X			RELOCATE FOR TRAIL.
CSAH 34 EB	103+83	69' LT	PED	CTL				X	
CSAH 34 EB	104+52 TO 106+68	36' RT TO 517' RT	F/O-BUR	CTL				X	
CSAH 34 EB	104+85 TO 107+77	161' RT TO 370' RT	F/O-BUR	CTL				X	
CSAH 34 EB	104+93	68' LT	PED	CTL		X			RELOCATE FOR TRAIL.
CSAH 34 EB	105+51	35' RT	PED	CTL				X	
CSAH 34 EB	106+56 TO 107+83	57' LT TO 51' LT	T-BUR	CTL				X	
CSAH 34 EB	107+68	40' RT	PED	CTL		X			RELOCATE AS NEEDED FOR ROUND-A-BOUT.
CSAH 34 EB	107+83 TO 115+89	51' LT TO 17' LT	T-BUR	CTL		X			RELOCATE AS NEEDED FOR ROUND-A-BOUT.
CSAH 34 EB	108+69	38' RT	PED	CTL				X	
CSAH 34 EB	108+72	38' 37.7747	PED	CTL				X	
CSAH 34 EB	108+96 TO 109+54	39' RT TO 667' RT	F/O-BUR	CTL		X			RELOCATE FOR TRAIL.
CSAH 34 EB	110+77	40' RT	PED	CTL				X	
CSAH 34 EB	112+73	38' LT	PED	CTL				X	
CSAH 34 EB	112+76	30' RT	PED	CTL				X	
CSAH 34 EB	114+87	52' RT	PED	CTL				X	
CSAH 34 EB	114+90	53' RT	PED	CTL				X	
CSAH 34 EB	115+34	22' LT	PED	CTL		X			RELOCATE AS NEEDED FOR ROUND-A-BOUT.
CSAH 34 EB	115+81	71' RT	PED	CTL					
CSAH 34 EB	115+89 TO 122+46	48' LT TO 17' LT	T-BUR	CTL		X			RELOCATE AS NEEDED FOR ROUND-A-BOUT.
CSAH 34 EB	116+14	6' RT	TEL MH	CTL				X	
CSAH 34 EB	117+17	37' LT	PED	CTL				X	
CSAH 34 EB	117+28 TO 117+61	18' LT TO 49' RT	T-BUR	CTL				X	
CSAH 34 EB	117+31 TO 117+95	18' LT TO 438' RT	T-BUR	CTL				X	
CSAH 34 EB	117+60	51' RT	PED	CTL				X	
CSAH 34 EB	117+61	49' RT	PED	CTL				X	
CSAH 34 EB	119+53	54' RT	PED	CTL				X	
CSAH 34 EB	121+79	54' RT	PED	CTL				X	
CSAH 34 EB	122+46 TO 142+81	48' LT TO 43' LT	T-BUR	CTL				X	
CSAH 34 EB	123+83 TO 124+30	44' RT TO 217' RT	T-BUR	CTL	X				ADJUST FOR ROADWAY.
CSAH 34 EB	126+40	40' RT	PED	CTL				X	
CSAH 34 EB	127+80 TO 127+82	139' LT TO 57' LT	T-BUR	CTL				X	
CSAH 34 EB	127+80 TO 127+86	194' LT TO 139' LT	T-BUR	CTL				X	
CSAH 34 EB	130+31 TO 130+37	159' LT TO 54' LT	T-BUR	CTL	X				ADJUST FOR ROADWAY.
CSAH 34 EB	130+46	60' LT	PED	CTL	X				ADJUST FOR ROADWAY.
CSAH 34 EB	132+43 TO 132+66	19' RT TO 34' RT	T-BUR	CTL	X				ADJUST FOR GRADING.
CSAH 34 EB	132+43 TO 155+29	2' RT TO 384' RT	T-BUR	CTL				X	
CSAH 34 EB	132+66 TO 132+79	34' RT TO 280' RT	T-BUR	CTL				X	
CSAH 34 EB	132+91 TO 133+19	14' RT TO 154' RT	T-BUR	CTL	X				ADJUST FOR ROADWAY.
CSAH 34 EB	133+38 TO 133+82	303' LT TO 72' LT	T-BUR	CTL				X	
CSAH 34 EB	137+53 TO 137+53	38' RT TO 338' RT	T-BUR	CTL				X	
CSAH 34 EB	138+10 TO 138+10	38' RT TO 341' RT	T-BUR	CTL	X				ADJUST FOR ROADWAY.
CSAH 34 EB	138+11	61' RT	PED	CTL	X				ADJUST FOR ROADWAY.
CSAH 34 EB	138+15	62' RT	PED	CTL	X				ADJUST FOR GRADING.
CSAH 34 EB	139+40	41' LT	PED	CTL				X	
CSAH 34 EB	140+42	45' RT	PED	CTL				X	
CSAH 34 EB	140+91 TO 140+91	39' RT TO 304' RT	T-BUR	CTL	X				ADJUST FOR ROADWAY.
CSAH 34 EB	140+93	48' RT	PED	CTL				X	
CSAH 34 EB	141+44	61' RT	PED	CTL				X	
CSAH 34 EB	141+45 TO 141+45	39' RT TO 304' RT	T-BUR	CTL				X	
CSAH 34 EB	142+62 TO 142+86	41' RT TO 51' RT	F/O-BUR	CTL	X				ADJUST FOR ROADWAY.
CSAH 34 EB	142+62 TO 155+30	54' RT TO 392' RT	F/O-BUR	CTL				X	
CSAH 34 EB	142+81	44' LT	3, CABINET	CTL				X	
CSAH 34 EB	142+81 TO 142+81	43' LT TO 39' RT	T-BUR	CTL	X				ADJUST FOR ROADWAY.
CSAH 34 EB	142+90	51' RT	PED	CTL	X				ADJUST FOR ROADWAY.
CSAH 34 EB	142+97	51' RT	PED	CTL	X				ADJUST FOR GRADING.
CSAH 34 EB	143+31 TO 146+62	40' RT TO 211' RT	T-BUR	CTL				X	
CSAH 34 EB	146+62	51' RT	PED	CTL	X				ADJUST FOR ROADWAY.
CSAH 34 EB	151+11 TO 151+15	40' RT TO 91' RT	T-BUR	CTL				X	

NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

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ANDREW J. PLOWMAN, PE

DATE 12/3/2020 LICENSE # 44200

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

UTILITY TABULATION
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 14 OF 195 SHEETS

COMMUNICATIONS - COMCAST

ALIGNMENT	STATION TO STATION	OFFSETS	DESCRIPTION	OWNER	ACTION				REMARKS
					ADJUST	RELOCATE	REMOVE	LEAVE AS IS	
CSAH 34 EB	100+00 TO 103+30	26'RT TO 36'RT	F/O-BUR	COMCAST	X				ADJSUT FOR ROADWAY.
CSAH 34 EB	103+27	36'RT	HH	COMCAST		X			RELOCATE FOR TRAIL.
CSAH 34 EB	103+30 TO 105+65	36'RT TO 37'RT	F/O-BUR	COMCAST	X				ADJUST FOR TRAIL.
CSAH 34 EB	105+31 TO 105+45	70'LT TO 9'RT	F/O-BUR	COMCAST	X				ADJUST FOR ROADWAY.
CSAH 34 EB	105+45 TO 105+65	9'RT TO 37'RT	F/O-BUR	COMCAST				X	
CSAH 34 EB	105+51	36'RT	HH	COMCAST		X			RELOCATE FOR TRAIL.
CSAH 34 EB	105+65 TO 114+97	37'RT TO 46'RT	F/O-BUR	COMCAST	X				ADJUST FOR ROADWAY.
CSAH 34 EB	106+94 TO 107+54	86'LT TO 36'RT	F/O-BUR	COMCAST					ADJUST FOR TRAIL.
CSAH 34 EB	107+54	36'RT	PED	COMCAST		X			RELOCATE FOR TRAIL.
CSAH 34 EB	112+70 TO 112+92	93'LT TO 36'RT	F/O-BUR	COMCAST	X				ADJUST FOR ROADWAY.
CSAH 34 EB	112+91	36'RT	PED	COMCAST		X			RELOCATE FOR TRAIL.
CSAH 34 EB	114+97 TO 115+02	46'RT TO 60'RT	F/O-BUR	COMCAST				X	
CSAH 34 EB	115+02	60'RT	HH	COMCAST				X	
CSAH 34 EB	115+02 TO 117+39	60'RT TO 71'RT	F/O-BUR	COMCAST				X	
CSAH 34 EB	117+38	51'RT	PED	COMCAST				X	
CSAH 34 EB	117+39 TO 121+79	53'RT TO 71'RT	F/O-BUR	COMCAST				X	
CSAH 34 EB	117+39 TO 117+71	55'RT TO 71'RT	T-BUR	COMCAST				X	
CSAH 34 EB	117+71 TO 117+83	55'RT TO 197'RT	T-BUR	COMCAST				X	
CSAH 34 EB	121+79 TO 124+21	47'RT TO 53'RT	F/O	COMCAST	X				ADJUST FOR ROADWAY AT WEST END OF SEGMENT.
CSAH 34 EB	124+21 TO 126+13	42'RT TO 47'RT	F/O	COMCAST		X			ADJUST AND RELOCATE TO MATCH XCEL,F/O MOUNT ON XCEL POLES.
CSAH 34 EB	125+60 TO 126+87	108'LT TO 117'RT	T-BUR	COMCAST		X			RELOCATE WITH XCEL POLE.
CSAH 34 EB	126+13 TO 127+03	39'RT TO 42'RT	F/O	COMCAST				X	
CSAH 34 EB	126+40	40'RT	HH	COMCAST	X				ADJUST FOR GRADING.
CSAH 34 EB	127+03 TO 129+39	37'RT TO 39'RT	F/O	COMCAST				X	
CSAH 34 EB	129+39 TO 131+19	37'RT TO 48'RT	F/O	COMCAST	X				ADJUST FOR ROADWAY.
CSAH 34 EB	130+41 TO 130+47	68'LT TO 34'RT	T-BUR	COMCAST	X				ADJUST FOR ROADWAY.
CSAH 34 EB	130+41 TO 131+19	34'RT TO 48'RT	T-BUR	COMCAST	X				ADJSUT FOR ROADWAY.
CSAH 34 EB	131+19 TO 133+58	38'RT TO 48'RT	F/O	COMCAST				X	
CSAH 34 EB	133+38	72'LT	PED	COMCAST		X			RELOCATE FOR ROUND-A-BOUT.
CSAH 34 EB	133+38 TO 133+58	76'LT TO 38'RT	F/O-BUR	COMCAST	X				ADJUST FOR ROADWAY.
CSAH 34 EB	133+58 TO 135+28	38'RT TO 47'RT	F/O	COMCAST		X			RELOCATE FOR ROUND-A-BOUT.
CSAH 34 EB	135+28 TO 137+60	46'RT TO 47'RT	F/O	COMCAST		X			RELOCATE WITH PED AT SOUTH OF SEGMENT.
CSAH 34 EB	137+60 TO 137+60	142'LT TO 46'RT	F/O-BUR	COMCAST		X			RELOCATE WITH XCEL POLE AT SOUTH OF SEGMENT.
CSAH 34 EB	137+60 TO 139+07	45'RT TO 46'RT	F/O	COMCAST		X			RELOCATE WITH XCEL POLE AT SOUTH OF SEGMENT.
CSAH 34 EB	139+07 TO 140+42	45'RT TO 45'RT	F/O	COMCAST	X				ADJUST FOR ROADWAY.
CSAH 34 EB	140+42 TO 142+86	45'RT TO 46'RT	F/O	COMCAST	X				ADJUST FOR ROADWAY.
CSAH 34 EB	142+86 TO 142+86	93'LT TO 46'RT	F/O-BUR	COMCAST	X				ADJSUT FOR ROADWAY.
CSAH 34 EB	142+86 TO 145+32	45'RT TO 46'RT	F/O	COMCAST				X	
CSAH 34 EB	145+32 TO 147+91	45'RT TO 46'RT	F/O	COMCAST	X				ADJUST FOR ROADWAY.
CSAH 34 EB	147+91 TO 150+40	45'RT TO 46'RT	F/O	COMCAST		X			RELOCATE FOR ROUND-A-BOUT.
CSAH 34 EB	150+40 TO 153+13	41'RT TO 45'RT	F/O	COMCAST		X			RELOCATE WITH PED AT SOUTH OF SEGMENT.

COMMUNICATIONS - VERIZON

ALIGNMENT	STATION TO STATION	OFFSETS	DESCRIPTION	OWNER	ACTION				REMARKS
					ADJUST	RELOCATE	REMOVE	LEAVE AS IS	
CSAH 34 EB	100+00 TO 157+13	8'RT TO 119'RT	F/O-BUR	VERIZON				X	
CSAH 34 EB	101+55 TO 105+55	35'RT TO 39'RT	F/O-BUR	VERIZON		X			EXTENDS INTO PROPOSED ROADWAY.
CSAH 34 EB	103+26 TO 103+72	26'RT TO 27'RT	F/O-BUR	VERIZON		X			EXTENDS INTO PROPOSED ROADWAY.
CSAH 34 EB	108+72 TO 109+05	33'RT TO 37'RT	F/O-BUR	VERIZON				X	

NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

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ANDREW J. PLOWMAN, PE
DATE 12/3/2020 LICENSE # 44200

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

UTILITY TABULATION
S.A.P. 002-634-003 & S.A.P. 210-020-010

PLOTTED/REVISED: 12/3/2020

NATURAL GAS - CENTERPOINT ENERGY

ALIGNMENT	STATION TO STATION	OFFSETS	DESCRIPTION	OWNER	ACTION				REMARKS
					ADJUST	RELOCATE	REMOVE	LEAVE AS IS	
CSAH 34 EB	100+00 TO 100+60	37' LT TO 37' LT	GAS - ABANDONED	CENTERPOINT			X		ABANDONED.
CSAH 34 EB	100+00 TO 103+07	21' RT TO 21' RT	GAS - ABANDONED	CENTERPOINT				X	ABANDONED.
CSAH 34 EB	100+60 TO 100+60	21' RT TO 37' LT	GAS - ABANDONED	CENTERPOINT				X	ABANDONED.
CSAH 34 EB	101+38 TO 101+38	21' RT TO 63' LT	GAS - ABANDONED	CENTERPOINT			X		ABANDONED.
CSAH 34 EB	102+90 TO 103+10	41' RT TO 63' LT	GAS - ABANDONED	CENTERPOINT			X		ABANDONED.
CSAH 34 EB	103+07 TO 108+96	13' RT TO 26' RT	GAS - ABANDONED	CENTERPOINT				X	ABANDONED.
CSAH 34 EB	104+24 TO 104+24	24' RT TO 65' LT	GAS - ABANDONED	CENTERPOINT			X		ABANDONED.
CSAH 34 EB	106+35 TO 106+35	21' RT TO 65' LT	GAS - ABANDONED	CENTERPOINT			X		ABANDONED.
CSAH 34 EB	107+31 TO 107+34	18' RT TO 55' LT	GAS - ABANDONED	CENTERPOINT			X		ABANDONED.
CSAH 34 EB	108+92 TO 108+92	13' RT TO 82' LT	GAS - ABANDONED	CENTERPOINT			X		ABANDONED.
CSAH 34 EB	114+87 TO 115+13	0' RT TO 117' LT	GAS - ABANDONED	CENTERPOINT			X		ABANDONED.
CSAH 34 EB	130+55 TO 130+62	0' RT TO 102' LT	GAS - ABANDONED	CENTERPOINT			X		ABANDONED.
CSAH 34 EB	150+98 TO 151+43	45' RT TO 71' RT	GAS - ABANDONED	CENTERPOINT			X		ABANDONED.
CSAH 34 EB	100+00 TO 101+38	63' LT TO 63' LT	GAS	CENTERPOINT				X	
CSAH 34 EB	101+38 TO 101+39	63' LT TO 106' LT	GAS	CENTERPOINT				X	
CSAH 34 EB	100+38 TO 102+90	63' LT TO 63' LT	GAS	CENTERPOINT				X	
CSAH 34 EB	102+51 TO 102+90	63' RT TO 274' RT	GAS	CENTERPOINT				X	
CSAH 34 EB	102+90 TO 103+17	63' LT TO 63' LT	GAS	CENTERPOINT				X	
CSAH 34 EB	103+14 TO 103+17	64' LT TO 312' RT	GAS	CENTERPOINT				X	
CSAH 34 EB	103+17	61' LT	GV	CENTERPOINT				X	
CSAH 34 EB	103+17 TO 104+24	64' LT TO 64' LT	GAS	CENTERPOINT				X	
CSAH 34 EB	103+21 TO 108+96	22' RT TO 39' RT	GAS	CENTERPOINT		X			RELOCATE OUTSIDE ROUND-A-BOUT.
CSAH 34 EB	104+24 TO 105+75	65' LT TO 65' LT	GAS	CENTERPOINT				X	
CSAH 34 EB	104+24 TO 104+66	65' LT TO 171' LT	GAS	CENTERPOINT				X	
CSAH 34 EB	105+75 TO 106+35	65' LT TO 65' LT	GAS	CENTERPOINT	X				ADJUST FOR ROADWAY.
CSAH 34 EB	106+35 TO 107+34	55' LT TO 65' LT	GAS	CENTERPOINT	X				ADJUST FOR ROADWAY.
CSAH 34 EB	107+34 TO 107+74	54' LT TO 55' LT	GAS	CENTERPOINT		X			RELOCATE FOR PEDESTRIAN RAMP.
CSAH 34 EB	107+74 TO 109+06	54' LT TO 13' RT	GAS	CENTERPOINT	X				ADJUST FOR ROADWAY.
CSAH 34 EB	105+75 TO 105+75	65' LT TO 71' RT	GAS	CENTERPOINT				X	
CSAH 34 EB	106+35 TO 106+35	65' LT TO 171' LT	GAS	CENTERPOINT	X				ADJUST FOR ROADWAY.
CSAH 34 EB	107+34 TO 107+38	55' LT TO 113' LT	GAS	CENTERPOINT				X	
CSAH 34 EB	107+74 TO 107+80	54' LT TO 70' RT	GAS	CENTERPOINT				X	
CSAH 34 EB	108+96 TO 109+48	13' RT TO 15' RT	GAS	CENTERPOINT				X	
CSAH 34 EB	109+07	9' RT	GV	CENTERPOINT				X	
CSAH 34 EB	109+48 TO 109+49	15' RT TO 315' RT	GAS	CENTERPOINT					
CSAH 34 EB	109+48 TO 110+05	15'RT TO 18' RT	GAS	CENTERPOINT				X	
CSAH 34 EB	110+05 TO 110+07	18' RT TO 148' LT	GAS	CENTERPOINT	X				ADJUST FOR ROADWAY.
CSAH 34 EB	112+54 TO 112+61	22' RT TO 156' LT	GAS	CENTERPOINT	X				ADJUST FOR ROADWAY.
CSAH 34 EB	110+05 TO 112+61	18' RT TO 22' RT	GAS	CENTERPOINT				X	
CSAH 34 EB	112+61 TO 113+92	22' RT TO 23' RT	GAS	CENTERPOINT	X				ADJUST FOR ROADWAY.
CSAH 34 EB	113+92 TO 114+07	23' RT TO 67' RT	GAS	CENTERPOINT	X				ADJUST FOR ROADWAY.
CSAH 34 EB	113+92 TO 117+98	13' RT TO 23' RT	GAS	CENTERPOINT				X	
CSAH 34 EB	117+91 TO 117+98	13' RT TO 443' RT	GAS	CENTERPOINT	X				ADJUST FOR ROADWAY.

POWER - XCEL

ALIGNMENT	STATION TO STATION	OFFSETS	DESCRIPTION	OWNER	ACTION				REMARKS
					ADJUST	RELOCATE	REMOVE	LEAVE AS IS	
CSAH 34 EB	100+00 TO 102+75	219' LT TO 31' RT	P-BUR	XCEL				X	
CSAH 34 EB	100+02	45' RT	ANC	XCEL				X	
CSAH 34 EB	100+02	66' RT	PP	XCEL				X	
CSAH 34 EB	100+03	47' RT	ANC	XCEL	X				ADJUST AS NEEDED FOR ROADWAY.
CSAH 34 EB	100+03	49' RT	ANC	XCEL	X				ADJUST AS NEEDED FOR ROADWAY.
CSAH 34 EB	100+05	37' RT	PP	XCEL		X			RELOCATE FOR EAST POLE.
CSAH 34 EB	101+06	32' RT	P VAULT	XCEL		X			RELOCATE FOR ROADWAY.
CSAH 34 EB	101+07 TO 103+20	69' LT TO 32' RT	P-BUR	XCEL		X			RELOCATE AS NEEDED FOR PP.
CSAH 34 EB	101+47	32'RT	P PED	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	101+54	34' RT	PP	XCEL		X			RELOCATE FOR TRAIL.
CSAH 34 EB	101+54 TO 103+18	35' RT TO 35' RT	OHP	XCEL		X			RELOCATE AS NEEDED FOR PP.
CSAH 34 EB	101+54	35' RT	PP	XCEL				X	
CSAH 34 EB	101+64 TO 103+15	26' RT TO 27' RT	P-BUR	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	102+53	48' LT	P MH	XCEL		X			RELOCATE FOR TRAIL.
CSAH 34 EB	102+66 TO 102+96	217' LT TO 104' LT	P-BUR	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	102+96 TO 103+15	104' LT TO 26' RT	P-BUR	XCEL		X			RELOCATE FOR TRAIL.
CSAH 34 EB	103+15 TO 103+18	35' RT TO 208' RT	P-BUR	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	103+18	34' RT	PP	XCEL				X	
CSAH 34 EB	103+18 TO 105+55	33' RT TO 35' RT	OHP	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	103+18	35' RT	PP	XCEL		X			RELOCATE FOR TRAIL.
CSAH 34 EB	103+24	50' LT	P MH	XCEL		X			RELOCATE WITH PP.

TABULATION CONTINUED ON SHEET 17

PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\4400-000_eu01.dgn

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Design By: AJP
Plan By: CWK
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ANOKA COUNTY, MINNESOTA

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TABULATION CONTINUED FROM SHEET 16

POWER - XCEL

ALIGNMENT	STATION TO STATION	OFFSETS	DESCRIPTION	OWNER	ACTION				REMARKS
					ADJUST	RELOCATE	REMOVE	LEAVE AS IS	
CSAH 34 EB	103+30	36' RT	P HH	XCEL				X	
CSAH 34 EB	103+94	46' LT	P MH	XCEL				X	
CSAH 34 EB	105+11 TO 105+55	176' LT TO 33' RT	P-BUR	XCEL					RELOCATE WITH PP.
CSAH 34 EB	105+14	66' LT	ANC	XCEL				X	
CSAH 34 EB	105+15	67' LT	ANC	XCEL				X	
CSAH 34 EB	105+20	75' LT	PP	XCEL				X	
CSAH 34 EB	105+43	34' RT	ANC	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	105+55 TO 107+68	33' RT TO 36' RT	OHP	XCEL		X			RELOCATE FOR TRAIL.
CSAH 34 EB	105+56	41' RT	ANC	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	105+56	34' RFT	PP	XCEL				X	
CSAH 34 EB	105+65	36' RT	P VAULT	XCEL				X	
CSAH 34 EB	106+40	65' LT	L POLE	XCEL				X	
CSAH 34 EB	107+68	36' RT	PP	XCEL				X	
CSAH 34 EB	107+68 TO 108+65	36' RT TO 37' RT	OHP	XCEL				X	
CSAH 34 EB	107+68	36' RT	PP	XCEL				X	
CSAH 34 EB	107+72	42' RT	ANC	XCEL				X	
CSAH 34 EB	107+83	51' LT	P PED	XCEL				X	
CSAH 34 EB	107+84	35' RT	ANC	XCEL				X	
CSAH 34 EB	108+64	36' RT	PP	XCEL				X	
CSAH 34 EB	108+65 TO 109+10	37' RT TO 349' RT	P-BUR	XCEL				X	
CSAH 34 EB	108+65 TO 110+74	37' RT TO 39' RT	OHP	XCEL				X	
CSAH 34 EB	108+65	37' RT	PP	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	108+94	39' RT	PP	XCEL		X			RELOCATE FOR PEDESTRIAN RAMP.
CSAH 34 EB	110+74	39' RT	PP	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	110+74 TO 111+16	59' LT TO 39' RT	OHP	XCEL				X	
CSAH 34 EB	110+74 TO 112+00	39' RT TO 41' RT	OHP	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	110+74	39' RT	PP	XCEL		X			RELOCATE FOR TRAIL.
CSAH 34 EB	110+96 TO 111+16	141' LT TO 59' LT	P-BUR	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	111+16	60' -59.677	PP	XCEL				X	
CSAH 34 EB	112+00	40' 40.2176	PP	XCEL	X				ADJUST FOR ROADWAY.
CSAH 34 EB	112+00 TO 112+83	41' RT TO 41' RT	OHP	XCEL				X	
CSAH 34 EB	112+47 TO 112+64	125' LT TO 56' LT	P-BUR	XCEL				X	
CSAH 34 EB	112+64	40' RT	ANC	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	112+64	57' LT	PP	XCEL		X			RELOCATE FOR TRAIL.
CSAH 34 EB	112+64 TO 112+83	56' LT TO 41' RT	OHP	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	112+64	56' LT	PP	XCEL				X	
CSAH 34 EB	112+83	40' RT	PP	XCEL		X			RELOCATE FOR ROUND-A-BOUT
CSAH 34 EB	112+83 TO 114+92	41' RT TO 53' RT	OHP	XCEL	X				ADJUST AS NEEDED FOR ROADWAY.
CSAH 34 EB	114+92	52' RT	PP	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	114+92 TO 117+58	53' RT TO 53' RT	OHP	XCEL		X			RELOCATE FOR TRAIL.
CSAH 34 EB	115+02	60' RT	P VAULT	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	116+94	66' RT	P HH	XCEL		X			RELOCATE FOR ROADWAY.
CSAH 34 EB	117+39	71' RT	P PED	XCEL			X		NO LONGER NEEDED FOR DYNAMIC SIGN.
CSAH 34 EB	117+53	63' RT	ANC	XCEL			X		NO LONGER NEEDED FOR DYNAMIC SIGN.
CSAH 34 EB	117+58	53' RT	PP	XCEL			X		NO LONGER NEEDED FOR DYNAMIC SIGN.
CSAH 34 EB	117+58 TO 117+85	49' RT TO 166' RT	P-BUR	XCEL			X		NO LONGER NEEDED FOR DYNAMIC SIGN.
CSAH 34 EB	117+58 TO 119+48	53' RT TO 54' RT	OHP	XCEL			X		NO LONGER NEEDED FOR DYNAMIC SIGN.
CSAH 34 EB	117+58	53' RT	PP	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	117+92 TO 119+48	46' RT TO 158' RT	P-BUR	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	119+48	53' RT	PP	XCEL		X			RELOCATE FOR TRAIL.
CSAH 34 EB	119+48 TO 121+80	53' RT TO 54' RT	OHP	XCEL				X	
CSAH 34 EB	119+48	54' RT	PP	XCEL				X	
CSAH 34 EB	120+64	55' LT	L POLE	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	120+69	48' LT	P HH	XCEL		X			RELOCATE FOR PEDESTRIAN RAMP.
CSAH 34 EB	121+67	54' RT	ANC	XCEL		X			RELOCATE AS NEEDED FOR PP.
CSAH 34 EB	121+79	53' RT	PP	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	121+80 TO 124+13	46' RT TO 53' RT	OHP	XCEL		X			RELOCATE FOR TRAIL.
CSAH 34 EB	121+80	53' RT	PP	XCEL		X			RELOCATE AS NEEDED FOR PP.
CSAH 34 EB	123+45	65' LT	L POLE	XCEL				X	
CSAH 34 EB	123+94 TO 124+17	46' RT TO 190' RT	P-BUR	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	124+13	46' RT	PP	XCEL		X			RELOCATE FOR TRAIL.
CSAH 34 EB	124+13 TO 126+13	42' RT TO 46' RT	OHP	XCEL		X			RELOCATE AS NEEDED FOR PP.
CSAH 34 EB	124+21	47' RT	PP	XCEL				X	
CSAH 34 EB	125+05	69' LT	L POLE	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	126+13	42' RT	PP	XCEL		X			RELOCATE FOR PEDESTRIAN RAMP.
CSAH 34 EB	126+13 TO 127+03	39' RT TO 42' RT	OHP	XCEL		X			RELOCATE AS NEEDED FOR PP.
CSAH 34 EB	126+13	42' RT	PP	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	126+25	50' RT	P VAULT	XCEL		X			RELOCATE FOR TRAIL.
CSAH 34 EB	126+27	42' RT	ANC	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	126+42	70' LT	L POLE	XCEL		X			RELOCATE FOR TRAIL.
CSAH 34 EB	126+82 TO 127+03	136' LT TO 39' RT	P-BUR	XCEL		X			RELOCATE AS NEEDED FOR PP.
CSAH 34 EB	127+03	39' RT	PP	XCEL				X	

TABULATION CONTINUED ON SHEET 18

NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

ANDREW J. PLOWMAN, PE
DATE 12/3/2020 LICENSE # 44200

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

UTILITY TABULATION
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 17 OF 195 SHEETS

PLOTTED/REVISED: 12/3/2020

PATH & FILENAME: Projects\Minnesota\0\44400-000\Cad\Plan\44400-000_au01.dgn

TABULATION CONTINUED FROM SHEET 17

POWER - XCEL

ALIGNMENT	STATION TO STATION	OFFSETS	DESCRIPTION	OWNER	ACTION				REMARKS
					ADJUST	RELOCATE	REMOVE	LEAVE AS IS	
CSAH 34 EB	127+03	39' RT	PP	XCEL				X	
CSAH 34 EB	127+03 TO 127+78	38' RT TO 39' RT	OHP	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	127+03	39' RT	PP	XCEL		X			RELOCATE FOR TRAIL.
CSAH 34 EB	127+77	37' RT	PP	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	127+78 TO 129+40	37' RT TO 38' RT	OHP	XCEL		X			RELOCATE FOR TRAIL.
CSAH 34 EB	129+39	37' RT	PP	XCEL		X			RELOCATE AS NEEDED FOR PP AND STORM SEWER.
CSAH 34 EB	129+40 TO 131+19	37' RT TO 48' RT	OHP	XCEL	X				ADJUST AS NEEDED FOR ROADWAY.
CSAH 34 EB	131+19	48' RT	PP	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	131+19 TO 132+79	24' RT TO 181' RT	P-BUR	XCEL		X			RELOCATE FOR TRAIL.
CSAH 34 EB	131+19 TO 135+29	38' RT TO 48' RT	OHP	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	131+70	43' LT	PP	XCEL				X	
CSAH 34 EB	131+70 TO 132+22	68' LT TO 43' LT	OHP	XCEL				X	
CSAH 34 EB	131+70	43' LT	PP	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	132+17	66' LT	ANC	XCEL				X	
CSAH 34 EB	132+19	66' LT	ANC	XCEL				X	
CSAH 34 EB	132+22	68' LT	PP	XCEL				X	
CSAH 34 EB	132+22 TO 133+38	75' LT TO 68' LT	OHP	XCEL				X	
CSAH 34 EB	132+68	36' RT	L POLE	XCEL				X	
CSAH 34 EB	132+88 TO 135+29	28' RT TO 169' RT	P-BUR	XCEL	X				ADJUST AS NEEDED FOR ROADWAY.
CSAH 34 EB	133+38	76' LT	PP	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	133+38 TO 133+58	75' LT TO 38' RT	OHP	XCEL		X			RELOCATE FOR TRAIL.
CSAH 34 EB	133+38 TO 133+74	256' LT TO 75' LT	OHP	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	133+38	75' LT	PP	XCEL		X			RELOCATE FOR ROADWAY.
CSAH 34 EB	133+38	72' LT	P PED	XCEL			X		NO LONGER NEEDED FOR DYNAMIC SIGN.
CSAH 34 EB	133+58	38' RT	L POLE	XCEL			X		NO LONGER NEEDED FOR DYNAMIC SIGN.
CSAH 34 EB	133+62	47' RT	GUY POLE	XCEL			X		NO LONGER NEEDED FOR DYNAMIC SIGN.
CSAH 34 EB	135+28	47' RT	PP	XCEL			X		NO LONGER NEEDED FOR DYNAMIC SIGN.
CSAH 34 EB	135+29 TO 137+61	46' RT TO 48' RT	OHP	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	137+51 TO 137+61	94' LT TO 46' RT	P-BUR	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	137+60	63' RT	GUY POLE	XCEL		X			RELOCATE FOR TRAIL.
CSAH 34 EB	137+60	46' RT	PP	XCEL				X	
CSAH 34 EB	137+61 TO 139+07	45' RT TO 46' RT	OHP	XCEL				X	
CSAH 34 EB	137+64	61' RT	L POLE	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	138+02 TO 139+07	45' RT TO 341' RT	P-BUR	XCEL		X			RELOCATE FOR PEDESTRIAN RAMP.
CSAH 34 EB	139+07	45' RT	PP	XCEL		X			RELOCATE AS NEEDED FOR PP.
CSAH 34 EB	139+07 TO 140+31	45' RT TO 46' RT	OHP	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	139+07	45' RT	PP	XCEL		X			RELOCATE FOR TRAIL.
CSAH 34 EB	140+30	45' RT	GUY POLE	XCEL		X			RELOCATE AS NEEDED FOR PP.
CSAH 34 EB	140+31 TO 140+84	46' RT TO 279' RT	P-BUR	XCEL				X	
CSAH 34 EB	140+31 TO 140+95	46' RT TO 46' RT	OHP	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	140+31	46' RT	PP	XCEL		X			RELOCATE FOR TRAIL.
CSAH 34 EB	140+42	45' RT	PP	XCEL		X			RELOCATE AS NEEDED FOR PP.
CSAH 34 EB	140+64	39' RT	P VAULT	XCEL				X	
CSAH 34 EB	140+95	46' RT	PP	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	140+95 TO 141+06	223' LT TO 47' RT	P-BUR	XCEL		X			RELOCATE FOR PEDESTRIAN RAMP.
CSAH 34 EB	140+95 TO 142+86	46' RT TO 47' RT	OHP	XCEL		X			RELOCATE AS NEEDED FOR PP.
CSAH 34 EB	104+95	47' RT	PP	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	142+86	46' RT	PP	XCEL		X			RELOCATE FOR TRAIL.
CSAH 34 EB	142+86 TO 145+32	46' RT TO 46' RT	OHP	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	142+99	46' RT	ANC	XCEL		X			RELOCATE FOR TRAIL.
CSAH 34 EB	142+99	44' RT	P HH	XCEL		X			RELOCATE AS NEEDED FOR PP.
CSAH 34 EB	143+00	51' RT	P PED	XCEL				X	
CSAH 34 EB	143+05	48' RT	P METER	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	144+31 TO 146+35	46' RT TO 220' RT	P-BUR	XCEL		X			RELOCATE FOR TRAIL.
CSAH 34 EB	145+32	46' RT	PP	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	145+32 TO 147+91	46' RT TO 46' RT	OHP	XCEL		X			RELOCATE FOR TRAIL.
CSAH 34 EB	145+32	46' RT	PP	XCEL		X			RELOCATE AS NEEDED FOR PP AND STORM SEWER.
CSAH 34 EB	146+07	44' RT	L POLE	XCEL	X				ADJUST AS NEEDED FOR ROADWAY.
CSAH 34 EB	147+91	46' RT	PP	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	147+91 TO 150+40	45' RT TO 46' RT	OHP	XCEL		X			RELOCATE FOR TRAIL.
CSAH 34 EB	149+27 TO 150+40	224' LT TO 45' RT	P-BUR	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	149+28	58' LT	L POLE	XCEL				X	
CSAH 34 EB	150+40 TO 152+93	44' RT TO 45' RT	OHP	XCEL				X	
CSAH 34 EB	150+40	45' RT	PP	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	152+82 TO 152+94	170' LT TO 63' LT	OHP	XCEL				X	
CSAH 34 EB	152+93 TO 152+94	63' LT TO 44' RT	OHP	XCEL				X	
CSAH 34 EB	152+93 TO 154+97	44' RT TO 73' RT	OHP	XCEL				X	
CSAH 34 EB	152+93	44' RT	PP	XCEL				X	
CSAH 34 EB	152+94	63' LT	PP	XCEL				X	
CSAH 34 EB	154+97 TO 156+72	73' RT TO 118' RT	OHP	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	154+97 TO 156+34	139' LT TO 73' RT	OHP	XCEL				X	
CSAH 34 EB	154+97	73' RT	PP	XCEL				X	
CSAH 34 EB	156+34	139' LT	PP	XCEL		X			RELOCATE WITH PP.
CSAH 34 EB	156+72	118' RT	PP	XCEL				X	

PLOTTED/REVISED: 12/3/2020

PATH & FILENAME: Projects\Minnesota\0J4400-000\Cad\Plan\J4400-000_eu01.dgn

NO.	DATE	BY	CHK	REVISIONS

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Plan By: CWK
Checked By: AJP
Approved By: AJP

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ANDREW J. PLOWMAN, PE

DATE 12/3/2020 LICENSE # 44200

wsb

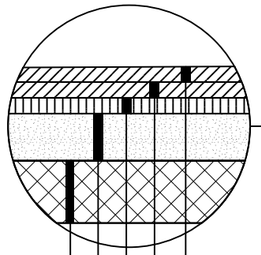
ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

UTILITY TABULATION
S.A.P. 002-634-003 & S.A.P. 210-020-010

PLOTTED/REVISED: 12/3/2020

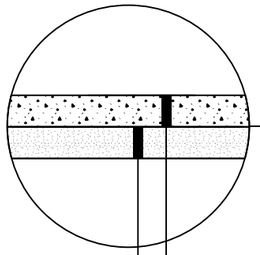


INSET A

CSAH 34 (BIRCH STREET)

NOTE: SIDE STREET TIE-INS SHALL MATCH MAINLINE PAVEMENT DEPTHS UNLESS OTHERWISE NOTED.

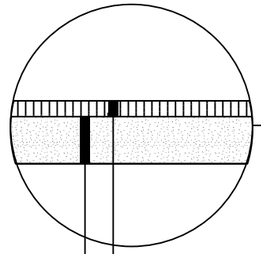
- 2" TYPE SP 12.5 WEARING COURSE MIXTURE (SPWEB340F)
- 2" TYPE SP 12.5 WEARING COURSE MIXTURE (SPWEB340F)
- 2" TYPE SP 12.5 NON WEARING COURSE MIXTURE (SPNWB330B)
- 6" AGGREGATE BASE (CV) CLASS 5
- 12" SELECT GRANULAR EMBANKMENT (CV)



INSET B

6" CONCRETE WALK/
(PED RAMPS & LANDINGS)

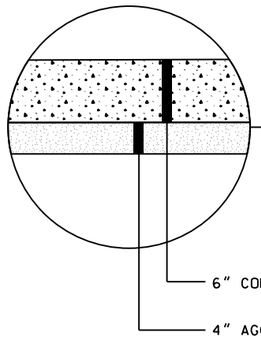
- 6" CONCRETE WALK
- 4" AGGREGATE BASE (CV) CLASS 5



INSET C

BITUMINOUS TRAIL

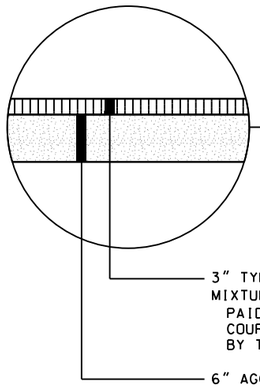
- 2.5" TYPE SP 9.5 WEARING COURSE MIXTURE (SPWEA230B)
- 4" AGGREGATE BASE (CV) CLASS 5



INSET D

CONCRETE DRIVEWAY PAVEMENT

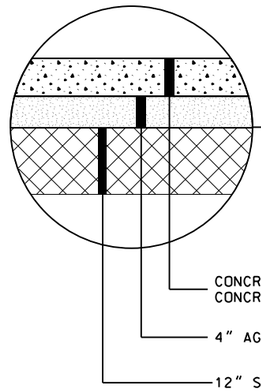
- 6" CONCRETE DRIVEWAY PAVEMENT
- 4" AGGREGATE BASE (CV) CLASS 5



INSET E

BITUMINOUS DRIVEWAYS

- 3" TYPE SP 12.5 WEARING COURSE MIXTURE (SPWEB340C)
  PAID AS TYPE SP 12.5 WEARING COURSE MIXTURE (3;C) 3.0" THICK BY THE SQ YD.
- 6" AGGREGATE BASE (CV) CLASS 5

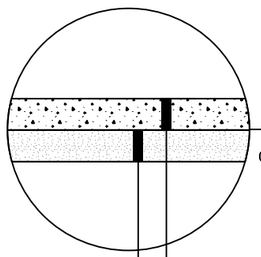


INSET F1 & F2

F1 - CONCRETE PAVEMENT 7.0"
(ROUNDABOUT)
F2 - CONCRETE PAVEMENT 7.0" SPECIAL
(TRUCK APRON)

- CONCRETE PAVEMENT (7.0")/
  CONCRETE PAVEMENT 7.0" SPECIAL
- 4" AGGREGATE BASE (CV) CLASS 5
- 12" SELECT GRANULAR EMBANKMENT (CV)

NOTE: SEE PAVING PLAN SHEET 113 TO 116 FOR CONCRETE TYPES AND LOCATIONS.

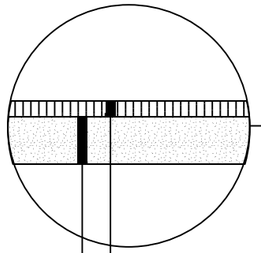


INSET G1 & G2

G1 - 4" CONCRETE WALK
G2 - 4" CONCRETE WALK SPECIAL
(MEDIANS)

- 4" CONCRETE WALK/4" CONCRETE WALK SPECIAL
- VARIABLE DEPTH SELECT GRANULAR EMBANKMENT (CV)

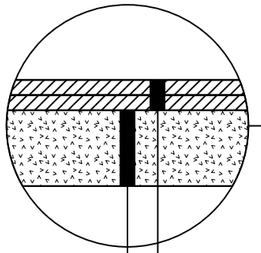
NOTE: SEE PAVING PLAN SHEET 113 TO 116 FOR CONCRETE TYPES AND LOCATIONS.



INSET H

TEMPORARY PAVEMENT

- 4" TYPE SP 12.5 NON WEARING COURSE MIXTURE (SPNWB330B) PAVE IN 2-2" LIFTS
- 8" AGGREGATE BASE (CV) CLASS 5

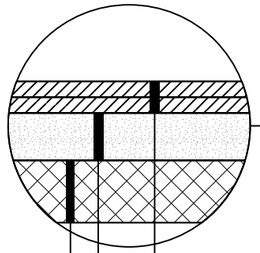


INSET I

CSAH 34 (BIRCH STREET)

FULL DEPTH RECLAMATION
WITH BITUMINOUS OVERLAY

- 4" TYPE SP 12.5 WEARING COURSE MIXTURE (SPWEB340F) PAVE IN 2-2" LIFTS
- 10" RECLAIMED BITUMINOUS / AGGREGATE BASE



INSET J

RICE LAKE ELEMENTARY PARKING LOT
(ALTERNATE BID)

- 4" TYPE SP 9.5 WEARING COURSE MIXTURE (SPWEA230B) PAVE IN (2) 2" LIFTS
- 6" AGGREGATE BASE (CV) CLASS 5
- 12" SELECT GRANULAR EMBANKMENT (CV)

NO.	DATE	BY	CHK	REVISIONS

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Plan By: CWK
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ANOKA COUNTY

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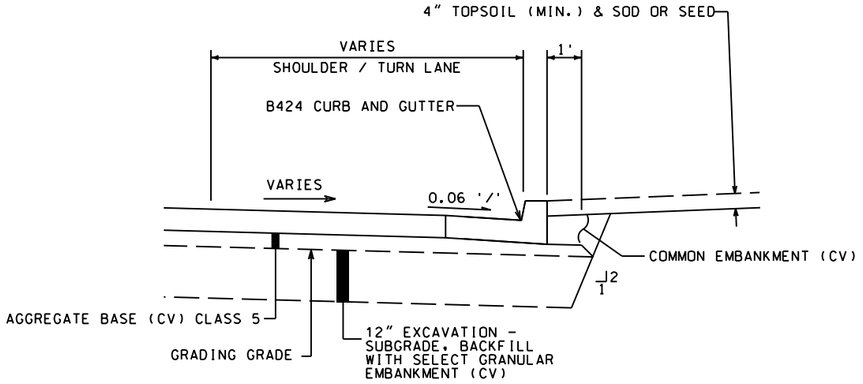
ANOKA COUNTY, MINNESOTA

TYPICAL SECTIONS
S.A.P. 002-634-003 & S.A.P. 210-020-010

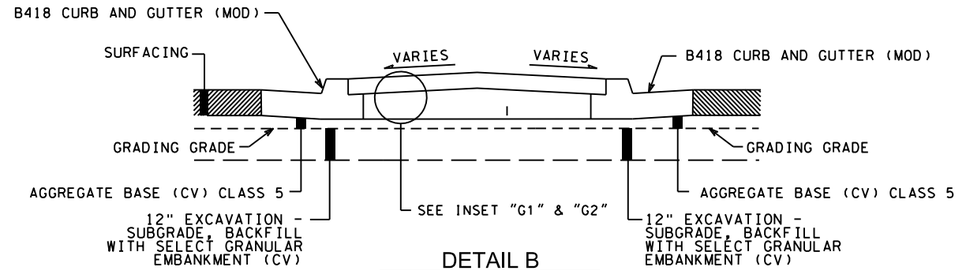
SHEET 19 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\4400-000_ts01.dgn



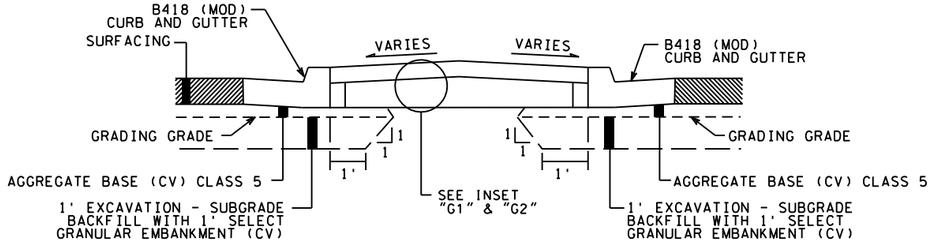
DETAIL A

CONCRETE CURB & GUTTER



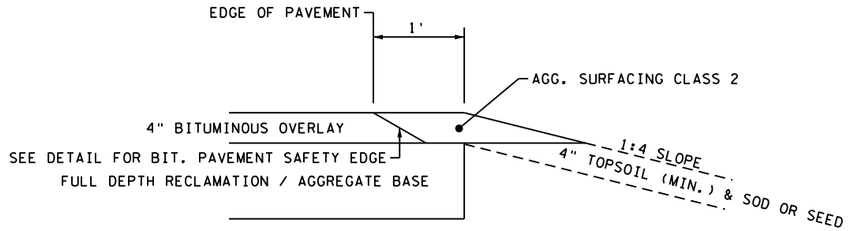
DETAIL B

CONCRETE MEDIAN LESS THAN 8' (FACE TO FACE)



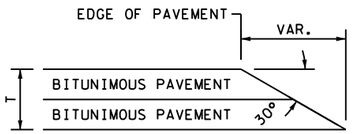
DETAIL B

CONCRETE MEDIAN GREATER THAN 8' (FACE TO FACE)



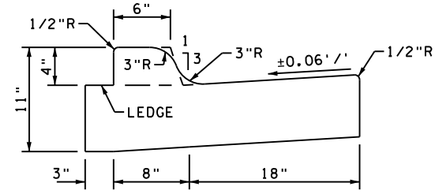
DETAIL C

RURAL AGGREGATE SHOULDER



BITMINOUS PAVEMENT SAFETY EDGE

FOR T < 6"



PAID AS CONCRETE CURB & GUTTER DESIGN B418 (MOD)
TO BE USED WHEN CONCRETE WALK IS TIGHT TO BACK OF CURB

B418 MODIFIED CURB & GUTTER

(NO VARIANCES ALLOWED)

NOTES:

1. UNLESS OTHERWISE SPECIFIED, THE SUBGRADE CROSS SLOPE WILL BE THE SAME AS THE FINISHED SLOPE.
2. ALL UNSUITABLE MATERIAL SHALL BE REMOVED FROM THE ROADWAY.
3. ALL EDGE DIMENSIONS ARE FACE TO FACE OF CURB OR TO THE EDGE OF THE PAVEMENT UNLESS OTHERWISE SPECIFIED.
4. COMMON TOPSOIL SHALL BE INCLUDED IN THE COMMON EMBANKMENT (CV).
5. ALL EMBANKMENT MATERIAL SHALL BE APPROVED BY THE ENGINEER. ALL CONCRETE AND BITUMINOUS REMOVAL MUST BE DISPOSED OF OFF-SITE. REMOVAL AND DISPOSAL OF EXCESS MATERIAL SHALL BE INCIDENTAL.
6. 2' CLEAR ZONE SHALL BE PROVIDED ON EACH SIDE OF THE TRAIL.
7. SEE CONCRETE PAVEMENT JOINT PLAN FOR LOCATION OF 4" CONCRETE WALK SPECIAL AND CONCRETE PAVEMENT 7.0" SPECIAL.

NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

ANDREW J. PLOWMAN, PE

DATE 12/3/2020 LICENSE # 44200

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements

Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

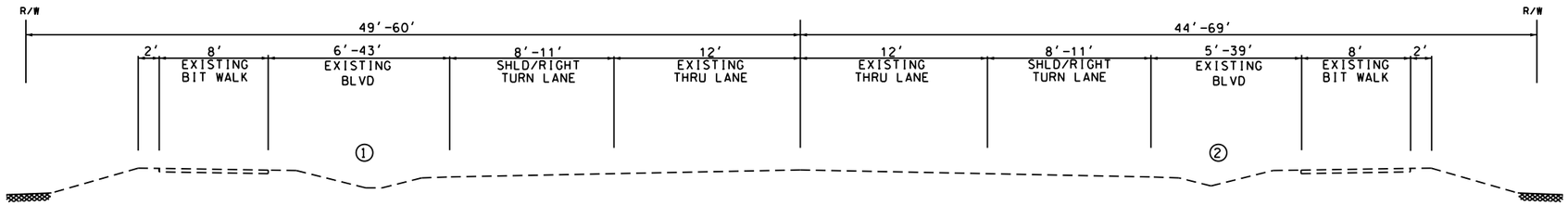
TYPICAL SECTIONS

S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **20** OF **195** SHEETS

PLOTTED/REVISED: 12/3/2020

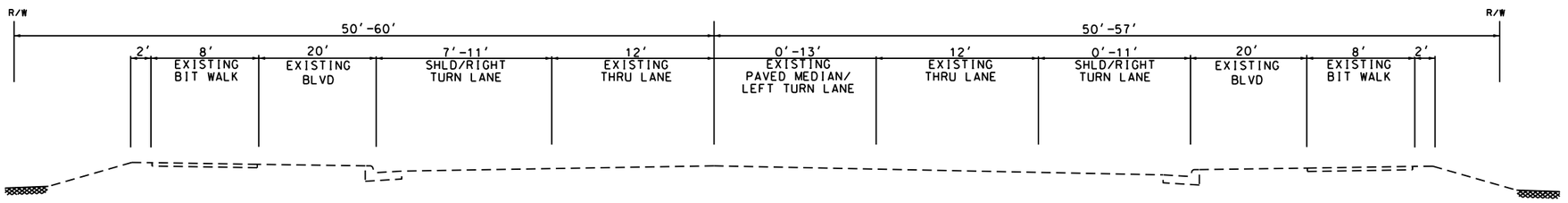
CSAH 34 (BIRCH STREET) EXISTING TYPICAL SECTION
STA. 108+82 TO 149+61.50



① BLVD AND TRAIL TIP AWAY FROM ROADWAY NEAR PEDESTRIAN TUNNEL FROM STA. 128+35 TO STA. 129+45.

② BLVD AND TRAIL TIP AWAY FROM ROADWAY NEAR PEDESTRIAN TUNNEL FROM STA. 126+60 TO STA. 130+00.

CSAH 34 (BIRCH STREET) EXISTING TYPICAL SECTION
STA. 103+01.40 TO 108+82



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DATE 12/3/2020 LICENSE # 44200

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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

TYPICAL SECTIONS
S.A.P. 002-634-003 & S.A.P. 210-020-010

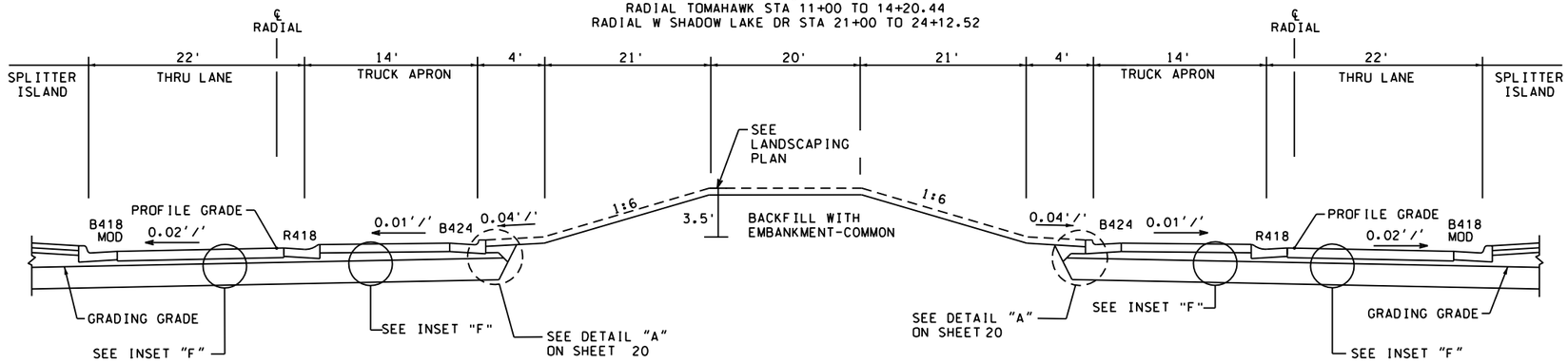
SHEET **21** OF **195** SHEETS

PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\4400-000_tsl01.dgn

PLOTTED/REVISED: 12/3/2020

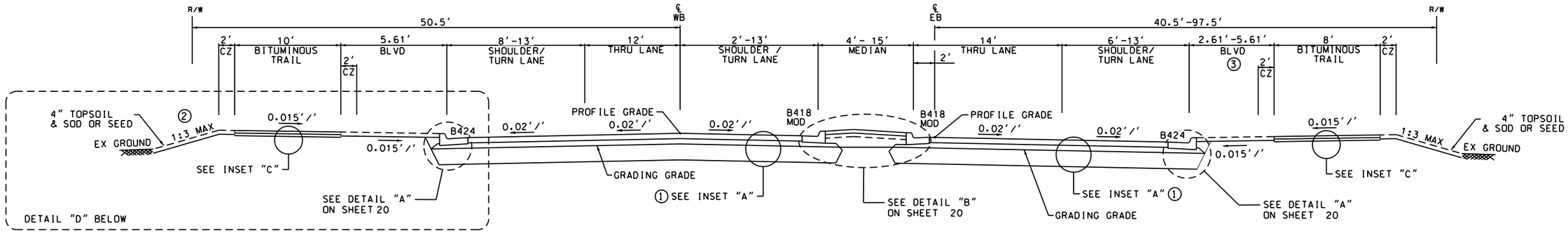
CSAH 34 & TOMAHAWK TRAIL ROUNDABOUT
CSAH 34 & WEST SHADOW LAKE DRIVE ROUNDABOUT

CSAH 34 EB STA 117+07 TO 118+54
CSAH 34 EB STA 131+98 TO 133+46
RADIAL TOMAHAWK STA 11+00 TO 14+20.44
RADIAL W SHADOW LAKE DR STA 21+00 TO 24+12.52

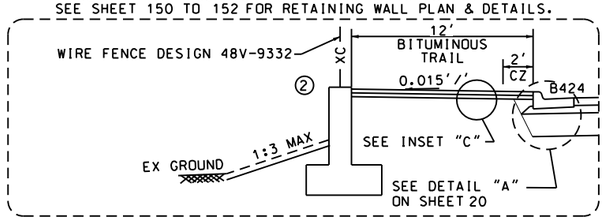


CSAH 34 (BIRCH STREET)

CSAH 34 EB STA. 103+01.40 TO 117+07



DETAIL "D" - CSAH 34 EB STA 109+01.78 TO 110+49.54
SEE SHEET 150 TO 152 FOR RETAINING WALL PLAN & DETAILS.



① USE INSET "F" FROM STATION 116+67 TO 117+07

② RETAINING WALL FROM STA. 109+01 TO 110+50 SEE SHEET 150 TO 152 FOR DETAILS.

③ 2.61' CONCRETE BLVD. USE INSET "G1" FROM STATION 103+01 TO 108+98

NO.	DATE	BY	CHK	REVISIONS

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Plan By: CWK
Checked By: AJP
Approved By: AJP

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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

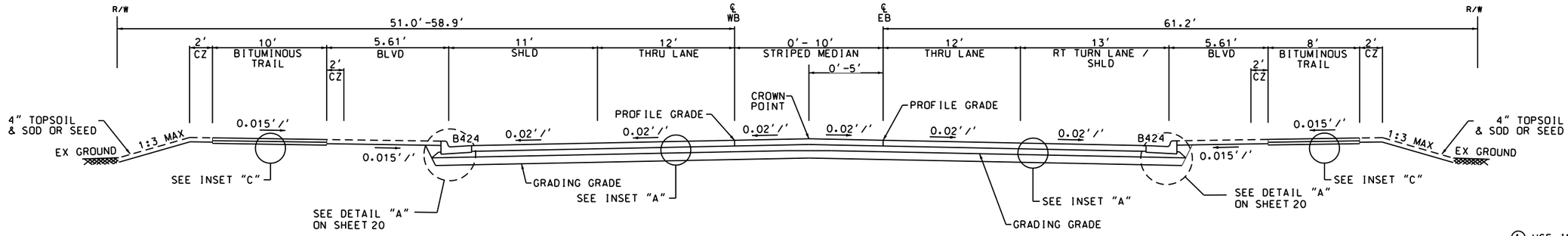
TYPICAL SECTIONS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 22 OF 195 SHEETS

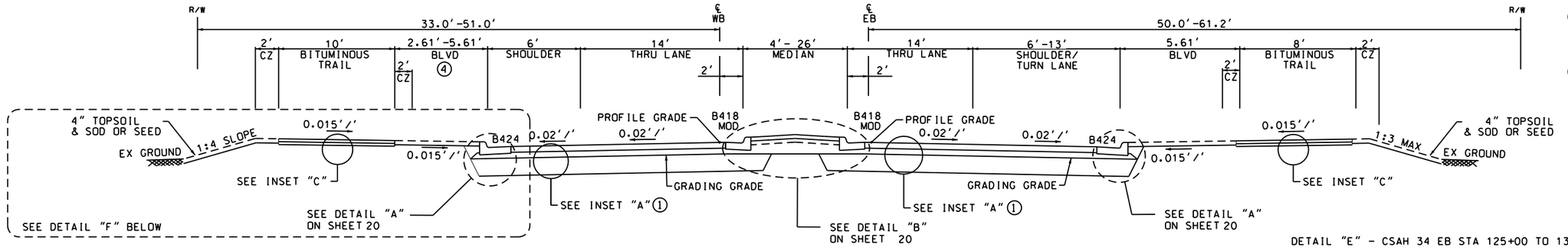
PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\4400-000_ts01.dgn

PLOTTED/REVISED: 12/3/2020

CSAH 34 (BIRCH STREET)
CSAH 34 STA. 136+00 TO 137+73.87



CSAH 34 (BIRCH STREET)
CSAH 34 EB STA. 133+46 TO 136+00



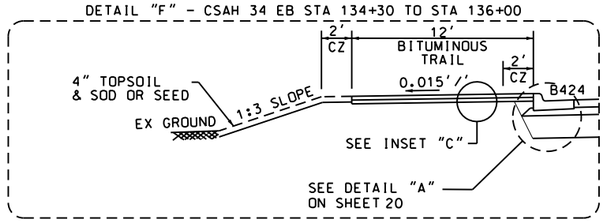
① USE INSET "F" FROM STATION 133+46 TO 133+83

② USE INSET "F" FROM STATION 118+54 TO 118+98 AND 131+60 TO 131+98

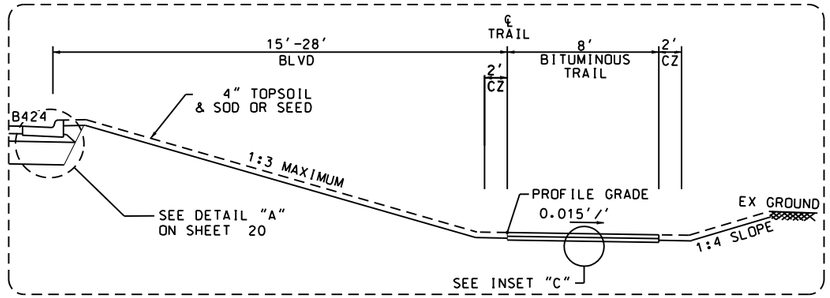
③ 2.61' TO 5.61' BITUMINOUS BLVD FROM STATION 127+53 TO 128+94

④ 2.61' TO 5.61' BITUMINOUS BLVD FROM STATION 133+46 TO 135+83

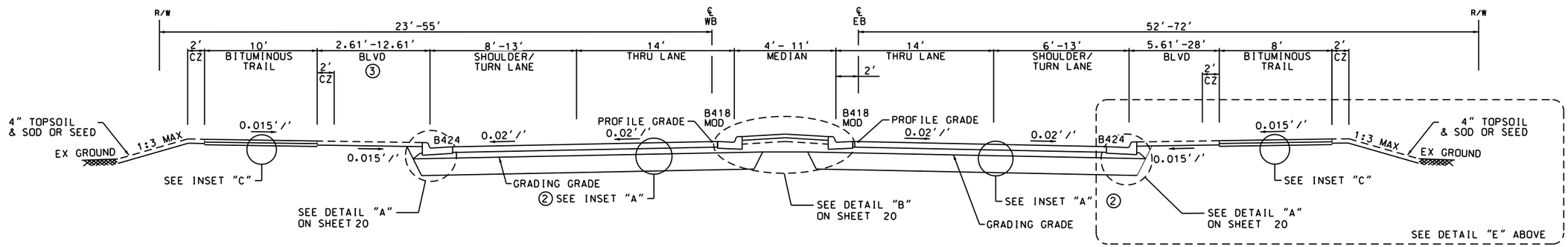
DETAIL "F" - CSAH 34 EB STA 134+30 TO STA 136+00



DETAIL "E" - CSAH 34 EB STA 125+00 TO 130+37



CSAH 34 (BIRCH STREET)
CSAH 34 EB STA. 118+54 TO 131+98



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DATE 12/3/2020 LICENSE # 44200

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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

TYPICAL SECTIONS
S.A.P. 002-634-003 & S.A.P. 210-020-010

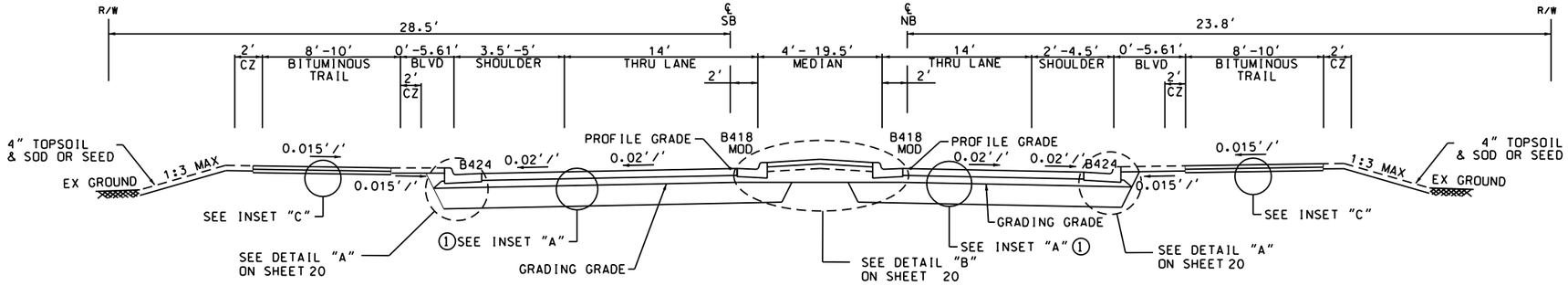
SHEET 23 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\0\4400-000\Cad\Plan\4400-000_ts01.dgn

PLOTTED/REVISED: 12/3/2020

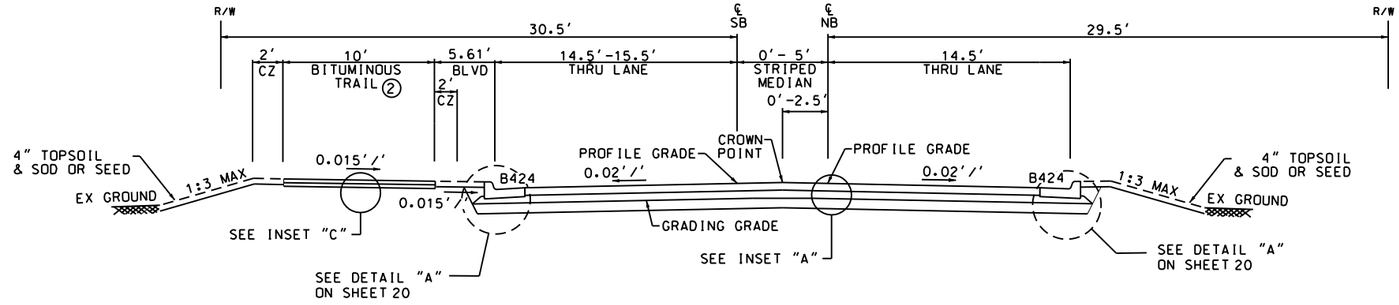
TOMAHAWK TRAIL/SCHOOL ENTRANCE

TOMAHAWK TRAIL STA. 202+26 TO 202+62
SCHOOL ENTRANCE STA. 204+26 TO 205+13



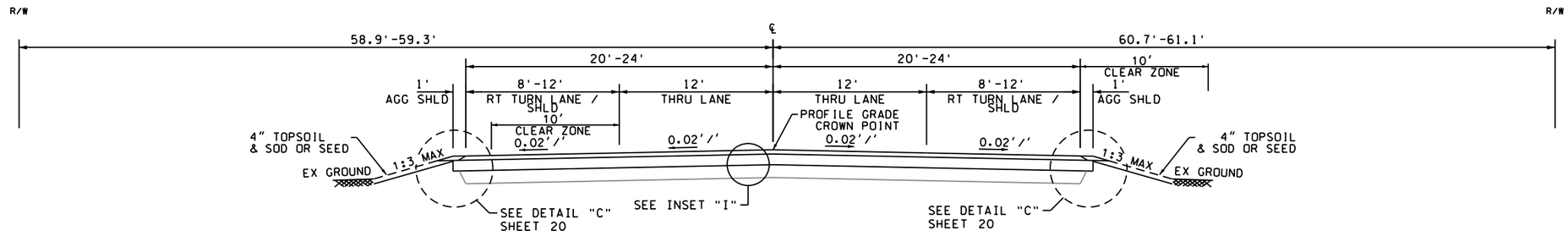
TOMAHAWK TRAIL/SCHOOL ENTRANCE

TOMAHAWK TRAIL STA. 201+35 TO 202+26
SCHOOL ENTRANCE STA. 205+13 TO 207+17



CSAH 34 (BIRCH STREET)

CSAH 34 STA. 137+73.87 TO 149+61.50



① USE INSET "F" FROM STATION 202+37 TO 202+62 AND STATION 204+26 TO 204+60

② NO TRAIL FROM STA. 201+35 TO 202+26

NO.	DATE	BY	CHK	REVISIONS

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CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

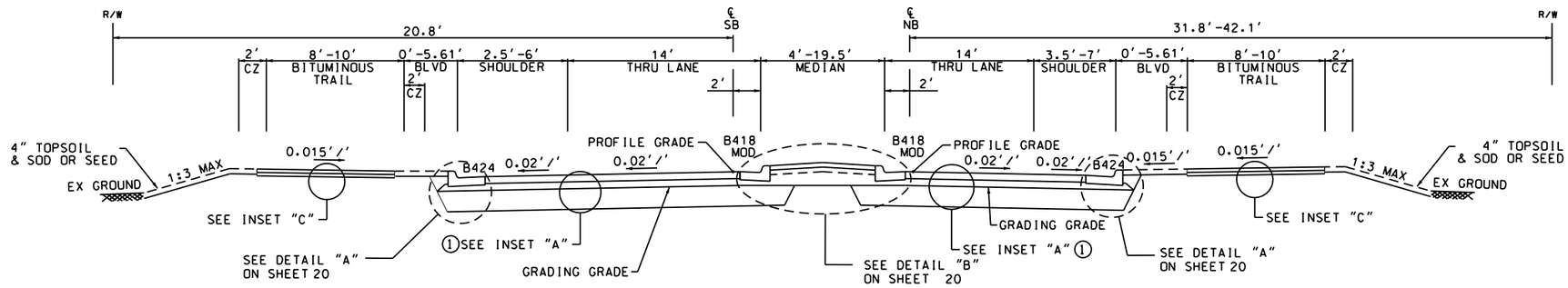
TYPICAL SECTIONS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **24** OF **195** SHEETS

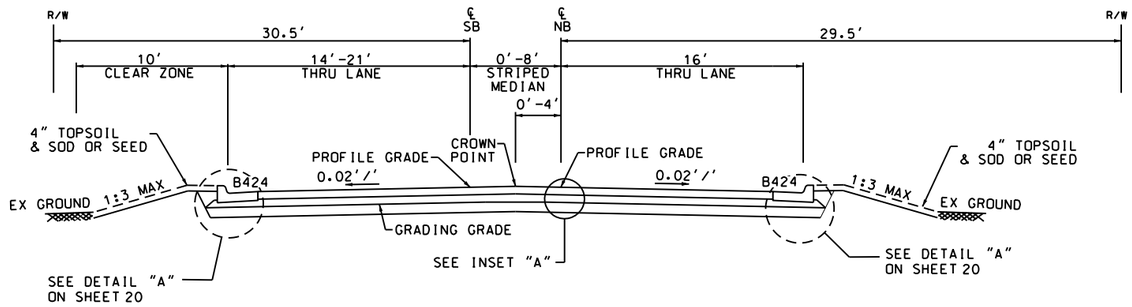
PATH & FILENAME: Projects\Minnesota\OI\44400-000\Cad\Plan\I4400-000_ts01.dgn

PLOTTED/REVISED: 12/3/2020

WEST SHADOW LAKE DRIVE
WEST SHADOW LAKE DRIVE STA. 301+86 TO 302+50
WEST SHADOW LAKE DRIVE STA. 304+09 TO 304+54



WEST SHADOW LAKE DRIVE
WEST SHADOW LAKE DRIVE STA. 301+28 TO 301+86
WEST SHADOW LAKE DRIVE STA. 304+54 TO 306+42



① USE INSET "F" FROM
STATION 302+22 TO 302+50
AND STATION 304+09 TO 304+37

NO.	DATE	BY	CHK	REVISIONS

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ANDREW J. PLOWMAN, PE
DATE 12/3/2020 LICENSE # 44200

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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

TYPICAL SECTIONS
S.A.P. 002-634-003 & S.A.P. 210-020-010

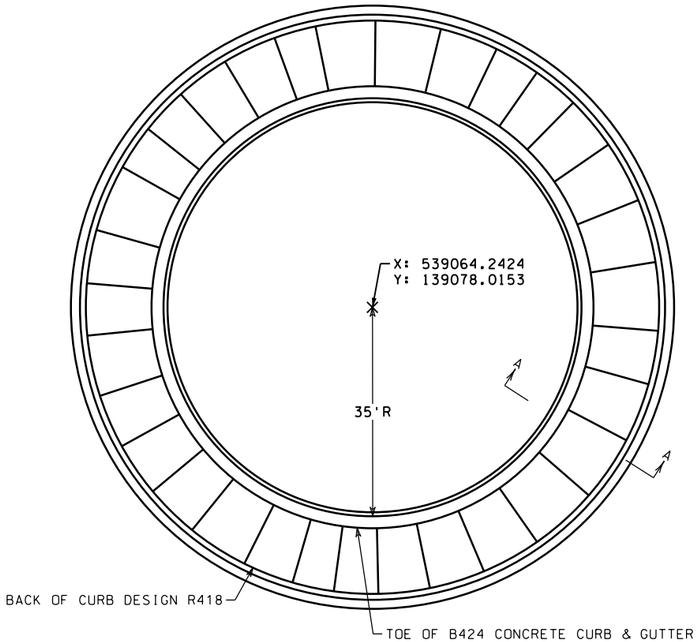
SHEET 25 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\0\4400-000\Cad\Plan\4400-000_tsl0.dgn

PLOTTED/REVISED: 12/3/2020

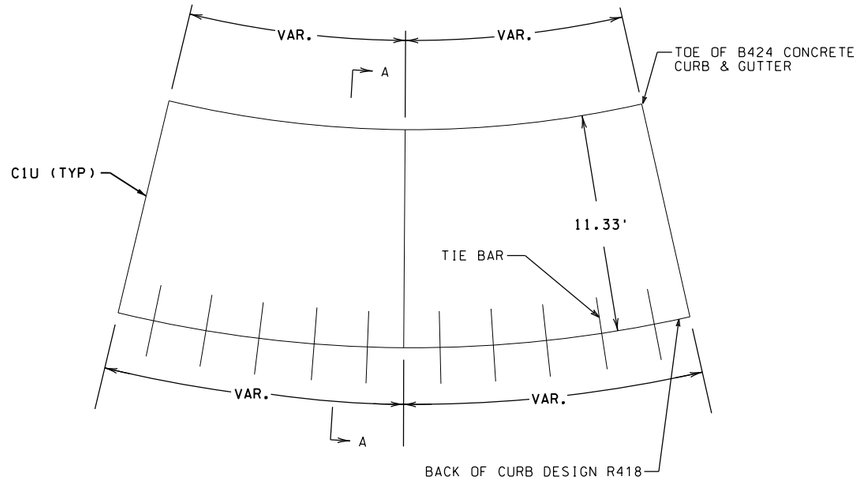
CSAH 34 & TOMAHAWK TRAIL

NOT TO SCALE



PLAN VIEW JOINT LAYOUT

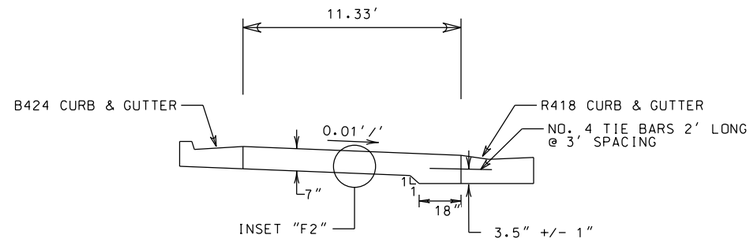
NOTE: C1U JOINT SHOULD EXTEND THROUGH CURB AND GUTTER



CONCRETE PANEL REINFORCEMENT

GENERAL NOTES:

1. SEE TYPICAL SECTIONS AND PLAN SHEETS FOR CURB AND GUTTER DETAILS
2. ALL REINFORCING BARS SHALL BE EPOXY COATED IN ACCORDANCE WITH SPEC. 3301 AND SHALL MEET THE REQUIREMENTS OF GRADE 60 FOR AASHTO M-31 OR M-53
3. TIE BARS: USE NO. 4 BARS, 2' LONG AT 3' SPACING
4. REINFORCEMENT BARS ARE CONSIDERED INCIDENTAL.
5. ADDITIONAL CONCRETE PAVEMENT DEPTH, ADJACENT TO CONCRETE CURB DESIGN R418, IS INCIDENTAL.



SECTION A-A

NO.	DATE	BY	CHK	REVISIONS

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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements

Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

TOMAHAWK TRAIL TRUCK APRON DETAIL

MISCELLANEOUS DETAILS

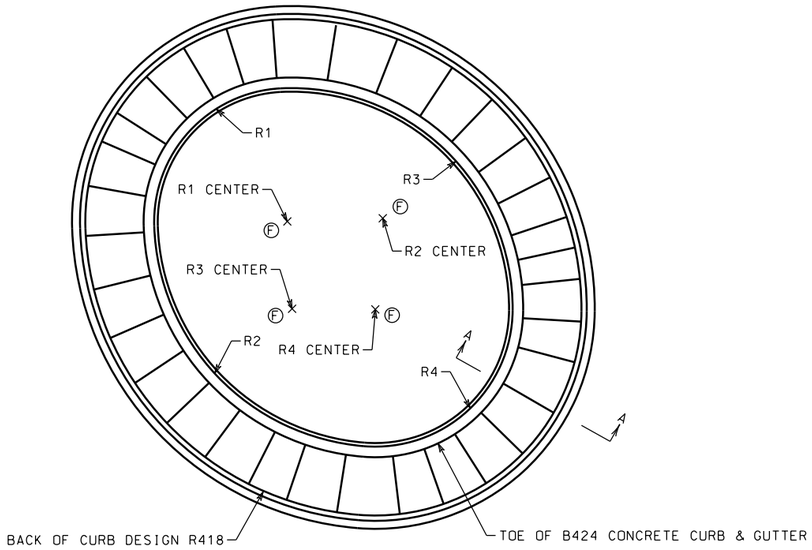
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **26** OF **195** SHEETS

PATH & FILENAME: Projects\Minnesota\0\44400-000\Cad\Plan\44400-000_mdl.dgn

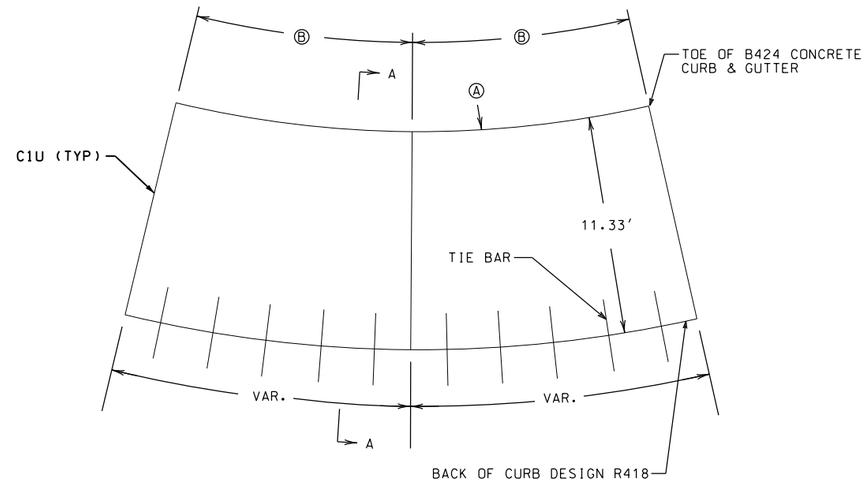
CSAH 34 & SHADOW LAKE DRIVE

NOT TO SCALE



PLAN VIEW JOINT LAYOUT

NOTE: C1U JOINT SHOULD EXTEND THROUGH CURB AND GUTTER

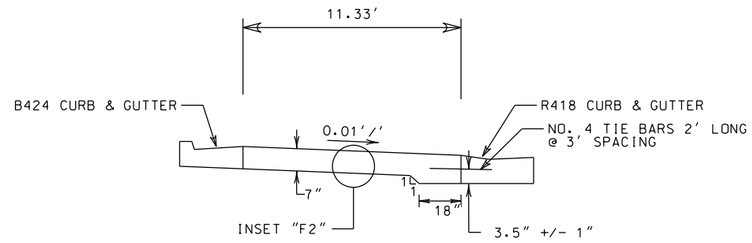


CONCRETE PANEL REINFORCEMENT

GENERAL NOTES:

1. SEE TYPICAL SECTIONS AND PLAN SHEETS FOR CURB AND GUTTER DETAILS
2. ALL REINFORCING BARS SHALL BE EPOXY COATED IN ACCORDANCE WITH SPEC. 3301 AND SHALL MEET THE REQUIREMENTS OF GRADE 60 FOR AASHTO M-31 OR M-53
3. TIE BARS: USE NO. 4 BARS, 2' LONG AT 3' SPACING
4. REINFORCEMENT BARS ARE CONSIDERED INCIDENTAL.
5. ADDITIONAL CONCRETE PAVEMENT DEPTH, ADJACENT TO CONCRETE CURB DESIGN R418, IS INCIDENTAL.

CSAH 34 & SHADOW LAKE DRIVE			
	Ⓐ	Ⓑ	Ⓕ
R1	25.13'	6.3' TYP	X:540527.7618 , Y:139061.3059
R2	43.14'	7.78' TYP	X:540545.7608 , Y:139061.9035
R3	41.60'	6.99' TYP	X:540528.6478 , Y:139044.8537
R4	25.90'	7.68' TYP	X:540544.3549 , Y:139044.7204



SECTION A-A

NO.	DATE	BY	CHK	REVISIONS

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ANDREW J. PLOWMAN, PE
DATE 12/3/2020 LICENSE # 44200

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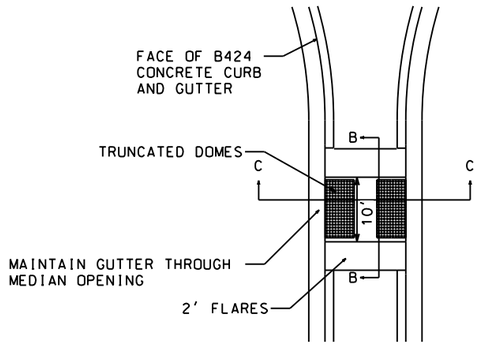
ANOKA COUNTY

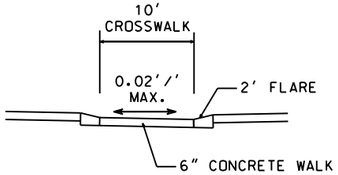
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
SHADOW LAKE DRIVE TRUCK ARPON DETAIL
MISCELLANEOUS DETAILS
S.A.P. 002-634-003 & S.A.P. 210-020-010

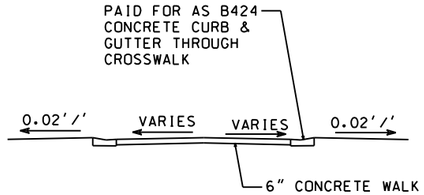
SHEET **27** OF **195** SHEETS

PLOTTED/REVISED: 12/3/2020





SECTION B-B



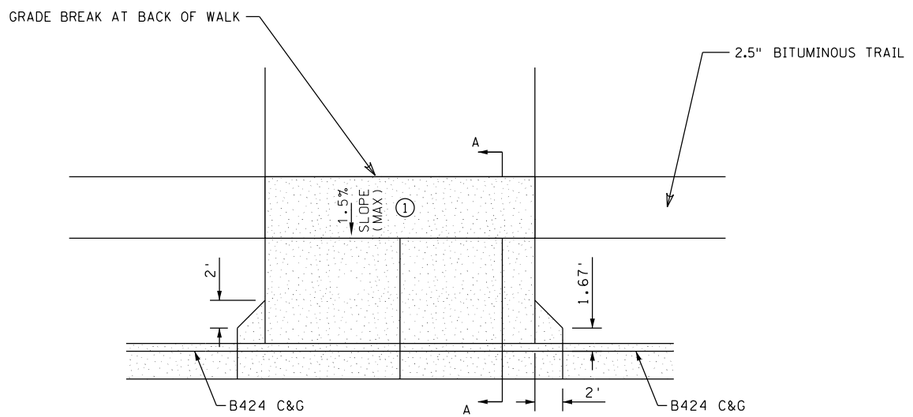
SECTION C-C

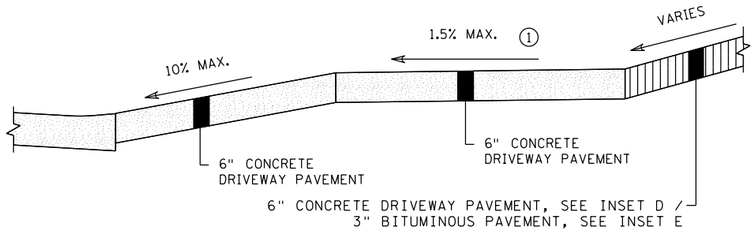
NOTES:

1. CROSSING TO BE PAID FOR AS 6" CONCRETE WALK.
2. TRUNCATED DOMES SHALL BE PLACED AT EACH SIDE OF THE CROSSWALK. PAID FOR AS SQ. FT. OF TRUNCATED DOMES.
3. FLARES TO BE PAID FOR AS 6" CONCRETE WALK.

DEPRESSED MEDIAN CURB AT CROSSWALK DETAIL

NO SCALE





SECTION A-A

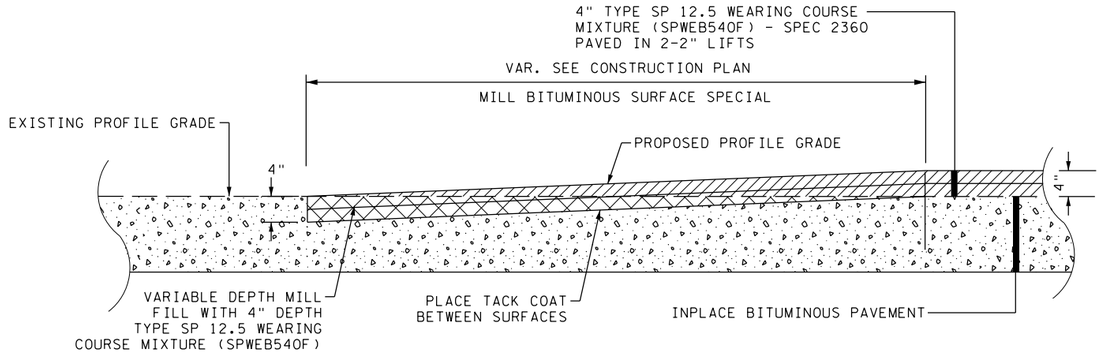
NOTES:

1 BITUMINOUS TRAIL WIDTH = 8' - 10', ENTIRE WIDTH 1.5% MAX

BITUMINOUS TRAIL AT DRIVEWAY

NO SCALE

4" BITUMINOUS MILL TRANSITION
END PROJECT
SIDE STREETS
DRIVEWAYS



MILL BITUMINOUS SURFACE SPECIAL DETAIL

NO SCALE

PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\14400-000_mdl.dgn

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wsb

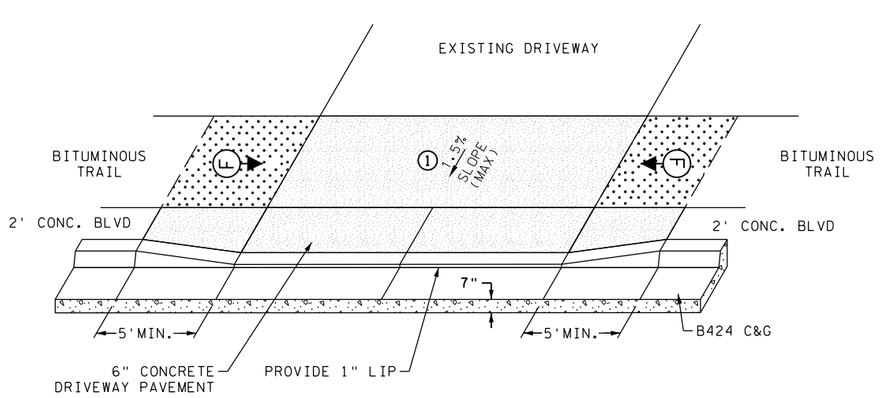
ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

MISCELLANEOUS DETAILS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 28 OF 195 SHEETS

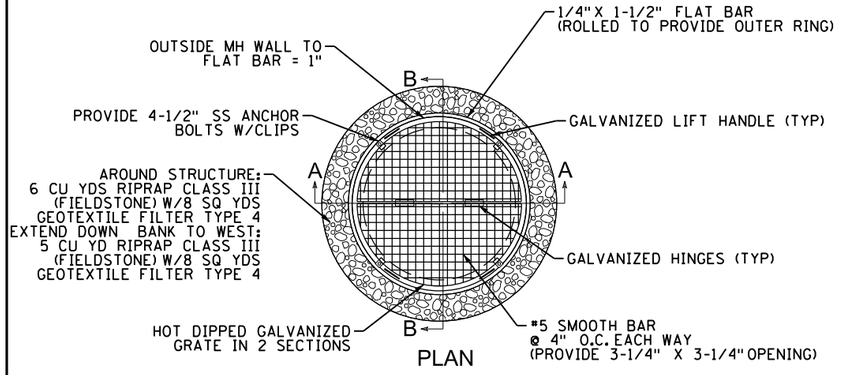


NOTES:

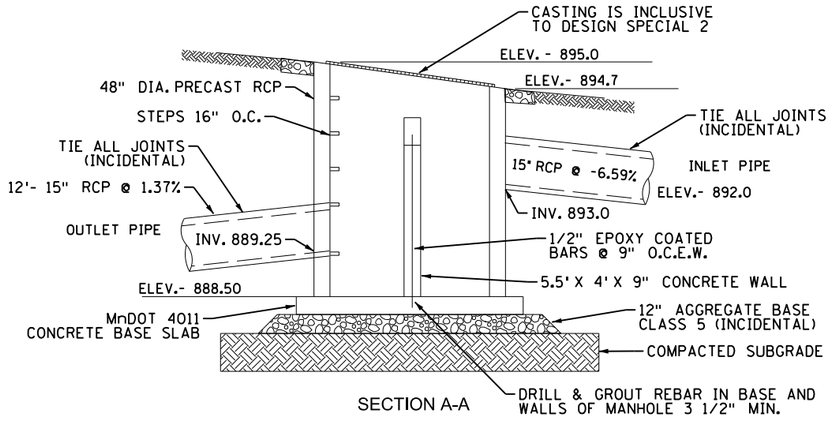
1. BITUMINOUS WALK WIDTH = 8'-10', ENTIRE WIDTH 1.5% MAX CROSS SLOPE
2. (F) SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 1.5%.

BITUMINOUS TRAIL (2' BLVD) AT DRIVEWAY

NO SCALE



PLAN



SECTION A-A

SECTION B-B

NOTE: SEE SHEET 159 FOR PIPE PROFILES
PLACE LOW RIM ELEVATION TOWARDS BASIN.

OUTLET CONTROL STRUCTURE DESIGN SPECIAL 2 (STRUCTURE 5047)

NOT TO SCALE

NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

ANDREW J. PLOWMAN, PE
DATE 12/3/2020 LICENSE # 44200

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

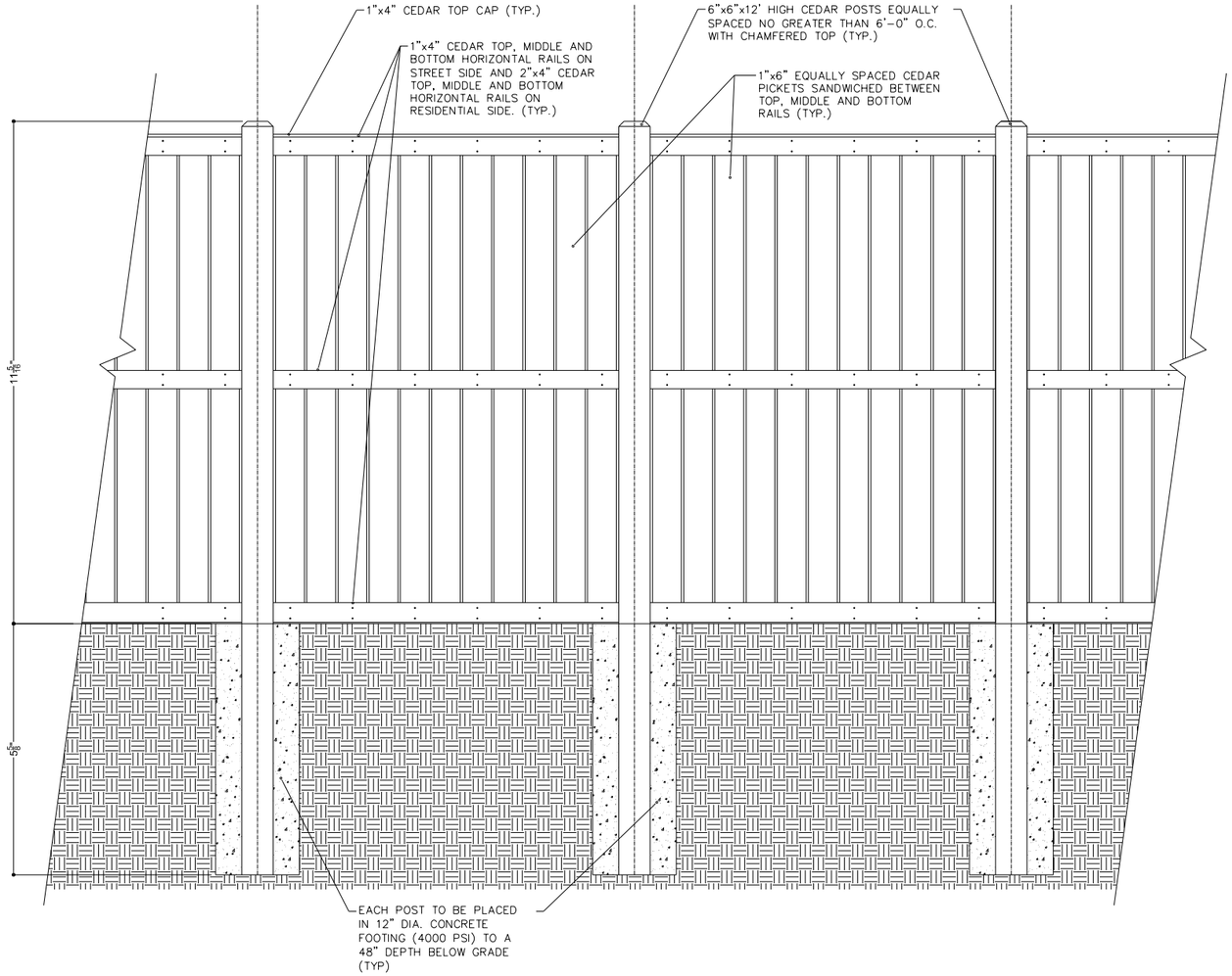
MISCELLANEOUS DETAILS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 29 OF 195 SHEETS

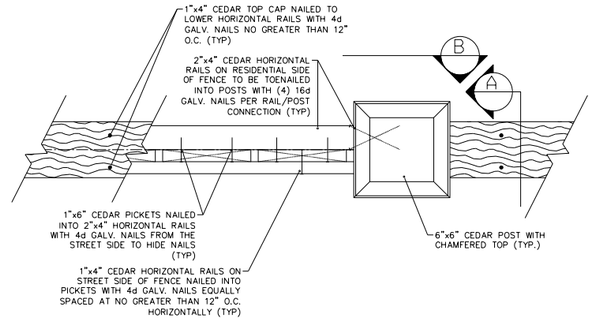
PLOTTED/REVISED: 12/3/2020

PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\14400-000_mdl.dgn

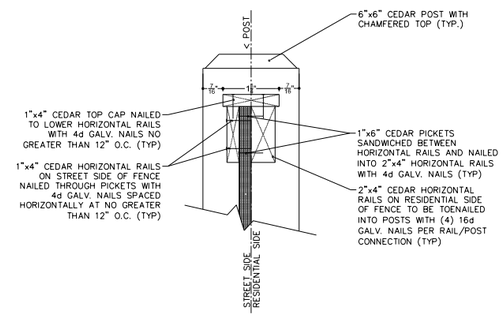
MATERIALS NOTE:
ALL CEDAR TO BE WESTERN RED CEDAR, ROUGH-SAWN
ALL HARDWARE SHALL BE GALVANIZED



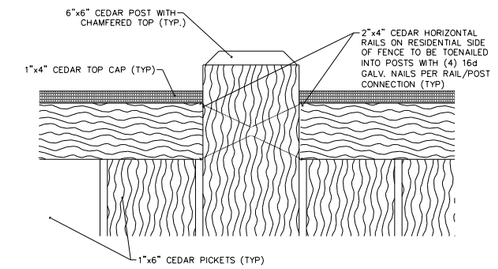
CEDAR FENCE DETAIL (ELEVATION VIEW FROM STREET SIDE)



CEDAR FENCE DETAIL (PLAN VIEW)



CEDAR FENCE DETAIL (VIEW "A")



CEDAR FENCE DETAIL (VIEW "B")

NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
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Approved By: AJP

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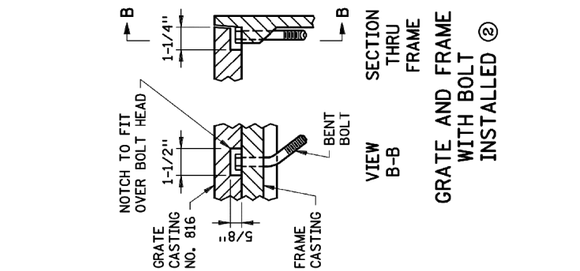
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

MISCELLANEOUS DETAILS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **30** OF **195** SHEETS

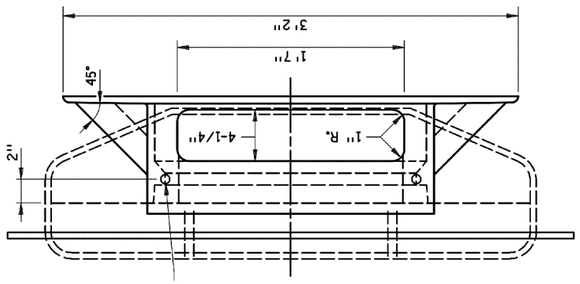
PLOTTED/REVISED: 12/3/2020



SECTION THRU FRAME

VIEW B-B

GRATE AND FRAME WITH BOLT INSTALLED ②



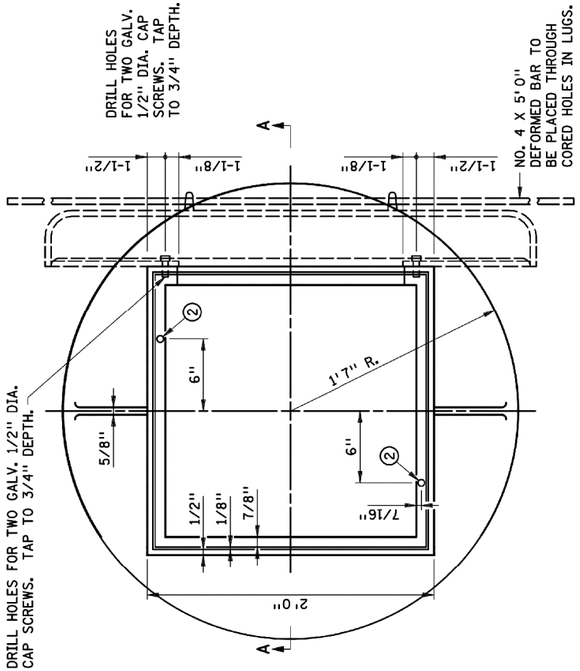
END VIEW

CASTINGS USED FOR ASSEMBLY

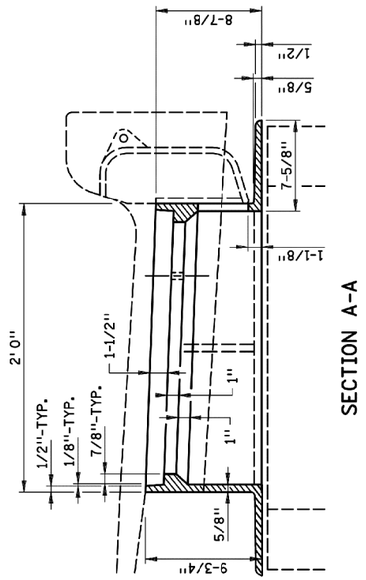
GRATE	NO. 816 (MNDOT STD PLATE 4154B)
CURB BOX ①	NO. 823A (MNDOT STD PLATE 4160) OR

NOTES:

USE 1/4" FILLETS IN ALL CORNERS.
SEE MNDOT STANDARD PLATE 7111 FOR INSTALLATION REQUIREMENTS.
① APPLIES TO DESIGN B OR V CURB AND CURB AND GUTTER.
② AT LOCATIONS INDICATED IN TOP VIEW, PROVIDE 9/16" DIA. HOLES WHEN GRATE NO 816 (MNDOT STD PLATE 4154) IS USED WITH THIS FRAME. FIELD PLACE 1/2" DIA X 4" LONG GALV BOLT IN UP STREAM SIDE AND BENT UNDERSIDE TO PREVENT REMOVAL. THIS WILL PREVENT GRATE NO. 816 (MNDOT STD PLATE 4154) FROM BEING PLACED IN WRONG AND NOT BEING BICYCLE SAFE



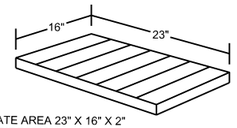
TOP VIEW



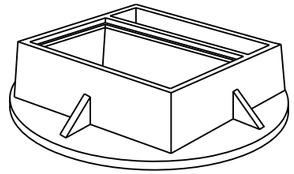
SECTION A-A

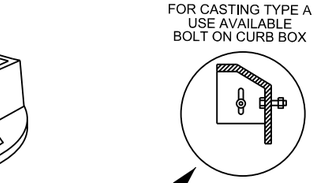
GRATE FRAME CASTING TYPE C & D

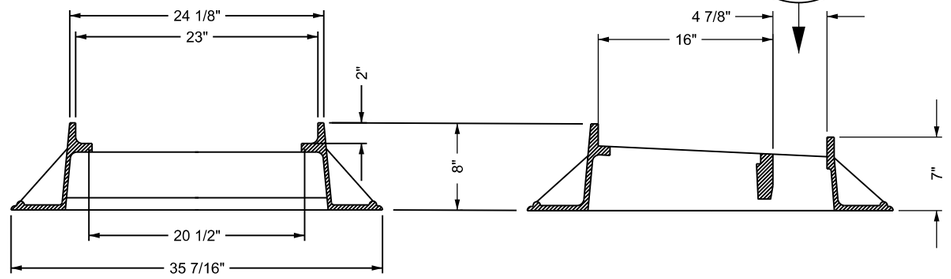
NOT TO SCALE



GRATE AREA 23" X 16" X 2"
MUST BE DIRECTIONAL AND BIKE SAFE
SIMILAR TO MNDOT STD PLATE 4152C
OR MNDOT STD PLATE 4154B

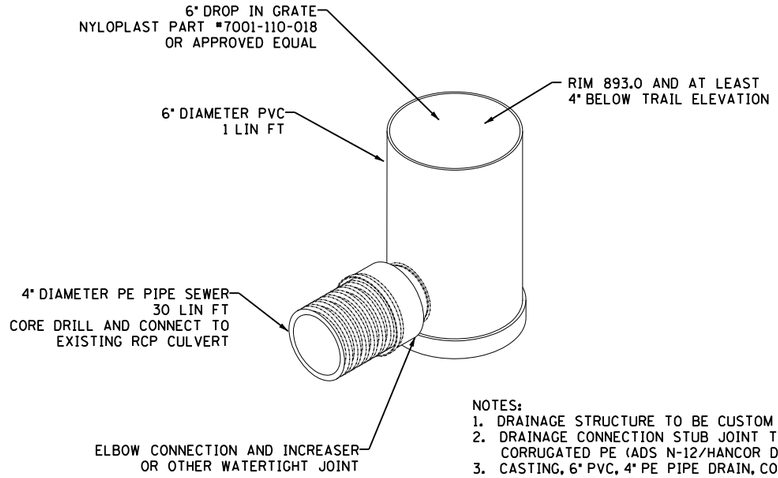






FRAME RING AND CASTING TYPE A AND TYPE B

TO BE USED FOR MEDIAN CATCH BASINS



NOTES:
1. DRAINAGE STRUCTURE TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS.
2. DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED PE (ADS N-12/HANCOR DUAL WALL), N-12 HP, & PVC SEWER (4" - 24").
3. CASTING, 6" PVC, 4" PE PIPE DRAIN, CONNECTIONS, AND CONNECT TO EXISTING CULVERT ARE INCLUSIVE TO DESIGN SPECIAL 3.

DESIGN SPECIAL 3

NOT TO SCALE

NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

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JACOB H. NEWHALL, PE

DATE 12/3/2020 LICENSE # 49170

wsb

ANOKA COUNTY

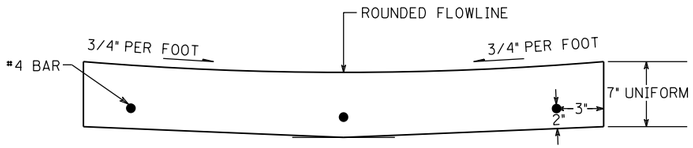
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

MISCELLANEOUS DETAILS
S.A.P. 002-634-003 & S.A.P. 210-020-010

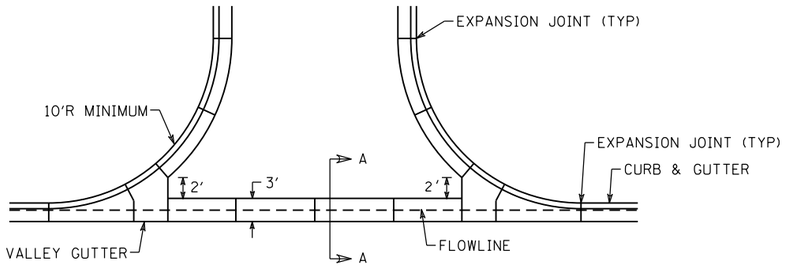
SHEET 31 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\14400-000_mdl.dgn



CONCRETE SWALE SHALL USE HIGH EARLY CONCRETE
FOR WHICH NO ADDITIONAL CONPENSATION WILL BE MADE.

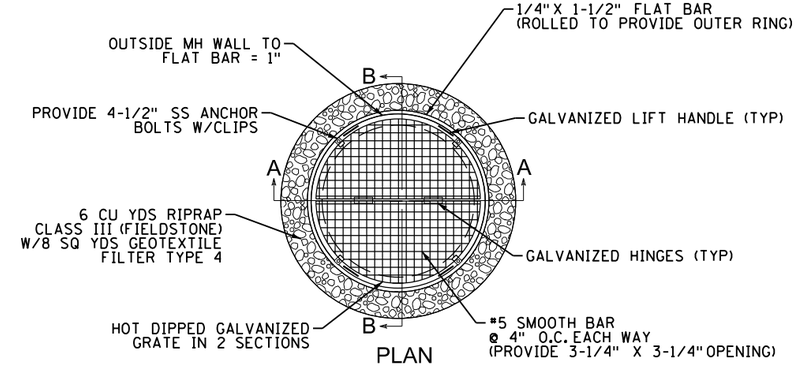
VALLEY GUTTER - SECTION A-A



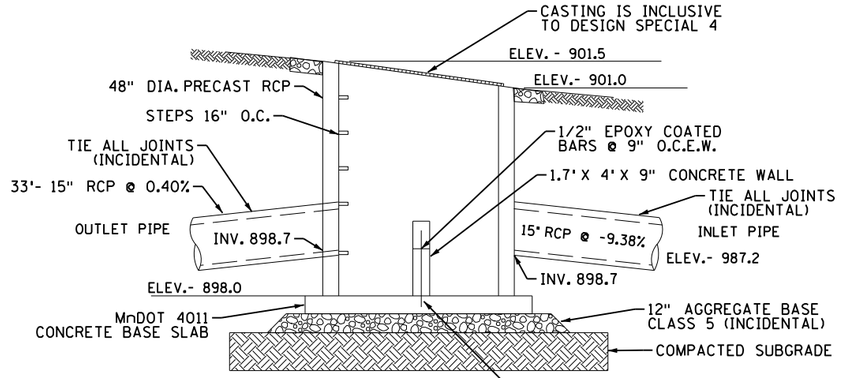
PLAN

PAYMENT FOR CONCRETE VALLEY GUTTER SHALL BE MADE AS CONCRETE CURB & GUTTER DESIGN B612 BY THE LIN FT.

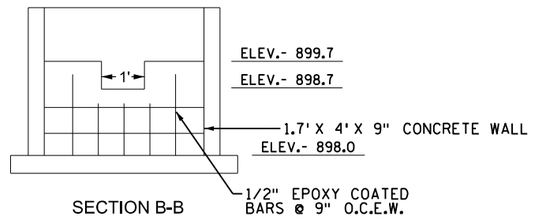
PARKING LOT ENTRANCE DETAIL
NO SCALE



PLAN



SECTION A-A



SECTION B-B

NOTE: SEE SHEET 160 FOR PIPE PROFILES
PLACE LOW RIM ELEVATION TOWARDS BASIN.

OUTLET CONTROL STRUCTURE
DESIGN SPECIAL 4 (STRUCTURE 5200)
NOT TO SCALE

NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
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ANDREW J. PLOWMAN, PE
DATE 12/3/2020 LICENSE # 44200

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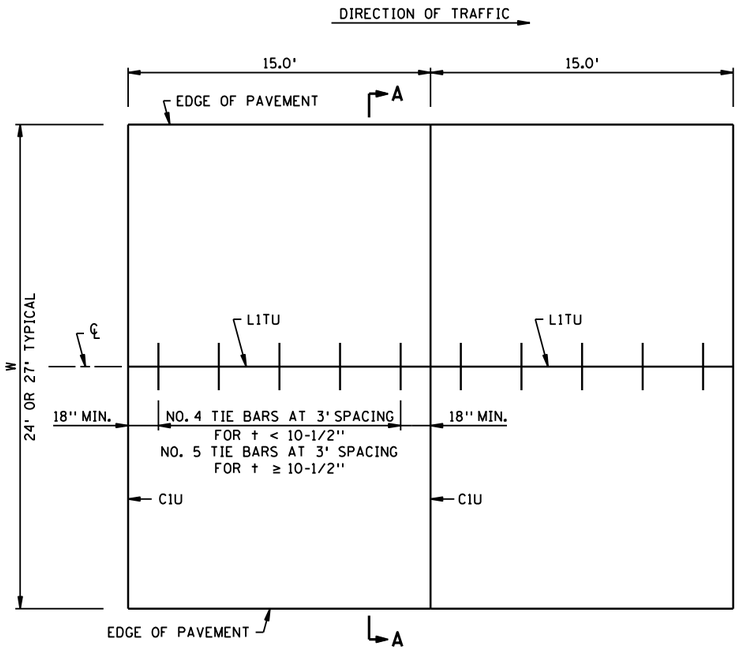
ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

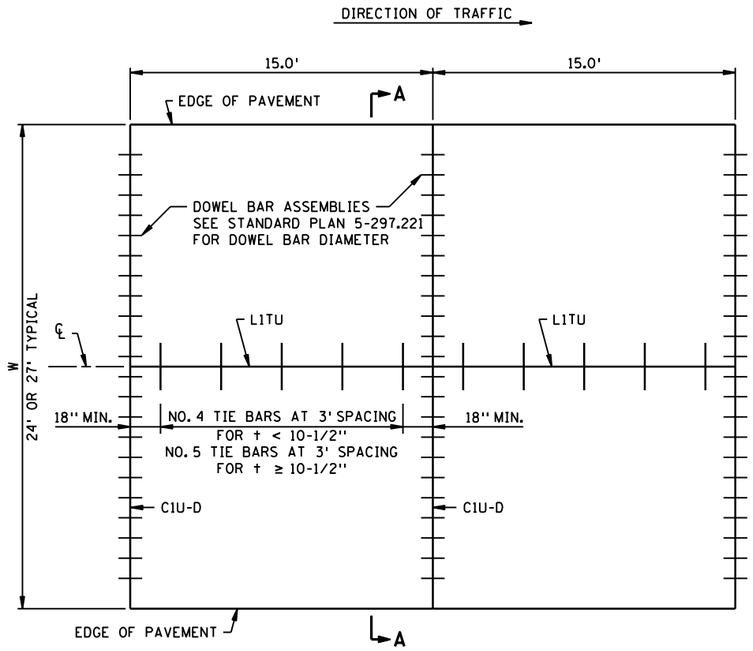
ANOKA COUNTY, MINNESOTA

MISCELLANEOUS DETAILS
S.A.P. 002-634-003 & S.A.P. 210-020-010

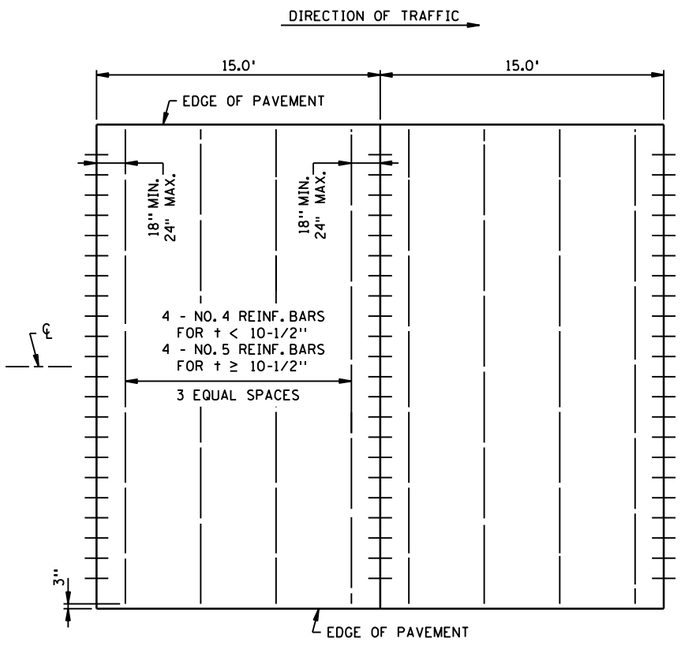
SHEET 32 OF 195 SHEETS



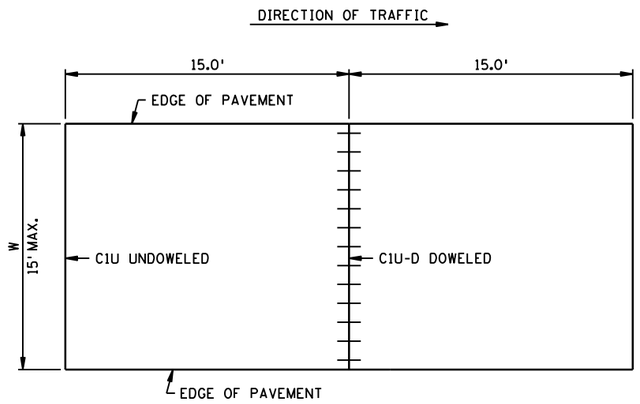
MAINLINE PAVEMENT
UNDOWELED



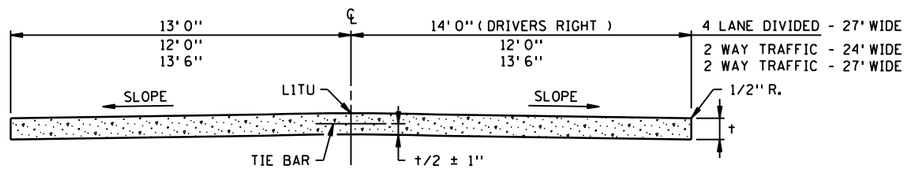
MAINLINE PAVEMENT
DOWELED



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

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.217 | 1 OF 2

APPROVED: 2-16-2016
REVISED:

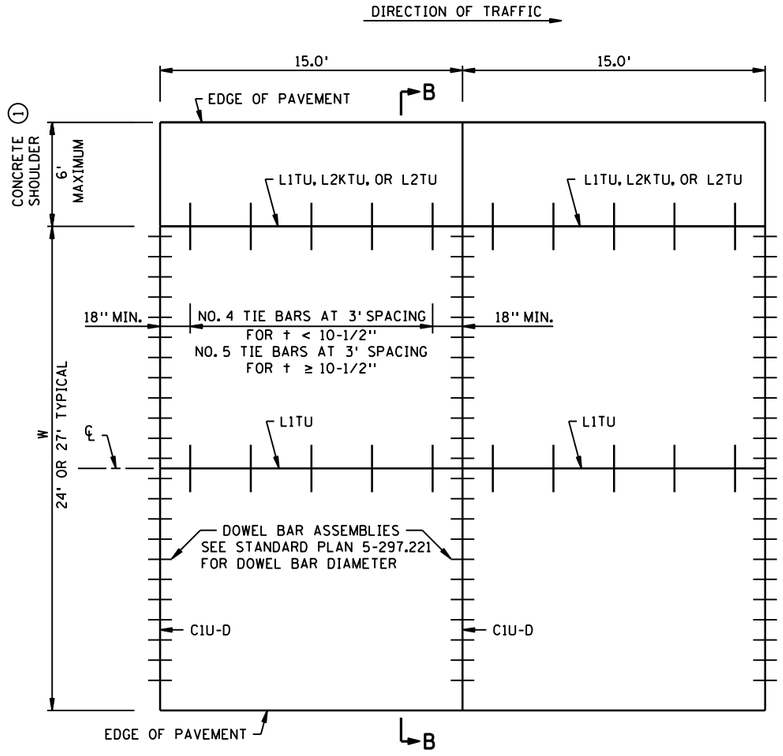
STATE DESIGN ENGINEER

CONCRETE MAINLINE PAVEMENT
15.0 FT. PANEL LENGTH
RURAL

S.A.P. 002-634-003 & S.A.P. 210-020-010

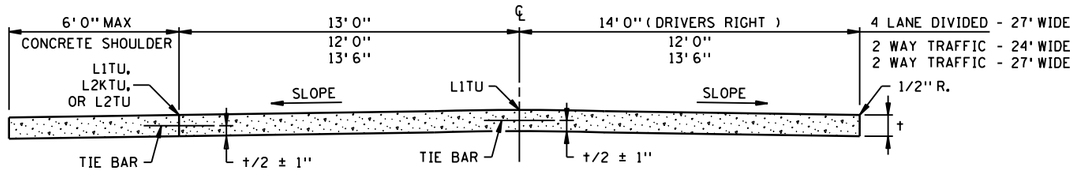
SHEET NO. 33 OF 195

Date Printed: 12/3/2020
MSE Filename: Projects\Minnesota\014400-000\Cad\Plan\14400-000_spn_217.dgn

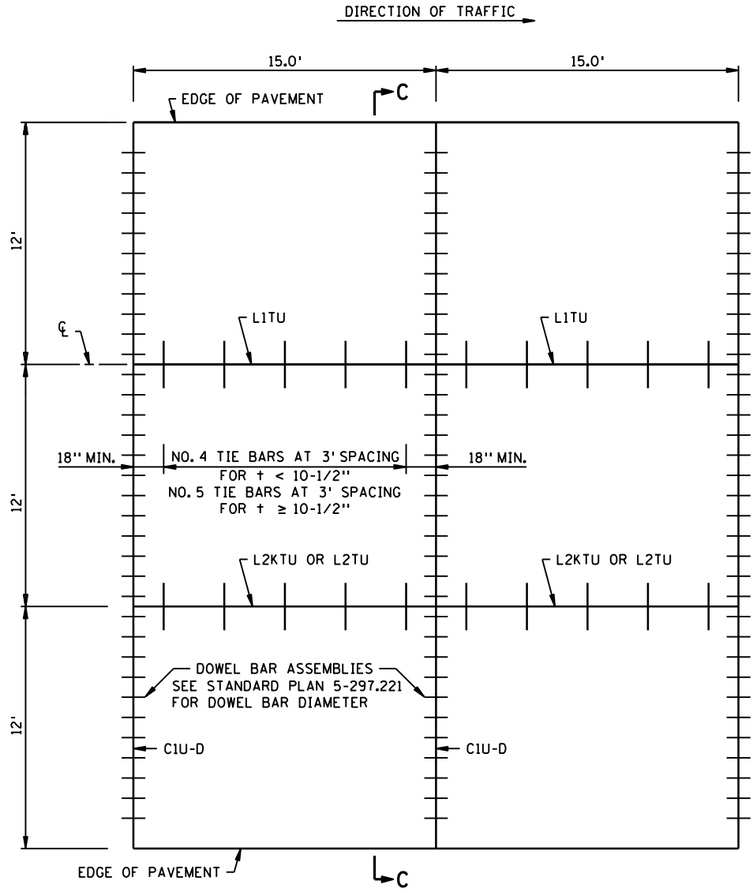


MAINLINE PAVEMENT WITH
INSIDE CONCRETE SHOULDER

DOWELED

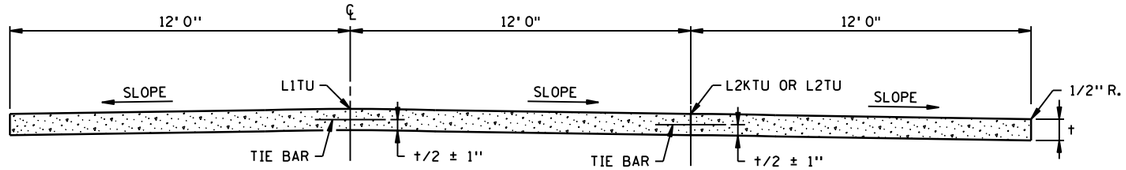


SECTION B-B



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

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.217 | 2 OF 2

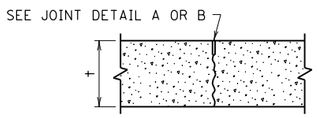
APPROVED: 2-16-2016
REVISED:

STATE DESIGN ENGINEER

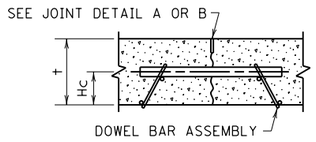
CONCRETE MAINLINE PAVEMENT
15.0 FT. PANEL LENGTH
URBAN OR CONCRETE SHOULDERS

S.A.P. 002-634-003 & S.A.P. 210-020-010

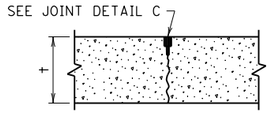
Date Printed: 12/3/2020
MSE Filename: Projects\Minnesota\04400-000\Cadd\Plan\4400-000_spn_217.dgn



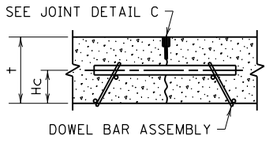
C1U & C2H



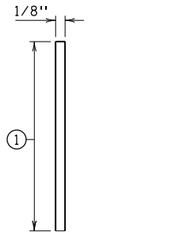
C1U-D & C2H-D (8)



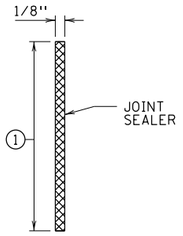
C3P



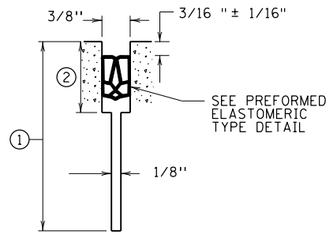
C3P-D (8)



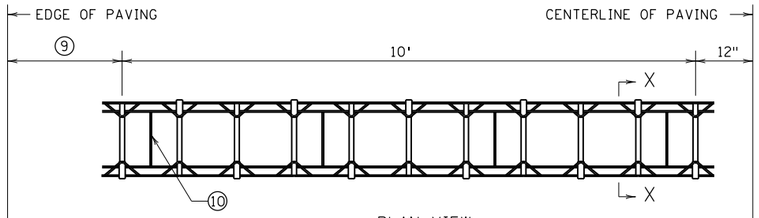
JOINT DETAIL A (3)(5)
SAWED & UNSEALED

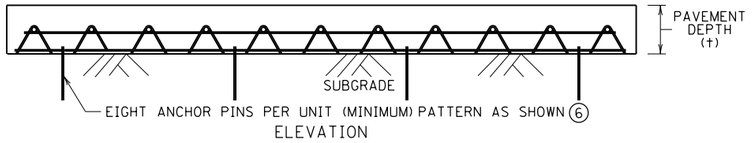


JOINT DETAIL B (4)(5)
SAWED & SEALED



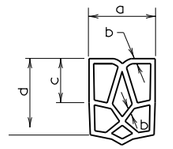
JOINT DETAIL C (4)(5)
SAWED AND SEALED





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.

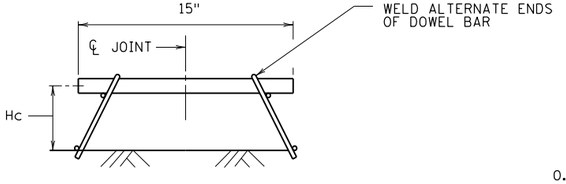


SPEC. REFERENCE 3721

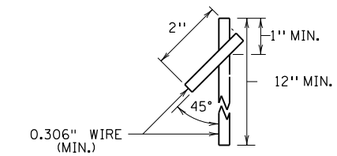
TYPICAL SHAPE FOR SATISFACTORY INSTALLATION IN JOINT (5 CELL MIN.)

PREFORMED ELASTOMERIC TYPE DETAIL (2)

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



SECTION X-X (8)



ANCHOR PIN (7)

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: C2H-D

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

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

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

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

REVISION:

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GLENN ENGSTROM
DIRECTOR, OFFICE OF MATERIALS AND ROAD RESEARCH

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.221 | 1 OF 4

APPROVED: 08-13-2020
REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

PAVEMENT JOINTS

CONTRACTION (DESIGN C)

S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET NO. 35 OF 195

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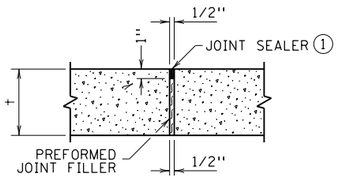
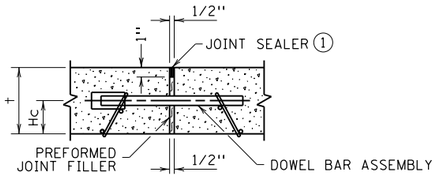


E1H



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"

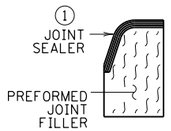
LEGEND — EXAMPLE

E = EXPANSION JOINT — E1H-D

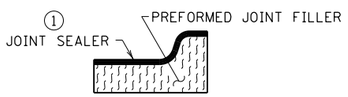
NO. = JOINT REFERENCE

H = HOT POURED

-D = DOWEL BARS



SECTION THRU CURB



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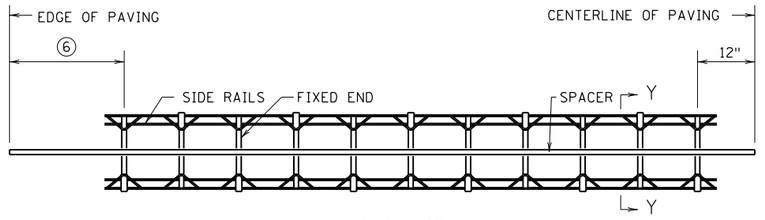
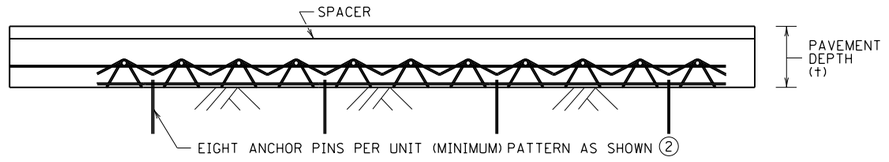
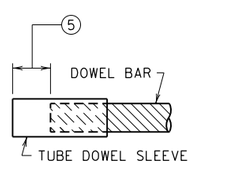


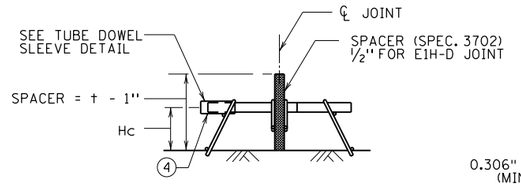
PLAN VIEW
EXPANSION JOINT DOWEL ASSEMBLY



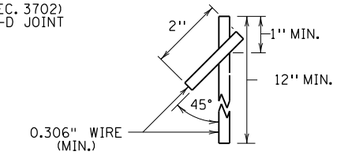
ELEVATION VIEW
EXPANSION JOINT DOWEL BAR ASSEMBLY



TUBE DOWEL SLEEVE DETAIL



SECTION Y-Y (3)



ANCHOR PIN

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

NOTES:

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

SEE STANDARD PLATE 1103 FOR DOWEL BAR ASSEMBLY.

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

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

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

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

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

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

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

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

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GLENN ENGSTROM
DIRECTOR, OFFICE OF MATERIALS AND ROAD RESEARCH

MINNESOTA DEPARTMENT OF TRANSPORTATION

THOMAS STYRBICKI
STATE DESIGN ENGINEER

STANDARD PLAN 5-297.221 | **2 OF 4**

APPROVED: 08-13-2020
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PAVEMENT JOINTS

EXPANSION (DESIGN E)

S.A.P. 002-634-003 & S.A.P. 210-020-010 — SHEET NO. 36 OF 195

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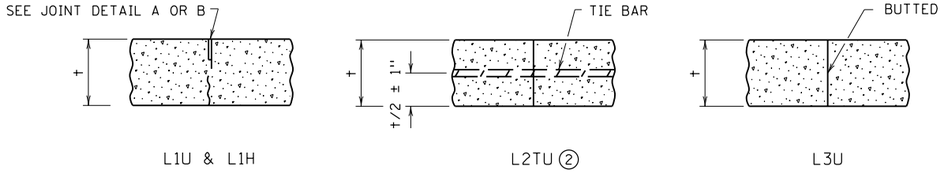
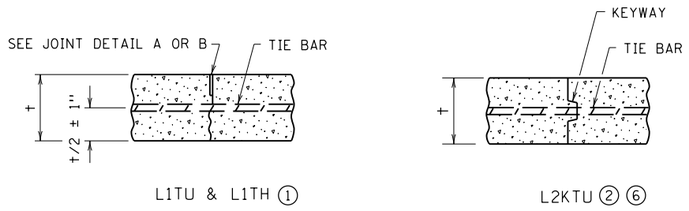




LONGITUDINAL JOINT REFERENCE, DETAIL & SEALER SPECIFICATION TABLE

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	

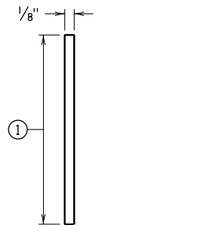
LEGEND

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

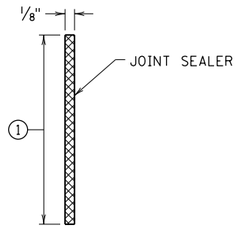
EXAMPLE: L2KTU

TIE BAR TABLE

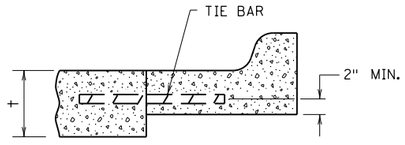
PAVEMENT THICKNESS	TIE BAR SIZE	LENGTH	SPACING
< 10-1/2"	NO. 4	30"	3'
≥ 10-1/2"	NO. 5	36"	3'
ALL THICKNESS WHEN TYING TO CURB AND GUTTER	NO. 4	30"	3'



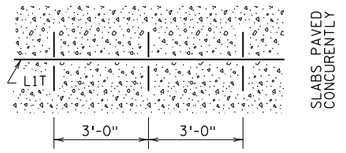
JOINT DETAIL A ③⑤
SAWED & UNSEALED



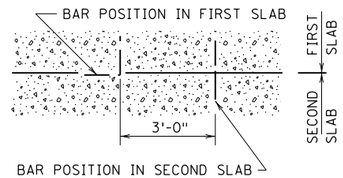
JOINT DETAIL B ④⑤
SAWED & SEALED



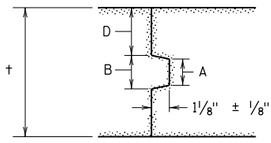
SECTION ⑦
THRU CURB



L1T PAVING DETAIL



L2T & L2KT TIE BAR BENDING ②
AND PAVING DETAIL



PAVEMENT KEYWAY DETAIL ⑥

FIXED FORM KEYWAY TABLE ⑥

† PAVEMENT THICKNESS	D (TOLERANCE ± 1/4")	A	B
< 7"	2-1/2"	1"	2"
7" TO 7-1/2"	3"	2"	2-1/2"
8" TO 10"	4"	2"	2-1/2"
≥ 10-1/2"	5"	2"	2-1/2"

SLIPFORM KEYWAY TABLE ⑥

† PAVEMENT THICKNESS	D (TOLERANCE ± 1/4")
< 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 ± ¼".

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.

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DIRECTOR, OFFICE OF MATERIALS AND ROAD RESEARCH

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.221 | 3 OF 4

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REVISED:
THOMAS STYRBICKI
STATE DESIGN ENGINEER

PAVEMENT JOINTS

LONGITUDINAL (DESIGN L)

S.A.P. 002-634-003 & S.A.P. 210-020-010 | SHEET NO. 37 OF 195

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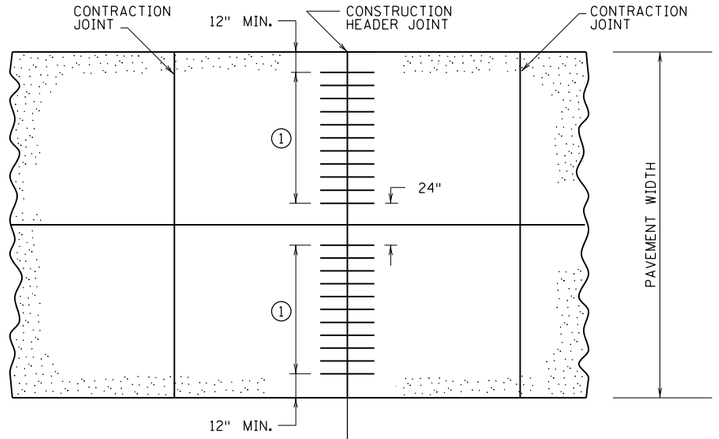
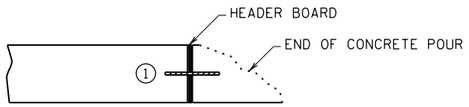
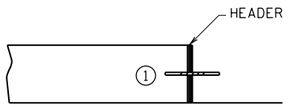


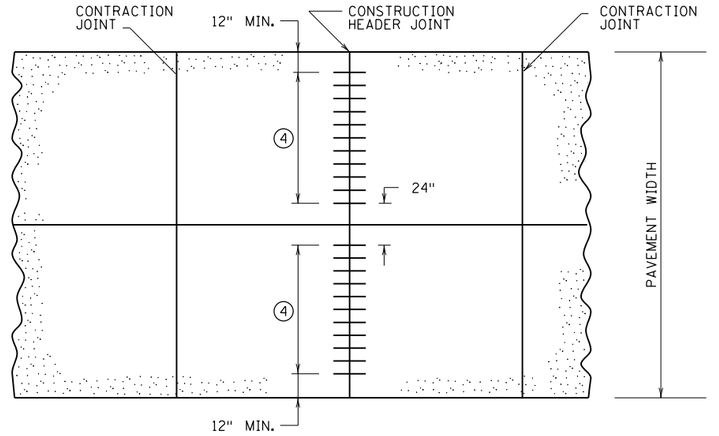
REINFORCEMENT BAR CONSTRUCTION HEADER



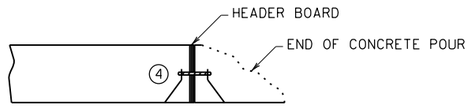
SLIPFORM PLACED REINFORCEMENT BAR HEADER (2)



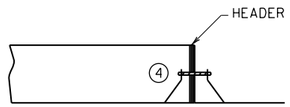
FIXED FORM PLACED REINFORCEMENT BAR HEADER (3)



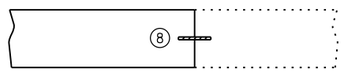
DOWEL BAR CONSTRUCTION HEADER



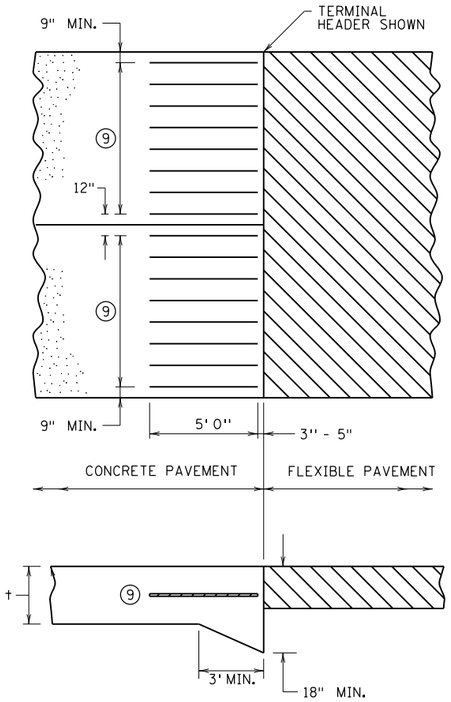
SLIPFORM PLACED DOWEL BAR HEADER (6)



FIXED FORM PLACED DOWEL BAR HEADER (7)



DRILL AND GROUT DOWEL BAR HEADER



PERMANENT HEADER (10)

NOTES:

(1) PROVIDE EPOXY COATED REINFORCEMENT BARS IN ACCORDANCE WITH SPEC. 3301.
- WHEN t < 10½", NO. 4 BARS 30" LONG, SPREAD 12" ON CENTER AT DEPTH OF t/2 ± 1"
- WHEN t ≥ 10½", NO. 5 BARS 36" 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 BARS, SPACED 12" ON CENTER AT A DEPTH OF T/2 ±1" WITH A MNDOT APPROVED EPOXY OR NON-SHRINK GROUT IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.

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

(10) USE THE TERMINAL HEADER WHEN LONG SECTIONS OF CONCRETE ABUT BITUMINOUS. DO NOT USE A TERMINAL HEADER ON SHORT CONCRETE SECTIONS (LESS THAN 200 FEET) ABUTTING BITUMINOUS (E.G. SIDE STREETS, ETC.). CONTACT THE CONCRETE UNIT WHEN FUTURE CONCRETE IS BEING CONSTRUCTED ADJACENT TO AN EXISTING TERMINAL HEADER..

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DIRECTOR, OFFICE OF MATERIALS AND ROAD RESEARCH

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.221 | 4 OF 4

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REVISED:

THOMAS STYRBICKI
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PAVEMENT JOINTS

CONSTRUCTION AND TERMINAL HEADERS

S.A.P. 002-634-003 & S.A.P. 210-020-010 | SHEET NO. 38 OF 195

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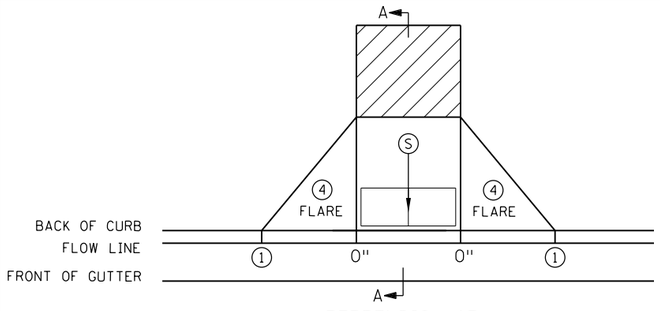
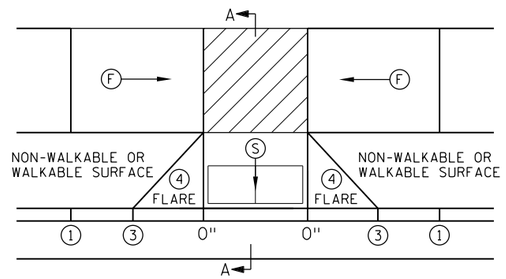
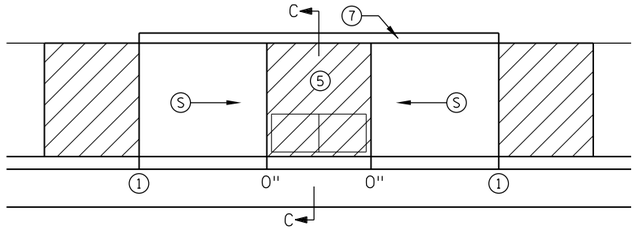


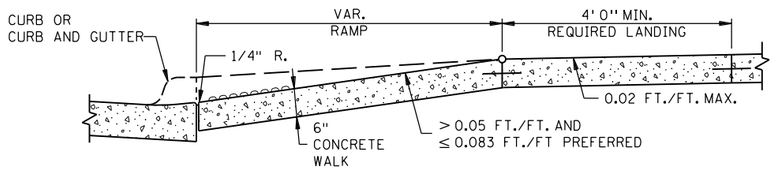
PERPENDICULAR



TIERED PERPENDICULAR

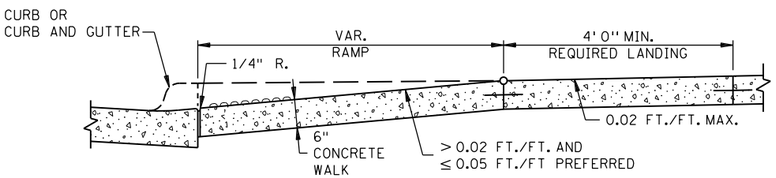


PARALLEL



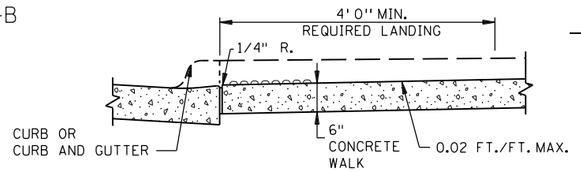
SECTION A-A

PERPENDICULAR/TIERED/DIAGONAL



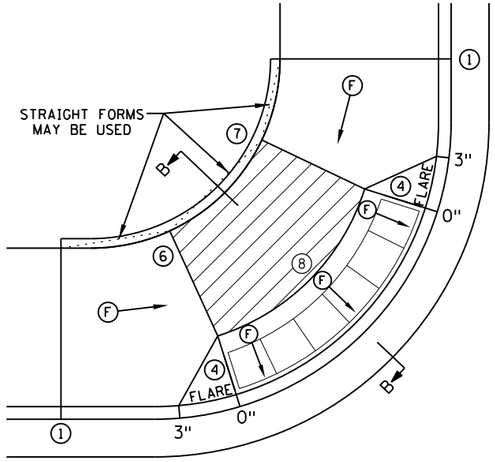
SECTION B-B

FAN

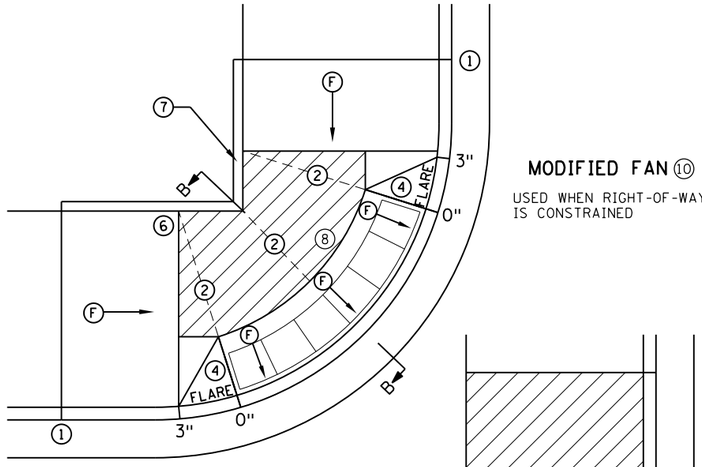


SECTION C-C

PARALLEL/DEPRESSED CORNER

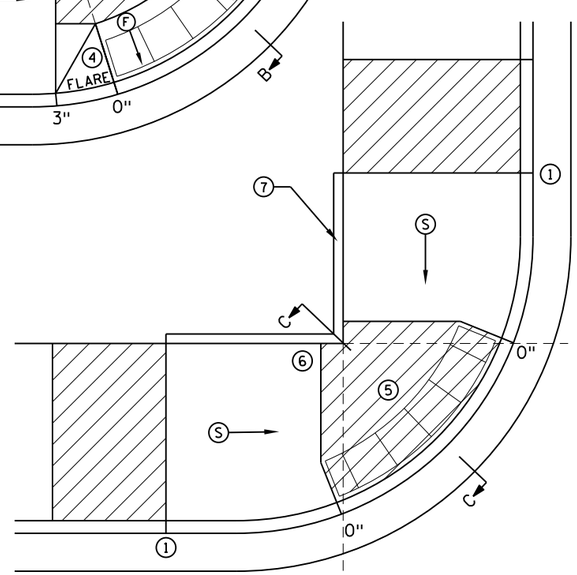


FAN⑩

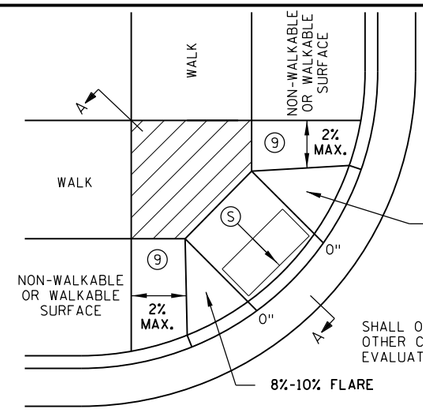


MODIFIED FAN ⑩

USED WHEN RIGHT-OF-WAY IS CONSTRAINED



DEPRESSED CORNER



DIAGONAL

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

NOTES:

LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE (PAR) CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE GREATER THAN 2%.

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

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

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

ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL, THUS BOTH SIDES OF A SLOPED WALKING SURFACE MUST BE EQUAL LENGTH. (EXCEPT AS STATED IN ⑥ BELOW.

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

TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

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

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

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

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

① MATCH FULL HEIGHT CURB.

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

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

④ SEE SHEET 4 OF 6, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS, WHEN INITIAL LANDING IS AT FULL CURB HEIGHT.

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

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

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

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

⑨ PAVE FULL WALK WIDTH.

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

LEGEND

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

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

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

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

X" CURB HEIGHT

REVISION:

APPROVED: JANUARY 23, 2017

OPERATIONS ENGINEER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.250 | 1 OF 6

APPROVED: 1-23-2017

REVISED:

STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

S.A.P. 002-634-003 & S.A.P. 210-020-010

Date Printed: 12/3/2020
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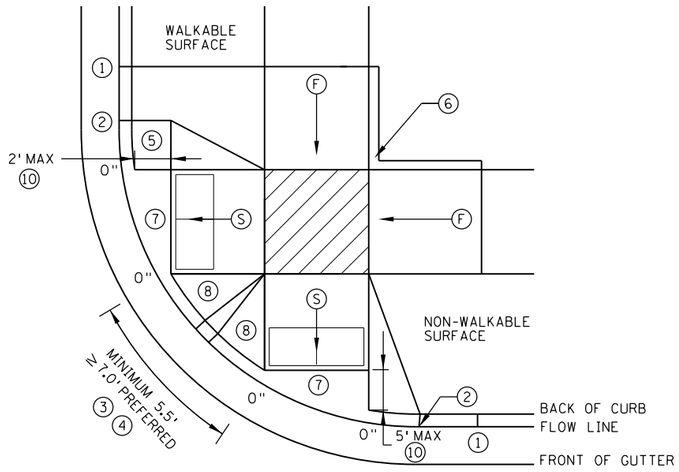
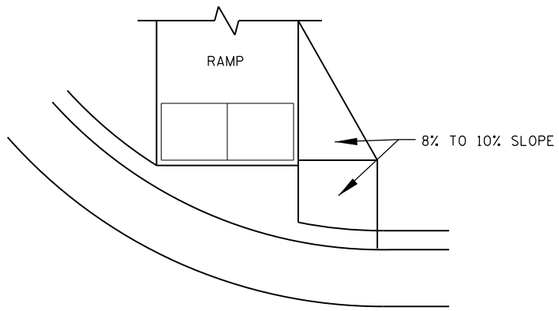


COMBINED DIRECTIONAL ⑨



DIRECTIONAL RAMP WALKABLE FLARE

NOTES:

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

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

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

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

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

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

TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

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

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

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

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

① MATCH FULL CURB HEIGHT.

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

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

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

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

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

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

⑧ 8% TO 10% WALKABLE FLARE.

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

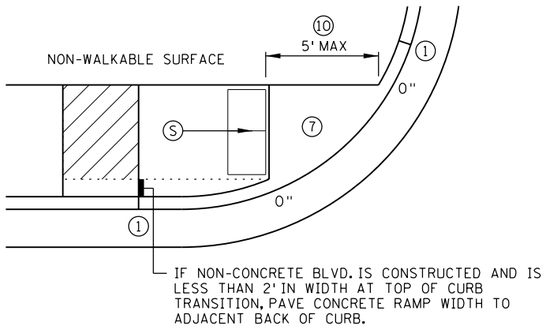
⑩ FRONT EDGE OF DETECTABLE WARNING SHALL BE SET BACK 2' MAXIMUM WHEN ADJACENT TO WALKABLE SURFACE, AND 5' MAXIMUM WHEN ADJACENT TO NON-WALKABLE SURFACE WITH ONE CORNER SET 3" FROM BACK OF CURB. A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP WITHOUT RAISED OBSTACLES THAT COULD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

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

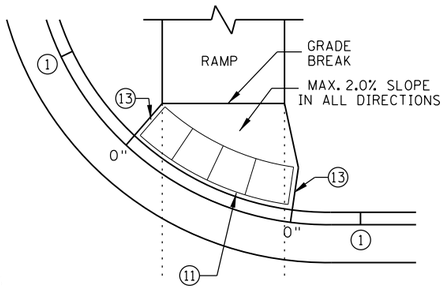
⑫ FOR DIRECTIONAL RAMPS WITH THE DETECTABLE WARNINGS PLACED AT THE BACK OF CURB, THE DETECTABLE WARNINGS SHALL COVER THE ENTIRE WIDTH OF THE WALK/PATH. THIS ENSURES A DETECTABLE EDGE AND HELPS ELIMINATE THE CURB TAPER OBSTRUCTING THE PATH OF PEDESTRIAN TRAVEL.

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

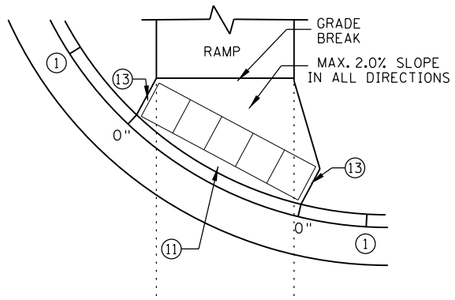
⑭ TO BE USED FOR ALL DIRECTIONAL RAMPS, EXCEPT WHERE DOMES ARE PLACED ALONG THE BACK OF CURB.

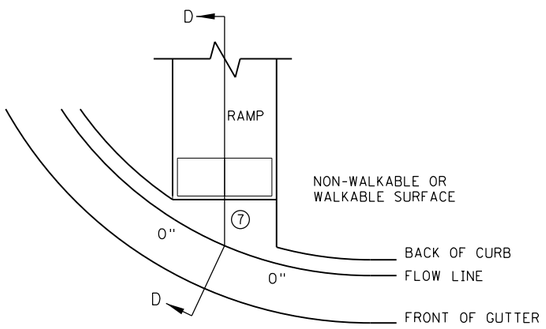


STANDARD ONE-WAY DIRECTIONAL ⑨

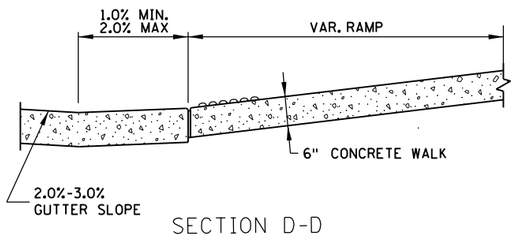


ONE-WAY DIRECTIONAL WITH DETECTABLE WARNING AT BACK OF CURB

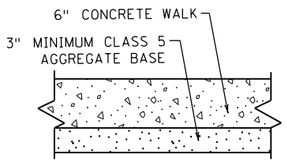




CURB FOR DIRECTIONAL RAMPS ⑭



SECTION D-D



TYPICAL SIDEWALK SECTION WITHIN INTERSECTION CORNER

LEGEND
THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.
(S) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.
(F) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.
LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PARS.
X" CURB HEIGHT

REVISION:
APPROVED: JANUARY 23, 2017
OPERATIONS ENGINEER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.250 | 2 OF 6

APPROVED: 1-23-2017
REVISED:
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

S.A.P. 002-634-003 & S.A.P. 210-020-010

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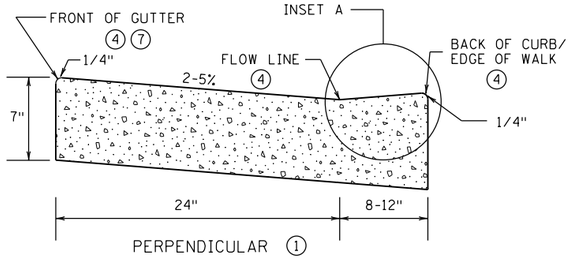
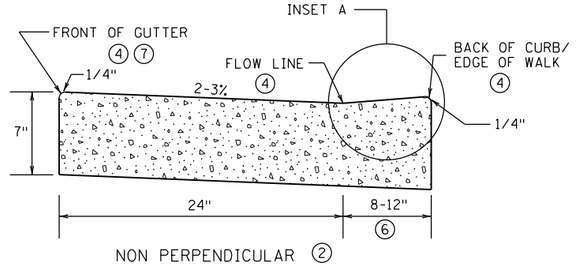
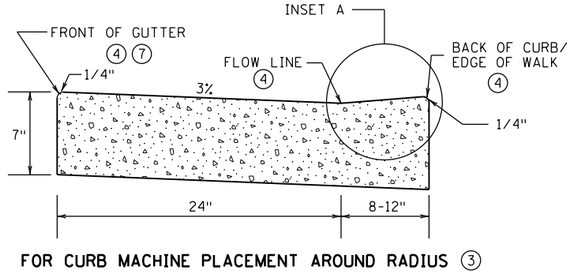


PERPENDICULAR (1)

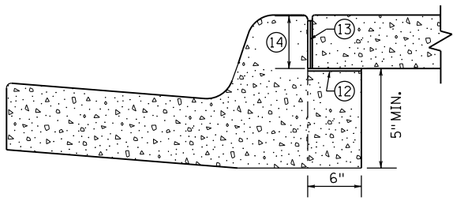


NON PERPENDICULAR (2)

PEDESTRIAN ACCESS ROUTE CURB & GUTTER DETAIL

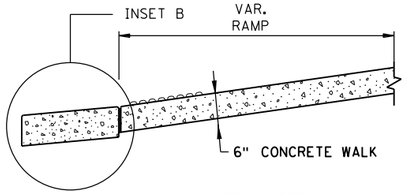


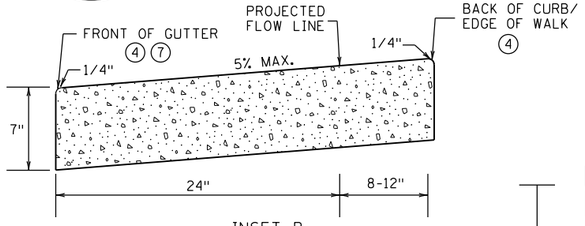
FOR CURB MACHINE PLACEMENT AROUND RADIUS (3)
(REGARDLESS OF RAMP TYPE)



OPTIONAL SILL CURB WHEN SIDEWALK IS AT BACK OF CURB

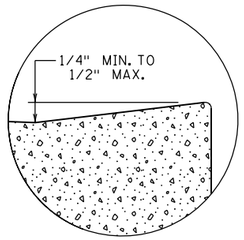
CONCRETE SILL TO BE USED ONLY WHEN SPECIFIED IN THE PLAN.



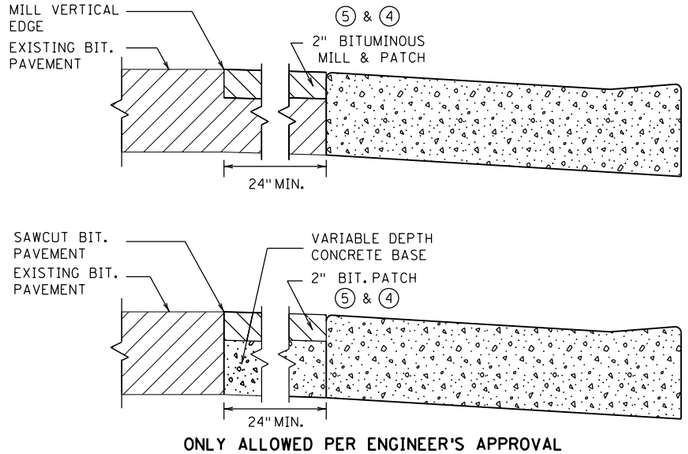


INSET B

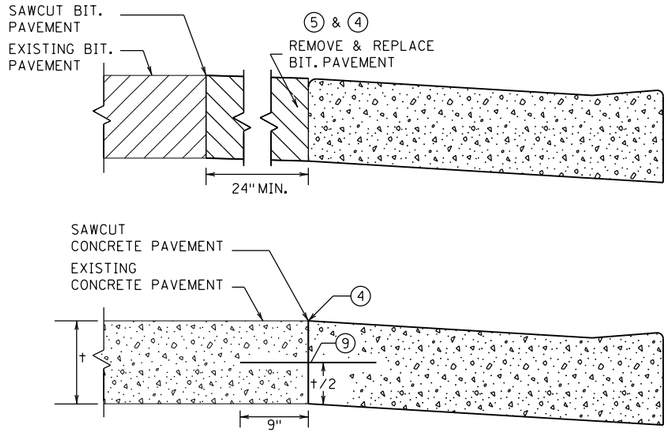
OUTFLOW GUTTER (8)



INSET A

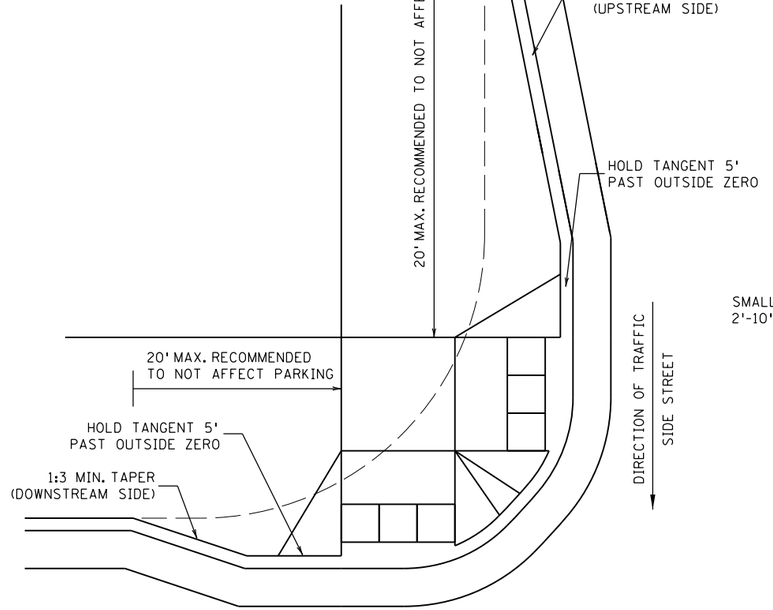


ONLY ALLOWED PER ENGINEER'S APPROVAL



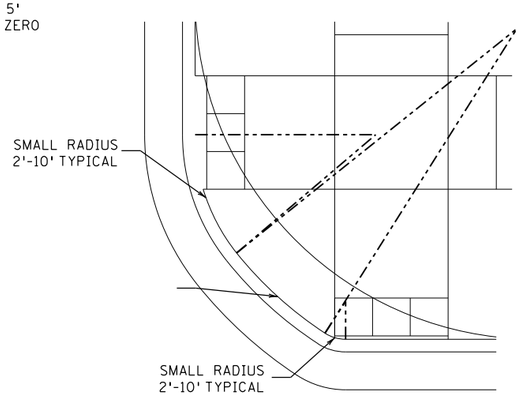
PAVEMENT TREATMENT OPTIONS IN FRONT OF CURB & GUTTER

FOR USE ON CURB RAMP RETROFITS



ADA CURB EXTENSION WITH COMPOUND RADIUS (BUMP OUT) (11)

DIRECTION OF TRAFFIC
MAIN STREET



COMBINED DIRECTIONAL (10) (COMPOUND RADIUS)

NOTES:

POSITIVE FLOW LINE DRAINAGE SHALL BE MAINTAINED THROUGH THE PEDESTRIAN ACCESS ROUTE (PAR) AT A 2% MAXIMUM.

NO PONDING SHALL BE PRESENT IN THE PAR.

ANY VERTICAL LIP THAT OCCURS AT THE FLOW LINE SHALL NOT BE GREATER THAN 1/4 INCH.

(1) FOR USE AT CURB CUTS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: PERPENDICULAR, TIERED PERPENDICULAR, PARALLEL, AND DIAGONAL RAMPS.

(2) FOR USE AT CURB RAMPS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED NON PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: FANS & DEPRESSED CORNERS.

(3) BEGIN GUTTER SLOPE TRANSITION 10' OUTSIDE OF ALL CURB RAMPS.

(4) THERE SHALL BE NO VERTICAL DISCONTINUITIES GREATER THAN 1/4".

(5) ELEVATION CHANGE TAKES PLACE FROM THE EXISTING TO NEW FRONT OF GUTTER. PATCH IS USED TO MATCH THE NEW GUTTER FACE INTO THE EXISTING ROADWAY.

(6) VARIABLE WIDTH FOR DIRECTIONAL CURB APPLICATIONS. SEE SHEET 2 FOR DIRECTIONAL CURB SLOPE REQUIREMENTS.

(7) TOP FRONT OF GUTTER SHALL BE CONSTRUCTED FLUSH WITH PROPOSED ADJACENT PAVEMENT ELEVATION. TOP 1.5" OF THE GUTTER FACE MUST BE A FORMED EDGE. PAR GUTTER SHALL NOT BE OVERLAID.

(8) SHOULD BE USED AT VERTICALLY CONSTRAINED AREAS WHEN AT A DRAINAGE HIGH POINT OR SUPER ELEVATED ROADWAY SEGMENTS.

(9) DRILL AND GROUT NO. 4 EPOXY-COATED 18" LONG TIE BARS AT 30" CENTER TO CENTER INTO EXISTING CONCRETE PAVEMENT 1' MINIMUM FROM ALL JOINTS.

(10) HELPS PROVIDE TWO SEPARATE RAMPS, REDUCES THE DOME SETBACK LENGTH AND MINIMIZES DIRECTIONAL CURB. THIS RADIUS DESIGN CLOSELY FOLLOWS THE TURNING VEHICLE PATH WHILE OPTIMIZING CURB RAMP LENGTH.

(11) CURB EXTENSIONS SHOULD BE USED IN VERTICALLY CONSTRAINED AREAS, USUALLY IN DOWNTOWN ROADWAY SEGMENTS WHERE ON-STREET PARKING IS AVAILABLE. CURB EXTENSIONS SHOULD BE CONSIDERED FOR APS INTERSECTIONS WHERE SPACE IS LIMITED. PUSH BUTTONS MUST MEET APS CRITERIA AS DESCRIBED IN THE PUSH BUTTON LOCATION DETAIL SHEET.

(12) PLACE BOND BREAKER BETWEEN WALK AND TOP OF SILL.

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

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

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STANDARD PLAN 5-297.250 | 3 OF 6

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PEDESTRIAN CURB RAMP DETAILS

S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET NO. 41 OF 195

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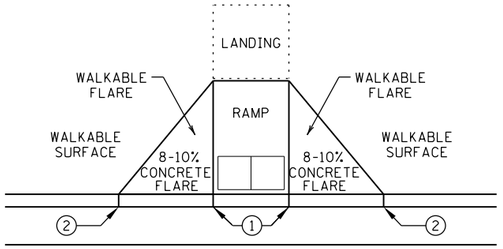
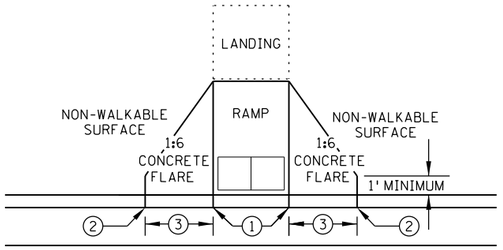
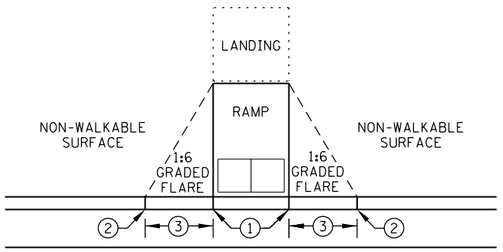
MSB Filename: Projects\Minnesota\014400-000\Cad\Plan\3490-000_spn_250.dgn



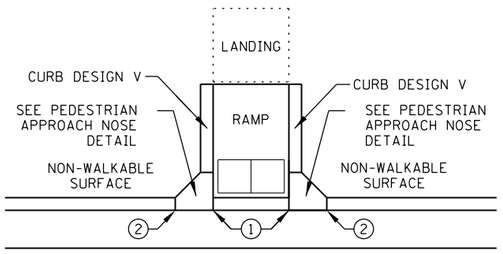
PAVED FLARES
ADJACENT TO WALKABLE SURFACE



PAVED FLARES
ADJACENT TO NON-WALKABLE SURFACE

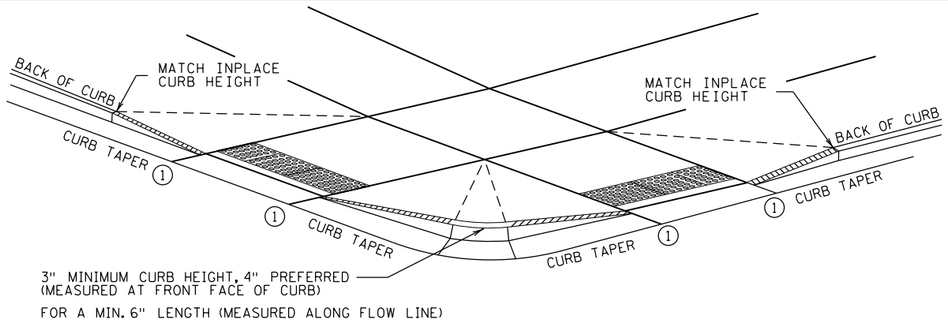


GRADED FLARES

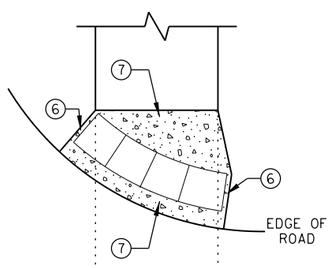


RETURNED CURB ⑤

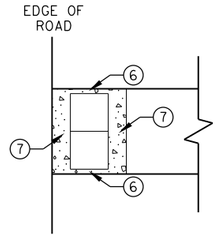
TYPICAL SIDE TREATMENT OPTIONS ④ ⑪



DETECTABLE EDGE WITH ⑧ CURB AND GUTTER

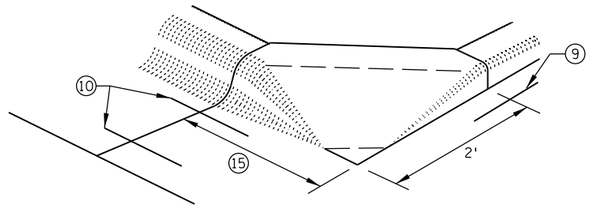


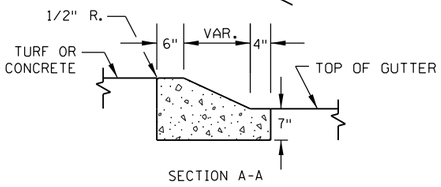
RADIAL DETECTABLE WARNING



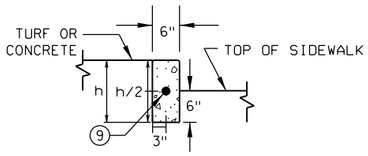
RECTANGULAR DETECTABLE WARNING

DETECTABLE EDGE WITHOUT CURB AND GUTTER

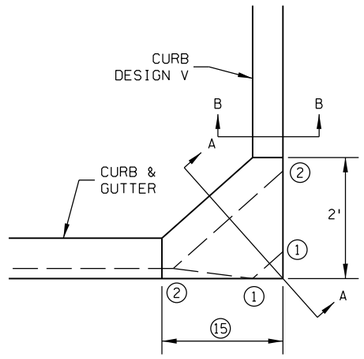




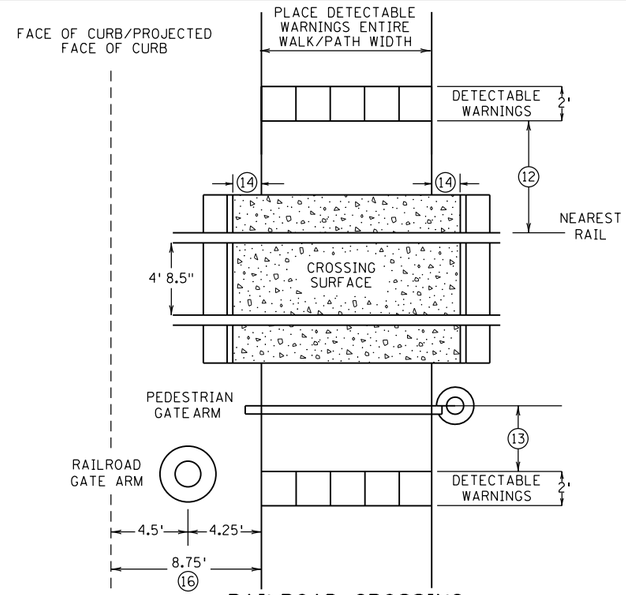
SECTION A-A



SECTION B-B



PEDESTRIAN APPROACH NOSE DETAIL
(FOR RETURNED CURB SIDE TREATMENT)



RAILROAD CROSSING PLAN VIEW

NOTES:

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

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

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

① 0" CURB HEIGHT.

② FULL CURB HEIGHT.

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

④ SIDE TREATMENTS ARE APPLICABLE TO ALL RAMP TYPES AND SHOULD BE IMPLEMENTED AS NEEDED AS FIELD CONDITIONS DICTATE. THE ENGINEER SHALL DETERMINE THE RAMP SIDE TREATMENTS BASED ON MAINTENANCE OF BOTH ROADWAY AND SIDEWALK, ADJACENT PROPERTY CONSIDERATIONS, AND MITIGATING CONSTRUCTION IMPACTS.

⑤ TYPICALLY USED FOR MEDIANS AND ISLANDS.

⑥ WHEN NO CONCRETE FLARES ARE PROPOSED, THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE EDGE OF ROADWAY. MAINTAIN 3" MAX. BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.

⑦ IF NO CURB AND GUTTER IS PLACED IN RURAL SECTIONS, DETECTABLE WARNINGS SHALL BE PLACED 1' FROM THE EDGE OF BITUMINOUS ROADWAY AND/OR BITUMINOUS SHARED-USE PATH TO PROVIDE VISUAL CONTRAST.

⑧ ALL CONSTRUCTED CURBS MUST HAVE A CONTINUOUS DETECTABLE EDGE FOR THE VISUALLY IMPAIRED. THIS DETECTABLE EDGE REQUIRES DETECTABLE WARNINGS WHEREVER THERE IS ZERO-INCH HIGH CURB. CURB TAPERS ARE CONSIDERED A DETECTABLE EDGE WHEN THE TAPER STARTS WITHIN 3" OF THE EDGE OF THE DETECTABLE WARNINGS AND UNIFORMLY RISES TO A 3-INCH MINIMUM CURB HEIGHT. ANY CURB NOT PART OF A CURB TAPER AND LESS THAN 3 INCHES IN HEIGHT IS NOT CONSIDERED A DETECTABLE EDGE AND THEREFORE IS NOT COMPLIANT WITH ACCESSIBILITY STANDARDS.

⑨ DRILL AND GROUT 1 - NO. 4 12" LONG REINFORCEMENT BAR (EPOXY COATED) WITH 3" MIN. COVER. REINFORCEMENT BARS ARE NOT NEEDED IF THE APPROACH NOSE IS POURED INTEGRAL WITH THE V CURB.

⑩ DRILL AND GROUT 2 - NO. 4 12" LONG REINFORCEMENT BARS (EPOXY COATED) WITH 3" MIN. COVER. REINFORCEMENT BARS ARE NOT NEEDED IF THE APPROACH NOSE IS POURED INTEGRAL WITH THE CURB AND GUTTER.

⑪ SIDE TREATMENT EXAMPLES SHOWN ARE WHEN THE INITIAL LANDING IS APPROXIMATELY LEVEL WITH THE FULL HEIGHT CURB (I.E. 6' LONG RAMP FOR 6" HIGH CURB). WHEN THE INITIAL LANDING IS MORE THAN 1" BELOW FULL HEIGHT CURB REFER TO SHEETS 1 & 2 TO MODIFY THE CURB HEIGHT TAPERS AND MAINTAIN POSITIVE BOULEVARD DRAINAGE.

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

⑬ WHEN PEDESTRIAN GATES ARE PROVIDED, DETECTABLE WARNING SURFACES SHALL BE PLACED ON THE SIDE OF THE GATES OPPOSITE THE RAIL, 2' FROM THE APPROACHING SIDE OF THE GATE ARM. THIS CRITERIA GOVERNS OVER NOTE ⑫.

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

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

⑯ SIDEWALK TO BE PLACED 8.75' MIN. FROM THE FACE OF CURB/PROJECTED FACE OF CURB. THIS ENSURES MIN. CLEARANCE BETWEEN THE SIDEWALK AND GATE ARM COUNTERWEIGHT SUPPORTS.

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STANDARD PLAN 5-297.250 | 4 OF 6

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PEDESTRIAN CURB RAMP DETAILS

S.A.P. 002-634-003 & S.A.P. 210-020-010 | SHEET NO. 42 OF 195

Date Printed: 12/3/2020
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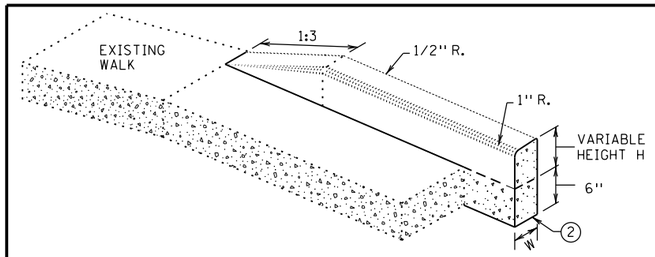
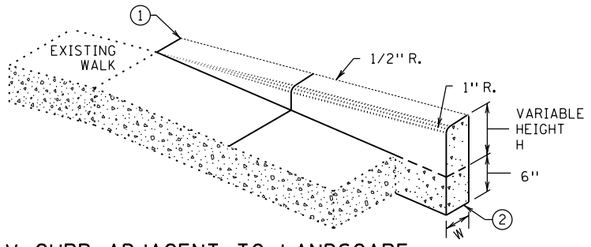


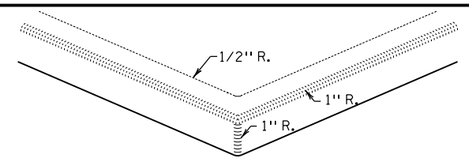
V CURB ADJACENT TO LANDSCAPE

CURB WITHIN SIDEWALK LIMITS

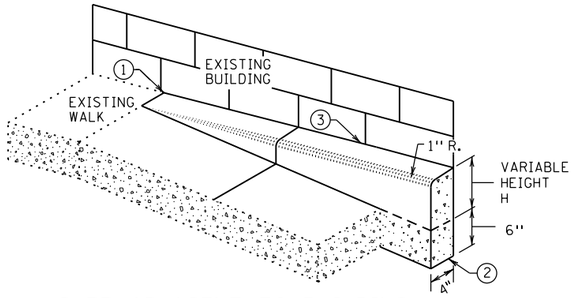


V CURB ADJACENT TO LANDSCAPE

CURB OUTSIDE SIDEWALK LIMITS

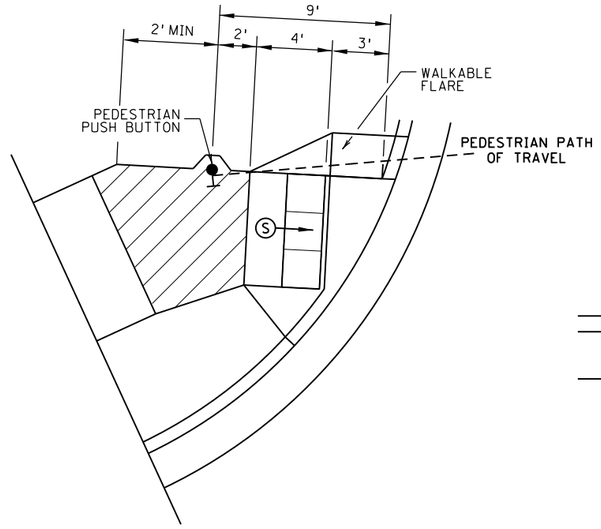


V CURB INTERSECTION



V CURB ADJACENT TO BUILDING OR BARRIER

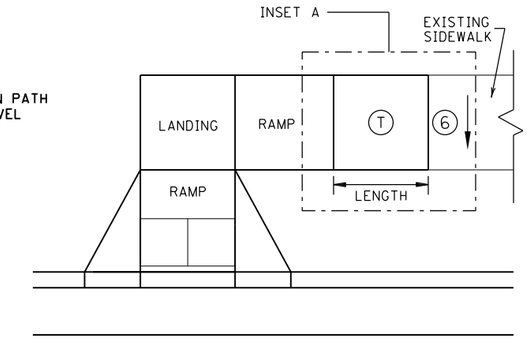
CONCRETE CURB DESIGN V	
CURB HEIGHT H	CURB WIDTH W
< 6"	4"
≥ 6"	6"

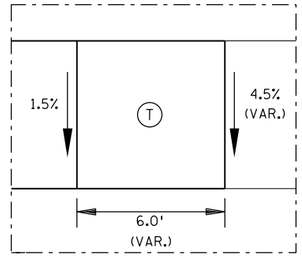


SEMI-DIRECTIONAL RAMP (3,4,9)

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

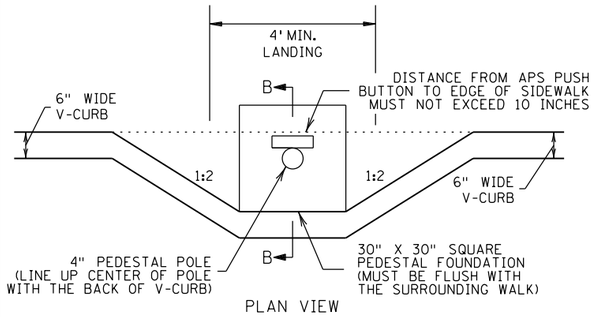
PRIMARILY USED FOR APS APPLICATIONS WHERE THE PAR DOES NOT CONTINUE PAST THE PUSH BUTTON (DEAD-END SIDEWALK)



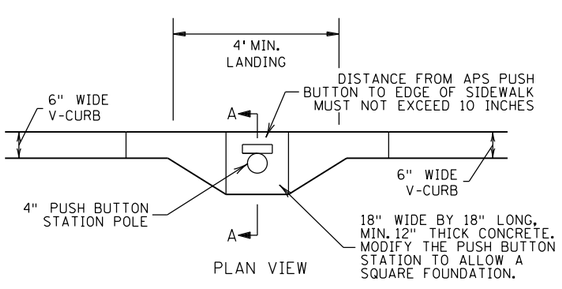


INSET A

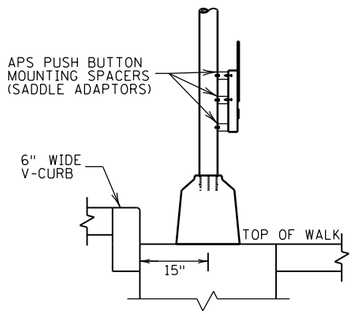
TRANSITION PANEL ④⑤



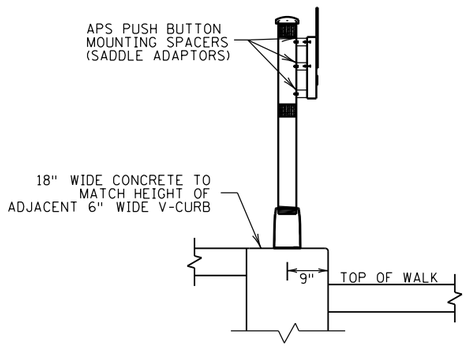
PLAN VIEW



PLAN VIEW



SECTION B-B



SECTION A-A

SIGNAL PEDESTAL & PUSH BUTTON (V-CURB)

PUSH BUTTON STATION (V-CURB)

NOTES:

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

ALL V CURB CONTRACTION JOINTS SHALL MATCH CONCRETE WALK JOINTS.

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

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

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

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

(2) ALL V CURB SHALL MATCH BOTTOM OF ADJACENT WALK.

(3) EDGE BETWEEN NEW V CURB AND INPLACE STRUCTURE SHALL BE SEALED AND BOND BREAKER SHALL BE USED BETWEEN EXISTING STRUCTURE AND PLACED V-CURB.

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

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

(6) EXISTING CROSS SLOPE GREATER THAN 2.0%.

LEGEND

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

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

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

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

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PEDESTRIAN CURB RAMP DETAILS

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SHEET NO. 43 OF 195

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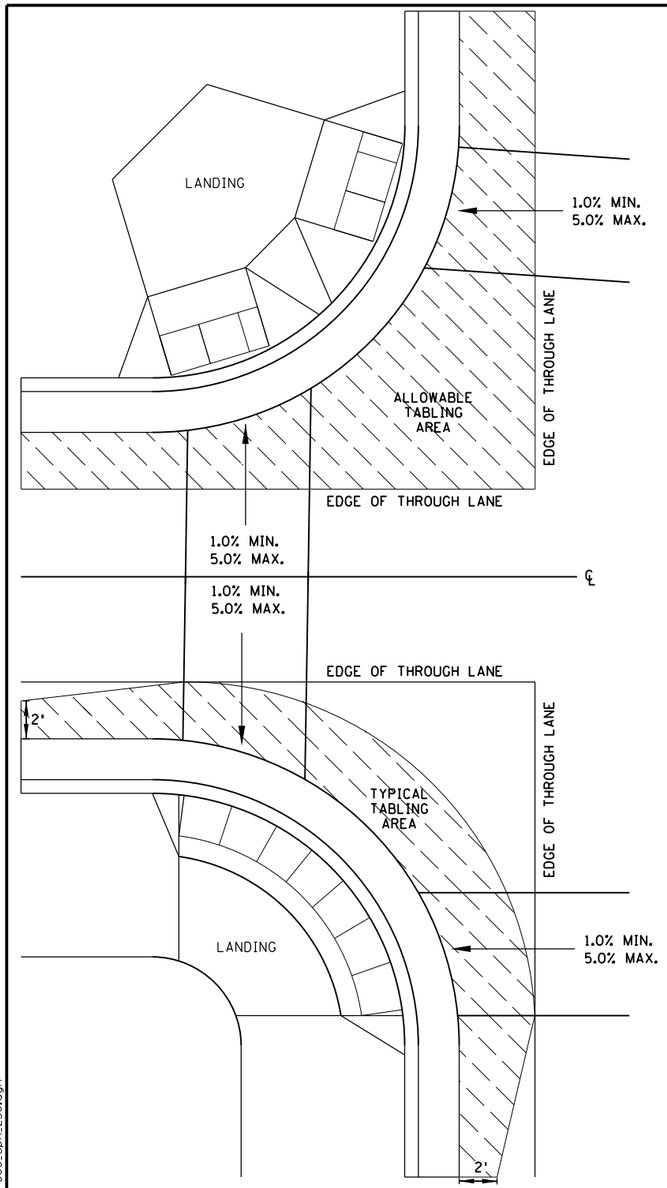
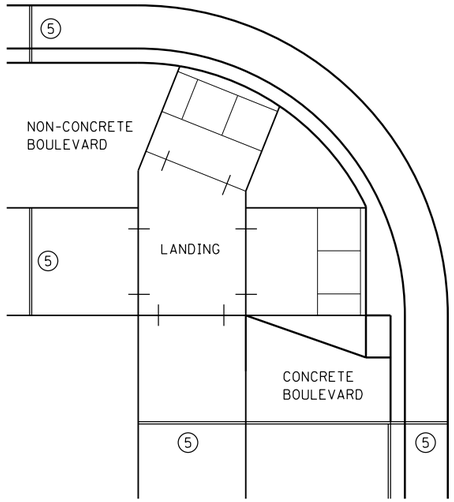
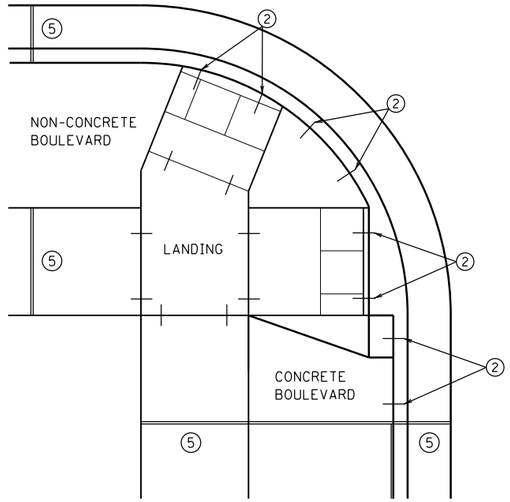


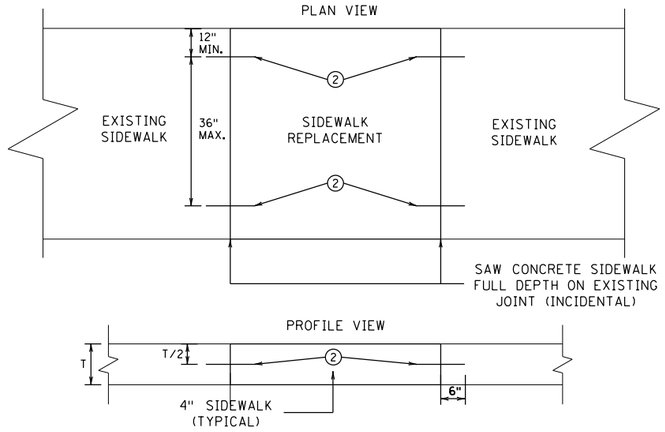
CURB LINE AND ROAD CROSSING ADJUSTMENTS



EXPANSION MATERIAL PLACEMENT FOR CONCRETE AND BITUMINOUS ROADWAYS

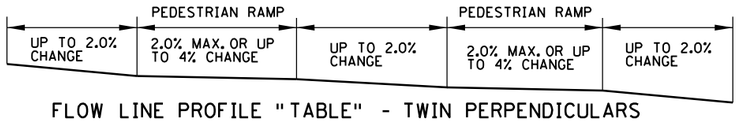


OPTIONAL CURB LINE REINFORCEMENT PLACEMENT ON BITUMINOUS ROADWAYS ④

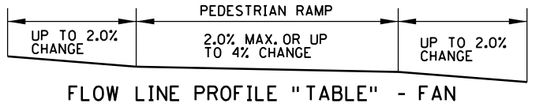


OPTIONAL SIDEWALK REINFORCEMENT

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



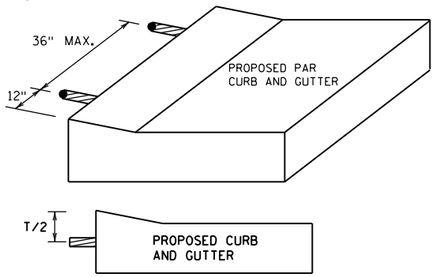
FLOW LINE PROFILE "TABLE" - TWIN PERPENDICULARS

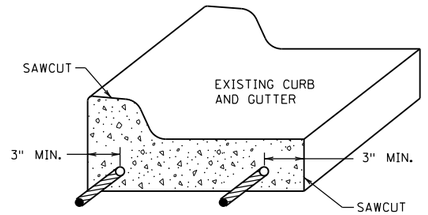


FLOW LINE PROFILE "TABLE" - FAN

FLOW LINE PROFILE RAISE - TWIN PERPENDICULARS

FLOW LINE PROFILE RAISE - FAN

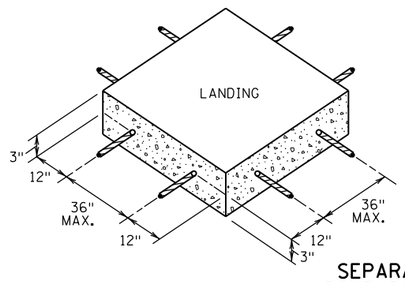


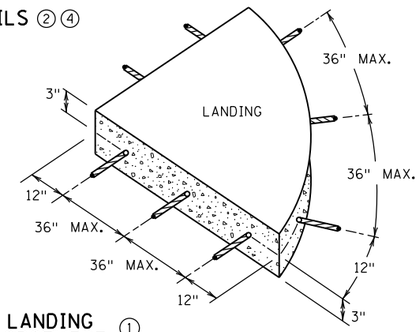


FOR USE ON CURB RAMP RETROFITS

CURB AND GUTTER REINFORCEMENT ③

OPTIONAL CURB LINE REINFORCEMENT DETAILS ②④





SEPARATE LANDING POUR REINFORCEMENT ①

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

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

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

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

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

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

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

NOTES:

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

REVISION:

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OPERATIONS ENGINEER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.250 | 6 OF 6

APPROVED: 1-23-2017
REVISED:

STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

S.A.P. 002-634-003 & S.A.P. 210-020-010

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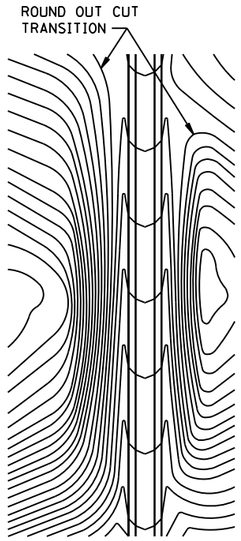
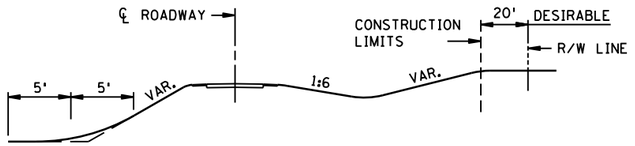
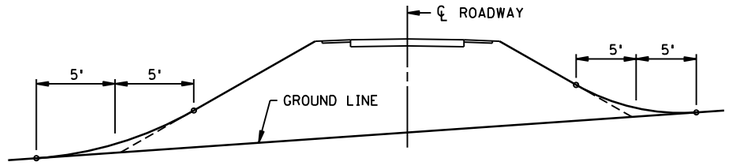


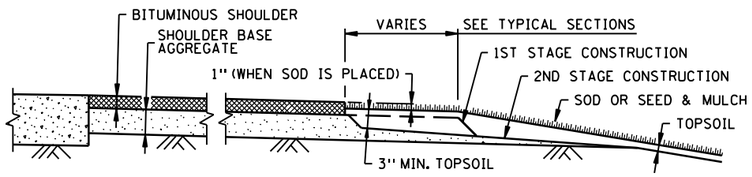
CONTOURING ROAD CUTS



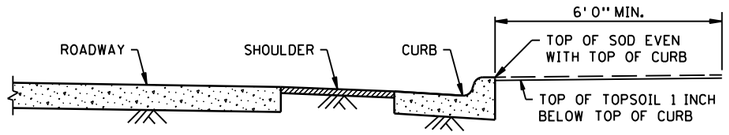
ROUNDING SHOULDERS AND BACKSLOPES



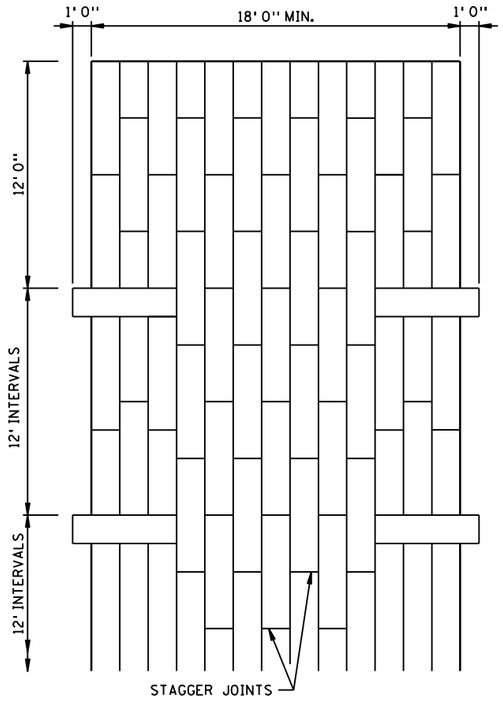
SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES



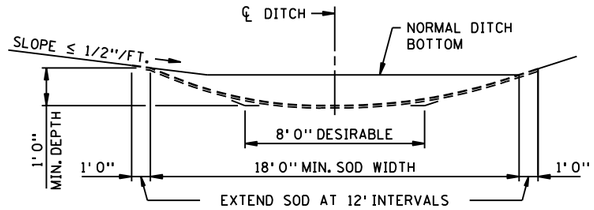
SHAPING AND TOPSOILING INSLOPES



SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED

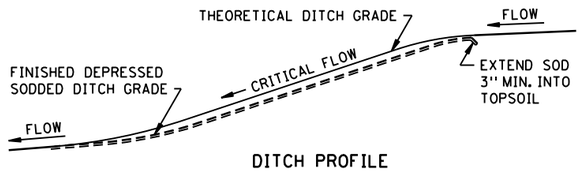


PLAN VIEW



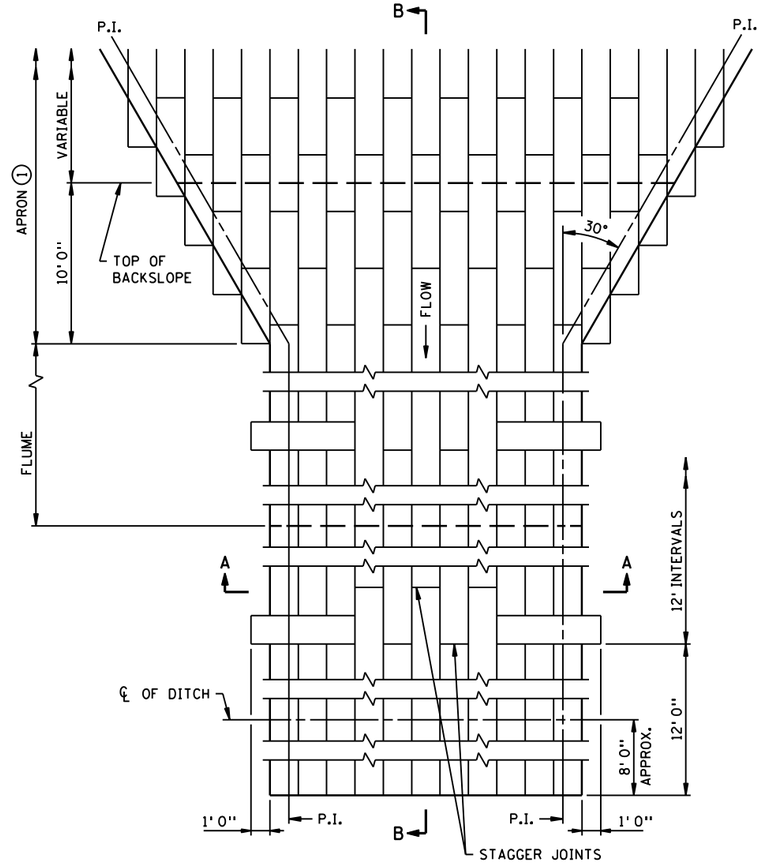
SODDED DITCH CROSS SECTION

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

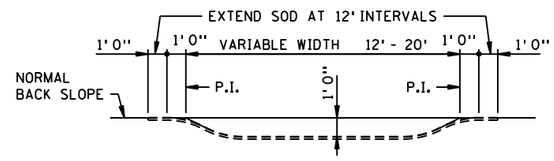


DITCH PROFILE

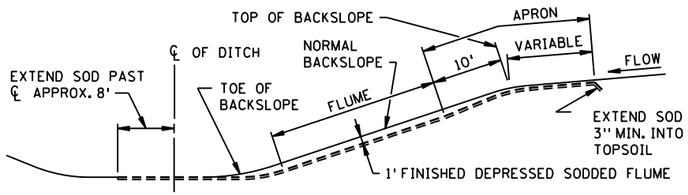
SODDED DITCH DETAILS



PLAN VIEW



SECTION A-A



SECTION B-B

SODDED FLUME DETAILS

NOTES:
SEE SPEC. 2575.3 FOR ADDITIONAL INFORMATION.
① CONSTRUCT TAPER AS DIRECTED BY THE ENGINEER.

REVISION:

APPROVED: 2-28-2017
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STATE DESIGN ENGINEER

STANDARD PLAN 5-297.404 | 1 OF 3

APPROVED: 2-28-2017
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PERMANENT EROSION CONTROL

ALONG ROADWAYS, DITCHES AND FLUMES

S.A.P. 002-634-003 & S.A.P. 210-020-010 | SHEET NO. 45 OF 195

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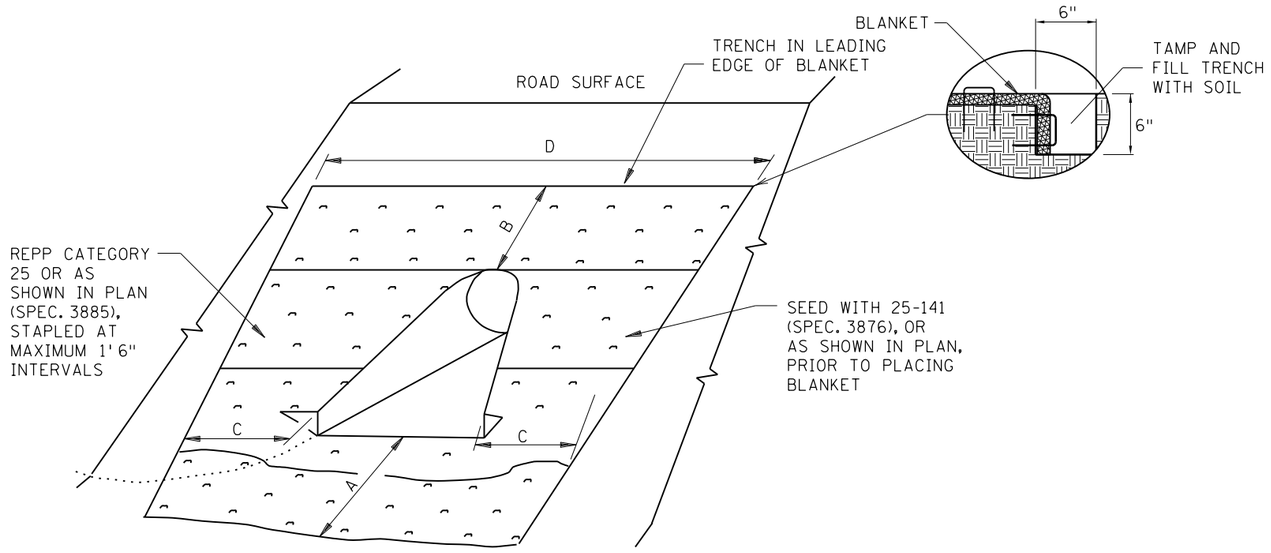
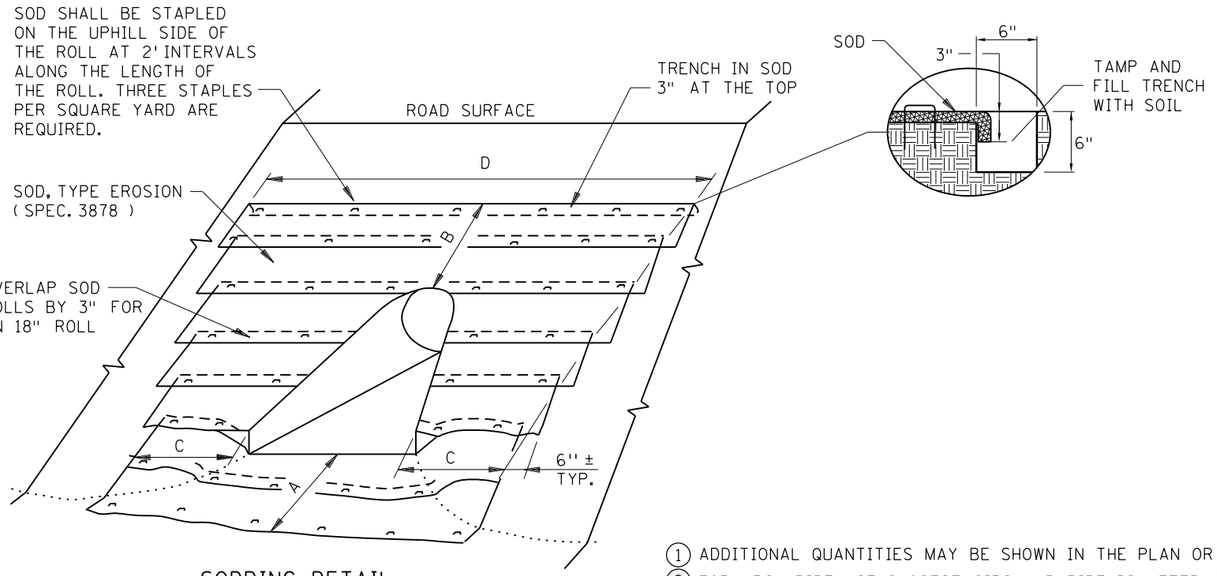


ROLLED EROSION PREVENTION PRODUCT (BLANKET) & SEED DETAIL



SODDING DETAIL

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

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

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.

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.

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CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.404 | 2 OF 3

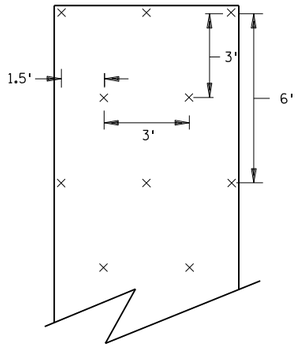
APPROVED: 1-8-2020
REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

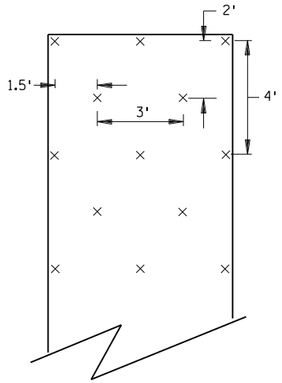
PERMANENT EROSION CONTROL

TURF ESTABLISHMENT DETAIL AT CULVERT ENDS

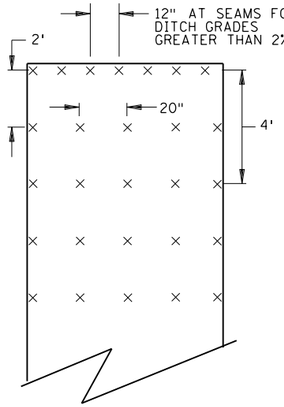
S.A.P. 002-634-003 & S.A.P. 210-020-010



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

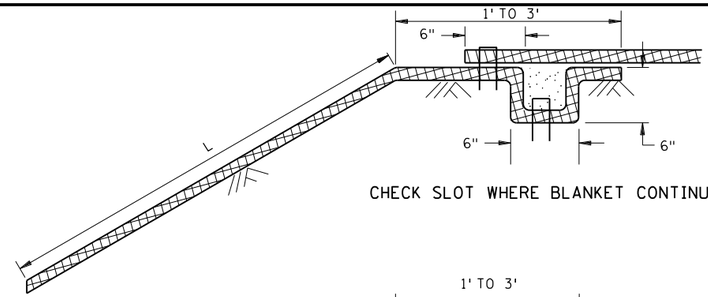


SLOPES 1:2 TO 1:1
170 STAPLES PER 100 SQ YD

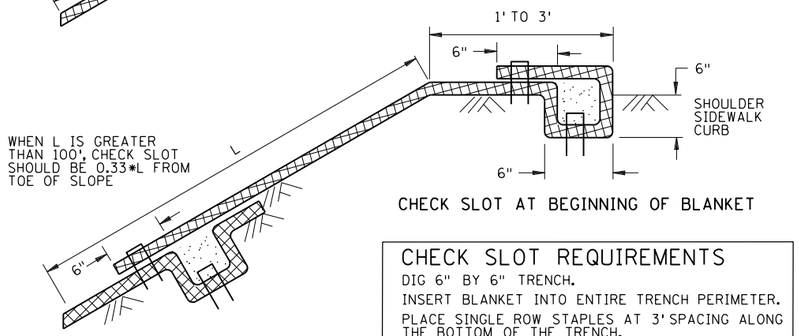


CHANNEL AND DITCH APPLICATIONS
350 STAPLES PER 100 SQ YD

BLANKET STAPLE PATTERN



CHECK SLOT WHERE BLANKET CONTINUES



CHECK SLOT AT BEGINNING OF BLANKET

CHECK SLOT REQUIREMENTS

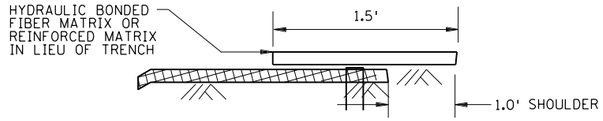
DIG 6" BY 6" TRENCH.

INSERT BLANKET INTO ENTIRE TRENCH PERIMETER.

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

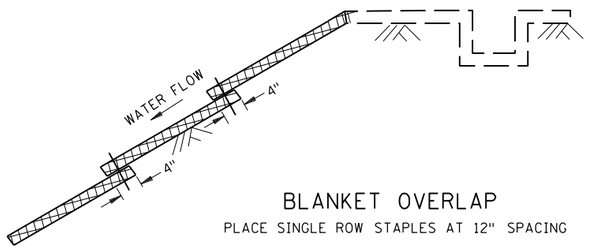
BACKFILL TRENCH WITH SOIL AND TAMP.

PLACE SINGLE ROW STAPLES AT 3' SPACING ON OVERLAP.

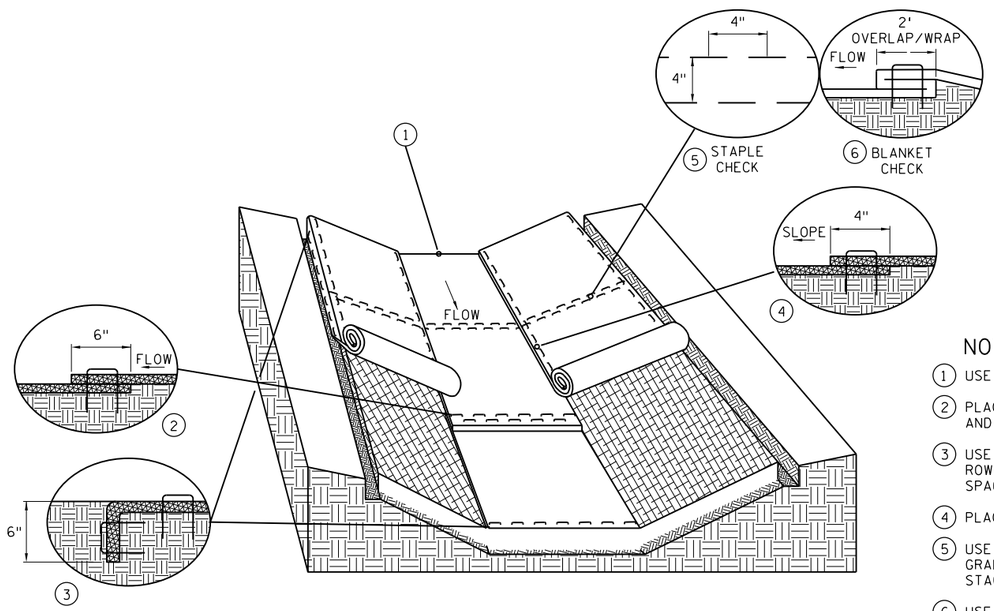


CHECK SLOT ALTERNATIVE
PLACE SINGLE ROW STAPLES AT 12" SPACING

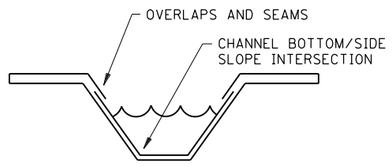
CHECK SLOT DETAILS



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.

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MARNI KARNOWSKI
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

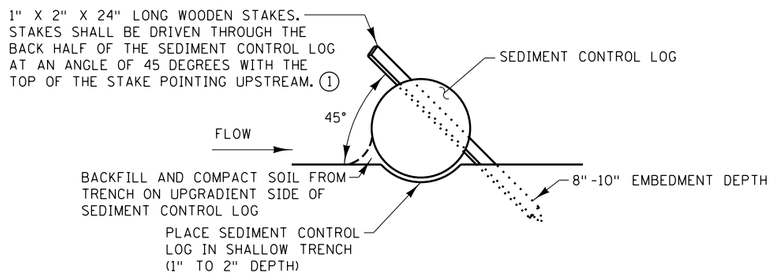
STANDARD PLAN 5-297.404 | 3 OF 3

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

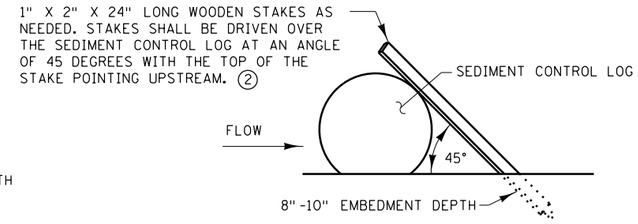
PERMANENT EROSION CONTROL

REPP (BLANKET) STAPLE PATTERN FOR SLOPES

S.A.P. 002-634-003 & S.A.P. 210-020-010

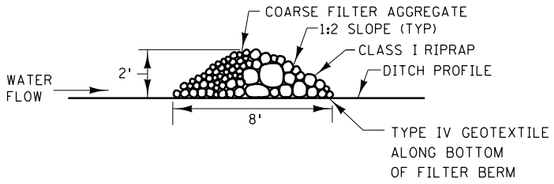


TYPES: STRAW, WOOD FIBER, OR COIR

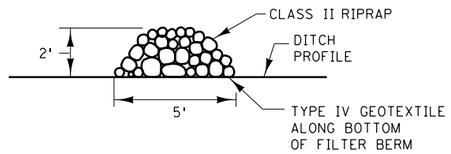


TYPES: WOOD CHIP, COMPOST, OR ROCK

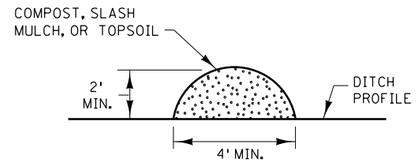
SEDIMENT CONTROL LOGS



TYPE 3 (ROCK WEEPER)

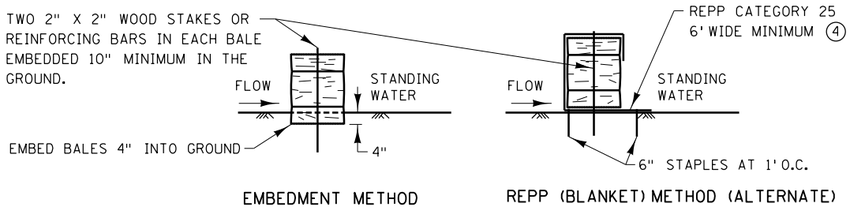


TYPE 5 (ROCK)



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.

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APPROVED: JANUARY 8, 2020

MARNI KARNOWSKI
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.405 | 2 OF 8

APPROVED: 1-8-2020
REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

TEMPORARY SEDIMENT CONTROL

FILTER BERMS, SEDIMENT CONTROL LOGS, AND BALE BARRIERS

S.A.P. 002-634-003 & S.A.P. 210-020-010 | SHEET NO. 48 OF 195

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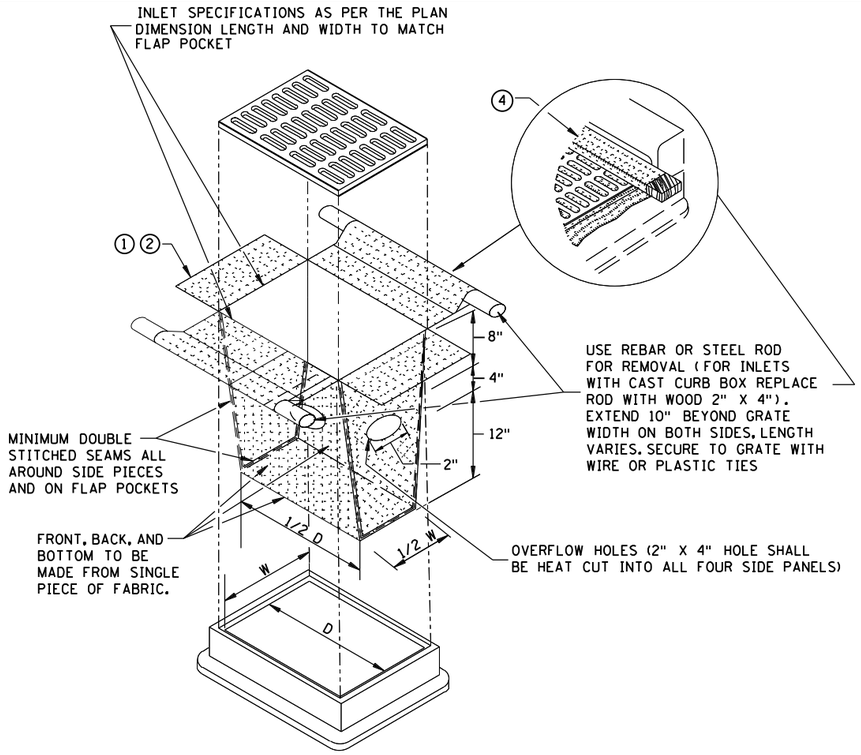
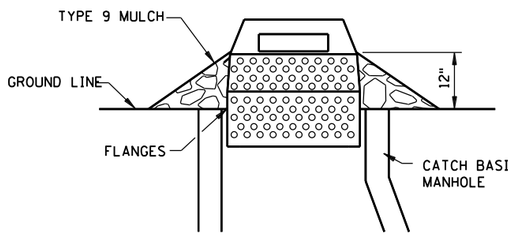


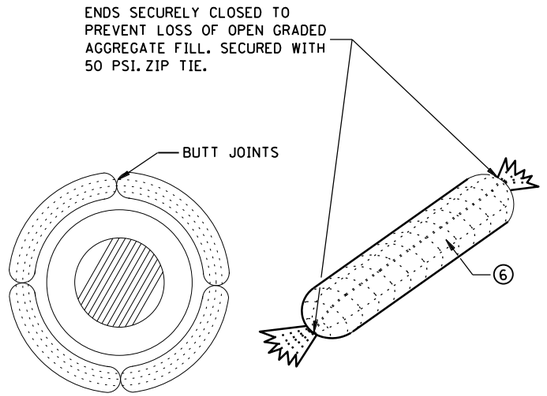
FILTER BAG INSERT ③

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

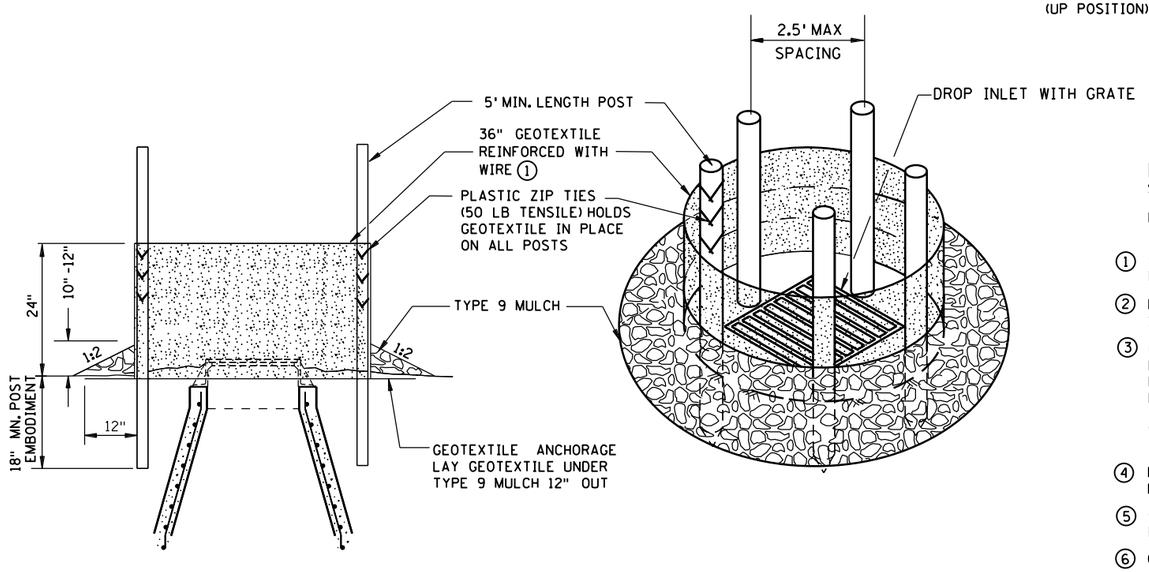


SEDIMENT CONTROL INLET HAT

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

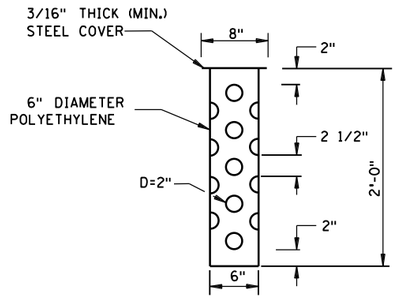


ROCK LOG/COMPOST LOG

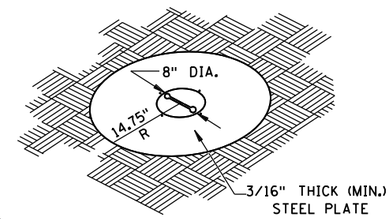


SILT FENCE RING AND ROCK FILTER BERM

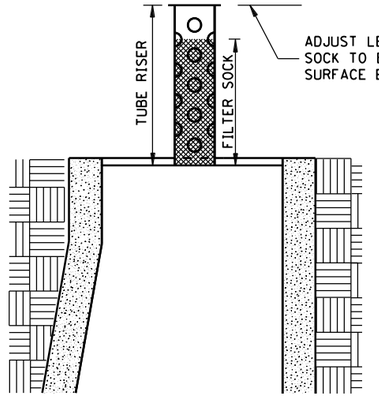
USE WHERE INLET DRAINS IN AN AREA WITH SLOPES AT 1:3 or LESS



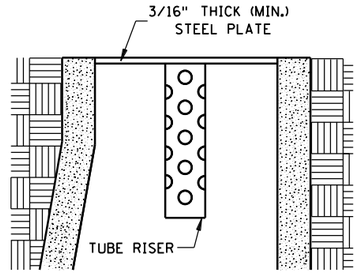
TUBE RISER



PERSPECTIVE VIEW



SECTION
(UP POSITION)



SECTION
(DOWN POSITION)

POP-UP HEAD

NOTES:

SEE SPECS. 2573, 3137, & 3886.

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

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

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

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

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

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

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

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STATE DESIGN ENGINEER

TEMPORARY SEDIMENT CONTROL

STORM DRAIN INLET PROTECTION

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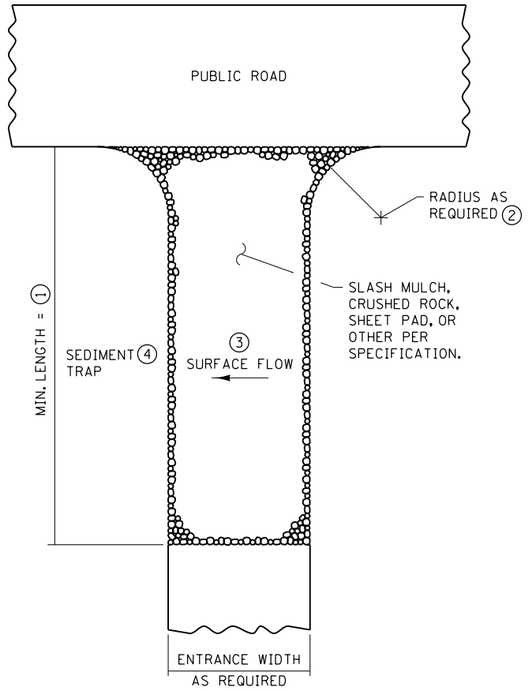
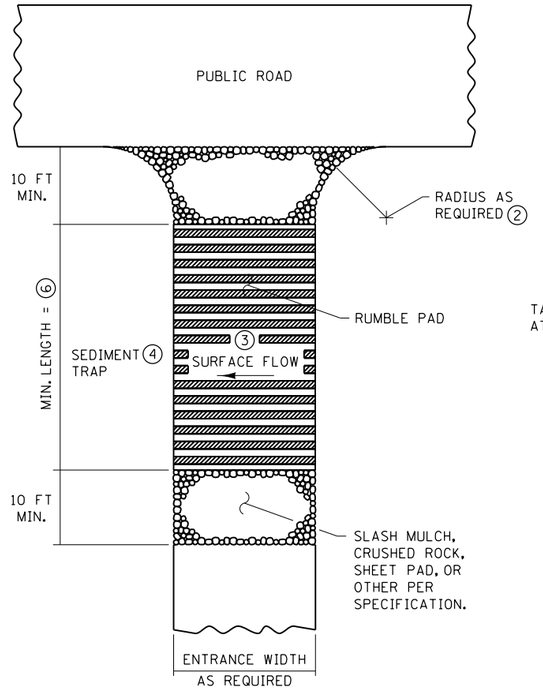
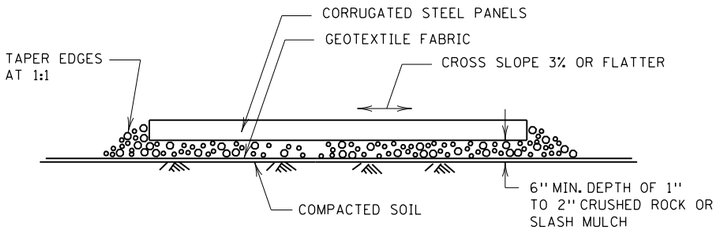


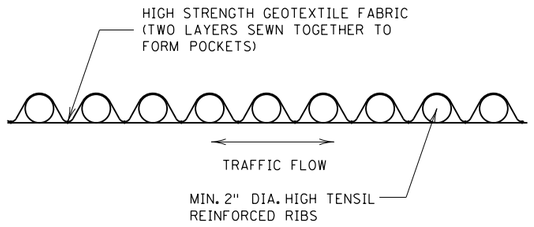
SLASH MULCH, CRUSHED ROCK, OR SHEET PAD CONSTRUCTION EXIT ⑤⑦



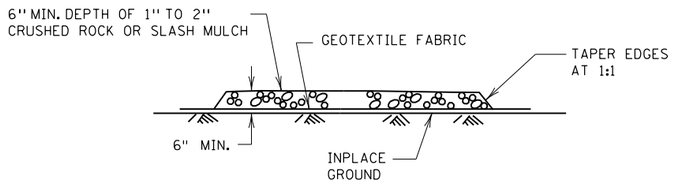
RUMBLE PAD CONSTRUCTION EXIT ⑤⑦



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.

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TEMPORARY SEDIMENT CONTROL

STABILIZED CONSTRUCTION EXIT

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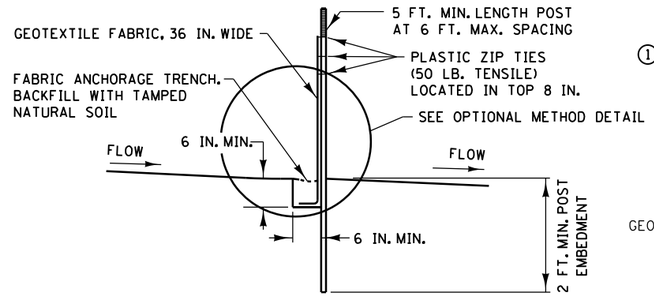
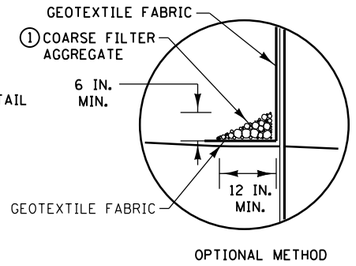
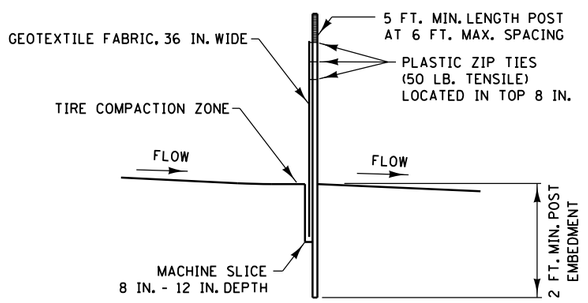


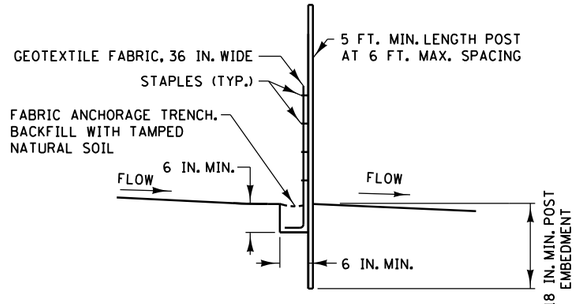


OPTIONAL METHOD

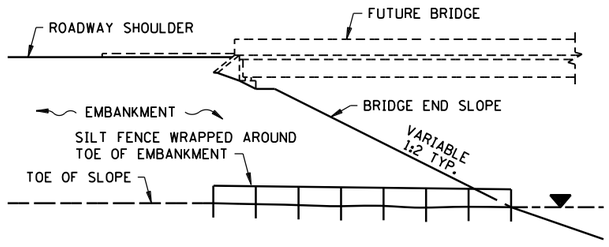
SILT FENCE TYPE HI ②
(HAND INSTALLED)



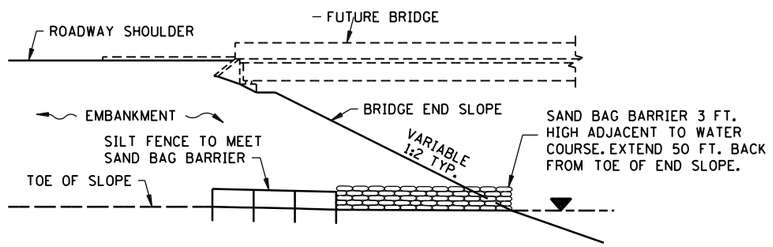
SILT FENCE TYPE MS ②
(MACHINE SLICED)



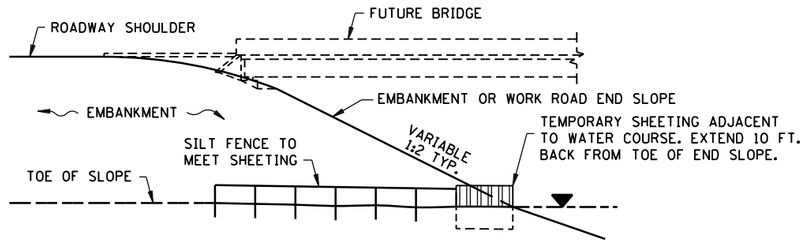
SILT FENCE TYPE PA ③
(PREASSEMBLED)



SILT FENCE ONLY ④

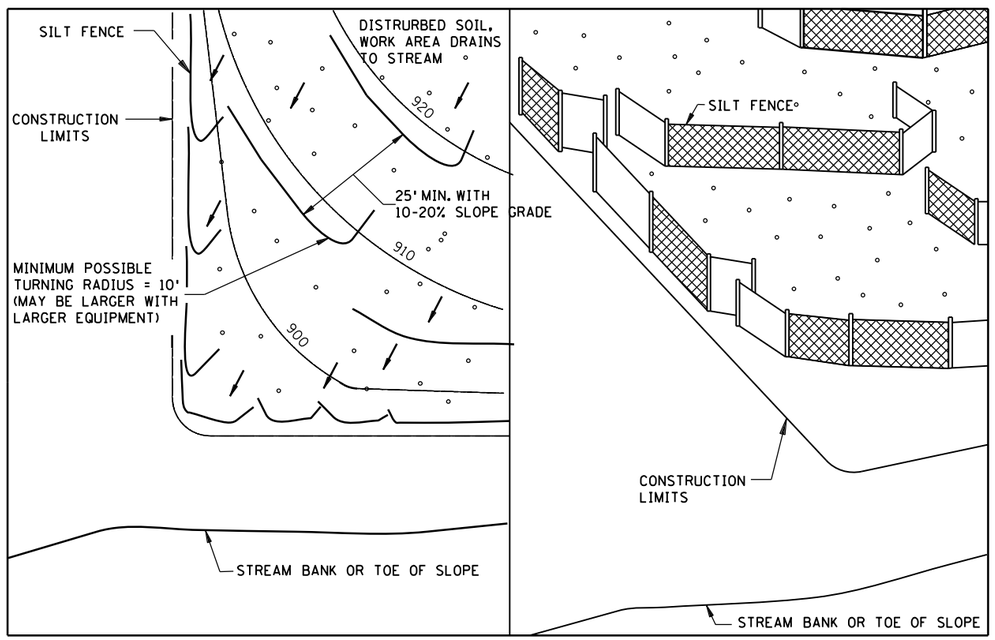


SILT FENCE WITH SAND BAGS ⑤



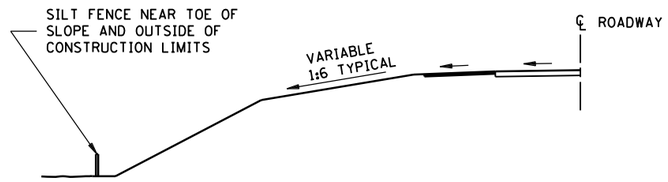
SILT FENCE WITH SHEETING ⑥

INSTALLATION AT BRIDGE EMBANKMENT ADJACENT TO WATER



PLAN VIEW PERSPECTIVE VIEW

J-HOOK INSTALLATION



LOCATION AT TOE OF ROADWAY EMBANKMENT

NOTES:

SEE SPECS. 2573, 3149 & 3886.

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

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

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

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

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

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

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TEMPORARY SEDIMENT CONTROL
SILT FENCE

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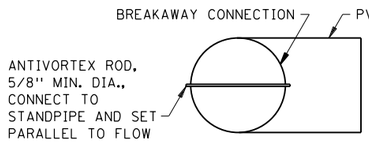
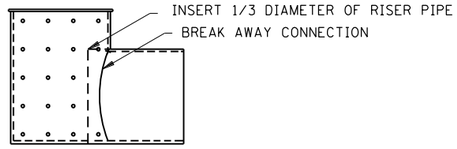
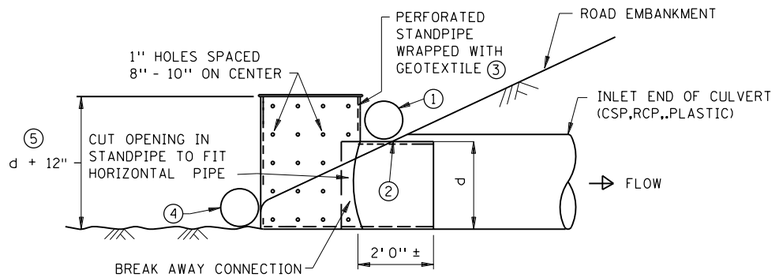


PLAN VIEW



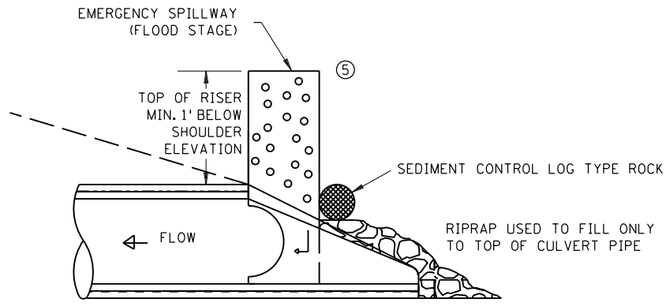
CULVERT STANDPIPE



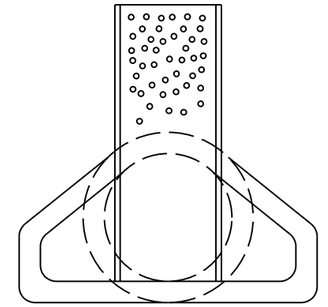
ELEVATION VIEW OF CULVERT INSTALLATION

CULVERT STANDPIPE INSERT (D-RISER)

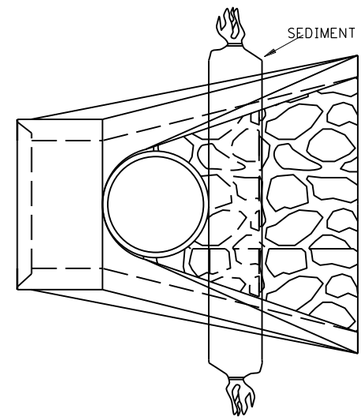
d= CULVERT SIZE: 12" - 36"



LONGITUDINAL SECTION



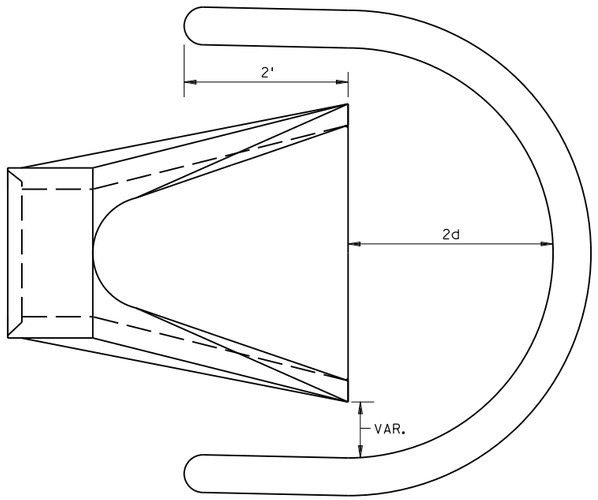
END VIEW



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

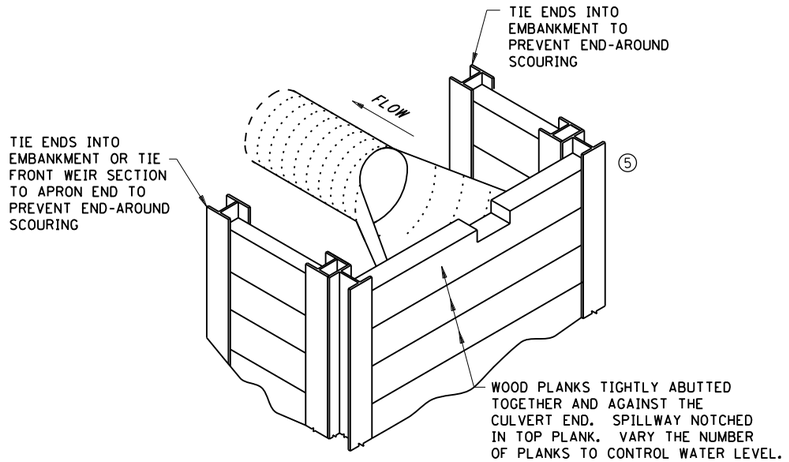
TOP VIEW

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.

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TEMPORARY SEDIMENT CONTROL

CULVERT END CONTROLS

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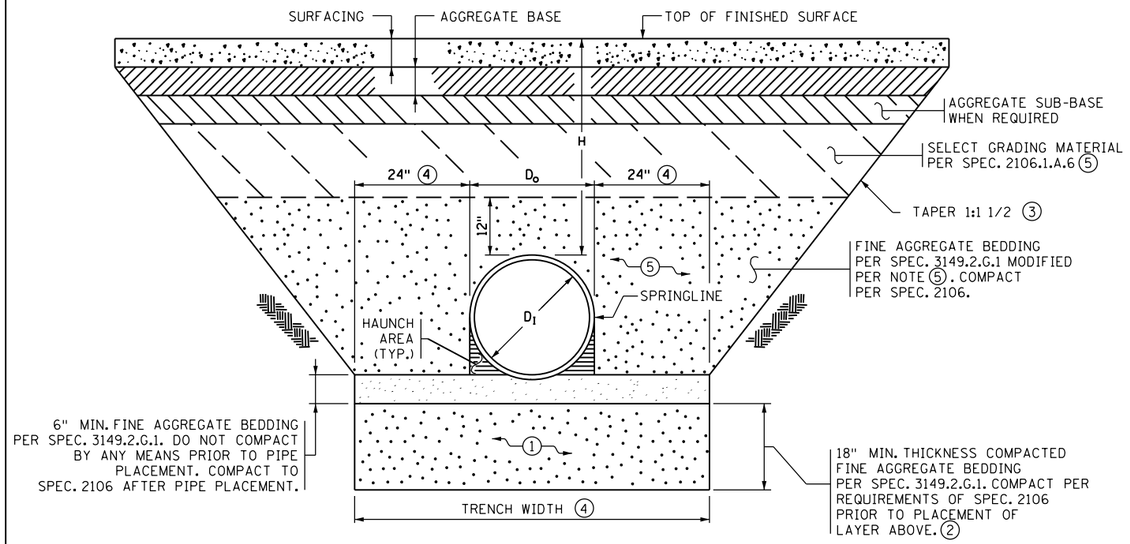
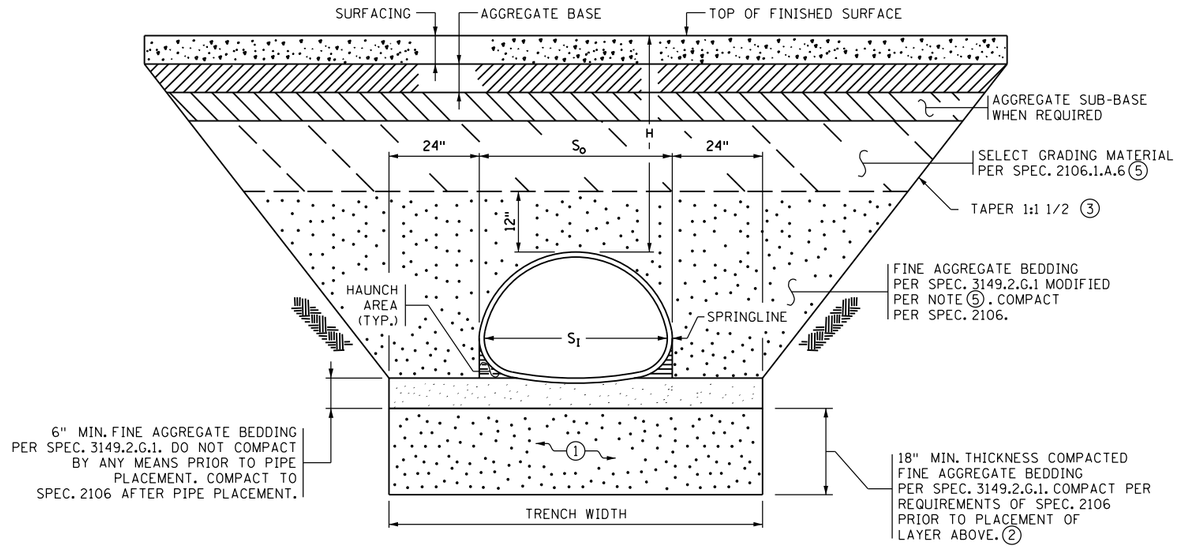


STANDARD FLEXIBLE PIPE CULVERT BEDDING



STANDARD FLEXIBLE PIPE ARCH CULVERT BEDDING

PLASTIC PIPE WITH H > 10 FT. (4)

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

-LEGEND-

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

= UNDISTURBED SOIL

= COMPACTED BEDDING

= LOOSE BEDDING, COMPACTED AFTER PIPE PLACEMENT

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 HAUNCH UNDER THE PIPE). THEN COMPACT THE HAUNCH AT AN ANGLE USING A POWERED MECHANICAL OR PNEUMATIC DEVICE (I.E. POLE TAMPER, JUMPING JACK, OR SIMILAR).
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 TO 12" ABOVE TOP OF PIPE WHEN COMPACTED.
8. COMPLETE REMAINING BACKFILL.
9. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

NOTES

STANDARD BEDDING FOR FLEXIBLE PIPE CULVERTS WITHOUT TREATMENTS.

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

PLASTIC ENTRANCE CULVERTS REQUIRE BEDDING PER SPEC. 2501.3.C.4. BEDDING COSTS FOR PLASTIC ENTRANCE CULVERTS WILL BE INCLUDED IN THE CONTRACT UNIT PRICE OF THE RELEVANT CULVERT PAY ITEM.

FLEXIBLE PIPE INCLUDES METAL AND PLASTIC MATERIAL SUCH AS CORRUGATED POLYPROPYLENE (PP) AND CORRUGATED POLYETHYLENE (CP).

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.

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 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) USE THERMOPLASTIC PIPE TABLE FOR TRENCH WIDTHS FOR THERMOPLASTIC PIPES WITH MORE THAN 10 FT. OF FILL OVER THE PIPE.

(5) MAXIMUM EMBANKMENT PARTICLE SIZE WITHIN 2 FT. OF PIPE IS 3" FOR METAL PIPES AND 1" FOR THERMOPLASTIC PIPES.

REVISION:

APPROVED: JANUARY 18, 2019
Kevin Western
STATE BRIDGE ENGINEER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.440 | **1 OF 1**

APPROVED: 01-18-2019
REVISED:
STATE DESIGN ENGINEER

STANDARD CULVERT BEDDING FOR FLEXIBLE PIPE (WITHOUT TREATMENTS)

S.A.P. 002-634-003 & S.A.P. 210-020-010 | SHEET NO. 53 OF 195

Date Printed: 12/3/2020
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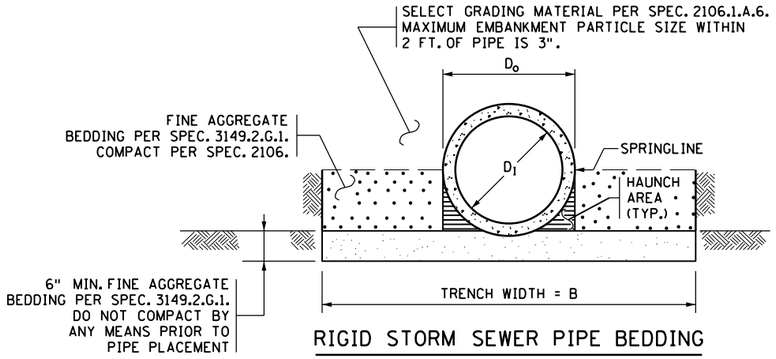
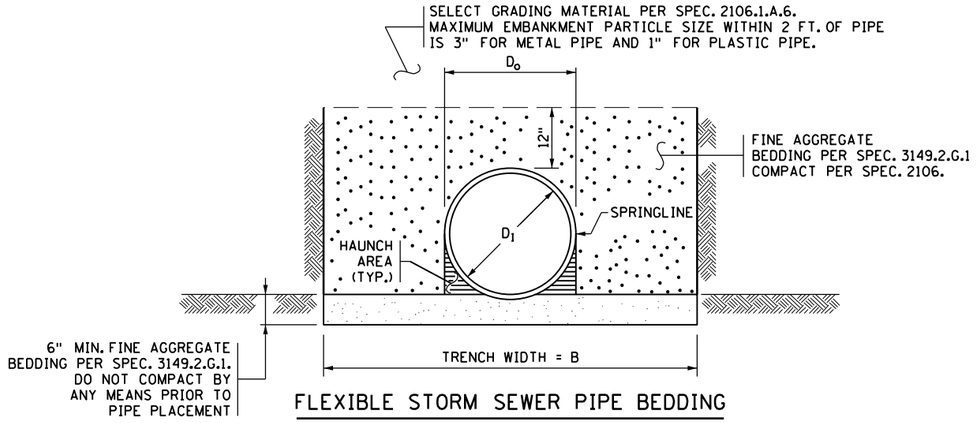


RIGID STORM SEWER PIPE BEDDING

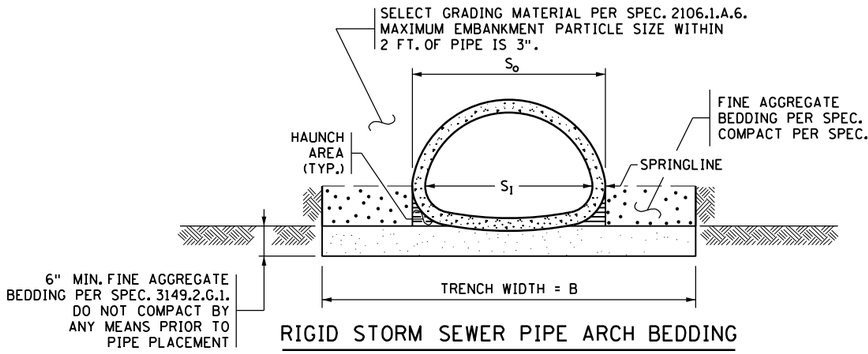
TRENCH BASE WIDTH ①②	
PIPE DIA. D_1 OR S_1	TRENCH WIDTH B
< 42"	D_o + 24"
42" TO 54"	1.5 x D_o
> 54"	D_o + 36"

PLASTIC PIPE
WITH H > 10 FT.①②

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



FLEXIBLE STORM SEWER PIPE BEDDING



RIGID STORM SEWER PIPE ARCH BEDDING

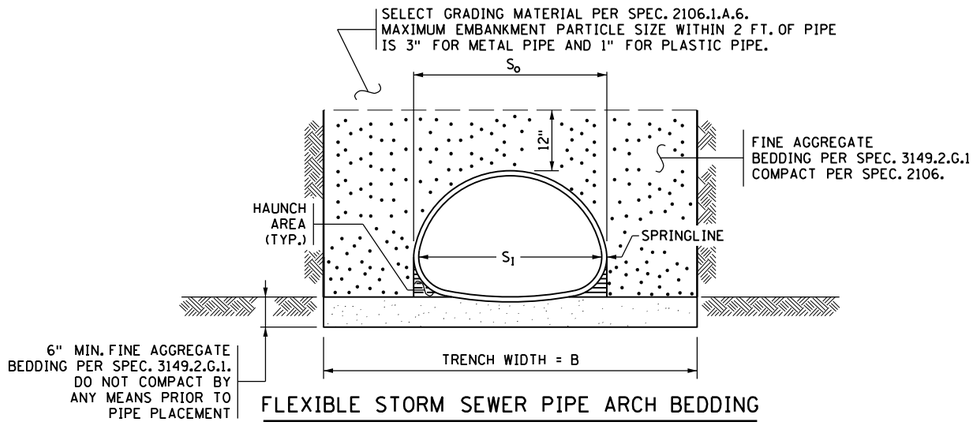
-LEGEND-

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

= UNDISTURBED SOIL

= COMPACTED BEDDING

= LOOSE BEDDING, COMPACTED AFTER PIPE PLACEMENT



FLEXIBLE STORM SEWER PIPE ARCH BEDDING

CONSTRUCTION SEQUENCE

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

NOTES

EXCAVATE & CONSTRUCT ALL TRENCHES AND SLOPES PER OSHA REQUIREMENTS.

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

PROTECT ALL PIPE DURING CONSTRUCTION PER SPEC. 2503.

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

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

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

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

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

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

*DENOTES MODIFICATION FROM STANDARD PLAN.

MODIFIED

REVISION:

APPROVED: JANUARY 18, 2019
Kevin Western
STATE BRIDGE ENGINEER

Design By:	AJF
Plan By:	AJF
Checked By	AJP
Approved B	AJP

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
ANDREW J. PLOWMAN, PE
DATE $SIGNDATE$ LICENSE # 44200

wsb

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.442 ~~1 OF 1~~

APPROVED: 01-18-2019
REVISED:
STATE DESIGN ENGINEER

STANDARD STORM SEWER BEDDING
FOR RIGID AND FLEXIBLE PIPE

S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET NO. 54 OF 195

Date Printed: 12/3/2020
WSB Filenames: Projects\Minnesota\014400-000\Cad\Plan\3490-000_spn_440.dgn

NOTES & GUIDELINES

GENERAL INFORMATION:

1. ALL DISTANCES ARE APPROXIMATE.
2. ACCESS SHALL BE MAINTAINED TO ALL RESIDENTS AND BUSINESSES AT ALL TIMES.

SIGNING:

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

PAVEMENT MARKING:

1. MASK OR REMOVE ANY CONFLICTING PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER. PAVEMENT MARKING REMOVAL BY GRINDING WILL NOT BE ALLOWED. ANY PAVEMENT MARKINGS ON PAVEMENT TO REMAIN AFTER CONSTRUCTION SHALL BE MASKED WITH REMOVABLE PREFORMED PLASTIC MASK (BLACK).
2. SEE 2582 IN THE SPECIAL PROVISIONS FOR PAVEMENT MARKING SPOTTING RESPONSIBILITIES.
3. PAVEMENT MARKINGS IN TRANSITION AREAS SHALL INCLUDE TEMPORARY RAISED PAVEMENT MARKINGS (TPRM'S).
4. TEMPORARY PAVEMENT MARKINGS PLACED ON PAVEMENT TO REMAIN AFTER CONSTRUCTION SHALL BE REMOVABLE PREFORMED PAVEMENT MARKING TAPE.

BARRIER & DELINEATION:

1. PLACE AND MAINTAIN TEMPORARY BARRIER DELINEATORS ANY TIME TRAFFIC IS WITHIN 10' OF BARRIER. DELINEATORS WILL EACH HAVE A MINIMUM OF 24 SQ IN. OF RETROREFLECTIVE SURFACE ON BOTH SIDES PLACED AT 25' SPACING ON TOP OF THE BARRIER. IF THE ENGINEER OR PLAN REQUIRES SIDE MOUNTED TEMPORARY BARRIER DELINEATORS, THEY WILL HAVE A MINIMUM OF 12 SQ. IN. OF RETROREFLECTIVE SURFACE AREA AND BE PLACED AT 12.5' SPACING. IF A SMALLER APPROVED BARRIER DELINEATOR IS USED IT SHALL BE A MINIMUM OF 6 SQ IN. OF RETROREFLECTIVE SURFACE AREA AND BE PLACED ON BOTH SIDES AT 6.25' SPACING. TEMPORARY BARRIER DELINEATOR COLOR SHALL MATCH APPLICABLE PAVEMENT MARKING.

CONSTRUCTION INFORMATION SIGNING:

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

   PLACE THE G20-X1 ADVANCE CLOSURE NOTICE SIGN(S) 7 DAYS PRIOR TO THE PLANNED CLOSURE DATE.

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

UPDATED 04/24/2020

PAVEMENT MARKING SYMBOLS AND MATERIALS LEGEND

- SOLID LINE PAVEMENT MARKING WITH TEMPORARY RAISED PAVEMENT MARKERS AT 10' SPACES
- BROKEN LINE-50' CYCLE (10' LINE, 40' GAP)
- CROSSWALK BLOCK
- PAVEMENT MESSAGE (LEFT ARROW)

STRIPING KEY

- XXX — TRIANGLE - PAINT
- XXX — PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING

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

EXAMPLE: 4SW = 4" SOLID LINE WHITE PREF THERMO

TRAFFIC CONTROL INDEX

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67	CSAH 34 EB DETOUR
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TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND

SYMBOL	DESCRIPTION
	AREA CLOSED TO TRAFFIC / WORK AREA
	CONSTRUCTION UNDER TRAFFIC
	TEMPORARY BITUMINOUS PAVEMENT
⊢	TRAFFIC CONTROL SIGN
⌴	TYPE III BARRICADE =
●	DRUM-LIKE CHANNELIZER (TYPE B) =
Ⓕ	TYPE A FLASHING WARNING LIGHT

SYMBOL	DESCRIPTION
	FLASHING ARROW BOARD TYPE C = (4' X 8' UNLESS OTHERWISE NOTED).
	PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)
	PORTABLE PRECAST CONC BARRIER DES 8337 WITH DELINEATORS AT 25' SPACES (PPCB)
⊠	TEMPORARY IMPACT ATTENUATOR

NO.	DATE	BY	CHK	REVISIONS

Design By: MF
Plan By: MF
Checked By: ES
Approved By: MS

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SEAN DELMORE, PE

DATE 12/3/2020 LICENSE # 40945

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
GENERAL NOTES / LEGEND
TEMPORARY TRAFFIC CONTROL PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 55 OF 195 SHEETS

TEMPORARY TRAFFIC CONTROL											I
ITEM	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	REMOVE BITUMINOUS PAVEMENT	TYPE SP 12.5 NON-WEARING COURSE MIX (3,B)	AGGREGATE BASE (CV) CLASS 5	PORTABLE PRECAST CONCRETE BARRIER DESIGN 8337 (3)	TEMPORARY IMPACT ATTENUATOR (3)	PORTABLE CONCRETE BARRIER DELINEATOR		RELOCATE		PORTABLE CHANGEABLE MESSAGE SIGN
							WHITE	YELLOW	PORTABLE PRECAST CONCRETE BARRIER DESIGN 8337	TEMPORARY IMPACT ATTENUATOR	
UNIT	LIN FT	SQ YD	TON	CU YD	LIN FT	ASSEMBLY	EACH	EACH	LIN FT	ASSEMBLY	UDAY
STAGE 0	518	585	132	154	822	10	33				20
STAGE 1					667			60	822	6	
STAGE 2											
STAGE 3											20
SUBTOTAL	518	585	132	154	1489	10	33	60	822	6	40
TOTAL	518	585	132	154	1489	10	93		822	6	40

TEMPORARY TRAFFIC CONTROL									I
ITEM	RAISED PAVEMENT MARKER TEMPORARY (3)		PAINT (1)			REMOVABLE PREFORMED PLASTIC MARKING (2)(3)			
			4" DBLE SOLID LINE	4" SOLID LINE		4" DBLE SOLID LINE	4" SOLID LINE		
	WHITE	YELLOW	YELLOW	WHITE	YELLOW	YELLOW	WHITE	YELLOW	
UNIT	EACH	EACH	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	
STAGE 0	48		3880	6944	516				
STAGE 1				4628	4628				
STAGE 2		53		1121		1450	4097	1008	
STAGE 3	30	85				507	1926	4584	
SUBTOTAL	78	138	3880	12693	5144	1957	6023	5592	
TOTAL	216		3880	17837		15529			

NOTES:

(1) SHALL NOT BE USED ON PERMANENT ROADWAY SURFACES.

(2) SHALL BE USED ON PERMANENT ROADWAY SURFACES. PAID AS REMOVABLE PREFORMED PAVEMENT MARKING TAPE.

(3) REMOVAL INCIDENTAL

NO.	DATE	BY	CHK	REVISIONS

Design By: MF
Plan By: MF
Checked By: ES
Approved By: SD

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SEAN DELMORE, PE

DATE 12/3/2020 LICENSE # 40945

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements

Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

TABULATIONS

TEMPORARY TRAFFIC CONTROL PLAN

S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 56 OF 195 SHEETS

PLOTTED/REVISED: 12/3/2020

"M" SERIES

SIGN	SIGN NO.	COLOR	SIZE (IN. X IN.) (W×H)
COUNTY 34	M1-6	WHITE AND YELLOW ON BLUE	24 X 24
EAST	M3-2	WHITE ON BLUE	24 X 12
WEST	M3-4	WHITE ON BLUE	24 X 12
DETOUR	M4-8	BLACK ON ORANGE	24 X 12
END DETOUR	M4-8a	BLACK ON ORANGE	24 X 18
	M5-1 (R/L)	WHITE ON BLUE	21 x 15
	M6-1 (R/L)	WHITE ON BLUE	21 x 15
	M6-3	WHITE ON BLUE	21 x 15

"G" SERIES

SIGN	SIGN NO.	COLOR	SIZE (IN. X IN.) (W×H)
END ROAD WORK	G20-2	BLACK ON ORANGE	36 X 18

DELINEATOR MOUNTED SIGNS

SIGN	SIGN NO.	COLOR	SIZE (IN. X IN.) (W×H)
	R4-7	BLACK ON WHITE	12 X 18
	W21-X3P	BLACK ON ORANGE	18 X 18

"R" SERIES

SIGN	SIGN NO.	COLOR	SIZE (IN. X IN.) (W×H)
STOP	R1-1	WHITE ON RED	36 X 36
YIELD	R1-2	WHITE ON RED	36 X 36 X 36
	R3-1	BLACK AND RED ON WHITE	24 X 24
	R3-2	BLACK AND RED ON WHITE	24 X 24
	R3-6 (R)	BLACK ON WHITE	30 X 36
RIGHT TURN LANE	R3-X1	BLACK ON WHITE	30 X 30
LEFT TURN LANE	R3-X2	BLACK ON WHITE	30 X 30
ONLY	R3-8DA	BLACK ON WHITE	36 X 30
	R4-7	BLACK ON WHITE	24 X 30
DO NOT ENTER	R5-1	RED ON WHITE	36 X 36
ONE WAY	R6-1 (R/L) RIGHT SHOWN	BLACK ON WHITE	36 X 12
	R6-4a	BLACK ON WHITE	48 X 24
	R6-4b	BLACK ON WHITE	60 X 24
SIDEWALK CLOSED USE OTHER SIDE	R9-10M (R/L) LEFT SHOWN	BLACK ON WHITE	24 X 12
SIDEWALK CLOSED AHEAD CROSS HERE	R9-11 (R/L) LEFT SHOWN	BLACK ON WHITE	24 X 12

"W" SERIES

SIGN	SIGN NO.	COLOR	SIZE (IN. X IN.) (W×H)
	W1-4 (R/L)	BLACK ON ORANGE	36 X 36
40 M.P.H.	W13-1P	BLACK ON ORANGE	24 X 24
NO PASSING ZONE	W14-3	BLACK ON ORANGE	64 X 64 X 48
100 FEET 500 FEET	W16-2P	BLACK ON ORANGE	30 X 24
ROAD WORK AHEAD	W20-1	BLACK ON ORANGE	36 X 36
DETOUR AHEAD	W20-2	BLACK ON ORANGE	36 X 36
ROAD CLOSED AHEAD	W20-3	BLACK ON ORANGE	36 X 36

BARRICADE MOUNTED SIGNS

SIGN	SIGN NO.	COLOR	SIZE (IN. X IN.) (W×H)
ONE WAY	R6-1 (R/L) RIGHT SHOWN	BLACK ON WHITE	36 X 12 54 X 18
ROAD CLOSED LANE	R11-2M	BLACK ON WHITE	48 X 30
ROAD CLOSED 0.25 MILES AHEAD LOCAL TRAFFIC ONLY ROAD CLOSED 1 MILES AHEAD LOCAL TRAFFIC ONLY ROAD CLOSED LOCAL TRAFFIC ONLY	R11-3a	BLACK ON WHITE	60 X 30
	W1-6	BLACK ON ORANGE	48 X 24

GENERAL NOTES:

1. SIGN STRUCTURE TABULATIONS INDICATE SQUARE TUBE GROUND MOUNTED SIGN STRUCTURES THAT ARE MASH-16 COMPLIANT.
2. USE PRODUCTS FROM THE BASES FOR SQUARE TUBE SIGN STRUCTURES APPROVED/QUALIFIED PRODUCTS LIST FOR THE INDICATED SQUARE TUBE RISER POST SIZE. PLACE PER THE MANUFACTURER'S SPECIFICATIONS.
3. ALUMINUM STRINGERS SHALL BE USED FOR SIGNS 36 INCHES AND WIDER. SEE MANUFACTURER'S SPECIFICATIONS FOR SQUARE TUBE MOUNTING DETAILS. STRINGERS ON SINGLE POST ASSEMBLIES ARE REQUIRED TO BE AT LEAST 9 INCHES IN FROM THE EDGE OF THE SIGN.
4. UNLESS OTHERWISE INDICATED, USE 2-1/2 INCH RISER POSTS FOR GROUND MOUNTED SIGN STRUCTURES.
5. SEE PERMANENT SIGNING PLAN FOR NON TEMP SIGNS THAT WILL BE INSTALLED IN STAGE 2 AND 3.

NO.	DATE	BY	CHK	REVISIONS

Design By: MF
Plan By: MF
Checked By: ES
Approved By: SD

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SEAN DELMORE, PE

DATE 12/3/2020 LICENSE # 40945

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
TABULATIONS
TEMPORARY TRAFFIC CONTROL PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 57 OF 195 SHEETS

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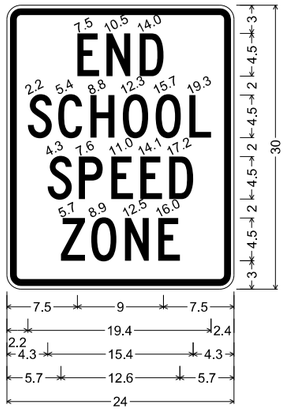
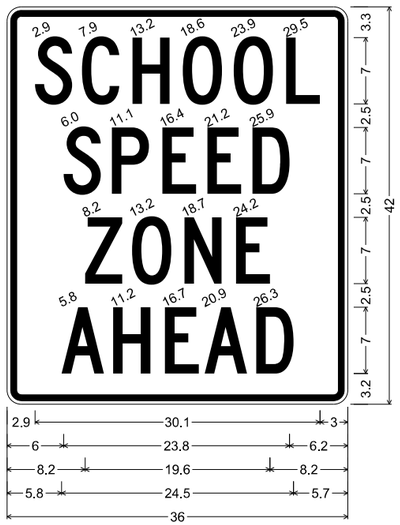


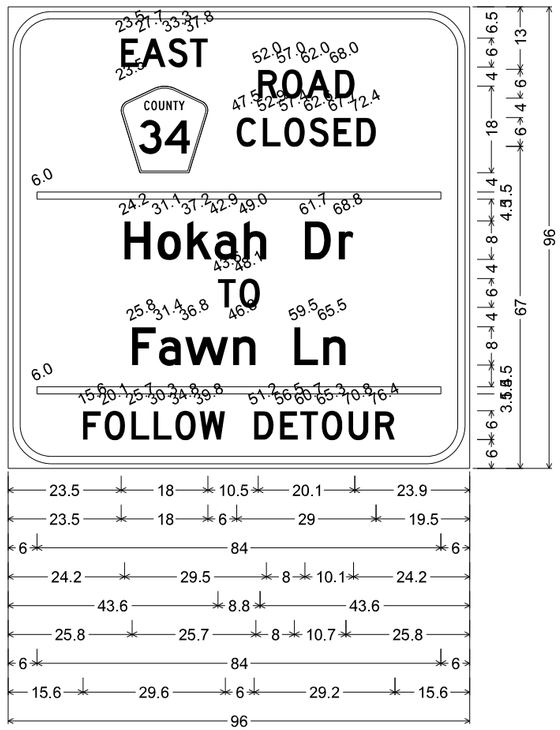
1.5" Radius, 0.6" Border, 0.4" Indent, Black on, White;
"END", C 2K; "SCHOOL", C 2K;
"SPEED", C 2K; "ZONE", C 2K;

X-202



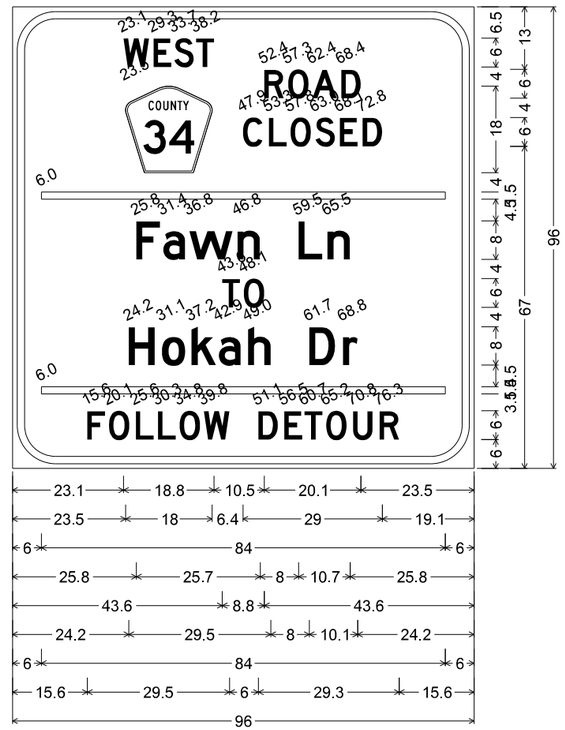
1.5" Radius, 0.6" Border, 0.4" Indent, Black on, Bright yellow green;
"SCHOOL", C 2K; "SPEED", C 2K;
"ZONE", C 2K; "AHEAD", C 2K;

G20-X2-A



9.0" Radius, 1.5" Border, 1.0" Indent, Black on, Orange;
"EAST", D 2K; Pentagonal County 34 M1-6a;
"ROAD", D 2K; "CLOSED", D 2K; "Hokah Dr", D 2K;
"TO", D 2K; "Fawn Ln", D 2K;
"FOLLOW DETOUR", D 2K;

G20-X2-B



9.0" Radius, 1.5" Border, 1.0" Indent, Black on, Orange;
"WEST", D 2K; Pentagonal County 34 M1-6a;
"ROAD", D 2K; "CLOSED", D 2K; "Fawn Ln", D 2K;
"TO", D 2K; "Hokah Dr", D 2K;
"FOLLOW DETOUR", D 2K;

ALL DIMENSIONS ARE IN INCHES.

NO.	DATE	BY	CHK	REVISIONS

Design By: MF
Plan By: MF
Checked By: ES
Approved By: SD

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SEAN DELMORE, PE
DATE 12/3/2020 LICENSE # 40945

wsb

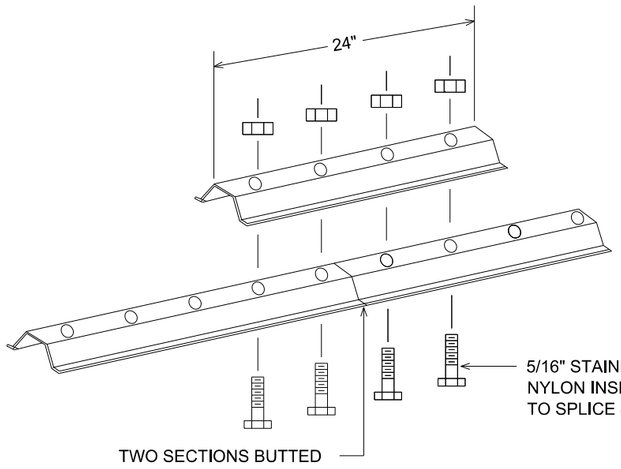
ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

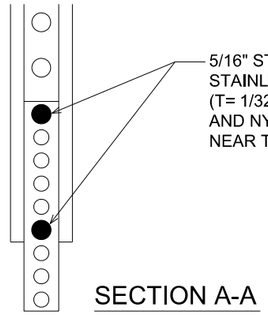
ANOKA COUNTY, MINNESOTA
SIGN DETAILS
TEMPORARY TRAFFIC CONTROL PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 58 OF 195 SHEETS

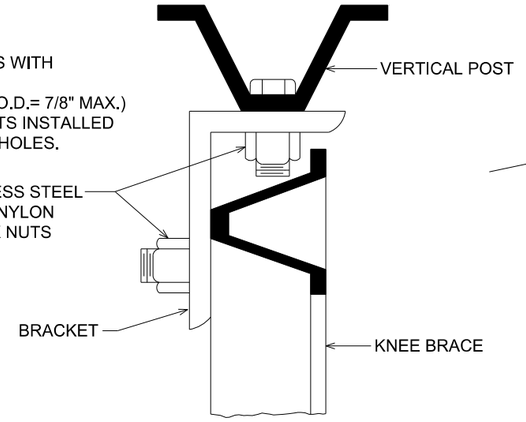
PLOTTED/REVISED: 12/3/2020

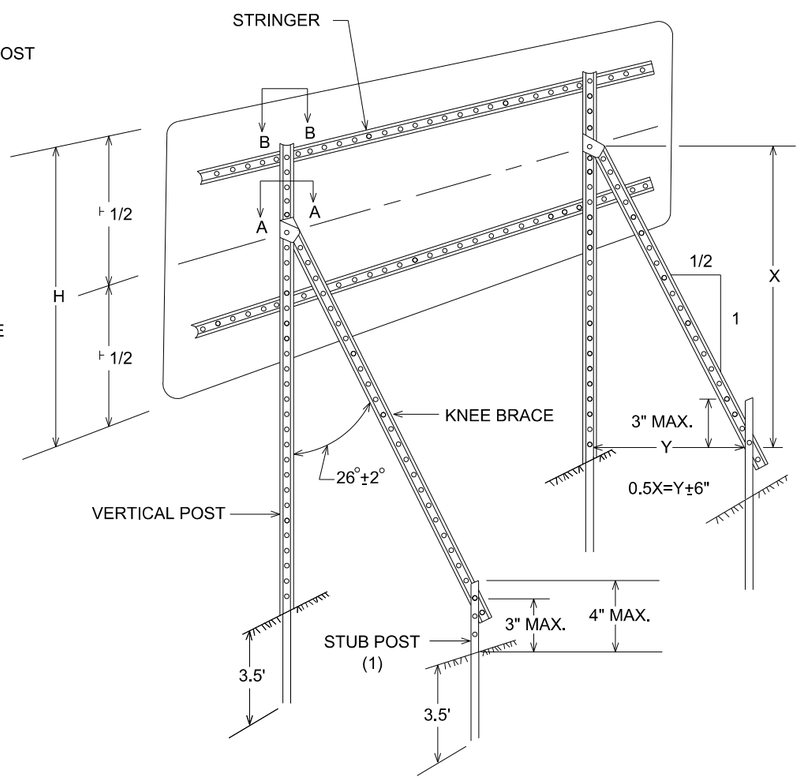


LATERAL BRACE OR STRINGER
SPLICE DETAIL (EXPLODED VIEW)

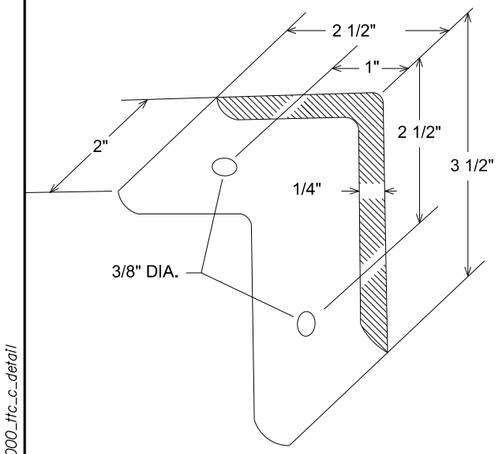


SECTION A-A



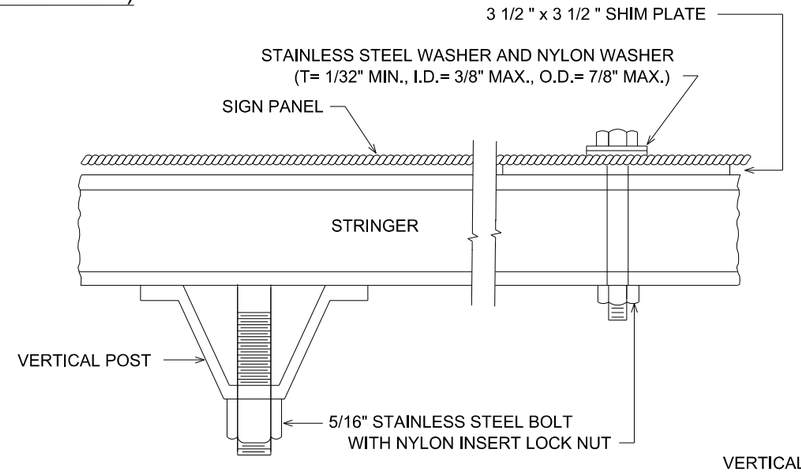


TYPICAL "A-FRAME" INSTALLATION
TYPE "D" SIGNS

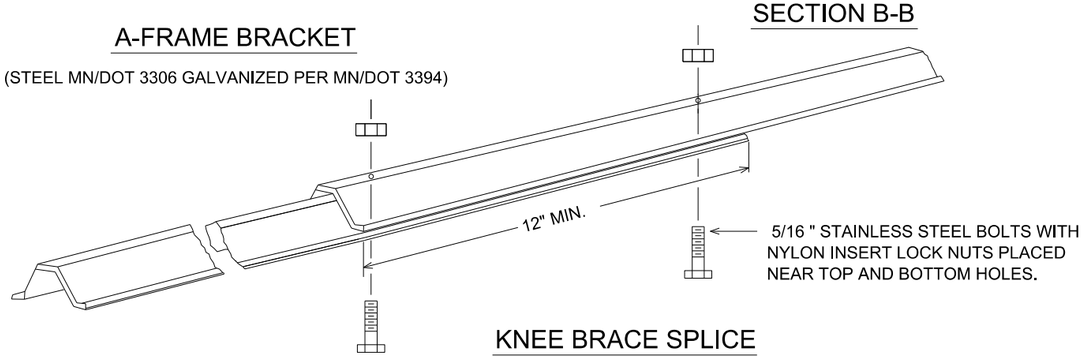


A-FRAME BRACKET

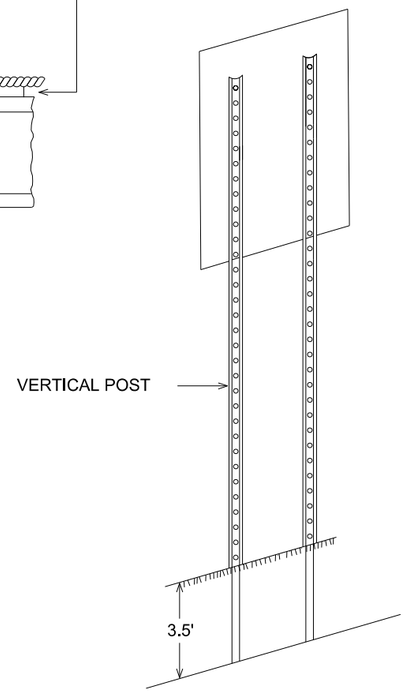
(STEEL MN/DOT 3306 GALVANIZED PER MN/DOT 3394)



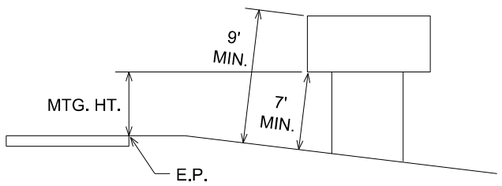
SECTION B-B



KNEE BRACE SPLICE



TYPICAL INSTALLATION 36" AND LARGER
TYPE "C" SIGNS



TYPICAL MOUNTING

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

TYPE C & D SIGN STRUCTURAL DETAILS

ANOKA COUNTY HIGHWAY DEPARTMENT SIGN DETAILS

NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

ANDREW J. PLOWMAN, PE
DATE 12/3/2020 LICENSE # 44200

wsb

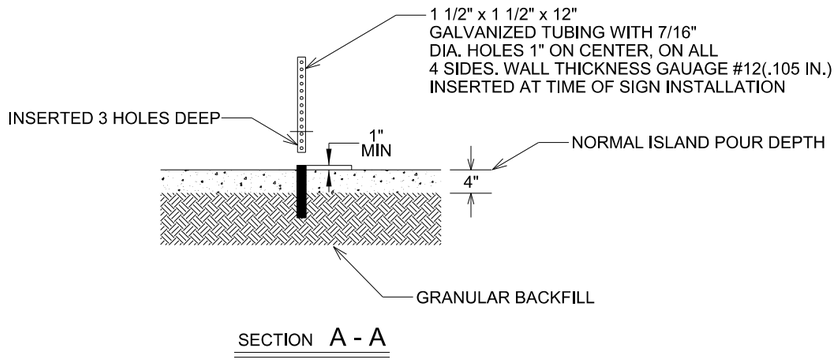
ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

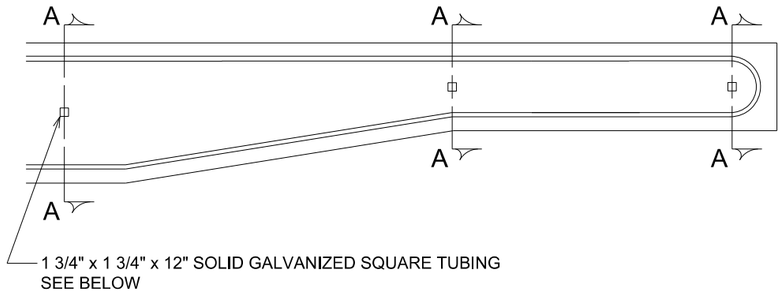
ANOKA COUNTY, MINNESOTA
DETAILS
TEMPORARY TRAFFIC CONTROL PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **59** OF **195** SHEETS

PATH & FILENAME: Projects\Minnesota\0\44400-000\Cad\Plan\44400-000_ttc_c_detail

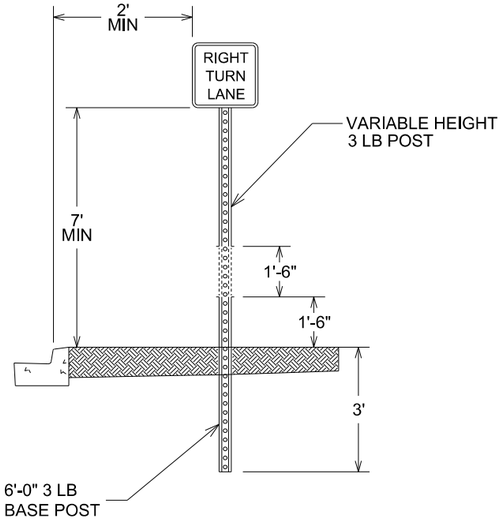


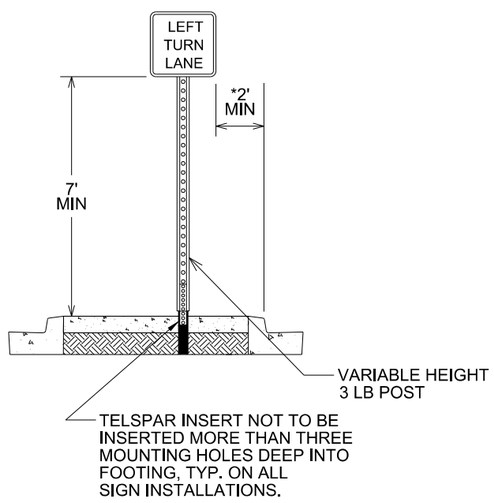
GROUND POST MOUNT SIGN
INSTALLATION TYPICAL

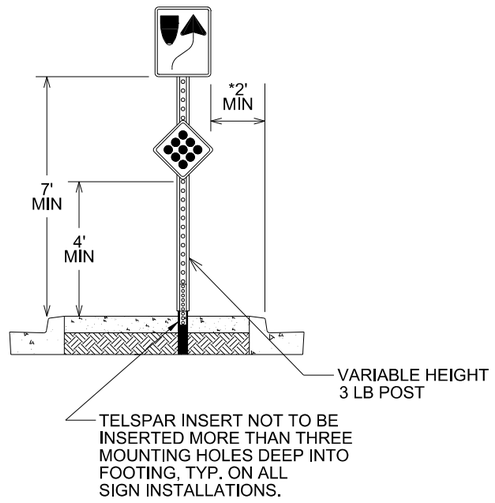


ISLAND MOUNT BREAK-AWAY SIGN
INSTALLATION TYPICAL

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







*1' MIN FOR NARROW URBAN LOCATIONS

INSTALLATION NEAR SIDEWALK (MN MUTCD)

ANOKA COUNTY HIGHWAY DEPARTMENT SIGN PLACEMENT

NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

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ANDREW J. PLOWMAN, PE

DATE 12/3/2020 LICENSE # 44200

wsb

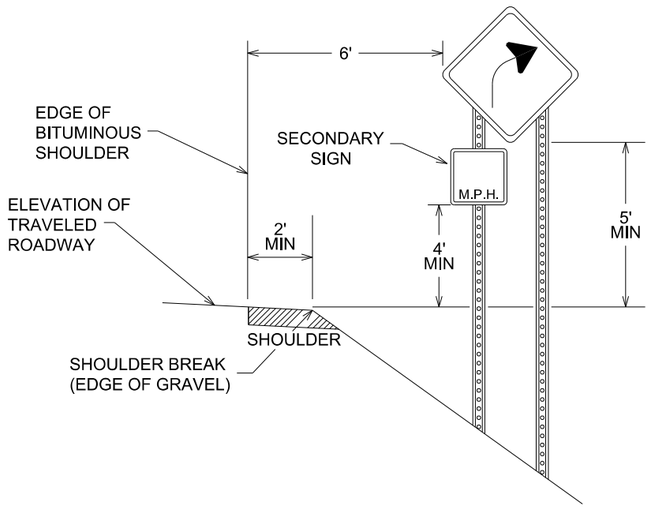
ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

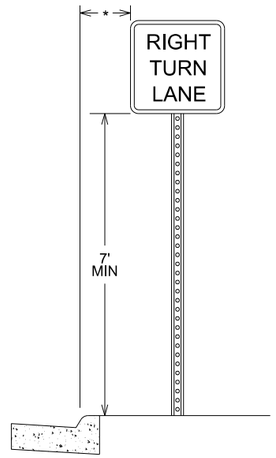
ANOKA COUNTY, MINNESOTA
DETAILS
TEMPORARY TRAFFIC CONTROL PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **60** OF **195** SHEETS

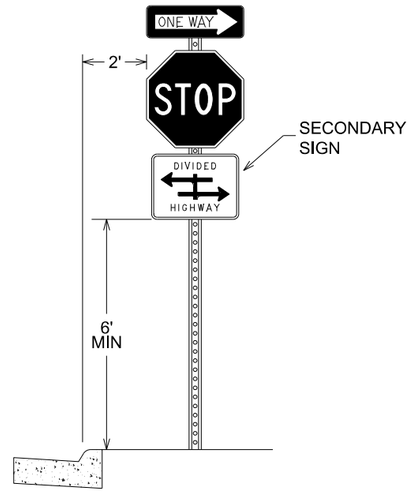
TYPICAL SIGN PLACEMENT
(RURAL)

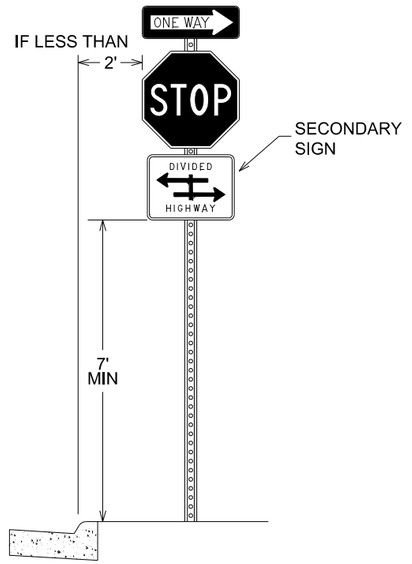


TYPICAL SIGN PLACEMENT
(URBAN)



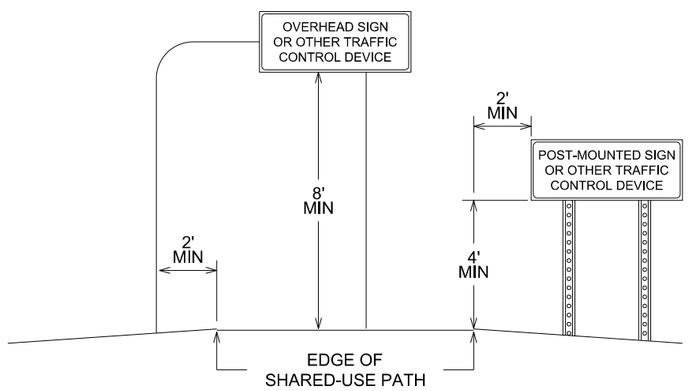
*2' - NARROW BOULEVARD (≤ 8' WIDE)
6' - WIDE BOULEVARD





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

TYPICAL SIGN PLACEMENT
SHARED-USE PATH



ANOKA COUNTY HIGHWAY DEPARTMENT SIGN PLACEMENT

NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

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ANDREW J. PLOWMAN, PE
DATE 12/3/2020 LICENSE # 44200

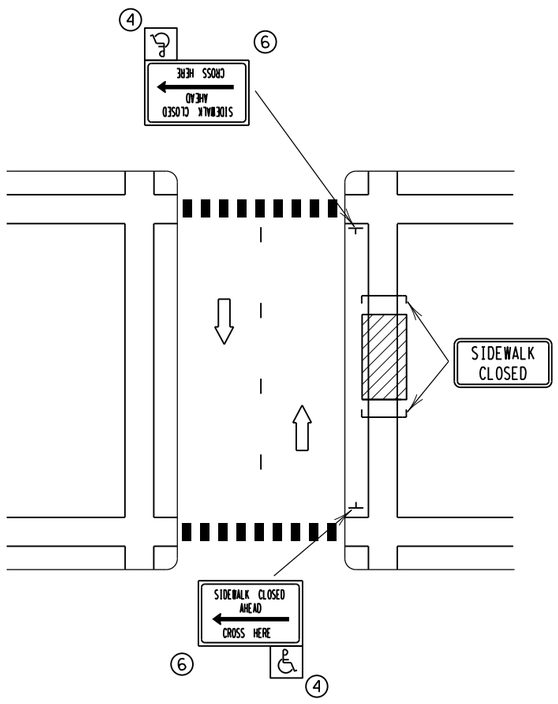
wsb

ANOKA COUNTY

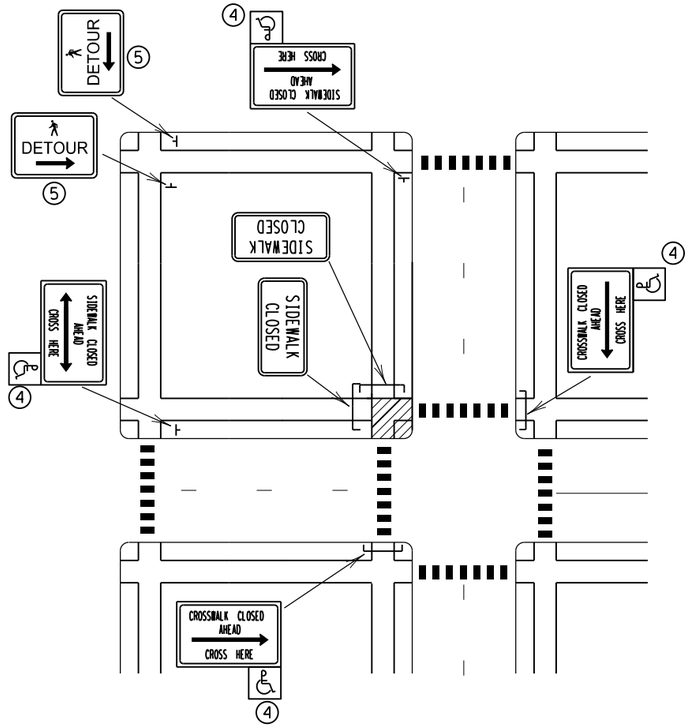
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
DETAILS
TEMPORARY TRAFFIC CONTROL PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

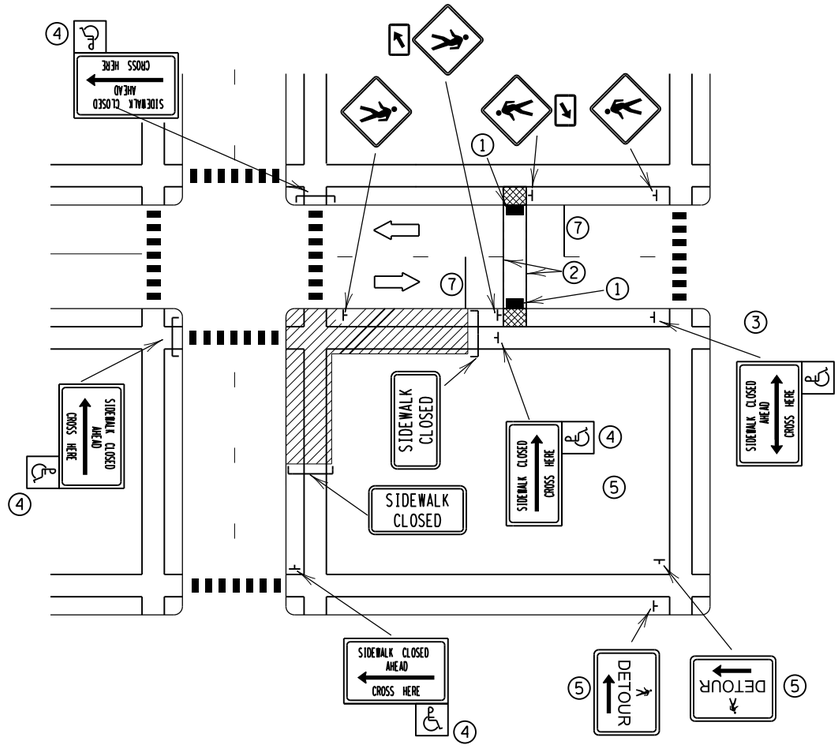
SHEET **61** OF **195** SHEETS



OTHER SIDE OF STREET DETOUR
(FOR MID-BLOCK CLOSURE)



ONE QUADRANT CLOSED



OTHER SIDE OF STREET DETOUR OR DETOUR WITH
TRAILBLAZING SIGNS (FOR CORNER SIDEWALK
CLOSURE WITH OPTIONAL TEMPORARY CROSSWALK)

GENERAL NOTES:

WHEN CLOSING OR RELOCATING CROSSWALKS OR SIDEWALKS, PROVIDE DETECTABLE TEMPORARY FACILITIES AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH EXISTING PEDESTRIAN FACILITIES. THE MINIMUM TEMPORARY WALKWAY WIDTH SHOULD BE THE WIDTH OF THE EXISTING FACILITY. IF THE EXISTING FACILITY HAS A WIDTH OF GREATER THAN 60", THE WIDTH OF THE TEMPORARY FACILITY MAY BE 60". IF THE WIDTH OF THE DETOUR IS LESS THAN 60", THEN A 60" BY 60" PASSING SPACE IS REQUIRED EVERY 200 FT.

TEMPORARY TRAFFIC CONTROL DEVICES FOR PEDESTRIANS ARE SHOWN. OTHER TRAILBLAZING SIGNS OR DEVICES MAY BE NEEDED FOR ADEQUATE ROUTING. STAGE WORK, AS NECESSARY, TO PROVIDE AN ALTERNATE PEDESTRIAN ROUTE (APR) AT ALL TIMES.

PROVIDE A SMOOTH, CONTINUOUS, HARD SURFACE THROUGH THE LENGTH OF THE APR. PROVIDE A FIRM, STABLE, FREE-DRAINING, AND NON-SLIP TEMPORARY WALKWAY SURFACE, REGARDLESS OF WEATHER CONDITIONS. THE TEMPORARY WALKWAY SURFACE SHALL BE SUPPORTED BY A SOLID BASE TO COVER SHORT SEGMENTS OF ROUGH, SOFT, OR UNEVEN GROUND. THE TEMPORARY WALKWAY SURFACE WILL ALLOW NORMAL USAGE OF WHEELCHAIRS, WALKERS, STROLLERS, AND OTHER MOBILITY DEVICES. CONCRETE, BITUMINOUS, STEEL, RUBBER, WOOD (3/4" OR THICKER), AND PLASTIC ARE ACCEPTABLE SURFACE MATERIALS FOR THE TEMPORARY WALKWAY SURFACE. GRAVEL, MILLINGS, OR OTHER UNEVEN SURFACES ARE NOT ACCEPTABLE SURFACE MATERIALS.

ANY PEDESTRIAN TRAFFIC SIGNALS CONTROLLING CLOSED CROSSWALKS SHALL BE COVERED OR DEACTIVATED.

POST MOUNTED SIGNS LOCATED ADJACENT TO A SIDEWALK SHALL HAVE A 7' MINIMUM CLEARANCE FROM THE BOTTOM OF THE SIGN TO THE SIDEWALK SURFACE.

ANY PORTABLE SIGN OR BARRICADE PLACED OR STORED IN A PEDESTRIAN WALKWAY THAT COULD BE A HAZARD TO A VISUALLY IMPAIRED PEDESTRIAN SHALL HAVE A DETECTABLE EDGE TO GUIDE THE PEDESTRIAN AROUND THE HAZARD.

MINIMIZE DISRUPTION TO PEDESTRIANS TO THE MAXIMUM EXTENT FEASIBLE BY PROVIDING AN APR IN THE FOLLOWING ORDER OF PREFERENCE:

1. PROVIDE THE APR ON THE SAME SIDE OF THE STREET AS THE DISRUPTED ROUTE UTILIZING BYPASSES.
2. WHERE IT IS NOT FEASIBLE TO PROVIDE A SAME SIDE APR, PROVIDE A DETOUR ON THE OTHER SIDE OF THE STREET.
3. WHERE IT IS NOT FEASIBLE TO PROVIDE AN APR ON THE OTHER SIDE OF THE ROADWAY, PROVIDE AN APR DETOUR WITH TRAILBLAZING SIGNS.

IF NOT ALREADY LIT, LIGHTING SHOULD BE CONSIDERED AT MID-BLOCK CROSSINGS IN ORDER TO ILLUMINATE PEDESTRIANS.

SPECIFIC NOTES:

(1) TEMPORARY CURB RAMPS WITH DETECTABLE WARNINGS.

(2) TEMPORARY PAVEMENT MARKINGS FOR CROSSWALKS MAY USE CROSSWALK BLOCKS OR TWO TRANSVERSE LINES. TWO STRIPS OF 18" PREFORMED MARKING MATERIAL MAY BE USED TO FORM 36" WIDE CROSSWALK BLOCKS.

(4) THE INTERNATIONAL SYMBOL OF ACCESSIBILITY SHOULD BE DISPLAYED WHEN ANY WALKWAY THROUGH A WORK ZONE HAS BEEN DETERMINED TO BE FULLY ACCESSIBLE. THE SYMBOL OF ACCESSIBILITY SHALL NOT BE DISPLAYED IF PERSONS WITH DISABILITIES SHOULD NOT USE THE PRIMARY TEMPORARY PEDESTRIAN DETOUR.

(5) PEDESTRIAN DETOUR TRAILBLAZING SIGNS SHOULD BE USED IF THE PEDESTRIAN DETOUR IS LOCATED SOMEPLACE OTHER THAN ACROSS THE STREET FROM THE SIDEWALK CLOSURE.

(7) STOP BAR SHOULD BE LOCATED 20' TO 50' PRIOR TO THE CROSSWALK. RESTRICT PARKING BETWEEN THE STOP BAR AND THE CROSSWALK. ON TWO-WAY ROADWAYS, RESTRICT PARKING BOTH PRIOR TO AND AFTER THE CROSSWALK FOR BOTH DIRECTIONS.

LEGEND:

- SIGN
- DIRECTION OF TRAFFIC
- TEMPORARY TRUNCATED DOME
- WORK AREA
- SIDEWALK BARRICADE
- TEMPORARY CURB RAMP WITH DETECTABLE EDGES

PUBLISHED BY OTE 04/24/2020 MODIFIED FOR ACHD 08/13/2020

ALTERNATE PEDESTRIAN ROUTE (APR) LAYOUTS-DETOURS

NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

ANDREW J. PLOWMAN, PE
DATE 12/3/2020 LICENSE # 44200

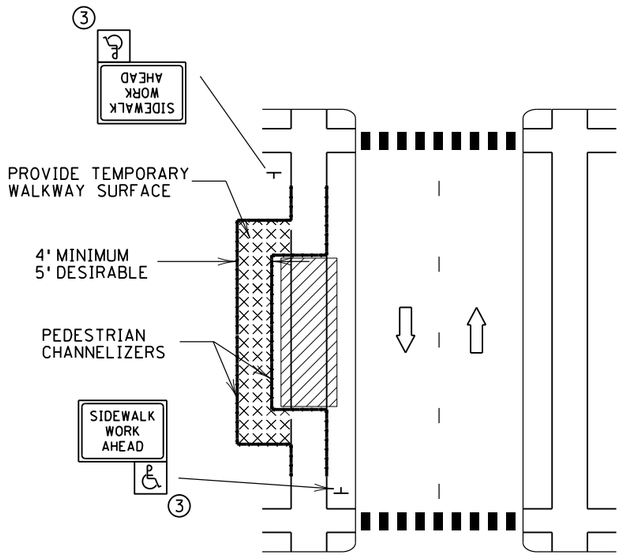
wsb

ANOKA COUNTY

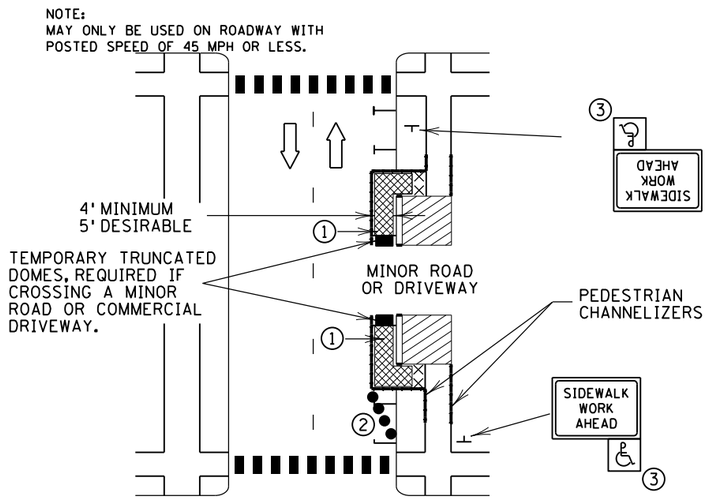
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
ALTERNATE PEDESTRIAN ROUTE DETAILS
TEMPORARY TRAFFIC CONTROL PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

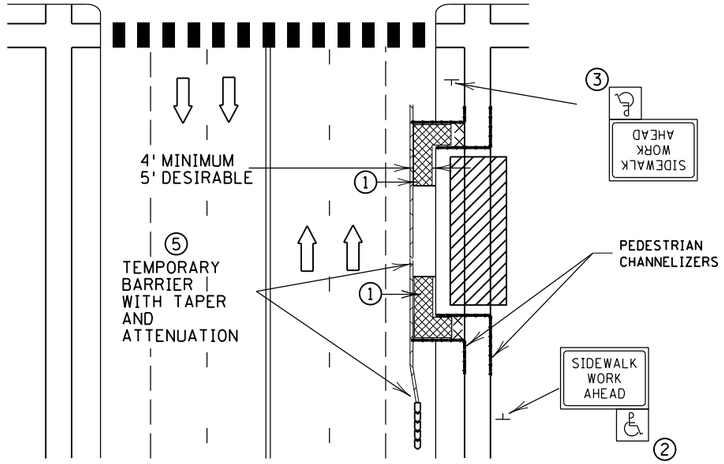
SHEET 62 OF 195 SHEETS



BYPASS ON ADJACENT AVAILABLE
RIGHT OF WAY
BYPASS TYPE A



SIDEWALK BYPASS USING PARKING OR
SHOULDER ON LOW SPEED ROADWAY
BYPASS TYPE B



SIDEWALK BYPASS USING SHOULDER
OR PARKING LANE ON MULTI-LANE
OR HIGH SPEED ROADWAY
BYPASS TYPE C

GENERAL NOTES:

WHEN CLOSING OR RELOCATING CROSSWALKS OR SIDEWALKS, PROVIDE DETECTABLE TEMPORARY FACILITIES AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH EXISTING PEDESTRIAN FACILITIES. THE ALTERNATE PEDESTRIAN ROUTE (APR) MUST REMAIN OPEN AT ALL TIMES.

TEMPORARY TRAFFIC CONTROL DEVICES FOR PEDESTRIANS ARE SHOWN. OTHER DEVICES MAY BE NECESSARY TO CONTROL VEHICULAR TRAFFIC. STAGE WORK, AS NECESSARY, TO PROVIDE AN ALTERNATE PEDESTRIAN ROUTE (APR) AT ALL TIMES. FOR ROADWAYS WITH NO AVAILABLE DETOURS,

PROVIDE A SMOOTH, CONTINUOUS, HARD SURFACE THROUGH THE LENGTH OF THE APR. PROVIDE A FIRM, STABLE, FREE-DRAINING, AND NON-SLIP TEMPORARY WALKWAY SURFACE, REGARDLESS OF WEATHER CONDITIONS. THE TEMPORARY WALKWAY SURFACE SHALL BE SUPPORTED BY A SOLID BASE TO COVER SHORT SEGMENTS OF ROUGH, SOFT, OR UNEVEN GROUND. THE TEMPORARY WALKWAY SURFACE WILL ALLOW NORMAL USAGE OF WHEELCHAIRS, WALKERS, STROLLERS, AND OTHER MOBILITY DEVICES. CONCRETE, BITUMINOUS, STEEL, RUBBER, WOOD (3/4" OR THICKER), AND PLASTIC ARE ACCEPTABLE SURFACE MATERIALS FOR THE TEMPORARY WALKWAY SURFACE. GRAVEL, MILLINGS, OR OTHER UNEVEN SURFACES ARE NOT ACCEPTABLE SURFACE MATERIALS.

IF A 60" PEDESTRIAN WALKWAY WIDTH ISN'T PROVIDED FOR THE ROUTE, THEN A 60" BY 60" PASSING SPACE IS REQUIRED EVERY 200'. THE MINIMUM WIDTH OF THE WALKWAY IS 48".

ANY PEDESTRIAN TRAFFIC SIGNALS CONTROLLING CLOSED CROSSWALKS SHALL BE COVERED OR DEACTIVATED.

POST MOUNTED SIGNS LOCATED ADJACENT TO A SIDEWALK SHALL HAVE A 7' MINIMUM CLEARANCE FROM THE BOTTOM OF THE LOWEST SIGN TO THE SIDEWALK SURFACE.

ANY PORTABLE SIGN OR BARRICADE PLACED OR STORED IN A PEDESTRIAN WALKWAY THAT COULD BE A HAZARD TO A VISUALLY IMPAIRED PEDESTRIAN SHALL HAVE A DETECTABLE EDGE TO GUIDE THE PEDESTRIAN AROUND THE HAZARD.

MINIMIZE DISRUPTION TO PEDESTRIANS TO THE MAXIMUM EXTENT FEASIBLE BY PROVIDING AN APR IN THE FOLLOWING ORDER OF PREFERENCE:

1. PROVIDE THE APR ON THE SAME SIDE OF THE STREET AS THE DISRUPTED ROUTE UTILIZING BYPASSES.
2. WHERE IT IS NOT FEASIBLE TO PROVIDE A SAME SIDE APR, PROVIDE A DETOUR ON THE OTHER SIDE OF THE STREET.
3. WHERE IT IS NOT FEASIBLE TO PROVIDE AN APR ON THE OTHER SIDE OF THE ROADWAY, PROVIDE AN APR DETOUR WITH TRAILBLAZING SIGNS.

SPECIFIC NOTES:

(1) TEMPORARY CURB RAMPS.

(2) 5 DEVICE TAPER 25' LONG, RECOMMENDED WHEN THE CLOSED AREA WAS USED AS AN INTERMITTENT TRAFFIC LANE OR BYPASS LANE.

(3) THE INTERNATIONAL SYMBOL OF ACCESSIBILITY SHOULD BE DISPLAYED WHEN ANY WALKWAY THROUGH A WORK ZONE HAS BEEN DETERMINED TO BE FULLY ACCESSIBLE. THE SYMBOL OF ACCESSIBILITY SHALL NOT BE DISPLAYED IF PERSONS WITH DISABILITIES SHOULD NOT USE THE PRIMARY TEMPORARY PEDESTRIAN DETOUR.

(5) SEE THE MnDOT TEMPORARY BARRIER GUIDANCE MANUAL DECEMBER 2018 FOR GUIDANCE ON PLACEMENT AND USAGE OF TEMPORARY BARRIER.

LEGEND:

- SIGN
- TEMPORARY TRUNCATED DOME
- WORK AREA
- PEDESTRIAN CHANNELIZATION DEVICE
- TEMPORARY BARRIER
- DIRECTION OF TRAFFIC
- CHANNELIZER
- TEMPORARY CURB RAMP WITH DETECTABLE EDGES
- TEMPORARY WALKWAY SURFACE

PUBLISHED BY OTE 04/24/2020 MODIFIED FOR ACHD 08/13/2020

ALTERNATE PEDESTRIAN ROUTE (APR) LAYOUTS-BYPASSES

NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

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ANDREW J. PLOWMAN, PE
DATE 12/3/2020 LICENSE # 44200

wsb

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CSAH 34 (Birch Street) Improvements
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ALTERNATE PEDESTRIAN ROUTE DETAILS
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S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 63 OF 195 SHEETS

CHANNELIZERS, SIDEWALK BARRICADES, AND PORTABLE STANDS

GENERAL NOTES;

1. RAILINGS OR OTHER OBJECTS MAY PROTRUDE A MAXIMUM OF 4" INTO THE WALKWAY CLEAR SPACE WHEN LOCATED A MINIMUM OF 27" ABOVE THE WALKWAY SURFACE.
2. WHEN TEMPORARY BARRIER IS USED AS A PEDESTRIAN CHANNELIZER IT SHALL MEET CRASHWORTHY REQUIREMENTS.
3. WHEN USED, SIDEWALK BARRICADES SHALL BE PLACED ACROSS THE ENTIRE WIDTH OF THE WALKWAY SURFACE.
4. ALL DEVICES USED TO CHANNELIZE PEDESTRIAN FLOW SHOULD INTERLOCK SUCH THAT GAPS DO NOT ALLOW PEDESTRIANS TO STRAY FROM THE CHANNELIZED PATH.

SPECIFIC NOTES;

(1) ANY TRIPPING HAZARD IN THE WALKWAY NEEDS A DETECTABLE EDGE. BALLAST SHALL BE LOCATED BEHIND THE DETECTABLE EDGE OR INTERNAL TO THE DEVICE. ANY SUPPORT ON THE FRONT OF THE DEVICE SHOULD NOT EXTEND INTO THE 48" MINIMUM WALKWAY CLEAR SPACE. ANY SUPPORT THAT EXTENDS INTO THE WALKWAY SHALL NOT EXCEED 0.5"'' HEIGHT ABOVE THE WALKWAY SURFACE; IF GREATER THAN 0.25", BEVEL AS SHOWN IN THE EDGE TREATMENT DETAIL.

(2) DETECTABLE EDGES SHALL BE CONTINUOUS AND 6" MINIMUM ABOVE THE WALKWAY SURFACE AND HAVE COLOR MARKINGS CONTRASTING WITH THE WALKWAY SURFACE. THE DETECTABLE EDGE AROUND A PORTABLE SIGN STAND SHOULD BE PLACED IN THE WALKWAY AREA IN WHICH THE SIGN POSES A HAZARD TO A VISUALLY IMPAIRED PEDESTRIAN.

(3) DEVICES AND DETECTABLE EDGES SHALL NOT BLOCK WATER DRAINAGE FROM THE WALKWAY. A GAP HEIGHT OR OPENING FROM THE WALKWAY SURFACE UP TO A MAXIMUM OF 2" IS ALLOWED FOR DRAINAGE PURPOSES.

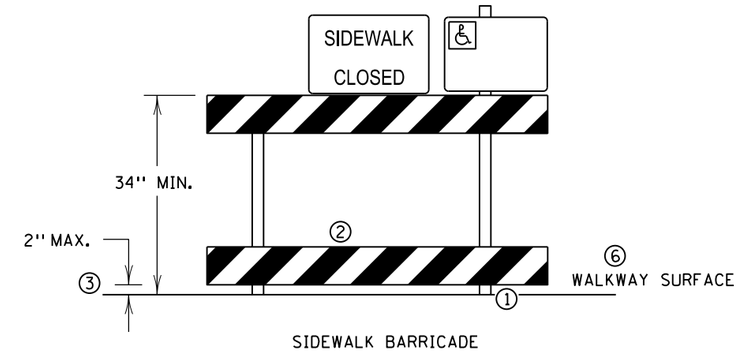
(4) WHEN HAND GUIDANCE IS REQUIRED, THE TOP RAIL OR TOP SURFACE SHALL:
- BE IN A VERTICAL PLANE PERPENDICULAR TO THE WALKWAY ABOVE THE DETECTABLE EDGE,
- BE CONTINUOUS AT A HEIGHT OF 34 TO 38" ABOVE THE WALKWAY SURFACE, AND
- BE SUPPORTED WITH MINIMAL INTERFERENCE TO THE PEDESTRIAN'S HANDS OR FINGERS.

(5) ALL DEVICES SHALL BE FREE OF SHARP OR ROUGH EDGES, AND FASTENERS (BOLTS) SHALL BE ROUNDED TO PREVENT HARM TO HANDS, ARMS OR CLOTHING OF PEDESTRIANS.

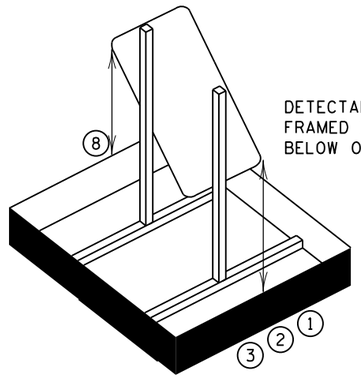
(6) TEMPORARY WALKWAY SURFACES SHALL BE FIRM, STABLE, FREE-DRAINING AND NON-SLIP REGARDLESS OF WEATHER CONDITIONS. TEMPORARY WALKWAY SURFACES SHALL ALLOW NORMAL USAGE OF WHEELCHAIRS, WALKERS, STROLLERS, OR OTHER MOBILITY DEVICES. CONCRETE, BITUMINOUS, STEEL, RUBBER, WOOD (3/4" OR THICKER), AND PLASTIC ARE ACCEPTABLE SURFACE MATERIALS FOR A TEMPORARY WALKWAY SURFACE. GRAVEL, MILLINGS, OR OTHER UNEVEN SURFACES ARE NOT ACCEPTABLE SURFACE MATERIALS.

(7) LONGITUDINAL CHANNELIZING DEVICES FOR PEDESTRIANS SHALL BE 32" HIGH OR GREATER.

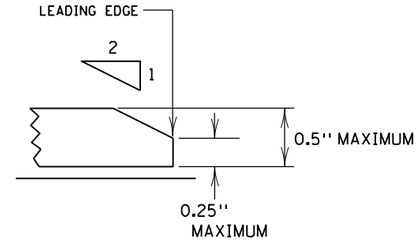
(8) AN EDGE OF THE FRAMING MAY BE REMOVED IF IT IS NOT NEEDED FOR PED GUIDANCE. STABILITY OF THE DETECTABLE EDGE SHOULD BE MAINTAINED.



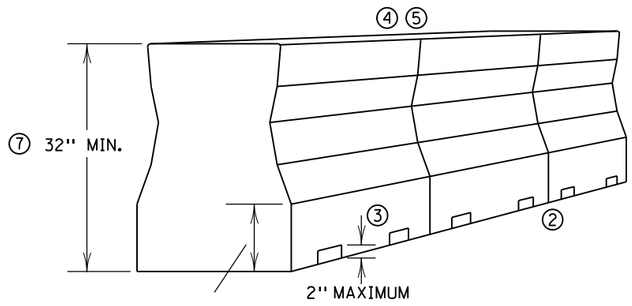
SIDEWALK BARRICADE



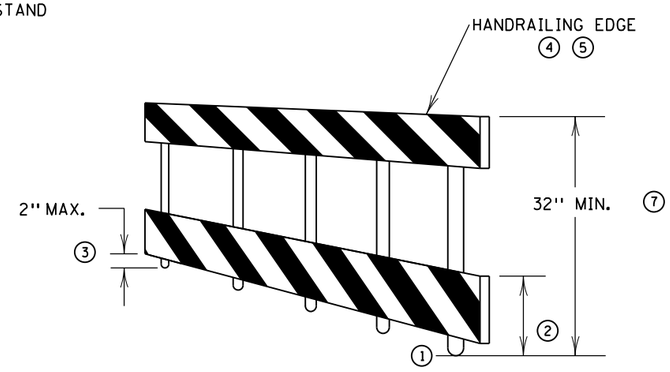
DETECTABLE EDGE FOR SIGN ON PORTABLE STAND



EDGE TREATMENT



PEDESTRIAN CHANNELIZER DEVICE USING A TEMPORARY BARRIER



PEDESTRIAN CHANNELIZER

PUBLISHED BY OTE 04/24/2020 MODIFIED FOR ACHD 08/13/2020

TEMPORARY PEDESTRIAN ACCESS ROUTE (TPAR) DEVICES

NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

ANDREW J. PLOWMAN, PE
DATE 12/3/2020 LICENSE # 44200

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
TEMPORARY PEDESTRIANACCESS ROUTE DEVICES
TEMPORARY TRAFFIC CONTROL PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 64 OF 195 SHEETS

PLOTTED/REVISED: 12/3/2020

TEMPORARY CURB RAMPS AND WALKWAY SURFACES

SPECIFIC NOTES:

① CURB RAMPS SHALL BE 48" MIN. WIDTH WITH A FIRM, STABLE AND SLIP RESISTANT SURFACE.

② PROTECTIVE EDGING WITH A 2" MIN. HEIGHT SHALL BE PLACED WHEN A CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3. PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.

③ DETECTABLE EDGING WITH 6" MIN. HEIGHT AND CONTRASTING COLOR SHALL BE PLACED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).

④ CURB RAMPS AND LANDINGS SHALL HAVE A 2% MAX. CROSS SLOPE.

⑤ CLEAR SPACE OF 48" X 48" MIN. SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.

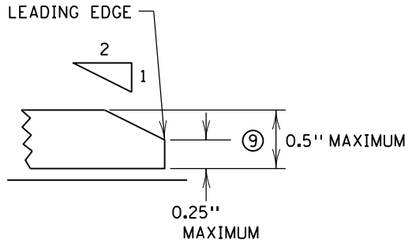
⑥ THE CURB RAMP WALKWAY EDGE SHALL BE MARKED WITH A CONTRASTING COLOR, 2" TO 4" WIDE MARKING. THE MARKING IS OPTIONAL WHERE COLOR CONTRASTING EDGING IS USED.

⑦ WATER FLOW IN THE GUTTER SYSTEM SHALL NOT BE IMPEDED.

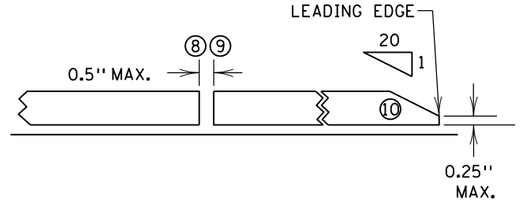
⑧ LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 1/2" WIDTH.

⑨ CHANGES BETWEEN SURFACE HEIGHTS SHALL NOT EXCEED 1/2". LATERAL EDGES SHOULD BE VERTICAL UP TO 1/4" HIGH, AND BEVELED AT 1:2 BETWEEN 1/4" AND 1/2" HEIGHT.

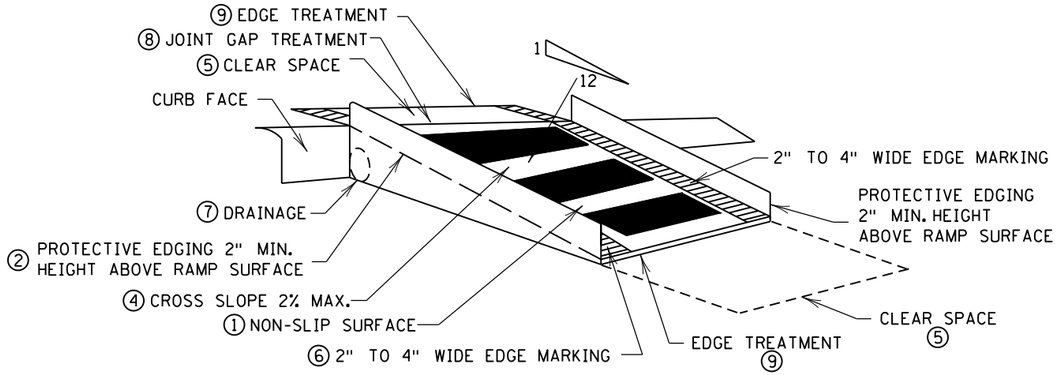
⑩ THE TEMPORARY WALKWAY SURFACE MAY HAVE A THICKNESS GREATER THAN 0.5". IF THE THICKNESS OF THE TEMPORARY WALKWAY SURFACE IS LESS THAN OR EQUAL TO 0.5", THE BEVEL MAY BE 1:2.



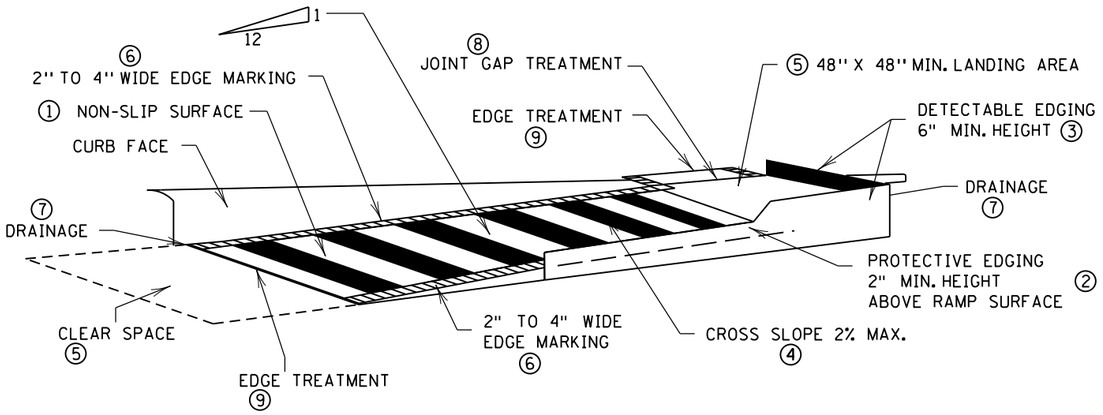
EDGE TREATMENT



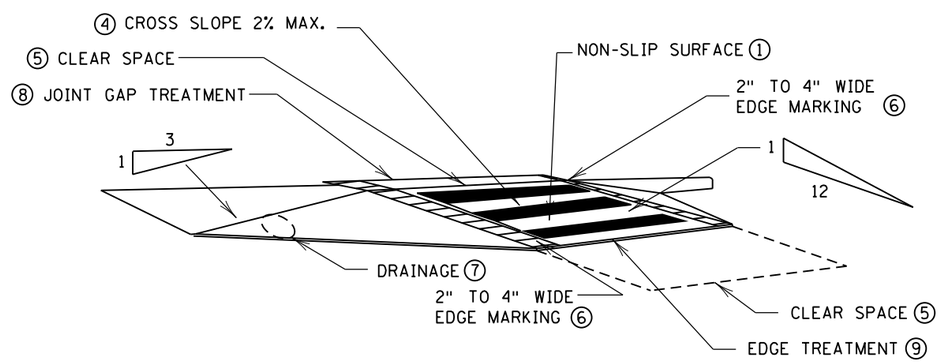
TEMPORARY WALKWAY SURFACE



TEMPORARY CURB RAMP PERPENDICULAR TO CURB
SHOWN WITH PROTECTIVE EDGE



TEMPORARY CURB RAMP
PARALLEL TO CURB



TEMPORARY CURB RAMP PERPENDICULAR TO CURB
SHOWN WITH SIDE APRON

PUBLISHED BY OTE 04/24/2020

TEMPORARY PEDESTRIAN ACCESS ROUTE (TPAR) DEVICES

NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

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ANDREW J. PLOWMAN, PE
DATE 12/3/2020 LICENSE # 44200

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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

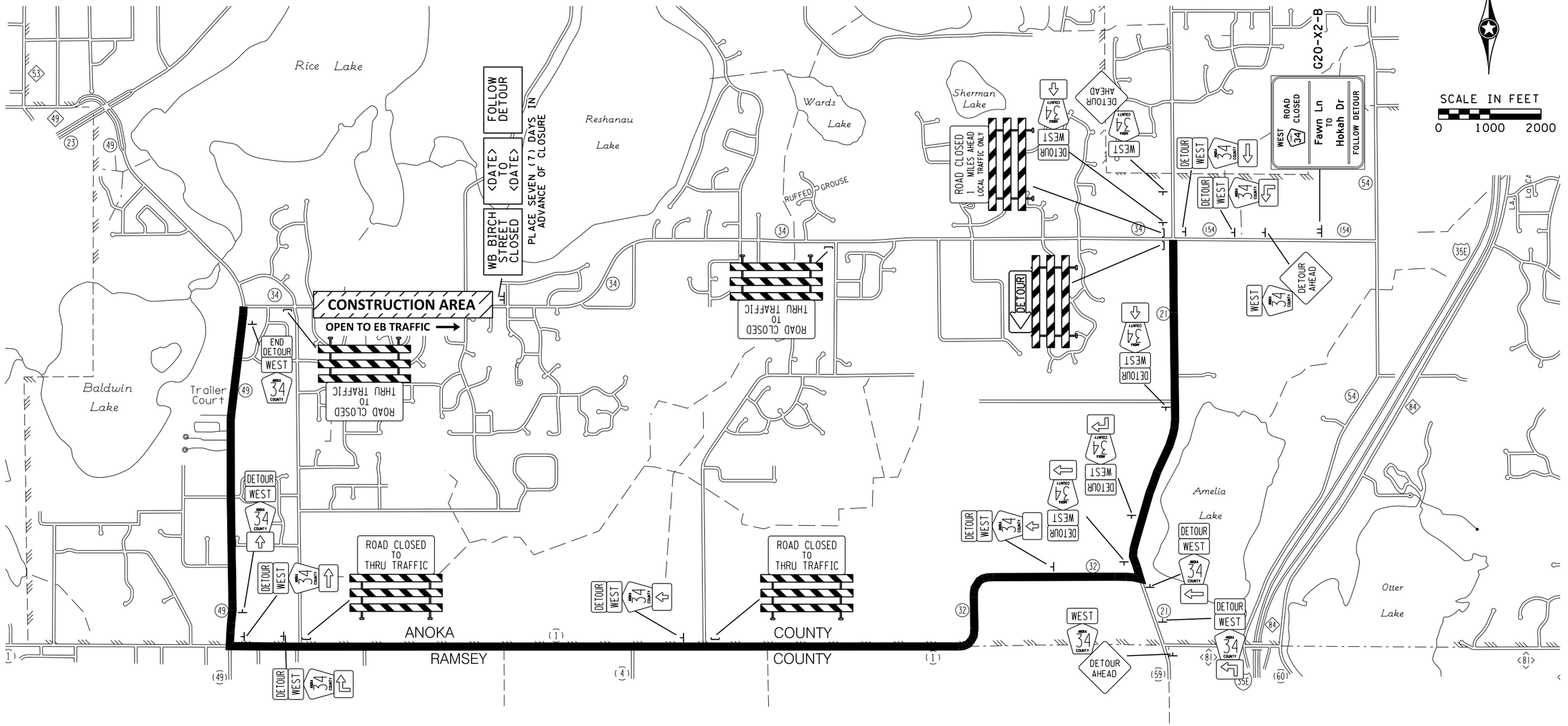
ANOKA COUNTY, MINNESOTA
TEMPORARY PEDESTRIANACCESS ROUTE DEVICES
TEMPORARY TRAFFIC CONTROL PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 65 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\4400-000_ttc_c_detail

PLOTTED/REVISED: 12/3/2020

CSAH 34 Westbound Detour



LEGEND

DETOUR ROUTE

NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
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Approved By: AJP

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ANDREW J. PLOWMAN, PE
DATE 12/3/2020 LICENSE # 44200

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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

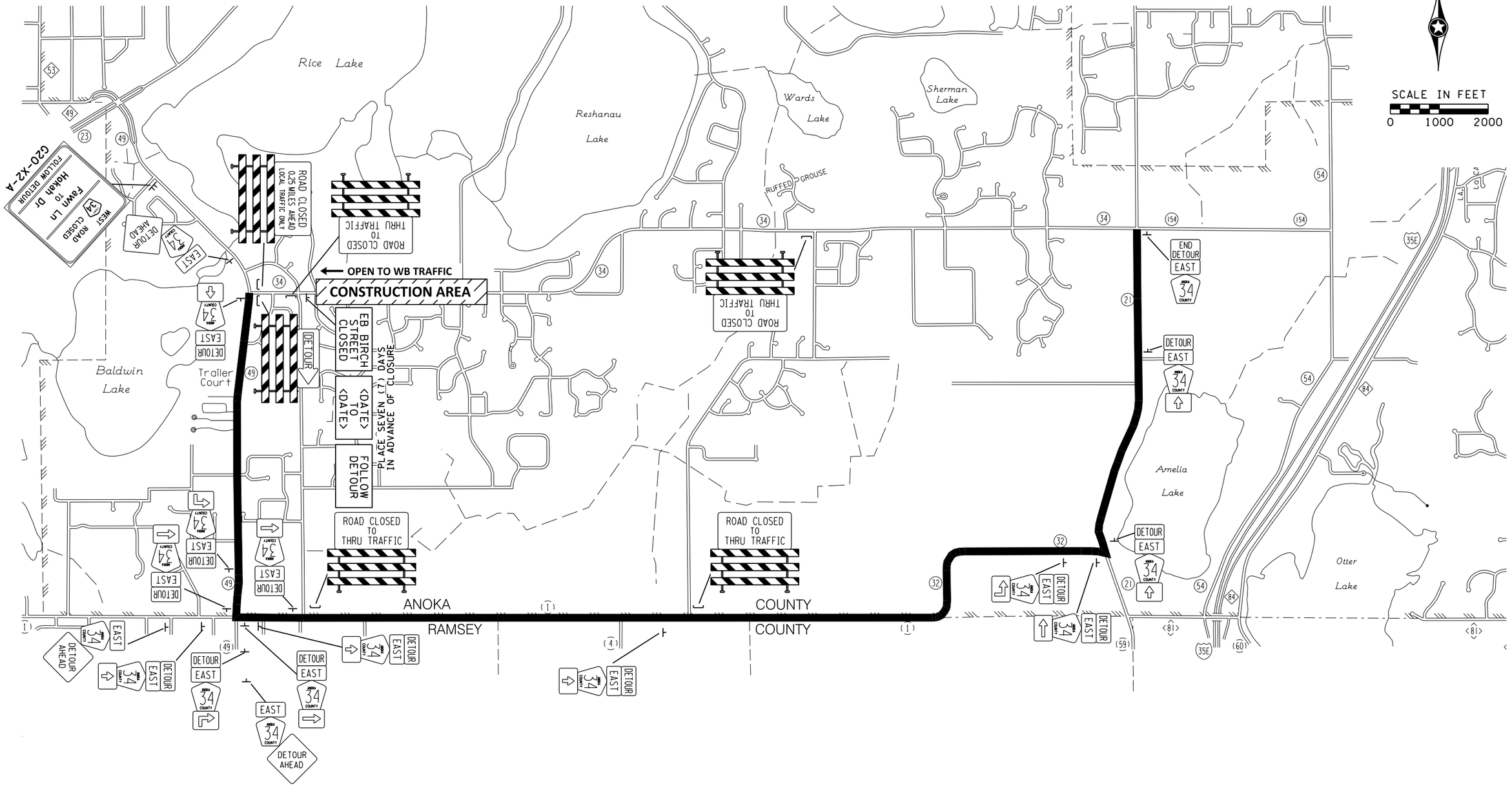
ANOKA COUNTY, MINNESOTA
CSAH 34 WB DETOUR - STAGE 1
TEMPORARY TRAFFIC CONTROL PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **66** OF **195** SHEETS

PATH & FILENAME: Projects\Minnesota\O\4400-000\Cad\Plan\4400-000_tfc_d_detours

PLOTTED/REVISED: 12/3/2020

CSAH 34 Eastbound Detour



LEGEND

DETOUR ROUTE

NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

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ANDREW J. PLOWMAN, PE

DATE 12/3/2020 LICENSE # 44200

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ANOKA COUNTY

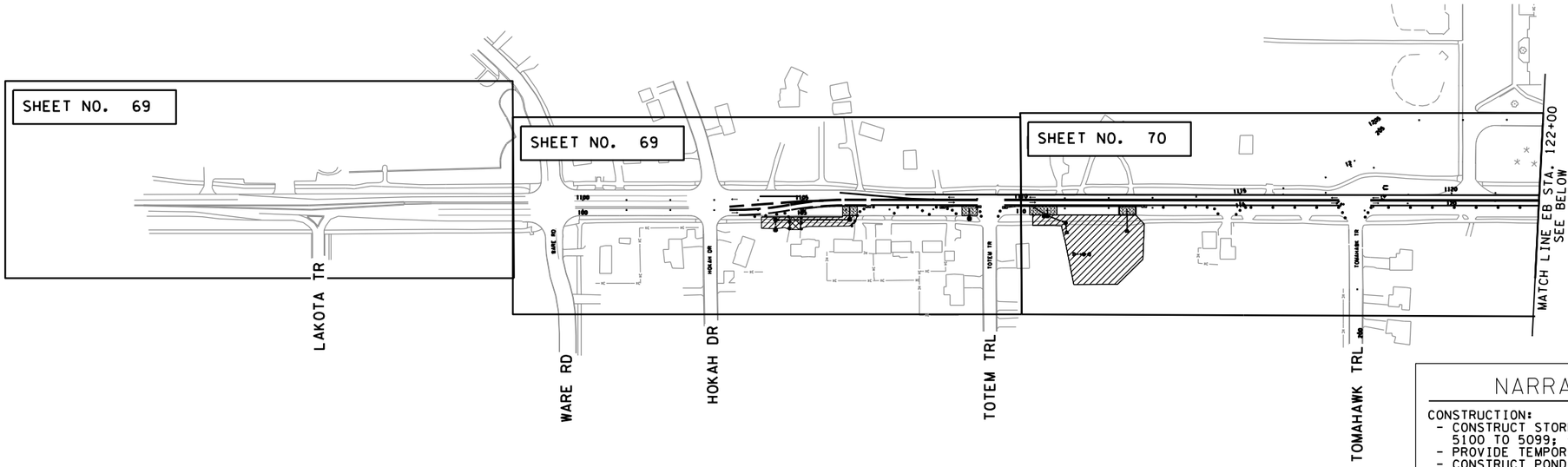
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
CSAH 34 EB DETOUR - STAGE 2 & 3
TEMPORARY TRAFFIC CONTROL PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 67 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\14400-000_ttc_d_detours

PLOTTED/REVISED: 12/3/2020



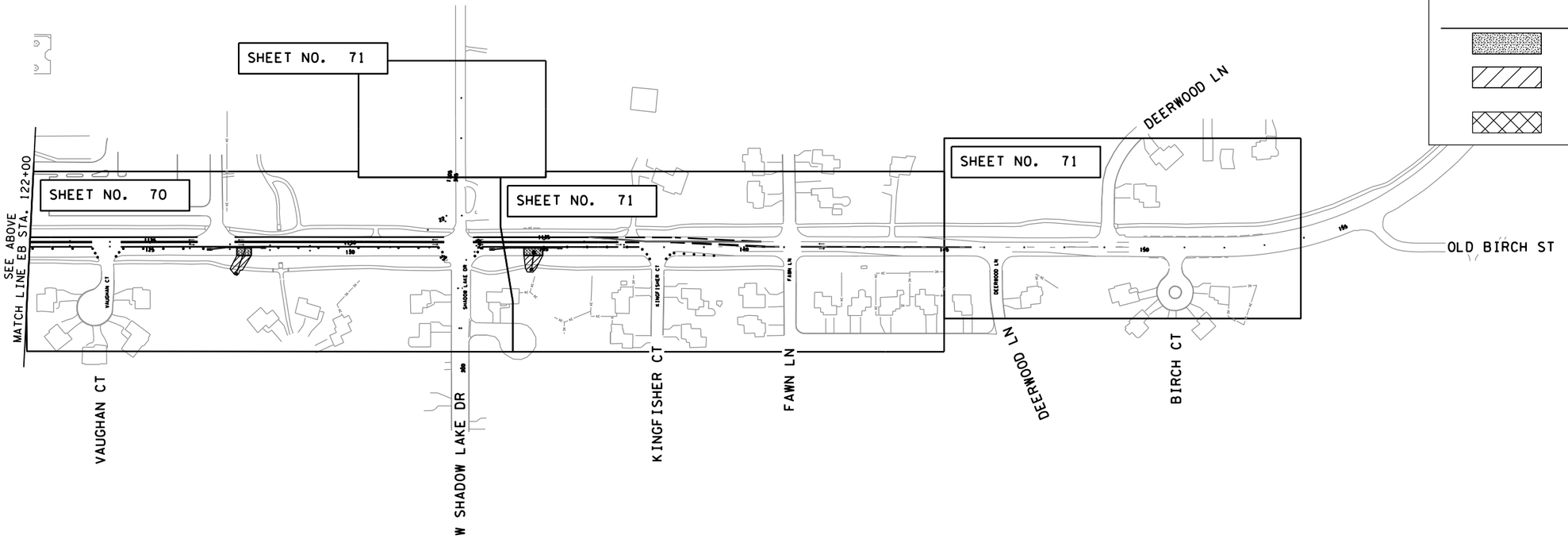
NARRATIVE: STAGE 0

CONSTRUCTION:
- CONSTRUCT STORM SEWER PIPES 5008 TO 5001; 5005; 5100 TO 5099; 5041; 6010; 5093
- PROVIDE TEMPORARY PAVEMENT FOR EXCAVATED ROADWAY
- CONSTRUCT POND
- PROVIDE TEMPORARY STORM CONNECTIONS TO REMAINING EXISTING PIPE

TRAFFIC:
- MAINTAIN 2-WAY TRAFFIC ON THE NORTH SIDE OF THE ROADWAY
- ACCESS TO ALL RESIDENTS AND BUSINESSES SHALL BE MAINTAINED AT ALL TIMES.

LEGEND

- TEMPORARY BITUMINOUS PAVEMENT
- UNDER CONSTRUCTION / CLOSED
- CONSTRUCT UNDER TRAFFIC



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Design By: MF
Plan By: MF
Checked By: ES
Approved By: SD

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SEAN DELMORE, PE

DATE 12/3/2020 LICENSE # 40945

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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

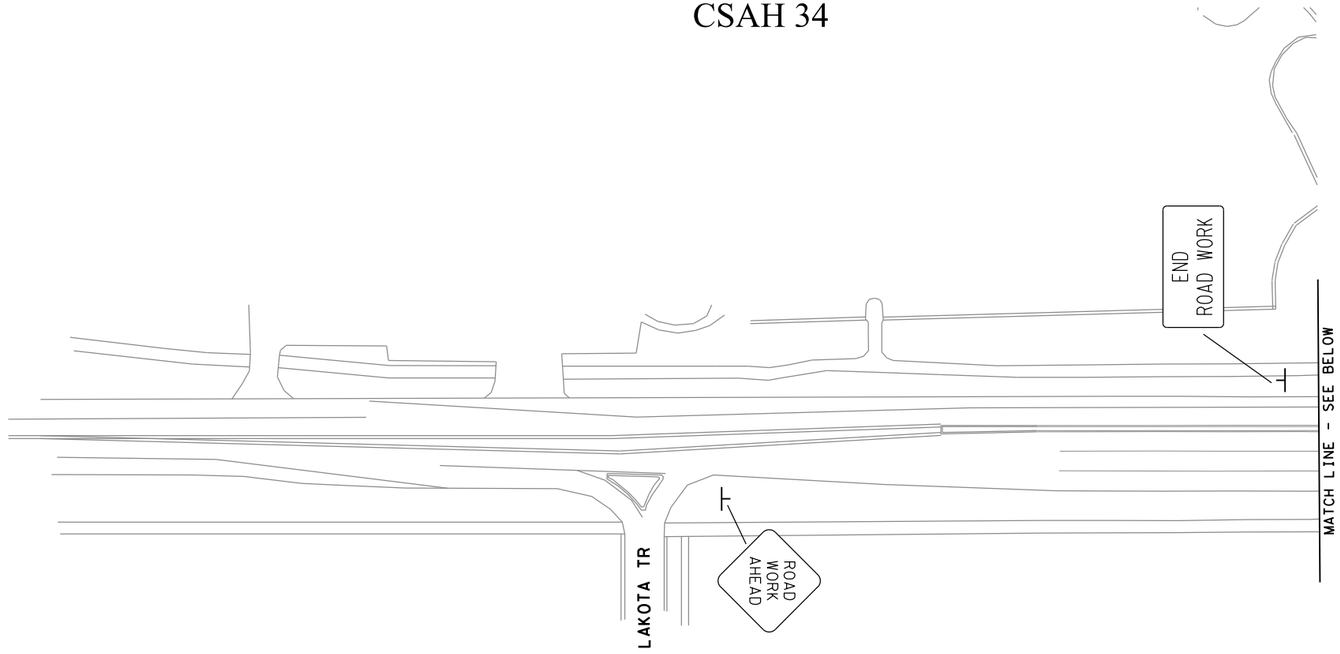
ANOKA COUNTY, MINNESOTA
STAGE 0: GENERAL LAYOUT
TEMPORARY TRAFFIC CONTROL PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 68 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\0\4400-000\Cad\Plan\4400-000_ttc000.dgn

PLOTTED/REVISED: 12/3/2020

CSAH 34



NARRATIVE: STAGE 0

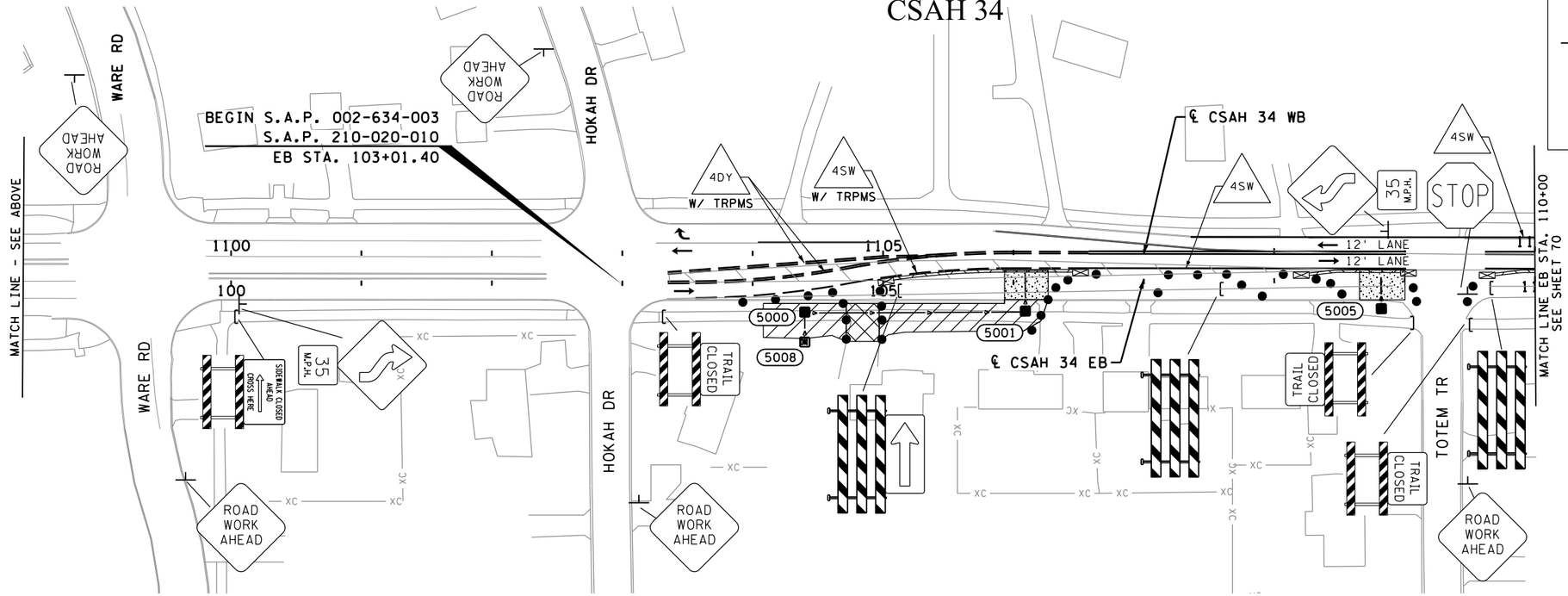
CONSTRUCTION:
- CONSTRUCT STORM SEWER PIPES 5008 TO 5001; 5005; 5100 TO 5099; 5041; 6010; 5093
- PROVIDE TEMPORARY PAVEMENT FOR EXCAVATED ROADWAY
- CONSTRUCT POND
- PROVIDE TEMPORARY STORM CONNECTIONS TO REMAINING EXISTING PIPE

TRAFFIC:
- MAINTAIN 2-WAY TRAFFIC ON THE NORTH SIDE OF THE ROADWAY
- ACCESS TO RESIDENTS AND SCHOOL SHALL BE MAINTAINED AT ALL TIMES

LEGEND

- TEMPORARY BITUMINOUS PAVEMENT
- UNDER CONSTRUCTION / CLOSED
- CONSTRUCT UNDER TRAFFIC

CSAH 34



NO.	DATE	BY	CHK	REVISIONS

Design By: MF
Plan By: MF
Checked By: ES
Approved By: SD

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SEAN DELMORE, PE

DATE 12/3/2020 LICENSE # 40945

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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

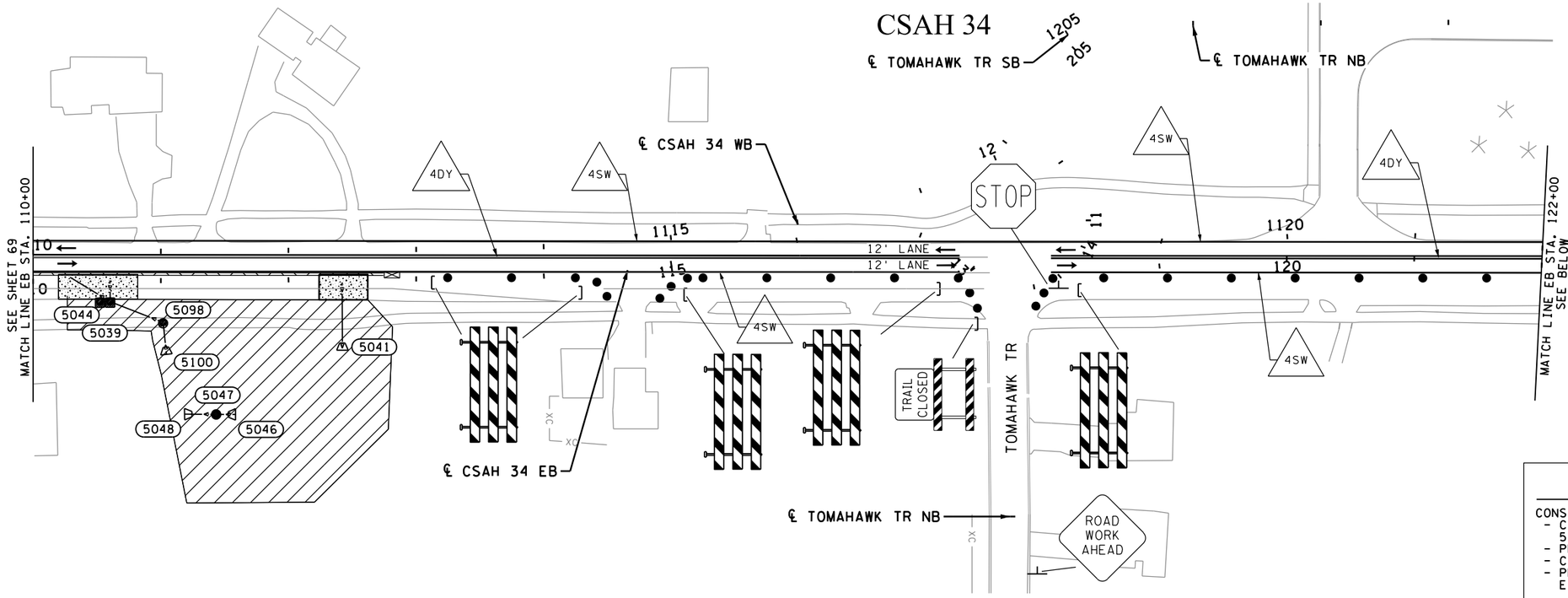
ANOKA COUNTY, MINNESOTA
STAGE 0; STA 103+01.40 TO STA 110+00
TEMPORARY TRAFFIC CONTROL PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 69 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\0\4400-000\Cad\Plan\4400-000_ttc001.dgn

PLOTTED/REVISED: 12/3/2020

CSAH 34



NARRATIVE: STAGE 0

CONSTRUCTION:
- CONSTRUCT STORM SEWER PIPES 5008 TO 5001; 5005; 5100 TO 5099; 5041; 6010; 5093
- PROVIDE TEMPORARY PAVEMENT FOR EXCAVATED ROADWAY
- CONSTRUCT POND
- PROVIDE TEMPORARY STORM CONNECTIONS TO REMAINING EXISTING PIPE

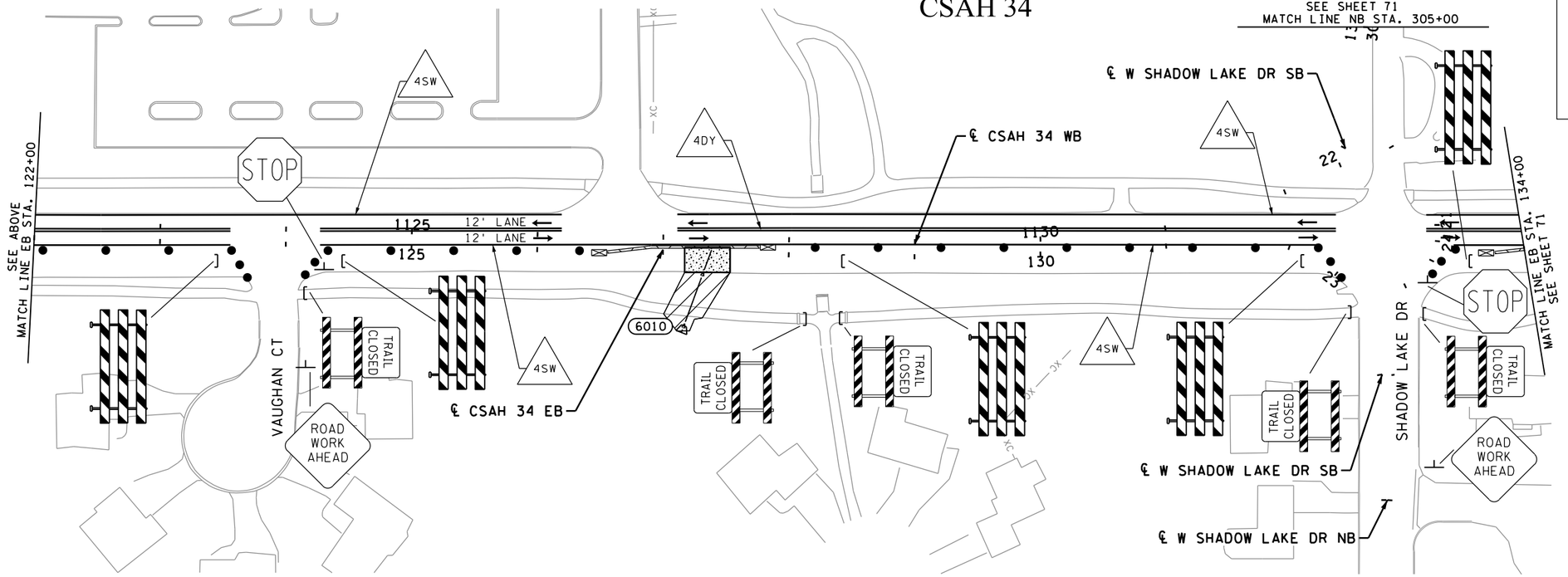
TRAFFIC:
- MAINTAIN 2-WAY TRAFFIC ON THE NORTH SIDE OF THE ROADWAY
- ACCESS TO RESIDENTS AND BUSINESSES SHALL BE MAINTAINED AT ALL TIMES

LEGEND

TEMPORARY BITUMINOUS PAVEMENT

UNDER CONSTRUCTION / CLOSED

CSAH 34



NO.	DATE	BY	CHK	REVISIONS

Design By: MF
Plan By: MF
Checked By: ES
Approved By: SD

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SEAN DELMORE, PE

DATE 12/3/2020 LICENSE # 40945

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ANOKA COUNTY

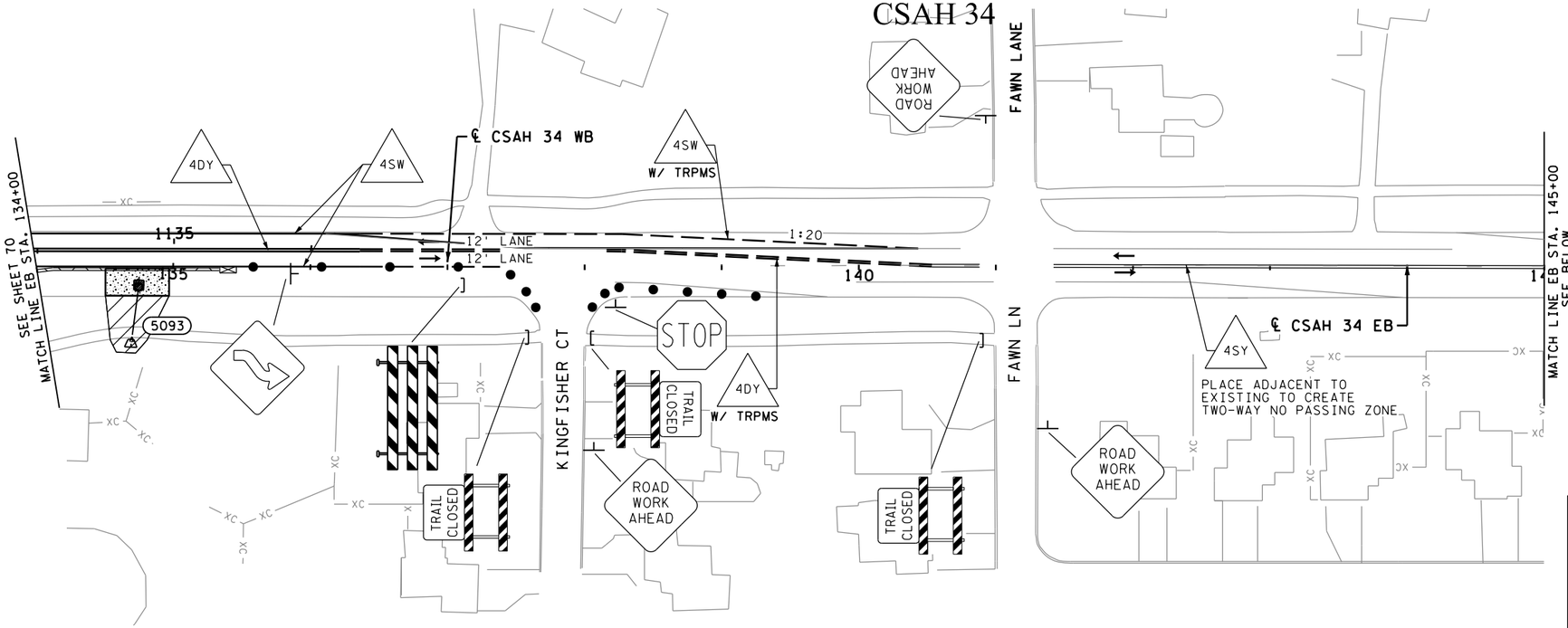
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

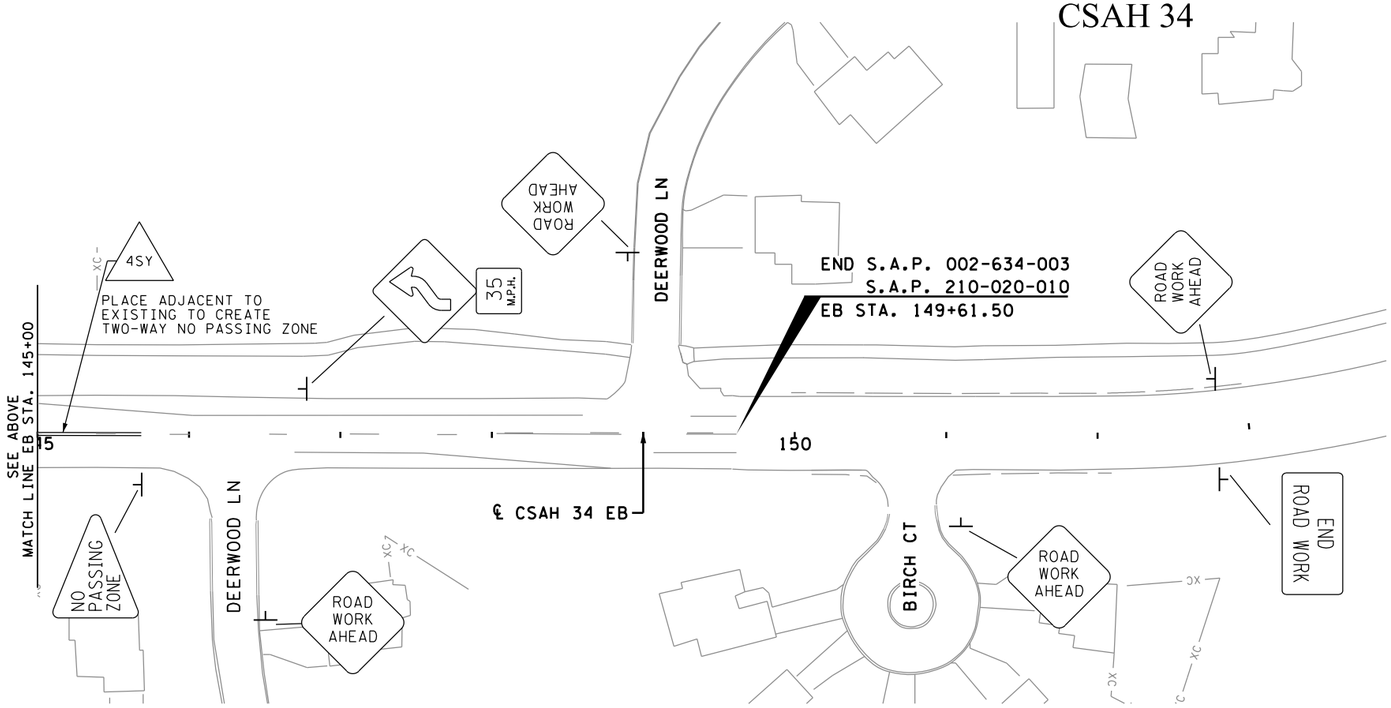
ANOKA COUNTY, MINNESOTA
STAGE 0; STA 110+00 TO STA 134+00
TEMPORARY TRAFFIC CONTROL PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

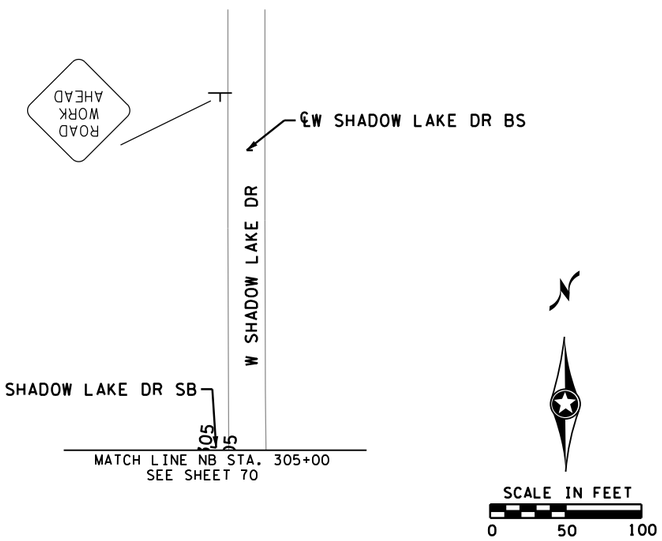
SHEET 70 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\014400-000\Cad\Plan\14400-000_ttc002.dgn

PLOTTED/REVISED: 12/3/2020







NARRATIVE: STAGE 0

CONSTRUCTION:
- CONSTRUCT STORM SEWER PIPES 5008 TO 5001; 5005; 5100 TO 5099; 5041; 6010; 5093
- PROVIDE TEMPORARY PAVEMENT FOR EXCAVATED ROADWAY
- CONSTRUCT POND
- PROVIDE TEMPORARY STORM CONNECTIONS TO REMAINING EXISTING PIPE

TRAFFIC:
- MAINTAIN 2-WAY TRAFFIC ON THE NORTH SIDE OF THE ROADWAY
- ACCESS TO RESIDENTS AND BUSINESSES SHALL BE MAINTAINED AT ALL TIMES

LEGEND

TEMPORARY BITUMINOUS PAVEMENT

UNDER CONSTRUCTION / CLOSED

SCALE IN FEET
0 50 100

NO.	DATE	BY	CHK	REVISIONS

Design By: MF
Plan By: MF
Checked By: ES
Approved By: SD

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SEAN DELMORE, PE
DATE 12/3/2020 LICENSE # 40945

wsb

ANOKA COUNTY

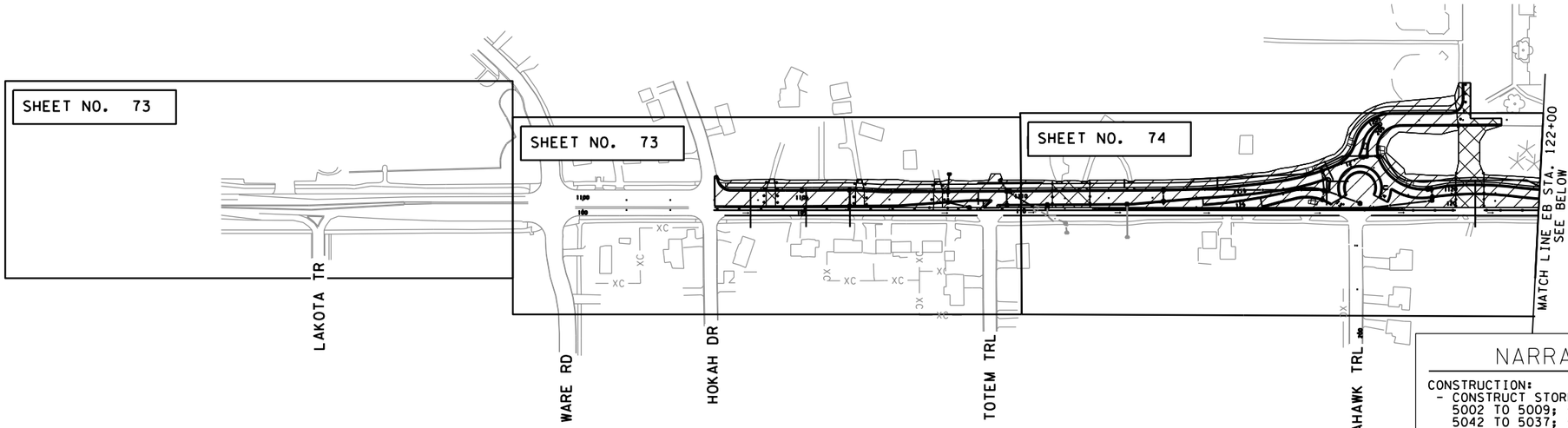
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
STAGE 0: STA 134+00 TO STA 154+00
TEMPORARY TRAFFIC CONTROL PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 71 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\4400-000_ttc003.dgn

PLOTTED/REVISED: 12/3/2020



NARRATIVE: STAGE 1

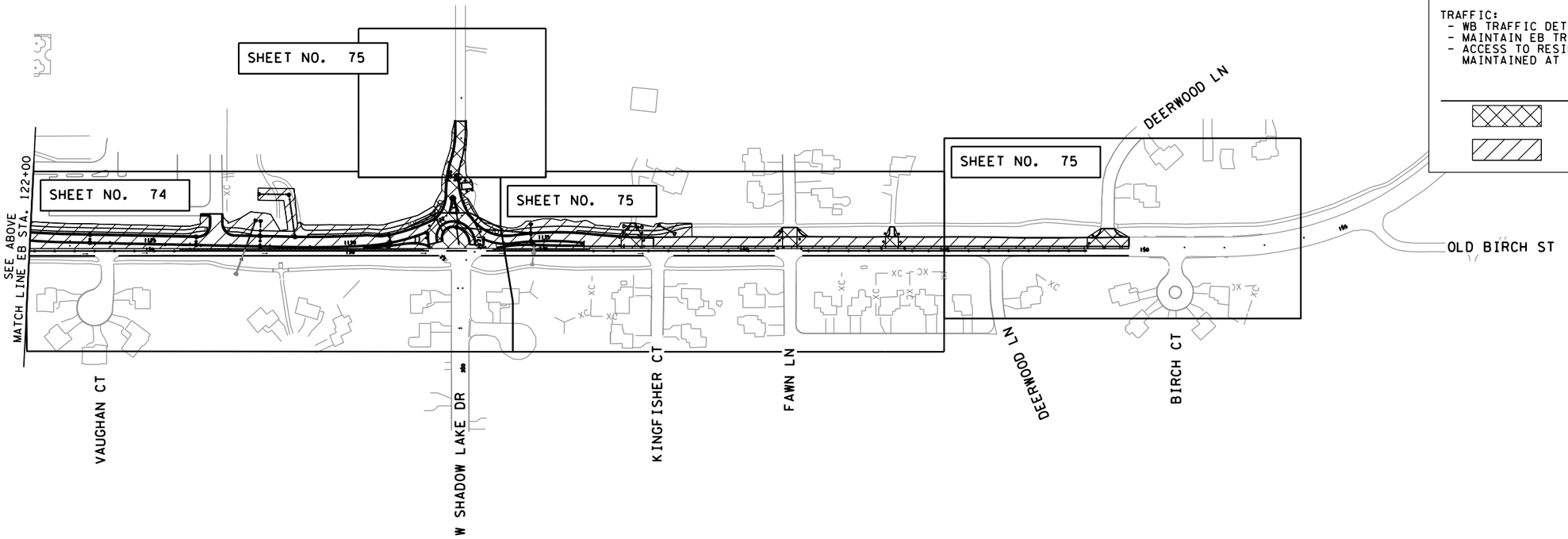
CONSTRUCTION:
- CONSTRUCT STORM SEWER PIPES 5003 TO 6004; 5002 TO 5009; 5006 TO 5004; 5101 TO 5102; 5042 TO 5037; 5038 TO 5040; 5017 TO 5029; 5025 TO 5029; 5031 TO 5029; 5029 TO 5040; 5034 TO 5033; 5018 TO 5020; 5052 TO 5059; 5054 TO 5055; 5078 TO 5073; 5082 TO 5090; 5087 TO 5089.
- CONSTRUCT CULVERT 5103 TO 5104; 5105 TO 5106
- CONSTRUCT WATERMAIN AND SANITARY SEWER
- CONSTRUCT CSAH 34 WB
- CONSTRUCT NORTHERN HALF OF BOTH ROUNDABOUTS
- PLACE WB MEDIAN CURB
- CONSTRUCT WATERMAIN ON NORTH SIDE OF CSAH 34 BORE WATER SERVICES TO SOUTH PARCELS AS DIRECTED IN THE WATERMAIN PLANS.

TRAFFIC:
- WB TRAFFIC DETOURED. SEE SHEET 66 .
- MAINTAIN EB TRAFFIC THROUGH CONSTRUCTION AREA
- ACCESS TO RESIDENTS AND BUSINESSES SHALL BE MAINTAINED AT ALL TIMES

LEGEND

CONSTRUCTION UNDER TRAFFIC

UNDER CONSTRUCTION / CLOSED



NO.	DATE	BY	CHK	REVISIONS

Design By: MF
Plan By: MF
Checked By: ES
Approved By: SD

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SEAN DELMORE, PE

DATE 12/3/2020 LICENSE # 40945

wsb

ANOKA COUNTY

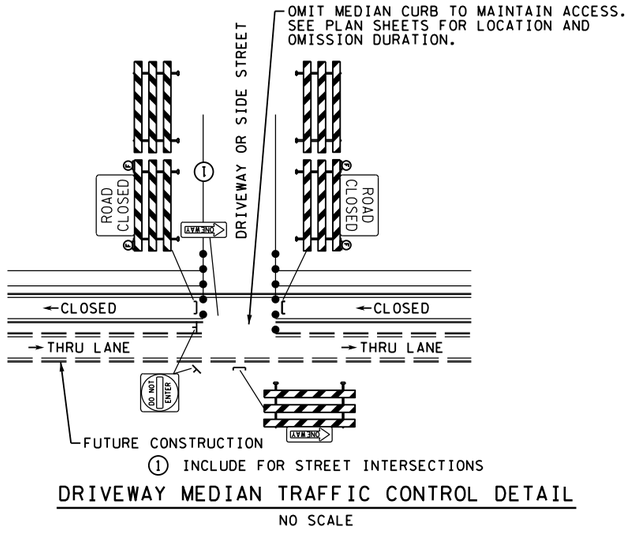
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
STAGE 1: GENERAL LAYOUT
TEMPORARY TRAFFIC CONTROL PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 72 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\0\4400-000\Cad\Plan\4400-000_ttcl00.dgn

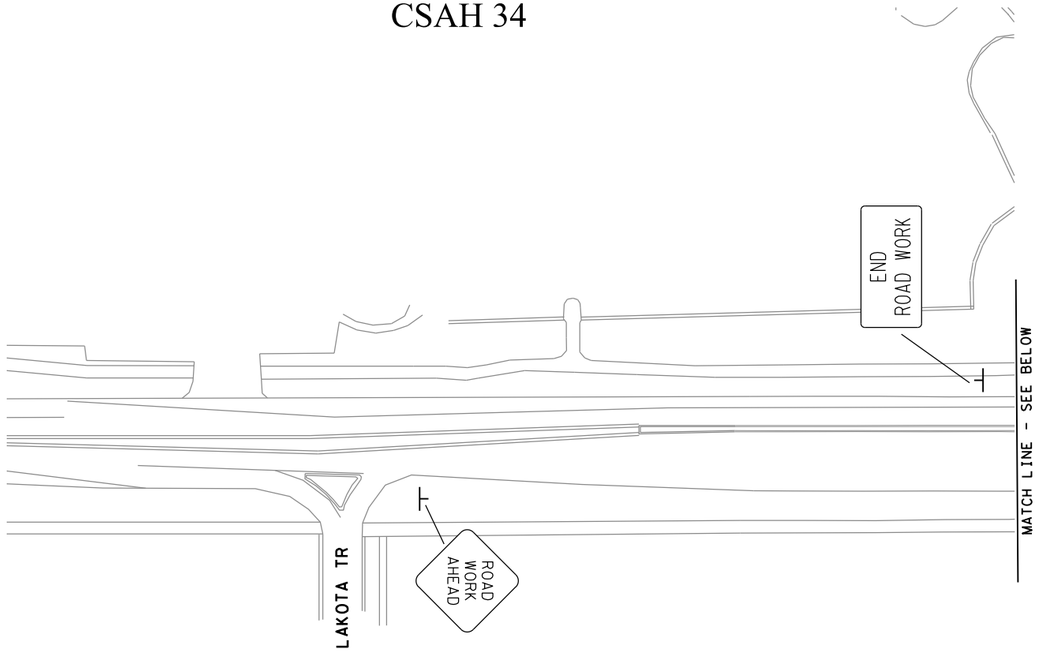
PLOTTED/REVISED: 12/3/2020



DRIVEWAY MEDIAN TRAFFIC CONTROL DETAIL

NO SCALE

CSAH 34



NARRATIVE: STAGE 1

CONSTRUCTION:
- CONSTRUCT STORM SEWER PIPES 5003 TO 6004; 5002 TO 5009; 5006 TO 5004; 5101 TO 5102; 5042 TO 5037; 5038 TO 5040; 5017 TO 5029; 5025 TO 5029; 5031 TO 5029; 5029 TO 5040; 5034 TO 5033; 5018 TO 5020; 5052 TO 5059; 5054 TO 5055; 5078 TO 5073; 5082 TO 5090; 5087 TO 5089.
- CONSTRUCT CULVERT 5103 TO 5104; 5105 TO 5106
- CONSTRUCT WATERMAIN AND SANITARY SEWER
- CONSTRUCT CSAH 34 WB
- CONSTRUCT NORTHERN HALF OF BOTH ROUNDABOUTS
- PLACE WB MEDIAN CURB
- CONSTRUCT WATERMAIN ON NORTH SIDE OF CSAH 34 BORE WATER SERVICES TO SOUTH PARCELS AS DIRECTED IN THE WATERMAIN PLANS.

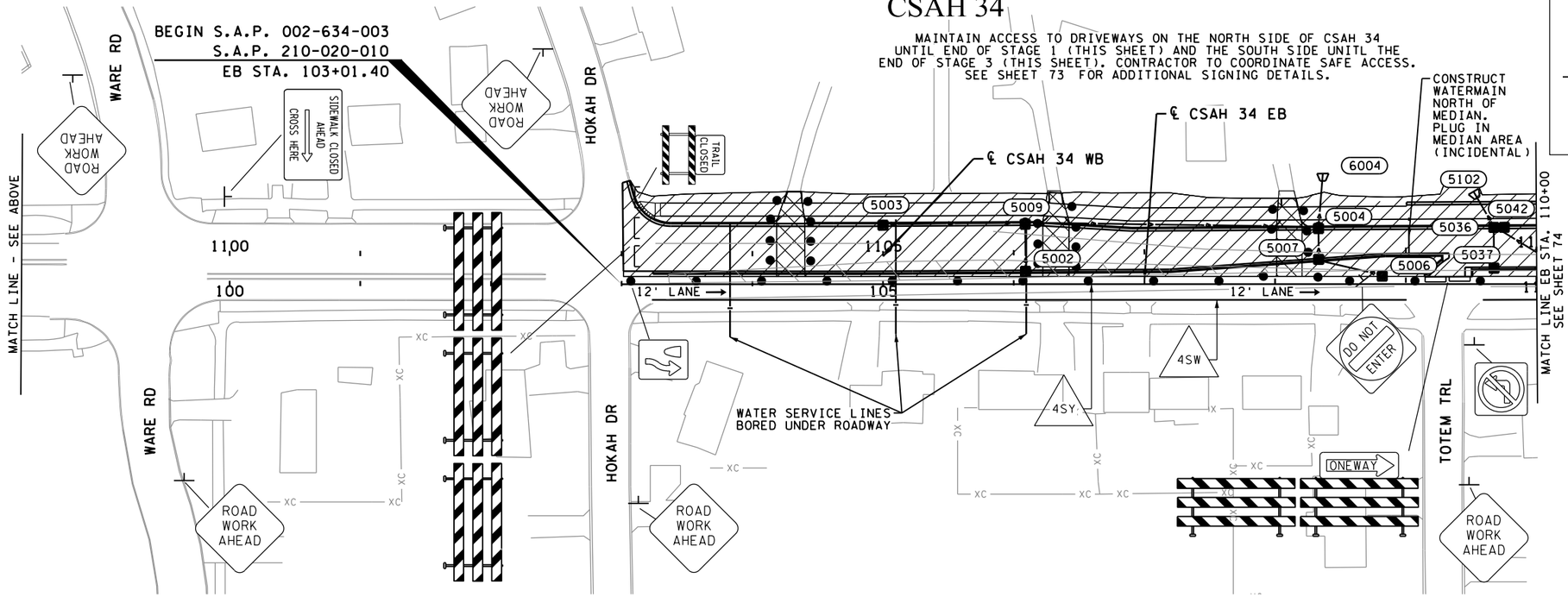
TRAFFIC:
- WB TRAFFIC DETOURED. SEE SHEET 66 .
- MAINTAIN EB TRAFFIC THROUGH CONSTRUCTION AREA
- ACCESS TO RESIDENTS AND BUSINESSES SHALL BE MAINTAINED AT ALL TIMES

LEGEND

CONSTRUCTION UNDER TRAFFIC

UNDER CONSTRUCTION / CLOSED

CSAH 34



MAINTAIN ACCESS TO DRIVEWAYS ON THE NORTH SIDE OF CSAH 34 UNTIL END OF STAGE 1 (THIS SHEET) AND THE SOUTH SIDE UNITL THE END OF STAGE 3 (THIS SHEET). CONTRACTOR TO COORDINATE SAFE ACCESS. SEE SHEET 73 FOR ADDITIONAL SIGNING DETAILS.

NO.	DATE	BY	CHK	REVISIONS

Design By: MF
Plan By: MF
Checked By: ES
Approved By: SD

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SEAN DELMORE, PE

DATE 12/3/2020 LICENSE # 40945

wsb

ANOKA COUNTY

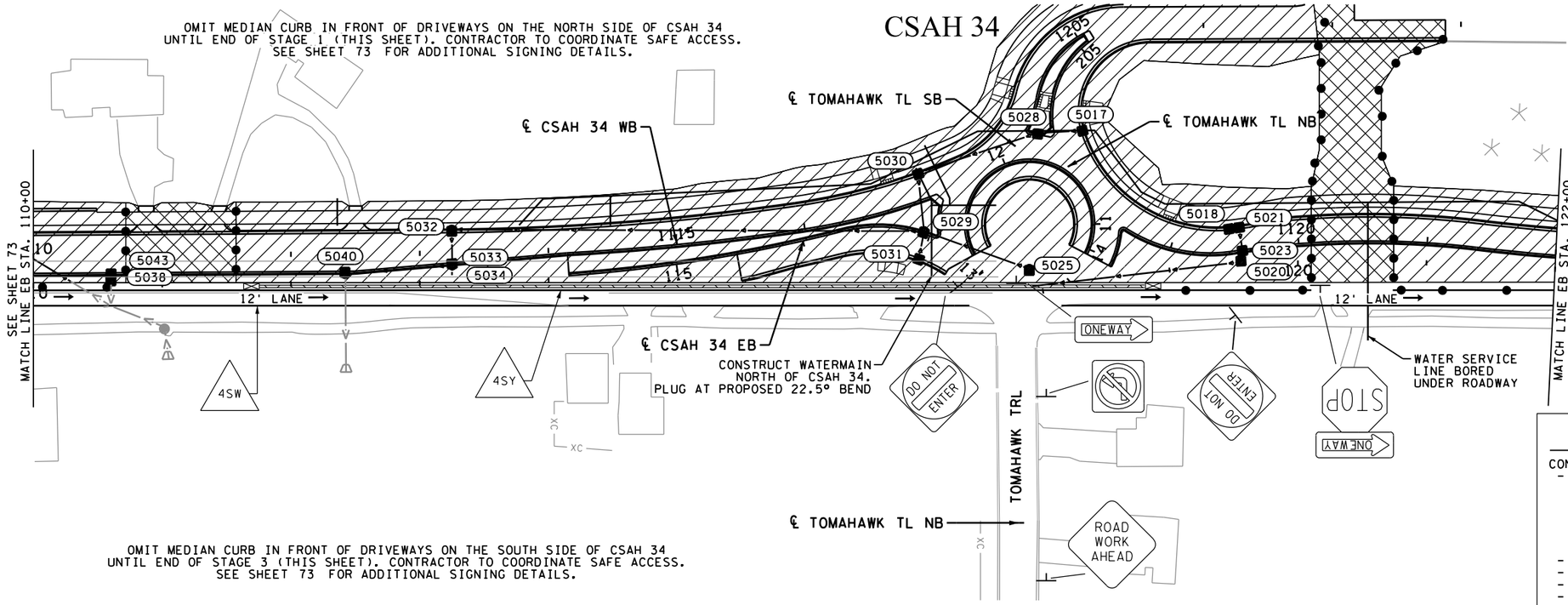
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

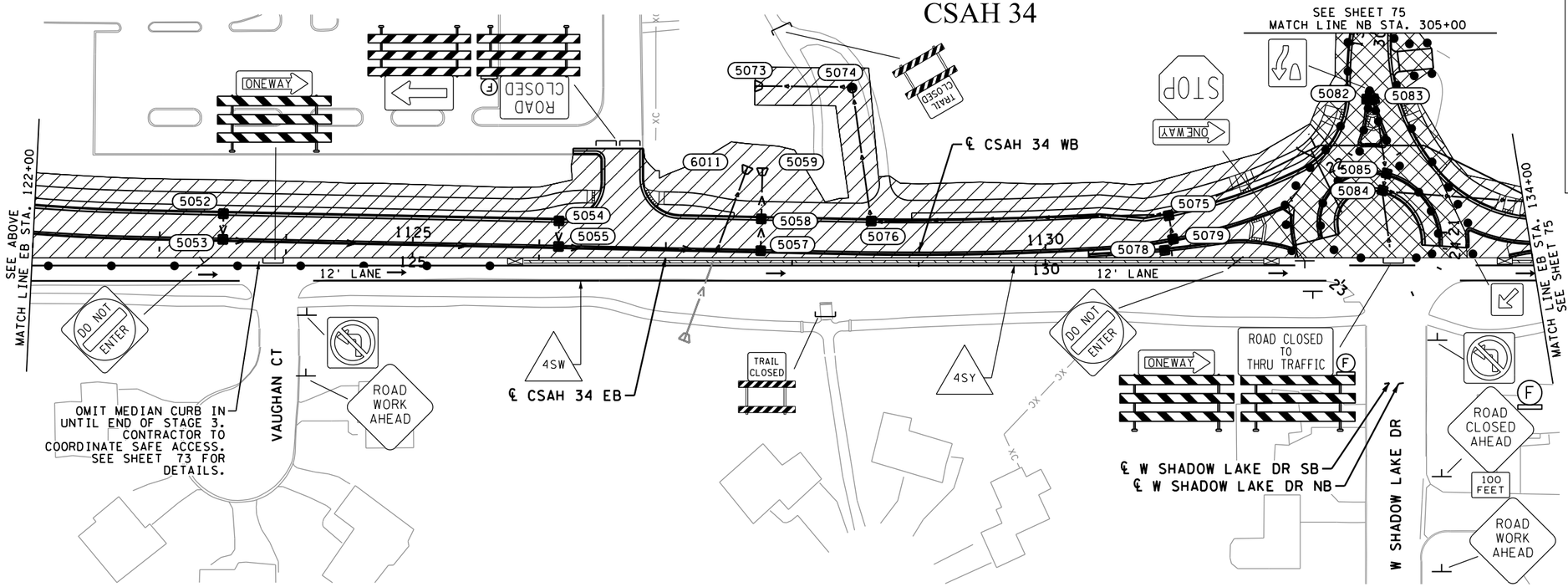
ANOKA COUNTY, MINNESOTA
STAGE 1: STA 103+01.40 TO STA 110+00
TEMPORARY TRAFFIC CONTROL PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 73 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\14400-000_ttc101.dgn

PLOTTED/REVISED: 12/3/2020





NARRATIVE: STAGE 1

CONSTRUCTION:
- CONSTRUCT STORM SEWER PIPES 5003 TO 6004; 5002 TO 5009; 5006 TO 5004; 5101 TO 5102; 5042 TO 5037; 5038 TO 5040; 5017 TO 5029; 5025 TO 5029; 5031 TO 5029; 5029 TO 5040; 5034 TO 5033; 5018 TO 5020; 5052 TO 5059; 5054 TO 5055; 5078 TO 5073; 5082 TO 5090; 5087 TO 5089.
- CONSTRUCT CULVERT 5103 TO 5104; 5105 TO 5106
- CONSTRUCT WATERMAIN AND SANITARY SEWER
- CONSTRUCT CSAH 34 WB
- CONSTRUCT NORTHERN HALF OF BOTH ROUNDABOUTS
- PLACE WB MEDIAN CURB
- CONSTRUCT WATERMAIN ON NORTH SIDE OF CSAH 34 BORE WATER SERVICES TO SOUTH PARCELS AS DIRECTED IN THE WATERMAIN PLANS.

TRAFFIC:
- WB TRAFFIC DETOURED. SEE SHEET 66 .
- MAINTAIN EB TRAFFIC THROUGH CONSTRUCTION AREA
- ACCESS TO RESIDENTS AND BUSINESSES SHALL BE MAINTAINED AT ALL TIMES

LEGEND

CONSTRUCTION UNDER TRAFFIC

UNDER CONSTRUCTION / CLOSED

THE CONTRACTOR SHALL MAINTAIN TRAFFIC INGRESS AND EGRESS TO THE NORTHERN LEG OF W SHADOW LAKE DR AT ALL TIMES. FLAGGING MAY BE REQUIRED FOR WHICH NO DIRECT COMPENSATION WILL BE MADE.

SCALE IN FEET
0 50 100

NO.	DATE	BY	CHK	REVISIONS

Design By: MF
Plan By: MF
Checked By: ES
Approved By: SD

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SEAN DELMORE, PE

DATE 12/3/2020 LICENSE # 40945

wsb

ANOKA COUNTY

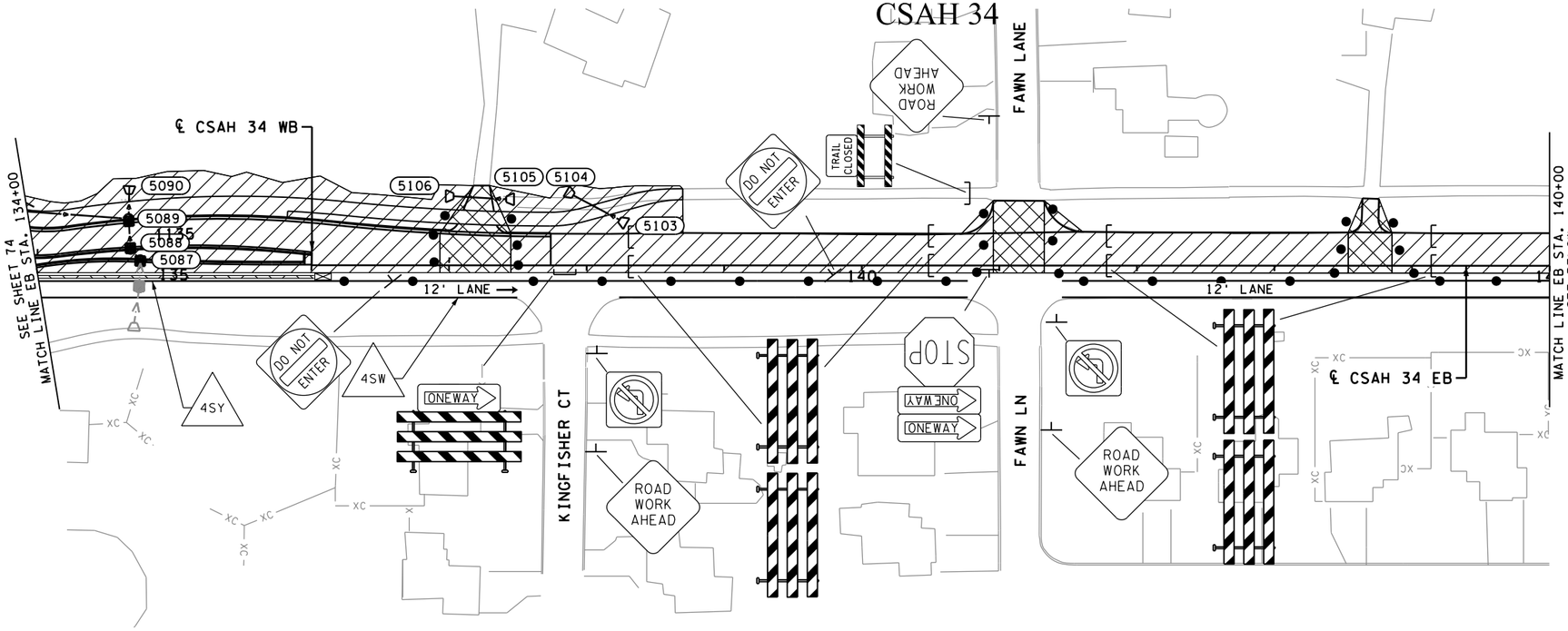
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

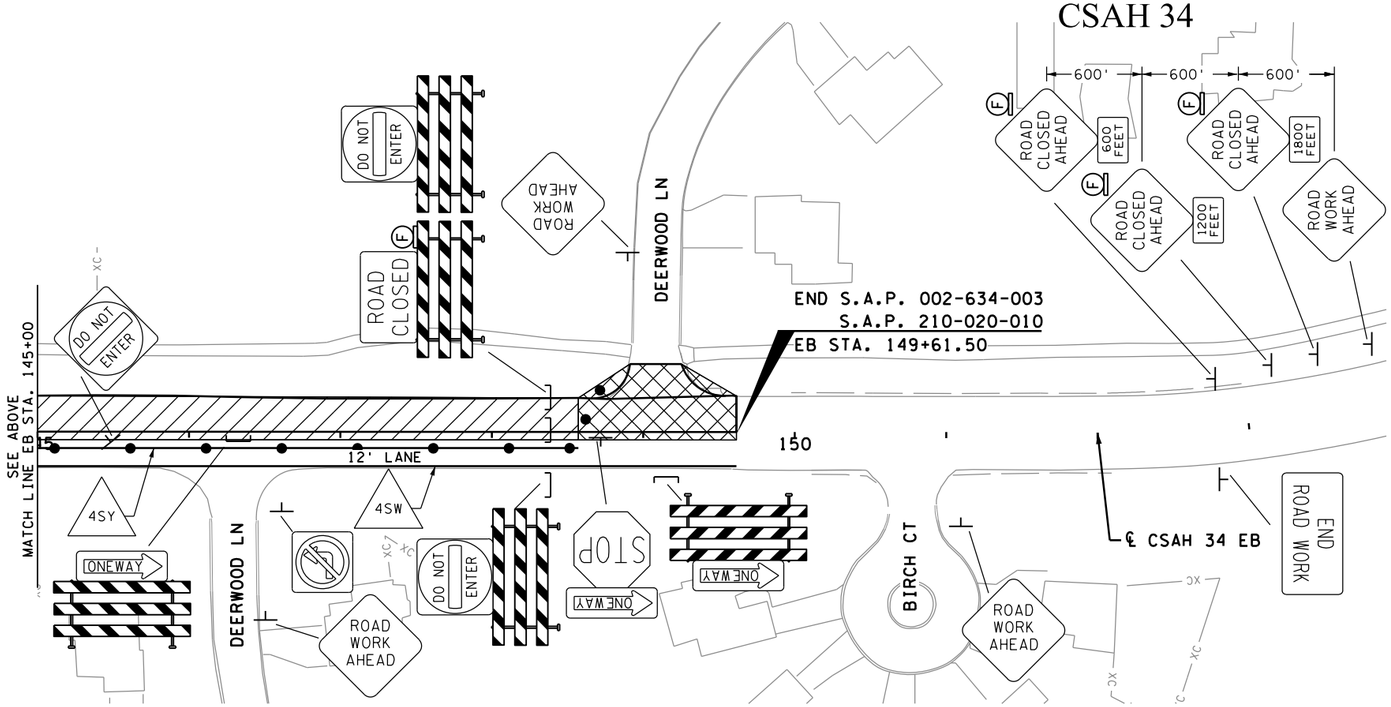
ANOKA COUNTY, MINNESOTA
STAGE 1: STA 110+00 TO STA 134+00
TEMPORARY TRAFFIC CONTROL PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

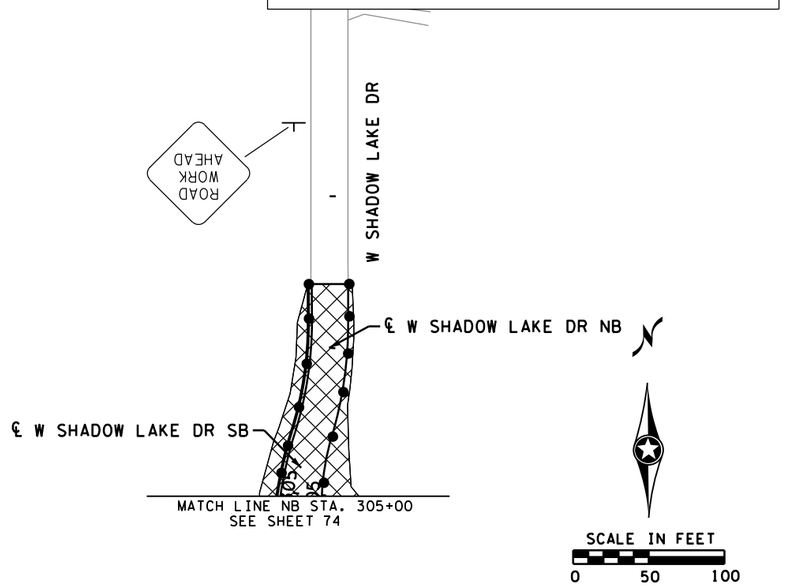
SHEET 74 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\0\4400-000\Cad\Plan\4400-000_ttcl02.dgn

PLOTTED/REVISED: 12/3/2020







NARRATIVE: STAGE 1

CONSTRUCTION:
- CONSTRUCT STORM SEWER PIPES 5003 TO 6004; 5002 TO 5009; 5006 TO 5004; 5101 TO 5102; 5042 TO 5037; 5038 TO 5040; 5017 TO 5029; 5025 TO 5029; 5031 TO 5029; 5029 TO 5040; 5034 TO 5033; 5018 TO 5020; 5052 TO 5059; 5054 TO 5055; 5078 TO 5073; 5082 TO 5090; 5087 TO 5089.
- CONSTRUCT CULVERT 5103 TO 5104; 5105 TO 5106
- CONSTRUCT WATERMAIN AND SANITARY SEWER
- CONSTRUCT CSAH 34 WB
- CONSTRUCT NORTHERN HALF OF BOTH ROUNDABOUTS
- PLACE WB MEDIAN CURB
- CONSTRUCT WATERMAIN ON NORTH SIDE OF CSAH 34 BORE WATER SERVICES TO SOUTH PARCELS AS DIRECTED IN THE WATERMAIN PLANS.

TRAFFIC:
- WB TRAFFIC DETOURED. SEE SHEET 66 .
- MAINTAIN EB TRAFFIC THROUGH CONSTRUCTION AREA
- ACCESS TO RESIDENTS AND BUSINESSES SHALL BE MAINTAINED AT ALL TIMES

LEGEND

CONSTRUCTION UNDER TRAFFIC

UNDER CONSTRUCTION / CLOSED

NO.	DATE	BY	CHK	REVISIONS

Design By: MF
Plan By: MF
Checked By: ES
Approved By: SD

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SEAN DELMORE, PE

DATE 12/3/2020 LICENSE # 40945

wsb

ANOKA COUNTY

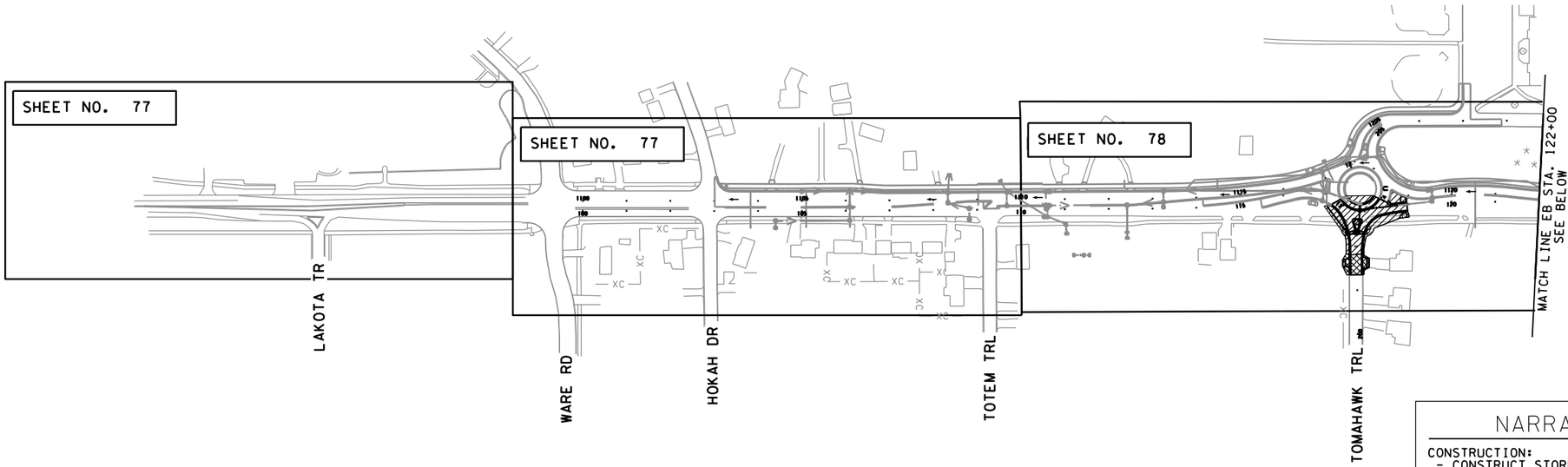
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
STAGE 1: STA 134+00 TO STA 154+00
TEMPORARY TRAFFIC CONTROL PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **75** OF **195** SHEETS

PATH & FILENAME: Projects\Minnesota\0l4400-000\Cad\Plan\4400-000_ttcl03.dgn

PLOTTED/REVISED: 12/3/2020



NARRATIVE: STAGE 2

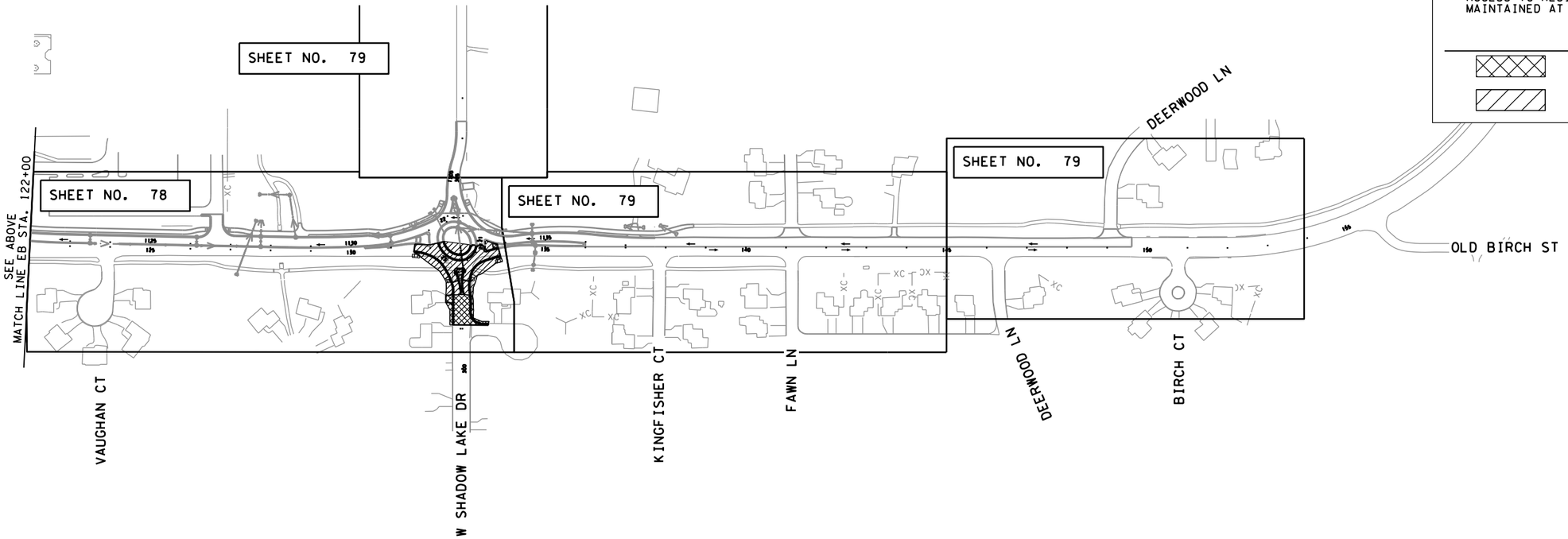
CONSTRUCTION:
- CONSTRUCT STORM SEWER PIPES 5026 TO 5025; 5023 TO 5024; 5080 TO 5084
- CONSTRUCT REMAINDER OF BOTH ROUNDABOUTS.
- CONSTRUCT WATERMAIN LOCATED IN THE SOUTH LEG OF THE TOMAHAWK TRL ROUNDABOUT.

TRAFFIC:
- EB TRAFFIC DETOURED. SEE SHEET 67 .
- MAINTAIN WB TRAFFIC THROUGH CONSTRUCTION AREA
- ACCESS TO RESIDENTS AND BUSINESSES SHALL BE MAINTAINED AT ALL TIMES

LEGEND

CONSTRUCTION UNDER TRAFFIC

UNDER CONSTRUCTION / CLOSED



NO.	DATE	BY	CHK	REVISIONS

Design By: MF
Plan By: MF
Checked By: ES
Approved By: SD

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SEAN DELMORE, PE

DATE 12/3/2020 LICENSE # 40945

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

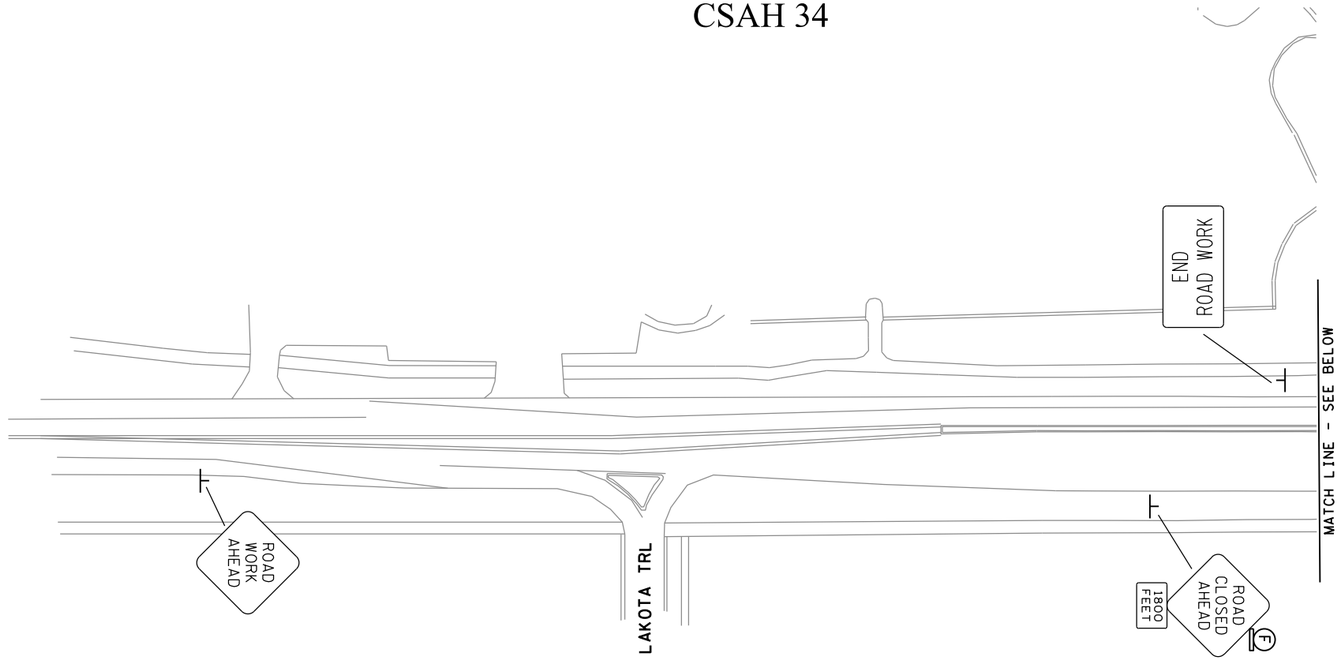
ANOKA COUNTY, MINNESOTA
STAGE 2: GENERAL LAYOUT
TEMPORARY TRAFFIC CONTROL PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 76 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\14400-000_ttc200.dgn

PLOTTED/REVISED: 12/3/2020

CSAH 34



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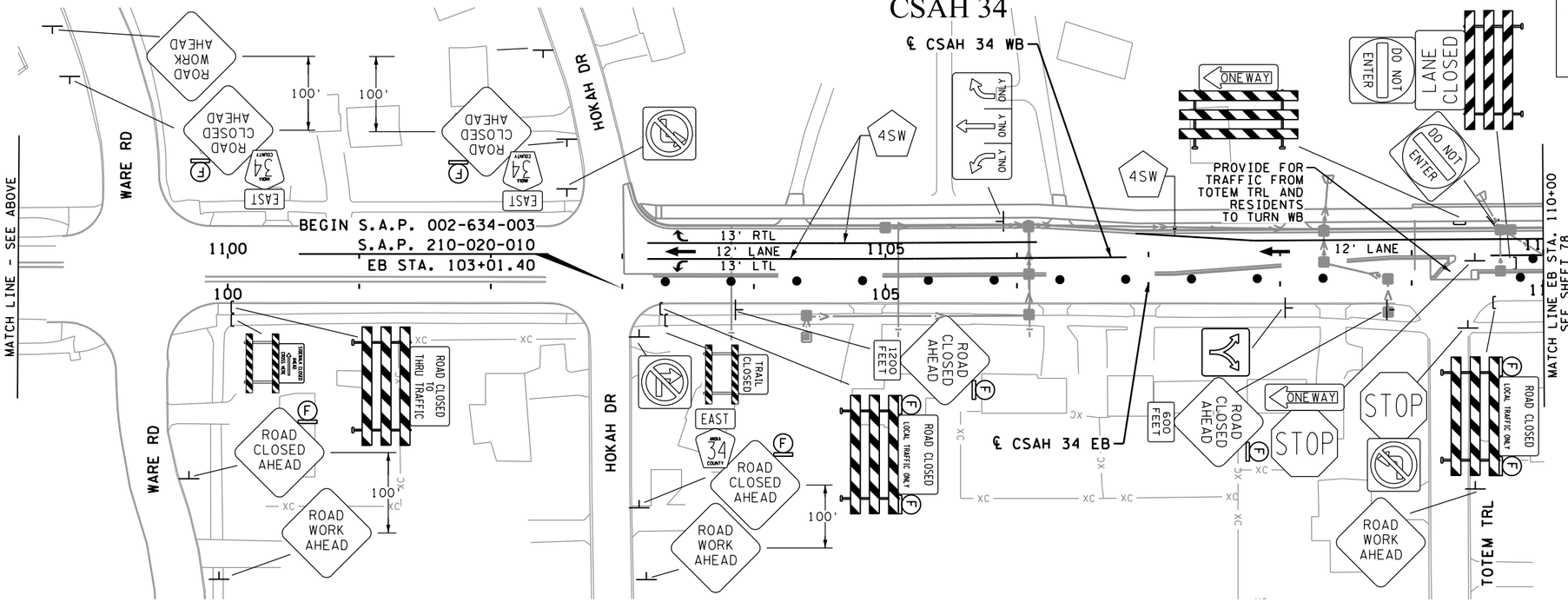
SCALE IN FEET
0 50 100

NARRATIVE: STAGE 2

CONSTRUCTION:
- CONSTRUCT STORM SEWER PIPES 5026 TO 5025; 5023 TO 5024; 5080 TO 5084
- CONSTRUCT REMAINDER OF BOTH ROUNDABOUTS
- CONSTRUCT WATERMAIN LOCATED IN THE SOUTH LEG OF THE TOMAHAWK TRL ROUNDABOUT.

TRAFFIC:
- EB TRAFFIC DETOURED. SEE SHEET 67 .
- MAINTAIN WB TRAFFIC THROUGH CONSTRUCTION AREA
- ACCESS TO RESIDENTS BUSINESSES SHALL BE MAINTAINED AT ALL TIMES.

CSAH 34



N

SCALE IN FEET
0 50 100

NO.	DATE	BY	CHK	REVISIONS

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Checked By: ES
Approved By: SD

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SEAN DELMORE, PE

DATE 12/3/2020 LICENSE # 40945

wsb

ANOKA COUNTY

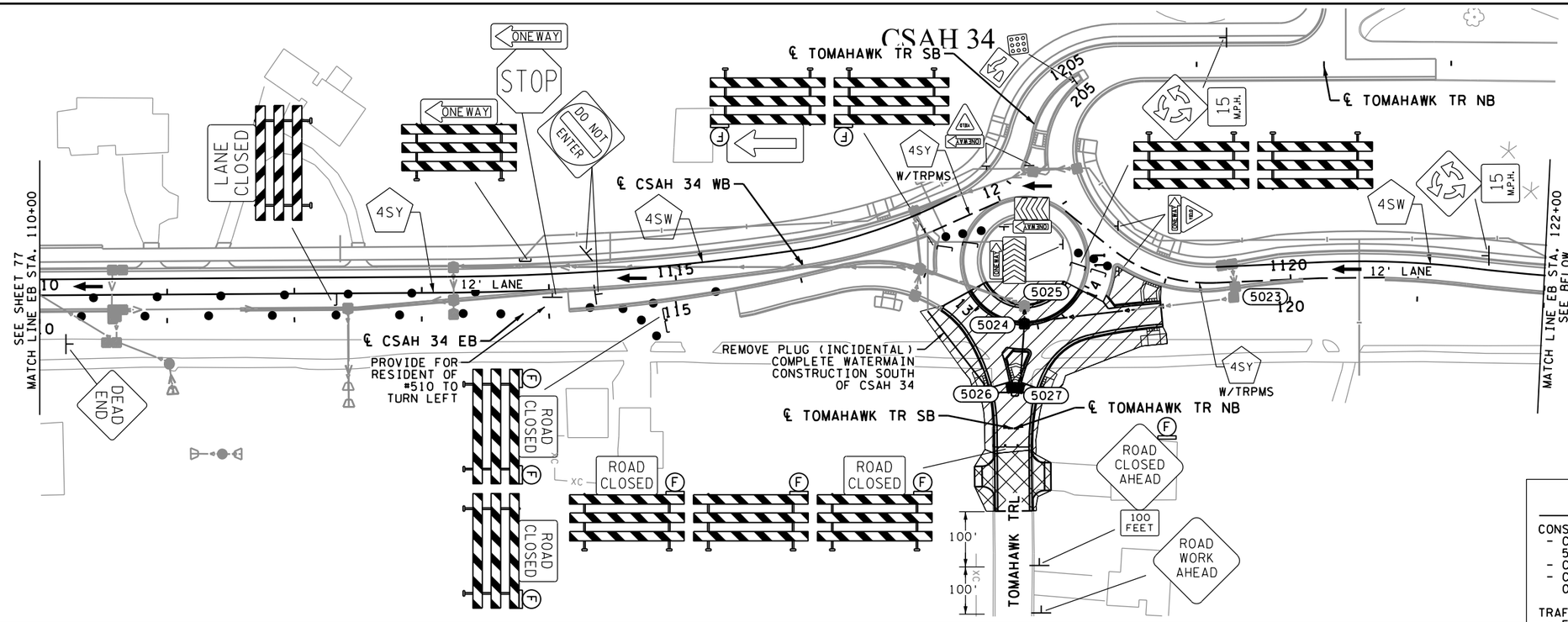
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

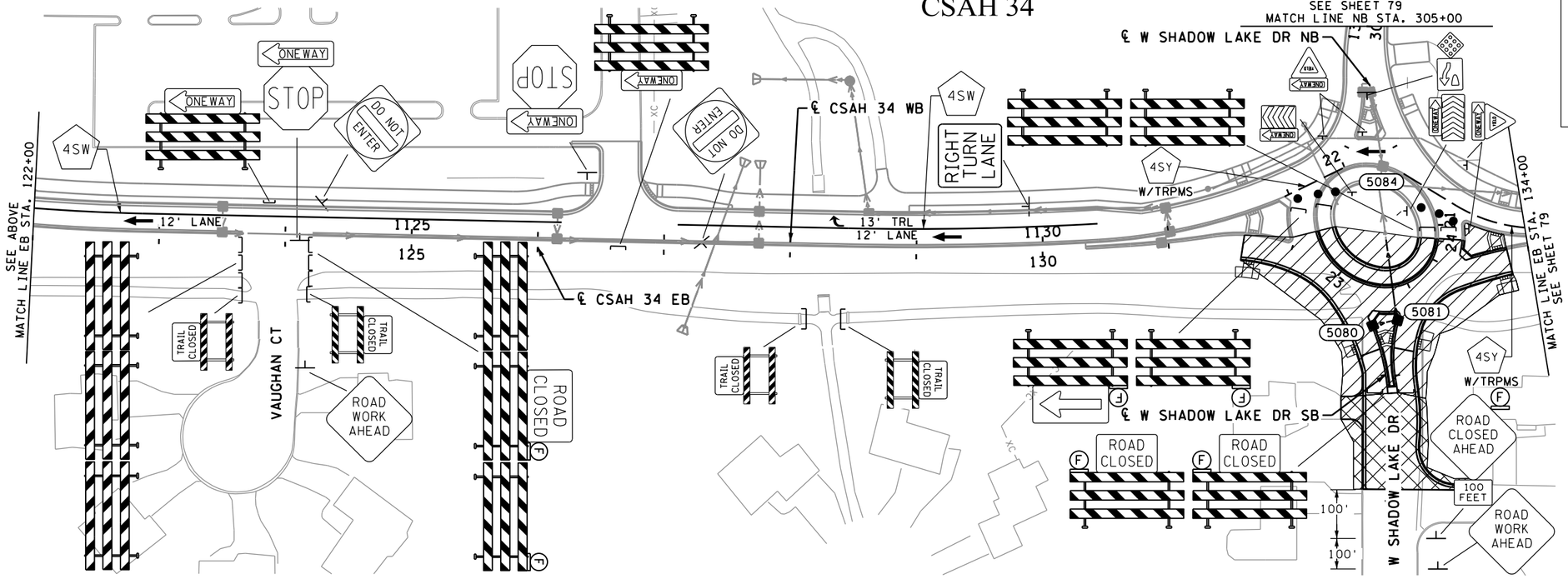
ANOKA COUNTY, MINNESOTA
STAGE 2: STA 103+01.40 TO STA 110+00
TEMPORARY TRAFFIC CONTROL PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 77 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\14400-000_ttc201.dgn

PLOTTED/REVISED: 12/3/2020





NARRATIVE: STAGE 2

CONSTRUCTION:
- CONSTRUCT STORM SEWER PIPES 5026 TO 5025; 5023 TO 5024; 5080 TO 5084
- CONSTRUCT REMAINDER OF BOTH ROUNDABOUTS.
- CONSTRUCT WATERMAIN LOCATED IN SOUTH LEG OF THE TOMAHAWK TRL ROUNDABOUT.

TRAFFIC:
- EB TRAFFIC DETOURED. SEE SHEET 67 .
- MAINTAIN WB TRAFFIC THROUGH CONSTRUCTION AREA
- ACCESS TO RESIDENTS AND BUSINESSES SHALL BE MAINTAINED AT ALL TIMES

LEGEND

CONSTRUCTION UNDER TRAFFIC

UNDER CONSTRUCTION / CLOSED

NO.	DATE	BY	CHK	REVISIONS

Design By: MF
Plan By: MF
Checked By: ES
Approved By: SD

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SEAN DELMORE, PE

DATE 12/3/2020 LICENSE # 40945

wsb

ANOKA COUNTY

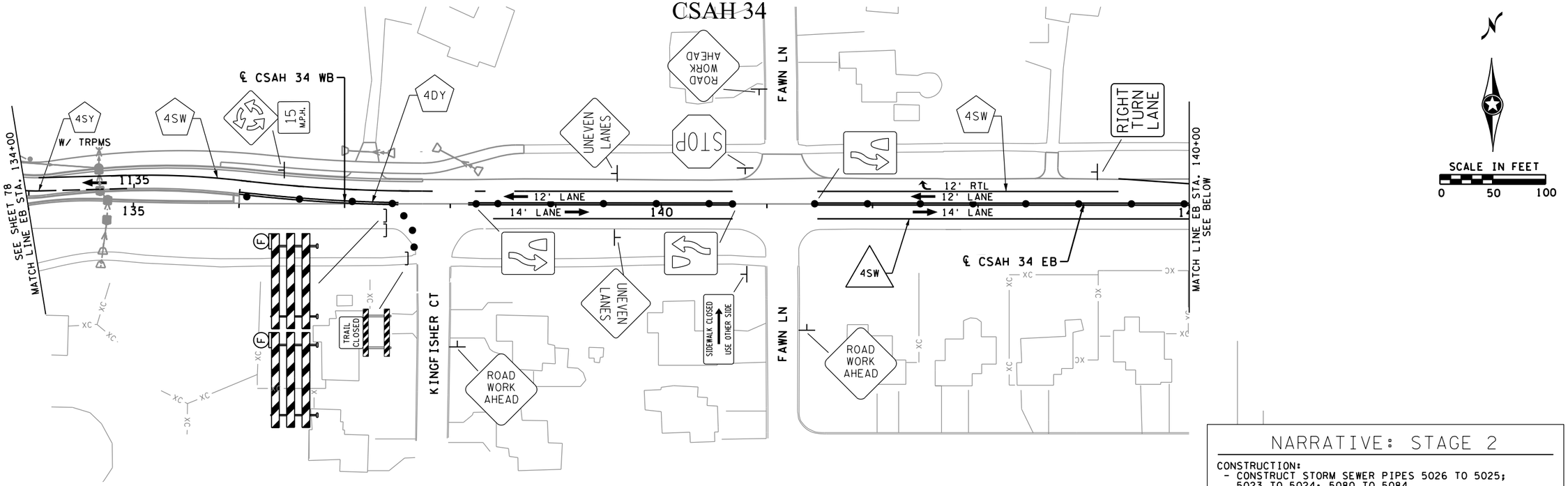
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
STAGE 2: STA 110+00 TO STA 134+00
TEMPORARY TRAFFIC CONTROL PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 78 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\14400-000_ttc202.dgn

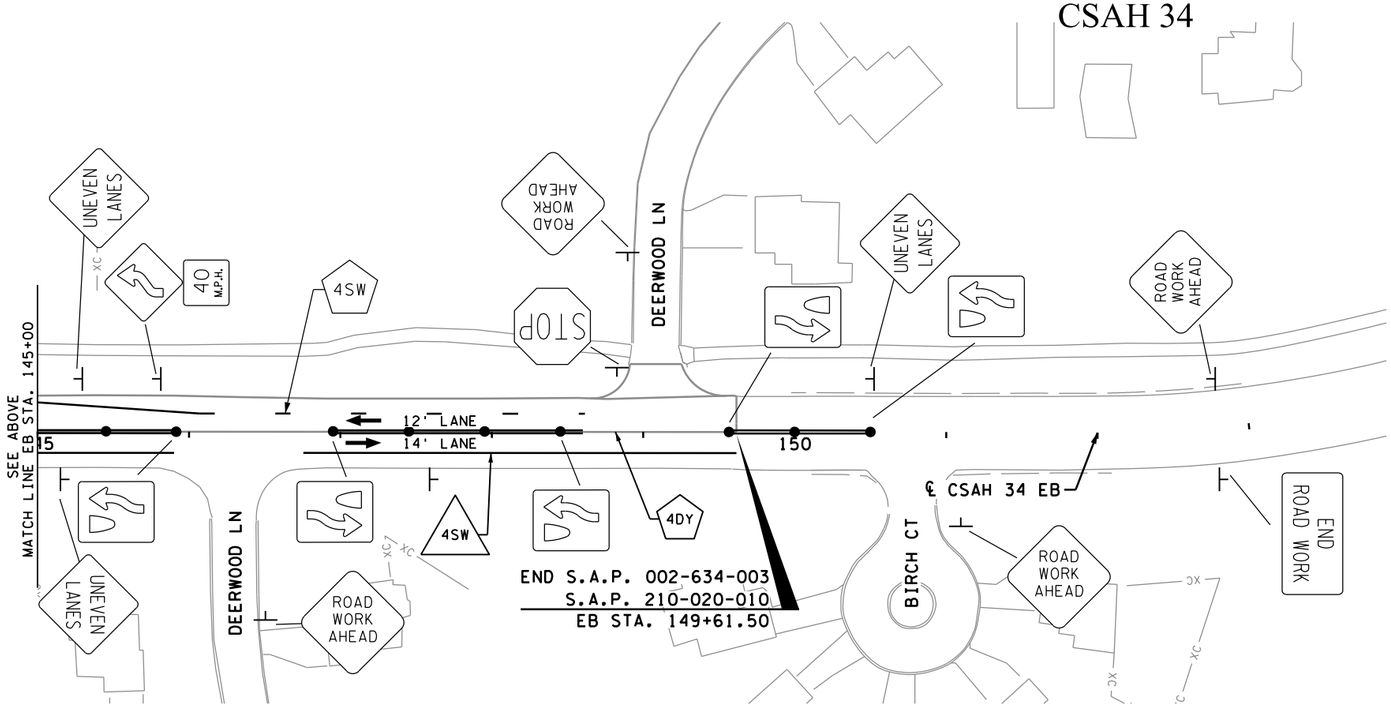
PLOTTED/REVISED: 12/3/2020

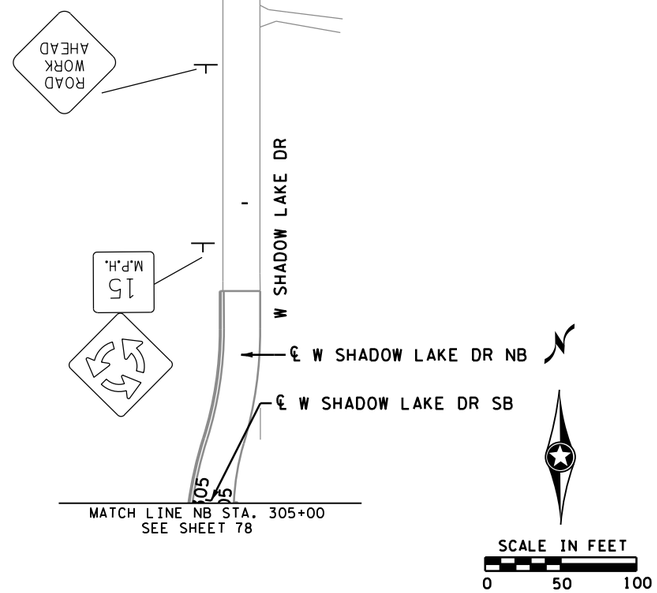


NARRATIVE: STAGE 2

CONSTRUCTION:
- CONSTRUCT STORM SEWER PIPES 5026 TO 5025; 5023 TO 5024; 5080 TO 5084
- CONSTRUCT REMAINDER OF BOTH ROUNDABOUTS
- CONSTRUCT WATERMAIN LOCATED IN THE SOUTH LEG OF THE TOMAHAWK TRL ROUNDABOUT.

TRAFFIC:
- EB TRAFFIC DETOURED. SEE SHEET 67 .
- MAINTAIN WB TRAFFIC THROUGH CONSTRUCTION AREA
- ACCESS TO RESIDENTS BUSINESSES SHALL BE MAINTAINED AT ALL TIMES.





NO.	DATE	BY	CHK	REVISIONS

Design By: MF
Plan By: MF
Checked By: ES
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SEAN DELMORE, PE
DATE 12/3/2020 LICENSE # 40945

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

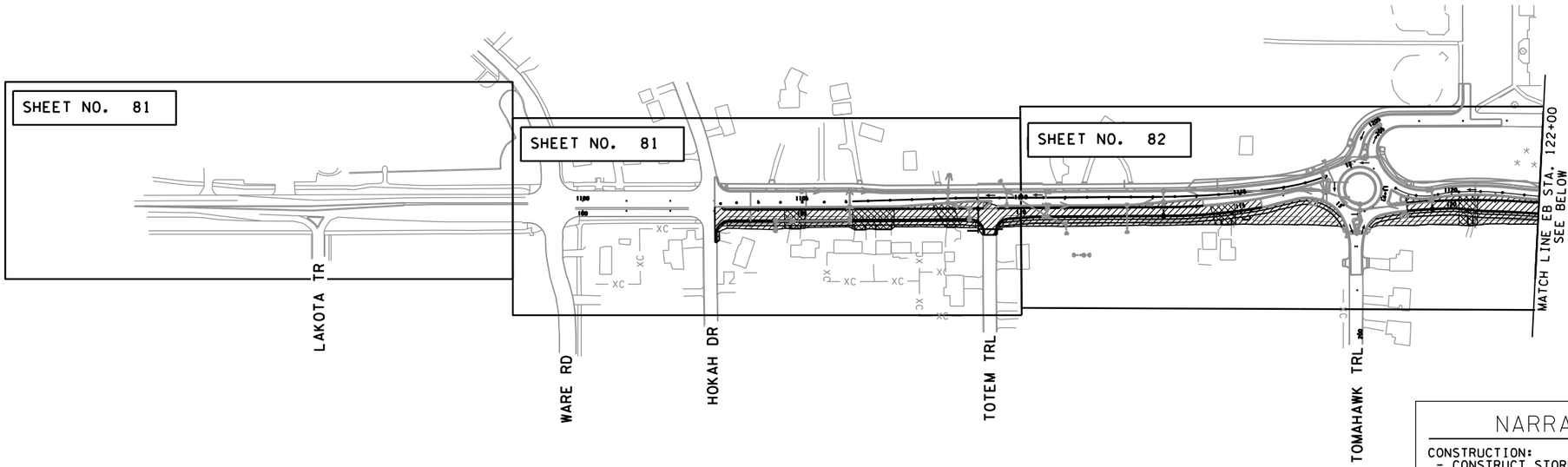
ANOKA COUNTY, MINNESOTA
STAGE 2: STA 134+00 TO STA 154+00
TEMPORARY TRAFFIC CONTROL PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 79 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\44400-000_ttc203.dgn

PLOTTED/REVISED: 12/3/2020

CSAH 34



SCALE IN FEET
0 150 300

NARRATIVE: STAGE 3

CONSTRUCTION:
- CONSTRUCT STORM SEWER PIPES 5020 TO 5024; 5050 TO 5053; 5056 TO 5057; 5072 TO 5078
- CONSTRUCT CSAH 34 EB.
- AFTER COMPLETION OF ALL STORM AND ROAD WORK, PLACE FINAL 2" LIFT OF BITUMINOUS WEARING COURSE ON BOTH EB AND WB CSAH 34.
- CONSTRUCT WATERMAIN UNDER CSAH 34 EB AND TOTEM TRL INTERSECTION

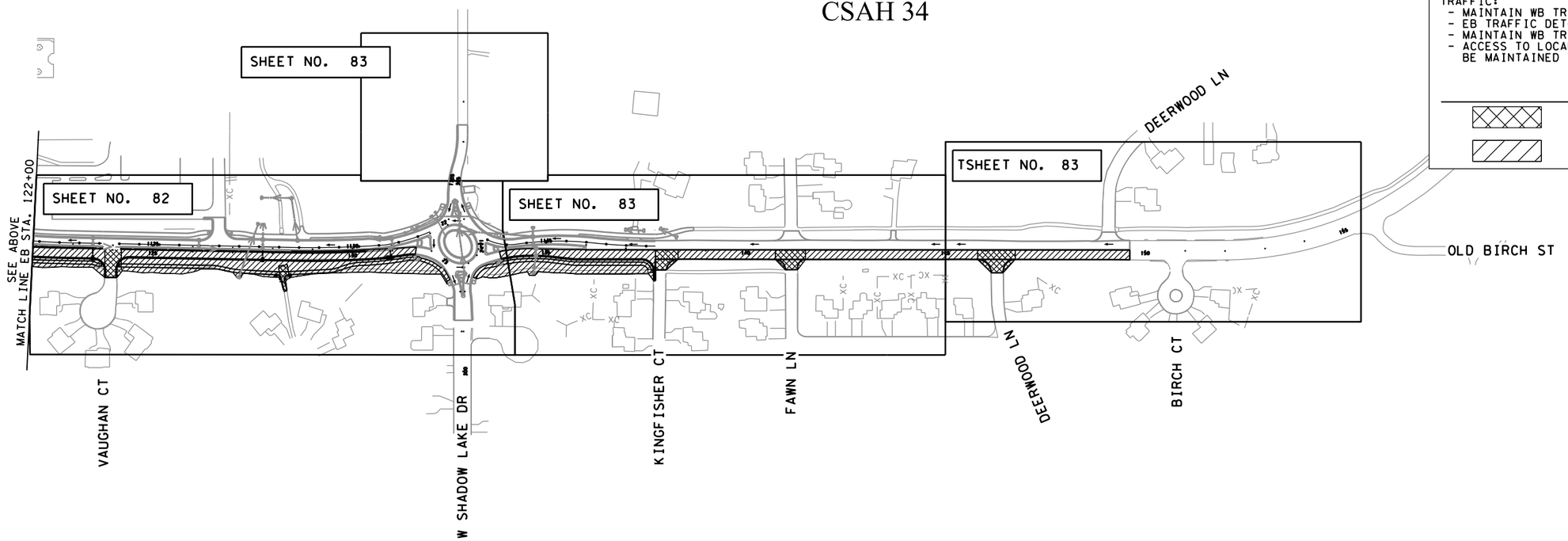
TRAFFIC:
- MAINTAIN WB TRAFFIC.
- EB TRAFFIC DETOURED. SEE SHEET 67 .
- MAINTAIN WB TRAFFIC THROUGH CONSTRUCTION AREA.
- ACCESS TO LOCAL RESIDENTS AND BUSINESSES SHALL BE MAINTAINED AT ALL TIMES

LEGEND

CONSTRUCTION UNDER TRAFFIC

UNDER CONSTRUCTION / CLOSED

CSAH 34



SCALE IN FEET
0 150 300

NO.	DATE	BY	CHK	REVISIONS

Design By: MF
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SEAN DELMORE, PE

DATE 12/3/2020 LICENSE # 40945

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

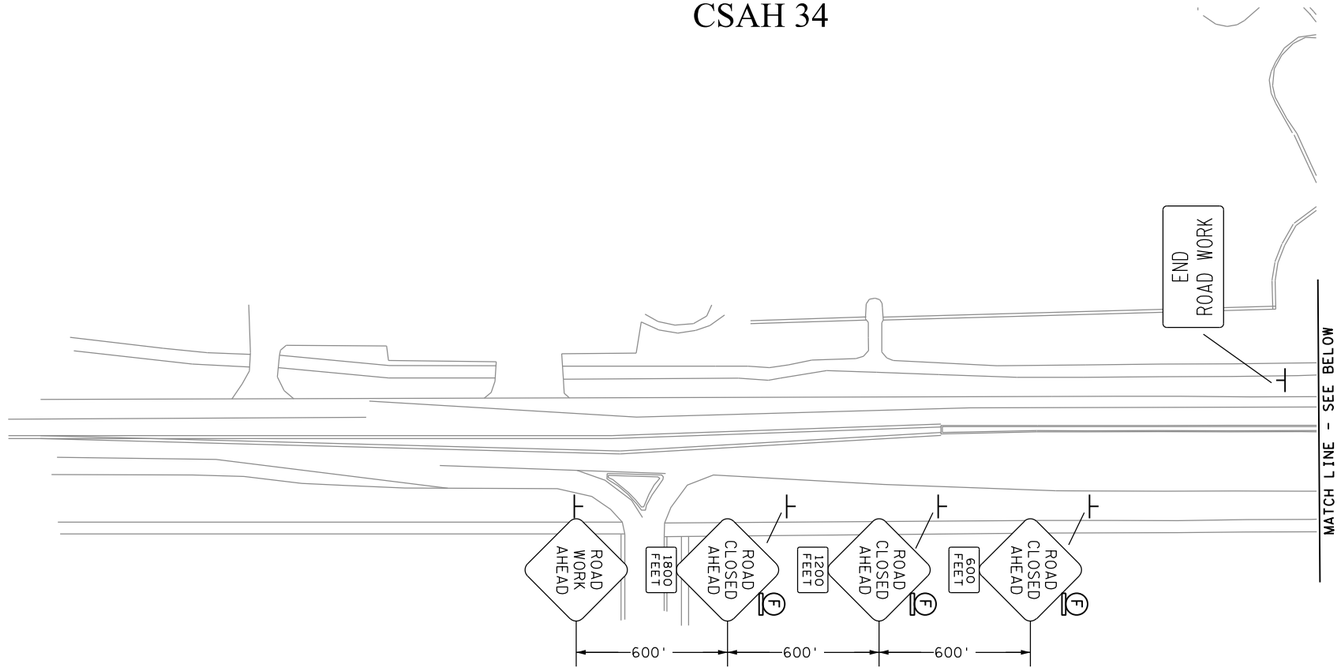
ANOKA COUNTY, MINNESOTA
STAGE 3: GENERAL LAYOUT
TEMPORARY TRAFFIC CONTROL PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **80** OF **195** SHEETS

PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\14400-000_ttc300.dgn

PLOTTED/REVISED: 12/3/2020

CSAH 34



NARRATIVE: STAGE 3

CONSTRUCTION:
- CONSTRUCT STORM SEWER PIPES 5020 TO 5024; 5050 TO 5053; 5056 TO 5057; 5072 TO 5078
- CONSTRUCT CSAH 34 EB.
- AFTER COMPLETION OF ALL STORM AND ROAD WORK, PLACE FINAL 2" LIFT OF BITUMINOUS WEARING COURSE ON BOTH EB AND WB CSAH 34.
- CONSTRUCT WATERMAIN UNDER CSAH 34 EB AND TOTEM TRL INTERSECTION

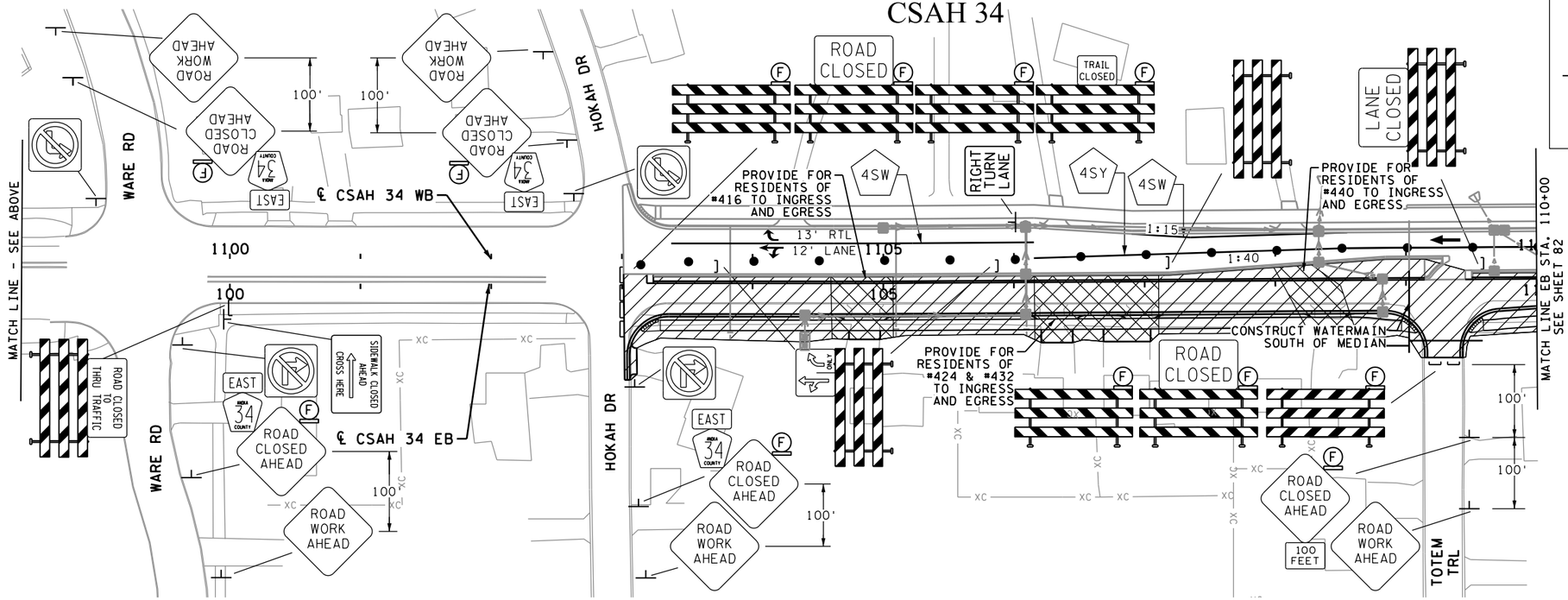
TRAFFIC:
- MAINTAIN WB TRAFFIC.
- EB TRAFFIC DETOURED. SEE SHEET 67 .
- MAINTAIN WB TRAFFIC THROUGH CONSTRUCTION AREA.
- ACCESS TO LOCAL RESIDENTS AND BUSINESSES SHALL BE MAINTAINED AT ALL TIMES

LEGEND

CONSTRUCTION UNDER TRAFFIC

UNDER CONSTRUCTION / CLOSED

CSAH 34



NO.	DATE	BY	CHK	REVISIONS

Design By: MF
Plan By: MF
Checked By: ES
Approved By: SD

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SEAN DELMORE, PE

DATE 12/3/2020 LICENSE # 40945

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements

Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

STAGE 3; STA 103+01.40 TO STA 110+00

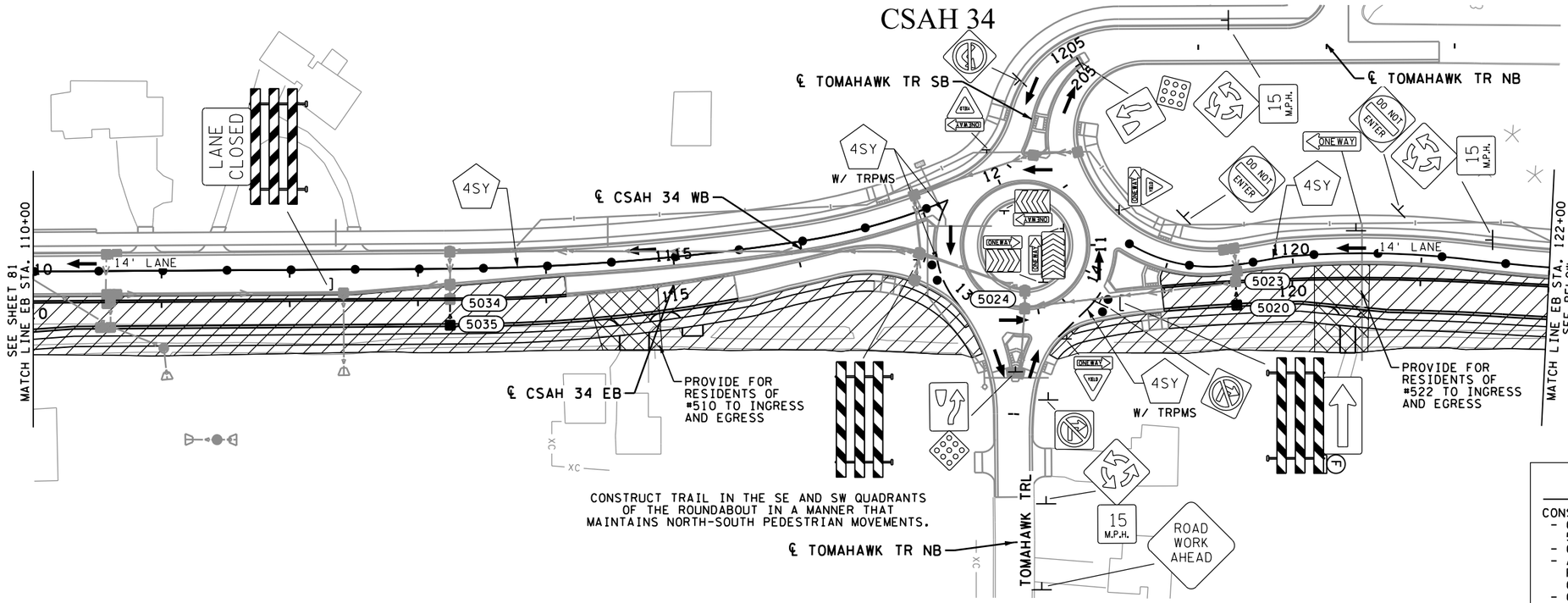
TEMPORARY TRAFFIC CONTROL PLAN

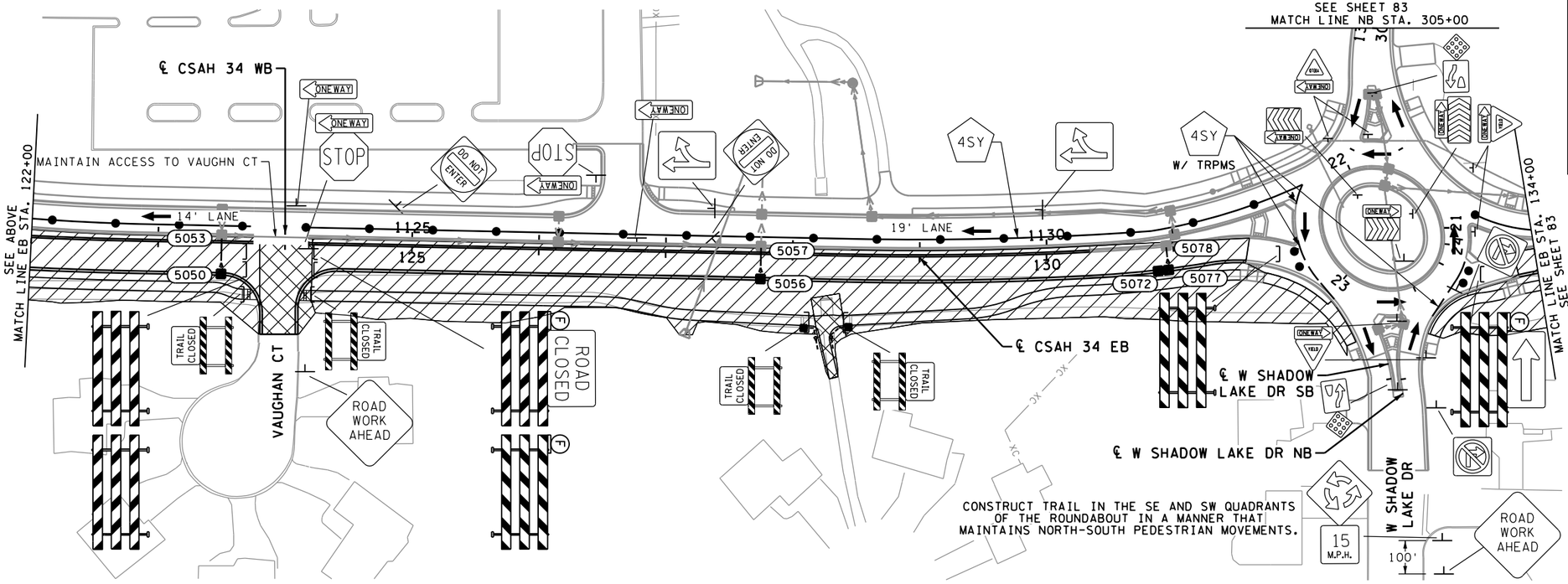
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 81 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\14400-000_ttc30.dgn

PLOTTED/REVISED: 12/3/2020





NARRATIVE: STAGE 3

CONSTRUCTION:
- CONSTRUCT STORM SEWER PIPES 5020 TO 5024; 5050 TO 5053; 5056 TO 5057; 5072 TO 5078
- CONSTRUCT CSAH 34 EB.
- AFTER COMPLETION OF ALL STORM AND ROAD WORK, PLACE FINAL 2" LIFT OF BITUMINOUS WEARING COURSE ON BOTH EB AND WB CSAH 34.
- CONSTRUCT WATERMAIN UNDER CSAH 34 EB AND TOTEM TRL INTERSECTION

TRAFFIC:
- MAINTAIN WB TRAFFIC.
- EB TRAFFIC DETOURED. SEE SHEET 67 .
- MAINTAIN WB TRAFFIC THROUGH CONSTRUCTION AREA.
- ACCESS TO LOCAL RESIDENTS AND BUSINESSES SHALL BE MAINTAINED AT ALL TIMES

LEGEND

CONSTRUCTION UNDER TRAFFIC

UNDER CONSTRUCTION / CLOSED

NO.	DATE	BY	CHK	REVISIONS

Design By: MF
Plan By: MF
Checked By: ES
Approved By: SD

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SEAN DELMORE, PE

DATE 12/3/2020 LICENSE # 40945

wsb

ANOKA COUNTY

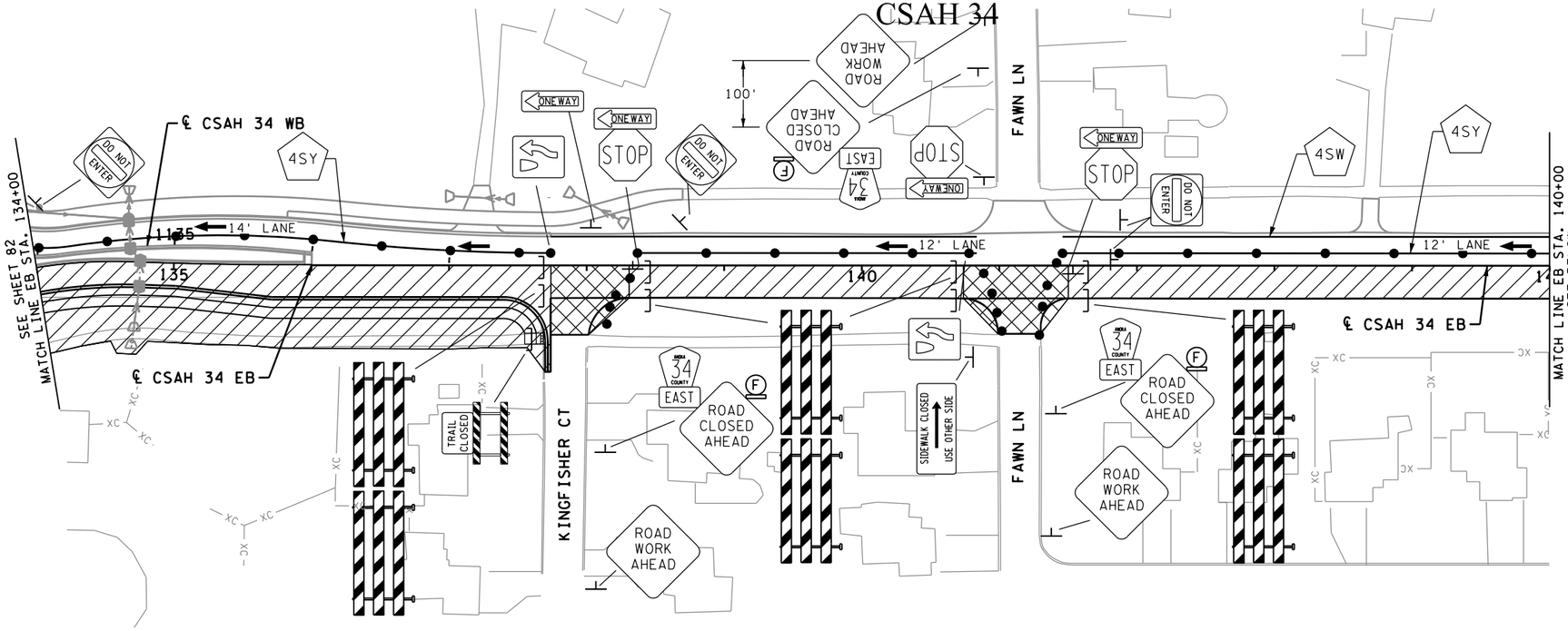
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
STAGE 3: STA 110+00 TO STA 134+00
TEMPORARY TRAFFIC CONTROL PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 82 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\4400-000_tfc302.dgn

PLOTTED/REVISED: 12/3/2020



NARRATIVE: STAGE 3

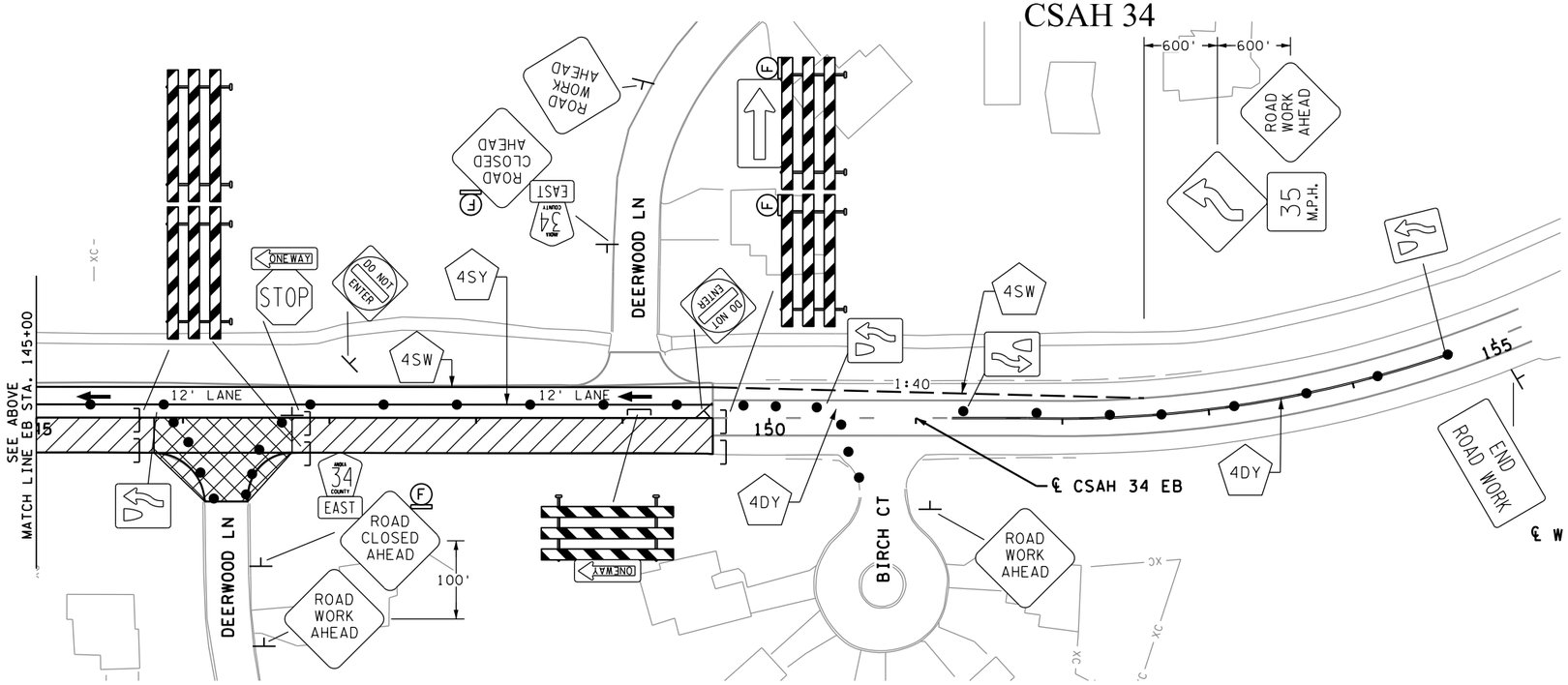
CONSTRUCTION:
- CONSTRUCT STORM SEWER PIPES 5020 TO 5024; 5050 TO 5053; 5056 TO 5057; 5072 TO 5078
- CONSTRUCT CSAH 34 EB.
- AFTER COMPLETION OF ALL STORM AND ROAD WORK, PLACE FINAL 2" LIFT OF BITUMINOUS WEARING COURSE ON BOTH EB AND WB CSAH 34.
- CONSTRUCT WATERMAIN UNDER CSAH 34 EB AND TOTEM TRL INTERSECTION

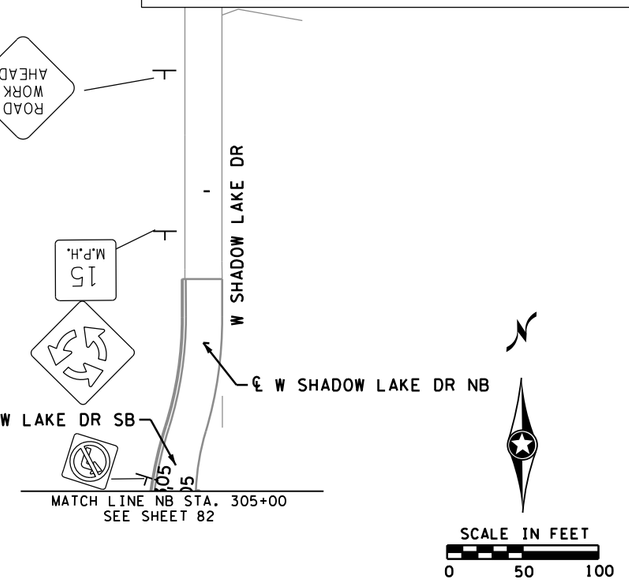
TRAFFIC:
- MAINTAIN WB TRAFFIC.
- EB TRAFFIC DETOURED. SEE SHEET 67 .
- MAINTAIN WB TRAFFIC THROUGH CONSTRUCTION AREA.
- ACCESS TO LOCAL RESIDENTS AND BUSINESSES SHALL BE MAINTAINED AT ALL TIMES

LEGEND

CONSTRUCTION UNDER TRAFFIC

UNDER CONSTRUCTION / CLOSED





NO.	DATE	BY	CHK	REVISIONS

Design By: MF
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SEAN DELMORE, PE

DATE 12/3/2020 LICENSE # 40945

wsb

ANOKA COUNTY

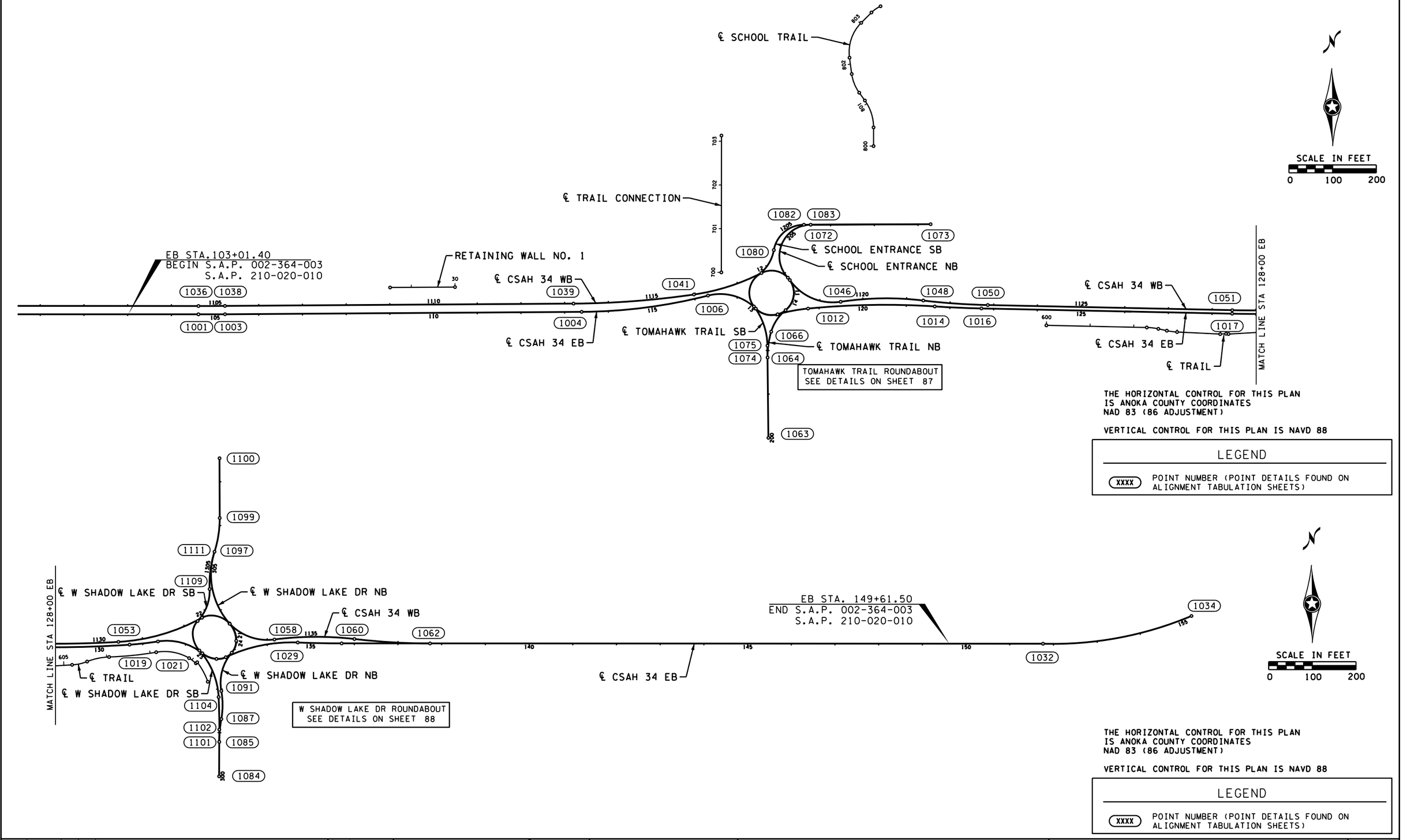
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
STAGE 3: STA 134+00 TO STA 154+00
TEMPORARY TRAFFIC CONTROL PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 83 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\4400-000_tfc303.dgn

PLOTTED/REVISED: 12/3/2020



NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

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ANDREW J. PLOWMAN, PE
DATE 12/3/2020 LICENSE # 44200

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

ALIGNMENT PLANS & TABULATIONS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 84 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\0\44400-000\Cad\Plan\44400-000_al01.dgn

PLOTTED/REVISED: 12/3/2020

ALIGNMENT TABULATION

CSAH 34 EB <34_EB>

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		BEARING
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
1000	POT	100+00.000						537,290.6668	139,029.1515	
1001	PC	104+62.053						537,752.7194	139,028.9288	S 89° 58' 20.57" E
1002	PI	104+92.434	0° 24' 34.48" LT	0° 40' 26.64"	8,500.000'	30.381'	60.762'	537,783.1006	139,028.9141	PI
1003	PT	105+22.815						537,813.4811	139,029.1167	N 89° 37' 04.95" E
1004	PC	113+39.094						538,629.7417	139,034.5583	N 89° 37' 04.95" E
1005	PI	114+85.822	13° 56' 32.26" LT	4° 46' 28.73"	1,200.000'	146.728'	292.007'	538,776.4666	139,035.5364	PI
1006	PRC	116+31.100						538,918.6331	139,071.8383	N 75° 40' 32.69" E
1007	PI	116+96.450	59° 12' 56.72" RT	49° 49' 20.70"	115.000'	65.350'	118.854'	538,981.9514	139,088.0065	PI
1008	PRC	117+49.954						539,028.2483	139,041.8847	S 45° 06' 30.60" E
1009	PI	117+79.786	60° 38' 59.49" LT	112° 20' 40.80"	51.000'	29.832'	53.986'	539,049.3824	139,020.8304	PI
1010	PRC	118+03.939						539,078.0930	139,028.9321	N 74° 14' 29.91" E
1011	PI	118+39.531	10° 10' 09.58" RT	14° 19' 26.20"	400.000'	35.591'	70.995'	539,112.3465	139,038.5980	PI
1012	PCC	118+74.935						539,147.7684	139,042.0643	N 84° 24' 39.49" E
1013	PI	120+20.419	9° 14' 30.27" RT	3° 10' 59.16"	1,800.000'	145.485'	290.338'	539,292.5613	139,056.2334	PI
1014	PRC	121+65.273						539,437.7503	139,046.9648	S 86° 20' 50.23" E
1015	PI	122+18.648	2° 26' 46.17" LT	2° 17' 30.59"	2,500.000'	53.375'	106.734'	539,491.0168	139,043.5643	PI
1016	PT	122+72.006						539,544.3799	139,042.4404	S 88° 47' 36.40" E
1017	PC	128+45.902						540,118.1482	139,030.3560	S 88° 47' 36.40" E
1018	PI	129+58.070	5° 07' 17.72" LT	2° 17' 04.27"	2,508.000'	112.168'	224.187'	540,230.2913	139,027.9941	PI
1019	PCC	130+70.088						540,342.1975	139,035.6526	N 86° 05' 05.88" E
1020	PI	131+02.779	4° 59' 29.59" LT	7° 38' 21.97"	750.000'	32.690'	65.339'	540,374.8116	139,037.8846	PI
1021	PRC	131+35.428						540,407.1077	139,042.9458	N 81° 05' 36.30" E
1022	PI	131+92.916	47° 42' 41.80" RT	44° 04' 25.24"	130.000'	57.488'	108.254'	540,463.9026	139,051.8464	PI
1023	PRC	132+43.682						540,508.7022	139,015.8202	S 51° 11' 41.91" E
1024	PI	132+61.833	34° 07' 38.93" LT	96° 53' 19.85"	59.136'	18.152'	35.223'	540,522.8473	139,004.4451	PI
1025	PCC	132+78.905						540,540.9384	139,002.9649	S 85° 19' 20.84" E
1026	PI	132+90.182	30° 07' 51.75" LT	136° 45' 36.41"	41.895'	11.277'	22.032'	540,552.1780	139,002.0453	PI
1027	PRC	133+00.937						540,562.3605	139,006.8919	N 64° 32' 47.42" E
1028	PI	133+87.500	27° 47' 00.58" RT	16° 22' 12.80"	350.000'	86.563'	169.720'	540,640.5210	139,044.0947	PI
1029	PRC	134+70.657						540,727.0121	139,040.5755	S 87° 40' 12.00" E
1030	PI	135+20.894	2° 18' 08.57" LT	2° 17' 30.59"	2,500.000'	50.237'	100.460'	540,777.2075	139,038.5331	PI
1031	PT	135+71.117						540,827.4444	139,038.5089	S 89° 58' 20.57" E
1032	PC	151+76.079						542,432.4062	139,037.7352	S 88° 19' 48.95" E
1033	PI	153+52.943	24° 32' 14.44" LT	7° 02' 41.27"	813.306'	176.864'	348.304'	542,609.1948	139,032.5817	PI
1034	PT	155+24.384						542,772.1579	139,101.3115	N 67° 07' 56.61" E

ALIGNMENT TABULATION

CSAH 34 WB (WEST OF TOMAHAWK TRAIL) <34_WB_1>

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		BEARING
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
1035	POT	1100+00.000						537,290.6760	139,048.1515	
1036	PC	1104+62.053						537,752.7286	139,047.9288	S 89° 58' 20.57" E
1037	PI	1104+92.366	0° 24' 34.48" LT	0° 40' 32.08"	8,481.000'	30.313'	60.626'	537,783.0419	139,047.9142	PI
1038	PT	1105+22.679						537,813.3545	139,048.1162	N 89° 37' 04.95" E
1039	PC	1113+20.380						538,611.0382	139,053.4340	N 89° 37' 04.95" E
1040	PI	1114+58.921	7° 55' 30.42" LT	2° 51' 53.24"	2,000.000'	138.540'	276.639'	538,749.5755	139,054.3576	PI
1041	PCC	1115+97.019						538,886.6622	139,074.3737	N 81° 41' 34.53" E
1042	PI	1116+79.141	18° 39' 16.15" LT	11° 27' 32.96"	500.000'	82.122'	162.791'	538,967.9229	139,086.2386	PI
1043	PT	1117+59.810						539,041.1193	139,123.4722	N 63° 02' 18.38" E

ALIGNMENT TABULATION

CSAH 34 WB (BETWEEN TOMAHAWK TRAIL AND W SHADOW LAKE DR) <34_WB_2>

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		BEARING
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
1044	PC	1118+15.500						539,106.0012	139,107.2933	S 35° 02' 06.08" E
1045	PI	1118+89.953	63° 38' 04.65" LT	47° 44' 47.34"	120.000'	74.453'	133.276'	539,148.7432	139,046.3308	PI
1046	PRC	1119+48.776						539,222.3458	139,057.5536	N 81° 19' 49.26" E
1047	PI	1120+44.229	15° 31' 48.16" RT	8° 11' 06.40"	700.000'	95.453'	189.735'	539,316.7080	139,071.9419	PI
1048	PRC	1121+38.511						539,411.4773	139,060.5400	S 83° 08' 22.57" E
1049	PI	1122+12.580	5° 39' 13.83" LT	3° 49' 10.99"	1,500.000'	74.069'	148.017'	539,485.0157	139,051.6925	PI
1050	PT	1122+86.529						539,559.0680	139,050.1328	S 88° 47' 36.40" E
1051	PC	1128+45.901						540,118.3166	139,038.3542	S 88° 47' 36.40" E
1052	PI	1129+45.169	4° 32' 51.81" LT	2° 17' 30.59"	2,500.000'	99.268'	198.432'	540,217.5627	139,036.2640	PI
1053	PCC	1130+44.333						540,316.6621	139,042.0494	N 86° 39' 31.79" E
1054	PI	1131+46.386	25° 33' 19.07" LT	12° 43' 56.62"	450.000'	102.053'	200.711'	540,418.5415	139,047.9972	PI
1055	PT	1132+45.044						540,507.8882	139,097.3121	N 61° 06' 12.72" E

ALIGNMENT TABULATION

CSAH 34 WB (EAST OF W SHADOW LAKE DR) <34_WB_3>

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		BEARING
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
1056	PC	1133+02.870						540,570.6563	139,084.2664	S 43° 10' 26.25" E
1057	PI	1133+64.271	54° 11' 43.46" LT	47° 44' 47.34"	120.000'	61.401'	113.507'	540,612.6679	139,039.4879	PI
1058	PRC	1134+16.377						540,673.5617	139,047.3635	N 82° 37' 50.29" E
1059	PI	1135+08.608	14° 01' 17.23" RT	7° 38' 21.97"	750.000'	92.231'	183.540'	540,765.0308	139,059.1935	PI
1060	PRC	1135+99.917						540,856.6408	139,048.5095	S 83° 20' 52.48" E
1061	PI	1136+86.728	6° 37' 28.09" LT	3° 49' 10.99"	1,500.000'	86.811'	173.428'	540,942.8672	139,038.4533	PI
1062	PT	1137+73.345						541,029.6781	139,038.4114	S 89° 58' 20.57" E

NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

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ANDREW J. PLOWMAN, PE
DATE 12/3/2020 LICENSE # 44200

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

ALIGNMENT PLANS & TABULATIONS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 85 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\4400-000_al01.dgn

PLOTTED/REVISED: 12/3/2020

ALIGNMENT TABULATION

TOMAHAWK TRAIL NB <TOM_NB>

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		BEARING
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
1063	POT	200+00.000						539,056.9974	138,746.2440	
1064	PC	201+83.743						539,055.0778	138,929.9767	N 0° 35' 54.94" W
1065	PI	202+13.991	17° 12' 03.05" RT	28° 38' 52.40"	200.000'	30.249'	60.042'	539,054.7618	138,960.2237	PI
1066	PCC	202+43.785						539,063.4046	138,989.2114	N 16° 36' 08.11" E
1067	PI	202+74.754	34° 24' 51.62" RT	57° 17' 44.81"	100.000'	30.969'	60.064'	539,072.2532	139,018.8892	PI
1068	PRC	203+03.849						539,096.3262	139,038.3716	N 51° 00' 59.73" E
1069	PI	203+58.630	94° 05' 36.01" LT	12° 20' 40.80"	51.000'	54.780'	83.754'	539,138.9084	139,072.8336	PI
1070	PRC	203+87.604						539,101.4948	139,112.8472	N 43° 04' 36.27" W
1071	PI	205+52.496	32° 49' 23.06" RT	79° 34' 38.90"	72.000'	164.892'	166.910'	538,988.8773	139,233.2908	PI
1072	PT	205+54.514						539,153.7677	139,234.0208	N 89° 44' 46.79" E
1073	POT	208+28.968						539,428.2194	139,235.2359	

ALIGNMENT TABULATION

TOMAHAWK TRAIL SB <TOM_SB_1>

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		BEARING
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
1074	POT	1200+00.000						539,056.9974	138,746.2440	
1075	PC	1202+10.959						539,054.7935	138,957.1910	N 0° 35' 54.94" W
1076	PI	1202+61.020	36° 54' 44.37" LT	38° 11' 49.87"	150.000'	50.062'	96.636'	539,054.2705	139,007.2500	PI
1077	PT	1203+07.595						539,023.7873	139,046.9608	N 37° 30' 39.30" W

ALIGNMENT TABULATION

SCHOOL ENTRANCE SB <TOM_SB_2>

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		BEARING
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
1078	PC	1203+72.677						539,034.0701	139,119.1327	N 53° 43' 42.39" E
1079	PI	1204+08.806	43° 44' 38.92" LT	63° 39' 43.12"	90.000'	36.129'	68.713'	539,063.1980	139,140.5069	PI
1080	PRC	1204+41.390						539,069.4619	139,176.0886	N 9° 59' 03.47" E
1081	PI	1204+99.880	79° 45' 43.33" RT	81° 51' 04.01"	70.000'	58.490'	97.448'	539,079.6027	139,233.6925	PI
1082	PT	1205+38.838						539,138.0919	139,233.9514	N 89° 44' 46.79" E
1083	POT	1208+00.000						539,399.2513	139,235.1077	

ALIGNMENT TABULATION

W SHADOW LAKE DR NB <SHADOW_NB>

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		BEARING
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
1084	POT	300+00.000						540,547.0861	138,734.2932	
1085	PC	300+78.764						540,547.3797	138,813.0571	N 0° 12' 49.06" E
1086	PI	301+05.094	10° 01' 53.93" RT	19° 05' 54.94"	300.000'	26.330'	52.526'	540,547.4779	138,839.3870	PI
1087	PRC	301+31.290						540,552.1611	138,865.2973	N 10° 14' 42.99" E
1088	PI	301+64.004	20° 36' 04.46" LT	31° 49' 51.56"	180.000'	32.714'	64.721'	540,557.9796	138,897.4892	PI
1089	PRC	301+96.011						540,552.0989	138,929.6699	N 10° 21' 21.47" W
1090	PI	302+46.380	51° 15' 16.36" RT	54° 34' 02.67"	105.000'	50.369'	93.929'	540,543.0444	138,979.2184	PI
1091	PRC	302+89.940						540,576.0221	139,017.2908	N 40° 53' 54.89" E
1092	PI	303+05.359	40° 24' 44.97" LT	36° 45' 36.41"	41.895'	15.420'	29.550'	540,586.1176	139,028.9460	PI
1093	PCC	303+19.489						540,586.2485	139,044.3650	N 0° 29' 09.92" E
1094	PI	303+41.745	42° 15' 00.48" LT	99° 28' 01.75"	57.603'	22.256'	42.476'	540,586.4373	139,066.6202	PI
1095	PRC	303+61.966						540,571.6133	139,083.2208	N 41° 45' 50.57" W
1096	PI	304+59.214	59° 32' 35.87" RT	33° 42' 12.24"	170.000'	97.248'	176.669'	540,506.8397	139,155.7577	PI
1097	PRC	305+38.634						540,536.5345	139,248.3614	N 17° 46' 45.30" E
1098	PI	305+78.173	17° 58' 26.56" LT	22° 55' 05.92"	250.000'	39.538'	78.427'	540,548.6075	139,286.0111	PI
1099	PT	306+17.061						540,548.4731	139,325.5490	N 0° 11' 41.26" W
1100	POT	307+53.791						540,548.0082	139,462.2777	

ALIGNMENT TABULATION

W SHADOW LAKE DR SB (SOUTH OF CSAH 34) <SHADOW_SB_1>

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		BEARING
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
1101	POT	1300+78.760						540,547.3797	138,813.0571	
1102	PC	1301+06.949						540,547.4849	138,841.2463	N 0° 12' 49.06" E
1103	PI	1301+44.201	2° 50' 42.73" LT	3° 49' 10.99"	1,500.000'	37.251'	74.487'	540,547.6237	138,878.4973	PI
1104	PCC	1301+81.437						540,545.9134	138,915.7093	N 2° 37' 53.66" W
1105	PI	1302+42.635	39° 35' 48.94" LT	33° 42' 12.24"	170.000'	61.199'	117.486'	540,543.1036	138,976.8434	PI
1106	PT	1302+98.923						540,501.9727	139,022.1591	N 42° 13' 42.61" W

ALIGNMENT TABULATION

W SHADOW LAKE DR SB (NORTH OF CSAH 34) <SHADOW_SB_2>

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		BEARING
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
1107	PC	1303+70.210						540,497.9401	139,089.6267	N 43° 31' 16.39" E
1108	PI	1304+12.655	45° 59' 52.11" LT	57° 17' 44.81"	100.000'	42.445'	80.281'	540,527.1688	139,120.4045	PI
1109	PRC	1304+50.491						540,525.3347	139,162.8101	N 2° 28' 33.18" W
1110	PI	1304+94.289	19° 52' 06.68" RT	22° 54' 44.71"	250.064'	43.797'	86.715'	540,523.4427	139,206.5665	PI
1111	PT	1305+37.206						540,536.5345	139,248.3614	N 17° 46' 45.30" E

NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

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ANDREW J. PLOWMAN, PE

DATE 12/3/2020 LICENSE # 44200

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

ALIGNMENT PLANS & TABULATIONS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 86 OF 195 SHEETS

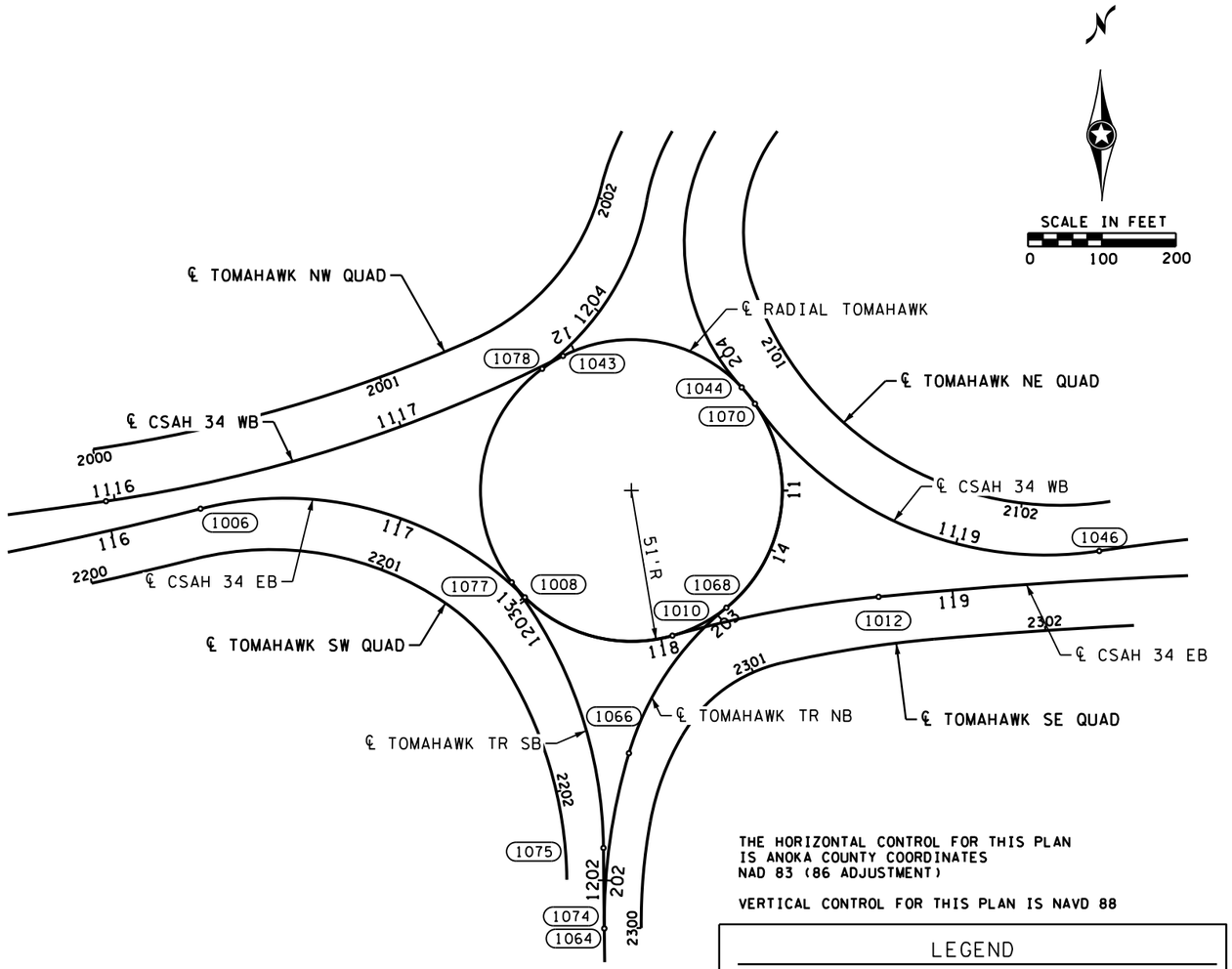
PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\14400-000_al01.dgn

PLOTTED/REVISED: 12/3/2020

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		BEARING
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
RADIAL AT CSAH 34/TOMAHAWK TRAIL <RA_TOM>										
1116	PC	11+00.000						539,115.2424	139,078.0153	N 0° 00' 00.26" W
1117	PI	11+00.000	359° 59' 59.47" LT	112° 20' 40.25"	51.000'	0.000'	320.443'	539,115.2424	139,078.0153	PI
1118	CC							539,064.2423	139,078.0153	
1119	PT	14+20.443						539,115.2424	139,078.0152	N 0° 00' 00.26" E

SEE SHEET 124 FOR QUADRANT ALIGNMENT TABLES.



THE HORIZONTAL CONTROL FOR THIS PLAN IS ANOKA COUNTY COORDINATES NAD 83 (86 ADJUSTMENT)

VERTICAL CONTROL FOR THIS PLAN IS NAVD 88

LEGEND

(XXXX) POINT NUMBER (POINT DETAILS FOUND ON ALIGNMENT TABULATION SHEETS)

NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

ANDREW J. PLOWMAN, PE
DATE 12/3/2020 LICENSE # 44200

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

ALIGNMENT PLANS & TABULATIONS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 87 OF 195 SHEETS

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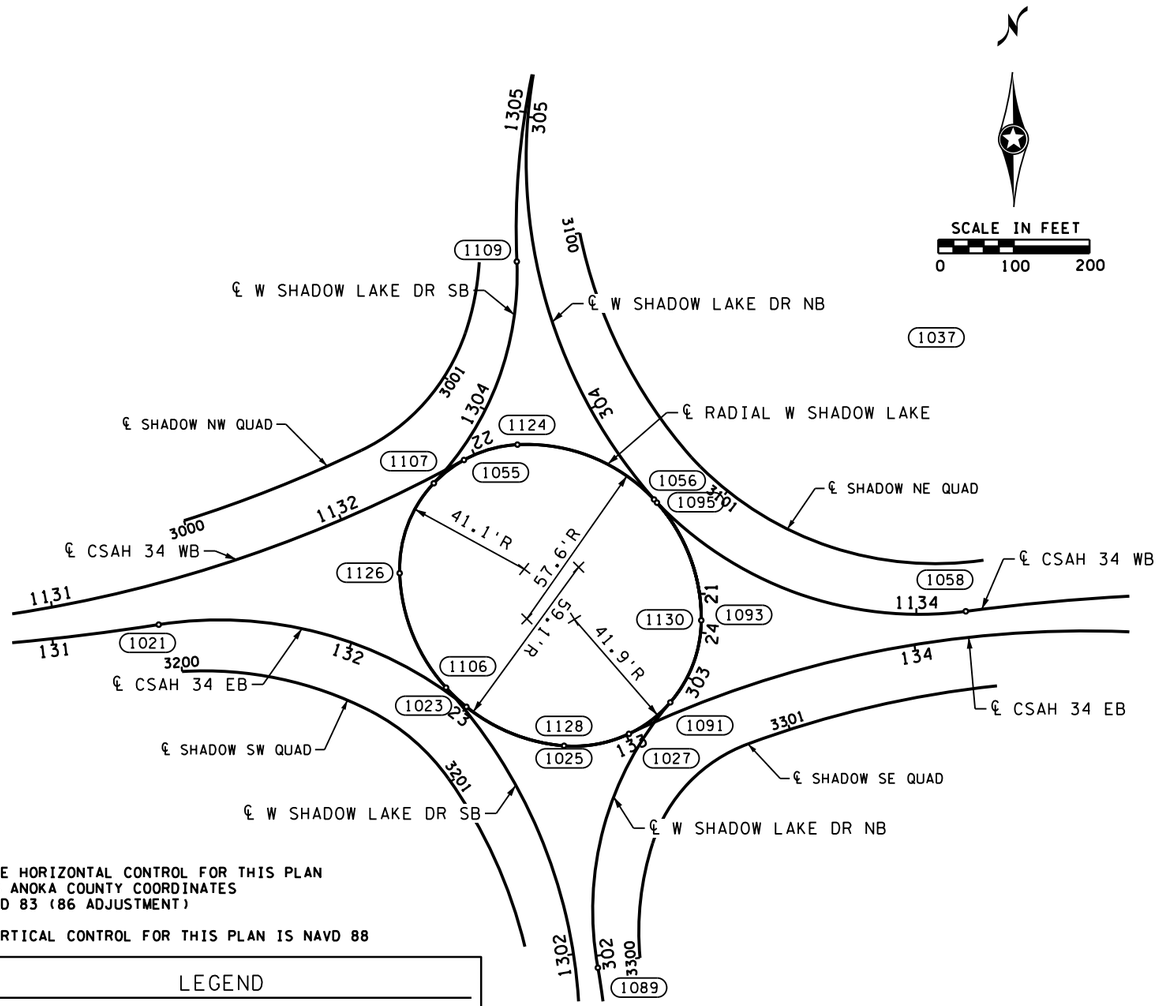
PLOTTED/REVISED: 12/3/2020

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		BEARING
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
RADIAL AT CSAH 34/W SHADOW LAKE DR <RA_SHADOW>										
1122	PC	21+00.000						540,585.6601	139,053.0798	N 8° 12' 37.23" W
1123	PI	21+52.665	84° 52' 20.20" LT	99° 28' 01.75"	57.603'	52.665'	85.327'	540,578.1391	139,105.2052	PI
1124	PCC	21+85.327						540,525.5502	139,102.3731	S 86° 55' 02.57" W
1125	PI	22+25.615	88° 49' 08.37" LT	139° 18' 55.44"	41.127'	40.288'	63.754'	540,485.3209	139,100.2066	PI
1126	PCC	22+49.081						540,486.6578	139,059.9412	S 1° 54' 05.80" E
1127	PI	23+01.788	83° 25' 15.04" LT	96° 53' 19.85"	59.136'	52.707'	86.100'	540,488.4068	139,007.2630	PI
1128	PCC	23+35.180						540,540.9384	139,002.9649	S 85° 19' 20.84" E
1129	PI	23+80.258	94° 11' 29.25" LT	136° 45' 36.41"	41.895'	45.078'	68.873'	540,585.8660	138,999.2889	PI
1130	PCC	24+04.054						540,586.2485	139,044.3650	N 0° 29' 09.92" E
1131	PI	24+08.434	8° 41' 47.04" LT	99° 28' 01.75"	57.603'	4.380'	8.743'	540,586.2856	139,048.7448	PI
1132	PT	24+12.797						540,585.6601	139,053.0798	N 8° 12' 37.12" W

SEE SHEET QD4A FOR QUADRANT ALIGNMENT TABLES.



THE HORIZONTAL CONTROL FOR THIS PLAN
IS ANOKA COUNTY COORDINATES
NAD 83 (86 ADJUSTMENT)

VERTICAL CONTROL FOR THIS PLAN IS NAVD 88

LEGEND

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SHEET **88** OF **195** SHEETS

PATH & FILENAME: Projects\Minnesota\0\44400-000\Cadd\Plan\44400-000_al01.dgn

PLOTTED/REVISED: 12/3/2020

ALIGNMENT TABULATION

TRAIL <TRAIL>

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		BEARING
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
TRAIL1	POT	600+00.000						539,693.1274	139,003.6297	
TRAIL2	PC	602+29.798						539,922.8740	138,998.7909	S 88°47'36.40" E
TRAIL3	PI	602+43.177	11° 04' 31.72" RT	41° 31' 07.25"	138.000'	13.380'	26.676'	539,936.2506	138,998.5091	PI
TRAIL4	CC							539,919.9681	138,860.8214	
TRAIL5	PT	602+56.473						539,949.3240	138,995.6630	S 77°43'04.68" E
TRAIL6	PC	602+76.365						539,968.7607	138,991.4315	S 77°43'04.68" E
TRAIL7	PI	602+88.203	9° 31' 50.99" LT	40° 20' 56.91"	142.000'	11.838'	23.621'	539,980.3276	138,988.9133	PI
TRAIL8	CC							539,998.9675	139,130.1814	
TRAIL9	PT	602+99.986						539,992.1517	138,988.3451	S 87°14'55.67" E
TRAIL10	POT	603+98.766						540,090.8180	138,983.6037	
TRAIL11	POT	604+03.430						540,095.4708	138,983.9250	
TRAIL12	POT	604+12.238						540,104.2668	138,984.3680	
TRAIL13	POT	604+17.950						540,109.9515	138,983.8092	
TRAIL14	PC	605+18.786						540,210.6326	138,989.3989	N 86°49'20.21" E
TRAIL15	PI	605+36.588	18° 23' 09.69" LT	52° 05' 13.46"	110.000'	17.802'	35.299'	540,228.4076	138,990.3857	PI
TRAIL16	CC							540,204.5350	139,099.2297	
TRAIL17	PRC	605+54.084						540,244.9640	138,996.9287	N 68°26'10.52" E
TRAIL18	PRC	605+54.084						540,244.9640	138,996.9287	N 68°26'10.52" E
TRAIL19	PI	605+80.186	19° 44' 33.75" RT	38° 11' 49.87"	150.000'	26.102'	51.686'	540,269.2390	139,006.5221	PI
TRAIL20	CC							540,300.0944	138,857.4273	
TRAIL21	PRC	606+05.771						540,295.3277	139,007.3516	N 88°10'44.26" E
TRAIL22	PRC	606+05.771						540,295.3277	139,007.3516	N 88°10'44.26" E
TRAIL23	PI	606+60.011	8° 01' 14.19" LT	7° 24' 20.57"	773.670'	54.240'	108.303'	540,349.5404	139,009.0752	PI
TRAIL24	CC							540,270.7422	139,780.6308	
TRAIL25	PRC	607+14.074						540,402.9823	139,018.3462	N 80°09'30.08" E
TRAIL26	PRC	607+14.074						540,402.9823	139,018.3462	N 80°09'30.08" E
TRAIL27	PI	607+51.733	37° 04' 05.02" RT	51° 00' 23.97"	112.330'	37.659'	72.673'	540,440.0874	139,024.7832	PI
TRAIL28	CC							540,422.1824	138,907.6693	
TRAIL29	PCC	607+86.747						540,473.5743	139,007.5537	S 62°46'24.91" E
TRAIL30	PCC	607+86.747						540,473.5743	139,007.5537	S 62°46'24.91" E
TRAIL31	PI	607+89.534	4° 57' 40.90" RT	89° 03' 55.48"	64.330'	2.787'	5.570'	540,476.0524	139,006.2787	PI
TRAIL32	CC							540,444.1428	138,950.3511	
TRAIL33	PCC	607+92.317						540,478.4111	139,004.7941	S 57°48'44.00" E
TRAIL34	PCC	607+92.317						540,478.4111	139,004.7941	S 57°48'44.00" E
TRAIL35	PI	608+02.140	10° 41' 19.07" RT	54° 34' 02.67"	105.000'	9.822'	19.588'	540,486.7239	138,999.5617	PI
TRAIL36	CC							540,422.4780	138,915.9318	
TRAIL37	PT	608+11.905						540,493.9220	138,992.8783	S 47°07'24.93" E
TRAIL38	PC	608+15.763						540,496.8556	138,995.3845	S 40°30'27.81" E
TRAIL39	PI	608+18.825	5° 03' 25.21" RT	82° 38' 31.62"	69.330'	3.062'	6.119'	540,498.8443	138,993.0567	PI
TRAIL40	CC							540,444.1428	138,950.3511	
TRAIL41	PCC	608+21.883						540,500.6200	138,990.5627	S 35°27'02.60" E
TRAIL42	PCC	608+21.883						540,500.6200	138,990.5627	S 35°27'02.60" E
TRAIL43	PI	608+44.498	16° 21' 34.93" RT	36° 25' 03.29"	157.330'	22.615'	44.923'	540,513.7368	138,972.1401	PI
TRAIL44	CC							540,372.4567	138,899.3109	
TRAIL45	PT	608+66.805						540,521.1336	138,950.7688	S 19°05'27.67" E

ALIGNMENT TABULATION

RETAINING WALL NO.1 <RWALL_1>

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		BEARING
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
RWALL1	POB	30+00.000						538,339.8049	139,091.2967	
RWALL2	POE	31+48.534						538,191.274	139,090.3065	S 89°37'04.95" W

ALIGNMENT TABULATION

TRAIL CONNECTION <PTRAILCONN>

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		BEARING
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
TRAIL50	POT	700+00.000						538,949.3355	139,124.9679	
TRAIL51	POT	703+13.136						538,949.4865	139,438.1035	

ALIGNMENT TABULATION (ALTERNATIVE BID)

SCHOOL TRAIL <PSCHOOLTRAIL>

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		BEARING
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
TRAIL52	POT	800+00.000						539,297.6003	139,413.8988	
TRAIL53	PC	800+42.909						539,297.6210	139,456.8079	N 0° 01' 39.43" E
TRAIL54	PI	800+76.914	35° 53' 22.10" LT	54° 34' 02.67"	105.000'	34.005'	65.771'	539,297.6374	139,490.8125	PI
TRAIL55	CC							539,192.6210	139,456.8585	
TRAIL56	PT	801+08.680						539,277.7163	139,518.3709	N 35° 51' 42.67" W
TRAIL57	PC	801+30.675						539,264.8312	139,536.1961	N 35° 51' 42.67" W
TRAIL58	PI	801+54.454	28° 06' 21.25" RT	60° 18' 40.85"	95.000'	23.779'	46.601'	539,250.9004	139,555.4677	PI
TRAIL59	CC							539,341.8222	139,591.8502	
TRAIL60	PT	801+77.276						539,247.6913	139,579.0296	N 7° 45' 21.43" W
TRAIL61	PC	802+14.958						539,242.6059	139,616.3669	N 7° 45' 21.43" W
TRAIL62	PI	802+61.823	52° 30' 57.73" RT	60° 18' 40.85"	95.000'	46.865'	87.075'	539,236.2813	139,662.8035	PI
TRAIL63	CC							539,336.7369	139,629.1875	
TRAIL64	PT	803+02.033						539,269.2810	139,696.0808	N 44° 45' 36.31" E
TRAIL65	PC	803+35.445						539,292.8075	139,719.8051	N 44° 45' 36.31" E
TRAIL66	PI	803+48.278	21° 36' 03.65" RT	85° 10' 11.84"	67.272'	12.833'	25.362'	539,301.8441	139,728.9177	PI
TRAIL67	CC							539,340.5750	139,672.4361	
TRAIL68	PT	803+60.807						539,313.6007	139,734.0636	N 66° 21' 39.96" E

NO.	DATE	BY	CHK	REVISIONS

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Plan By: CWK
Checked By: AJP
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ANDREW J. PLOWMAN, PE
DATE 12/3/2020 LICENSE # 44200

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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

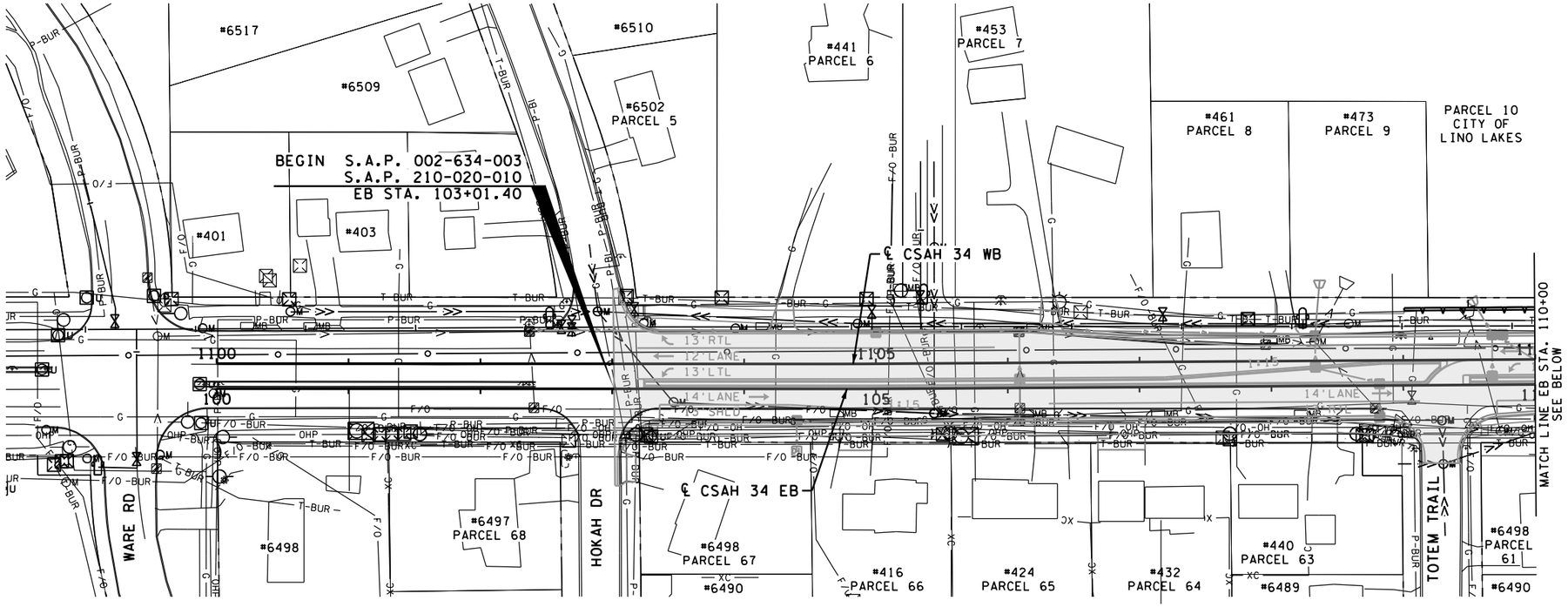
ANOKA COUNTY, MINNESOTA

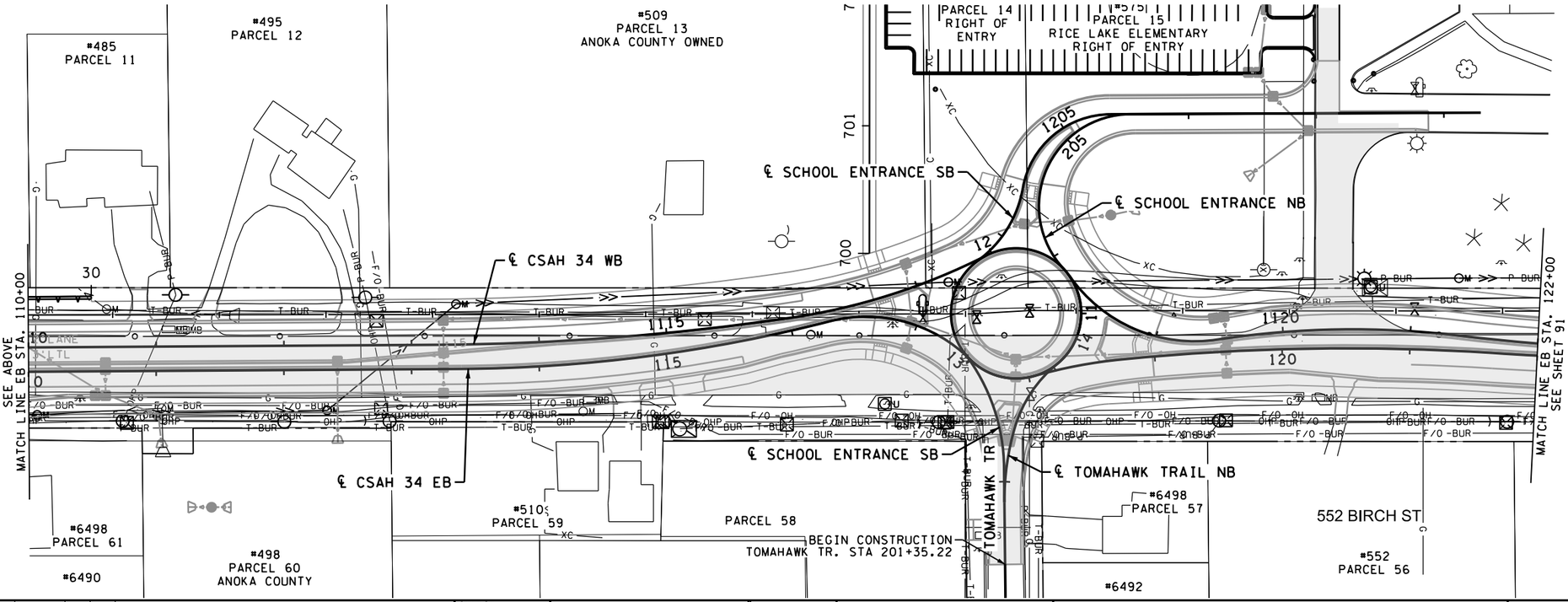
ALIGNMENT PLANS & TABULATIONS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 89 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\01\44400-000\Cad\Plan\44400-000_al01.dgn

PLOTTED/REVISED: 12/3/2020





SCALE IN FEET
0 50 100

LEGEND

- T-BUR — BURIED TELEPHONE LINE
- TV-BUR — BURIED TELEVISION LINE
- OHU — OVERHEAD UTILITY LINE
- F/O -BUR — BURIED FIBER OPTIC LINE
- P-BUR — BURIED POWER LINE
- P — UTILITY IN CONDUIT
- OHP — OVERHEAD POWER LINE
- SIG-BUR — BURIED SIGNAL LINE
- G — UNDERGROUND GAS MAIN/SERVICE
- >> — SANITARY SEWER LINE
- > — STORM SEWER LINE
- FORCEMAIN
- I — WATERMAIN
- UTILITY PEDESTAL
- HH — HANDHOLE
- POWER/UTILITY POLE
- LIGHT POLE
- CABINET
- VALVE (GAS)
- OM — MANHOLE
- CATCH BASIN
- CONCRETE APRON
- HYDRANT
- GV — VALVE (WATER)
- VALVE (GAS)
- VEGITATION
- INPLACE STRUCTURE
- P — EXISTING GUARD RAIL
- EXISTING WATER EDGE
- BOLLARD
- RETAINING WALL
- NOISE WALL
- XC — EXISTING FENCE
- EXISTING ROADWAY BIT. TO BE REMOVED, MILLED, OR RECLAIMED

GENERAL NOTES

- THE EXISTING SUBSURFACE UTILITY INFORMATION IS QUALITY LEVEL D IN ACCORDANCE TO THE GUIDELINE OF CI/ASCE 38-02.
- UTILITIES ARE SHOWN AT APPROXIMATE LOCATIONS. THE CONTRACTOR SHALL DETERMINE THE ACTUAL LOCATION OF ALL BURIED UTILITIES IN THE FIELD.
- SEE INPLACE UTILITY TABULATIONS FOR MORE DETAILS.

SCALE IN FEET
0 50 100

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Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
STA 102+01.40 TO STA 122+00
INPLACE TOPOGRAPHY & UTILITY PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **90** OF **195** SHEETS

PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\14400-000_Ju01.dgn

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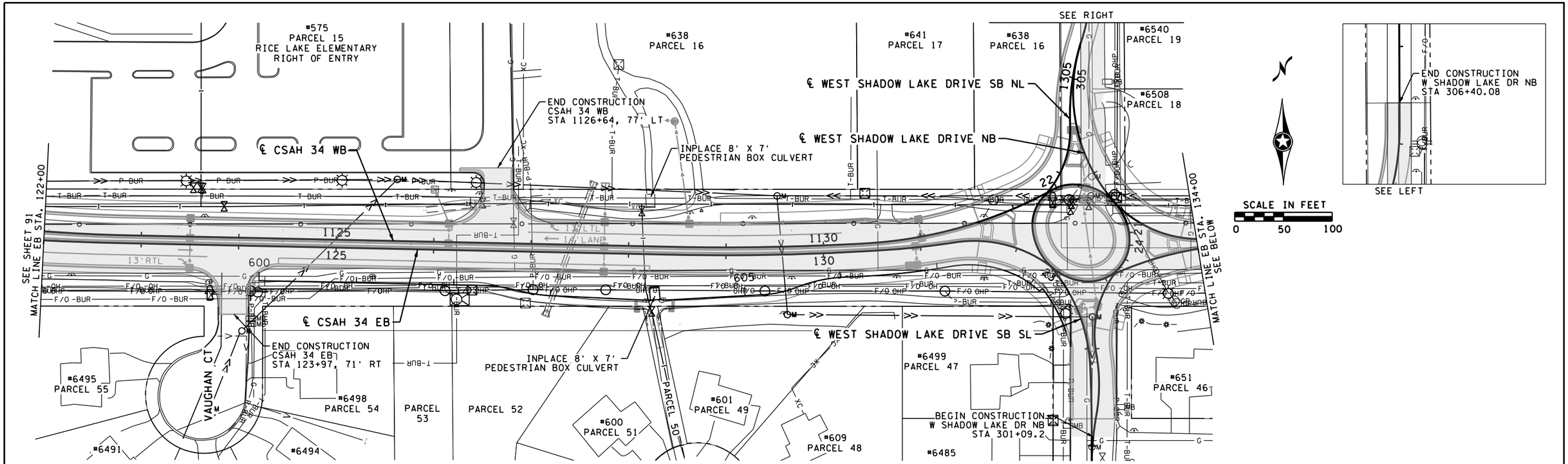

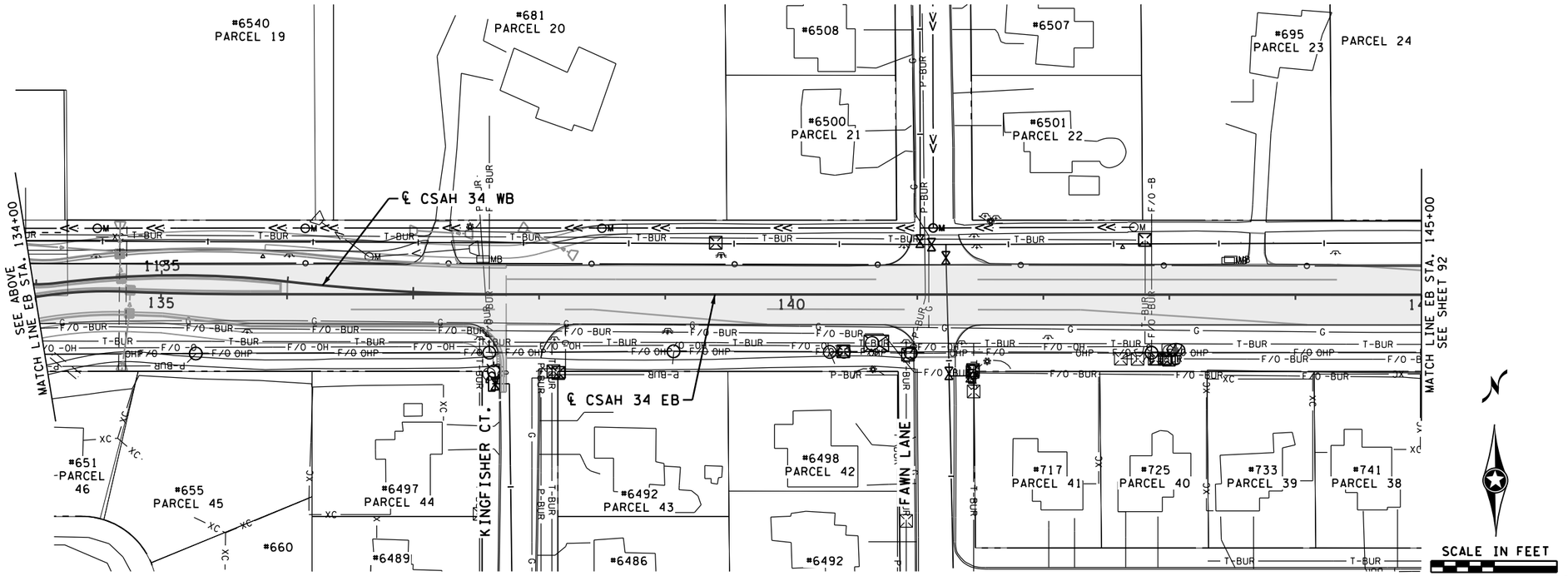

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ANOKA COUNTY

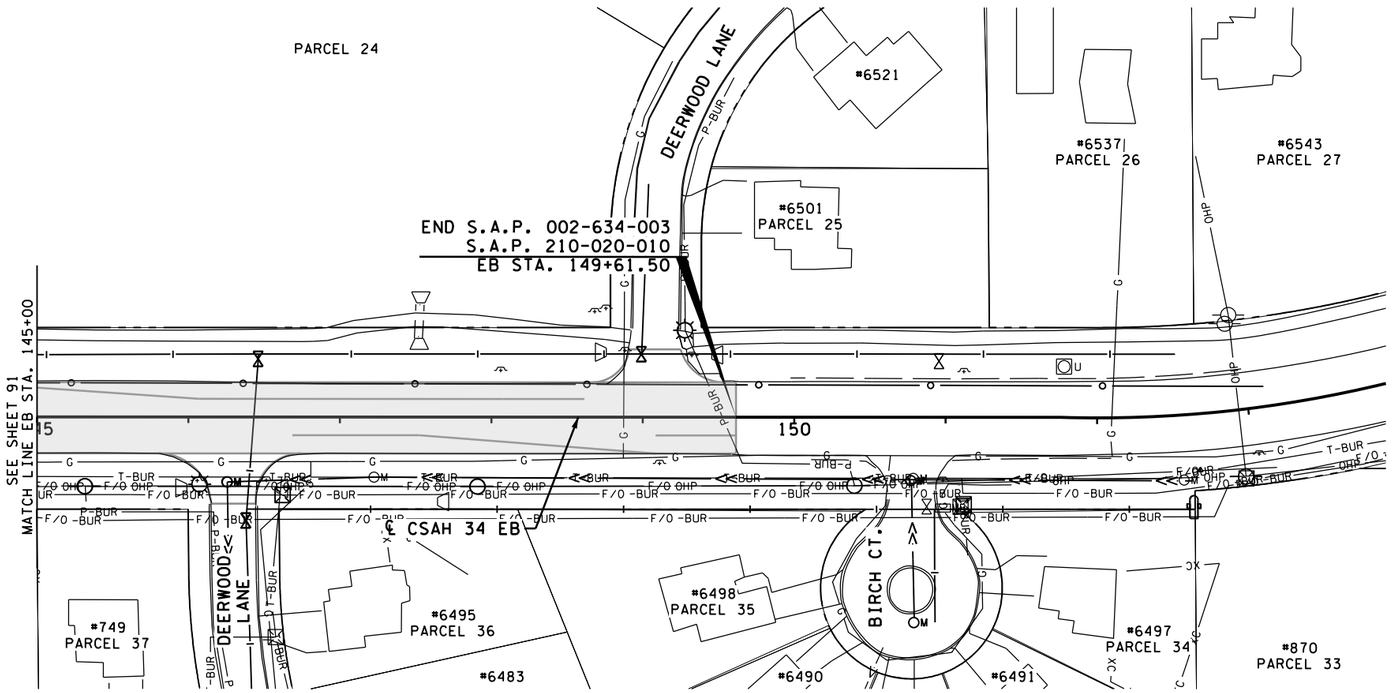
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
STA 122+00 TO STA 145+00
INPLACE TOPOGRAPHY & UTILITY PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **91** OF **195** SHEETS

PATH & FILENAME: Projects\Minnesota\0\4400-000\Cad\Plan\14400-000_iu02.dgn

PLOTTED/REVISED: 12/3/2020



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SCALE IN FEET
0 50 100

PATH & FILENAME: Projects\Minnesota\0I4400-000\Cad\Plan\I4400-000_Iu03.dgn

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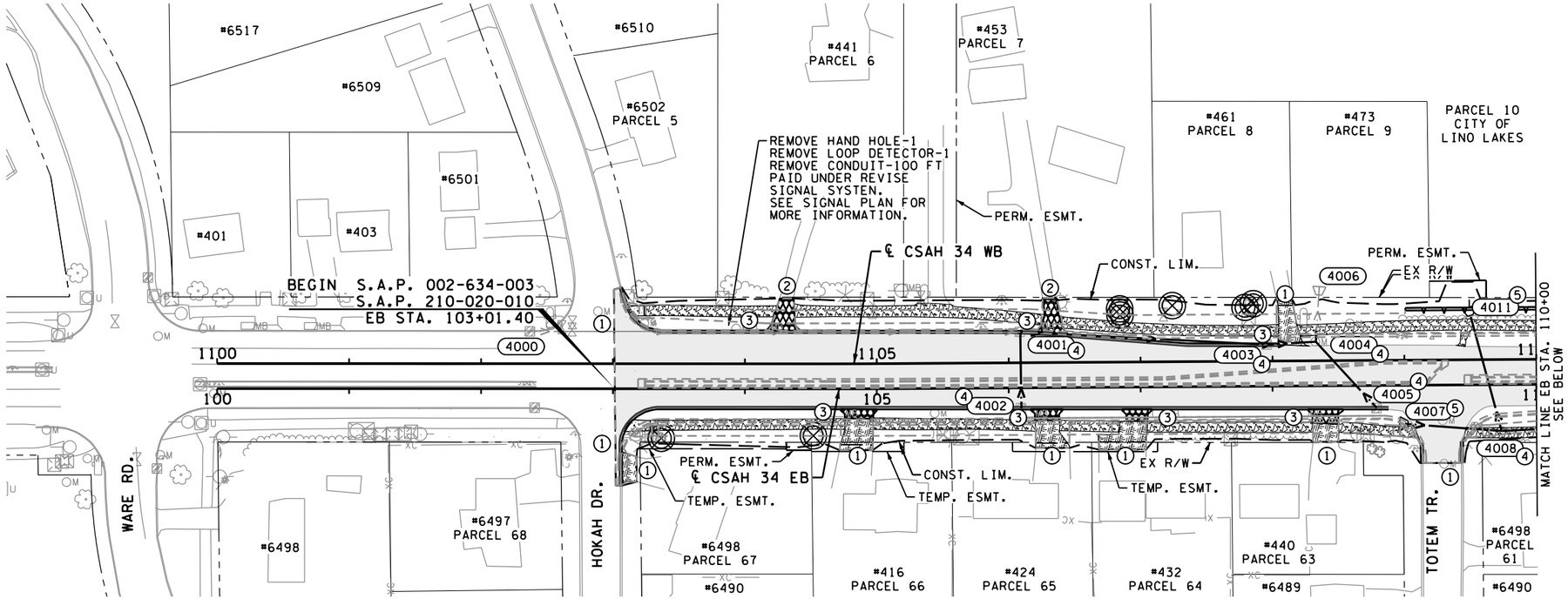
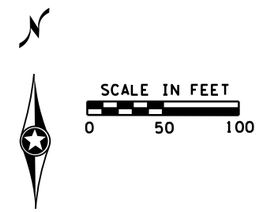
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
STA 145+00 TO STA 149+61.50
INPLACE TOPOGRAPHY & UTILITY PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **92** OF **195** SHEETS

PLOTTED/REVISED: 12/3/2020



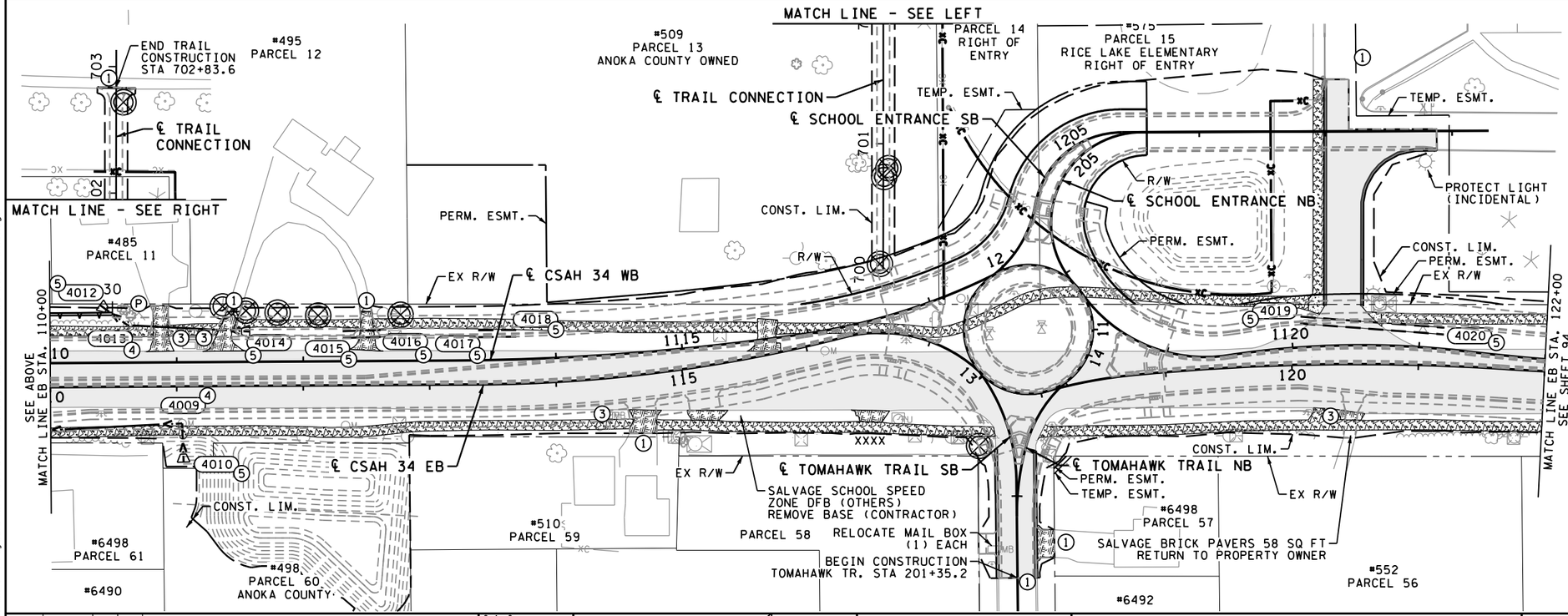


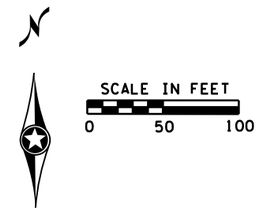
LEGEND

- REMOVE BITUMINOUS PAVEMENT
- REMOVE CONCRETE SIDEWALK
- REMOVE BITUMINOUS SIDEWALK
- REMOVE BITUMINOUS DRIVEWAY PAVEMENT
- REMOVE CONCRETE DRIVEWAY PAVEMENT
- FULL DEPTH RECLAMATION
- CLEAR & GRUB TREE (ACRE)
- REMOVE CURB & GUTTER (CONCRETE)
- XC · REMOVE CHAIN LINK FENCE
- CLEAR & GRUB TREE (EACH)
- (1) SAWCUT BITUMINOUS PAVEMENT (FULL DEPTH)
- (2) SAWCUT CONCRETE PAVEMENT (FULL DEPTH)
- (3) SALVAGE MAILBOX SUPPORT
- (4) REMOVE DRAINAGE STRUCTURE
- (5) REMOVE PIPE APRON
- (6) MILL BITUMINOUS SURFACE SPECIAL SEE SHEET 28 FOR DETAILS.
- (P) PROTECT TREE (INCIDENTAL)
- (0000) DRAINAGE STRUCTURE NUMBER

GENERAL NOTES

1. REMOVAL OF ALL AGGREGATE SURFACING REGARDLESS OF THICKNESS SHALL BE INCLUDED IN COMMON EXCAVATION.
2. ALL REMOVAL ITEMS SHALL BE DISPOSED OF OFF THE PROJECT SITE. (INCIDENTAL)
3. SAWCUTTING FOR CONCRETE CURB & GUTTER, CONCRETE WALK, AND BITUMINOUS WALK SHALL BE INCIDENTAL.
4. INPLACE BITUMINOUS PAVEMENT THICKNESS 2" - 8". NO ADDITIONAL PAYMENT FOR EXTRA THICKNESS.





NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

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ANDREW J. PLOWMAN, PE
DATE 12/3/2020 LICENSE # 44200

wsb

ANOKA COUNTY

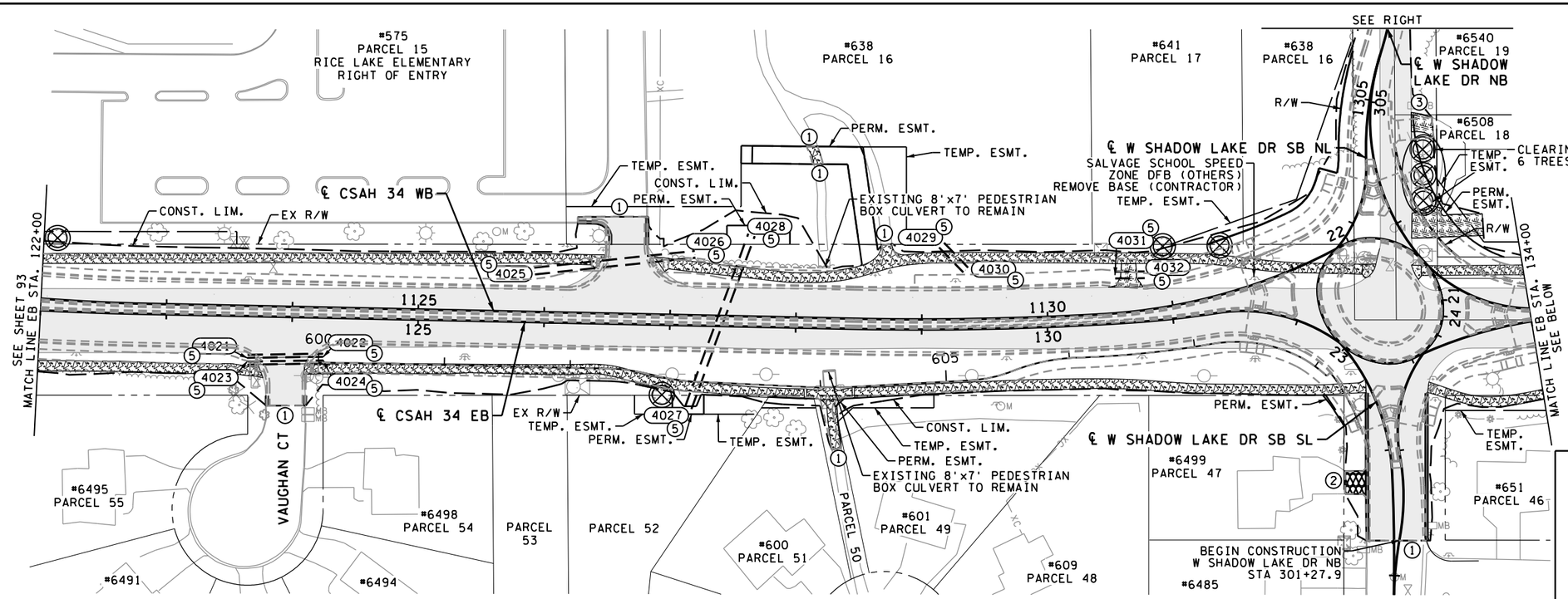
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

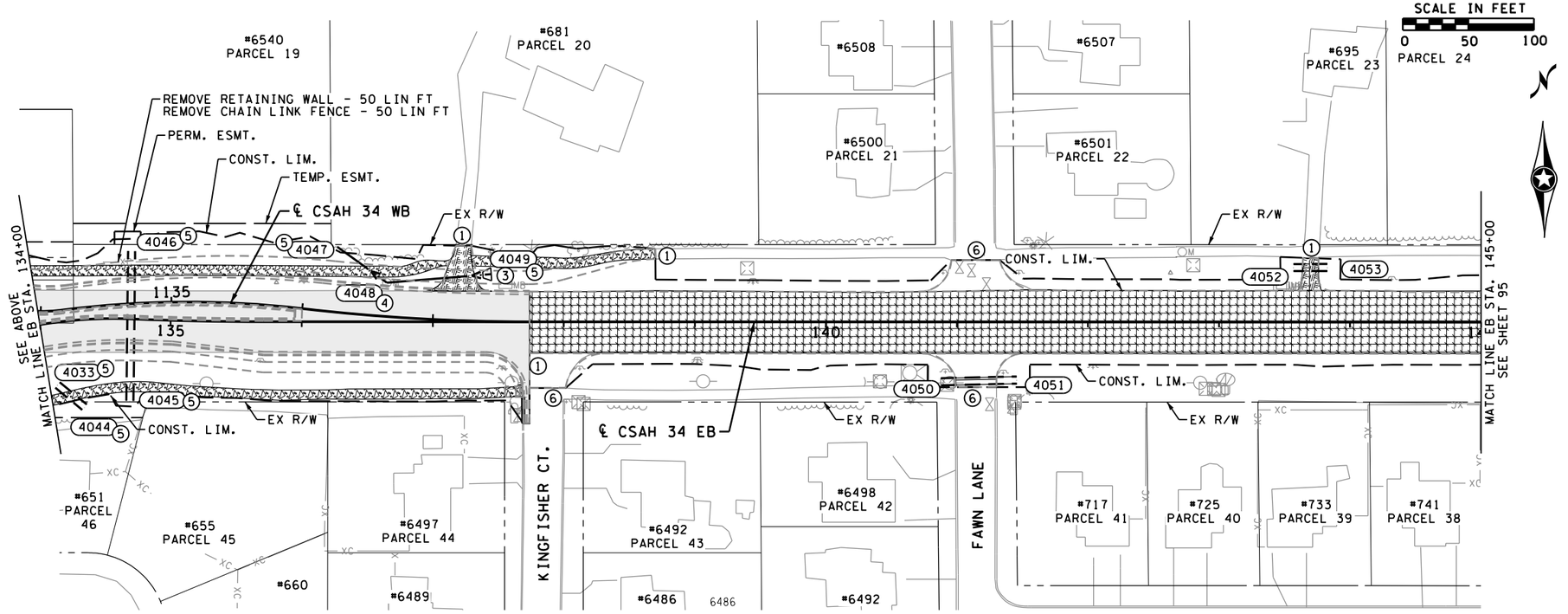
ANOKA COUNTY, MINNESOTA
STA 103+01.40 TO STA 122+00
MISCELLANEOUS REMOVAL PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 93 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\0\4400-000\Cad\Plan\4400-000_rem01.dgn

PLOTTED/REVISED: 12/3/2020





LEGEND

- REMOVE BITUMINOUS PAVEMENT
- REMOVE CONCRETE SIDEWALK
- REMOVE BITUMINOUS SIDEWALK
- REMOVE BITUMINOUS DRIVEWAY PAVEMENT
- REMOVE CONCRETE DRIVEWAY PAVEMENT
- FULL DEPTH RECLAMATION
- CLEAR & GRUB TREE (ACRE)
- REMOVE CURB & GUTTER (CONCRETE)
- XC · REMOVE CHAIN LINK FENCE
- CLEAR & GRUB TREE (EACH)
- (1) SAWCUT BITUMINOUS PAVEMENT (FULL DEPTH)
- (2) SAWCUT CONCRETE PAVEMENT (FULL DEPTH)
- (3) SALVAGE MAILBOX SUPPORT
- (4) REMOVE DRAINAGE STRUCTURE
- (5) REMOVE PIPE APRON
- (6) MILL BITUMINOUS SURFACE SPECIAL SEE SHEET 28 FOR DETAILS.
- (P) PROTECT TREE (INCIDENTAL)
- (0000) DRAINAGE STRUCTURE NUMBER

GENERAL NOTES

1. REMOVAL OF ALL AGGREGATE SURFACING REGARDLESS OF THICKNESS SHALL BE INCLUDED IN COMMON EXCAVATION.
2. ALL REMOVAL ITEMS SHALL BE DISPOSED OF OFF THE PROJECT SITE. (INCIDENTAL)
3. SAWCUTTING FOR CONCRETE CURB & GUTTER, CONCRETE WALK, AND BITUMINOUS WALK SHALL BE INCIDENTAL.
4. INPLACE BITUMINOUS PAVEMENT THICKNESS 2" - 8", NO ADDITIONAL PAYMENT FOR EXTRA THICKNESS.

NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

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ANDREW J. PLOWMAN, PE
DATE 12/3/2020 LICENSE # 44200

wsb

ANOKA COUNTY

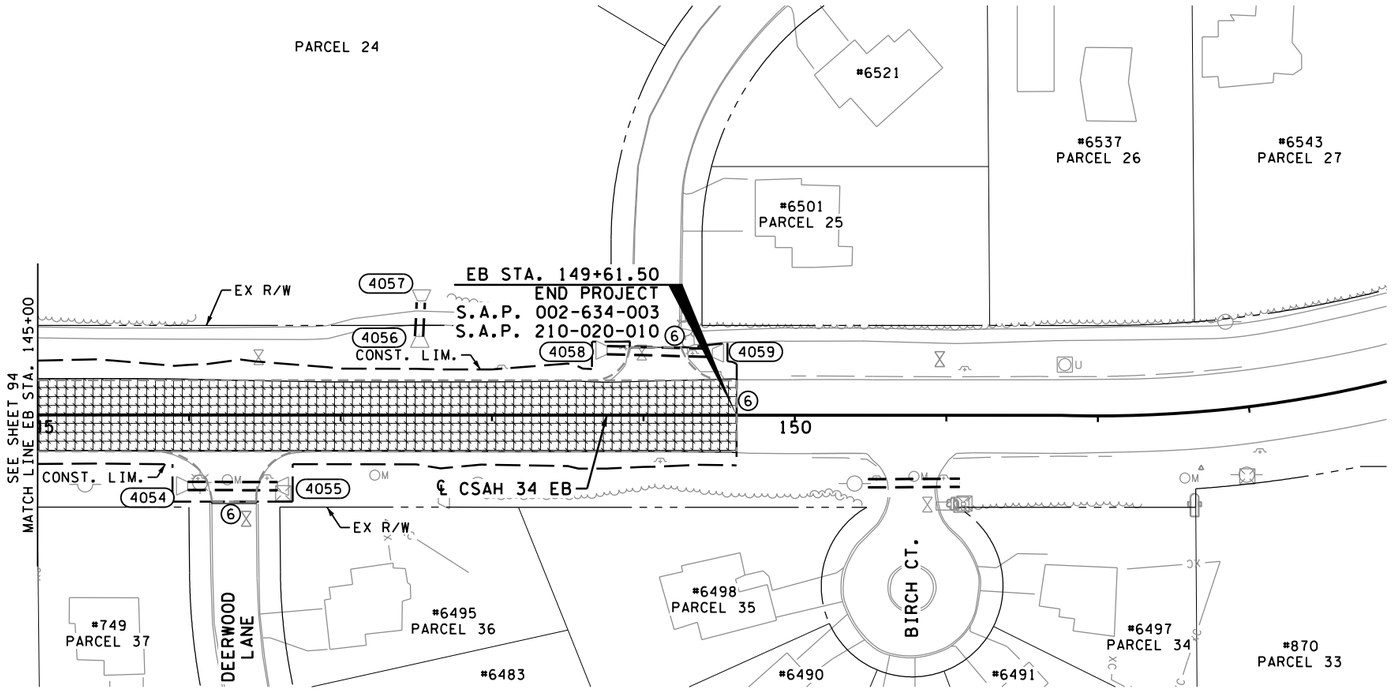
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
STA 122+00 TO STA 145+00
MISCELLANEOUS REMOVAL PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 94 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\44400-000_rem02.dgn

PLOTTED/REVISED: 12/3/2020



N

SCALE IN FEET
0 50 100

LEGEND

- REMOVE BITUMINOUS PAVEMENT
- REMOVE CONCRETE SIDEWALK
- REMOVE BITUMINOUS SIDEWALK
- REMOVE BITUMINOUS DRIVEWAY PAVEMENT
- REMOVE CONCRETE DRIVEWAY PAVEMENT
- FULL DEPTH RECLAMATION
- CLEAR & GRUB TREE (ACRE)
- REMOVE CURB & GUTTER (CONCRETE)
- XC · REMOVE CHAIN LINK FENCE
- CLEAR & GRUB TREE (EACH)
- (1) SAWCUT BITUMINOUS PAVEMENT (FULL DEPTH)
- (2) SAWCUT CONCRETE PAVEMENT (FULL DEPTH)
- (3) SALVAGE MAILBOX SUPPORT
- (4) REMOVE DRAINAGE STRUCTURE
- (5) REMOVE PIPE APRON
- (6) MILL BITUMINOUS SURFACE SPECIAL SEE SHEET 28 FOR DETAILS.
- (P) PROTECT TREE (INCIDENTAL)
- (0000) DRAINAGE STRUCTURE NUMBER

GENERAL NOTES

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2. ALL REMOVAL ITEMS SHALL BE DISPOSED OF OFF THE PROJECT SITE. (INCIDENTAL)
3. SAWCUTTING FOR CONCRETE CURB & GUTTER, CONCRETE WALK, AND BITUMINOUS WALK SHALL BE INCIDENTAL.
4. INPLACE BITUMINOUS PAVEMENT THICKNESS 2" - 8". NO ADDITIONAL PAYMENT FOR EXTRA THICKNESS.

NO.	DATE	BY	CHK	REVISIONS

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ANOKA COUNTY

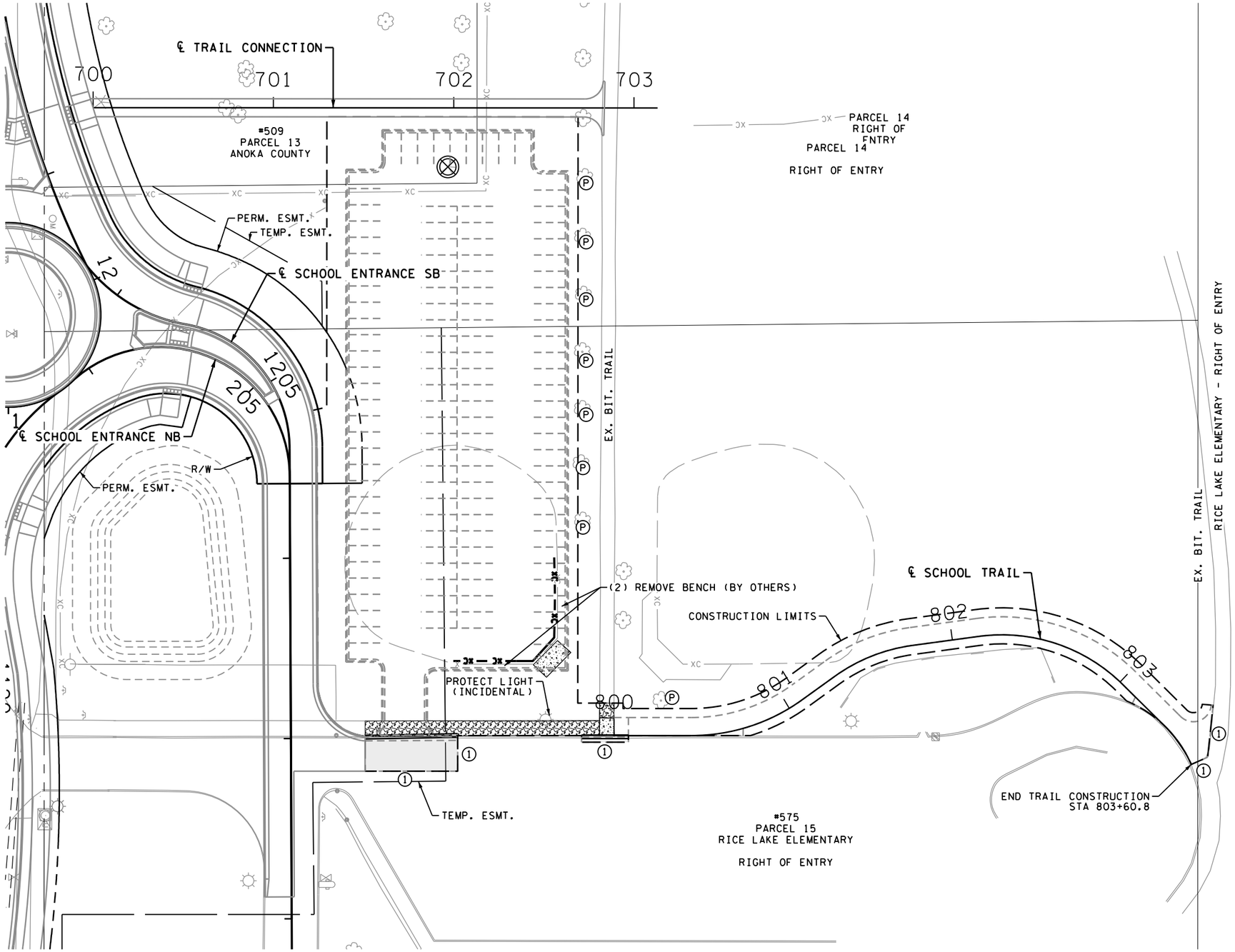
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
STA 145+00 TO STA 149+61.50
MISCELLANEOUS REMOVAL PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 95 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\DI\4400-000\Cad\Plan\4400-000_rem03.dgn

RICE LAKE ELEMENTARY PARKING (ADD ALTERNATE BID)



SCALE IN FEET
0 30 60

LEGEND

- REMOVE BITUMINOUS PAVEMENT
- REMOVE CONCRETE SIDEWALK
- REMOVE BITUMINOUS SIDEWALK
- REMOVE BITUMINOUS DRIVEWAY PAVEMENT
- REMOVE CONCRETE DRIVEWAY PAVEMENT
- FULL DEPTH RECLAMATION
- CLEAR & GRUB TREE (ACRE)
- REMOVE CURB & GUTTER (CONCRETE)
- REMOVE CHAIN LINK FENCE
- ⊗ CLEAR & GRUB TREE (EACH)
- ① SAWCUT BITUMINOUS PAVEMENT (FULL DEPTH)
- ② SAWCUT CONCRETE PAVEMENT (FULL DEPTH)
- ③ SALVAGE MAILBOX SUPPORT
- ④ REMOVE DRAINAGE STRUCTURE
- ⑤ REMOVE PIPE APRON
- ⑥ MILL BITUMINOUS SURFACE SPECIAL SEE SHEET 28 FOR DETAILS.
- Ⓟ PROTECT TREE (INCIDENTAL)
- (0000) DRAINAGE STRUCTURE NUMBER

GENERAL NOTES

1. REMOVAL OF ALL AGGREGATE SURFACING REGARDLESS OF THICKNESS SHALL BE INCLUDED IN COMMON EXCAVATION.
2. ALL REMOVAL ITEMS SHALL BE DISPOSED OF OFF THE PROJECT SITE. (INCIDENTAL)
3. SAWCUTTING FOR CONCRETE CURB & GUTTER, CONCRETE WALK, AND BITUMINOUS WALK SHALL BE INCIDENTAL.
4. INPLACE BITUMINOUS PAVEMENT THICKNESS 2" - 8", NO ADDITIONAL PAYMENT FOR EXTRA THICKNESS.
5. REMOVALS SHOWN ON THIS SHEET ARE IN ADDITION TO THOSE SHOWN ON SHEETS 93 TO 95 OF THIS PLAN SET.

NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

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ANDREW J. PLOWMAN, PE
DATE 12/3/2020 LICENSE # 44200

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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
RICE LAKE ELEMENTARY PARKING (ADD ALTERNATE BID)
MISCELLANEOUS REMOVAL PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 96 OF 195 SHEETS

REMOVE SIGN TYPE D — J

SIGN NO	QTY	POSTS		PANEL	PANEL LEGEND
		NO & TYPE (2)	KNEE BRACES	SIZE (1)	
	EACH		QTY	INCH	
D-101	1	2-U		60 x 18	ENTRANCE TO CHOMONIX CLOSED PLEASE USE LAKE DRIVE ENTRANCE
TOTAL	**1**				

SPECIFIC NOTE:
(1) SIZES ARE APPROXIMATE
(2) POST TYPE ABBREVIATIONS (SQ = SQUARE TUBE, R = ROUND POST, U = U CHANNEL)

SALVAGE & INSTALL SIGN TYPE SPECIAL — K

SIGN NO	QTY	MTG HT (1)	PANEL LEGEND
	EACH	FEET	
X-201	1	7	BIRCH ST HOKAH DR
X-202	1	7	BIRCH ST TOTEM TR
X-203	1	7	BIRCH ST VAUGHAN CT
X-204	1	7	BIRCH ST KINGFISHER CT
TOTAL	4		

NO.	DATE	BY	CHK	REVISIONS

Design By: MF
Plan By: MF
Checked By: ES
Approved By: SD

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SEAN DELMORE, PE

DATE 12/3/2020 LICENSE # 40945

wsb

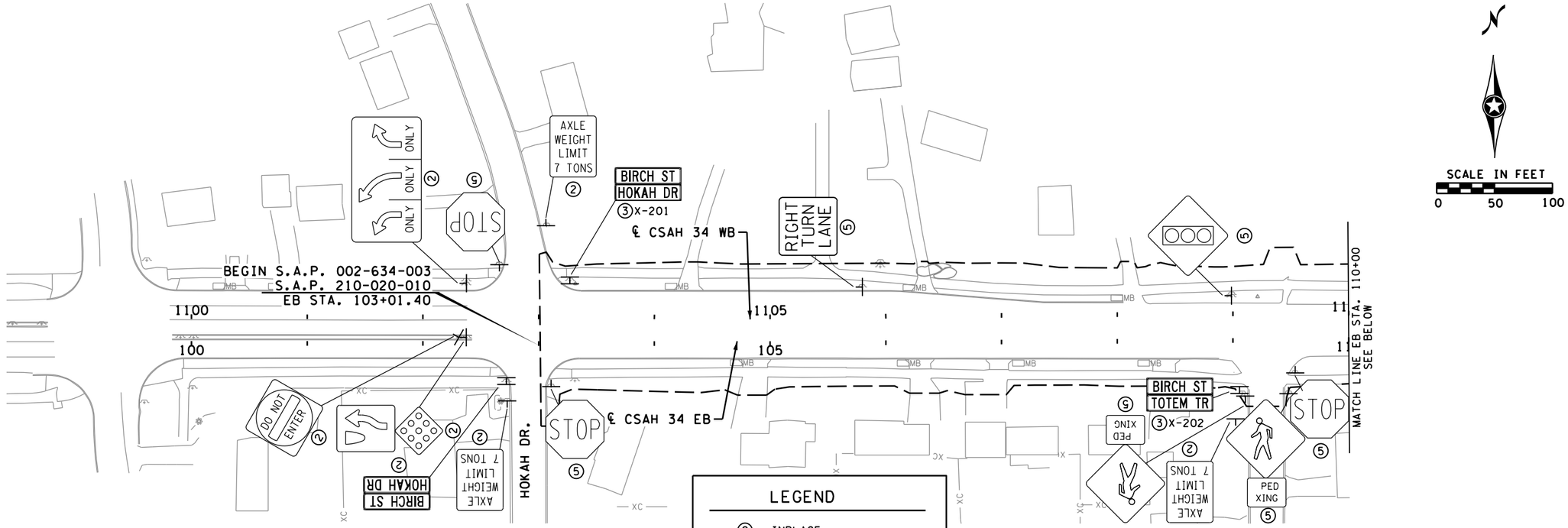
ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
SIGN REMOVALS TABULATION
SIGN REMOVALS
S.A.P. 002-634-003 & S.A.P. 210-020-010

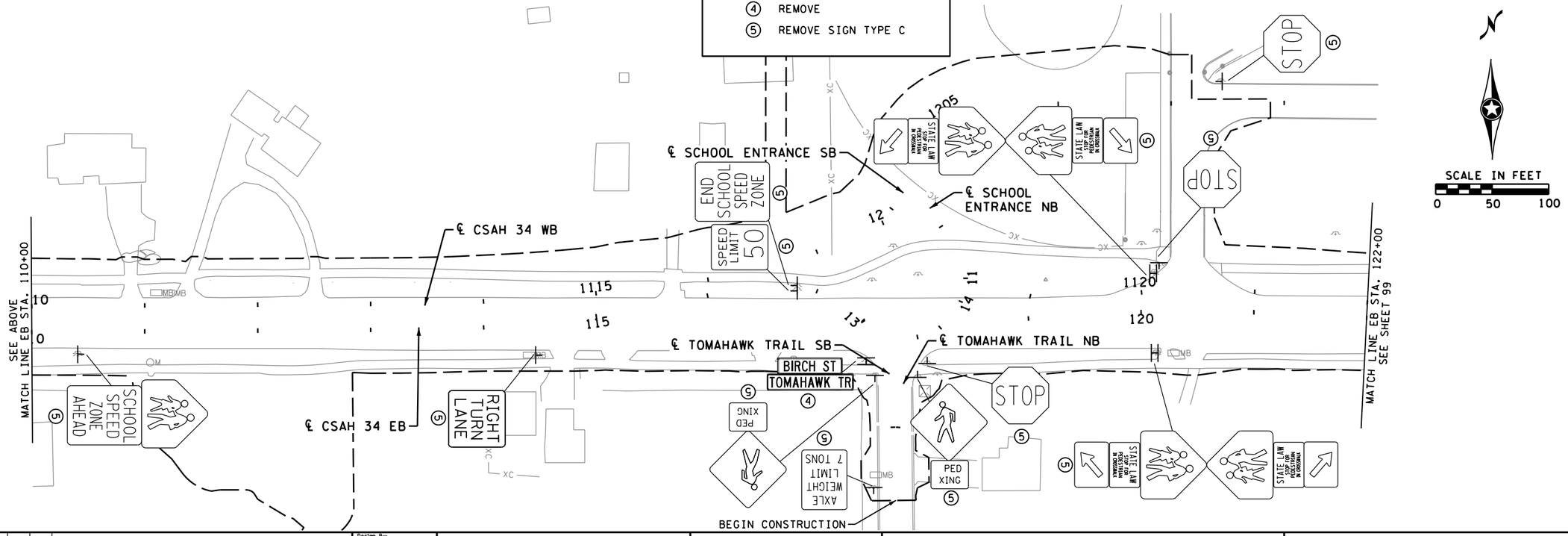
SHEET **97** OF **195** SHEETS

PLOTTED/REVISED: 12/3/2020



LEGEND

- ② INPLACE
- ③ SALVAGE
- ④ REMOVE
- ⑤ REMOVE SIGN TYPE C



NO.	DATE	BY	CHK	REVISIONS

Design By: MF
Plan By: MF
Checked By: ES
Approved By: SD

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SEAN DELMORE, PE

DATE 12/3/2020 LICENSE # 40945

wsb

ANOKA COUNTY

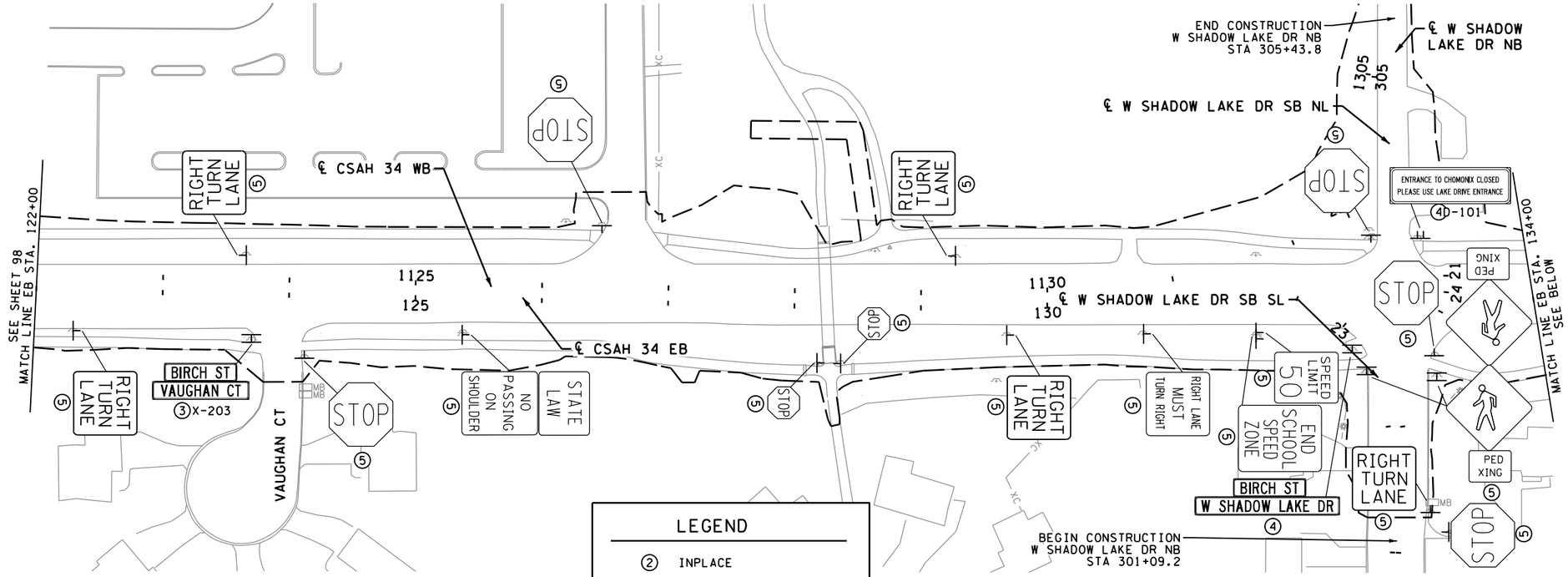
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
STA 103+01.40 TO STA 122+00
SIGN REMOVALS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **98** OF **195** SHEETS

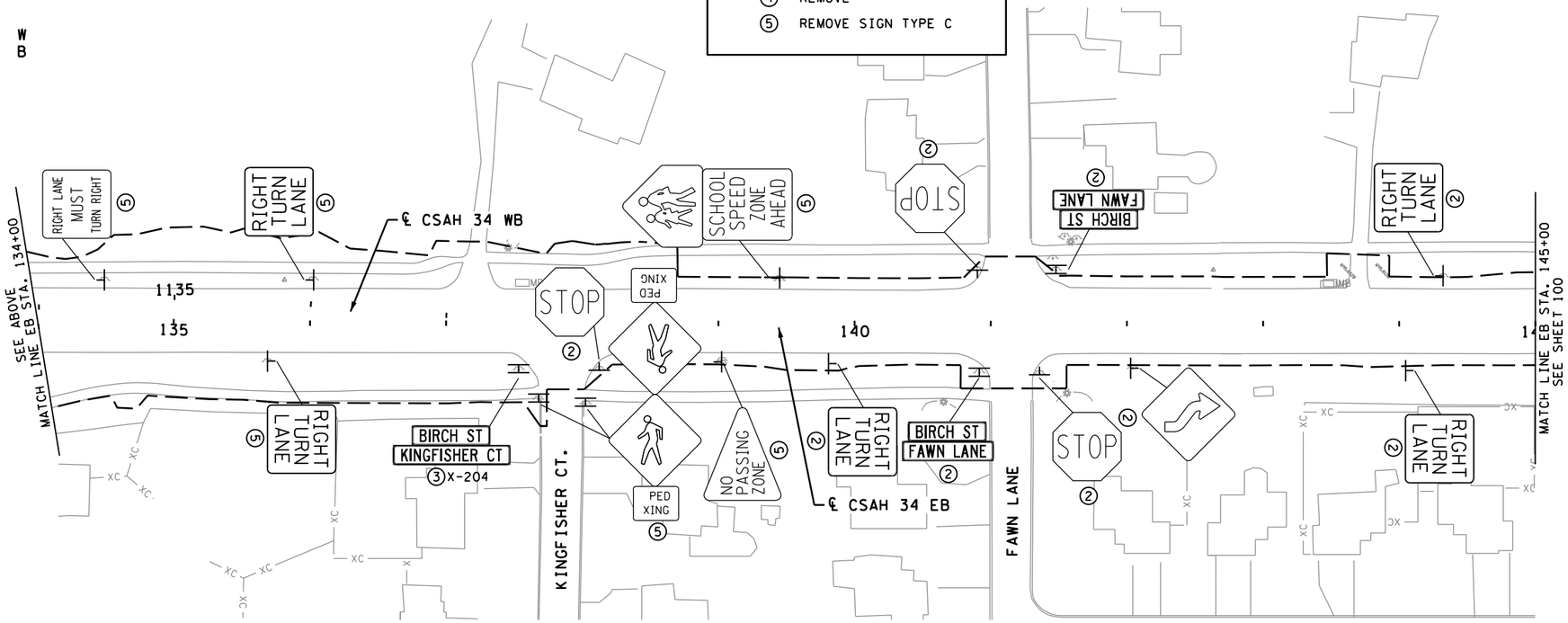
PATH & FILENAME: Projects\Minnesota\0\4400-000\Cad\Plan\4400-000_sgn rem01.dgn

PLOTTED/REVISED: 12/3/2020



LEGEND

- ② INPLACE
- ③ SALVAGE
- ④ REMOVE
- ⑤ REMOVE SIGN TYPE C



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Design By: MF
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SEAN DELMORE, PE

DATE 12/3/2020 LICENSE # 40945

wsb

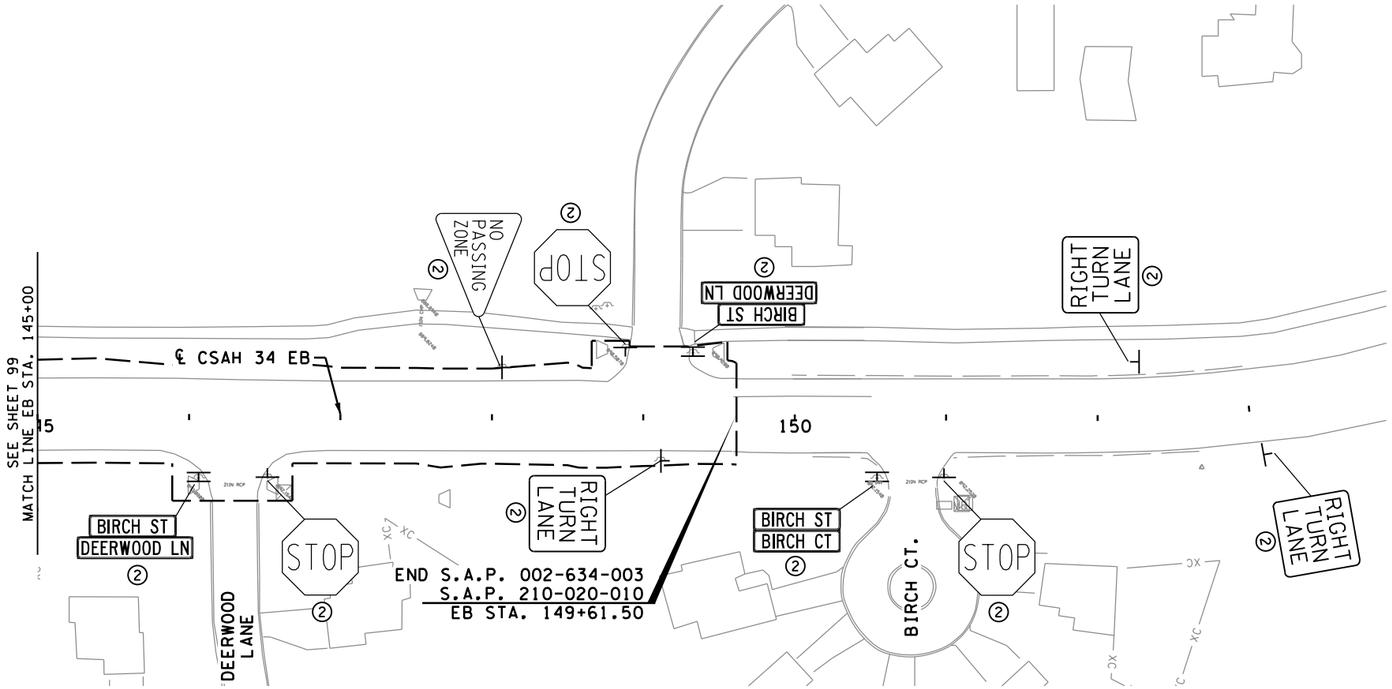
ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
STA 122+00 TO STA 145+00
SIGN REMOVALS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 99 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\01400-000\Cad\Plan\14400-000_sgn rem02.dgn



LEGEND

- ② INPLACE
- ③ SALVAGE
- ④ REMOVE
- ⑤ REMOVE SIGN TYPE C

N

SCALE IN FEET
0 50 100

NO.	DATE	BY	CHK	REVISIONS

Design By: MF
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SEAN DELMORE, PE

DATE 12/3/2020 LICENSE # 40945

wsb

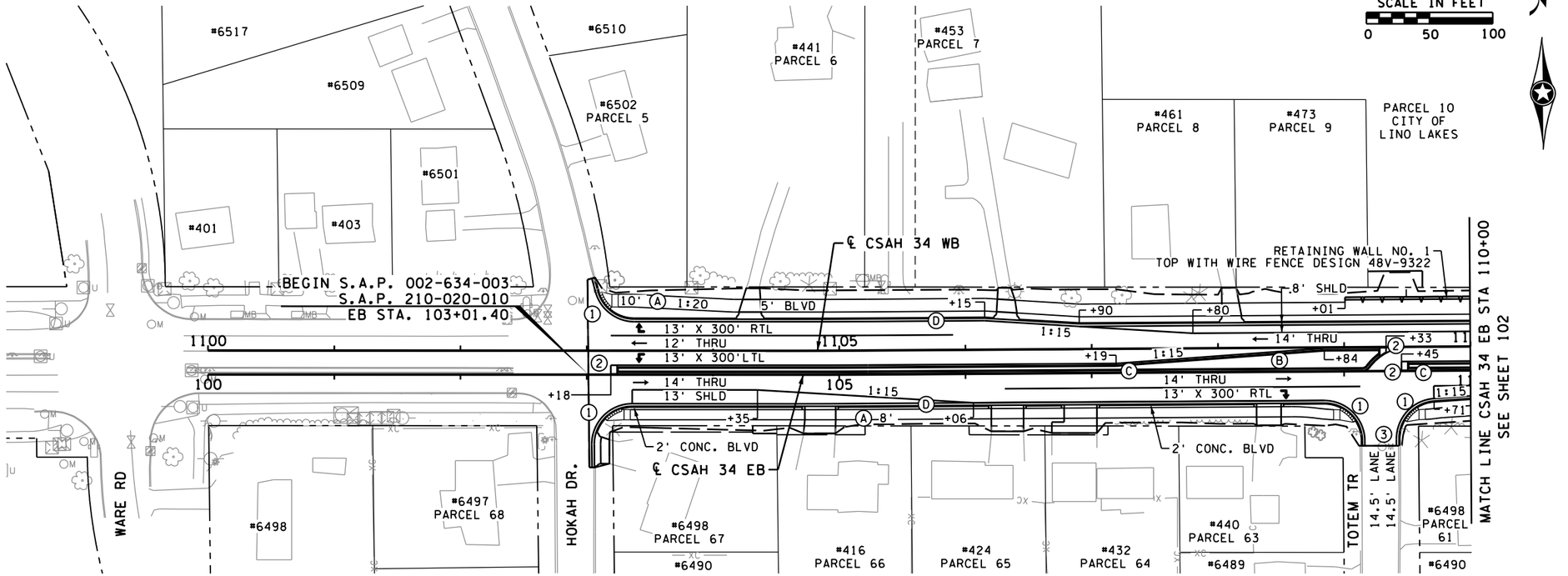
ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
STA 145+00 TO STA 149+61.50
SIGN REMOVALS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **100** OF **195** SHEETS

PLOTTED/REVISED: 12/3/2020



LEGEND

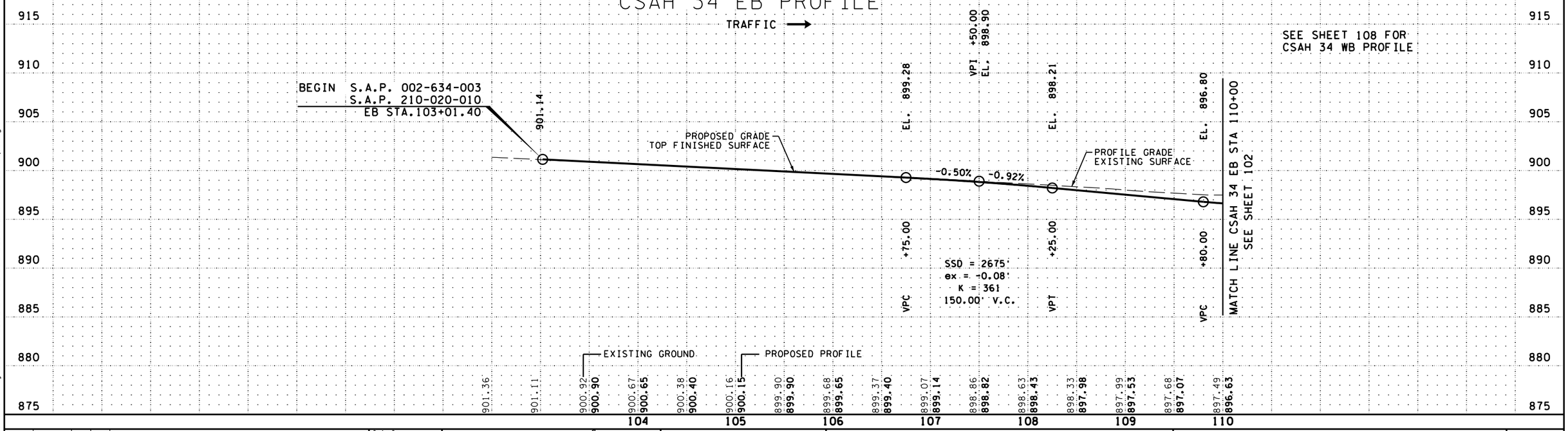
1. CONSTRUCT CONCRETE PEDESTRIAN CURB RAMP WITH TRUNCATED DOMES. SEE PEDESTRIAN RAMP DETAILS.
2. CONSTRUCT CONCRETE MEDIAN NOSE PER STANDARD PLATE 7113
3. SEE INTERSECTION DETAILS FOR ADDITIONAL INFORMATION AT ROADWAY INTERSECTIONS.
4. SEE SHEET 28 FOR MILLED PAVEMENT TRANSITION.

- (A) 2.5" BITUMINOUS TRAIL
- (B) 4" CONCRETE WALK (MED.)
- (C) B418(MOD) CONC. CURB & GUTTER
- (D) B424 CONC. CURB & GUTTER
- (E) R418 CONC. CURB & GUTTER
- TRAFFIC FLOW
- CONSTRUCTION LIMITS
- EXISTING R/W
- PROPOSED R/W
- TEMPORARY EASEMENT
- PERMANENT EASEMENT

GENERAL NOTES

1. ALL DIMENSIONS ARE TO FACE OF CURB OR EDGE OF BITUMINOUS UNLESS OTHERWISE NOTED.
2. SEE DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION AT DRIVEWAYS.
3. SEE PAVING PLAN FOR REQUIRED PAVEMENT SECTIONS.

CSAH 34 EB PROFILE



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ANDREW J. PLOWMAN, PE
DATE 12/3/2020 LICENSE # 44200

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ANOKA COUNTY

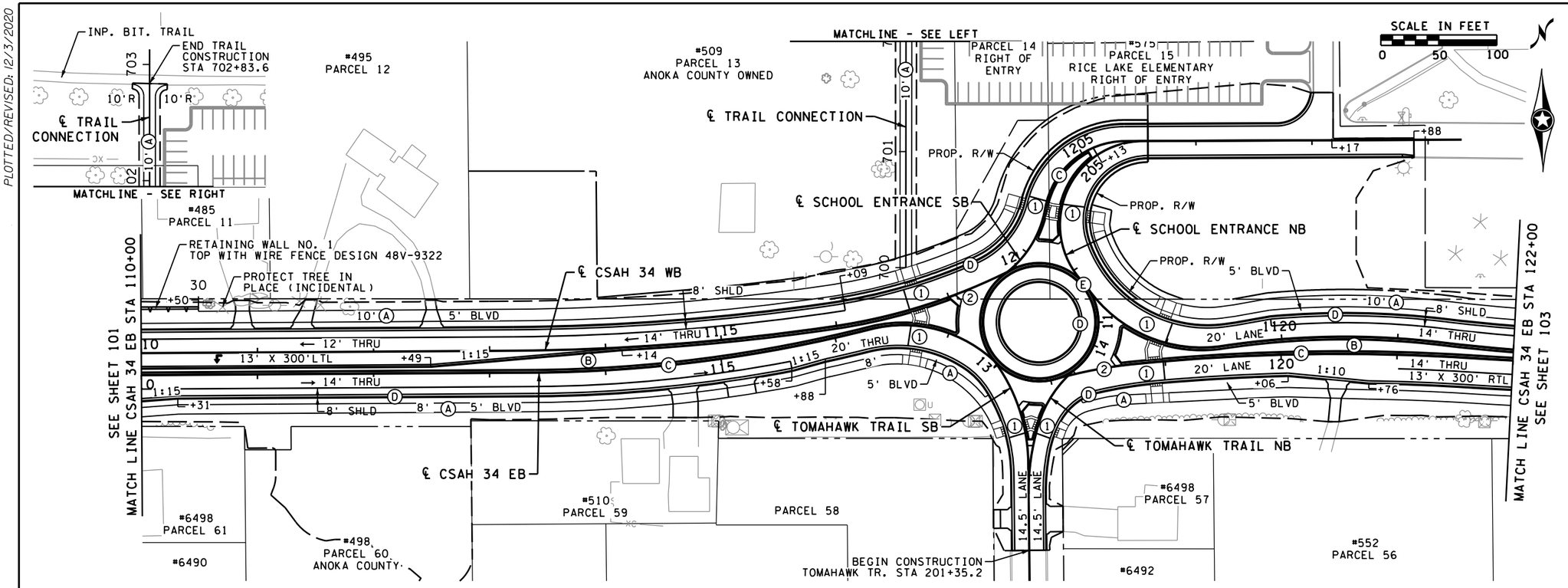
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
STA 103+01.40 TO STA 110+00
CONSTRUCTION PLAN & PROFILE
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 101 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\0\4400-000\Cad\Plan\4400-000_cp01.dgn

PLOTTED/REVISED: 12/3/2020



LEGEND

1. CONSTRUCT CONCRETE PEDESTRIAN CURB RAMP WITH TRUNCATED DOMES. SEE PEDESTRIAN RAMP DETAILS.
2. CONSTRUCT CONCRETE MEDIAN NOSE PER STANDARD PLATE 7113
3. SEE INTERSECTION DETAILS FOR ADDITIONAL INFORMATION AT ROADWAY INTERSECTIONS.
4. SEE SHEET 28 FOR MILLED PAVEMENT TRANSITION.

- (A) 2.5" BITUMINOUS TRAIL
- (B) 4" CONCRETE WALK (MED.)
- (C) B418(MOD) CONC. CURB & GUTTER
- (D) B424 CONC. CURB & GUTTER
- (E) R418 CONC. CURB & GUTTER
- TRAFFIC FLOW
- CONSTRUCTION LIMITS
- EXISTING R/W
- PROPOSED R/W
- TEMPORARY EASEMENT
- PERMANENT EASEMENT

GENERAL NOTES

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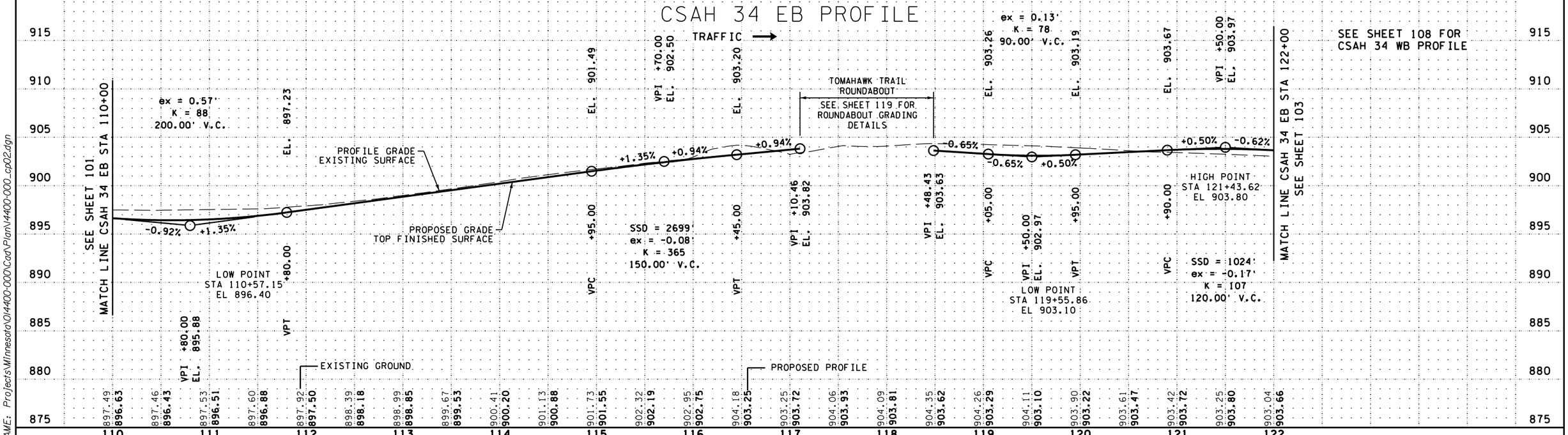
3. SEE PAVING PLAN FOR REQUIRED PAVEMENT SECTIONS.



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ANDREW J. PLOWMAN, PE
DATE 12/3/2020 LICENSE # 44200

wsb

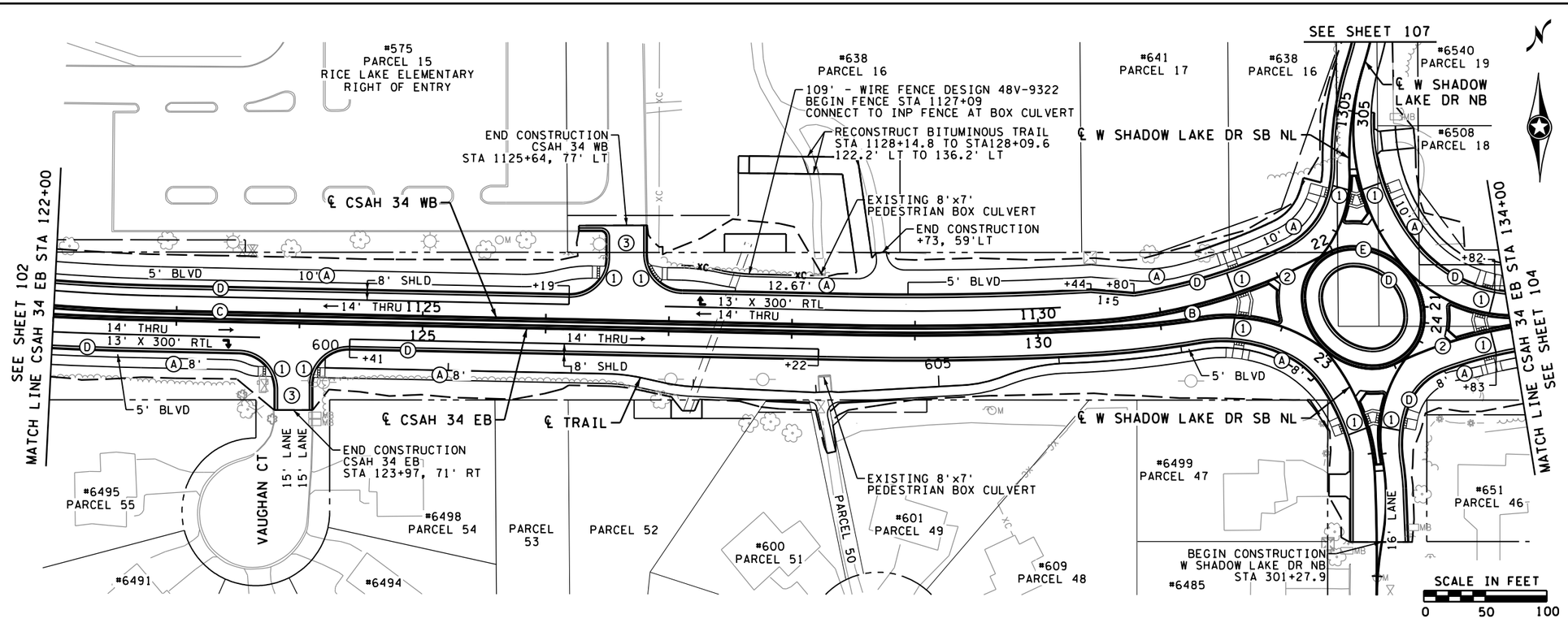
ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
STA 110+00 TO STA 122+00
CONSTRUCTION PLAN & PROFILE
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 102 OF 195 SHEETS

PLOTTED/REVISED: 12/3/2020



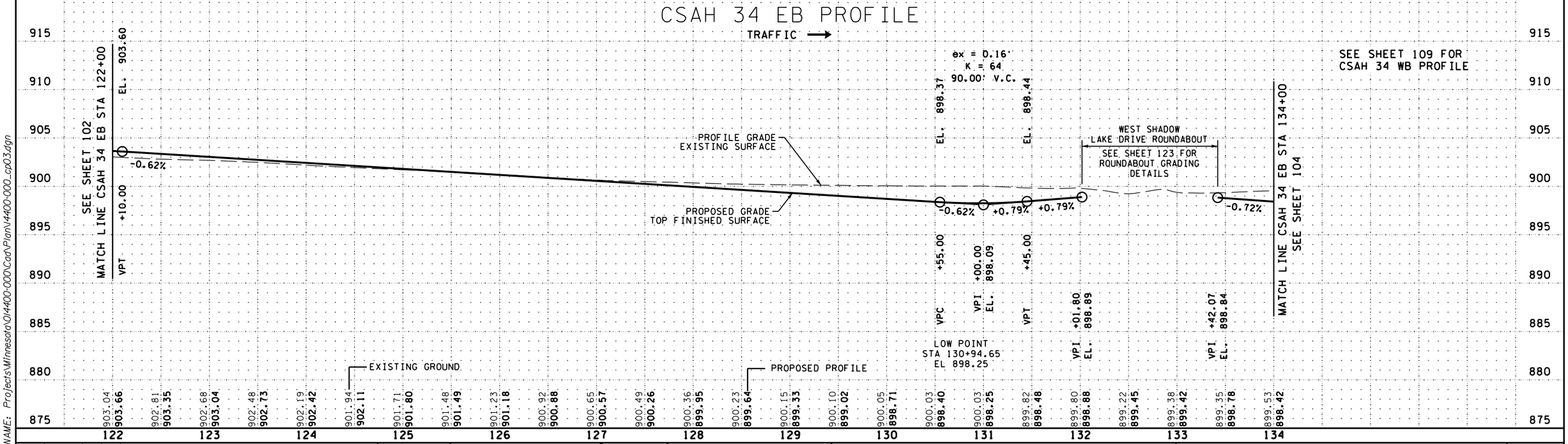
LEGEND

1. CONSTRUCT CONCRETE PEDESTRIAN CURB RAMP WITH TRUNCATED DOMES. SEE PEDESTRIAN RAMP DETAILS.
2. CONSTRUCT CONCRETE MEDIAN NOSE PER STANDARD PLATE 7113
3. SEE INTERSECTION DETAILS FOR ADDITIONAL INFORMATION AT ROADWAY INTERSECTIONS.
4. SEE SHEET 28 FOR MILLED PAVEMENT TRANSITION.

- (A) 2.5" BITUMINOUS TRAIL
- (B) 4" CONCRETE WALK (MED.)
- (C) B418(MOD) CONC. CURB & GUTTER
- (D) B424 CONC. CURB & GUTTER
- (E) R418 CONC. CURB & GUTTER
- TRAFFIC FLOW
- CONSTRUCTION LIMITS
- EXISTING R/W
- PROPOSED R/W
- TEMPORARY EASEMENT
- PERMANENT EASEMENT

GENERAL NOTES

1. ALL DIMENSIONS ARE TO FACE OF CURB OR EDGE OF BITUMINOUS UNLESS OTHERWISE NOTED.
2. SEE DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION AT DRIVEWAYS.
3. SEE PAVING PLAN FOR REQUIRED PAVEMENT SECTIONS.



NO.	DATE	BY	CHK	REVISIONS

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ANDREW J. PLOWMAN, PE
DATE 12/3/2020 LICENSE # 44200

wsb

ANOKA COUNTY

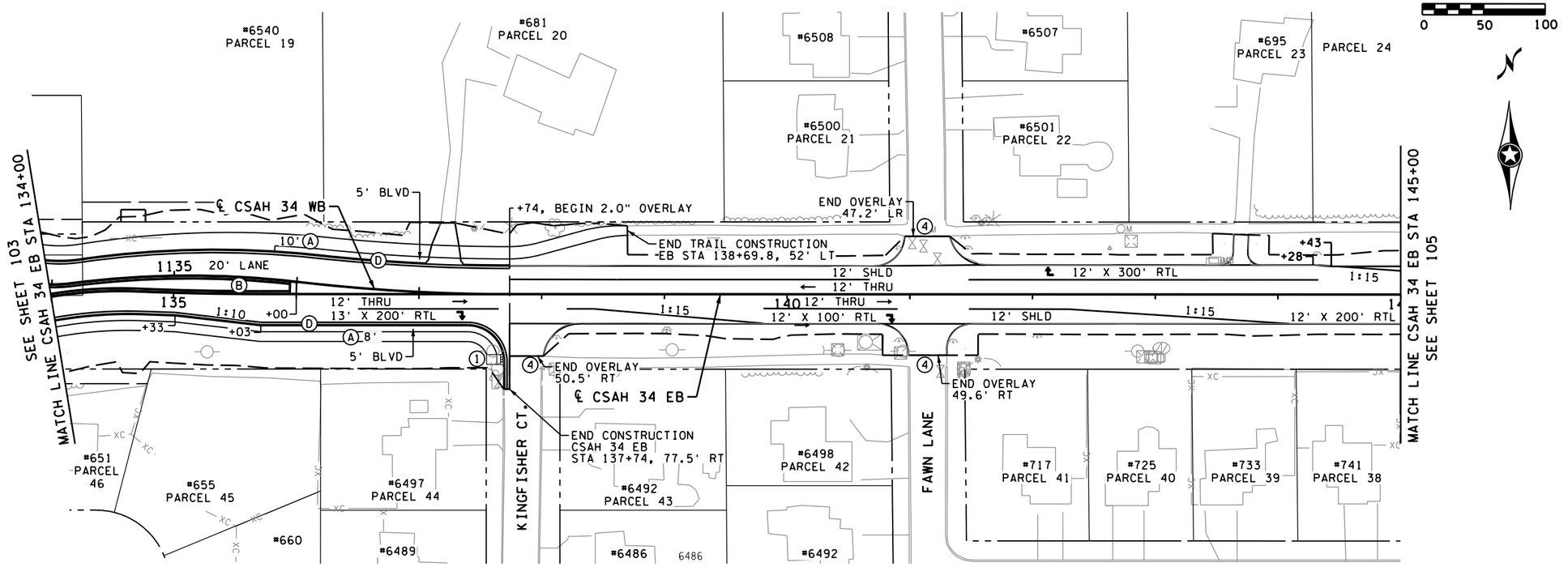
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
STA 122+00 TO STA 134+00
CONSTRUCTION PLAN & PROFILE
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 103 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\0\4400-000\Cad\Plan\4400-000_cp03.dgn

PLOTTED/REVISED: 12/3/2020



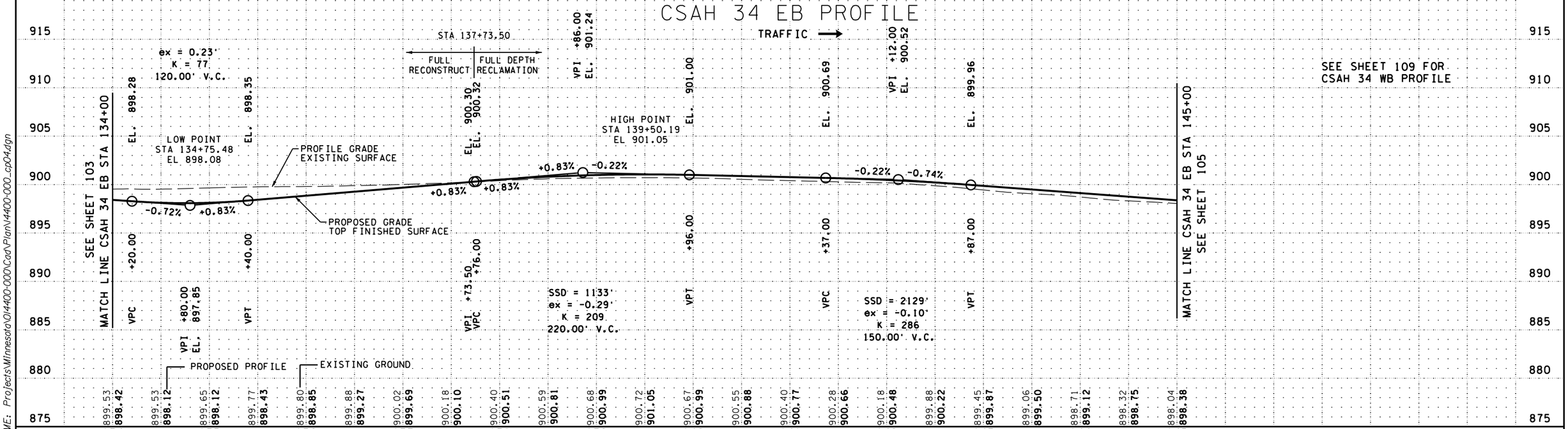
LEGEND

1. CONSTRUCT CONCRETE PEDESTRIAN CURB RAMP WITH TRUNCATED DOMES. SEE PEDESTRIAN RAMP DETAILS.
2. CONSTRUCT CONCRETE MEDIAN NOSE PER STANDARD PLATE 7113
3. SEE INTERSECTION DETAILS FOR ADDITIONAL INFORMATION AT ROADWAY INTERSECTIONS.
4. SEE SHEET 28 FOR MILLED PAVEMENT TRANSITION.

- (A) 2.5" BITUMINOUS TRAIL
- (B) 4" CONCRETE WALK (MED.)
- (C) B418(MOD) CONC. CURB & GUTTER
- (D) B424 CONC. CURB & GUTTER
- (E) R418 CONC. CURB & GUTTER
- TRAFFIC FLOW
- CONSTRUCTION LIMITS
- EXISTING R/W
- PROPOSED R/W
- TEMPORARY EASEMENT
- PERMANENT EASEMENT

GENERAL NOTES

1. ALL DIMENSIONS ARE TO FACE OF CURB OR EDGE OF BITUMINOUS UNLESS OTHERWISE NOTED.
2. SEE DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION AT DRIVEWAYS.
3. SEE PAVING PLAN FOR REQUIRED PAVEMENT SECTIONS.



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NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

ANDREW J. PLOWMAN, PE
DATE 12/3/2020 LICENSE # 44200

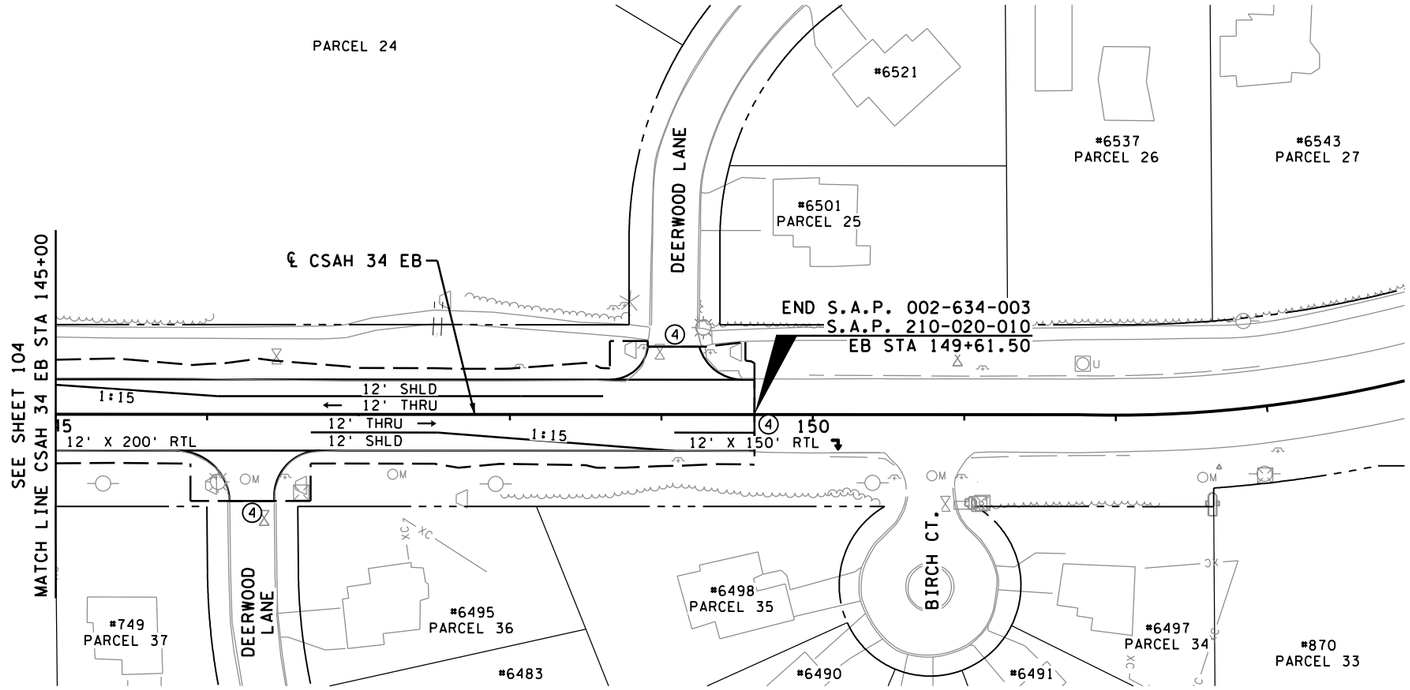
wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
STA 134+00 TO STA 145+00
CONSTRUCTION PLAN & PROFILE
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 104 OF 195 SHEETS



LEGEND

1. CONSTRUCT CONCRETE PEDESTRIAN CURB RAMP WITH TRUNCATED DOMES. SEE PEDESTRIAN RAMP DETAILS.
2. CONSTRUCT CONCRETE MEDIAN NOSE PER STANDARD PLATE 7113
3. SEE INTERSECTION DETAILS FOR ADDITIONAL INFORMATION AT ROADWAY INTERSECTIONS.
4. SEE SHEET 28 FOR MILLED PAVEMENT TRANSITION.

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- CONSTRUCTION LIMITS
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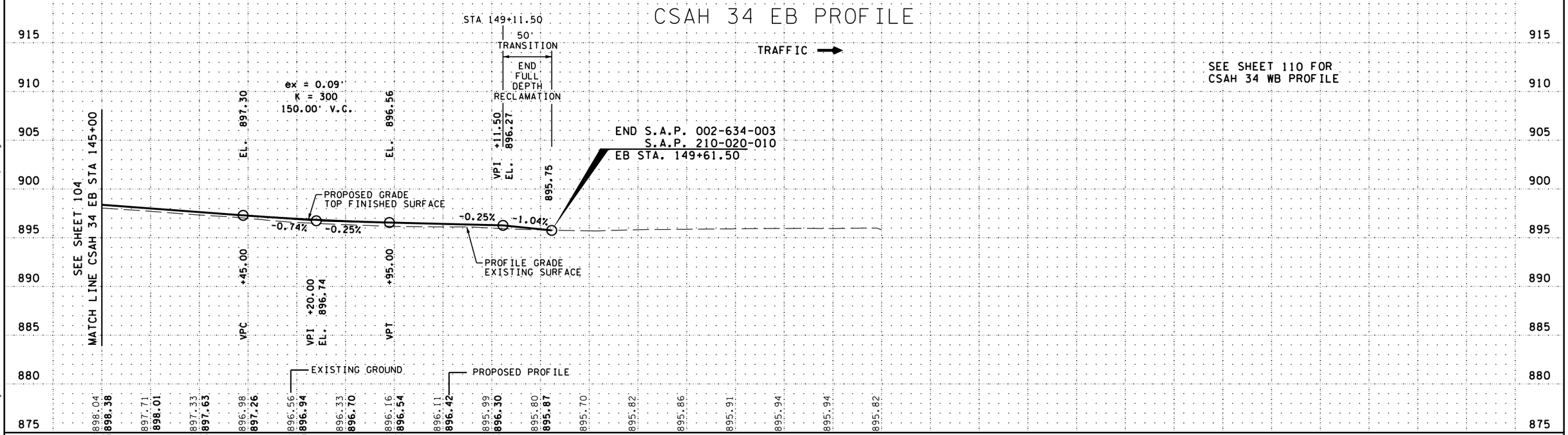

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ANDREW J. PLOWMAN, PE

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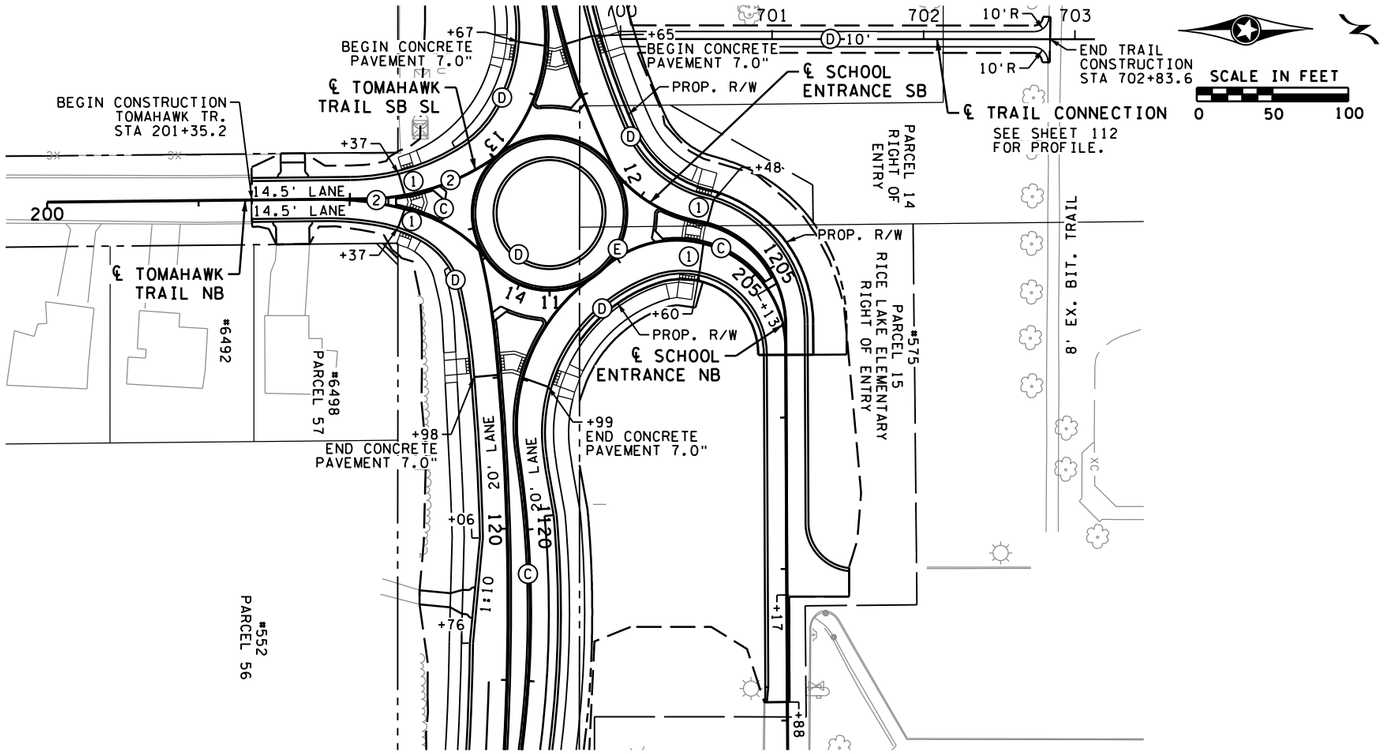
ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
STA 145+00 TO STA 149+61.50
CONSTRUCTION PLAN & PROFILE
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 105 OF 195 SHEETS



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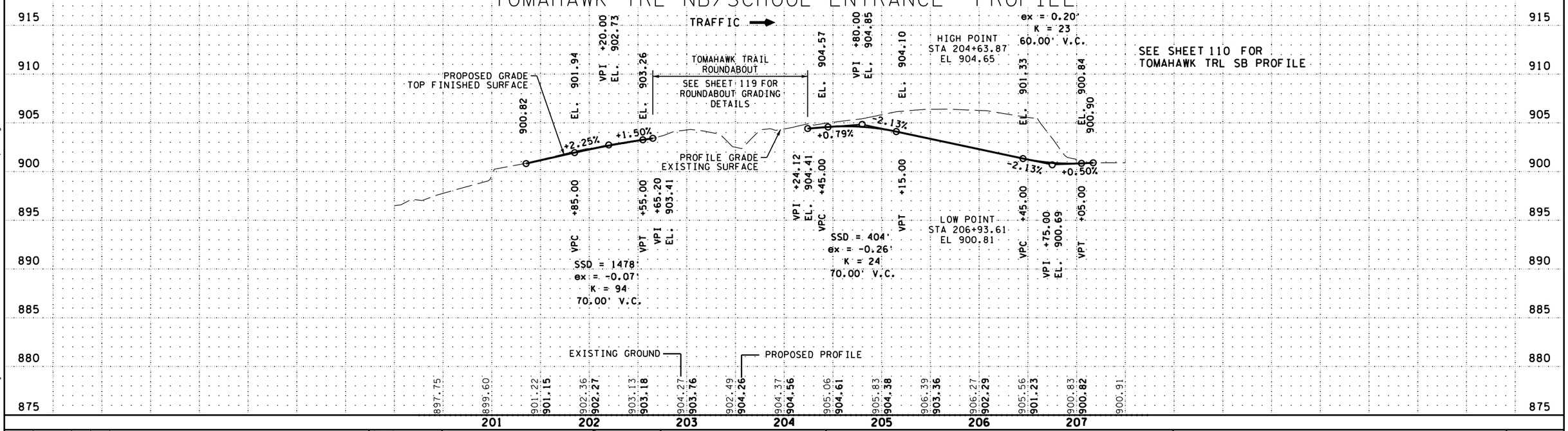
3. SEE PAVING PLAN FOR REQUIRED PAVEMENT SECTIONS.

TOMAHAWK TRL NB/SCHOOL ENTRANCE PROFILE



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ANDREW J. PLOWMAN, PE
DATE 12/3/2020 LICENSE # 44200

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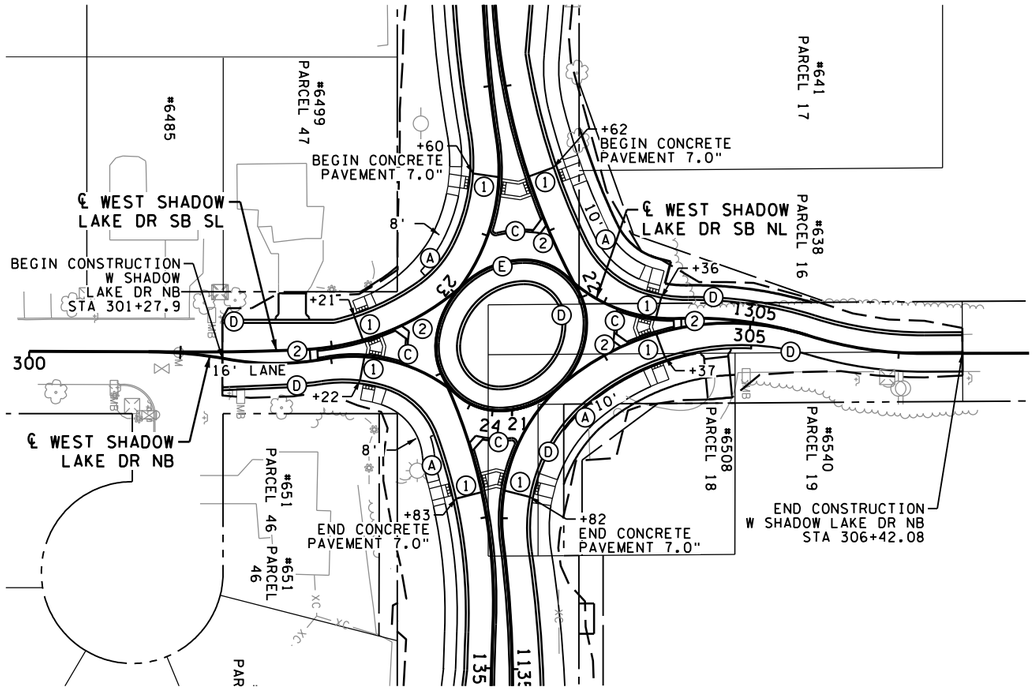
ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
TOMAHAWK TRAIL ROUNDABOUT
CONSTRUCTION PLAN & PROFILE
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **106** OF **195** SHEETS

PLOTTED/REVISED: 12/3/2020



LEGEND

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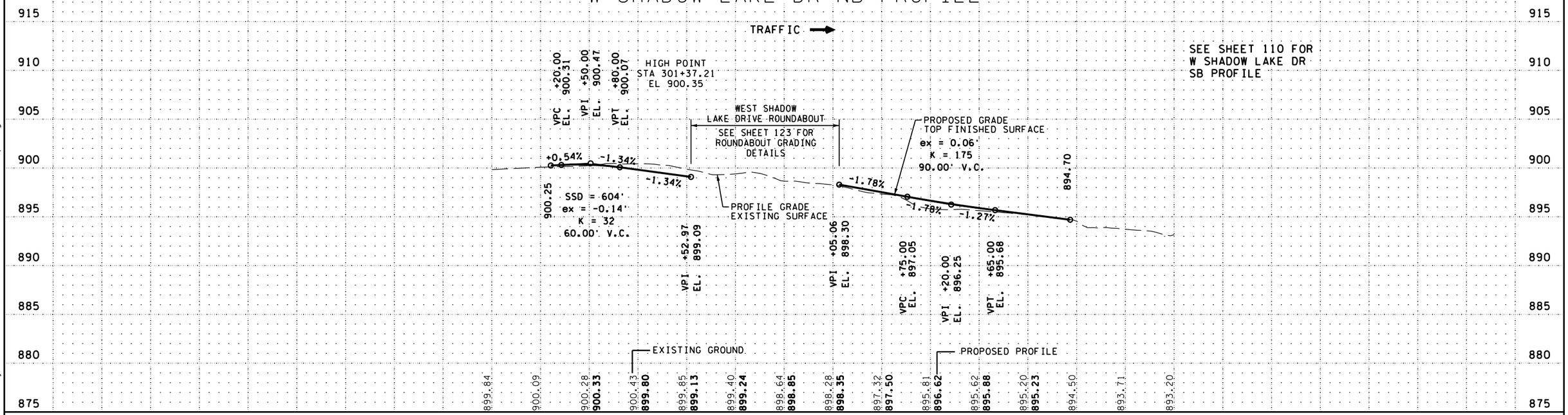
W SHADOW LAKE DR NB PROFILE



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ANDREW J. PLOWMAN, PE
DATE 12/3/2020 LICENSE # 44200

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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
WEST SHADOW LAKE DRIVE ROUNDABOUT
CONSTRUCTION PLAN & PROFILE
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **107** OF **195** SHEETS

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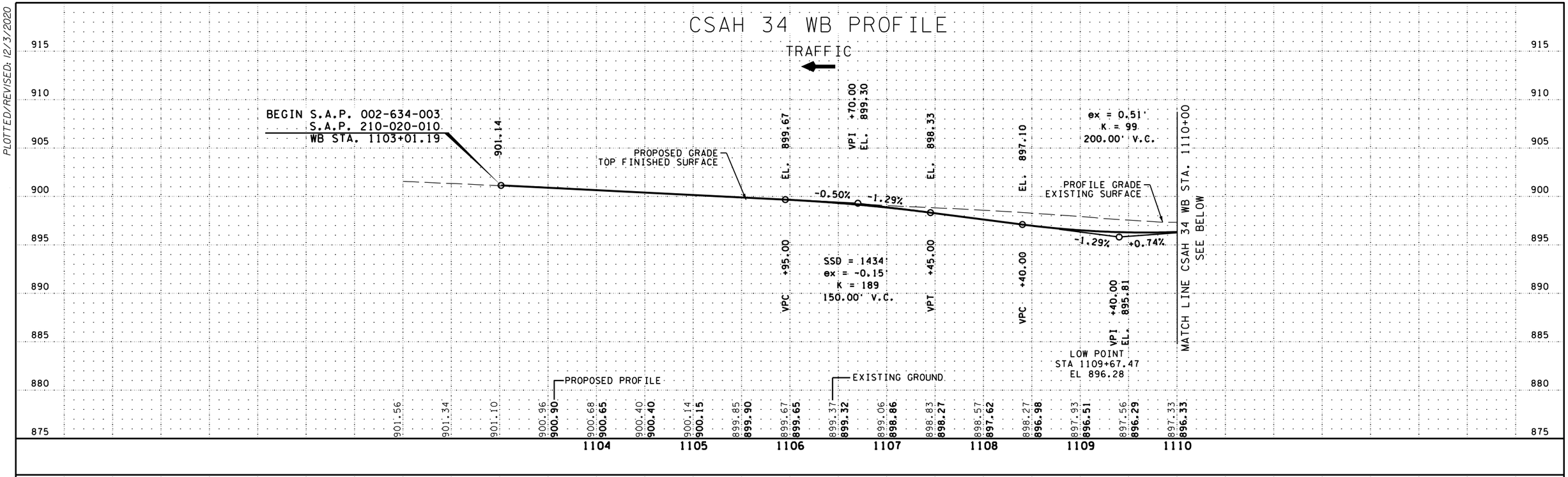
PLOTTED/REVISED: 12/3/2020

CSAH 34 WB PROFILE



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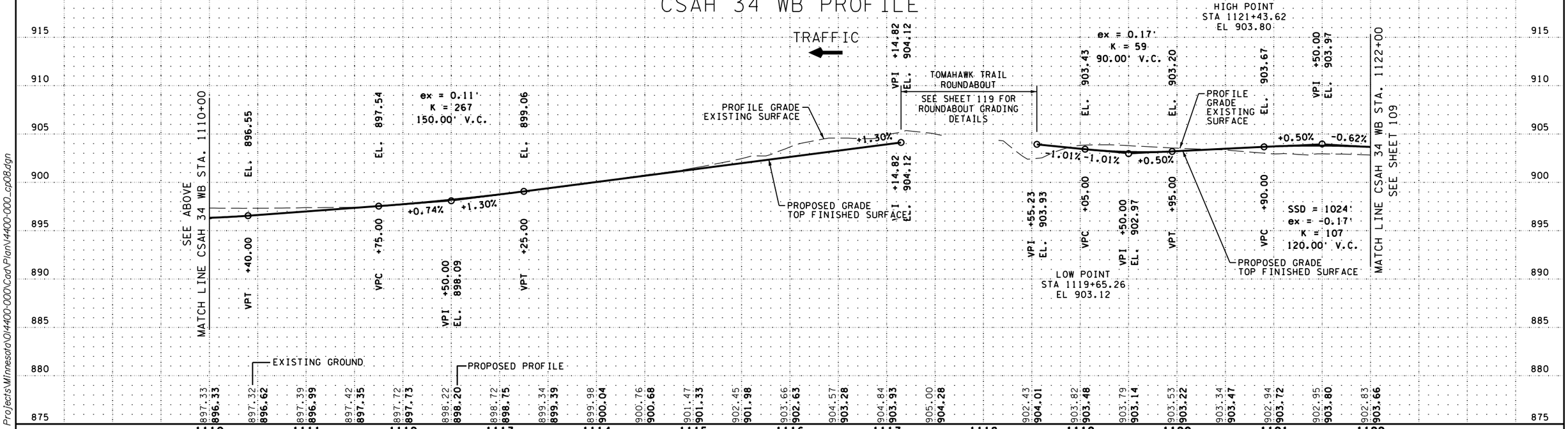

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ANDREW J. PLOWMAN, PE
DATE 12/3/2020 LICENSE # 44200

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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

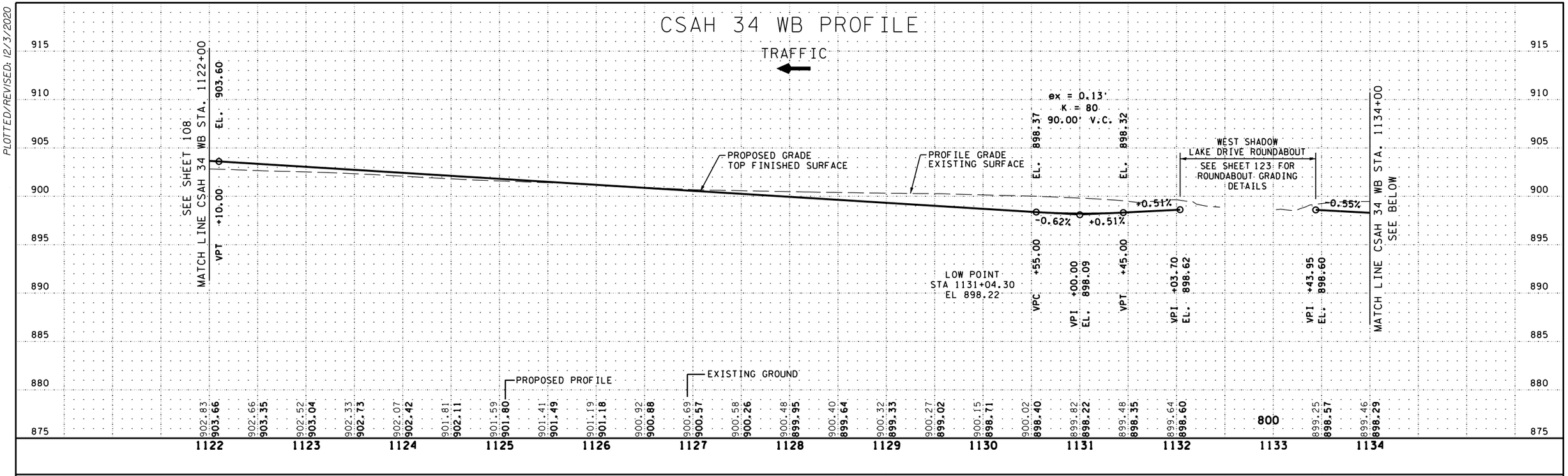
CONSTRUCTION PLAN & PROFILE
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 108 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\0\4400-000\Cad\Plan\4400-000_cp08.dgn

PLOTTED/REVISED: 12/3/2020

CSAH 34 WB PROFILE



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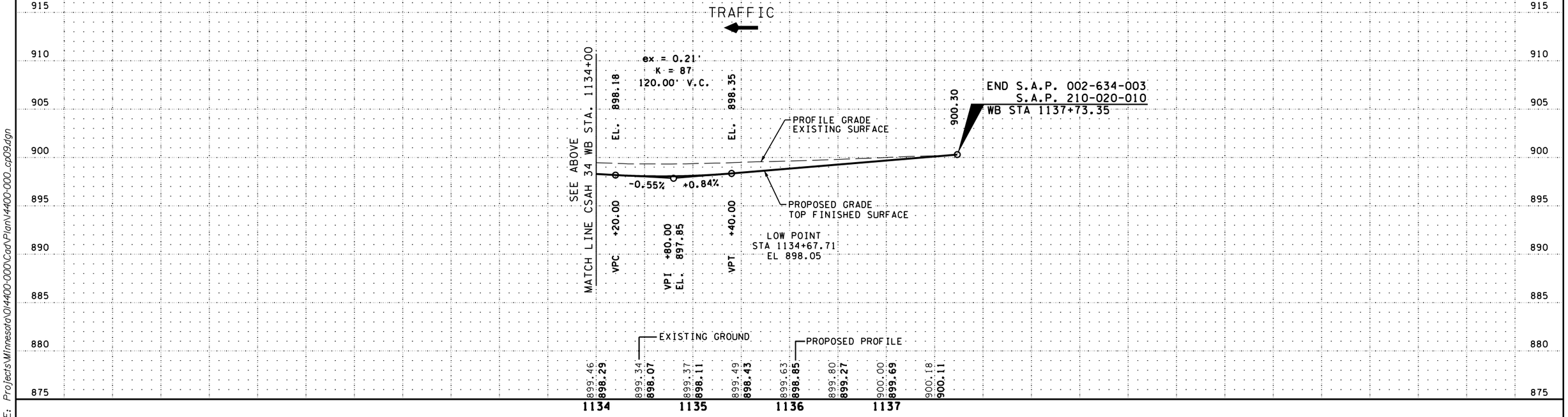

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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

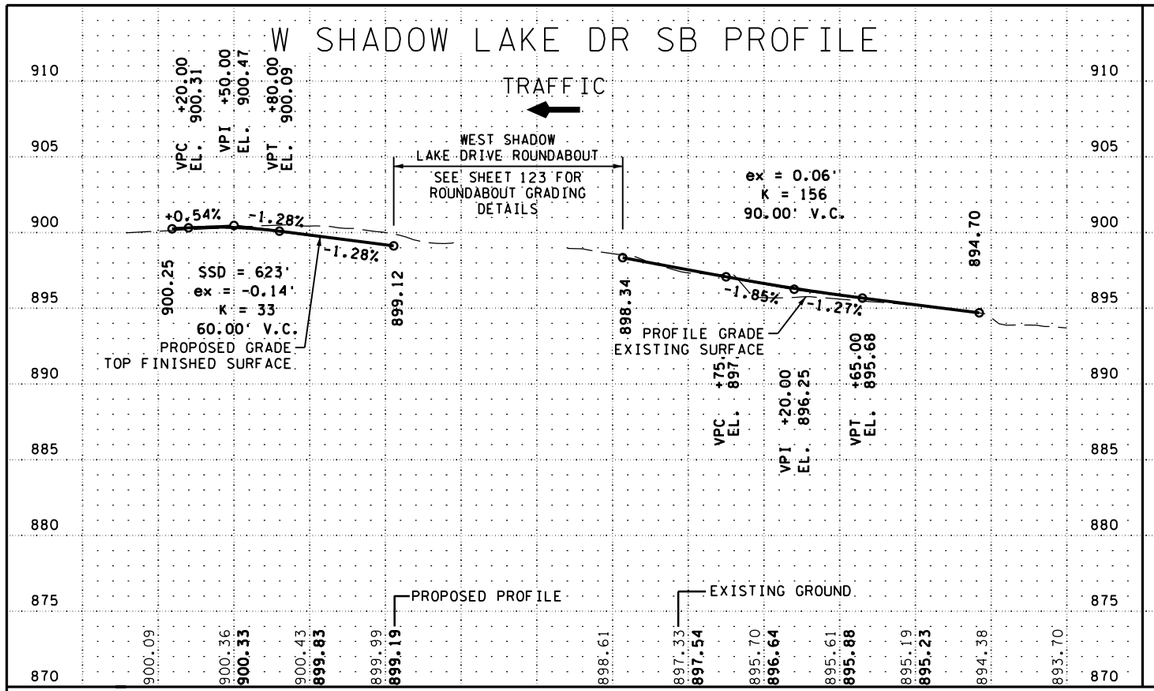
ANOKA COUNTY, MINNESOTA

CONSTRUCTION PLAN & PROFILE
S.A.P. 002-634-003 & S.A.P. 210-020-010

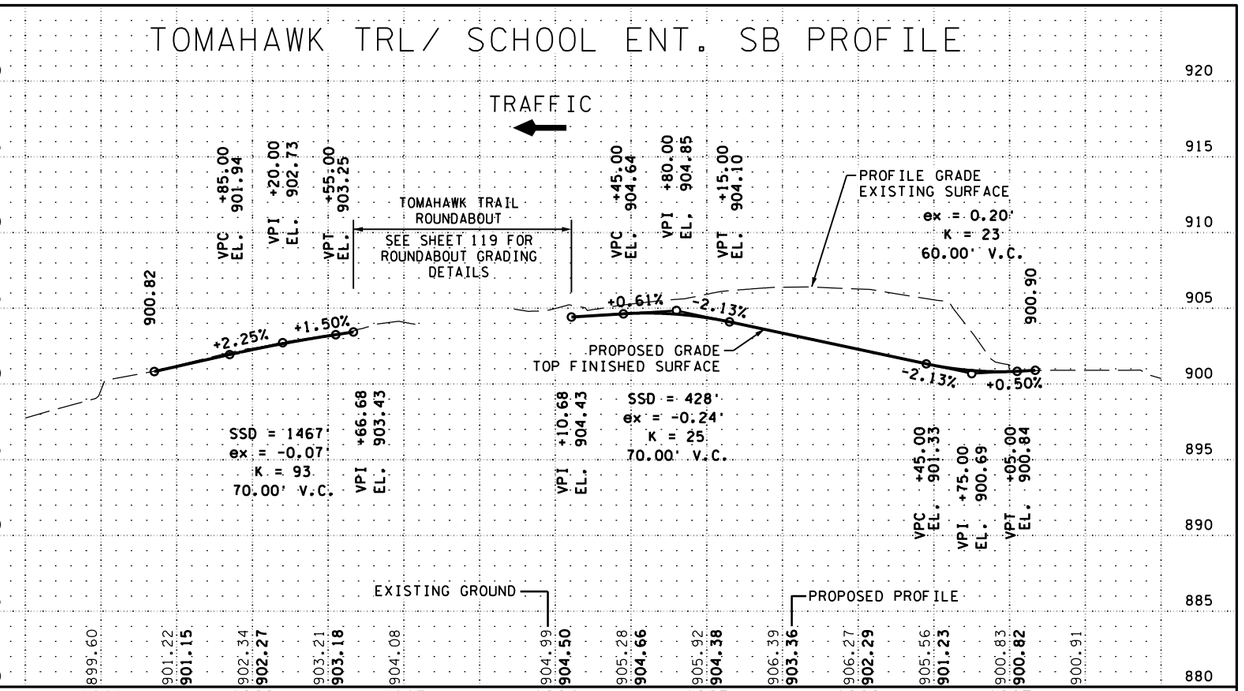
SHEET 109 OF 195 SHEETS

PLOTTED/REVISED: 12/3/2020

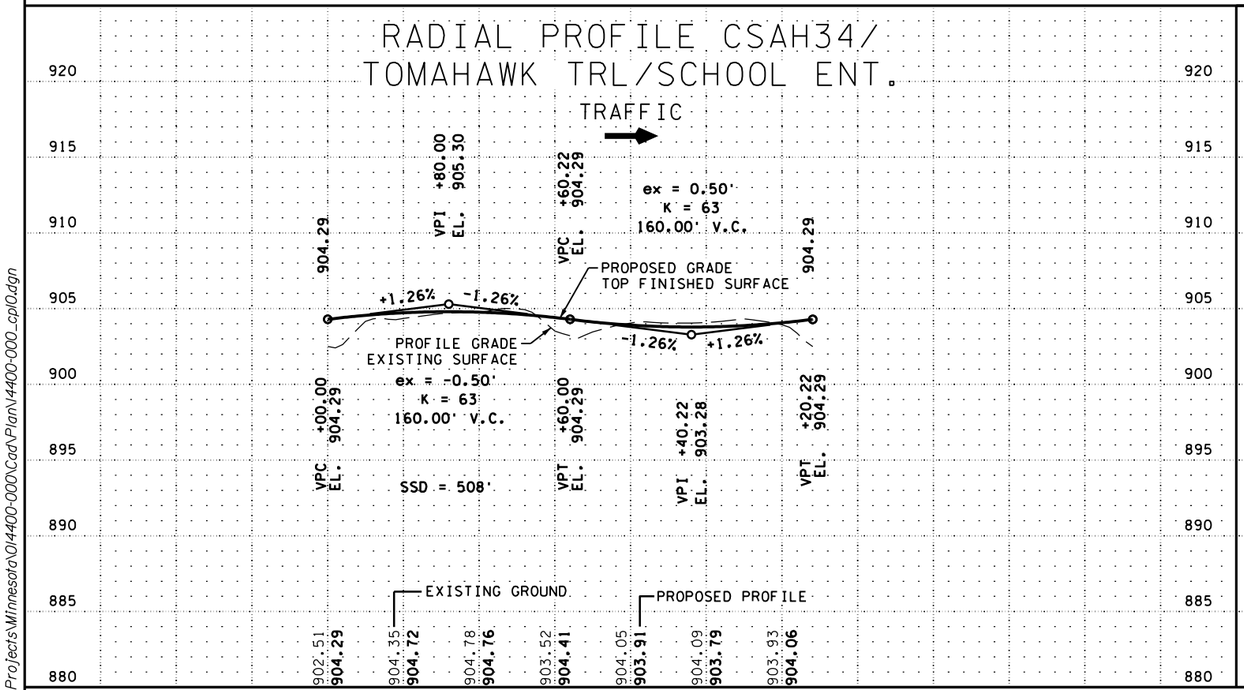
W SHADOW LAKE DR SB PROFILE



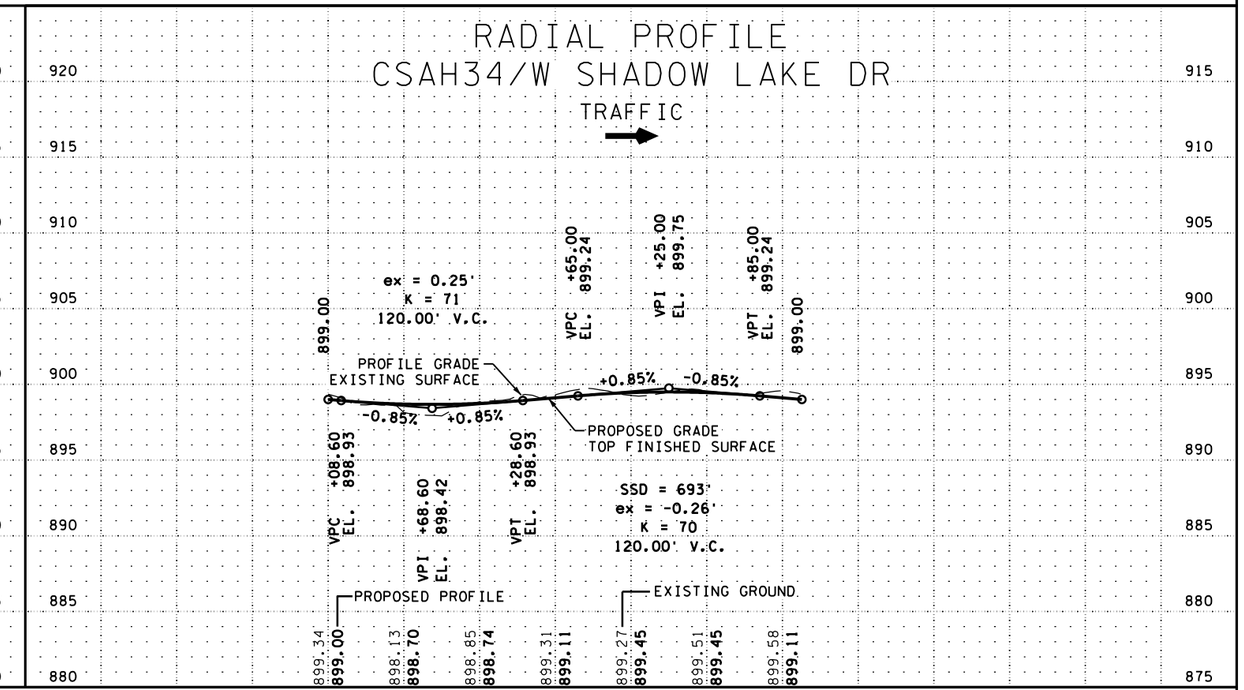
TOMAHAWK TRL/ SCHOOL ENT. SB PROFILE



RADIAL PROFILE CSAH34/ TOMAHAWK TRL/SCHOOL ENT.



RADIAL PROFILE CSAH34/W SHADOW LAKE DR



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ANDREW J. PLOWMAN, PE

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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

CONSTRUCTION PLAN & PROFILE
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 110 OF 195 SHEETS

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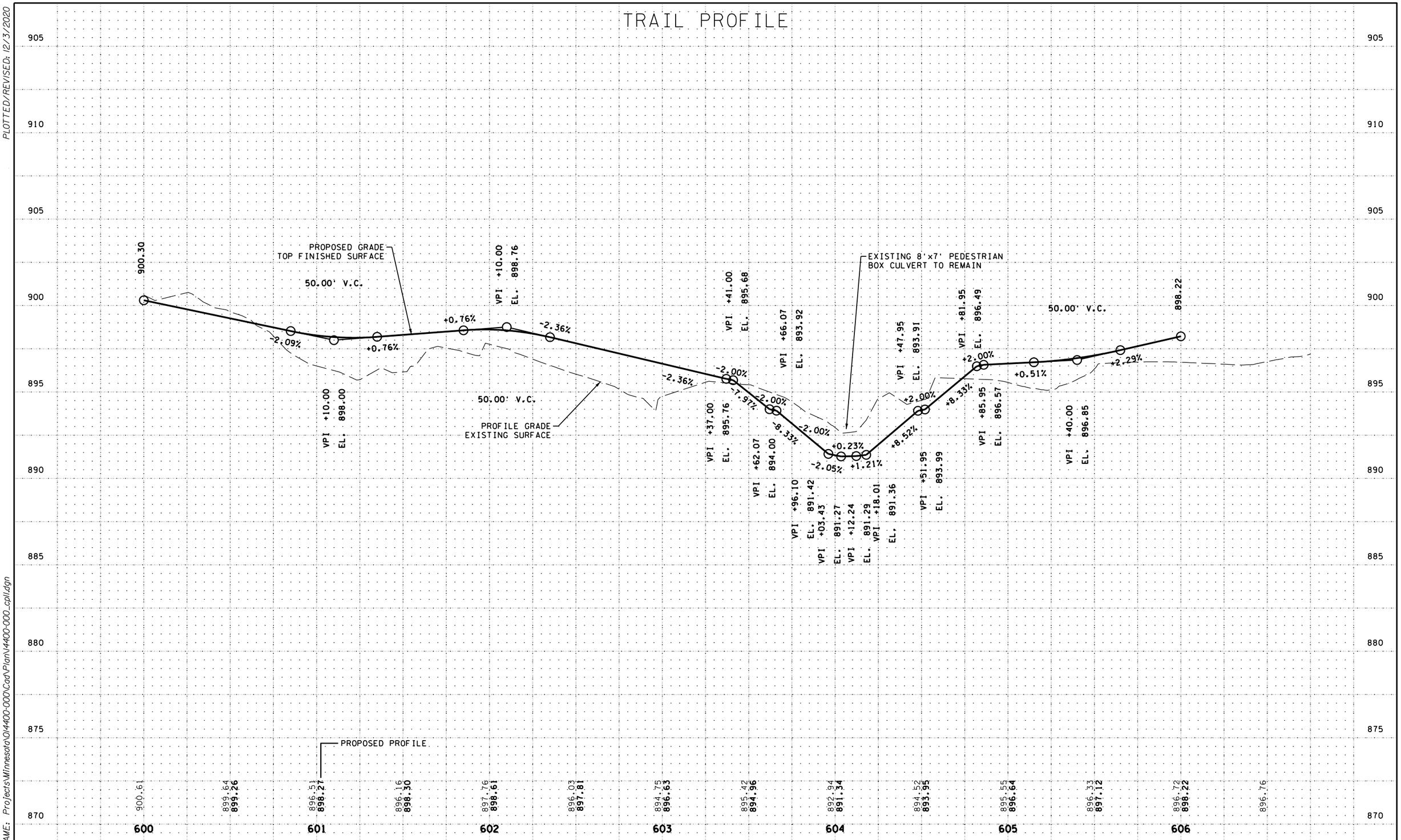
PLOTTED/REVISED: 12/3/2020

TRAIL PROFILE



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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

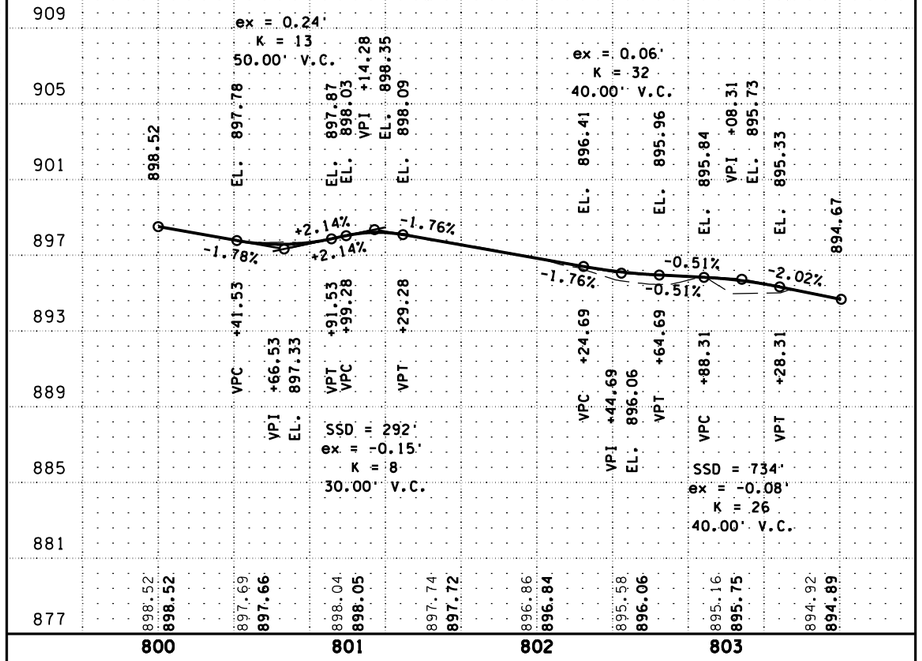
CONSTRUCTION PLAN & PROFILE
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 111 OF 195 SHEETS

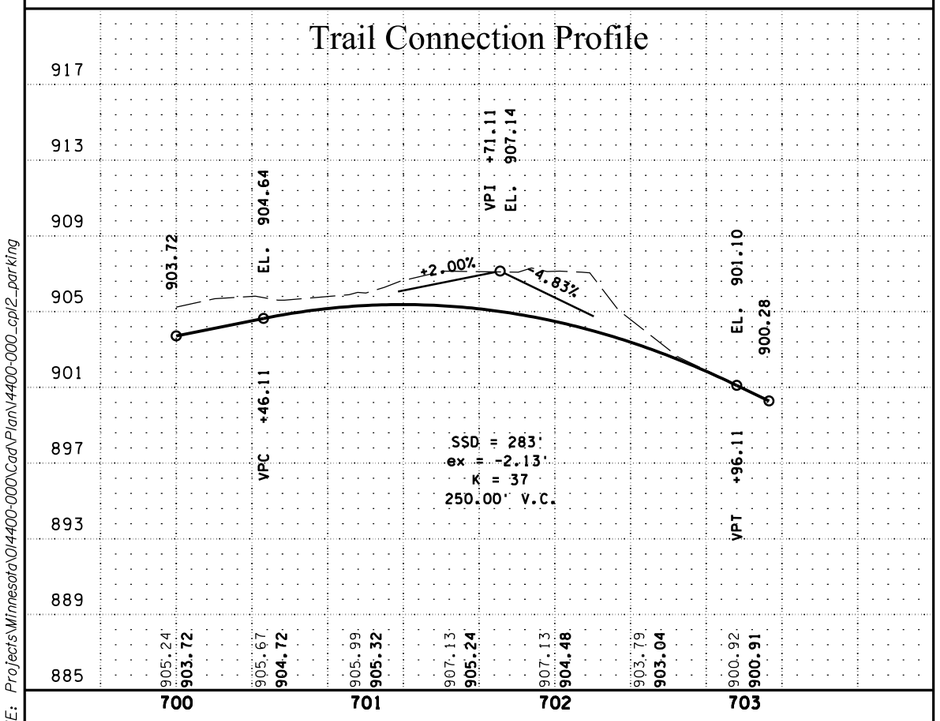
PATH & FILENAME: Projects\Minnesota\0\4400-000\Cad\Plan\4400-000_cpll.dgn

PLOTTED/REVISED: 12/3/2020

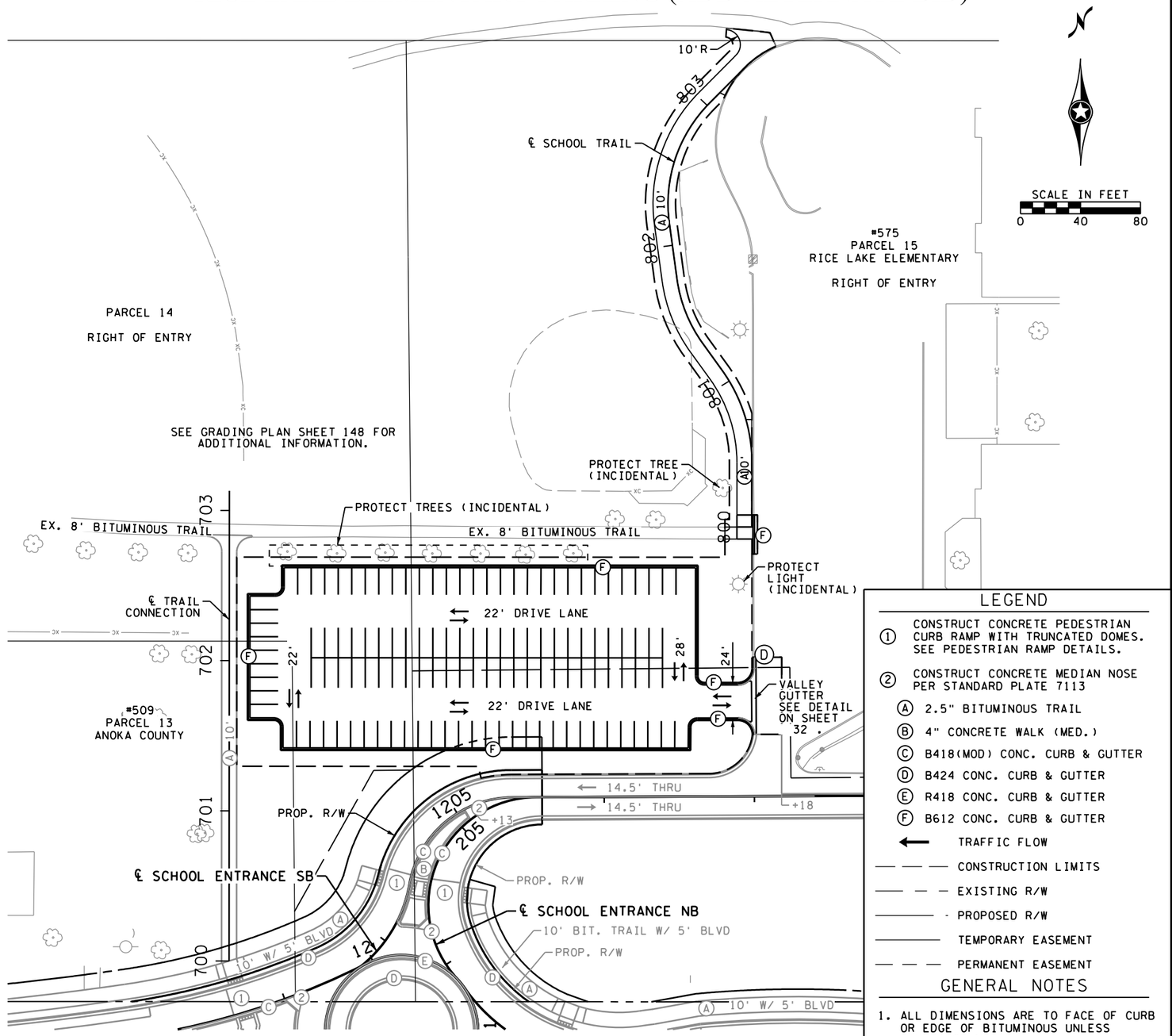
School Trail Profile (ADD ALTERNATE BID)



Trail Connection Profile



RICE LAKE ELEMENTARY PARKING (ADD ALTERNATE BID)



LEGEND

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2. CONSTRUCT CONCRETE MEDIAN NOSE PER STANDARD PLATE 7113

- (A) 2.5" BITUMINOUS TRAIL
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- (C) B418(MOD) CONC. CURB & GUTTER
- (D) B424 CONC. CURB & GUTTER
- (E) R418 CONC. CURB & GUTTER
- (F) B612 CONC. CURB & GUTTER
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3. SEE PAVING PLAN FOR REQUIRED PAVEMENT SECTIONS.

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ANDREW J. PLOWMAN, PE
DATE 12/3/2020 LICENSE # 44200

wsb

ANOKA COUNTY

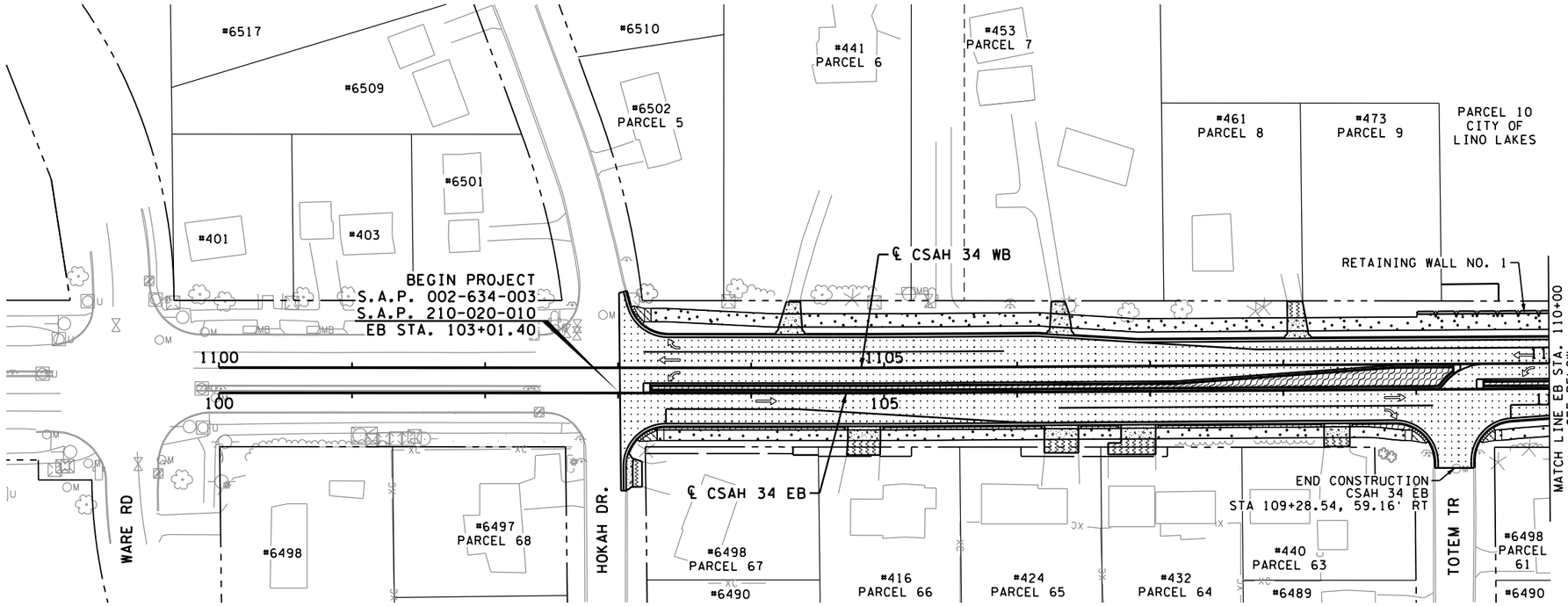
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

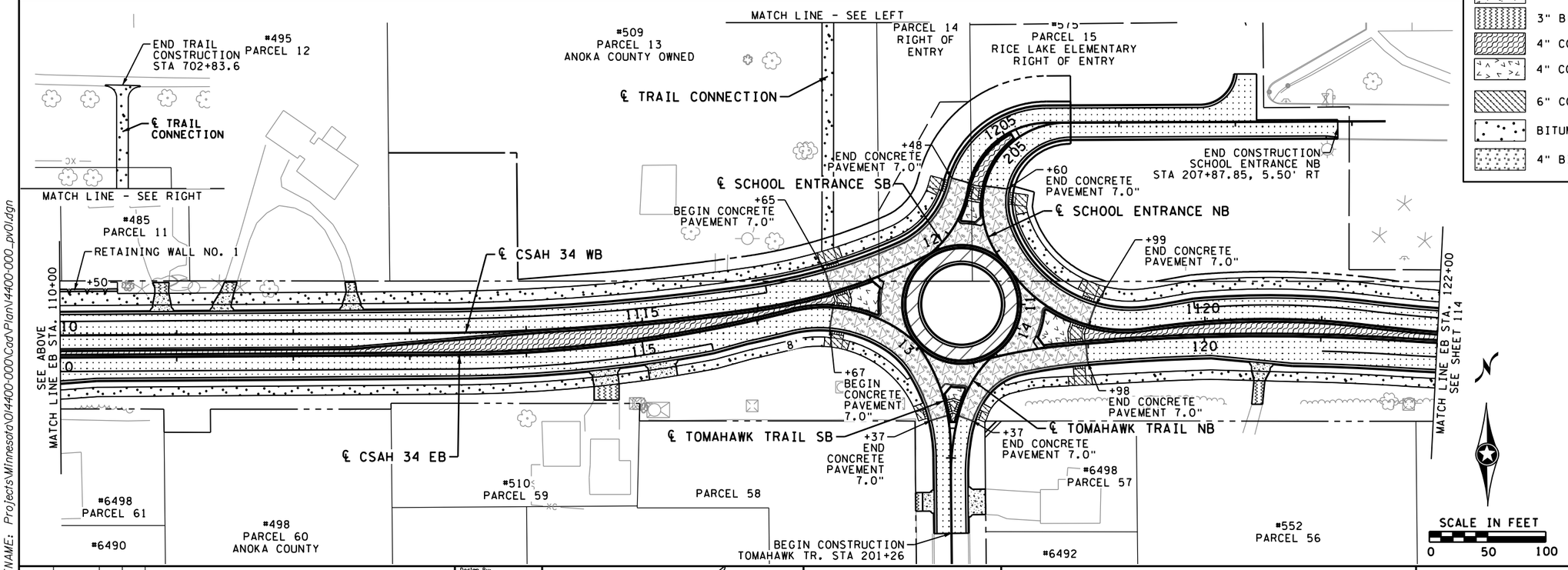
ANOKA COUNTY, MINNESOTA
RICE LAKE ELEMENTARY PARKING (ADD ALTERNATE BID)
CONSTRUCTION PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 112 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\14400-000_cpl2_parking

PLOTTED/REVISED: 12/3/2020





N

SCALE IN FEET
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LEGEND

- 6" BITUMINOUS ROADWAY PAVEMENT (INSET A)
- CONCRETE PAVEMENT 7.0" (INSET F1)
- CONCRETE PAVEMENT 7.0" SPECIAL (INSET F2)
- FULL DEPTH RECLAMATION WITH BITUMINOUS OVERLAY (INSET I)
- 6" CONCRETE DRIVEWAY PAVEMENT (INSET D)
- 3" BITUMINOUS DRIVEWAY PAVEMENT (INSET E)
- 4" CONCRETE WALK (INSET G1)
- 4" CONCRETE WALK SPECIAL (INSET G2)
- 6" CONCRETE WALK (INSET B)
- BITUMINOUS TRAIL (INSET C)
- 4" BITUMINOUS PARKING LOT (INSET J)

N

SCALE IN FEET
0 50 100

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ANDREW J. PLOWMAN, PE
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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
STA 103+01.40 TO STA 122+00
PAVING PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 113 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\0\4400-000\Cad\Plan\4400-000_pv01.dgn

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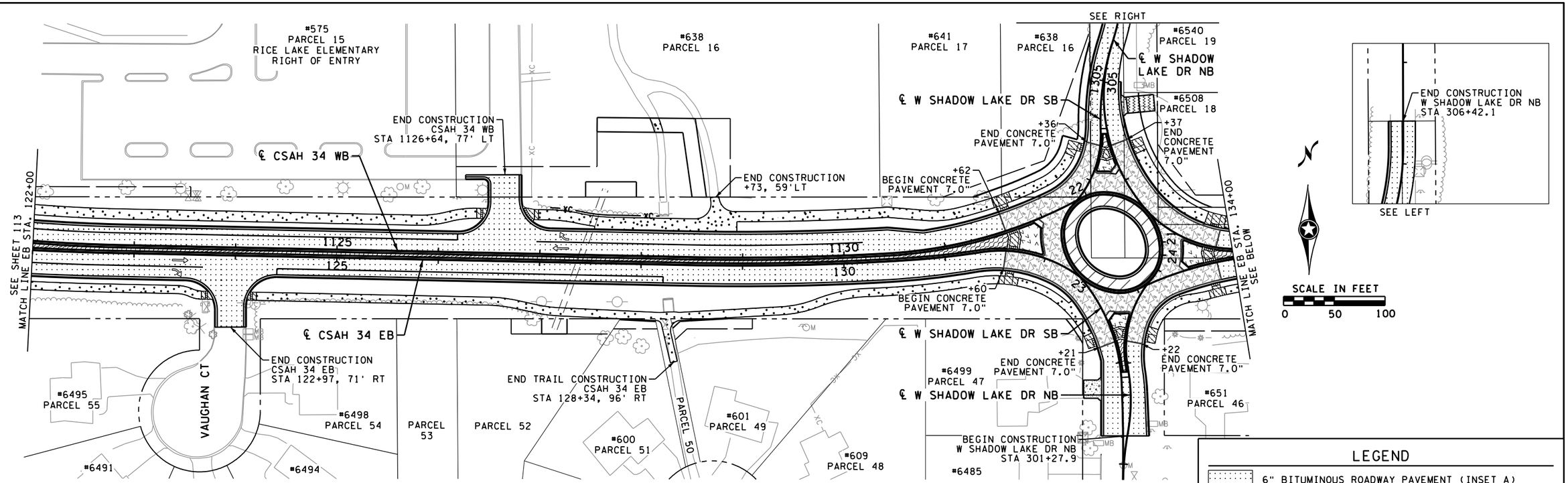

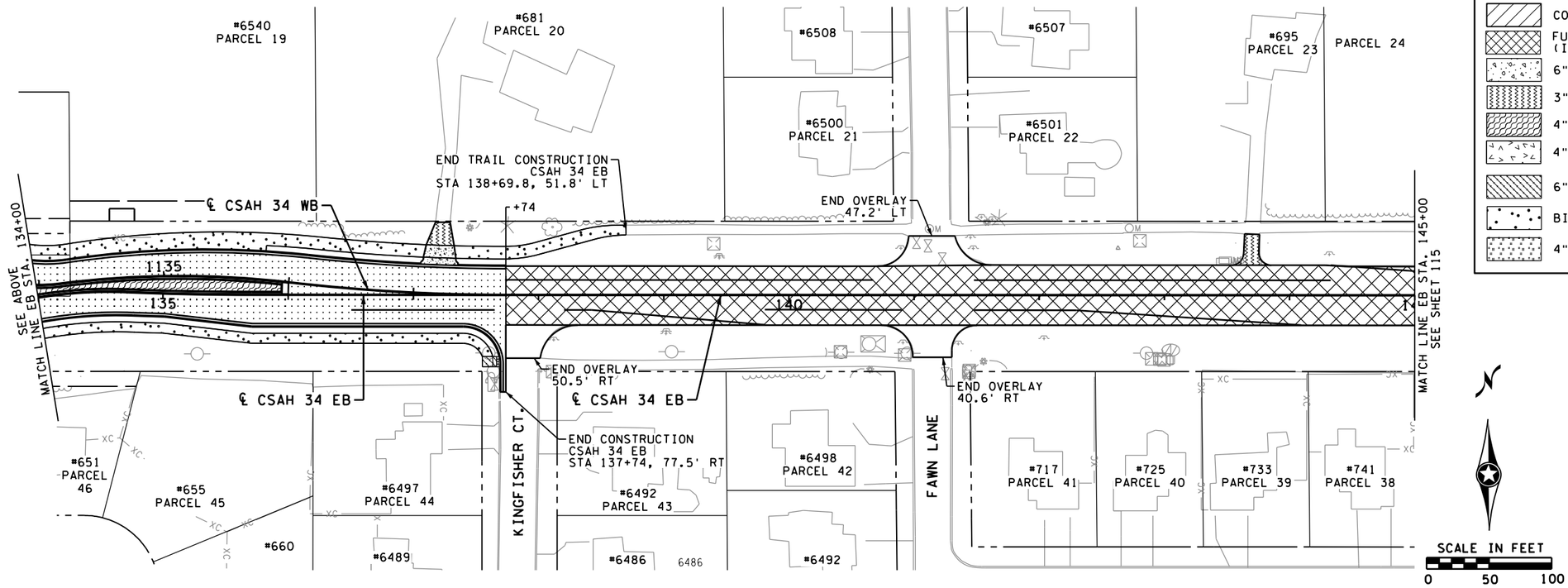

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- 3" BITUMINOUS DRIVEWAY PAVEMENT (INSET E)
- 4" CONCRETE WALK (INSET G1)
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- 6" CONCRETE WALK (INSET B)
- BITUMINOUS TRAIL (INSET C)
- 4" BITUMINOUS PARKING LOT (INSET J)

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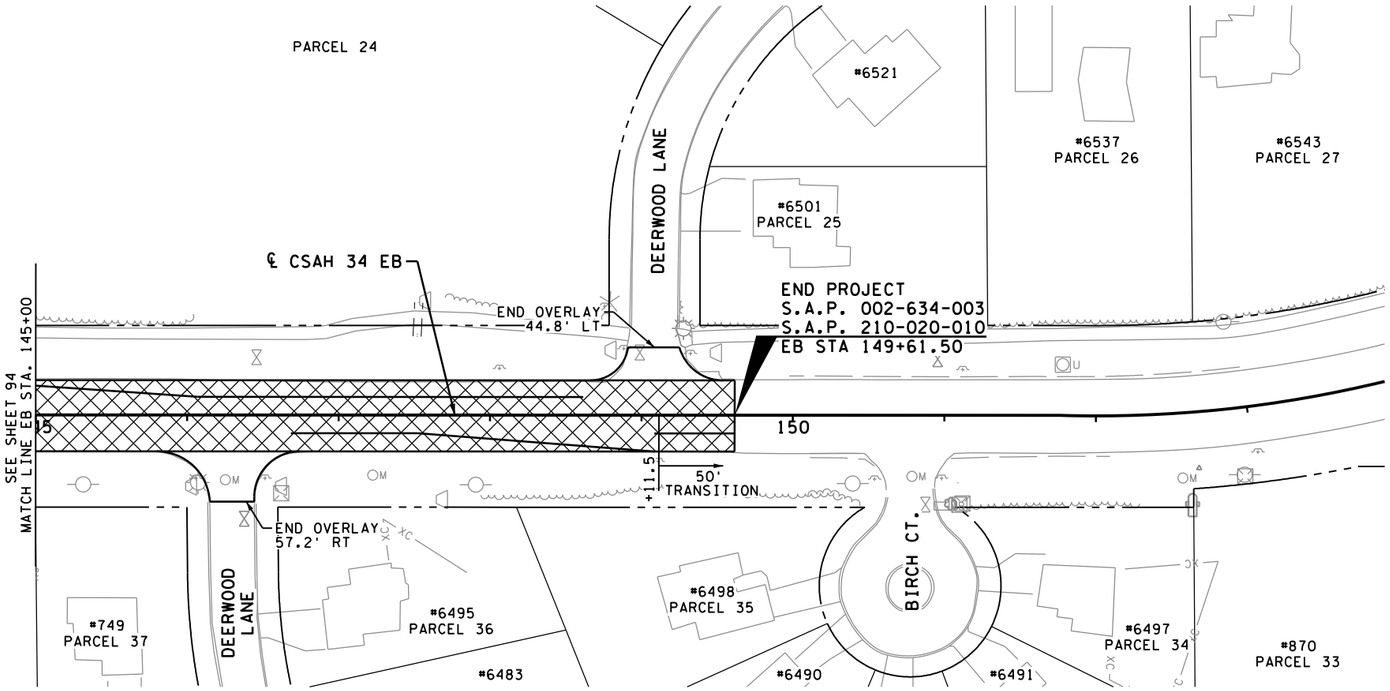
ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
STA 122+00 TO STA 145+00
PAVING PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **114** OF **195** SHEETS

PATH & FILENAME: Projects\Minnesota\0\44400-000\Cad\Plan\144400-000_pv02.dgn



SCALE IN FEET
0 50 100

LEGEND

- 6" BITUMINOUS ROADWAY PAVEMENT (INSET A)
- CONCRETE PAVEMENT 7.0" (INSET F1)
- CONCRETE PAVEMENT 7.0" SPECIAL (INSET F2)
- FULL DEPTH RECLAMATION WITH BITUMINOUS OVERLAY (INSET I)
- 6" CONCRETE DRIVEWAY PAVEMENT (INSET D)
- 3" BITUMINOUS DRIVEWAY PAVEMENT (INSET E)
- 4" CONCRETE WALK (INSET G1)
- 4" CONCRETE WALK SPECIAL (INSET G2)
- 6" CONCRETE WALK (INSET B)
- BITUMINOUS TRAIL (INSET C)
- 4" BITUMINOUS PARKING LOT (INSET J)

NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

ANDREW J. PLOWMAN, PE
DATE 12/3/2020 LICENSE # 44200

wsb

ANOKA COUNTY

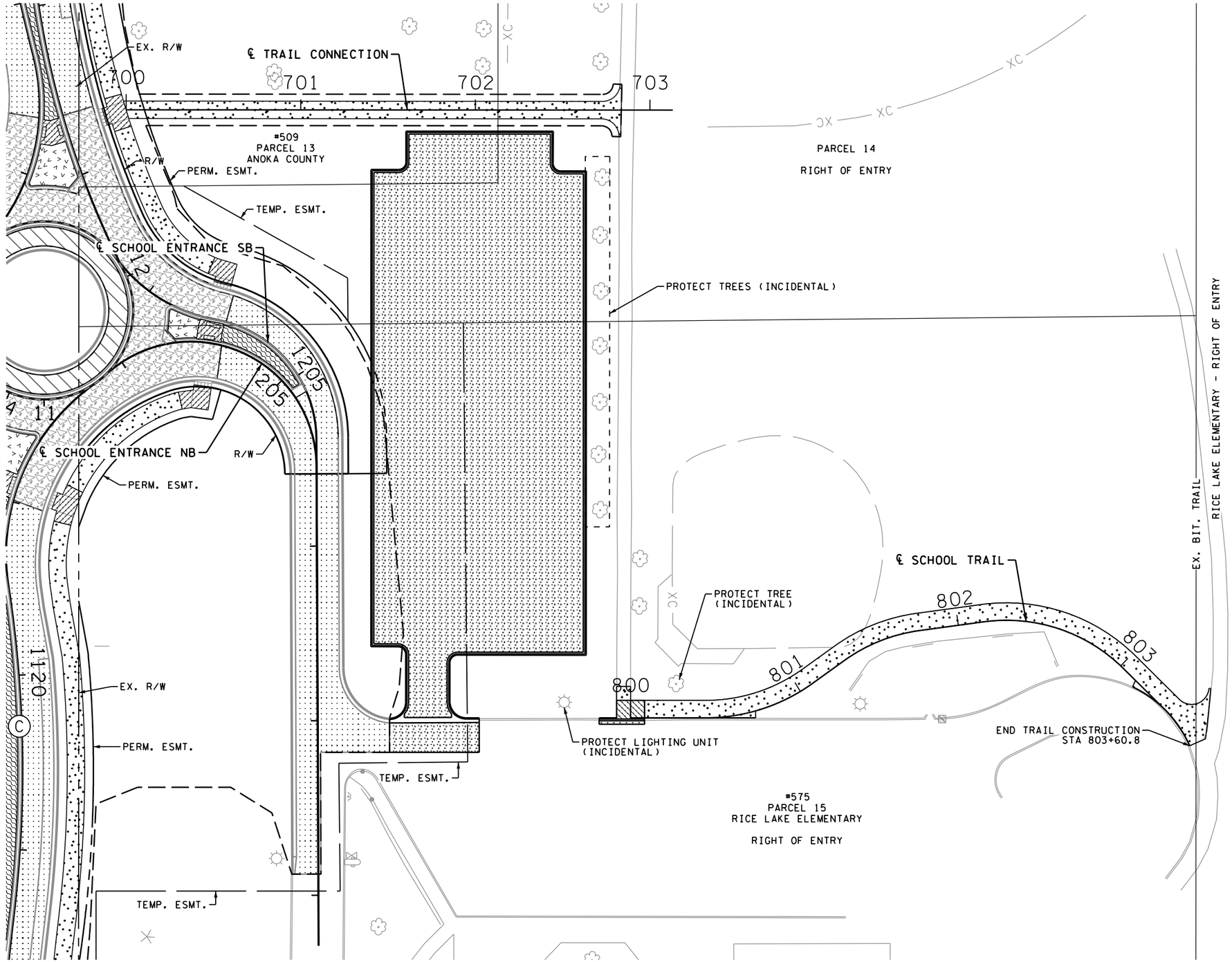
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
STA 145+00 TO STA 149+61.50
PAVING PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **115** OF **195** SHEETS

PLOTTED/REVISED: 12/3/2020

RICE LAKE ELEMENTARY PARKING (ADD ALTERNATE BID)



SCALE IN FEET
0 15 30

LEGEND

- 6" BITUMINOUS ROADWAY PAVEMENT (INSET A)
- CONCRETE PAVEMENT 7.0" (INSET F1)
- CONCRETE PAVEMENT 7.0" SPECIAL (INSET F2)
- FULL DEPTH RECLAMATION WITH BITUMINOUS OVERLAY (INSET I)
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- 3" BITUMINOUS DRIVEWAY PAVEMENT (INSET E)
- 4" CONCRETE WALK (INSET G1)
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- 6" CONCRETE WALK (INSET B)
- BITUMINOUS TRAIL (INSET C)
- 4" BITUMINOUS PARKING LOT (INSET J)

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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

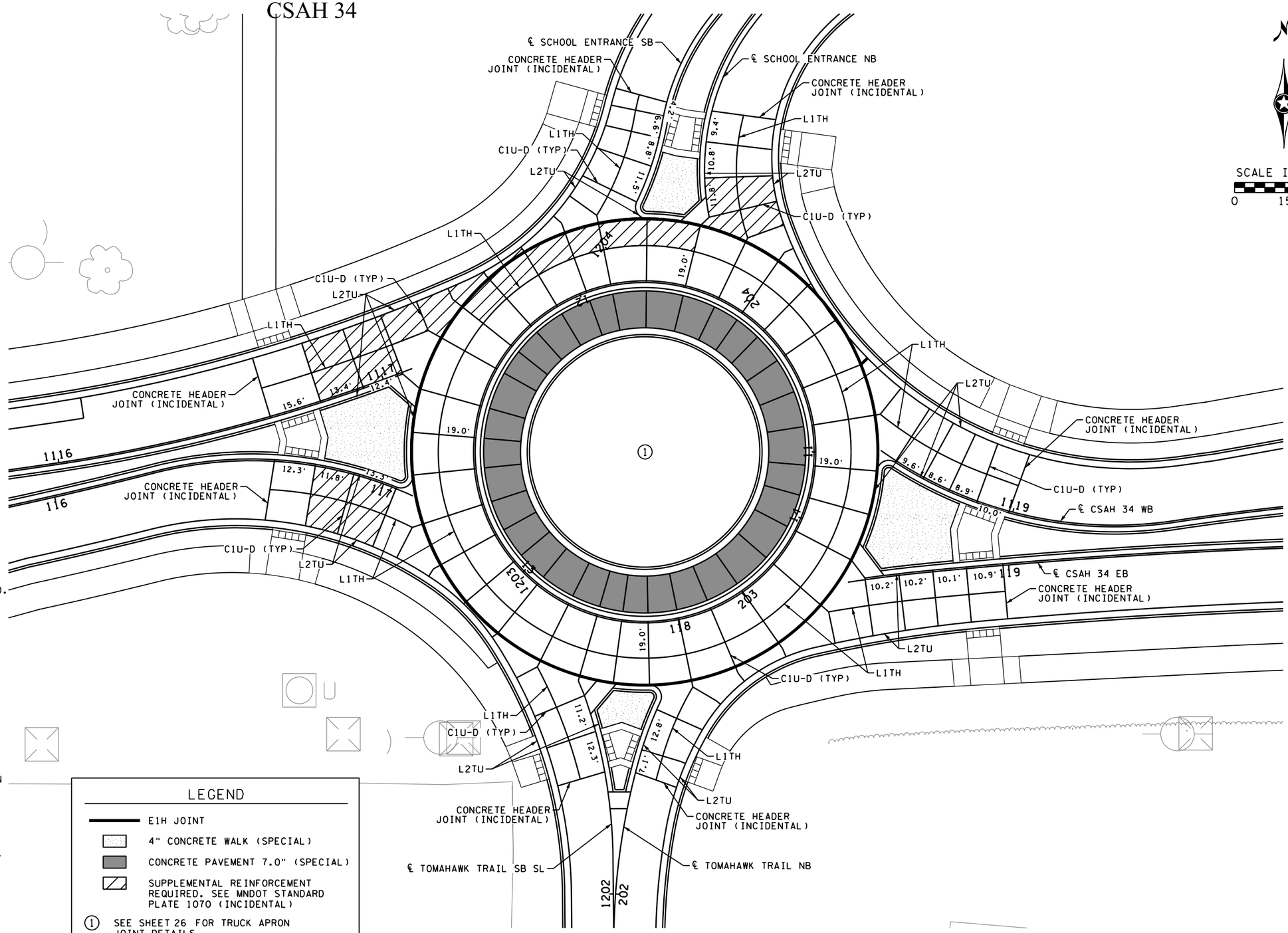
ANOKA COUNTY, MINNESOTA
RICE LAKE ELEMENTARY PARKING (ADD ALTERNATE BID)
PAVING PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 116 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\0j4400-000\Cad\Plan\4400-000_pv04_parking.dgn

PLOTTED/REVISED: 12/3/2020

CSAH 34



NOTES:

1. ALL L1TH JOINTS ARE 7' OFFSET FROM SPLITTER ISLAND CURB AND GUTTER TOE UNLESS OTHERWISE NOTED.
2. SEE STANDARD PLATE 1150 FOR CONCRETE HEADER JOINT DETAIL.
3. JOINT LAYOUTS MAY BE CHANGED IN THE FIELD BY THE CONTRACTOR WITH APPROVAL OF THE ENGINEER.
4. CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL PROPOSED AND EXISTING STRUCTURES ARE LOCATED AND RAISED DURING PAVING.
5. IT IS ASSUMED A MAJORITY OF THE REINFORCEMENT BARS WILL NEED TO BE DRILL AND GROUTED IN THE SPLITTER ISLANDS DUE TO STAGING. REINFORCEMENT BARS PLACED BETWEEN ADJACENT PANELS WILL BE INCIDENTAL.
6. MATCH EXISTING JOINTS WHERE APPLICABLE.
7. REFER TO TEMPORARY TRAFFIC CONTROL PLAN FOR CONCRETE PAVEMENT STAGING DETAILS. USE BENT TIE BARS TO TIE STAGED PAVEMENTE AREAS TOGETHER.

LEGEND

- E1H JOINT
- 4" CONCRETE WALK (SPECIAL)
- CONCRETE PAVEMENT 7.0" (SPECIAL)
- SUPPLEMENTAL REINFORCEMENT REQUIRED. SEE MNDOT STANDARD PLATE 1070 (INCIDENTAL)
- (1) SEE SHEET 26 FOR TRUCK APRON JOINT DETAILS

NO.	DATE	BY	CHK	REVISIONS

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Plan By: CWK
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ANDREW J. PLOWMAN, PE
DATE 12/3/2020 LICENSE # 44200

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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

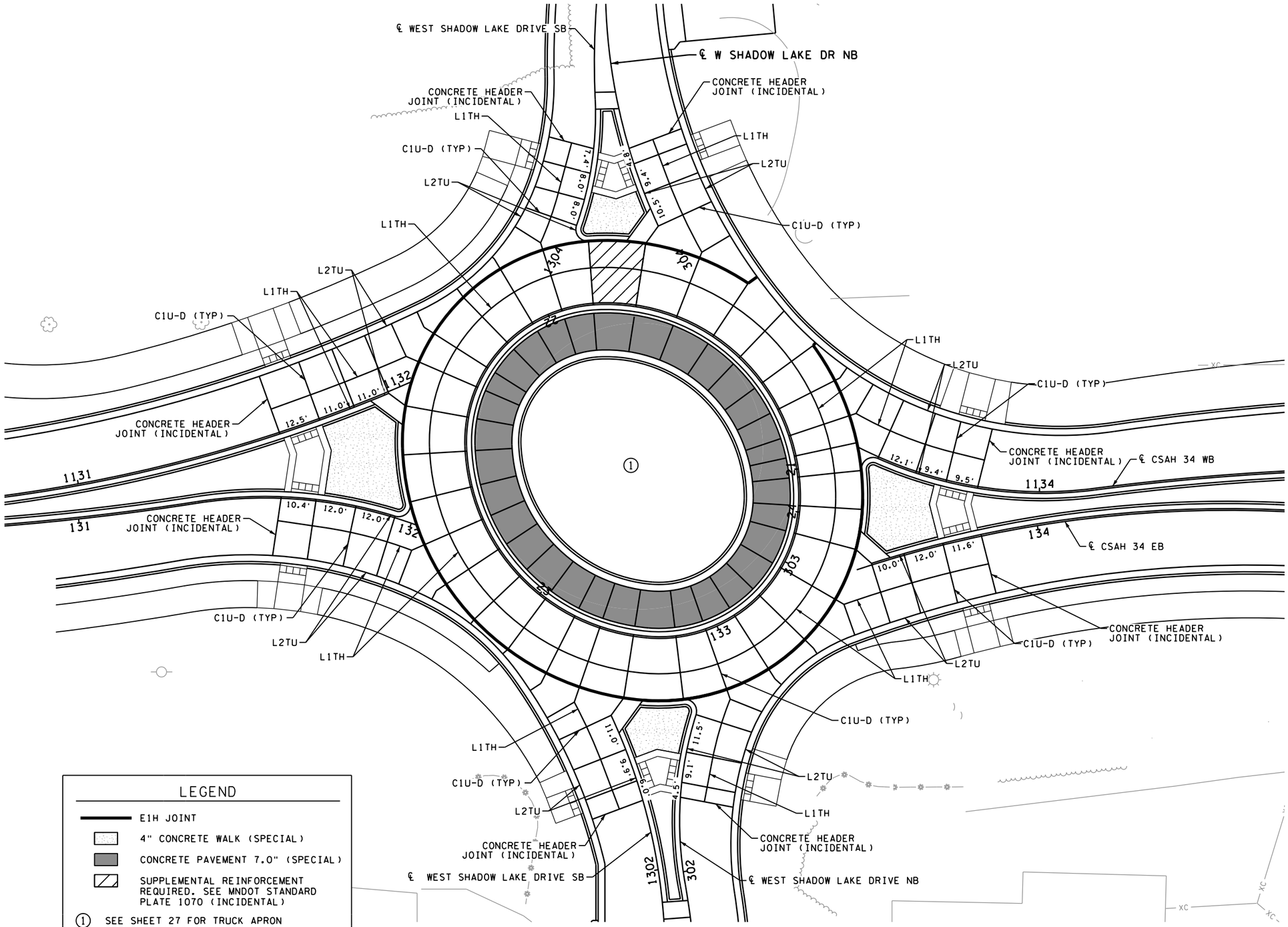
ANOKA COUNTY, MINNESOTA

CONCRETE PAVEMENT JOINT PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 117 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\14400-000_p01.dgn

PLOTTED/REVISED: 12/3/2020



NOTES:

1. ALL L1TH JOINTS ARE 7' OFFSET FROM SPLITTER ISLAND CURB AND GUTTER TOE UNLESS OTHERWISE NOTED.
2. SEE STANDARD PLATE 1150 FOR CONCRETE HEADER JOINT DETAIL.
3. JOINT LAYOUTS MAY BE CHANGED IN THE FIELD BY THE CONTRACTOR WITH APPROVAL OF THE ENGINEER.
4. CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL PROPOSED AND EXISTING STRUCTURES ARE LOCATED AND RAISED DURING PAVING.
5. IT IS ASSUMED A MAJORITY OF THE REINFORCEMENT BARS WILL NEED TO BE DRILL AND GROUTED IN THE SPLITTER ISLANDS DUE TO STAGING. REINFORCEMENT BARS PLACED BETWEEN ADJACENT PANELS WILL BE INCIDENTAL.
6. MATCH EXISTING JOINTS WHERE APPLICABLE.
7. REFER TO TEMPORARY TRAFFIC CONTROL PLAN FOR CONCRETE PAVEMENT

NO.	DATE	BY	CHK	REVISIONS

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ANDREW J. PLOWMAN, PE
DATE 12/3/2020 LICENSE # 44200

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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

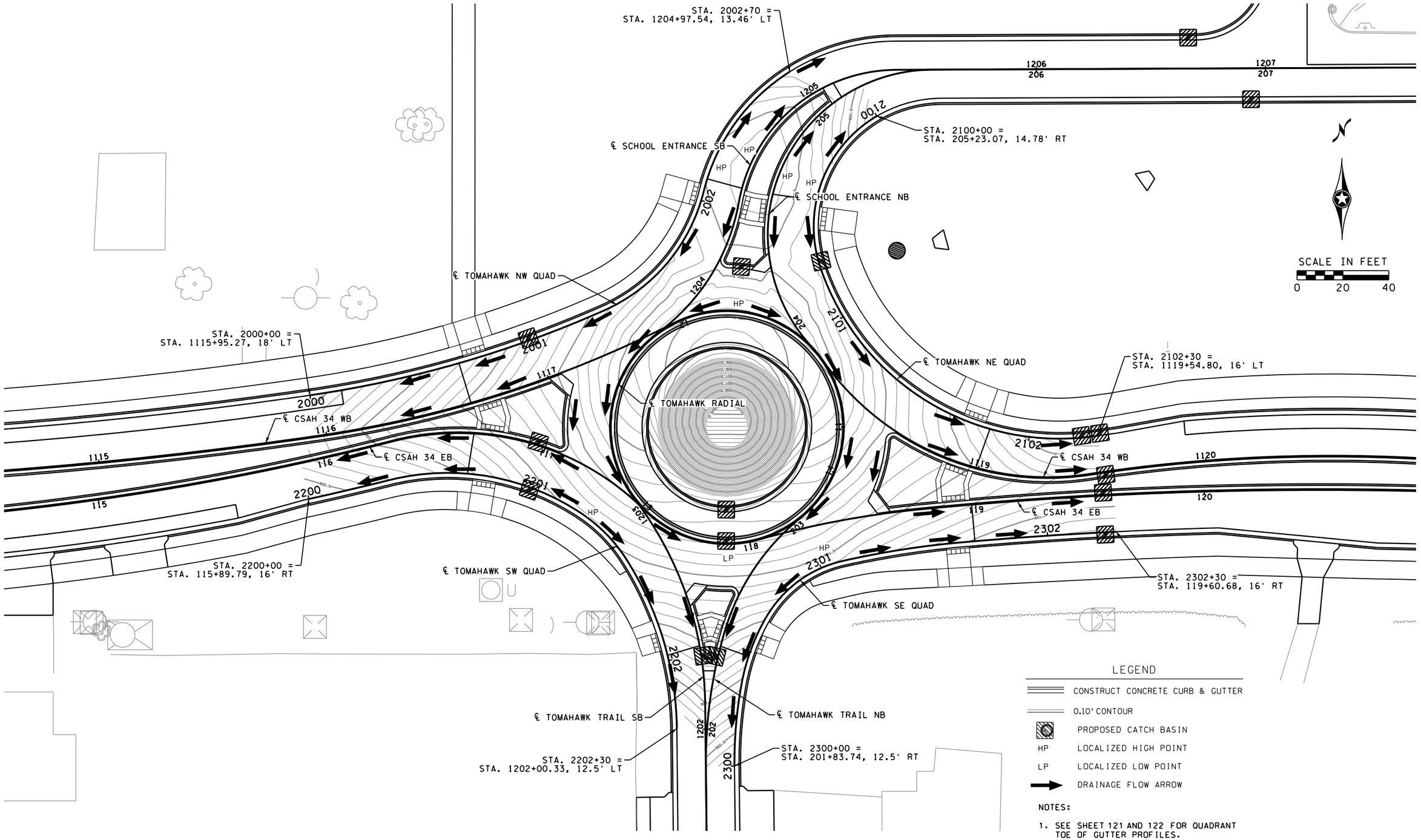
ANOKA COUNTY, MINNESOTA

CONCRETE PAVEMENT JOINT PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 118 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\0I4400-000\Cad\Plan\I4400-000_pj102.dgn

PLOTTED/REVISED: 12/3/2020



LEGEND

- CONSTRUCT CONCRETE CURB & GUTTER
- 0.10' CONTOUR
- PROPOSED CATCH BASIN
- HP LOCALIZED HIGH POINT
- LP LOCALIZED LOW POINT
- DRAINAGE FLOW ARROW

NOTES:

1. SEE SHEET 121 AND 122 FOR QUADRANT TOE OF GUTTER PROFILES.
2. SEE SHEET 110 FOR RADIAL PROFILE.

NO.	DATE	BY	CHK	REVISIONS

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ANDREW J. PLOWMAN, PE

DATE 12/3/2020 LICENSE # 44200

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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
TOMAHAWK ROUNDABOUT
ROUNDABOUT INTERSECTION DETAILS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 119 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\0\44400-000\CadPlan\44400-000_qd01.dgn

PLOTTED/REVISED: 12/3/2020

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	DELTA	DEGREE	RADIUS	TANGENT	LENGTH	COORDINATES X	COORDINATES Y	BEARING
		TOMAHAWK TRL NW QUAD <Q_TOM_NW>								
	PC	2000+00.000						538,882.3430	139,091.9346	N 81° 44' 35.27" E
	PI	2000+67.360	15° 39' 17.18" LT	11° 41' 34.86"	490.000'	67.360'	133.881'	538,949.0050	139,101.6083	PI
	CC							538,811.9735	139,576.8554	
	PCC	2001+33.881						539,010.5839	139,128.9113	N 66° 05' 18.09" E
	PCC	2001+33.881						539,010.5839	139,128.9113	N 66° 05' 18.09" E
	PI	2001+71.685	52° 17' 53.69" LT	74° 24' 36.37"	77.000'	37.804'	70.284'	539,045.1430	139,144.2342	PI
	CC							538,979.3736	139,199.3025	
	PRC	2002+04.165						539,054.1542	139,180.9483	N 13° 47' 24.40" E
	PRC	2002+04.165						539,054.1542	139,180.9483	N 13° 47' 24.40" E
	PI	2002+38.797	43° 52' 08.02" RT	66° 37' 22.80"	86.000'	34.632'	65.846'	539,062.4092	139,214.5819	PI
	CC							539,137.6752	139,160.4489	
	PT	2002+70.012						539,091.6689	139,233.1085	N 57° 39' 32.42" E
		TOMAHAWK TRL NE QUAD <Q_TOM_NE>								
	PC	2100+00.000						539,129.6536	139,213.7601	S 59° 26' 18.38" W
	PI	2100+45.584	78° 17' 27.03" LT	102° 18' 50.01"	56.000'	45.584'	76.520'	539,090.4022	139,190.5825	PI
	CC							539,158.1276	139,165.5395	
	PCC	2100+76.520						539,105.1318	139,147.4441	S 18° 51' 08.65" E
	PCC	2100+76.520						539,105.1318	139,147.4441	S 18° 51' 08.65" E
	PI	2101+68.742	79° 57' 04.80" LT	52° 05' 13.46"	110.000'	92.221'	153.496'	539,134.9314	139,060.1700	PI
	CC							539,209.2307	139,182.9886	
	PT	2102+30.016						539,226.0662	139,074.2845	N 81° 11' 46.55" E

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	DELTA	DEGREE	RADIUS	TANGENT	LENGTH	COORDINATES X	COORDINATES Y	BEARING
		TOMAHAWK TRL SW QUAD <Q_TOM_SW>								
	PC	2200+00.000						538,881.8646	139,046.6797	N 77° 38' 52.90" E
	PI	2200+18.023	1° 41' 53.94" LT	4° 42' 42.57"	1,216.000'	18.023'	36.044'	538,899.4706	139,050.5351	PI
	CC							538,621.7421	140,234.5316	
	PRC	2200+36.044						538,916.9546	139,054.9107	N 75° 56' 58.95" E
	PRC	2200+36.044						538,916.9546	139,054.9107	N 75° 56' 58.95" E
	PI	2200+83.032	48° 13' 04.24" RT	54° 34' 02.67"	105.000'	46.988'	88.364'	538,962.5372	139,066.3182	PI
	CC							538,942.4458	138,953.0520	
	PCC	2201+24.408						539,001.4154	139,039.9288	S 55° 49' 56.81" E
	PCC	2201+24.408						539,001.4154	139,039.9288	S 55° 49' 56.81" E
	PI	2201+38.070	23° 03' 04.33" RT	85° 30' 57.92"	67.000'	13.662'	26.955'	539,012.7197	139,032.2558	PI
	CC							538,963.7872	138,984.4931	
	PCC	2201+51.363						539,020.1170	139,020.7691	S 32° 46' 52.48" E
	PCC	2201+51.363						539,020.1170	139,020.7691	S 32° 46' 52.48" E
	PI	2201+91.749	32° 10' 57.54" RT	40° 55' 32.00"	140.000'	40.386'	78.637'	539,041.9833	138,986.8149	PI
	CC							538,902.4129	138,944.9685	
	PT	2202+30.000						539,042.4052	138,946.4311	S 0° 35' 54.94" E
		TOMAHAWK TRL SE QUAD <Q_TOM_SE>								
	PC	2300+00.000						539,067.5771	138,930.1073	N 0° 35' 54.94" W
	PI	2300+18.248	11° 07' 03.38" RT	30° 33' 27.90"	187.500'	18.248'	36.382'	539,067.3865	138,948.3548	PI
	CC							539,255.0669	138,932.0662	
	PCC	2300+36.382						539,070.7179	138,966.2965	N 10° 31' 08.45" E
	PCC	2300+36.382						539,070.7179	138,966.2965	N 10° 31' 08.45" E
	PI	2300+51.971	19° 39' 12.11" RT	63° 39' 43.12"	90.000'	15.589'	30.871'	539,073.5639	138,981.6234	PI
	CC							539,159.2054	138,949.8660	
	PCC	2300+67.254						539,081.3989	138,995.1002	N 30° 10' 20.56" E
	PCC	2300+67.254						539,081.3989	138,995.1002	N 30° 10' 20.56" E
	PI	2300+89.931	47° 07' 30.27" RT	10° 11' 03.09"	52.000'	22.678'	42.769'	539,092.7968	139,014.7056	PI
	CC							539,126.3538	138,968.9649	
	PCC	2301+10.023						539,114.9195	139,019.6922	N 77° 17' 50.83" E
	PCC	2301+10.023						539,114.9195	139,019.6922	N 77° 17' 50.83" E
	PI	2301+36.150	7° 39' 55.04" RT	14° 41' 28.41"	390.000'	26.127'	52.176'	539,140.4070	139,025.4372	PI
	CC							539,200.6765	138,639.2375	
	PCC	2301+62.199						539,166.4331	139,027.7312	N 84° 57' 45.87" E
	PCC	2301+62.199						539,166.4331	139,027.7312	N 84° 57' 45.87" E
	PI	2301+96.104	2° 10' 39.09" RT	3° 12' 41.93"	1,784.000'	33.905'	67.801'	539,200.2067	139,030.7082	PI
	CC							539,323.0746	137,250.6214	
	PT	2302+30.000						539,234.0690	139,032.3997	N 87° 08' 24.96" E

NOTES:

<XXXX> INDICATES GEOPAK ALIGNMENT NAMES.

PATH & FILENAME: Projects\Minnesota\0|4400-000\Cad\Plan\|4400-000_qd01.dgn

NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
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ANDREW J. PLOWMAN, PE

DATE 12/3/2020 LICENSE # 44200

wsb

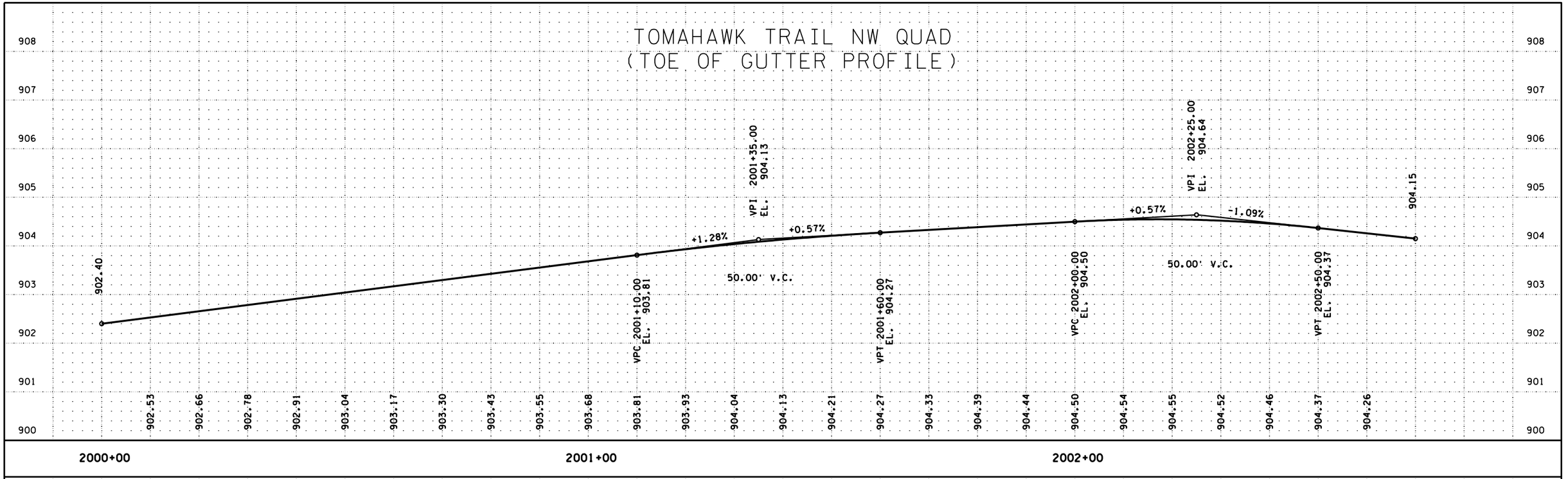
ANOKA COUNTY

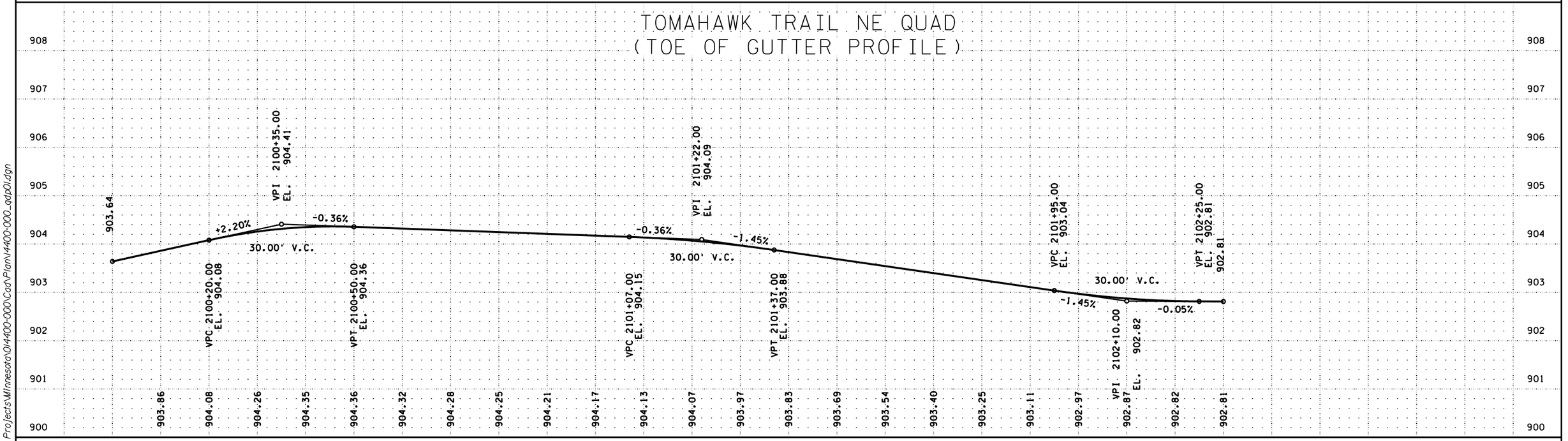
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
TOMAHAWK ROUNDABOUT ALIGNMENT DETAILS
ROUNDABOUT INTERSECTION DETAILS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **120** OF **195** SHEETS

PLOTTED/REVISED: 12/3/2020





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ANOKA COUNTY

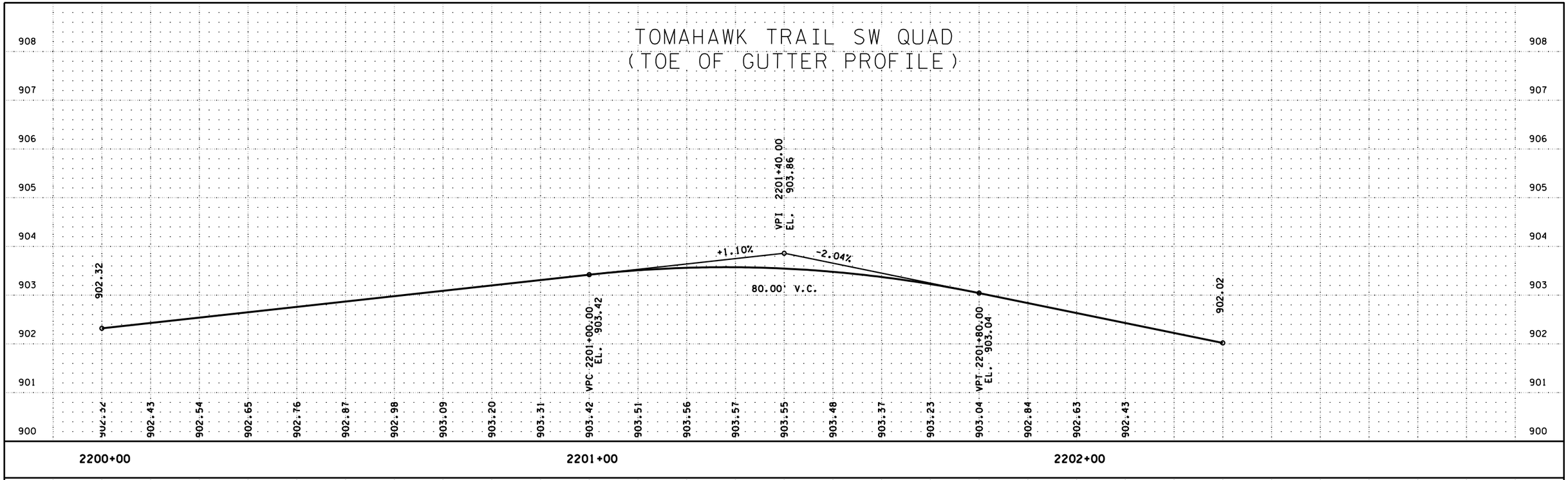
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
TOMAHAWK ROUNDABOUT QUADRANT PROFILES
ROUNDABOUT INTERSECTION DETAILS
S.A.P. 002-634-003 & S.A.P. 210-020-010

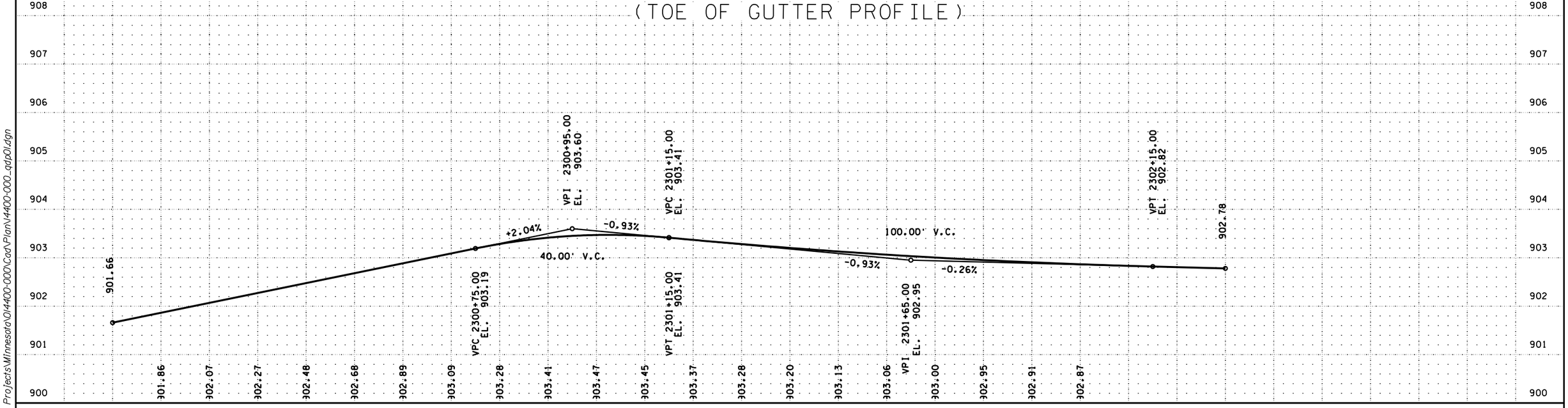
SHEET 121 OF 195 SHEETS

PLOTTED/REVISED: 12/3/2020

TOMAHAWK TRAIL SW QUAD
(TOE OF GUTTER PROFILE)



TOMAHAWK TRAIL SE QUAD
(TOE OF GUTTER PROFILE)



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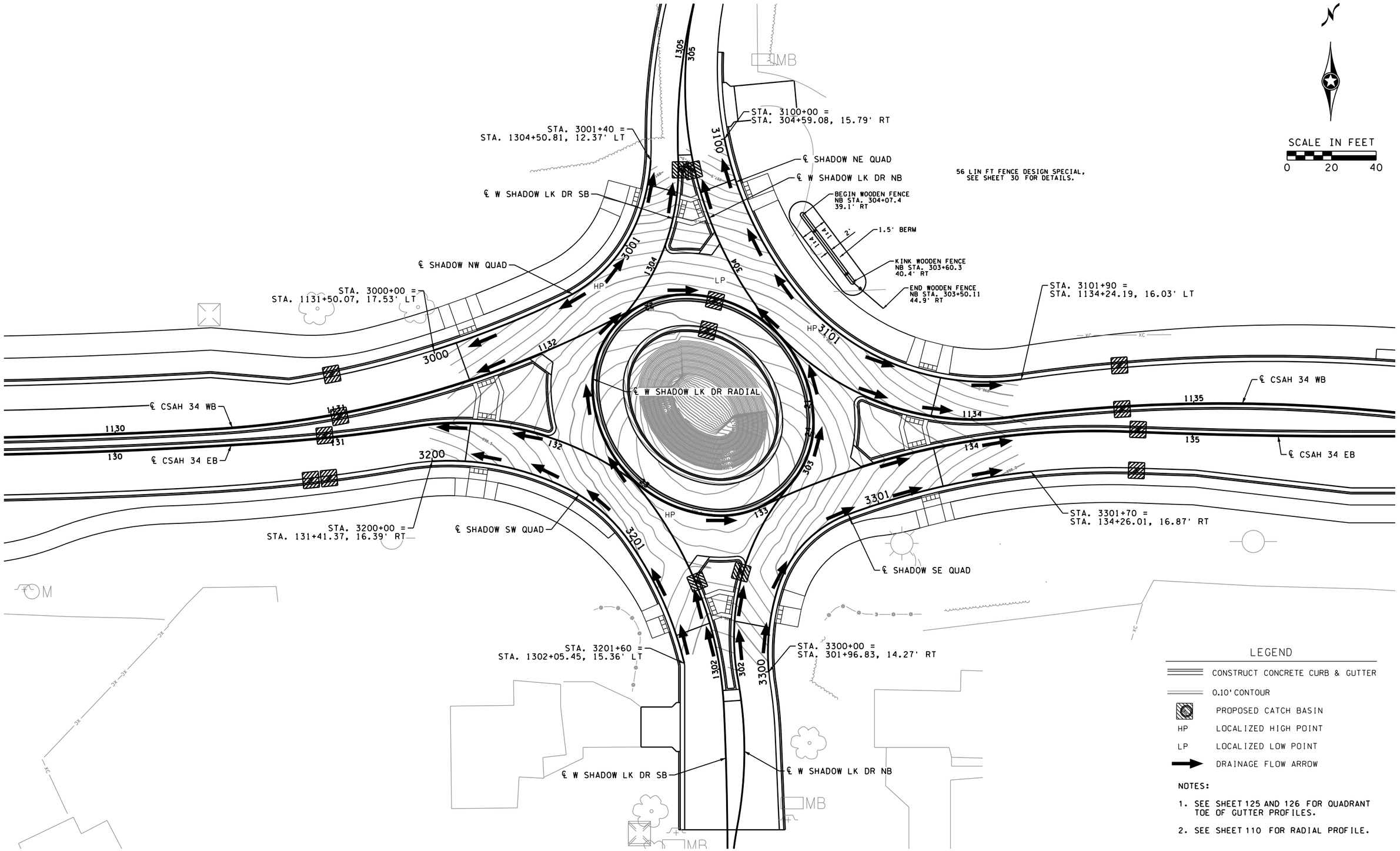
ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
TOMAHAWK ROUNDABOUT QUADRANT PROFILES
ROUNDABOUT INTERSECTION DETAILS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 122 OF 195 SHEETS

PLOTTED/REVISED: 12/3/2020



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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
SHADOW ROUNDABOUT
ROUNDABOUT INTERSECTION DETAILS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **123** OF **195** SHEETS

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	DELTA	DEGREE	RADIUS	TANGENT	LENGTH	COORDINATES X	COORDINATES Y	BEARING
W SHADOW LAKE DR NW QUAD <Q_SHADOW_NW>										
	PC	3000+00.000						540,415.4620	139,077.2852	N 72° 28' 45.81" E
	PI	3000+31.560	8° 12' 19.38" LT	13° 01' 18.37"	440.000'	31.560'	63.013'	540,445.5582	139,086.7864	PI
	CC							540,283.0005	139,496.8730	
	PCC	3000+63.013						540,473.9903	139,100.4857	N 64° 16' 26.43" E
	PCC	3000+63.013						540,473.9903	139,100.4857	N 64° 16' 26.43" E
	PI	3000+91.054	45° 25' 17.39" LT	85° 30' 57.92"	67.000'	28.041'	53.115'	540,499.2523	139,112.6576	PI
	CC							540,444.9078	139,160.8447	
	PCC	3001+16.127						540,508.3135	139,139.1948	N 18° 51' 09.04" E
	PCC	3001+16.127						540,508.3135	139,139.1948	N 18° 51' 09.04" E
	PI	3001+28.172	15° 14' 41.89" LT	63° 39' 43.12"	90.000'	12.045'	23.947'	540,512.2055	139,150.5932	PI
	CC							540,423.1417	139,168.2768	
	PT	3001+40.074						540,512.9633	139,162.6138	N 3° 36' 27.15" E
W SHADOW LAKE DR NE QUAD <Q_SHADOW_NE>										
	PC	3100+00.000						540,546.1148	139,172.2404	S 11° 30' 41.58" E
	PI	3100+42.796	29° 56' 58.64" LT	35° 48' 35.50"	160.000'	42.796'	83.635'	540,554.6555	139,130.3048	PI
	CC							540,702.8963	139,204.1709	
	PCC	3100+83.635						540,582.9916	139,098.2329	S 41° 27' 40.22" E
	PCC	3100+83.635						540,582.9916	139,098.2329	S 41° 27' 40.22" E
	PI	3100+85.806	3° 42' 42.86" LT	85° 30' 57.92"	67.000'	2.171'	4.341'	540,584.4290	139,096.6059	PI
	CC							540,633.2017	139,142.5944	
	PCC	3100+87.976						540,585.9688	139,095.0754	S 45° 10' 23.07" E
	PCC	3100+87.976						540,585.9688	139,095.0754	S 45° 10' 23.07" E
	PI	3101+42.989	53° 08' 29.23" LT	52° 05' 13.46"	110.000'	55.014'	102.024'	540,624.9867	139,056.2926	PI
	CC							540,663.5153	139,173.0917	
	PT	3101+90.000						540,679.4221	139,064.2479	N 81° 41' 07.70" E

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	DELTA	DEGREE	RADIUS	TANGENT	LENGTH	COORDINATES X	COORDINATES Y	BEARING
W SHADOW LAKE DR SW QUAD <Q_SHADOW_SW>										
	PC	3200+00.000						540,414.7899	139,027.4414	N 86° 28' 05.16" E
	PI	3200+33.007	30° 45' 29.93" RT	47° 44' 47.34"	120.000'	33.007'	64.420'	540,447.7337	139,029.4747	PI
	CC							540,422.1824	138,907.6693	
	PCC	3200+64.420						540,477.0833	139,014.3739	S 62° 46' 24.91" E
	PCC	3200+64.420						540,477.0833	139,014.3739	S 62° 46' 24.91" E
	PI	3200+81.920	27° 19' 22.31" RT	79° 34' 38.90"	72.000'	17.500'	34.335'	540,492.6448	139,006.3674	PI
	CC							540,444.1428	138,950.3511	
	PCC	3200+98.755						540,502.7950	138,992.1113	S 35° 27' 02.60" E
	PCC	3200+98.755						540,502.7950	138,992.1113	S 35° 27' 02.60" E
	PI	3201+29.773	21° 56' 33.61" RT	35° 48' 35.50"	160.000'	31.018'	61.275'	540,520.7854	138,966.8438	PI
	CC							540,372.4567	138,899.3109	
	PT	3201+60.030						540,528.0306	138,936.6840	S 13° 30' 28.99" E
W SHADOW LAKE DR SE QUAD <Q_SHADOW_SE>										
	PC	3300+00.000						540,566.0126	138,932.9364	N 5° 14' 25.40" W
	PI	3300+19.413	23° 05' 54.59" RT	60° 18' 40.85"	95.000'	19.413'	38.299'	540,564.2395	138,952.2683	PI
	CC							540,660.6155	138,941.6132	
	PCC	3300+38.299						540,570.1927	138,970.7460	N 17° 51' 29.19" E
	PCC	3300+38.299						540,570.1927	138,970.7460	N 17° 51' 29.19" E
	PI	3300+63.600	51° 53' 31.53" RT	110° 11' 03.09"	52.000'	25.302'	47.096'	540,577.9517	138,994.8284	PI
	CC							540,619.6873	138,954.7996	
	PCC	3300+85.395						540,601.6894	139,003.5856	N 69° 45' 00.72" E
	PCC	3300+85.395						540,601.6894	139,003.5856	N 69° 45' 00.72" E
	PI	3301+27.917	14° 15' 26.84" RT	16° 51' 06.12"	340.000'	42.522'	84.605'	540,641.5835	139,018.3032	PI
	CC							540,719.3680	138,684.6002	
	PT	3301+70.000						540,683.8735	139,022.7424	N 84° 00' 27.56" E

NOTES:

<XXXX> INDICATES GEOPAK ALIGNMENT NAMES.

NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

ANDREW J. PLOWMAN, PE

DATE 12/3/2020 LICENSE # 44200

wsb

ANOKA COUNTY

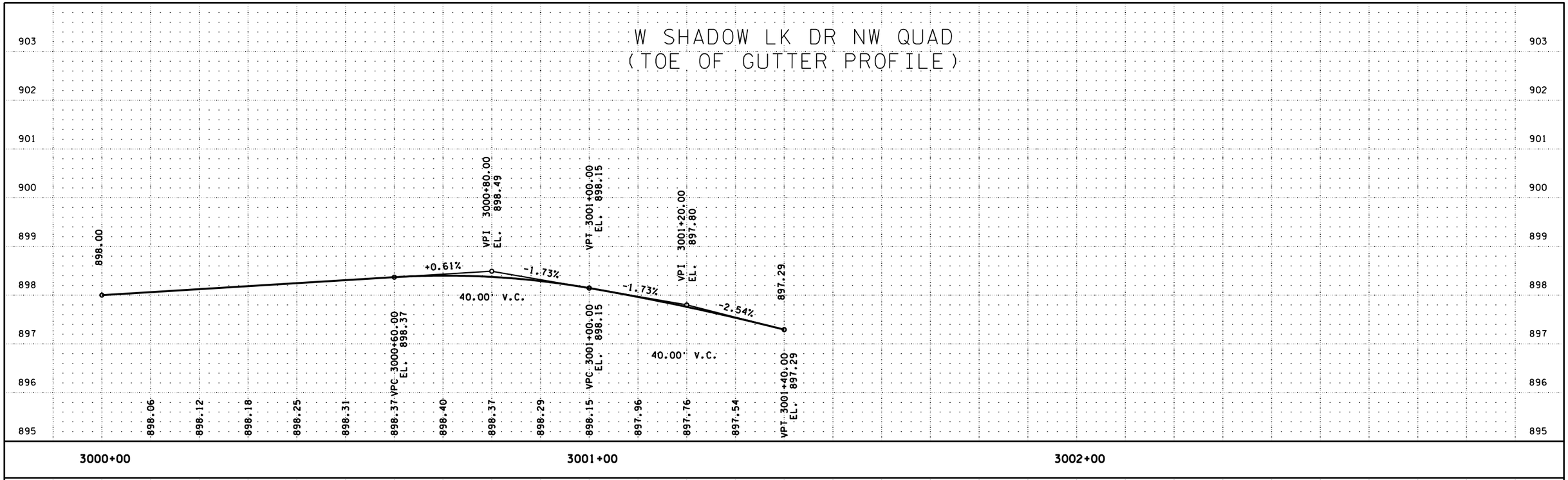
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
SHADOW ROUNDABOUT ALIGNMENT DETAILS
ROUNDABOUT INTERSECTION DETAILS
S.A.P. 002-634-003 & S.A.P. 210-020-010

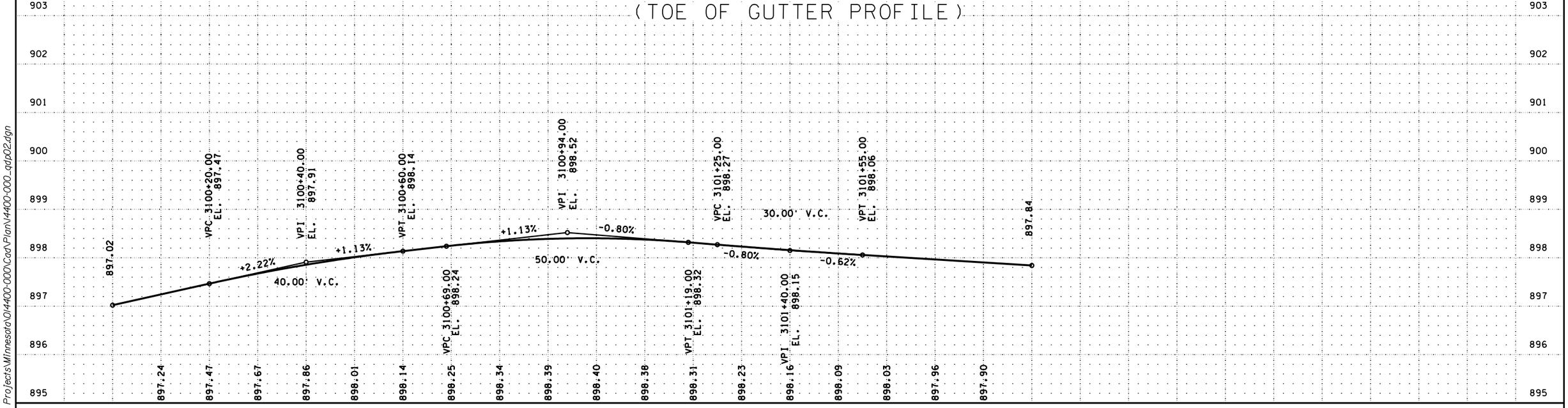
SHEET 124 OF 195 SHEETS

PLOTTED/REVISED: 12/3/2020

W SHADOW LK DR NW QUAD
(TOE OF GUTTER PROFILE)



W SHADOW LK DR NE QUAD
(TOE OF GUTTER PROFILE)



PATH & FILENAME: Projects\Minnesota\0l4400-000\Cad\Plan\l4400-000_qdp02.dgn

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ANOKA COUNTY

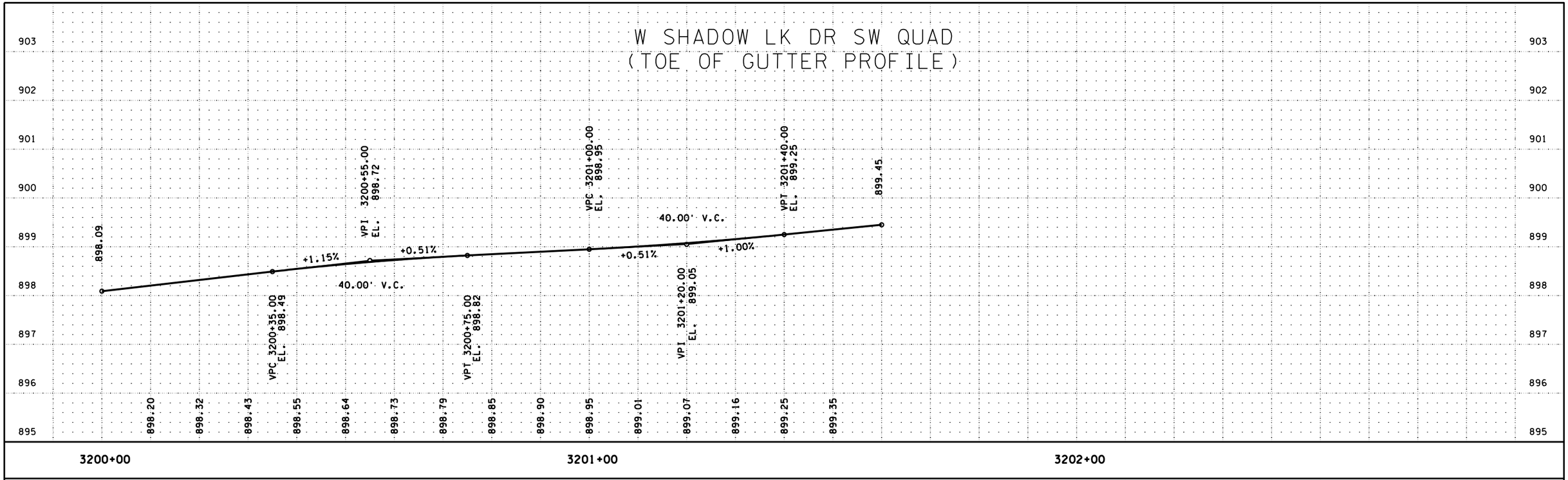
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
SHADOW ROUNDABOUT QUADRANT PROFILES
ROUNDABOUT INTERSECTION DETAILS
S.A.P. 002-634-003 & S.A.P. 210-020-010

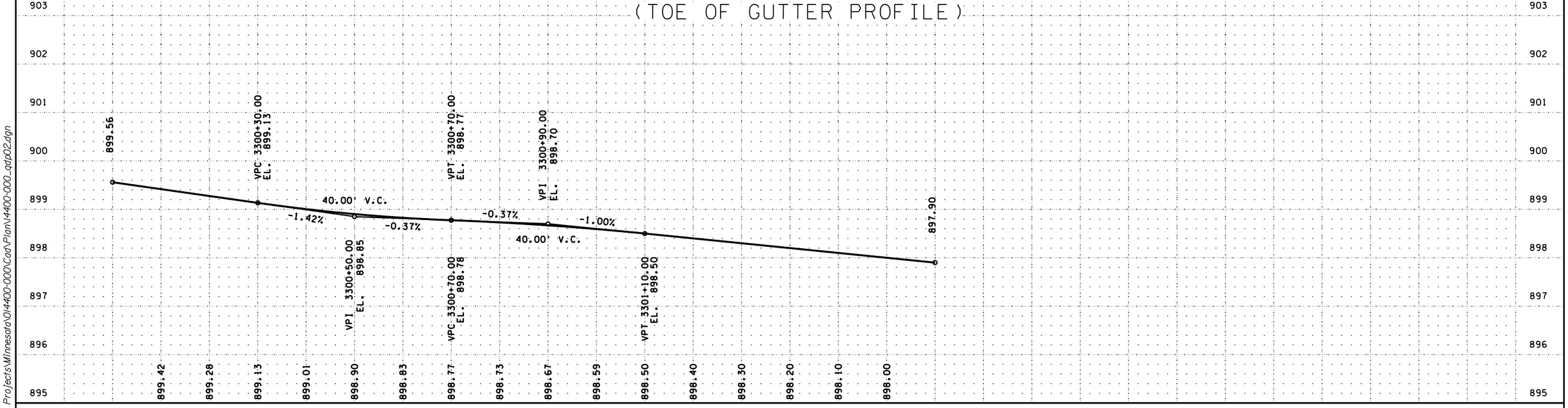
SHEET 125 OF 195 SHEETS

PLOTTED/REVISED: 12/3/2020

W SHADOW LK DR SW QUAD
(TOE OF GUTTER PROFILE)



W SHADOW LK DR SE QUAD
(TOE OF GUTTER PROFILE)



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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
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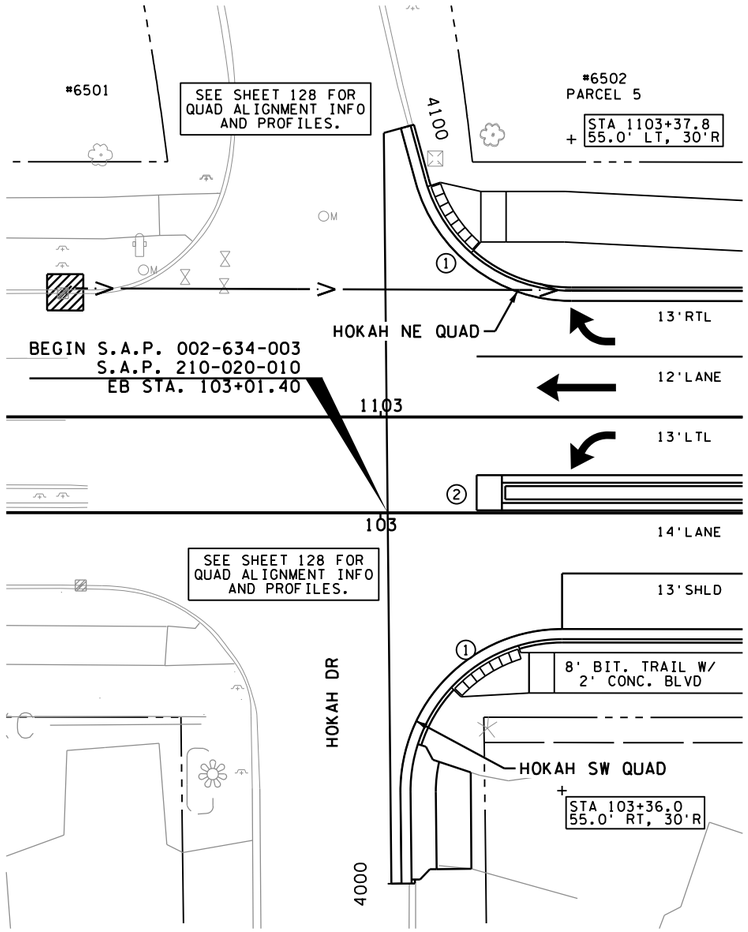
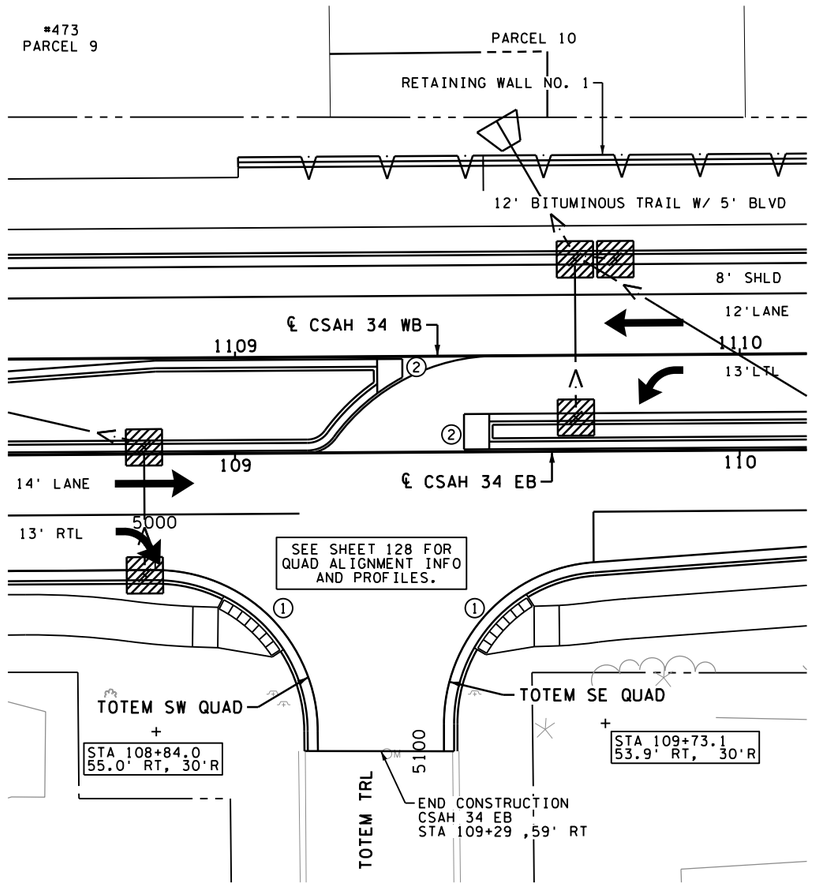
ANOKA COUNTY, MINNESOTA
SHADOW ROUNDABOUT QUADRANT PROFILES
ROUNDABOUT INTERSECTION DETAILS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 126 OF 195 SHEETS

SCALE IN FEET
0 15 30





LEGEND

- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CATCH BASIN
- MH ○M MANHOLE
- ① PEDESTRIAN CURB RAMP, SEE PEDESTRIAN RAMP DETAILS AND STANDARD PLANS.
- ② CONCRETE MEDIAN NOSE DESIGN 7113
- ③ MILL BITUMINOUS SURFACE SPECIAL, SEE SHEET 28 FOR DETAILS.

NOTE:
- RADII LABELS ARE TO FACE OF CURB.

NO.	DATE	BY	CHK	REVISIONS

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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

INTERSECTION DETAILS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 127 OF 195 SHEETS

PLOTTED/REVISED: 12/3/2020

PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\4400-000_1d01

PLOTTED/REVISED: 12/3/2020

ALIGNMENT TABULATION

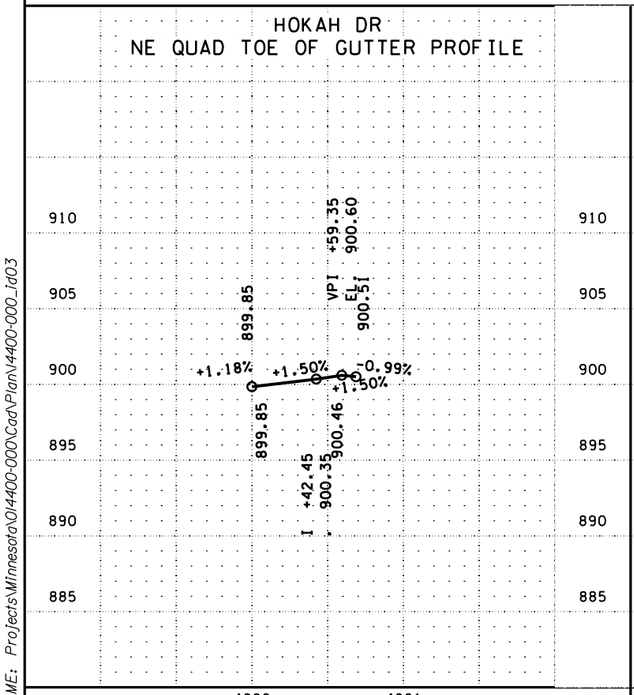
POINT NUMBER	POINT	STATION	DELTA	DEGREE	RADIUS	TANGENT	LENGTH	COORDINATES X	COORDINATES Y	BEARING
		HOKAH STREET SW QUAD <Q_HOKAH_SE>								
	POT	4000+00.000						537,594.8122	138,955.5771	
	PC	4000+18.087						537,594.6278	138,973.6632	N 0° 35' 03.54" W
	PI	4000+50.431	90° 36' 42.97" RT	179° 02' 57.52"	32.000'	32.344'	50.607'	537,594.2979	139,006.0051	PI
	CC							537,626.6261	138,973.9895	
	PT	4000+68.694						537,626.6415	139,005.9895	S 89° 58' 20.57" E
	POT	4000+00.000						537,594.8122	138,955.5771	
	PC	4000+18.087						537,594.6278	138,973.6632	N 0° 35' 03.54" W
	PI	4000+50.431	90° 36' 42.97" RT	179° 02' 57.52"	32.000'	32.344'	50.607'	537,594.2979	139,006.0051	PI
	CC							537,626.6261	138,973.9895	
	PT	4000+68.694						537,626.6415	139,005.9895	S 89° 58' 20.57" E
		HOKAH DRIVE NE QUAD <Q_HOKAH_NE>								
	POT	4100+00.000						537,594.6907	139,105.1987	
	PC	4100+11.066						537,597.6169	139,094.5267	S 15° 20' 00.43" E
	PI	4100+35.461	74° 38' 20.14" LT	179° 02' 57.52"	32.000'	24.395'	41.686'	537,604.0677	139,071.0004	PI
	CC							537,628.4778	139,102.9887	
	PT	4100+52.752						537,628.4624	139,070.9887	S 89° 58' 20.57" E
	POT	4100+00.000						537,594.6907	139,105.1987	
	PC	4100+11.066						537,597.6169	139,094.5267	S 15° 20' 00.43" E
	PI	4100+35.461	74° 38' 20.14" LT	179° 02' 57.52"	32.000'	24.395'	41.686'	537,604.0677	139,071.0004	PI
	CC							537,628.4778	139,102.9887	
	PT	4100+52.752						537,628.4624	139,070.9887	S 89° 58' 20.57" E

ALIGNMENT TABULATION

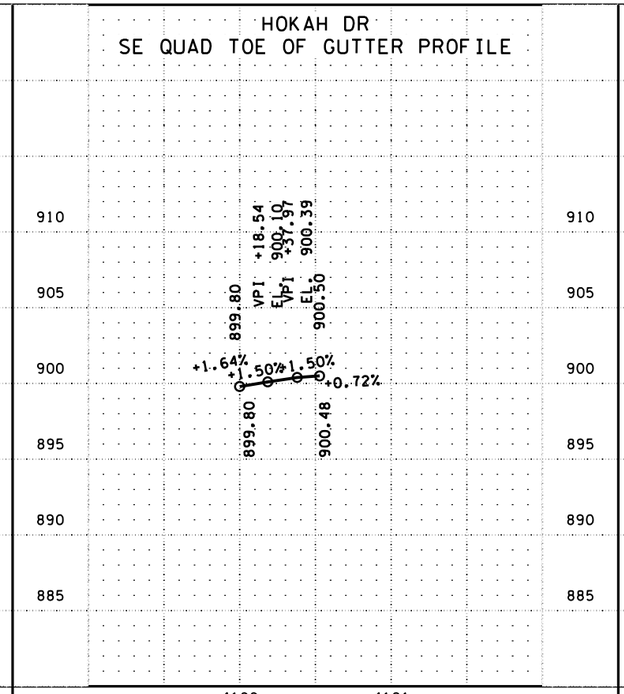
POINT NUMBER	POINT	STATION	DELTA	DEGREE	RADIUS	TANGENT	LENGTH	COORDINATES X	COORDINATES Y	BEARING
		TOTEM TRL SW QUAD <Q_TOTEM_SW>								
	PC	5000+00.000						538,174.8566	139,008.5253	N 89° 37' 04.95" E
	PI	5000+32.070	90° 07' 30.65" RT	179° 02' 57.52"	32.000'	32.070'	50.335'	538,206.9259	139,008.7391	PI
	CC							538,175.0700	138,976.5260	
	PT	5000+50.335						538,207.0696	138,976.6694	S 0° 15' 24.40" E
	POT	5000+54.333						538,207.0876	138,972.6720	
	PC	5000+00.000						538,174.8566	139,008.5253	N 89° 37' 04.95" E
	PI	5000+32.070	90° 07' 30.65" RT	179° 02' 57.52"	32.000'	32.070'	50.335'	538,206.9259	139,008.7391	PI
	CC							538,175.0700	138,976.5260	
	PT	5000+50.335						538,207.0696	138,976.6694	S 0° 15' 24.40" E
	POT	5000+54.333						538,207.0876	138,972.6720	
		TOTEM TRL SE QUAD <Q_TOTEM_SE>								
	POT	5100+00.000						538,232.0879	138,972.6599	
	PC	5100+05.375						538,232.0638	138,978.0346	N 0° 15' 24.40" W
	PI	5100+35.247	86° 03' 38.68" RT	179° 02' 57.52"	32.000'	29.872'	48.065'	538,231.9299	139,007.9066	PI
	CC							538,264.0635	138,978.1781	
	PT	5100+53.440						538,261.7220	139,010.0923	N 85° 48' 14.28" E
	POT	5100+00.000						538,232.0879	138,972.6599	
	PC	5100+05.375						538,232.0638	138,978.0346	N 0° 15' 24.40" W
	PI	5100+35.247	86° 03' 38.68" RT	179° 02' 57.52"	32.000'	29.872'	48.065'	538,231.9299	139,007.9066	PI
	CC							538,264.0635	138,978.1781	
	PT	5100+53.440						538,261.7220	139,010.0923	N 85° 48' 14.28" E

NOTES: <XXXX> INDICATES GEOPAK ALIGNMENT NAMES.

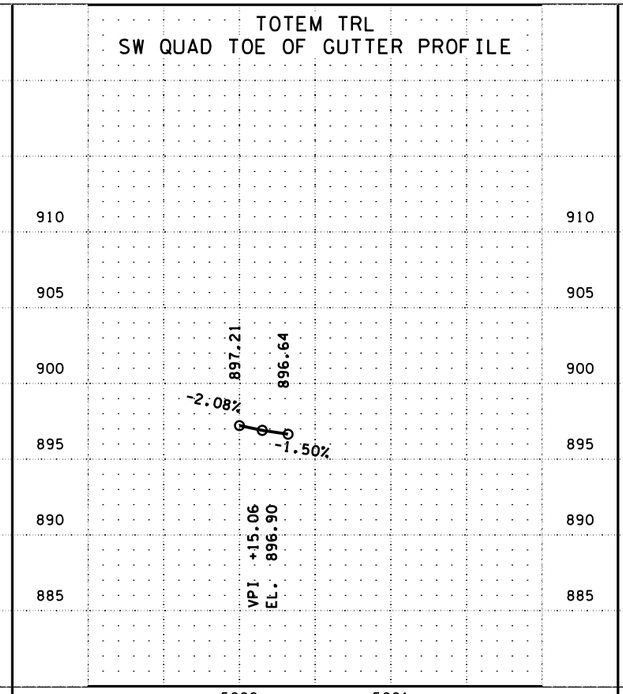
HOKAH DR
NE QUAD TOE OF GUTTER PROFILE



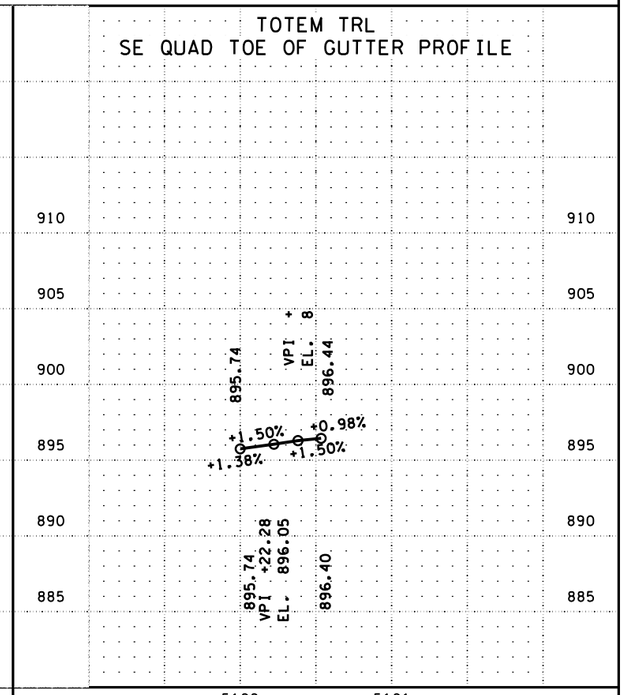
HOKAH DR
SE QUAD TOE OF GUTTER PROFILE



TOTEM TRL
SW QUAD TOE OF GUTTER PROFILE



TOTEM TRL
SE QUAD TOE OF GUTTER PROFILE



NO.	DATE	BY	CHK	REVISIONS

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ANDREW J. PLOWMAN, PE

DATE 12/3/2020 LICENSE # 44200

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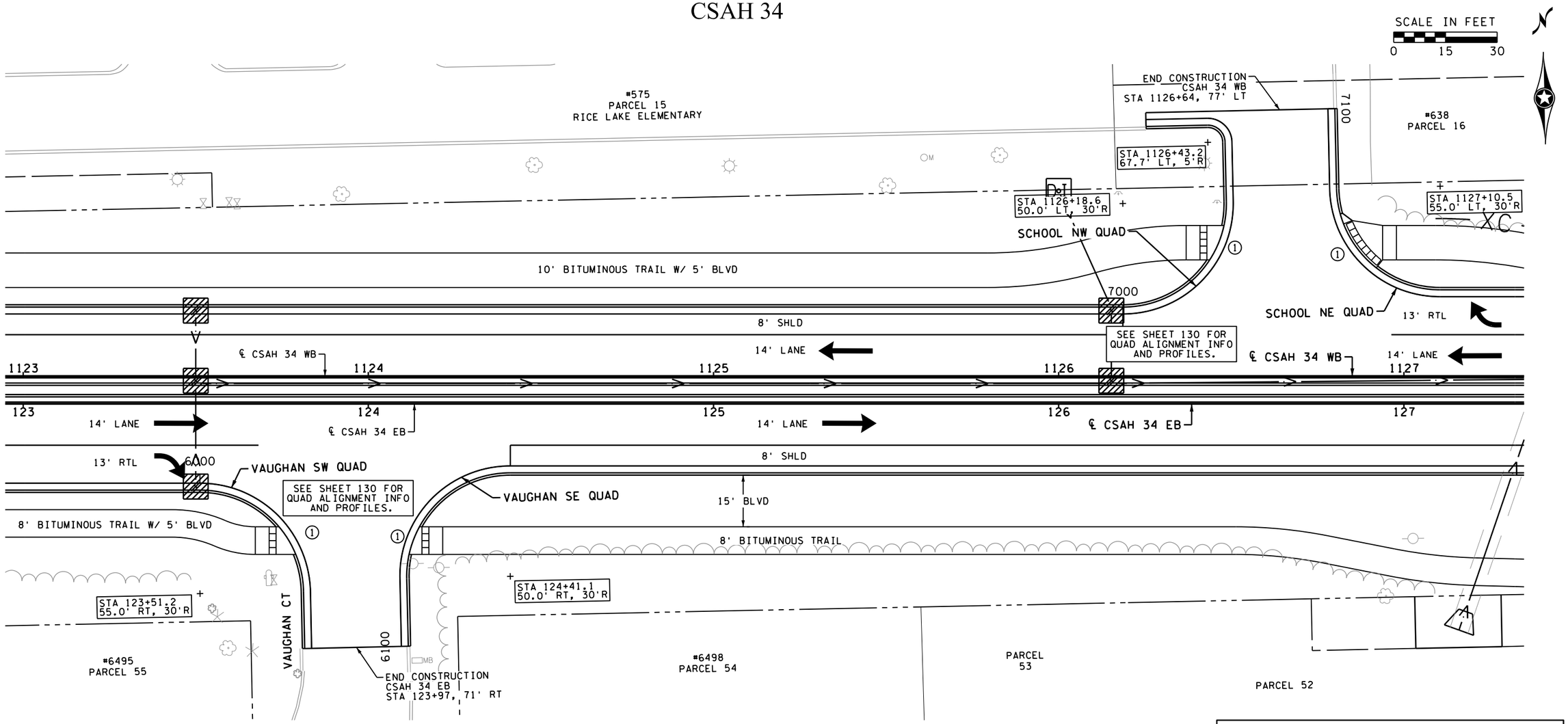
ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
ALIGNMENT TABULATIONS / PROFILES
INTERSECTION DETAILS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 128 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\4400-000_Id03



LEGEND

- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CATCH BASIN
- MH ○M MANHOLE
- ① PEDESTRIAN CURB RAMP, SEE PEDESTRIAN RAMP DETAILS AND STANDARD PLANS.
- ② CONCRETE MEDIAN NOSE DESIGN 7113
- ③ MILL BITUMINOUS SURFACE SPECIAL, SEE SHEET 28 FOR DETAILS.

NOTE:

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NO.	DATE	BY	CHK	REVISIONS

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Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

INTERSECTION DETAILS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 129 OF 195 SHEETS

PLOTTED/REVISED: 12/3/2020

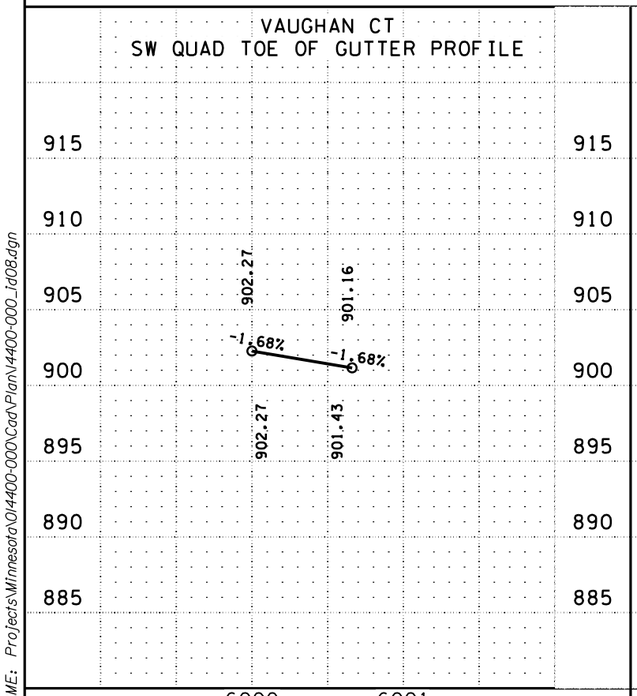
ALIGNMENT TABULATION

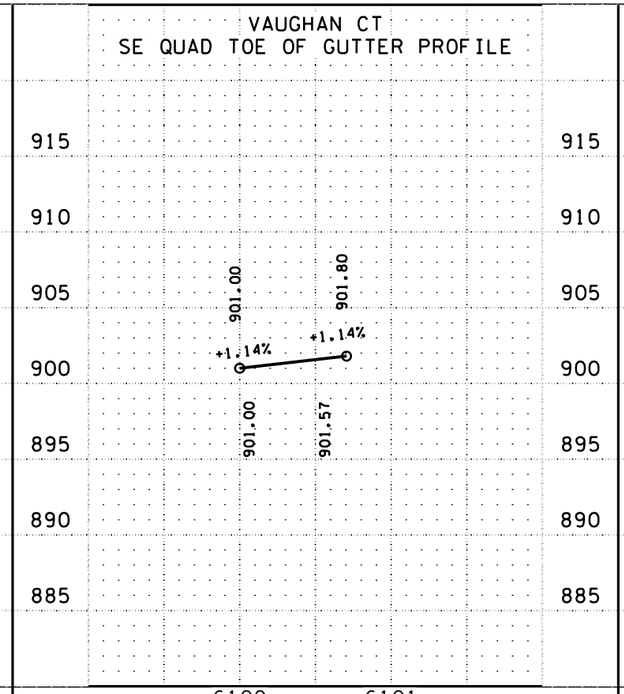
POINT NUMBER	POINT	STATION	DELTA	DEGREE	RADIUS	TANGENT	LENGTH	COORDINATES X	COORDINATES Y	BEARING
		VAUGHAN CT SW QUAD <Q_VAUGHAN_SW>								
	PC	6000+00.000						539,623.0889	139,017.7776	S 88° 47' 36.40" E
	PI	6000+31.305	88° 44' 30.32" RT	79° 02' 57.52"	32.000'	31.305'	49.563'	539,654.3868	139,017.1184	PI
	CC							539,622.4151	138,985.7847	
	PT	6000+49.563						539,654.4151	138,985.8135	S 0° 03' 06.08" E
	POT	6000+66.132						539,654.4300	138,969.2443	
	PC	6000+00.000						539,623.0889	139,017.7776	S 88° 47' 36.40" E
	PI	6000+31.305	88° 44' 30.32" RT	79° 02' 57.52"	32.000'	31.305'	49.563'	539,654.3868	139,017.1184	PI
	CC							539,622.4151	138,985.7847	
	PT	6000+49.563						539,654.4151	138,985.8135	S 0° 03' 06.08" E
	POT	6000+66.132						539,654.4300	138,969.2443	
		VAUGHAN CT SE QUAD <Q_VAUGHAN_SE>								
	POT	6100+00.000						539,680.4300	138,969.2678	
	PC	6100+19.594						539,680.4123	138,988.8614	N 0° 03' 06.08" W
	PI	6100+52.304	91° 15' 29.68" RT	79° 02' 57.52"	32.000'	32.711'	50.968'	539,680.3828	139,021.5720	PI
	CC							539,712.4123	138,988.8903	
	PT	6100+70.562						539,713.0861	139,020.8832	S 88° 47' 36.40" E
	POT	6100+00.000						539,680.4300	138,969.2678	
	PC	6100+19.594						539,680.4123	138,988.8614	N 0° 03' 06.08" W
	PI	6100+52.304	91° 15' 29.68" RT	79° 02' 57.52"	32.000'	32.711'	50.968'	539,680.3828	139,021.5720	PI
	CC							539,712.4123	138,988.8903	
	PT	6100+70.562						539,713.0861	139,020.8832	S 88° 47' 36.40" E

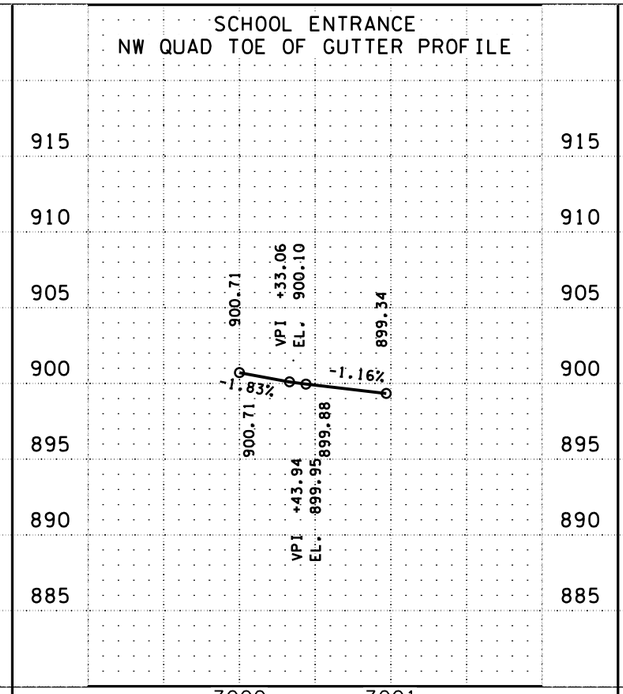
ALIGNMENT TABULATION

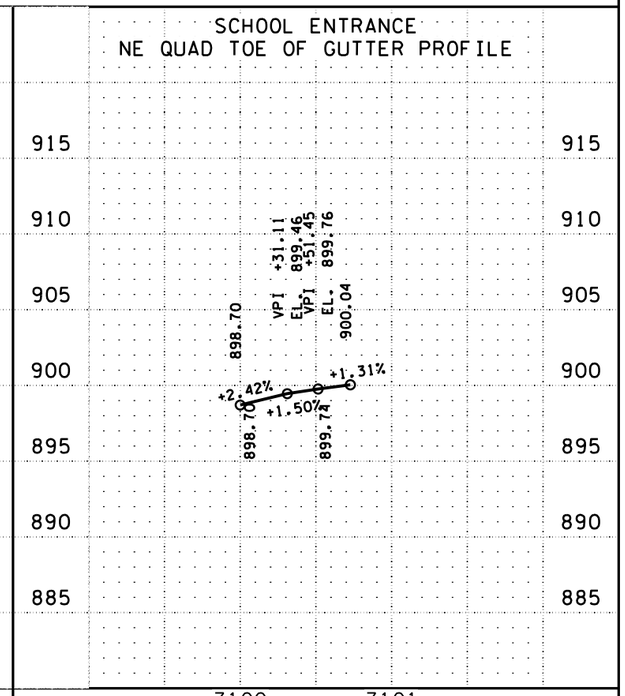
POINT NUMBER	POINT	STATION	DELTA	DEGREE	RADIUS	TANGENT	LENGTH	COORDINATES X	COORDINATES Y	BEARING
		SCHOOL ENTRANCE NW QUAD <Q_SCHL_NW>								
	PC	7000+00.000						539,891.4150	139,061.1371	S 88° 47' 36.40" E
	PI	7000+32.711	91° 15' 29.68" LT	79° 02' 57.52"	32.000'	32.711'	50.968'	539,924.1183	139,060.4483	PI
	CC							539,892.0888	139,093.1300	
	PT	7000+50.968						539,924.0888	139,093.1589	N 0° 03' 06.08" W
	PC	7000+68.140						539,924.0733	139,110.3303	N 0° 03' 06.08" W
	PI	7000+75.140	90° 00' 00.00" LT	18° 30' 40.09"	7.000'	7.000'	10.996'	539,924.0670	139,117.3302	PI
	CC							539,917.0733	139,110.3239	
	PT	7000+79.135						539,917.0670	139,117.3239	S 89° 56' 53.92" W
	POT	7000+96.922						539,899.2801	139,117.3079	
		SCHOOL ENTRANCE NE QUAD <Q_SCHL_NE>								
	POT	7100+00.000						539,952.0651	139,119.3555	
	PC	7100+23.191						539,952.0861	139,096.1646	S 0° 03' 06.08" E
	PI	7100+54.496	88° 44' 30.32" LT	79° 02' 57.52"	32.000'	31.305'	49.563'	539,952.1143	139,064.8598	PI
	CC							539,984.0861	139,096.1935	
	PT	7100+72.754						539,983.4122	139,064.2006	S 88° 47' 36.40" E
	POT	7100+00.000						539,952.0651	139,119.3555	
	PC	7100+23.191						539,952.0861	139,096.1646	S 0° 03' 06.08" E
	PI	7100+54.496	88° 44' 30.32" LT	79° 02' 57.52"	32.000'	31.305'	49.563'	539,952.1143	139,064.8598	PI
	CC							539,984.0861	139,096.1935	
	PT	7100+72.754						539,983.4122	139,064.2006	S 88° 47' 36.40" E

NOTES: <XXXX> INDICATES GEOPAK ALIGNMENT NAMES.









PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\4400-000_Id08.dgn

NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

ANDREW J. PLOWMAN, PE
DATE 12/3/2020 LICENSE # 44200

wsb

ANOKA COUNTY

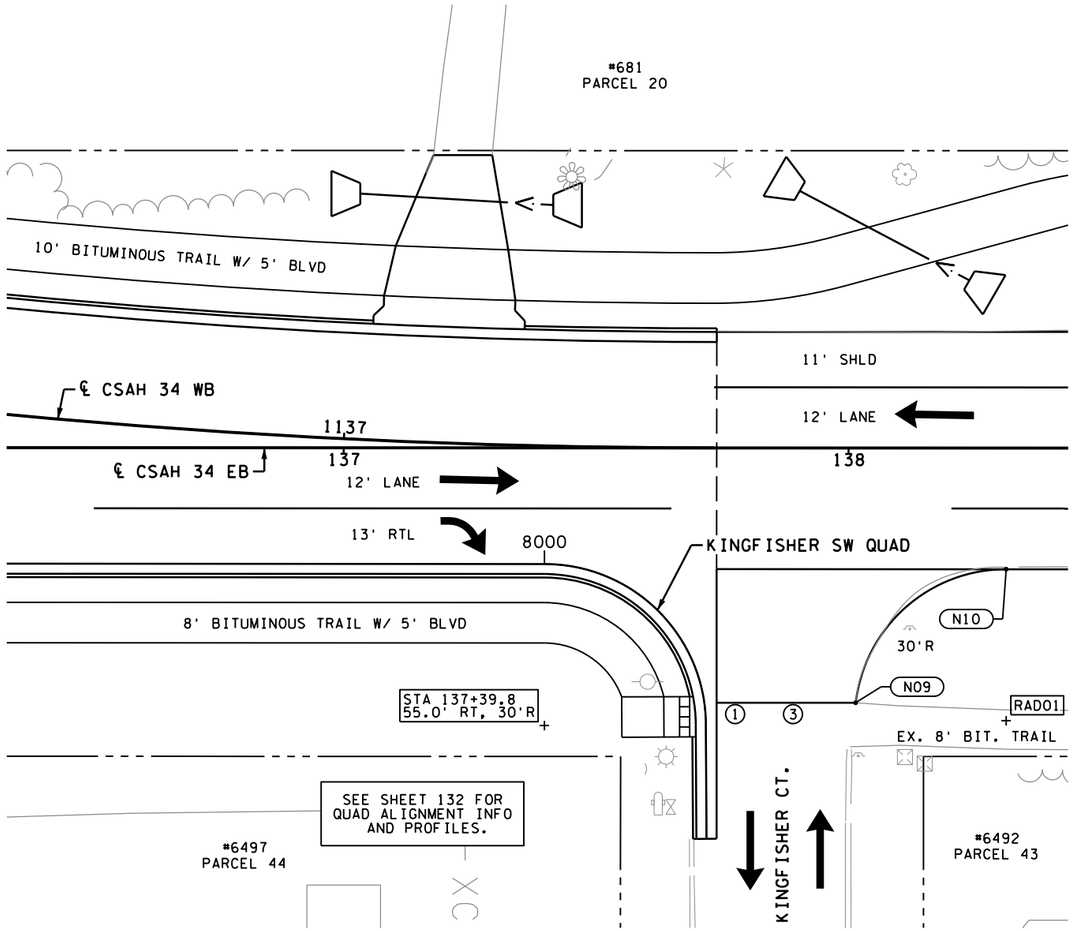
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
ALIGNMENT TABULATIONS / PROFILES
INTERSECTION DETAILS
S.A.P. 002-634-003 & S.A.P. 210-020-010

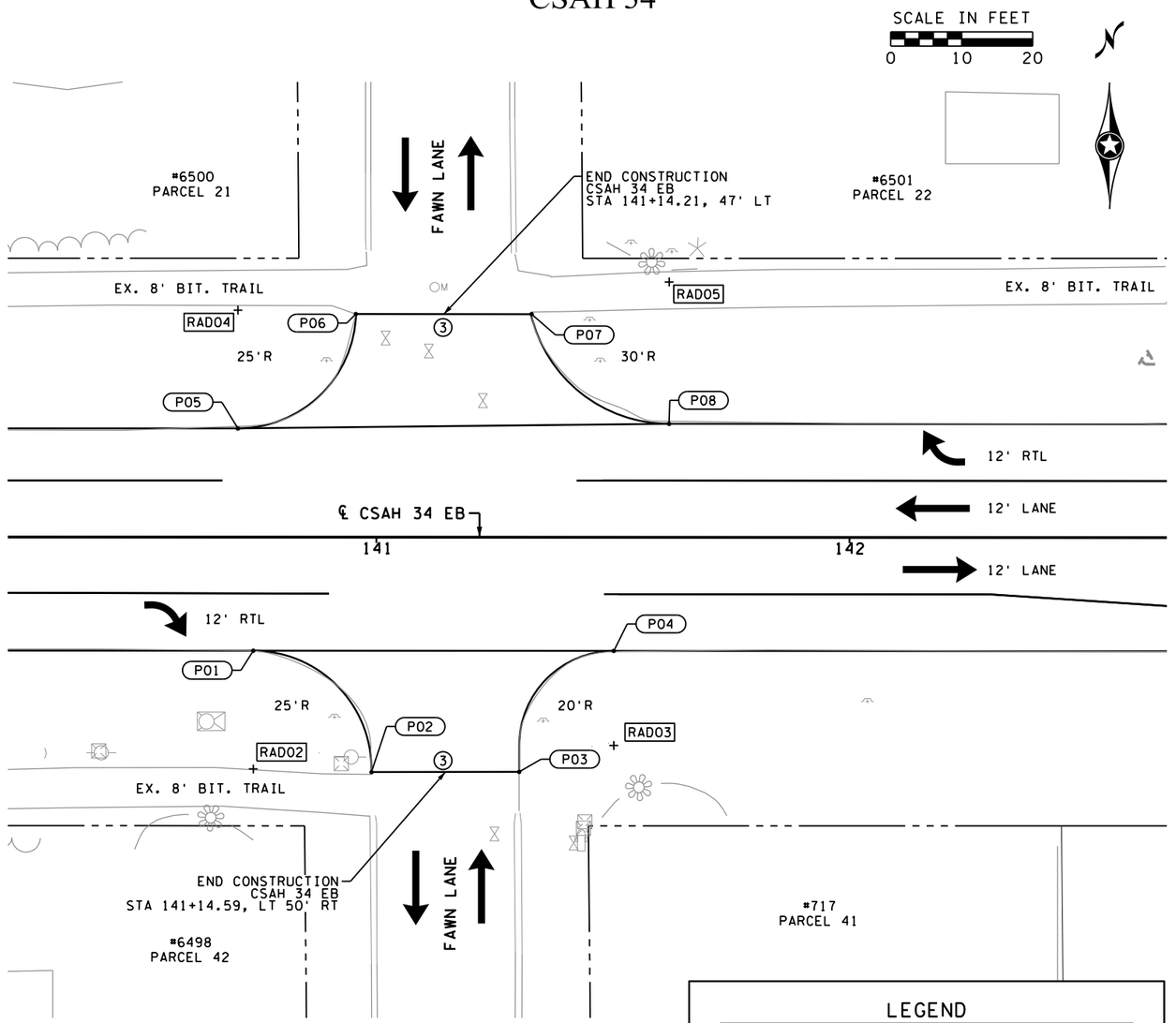
SHEET 130 OF 195 SHEETS

PLOTTED/REVISED: 12/3/2020

CSAH 34



CSAH 34



SCALE IN FEET
0 10 20

RADIUS CONTROL POINTS				
POINT NO.	ALIGNMENT	STATION	OFFSET	RADIUS
RAD01	CSAH 34 EB	138+31.25	54.00' RT	30'
RAD02	CSAH 34 EB	140+73.98	49.00' RT	25'
RAD03	CSAH 34 EB	141+50.19	44.00' RT	20'
RAD04	CSAH 34 EB	140+70.70	48.00' LT	25'
RAD05	CSAH 34 EB	141+61.86	54.00' LT	30'

CONTROL POINTS AT GUTTER FLOW LINE				
POINT NO.	ALIGNMENT	STATION	OFFSET	ELEVATION
N09	CSAH 34 EB	138+01.41	50.48' RT	899.52
N10	CSAH 34 EB	138+31.25	24.00' RT	900.04
P01	CSAH 34 EB	140+73.98	24.00' RT	900.35
P02	CSAH 34 EB	140+98.98	49.65' RT	899.13
P03	CSAH 34 EB	141+30.20	49.60' RT	898.91
P04	CSAH 34 EB	141+50.19	24.00' RT	900.18
P05	CSAH 34 EB	140+70.70	23.00' LT	900.13
P06	CSAH 34 EB	140+95.64	47.19' LT	899.92
P07	CSAH 34 EB	141+32.78	47.19' LT	899.73
P08	CSAH 34 EB	141+61.86	24.00' LT	900.14

LEGEND

- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CATCH BASIN
- MH ○M MANHOLE
- ① PEDESTRIAN CURB RAMP, SEE PEDESTRIAN RAMP DETAILS AND STANDARD PLANS.
- ② CONCRETE MEDIAN NOSE DESIGN 7113
- ③ MILL BITUMINOUS SURFACE SPECIAL, SEE SHEET 28 FOR DETAILS.

NOTE:

- RADII LABELS ARE TO FACE OF CURB.

NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

INTERSECTION DETAILS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 131 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\0\44400-000\Cad\Plan\\44400-000_Idl.dgn

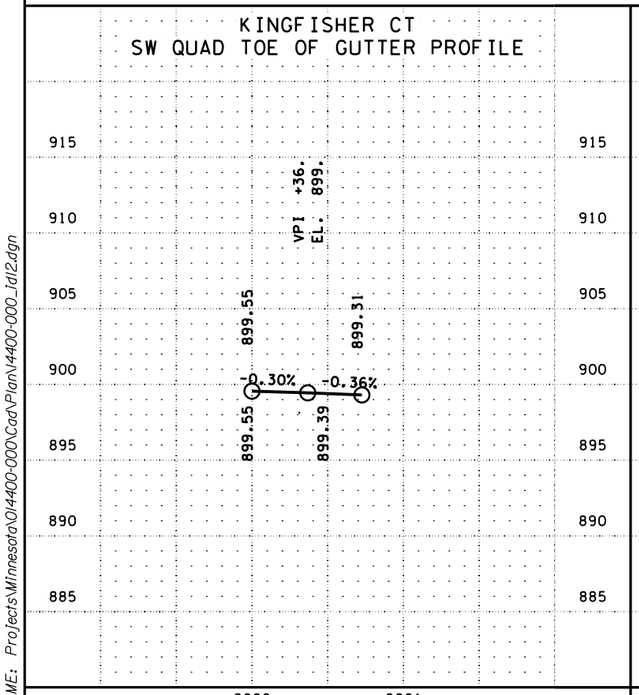
PLOTTED/REVISED: 12/3/2020

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	DELTA	DEGREE	RADIUS	TANGENT	LENGTH	COORDINATES X	COORDINATES Y	BEARING
KINGFISHER CT SW QUAD <Q_KING_SW>										
	PC	8000+00.000						540,996.0841	139,015.4276	S 89° 58' 20.57" E
	PI	8000+31.843	89° 43' 02.36" RT	79° 02' 57.52"	32.000'	31.843'	50.108'	541,027.9266	139,015.4123	PI
	CC							540,996.0687	138,983.4276	
	PT	8000+50.108						541,028.0684	138,983.5701	S 0° 15' 18.21" E
	POT	8000+72.703						541,028.1689	138,960.9746	

NOTES: <XXXX> INDICATES GEOPAK ALIGNMENT NAMES.

KINGFISHER CT
SW QUAD TOE OF GUTTER PROFILE



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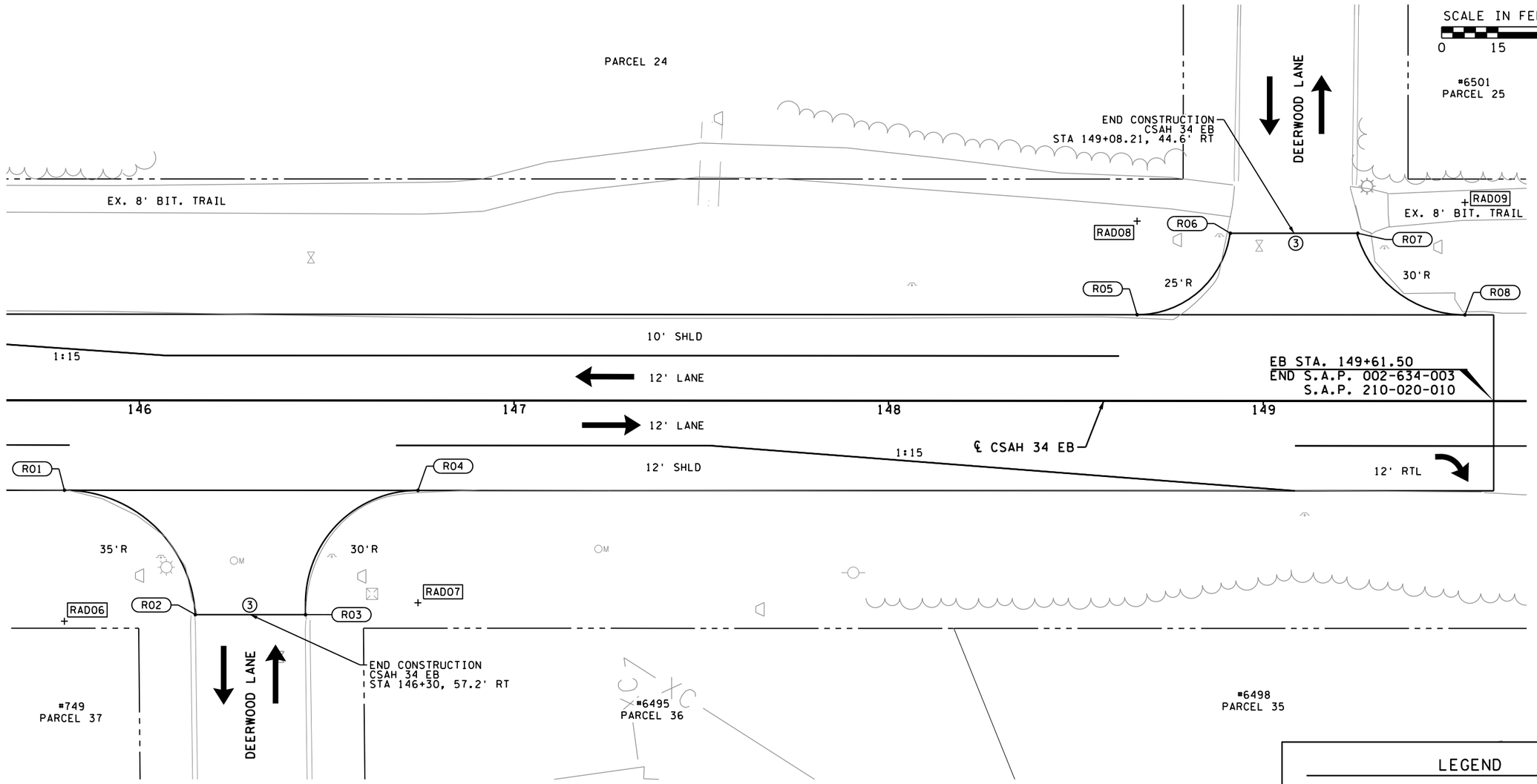
SHEET 132 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\44400-000_Id12.dgn



CONTROL POINTS AT EDGE OF BITUMINOUS				
POINT NO.	ALIGNMENT	STATION	OFFSET	ELEVATION
R01	CSAH 34 EB	145+80.01	24.00' RT	897.30
R02	CSAH 34 EB	146+14.97	57.22' RT	896.26
R03	CSAH 34 EB	146+44.38	57.22' RT	896.03
R04	CSAH 34 EB	146+74.38	24.00' RT	896.61
R05	CSAH 34 EB	148+66.31	23.00' LT	895.92
R06	CSAH 34 EB	148+91.20	44.78' LT	895.10
R07	CSAH 34 EB	149+25.21	44.78' LT	895.10
R08	CSAH 34 EB	149+53.82	23.00' LT	895.37

RADIUS CONTROL POINTS				
POINT NO.	ALIGNMENT	STATION	OFFSET	RADIUS
RAD06	CSAH 34 EB	145+80.01	59.00' RT	35'
RAD07	CSAH 34 EB	146+74.38	54.00' RT	30'
RAD08	CSAH 34 EB	148+66.31	48.00' LT	25'
RAD09	CSAH 34 EB	149+53.82	53.00' LT	30'

LEGEND

- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CATCH BASIN
- MANHOLE
- ① PEDESTRIAN CURB RAMP, SEE PEDESTRIAN RAMP DETAILS AND STANDARD PLANS.
- ② CONCRETE MEDIAN NOSE DESIGN 7113
- ③ MILL BITUMINOUS SURFACE SPECIAL, SEE SHEET 28 FOR DETAILS.

NOTE:

- RADII LABELS ARE TO FACE OF CURB.

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Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

INTERSECTION DETAILS
S.A.P. 002-634-003 & S.A.P. 210-020-010

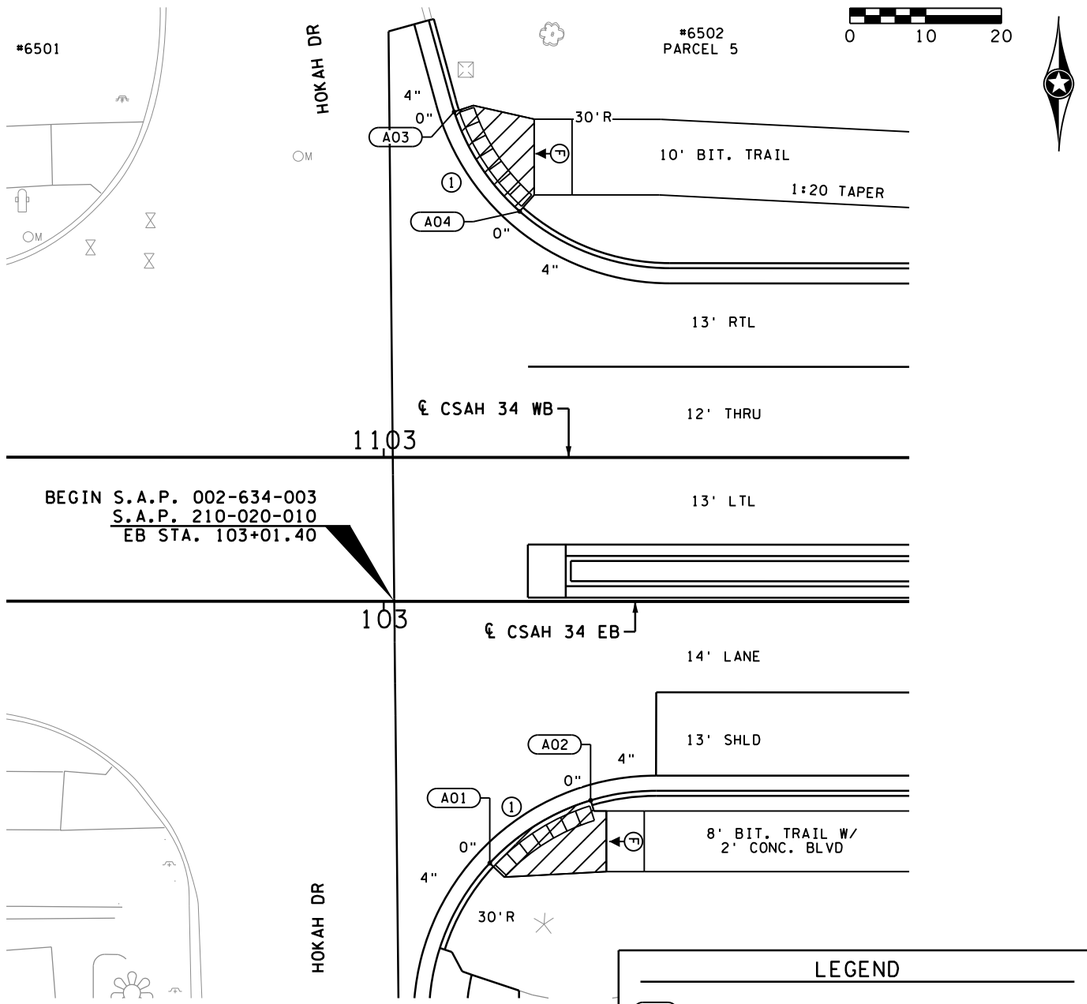
SHEET 133 OF 195 SHEETS

PLOTTED/REVISED: 12/3/2020

PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\14400-000_tid14.dgn

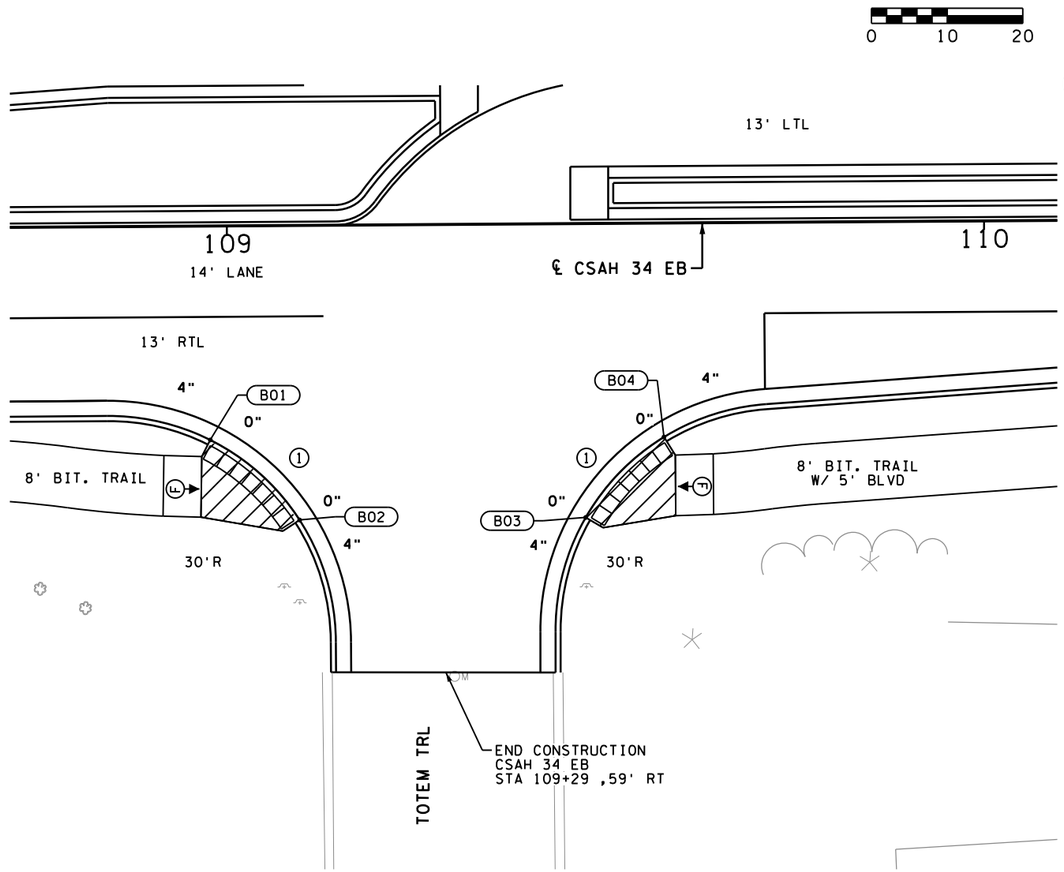
PLOTTED/REVISED: 12/3/2020

CSAH 34 at Hokah Drive



CONTROL POINTS AT GUTTER FLOW LINE				
POINT NO.	ALIGNMENT	STATION	OFFSET	ELEVATION
A01	CSAH 34 EB	103+14.02	34.57' RT	900.23
A02	CSAH 34 EB	103+27.34	26.27' RT	900.48
A03	CSAH 34 WB	1103+09.27	45.64' LT	899.88
A04	CSAH 34 WB	1103+17.93	32.50' LT	900.15

CSAH 34 at Totem Trail



CONTROL POINTS AT GUTTER FLOW LINE				
POINT NO.	ALIGNMENT	STATION	OFFSET	ELEVATION
B01	CSAH 34 EB	108+97.63	28.25' RT	896.78
B02	CSAH 34 EB	109+09.36	38.90' RT	896.52
B03	CSAH 34 EB	109+47.14	38.82' RT	895.93
B04	CSAH 34 EB	109+57.54	28.26' RT	896.17

LEGEND

- (XX) — CONTROL POINTS AT GUTTER FLOW LINE
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- X" — CURB HEIGHT
- LANDING AREA - 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS.
- (S) — INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.
- (F) — INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.
- (1) — PEDESTRIAN CURB RAMP, SEE STANDARD PLANS

GENERAL NOTES

- MAINTAIN A MINIMUM 4' WIDE PEDESTRIAN ACCESS ROUTE OBSTRUCTION TO OBSTRUCTION AND/OR OBSTRUCTION TO FAR EDGE OF WALK.
- THE CROSS SLOPE OF THE PEDESTRIAN ACCESS ROUTE SHALL NOT EXCEED 0.020 FT/FT
- PROVIDE A SAWCUT (INCIDENTAL) AT ALL CONCRETE WALK AND BITUMINOUS TRAIL REMOVAL LIMITS.
- ALL CURB RAMPS AND LANDING AREAS SHALL BE 6" CONCRETE WALK ON 3" AGGREGATE BASE CLASS 5.
- LANDINGS SHALL BE CONNECTED TO EXISTING SIDEWALKS MAINTAINING A 4' WIDE (MINIMUM) PEDESTRIAN ACCESS ROUTE WITH A CROSS SLOPE THAT DOES NOT EXCEED 0.020 FT/FT AND A RUNNING SLOPE THAT DOES NOT EXCEED 0.050 FT/FT.
- ALL DISTRURBED AREAS IN CUT SECTION THAT ARE NOT OTHERWISE SURFACED SHALL BE GRADED FLUSH WITH NEW SURFACING AT A 1:6 SLOPE FOR A DISTANCE OF UP TO 5 FEET FROM THE EDGE OF WALK TO MATCH SURROUNDING CONTOURS.

NO.	DATE	BY	CHK	REVISIONS

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Plan By: CWK
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ANDREW J. PLOWMAN, PE
DATE 12/3/2020 LICENSE # 44200

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

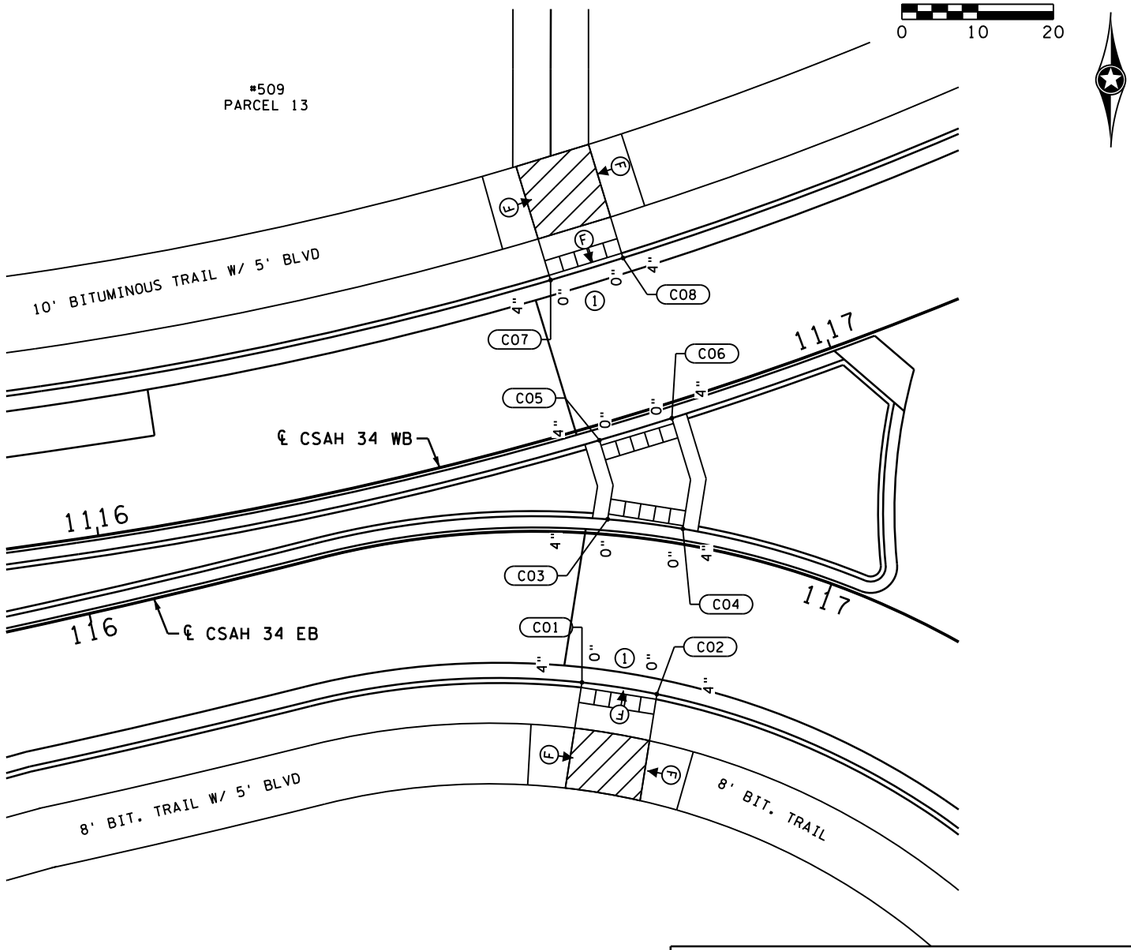
PEDESTRIAN RAMP DETAILS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 134 OF 195 SHEETS

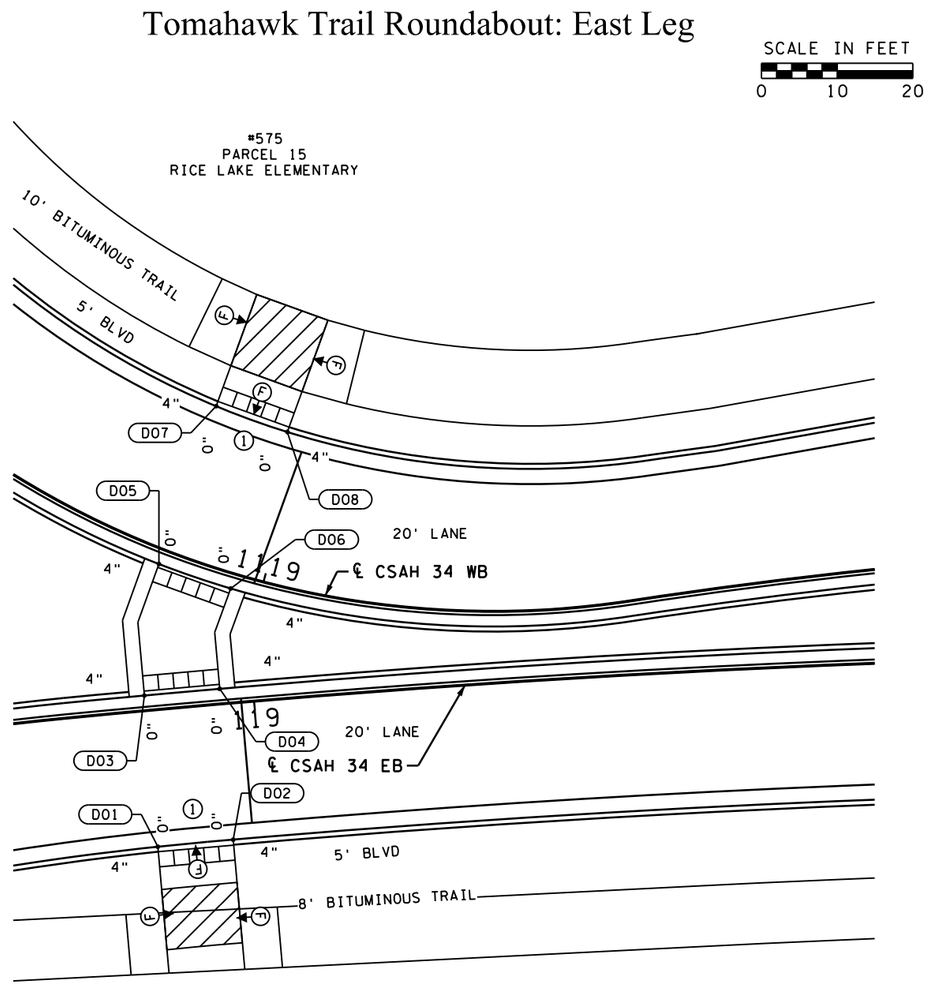
PATH & FILENAME: Projects\Minnesota\0\44400-000\Cad\Plan\44400-000_ped01

PLOTTED/REVISED: 12/3/2020

Tomahawk Trail Roundabout: West Leg



Tomahawk Trail Roundabout: East Leg



LEGEND

- XX — CONTROL POINTS AT GUTTER FLOW LINE
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- X" — CURB HEIGHT
- LANDING AREA - 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS.
- (S) — INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.
- (F) — INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.
- (1) — PEDESTRIAN CURB RAMP, SEE STANDARD PLANS

GENERAL NOTES

- MAINTAIN A MINIMUM 4' WIDE PEDESTRIAN ACCESS ROUTE OBSTRUCTION TO OBSTRUCTION AND/OR OBSTRUCTION TO FAR EDGE OF WALK.
- THE CROSS SLOPE OF THE PEDESTRIAN ACCESS ROUTE SHALL NOT EXCEED 0.020 FT/FT
- PROVIDE A SAWCUT (INCIDENTAL) AT ALL CONCRETE WALK AND BITUMINOUS TRAIL REMOVAL LIMITS.
- ALL CURB RAMPS AND LANDING AREAS SHALL BE 6" CONCRETE WALK ON 3" AGGREGATE BASE CLASS 5.
- LANDINGS SHALL BE CONNECTED TO EXISTING SIDEWALKS MAINTAINING A 4' WIDE (MINIMUM) PEDESTRIAN ACCESS ROUTE WITH A CROSS SLOPE THAT DOES NOT EXCEED 0.020 FT/FT AND A RUNNING SLOPE THAT DOES NOT EXCEED 0.050 FT/FT.
- ALL DISTRURBED AREAS IN CUT SECTION THAT ARE NOT OTHERWISE SURFACED SHALL BE GRADED FLUSH WITH NEW SURFACING AT A 1:6 SLOPE FOR A DISTANCE OF UP TO 5 FEET FROM THE EDGE OF WALK TO MATCH SURROUNDING CONTOURS.

CONTROL POINTS AT GUTTER FLOW LINE

POINT NO.	ALIGNMENT	STATION	OFFSET	ELEVATION
C01	CSAH 34 EB	116+67.57	19.74' RT	903.00
C02	CSAH 34 EB	116+79.67	20.10' RT	903.12
C03	CSAH 34 EB	116+69.48	2.00' LT	903.35
C04	CSAH 34 EB	116+79.32	2.00' LT	903.45
C05	CSAH 34 WB	1116+67.24	2.00' RT	903.53
C06	CSAH 34 WB	1116+77.20	2.00' RT	903.64
C07	CSAH 34 WB	1116+67.01	20.10' LT	903.17
C08	CSAH 34 WB	1116+77.43	20.11' LT	903.30

CONTROL POINTS AT GUTTER FLOW LINE

POINT NO.	ALIGNMENT	STATION	OFFSET	ELEVATION
D01	CSAH 34 EB	118+85.58	18.04' RT	902.97
D02	CSAH 34 EB	118+95.68	18.00' RT	902.91
D03	CSAH 34 EB	118+85.63	2.00' LT	903.31
D04	CSAH 34 EB	118+95.62	2.00' LT	903.24
D05	CSAH 34 WB	1108+86.25	2.00' RT	903.54
D06	CSAH 34 WB	1118+96.09	2.00' RT	903.44
D07	CSAH 34 WB	1118+85.67	20.17' LT	903.28
D08	CSAH 34 WB	118+97.68	19.94' LT	903.14

NO.	DATE	BY	CHK	REVISIONS

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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

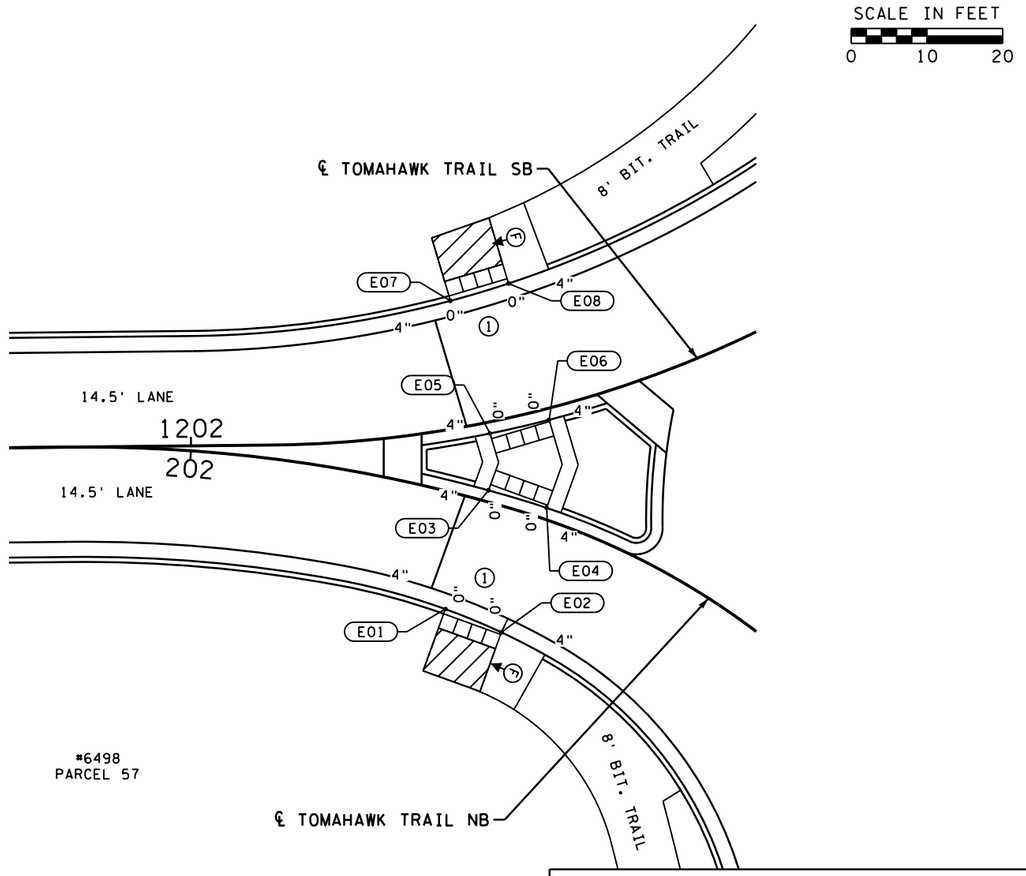
PEDESTRIAN RAMP DETAILS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 135 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\14400-000_ped02.dgn

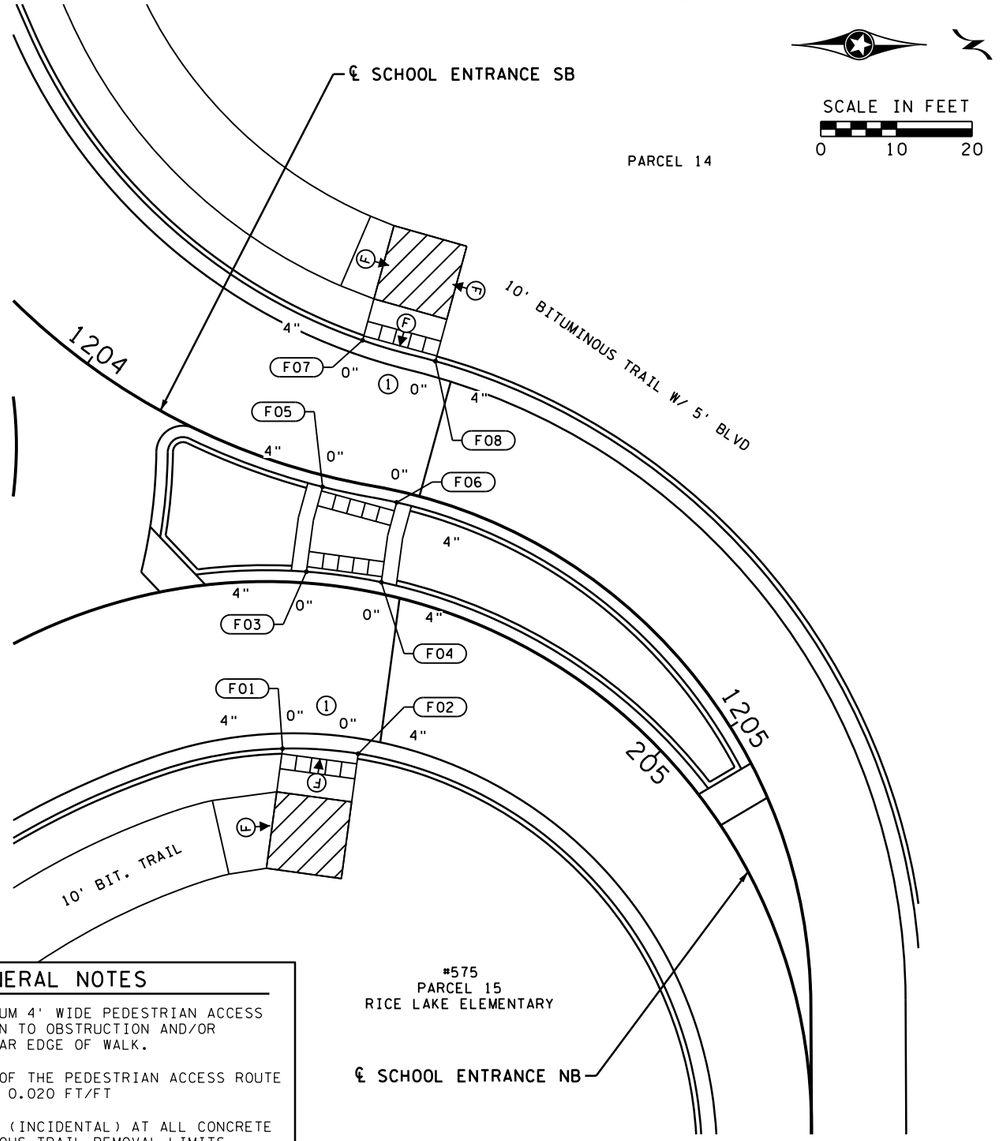
PLOTTED/REVISED: 12/3/2020

Tomahawk Trail Roundabout: South Leg



CONTROL POINTS AT GUTTER FLOW LINE				
POINT NO.	ALIGNMENT	STATION	OFFSET	ELEVATION
E01	TOMAHAWK TRL NB	202+32.11	15.15' RT	902.58
E02	TOMAHAWK TRL NB	202+47.02	15.98' RT	902.75
E03	TOMAHAWK TRL NB	202+36.53	1.50' LT	902.87
E04	TOMAHAWK TRL NB	202+47.46	1.50' LT	903.05
E05	SCHOOL ENTRANCE SB	1202+39.38	1.50' RT	902.92
E06	SCHOOL ENTRANCE SB	1202+47.32	1.50' RT	903.05
E07	SCHOOL ENTRANCE SB	1202+37.54	16.70' LT	902.62
E08	SCHOOL ENTRANCE SB	1202+46.54	17.27' LT	902.78

Tomahawk Trail Roundabout: North Leg



CONTROL POINTS AT GUTTER FLOW LINE				
POINT NO.	ALIGNMENT	STATION	OFFSET	ELEVATION
F01	SCHOOL ENTRANCE NB	204+44.82	22.01' RT	904.20
F02	SCHOOL ENTRANCE NB	204+59.13	21.26' RT	904.24
F03	SCHOOL ENTRANCE NB	204+46.93	1.50' LT	904.50
F04	SCHOOL ENTRANCE NB	204+56.73	1.50' LT	904.55
F05	SCHOOL ENTRANCE SB	1204+34.97	1.50' RT	904.48
F06	SCHOOL ENTRANCE SB	1204+44.69	1.50' RT	904.54
F07	SCHOOL ENTRANCE SB	1204+35.51	18.55' LT	904.36
F08	SCHOOL ENTRANCE SB	1204+45.60	17.82' LT	904.41

LEGEND

- XX — CONTROL POINTS AT GUTTER FLOW LINE
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- X" — CURB HEIGHT
- LANDING AREA - 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS.
- (S) — INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.
- (F) — INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.
- (1) — PEDESTRIAN CURB RAMP, SEE STANDARD PLANS

GENERAL NOTES

- MAINTAIN A MINIMUM 4' WIDE PEDESTRIAN ACCESS ROUTE OBSTRUCTION TO OBSTRUCTION AND/OR OBSTRUCTION TO FAR EDGE OF WALK.
- THE CROSS SLOPE OF THE PEDESTRIAN ACCESS ROUTE SHALL NOT EXCEED 0.020 FT/FT
- PROVIDE A SAWCUT (INCIDENTAL) AT ALL CONCRETE WALK AND BITUMINOUS TRAIL REMOVAL LIMITS.
- ALL CURB RAMPS AND LANDING AREAS SHALL BE 6" CONCRETE WALK ON 3" AGGREGATE BASE CLASS 5.
- LANDINGS SHALL BE CONNECTED TO EXISTING SIDEWALKS MAINTAINING A 4' WIDE (MINIMUM) PEDESTRIAN ACCESS ROUTE WITH A CROSS SLOPE THAT DOES NOT EXCEED 0.020 FT/FT AND A RUNNING SLOPE THAT DOES NOT EXCEED 0.050 FT/FT.
- ALL DISTRURBED AREAS IN CUT SECTION THAT ARE NOT OTHERWISE SURFACED SHALL BE GRADED FLUSH WITH NEW SURFACING AT A 1:6 SLOPE FOR A DISTANCE OF UP TO 5 FEET FROM THE EDGE OF WALK TO MATCH SURROUNDING CONTOURS.

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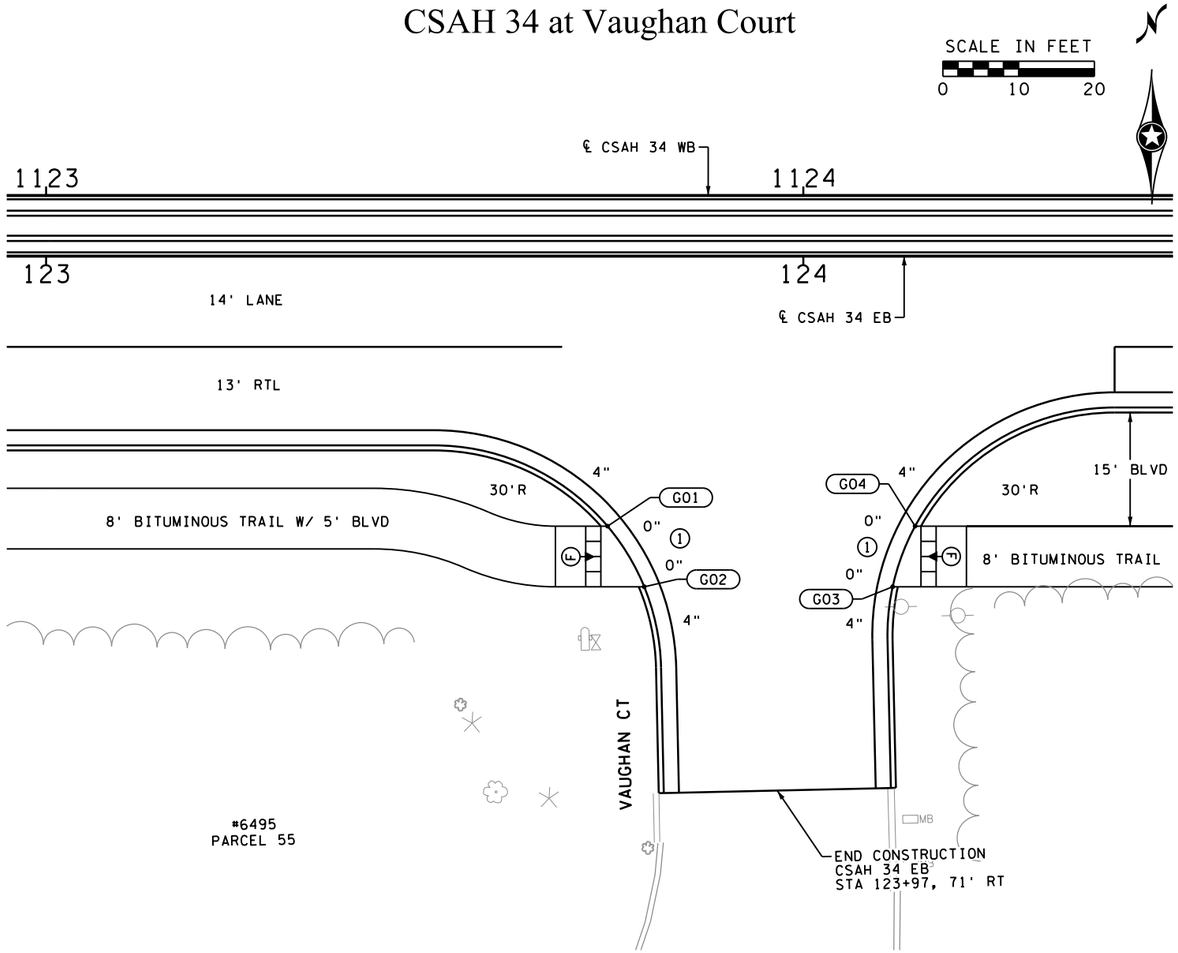
SHEET 136 OF 195 SHEETS

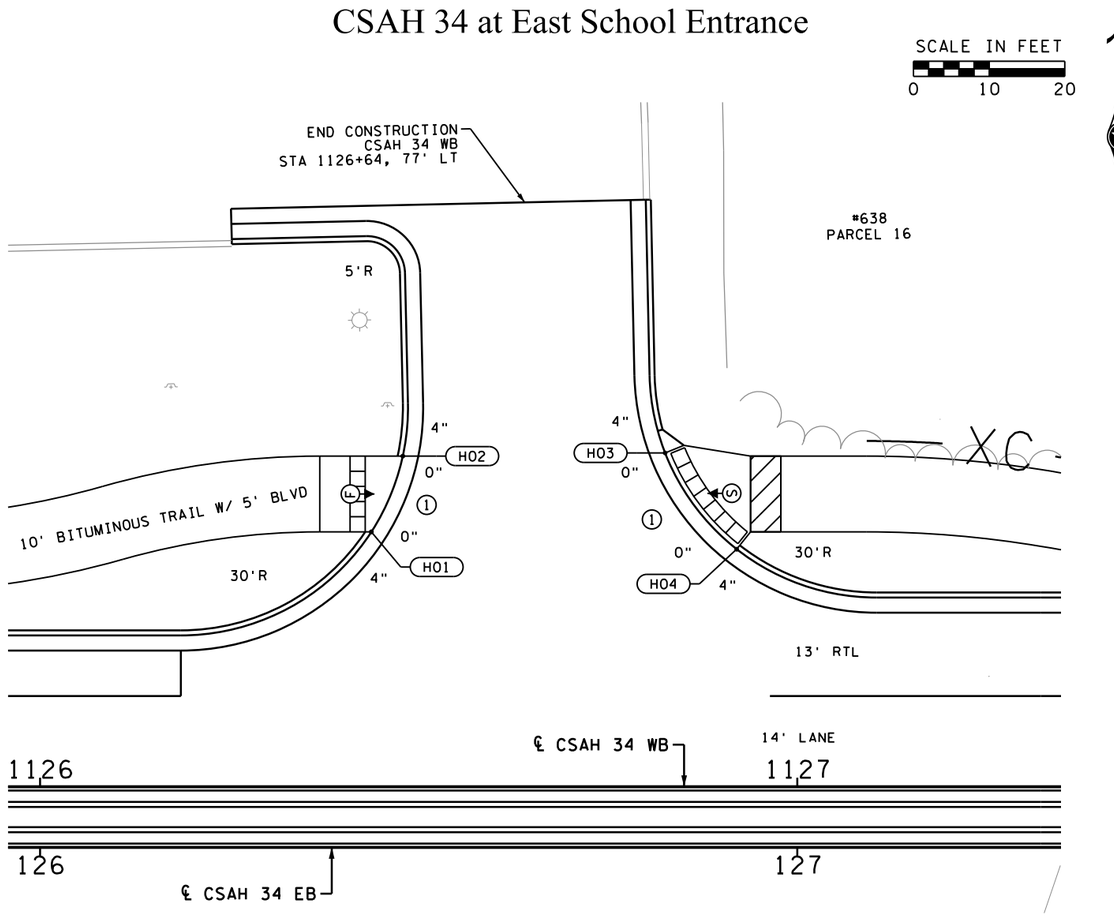
PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\14400-000_ped03.dgn

CSAH 34 at Vaughan Court



CONTROL POINTS AT GUTTER FLOW LINE				
POINT NO.	ALIGNMENT	STATION	OFFSET	ELEVATION
G01	CSAH 34 EB	123+74.16	35.67' RT	901.68
G02	CSAH 34 EB	123+79.00	43.67' RT	901.51
G03	CSAH 34 EB	124+11.80	43.67' RT	901.19
G04	CSAH 34 EB	124+14.77	35.67' RT	901.29

CSAH 34 at East School Entrance



CONTROL POINTS AT GUTTER FLOW LINE				
POINT NO.	ALIGNMENT	STATION	OFFSET	ELEVATION
H01	CSAH 34 WB	1126+43.74	33.67' LT	899.98
H02	CSAH 34 WB	1126+47.89	43.67' LT	899.83
H03	CSAH 34 WB	1126+82.54	44.06' LT	899.34
H04	CSAH 34 WB	1126+91.99	31.38' LT	899.64

LEGEND

- XX — CONTROL POINTS AT GUTTER FLOW LINE
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- X" — CURB HEIGHT
- LANDING AREA - 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS.
- (S) — INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.
- (F) — INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.
- (1) — PEDESTRIAN CURB RAMP, SEE STANDARD PLANS

GENERAL NOTES

- MAINTAIN A MINIMUM 4' WIDE PEDESTRIAN ACCESS ROUTE OBSTRUCTION TO OBSTRUCTION AND/OR OBSTRUCTION TO FAR EDGE OF WALK.
- THE CROSS SLOPE OF THE PEDESTRIAN ACCESS ROUTE SHALL NOT EXCEED 0.020 FT/FT
- PROVIDE A SAWCUT (INCIDENTAL) AT ALL CONCRETE WALK AND BITUMINOUS TRAIL REMOVAL LIMITS.
- ALL CURB RAMPS AND LANDING AREAS SHALL BE 6" CONCRETE WALK ON 3" AGGREGATE BASE CLASS 5.
- LANDINGS SHALL BE CONNECTED TO EXISTING SIDEWALKS MAINTAINING A 4' WIDE (MINIMUM) PEDESTRIAN ACCESS ROUTE WITH A CROSS SLOPE THAT DOES NOT EXCEED 0.020 FT/FT AND A RUNNING SLOPE THAT DOES NOT EXCEED 0.050 FT/FT.
- ALL DISTRURBED AREAS IN CUT SECTION THAT ARE NOT OTHERWISE SURFACED SHALL BE GRADED FLUSH WITH NEW SURFACING AT A 1:6 SLOPE FOR A DISTANCE OF UP TO 5 FEET FROM THE EDGE OF WALK TO MATCH SURROUNDING CONTOURS.

NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

ANDREW J. PLOWMAN, PE

DATE 12/3/2020 LICENSE # 44200

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

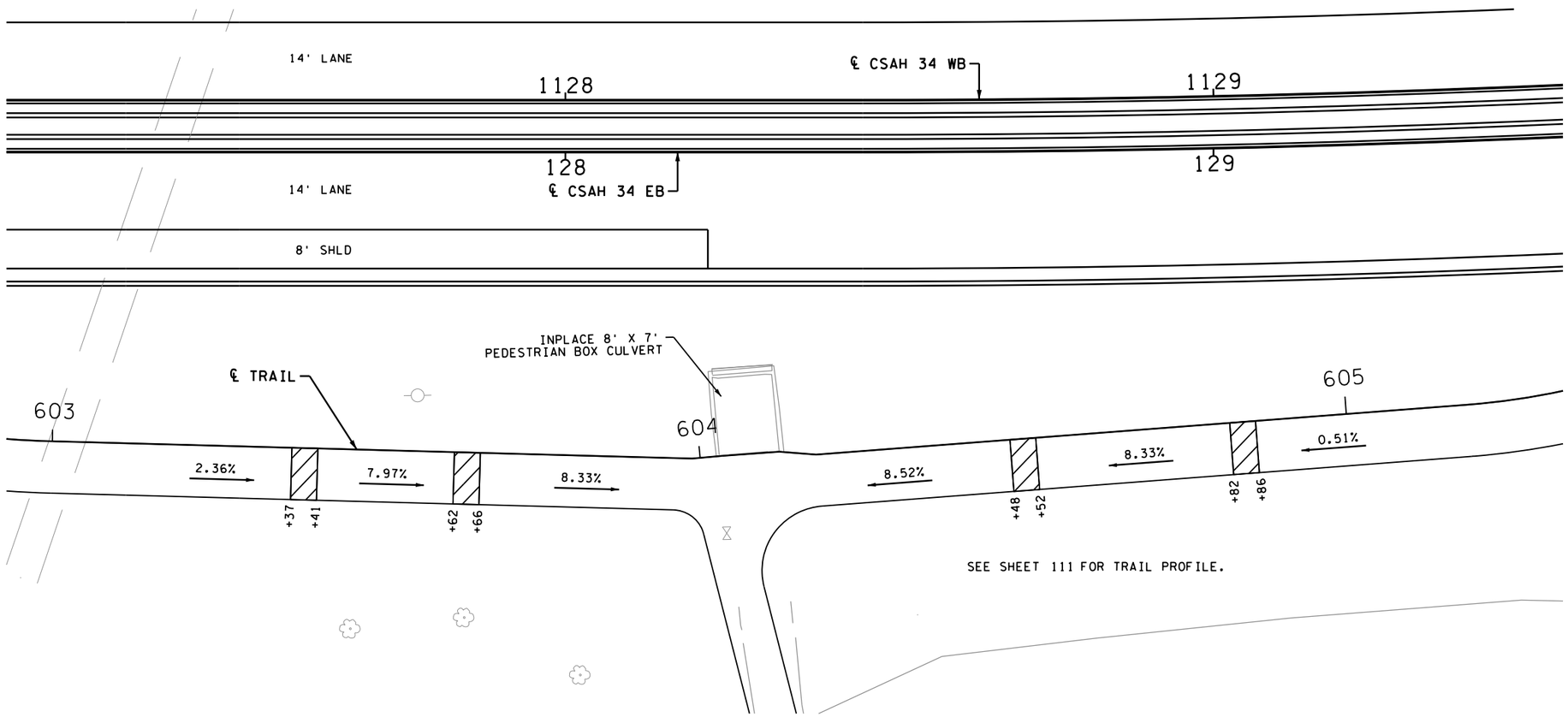
ANOKA COUNTY, MINNESOTA

PEDESTRIAN RAMP DETAILS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 137 OF 195 SHEETS

CSAH 34 Trail at Pedestrian Box Culvert

SCALE IN FEET
0 10 20



LEGEND

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Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

PEDESTRIAN RAMP DETAILS
S.A.P. 002-634-003 & S.A.P. 210-020-010

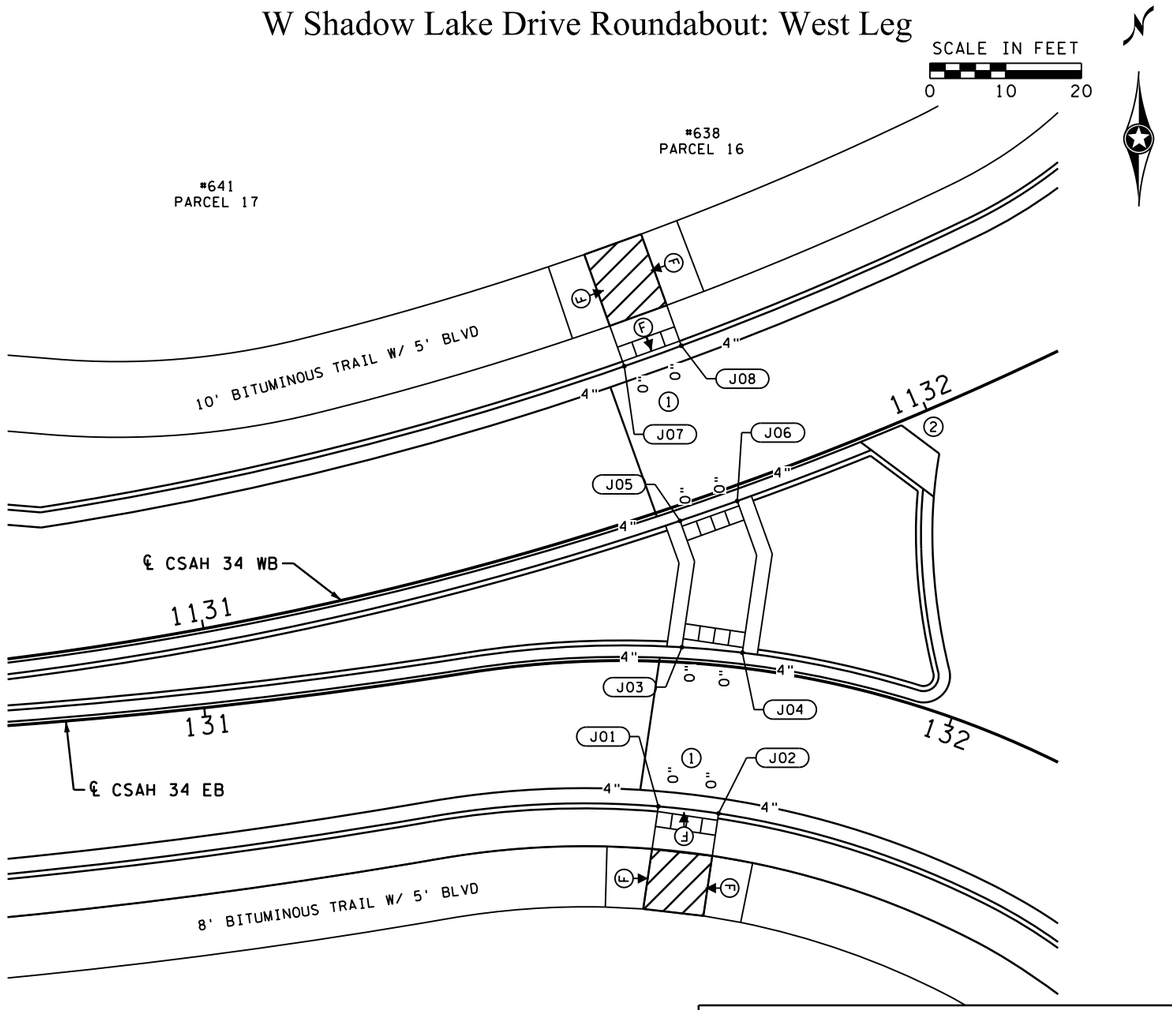
SHEET 138 OF 195 SHEETS

PLOTTED/REVISED: 12/3/2020

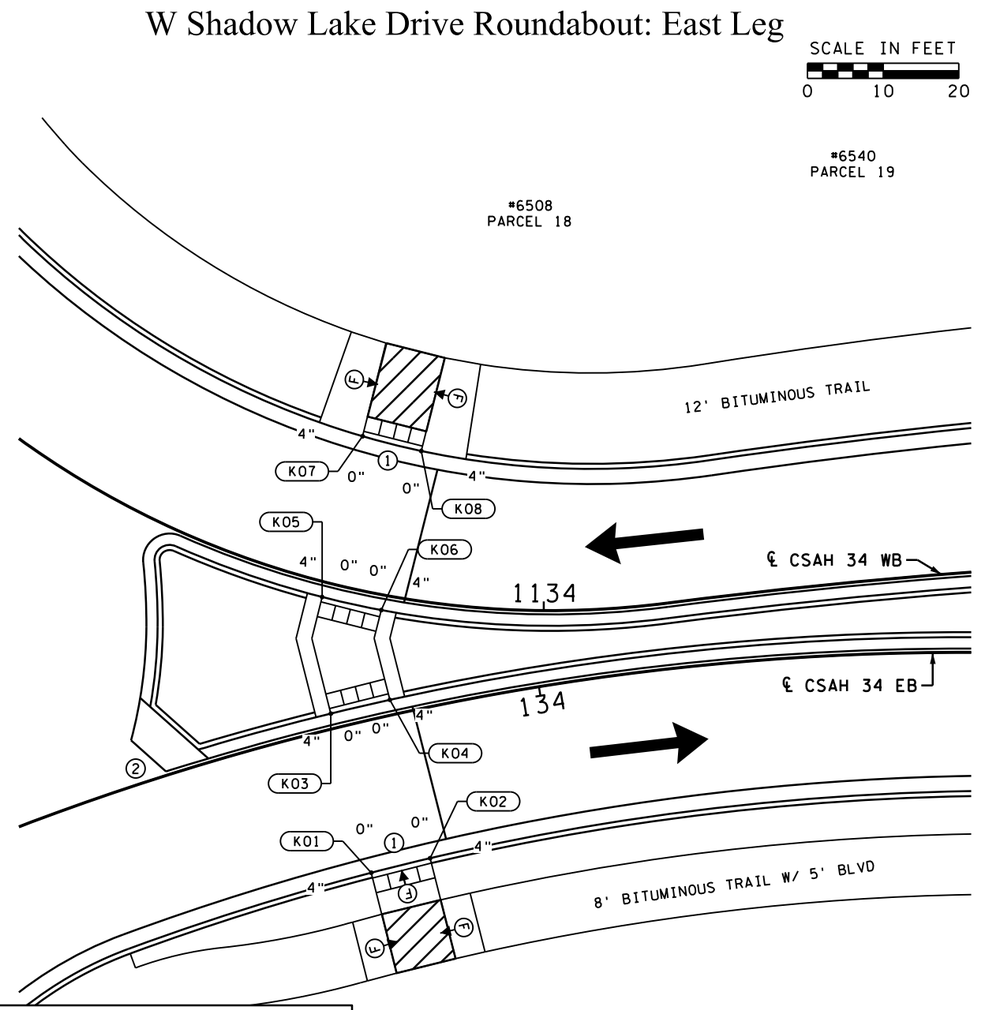
PATH & FILENAME: Projects\Minnesota\0\4400-000\Cad\Plan\4400-000_ped04A.dgn

PLOTTED/REVISED: 12/3/2020

W Shadow Lake Drive Roundabout: West Leg



W Shadow Lake Drive Roundabout: East Leg



LEGEND

- (XX) CONTROL POINTS AT GUTTER FLOW LINE
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
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CONTROL POINTS AT GUTTER FLOW LINE

POINT NO.	ALIGNMENT	STATION	OFFSET	ELEVATION
J01	CSAH 34 EB	131+61.17	19.15' RT	898.17
J02	CSAH 34 EB	131+70.57	19.45' RT	898.26
J03	CSAH 34 EB	131+63.35	2.00' LT	898.51
J04	CSAH 34 EB	131+71.25	2.00' LT	898.57
J05	CSAH 34 WB	1131+64.39	2.00' RT	898.34
J06	CSAH 34 WB	1131+72.36	2.00' RT	898.38
J07	CSAH 34 WB	1131+63.94	19.70' LT	897.96
J08	CSAH 34 WB	1161+72.30	19.79' LT	898.01

CONTROL POINTS AT GUTTER FLOW LINE

POINT NO.	ALIGNMENT	STATION	OFFSET	ELEVATION
K01	CSAH 34 EB	133+72.63	19.68' RT	898.29
K02	CSAH 34 EB	133+81.11	19.56' RT	898.21
K03	CSAH 34 EB	133+72.43	2.00' LT	898.54
K04	CSAH 34 EB	133+80.39	2.00' LT	898.48
K05	CSAH 34 WB	1133+70.92	2.00' RT	898.37
K06	CSAH 34 WB	1133+78.80	2.00' RT	898.33
K07	CSAH 34 WB	1133+70.83	19.89' LT	898.02
K08	CSAH 34 WB	1133+80.40	19.61' LT	897.96

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Approved By: AJP

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DATE 12/3/2020 LICENSE # 44200

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

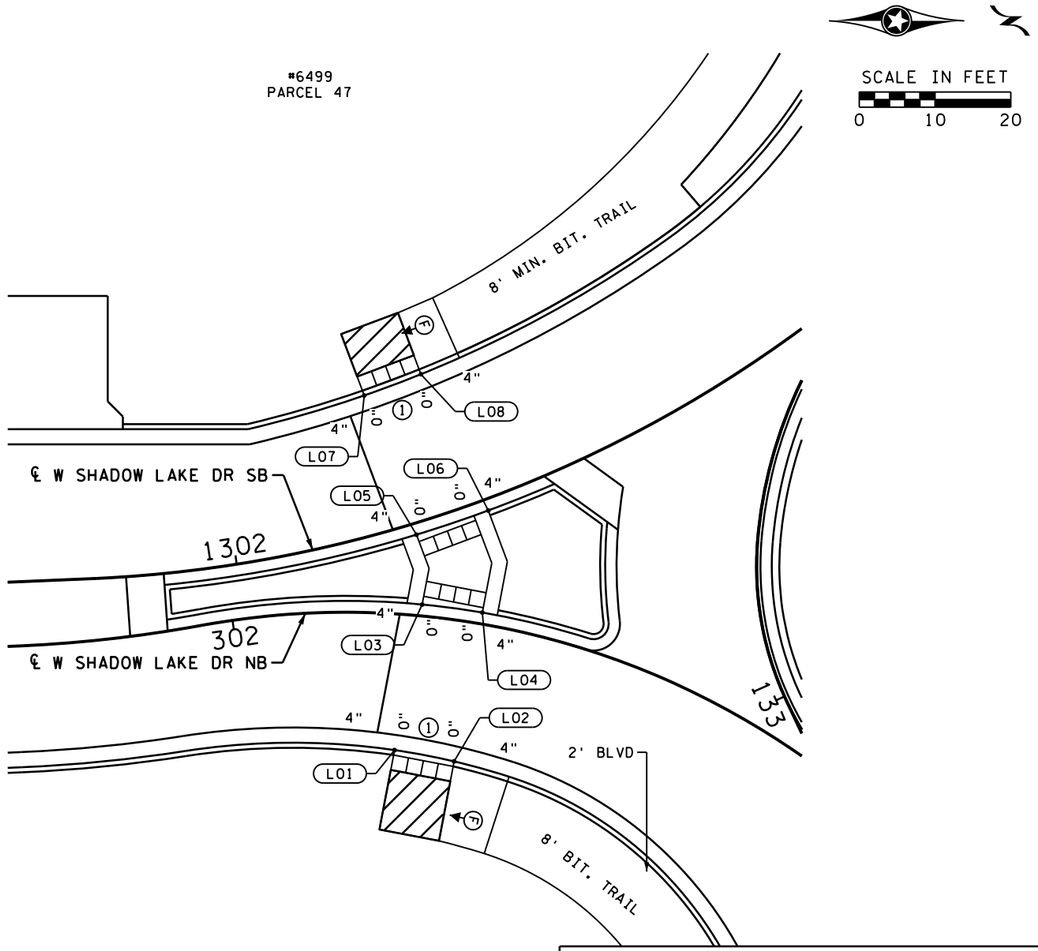
PEDESTRIAN RAMP DETAILS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 139 OF 195 SHEETS

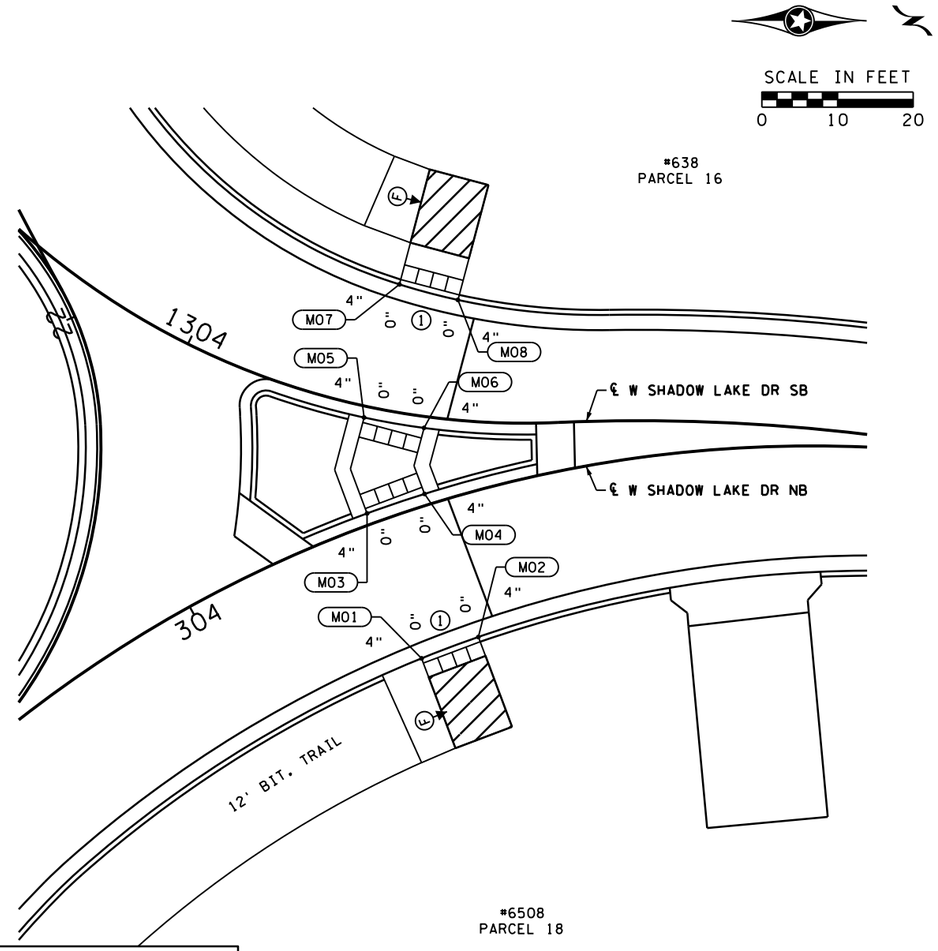
PATH & FILENAME: Projects\Minnesota\0\44400-000\CadPlan\44400-000_ped05.dgn

PLOTTED/REVISED: 12/3/2020

W Shadow Lake Drive Roundabout: South Leg



W Shadow Lake Drive Roundabout: North Leg



LEGEND

- XX — CONTROL POINTS AT GUTTER FLOW LINE
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- X" — CURB HEIGHT
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CONTROL POINTS AT GUTTER FLOW LINE

POINT NO.	ALIGNMENT	STATION	OFFSET	ELEVATION
L01	W SHADOW LAKE DR NB	302+22.79	17.96' RT	899.08
L02	W SHADOW LAKE DR NB	302+32.46	18.49' RT	898.97
L03	W SHADOW LAKE DR NB	302+24.97	1.50' LT	899.38
L04	W SHADOW LAKE DR NB	302+32.87	1.50' LT	899.27
L05	W SHADOW LAKE DR SB	1302+23.91	1.50' RT	899.43
L06	W SHADOW LAKE DR SB	1302+33.83	1.50' RT	899.31
L07	W SHADOW LAKE DR SB	1302+22.53	18.09' LT	899.13
L08	W SHADOW LAKE DR SB	1302+31.49	18.45' LT	899.05

CONTROL POINTS AT GUTTER FLOW LINE

POINT NO.	ALIGNMENT	STATION	OFFSET	ELEVATION
MO1	W SHADOW LAKE DR NB	304+26.56	18.95' RT	897.50
MO2	W SHADOW LAKE DR NB	304+35.55	18.65' RT	897.34
MO3	W SHADOW LAKE DR NB	304+26.34	1.50' LT	897.83
MO4	W SHADOW LAKE DR NB	304+34.28	1.50' LT	897.69
MO5	W SHADOW LAKE DR SB	1304+25.04	1.50' RT	897.91
MO6	W SHADOW LAKE DR SB	1304+32.96	1.50' RT	897.77
MO7	W SHADOW LAKE DR SB	1304+26.09	16.67' LT	897.64
MO8	W SHADOW LAKE DR SB	1304+35.59	15.82' LT	897.46

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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
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ANOKA COUNTY, MINNESOTA

PEDESTRIAN RAMP DETAILS
S.A.P. 002-634-003 & S.A.P. 210-020-010

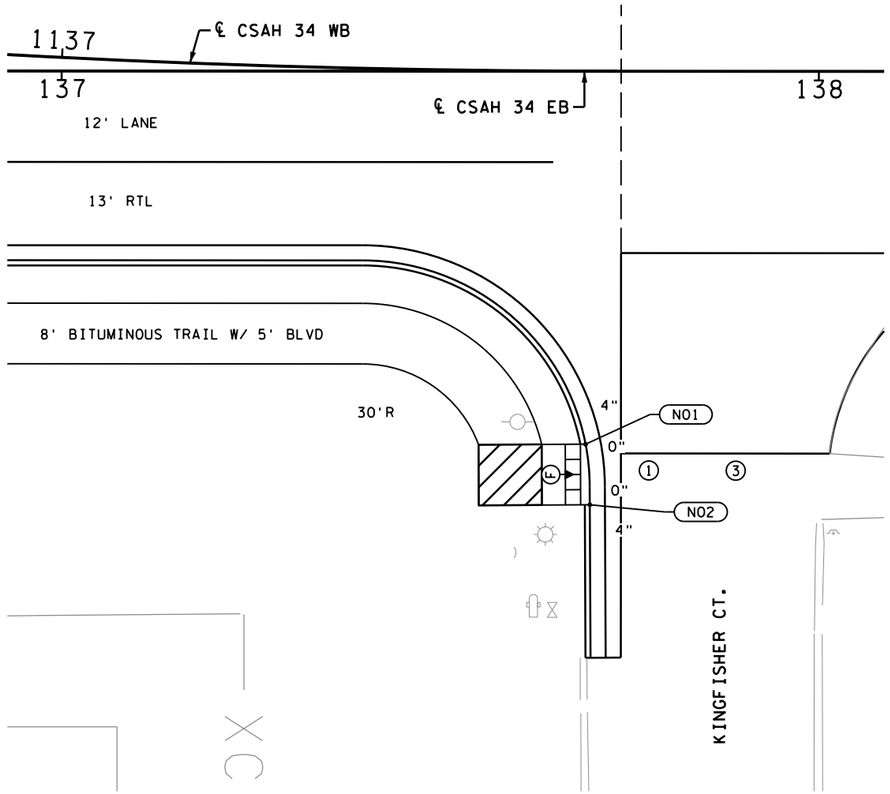
SHEET 140 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\0\4400-000\Cad\Plan\4400-000_ped06.dgn

PLOTTED/REVISED: 12/3/2020

CSAH 34 at Kingfisher Court

SCALE IN FEET
0 10 20



CONTROL POINTS AT GUTTER FLOW LINE				
POINT NO.	ALIGNMENT	STATION	OFFSET	ELEVATION
NO1	CSAH 34 EB	137+69.21	49.25' RT	899.29
NO2	CSAH 34 EB	137+69.78	57.25' RT	899.25

LEGEND

- XX — CONTROL POINTS AT GUTTER FLOW LINE
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- X" — CURB HEIGHT
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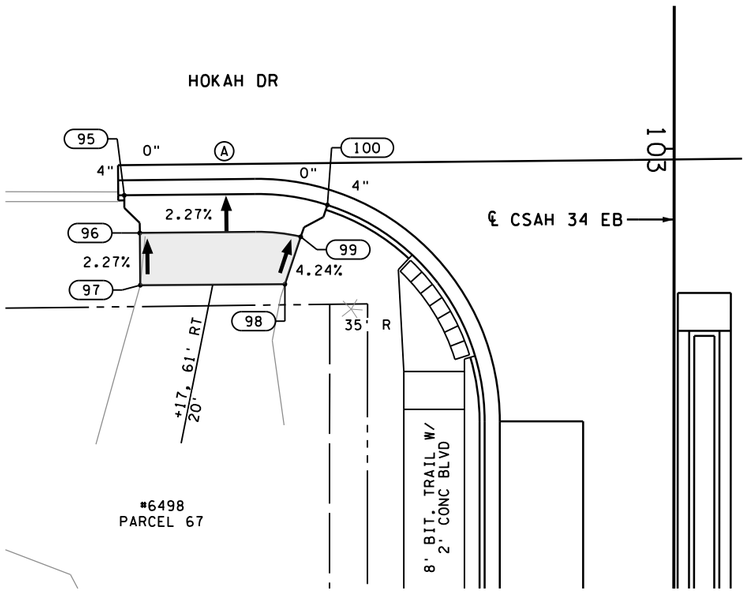
SHEET 141 OF 195 SHEETS

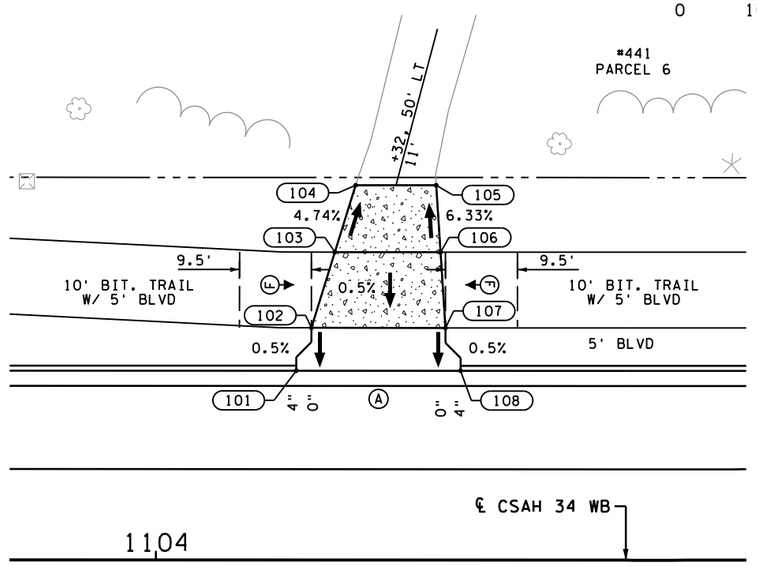
PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\4400-000_ped07.dgn



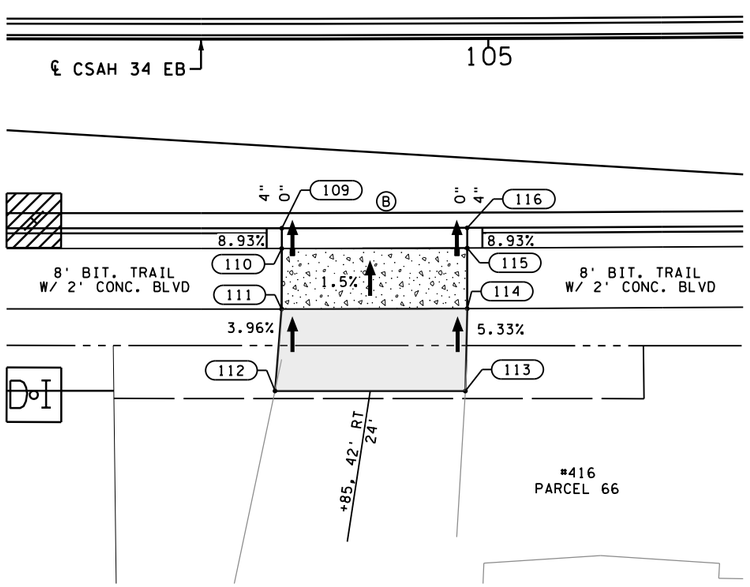
SCALE IN FEET
0 10 20

CONTROL POINTS				(SEE LEFT)
POINT NO.	ALIGNMENT	STATION	OFFSET	ELEVATION
95	CSAH 34 EB	103+06.17	72.61' RT	899.74
96	CSAH 34 EB	103+11.15	70.56' RT	899.94
97	CSAH 34 EB	103+18.04	70.48' RT	900.01
98	CSAH 34 EB	103+17.90	51.39' RT	900.42
99	CSAH 34 EB	103+11.64	49.30' RT	900.14
100	CSAH 34 EB	103+07.44	45.76' RT	900.06

SCALE IN FEET
0 10 20



CONTROL POINTS				(SEE ABOVE)
POINT NO.	ALIGNMENT	STATION	OFFSET	ELEVATION
101	CSAH 34 WB	1104+18.53	25.00' LT	899.97
102	CSAH 34 WB	1104+20.53	30.67' LT	899.99
103	CSAH 34 WB	1104+23.62	40.67' LT	900.03
104	CSAH 34 WB	1104+26.36	49.50' LT	899.59
105	CSAH 34 WB	1104+37.00	49.50' LT	899.40
106	CSAH 34 WB	1104+37.57	40.67' LT	899.96
107	CSAH 34 WB	1104+38.22	30.67' LT	899.91
108	CSAH 34 WB	1104+40.22	25.00' LT	899.87



SCALE IN FEET
0 10 20

CONTROL POINTS				(SEE LEFT)
POINT NO.	ALIGNMENT	STATION	OFFSET	ELEVATION
109	CSAH 34 EB	104+72.69	25.00' RT	899.71
110	CSAH 34 EB	104+72.69	27.67' RT	899.95
111	CSAH 34 EB	104+72.68	35.67' RT	900.07
112	CSAH 34 EB	104+71.80	46.48' RT	900.50
113	CSAH 34 EB	104+96.79	46.54' RT	900.53
114	CSAH 34 EB	104+97.08	35.67' RT	899.95
115	CSAH 34 EB	104+97.11	27.67' RT	899.82
116	CSAH 34 EB	104+97.12	25.00' RT	899.58

SCALE IN FEET
0 10 20

LEGEND

- PROPOSED CATCH BASIN
- CONSTRUCT CONCRETE CURB AND GUTTER
- XXX — CONTROL POINT
- DRAINAGE FLOW ARROW
- (F) — INDICATES TRAIL SLOPE CHANGE - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
- (A) — SEE DRIVEWAY DETAIL ON SHEET 28 .
- (B) — SEE DRIVEWAY DETAIL ON SHEET 29 .
- 6" CONCRETE DRIVEWAY PAVEMENT, SEE INSET D ON SHEET 19 .
- BITUMINOUS DRIVEWAY, SEE INSET E ON SHEET 19 .

DRIVEWAY INFORMATION: STA AT CENTER, OFFSET / DRIVEWAY WIDTH

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DRIVEWAY DETAILS
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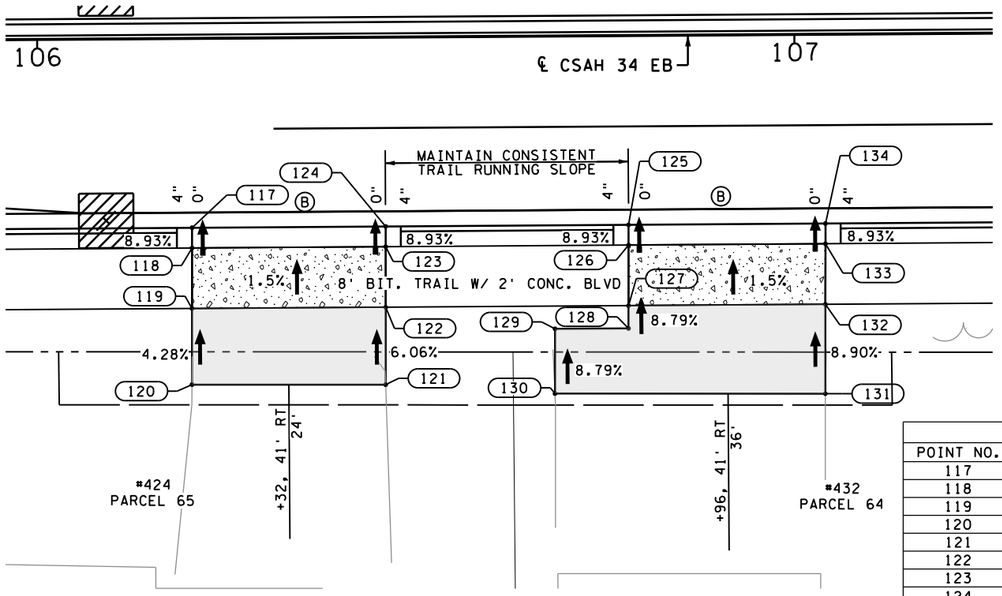
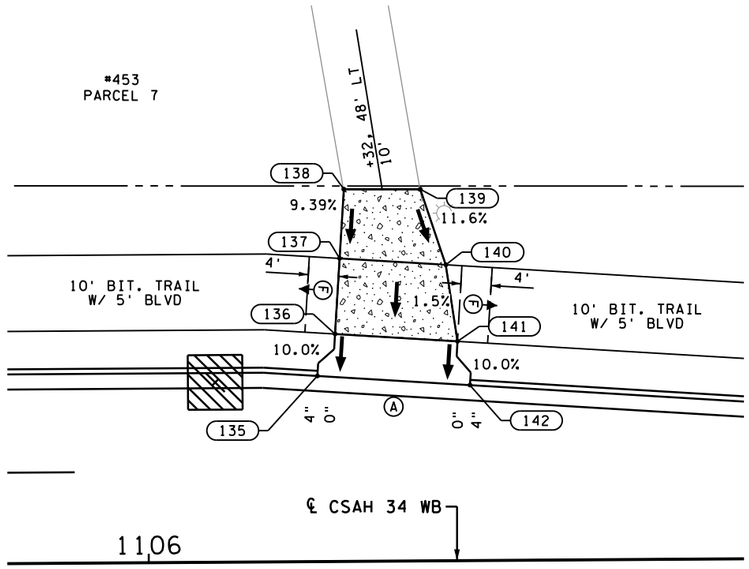
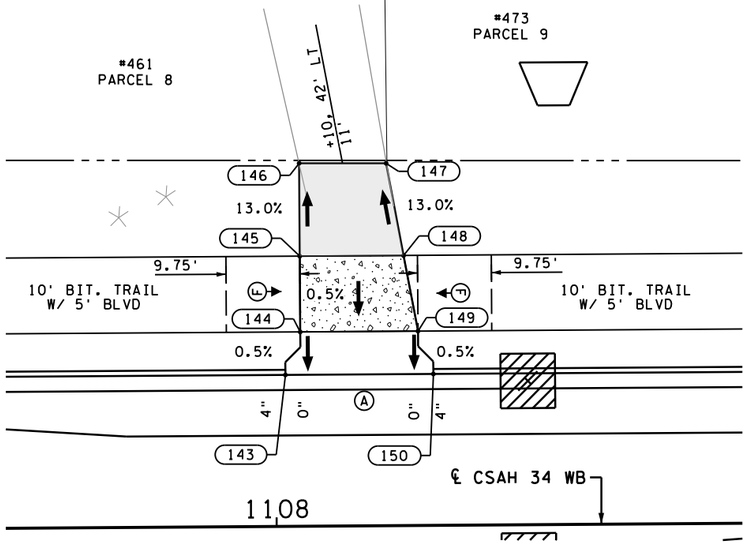
SHEET 142 OF 195 SHEETS



CONTROL POINTS (SEE UPPER LEFT)				
POINT NO.	ALIGNMENT	STATION	OFFSET	ELEVATION
117	CSAH 34 EB	106+20.29	25.00' RT	898.97
118	CSAH 34 EB	106+20.27	27.67' RT	899.21
119	CSAH 34 EB	106+20.21	35.67' RT	899.33
120	CSAH 34 EB	106+20.14	45.71' RT	899.76
121	CSAH 34 EB	106+45.72	45.90' RT	899.82
122	CSAH 34 EB	106+45.76	35.67' RT	899.20
123	CSAH 34 EB	106+45.85	27.67' RT	899.08
124	CSAH 34 EB	106+45.87	25.00' RT	898.84
125	CSAH 34 EB	106+77.94	25.00' RT	898.68
126	CSAH 34 EB	106+77.92	27.67' RT	898.92
127	CSAH 34 EB	106+77.87	35.67' RT	899.04
128	CSAH 34 EB	106+77.84	38.67' RT	899.30
129	CSAH 34 EB	106+68.14	38.67' RT	899.33
130	CSAH 34 EB	106+68.08	47.21' RT	900.08
131	CSAH 34 EB	107+03.78	47.47' RT	899.95
132	CSAH 34 EB	107+03.87	35.67' RT	898.90
133	CSAH 34 EB	107+03.92	27.67' RT	898.78
134	CSAH 34 EB	107+03.94	25.00' RT	898.54



CONTROL POINTS (SEE ABOVE)				
POINT NO.	ALIGNMENT	STATION	OFFSET	ELEVATION
135	CSAH 34 WB	1106+22.44	24.52' LT	898.95
136	CSAH 34 WB	1106+24.81	30.05' LT	899.51
137	CSAH 34 WB	1106+25.47	40.03' LT	899.66
138	CSAH 34 WB	1106+26.08	49.17' LT	900.52
139	CSAH 34 WB	1106+36.20	49.09' LT	900.80
140	CSAH 34 WB	1106+39.50	39.09' LT	899.58
141	CSAH 34 WB	1106+40.96	28.97' LT	899.41
142	CSAH 34 WB	1106+42.58	23.18' LT	898.84



CONTROL POINTS (SEE LEFT)				
POINT NO.	ALIGNMENT	STATION	OFFSET	ELEVATION
143	CSAH 34 WB	1108+01.27	20.00' LT	897.12
144	CSAH 34 WB	1108+03.27	25.67' LT	897.13
145	CSAH 34 WB	1108+03.25	35.67' LT	897.18
146	CSAH 34 WB	1108+03.27	47.94' LT	895.57
147	CSAH 34 WB	1108+14.77	47.86' LT	895.39
148	CSAH 34 WB	1108+17.00	35.67' LT	897.00
149	CSAH 34 WB	1108+18.82	25.67' LT	896.93
150	CSAH 34 WB	1108+20.82	20.00' LT	896.87

SCALE IN FEET
0 10 20

LEGEND

- PROPOSED CATCH BASIN
- CONSTRUCT CONCRETE CURB AND GUTTER
- XXX — CONTROL POINT
- DRAINAGE FLOW ARROW
- (F) — INDICATES TRAIL SLOPE CHANGE - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
- (A) — SEE DRIVEWAY DETAIL ON SHEET 28 .
- (B) — SEE DRIVEWAY DETAIL ON SHEET 29 .
- 6" CONCRETE DRIVEWAY PAVEMENT, SEE INSET D ON SHEET 19 .
- BITUMINOUS DRIVEWAY, SEE INSET E ON SHEET 19 .

DRIVEWAY INFORMATION: STA AT CENTER, OFFSET / DRIVEWAY WIDTH, MATERIAL

NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

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ANDREW J. PLOWMAN, PE
DATE 12/3/2020 LICENSE # 44200

wsb

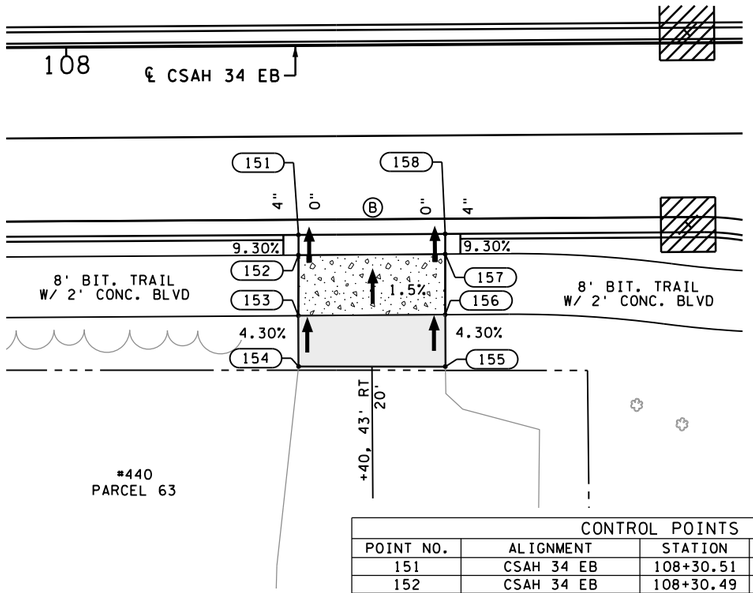
ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

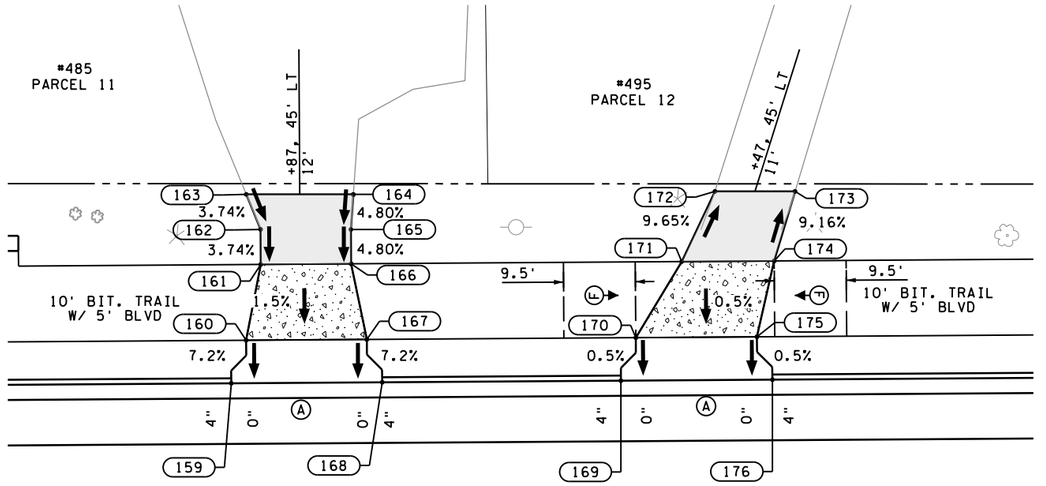
ANOKA COUNTY, MINNESOTA

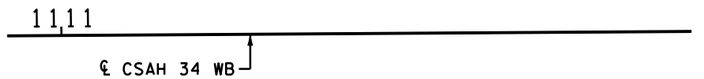
DRIVEWAY DETAILS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 143 OF 195 SHEETS

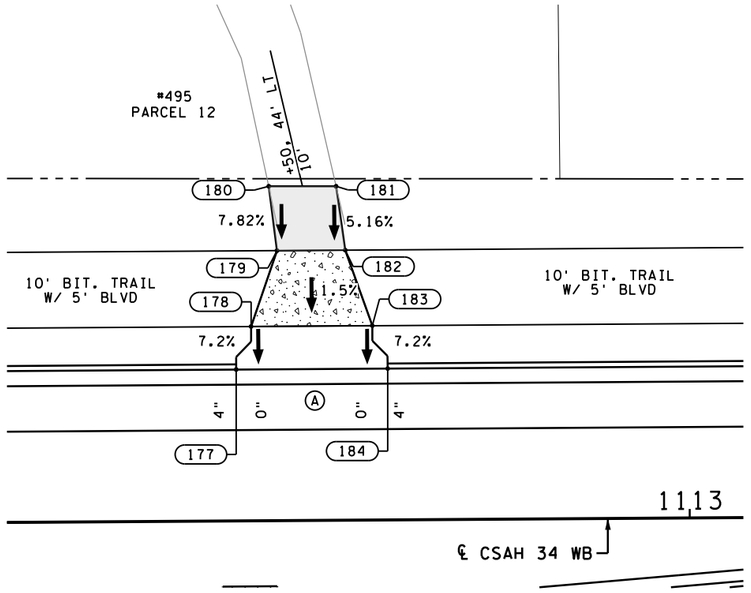


CONTROL POINTS (SEE UPPER LEFT)				
POINT NO.	ALIGNMENT	STATION	OFFSET	ELEVATION
151	CSAH 34 EB	108+30.51	25.00' RT	897.58
152	CSAH 34 EB	108+30.49	27.67' RT	897.83
153	CSAH 34 EB	108+30.43	35.67' RT	897.95
154	CSAH 34 EB	108+30.41	42.38' RT	898.24
155	CSAH 34 EB	108+49.79	42.52' RT	898.07
156	CSAH 34 EB	108+49.81	35.67' RT	897.78
157	CSAH 34 EB	108+49.87	27.67' RT	897.66
158	CSAH 34 EB	108+49.89	25.00' RT	897.41





CONTROL POINTS (SEE UPPER RIGHT)				
POINT NO.	ALIGNMENT	STATION	OFFSET	ELEVATION
159	CSAH 34 WB	1110+77.39	20.00' LT	896.34
160	CSAH 34 WB	1110+79.39	25.67' LT	896.76
161	CSAH 34 WB	1110+81.39	35.67' LT	896.93
162	CSAH 34 WB	1110+81.39	40.29' LT	897.10
163	CSAH 34 WB	1110+79.55	44.93' LT	897.29
164	CSAH 34 WB	1110+93.68	44.83' LT	897.46
165	CSAH 34 WB	1110+93.33	40.21' LT	897.24
166	CSAH 34 WB	1110+93.33	35.67' LT	897.02
167	CSAH 34 WB	1110+95.33	25.67' LT	896.88
168	CSAH 34 WB	1110+97.33	20.00' RT	896.22
169	CSAH 34 WB	1111+28.86	20.00' LT	896.72
170	CSAH 34 WB	1111+30.86	25.67' LT	896.76
171	CSAH 34 WB	1111+36.98	35.67' LT	896.86
172	CSAH 34 WB	1111+39.55	39.87' LT	895.87
173	CSAH 34 WB	1111+50.17	39.50' LT	896.07
174	CSAH 34 WB	1111+49.21	35.67' LT	896.95
175	CSAH 34 WB	1111+46.86	25.67' LT	896.88
176	CSAH 34 WB	1111+48.86	20.00' LT	896.87



CONTROL POINTS (SEE LEFT)				
POINT NO.	ALIGNMENT	STATION	OFFSET	ELEVATION
177	CSAH 34 WB	1112+40.23	20.00' LT	897.62
178	CSAH 34 WB	1112+42.23	25.67' LT	898.05
179	CSAH 34 WB	1112+45.73	35.67' LT	898.23
180	CSAH 34 WB	1112+44.69	44.18' LT	898.90
181	CSAH 34 WB	1112+53.58	44.11' LT	898.76
182	CSAH 34 WB	1112+54.74	35.67' LT	898.32
183	CSAH 34 WB	1112+58.24	25.67' LT	898.21
184	CSAH 34 WB	1112+60.24	20.00' LT	897.82

LEGEND

- PROPOSED CATCH BASIN
- CONSTRUCT CONCRETE CURB AND GUTTER
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- 6" CONCRETE DRIVEWAY PAVEMENT, SEE INSET D ON SHEET 19 .
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DRIVEWAY INFORMATION: STA AT CENTER, OFFSET / DRIVEWAY WIDTH, MATERIAL

NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

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DATE 12/3/2020 LICENSE # 44200

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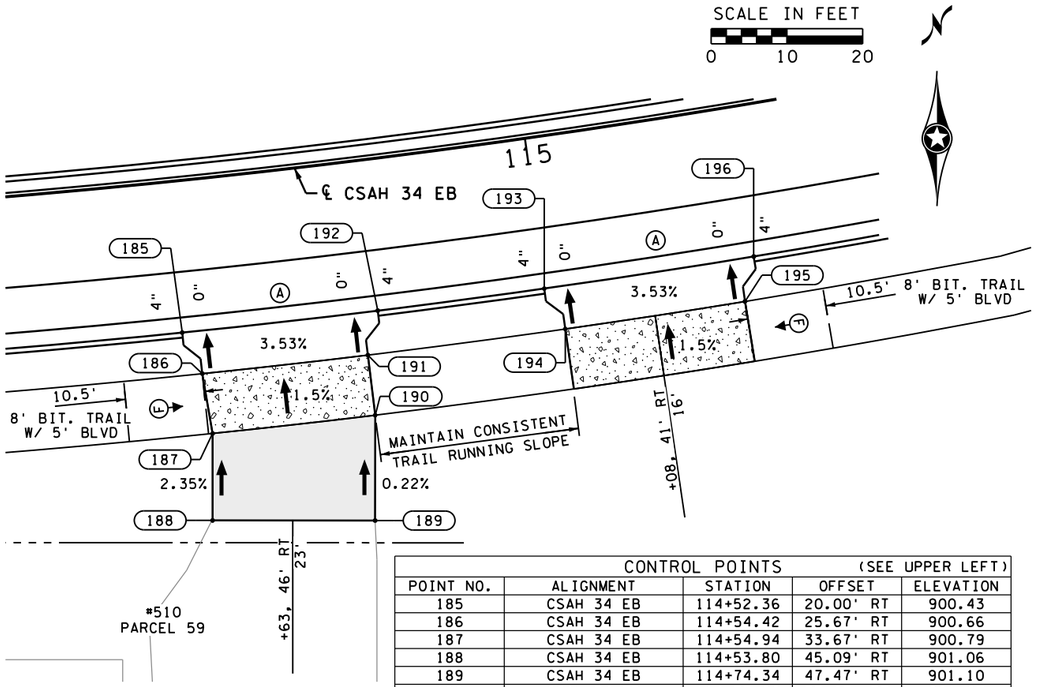
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

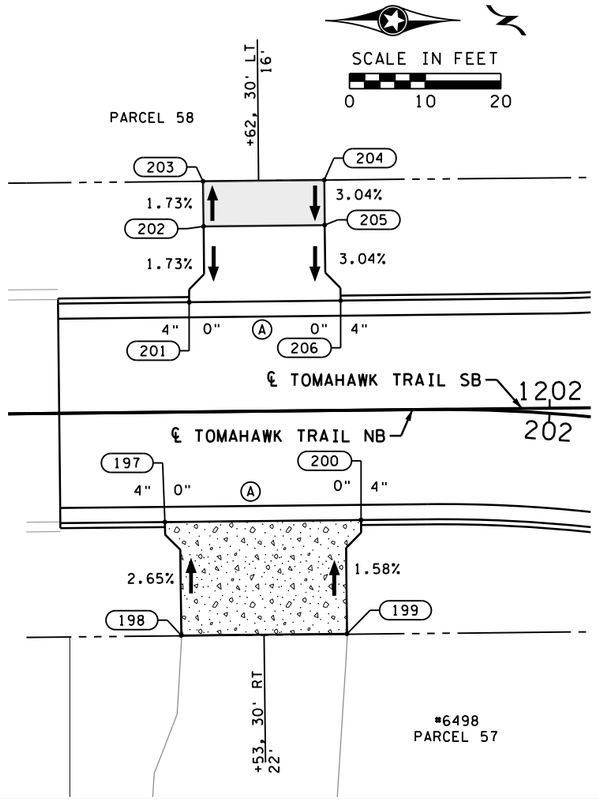
DRIVEWAY DETAILS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 144 OF 195 SHEETS

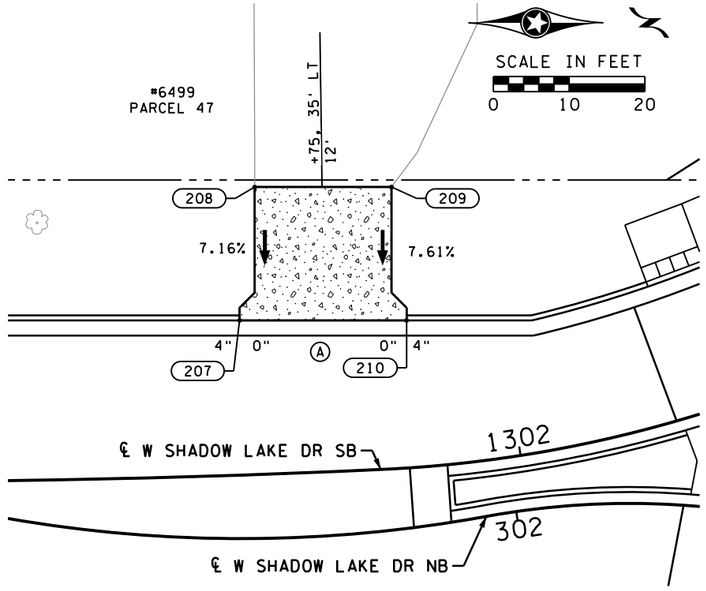
PLOTTED/REVISED: 12/3/2020



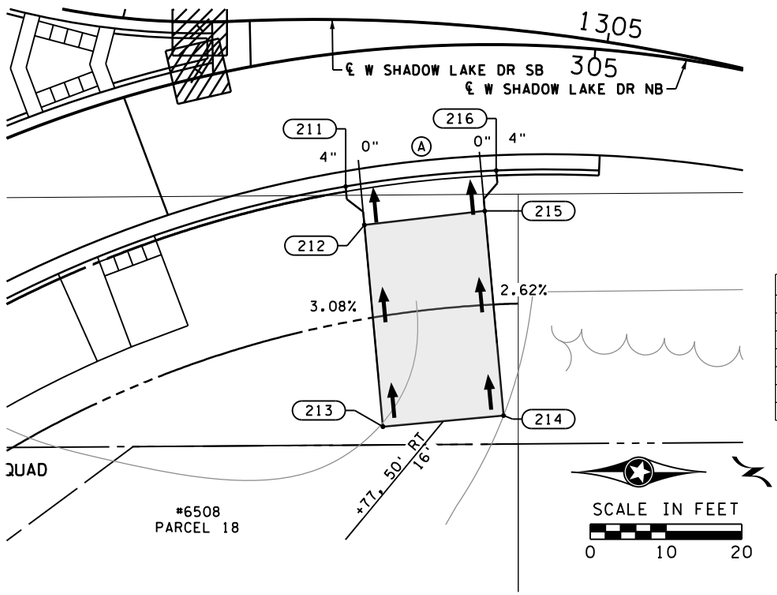
CONTROL POINTS				(SEE UPPER LEFT)
POINT NO.	ALIGNMENT	STATION	OFFSET	ELEVATION
185	CSAH 34 EB	114+52.36	20.00' RT	900.43
186	CSAH 34 EB	114+54.42	25.67' RT	900.66
187	CSAH 34 EB	114+54.94	33.67' RT	900.79
188	CSAH 34 EB	114+53.80	45.09' RT	901.06
189	CSAH 34 EB	114+74.34	47.47' RT	901.10
190	CSAH 34 EB	114+75.96	33.67' RT	901.07
191	CSAH 34 EB	114+75.96	25.67' RT	900.95
192	CSAH 34 EB	114+77.92	20.00' RT	900.78
193	CSAH 34 EB	114+99.74	20.00' RT	901.07
194	CSAH 34 EB	115+01.71	25.37' RT	901.30
195	CSAH 34 EB	115+25.21	25.67' RT	901.60
196	CSAH 34 EB	115+27.27	20.00' RT	901.43



CONTROL POINTS				(SEE ABOVE)
POINT NO.	ALIGNMENT	STATION	OFFSET	ELEVATION
197	TOMAHAWK TRL NB	201+49.03	14.50' RT	900.76
198	TOMAHAWK TRL NB	201+51.03	29.50' RT	901.18
199	TOMAHAWK TRL NB	201+72.93	29.50' RT	901.59
200	TOMAHAWK TRL NB	201+74.93	14.50' RT	901.34
201	TOMAHAWK TRL NB	201+52.54	14.50' LT	900.84
202	TOMAHAWK TRL NB	201+54.54	24.50' LT	901.18
203	TOMAHAWK TRL NB	201+54.54	30.45' LT	901.13
204	TOMAHAWK TRL NB	201+70.54	30.44' LT	901.80
205	TOMAHAWK TRL NB	201+70.54	24.50' LT	901.66
206	TOMAHAWK TRL NB	201+72.54	14.50' LT	901.29



CONTROL POINTS				(SEE ABOVE)
POINT NO.	ALIGNMENT	STATION	OFFSET	ELEVATION
207	W SHADOW LAKE DR SB	1301+63.47	20.43' LT	899.77
208	W SHADOW LAKE DR SB	1301+66.14	37.95' LT	901.03
209	W SHADOW LAKE DR SB	1301+85.43	37.16' LT	900.88
210	W SHADOW LAKE DR SB	1301+86.31	19.46' LT	899.54



CONTROL POINTS				(SEE LEFT)
POINT NO.	ALIGNMENT	STATION	OFFSET	ELEVATION
211	W SHADOW LAKE DR NB	304+64.78	17.56' RT	896.80
212	W SHADOW LAKE DR NB	304+66.89	22.90' RT	892.34
213	W SHADOW LAKE DR NB	304+66.14	49.65' RT	897.76
214	W SHADOW LAKE DR NB	304+88.67	48.98' RT	897.28
215	W SHADOW LAKE DR NB	904+85.31	21.97' RT	896.57
216	W SHADOW LAKE DR NB	304+87.01	16.62' RT	896.43

LEGEND

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DRIVEWAY INFORMATION: STA AT CENTER, OFFSET / DRIVEWAY WIDTH, MATERIAL

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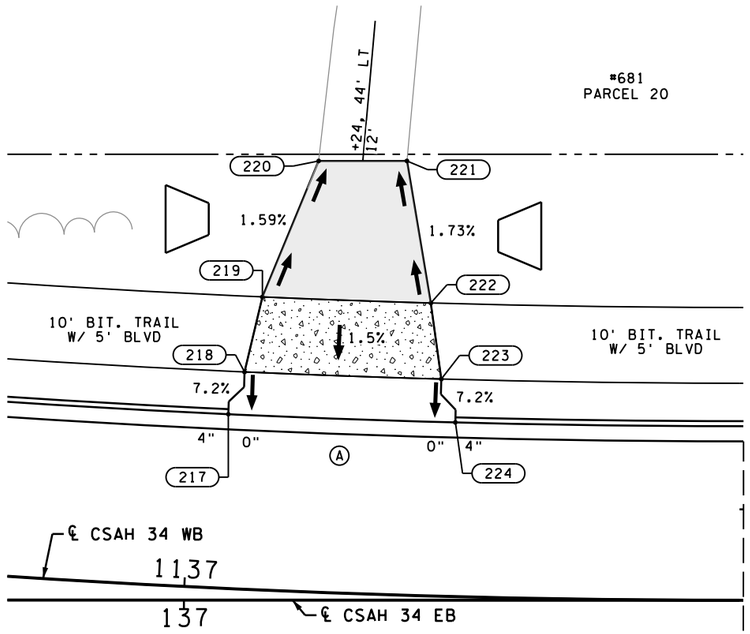
ANOKA COUNTY, MINNESOTA

DRIVEWAY DETAILS
S.A.P. 002-634-003 & S.A.P. 210-020-010

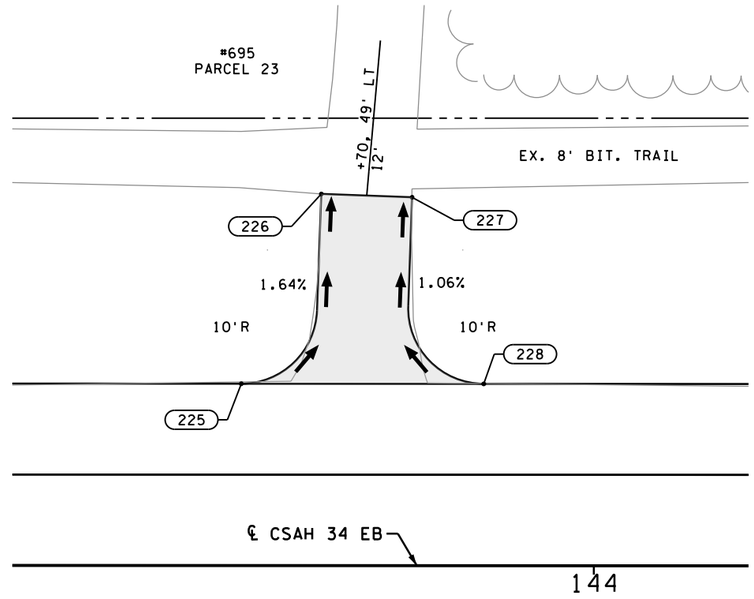
SHEET 145 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\0\44400-000\Cad\Plan\44400-000_drwy04.dgn

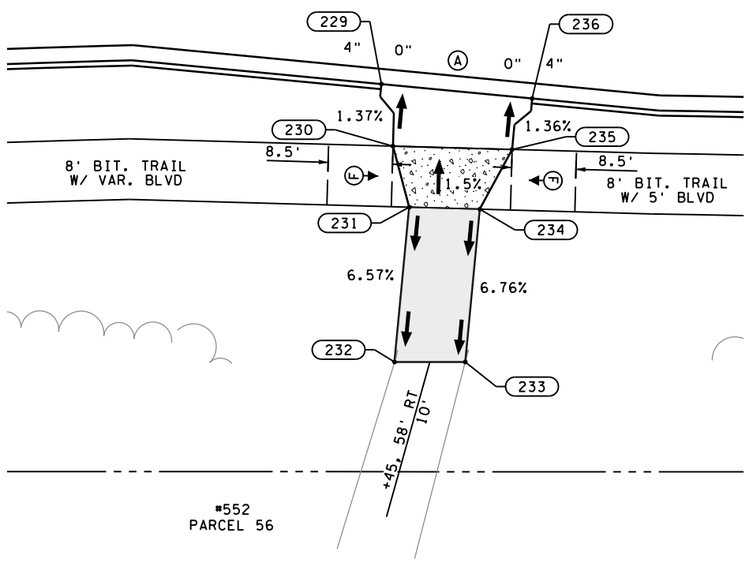
PLOTTED/REVISED: 12/3/2020



CONTROL POINTS (SEE LEFT)				
POINT NO.	ALIGNMENT	STATION	OFFSET	ELEVATION
217	CSAH 34 EB	137+05.84	24.54' LT	899.19
218	CSAH 34 EB	137+07.99	30.12' LT	899.73
219	CSAH 34 EB	137+10.32	40.03' LT	899.90
220	CSAH 34 EB	137+17.75	57.99' LT	899.59
221	CSAH 34 EB	137+29.41	58.00' LT	899.76
222	CSAH 34 EB	137+32.58	39.24' LT	900.09
223	CSAH 34 EB	137+33.97	29.20' LT	899.95
224	CSAH 34 EB	137+35.82	23.48' LT	899.44



CONTROL POINTS (SEE ABOVE)				
POINT NO.	ALIGNMENT	STATION	OFFSET	ELEVATION
225	CSAH 34 EB	143+53.44	24.00' LT	898.99
226	CSAH 34 EB	143+63.99	49.07' LT	898.49
227	CSAH 34 EB	143+75.99	48.64' LT	898.43
228	CSAH 34 EB	143+85.46	24.00' LT	898.75



CONTROL POINTS (SEE LEFT)				
POINT NO.	ALIGNMENT	STATION	OFFSET	ELEVATION
229	CSAH 34 EB	120+38.84	21.65' RT	902.91
230	CSAH 34 EB	120+40.34	29.85' RT	903.02
231	CSAH 34 EB	120+42.50	37.92' RT	903.14
232	CSAH 34 EB	120+40.39	58.36' RT	901.79
233	CSAH 34 EB	120+50.04	58.38' RT	901.80
234	CSAH 34 EB	120+52.01	38.20' RT	903.17
235	CSAH 34 EB	120+56.34	30.31' RT	903.06
236	CSAH 34 EB	120+59.01	23.56' RT	902.97

LEGEND

- PROPOSED CATCH BASIN
- CONSTRUCT CONCRETE CURB AND GUTTER
- XXX — CONTROL POINT
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DRIVEWAY INFORMATION: STA AT CENTER, OFFSET / DRIVEWAY WIDTH, MATERIAL

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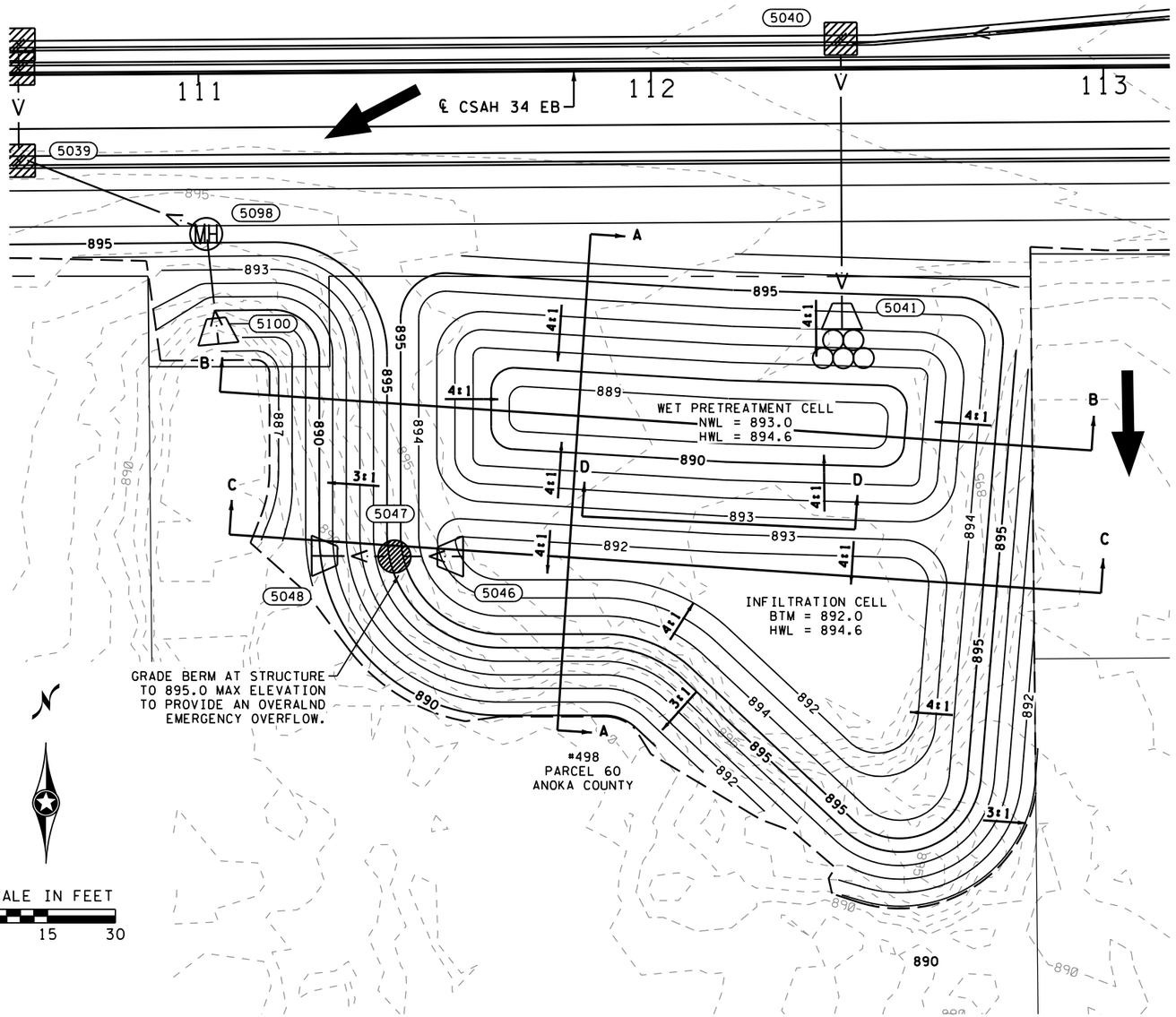
ANOKA COUNTY, MINNESOTA

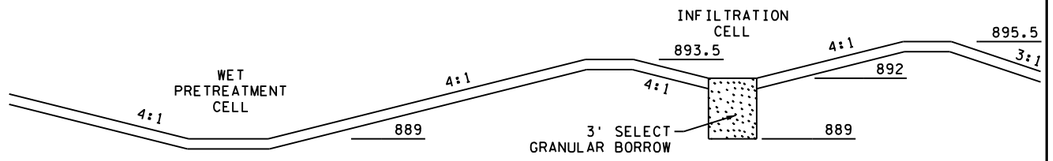
DRIVEWAY DETAILS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 146 OF 195 SHEETS

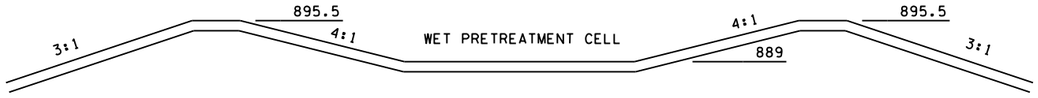
PATH & FILENAME: Projects\Minnesota\0\4400-000\Cad\Plan\4400-000_drwy05.dgn

PLOTTED/REVISED: 12/3/2020

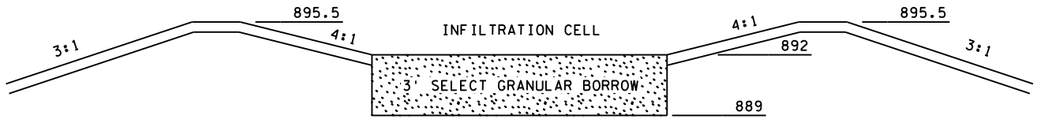




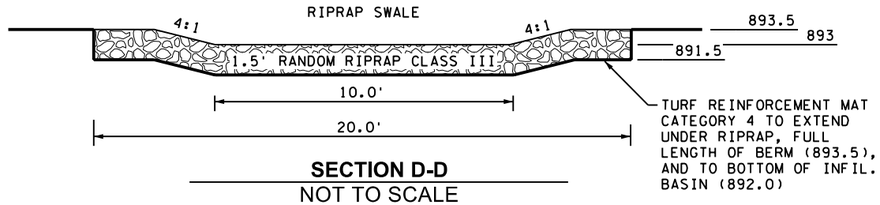
SECTION A-A
NOT TO SCALE



SECTION B-B
NOT TO SCALE



SECTION C-C
NOT TO SCALE



SECTION D-D
NOT TO SCALE

GENERAL NOTES:
1. PERFORM CONTINUOUS INSPECTIONS OF EROSION CONTROL PRACTICES, ESPECIALLY AFTER EACH RAINFALL EVENT. SEE SHEETS 186 TO 189 FOR TURF ESTABLISHMENT & EROSION CONTROL.
2. CONTOURS ARE TO FINISHED GROUND GRADE (TOP OF TOPSOIL).
3. EXISTING GROUND AND PROPOSED GROUND CONTOURS ARE APPROXIMATE. EXACT CONTOURS SHALL BE DETERMINED IN THE FIELD BY ENGINEER.
4. EXCAVATION OF THE BMP REQUIRES A TOOTHED BUCKET TO AVOID COMPACTING OR SMEARING SOILS.
5. GRADING OF THE BMP REQUIRES USE OF LOW-IMPACT EARTH-MOVING EQUIPMENT TO PREVENT COMPACTION OF THE UNDERLYING SOILS. SMALL TRACKED DOZERS AND BOBCATS WITH RUNNER TRACKS ARE RECOMMENDED.
6. INSTALL ALL UTILITIES PRIOR TO SETTING FINAL GRADE OF BMP.
7. IF BMP AREA IS BEING USED AS TEMPORARY SEDIMENT BASIN DURING CONSTRUCTION, LEAVE A MINIMUM OF 2 FEET OF COVER OVER THE FINISHED GRADE ELEVATION TO PROTECT THE UNDERLYING SOILS.
8. ENSURE ALL CRITICAL ELEVATIONS ARE CORRECT PRIOR TO TOPSOIL PLACEMENT. A 6-INCH LAYER OF TOPSOIL SHALL BE PLACED ON THE EXPOSED POND SLOPES TO SUPPORT VEGETATION.
9. SEEDING AND INSTALLATION OF EROSION CONTROL BLANKET SHALL BE COMPLETED WITHIN 48 HOURS OF FINAL GRADING.
10. SEE SHEETS 155 TO 162 FOR DRAINAGE PROFILES AND TABULATIONS.
11. FINISHED SLOPE GRADES ARE LISTED AS HORIZONTAL TO VERTICAL (H:V).

LEGEND

	RANDOM RIPRAP	->	INPLACE STORM SEWER
	DRAINAGE STRUCTURES		CONSTRUCTION LIMITS
	APRON		RIGHT OF WAY
->	STORM SEWER PIPE		DRN AND UTL EASEMENT
XXXX	STRUCTURE NUMBER	885	EXISTING CONTOURS
	SURFACE FLOW DIRECTION	865	PROPOSED CONTOURS

NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

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ANDREW J. PLOWMAN, PE
DATE 12/3/2020 LICENSE # 44200

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

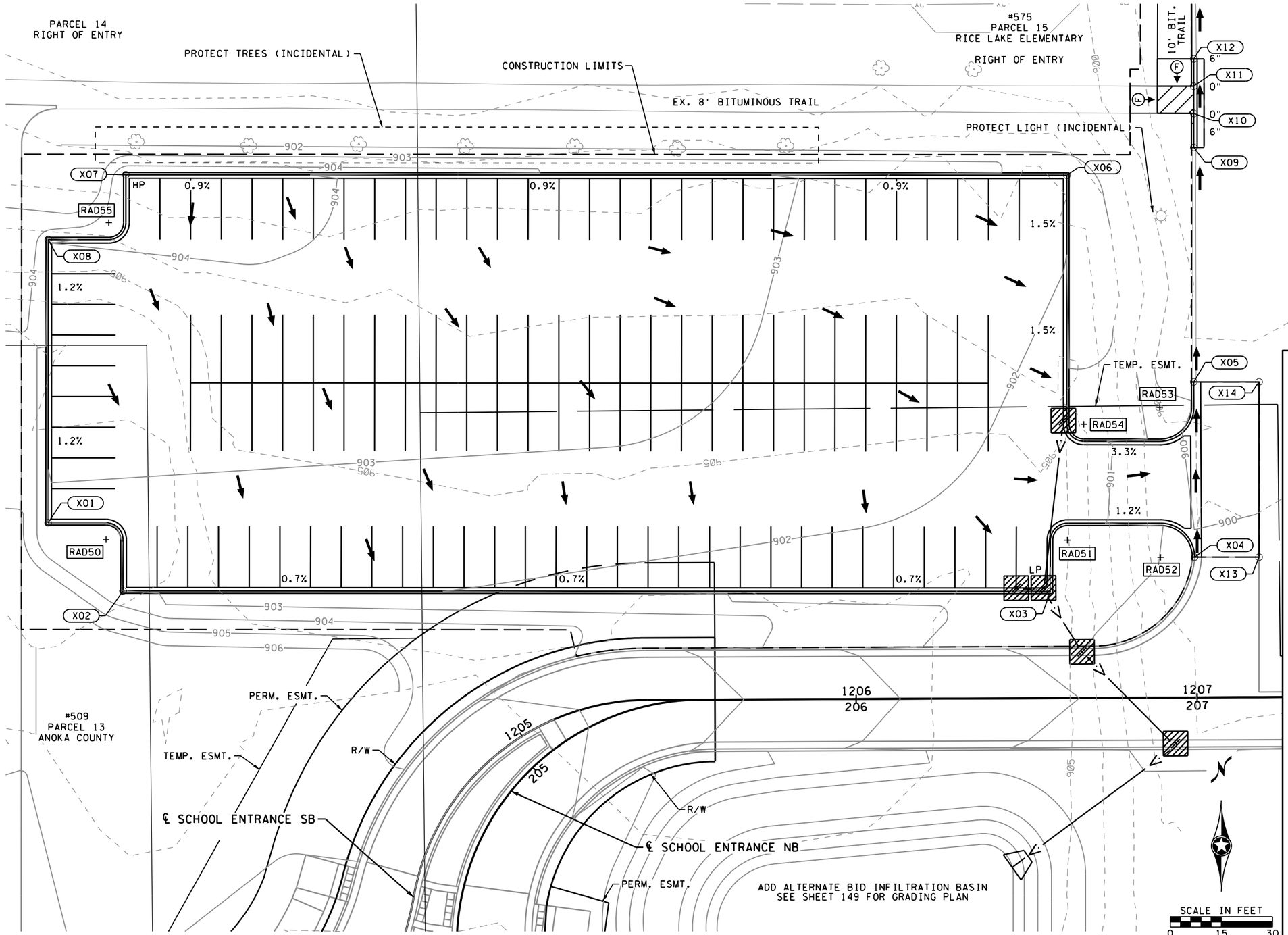
ANOKA COUNTY, MINNESOTA
STORMWATER TREATMENT BMP
GRADING PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 147 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\4400-000_dp_pond

PLOTTED/REVISED: 12/3/2020

RICE LAKE ELEMENTARY PARKING (ADD ALTERNATE BID)



CONTROL POINTS AT GUTTER FLOW LINE			
POINT NO.	NORTHING	EASTING	ELEVATION
X01	139285.91	538962.22	903.00
X02	139265.90	538984.21	903.00
X03	139265.77	539256.21	901.00
X04	139275.80	539298.52	900.19
X05	139327.17	539298.25	899.41
X06	139387.76	539261.05	902.22
X07	139387.90	538985.05	904.62
X08	139368.91	538962.26	904.00
X09	139395.90	539298.26	898.78
X10	139405.90	539298.27	898.66
X11	139413.90	539298.27	898.52
X12	139421.90	539298.27	898.38
X13	139275.81	539317.40	900.14
X14	139327.17	439317.40	899.43

RADIUS CONTROL POINTS			
POINT NO.	NORTHING	EASTING	RADIUS
RAD50	139280.90	538979.22	5'
RAD51	139280.76	439261.22	5'
RAD52	139275.75	593288.52	10'
RAD53	139319.75	539288.29	10'
RAD54	139314.76	539266.01	5'
RAD55	139373.90	5389.80.0425	5'

LEGEND

- CONSTRUCT CONCRETE CURB & GUTTER
- xx — CONTROL POINT AT GUTTER FLOW LINE
- X" — CURB HEIGHT
- LANDING AREA - 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS.
- (F) — INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.
- PROPOSED CATCH BASIN
- HP — LOCALIZED HIGH POINT
- LP — LOCALIZED LOW POINT
- 885 — EXISTING CONTOURS
- 865 — PROPOSED CONTOURS
- CONSTRUCTION LIMITS
- EXISTING R/W
- PROPOSED R/W
- TEMPORARY EASEMENT
- PERMANENT EASEMENT

NOTES:

1. CONTROL POINTS ARE LOCATED AT THE GUTTER FLOW LINE.
2. MAINTAIN A MINIMUM 4' WIDE PEDESTRIAN ACCESS ROUTE OBSTRUCTION TO OBSTRUCTION AND/OR OBSTRUCTION TO FAR EDGE OF WALK.
3. THE CROSS SLOPE OF THE PEDESTRIAN ACCESS ROUTE SHALL NOT EXCEED 0.020 FT/FT.
4. PROVIDE A SAWCUT (INCIDENTAL) AT ALL CONCRETE AND BITUMINOUS TRAIL REMOVAL LIMITS.
5. ALL DISTURBED AREAS IN CUT SECTION THAT ARE NOT OTHERWISE SURFACED SHALL BE GRADED FLUSH WITH NEW SURFACING AT A 1:6 SLOPE FOR A DISTANCE OF UP TO 5 FEET FROM THE EDGE OF WALK TO MATCH SURROUNDING CONTOURS.

NO.	DATE	BY	CHK	REVISIONS

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Plan By: CWK
Checked By: AJP
Approved By: AJP

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ANOKA COUNTY

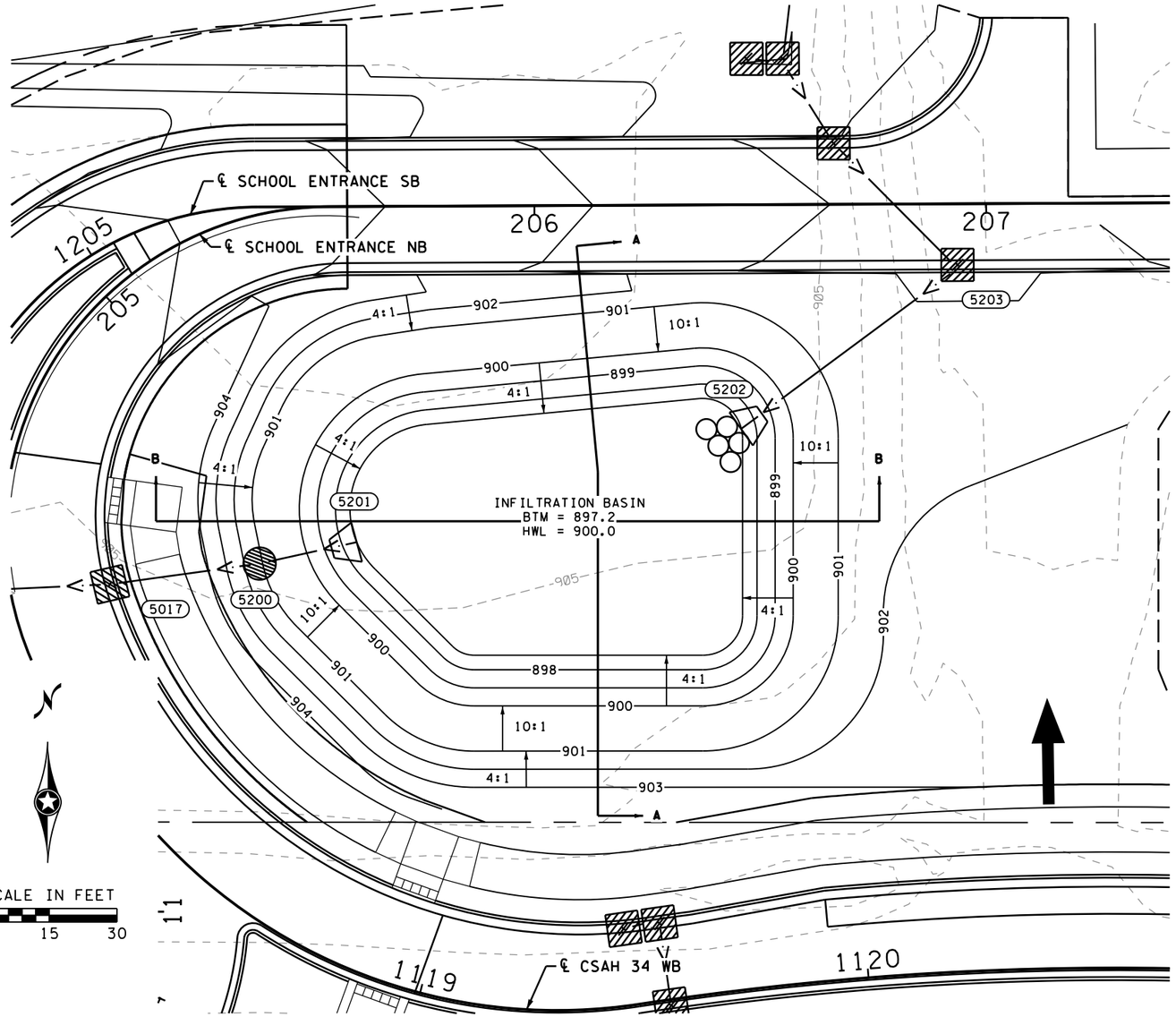
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

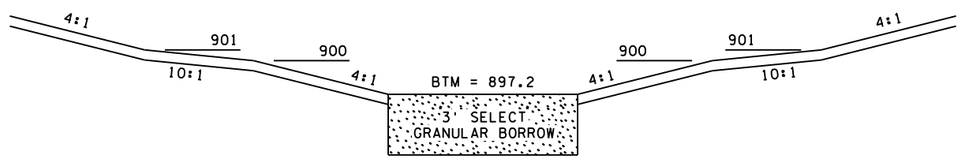
ANOKA COUNTY, MINNESOTA
RICE LAKE ELEMENTARY PARKING (ADD ALTERNATE BID)
GRADING PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 148 OF 195 SHEETS

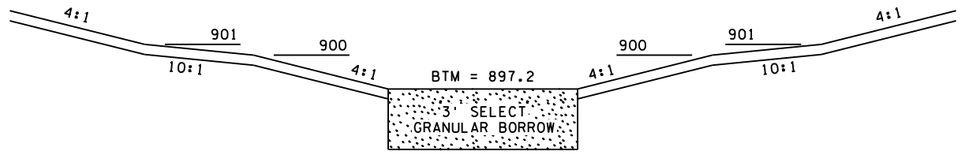
PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\4400-000_gp02_parking_grading.dgn

RICE LAKE ELEMENTARY PARKING INFILTRATION BASIN (ADD ALTERNATE BID)





SECTION A-A
NOT TO SCALE



SECTION B-B
NOT TO SCALE

GENERAL NOTES:
1. PERFORM CONTINUOUS INSPECTIONS OF EROSION CONTROL PRACTICES, ESPECIALLY AFTER EACH RAINFALL EVENT. SEE SHEETS 186 TO 190 FOR TURF ESTABLISHMENT & EROSION CONTROL.
2. CONTOURS ARE TO FINISHED GROUND GRADE (TOP OF TOPSOIL).
3. EXISTING GROUND AND PROPOSED GROUND CONTOURS ARE APPROXIMATE. EXACT CONTOURS SHALL BE DETERMINED IN THE FIELD BY ENGINEER.
4. EXCAVATION OF THE BMP REQUIRES A TOOTHED BUCKET TO AVOID COMPACTING OR SMEARING SOILS.
5. GRADING OF THE BMP REQUIRES USE OF LOW-IMPACT EARTH-MOVING EQUIPMENT TO PREVENT COMPACTION OF THE UNDERLYING SOILS. SMALL TRACKED DOZERS AND BOBCATS WITH RUNNER TRACKS ARE RECOMMENDED.
6. INSTALL ALL UTILITIES PRIOR TO SETTING FINAL GRADE OF BMP.
7. IF BMP AREA IS BEING USED AS TEMPORARY SEDIMENT BASIN DURING CONSTRUCTION, LEAVE A MINIMUM OF 2 FEET OF COVER OVER THE FINISHED GRADE ELEVATION TO PROTECT THE UNDERLYING SOILS.
8. ENSURE ALL CRITICAL ELEVATIONS ARE CORRECT PRIOR TO TOPSOIL PLACEMENT. A 6-INCH LAYER OF TOPSOIL SHALL BE PLACED ON THE EXPOSED POND SLOPES TO SUPPORT VEGETATION.
9. SEEDING AND INSTALLATION OF EROSION CONTROL BLANKET SHALL BE COMPLETED WITHIN 48 HOURS OF FINAL GRADING.
10. SEE SHEETS 155 TO 162 FOR DRAINAGE PROFILES AND TABULATIONS.
11. FINISHED SLOPE GRADES ARE LISTED AS HORIZONTAL TO VERTICAL (H:V).

LEGEND

	RANDOM RIPRAP	->	INPLACE STORM SEWER
	DRAINAGE STRUCTURES	- - - - - - - - -	CONSTRUCTION LIMITS
	APRON	——— - - - ———	RIGHT OF WAY
->	STORM SEWER PIPE	——— - - - ———	DRN AND UTL EASEMENT
XXXX	STRUCTURE NUMBER	- - - 885 - - -	EXISTING CONTOURS
	SURFACE FLOW DIRECTION	——— 865 ———	PROPOSED CONTOURS

NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
STORMWATER TREATMENT BMP (ADD ALTERNATE BID)
GRADING PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

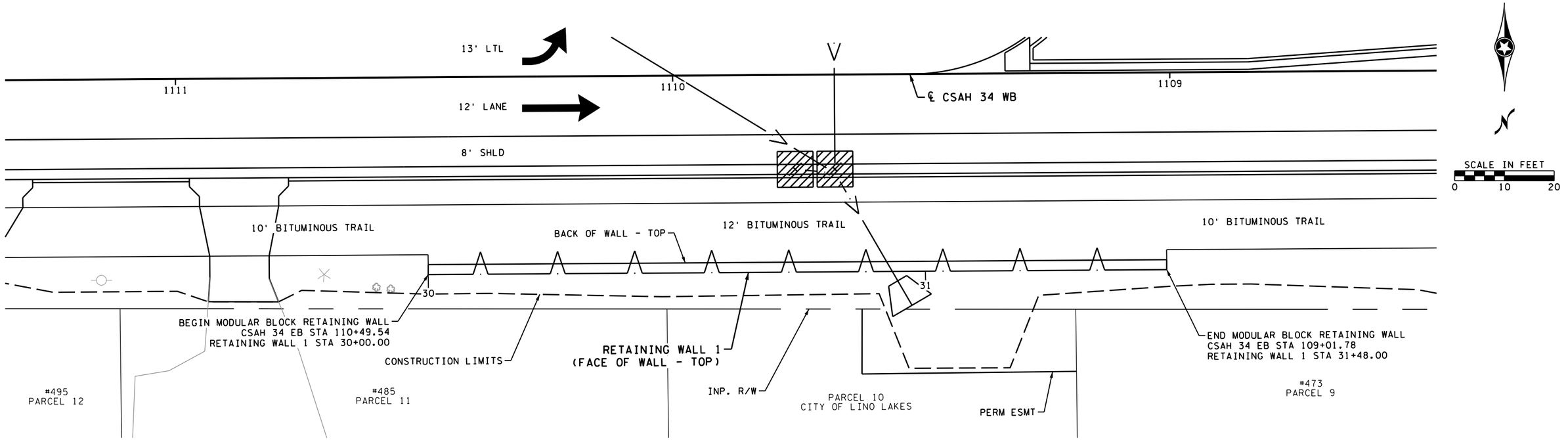
SHEET 149 OF 195 SHEETS

PLOTTED/REVISED: 12/3/2020

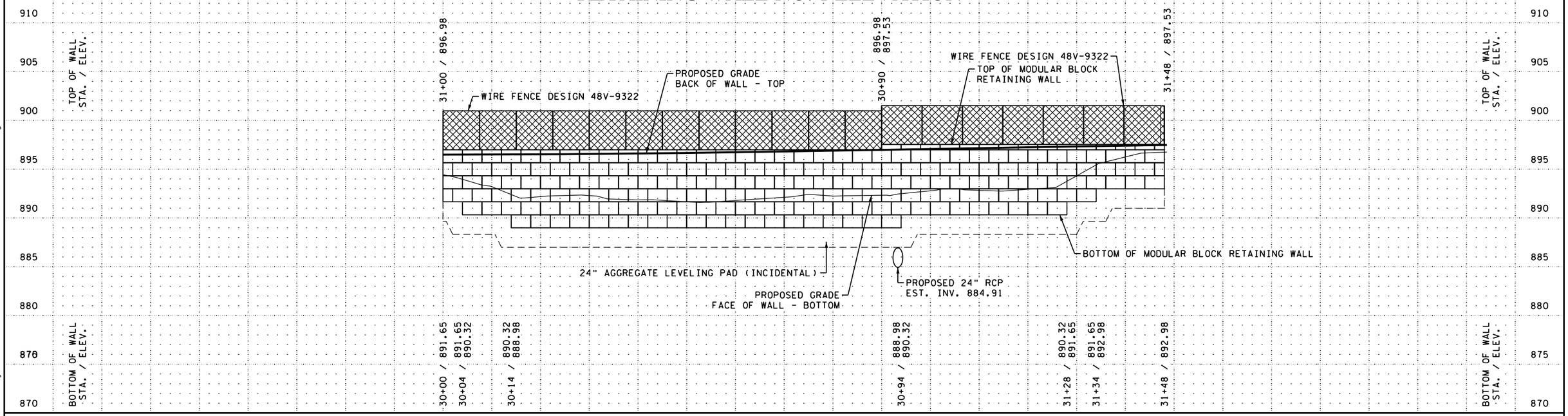
PATH & FILENAME: Projects\Minnesota\0\4400-000\Cad\Plan\4400-000_dp_pond2_Parking.dgn

PLOTTED/REVISED: 12/3/2020

RETAINING WALL NO. 1



RETAINING WALL NO. 1 ELEVATION



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ANOKA COUNTY

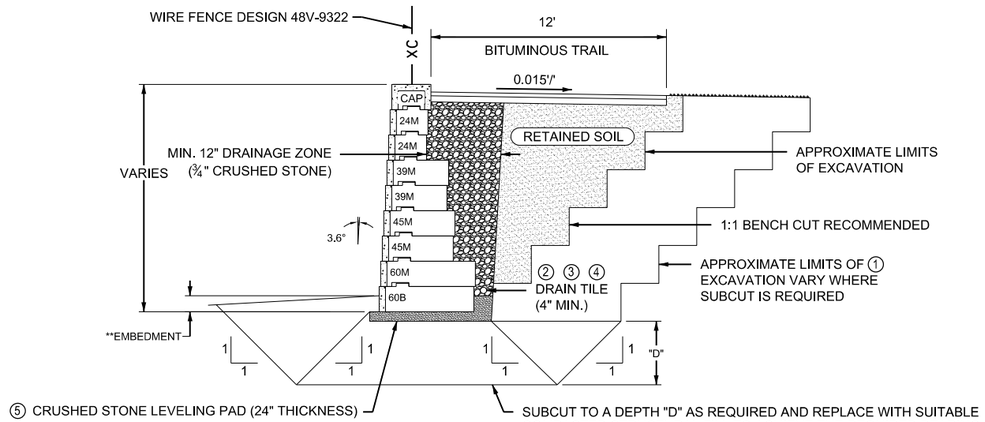
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
RETAINING WALL 1
RETAINING WALL PLANS AND PROFILES
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **150** OF **195** SHEETS

PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\14400-000_rw01.dgn

FINISHED GRADE AT TOP OF WALL SHALL BE DESIGNED FOR PROPER DRAINAGE TO PREVENT PONDING.



**EMBEDMENT SHOULD BE THE GREATER OF 2' OR H/20 FOR WALLS WITH LEVEL GRADE AT THE TOE. REFER TO MANUFACTURER'S EMBEDMENT RECOMMENDATION DOCUMENT FOR ADDITIONAL INFORMATION FOR WALLS WITH A TOE SLOPE CONDITION.

NOTES:

- ALL FRONT AND BACK EXPOSED BLOCK FACES SHALL BE TEXTURED.

① PAY LIMITS OF STRUCTURAL EXCAVATION. ACTUAL EXCAVATION SLOPE IS DETERMINED BY OSHA REGULATIONS AND IN-SITU SOILS; SHORING/SHEETING OR EXCAVATION BEYOND "LIMITS OF STRUCTURAL EXCAVATION" AT CONTRACTOR'S EXPENSE.

② INSPECT EXCAVATION SLOPES FOR ACTIVE SEEPAGE AND PLACE ADDITIONAL DRAINS WHERE SEEPAGE OCCURS AS DIRECTED BY THE ENGINEER. (INCIDENTAL)

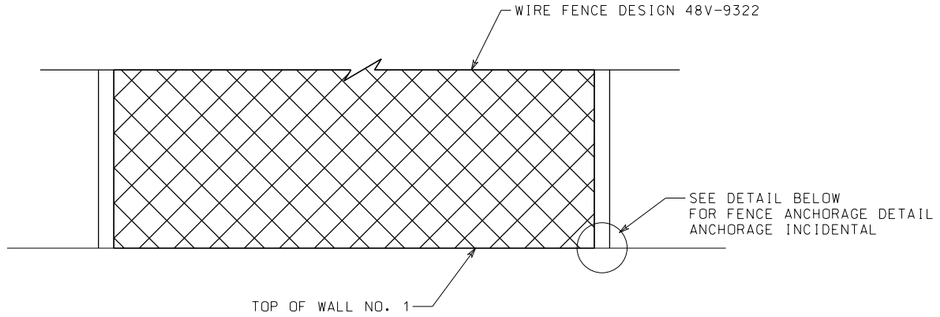
③ PLACE DRAIN AT BOTTOM OF REINFORCED SOIL IF PIPE CAN BE SLOPED TO OUTLET. DO NOT OUTLET ONTO FRONT WALL. (INCIDENTAL)

④ 4" THERMOPLASTIC PERFORATED PIPE, MN/DOT SPEC. 3245, WRAP WITH TYPE I GEOTEXTILE, MN/DOT SPEC. 3733 (TYP.) (INCIDENTAL) INSTALLATION PER MN/DOT SPEC. 2502.

⑤ LEVELING PAD SHALL BE INCIDENTAL.

TYPICAL GRAVITY WALL CROSS SECTION

NOT TO SCALE

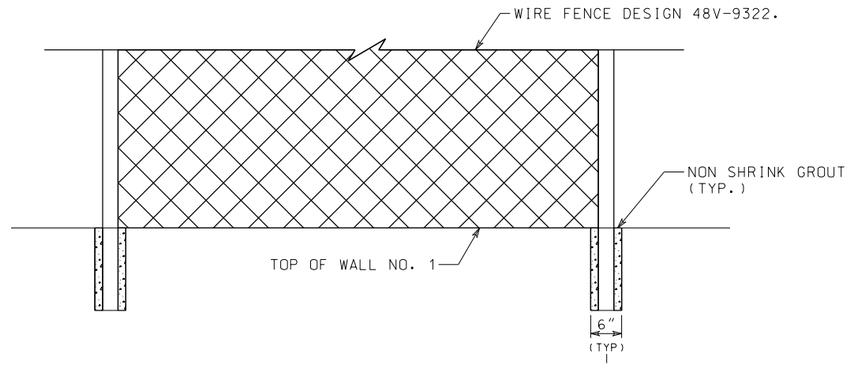


FENCE DETAIL ON RETAINING WALL

NOT TO SCALE

NOTES:

1. FENCE SHALL BE 48 INCHES IN HEIGHT.
2. FENCE SHALL VINYL COATED, COLOR BLACK.



FENCE ANCHOR DETAIL ON RETAINING WALL

NOT TO SCALE (INCIDENTAL)

NOTES:

1. SET FENCE POSTS INTO WALL USING NON SHRINK GROUT MIX. (DEPTH = ONE COURSE)
2. USE CONSTRUCTION ADHESIVE (AS PER MANUFACTURERS RECOMMENDATION) TO ADHERE TOP TWO UNITS.
3. FENCE SPACING TO BE 8' O.C. UNLESS OTHERWISE NOTED.

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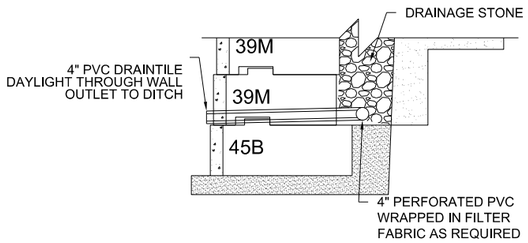
ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

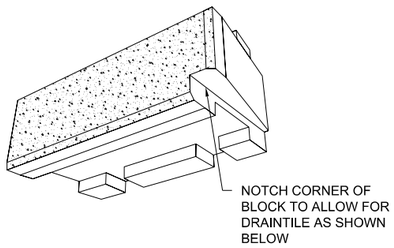
ANOKA COUNTY, MINNESOTA
DETAILS
RETAINING WALL PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 151 OF 195 SHEETS



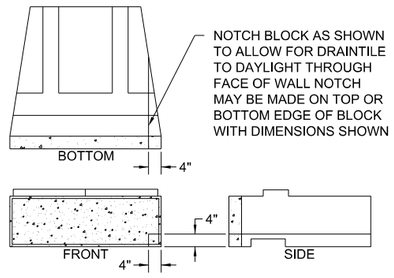
PARTIAL CROSS SECTION

NOT TO SCALE (INCIDENTAL)



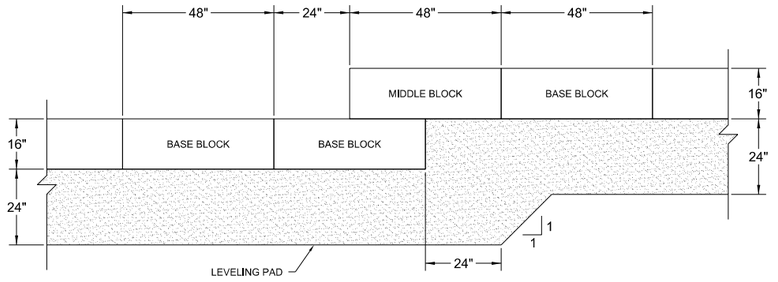
ISOMETRIC VIEW

NOT TO SCALE (INCIDENTAL)



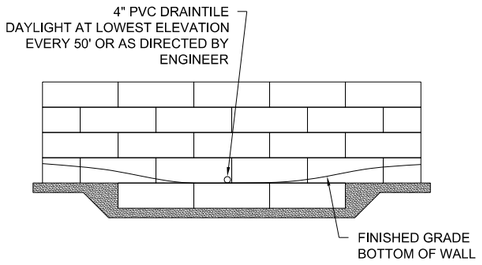
DETAIL

NOT TO SCALE (INCIDENTAL)



LEVELING PAD DETAIL

NOT TO SCALE (INCIDENTAL)



TYPICAL PIPE DRAINAGE DETAILS

NOT TO SCALE (INCIDENTAL)

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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements

Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

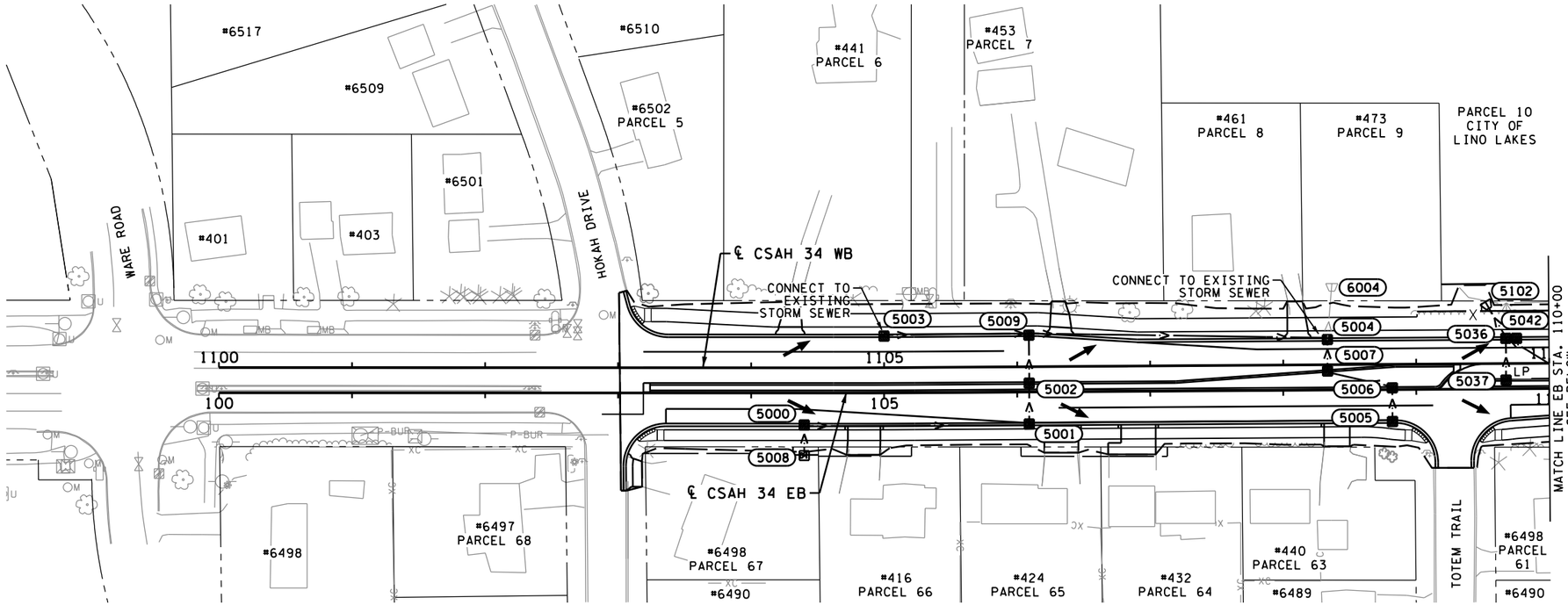
DETAILS

RETAINING WALL PLAN

S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **152** OF **195** SHEETS

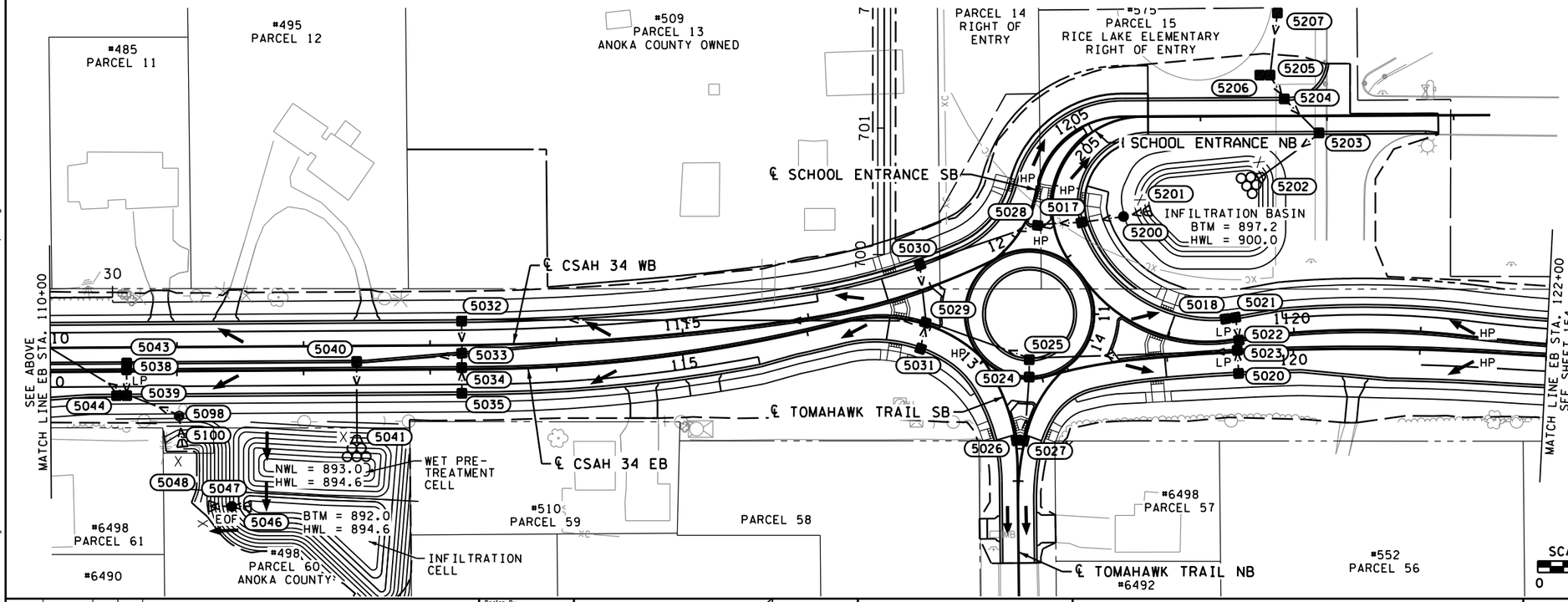
PLOTTED/REVISED: 12/3/2020



LEGEND

- GUIDE POST TYPE B
- RANDOM RIPRAP
- CATCH BASIN
- MANHOLE
- DROP INLET
- APRON
- XXXX — STRUCTURE NUMBER
- SURFACE FLOW DIRECTION
- STORM SEWER PIPE
- CULVERT PIPE
- INPLACE STORM SEWER
- 4" PE PIPE DRAIN
- CONSTRUCTION LIMITS

NOTES:
1. SEE ROADWAY PROFILE FOR ALL HIGH AND LOW POINTS.



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ANOKA COUNTY

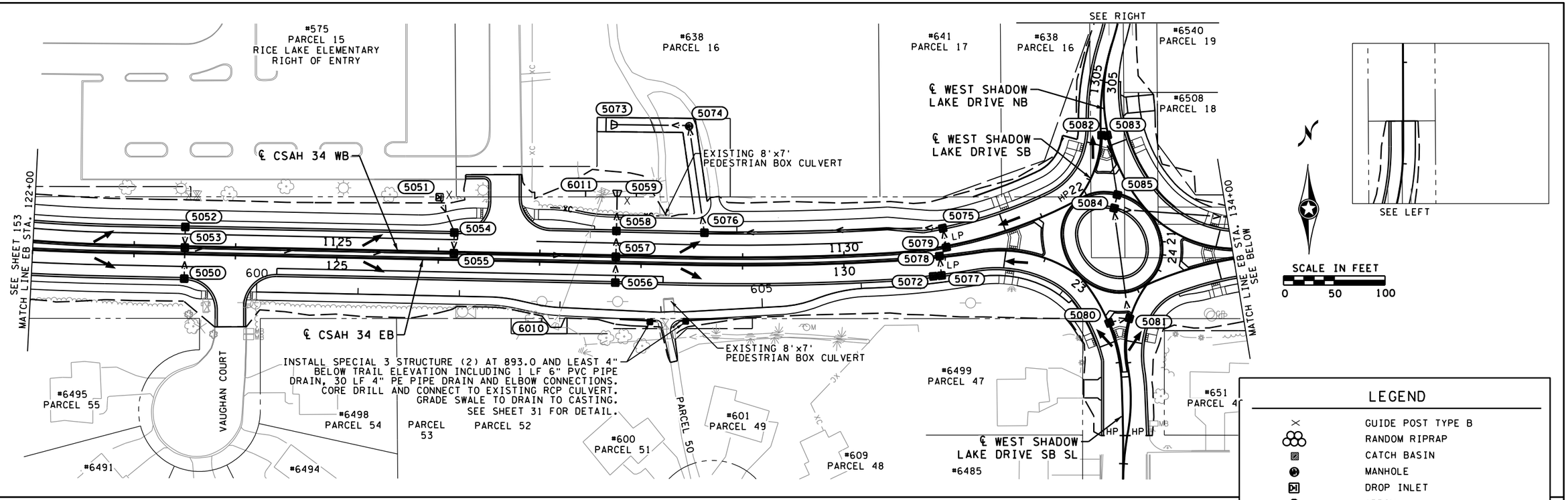
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

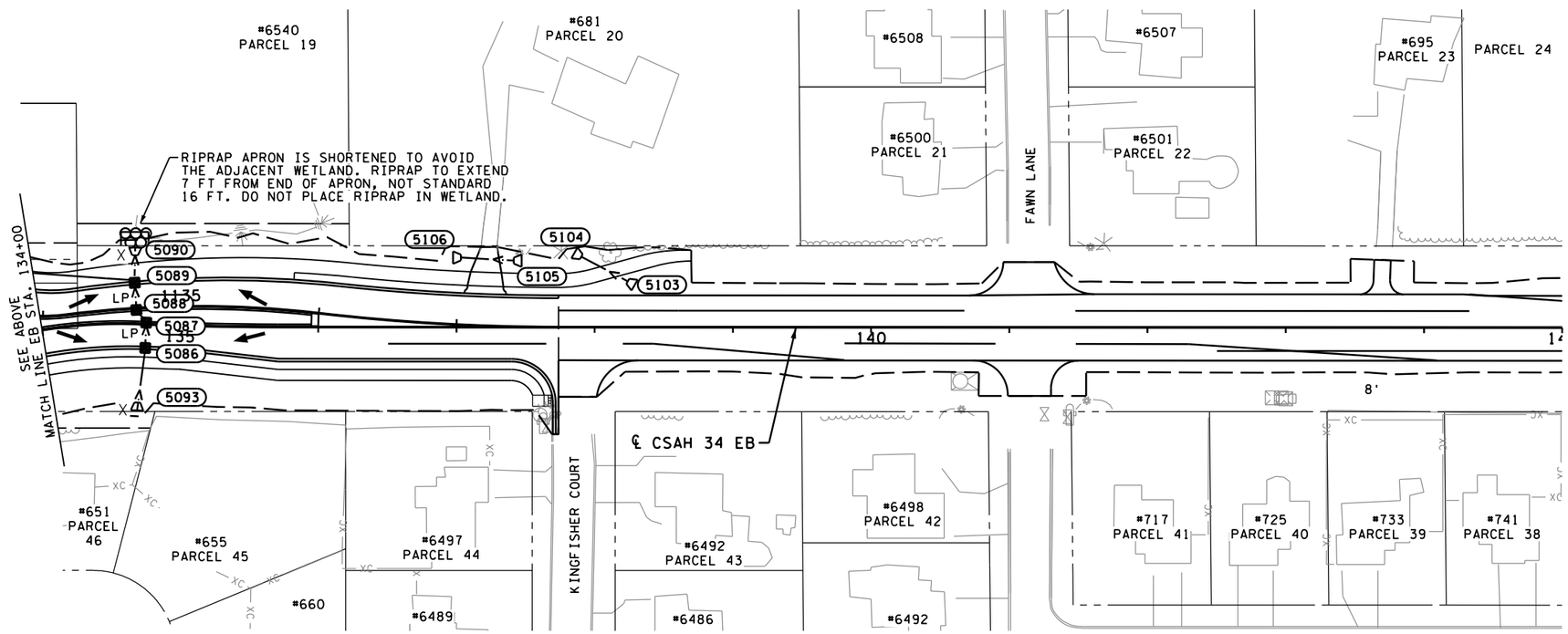
ANOKA COUNTY, MINNESOTA
STA 103+01.40 TO STA 122+00
DRAINAGE PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 153 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\4400-000_dp01.dgn

PLOTTED/REVISED: 12/3/2020





LEGEND

- GUIDE POST TYPE B
- RANDOM RIPRAP
- CATCH BASIN
- MANHOLE
- DROP INLET
- APRON
- XXXX — STRUCTURE NUMBER
- SURFACE FLOW DIRECTION
- STORM SEWER PIPE
- CULVERT PIPE
- INPLACE STORM SEWER
- 4" PE PIPE DRAIN
- CONSTRUCTION LIMITS

NOTES:
1. SEE ROADWAY PROFILE FOR ALL HIGH AND LOW POINTS.

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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
STA 122+00 TO STA 145+00
DRAINAGE PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 154 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\0\4400-000\Cad\Plan\4400-000_dp02.dgn

DRAINAGE TABULATION (THIS SHEET ONLY)

STRUCTURE NO.		STRUCTURE LOCATION			COORDINATES		DRAINAGE STRUCTURES						TOP OF CASTING ELEV	OUTLET ELEV. (E)	INLET ELEV. (E)	PIPE SLOPE	15" RCP CL V	21" RCP CL III	24" RCP CL III	FINE AGGREGATE BEDDING (CV)	GUIDE POSTS TYPE B	REMARKS
							PAY HEIGHT															
FLOWS FROM	FLOWS TO	ALIGN.	STATION	OFFSET	X	Y	G	H	48-4020	60-4020	CASTING ASSEMBLY TYPE (F)	CONNECT TO EXISTING STORM SEWER										
							LIN FT	LIN FT	LIN FT	LIN FT						FT/FT	LIN FT	LIN FT	LIN FT	CU YD	EACH	
5008	5000	34_EB	104+40.00	47.0' RT	537730.64	138981.94		3.3			M - 11		898.40	895.10	895.02	0.0040	22			0.21	1	
5000	5001	34_EB	104+40.00	24.0' RT	537730.66	139004.94			4.7		C		899.77	895.00	894.34	0.0040	169			1.78		
5001	5002	34_EB	106+08.96	24.0' RT	537899.78	139005.69			4.5		C		898.92	894.32	894.22	0.0040	32			0.31		
5002	5009	34_WB_1	1106+08.96	12.3' RT	537899.72	139036.36			5.1		B		899.18	894.20	894.07	0.0040	37			0.35		
5009	5004	34_WB_1	1106+08.94	23.8' LT	537899.46	139072.44				5.4	C		898.91	893.40	892.65	0.0034			224	3.13		
5004	6004	34_WB_1	1108+33.30	19.0' LT	538123.84	139069.19				7.9	C	1	896.60	892.63	892.48	0.0040				0.55		B
5005	5006	34_EB	108+82.00	24.0' RT	538172.82	139007.51	3.1				C		897.01	893.81	893.72	0.0040	26			0.24		
5006	5007	34_EB	108+82.00	1.3' LT	538172.65	139032.84			3.9		B		897.51	893.70	893.52	0.0040	50			0.50		
5007	5004	34_WB_1	1108+33.30	4.7' RT	538124.00	139045.48			3.6		B		896.92	893.44	892.72	0.0338	26			0.23		
5003	5009	34_WB_1	1105+00.00	23.8' LT	537790.58	139071.75			5.6		C	1	899.46	893.73	893.42	0.0030		109		1.37		
TOTAL							3.1	3.3	27.4	13.3		2					362	109	224	8.66	1	

GENERAL NOTES:
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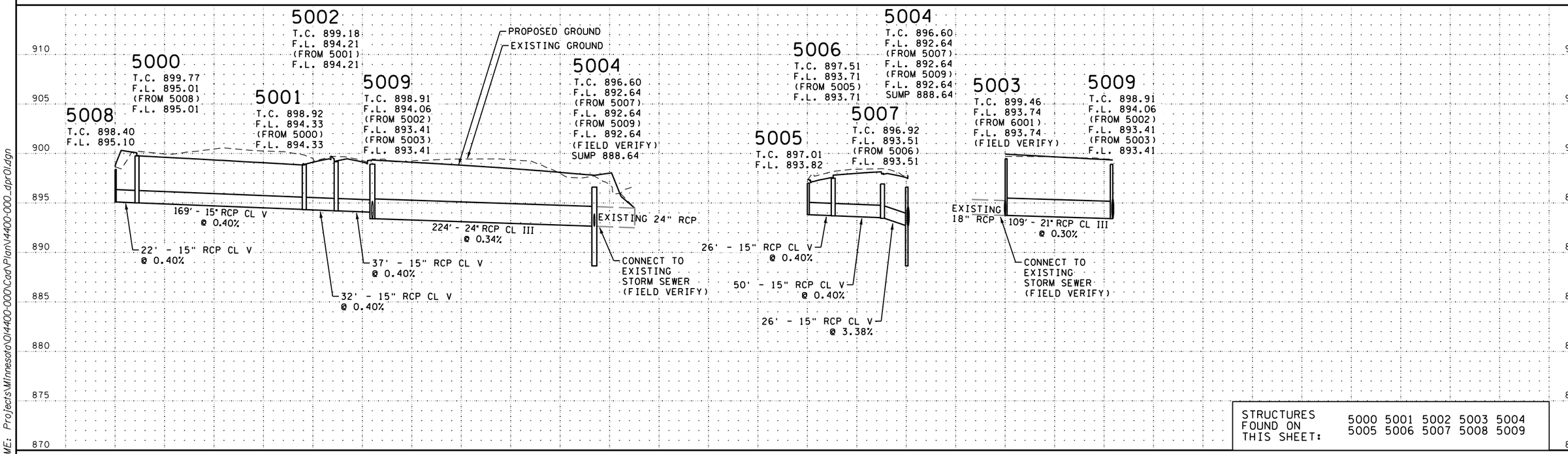
  - -END OF ALL CONCRETE APRONS.
  - -CENTER OF CASTING FOR ALL STORM STRUCTURES.
- ALL PIPE LENGTHS EXCLUDE APRONS.
- PAY HEIGHTS ARE FROM BOTTOM OF CASTING TO OUTLET INVERT, PLUS 0.7'.
- RC PIPE IS DES 3006 GASKET JOINT PIPE.
- STEPS REQUIRED WHEN DEPTH FROM TOP OF CASTING TO STRUCTURE INVERT IS GREATER THAN 4.5'.

NOTES:
B. 4 FT SUMP INCLUDED IN PAY HEIGHT.
E. FLOWLINE (F.L.) ELEVATIONS ON PROFILES ARE AT CENTER OF STRUCTURE. INLET AND OUTLET ELEVATIONS ON TABULATIONS ARE AT EDGE OF STRUCTURE.
F. SEE SHEET 31 FOR CASTING DETAILS.



STRUCTURES FOUND ON THIS SHEET: 5000 5001 5002 5003 5004 5005 5006 5007 5008 5009

NO.	DATE	BY	CHK	REVISIONS

Design By: MJS
Plan By: MJS
Checked By: JP
Approved By: JHN

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

JACOB H. NEWHALL, PE
DATE 12/3/2020 LICENSE # 49170

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

DRAINAGE PROFILES AND TABULATIONS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 155 OF 195 SHEETS

DRAINAGE TABULATION (THIS SHEET ONLY)

STRUCTURE NO.		STRUCTURE LOCATION			COORDINATES		DRAINAGE STRUCTURES				TOP OF CASTING ELEV	OUTLET ELEV. (E)	INLET ELEV. (E)	PIPE SLOPE	15" RCP CL V	18" RCP CL III	21" RCP CL III	APRON	APRON TYPE	RIPRAP CLASS III	GEOTEXTILE FILTER TYPE 4	FINE AGGREGATE BEDDING (CV)	GUIDE POSTS TYPE B	REMARKS
							PAY HEIGHT																	
FLOWS FROM	FLOWS TO	ALIGN.	STATION	OFFSET	X	Y	G	48-4020	60-4020	CASTING ASSEMBLY TYPE (F)														
							LIN FT	LIN FT	LIN FT					FT/FT	LIN FT	LIN FT	LIN FT	EACH		CU YD	SQ YD	CU YD	EACH	
5018	5021	34_WB_2	1119+47.86	17.0' LT	539219.01	139074.24	3.7			C	902.60	898.83	898.79	0.0100	8							0.04		
5021	5022	34_WB_2	1119+55.86	17.0' LT	539226.96	139075.42		3.7		C	902.58	898.76	898.70	0.0040	20							0.17		
5022	5023	34_WB_2	1119+55.86	1.3' RT	539229.54	139057.27		4.3		B	902.94	898.68	898.67	0.0041	8							0.04		
5023	5025	34_EB	119+55.86	1.3' LT	539228.39	139049.46		4.3		B	902.91	898.65	898.01	0.0040	165							1.73		
5025	5029	RA_TOM	13+40.00	15.0' LT	539064.01	139042.02			6.1	C	903.91	897.74	897.35	0.0047		87						0.98		
5029	5032	34_EB	116+94.85	1.3' LT	538981.95	139071.40			6.2	B	903.49	897.32	894.28	0.0084		367						4.33		
5032	5033	34_WB_1	1113+25.00	19.0' LT	538615.49	139072.47			4.4	C	898.48	894.00	893.91	0.0040			28					0.30		
5033	5040	34_WB_1	1113+25.00	6.3' RT	538615.71	139047.21			4.9	B	898.76	893.89	893.57	0.0040			83					1.03		
5040	5041	34_WB_1	1112+41.86	12.3' RT	538532.60	139040.66			8.8	B	897.96	893.24	893.00	0.0040			57					0.79		B
5041		34_EB	112+41.86	57.4' RT	538532.9	138976.48						893.00						1	21" RC APRON	7	27		1	A
5035	5034	34_EB	113+25.00	19.0' RT	538615.78	139015.46	3.7			C	898.61	894.88	894.71	0.0100	21							0.18		
5034	5033	34_EB	113+25.00	1.3' LT	538615.64	139035.79		4.5		B	899.01	894.63	894.48	0.0311	9							0.05		
				TOTAL			7.4	16.8	30.4						231	454	168	1		7	27	9.65	1	

GENERAL NOTES:
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  - -CENTER OF CASTING FOR ALL STORM STRUCTURES.
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NOTES:
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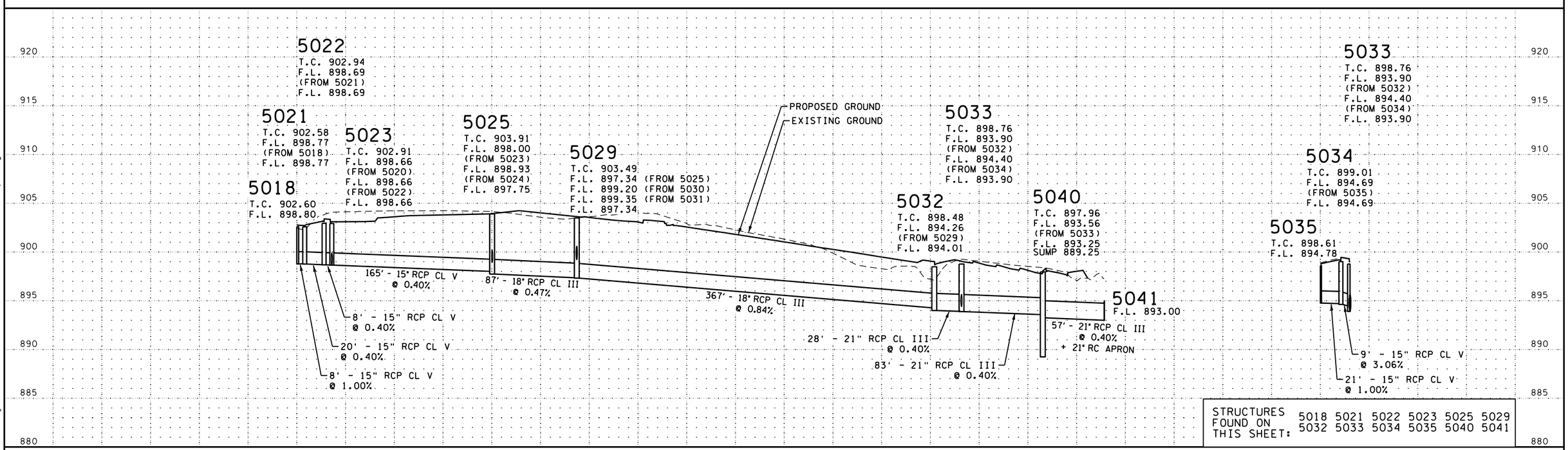
B. 4 FT SUMP INCLUDED IN PAY HEIGHT.
E. FLOWLINE (F.L.) ELEVATIONS ON PROFILES ARE AT CENTER OF STRUCTURE. INLET AND OUTLET ELEVATIONS ON TABULATIONS ARE AT EDGE OF STRUCTURE.
F. SEE SHEET 31 FOR CASTING DETAILS.



STRUCTURES FOUND ON THIS SHEET: 5018 5021 5022 5023 5025 5029 5032 5033 5034 5035 5040 5041

NO.	DATE	BY	CHK	REVISIONS

Design By: MJS
Plan By: MJS
Checked By: JP
Approved By: JHN

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JACOB H. NEWHALL, PE

DATE 12/3/2020 LICENSE # 49170

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

DRAINAGE PROFILES AND TABULATIONS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 156 OF 195 SHEETS

PLOTTED/REVISED: 12/3/2020

DRAINAGE TABULATION (THIS SHEET ONLY)

STRUCTURE NO.		STRUCTURE LOCATION			COORDINATES		DRAINAGE STRUCTURES PAY HEIGHT			CASTING ASSEMBLY TYPE (F)	TOP OF CASTING ELEV	OUTLET ELEV. (E)	INLET ELEV. (E)	PIPE SLOPE	15" RCP CL V	APRON	APRON TYPE	FINE AGGREGATE BEDDING (CV)	GUIDE POSTS TYPE B	REMARKS
		ALIGN.	STATION	OFFSET	X	Y	G	48-4020	60-4020											
							LIN FT	LIN FT	LIN FT					FT/FT	LIN FT	EACH		CU YD	EACH	
5017	5028	TOM_NB	204+24.99	21.9' RT	539105.29	139150.46	5.1			C	903.77	898.57	898.45	0.0040	35			0.33		
5028	5030	RA_TOM	11+75.50	19.3' RT	539070.59	139148.06		5.9		B	904.23	898.43	898.06	0.0040	98			1.02		
5030	5029	34_WB_1	1116+97.80	19.2' LT	538977.75	139116.86		5.2		C	903.35	898.03	897.62	0.0101	45			0.44		
5031	5029	34_EB	116+98.00	19.5' RT	538978.19	139050.71	3.7			C	903.24	899.43	899.36	0.0041	22			0.19		
5026	5027	TOM_SB_1	1202+32.00	0.8' RT	539053.92	138978.27	3.2			B	902.69	899.53	899.35	0.0777	6			0.03		
5027	5024	TOM_NB	202+32.00	0.8' LT	539059.56	138978.01		3.6		B	902.69	899.18	898.99	0.0040	52			0.51		
5024	5025	RA_TOM	13+40.00	1.3' LT	539063.92	139028.35			4.7	B	903.60	898.97	898.94	0.0040	14					
5020	5023	34_EB	119+55.86	17.0' RT	539229.35	139031.16	3.7			C	902.55	898.81	898.68	0.0100	18			0.15		
5052	5053	34_WB_2	1123+50.00	19.0' LT	539622.93	139067.79	3.5			C	902.15	898.62	898.45	0.0100	21			0.18		
5053	5055	34_WB_2	1123+50.00	1.3' RT	539622.50	139047.47		4.2		B	902.55	898.41	895.94	0.0095	265			2.82		
5055	5057	34_WB_2	1126+15.25	1.3' RT	539887.69	139041.88		5.1		B	900.94	895.91	895.29	0.0040	160			1.68		
5057	5058	34_WB_2	1127+75.00	1.3' RT	540047.40	139038.52		4.7		B	899.92	895.27	895.19	0.0040	25			0.23		
5058	5059	34_WB_2	1127+75.00	24.0' LT	540047.94	139063.84		13.0		C	899.42	890.37	890.00	0.0100	33			0.40		B
5059		34_WB_2	1127+75.00	64.0' LT	540048.78	139103.83						890.00				1	15" RC APRON		1	A
5050	5053	34_EB	123+50.00	24.0' RT	539621.85	139016.80	3.3			C	902.05	898.71	898.45	0.0100	30			0.28		
TOTAL							22.5	41.7	4.7						824	1		8.27	1	

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NOTES:
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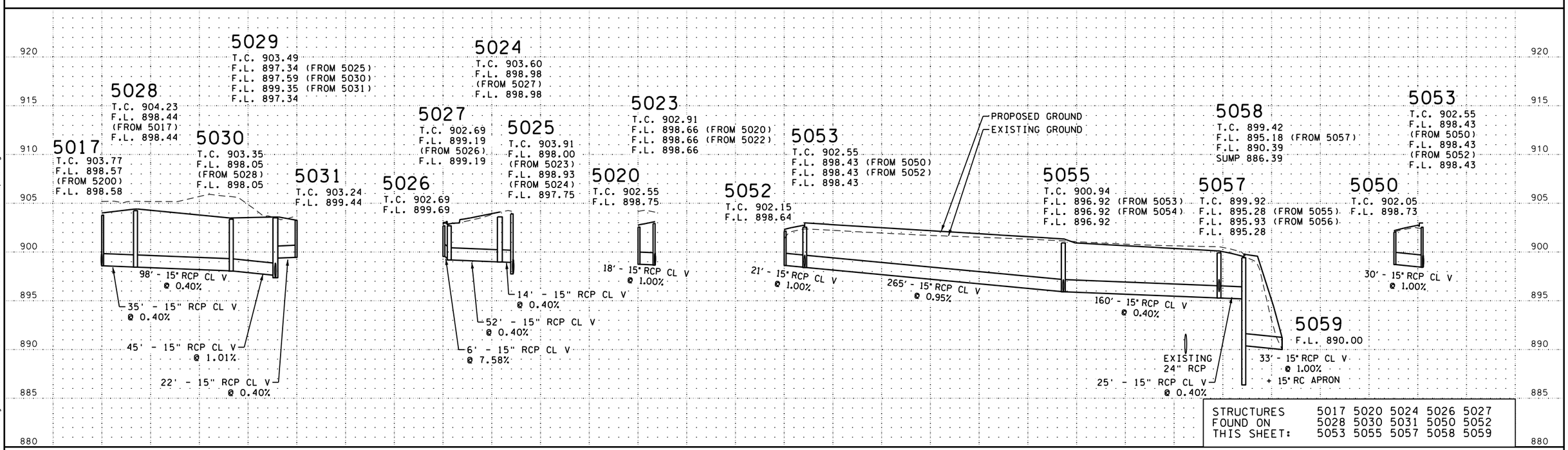
F. SEE SHEET 31 FOR CASTING DETAILS.



STRUCTURES FOUND ON THIS SHEET:	
	5017 5020 5024 5026 5027
	5028 5030 5031 5050 5052
	5053 5055 5057 5058 5059

NO.	DATE	BY	CHK	REVISIONS

Design By: MJS
Plan By: MJS
Checked By: JP
Approved By: JHN

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JACOB H. NEWHALL, PE

DATE 12/3/2020 LICENSE # 49170

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

DRAINAGE PROFILES AND TABULATIONS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 157 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\0\4400-000\Cad\Plan\4400-000_dpr01.dgn

PLOTTED/REVISED: 12/3/2020

DRAINAGE TABULATION (THIS SHEET ONLY)

STRUCTURE NO.		STRUCTURE LOCATION			COORDINATES		DRAINAGE STRUCTURES PAY HEIGHT			CASTING ASSEMBLY	TOP OF CASTING	OUTLET ELEV.	INLET ELEV.	PIPE SLOPE	15" RCP CL V	APRON	APRON TYPE	FINE AGGREGATE BEDDING (CV)	GUIDE POSTS TYPE B	REMARKS
		ALIGN.	STATION	OFFSET	X	Y	G	H	48-4020	TYPE (F)	ELEV	(E)	(E)	FT/FT	LIN FT	EACH		CU YD	EACH	
							LIN FT	LIN FT	LIN FT											
5051	5054	34_WB_2	1126+00.00	53.6' LT	539873.60	139097.16		3.3		M - 11	899.68	896.37	896.03	0.0100	37			0.37	1	
5054	5055	34_WB_2	1126+15.25	19.0' LT	539888.12	139062.21			4.4	C	900.51	896.00	895.93	0.0040	22			0.19		
5056	5057	34_EB	127+75.00	19.0' RT	540046.86	139012.85	3.3			C	899.52	896.18	895.95	0.0100	26			0.24		
5072	5077	34_EB	130+86.65	18.0' RT	540360.33	139019.09	3.7			C	897.69	893.92	893.88	0.0100	8			0.05		
5077	5078	34_EB	130+94.65	18.0' RT	540368.48	139019.87			3.8	C	897.68	893.85	893.78	0.0040	21			0.18		
5078	5079	34_EB	130+94.65	1.3' LT	540366.54	139039.05			4.4	B	898.06	893.76	893.74	0.0040	10			0.06		
5079	5075	34_WB_2	1131+01.09	1.3' RT	540373.21	139047.61			4.4	B	898.03	893.72	893.66	0.0040	21			0.18		
5075	5076	34_WB_2	1131+01.09	17.9' LT	540369.68	139066.51			3.9	C	897.65	893.64	892.72	0.0040	235			2.49		
5076	5074	34_WB_2	1128+61.98	24.0' LT	540134.74	139062.06			10.1	C	898.88	892.68	891.23	0.0140	108			1.12		B
5074	5073	34_WB_2	1128+44.47	128.8' LT	540119.60	139167.11			6.4	A - 7D	895.00	888.75	888.00	0.0100	71			0.81		
5073		34_WB_2	1127+67.73	128.7' LT	540042.88	139168.71						888.00				1	15" RC APRON		1	A
5082	5083	SHADOW_SB_2	1304+46.00	0.8' RT	540526.26	139158.32	3.3			B	897.42	894.24	894.03	0.0885	6			0.03		
5083	5085	SHADOW_NB	304+47.41	0.8' LT	540531.94	139158.12			3.6	B	897.35	893.84	893.62	0.0040	60			0.61		
5085	5084	RA_SHADOW	21+68.60	1.3' LT	540541.84	139099.56			5.0	B	898.49	893.60	893.57	0.0040	14			0.10		
5084	5089	RA_SHADOW	21+68.60	15.0' LT	540538.63	139086.27			5.1	C	898.72	893.55	892.82	0.0040	185			1.95		
5080	5081	SHADOW_SB_1	1302+40.50	0.8' RT	540533.88	138973.38	3.1			B	899.12	896.06	895.57	0.0310	20			0.17		
5081	5084	SHADOW_NB	302+44.23	0.8' LT	540553.64	138977.64			3.6	B	899.01	895.47	893.60	0.0180	109			1.13		
				TOTAL			13.4	3.3	54.7						953	1		9.68	2	

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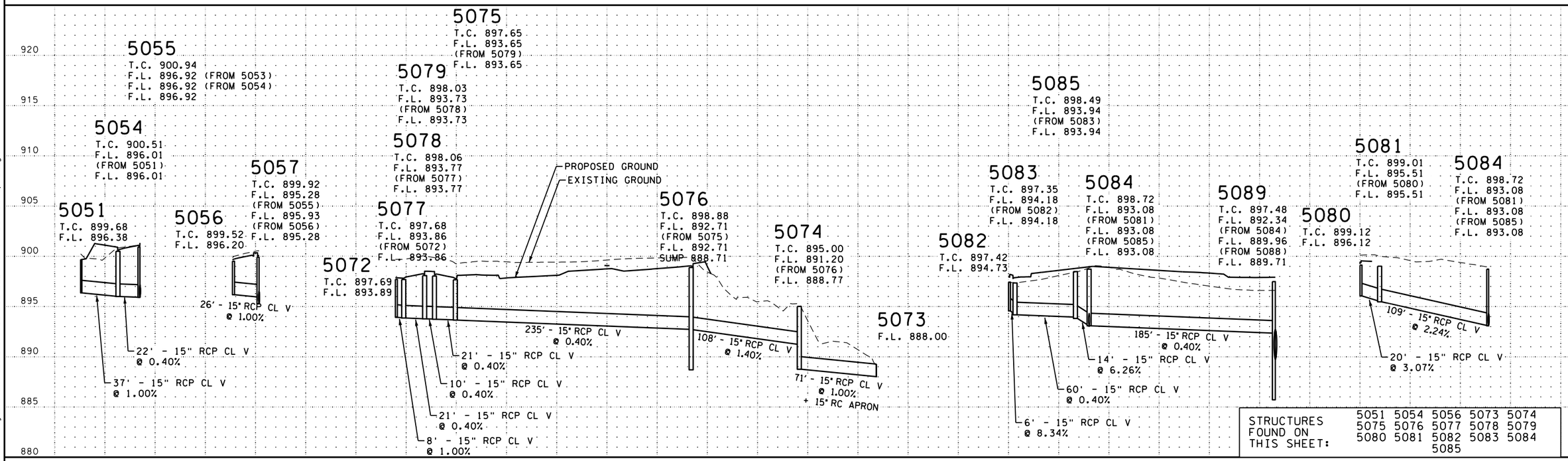

STRUCTURES FOUND ON THIS SHEET: 5051 5054 5056 5073 5074 5075 5076 5077 5078 5079 5080 5081 5082 5083 5084 5085

PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\4400-000_dpr01.dgn

NO.	DATE	BY	CHK	REVISIONS

Design By: MJS
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DRAINAGE PROFILES AND TABULATIONS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 158 OF 195 SHEETS

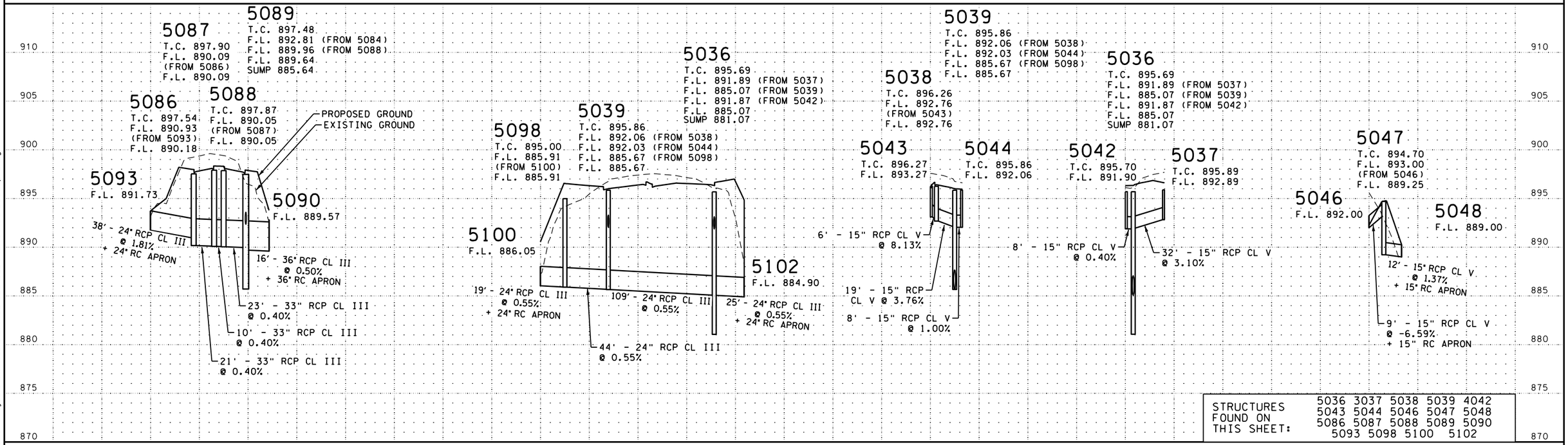
PLOTTED/REVISED: 12/3/2020

DRAINAGE TABULATION (THIS SHEET ONLY)

STRUCTURE NO.		STRUCTURE LOCATION			COORDINATES		DRAINAGE STRUCTURES						TOP OF CASTING ELEV	OUTLET ELEV. (E)	INLET ELEV. (E)	PIPE SLOPE	15" RCP CL V	24" RCP CL III	33" RCP CL III	36" RCP CL III	APRON	TRASH GUARD	APRON TYPE	RIPRAP CLASS III	GEOTEXTILE FILTER TYPE 4	FINE AGGREGATE BEDDING (CV)	GUIDE POSTS TYPE B	REMARKS
							PAY HEIGHT																					
FLOWS FROM	FLOWS TO	ALIGN.	STATION	OFFSET	X	Y	G	SPEC 2	48-4020	60-4020	72-4020	CASTING ASSEMBLY TYPE (F)																
							LIN FT	EACH	LIN FT	LIN FT	LIN FT					FT/FT	LIN FT	LIN FT	LIN FT	LIN FT	EACH	EACH		CU YD	SQ YD	CU YD	EACH	
5093	5086	34_EB	134+71.40	62.5' RT	540725.23	138978.12							893.73	891.73	890.98	0.0181		38			1	1	24" RC APRON			0.60	1	A
5086	5087	34_EB	134+75.48	17.1' RT	540731.17	139023.35				7.3		C	897.54	890.17	890.10	0.0040			21							0.28		
5087	5088	34_EB	134+75.48	1.3' LT	540731.88	139041.71				7.9		B	897.90	890.08	890.06	0.0040			10							0.08		
5088	5089	34_WB_3	1134+67.71	1.3' RT	540724.74	139050.87				7.9		B	897.87	890.04	889.97	0.0040			23							0.31		
5089	5090	34_WB_3	1134+67.71	18.3' LT	540723.55	139070.5					11.8	C	897.48	889.63	889.57	0.0050				16						0.39		B
5090		34_WB_3	1134+69.53	43.8' LT	540723.94	139096.05								889.57							1	1	36" RC APRON	7	25		1	A, I
5100	5098	34_EB	111+04.04	59.8' RT	538395.09	138973.21							888.05	886.04	885.92	0.0055		19			1	1	24" RC APRON			0.33	1	A
5098	5039	34_EB	111+01.49	35.5' RT	538392.38	138997.51			9.2			A - 7D	895.00	885.90	885.68	0.0055		44								0.58		
5039	5036	34_EB	110+60.18	19.0' RT	538350.96	139013.70			10.1			C	895.84	885.66	885.08	0.0055		109								1.49		
5036	5102	34_WB_1	1109+67.47	19.0' LT	538258.01	139070.08			14.6			C	895.69	885.06	884.90	0.0055		25								0.41		B
5102		34_WB_1	1109+52.16	46.5' LT	538242.51	139097.48								884.90							1	1	24" RC APRON				1	A
5043	5038	34_WB_1	1110+60.18	12.3' RT	538350.93	139039.37	3.2					B	896.27	893.10	892.91	0.0862	6									0.02		
5038	5039	34_EB	110+60.18	1.3' LT	538350.83	139034.03			3.6			B	896.24	892.67	892.11	0.0374	19									0.16		
5044	5039	34_EB	110+52.20	19.0' RT	538342.98	139013.65	3.3					C	895.84	892.51	892.50	0.0040	8									0.04		
5042	5036	34_WB_1	1109+75.47	19.0' LT	538266.01	139070.13	3.4					C	895.70	892.26	892.01	0.0601	8									0.04		
5037	5036	34_WB_1	1109+67.47	12.3' RT	538258.22	139038.75	3.1					B	895.89	892.83	891.95	0.0309	32									0.30		
5046	5047	34_EB	111+57.78	107.2' RT	538449.15	138926.21							893.25	892.00	893.00	-0.0659	9				1		15" RC APRON			0.14	1	A
5047	5048	34_WB_1	1111+42.47	126.1' RT	538433.98	138926.21		1				SPEC - 2	894.70	889.25	889.00	0.0137	12							11	16	0.18		C, D
5048		34_EB	111+24.31	106.8' RT	538415.68	138926.35								889.00							1		15" RC APRON				1	A
				TOTAL			13.0	1	37.5	23.1	11.8						94	235	54	16	6	4		18	41	5.37	6	

GENERAL NOTES:
- STATIONS, OFFSETS, AND ELEVATIONS ARE GIVEN TO:
  -END OF ALL CONCRETE APRONS.
  -CENTER OF CASTING FOR ALL STORM STRUCTURES.
- ALL PIPE LENGTHS EXCLUDE APRONS.
- PAY HEIGHTS ARE FROM BOTTOM OF CASTING TO OUTLET INVERT, PLUS 0.7'.
- RC PIPE IS DES 3006 GASKET JOINT PIPE.
- STEPS REQUIRED WHEN DEPTH FROM TOP OF CASTING TO STRUCTURE INVERT IS GREATER THAN 4.5'.

NOTES:
A. TIE ALL JOINTS (INCIDENTAL).
B. 4 FT SUMP INCLUDED IN PAY HEIGHT.
C. CASTING SPEC-2 IS INCLUSIVE TO STRUCTURE SPEC-2. SEE SHEET 29 FOR DETAIL.
D. RIPRAP AND GEOTEXTILE FILTER ARE FOR AROUND OUTLET CONTROL STRUCTURE. SEE SHEET 29 FOR DETAIL.
E. FLOWLINE (F.L.) ELEVATIONS ON PROFILES ARE AT CENTER OF STRUCTURE. INLET AND OUTLET ELEVATIONS ON TABULATIONS ARE AT EDGE OF STRUCTURE.
F. SEE SHEET 31 FOR CASTING DETAILS.
I. RIPRAP APRON IS SHORTENED TO AVOID THE ADJACENT WETLAND. RIPRAP TO EXTEND 7 FT FROM END OF APRON, NOT STANDARD 16 FT. DO NOT PLACE RIPRAP IN WETLAND.



STRUCTURES FOUND ON THIS SHEET: 5036 3037 5038 5039 4042 5043 5044 5046 5047 5048 5086 5087 5088 5089 5090 5093 5098 5100 5102

NO.	DATE	BY	CHK	REVISIONS

Design By: MJS
Plan By: MJS
Checked By: JP
Approved By: JHN

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

JACOB H. NEWHALL, PE
DATE 12/3/2020 LICENSE # 49170

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

DRAINAGE PROFILES AND TABULATIONS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 159 OF 195 SHEETS

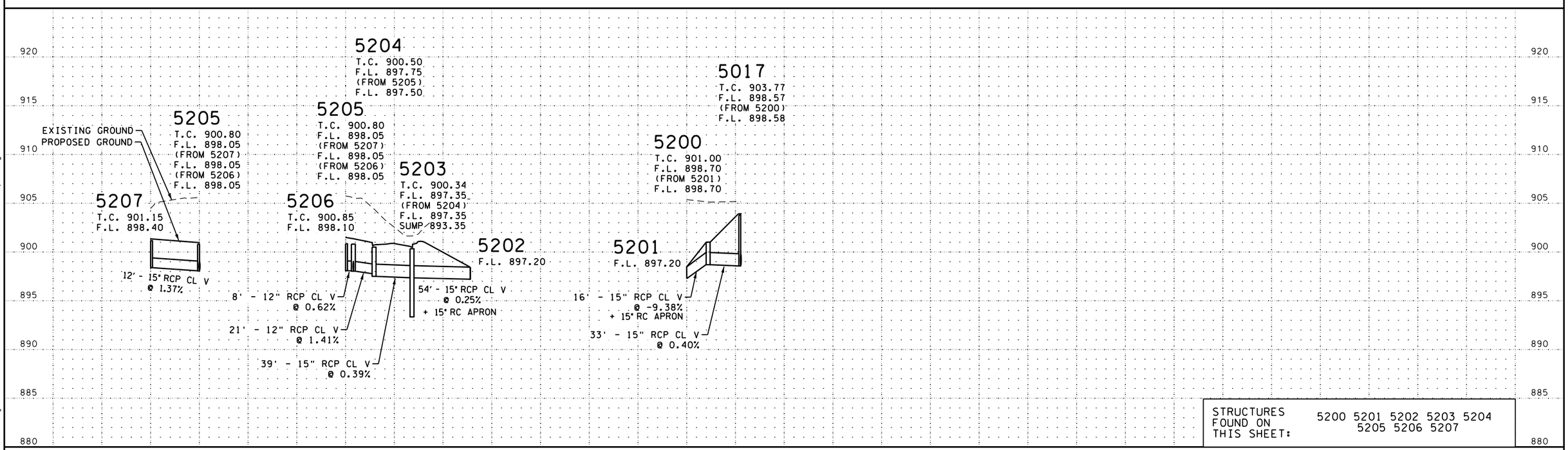
PATH & FILENAME: Projects\Minnesota\01400-000\Cad\Plan\14400-000_dpr01.dgn

DRAINAGE TABULATION (THIS SHEET ONLY)

STRUCTURE NO.		STRUCTURE LOCATION			COORDINATES		DRAINAGE STRUCTURES					TOP OF CASTING ELEV	OUTLET ELEV. (E)	INLET ELEV. (E)	PIPE SLOPE	12" RCP CL V	15" RCP CL V	APRON	APRON TYPE	RIPRAP CLASS III	GEOTEXTILE FILTER TYPE 4	FINE AGGREGATE BEDDING (CV)	GUIDE POSTS TYPE B	REMARKS
							PAY HEIGHT																	
FLOWS FROM	FLOWS TO	ALIGN.	STATION	OFFSET	X	Y	G	SPEC 4	SD-48	48-4020	CASTING ASSEMBLY TYPE (F)													
							LIN FT	EACH	LIN FT	LIN FT					FT/FT	LIN FT	LIN FT	EACH		CU YD	SQ YD	CU YD	EACH	
5207	5205	TOM_SB_2	1206+61.14	81.3' LT	539260.03	139315.84	2.7				C	901.15	898.39	898.06	0.0070	50	50					0.45		
5206	5205	TOM_SB_2	1206+47.10	32.3' LT	539246.21	139266.73	2.7				C	900.85	898.09	898.06	0.0062	8						0.04		
5205	5204	TOM_SB_2	1206+55.10	32.3' LT	539254.21	139266.77			2.7		C	900.80	898.02	897.78	0.0141	21						0.17		
5204	5203	TOM_SB_2	1206+66.30	13.5' LT	539265.49	139248.02	2.9				C	900.50	897.49	897.36	0.0039		39					0.38		
5203	5202	TOM_NB	206+93.61	13.5' RT	539292.92	139221.14				6.9	C	900.34	897.35	897.20	0.0025		54					0.62		B
5202		TOM_NB	206+45.53	49.6' RT	539245.01	139184.85							897.20					1	15" RC APRON	5	21		1	A
5201	5200	TOM_NB	205+60.34	74.3' RT	539159.92	139159.79							897.20	898.70	-0.0938		16	1	15" RC APRON			0.22	1	A
5200	5017	TOM_NB	204+11.55	54.9' RT	539138.44	139155.05		1			SPEC - 4	901.00	898.70	898.58	0.0040		33			6	8	0.32		G, H
				TOTAL			8.3	1	2.7	6.9						79	192	2		11	29	2.19	2	

GENERAL NOTES:
- STATIONS, OFFSETS, AND ELEVATIONS ARE GIVEN TO:
  -END OF ALL CONCRETE APRONS.
  -CENTER OF CASTING FOR ALL STORM STRUCTURES.
- ALL PIPE LENGTHS EXCLUDE APRONS.
- PAY HEIGHTS ARE FROM BOTTOM OF CASTING TO OUTLET INVERT, PLUS 0.7'.
- RC PIPE IS DES 3006 GASKET JOINT PIPE.
- STEPS REQUIRED WHEN DEPTH FROM TOP OF CASTING TO STRUCTURE INVERT IS GREATER THAN 4.5'.

NOTES:
A. TIE ALL JOINTS (INCIDENTAL).
B. 4 FT SUMP INCLUDED IN PAY HEIGHT.
E. FLOWLINE (F.L.) ELEVATIONS ON PROFILES ARE AT CENTER OF STRUCTURE. INLET AND OUTLET ELEVATIONS ON TABULATIONS ARE AT EDGE OF STRUCTURE.
F. SEE SHEET 31 FOR CASTING DETAILS.
G. CASTING SPEC-4 IS INCLUSIVE TO STRUCTURE SPEC-4. SEE SHEET 32 FOR DETAIL.
H. RIPRAP AND GEOTEXTILE FILTER ARE FOR AROUND OUTLET CONTROL STRUCTURE. SEE SHEET 32 FOR DETAIL.



STRUCTURES FOUND ON THIS SHEET: 5200 5201 5202 5203 5204 5205 5206 5207

NO.	DATE	BY	CHK	REVISIONS

Design By: MJS
Plan By: MJS
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Approved By: JHN

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JACOB H. NEWHALL, PE

DATE 12/3/2020 LICENSE # 49170

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

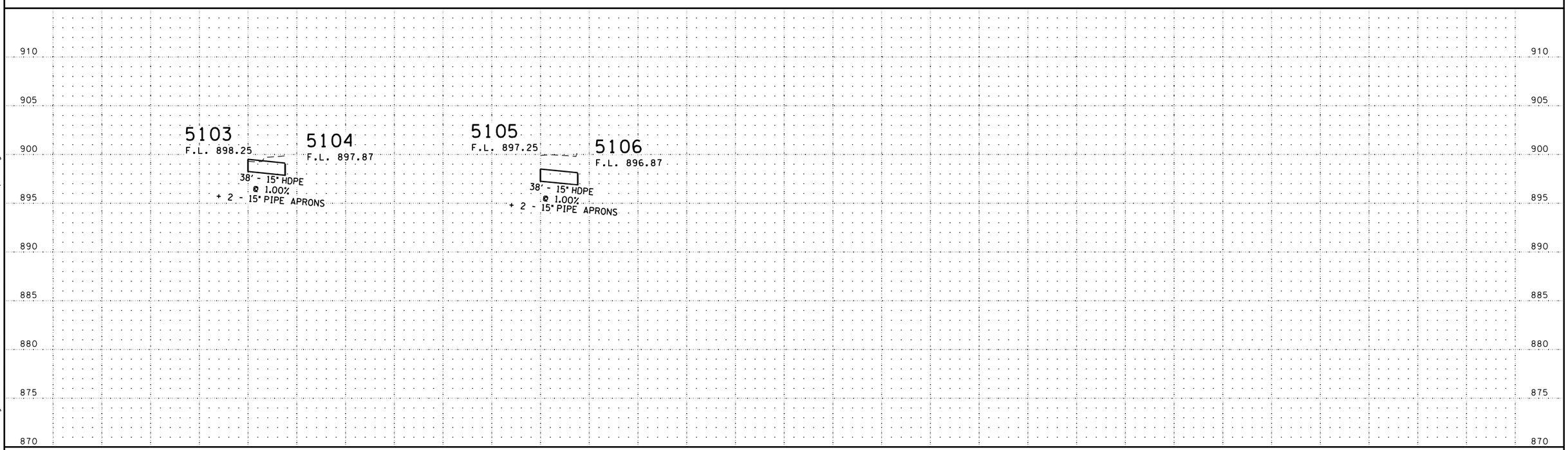
DRAINAGE PROFILES AND TABULATIONS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 160 OF 195 SHEETS

CULVERT TABULATION

STRUCTURE NO.		STRUCTURE LOCATION			COORDINATES		OUTLET ELEV.	INLET ELEV.	PIPE SLOPE	15" HDPE	APRON	APRON TYPE	REMARKS
FLOWS FROM	FLOWS TO	ALIGN.	STATION	OFFSET	X	Y			FT/FT	LIN FT	EACH		
5103	5104	34_EB	138+23.92	33.2' LT	541080.26	139071.59	897.98	897.62	0.0100	38	1	15" APRON	
5104		34_EB	137+90.30	50.9' LT	541046.65	139089.33	897.62				1	15" APRON	
5105	5106	34_EB	137+41.47	48.1' LT	540997.82	139086.52	896.98	896.62	0.0100	38	1	15" APRON	
5106		34_EB	137+03.24	50.3' LT	540959.59	139088.76	896.62				1	15" APRON	
				TOTAL						76	4		

GENERAL NOTES:
- STATIONS, OFFSETS, AND ELEVATIONS ARE GIVEN TO END OF BARREL.
- ALL PIPE LENGTHS EXCLUDE APRONS.



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ANOKA COUNTY, MINNESOTA

DRAINAGE PROFILES AND TABULATIONS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **161** OF **195** SHEETS

DRAINAGE STRUCTURE SUMMARY — L

ITEM	UNIT	QUANTITIES FROM SHEET NO. SAP 002-634-00						TOTALS
		154	155	156	157	158	159	
CONST DRAINAGE STRUCTURE DESIGN G	LIN FT		3.1	7.4	22.5	13.4	13.0	**59**
CONST DRAINAGE STRUCTURE DESIGN H	LIN FT		3.3			3.3		**6.6**
CONST DRAINAGE STRUCTURE DES 48-4020	LIN FT		27.4	16.8	41.0	54.7	37.5	**177.4**
CONST DRAINAGE STRUCTURE DES 60-4020	LIN FT		13.3	30.4	4.7		23.1	**71.5**
CONST DRAINAGE STRUCTURE DES 72-4020	LIN FT						11.8	**11.8**
CONST DRAINAGE STRUCTURE DESIGN SPEC 2	EACH						1	**1**
CONST DRAINAGE STRUCTURE DESIGN SPEC 3	EACH	2						**2**
CASTING ASSEMBLY	EACH		10	11	14	16	12	**63**

CASTING ASSEMBLY SUMMARY — N

ASSEMBLY	RING OR FRAME	COVER OR GRATE	CURB BOX	STANDARD PLATE NUMBER	USE	TOTALS
M - 11	ROUND CONC	731		4143 4143	STOOL GRATE	**2**
A - 7D	700-7	715		4101 4110	MANHOLE	**2**
B	FRAME AND RING CASTING TYPE B FOR MEDIAN CATCH BASINS. SEE DETAIL.					**28**
C	806 MODIFIED	816	823A	SEE DETAIL 4154 4160	CATCH BASIN	**31**
					TOTAL	**63**
SPEC - 2	SEE SHEET 29 FOR SPECIAL 2 DETAIL. STRUCTURE INCLUDES SPECIAL 2 CASTING TOTAL FOR INFORMATIONAL PURPOSES.					**1**

STORM SEWER SUMMARY — M

ITEM	UNIT	QUANTITIES FROM SHEET NO. SAP 002-634-00					TOTALS
		155	156	157	158	159	
15" RC PIPE SEWER DESIGN 3006 CLASS V	LIN FT	362	231	824	953	94	**2464**
18" RC PIPE SEWER DESIGN 3006 CLASS III	LIN FT		454				**454**
21" RC PIPE SEWER DESIGN 3006 CLASS III	LIN FT	109	168				**277**
24" RC PIPE SEWER DESIGN 3006 CLASS III	LIN FT	224				235	**459**
33" RC PIPE SEWER DESIGN 3006 CLASS III	LIN FT					54	**54**
36" RC PIPE SEWER DESIGN 3006 CLASS III	LIN FT					16	**16**
15" RC PIPE APRON	EACH			1	1	2	**4**
21" RC PIPE APRON	EACH		1				**1**
24" RC PIPE APRON	EACH					3	**3**
36" RC PIPE APRON	EACH					1	**1**
TRASH GUARD FOR 24" PIPE APRON	EACH					3	**3**
TRASH GUARD FOR 36" PIPE APRON	EACH					1	**1**
CONNECT TO EXISTING STORM SEWER	EACH	2					**2**
RANDOM RIPRAP CLASS III	CU YD		7			18	**25**
GEOTEXTILE FILTER TYPE 4	SQ YD		27			41	**68**
FINE AGGREGATE BEDDING (CV)	CU YD	9	10	8	10	5	**42**
GUIDE POST TYPE B	EACH	1	1	1	2	6	**11**

NO.	DATE	BY	CHK	REVISIONS

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JACOB H. NEWHALL, PE

DATE 12/3/2020 LICENSE # 49170

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

DRAINAGE PROFILES AND TABULATIONS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **162** OF **195** SHEETS

PLOTTED/REVISED: 12/3/2020

SIGN PANELS TYPE C — 0

	SIGN NO	SIGNS QTY EACH	CODE NO	PANEL LEGEND	PANEL SIZE INCH	PANEL AREA SQ FT	MTG HT (1) FEET	POSTS/MOUNTING NUMBER OF POSTS	POSTS/MOUNTING POST TYPE (2)	POSTS/MOUNTING SURFACE TYPE	TOTAL AREA SQ FT
	C-1	3	R1-1	STOP	30 x 30	6.25	7	1	U	SOIL	18.75
(3)	C-2	2	R4-7	KEEP RIGHT	24 x 30	5.00	7	1	U	CONCRETE	10.00
	C-3	4	R5-1	DO NOT ENTER	30 x 30	6.25	7	1	U	CONCRETE	25.00
	C-4	5	R3-7R (MOD)	RIGHT TURN LANE	30 x 30	6.25	7	1	U	SOIL	31.25
	C-5	2	R3-7L (MOD)	LEFT TURN LANE	30 x 30	6.25	7	1	U	SOIL	12.50
	C-6	1	W3-3	SIGNAL AHEAD	36 x 36	9.00	7	2	U	SOIL	9.00
(3)	C-7	6	R3-4	NO U-TURN	24 x 24	4.00	7	1	U	CONCRETE	24.00
			R4-7	KEEP RIGHT	24 x 30	5.00					30.00
	C-8	3	R6-1R	ONE WAY RIGHT	54 x 18	6.75	7	2	U	CONCRETE	20.25
	C-9	3	R6-1R	ONE WAY RIGHT	36 x 12	3.00	7	2	U	SOIL	9.00
			R1-1	STOP	30 x 30	6.25					18.75
	C-10	2	S1-1	SCHOOL CROSSING	36 PENT	6.75	7	2	U	SOIL	13.50
	C-11	2	W3-2	YIELD AHEAD	30 x 30 x 30	2.62	7	1	U	SOIL	5.24
	C-12	2	R2-1	SPEED LIMIT 50	24 x 30	5.00	7	1	U	SOIL	10.00
	C-13	1	S5-2	END SCHOOL SPEED ZONE	24 x 30	5.00	7	1	U	SOIL	5.00
	C-14	8	W2-6a	ROUNDABOUT	36 x 36	9.00	7	2	U	SOIL	72.00
			W13-1P	15 MPH ADVISORY	24 x 24	4.00					32.00
	C-15	1	M3-4a	WEST (BLUE)	24 x 12	2.00	7	1	U	SOIL	2.00
			M1-6	ANOKA COUNTY 34 (BLUE)	24 x 24	4.00					4.00
(5)	C-16	2	R1-1	STOP	18 x 18	2.25	7	1	U	SOIL	4.50
	C-17	1	M3-2a	EAST (BLUE)	24 x 12	2.00	7	1	U	SOIL	2.00
			M1-6	ANOKA COUNTY 34 (BLUE)	24 x 24	4.00					4.00
			S5-2	END SCHOOL SPEED ZONE	24 x 30	5.00					5.00
	C-18	1	W14-3	NO PASSING ZONE	64 x 64 x 48	9.89	7	2	U	SOIL	9.89
	C-19	8	R6-1R	ONE WAY RIGHT	36 x 12	3.00	7	1	U	CONCRETE	24.00
			R1-2	YIELD	36 x 36 x 36	3.90					31.20
	C-20	8	R6-1R	ONE WAY RIGHT	36 x 12	3.00	7	1	U	SOIL	24.00
			R1-2	YIELD	36 x 36 x 36	3.90					31.20
	C-21	7	R1-6a	STATE LAW STOP FOR PEDS IN XWALK	12 x 36	3.00	1	1	U	CONCRETE	21.00
	C-22	4	R6-1R	ONE WAY RIGHT	36 x 12	3.00	4	2	U	CONCRETE	12.00
			R6-4b	ROUNDABOUT DIRECTIONAL (4 CHEVRONS)	60 x 24	10.00					40.00
	C-23	4	R6-1R	ONE WAY RIGHT	36 x 12	3.00	4	2	U	CONCRETE	12.00
			R6-4a	ROUNDABOUT DIRECTIONAL (3 CHEVRONS)	48 x 24	8.00					32.00
	C-24	7	W11-2	PEDESTRIAN CROSSING	30 x 30	6.25	7	1	U	SOIL	43.75
			W16-7mPL	DOWN LEFT ARROW	24 x 18	3.00					21.00
	C-25	2	M3-4a	WEST (BLUE)	24 x 12	2.00	7	1	U	SOIL	4.00
			M1-6	ANOKA COUNTY 34 (BLUE)	24 x 24	4.00					8.00
			M6-2a	UP RIGHT ARROW (BLUE	21 x 15	2.19					4.38
	C-26	2	M3-2a	EAST (BLUE)	24 x 12	2.00	7	1	U	SOIL	4.00
			M1-6	ANOKA COUNTY 34 (BLUE)	24 x 24	4.00					8.00
			M6-2a	UP RIGHT ARROW (BLUE	21 x 15	2.19					4.38
	C-27	2	R6-1R	ONE WAY RIGHT	36 x 12	3.00	7	1	U	SOIL	6.00
			R6-1R	ONE WAY RIGHT	36 x 12	3.00					6.00
			R1-1	STOP	30 x 30	6.25					12.50
	C-28	1	R6-1L	ONE WAY LEFT	54 x 18	6.75	7	2	U	SOIL	6.75
(4)	C-29	1	R1-1	STOP	30 x 30	6.25	7	1	U	SOIL	6.25
			W4-4P	CROSS TRAFFIC DOES NOT STOP	24 x 12	2.00					2.00
	TOTAL										744

MARKER — Q

CODE NO	SIZE INCH	COLOR	QUANTITY EACH
X33	18 x 18	YELLOW ON BLACK	16

TOTAL QUANTITIES

CODE NO	QUANTITY EACH
X33	16

SIGN PANELS TYPE D — P

SIGN NO	SIGNS QTY EACH	PANEL LEGEND	PANEL SIZE INCH	PANEL AREA SQ FT	MTG HT (1) FEET	POSTS/MOUNTING NUMBER OF POSTS	POSTS/MOUNTING POST TYPE (2)	POSTS/MOUNTING POST SPACING	POSTS/MOUNTING SURFACE TYPE	TOTAL AREA SQ FT
D-1	4	Birch St	60 x 18	7.50	7	2	U	36	CONCRETE	30.00
D-2	1	Tomahawk Tr	84 x 18	10.50	7	2	U	48	CONCRETE	10.50
D-3	1	Rice Lake Elementary	72 x 24	12.00	7	2	U	42	CONCRETE	12.00
D-4	2	W Shadow Lake Dr	66 x 24	11.00	7	2	U	36	CONCRETE	22.00
TOTAL										75.00

SPECIFIC NOTES:
(1) MOUNTING HEIGHT IS MINIMUM (WITH A +6 INCH TOLERANCE)
(2) POST TYPE ABBREVIATIONS (SQ = SQUARE TUBE, R = ROUND POST, U = U CHANNEL).
(3) MOUNT X4-2 BELOW.
(5) CITY (S.A.P. 210-020-010)
(4) ALTERNATIVE BID.

NO.	DATE	BY	CHK	REVISIONS

Design By: MF
Plan By: MF
Checked By: ES
Approved By: SD

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SEAN DELMORE, PE
DATE 12/3/2020 LICENSE # 40945

wsb

ANOKA COUNTY

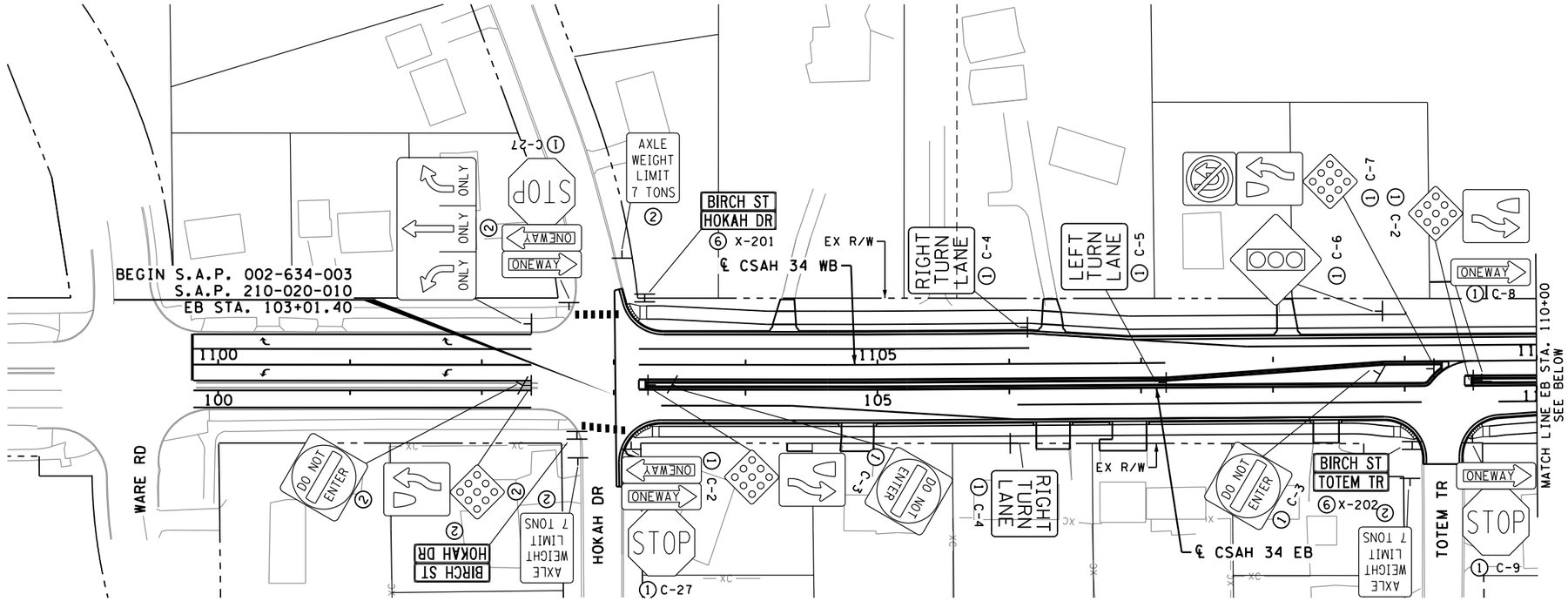
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
SIGNING TABULATION
SIGNING PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 163 OF 195 SHEETS

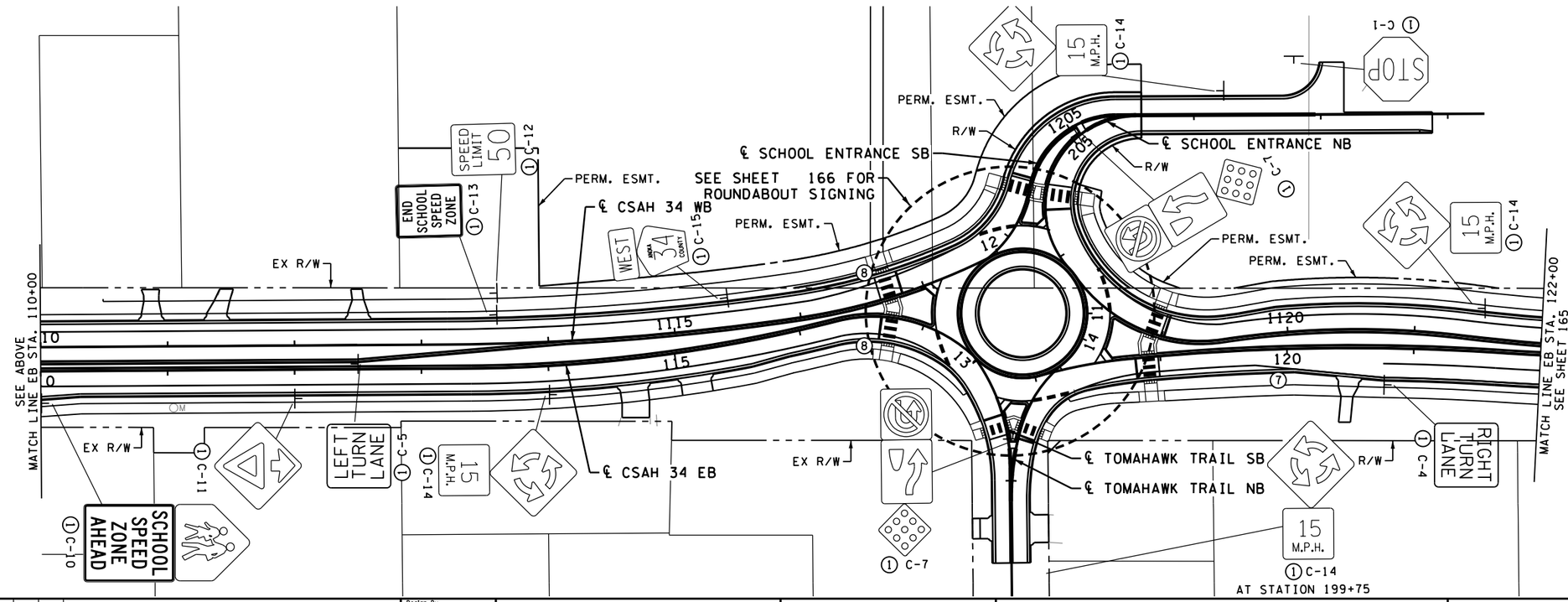
PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\14400-000_sgntab.dgn

PLOTTED/REVISED: 12/3/2020



LEGEND

1. FURNISH & INSTALL
2. INPLACE
6. INSTALL
7. SCHOOL SPEED ZONE DFB FLASHER SYSTEM SEE ELECTRICAL PLAN
8. LED ENHANCED SCHOOL CROSSING SEE ELECTRICAL PLAN



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ANOKA COUNTY

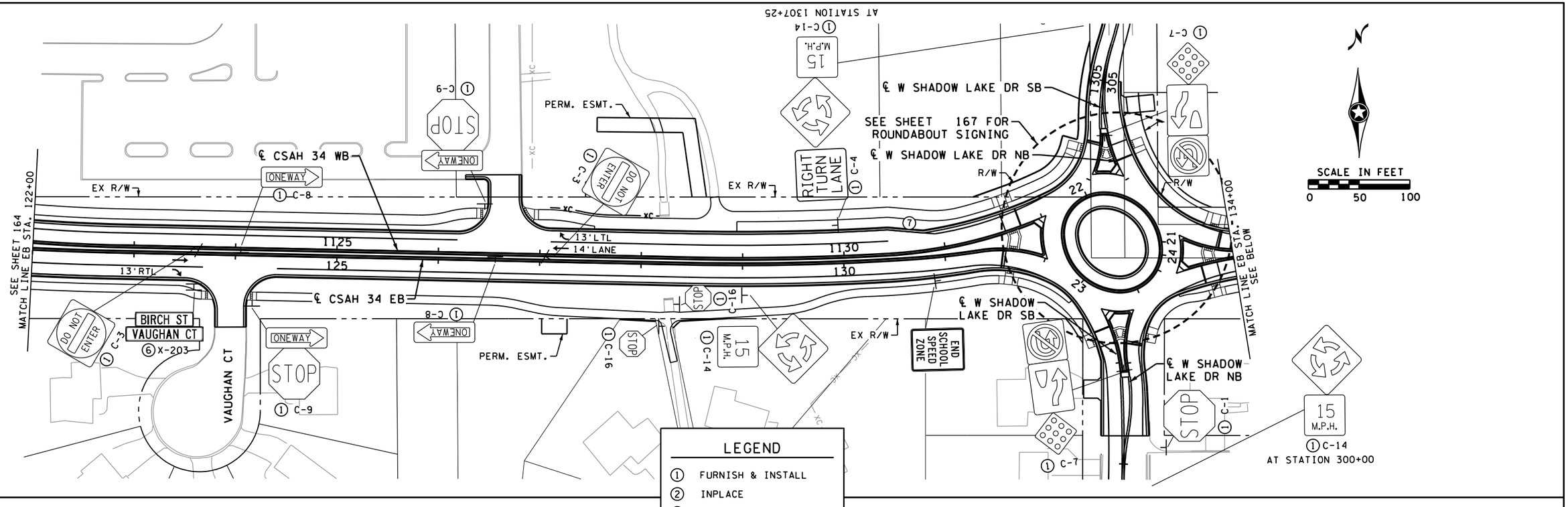
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
STA 103+01.40 TO STA 122+00
SIGNING PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **164** OF **195** SHEETS

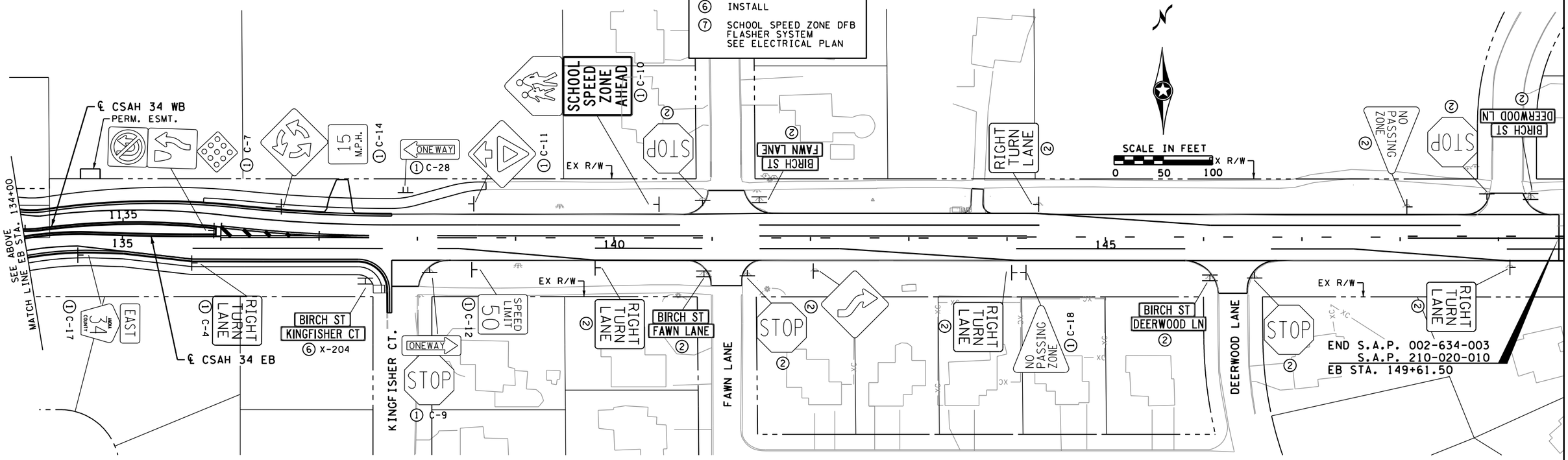
PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\14400-000_sgn01.dgn

PLOTTED/REVISED: 12/3/2020



LEGEND

1. FURNISH & INSTALL
2. INPLACE
6. INSTALL
7. SCHOOL SPEED ZONE DFB FLASHER SYSTEM SEE ELECTRICAL PLAN



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Approved By: SD

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SEAN DELMORE, PE

DATE 12/3/2020 LICENSE # 40945

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements

Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

STA 122+00 TO STA 145+00

SIGNING PLAN

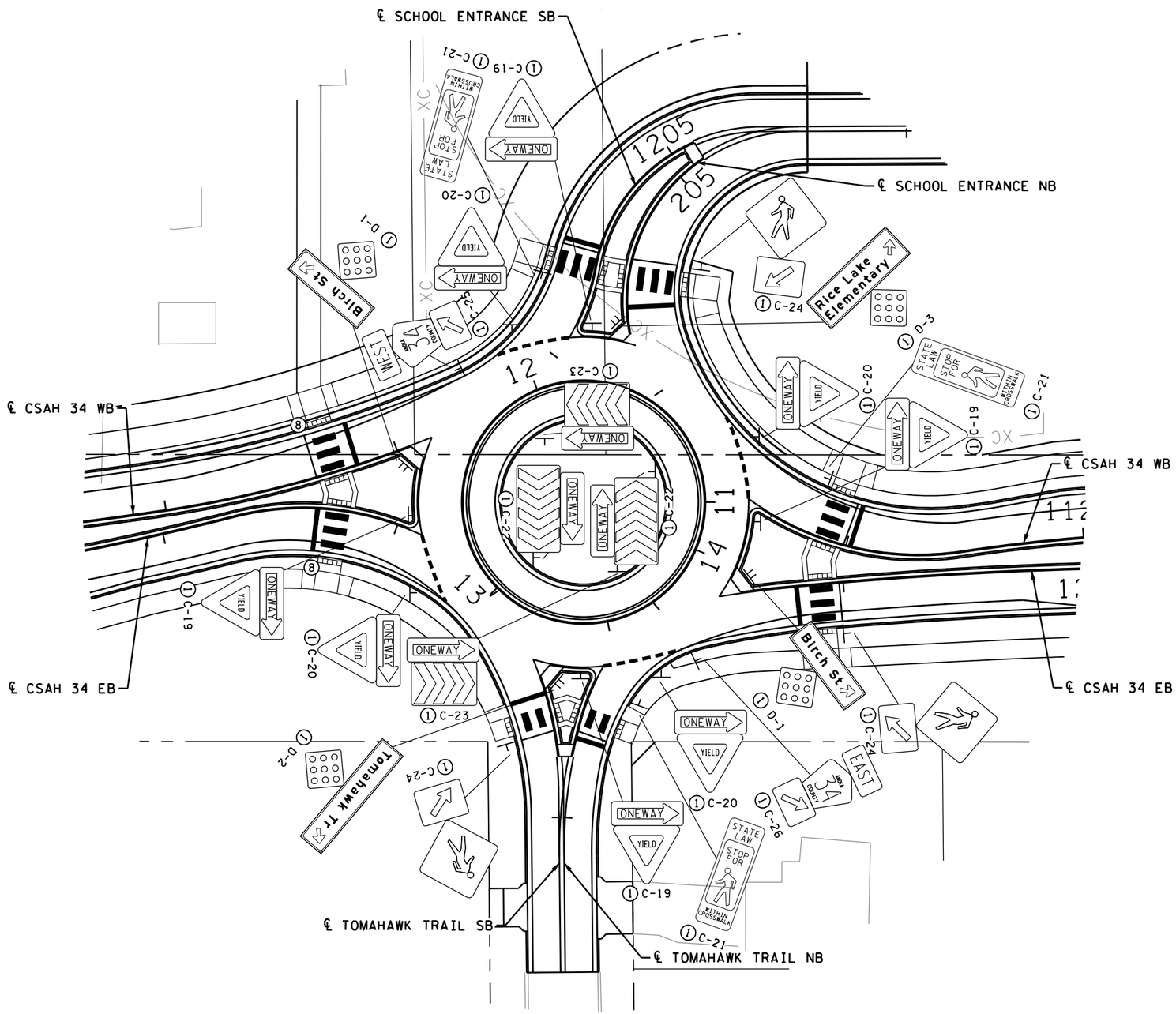
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 165 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\0\4400-000\Cad\Plan\4400-000_sgn02.dgn

PLOTTED/REVISED: 12/3/2020

CSAH 34 & TOMAHAWK TRAIL ROUNDABOUT



SCALE IN FEET
0 25 50

LEGEND

(1) FURNISH & INSTALL

(8) LED ENHANCED SCHOOL CROSSING SEE ELECTRICAL PLAN

NO.	DATE	BY	CHK	REVISIONS

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Plan By: MF
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CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

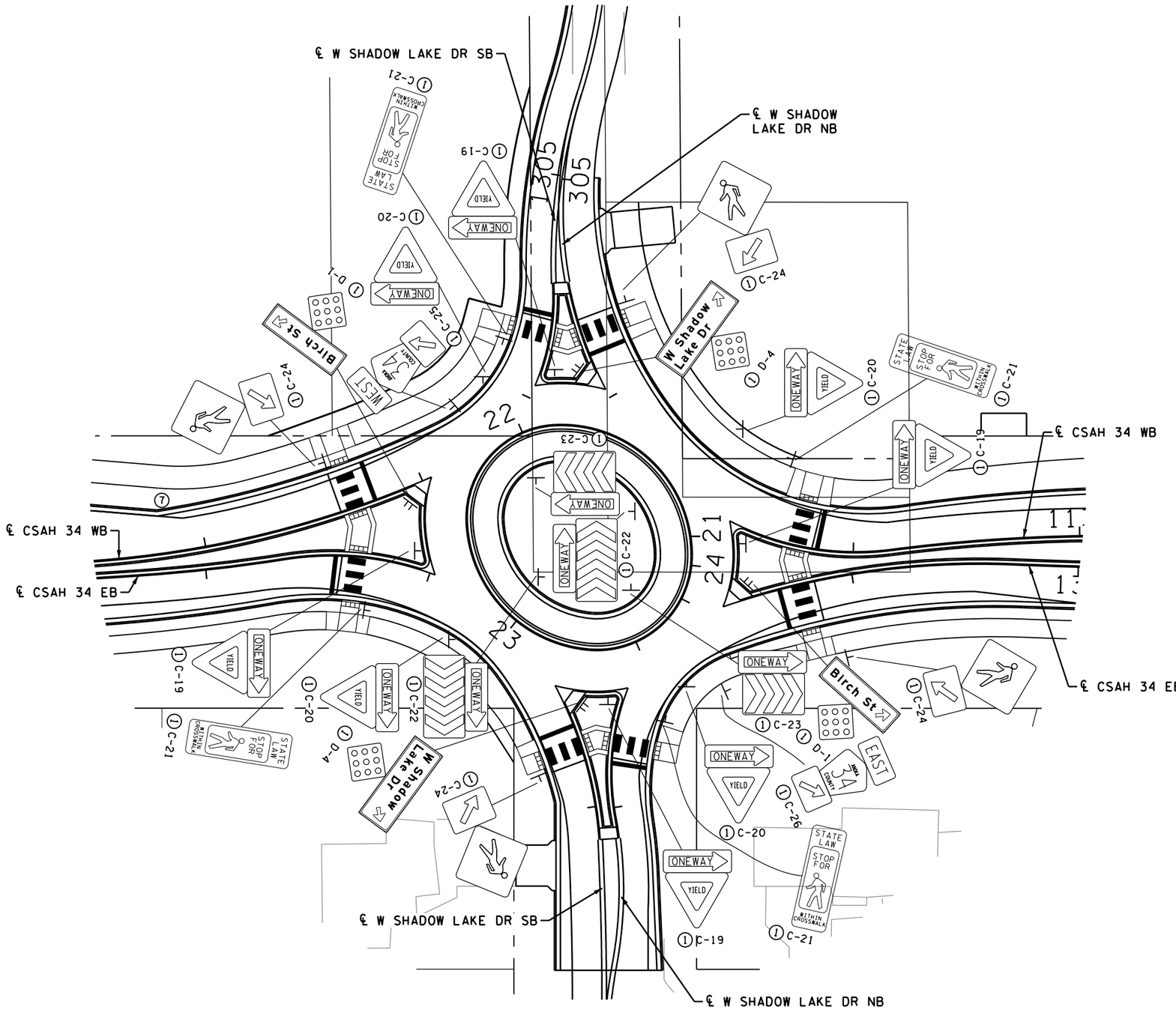
ANOKA COUNTY, MINNESOTA
CSAH 34 & TOMAHAWK TRAIL ROUNDABOUT
SIGNING PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 166 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\4400-000_sgn03.dgn

PLOTTED/REVISED: 12/3/2020

CSAH 34 & WEST SHADOW LAKE DRIVE ROUNDABOUT



SCALE IN FEET
0 25 50

LEGEND

① FURNISH & INSTALL

⑦ SCHOOL SPEED ZONE DFB FLASHER SYSTEM SEE ELECTRICAL PLAN

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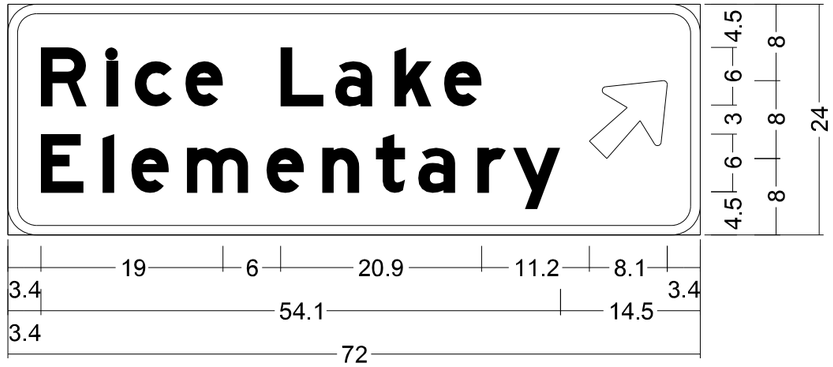
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
CSAH 34 & WEST SHADOW LAKE DRIVE ROUNDABOUT
SIGNING PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

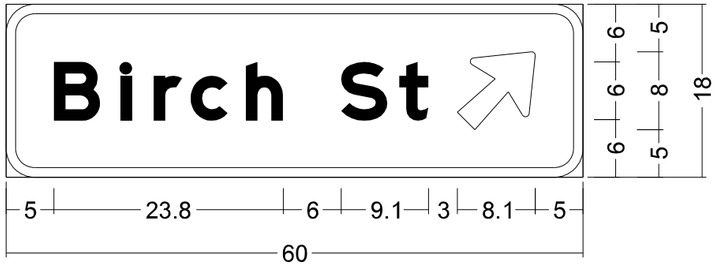
SHEET **167** OF **195** SHEETS

PATH & FILENAME: Projects\Minnesota\0\4400-000\Cad\Plan\14400-000_sgn04.dgn

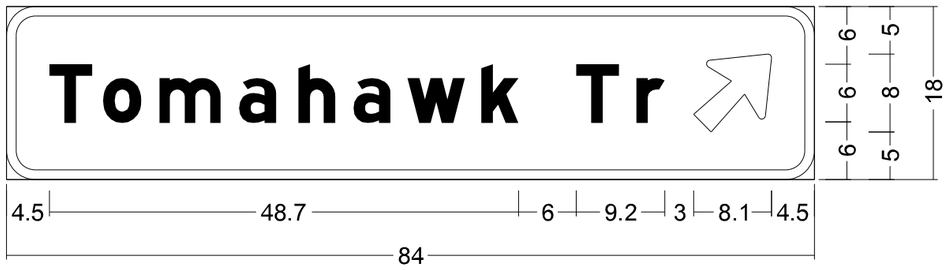
PLOTTED/REVISED: 12/3/2020



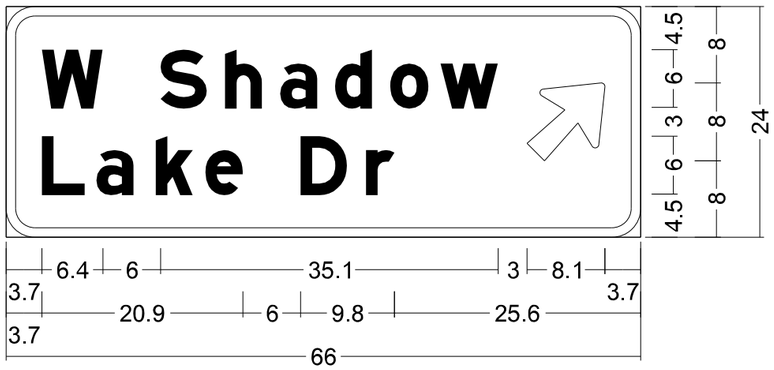
3.0" Radius, 1.0" Border, White on, Green;
"Rice Lake", E Mod; "Elementary", E Mod;
Arrow 3 - 10.0" 45';



3.0" Radius, 1.0" Border, White on, Green;
"Birch St", E Mod; Arrow 3 - 10.0" 45';



3.0" Radius, 1.0" Border, White on, Green;
"Tomahawk Tr", E Mod; Arrow 3 - 10.0" 45';



3.0" Radius, 1.0" Border, White on, Green;
"W Shadow", E Mod; "Lake Dr", E Mod;
Arrow 3 - 10.0" 45';

ALL SIGN DIMENSIONS ARE IN INCHES.

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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
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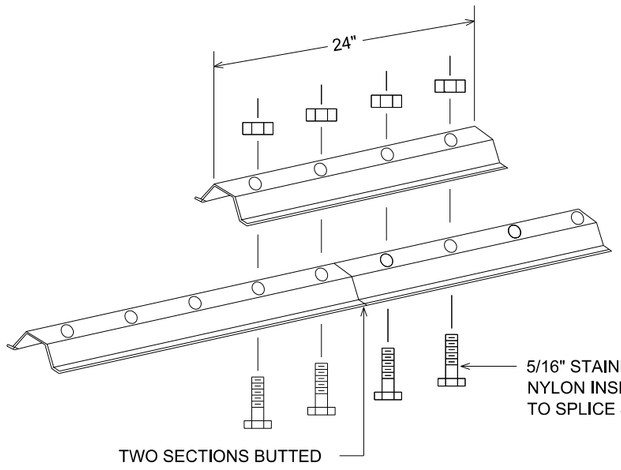
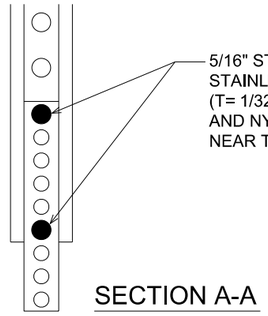
SHEET **168** OF **195** SHEETS

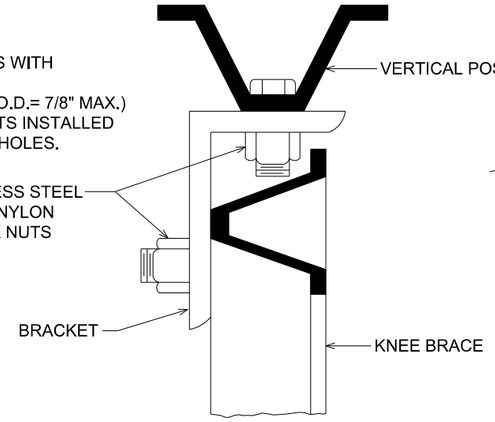
PATH & FILENAME: Projects\Minnesota\0\4400-000\Cad\Plan\4400-000_sgndet.dgn

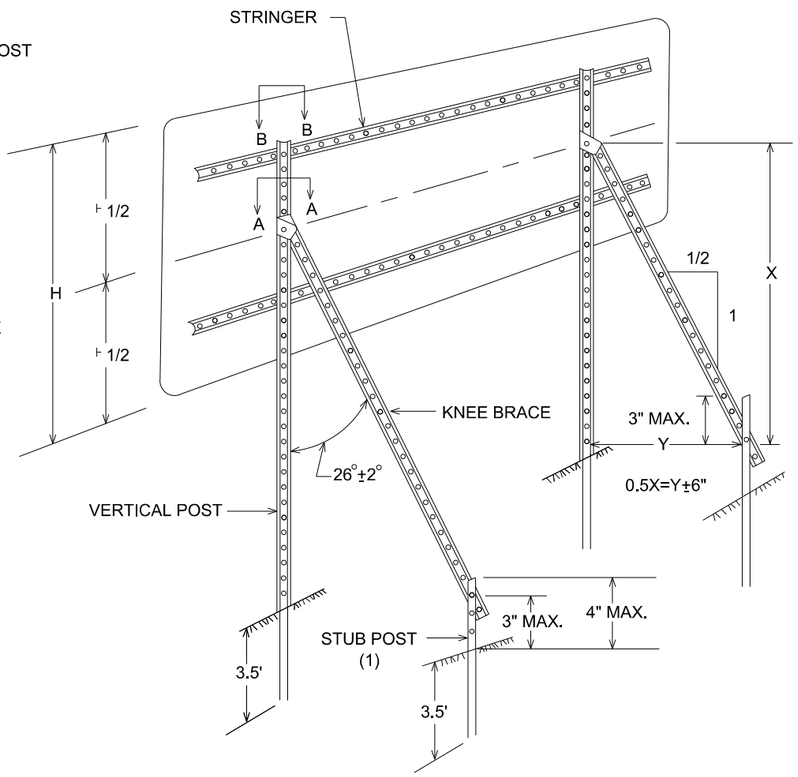


LATERAL BRACE OR STRINGER SPLICE DETAIL (EXPLODED VIEW)

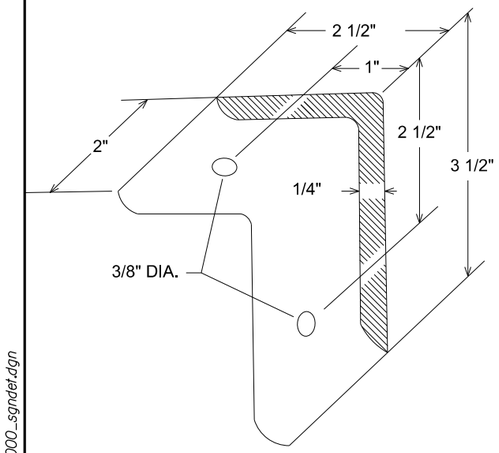


SECTION A-A



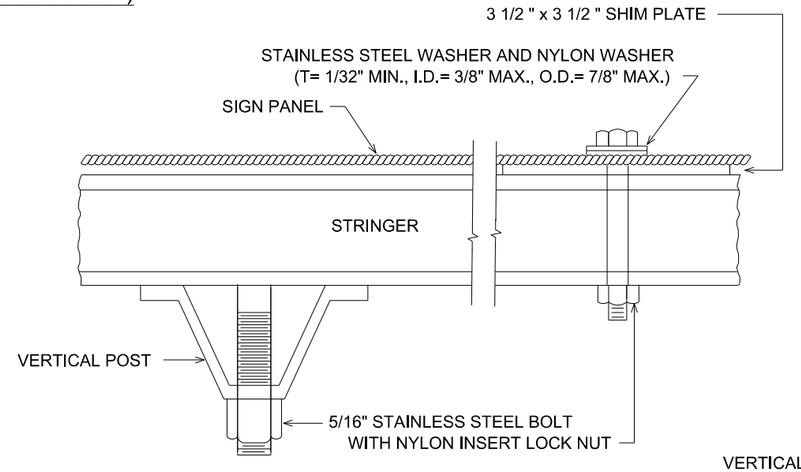


TYPICAL "A-FRAME" INSTALLATION TYPE "D" SIGNS



A-FRAME BRACKET

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



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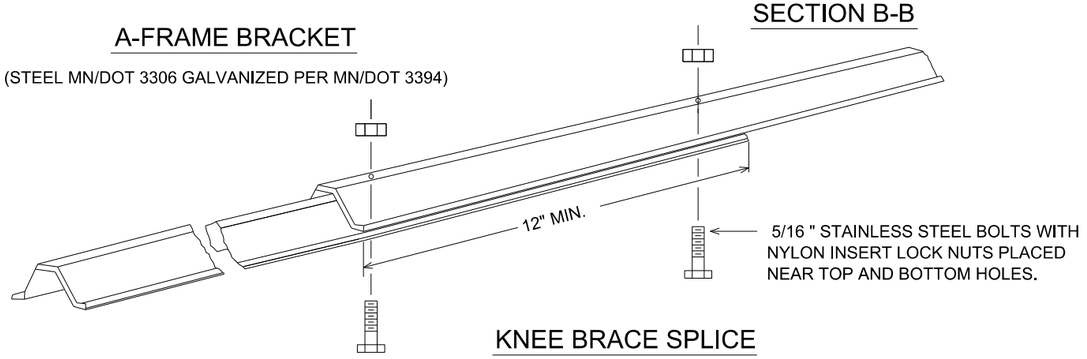
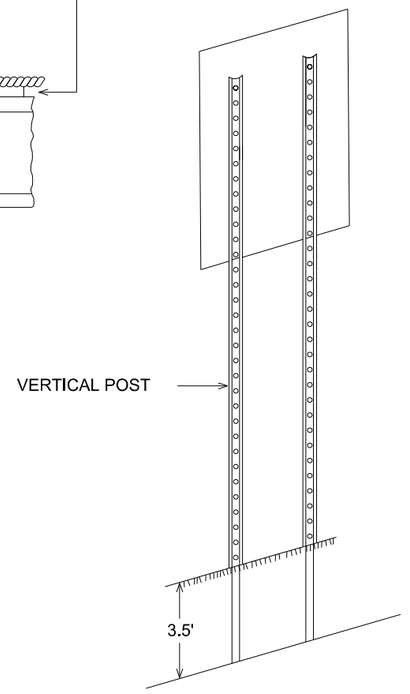
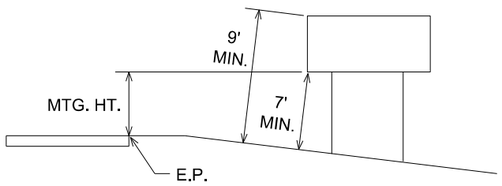


KNEE BRACE SPLICE



TYPICAL INSTALLATION 36" AND LARGER TYPE "C" SIGNS



TYPICAL MOUNTING

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

TYPE C & D SIGN STRUCTURAL DETAILS

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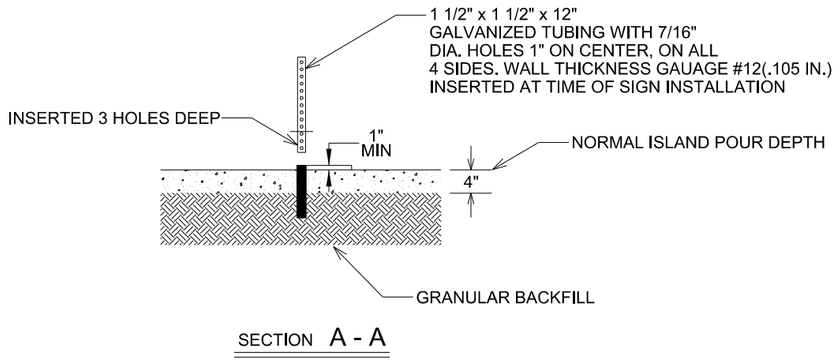
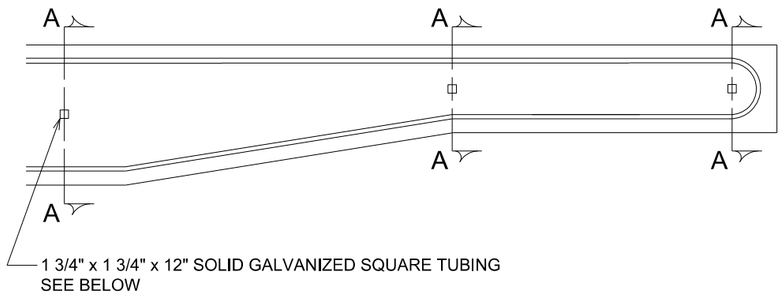
SHEET **169** OF **195** SHEETS

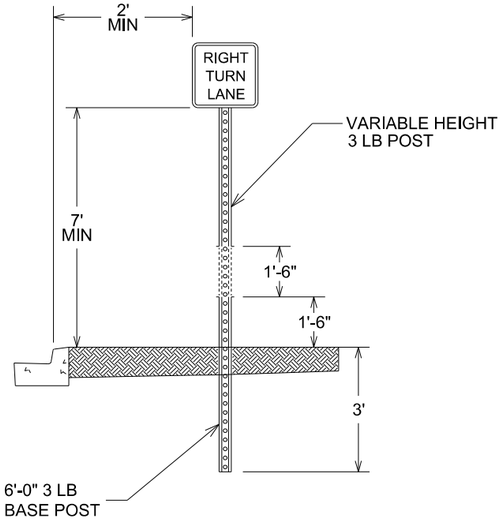


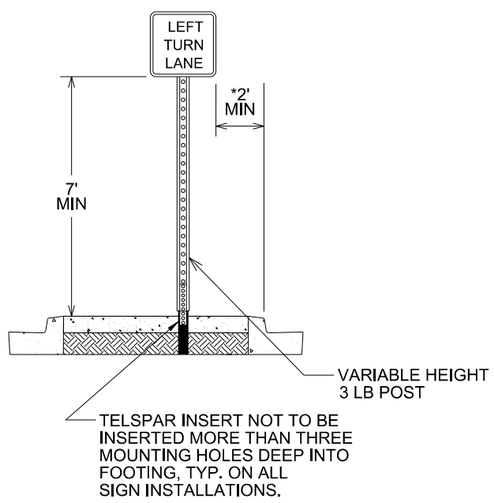
GROUND POST MOUNT SIGN
INSTALLATION TYPICAL

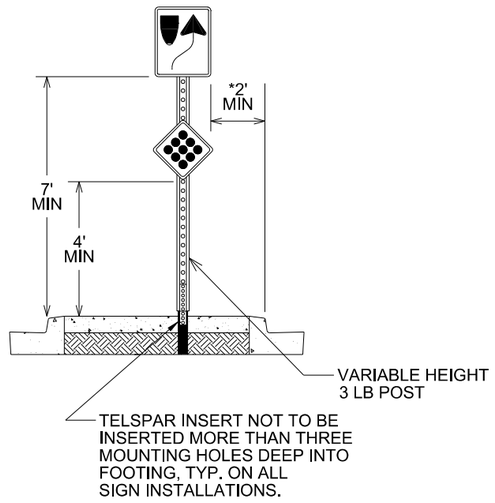


ISLAND MOUNT BREAK-AWAY SIGN
INSTALLATION TYPICAL

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







*1' MIN FOR NARROW URBAN LOCATIONS

INSTALLATION NEAR SIDEWALK (MN MUTCD)

The minimum height, measured vertically from the bottom of the sign to the sidewalk, of signs installed above sidewalks shall be 7 feet. If the bottom of a secondary sign that is mounted below another sign is mounted lower than 7 feet above a pedestrian sidewalk or pathway, the secondary sign shall not project more than 4 inches into the pedestrian facility.

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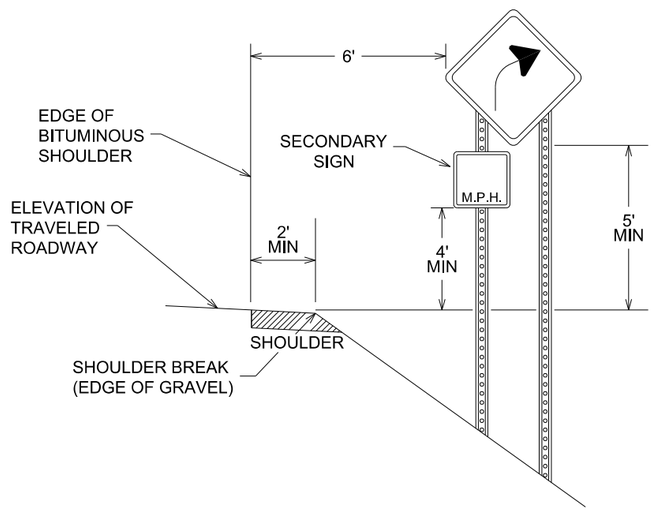
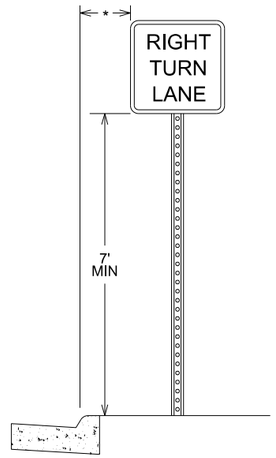
SHEET **170** OF **195** SHEETS

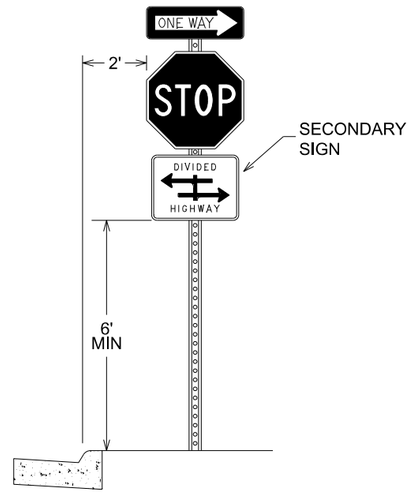
TYPICAL SIGN PLACEMENT
(RURAL)

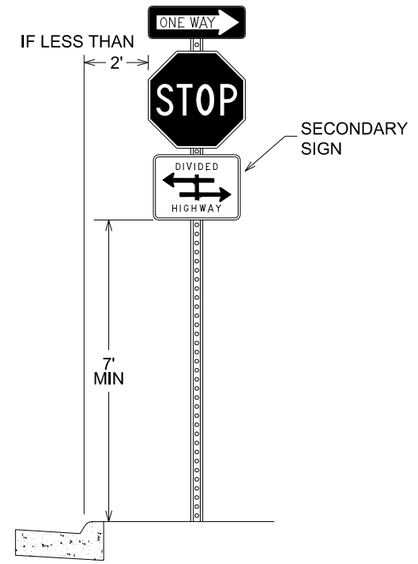


TYPICAL SIGN PLACEMENT
(URBAN)



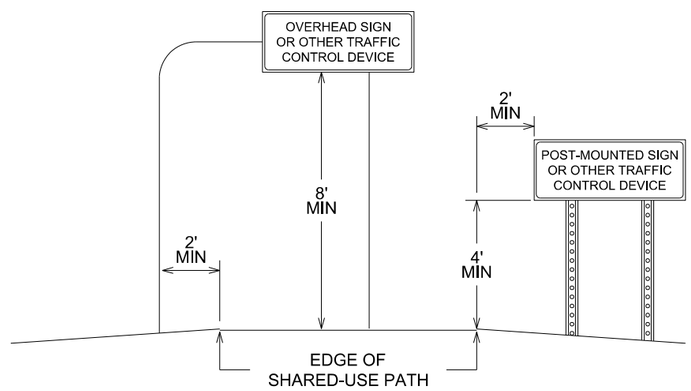
*2' - NARROW BOULEVARD (≤ 8' WIDE)
6' - WIDE BOULEVARD





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

TYPICAL SIGN PLACEMENT
SHARED-USE PATH



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SHEET **171** OF **195** SHEETS

PERMANENT PAVEMENT MARKING PLAN
NOTES AND GUIDELINES

GENERAL INFORMATION:
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.

EDGE LINES AND LANE LINES ARE TO BE BROKEN ONLY AT INTERSECTIONS WITH PUBLIC ROADS AND AT PRIVATE ENTRANCES IF THEY ARE CONTROLLED BY A YIELD SIGN, STOP SIGN OR TRAFFIC SIGNAL. THE BREAK POINT IS TO BE AT THE START OF THE RADIUS FOR THE INTERSECTION OR AT MARKED STOP LINES OR CROSSWALKS.

A TOLERANCE OF $\frac{1}{4}$ INCH UNDER OR $\frac{1}{4}$ 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.

MULTI COMPONENT (MULTI COMP):
THE ROAD SURFACE SHALL BE CLEANED AT THE DIRECTION OF THE ENGINEER JUST PRIOR TO APPLICATION. PAVEMENT CLEANING SHALL CONSIST OF AT LEAST BRUSHING WITH A ROTARY BROOM (NON-METALLIC) OR AS RECOMMENDED BY THE MATERIAL MANUFACTURER AND ACCEPTABLE TO THE ENGINEER. NEW PORTLAND CEMENT CONCRETE SURFACES SHALL BE SANDBLAST CLEANED TO REMOVE ANY SURFACE TREATMENT AND/OR LAITANCE ON LOW SPEED (SPEED LIMIT 35 MPH OR LESS) URBAN PORTLAND CEMENT CONCRETE ROADWAYS. SANDBLAST CLEANING SHALL BE USED FOR ALL MULTI COMP PAVEMENT MARKINGS.

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

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

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

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

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

PAINT:
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 APPLICAITON IN A MANNER AND TO THE EXTENT REQUIRED BY THE ENGINEER.

GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE PAINT LINE.

EXCEPT WHEN USED AS A TEMPORARY MARKING, PAVEMENT MARKINGS SHALL ONLY BE APPLIED IN SEASONABLE WEATHER WHEN AIR TEMPERATURE IS 50 DEGREES FARHENHEIT OR HIGHER AND SHALL NOT BE APPLIED WHEN THE WIND OR OTHER CONDITIONS CAUSE A FILD OR DUST TO BE DEPOSITED ON THE PAVEMENT SURFACE AFTER CLEANING AND BEFORE THE MARKING MATERIAL CAN BE APPLIED.

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.

PAVEMENT MARKING TABULATION — R

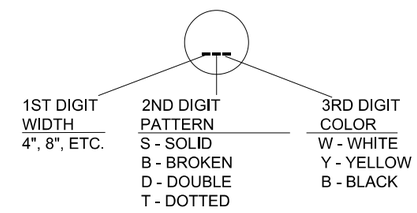
LOCATION	MULTI-COMPONENT					PREFORM THERMOPLASTIC							
	4" SOLID LINE		24" SOLID LINE	4" BROKEN LINE	4" DOUBLE SOLID LINE	4" SOLID LINE		24" SOLID LINE	12" DOTTED LINE	4" DOUBLE SOLID LINE	CROSSWALK	PAVEMENT MESSAGE	
	WHITE	YELLOW	YELLOW	YELLOW	YELLOW	WHITE	YELLOW	WHITE	WHITE	YELLOW		LEFT ARROW	RIGHT ARROW
	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	SQ FT	SQ FT	SQ FT
CSAH 34													
WARE ROAD TO HOKAH DRIVE	1076	539						37				30	30
STA 103+01.40 TO 110+00.00	2476	1381									227		
STA 110+00.00 TO 116+66.66	1314	1051				342	349						
STA 116+66.66 TO 118+98.30						447	666	142	69		416		
STA 118+98.30 TO 122+00.00	550	421				204	214						
STA 122+00.00 TO 131+60.49	2114	1779				227	235				95		
STA 131+60.49 TO 133+83.12						567	639	144	75		435		
STA 133+83.12 TO 145+00.00	2672	834	41	122	360	141	150				113		
STA 145+00.00 TO 149+61.50	1092	168		98									
SUBTOTAL CSAH 34	11294	6173	41	220	360	1928	2253	323	144		1286	30	30
TOMAHAWK TRAIL/SCHOOL ENTRANCE													
STA 201+35.22 TO 202+36.73					85		23			55			
STA 204+58.80 TO 207+61.93					238		123						
SUBTOTAL TOMAHAWK TRAIL					323		146			55			
WEST SHADOW LAKE DRIVE													
STA 301+27.90 TO 302+22.15	166				307	66	76						
STA 304+37.04 TO 306+42.08					230		36			70			
SUBTOTAL WEST SHADOW LAKE DRIVE	166				537	66	112			70			
PROJECT (BASE) SUBTOTAL	11460	6173	41	220	1220	1994	2511	323	144	125	1286	30	30
PROJECT (BASE) TOTAL	17633		41	220	1220	4505		323	144	125	1286	60	
ALTERNATIVE BID													
PARKING LOT & TRAIL	2634												
ALTERNATIVE BID TOTAL	2634												

SYMBOLS & MATERIALS LEGEND

- CROSSWALK BLOCK WHITE-POLY PREFORM
- PAVEMENT MESSAGE (LEFT ARROW) POLY PREFORM

STRIPING KEY

- CIRCLE - MULTI COMP
- SQUARE - POLY PREFORM THERMOPLASTIC
- TRIANGLE - PAINT
- PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING



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

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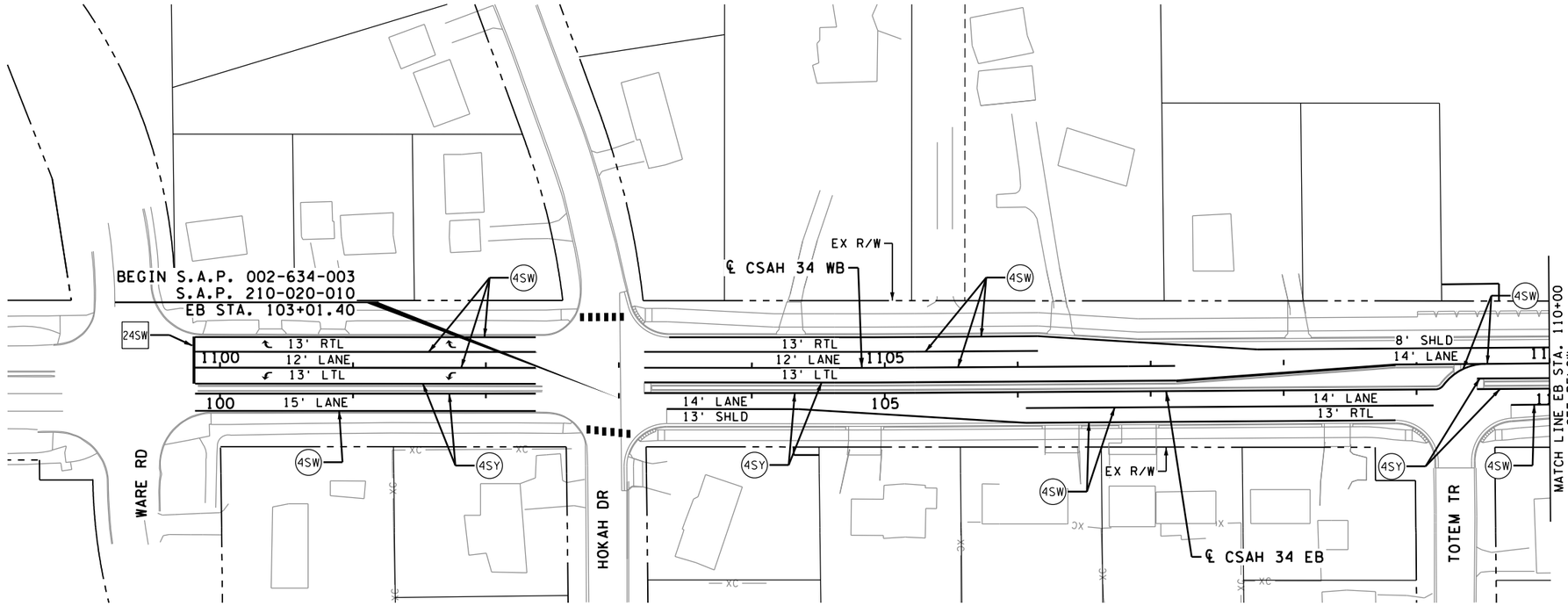
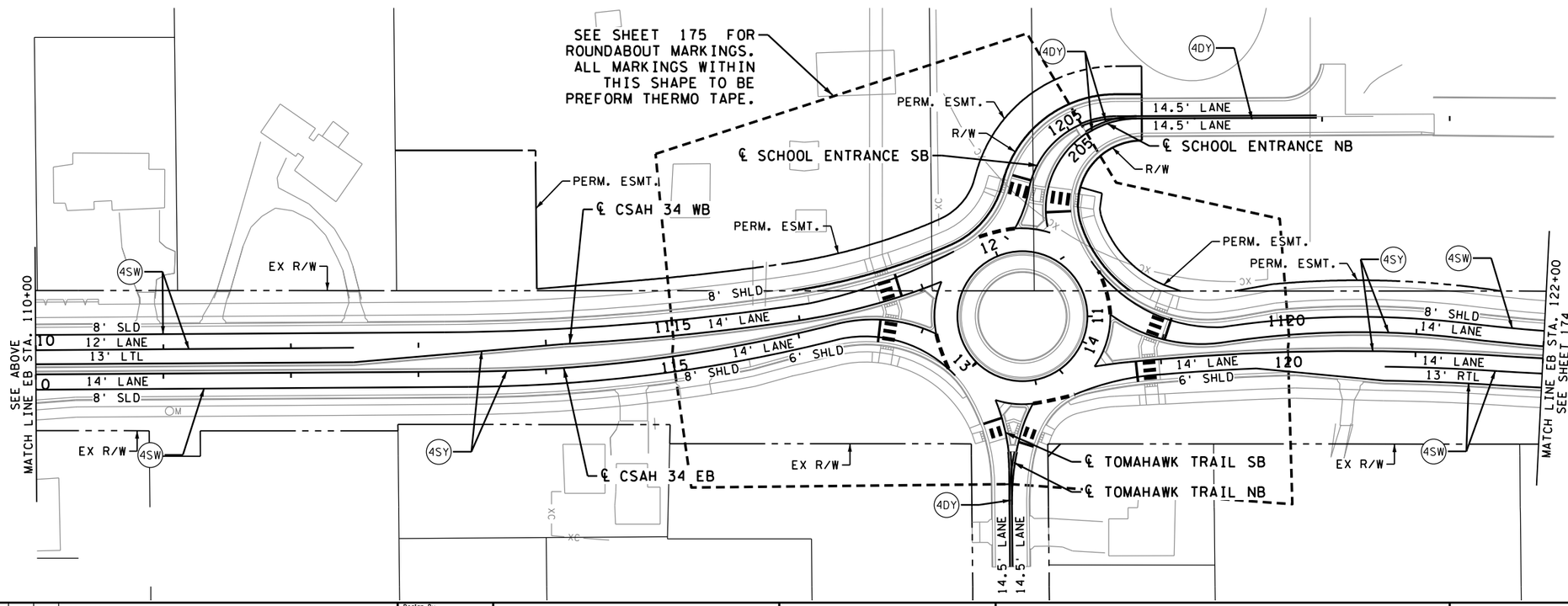
SHEET 172 OF 195 SHEETS

PLOTTED/REVISED: 12/3/2020





STRIPING KEY

- CIRCLE - MULTI COMP
- CROSSWALK - PREF THERMO
- ARROWS - PREF THERMO
- MULTI COMP

1ST DIGIT WIDTH
4",8",ETC.

2ND DIGIT PATTERN
S = SOLID
B = BROKEN
D = DOUBLE
T = DOTTED

3RD DIGIT COLOR
W = WHITE
Y = YELLOW
B = BLACK

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

SCALE IN FEET
0 50 100

NO.	DATE	BY	CHK	REVISIONS

Design By: MF
Plan By: MF
Checked By: ES
Approved By: SD

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SEAN DELMORE, PE

DATE 12/3/2020 LICENSE # 40945

wsb

ANOKA COUNTY

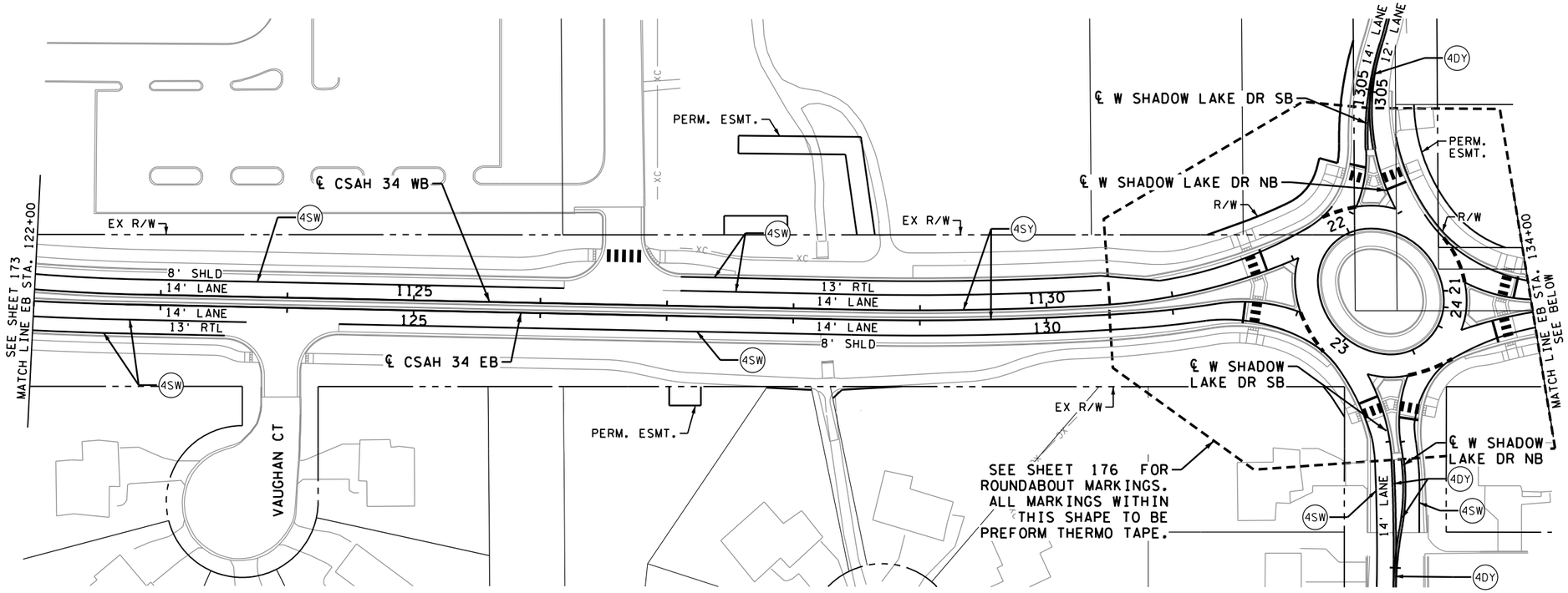
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

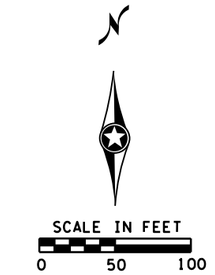
ANOKA COUNTY, MINNESOTA
STA 103+01.40 TO STA 122+00
PAVEMENT MARKING PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 173 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\14400-000_pm01.dgn

PLOTTED/REVISED: 12/3/2020





STRIPING KEY

- CIRCLE - MULTI COMP
- CROSSWALK - PREF THERMO
- ARROWS - PREF THERMO

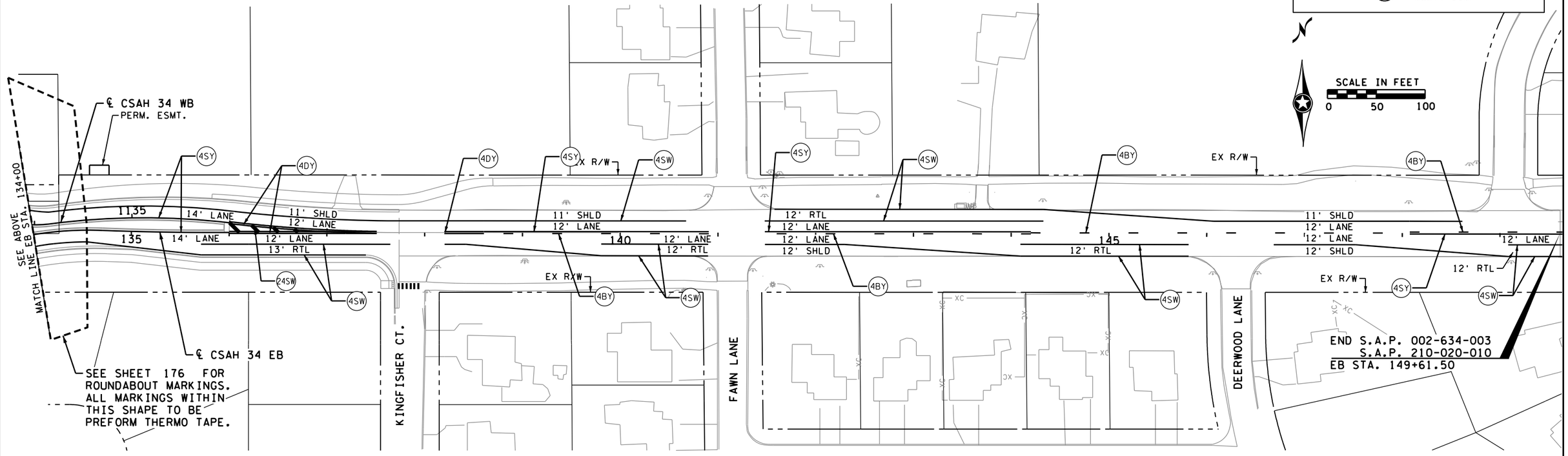
MULTI COMP

1ST DIGIT WIDTH: 4",8",ETC.

2ND DIGIT PATTERN:
S = SOLID
B = BROKEN
D = DOUBLE
T = DOTTED

3RD DIGIT COLOR:
W = WHITE
Y = YELLOW
B = BLACK
G = GROUND IN
W = WET REFLECTIVE

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



NO.	DATE	BY	CHK	REVISIONS

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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

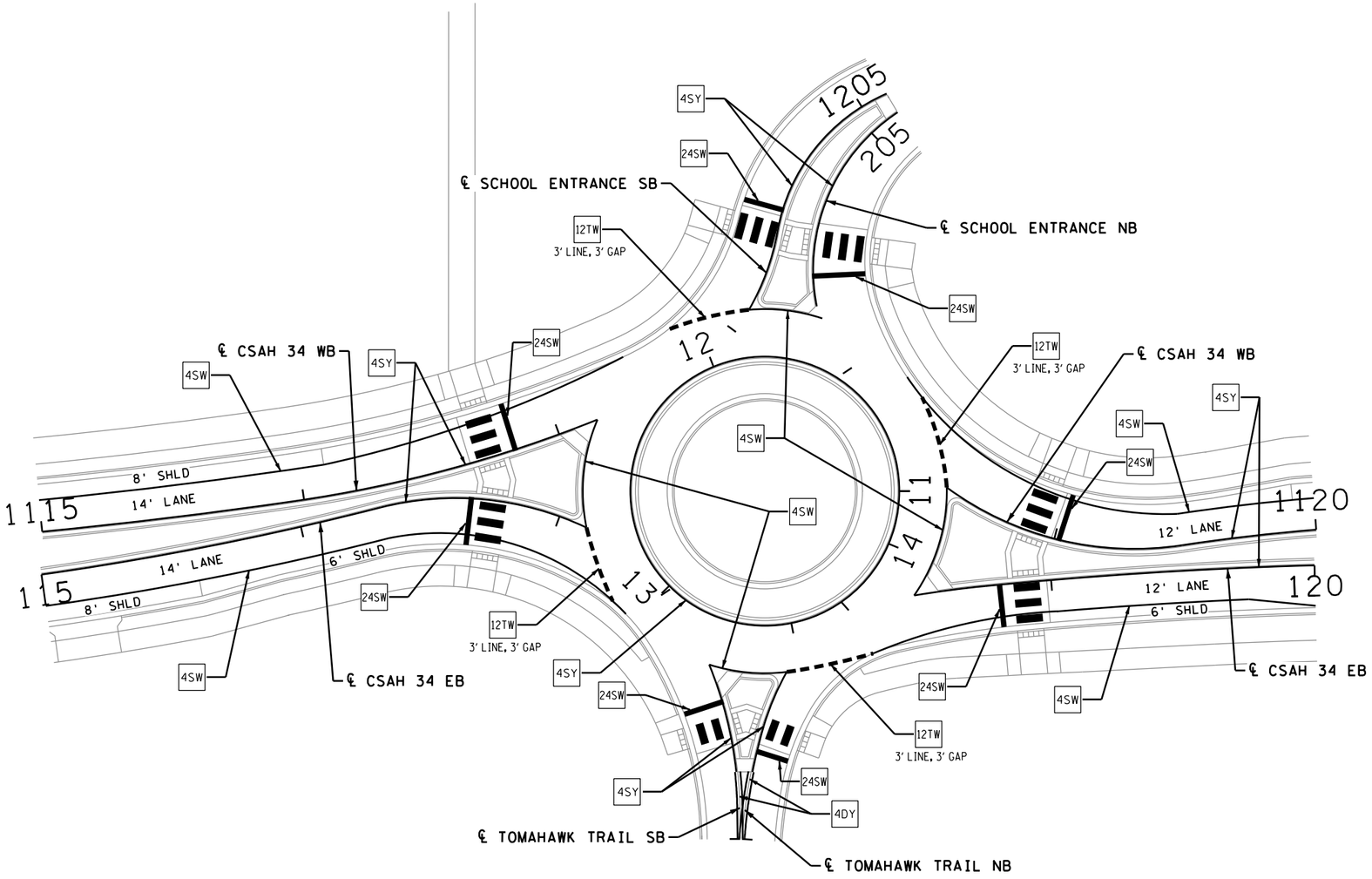
ANOKA COUNTY, MINNESOTA
STA 122+00 TO STA 145+00
PAVEMENT MARKING PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 174 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\0\4400-000\Cad\Plan\4400-000_pm02.dgn

PLOTTED/REVISED: 12/3/2020

CSAH 34 & TOMAHAWK TRAIL ROUNDABOUT



STRIPING KEY

- SQUARE - PREF THERMO
- CIRCLE - MULTI COMP
- CROSSWALK - PREF THERMO
- ARROWS - PREF THERMO

MULTI COMP

1ST DIGIT WIDTH 4",8",ETC.

2ND DIGIT PATTERN
S = SOLID
B = BROKEN
D = DOUBLE
T = DOTTED

3RD DIGIT COLOR
W = WHITE
Y = YELLOW
B = BLACK

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

PATH & FILENAME: Projects\Minnesota\0\4400-000\Cad\Plan\14400-000_pm03.dgn

NO.	DATE	BY	CHK	REVISIONS

Design By: MF
Plan By: MF
Checked By: ES
Approved By: SD

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SEAN DELMORE, PE

DATE 12/3/2020 LICENSE # 40945

wsb

ANOKA COUNTY

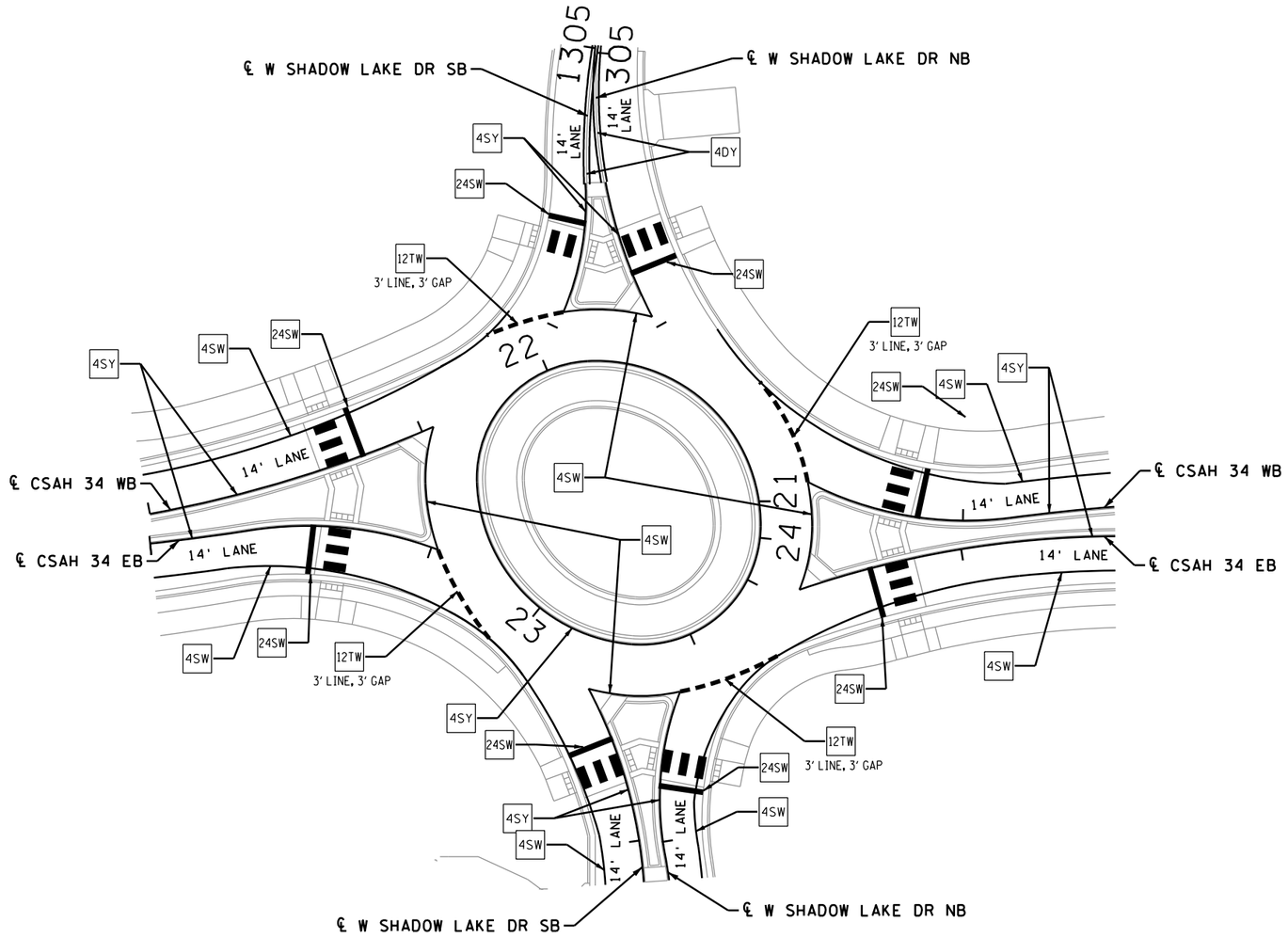
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
CSAH 34 & TOMAHAWK TRAIL ROUNDABOUT
PAVEMENT MARKING PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 175 OF 195 SHEETS

PLOTTED/REVISED: 12/3/2020

CSAH 34 & WEST SHADOW LAKE DR ROUNDABOUT



SCALE IN FEET
0 25 50

STRIPING KEY

- SQUARE - PREF THERMO
- CIRCLE - MULTI COMP
- CROSSWALK - PREF THERMO
- ARROWS - PREF THERMO

MULTI COMP

1ST DIGIT WIDTH
4",8",ETC.

2ND DIGIT PATTERN
S = SOLID
B = BROKEN
D = DOUBLE
T = DOTTED

3RD DIGIT COLOR
W = WHITE
Y = YELLOW
B = BLACK

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

NO.	DATE	BY	CHK	REVISIONS

Design By: MF
Plan By: MF
Checked By: ES
Approved By: SD

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SEAN DELMORE, PE

DATE 12/3/2020 LICENSE # 40945

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

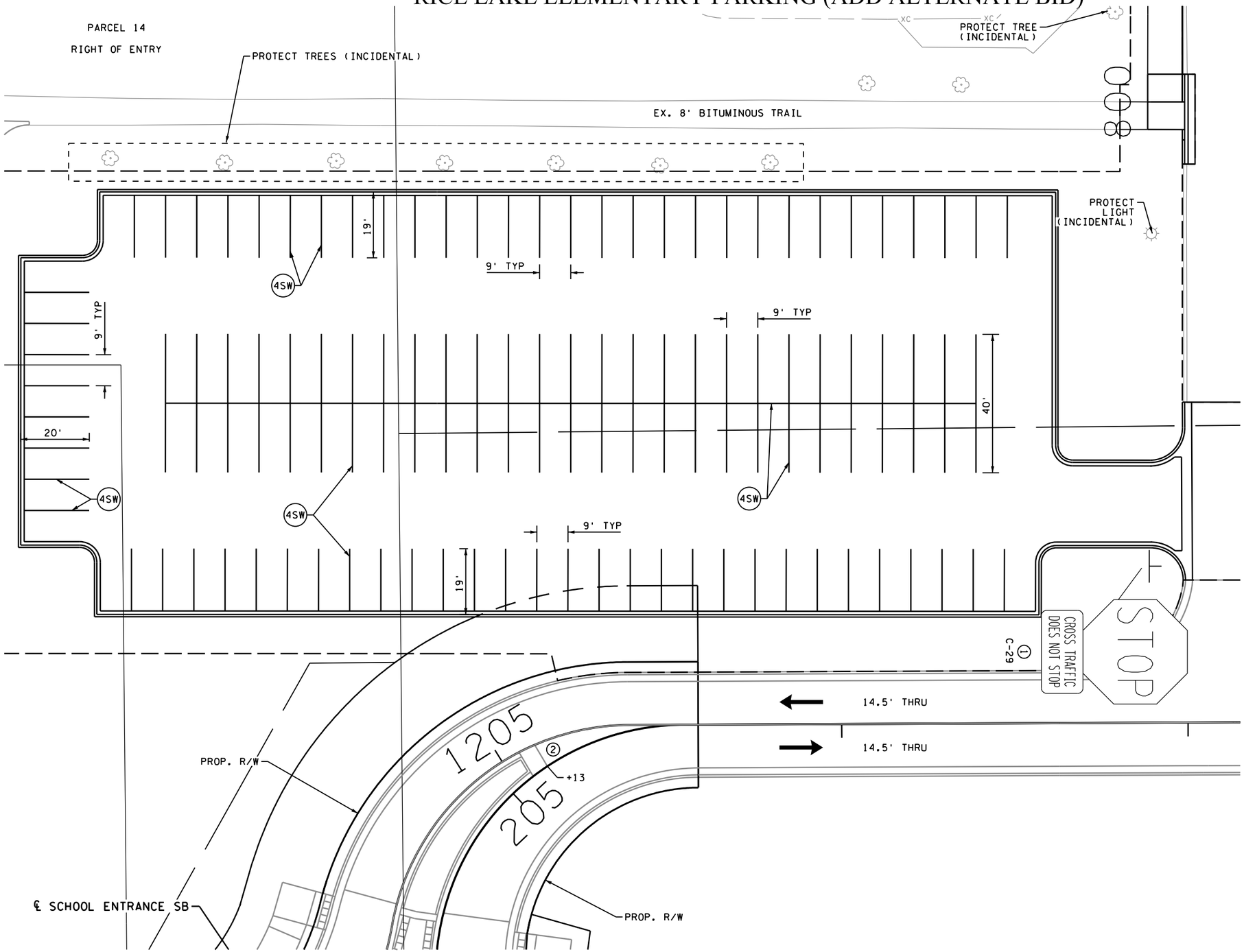
ANOKA COUNTY, MINNESOTA
CSAH 34 & WEST SHADOW LAKE DRIVE ROUNDABOUT
PAVEMENT MARKING PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 176 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\0\44400-000\Cad\Plan\44400-000_pm04.dgn

PLOTTED/REVISED: 12/3/2020

RICE LAKE ELEMENTARY PARKING (ADD ALTERNATE BID)



N

SCALE IN FEET
0 15 30

STRIPING KEY

CIRCLE - MULTI COMP

MULTI COMP

1ST DIGIT WIDTH 4",8",ETC.

2ND DIGIT PATTERN
S = SOLID
B = BROKEN
D = DOUBLE
T = DOTTED

3RD DIGIT COLOR
W = WHITE
Y = YELLOW
B = BLACK

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

SIGNING LEGEND

① FURNISH & INSTALL

NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

ANDREW J. PLOWMAN, PE
DATE 12/3/2020 LICENSE # 44200

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

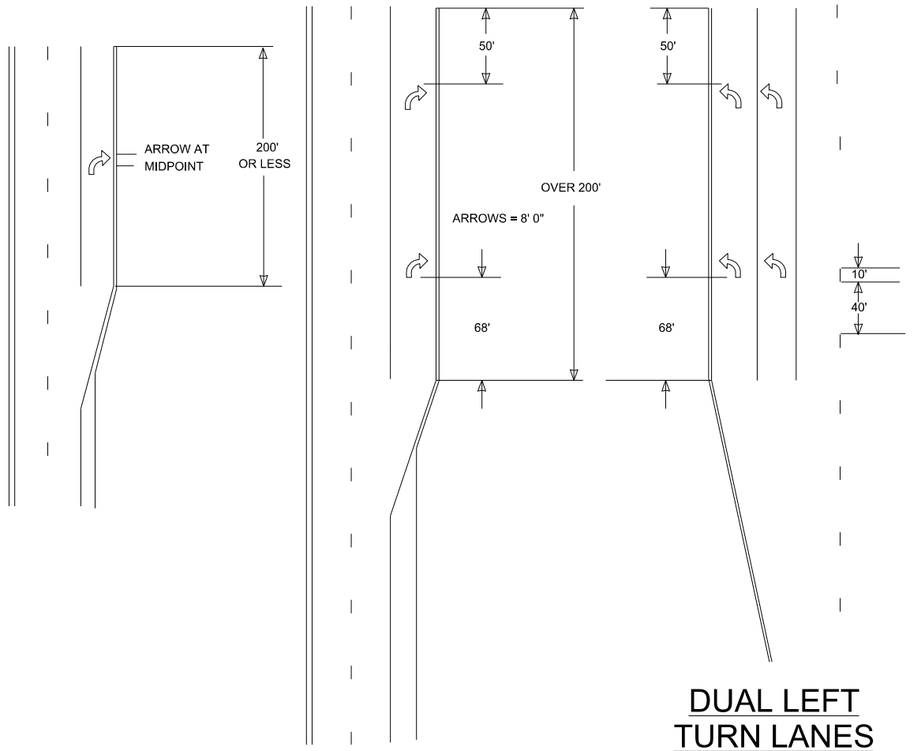
ANOKA COUNTY, MINNESOTA
RICE LAKE ELEMENTARY PARKING (ADD ALTERNATE BID)
SIGNING & PAVEMENT MARKING PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 177 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\0l4400-000\Cad\Plan\l4400-000_ss0l_parking.dgn

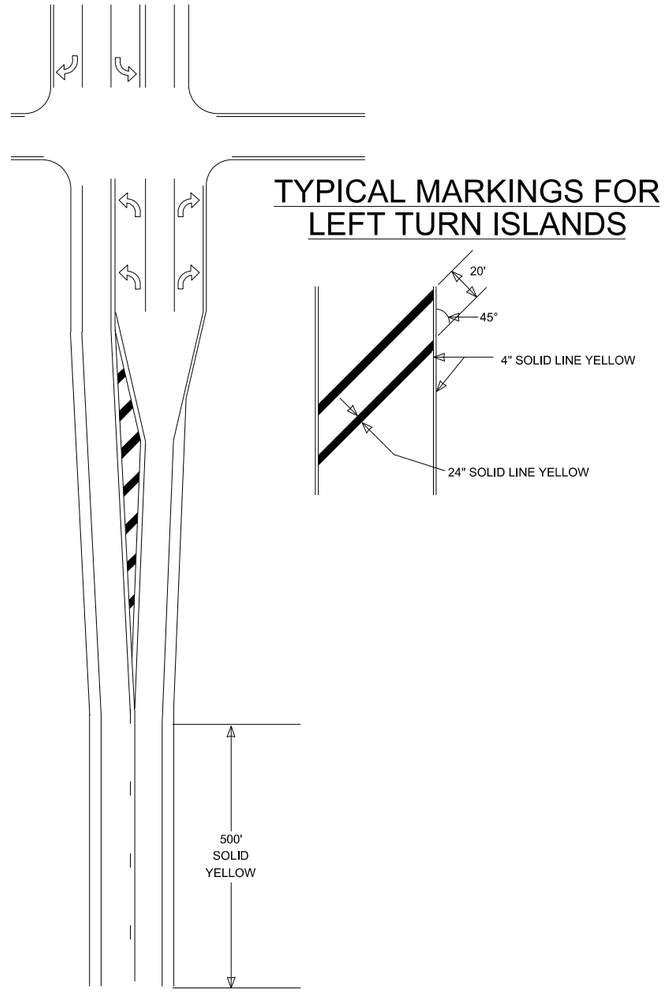
PLOTTED/REVISED: 12/3/2020

TYPICAL MESSAGE PLACEMENT FOR TURN LANES



DUAL LEFT TURN LANES

TYPICAL MARKINGS FOR LEFT TURN ISLANDS



PATH & FILENAME: Projects\Minnesota\OI4400-000\Cad\Plan\I4400-000_pmdet.dgn

NO.	DATE	BY	CHK	REVISIONS

Design By: MF
Plan By: MF
Checked By: ES
Approved By: SD

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SEAN DELMORE, PE

DATE 12/3/2020 LICENSE # 40945

wsb

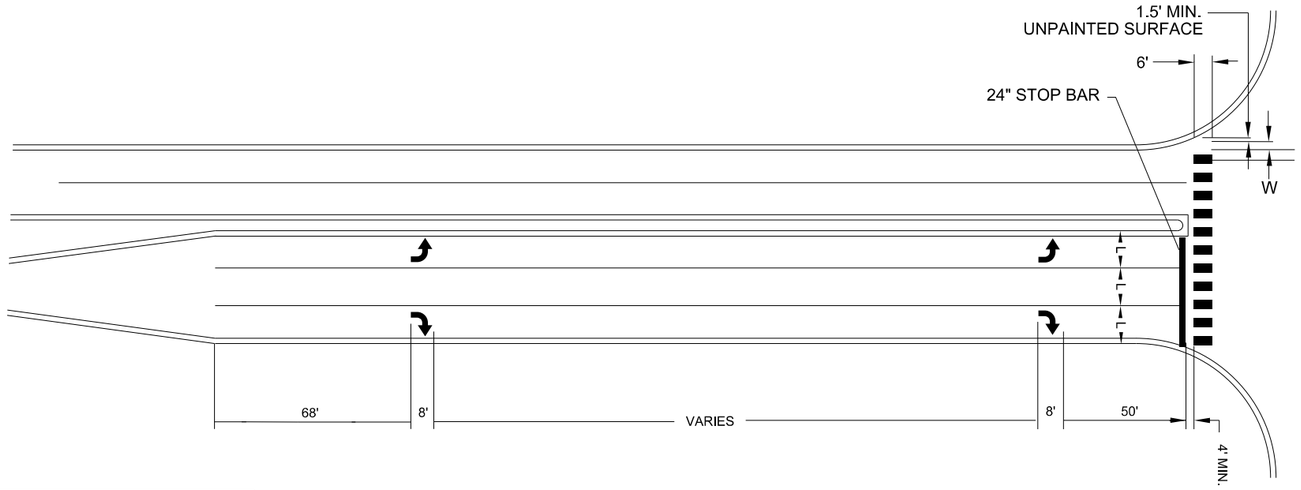
ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
DETAILS
PAVEMENT MARKING PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **178** OF **195** SHEETS

MARKINGS FOR PEDESTRIAN CROSSWALKS



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

NOTES: CROSSWALKS:

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

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

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

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

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

NO.	DATE	BY	CHK	REVISIONS

Design By: MF
Plan By: MF
Checked By: ES
Approved By: SD

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SEAN DELMORE, PE

DATE 12/3/2020 LICENSE # 40945

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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
DETAILS
PAVEMENT MARKING PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

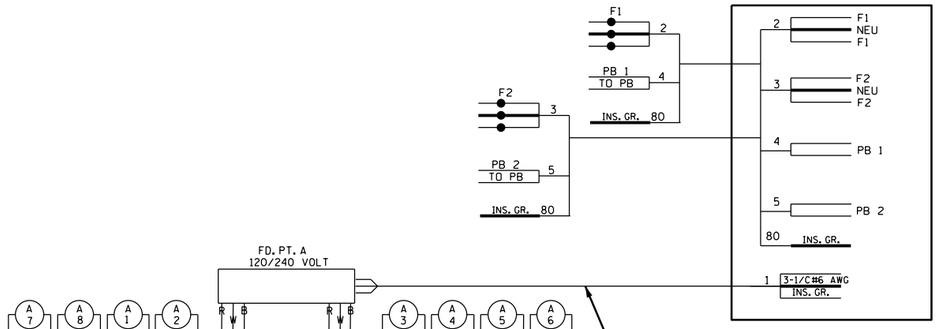
SHEET **179** OF **195** SHEETS

PLOTTED/REVISED: 12/3/2020

STREET LIGHTING TABULATION		S
ITEM DESCRIPTION	UNIT	TOTAL
SALVAGE FLASHER SYSTEM	EACH	1
LIGHTING UNIT TYPE 9-40	EACH	16
LIGHT FOUNDATION DESIGN E	EACH	16
SERVICE CABINET -TYPE L1	EACH	3
SERVICE EQUIPMENT	EACH	3
EQUIPMENT PAD B	EACH	3
1.5" NON-METALLIC CONDUIT	LIN FT	1650
UNDERGROUND WIRE 1/C 8 AWG	LIN FT	6600
INSTALL FLASHER SYSTEM	LUMP SUM	1
PEDESTRIAN CROSSWALK FLASHER SYSTEM	SYSTEM	1

FEEDPOINT A LIGHTING STANDARDS AND FOUNDATIONS							
NO.	STATION	LT	RT	LOCATION	TYPE	FOUNDATION	NOTES
1	116+41		X	CSAH 34 EB	9-40	DESIGN E	
2	13+02		X	ROUNDABOUT CIRCULAR	9-40	DESIGN E	
3	202+09		X	TOMAHAWK TR NB	9-40	DESIGN E	
4	13+80		X	ROUNDABOUT CIRCULAR	9-40	DESIGN E	
5	1119+33	X		CSAH 34 WB	9-40	DESIGN E	
6	11+37		X	ROUNDABOUT CIRCULAR	9-40	DESIGN E	
7	1204+64	X		TOMAHAWK TR SB	9-40	DESIGN E	
8	12+26		X	ROUNDABOUT CIRCULAR	9-40	DESIGN E	

SCALE IN FEET
0 50 100

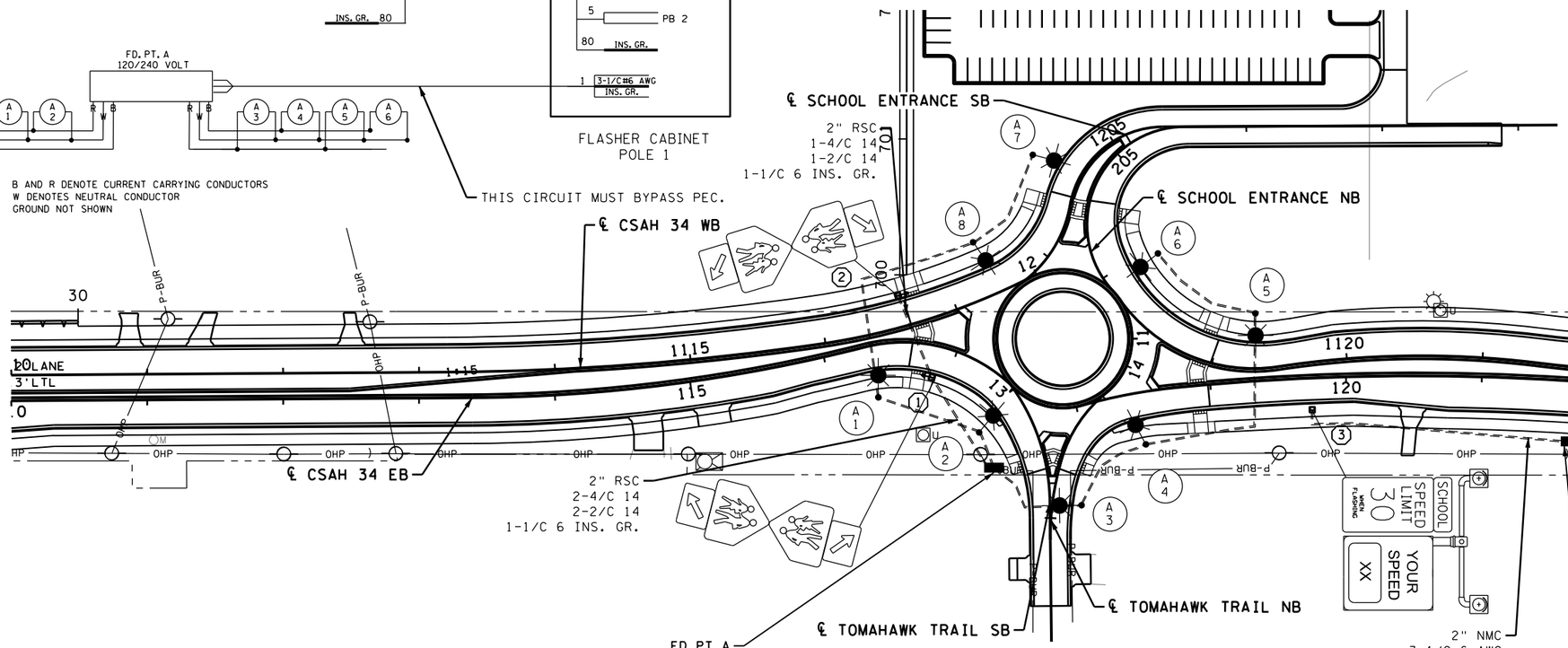


(2) FURNISH BY ACHD, INSTALL BY CONTRACTOR:

MODIFIED PEDESTAL CONCRETE FOUNDATION
PEDESTAL POLE AND BASE (MNDOT STD PLATE 8112)
POLE MOUNTED CONTROL CABINET
2 S1-1 LED ENHANCED SIGNS (30"X30") BACK TO BACK
1 W16-7PL (24"X18") AND 1 W16-7PL (24"X18") BACK TO BACK
1 PED PUSHBUTTON (PB-2) AND SIGN

F&I BY CONTRACTOR FROM FLASHER 1:
2" RSC
1-4/C 14
1-2/C 14
1-1/C 6 INS. GR.

NOTES:
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES PRIOR TO WORK.
2. THE CONTRACTOR SHALL COORDINATE THE PLACEMENT OF CONDUIT AND FOUNDATIONS WITH OTHER CONSTRUCTION ACTIVITIES IN THE AREA.
3. THE CONTRACTOR IS RESPONSIBLE FOR ALL PERMITS AND UTILITY COORDINATION.
4. ALL MATERIAL AND WORK SHALL BE IN ACCORDANCE WITH THE N.E.C.
5. LIGHTING UNITS MUST MAINTAIN A MINIMUM CLEARANCE OF 10' FROM OVERHEAD POWER LINES.
6. EXACT LOCATIONS OF LIGHT AND SERVICE CABINET FOUNDATIONS SHALL BE LOCATED BY THE ENGINEER IN THE FIELD.



(1) FURNISH BY ACHD, INSTALL BY CONTRACTOR:

MODIFIED PEDESTAL CONCRETE FOUNDATION
PEDESTAL POLE AND BASE (MNDOT STD PLATE 8112)
POLE MOUNTED CONTROL CABINET
2 S1-1 LED ENHANCED SIGNS (30"X30") BACK TO BACK
1 W16-7PL (24"X18") AND 1 W16-7PR (24"X18") BACK TO BACK
1 PED PUSHBUTTON (PB-1) AND SIGN

F&I BY CONTRACTOR FROM CABINET:
2" RSC
2-4/C 14
2-2/C 14
1-1/C 6 INS. GR.

(3) SALVAGE BY ACHD:
EXISTING DRIVER FEEDBACK SYSTEM
(PANELS, BEACONS, POLE)

REMOVE BY CONTRACTOR:
EXISTING PEDESTAL FOUNDATION

FURNISH BY ACHD, INSTALL BY CONTRACTOR:
DRIVER FEEDBACK SYSTEM (PANELS, BEACONS, POLE)

F&I BY CONTRACTOR:
PEDESTAL FOUNDATION (MNDOT STD PLATE 8112)

LEGEND

- LIGHTING UNIT TYPE 9-40
- 1.5" NMC WITH 3-1/C 8 AWG AND 1-1/C 8 AWG GR. (UNLESS NOTED OTHERWISE)
- SERVICE CABINET TYPE L1

NO.	DATE	BY	CHK	REVISIONS

Design By: MF
Plan By: MF
Checked By: ES
Approved By: SD

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SEAN DELMORE, PE
DATE 12/3/2020 LICENSE # 40945

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
STA 110+00 TO STA 122+00
ELECTRICAL PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 180 OF 195 SHEETS

PATH & FILENAME: Projects\Minnesota\0\4400-000\Cad\Plan\14400-000_lit10.dgn

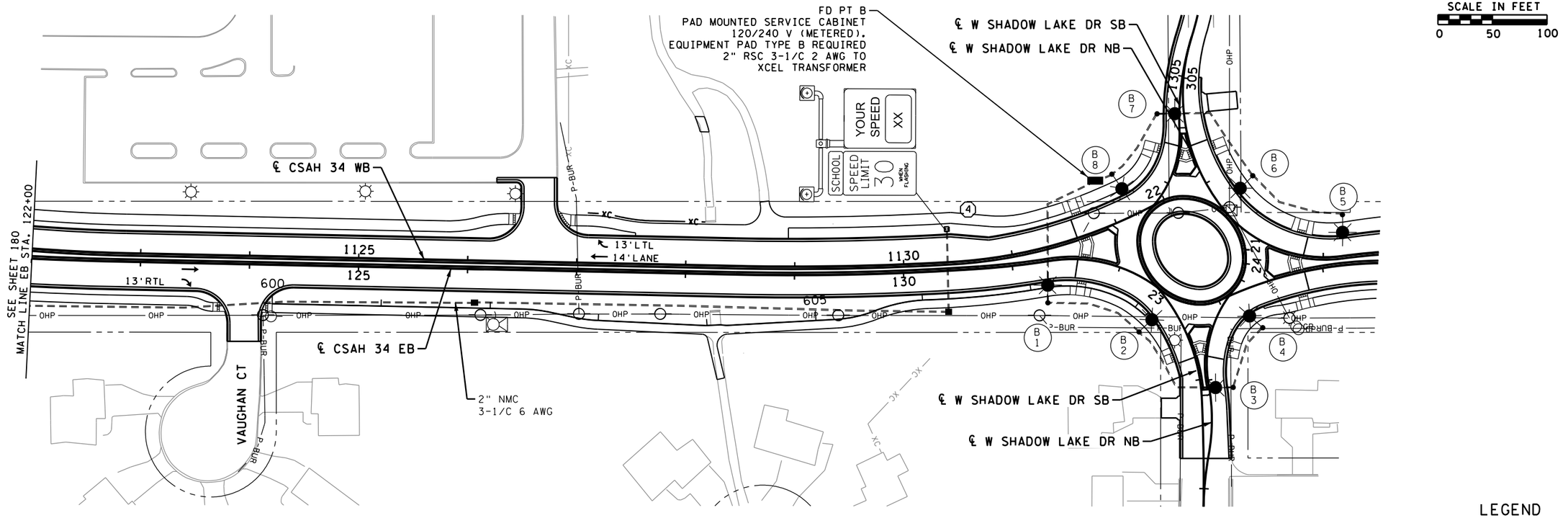
PLOTTED/REVISED: 12/3/2020

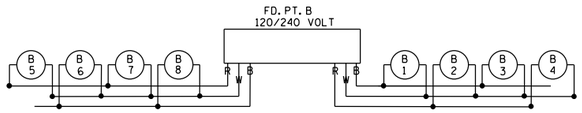
(4) SALVAGE BY ACHD:
EXISTING DRIVER FEEDBACK SYSTEM
(PANELS, BEACONS, POLE)

REMOVE BY CONTRACTOR:
EXISTING PEDESTAL FOUNDATION

FURNISH BY ACHD, INSTALL BY CONTRACTOR:
DRIVER FEEDBACK SYSTEM (PANELS, BEACONS, POLE)

F&I BY CONTRACTOR:
PEDESTAL FOUNDATION (MNDOT STD PLATE 8112)





B AND R DENOTE CURRENT CARRYING CONDUCTORS
W DENOTES NEUTRAL CONDUCTOR
GROUND NOT SHOWN

FEEDPOINT B
LIGHTING STANDARDS AND FOUNDATIONS

NO.	STATION	LT	RT	LOCATION	TYPE	FOUNDATION	NOTES
1	131+32		X	CSAH 34 EB	9-40	DESIGN E	
2	23+13		X	ROUNDABOUT CIRCULAR	9-40	DESIGN E	
3	301+93		X	WEST SHADOW NB	9-40	DESIGN E	
4	23+67		X	ROUNDABOUT CIRCULAR	9-40	DESIGN E	
5	1134+18	X		CSAH 34 WB	9-40	DESIGN E	
6	21+45		X	ROUNDABOUT CIRCULAR	9-40	DESIGN E	
7	1304+65	X		WEST SHADOW SB	9-40	DESIGN E	
8	22+27		X	ROUNDABOUT CIRCULAR	9-40	DESIGN E	

LEGEND

- LIGHTING UNIT TYPE 9-40
- 1.5" NMC WITH 3-1/C 8 AWG AND 1-1/C 8 AWG GR. (UNLESS NOTED OTHERWISE)
- SERVICE CABINET TYPE L1
- HANDHOLE

NOTES:
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES PRIOR TO WORK.
2. THE CONTRACTOR SHALL COORDINATE THE PLACEMENT OF CONDUIT AND FOUNDATIONS WITH OTHER CONSTRUCTION ACTIVITIES IN THE AREA.
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4. ALL MATERIAL AND WORK SHALL BE IN ACCORDANCE WITH THE N.E.C.
5. LIGHTING UNITS MUST MAINTAIN A MINIMUM CLEARANCE OF 10' FROM OVERHEAD POWER LINES.
6. EXACT LOCATIONS OF LIGHT AND SERVICE CABINET FOUNDATIONS SHALL BE LOCATED BY THE ENGINEER IN THE FIELD.

NO.	DATE	BY	CHK	REVISIONS

Design By: MF
Plan By: MF
Checked By: ES
Approved By: SD

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SEAN DELMORE, PE

DATE 12/3/2020 LICENSE # 40945

wsb

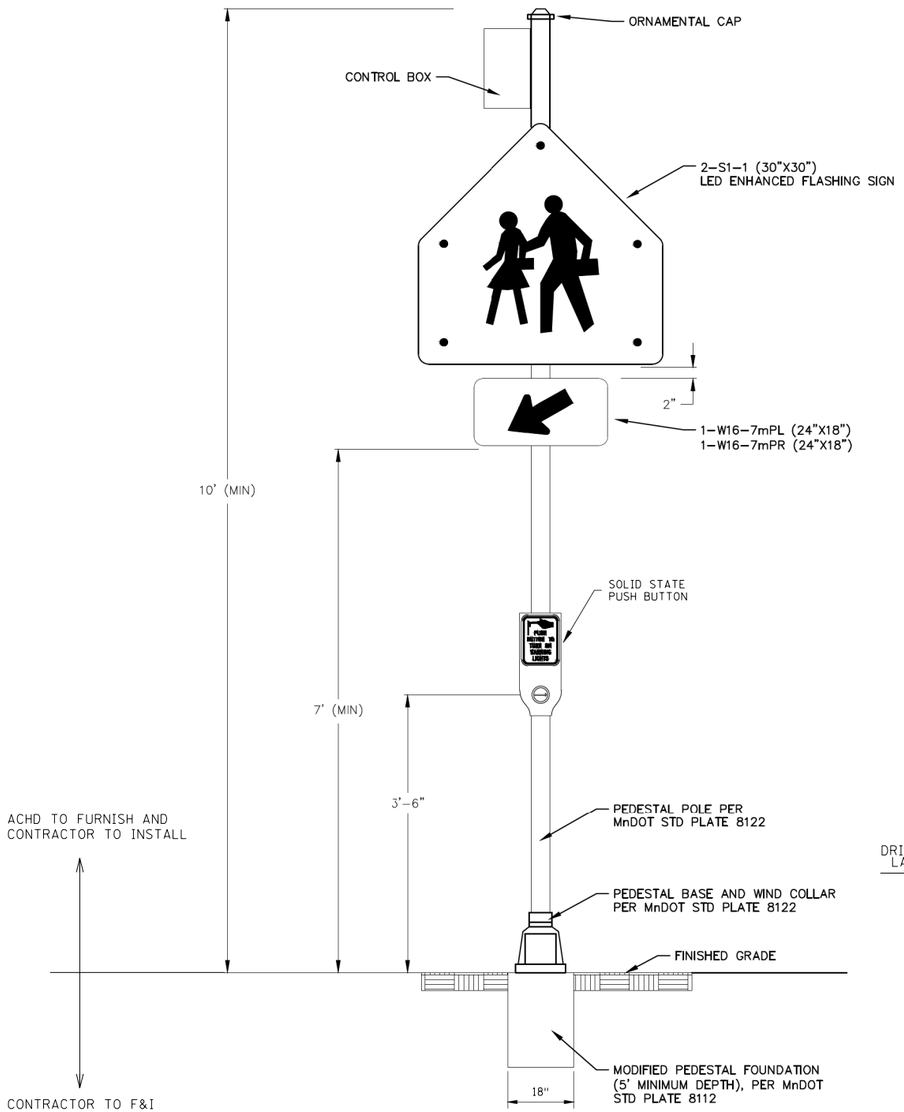
ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
STA 122+00 TO STA 145+00
ELECTRICAL PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

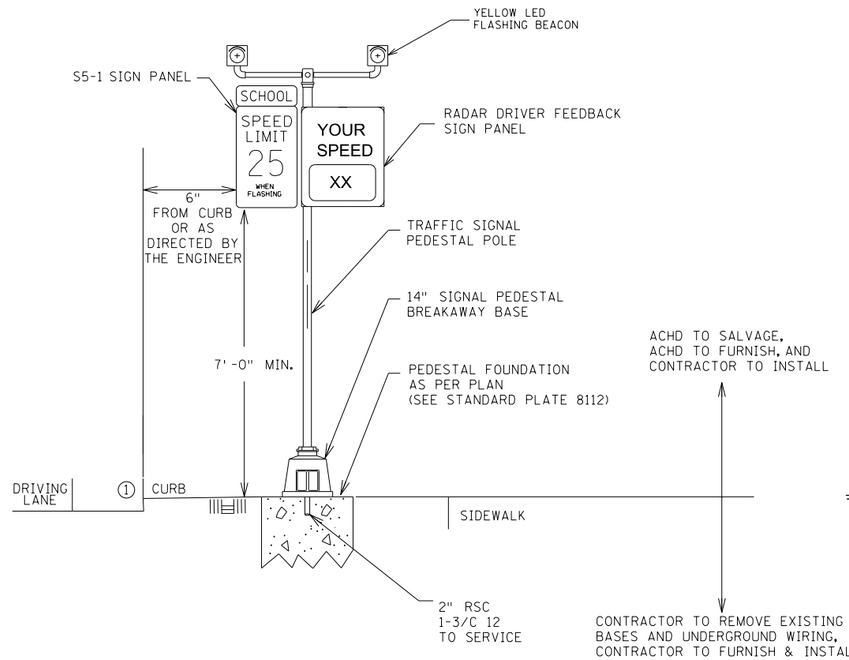
SHEET 181 OF 195 SHEETS

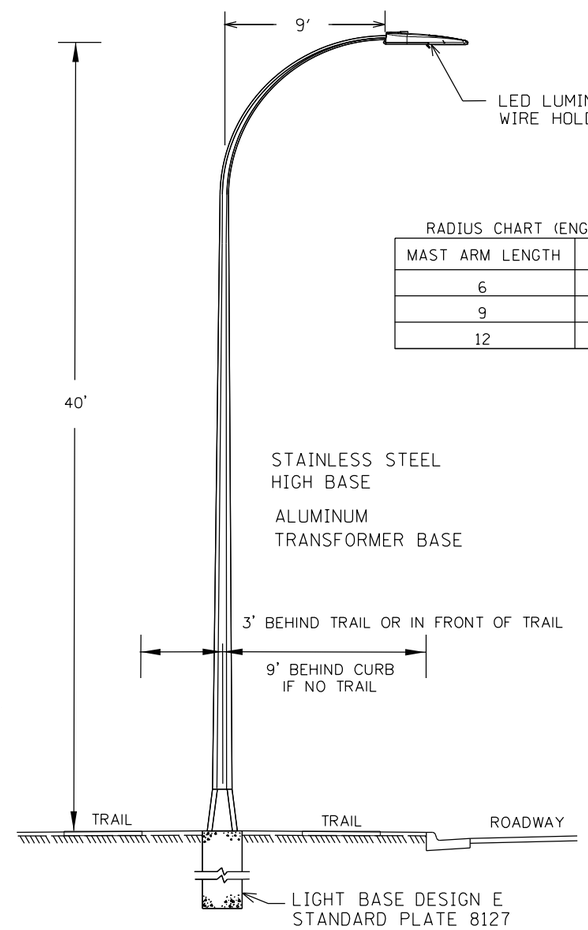
PATH & FILENAME: Projects\Minnesota\0\4400-000\Cad\Plan\4400-000_lit02.dgn



LED ENHANCED SCHOOL CROSSING SIGN

DFB SIGN WITH FLASHERS FRONT VIEW





RADIUS CHART (ENGLISH)

MAST ARM LENGTH	RADIUS
6	5
9	8
12	10

STAINLESS STEEL
HIGH BASE

ALUMINUM
TRANSFORMER BASE

LIGHTING UNIT TYPE 9-40
PLACEMENT DETAIL

(NON-BREAKAWAY)
NOT TO SCALE

NO.	DATE	BY	CHK	REVISIONS

Design By: MF
Plan By: MF
Checked By: ES
Approved By: SD

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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

ELECTRICAL PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **182** OF **195** SHEETS

STORMWATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE

PROJECT NAME: CSAH 34 IMPROVEMENTS **PROJECT NUMBER:** SAP 002-634-003; WSB 014400-000
PROJECT LOCATION: STREET: CSAH 34 (BIRCH STREET) CITY: LINO LAKES COUNTY: ANOKA
STATE: MINNESOTA ZIP: 55014 LATITUDE/LONGITUDE: 45.1422/-93.1131

THE PLANNED SCOPE OF THE PROJECT INCLUDES:
THE PROJECT IS LOCATED IN LINO LAKES, MN (ANOKA COUNTY). ANOKA COUNTY IS PROPOSING TO RECONSTRUCT THE ROADWAY, REGRADE, ADD ROUNDABOUTS, ADD LIGHTING, AND PROVIDE ADA IMPROVEMENTS ON CSAH 34 (BIRCH STREET), TOMAHAWK TRAIL, AND WEST SHADOW LAKE DRIVE.

TENTATIVE CONSTRUCTION SCHEDULE (OPERATOR SHOULD PROVIDE ESTIMATED CONSTRUCTION SCHEDULE TO THE ENGINEER)	
CONSTRUCTION ACTIVITIES:	ESTIMATED DATES OF SOIL DISTURBANCE ACTIVITIES:
TEMPORARY SEDIMENT CONTROL BMPS & REMOVALS	APR 2021
GRADING & UTILITY WORK	JUN – JUL 2021
CURB & PAVEMENT	JUL – AUG 2021
FINAL STABILIZATION	AUG – SEPT 2021

PROJECT PERSONNEL AND TRAINING

SWPPP DEVELOPER:
WSB (ZACH KOLSUM)
701 XENIA AVE S, SUITE 300
GOLDEN VALLEY, MN 55416
612-201-6809/ZKOLSUM@WSBENG.COM

CONTRACTOR TO PROVIDE CERTIFICATION OF EROSION CONTROL OFFICER AND ANY OTHER CREW MEMBERS WHO WILL WORK ON THE IMPLEMENTATION OF THE SWPPP AND THE INSTALLATION, INSPECTION, AND MAINTENANCE OF THE EROSION PREVENTION AND SEDIMENT CONTROL BMPS BEFORE, DURING, AND AFTER CONSTRUCTION UNTIL THE NOTICE OF TERMINATION (NOT) HAS BEEN FILED WITH THE MPCA. PROVIDE PROOF OF CERTIFICATION AT THE PRECONSTRUCTION MEETING. WORK WILL NOT BE ALLOWED TO COMMENCE UNTIL PROOF OF CERTIFICATION HAS BEEN PROVIDED TO THE PROJECT ENGINEER.

CHAIN OF RESPONSIBILITY

ANOKA COUNTY AND THE CONTRACTOR ARE CO-PERMITTEES FOR THE NPDES CONSTRUCTION GENERAL 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.

NAME	COMPANY	TITLE	PHONE
CHRIS OSTERHUS	ANOKA COUNTY	PROJECT ENGINEER OR REPRESENTATIVE (OWNER CONTACT)	763-324-3189

AGENCY CONTACTS

ORGANIZATION	CONTACT NAME	PHONE
MPCA (EMERGENCY) 24 HOUR	STATE DUTY OFFICER	1-800-422-0798
MPCA	BRIAN GREEN	507-206-2610
RICE CREEK WATERSHED DISTRICT	PATRICK HUGHES	763-398-3080

LOCATION OF SWPPP REQUIREMENTS

THE REQUIRED SWPPP ELEMENTS MAY BE LOCATED IN MANY PLACES WITHIN THE PLAN SET AS WELL AS IN THE SPECIAL PROVISIONS, PROJECT MANUAL, MNDOT SPEC BOOK, OR ON FILE WITH THE PROJECT OWNER.

DESCRIPTION	LOCATION
TEMPORARY/PERMANENT EROSION CONTROL MEASURES	186 - 188
DIRECTION OF FLOW	153 - 154
CONSTRUCTION NOTES & STANDARD PLATES	13
DRAINAGE PLAN & CONSTRUCTION PLAN	153 - 154 & 101 - 107
BMP TABULATION	9
STORMWATER CALCULATIONS	DRAINAGE REPORT & HYDRAULIC REPORT. AVAILABLE UPON REQUEST

RECEIVING WATERS

A SPECIAL AND IMPAIRED WATERS SEARCH WAS COMPLETED USING THE MPCA SEARCH ENGINE ON 03/04/2020. BASED ON THIS REVIEW, THE FOLLOWING SPECIAL/IMPAIRED WATERS (WITH CONSTRUCTION RELATED IMPAIRMENTS) ARE LOCATED WITHIN ONE MILE OF, AND DOWNSTREAM OF, ANY PROJECT DISCHARGE POINTS. PARTS 23.9 & 23.10 OF THE NPDES PERMIT APPLY.

WATERBODY	IMPAIRMENT(S)
RICE LAKE	NUTRIENTS
RESHANAU LAKE	NUTRIENTS
NWI (PAGx)	N/A
NWI (PEM1A)	N/A
NWI (PEM1F)	N/A
NWI (PEM1A)	N/A
NWI (PEM1C)	N/A

AREAS OF ENVIRONMENTAL SENSITIVITY (AES) AND INFESTED WATERS

IN ADDITION TO THE LIST OF SPECIAL AND IMPAIRED WATERS, THE CONTRACTOR SHALL BE AWARE THAT THERE ARE WETLANDS AND EXISTING STORMWATER FACILITIES WITHIN AND NEAR THE PROJECT BOUNDARY. THERE IS A MAP OF KNOWN NATURAL RESOURCES ON THE LAST PAGE OF THE SWPPP NARRATIVE. AREAS OF ENVIRONMENTAL SENSITIVITY ARE ALSO CALLED OUT ON THE PLAN SHEETS.

SOIL TYPES

A PROJECT WIDE GEOTECHNICAL REPORT WAS COMPLETED DURING THE DESIGN PHASE. PREDOMINATING CONDITIONS ARE LACUSTRINE (LAKE-DEPOSITED) SAND SOILS THAT CONTAIN SCATTERED LENSES OF SILT TO SILTY CLAY. THE EASTERN PORTION OF THE SITE CONSIST OF FINE-GRAINED SAND OVERLYING SANDY AND CLAYEY GLACIAL TILL. SOIL CLASSIFICATIONS FOR HIGHLY ERODIBLE LAND (HEL), POTENTIALLY HIGHLY ERODIBLE LAND (PHEL), AND NOT HIGHLY ERODIBLE LAND (NHEL) SOILS CAN BE FOUND ON *FIGURE 1. SWPPP RESOURCE MAP*.

NATIVE TOPSOIL WILL BE STRIPPED; IF MATERIAL NEEDS TO BE STOCKPILED, APPROPRIATE ACTION WILL TAKE PLACE TO ENSURE THE STOCKPILES HAVE ALL PROPER BMPS IN PLACE ACCORDING TO THIS SWPPP AND THE NPDES PERMIT.

ENVIRONMENTAL REVIEW

NO FORMAL ENVIRONMENTAL REVIEW WAS REQUIRED FOR THIS PROJECT.

WETLANDS: MITIGATION MEASURES ARE NOT REQUIRED AS A RESULT OF WETLAND IMPACTS FROM THE PROJECT. A WETLAND SEARCH USING THE NATIONAL WETLAND INVENTORY SEARCH ENGINE ON 03/04/2020 SHOWS 5 WETLANDS ADJACENT TO THE PROJECT LOCATION WHICH RUNOFF FROM THE PROJECT WILL POTENTIALLY BE DIRECTED TO VIA EXISTING STORM SEWER AND/OR OVER LAND. IT IS ANTICIPATED THAT A 50' NATURAL BUFFER WILL BE NOT BE ABLE TO BE MAINTAINED AT ALL WETLANDS DURING CONSTRUCTION; IF THE 50' BUFFER CANNOT BE MAINTAINED, THEN REDUNDANT SEDIMENT CONTROL BMPS WILL BE INSTALLED PER CSW PERMIT REQUIREMENTS TO PROTECT THE WETLAND TO THE MAXIMUM EXTENT.

THREATENED/ENDANGERED SPECIES: ANOKA COUNTY LISTS THE NORTHERN LONG-EARED BAT AS A THREATENED/ENDANGERED SPECIES WITHIN THE COUNTY. BASED ON THE CONSTRUCTION ACTIVITIES, IT IS DETERMINED THAT THE PROJECT WILL HAVE NO EFFECT ON THESE SPECIES OR THEIR HABITATS. HOWEVER, IF THESE SPECIES ARE FOUND, CONTRACTOR TO STOP WORK IMMEDIATELY FOR FURTHER INVESTIGATION.

DRINKING WATER/WELLS: ACCORDING TO THE MDH, ABOUT 30% OF THE PROJECT LOCATION IS WITHIN THE LINO LAKES DWSMA, MAINLY ON THE EASTERN SIDE OF THE PROJECT. THERE ARE 12 WELLS LOCATED WITHIN OR ADJACENT TO THE PROJECT LOCATION: PAUL MOUNTAIN 45.1416/-93.1109, DAVE JOHNSON 45.1420/-93.1149, SHIRLEY DAVIDSON 45.1416/-93.1150, ANNE BOECKMAN 45.1416/-93.1148, UNNAMED 45.1413/-93.1149, UNNAMED 45.1420/-93.1182, UNNAMED 45.1421/-93.1185, UNNAMED 45.1416/-93.1196, UNNAMED 45.1421/-93.1202, UNNAMED 45.1426/-93.1207, KATHY BENNING 45.1427/-93.1208, & UNNAMED 45.1427/-93.1214. RECOMMEND THAT WELL LOCATIONS ARE TO BE VERIFIED IN THE FIELD, AND PROTECTED TO THE MAXIMUM EXTENT WHERE DEEMED NECESSARY FROM FIELD VERIFICATION.

CONTAMINATED PROPERTIES: THE MPCA'S "WHAT'S IN MY NEIGHBORHOOD" DATABASE WAS REVIEWED ON 03/04/2020. THE RESULTS OF THIS REVIEW SHOW TWO (2) KNOWN ACTIVE VERY SMALL QUANTITY HAZARDOUS WASTE GENERATION SITES ADJACENT TO THE PROJECT ALIGNMENT: ID 20645 45.1423/-93.1124, ID 145491 45.1423/-93.1198. THE REVIEW ALSO SHOWS ONE (1) ACTIVE UNDERGROUND TANK ADJACENT TO THE PROJECT ALIGNMENT: ID 20645 45.1423/-93.1423. DUE TO THE PROJECT LOCATION, IT IS NOT PROPOSED TO UNEARTH ANY CONTAMINATED SOIL, CONTAMINATED WATER, AND/OR REGULATED WASTE. REFER TO MNDOT SPEC 1717.1.A. FOR POTENTIAL INDICATORS OF CONTAMINATED MATERIALS AND REGULATED WASTE. IF CONTAMINATED MATERIAL, CONTAMINATED WATER, AND/OR REGULATED MATERIALS ARE FOUND, CREWS ARE TO STOP WORK IMMEDIATELY FOR FURTHER INVESTIGATION/TESTING.

FLOOD CONTINGENCY PLAN: PROJECT ACTIVITIES MAY OCCUR WITHIN THE 100-YEAR FLOODPLAIN OR FLOODWAY, THEREFORE, THE PROJECT ENGINEER (AT THEIR DISCRETION) MAY REQUIRE A PREVENTATIVE FLOOD CONTINGENCY PLAN FOR SPECIFIC PROJECT ACTIVITIES AND AREAS IF SEASONAL PRECIPITATION POSSES A POTENTIAL RISK OF FLOODING WORK AREAS WITHIN THE PROJECT LIMITS. THIS PLAN SHALL BE SUBMITTED BY THE OPERATOR TO THE PROJECT ENGINEER FOR APPROVAL A MINIMUM OF 72 HOURS PRIOR TO THE SCHEDULED WORK AND/OR DURING ACTIVE WORK WITHIN THE FLOODPLAIN. NO WORK WITHIN THE FLOODPLAIN CAN COMMENCE UNTIL WRITTEN APPROVAL HAS BEEN GRANTED BY THE PROJECT ENGINEER.

LAND FEATURE CHANGES

TOTAL AREA TO BE DISTURBED = 11.40 ACRES
IMPERVIOUS AREA: PRE-CONSTRUCTION = 6.10 ACRES/POST-CONSTRUCTION = 7.27 ACRES
NET INCREASE OF IMPERVIOUS AREA = 1.17 ACRES

LONG TERM MAINTENANCE AND OPERATION:
THE NPDES PERMANENT STORMWATER TREATMENT SYSTEM (PART 15.1) FROM THE NET NEW IMPERVIOUS SURFACES OF THE PROJECT IS PROVIDED IN THE STORMWATER POND. ANOKA COUNTY AND CITY OF LINO LAKES STAFF ARE RESPONSIBLE FOR THE LONG-TERM MAINTENANCE AND OPERATION OF THE PERMANENT STORMWATER SYSTEM.

STABILIZATION TIME FRAMES

AREA	TIME FRAME	NOTES
EXPOSED AREAS	IMMEDIATELY AND NO LATER THAN 7 DAYS OF BEING UNWORKED	1, 4, 5
LAST 200 LINEAL FEET OF DRAINAGE DITCH/SWALE	WITHIN 24 HOURS OF CONNECTION TO SURFACE WATER/PROPERTY EDGE	1, 2, 3
REMAINING PORTIONS OF DRAINAGE DITCH OR SWALE	7 DAYS	1, 3
PIPE AND CULVERT OUTLETS	24 HOURS	
STOCKPILES	7 DAYS	1

1. INITIATE STABILIZATION IMMEDIATELY WHEN CONSTRUCTION HAS TEMPORARILY OR PERMANENTLY CEASED ON ANY PORTION OF THE SITE. COMPLETE STABILIZATION WITHIN THE TIME FRAME LISTED. IN MANY INSTANCES THIS WILL REQUIRE STABILIZATION TO OCCUR MORE THAN ONCE DURING THE COURSE OF THE PROJECT. TEMPORARY SOIL STOCKPILES WITHOUT SIGNIFICANT CLAY OR SILT AND STOCKPILED AND CONSTRUCTED ROAD BASE ARE EXEMPT FROM THE STABILIZATION REQUIREMENT.
2. STABILIZE WETTED PERIMETER OF DITCH (I.E. WHERE THE DITCH GETS WET).
3. APPLICATION OF MULCH, HYDROMULCH, TACKIFIER AND POLYACRYLAMIDE ARE NOT ACCEPTABLE STABILIZATION METHODS IN THESE AREAS.

NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
ANDREW J. PLOWMAN, PE
DATE 12/3/2020 LICENSE # 44200

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
SWPPP NARRATIVE
S.A.P. 002-634-003 & S.A.P. 210-020-010

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4. STABILIZE ALL AREAS OF THE SITE PRIOR TO THE ONSET OF WINTER. ANY WORK STILL BEING PERFORMED WILL BE MULCHED OR BLANKETED WITHIN THE TIME FRAMES IN THE NPDES PERMIT.
5. KEEP DITCHES AND EXPOSED SOILS IN AN EVEN ROUGH GRADED CONDITION IN ORDER TO BE ABLE TO APPLY EROSION CONTROL MULCHES, HYDROMULCHES, AND BLANKETS.

SITE INSPECTION AND MAINTENANCE

THE EROSION CONTROL OFFICER IS TO INSPECT THE ENTIRE CONSTRUCTION SITE AT LEAST ONCE EVERY SEVEN (7) DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS. THE OPERATOR SHALL PROVIDE A RAINFALL GAUGE ON-SITE AT VARIOUS MILE INTERVALS ALONG THE ALIGNMENT. INSPECT ALL TEMPORARY AND PERMANENT PROJECT BMPS UNTIL THE SITE HAS UNDERGONE FINAL STABILIZATION AND THE NOT HAS BEEN SUBMITTED. INSPECT SURFACE WATER INCLUDING DRAINAGE DITCHES FOR SIGNS OF EROSION AND SEDIMENT DEPOSITION. INSPECT CONSTRUCTION SITE VEHICLE EXIT LOCATIONS FOR EVIDENCE OF TRACKING ONTO PAVED SURFACES. INSPECT SURROUNDING PROPERTIES FOR EVIDENCE OF OFF-SITE SEDIMENT ACCUMULATION. ALL INSPECTIONS AND MAINTENANCE CONDUCTED MUST BE RECORDED IN WRITING BY THE OPERATOR AND RETAINED WITH THE SWPPP. SUBMIT INSPECTION REPORTS IN A FORMAT THAT IS ACCEPTABLE TO THE PROJECT ENGINEER. RECORDS OF EACH INSPECTION AND MAINTENANCE ACTIVITY SHALL INCLUDE:

A. DATE, TIME, AND NAME OF PERSON(S) CONDUCTING INSPECTIONS;
B. FINDINGS OF INSPECTIONS, INCLUDING RECOMMENDATIONS FOR CORRECTIVE ACTIONS;
C. CORRECTIVE ACTIONS TAKEN (INCLUDING DATES, TIMES, AND PARTY COMPLETING MAINTENANCE ACTIVITIES); INCLUDING DOCUMENTATION/PHOTOS OF IMPLEMENTED BMPS INTENDED TO CORRECT A PROBLEM BUT FAILED.
D. DATE AND AMOUNT OF ALL RAINFALL EVENTS GREATER THAN 0.5 INCHES IN 24 HOURS;
E. DOCUMENTATION OF CHANGES MADE TO THE SWPPP.

REPLACE, REPAIR OR SUPPLEMENT ALL NONFUNCTIONAL BMPS BY THE END OF THE NEXT BUSINESS DAY FOLLOWING DISCOVERY UNLESS LISTED DIFFERENTLY BELOW:

A. REPAIR, REPLACE, OR SUPPLEMENT PERIMETER CONTROL DEVICES WHEN THEY BECOME NONFUNCTIONAL OR SEDIMENT REACHES 1/2 THE HEIGHT OF THE DEVICE. COMPLETE REPAIRS BY THE END OF THE NEXT BUSINESS DAY FOLLOWING DISCOVERY.
B. REPAIR OR REPLACE INLET PROTECTION DEVICES WHEN THEY BECOME NONFUNCTIONAL OR SEDIMENT REACHES 1/2 THE HEIGHT AND/OR DEPTH OF THE DEVICE.
C. REMOVE ALL DELTAS AND SEDIMENT DEPOSITED IN SURFACE WATERS INCLUDING DRAINAGE WAYS, CATCH BASINS, AND OTHER DRAINAGE SYSTEMS. STABILIZE ANY AREAS THAT ARE DISTURBED BY SEDIMENT REMOVAL OPERATIONS. SEDIMENT REMOVAL AND STABILIZATION MUST BE COMPLETED WITHIN 7 DAYS OF DISCOVERY.
D. REMOVE TRACKED SEDIMENT FROM PAVED SURFACES BOTH ON AND OFF SITE WITHIN ONE (1) CALENDAR DAY OF DISCOVERY. STREET SWEEPING MAY HAVE TO OCCUR MORE OFTEN TO MINIMIZE OFF SITE IMPACTS. LIGHTLY WET THE PAVEMENT PRIOR TO SWEEPING.
E. MAINTAIN ALL BMPS UNTIL WORK HAS BEEN COMPLETED, SITE HAS GONE UNDER FINAL STABILIZATION, AND THE NOT HAS BEEN SUBMITTED TO THE MPCA.

CONSTRUCTION ACTIVITY REQUIREMENTS: EROSION/SEDIMENT CONTROL, PROCEDURES, & MAINTENANCE STANDARDS

1. AMEND THE SWPPP AND DOCUMENT ALL CHANGES TO THE SWPPP AND ASSOCIATED PLAN SHEETS IN A TIMELY MANNER. SWPPP AMENDMENTS AND SITE PLANS WILL BE PREPARED BY THE OPERATOR AND SUBMITTED TO THE OWNER FOR REVIEW AND WRITTEN APPROVAL BY THE PROJECT OWNER (OR DESIGNATED REPRESENTATIVE). STORE THE SWPPP AND ALL AMENDMENTS ON SITE AT ALL TIMES.
2. PREPARE AND SUBMIT A SITE MANAGEMENT PLAN FOR THE ENGINEER'S ACCEPTANCE FOR STAGING/STOCKPILE MANAGEMENT AREAS, CONCRETE MANAGEMENT, CONCRETE SLURRY APPLICATION AREAS, SPILL CONTAINMENT PLAN, WELL MANAGEMENT WORK IN AND NEAR AREAS OF ENVIRONMENTAL SENSITIVITY, AREAS IDENTIFIED IN THE PLANS AS "SITE MANAGEMENT PLAN AREA", ANY WORK THAT WILL REQUIRE DEWATERING, ANY ADDITIONAL PLANS LISTED IN THE PROJECT SPECIFICATIONS, AND AS REQUIRED BY THE ENGINEER. SUBMIT ALL SITE MANAGEMENT PLANS TO THE ENGINEER IN WRITING. ALLOW A MINIMUM OF 7 DAYS FOR THE ENGINEER 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.
3. THE PROJECT'S CONSTRUCTION PHASING AND STAGING IS DEFINED BY THE "CONSTRUCTION STAGING & TRAFFIC CONTROL PLAN" AND PROJECT SPECIFICATIONS.
4. BURNING OF ANY MATERIAL IS NOT ALLOWED WITHIN PROJECT BOUNDARY.
5. DO NOT DISTURB AREAS OUTSIDE OF THE CONSTRUCTION LIMITS. DELINEATE AREAS NOT TO BE DISTURBED AND WETLANDS (EVEN AREAS THAT ARE PERMITTED FOR CONSTRUCTION) PRIOR TO STARTING GROUND DISTURBING ACTIVITIES. IF IT BECOMES NECESSARY TO DISTURB AREAS OUTSIDE OF THE CONSTRUCTION LIMITS, OBTAIN WRITTEN PERMISSION FROM THE PROJECT ENGINEER PRIOR TO PROCEEDING. PRESERVE ALL NATURAL BUFFERS SHOWN ON THE PLANS.
6. ROUTE STORMWATER AROUND UNSTABILIZED AREAS OF THE SITE WHENEVER FEASIBLE. PROVIDE EROSION CONTROL AND VELOCITY DISSIPATION DEVICES AS NEEDED TO KEEP CHANNELS FROM ERODING AND TO PREVENT NUISANCE CONDITIONS AT THE OUTLET.
7. DIRECT DISCHARGE FROM BMPS TO VEGETATED AREAS WHENEVER FEASIBLE. PROVIDE VELOCITY DISSIPATION DEVICES AS NEEDED TO PREVENT EROSION.
8. LOCATE PERIMETER CONTROL ON THE CONTOUR TO CAPTURE OVERLAND, LOW-VELOCITY SHEET FLOWS DOWN GRADIENT OF ALL EXPOSED SOILS AND PRIOR TO DISCHARGING TO SURFACE WATERS. PLACE J-HOOKS AT A MAXIMUM OF 100-FOOT INTERVALS.
9. ALL STOCKPILES MUST HAVE PERIMETER SEDIMENT CONTROLS IMPLEMENTED AND MAINTAINED AT ALL TIMES. PILES CANNOT BE PLACED IN BUFFER AREAS OR SURFACE WATERS, INCLUDING STORMWATER CONVEYANCES SUCH AS CURB AND GUTTER SYSTEMS, OR CONDUITS AND DITCHES UNLESS THERE IS A BYPASS IN PLACE TO PREVENT STORMWATER RUN-ON INTO THE STOCKPILE.
10. STEEP SLOPES MAY BE TEMPORARILY CREATED DURING GRADING OPERATIONS. STABILIZATION OF STEEP SLOPES (3:1 OR GREATER) SHALL BE PROPERLY CAT-TRACKED AND STABILIZED PER THE EROSION CONTROL PLAN. LONG SLOPES CAN BE BROKEN UP WITH SEDIMENT CONTROL LOGS IF EROSION IS EVIDENT.
11. DITCH CHECKS WILL BE PLACED AS INDICATED ON THE PLANS DURING ALL PHASES OF CONSTRUCTION.
12. ALL STORM DRAIN INLETS, THAT RECEIVE PROJECT STORMWATER, MUST BE PROTECTED BY APPROPRIATE BMPS DURING CONSTRUCTION UNTIL ALL SOURCES WITH POTENTIAL FOR DISCHARGING TO THE INLET HAVE BEEN STABILIZED. INLET PROTECTION MAY BE REMOVED FOR A PARTICULAR INLET IF A SPECIFIC SAFETY CONCERN (STREET FLOODING/FREEZING) HAS BEEN IDENTIFIED AND THE PERMITTEE(S) HAS RECEIVED WRITTEN CORRESPONDENCE FROM THE JURISDICTIONAL AUTHORITY VERIFYING THE NEED FOR REMOVAL. WRITTEN CORRESPONDENCE MUST BE DOCUMENTED IN THE SWPPP.
13. SILT FENCE IS NOT AN ACCEPTABLE CATCH BASIN INLET PROTECTION BMP. CONTACTOR SHALL CLEAN, REMOVE AND DISPOSE OF SEDIMENT, AND/OR REPLACE STORM DRAIN INLET PROTECTION ON A ROUTINE BASIS TO ENSURE THE DEVICE IS FULLY FUNCTIONAL PRIOR TO THE NEXT FORECASTED PRECIPITATION EVENT (30% OR GREATER).
14. DISCHARGE TURBID OR SEDIMENT LADEN WATER TO TEMPORARY SEDIMENT BASINS WHENEVER FEASIBLE. 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. CLEAN OUT ALL PERMANENT STORMWATER BASINS REGARDLESS OF WHETHER USED AS TEMPORARY SEDIMENT BASINS/TRAPS TO THE DESIGN CAPACITY AFTER COMPLETING ALL UP-GRADIENT LAND DISTURBING ACTIVITY. USE A SKIMMER DEVICE FOR BASIN DRAINING.
15. PROVIDE STABILIZATION IN ANY TRENCHES CUT FOR DEWATERING OR SITE DRAINING PURPOSES.
16. THE CONTRACTOR SHALL SUBMIT A DEWATERING PLAN AND NARRATIVE TO THE PROJECT ENGINEER FOR APPROVAL 7 DAYS PRIOR TO UNDERTAKING THESE ACTIVITIES. DEWATERING PLAN MUST INCLUDE BMP'S TO PREVENT SEDIMENT TRANSPORT, EROSION, AND ADVERSE IMPACTS TO DOWNSTREAM RECEIVING WATERS. THE DEWATERING PLAN MUST ALSO INCLUDE ANY SPECIFIC CHEMICAL TREATMENTS (FLOC, POLYMERS, ETC.) THAT WILL BE USED. THE CONTRACTOR IS RESPONSIBLE TO OBTAIN ANY PERMIT NECESSARY FOR THESE ACTIVITIES; THE DEWATERING PLAN AND DNR APPROPRIATIONS PERMIT WILL BECOME PART OF THE SWPPP.

TEMPORARY & PERMANENT EROSION CONTROL BMPS

SEED MIX: SEED MIX SHALL BE USED IN CONSTRUCTION AND REVEGETATION PROJECTS IN ORDER TO ENHANCE SOIL NUTRIENT AVAILABILITY AND BIOLOGICAL SOIL STRUCTURE, ENCOURAGE NATIVE PLAN SUCCESSION, REDUCE EROSION, AND DISCOURAGE INVASIVE PLANT SPECIES. INOCULATION OF SOILS WITH MYCORRHIZAL FUNGI OR THE PRESENCE OF PRE-EXISTING SOIL MICROBES IS ESSENTIAL FOR THE STABILIZATION OF ADVERSE SOILS, ESTABLISHMENT OF NATIVE GRASSES, AND THE EXCLUSION OF NON-NATIVE "ANNUALS" AND NOXIOUS WEEDS.

EROSION CONTROL BLANKET: EROSION CONTROL BLANKETS (ECBS) ARE A SOIL STABILIZATION (EROSION CONTROL) BMP, INTENDED TO PROTECT DISTURBED SOIL SURFACES FROM RAINDROP IMPACT EROSION. ECBS ARE CARPET-LIKE MATS, INSTALLED OVER AND ANCHORED TO THE PROPERLY PREPARED SOIL SURFACES. PROPERLY SELECTED AND INSTALLED, ECBS CAN MIMIC THE BENEFICIAL EFFECTS OF VEGETATIVE COVER THEREBY REDUCING EROSION RATES BY OVER 90%. ECBS ALSO PROTECT SEEDS AND PROVIDE A BENEFICIAL ENVIRONMENT FOR VEGETATION TO BECOME ESTABLISHED. CONTRACTOR SHALL VERIFY DURING REGULAR INSPECTIONS THAT NO GULLIES, RILLS, OR SCOUR HOLES HAVE FORMED UNDER EROSION CONTROL BLANKETS AND MATS AND CORRECT ALL ERODED AREAS WITHIN 7 DAYS. ALL REPAIRS MUST BE COMPLETED WITHIN 24 HOURS OF DISCOVERY, OR AS SOON AS FIELD CONDITIONS ALLOW ACCESS.

HECP TYPE 3884.2.B.3: HYDRAULIC EROSION CONTROL PRODUCTS ARE SOIL STABILIZATION (EROSION CONTROL) TECHNIQUES WHERE FIBER MULCH IS APPLIED TO THE EXPOSED AND DISTURBED SOIL SURFACE. THE FIBER IS APPLIED HYDRAULICALLY, IN A SLURRY, PRODUCED BY MIXING FIBER, WATER AND A BINDING AGENT TOGETHER IN A MECHANICAL HYDRO-SEEDER. WOOD FIBER IS WIDELY USED BUT OTHER FIBERS CAN INCLUDE PAPER, STRAW, COIR, CORN, ETC. THE EFFECTIVENESS OF THESE HECP IS DEPENDENT ON:

- PROPER SOIL PREPARATION
- APPLICATION RATES (DEPENDENT ON THE MANUFACTURERS RECOMMENDATIONS)
- THE TYPE OF FIBERS USED
- THE TYPE OF BOND AGENT(S) ADDED

SOD TYPE LAWN: SOD IS A PERMANENT EROSION PREVENTION BMP THAT PROVIDES INSTANTANEOUS SOIL STABILIZATION. THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF SOD AS OUTLINED IN THE PROJECT SPECIFICATIONS.

ENERGY DISSIPATER: AN ENERGY DISSIPATER IS A STRUCTURE DESIGNED TO CONTROL EROSION AT THE OUTLET OF A CHANNEL OR CONDUIT.

RAPID STABILIZATION METHOD #4: THIS METHOD SHALL CONSIST OF CATEGORY 25 EROSION CONTROL BLANKET (NATURAL NET ONLY) IN COMBINATION WITH MNDOT SEED MIX 22-111 (2 LBS PER 100 SQ. YD.) AND TYPE 3 SLOW RELEASE FERTILIZER (8 LBS PER 100 SQ. YD.). THIS IS AN ACCEPTABLE BMP FOR DISTURBED AREAS ADJACENT TO ENVIRONMENTALLY SENSITIVE AREAS, SURFACE WATERS, AND WITHIN THE LAST 200 FEET OF DITCH BOTTOMS.

TEMPORARY & PERMANENT SEDIMENT CONTROL BMPS

SEDIMENT CONTROL LOGS: SEDIMENT CONTROL LOGS ARE MANUFACTURED FROM STRAW, WOOD EXCELSIOR, COCONUT FIBERS, AND/OR OTHER MATERIALS THAT ARE BOUND WITH POLYPROPYLENE OR BIODEGRADABLE NETTING INTO TIGHT TUBULAR ROLLS. FIBER ROLLS CONTROL THREE TYPES OF EROSIONAL PROCESSES; EROSION CONTROL, RUN OFF CONTROL, AND SEDIMENT CONTROL. SEDIMENT CONTROL LOGS CAN BE USED FOR THE FOLLOWING:

- SLOPE INTERRUPTERS TO REDUCE EROSION ON NEWLY CONSTRUCTED SLOPES
- TEMPORARY DITCH CHECKS TO REDUCE RUNOFF VELOCITIES IN DRAINAGE CHANNELS
- SEDIMENT CONTROL BARRIERS FOR SMALL DISTURBED SOIL AREAS SUCH AS STOCKPILES, DISCRETE SLOPES, OR INDIVIDUAL LOTS

STABILIZED CONSTRUCTION EXIT: TEMPORARY CONSTRUCTION EXITS ARE CONSTRUCTED AT THE EGRESS POINT FROM THE CONSTRUCTION AREA ONTO A PAVED ROAD. A STABILIZED CONSTRUCTION EXIT IS A TRACKING CONTROL BMP INTENDED TO PREVENT TRACKING OF SOIL FROM THE CONSTRUCTION SITE BY EQUIPMENT AND VEHICLES. THE EXITS ARE CONSTRUCTED OF LARGE ANGULAR ROCK, STEEL RIBS (RUMBLE STRIPS), OR TRACK PADS INTENDED TO KNOCK THE MUD OFF THE TIRES BEFORE TRAVELING ONTO THE ROADWAY.

CHEMICAL TREATMENTS: OPERATOR MUST AMEND THE SWPPP TO INCLUDE THE INTENDED USES AND LOCATIONS OF FLOCCULANTS, POLYMERS, AND OTHER SEDIMENTATION TREATMENT CHEMICALS. CHEMICAL TREATMENTS MUST BE IN COMPLIANCE WITH PART 9.18.

DUST CONTROL: OPERATOR WILL COMPLY WITH STATE RULE 7011.0150 ON DUST PREVENTION REQUIREMENTS. DUST FROM THE SITE WILL BE CONTROLLED BY INCREASED STREET SWEEPING AND/OR USING A MOBILE PRESSURE-TYPE DISTRIBUTOR TRUCK TO APPLY POTABLE WATER TO DISTURBED AREAS. THE MOBILE UNIT WILL APPLY WATER AT A RATE NECESSARY TO PREVENT RUNOFF AND PONDING.

POLLUTION PREVENTION MANAGEMENT

POTENTIAL SOURCES OF POLLUTANTS FROM CONSTRUCTION ACTIVITIES INCLUDE, BUT NOT LIMITED TO:

1. SEDIMENT AND FUGITIVE DUST GENERATED FROM CLEARING AND GRUBBING, IMPORT/EXPORT OPERATIONS, REMOVALS/COMPACTION, MASS/FINE GRADING, EXCAVATIONS, TOPSOIL STRIPING STOCKPILING, WET/DRY PAVEMENT CUTTING, STREET CONSTRUCTION.
2. BASIC/ACIDIC PH LEVELS FROM CURB AND GUTTER, MANHOLE STRUCTURES, SIDEWALKS, DRIVEWAY APRONS, WET/DRY PAVEMENT CUTTING, MASONRY WASHOUT/CLEANOUT.
3. EXCESS NUTRIENTS FROM LANDSCAPING INSTALLATIONS, SOIL ADDITIVES, FERTILIZATION, MULCHING.
4. HYDROCARBONS FROM STREET CONSTRUCTION, DEMOLITION/REMOVALS, WET/DRY PAVEMENT CUTTING.

NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

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ANDREW J. PLOWMAN, PE
DATE 12/3/2020 LICENSE # 44200

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

SWPPP NARRATIVE
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 184 OF 195 SHEETS

OPERATOR WILL COMPLY WITH ALL OF THE POLLUTION PREVENTION AND MANAGEMENT MEASURES IDENTIFIED IN THE NPDES-CSW PERMIT, PART 12.1. STORAGE AND DISPOSAL OF CONSTRUCTION AND HAZARDOUS WASTES MUST BE IN COMPLIANCE WITH MPCA REGULATIONS.

A. POSITION AND STAKE DOWN ALL PORTABLE TOILETS SO THEY CANNOT BE TIPPED OR KNOCKED OVER. SUPPLY ADEQUATE SECONDARY CONTAINMENT.
B. SECONDARY CONTAINMENT IS NEEDED AROUND ALL STATIONARY EQUIPMENT (GENERATORS, PUMPS, LIGHT PLANTS, ETC.) PROVIDE CONTAINMENT FOR ALL HAZARDOUS MATERIALS AND TOXIC WASTE.
C. NO ENGINE DEGREASING IS ALLOWED ON SITE.
D. VEHICLE AND EQUIPMENT WASHING TO OCCUR IN DESIGNATED AREA AS DETERMINED BY THE CONTRACTOR SUBMITTAL OF A MANAGEMENT PLAN FOR THESE ACTIVITIES.
E. PROPERLY CLEAN UP AND REPORT ALL SPILLS AS REQUIRED BY THE MPCA AND MNDOT SPECIFICATIONS.
F. PROVIDE A SPILL KIT AT EACH WORK LOCATION ON THE SITE.
G. PROVIDE A SECURE STORAGE AREA WITH RESTRICTED ACCESS FOR ALL HAZARDOUS MATERIALS AND TOXIC WASTE. RETURN ALL HAZARDOUS MATERIALS AND TOXIC WASTE TO THE DESIGNATED STORAGE AREA AT THE END OF THE BUSINESS DAY UNLESS INFEASIBLE. STORE ALL HAZARDOUS MATERIALS AND TOXIC WASTE (INCLUDING BUT NOT LIMITED TO OIL, DIESEL FUEL, GASOLINE, HYDRAULIC FLUIDS, PAINT, PETROLEUM BASED PRODUCTS, WOOD PRESERVATIVES, ADDITIVES, CURING COMPOUNDS, AND ACIDS) IN SEALED CONTAINERS WITH SECONDARY CONTAINMENT. CLEAN UP SPILLS IMMEDIATELY. STORE, COLLECT AND DISPOSE OF ALL SOLID WASTE.
H. SLURRY FROM CONCRETE OPERATIONS MUST BE VACUUMED UP IMMEDIATELY. NO CONCRETE WASHOUT SHALL COME IN CONTACT WITH THE GROUND AND MUST BE PROPERLY DISPOSED OF.
I. A SIGN MUST BE INSTALLED ADJACENT TO EACH CONCRETE WASHOUT FACILITY.
J. CREATE AND FOLLOW A WRITTEN DISPOSAL PLAN FOR ALL WASTE MATERIALS. INCLUDE IN THE PLAN HOW THE MATERIAL WILL BE DISPOSED OF AND THE LOCATION OF THE DISPOSAL SITE. SUBMIT PLAN TO THE ENGINEER PRIOR TO CONSTRUCTION.
K. 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.

FINAL STABILIZATION

FINAL STABILIZATION IS ACHIEVED WHEN NPDES CGP PARTS 13.1-13.7 (AS APPLICABLE) ARE COMPLETED PRIOR TO SUBMISSION OF THE NOTICE OF TERMINATION (NOT) TO MPCA.

1. ALL AREAS MUST BE STABILIZED WITH A UNIFORM PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 70%.
2. ALL TEMPORARY SEDIMENT CONTROL BMP MEASURES MUST BE REMOVED PRIOR TO SUBMITTING PERMIT NOT.

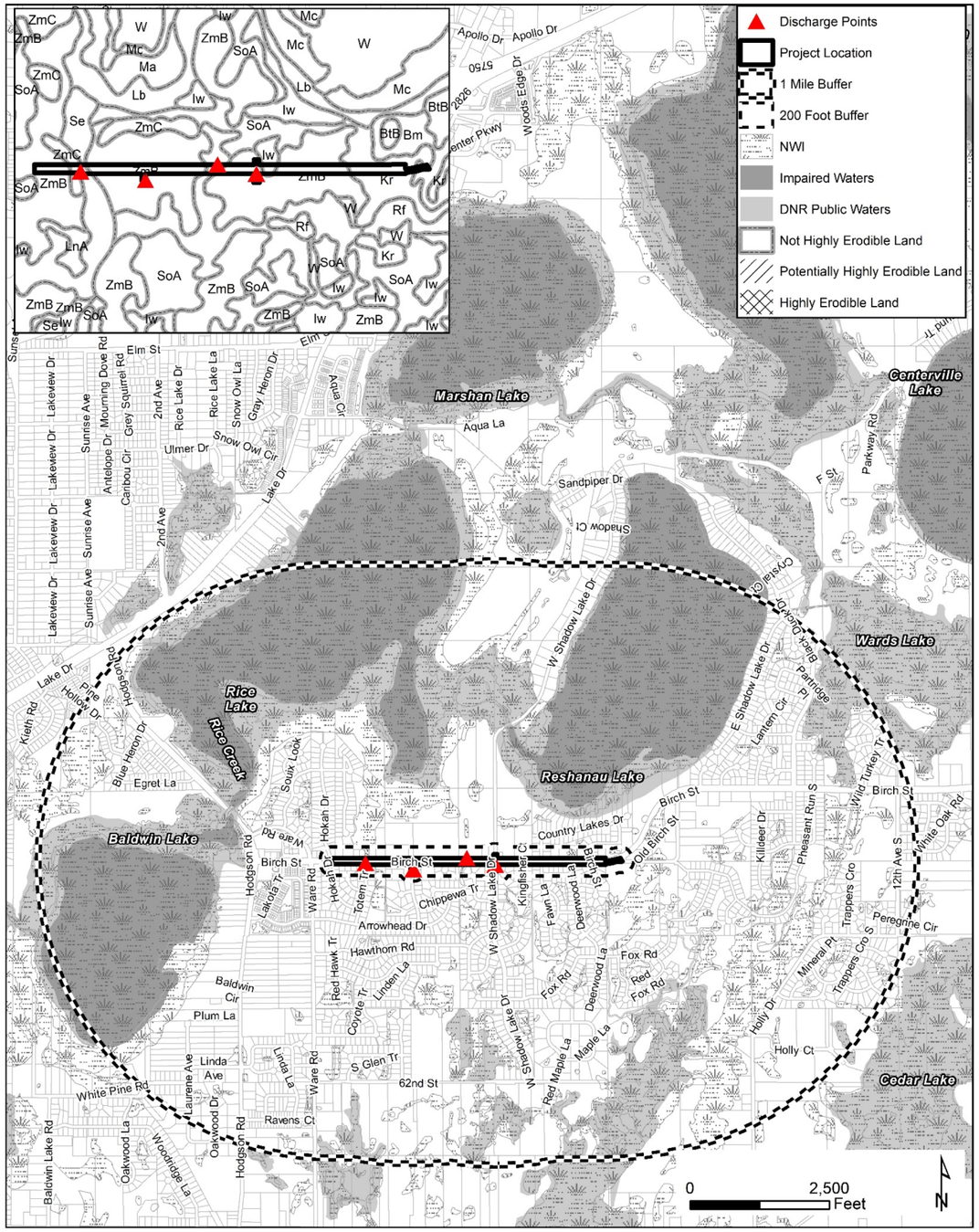

Figure 1. SWPPP Resource Map

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SHEET 185 OF 195 SHEETS

EROSION/SEDIMENT CONTROL NOTES:

SEDIMENT CONTROL PRACTICES:

1. SEDIMENT CONTROL MUST BE IN PLACE AND APPROVED BY THE ENGINEER BEFORE ANY PHASE OF CONSTRUCTION CAN BEGIN.
2. IF A 50' NATURAL BUFFER AROUND A SURFACE WATER IS INFEASIBLE, REDUNDANT PERIMETER CONTROLS MUST BE PROVIDED. REDUNDANT MEASURE TO BE INSTALLED 3-5' FROM THE PRIMARY MEASURE WITH STABILIZED AREAS IN BETWEEN THE TWO BMPS.
3. INLET PROTECTION WILL BE INSTALLED AT ALL CATCH INLETS WITHIN THE PROJECT AREA PER STANDARD DETAILS.
4. TEMPORARY STABILIZATION MEASURES SHALL BE EMPLOYED WITHIN 200 FEET OF THE NWP OF ALL DISCHARGE POINTS WITHIN 24 HOURS. MULCH IS NOT AN APPROVED MEASURE.
5. IN THE EVENT THAT PERMANENT STABILIZATION CANNOT BE IMPLEMENTED WITHIN 7 DAYS AFTER CONSTRUCTION ACTIVITY IN THE DISTURBED AREA HAS CEASED, TEMPORARY STABILIZATION BMPS MUST BE SCHEDULED TO OCCUR WITHIN THAT 7 DAY TIME FRAME (EXCEPT WHERE CALLED OUT BY NOTE BELOW)
6. RAPID STABILIZATION METHOD 4 SHALL BE EMPLOYED WITHIN 200 FEET OF THE NORMAL WETTED PERIMETER OF ALL DISCHARGE POINTS WITHIN 24 HOURS.
7. A SEDIMENT TRAP MUST BE INSTALLED PER THE APPROVED STANDARD DETAILS WITHIN 24 HOURS OF CONNECTING THE UTILITIES.
8. ALL STOCKPILES MUST HAVE DOWN GRADIENT PERIMETER SEDIMENT CONTROL IMPLEMENTED AND MAINTAINED AT ALL TIMES. STOCKPILES TO RECEIVE TEMPORARY STABILIZATION IF UNWORKED FOR 7 DAYS.
9. STOCKPILES MAY NOT BE PLACED WITHIN ANY DRAINAGE OR CURB LINE UNLESS PROPER BYPASS IS INSTALLED PRIOR TO STOCKPILE PLACEMENT.
10. CONTRACTOR TO INSTALL SEDIMENT CONTROL LOGS DOWN GRADIENT FROM ANY EXPOSED AREAS

EROSION PREVENTION PRACTICES:

1. STABILIZATION OF DISTURBED AREAS SHALL BE DONE BY PERMANENT TURF ESTABLISHMENT WHENEVER POSSIBLE.

POLLUTION PREVENTION MANAGEMENT MEASURES:

1. A ROCK CONSTRUCTION ENTRANCE WILL BE PLACED AT ALL ENTRANCES THAT LEAD TO THE PROJECT SITE IN ACCORDANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN AND THE APPROVED STANDARD DETAILS.
2. ALL STREETS IN AND ADJACENT TO THE PROJECT SHALL REMAIN CLEAN AND PASSABLE AT ALL TIMES. ADJACENT STREET AND CURB LINE TO BE SWEPT FREE OF DEBRIS AT THE END OF EACH WORK DAY, OR AS OFTEN AS NEEDED TO ENSURE PUBLIC SAFETY.
3. SLURRY FROM CONCRETE OPERATIONS MUST BE VACUUMED UP IMMEDIATELY. NO CONCRETE WASHOUT SHALL COME IN CONTACT WITH THE GROUND AND MUST BE PROPERLY DISPOSED OF. ALL HAZARDOUS MATERIALS MUST BE KEPT UNDER COVER AND WITHIN PROPER CONTAINMENT WHEN NOT IN USE.

INFILTRATION BASINS:

1. NO HEAVY EQUIPMENT, STOCKPILES, OR HAZARDOUS MATERIALS SHALL BE STORED ON OR NEAR THE INFILTRATION BASINS.
2. DO NOT FULLY EXCAVATE INFILTRATION BASINS UNTIL ALL UPGRADIENT LAND DISTURBING ACTIVITY HAS BEEN COMPLETED AND THE DRAINAGE AREA HAS BEEN STABILIZED. PROVIDE RIGOROUS EROSION PREVENTION AND SEDIMENT AND SEDIMENT CONTROL BMPS TO KEEP SEDIMENT AND RUNOFF COMPLETELY AWAY FROM THE INFILTRATION AREAS.
3. KEEP INFILTRATION BASINS OFFLINE UNTIL VEGETATION HAS BEEN ADEQUATELY ESTABLISHED.

MISCELLANEOUS:

1. ADDITIONAL EROSION AND SEDIMENT CONTROL MAY BE ADDED DURING ANY PHASE OF CONSTRUCTION AS DIRECTED BY THE ENGINEER.
2. IF PROJECT CONSISTS OF MILL & OVERLAY OF SECTIONS, ENSURE MILLINGS ARE NOT A THREAT FROM WASHING OFF THE PROJECT ROW.
3. CONTRACTOR TO PROTECT ALL WETLAND AREAS WITH PERIMETER CONTROL (AND REDUNDANT MEASURES) UNTIL WORK IN THE PERMITTED AREAS IS NEEDED.

TURF ESTABLISHMENT AND EROSION CONTROL LEGEND

	PERMANENT:	TEMPORARY:
	SOD TYPE LAWN FERTILIZER TYPE 3 (200 LBS/ACRE)	HYDRAULIC MULCH MATRIX (TYPE 3884.2.B.3 AT 3000 LBS/ACRE)
	ROLLED EROSION PREVENTION PRODUCT CATEGORY 20 SEED MIXTURE 25-151 (120 LBS/ACRE) FERTILIZER TYPE 3 (200 LBS/ACRE)	ROLLED EROSION PREVENTION PRODUCT CATEGORY 20 SEED MIXTURE 22-111 (30.5 LBS/ACRE) FERTILIZER TYPE 3 (200 LBS/ACRE)
	HYDRAULIC MULCH MATRIX (TYPE 3884.2.8.3 AT 3000 LBS/ACRE) SEED MIXTURE 25-151 (120 LBS/ACRE) FERTILIZER TYPE 3 (200 LBS/ACRE)	HYDRAULIC MULCH MATRIX (TYPE 3884.2.B.3 AT 3000 LBS/ACRE)
	ROLLED EROSION PREVENTION PRODUCT CATEGORY 20 SEED MIXTURE 25-141 (59 LBS/ACRE) FERTILIZER TYPE 3 (200 LBS/ACRE)	ROLLED EROSION PREVENTION PRODUCT CATEGORY 20 SEED MIXTURE 22-111 (30.5 LBS/ACRE) FERTILIZER TYPE 3 (200 LBS/ACRE)
	ROLLED EROSION PREVENTAION PRODUCT CATEGORY 20 SEED MIXTURE 33-261 (35 LBS/ACRE) FERTILIZER TYPE 4 (180 LBS/ACRE)	ROLLED EROSION PREVENTION PRODUCT CATEGORY 20 SEED MIXTURE 33-261(35 LBS/ACRE) FERTILIZER TYPE 4 (180 LBS/ACRE)

MS	SILT FENCE; TYPE MS
BR	SEDIMENT CONTROL LOG, TYPE WOOD FIBER
CP	CULVERT END CONTROLS
	STORM DRAIN INLET PROTECTION
	STABILIZED CONSTRUCTION EXIT
	SURFACE DRAINAGE DIRECTION
	RIGHT OF WAY
	TEMPORARY EASEMENT
	PERMANENT DRAINAGE EASEMENT

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ANDREW J. PLOWMAN, PE

DATE 12/3/2020 LICENSE # 44200

wsb

ANOKA COUNTY

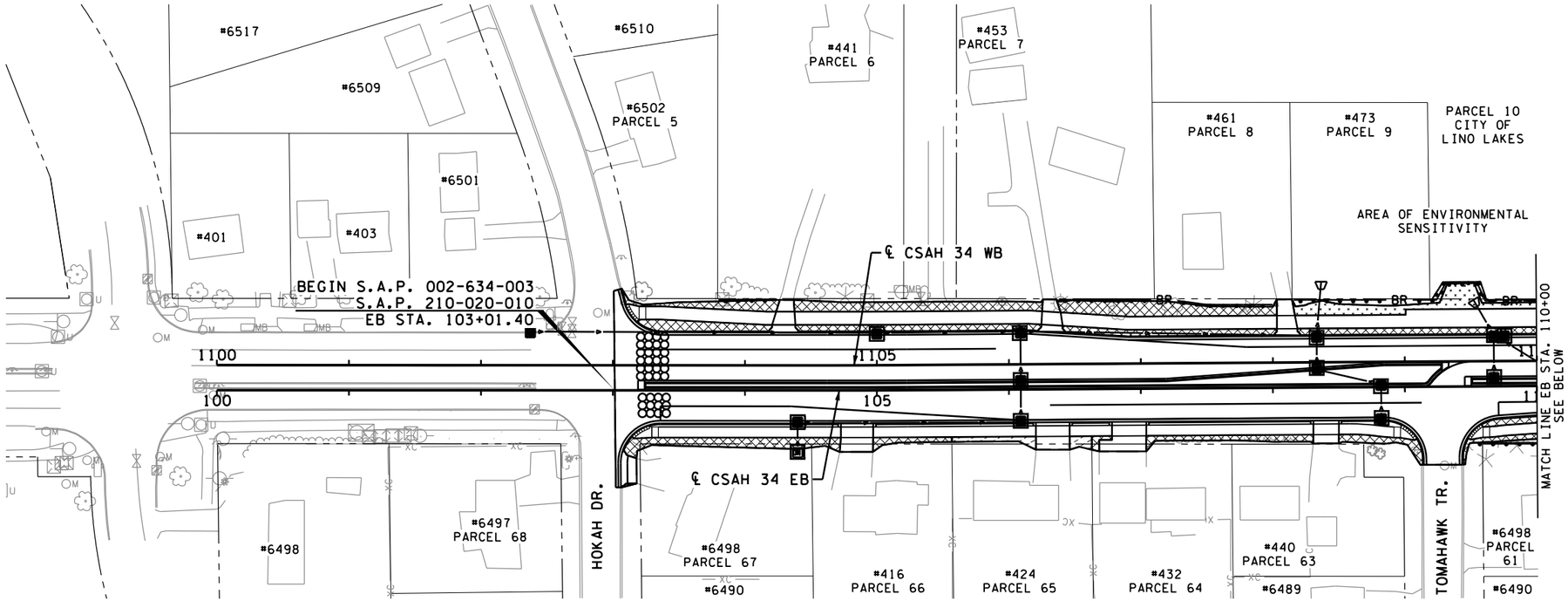
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

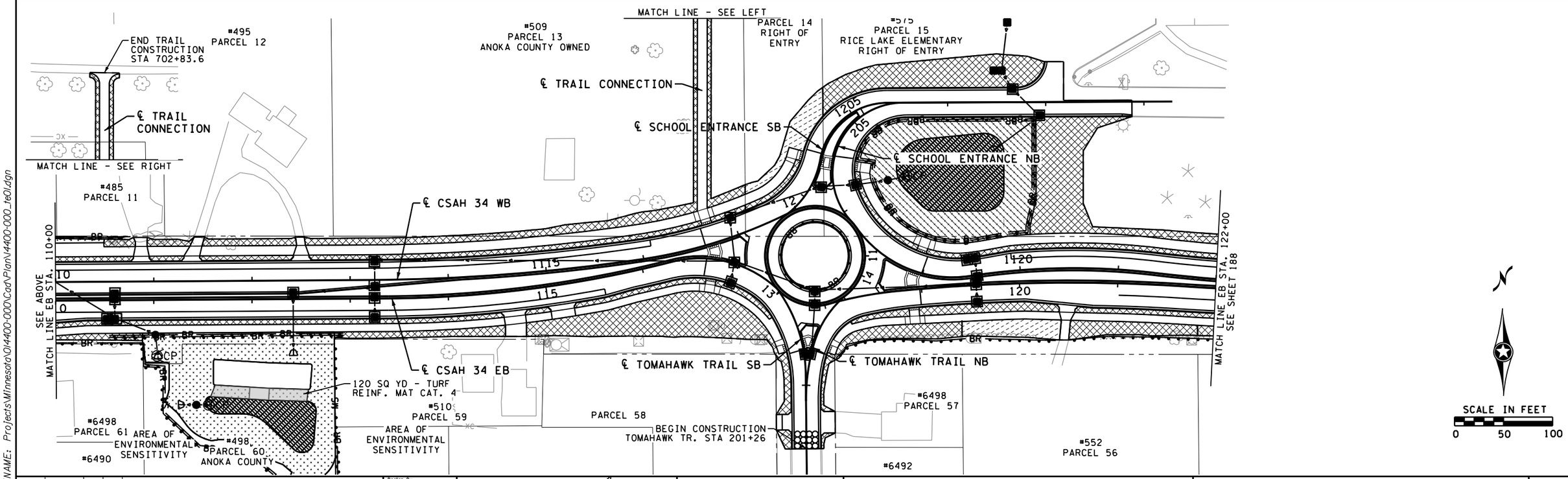
ANOKA COUNTY, MINNESOTA

TURF ESTABLISHMENT & EROSION CONTROL
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **186** OF **195** SHEETS

PLOTTED/REVISED: 12/3/2020





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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
STA 103+01.40 TO STA 122+00
TURF ESTABLISHMENT & EROSION CONTROL
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **187** OF **195** SHEETS

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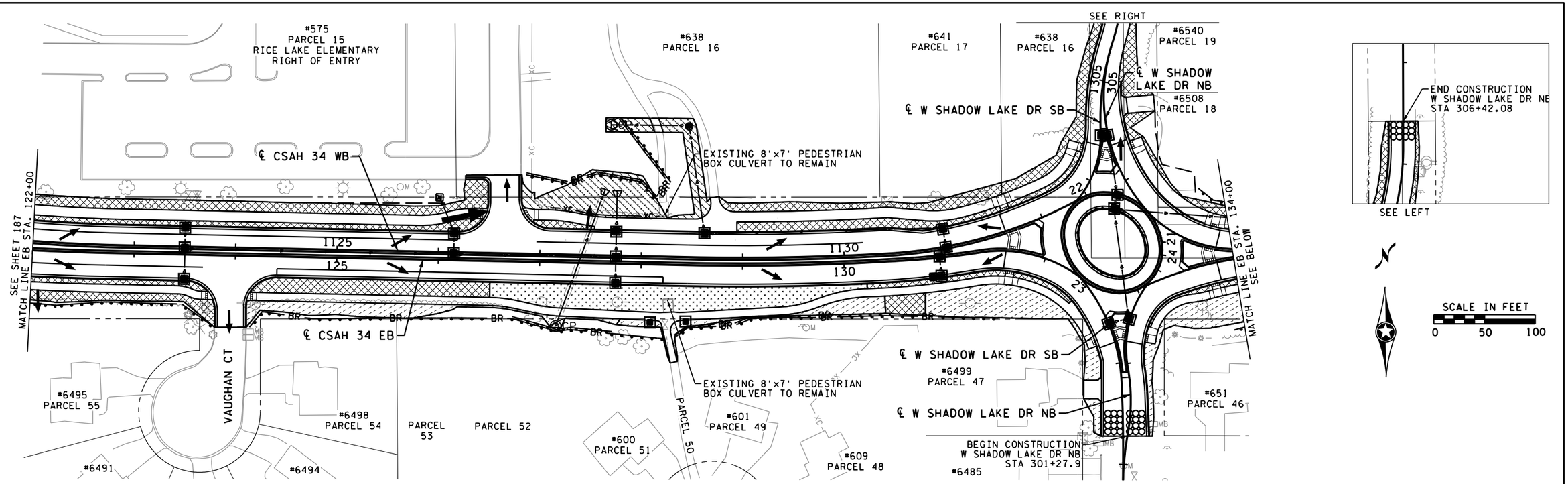

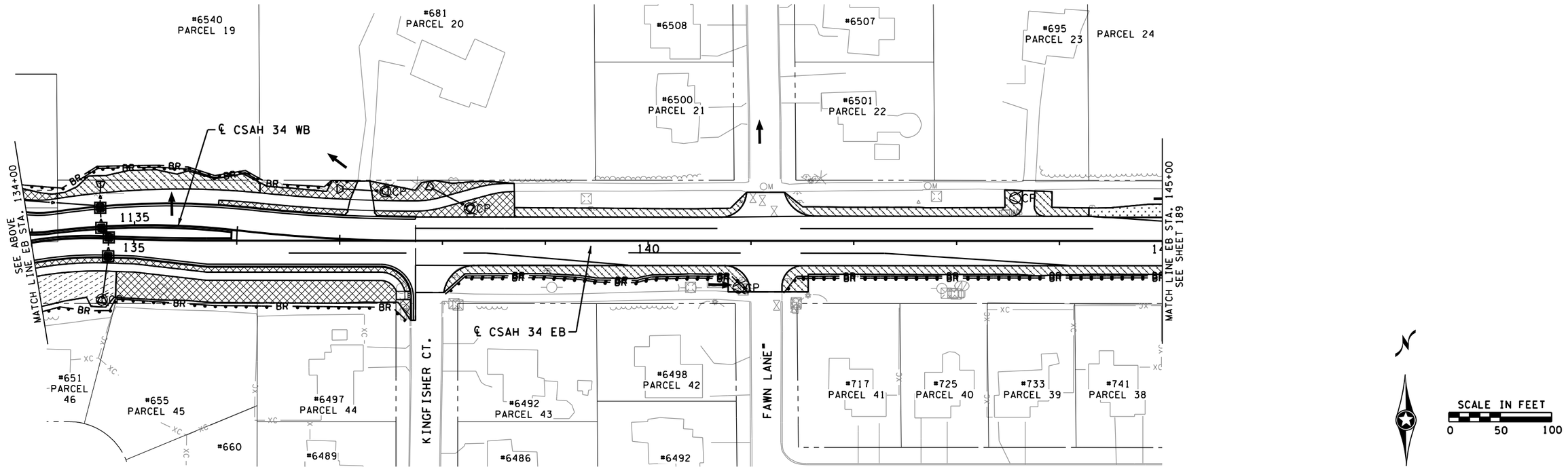

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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
STA 122+00 TO STA 145+00
TURF ESTABLISHMENT & EROSION CONTROL
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **188** OF **195** SHEETS

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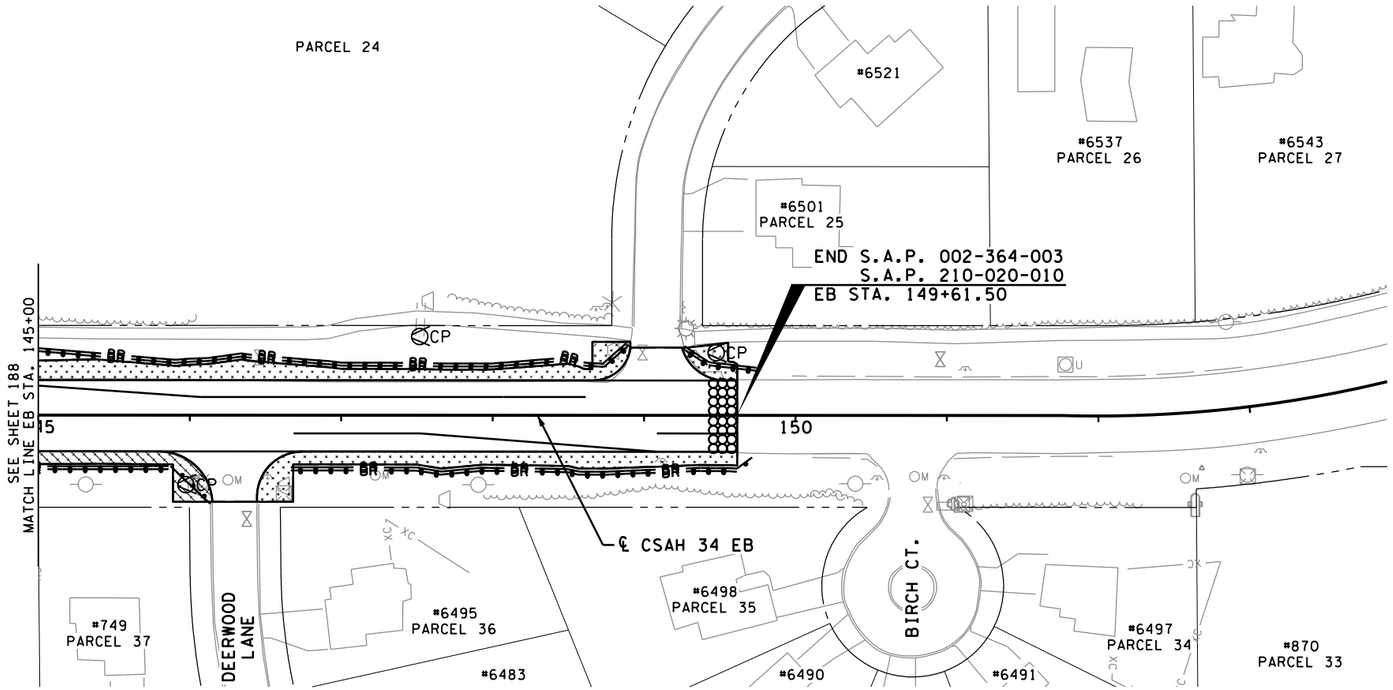

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SCALE IN FEET
0 50 100

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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
STA 145+00 TO STA 149+61.50
TURF ESTABLISHMENT & EROSION CONTROL
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 189 OF 195 SHEETS

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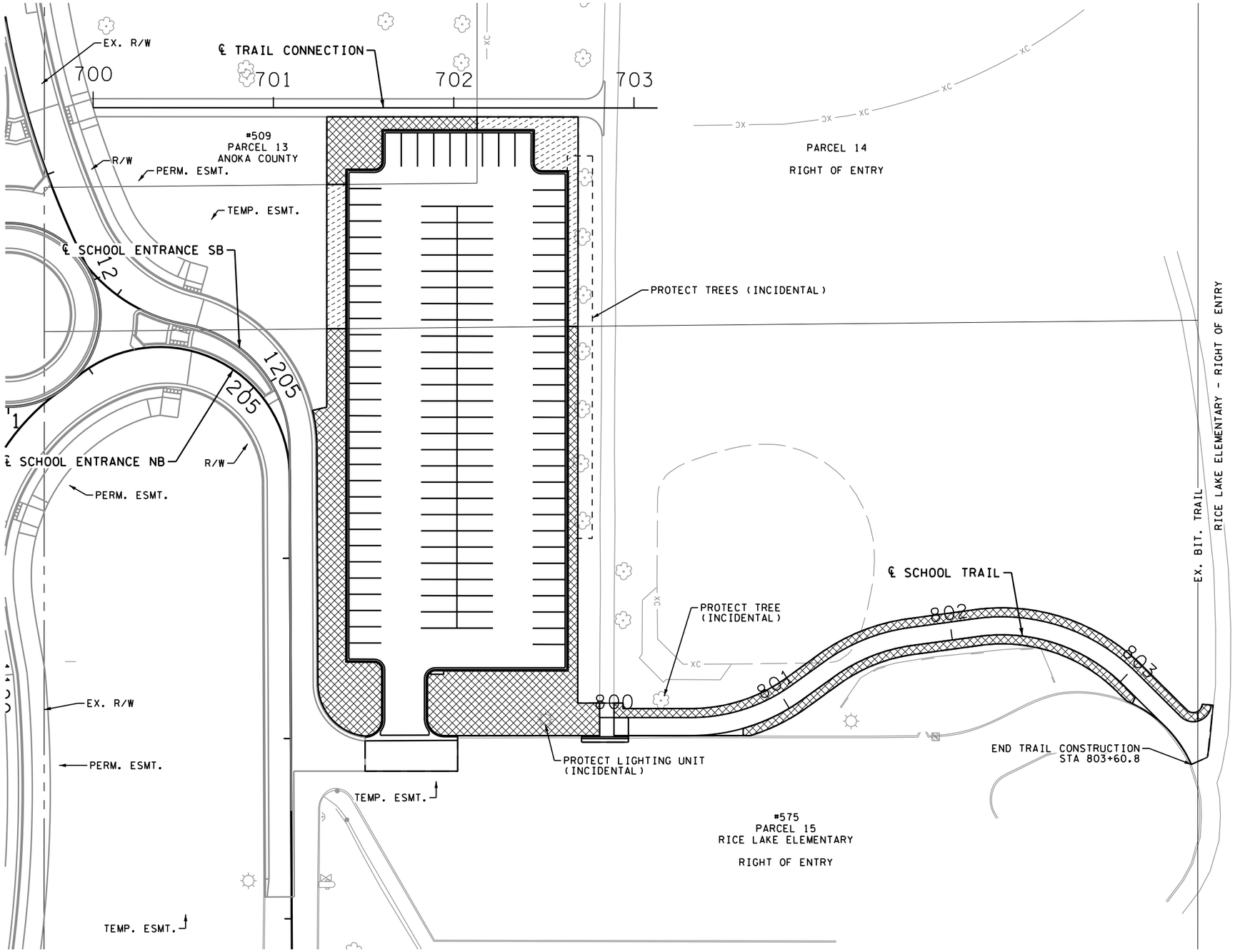
RICE LAKE ELEMENTARY PARKING (ADD ALTERNATE BID)



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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
RICE LAKE ELEMENTARY PARKING (ADD ALTERNATE BID)
TURF ESTABLISHMENT & EROSION CONTROL
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **190** OF **195** SHEETS

PLOTTED/REVISED: 12/3/2020

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NOTES:
1. CONTRACTOR SHALL FURNISH AND INSTALL LOOP DETECTOR D6-1. CONTRACTOR SHALL PULL EXISTING CABLE 2/C 14 INTO EXISTING HH 10 DURING CONSTRUCTION. CONTRACTOR SHALL SPLICE IN NEW HH 12.
2. CONTRACTOR SHALL ADJUST HH 11.
3. CONTRACTOR SHALL CONTACT ANOKA COUNTY PRIOR TO ANY TRAFFIC CONTROL CHANGE OR REMOVAL OF EXISTING LOOP DETECTOR.
4. CONTRACTOR SHALL FURNISH AND INSTALL HH 12.
5. THE CONTRACTOR SHALL PLACE THE LOOP DETECTOR IN AGGREGATE PRIOR TO WEARING COURSE.

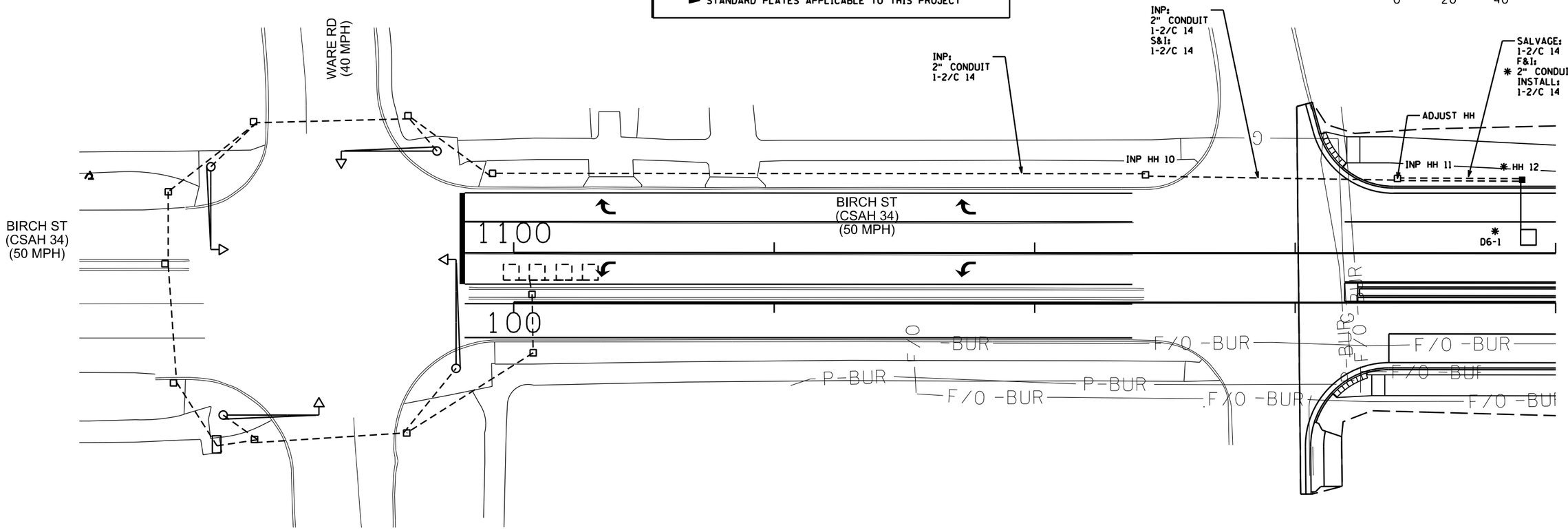
STANDARD PLATES - SIGNAL SYSTEMS		
THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT		
PLATE NO.		DESCRIPTION
► 8132	B	PREFORMED RIGID PVC CONDUIT LOOP DETECTOR
► STANDARD PLATES APPLICABLE TO THIS PROJECT		

LOOP DETECTOR CHART		
NUMBER	SIZE (FT)	LOCATION
* D6-1	6 x 6	400

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

N

SCALE IN FEET
0 20 40



* = FURNISH AND INSTALL

STATEMENT OF ESTIMATED QUANTITIES				
ITEM NO.	DESCRIPTION	LOCATION	UNIT	QTY
2565	REVISE SIGNAL SYSTEM	CSAH 34 (BIRCH ST) & WARE RD	SYSTEM	1

NO.	DATE	BY	CHK	REVISIONS

Design By: MF
Plan By: MF
Checked By: ES
Approved By: SD

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SEAN DELMORE, PE
DATE 12/3/2020 LICENSE # 40945

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
LOOP REPLACEMENT
TRAFFIC CONTROL SIGNAL SYSTEM
S.A.P. 002-634-003 & S.A.P. 210-020-010

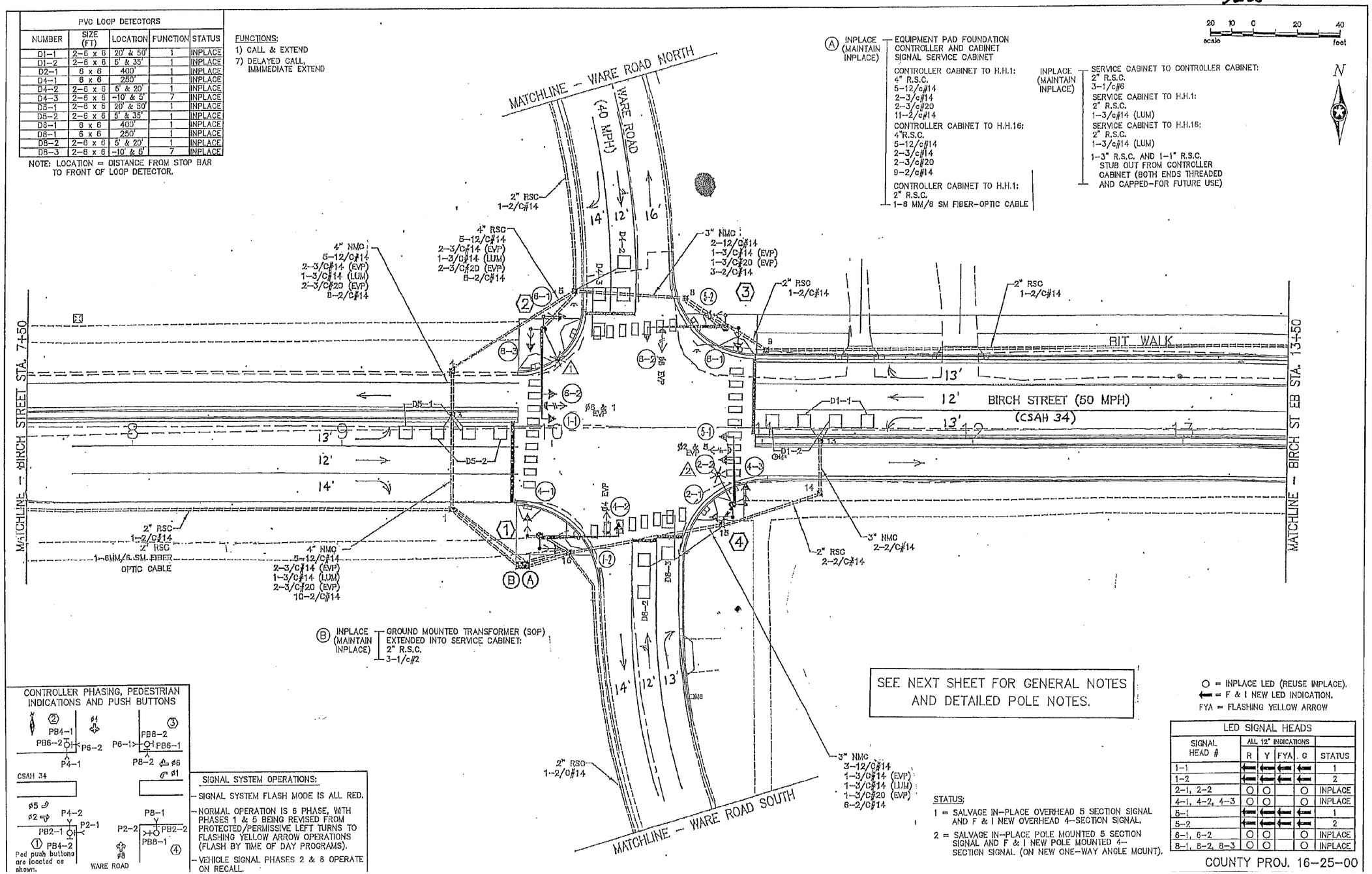
SHEET **191** OF **195** SHEETS

7235

PVC LOOP DETECTORS				
NUMBER	SIZE (FT)	LOCATION	FUNCTION	STATUS
D1-1	2-6 x 6	20' & 50'	1	INPLACE
D1-2	2-6 x 6	6' & 35'	1	INPLACE
D2-1	6 x 6	400'	1	INPLACE
D4-1	6 x 6	250'	1	INPLACE
D4-2	2-6 x 6	5' & 20'	1	INPLACE
D4-3	2-6 x 6	-10' & 5'	7	INPLACE
D5-1	2-6 x 6	20' & 50'	1	INPLACE
D5-2	2-6 x 6	5' & 35'	1	INPLACE
D8-1	6 x 6	400'	1	INPLACE
D8-1	6 x 6	250'	1	INPLACE
D8-2	2-6 x 6	5' & 20'	1	INPLACE
D8-3	2-6 x 6	-10' & 5'	7	INPLACE

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

FUNCTIONS:
1) CALL & EXTEND
7) DELAYED CALL, IMMMEDIATE EXTEND



Ⓐ INPLACE (MAINTAIN INPLACE) — EQUIPMENT PAD FOUNDATION
CONTROLLER AND CABINET
SIGNAL SERVICE CABINET
CONTROLLER CABINET TO H.H.1:
4" R.S.C.
5-12/c#14
2-3/c#14
2-3/c#20
11-2/c#14
CONTROLLER CABINET TO H.H.16:
4"R.S.C.
5-12/c#14
2-3/c#14
2-3/c#20
9-2/c#14
CONTROLLER CABINET TO H.H.1:
2" R.S.C.
1-6 MM/8 SM FIBER-OPTIC CABLE

INPLACE (MAINTAIN INPLACE) — SERVICE CABINET TO CONTROLLER CABINET:
2" R.S.C.
3-1/c#6
SERVICE CABINET TO H.H.1:
2" R.S.C.
1-3/c#14 (LUM)
SERVICE CABINET TO H.H.16:
2" R.S.C.
1-3/c#14 (LUM)
1-3" R.S.C. AND 1-1" R.S.C. STUB OUT FROM CONTROLLER CABINET (BOTH ENDS THREADED AND CAPPED-FOR FUTURE USE)

Ⓑ INPLACE (MAINTAIN INPLACE) — GROUND MOUNTED TRANSFORMER (SOP) EXTENDED INTO SERVICE CABINET:
2" R.S.C.
3-1/c#2

scale 20 10 0 20 40 feet

N

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS

SIGNAL SYSTEM OPERATIONS:
- SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 6 PHASE, WITH PHASES 1 & 5 BEING REVISED FROM PROTECTED/PERMISSIVE LEFT TURNS TO FLASHING YELLOW ARROW OPERATIONS (FLASH BY TIME OF DAY PROGRAMS).
- VEHICLE SIGNAL PHASES 2 & 6 OPERATE ON RECALL.

SEE NEXT SHEET FOR GENERAL NOTES AND DETAILED POLE NOTES.

STATUS:
1 = SALVAGE IN-PLACE OVERHEAD 5 SECTION SIGNAL AND F & I NEW OVERHEAD 4-SECTION SIGNAL.
2 = SALVAGE IN-PLACE POLE MOUNTED 5 SECTION SIGNAL AND F & I NEW POLE MOUNTED 4-SECTION SIGNAL. (ON NEW ONE-WAY ANGLE MOUNT).

O = INPLACE LED (REUSE INPLACE).
⟵ = F & I NEW LED INDICATION.
FYA = FLASHING YELLOW ARROW

LED SIGNAL HEADS					
SIGNAL HEAD #	ALL 12" INDICATIONS R	Y	FYA	G	STATUS
1-1	⟵	⟵	⟵	⟵	1
1-2	⟵	⟵	⟵	⟵	2
2-1, 2-2	O	O		O	INPLACE
4-1, 4-2, 4-3	O	O		O	INPLACE
5-1	⟵	⟵	⟵	⟵	1
5-2	⟵	⟵	⟵	⟵	2
6-1, 6-2	O	O		O	INPLACE
8-1, 8-2, 8-3	O	O		O	INPLACE

COUNTY PROJ. 16-25-00

FOR INFORMATION ONLY

PLOTTED/REVISED: 12/3/2020

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NO.	DATE	BY	CHK	REVISIONS

CHECKED BY: ____

Design By: MF
Plan By: MF
Checked By: ES
Approved By: SD

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ANOKA COUNTY

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Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
FOR INFORMATION ONLY
TRAFFIC CONTROL SIGNAL SYSTEM
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 192 OF 195 SHEETS

PLOTTED/REVISED: 12/3/2020

7235

NOTES:

1) ALL ITEMS OF THIS SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, UNLESS OTHERWISE NOTED ON PLANS.
2) ALL HANDHOLES ARE PVC HANDHOLES WITH METAL FRAMES AND COVERS AND ARE INPLACE (REUSE AND MAINTAIN INPLACE).
3) ALL PEDESTRIAN SIGNAL HEADS ARE ONE-SECTION LED "HAND/WALKING PERSON" COUNTDOWN TIMER INDICATIONS AND ARE INPLACE (REUSE AND MAINTAIN INPLACE).
4) ALL LOOP DETECTORS ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE AND OPERATIONAL.
5) ANY DAMAGE TO INPLACE TRAFFIC SIGNAL FACILITIES (CONDUIT, CABLES, HANDHOLES, SIGNAL POLES, ETC.), DUE TO TRAFFIC SIGNAL REVISION WORK, SHALL BE REPAIRED BY CONTRACTOR TO SATISFACTION OF THE ENGINEER, AT NO EXPENSE TO THE COUNTY.
6) CONTRACTOR SHALL MAINTAIN OPERATION OF THE SIGNAL SYSTEM AT ALL TIMES, EXCEPT AS OTHERWISE APPROVED BY ENGINEER.
7) ALL NEW VEHICULAR SIGNAL HEADS SHALL HAVE BACKGROUND SHIELDS FURNISHED & INSTALLED BY CONTRACTOR. ALL INPLACE VEHICULAR SIGNAL HEADS BEING REUSED AS PART OF REVISE SIGNAL SYSTEM "B" HAVE BACKGROUND SHIELDS (REUSE AND MAINTAIN INPLACE).
8) F & I = NEW, FURNISH AND INSTALL.
   S & I = INPLACE, SALVAGE AND INSTALL.
9) ALL NEW VEHICULAR SIGNAL HOUSINGS, BACKGROUND SHIELDS AND VISORS SHALL BE FABRICATED USING BLACK POLYCARBONATE MATERIALS. SEE SPECIAL PROVISIONS.
10) SEE SPECIAL PROVISIONS REGARDING NEW TYPE C SIGN PANELS TO BE FURNISHED AND INSTALLED BY CONTRACTOR (INCLUDED AS PART OF PAY ITEM FOR "REVISE SIGNAL SYSTEM B").

(1) INPLACE (MAINTAIN INPLACE)
- PA90 POLE FOUNDATION
- TYPE PA90-A-35
- 1-ONE WAY SIGNAL-OVERHEAD AT 0' (4-2) (TURN HEAD TO ALIGN WITH LANE LINE)
- 1-ONE WAY SIGNAL-POLE MOUNTED 180 DEG (4-1)
- 2-SETS CD PED SIGNALS-POLE MOUNTED AT 90 DEG (P2-1) AND 180 DEG (P4-2)
- 2-PEDESTRIAN PUSH BUTTONS & SIGNS
- TYPE D SIGN PANEL-OVERHEAD AT 10'
- ONE WAY EVP DETECTOR AND LIGHT AT 6' (ø4)
- EXTENDED INTO H.H.16:
- 3" R.S.C.
- 2-12/c#14
- 1-3/c#14
- 2-2/c#14
- 1-3/c#20

INPLACE — ONE WAY SIGNAL AND MOUNT-POLE MOUNTED 90 DEG (OLD 6-4) (SALVAGE)

F & I — 1-ONE WAY SIGNAL AND ANGLE MOUNT-POLE MOUNTED 90 DEG (NEW 1-2)
F & I — R10-12 (LEFT TURN YIELD ON GREEN) SIGN-ADJACENT TO 4-2

(2) INPLACE (MAINTAIN INPLACE)
- PA100 POLE FOUNDATION
- TYPE PA100-A-40-D40-9 (DAVIT AT 350 DEG)
- LUMINAIRE-250 W HPS
- 1-ONE WAY SIGNAL-OVERHEAD AT 11' (6-2)
- 2-ONE WAY SIGNALS-POLE MOUNTED 90 DEG (8-3) AND 180 DEG (8-1)
- 2-SETS CD PED SIGNALS-POLE MOUNTED AT 90 DEG (P4-1) AND 180 DEG (P6-2)
- TYPE D SIGN PANEL-OVERHEAD AT 18'
- 2-PEDESTRIAN PUSH BUTTONS & SIGNS
- ONE WAY EVP DETECTOR AND LIGHT AT 6' (ø6,1)
- EXTENDED INTO H.H.5:
- 3" R.S.C.
- 3-12/c#14
- 1-3/c#14
- 2-2/c#14
- 1-3/c#20
- 1-3/c#14 (LUM)

INPLACE — ONE WAY SIGNAL AND MOUNT-OVERHEAD AT 0' (OLD 6-3) (SALVAGE)
INPLACE — R10-12 SIGN PANEL-OVERHEAD (REMOVE)
F & I — 1-ONE WAY SIGNAL AND ANGLE MOUNT-OVERHEAD AT 0' (NEW 1-1)
F & I — R10-X12 SIGN PANEL-ADJACENT TO 1-1

(3) INPLACE (MAINTAIN INPLACE)
- PA90 POLE FOUNDATION
- TYPE PA90-A-35
- 1-ONE WAY SIGNAL-OVERHEAD AT 0' (8-2) (TURN HEAD TO ALIGN WITH LANE LINE)
- 1-ONE WAY SIGNAL-POLE MOUNTED 180 DEG (8-1)
- 2-SETS CD PED SIGNALS-POLE MOUNTED AT 90 DEG (P6-1) AND 180 DEG (P8-2)
- 2-PEDESTRIAN PUSH BUTTONS & SIGNS
- TYPE D SIGN PANEL-OVERHEAD AT 10'
- ONE WAY EVP DETECTOR AND LIGHT AT 6' (ø8)
- EXTENDED INTO H.H.8:
- 3" R.S.C.
- 2-12/c#14
- 1-3/c#14
- 2-2/c#14
- 1-3/c#20

INPLACE — ONE WAY SIGNAL AND MOUNT-POLE MOUNTED 90 DEG (OLD 2-4) (SALVAGE)

F & I — 1-ONE WAY SIGNAL AND ANGLE MOUNT-POLE MOUNTED 90 DEG (NEW 5-2)
F & I — R10-12 (LEFT TURN YIELD ON GREEN) SIGN-ADJACENT TO 8-2

(4) INPLACE (MAINTAIN INPLACE)
- PA90 POLE FOUNDATION
- TYPE PA90-A-30-D40-9 (DAVIT AT 350 DEG)
- LUMINAIRE-250 W HPS
- 1-ONE WAY SIGNAL-OVERHEAD AT 11' (2-2)
- 2-ONE WAY SIGNALS-POLE MOUNTED 90 DEG (4-3) AND 180 DEG (2-1)
- 2-SETS CD PED SIGNALS-POLE MOUNTED AT 90 DEG (P8-1) AND 180 DEG (P2-2)
- TYPE D SIGN PANEL-OVERHEAD AT 18'
- 2-PEDESTRIAN PUSH BUTTONS & SIGNS
- ONE WAY EVP DETECTOR AND LIGHT AT 6' (ø2,5)
- EXTENDED INTO H.H.15:
- 3" R.S.C.
- 3-12/c#14
- 1-3/c#14
- 2-2/c#14
- 1-3/c#20
- 1-3/c#14 (LUM)

INPLACE — ONE WAY SIGNAL AND MOUNT-OVERHEAD AT 0' (OLD 2-3) (SALVAGE)
INPLACE — R10-12 SIGN PANEL-OVERHEAD (REMOVE)
F & I — 1-ONE WAY SIGNAL AND ANGLE MOUNT-OVERHEAD AT 0' (NEW 5-1)
F & I — R10-X12 SIGN PANEL-ADJACENT TO 5-1

COUNTY PROJ. 16-25-00

FOR INFORMATION ONLY

PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\4400-000_sig03.dgn

NO.	DATE	BY	CHK	REVISIONS

Design By: MF
Plan By: MF
Checked By: ES
Approved By: SD

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SEAN DELMORE, PE

DATE 12/3/2020 LICENSE # 40945

wsb

ANOKA COUNTY

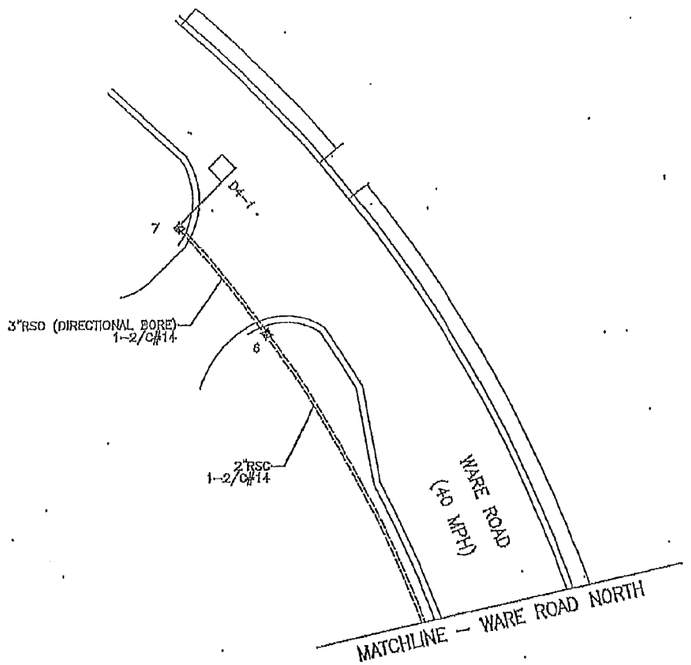
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
FOR INFORMATION ONLY
TRAFFIC CONTROL SIGNAL SYSTEM
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **193** OF **195** SHEETS

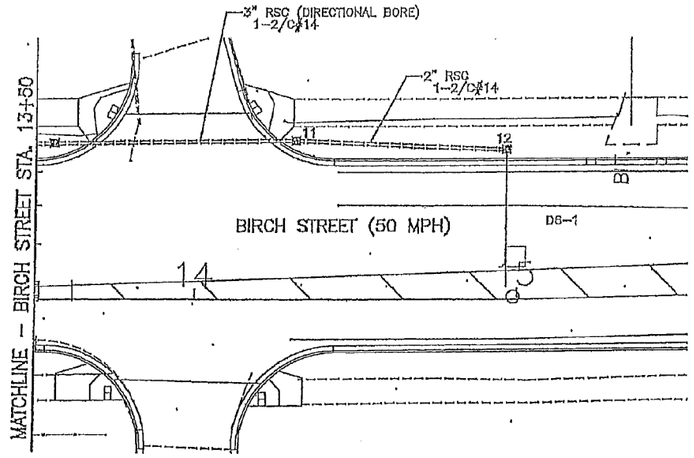
PLOTTED/REVISED: 12/3/2020

7235



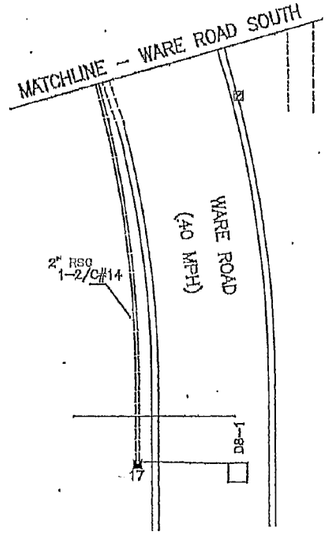
Ⓐ ~~INSTALL~~ CONTROLLER AND CABINET
~~(FURNISHED BY OGUARD)~~
EQUIPMENT PAD FOUNDATION
BETWEEN CONTROLLER AND CABINET AND SERVICE CABINET:
METERED SIGNAL SERVICE
2" RSC
3-1/0 #8
4" RSC INTO HH 1:
5-12/C#14
2-3/C#14 (EVP)
2-3/C#20 (EVP)
11-2/C#14
4" RSC INTO HH 18:
5-12/C#14
2-3/C#14 (EVP)
2-3/C#20 (EVP)
9-2/C#14
2" RSC (INTERCONNECT) INTO HH1
1-6MM/6SM FIBEROPTIC CABLE (INTERCONNECT)
STUB OUT 3" RSC FROM CABINET TO EAST
(THREAD AND CAP FOR FUTURE USE)
STUB OUT 1" RSC FROM CABINET
(FOR FUTURE PHONE LINE BY OTHERS)

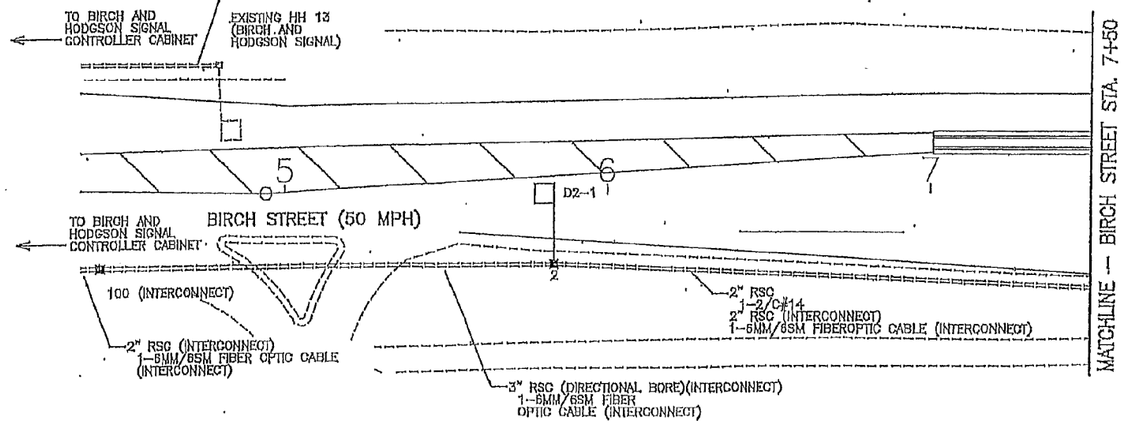
Ⓑ SIGNAL SERVICE CABINET
(ON SAME FOUNDATION AS CONTROLLER CABINET)
2" RSC INTO HH 1:
UNMETERED STREET LIGHT SERVICE
1-3/C#14 (LUM)
2" RSC INTO HH 16:
UNMETERED STREET LIGHT SERVICE
1-3/C#14 (LUM)
STUB OUT 2" RSC FROM SERVICE CABINET TO WEST
(FOR POWER CONNECTION)



② PA100 POLE FOUNDATION
TYPE PA100-A-40'-D40-9 (DAVIT AT 350°)
LUMINAIRE 250W HPS
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0°
1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 11°
2-ANGLE MOUNT SIGNALS-POLE MOUNTED AT 90° AND 180°
2-ANGLE MOUNT C.D. PED. INDICATIONS-POLE MOUNTED AT 90° AND 180°
2-PEDESTRIAN PUSH BUTTONS AND SIGNS
1- SIGN R10-12 OVERHEAD AT 2°
TYPE D SIGN PANEL-OVERHEAD (D-2)
ONE WAY EVP DETECTOR AND LIGHT (#6,1) (EVP)
3" RSC INTO HH 5:
3-12/C#14
1-3/C#14 (EVP)
1-3/C#14 (LUM)
1-3/C#20 (EVP)
2-2/C#14

③ PA90 POLE FOUNDATION
TYPE PA90-A-35
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0°
2-ANGLE MOUNT SIGNALS-POLE MOUNTED AT 90° & 180°
2-ANGLE MOUNT C.D. PED. INDICATIONS-POLE MOUNTED AT 90° & 180°
2-PEDESTRIAN PUSH BUTTONS AND SIGNS
TYPE D SIGN PANEL-OVERHEAD (D-1)
ONE WAY EVP DETECTOR AND LIGHT (#8) (EVP)
3" RSC INTO HH 8:
2-12/C#14
1-3/C#14 (EVP)
1-3/C#20 (EVP)
2-2/C#14





NOTE: THIS PLAN SHEET IS BEING PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

SCALE IN FEET
0 10 20 40

COUNTY PROJ. 16-25-00

FOR INFORMATION ONLY

PATH & FILENAME: Projects\Minnesota\01400-000\Cad\Plan\14400-000_sig04.dgn

DESIGN TEAM	NO.	BY	DATE	REVISIONS

NO.	DATE	BY	CHK	REVISIONS

Design By: MF
Plan By: MF
Checked By: ES
Approved By: SD

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
SEAN DELMORE, PE
DATE 12/3/2020 LICENSE # 40945

wsb

ANOKA COUNTY
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
FOR INFORMATION ONLY
TRAFFIC CONTROL SIGNAL SYSTEM
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET 194 OF 195 SHEETS

PLOTTED/REVISED: 12/3/2020

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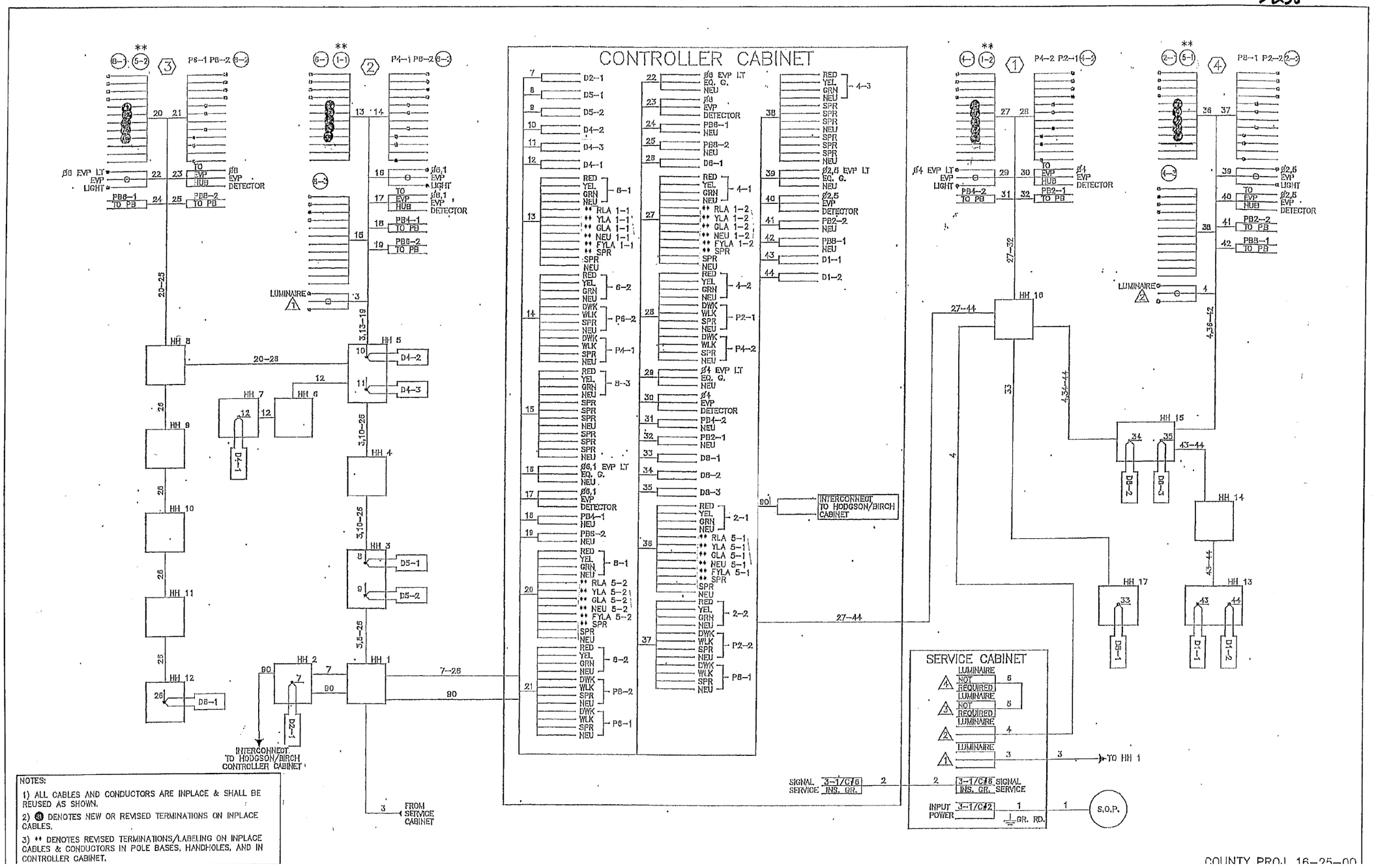

FOR INFORMATION ONLY

COUNTY PROJ. 16-25-00

PATH & FILENAME: Projects\Minnesota\0\4400-000\Cad\Plan\4400-000_sig05.dgn

NO.	DATE	BY	CHK	REVISIONS

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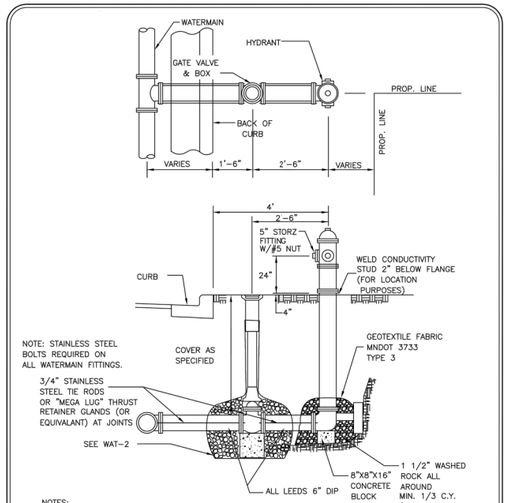
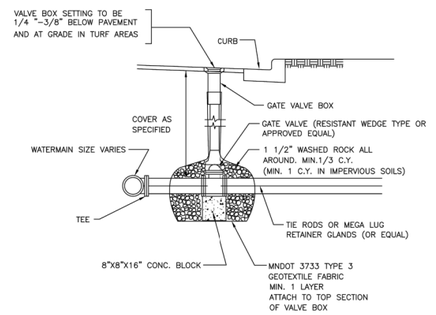
SHEET 195 OF 195 SHEETS



NOTES:
1. ALL FITTINGS SHALL BE MECHANICAL JOINTS
2. MEGALUG OPTION PERMITTED UPON CITY REVIEW
3. HYDRANTS SHALL HAVE 16" BREAKAWAY SECTION
4. ALL DUCTILE IRON PIPE AND FITTINGS SHALL BE POLYETHYLENE ENCASED
5. NO EXTENSIONS ARE ALLOWED.
6. GATE VALVE SHALL MEET ALL REQUIREMENTS OF WAT-2
7. VENTED CAP

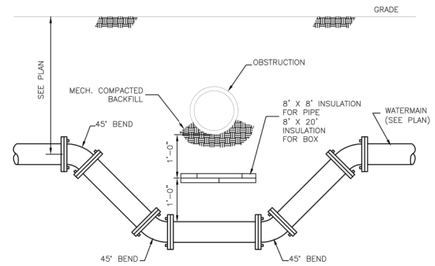
CITY OF LINO LAKES	TYPICAL HYDRANT DETAILS (VALVE IN BOULEVARD)	FEBRUARY, 2020 WAT-1

NOTE: STAINLESS STEEL BOLTS REQUIRED ON ALL WATERMAIN FITTINGS.



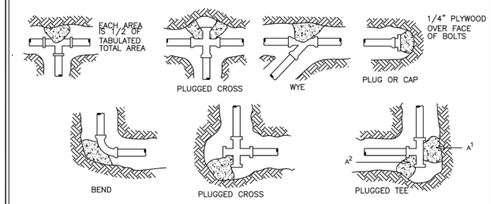
NOTES:
1. GATE VALVES SHOULD BE USED ON 6" THROUGH 16" WATERMAIN.
2. VALVE BOX INSERTS ARE NOT ALLOWED UNLESS APPROVED BY THE ENGINEER.
3. VALVE BOXES SHALL BE INSTALLED PLUMB AND SHALL ALLOW A 4" P.V.C. PIPE TO PASS ENTIRELY OVER THE GATE VALVE NUT AFTER INSTALLATION IS COMPLETE.
4. ALL VALVES SHALL BE TIED WITH ¾" THREADED TIE RODS TO THE MAIN. MEGALUGS MAY BE USED IN LIEU OF TIE RODS.
5. THE INITIAL & FINAL RAISING OF VALVE BOXES SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.
6. BONNET ADAPTOR SHALL BE INSTALLED ON TOP OF GATE VALVE.

CITY OF LINO LAKES	GATE VALVE & BOX INSTALLATION	FEBRUARY, 2020 WAT-2



TIE ALL JOINTS WITH MEGALUGS (8 REQ.)

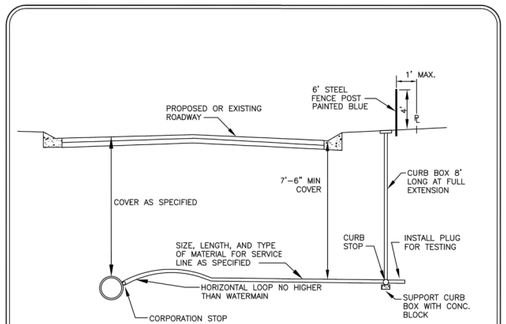
CITY OF LINO LAKES	WATER LOWER	NOVEMBER, 2020 WAT-3



NOMINAL FITTING SIZE, INCHES	TEE, WYE, PLUG OR CAP	90^ BEND, PLUGGED CROSS	TEE PLUGGED ON RUN A1	TEE PLUGGED ON RUN A2	45^ BEND	22-1/2^ BEND	11-1/4^ BEND
4	1.0	1.4	1.9	1.4	1.0	-	-
6	2.1	3.0	4.3	3.0	1.6	1.0	-
8	3.8	5.3	7.6	5.4	2.9	1.5	1.0
10	5.9	8.4	11.8	8.4	4.6	2.6	1.2
12	8.5	12.0	17.0	12.0	6.6	3.4	1.7
14	11.5	16.3	23.0	16.3	8.9	4.6	2.3
16	15.0	21.3	30.0	21.3	11.6	6.0	3.0
18	19.0	27.0	38.0	27.0	14.6	7.6	3.8
20	23.5	33.3	47.0	33.3	18.1	9.4	4.7
24	34.0	48.0	68.0	48.0	26.2	13.6	6.8

NOTES:
1. CONCRETE THRUST BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH.
2. KEEP CONCRETE CLEAR OF JOINT AND ACCESSORIES.
3. REQUIRED BEARING AREAS AT FITTING SHALL BE AS NOTED ABOVE, UNLESS INDICATED OTHERWISE.
4. BEARING AREAS AND SPECIAL BLOCKING DETAILS SHOWN ON THE PLANS TAKE PRECEDENCE OVER BEARING AREAS AND BLOCKING DETAILS SHOWN ON THIS STANDARD PLATE.
5. ABOVE BEARING AREAS BASED ON TEST PRESSURES OF 150 PSI AND AN ALLOWABLE SOIL BEARING STRESS OF 2000 LBS. PER SQUARE FOOT. TO COMPUTE BEARING AREAS FOR DIFFERENT TEST PRESSURES AND SOIL BEARING STRESSES, USE THE FOLLOWING EQUATION: BEARING AREA = (TEST PRESSURE/150) X (2000/SOIL BEARING STRESS) X (TABLE VALUE).

CITY OF LINO LAKES	DUCTILE IRON PIPE REACTION BACKING (FOR BENDS)	MAY, 2013 WAT-4



NOTES:
1. CURB BOXES INSTALLED IN AREAS WHERE BOULEVARD IS TO BE CUT AT A LATER DATE SHALL BE INSTALLED AT DEPTH REQUIRED, CURB BOX EXTENTION FOR BOXES EXCEEDING 7.5' IN LENGTH ARE TO BE BID AT CONTRACT PRICE AND SHALL INCLUDE STACK COUPLINGS, CONNECTIONS, ETC..
2. CURB BOXES LOCATED IN DRIVEWAYS OR PARKING LOTS SHALL UTILIZE THE FORD MINNEAPOLIS PATTERN CURB BOXES A-1 OR CITY APPROVED EQUIVALENT.
3. CORP. STOPS SHALL BE FORD BALLCORP FB600-4 AND CURB STOPS SHALL BE FORD BALL VALVE B22-444M OR CITY APPROVED EQUIVALENT.
4. WATER SERVICES SHALL BE TYPE K COPPER - 1" DIA. MIN.
5. MAINTAIN 18" VERTICAL & 36" HORIZONTAL SEPARATION BETWEEN SEWER & WATER SERVICES
6. CURB STOPS SHALL HAVE INTERNAL OPERATING RODS TO FINISHED GRADE
7. CURB STOPS LOCATED IN PAVED AREAS SHALL BE COVERED WITH METER BOX COVER (FORD A-1) OR APPROVED EQUAL

CITY OF LINO LAKES	WATER SERVICE DETAIL	MAY, 2013 WAT-5

UTILITY CONSTRUCTION NOTES

A. THE 2018 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.
   1. CONTRACTOR SHALL NOT OPEN, TURN OFF, INTERFERE WITH, OR ATTACH ANY PIPE OR HOSE TO OR TAP WATERMAIN BELONGING TO THE CITY UNLESS DULY AUTHORIZED TO DO SO BY THE CITY. ANY ADVERSE CONSEQUENCES OF ANY SCHEDULED OR UNSCHEDULED DISRUPTIONS OF SERVICE TO THE PUBLIC ARE THE LIABILITY OF THE CONTRACTOR
   2. A MINIMUM VERTICAL SEPARATION OF 18 INCHES IS REQUIRED AT ALL WATERMAIN AND SEWER MAIN (BUILDING, STORM AND SANITARY) CROSSINGS.

B. ALL MATERIALS SHALL BE AS SPECIFIED IN CEAM SPECIFICATIONS EXCEPT AS MODIFIED HEREIN.
   1. ALL MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE SPECIFICATIONS.
   2. ALL SANITARY SEWER TO BE PVC SDR-35, UNLESS NOTED OTHERWISE.

C. THE CONTRACTOR SHALL SUBMIT PDF COPIES OF SHOP DRAWINGS FOR MANHOLE AND CATCH BASIN STRUCTURES FOR APPROVAL. CONTRACTOR SHALL ALLOW 10 WORKING DAYS FOR SHOP DRAWING REVIEW.

D. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS. THE LOCATIONS OF SMALL UTILITIES SHALL BE OBTAINED BY THE CONTRACTOR, BY CALLING GOPHER STATE ONE CALL AT 454-0002.

E. SAFETY NOTICE TO CONTRACTORS: IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS ON THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE DUTY OF THE ENGINEER OR THE DEVELOPER TO CONDUCT CONSTRUCTION REVIEW OF THE CONTRACTOR'S PERFORMANCE IS NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES IN, ON OR NEAR THE CONSTRUCTION SITE.

F. ALL AREAS OUTSIDE THE PROPERTY BOUNDARIES THAT ARE DISTURBED BY UTILITY CONSTRUCTION SHALL BE RESTORED IN KIND. SODDED AREAS SHALL BE RESTORED WITH 6 INCHES OF TOPSOIL PLACED BENEATH THE SOD.

NO.	DATE	BY	CHK	REVISIONS

Design By: DLH/ECY
Plan By: ECY
Checked By: DLH/JW
Approved By: DLH

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DIANE L. HANKEE, PE

DATE 11/11/2020 LICENSE # 43338

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements

Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

WATERMAIN IMPROVEMENTS

S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET S1 OF S6 SHEETS

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BIRCH STREET (CSAH NO. 34)

N

0 30 60
H: SCALE IN FEET

509 BIRCH ST

575 BI

PRIVATE DRIVE

DISCONNECT EXISTING 1" WATER SERVICE AT WATERMAIN

510 BIRCH ST

TOMAHAWK TRAIL

6498 TOMAHAWK TRAIL

#6498

552 BIRCH ST

6495 VAUGHAN

638 BIRCH ST

641 BIRCH ST

WEST SHADOW LAKE DRIVE

PARCEL 18

6508 W. SHADOW LAKE. DR.

6540 W. SHADOW LAKE. DR.

DISCONNECT EXISTING 1" WATER SERVICE AT WATERMAIN, REMOVE 10 LF - 1" COPPER SERVICE, VERIFY LOCATION.

601 PRAIRIE FLOWER RD

609 PRAIRIE FLOWER RD

#6499

LEGEND

- REMOVE WATERMAIN
- HY — SALVAGE HYDRANT AND VALVE
- V — SALVAGE VALVE

NO.	DATE	BY	CHK	REVISIONS

Design By: DLH/ECY
Plan By: ECY
Checked By: DLH/JW
Approved By: DLH

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DIANE L. HANKEE, PE

DATE 11/11/2020 LICENSE # 43338

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

WATERMAIN REMOVALS

S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET S2 OF S6 SHEETS

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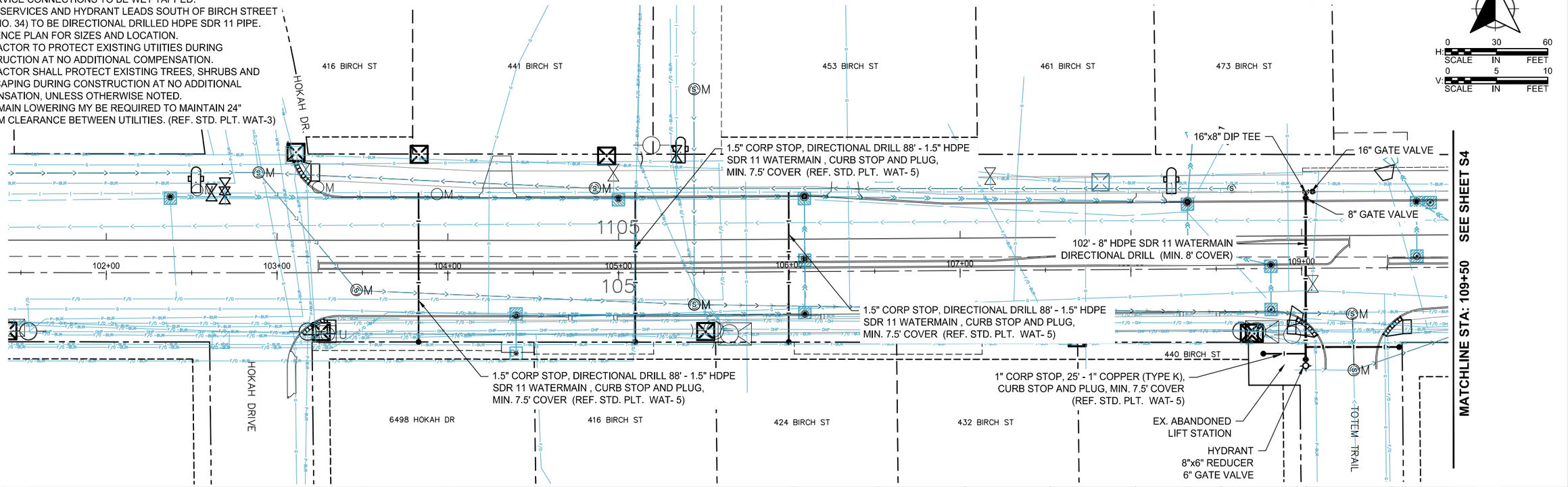
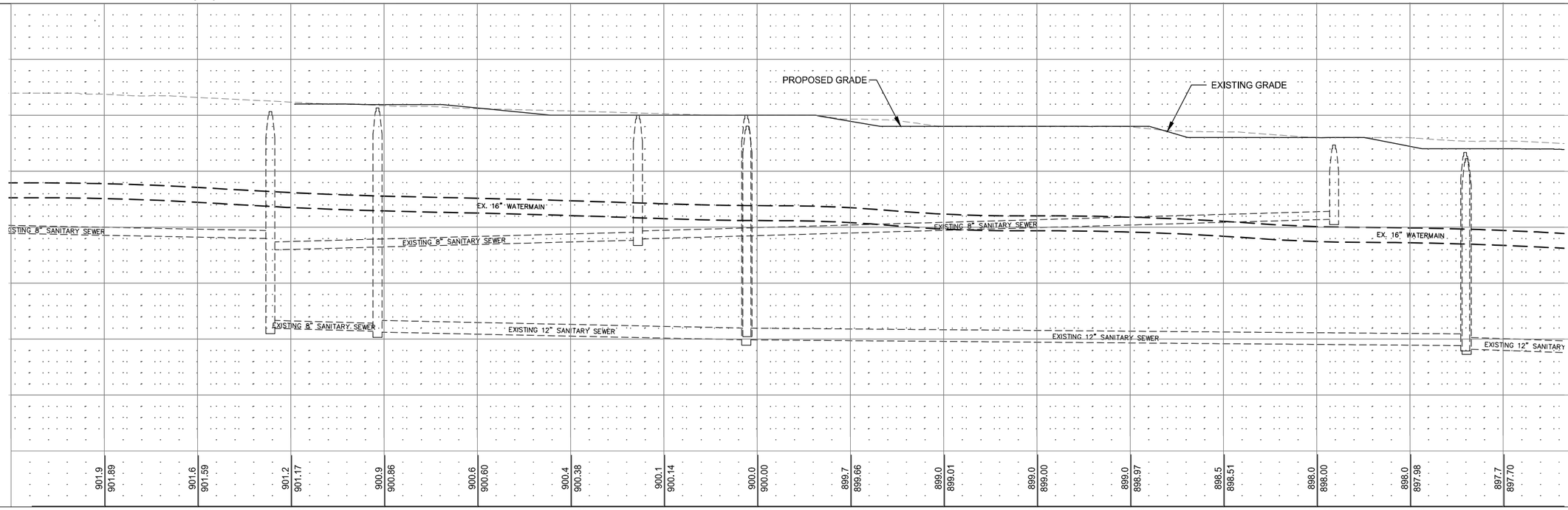
CONSTRUCTION NOTES

1. VERIFY ALL SERVICE LOCATIONS WITH PROPERTY OWNER.
2. ALL SERVICE CONNECTIONS TO BE WET TAPPED.
3. WATER SERVICES AND HYDRANT LEADS SOUTH OF BIRCH STREET (CSAH NO. 34) TO BE DIRECTIONAL DRILLED HDPE SDR 11 PIPE. REFERENCE PLAN FOR SIZES AND LOCATION.
4. CONTRACTOR TO PROTECT EXISTING UTIITIES DURING CONSTRUCTION AT NO ADDITIONAL COMPENSATION.
5. CONTRACTOR SHALL PROTECT EXISTING TREES, SHRUBS AND LANDSCAPING DURING CONSTRUCTION AT NO ADDITIONAL COMPENSATION, UNLESS OTHERWISE NOTED.
6. WATERMAIN LOWERING MY BE REQUIRED TO MAINTAIN 24" MINIMUM CLEARANCE BETWEEN UTILITIES. (REF. STD. PLT. WAT-3)

BIRCH STREET (CSAH NO. 34)





NO.	DATE	BY	CHK	REVISIONS

Design By: DLH/ECY
Plan By: ECY
Checked By: DLH/JW
Approved By: DLH

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DIANE L. HANKEE, PE

DATE 11/11/2020 LICENSE # 43338

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

WATERMAIN IMPROVEMENTS

S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET S3 OF S6 SHEETS

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BIRCH STREET (CSAH NO. 34)

N

0 30 60
H: SCALE IN FEET
0 5 10
V: SCALE IN FEET

485 BIRCH ST
495 BIRCH ST
498 BIRCH ST
509 BIRCH ST
510 BIRCH ST
6498 TOTEM TRAIL
6512 TOMAHAWK TRAIL

FUTURE WELL HOUSE
FFE - 902 (+/-)

MATCHLINE STA: 109+50 SEE SHEET S3

MATCHLINE STA: 117+50 SEE SHEET S5

26'-12" DIP CL 52 WATERMAIN
12" PLUG, MIN. 7.5' COVER

16LF - 4" PVC SCH. 40 SANITARY SEWER SERVICE
CALCULATED INVERT @ MAIN - 886.55 (VERIFY)
(REF. STD. PLT. SAN- 6, SAN-7)

1" CORP STOP, 22' - 1" COPPER (TYPE K),
CURB STOP AND PLUG, MIN. 7.5' COVER
(REF. STD. PLT. WAT- 5)

12" GATE VALVE

16"x12" DIP TEE

18LF - 4" PVC SCH. 40 SANITARY
SEWER SERVICE @ 2.0% MIN.
INVERT @ MH - 889.00 (VERIFY)
(REF. STD. PLT. SAN- 6, SAN-7)

CONNECT TO EX. SAN. SEWER
CORE DRILL MANHOLE

DISCONNECT EX. WATER SERVICE,
PROVIDE TEMP. WATER SERVICE,
1" CORP STOP, 24' - 1" COPPER (TYPE K),
MIN. 7.5' COVER, CONNECT TO EXISTING
SERVICE, SERVICE LOC. APPROX., (REF.
STD. PLT. WAT- 5)

16" DIP - 22.5° BEND

ADJUST MANHOLE CASTING

WATER METER

16"x8" DIP TEE

16" DIP - 22.5° BEND

8" GATE VALVE

176' - 8" HDPE SDR 11 WATERMAIN
DIRECTIONAL DRILL (MIN. 8' COVER)

1" CORP STOP, 50' - 1" COPPER (TYPE K),
MIN. 7.5' COVER

CONNECT TO EX. 16" WATERMAIN

CONNECT TO EX. 16" WATERMAIN

16" GATE VALVE

16" DIP - 45° BEND

16" DIP - 45° BEND

1" CORP STOP, 56' - 1" COPPER (TYPE K),
CURB STOP AND PLUG, MIN. 7.5' COVER
(REF. STD. PLT. WAT- 5)

HYDRANT
6" GATE VALVE
8"x6" REDUCER

CONSTRUCTION NOTES

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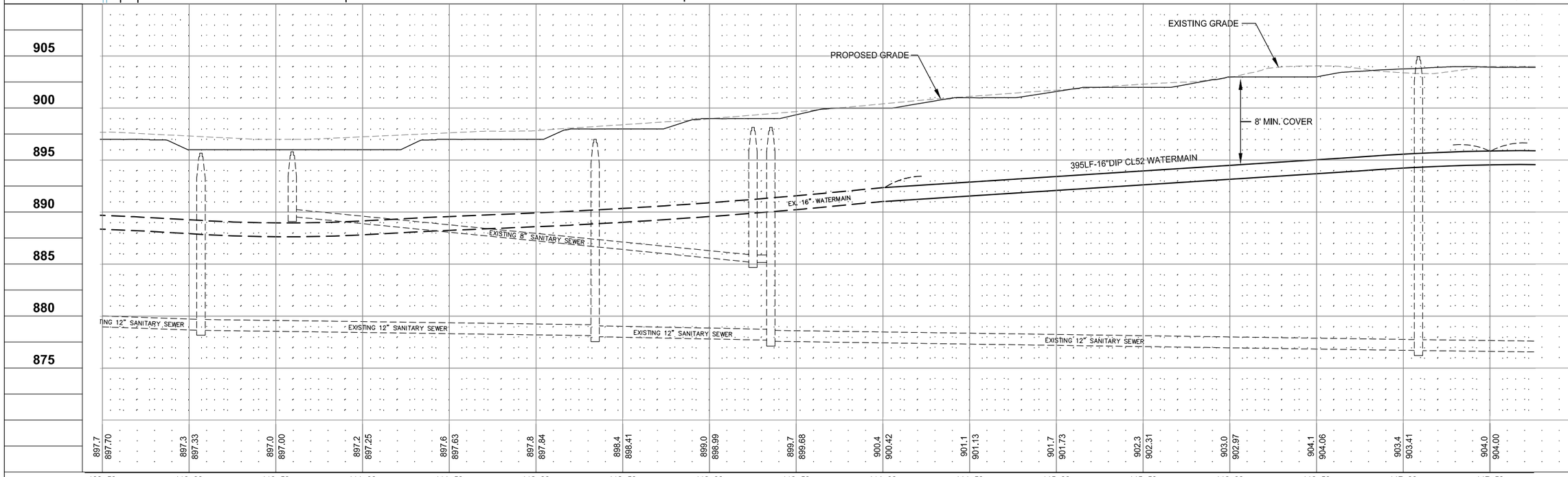

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PRINT NAME: DIANE L. HANKEE, PE

DATE 11/11/2020 LICENSE # 43338

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

WATERMAIN IMPROVEMENTS

S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET S4 OF S6 SHEETS

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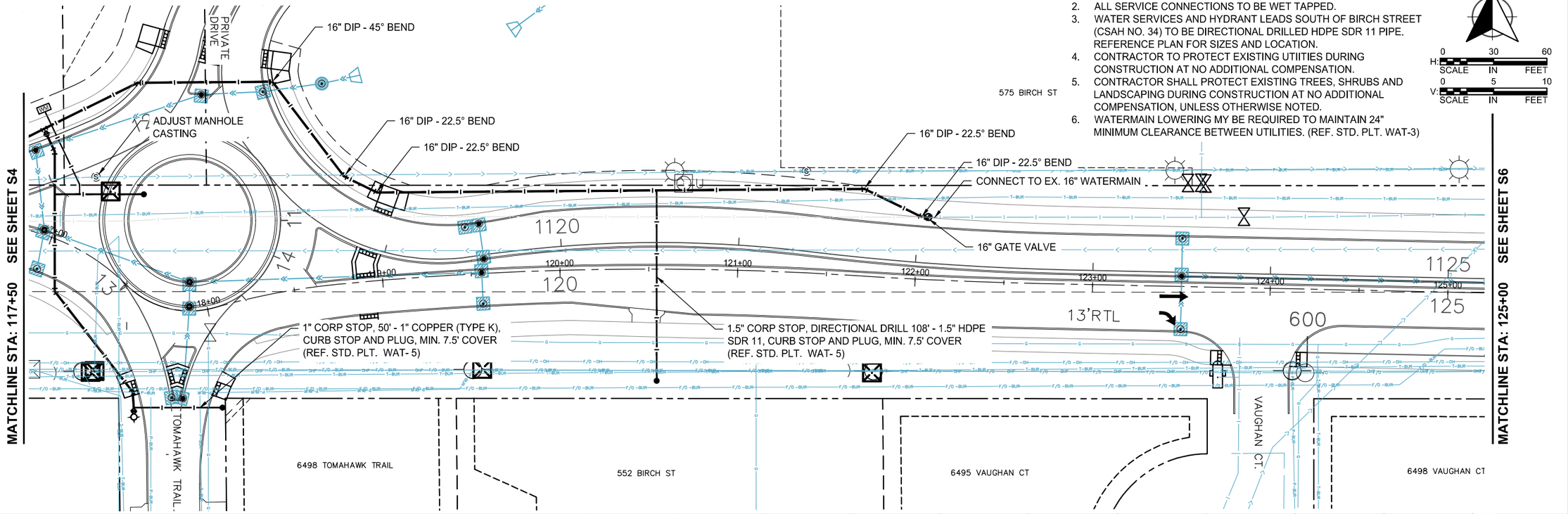
BIRCH STREET (CSAH NO. 34)



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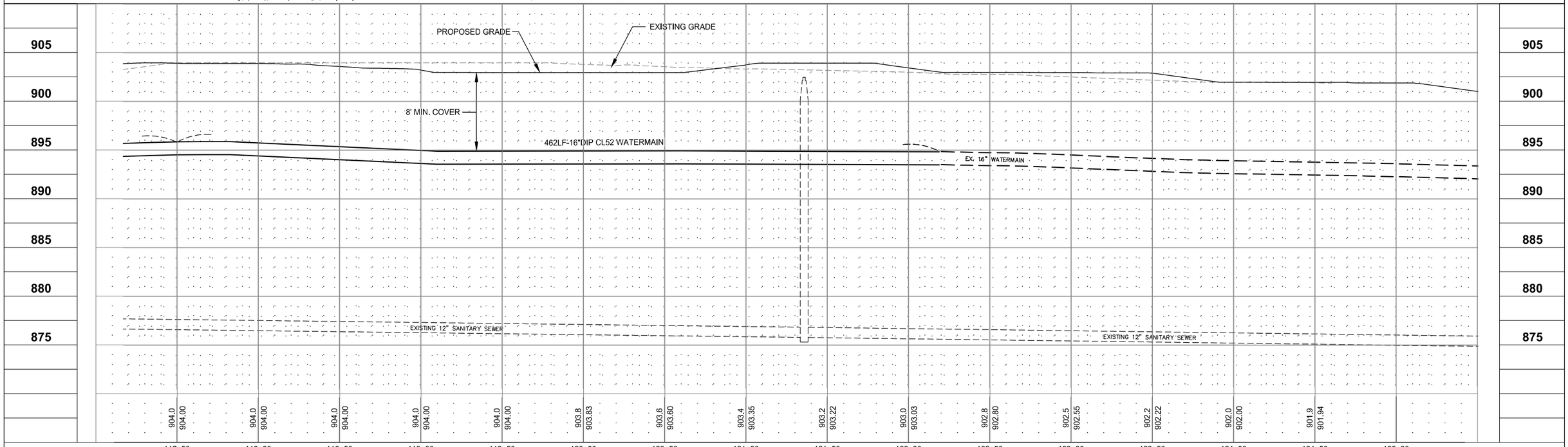
N

H: 0 30 60 SCALE IN FEET

V: 0 5 10 SCALE IN FEET



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WATERMAIN IMPROVEMENTS

S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET S5 OF S6 SHEETS

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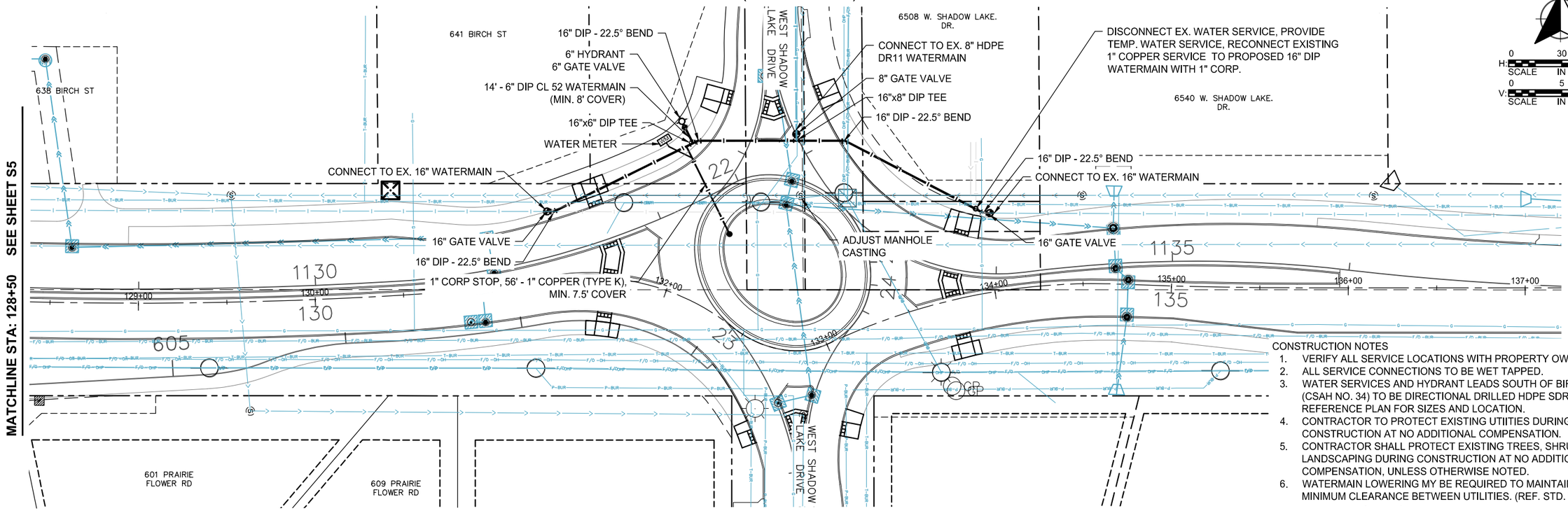
BIRCH STREET (CSAH NO. 34)



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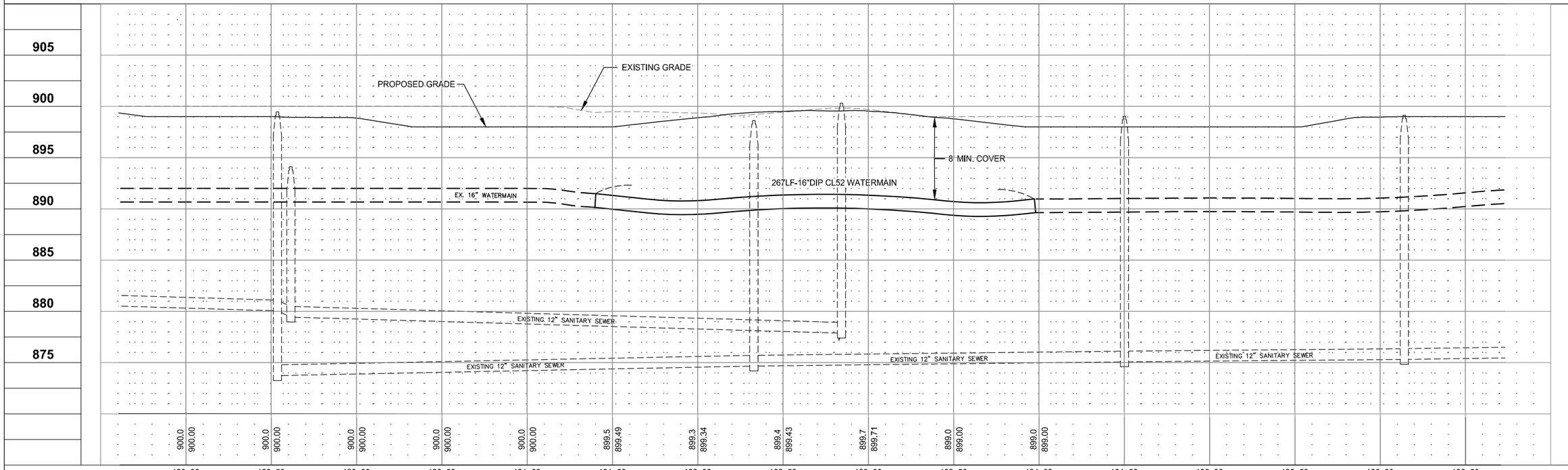

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ANOKA COUNTY, MINNESOTA

WATERMAIN IMPROVEMENTS

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SHEET S6 OF S6 SHEETS

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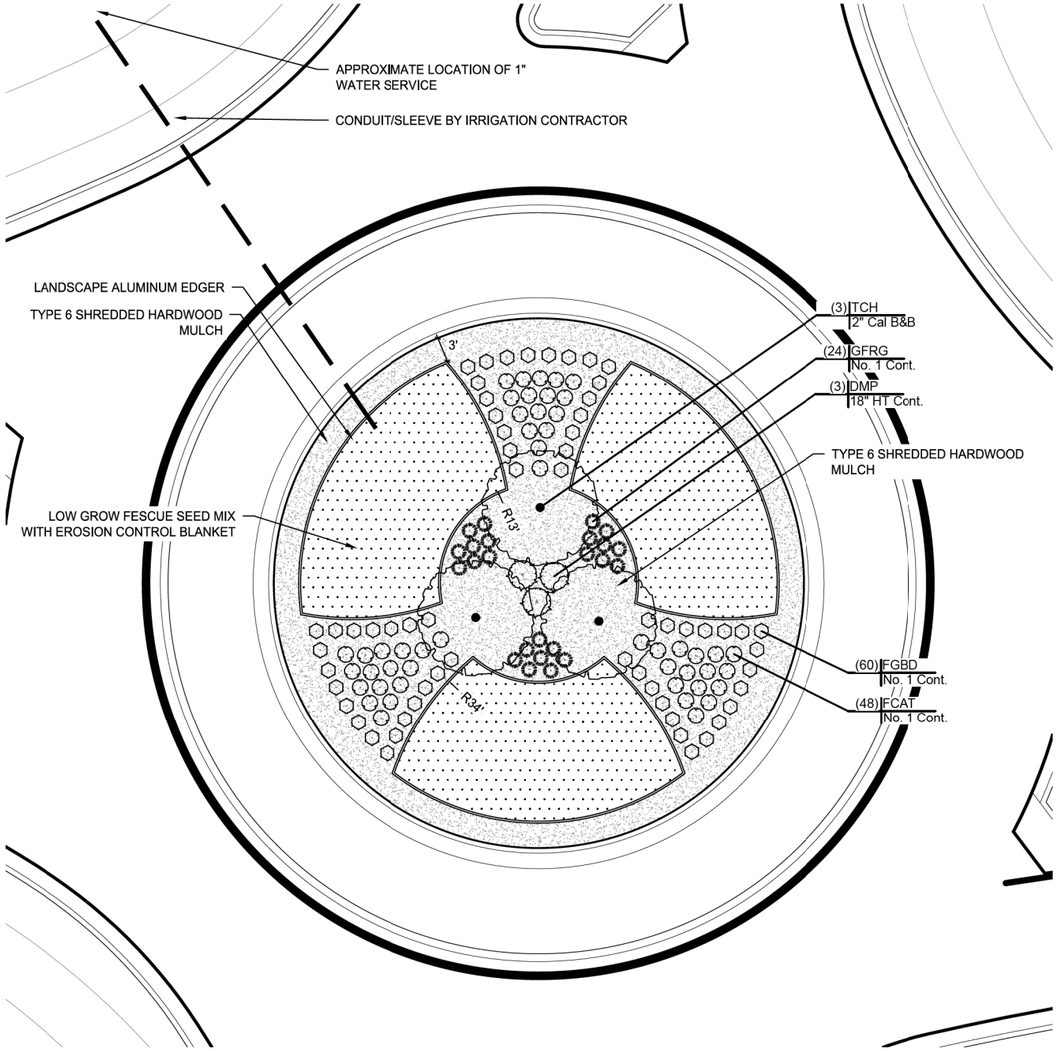
PLOTTED/REVISED: 12/3/2020

NOTE:
-INLET PROTECTION TO BE PLACED IN ALL CATCH BASINS PRIOR TO PLANTING WORK IN ROUNDABOUT.
-PROVIDE DESIGN-BUILD IRRIGATION SYSTEM (REFER TO SPECIFICATIONS)
-TOPSOIL ADDED TO ROUNDABOUT AT 6" THICK.
-TYPE 6 SHREDDED HARDWOOD MULCH TO BE DARK BROWN AND MIN OF 4" THICK.

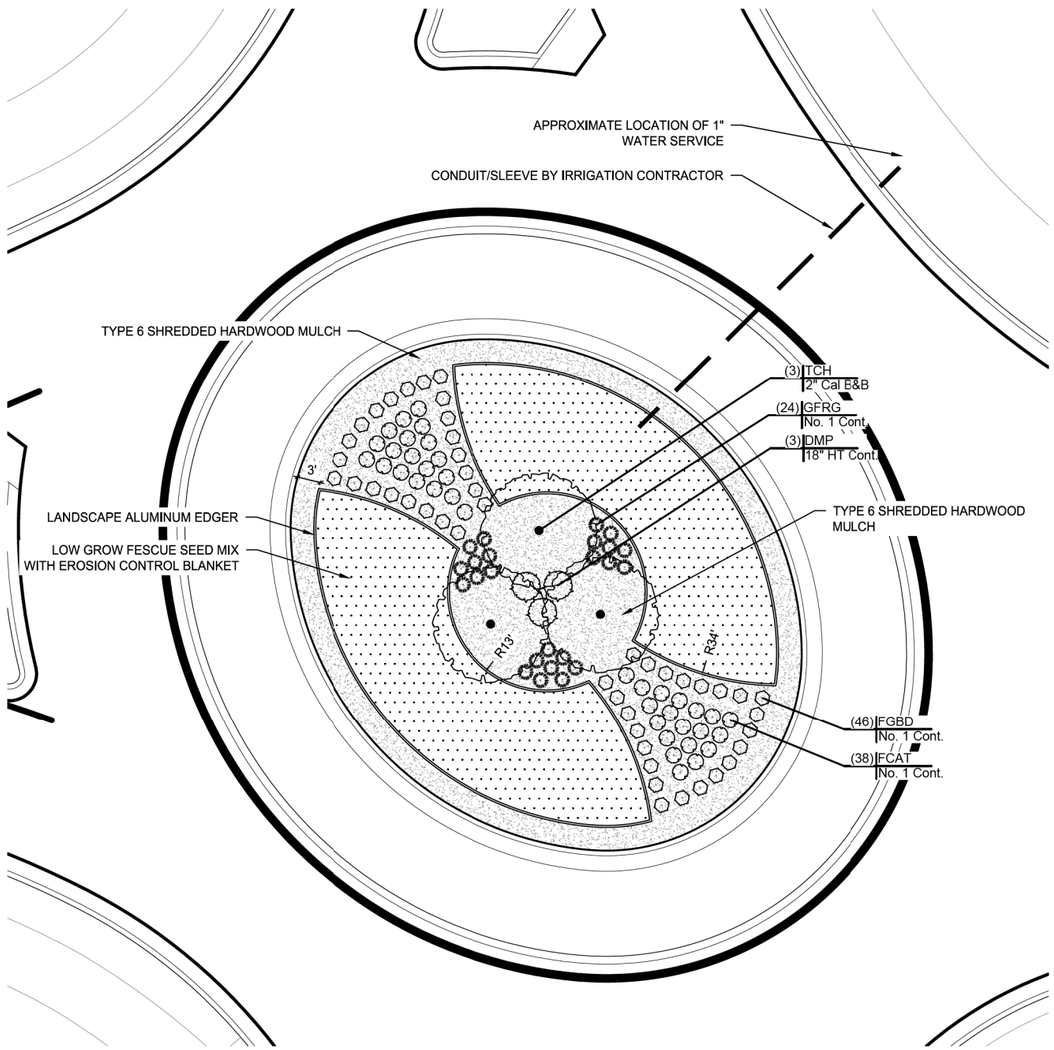
LOW GROW FESCUE SEED MIXTURE:
(SEEDING RATE 250 IBS PER ACRE)
25% BLUE MESA SHEEP FESCUE
25% NANOOK HARD FESCUE
25% INTRIGUE CHEWINGS FESCUE
25% CELESTIAL CREEPING RED FESCUE

KEY	SPECIES	QUANTITY	SPACING
TCH_2" CAL B&B	HAWTHORN, THORNLESS	6	AS SHOWN
DMP_18" HT CONT	MUGO PINE, DWARF	6	AS SHOWN
GFRG_NO 1 CONT	GRASS, FEATHER REED	48	AS SHOWN
FGBD_NO 1 CONT	DAYLILY, GOING BANANAS	106	AS SHOWN
FCAT_NO 1 CONT	CATMINT, WALKERS LOW	86	AS SHOWN

ITEM	ITEM DESCRIPTION	UNITS	PROJECT TOTAL
2575.605	SEED MIXTURE SPECIAL	POUND	20
2105.507	BLVD TOPSOIL BORROW TYPE F	CU YD	130
2575.507	MULCH MATERIAL TYPE 6 (SHREDDED HARDWOOD DARK BROWN)	CU YD	34
2504.601	IRRIGATION SYSTEM	LS	1
2575.504	ROLLED EROSION PREVENTION CATEGORY 20	SQ YD	365
2571.604	GEOTEXTILE WEED BARRIER FABRIC	SQ YD	420
2573.503	SEDIMENT CONTROL LOG TYPE WOOD FIBER	LIN FT	430
2540.603	LANDSCAPE EDGER (ALUMINUM)	LIN FT	580



1 L1 **TOMAHAWK TRAIL ROUNDABOUT**



2 L1 **WEST SHADOW LAKE DRIVE ROUNDABOUT**

N

0 10 20
SCALE IN FEET

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NO.	DATE	BY	CHK	REVISIONS

Design By: CCA
Plan By: SMN
Checked By: CCA
Approved By: CCA

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CANDACE AMBERG

DATE 12/3/2020 LICENSE #

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
PLANTING LAYOUT
LANDSCAPING PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **L1** OF **L5** SHEETS

PLOTTED/REVISED: 12/3/2020

GENERAL NOTES

SEE SPECIAL PROVISIONS FOR SPECIFIC PROJECT REQUIREMENTS.

REFER TO MnDOT SPECIFICATIONS 2571, 3861, AND THE INSPECTION AND CONTRACT ADMINISTRATION MANUAL FOR MnDOT LANDSCAPE PROJECTS" FOR GENERAL REQUIREMENTS.

COMPLETE PREPARATORY WORK BEFORE STARTING INITIAL PLANTING OPERATIONS.

ACCEPT ALL PLANT STOCK IN ACCORDANCE WITH (MnDOT 3861) PRIOR TO PLANTING.

THE CONTRACTOR WILL DEMONSTRATE COMPETENCY FOR SOIL CULTIVATION OPERATIONS IN ACCORDANCE WITH (MnDOT 2571.3D2 STEP 4)

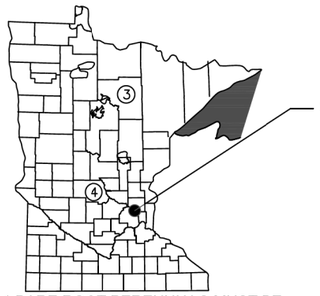
THE CONTRACTOR WILL DEMONSTRATE COMPETENCY FOR ALL PLANT INSTALLATION OPERATIONS IN ACCORDANCE WITH (MnDOT 2571.3F1)

RODENT PROTECTION	SEE SPECIAL PROVISIONS AND STANDARD PLANTING DETAILS (C)
FERTILIZER	SEE SPECIAL PROVISIONS
COMPOST	MnDOT 3890 GRADE 2 UNLESS OTHERWISE SPECIFIED.
MULCH MATERIAL	MnDOT 3882 TYPE 6 UNLESS OTHERWISE SPECIFIED.
MASS PLANTING BEDS	PREPARE MASS PLANTING BEDS FOR PLANTS PLACED AT ___ OR LESS, UNLESS OTHERWISE SPECIFIED ON SHEETS. PLANT BEDS IN STAGGERED ROWS ON THE PERIMETER FIRST, THEN UNIFORMLY FILL IN WITH REMAINING PLANTS. USE TRIANGULAR SPACING, UNLESS SPECIFIED OTHERWISE. PROVIDE 5' RADIUS CLEAR OF SHRUBS AROUND EACH DECIDUOUS TREE AND 8' CLEAR RADIUS AROUND EACH CONIFER TREE. RADIUS WILL BE MEASURED FROM THE CENTER OF THE TREE TO THE CENTER OF THE SHRUB. NOTIFY ENGINEER OF GROSS PLANT QUANTITY SURPLUS OR DEFICIENCY IMMEDIATELY. MULCH ENTIRE MASS PLANTING BED. SEE STANDARD PLANTING DETAILS (C)
TREE PAINTING (FROST CRACK PREVENTION)	PAINT OAK, LINDEN, LOCUST, MAPLE, CRABAPPLE AND MOUNTAIN ASH. ONLY UNDILUTED EXTERIOR WHITE LATEX PAINT IS ACCEPTABLE. PAINT TREE CIRCUMFERENCE FROM GROUND LINE TO FIRST MAJOR BRANCH.
PLANTING PLAN DIMENSIONS	STATED DIMENSIONS SUPERCEDE SCALING FROM PLAN.

WATERING GUIDELINES (MnDOT 2571.3G)

PLANT TYPE	AVERAGE GALLONS OF WATER PER APPLICATION
MACHINE TRANSPLANTED TREES	50-100
BALLED AND BURLAPPED TREES	20
BARE ROOT AND CONTAINER TREES	15
BALLED AND BURLAPPED SHRUBS	10
BARE ROOT AND CONTAINER SHRUBS	7
WOODY SEEDLINGS	4
PERENNIALS AND VINES	3

IT IS THE CONTRACTOR'S RESPONSIBILITY TO MONITOR AND MAINTAIN SOIL MOISTURE AT ADEQUATE BUT NOT EXCESSIVE LEVELS. THE AMOUNTS LISTED ABOVE ARE GUIDELINES, NOT REQUIREMENTS.



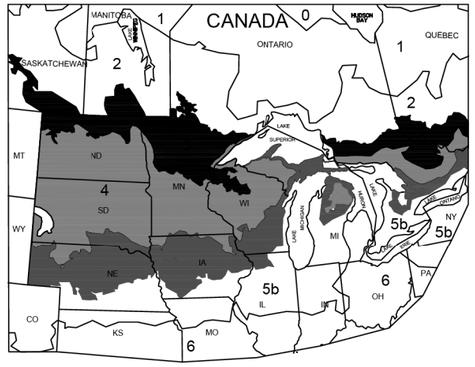
1.BARE ROOT PERENNIALS MUST BE INSTALLED IN THE SPRING NO LATER THAN JUNE 1ST OR FOLLOW THE FALL DECIDUOUS PLANTING DATES.
2.ACTUAL DATES MAY CHANGE DEPENDING UPON SEASONAL CONDITIONS, AS DETERMINED BY THE ENGINEER.
3.FALL PLANTING IS NOT ALLOWED FOR BARE ROOT FORM OF THE FOLLOWING SPECIES: HAWTHORN, DOGWOOD, POPLAR, HACKBERRY, LINDEN, IRONWOOD, HONEYLOCUST, BIRCH, MOUNTAIN ASH, MAPLE, WILLOW, CRABAPPLE, PLUM/CHERRY, OAKS, AND SUMAC.
4.ALL REPLACEMENT PLANTS MUST BE INSTALLED DURING THE MONTH OF MAY (SPRING PLANTING) AND SEPTEMBER (FALL PLANTING) DURING THE FIRST YEAR OF THE PLANT ESTABLISHMENT PERIOD.
5.MACHINED MOVED PLANTING DATES WILL BE SPECIFIED IN THE SPECIAL POVISIONS.

PLANTING DATES BY ZONE

			③	④
SPRING	DECIDUOUS	BARE ROOT	APRIL 21 TO JUNE 1	APRIL 7 TO JUNE 1
		CONTAINER B&B	APRIL 21 TO JUNE 30	APRIL 7 TO JUNE 30
	CONIFEROUS		APRIL 21 TO JUNE 1	APRIL 7 TO MAY 17
	PERENNIALS		MAY 1 TO JUNE 30	MAY 1 TO JUNE 30
	SEEDLINGS		APRIL 21 TO JUNE 1	APRIL 7 TO JUNE 1
FALL	DECIDUOUS	BARE ROOT	OCT. 1 TO NOV. 1	OCT. 10 TO NOV. 15
		CONTAINER B&B	AUG. 25 TO OCT. 15	AUG. 25 TO NOV. 1
	CONIFEROUS		AUG. 25 TO SEPT. 15	AUG. 25 TO SEPT. 15
	PERENNIALS		AUG. 25 TO SEPT. 15	AUG. 25 TO SEPT. 15

PLANT INSTALLATION PERIOD

(MnDOT 2571.3F2)



ACCEPTABLE ZONES		
ZONES	LEGEND	MIN. TEMP.
3		-34.4°TO -40 F°
4		-28.9°TO -34.4 F°
5a		-26.1°TO -28.9 F°

UNACCEPTABLE ZONES	
ZONES	LEGEND
0, 1, 2, 5b and 6	

FOR ALL PLANT STOCK, DOCUMENT ACCEPTABILITY FOR HARDINESS IN THE MINNESOTA ZONE WHERE THE PROJECT SITE IS LOCATED, AS FOLLOWS:

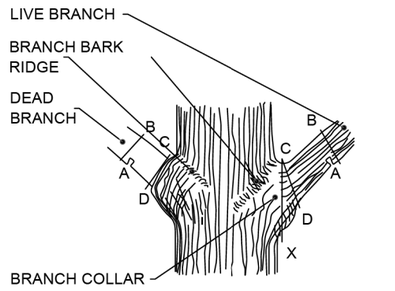
A.PLANT STOCK CONTINUOUSLY GROWN FOR AT LEAST THE LAST TWO YEARS WITHIN THE ACCEPTABLE LIMITS SHOWN.

OR

B.PLANT STOCK, GROWN OUTSIDE THE ACCEPTABLE GROWING RANGE LIMITS, HAVING SEED SOURCE OR ROOT AND GRAFT STOCK ORIGINATING FROM THE ACCEPTABLE LIMITS SHOWN.

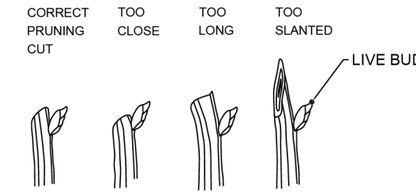
ACCEPTABLE PLANT STOCK GROWING RANGE LIMITS

SOURCE: USDA PLANT HARDINESS ZONE MAP (MnDOT 3861.2C)



BRANCHES PRUNED AT TRUNK

(SHIGO METHOD)



BRANCHES PRUNED TO LIVE BUD

PRUNING

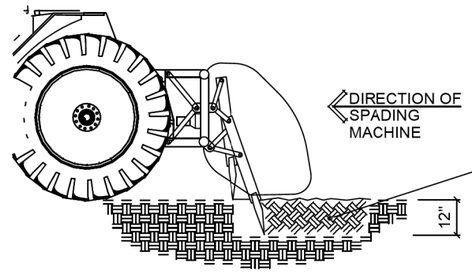
(MnDOT 2571.3K2a9 and 2571.3E1)

STEPS TO PRUNING WITH PRUNING SAW:
1.CUT PART WAY THROUGH THE BRANCH AT POINT A.
2.CUT COMPLETELY THROUGH BRANCH FROM POINT B TO A.
3.AT BRANCH COLLAR CUT FROM POINT C TO D.

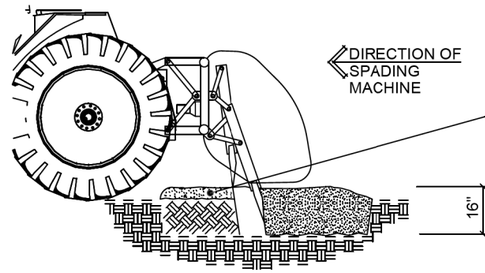
INCORRECT CUT FROM POINT C TO X (TOO CLOSE) WILL RESULT IN DISCONTINUOUS CALLUS FORMATION AFTER ONE SEASON OF GROWTH.

CORRECT CUT FROM POINT C TO D (LEAVING BRANCH COLLAR BUT NOT THE STUB FROM POINT B TO A) WILL RESULT IN CONTINUOUS DOUGHNUT SHAPED CALLUS FORMATION AFTER ONE SEASON OF GROWTH.

PRUNING NOTES:
1.PRUNE USING CLEAN AND SHARP SCISSOR-TYPE PRUNER OR PRUNING SAW.
2.THE BEST TIME TO PRUNE IS LATE DORMANT SEASON OR EARLY SPRING.
3.AVOID PRUNING OAKS IN APRIL, MAY, JUNE OR JULY.
4.IF PRUNING IS NECESSARY OR IF WOUNDS OCCUR TO OAK TREES IN APRIL, MAY, JUNE OR JULY, IMMEDIATELY PAINT CUT SURFACE OR WOUND WITH LATEX PAINT OR SHELLAC.



PRIMARY TILLAGE - PASS 1



INCORPORATION TILLAGE - PASS 2

PLANTING SOIL

(MnDOT 2571.3D2)

PATH & FILENAME: Projects\Minnesota\01\4400-000\Cad\Plan\44400-000_la02.dgn

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CANDACE AMBERG
DATE 12/3/2020 LICENSE # 40646

wsb

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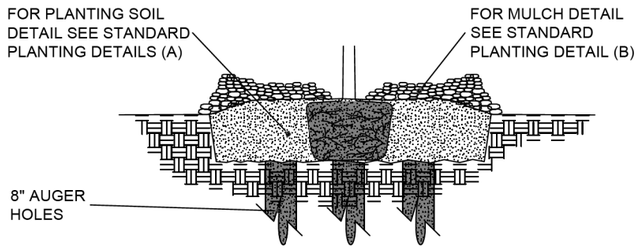
Anoka County Highway Department

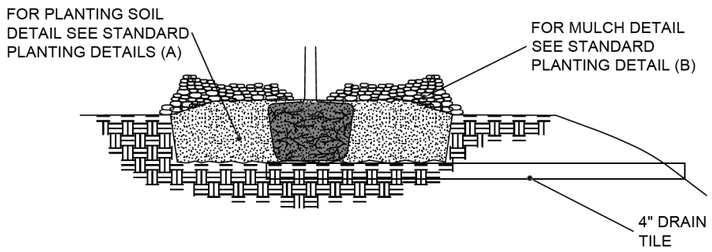
ANOKA COUNTY, MINNESOTA
PLANTING DETAILS
LANDSCAPING PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **L2** OF **L5** SHEETS



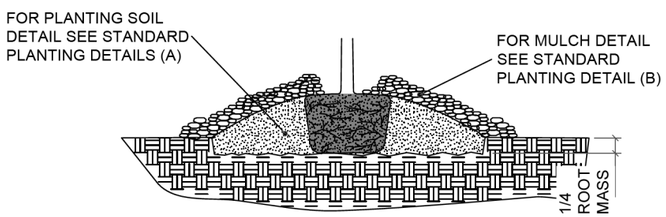
1.EXCAVATE HOLE OR BED TO ALLOW PLACING THE TOP OF ROOT MASS 1"-3" HIGHER THAN FINISHED GRADE.
2.AUGER 8" DIAMETER HOLES ENTIRELY THROUGH IMPERVIOUS OR POORLY DRAINED HARD PAN SOIL LAYER TO ADEQUATELY DRAIN SUBSOIL.
3.TEST FOR POSITIVE DRAINAGE. RE-AUGER AN ADDITIONAL 8" IF NECESSARY FOR POSITIVE DRAINAGE.
4.THOUROUGHLY BACKFILL AUGER HOLES WITH A UNIFORM INCORPORATED MIXTURE OF 50% SAND AND 50% INPLACE SOIL.
5.COMPLETE PLANTING ACCORDING TO ROOT TYPE. SEE STANDARD PLANTING DETAILS (B).

INSTALL GRANULAR FILTER



1.EXCAVATE HOLE OR BED TO ALLOW PLACING THE TOP OF THE ROOT MASS 1"-3" HIGHER THAN FINISHED GRADE.
2.INSTALL 4" MINIMUM DIAMETER DRAIN TILE DAYLIGHTING AT A LOWER GRADE.
3.COMPLETE PLANTING ACCORDING TO ROOT TYPE. SEE STANDARD PLANTING DETAILS (B).

INSTALL TILE DRAINAGE



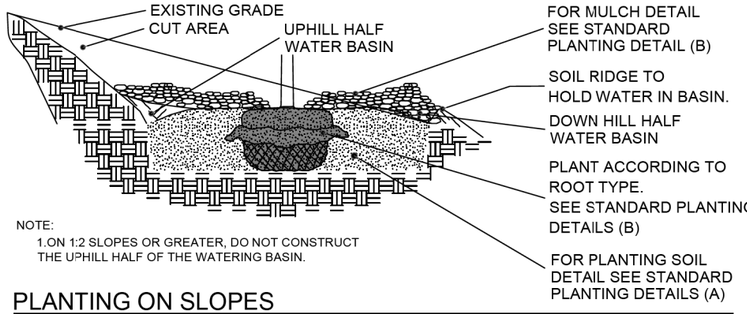
1.EXCAVATE HOLE OR BED 1/4 THE DEPTH OF THE ROOT MASS.
2.SET ROOT MASS IN HOLE.
3.CONSTRUCT BERM WITH PLANTING SOIL. EXTEND THE BERM BASE TO A WIDTH OF 3 TIMES THE BERM HEIGHT.
4.COMPLETE PLANTING ACCORDING ROOT TYPE. SEE STANDARD PLANTING DETAILS (B).

INSTALL MINI-BERM

NOTE:
1.THE NEED FOR USING PLANTING DETAILS FOR POORLY DRAINED SOILS AND WHICH TYPE TO USE ARE DETERMINED BY THE CONTRACTOR, SUBJECT TO ENGINEER APPROVAL.

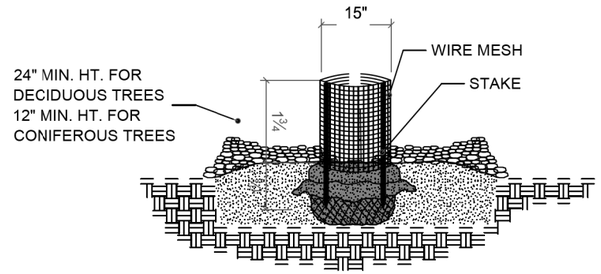
PLANTING DETAIL FOR POORLY DRAINED SOILS

(MnDOT 2571.3D2 (STEP 8)



NOTE:
1.ON 1:2 SLOPES OR GREATER, DO NOT CONSTRUCT THE UPHILL HALF OF THE WATERING BASIN.

PLANTING ON SLOPES

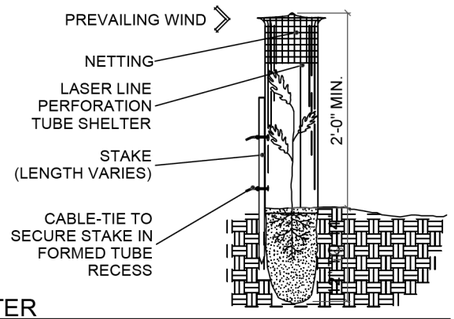


1.FORM A DOUBLE-LAYERED CYLINDER USING 0.25" GRID GALVANIZED WELDED WIRE MESH (HARDWARE CLOTH). OVERLAP THE CUT END 2".
2.DRIVE TWO 1" x 1" OPPOSING HEARTWOOD WHITE OAK STAKES INTO THE GROUND, 7" FROM THE CENTER OF THE TREE STEM.
3.SECURE THE MESH CYLINDER TO THE OUTSIDE OF THE STAKES USING EITHER, SCREWS AND WASHERS OR CABLE-TIES ALONG THE OVERLAP. SPACE APPROXIMATELY 4" ON CENTER ALONG THE OVERLAP.
a.SCREWS SHALL BE ROUND HEAD GALVANIZED 1/8" DIA. x 3/4" LONG WITH WASHERS.
OR
b.CABLE-TIES SHALL BE NYLON, AT LEAST 8" LONG AND BETWEEN 75LB TO 120LB TENSILE STRENGTH.
4.EMBED THE LOWER EDGE OF THE MESH CYLINDER 1" BELOW THE SOIL SURFACE WITHOUT DISTURBING THE TREE ROOTS.
5.CUT EDGES WILL NOT BE PERMITTED AT THE TOP OF THE CYLINDER. STAKE WILL BE FLUSH WITH THE TOP OF THE CYLINDER.
6.MULCH WITHIN THE CYLINDER SHALL NOT EXCEED 3" DEPTH AND SHALL BE PULLED BACK FROM THE TRUNK AS SPECIFIED IN MULCH PLACEMENT DETAIL.
7.THE BOTTOM WHORL OF PINE AND LARCH BRANCHES MAY HAVE TO BE REMOVED TO PERMIT INSTALLATION OF 12" MIN. HEIGHT RODENT GUARDS.
8.INSTALL ON ALL DECIDUOUS, PINE AND LARCH TREES, DO NOT PLACE ON SPRUCE TREES.

RODENT PROTECTION

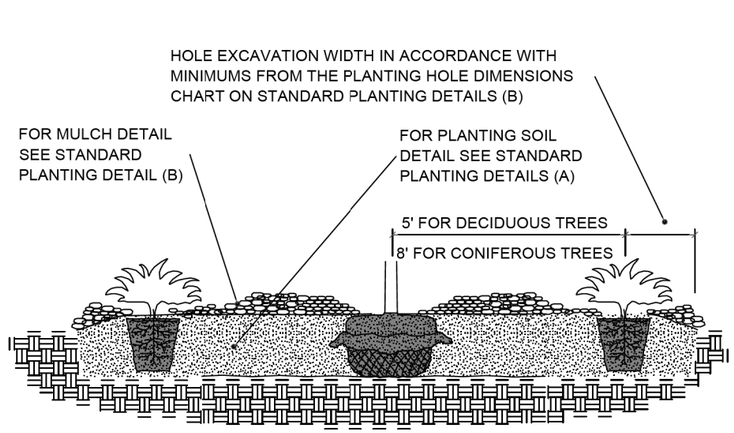
(MnDOT 2571.3I2)

1.USE SEAMLESS, EXTRUDED, TWIN-WALL, RIGID AND SEMI TRANSLUCENT POLYPROPYLENE TUBES WITH A LASER LINE PERFORATION AND AN OUTWARD-FLARED TOP RIM.
2.SECURE SHELTER WITH NYLON CABLE-TIES ATTACHED TO A 1" x 1" WHITE OAK STAKE TO PREVENT DISLODGING OR TWISTING.
3.EMBED THE BOTTOM OF THE TUBE A MINIMUM OF 1" BELOW THE SOIL SURFACE WITHOUT DISTURBING THE TREE ROOTS.
4.INSTALL A PLASTIC PHOTODEGRADABLE NETTING COVER AND SLEEVE OVER THE TOP OF THE TUBE. PULL NETTING DOWN AS SHOWN.

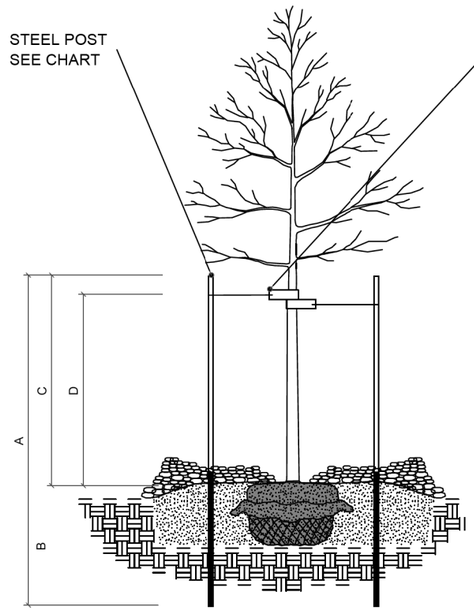


SEEDLING TREE SHELTER

(MnDOT 2571.3I4)



PLANT SPACING IN MASS BEDS



1.STEEL POSTS TO BE NOTCHED OR DRILLED TO RETAIN GUY WIRES. PLACE OUTSIDE OF ROOT BALL. DRIVE PLUMB REGARDLESS OF GROUND SLOPE.

2.REQUESTS TO SUBSTITUTE RUBBER HOSE AND WIRE GUYING SYSTEMS WILL NOT BE APPROVED.

3. TREE STAKING IS NOT REQUIRED UNLESS SPECIFIED OR NECESSARY TO MAINTAIN TREES IN A PLUMB CONDITION WHERE VANDALISM, SOIL, OR WIND CONDITIONS ARE A PROBLEM, OR AS DIRECTED BY THE ENGINEER.

4.REMOVE WITHIN ONE YEAR.

STEEL POST SIZING					
CALIPER	STEEL POST TYPE	A	B	C	D
LESS THEN 4 INCHES	ROLLED STEEL FENCE POST (MnDOT 3403) OR APPROVED EQUAL.	7'-0"	3'-0" MIN.	4'-0"	3'-0"
GREATER THEN 4 INCHES	10', 2.2 LB. FLANGED CHANNEL STEEL SIGN POST (MnDOT 3401) OR APPROVED EQUAL.	10'-0"	4'-0" MIN.	6'-0"	5'-0"

STAKING AND GUYING

(MnDOT 2571.3I1)

NO.	DATE	BY	CHK	REVISIONS

Design By: CCA
Plan By: SMN
Checked By: CCA
Approved By: CCA

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA.

CANDACE AMBERG

DATE 12/3/2020 LICENSE # 40646

wsb

ANOKA COUNTY

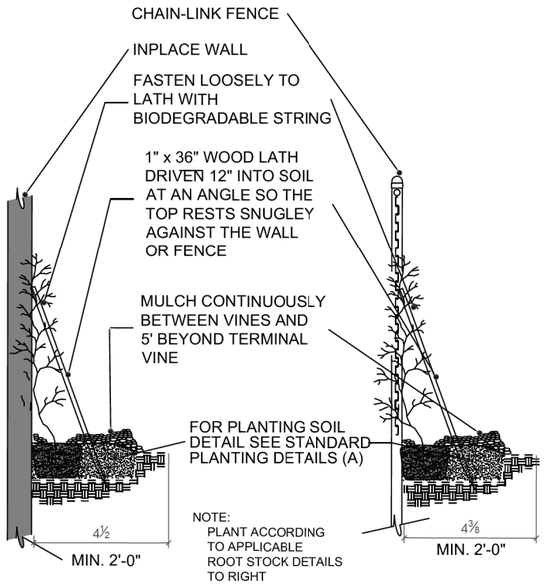
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
PLANTING DETAILS
LANDSCAPING PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **L3** OF **L5** SHEETS

PLOTTED/REVISED: 12/3/2020

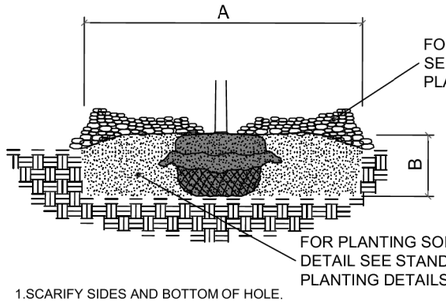
PLANTING HOLE DIMENSIONS			
HOLE DEPTH FOR B&B AND CONTAINER PLANTS SHALL NOT EXCEED MEASUREMENT FROM ROOT FLAIR TO BOTTOM OF SOIL BALL.			
PLANT TYPE	PLANT SIZE UP TO AND INCLUDING	(A) MINIMUM HOLE WIDTH	(B) APPROXIMATE HOLE DEPTH
DECIDUOUS & ORNAMENTAL TREES	3' B.R.	46"	13"
	4' B.R	46"	14"
	5' B.R.	48"	14"
	6' B.R.	54"	15"
	7' B.R	60"	16"
	8' B.R.	66"	19"
	0.75" B.R.	48'	12"
	1" B.R.	54"	14"
	1.25" B.R.	60"	14"
	1.5 B.R.	66"	15"
	1.75" B.R	72"	16"
	2" B.R.	84"	19"
	4' B.B.	42"	11"
	5' B.B.	48"	12"
	6' B.B.	52"	14"
	8' B.B.	66"	16"
	10' B.B.	66"	16"
	12' B.B.	48"	16"
	1" B.B.	54"	14"
	1.25" B.B.	56"	15"
	1.5" B.B.	61"	15"
	1.75" B.B.	66"	16"
	2" B.B.	72"	16"
	2.5" B.B.	84"	19"
	3" B.B.	96"	20"
	3.5" B.B.	114"	23"
	4" B.B.	126"	25"
DECIDUOUS SHRUBS, ROSES AND PERENNIALS PERENNIAL HOLE DEPTH AND WIDTH SHALL BE BASED UPON ON-CENTER SPACING IN A CONTINUOUS TRENCH.	12" B.R.	24"	7"
	15" B.R.	28"	8"
	18" B.R.	30"	8"
	2' B.R.	33"	9"
	3' B.R.	42"	11"
	4' B.B.	48"	12"
	5' B.R.	54"	14"
	6' B.R.	60"	14"
	18" B.B.	27"	7"
	2' B.B.	30"	8"
	3' B.B.	36"	9"
	4' B.B.	42"	11"
	5' B.B.	48"	12"
	6' B.B.	54"	14"



WALL INSTALLATION

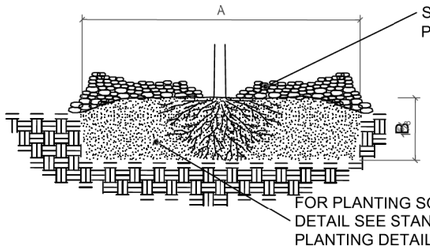
FENCE INSTALLATION

INSTALLATION OF VINES



1.SCARIFY SIDES AND BOTTOM OF HOLE.
2.PROCEED WITH CORRECTIVE PRUNING.
3.SET PLANT ON UNDISTURBED NATIVE SOIL OR THOROUGHLY COMPACTED PLANTING SOIL. INSTALL PLANT SO THE ROOT FLARE IS AT OR UP TO 2" ABOVE THE FINISHED GRADE WITH BURLAP AND WIRE BASKET, (IF USED), INTACT.
4.SLIT REMAINING TREATED BURLAP AT 6" INTERVALS.
5.BACKFILL TO WITHIN APPROXIMATELY 12" OF THE TOP OF THE ROOTBALL, THEN WATER PLANT.
6.REMOVE THE TOP 1/3 OF THE BASKET OR THE TOP TWO HORIZONTAL RINGS WHICHEVER IS GREATER. REMOVE ALL BURLAP AND NAILS FROM THE TOP 1/3 OF THE BALL. REMOVE ALL TWINE. REMOVE OR CORRECT STEM GIRDLING ROOTS.
7.PLUMB AND BACKFILL WITH PLANTING SOIL.
8.WATER THOROUGHLY WITHIN 2 HOURS TO SETTLE PLANTS AND FILL VOIDS.
9.BACK FILL VOIDS AND WATER A SECOND TIME.
10.PLACE MULCH WITHIN 48 HOURS OF THE SECOND WATERING UNLESS SOIL MOISTURE IS EXCESSIVE.

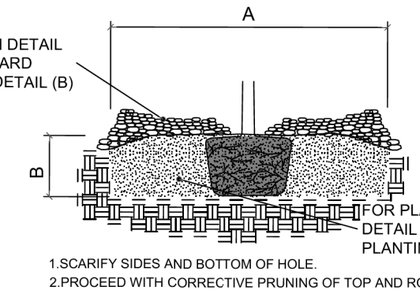
BALLED & BURLAPPED STOCK



1.SOAK ROOTS IN WATER FOR AT LEAST ONE HOUR BUT NOT MORE THAN 24 HOURS PRIOR TO PLANTING.
2.SCARIFY SIDES AND BOTTOM OF HOLE.
3.PROCEED WITH CORRECTIVE PRUNING OF THE TOP AND ROOTS.
4.TRANSFER PLANT DIRECTLY FROM WATER TO HOLE. SET PLANT SO THE ROOT FLARE IS AT THE FINISHED SOIL ELEVATION. SPREAD ROOTS OUT EVENLY. PLUMB AND IMMEDIATELY BACKFILL WITH PLANTING SOIL.
5.WATER THOROUGHLY WITHIN 2 HOURS TO SETTLE PLANTS AND FILL VOIDS.
6.BACK FILL VOIDS AND WATER A SECOND TIME.
7.PLACE MULCH WITHIN 48 HOURS OF THE SECOND WATERING UNLESS SOIL MOISTURE IS EXCESSIVE.

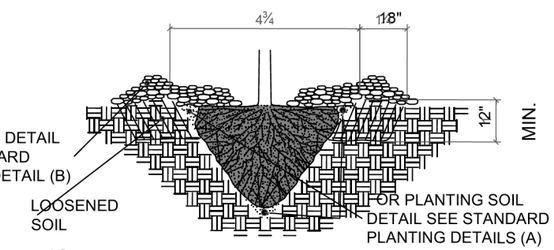
BARE ROOT STOCK

INSTALLATION OF PLANTS



1.SCARIFY SIDES AND BOTTOM OF HOLE.
2.PROCEED WITH CORRECTIVE PRUNING OF TOP AND ROOT.
3.REMOVE CONTAINER AND SCORE OUTSIDE OF SOIL MASS TO REDIRECT AND PREVENT CIRCLING FIBROUS ROOTS. REMOVE OR CORRECT STEM GIRDLING ROOTS.
4.SET PLANT ON UNDISTURBED NATIVE SOIL OR THOROUGHLY COMPACTED PLANTING SOIL. INSTALL PLANT SO THE TOP OF THE ROOT FLARE IS AT OR UP TO 2" ABOVE THE FINISHED GRADE.
5.PLUMB AND BACKFILL WITH PLANTING SOIL.
6.WATER THOROUGHLY WITHIN 2 HOURS TO SETTLE PLANT AND FILL VOIDS.
7.BACK FILL VOIDS AND WATER A SECOND TIME.
8.PLACE MULCH WITHIN 48 HOURS OF THE SECOND WATERING UNLESS SOIL MOISTURE IS EXCESSIVE.

CONTAINER STOCK



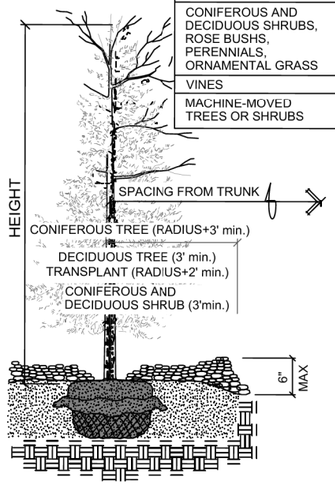
1.SCARIFY SIDES AND BOTTOM OF HOLE.
2.PROCEED WITH CORRECTIVE PRUNING.
3.SET PLANT ON NATIVE SOIL AT SAME DEPTH AS IT WAS PREVIOUSLY GROWN.
4.PLUMB AND BACKFILL WITH PLANTING SOIL.
5.AFTER PLANTING, LOOSEN THE SOIL IMMEDIATELY ADJACENT TO THE ROOT BALL TO A MINIMUM DISTANCE OF 18" AND A MINIMUM DEPTH OF 12".
6.WATER THOROUGHLY WITHIN 2 HOURS TO SETTLE PLANT AND FILL VOIDS.
7.BACK FILL VOIDS AND WATER A SECOND TIME.
8.PLACE MULCH WITHIN 48 HOURS OF THE SECOND WATERING UNLESS SOIL MOISTURE IS EXCESSIVE.

MINIMUM TREE SPADE SIZE REQUIREMENTS			
(C) SPADE DIAMETER SIZE	OAK TREE, CALIPER	DECIDUOUS/ ORNAMENTAL TREE,CALIPER	CONIFEROUS TREE, HEIGHT
42"	1" to 1.5"	2" to 3"	5' to 7'
60"	1.5" to 2.5"	3" to 4"	7' to 9'
78"	2.5" to 3.5"	4" to 6"	9' to 14'
85"	3.5" to 5"	6" to 8"	14' to 18'

MACHINE MOVED STOCK

PLANTING HOLE DIMENSIONS			
HOLE DEPTH FOR B&B AND CONTAINER PLANTS SHALL NOT EXCEED MEASUREMENT FROM ROOT FLAIR TO BOTTOM OF SOIL BALL.			
PLANT TYPE	PLANT SIZE UP TO AND INCLUDING	(A) MINIMUM HOLE WIDTH	(B) APPROXIMATE HOLE DEPTH
CONIFEROUS TREES AT LEAST 2/3 OF ALL CONIFER BRANCHES WILL CONTAIN TERMINAL BUDS	2' B.B	36"	10"
	3' B.B	42"	11"
	4' B.B	51"	13"
	5' B.B	60"	13"
	6' B.B	66"	15"
	7' B.B	72"	16"
	8' B.B.	81"	18"
	9' B.B	90"	20"
	10' B.B	102"	21"
	12' B.B	114"	24"
CONIFEROUS SHRUBS (UPRIGHT)	18" B.B.	24"	7"
	3' B.B.	48"	12"
CONIFEROUS SHRUBS (SPREADING)	18" SPR B.B.	30"	8"
	2' SPR B.B.	36"	9"
CONTAINER GROWN PLANTS	CELLPACKS / PLUGS	6"	2.5"
	2.25" CONT.	7"	3"
	3.5" CONT.	10"	3"
	4" CONT.	11"	4"
	4.5" CONT.	13"	4"
	6"/1 QT CONT.	15"	5.5"
	1# CONT.	18"	6"
	2# CONT.	23"	7.5"
	3# CONT.	29"	8.5"
	5# CONT.	30"	11"
	7# CONT.	37"	11"
	15# CONT.	44"	14"
	10# CONT.	45"	15"
	20# CONT.	60"	16"
	25# CONT.	72"	17"
SEEDLINGS	6" SEEDLING	15"	14"
	9" SEEDLING	18"	14"
	12" SEEDLING	23"	16"
	18" SEEDLING	30"	16"
	2' SEEDLING	36"	18"
VINES	1 YR. MED B.R.	15"	11"
	1 YR. NO. 1 B.R.	17"	14'
	2 YR. MED. B.R.	33"	12"
	2 YR. NO. 1 B.R.	42"	15"

MULCH AREA CALCULATOR	
TYPE OF PLANT	SQ. FT. PER PLANT
CONIFEROUS TREES	$\left[\left(\frac{3 / 5 \times \text{HEIGHT}}{2}\right)+3\right]^2 \times \pi$
DECIDUOUS AND ORNAMENTAL TREES	$3^2 \times \pi$
CONIFEROUS AND DECIDUOUS SHRUBS, ROSE BUSHS, PERENNIALS, ORNAMENTAL GRASS	SPACING x SPACING
VINES	SPACING x 2
MACHINE-MOVED TREES OR SHRUBS	$\left[\left(\frac{\text{SPADE DIAMETER}}{2}\right)+1\right]^2 \times \pi$
π= 3.1416	



1.PULL MULCH BACK NO LESS THAN 3" AND NO MORE THAN 6" FROM TREES AND SHRUBS AT THE TRUNK OR MAIN STEM.
2.SUBSIDING OR DETERIORATING MULCH IS ACCEPTABLE THROUGHOUT THE ESTABLISHED PERIOD IF THE MULCH DEPTH IS MAINTAINED AT A MINIMUM 3" DEPTH.
3.ADD MULCH WHEN BELOW THE 3" MINIMUM DEPTH, DO NOT EXCEED THE 6" MAXIMUM DEPTH.
4.MULCH CONTAMINATED WITH SOIL MUST BE REMOVED AND REPLACED.

MULCH PLACEMENT

(MnDOT 2571.3F)

(MnDOT 2571.3H)

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NO.	DATE	BY	CHK	REVISIONS

Design By: CCA
Plan By: SMN
Checked By: CCA
Approved By: CCA

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA.

CANDACE AMBERG

DATE 12/3/2020 LICENSE # 40646

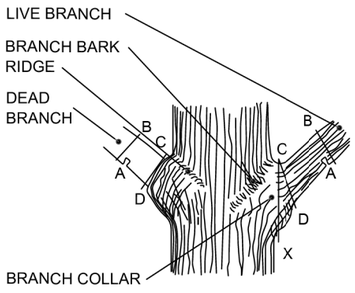
wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
PLANTING DETAILS
LANDSCAPING PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **L4** OF **L5** SHEETS

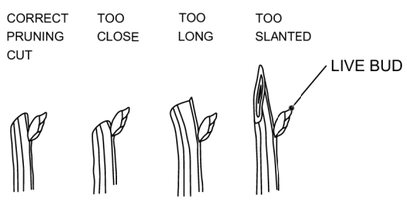


BRANCHES PRUNED AT TRUNK
(SHIGO METHOD)

STEPS TO PRUNING WITH PRUNING SAW:
1. CUT PART WAY THROUGH THE BRANCH AT POINT A.
2. CUT COMPLETELY THROUGH BRANCH FROM POINT B TO A.
3. AT BRANCH COLLAR CUT FROM POINT C TO D.

INCORRECT CUT FROM POINT C TO X (TOO CLOSE) WILL RESULT IN DISCONTINUOUS CALLUS FORMATION AFTER ONE SEASON OF GROWTH.

CORRECT CUT FROM POINT C TO D (LEAVING BRANCH COLLAR BUT NOT THE STUB FROM POINT B TO A) WILL RESULT IN CONTINUOUS DOUGHNUT SHAPED CALLUS FORMATION AFTER ONE SEASON OF GROWTH.

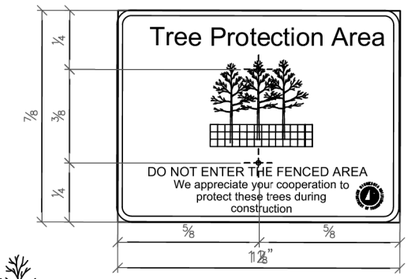


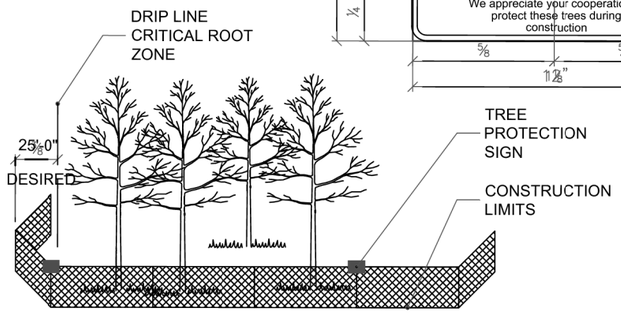
BRANCHES PRUNED TO LIVE BUD

PRUNING NOTES:
1. PRUNE USING CLEAN AND SHARP SCISSOR-TYPE PRUNER OR PRUNING SAW.
2. THE BEST TIME TO PRUNE IS LATE DORMANT SEASON OR EARLY SPRING.
3. AVOID PRUNING OAKS IN APRIL, MAY, JUNE OR JULY.
4. IF PRUNING IS NECESSARY OR IF WOUNDS OCCUR TO OAK TREES IN APRIL, MAY, JUNE OR JULY, IMMEDIATELY PAINT CUT SURFACE OR WOUND WITH LATEX PAINT OR SHELLAC.

PRUNING
(MnDOT 2571.3K2a9 and 2571.3E1)

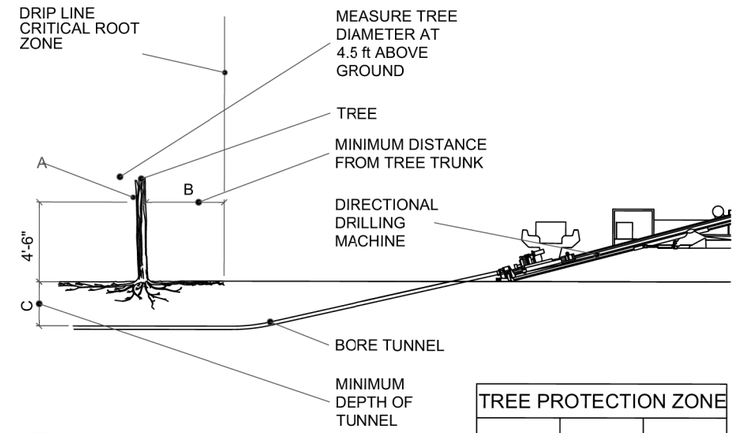
1. FABRICATE 12" X 9" X 3/8" SIGN WITH 0.75" RADIUS CORNERS.
2. SIGN SHALL BE WHITE WITH BLACK LETTERING.
3. ATTACH SIGN TO POST USING 1" LENGTH WOOD SCREWS.





1. FURNISH AND INSTALL TEMPORARY FENCE AT THE TREE'S DRIPLINE OR CONSTRUCTION LIMITS AS SPECIFIED, PRIOR TO ANY CONSTRUCTION.
2. WHEN POSSIBLE PLACE FENCE 25 FEET BEYOND THE DRIP LINE.
3. PLACE TREE PROTECTION SIGNS ALONG FENCE AT 50' INTERVALS.

TEMPORARY FENCE
(MnDOT 2572.3A1)

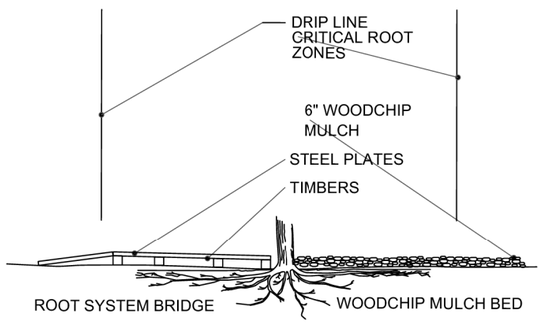


NOTE:

1. (A) IS THE DIAMETER OF TREES MEASURED 4-6 FEET ABOVE THE GROUND AND IS TERMED THE "DIAMETER AT BREAST HEIGHT," (DBH).
2. USING A TREE DIAMETER TAPE, WRAP THE TAPE AROUND THE GIRTH OF THE TREE, AT THE DBH, BEING CAREFUL NOT TO TWIST THE TAPE.

TREE PROTECTION ZONE		
A	B	C
<2"	2'	2'
2-4"	4'	2.5'
>4-9"	6'	2.5'
>9-14"	10'	3'
>14-19"	12'	3.25'
>19"	15'	4'

UTILITY CONSTRUCTION
(MnDOT 2572.3A5)



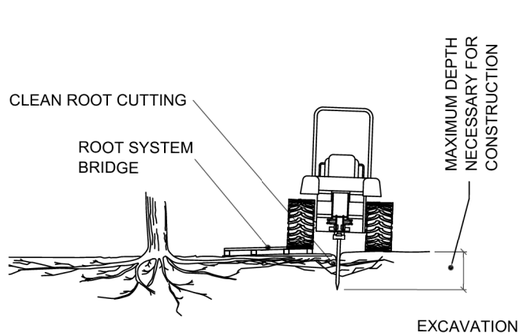
IF CONSTRUCTION VEHICLES MUST PASS OVER ROOT ZONES, THE CONTRACTOR MUST EITHER:

1. CONSTRUCT ROOT SYSTEM BRIDGES WITH STEEL PLATE SUPPORTED ON WOOD TIMBERS PLACED RADIALLY TO THE TREE TRUNK.

OR

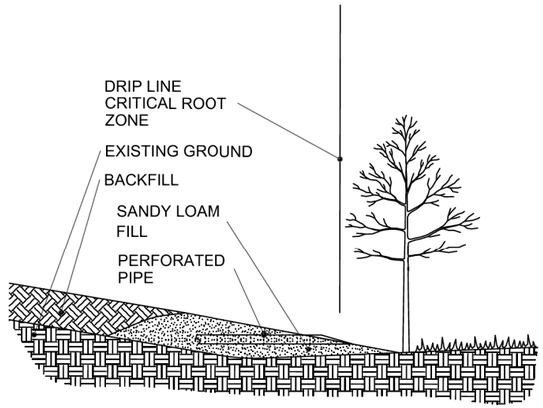
2. PLACE A 6 INCH LAYER OF WOODCHIP MULCH OVER TYPE III GEOTEXTILE (MnDOT 3733)

OTHER VEGETATION PROTECTION MEASURES
(MnDOT 2572.3A12)



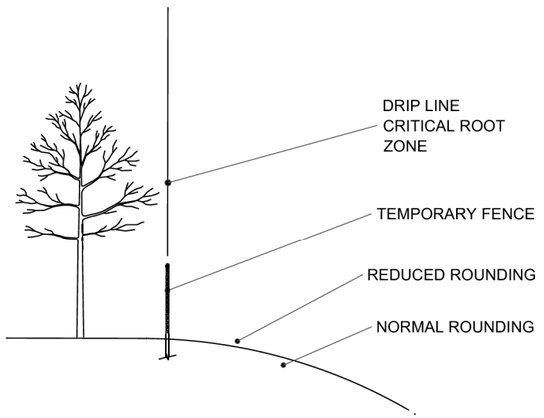
1. WHEN DESIGNATED IN THE PLAN OR DIRECTED BY THE ENGINEER, PRIOR TO EXCAVATION, ALL TREE ROOTS WILL BE CLEANLY CUT BY A VIBRATORY PLOW OR OTHER APPROVED ROOT CUTTER.
2. THE TREE ROOTS WILL BE CUT CLEANLY TO THE MINIMUM DEPTH NECESSARY FOR CONSTRUCTION.
3. IMMEDIALTLY, AND CLEANLY CUT DAMAGED AND EXPOSED ROOTS.
4. ROOT ENDS EXPOSED BY EXCAVATION ACTIVITIES SHALL BE IMMEDIATELY COVERED WITH A 6" LAYER OF ADJACENT SOIL.
5. EXPOSED CUT OAK ROOTS SHALL BE IMMEDIATELY (WITHIN 5 MINUTES) TREATED WITH A WOUND DRESSING MATERIAL CONSISTING OF LATEX PAINT OR SHELLAC.

CLEAN ROOT CUTTING
(MnDOT 2572.3A2)



1. ANY FILL REQUIRED WITHIN THE DRIP LINE OF TREES, IS UNCOMPACTED SANDY LOAM TOPSOIL (WITH A COARSE SAND COMPONENT).
2. EXCESSIVE FILL MAY REQUIRE INSTALLING PERFORATED PIPE WITH AT LEAST ONE DAYLIGHTED END OPENING AS AN AERATION SYSTEM.

SANDY LOAM TOPSOIL
(MnDOT 2572.3A4)



SIGNIFICANT TREES NEAR THE PROPOSED CONSTRUCTION LIMITS WILL BE IDENTIFIED IN THE PLAN OR BY THE ENGINEER AND WILL BE PRESERVED BY THE CONTRACTOR.

1. PLACE THE TEMPORARY FENCE.
2. REDUCE SLOPE ROUNDING WHERE ROOT ZONES ARE DISTURBED BY NORMAL SLOPE ROUNDING.
3. VARY BACKSLOPE STEEPNESS TO AVOID TREE LOSS OR UNNECESSARY ROOT DAMAGE.

SLOPE ROUNDING

NO.	DATE	BY	CHK	REVISIONS

Design By: CCA
Plan By: SMN
Checked By: CCA
Approved By: CCA

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA.

CANDACE AMBERG
DATE 12/3/2020 LICENSE # 40646

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
PLANTING DETAILS
LANDSCAPING PLAN
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **L5** OF **L5** SHEETS

PLOTTED/REVISED: 12/3/2020

#441

INP R/W

C CSAH 34 WB

C CSAH 34 EB

104+32.00 R1

900.49

900.50

PWR OH

INP R/W

T.E.

7.6% 1.0% 2.0% 2.0% 2.0% 2.0% 2.0% 1.5% 1:3.0

GAS T-BUR GAS WATER T-BUR GAS T-BUR T-BUR T-BUR T-BUR T-BUR T-BUR T-BUR

INP R/W

C CSAH 34 WB

C CSAH 34 EB

104+00.00 R1

900.65

900.65

PWR OH

INP R/W.E.

7.5% 1.5% 2.0% 2.0% 2.0% 1.5% 1:3.0

T-BUR GAS WATER T-BUR GAS T-BUR T-BUR T-BUR T-BUR T-BUR T-BUR T-BUR

INP R/W

C CSAH 34 WB

C CSAH 34 EB

103+50.00 R1

900.90

900.90

PWR OH

INP R/W.E.

3.1% 1.5% 2.0% 2.0% 2.0% 1.5% 1:3.1

T-BUR GAS WATER T-BUR GAS T-BUR T-BUR T-BUR T-BUR T-BUR T-BUR T-BUR

INP R/W

C CSAH 34 WB

C CSAH 34 EB

103+04.18 R1

901.13

901.13

INP R/W

1:4.0 1.5% 1.5% 2.0% 2.0% 2.0% 2.0% 2.0% 1.5% 1:7.4

GAS GAS T-BUR T-BUR GAS P-BUR WATER GAS T-BUR GAS P-BUR T-BUR T-BUR T-BUR T-BUR P-BUR P-BUR T-BUR T-BUR T-BUR

910 900 890 880

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140

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NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements

Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

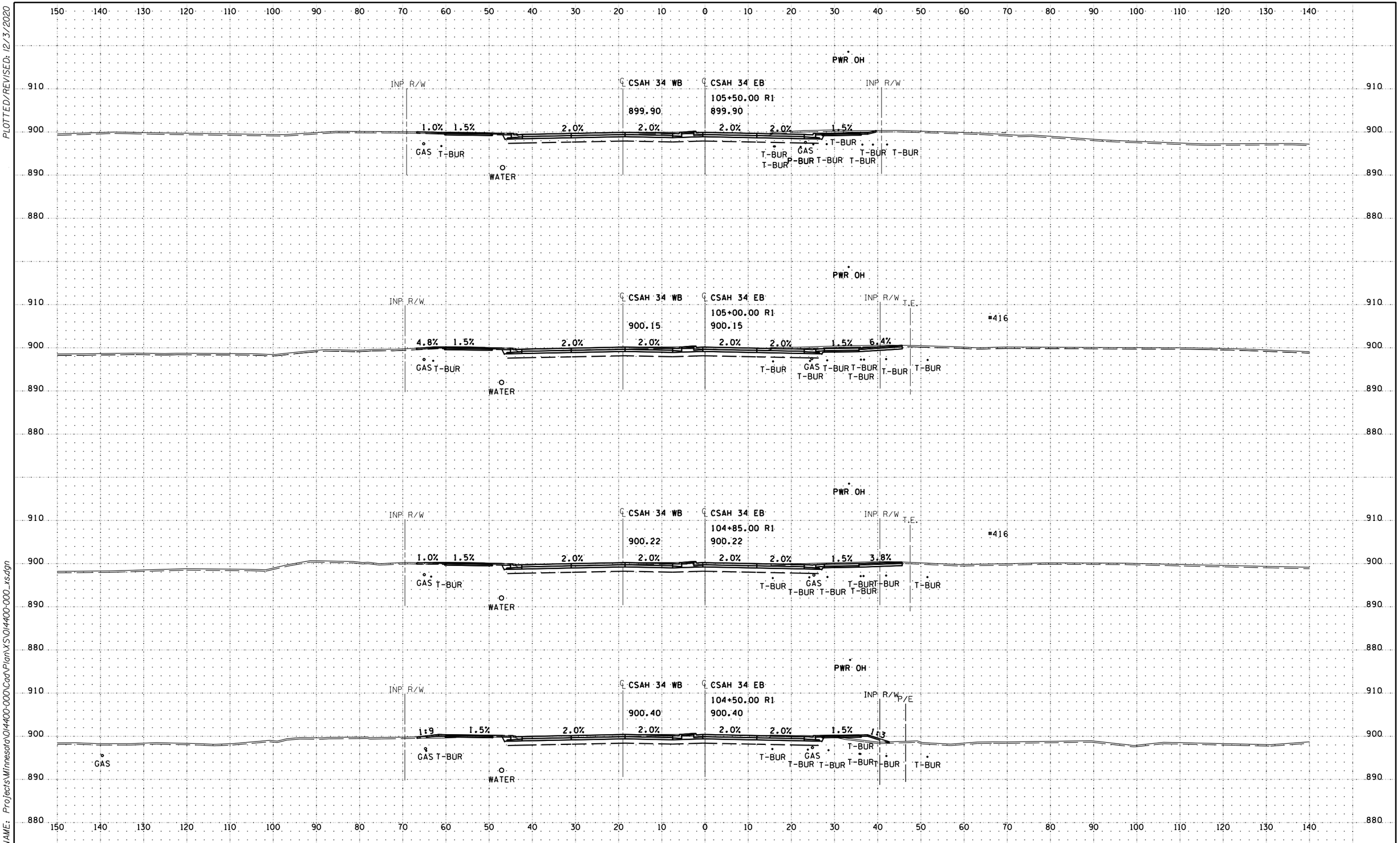
CSAH 34

CROSS SECTIONS

S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **X1** OF **X35** SHEETS

PLOTTED/REVISED: 12/3/2020



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NO.	DATE	BY	CHK	REVISIONS

Design By:	AJP
Plan By:	CWK
Checked By:	AJP
Approved By:	AJP

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements

Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

CSAH 34

CROSS SECTIONS

S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **X2** OF **X35** SHEETS

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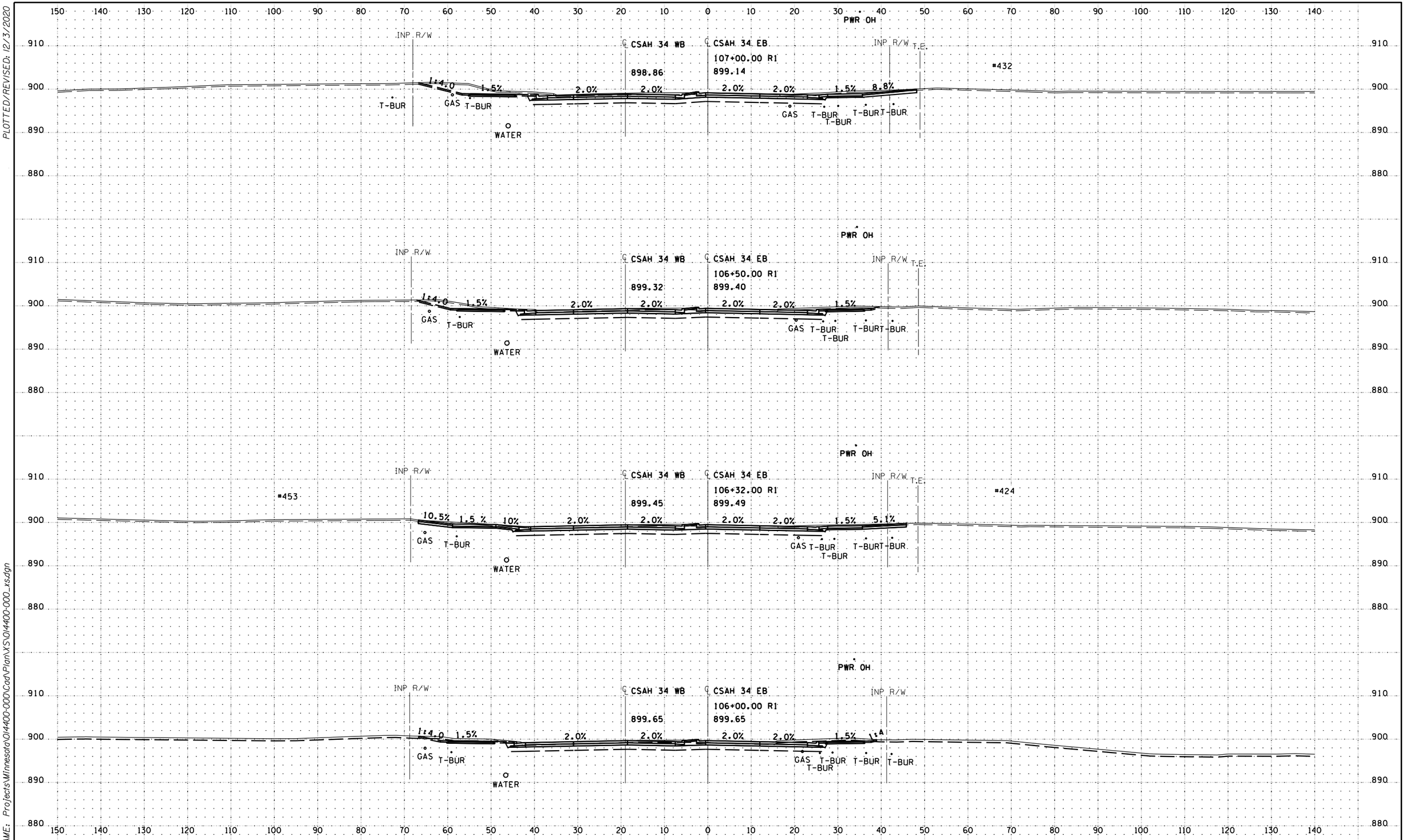

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NO.	DATE	BY	CHK	REVISIONS

Design By:	AJP
Plan By:	CWK
Checked By:	AJP
Approved By:	AJP

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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements

Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

CSAH 34

CROSS SECTIONS

S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **X3** OF **X35** SHEETS

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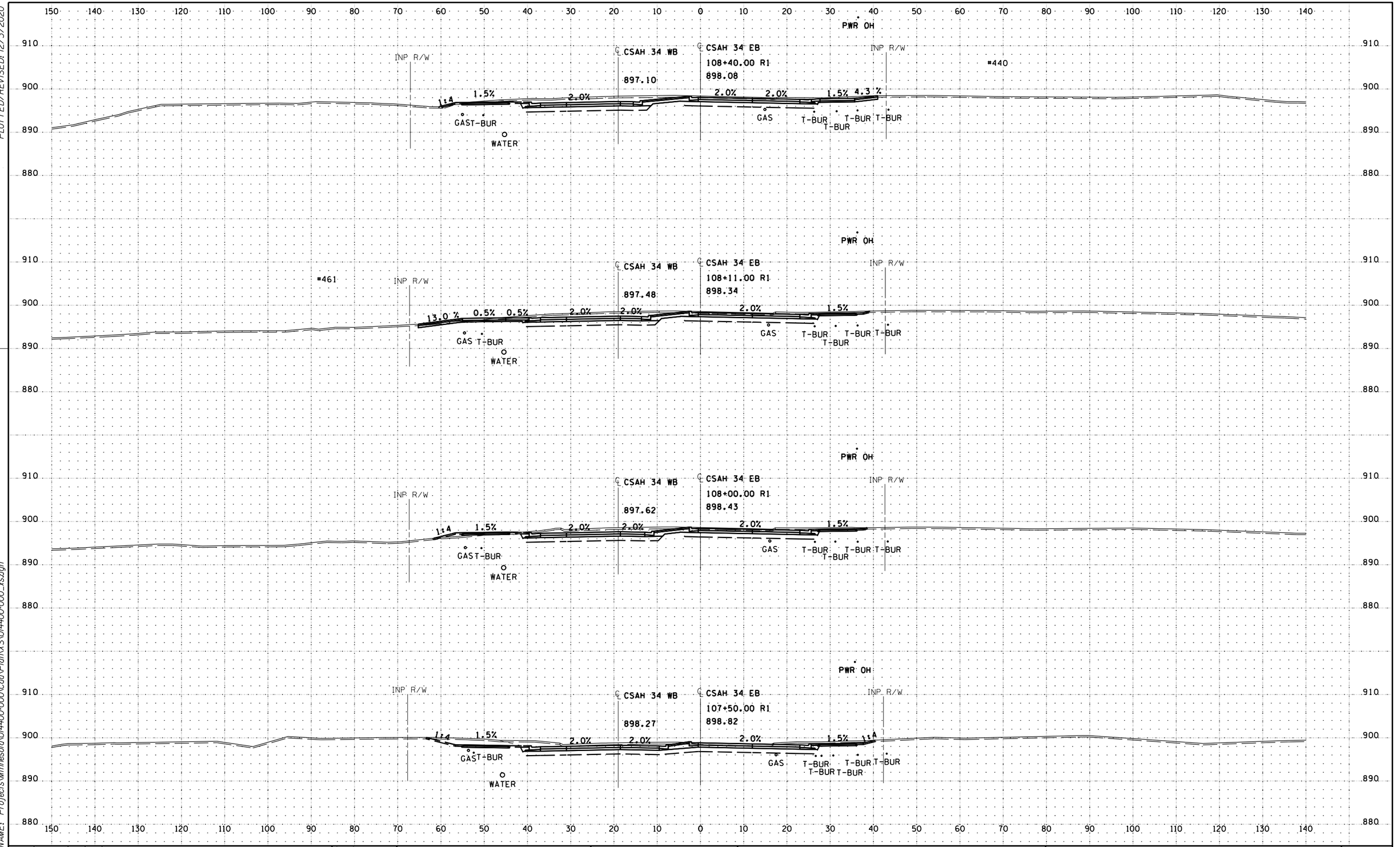

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NO.	DATE	BY	CHK	REVISIONS

Design By:	AJP
Plan By:	CWK
Checked By:	AJP
Approved By:	AJP

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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
CSAH 34
CROSS SECTIONS
S.A.P. 002-634-003 & S.A.P. 210-020-010

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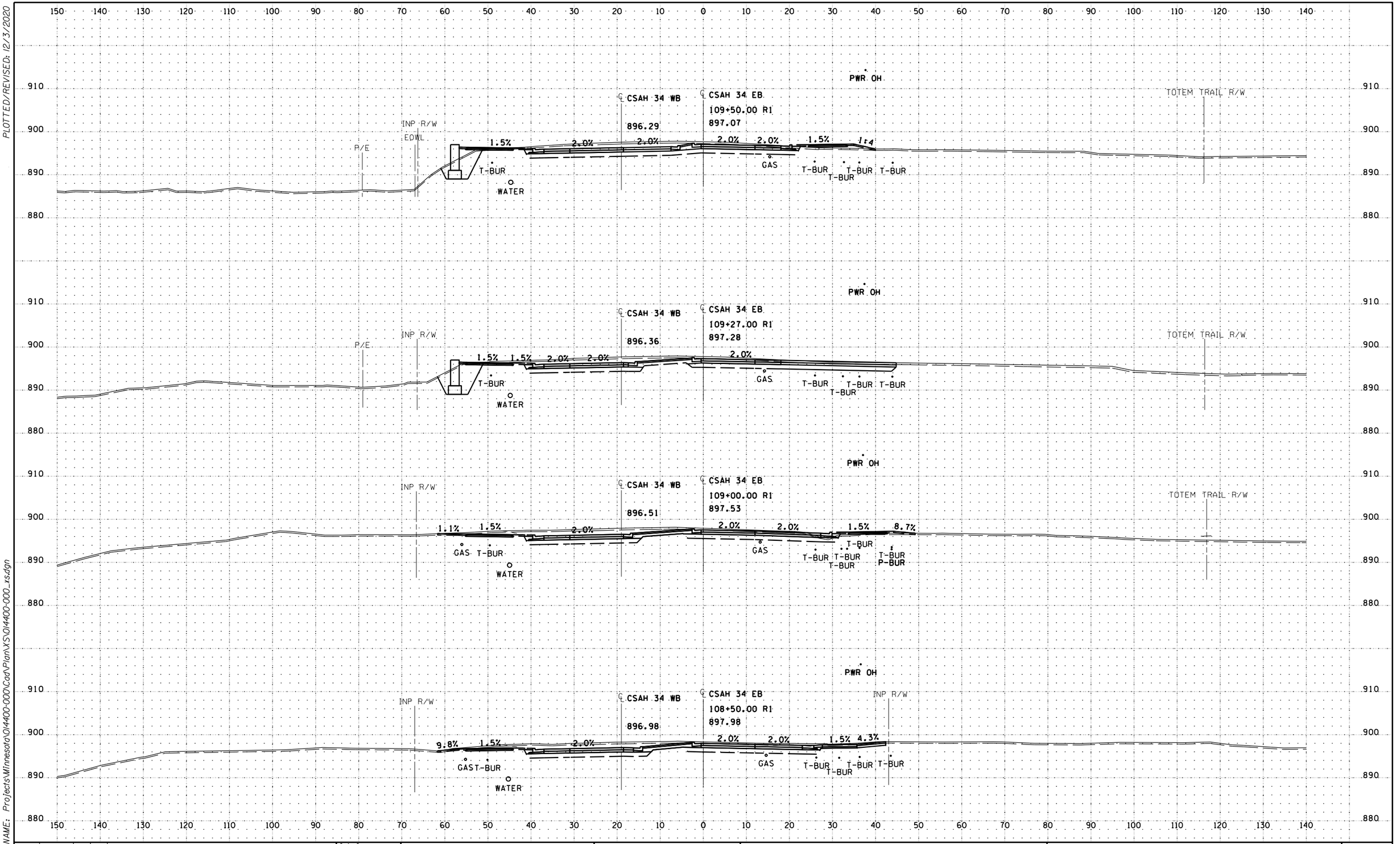

NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
CSAH 34
CROSS SECTIONS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **X5** OF **X35** SHEETS

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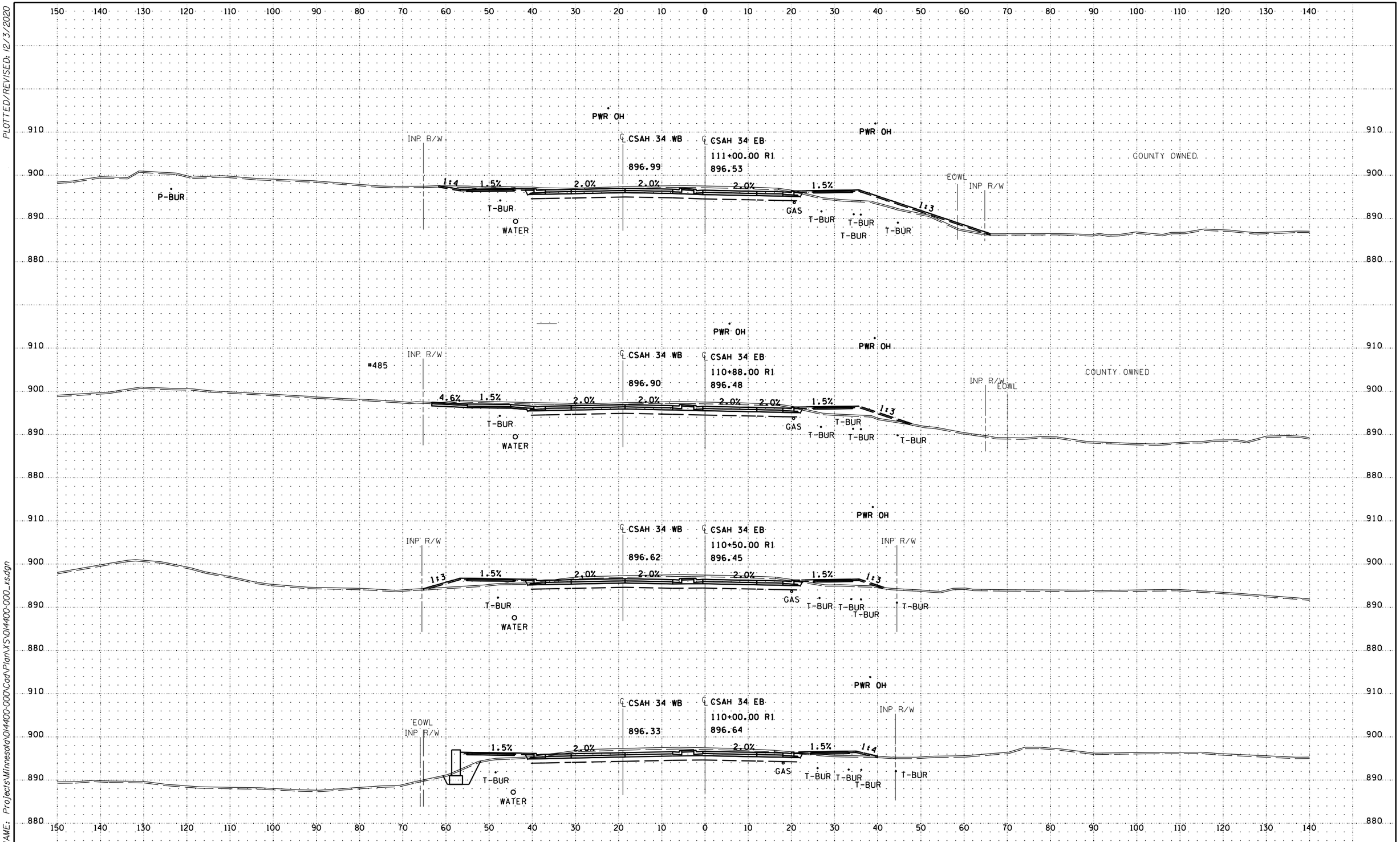

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Design By:	AJP
Plan By:	CWK
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Approved By:	AJP

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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements

Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

CSAH 34

CROSS SECTIONS

S.A.P. 002-634-003 & S.A.P. 210-020-010

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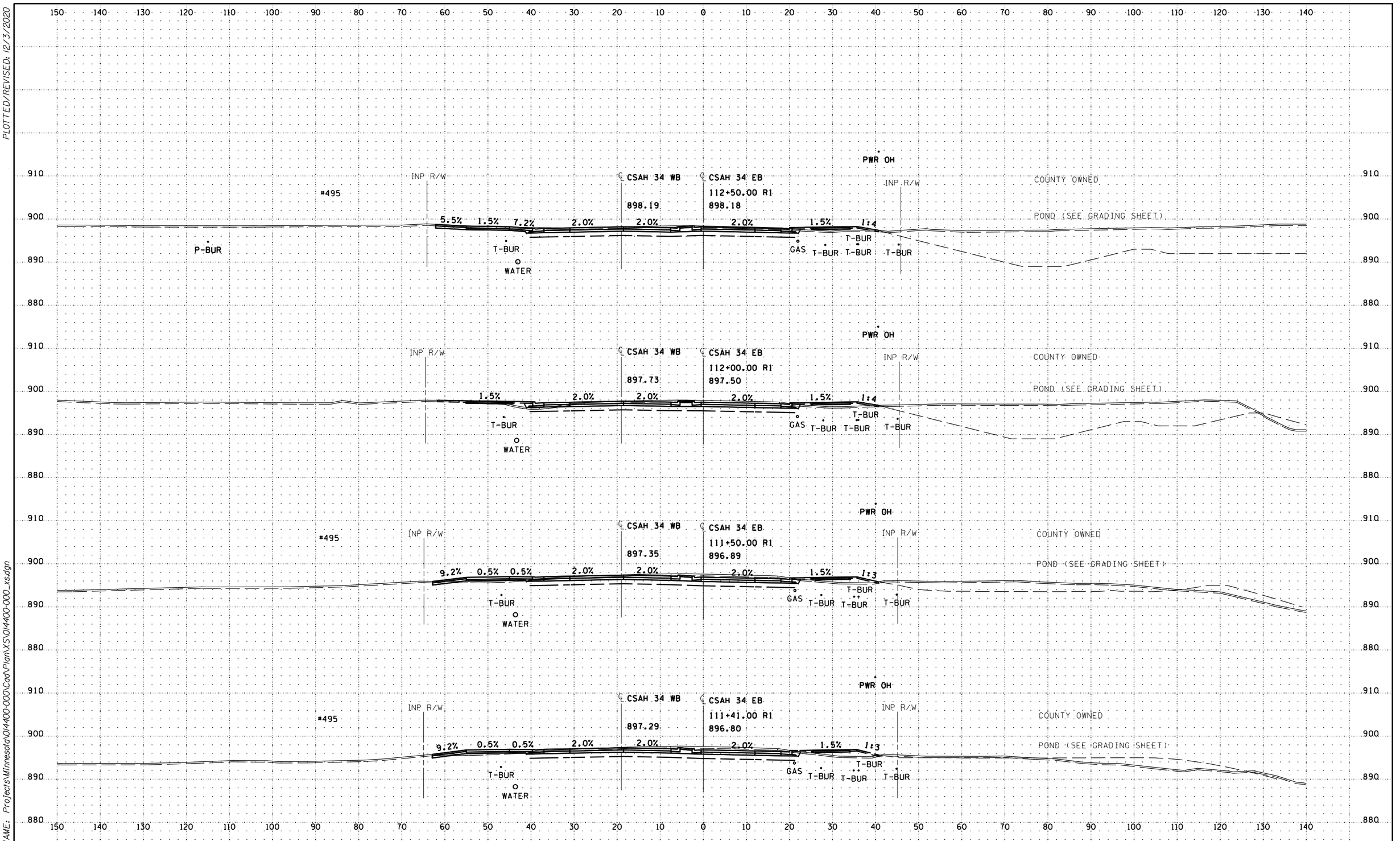

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NO.	DATE	BY	CHK	REVISIONS

Design By:	AJP
Plan By:	CWK
Checked By:	AJP
Approved By:	AJP

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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements

Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

CSAH 34

CROSS SECTIONS

S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **X7** OF **X35** SHEETS

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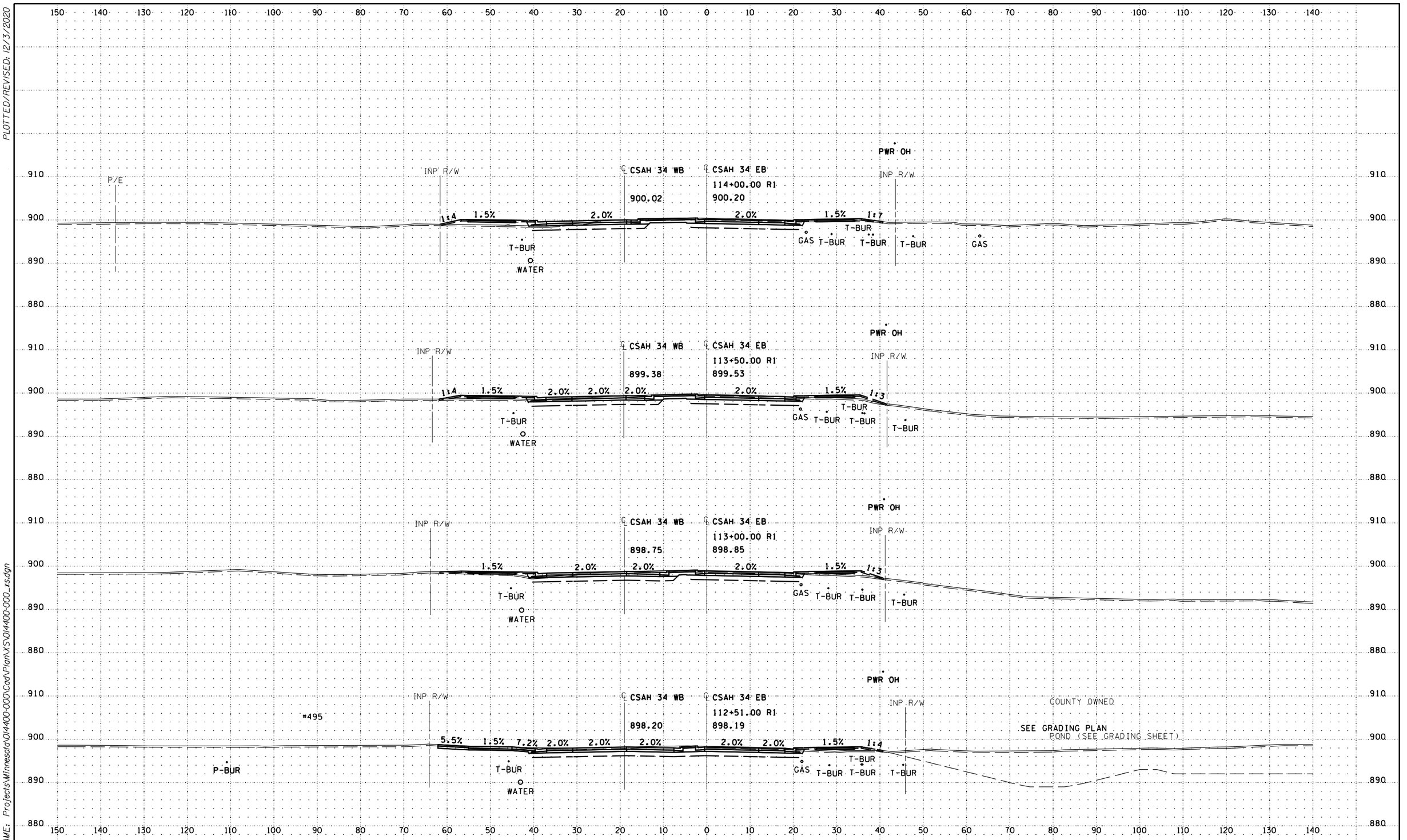

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NO.	DATE	BY	CHK	REVISIONS

Design By:	AJP
Plan By:	CWK
Checked By:	AJP
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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements

Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

CSAH 34

CROSS SECTIONS

S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **X8** OF **X35** SHEETS

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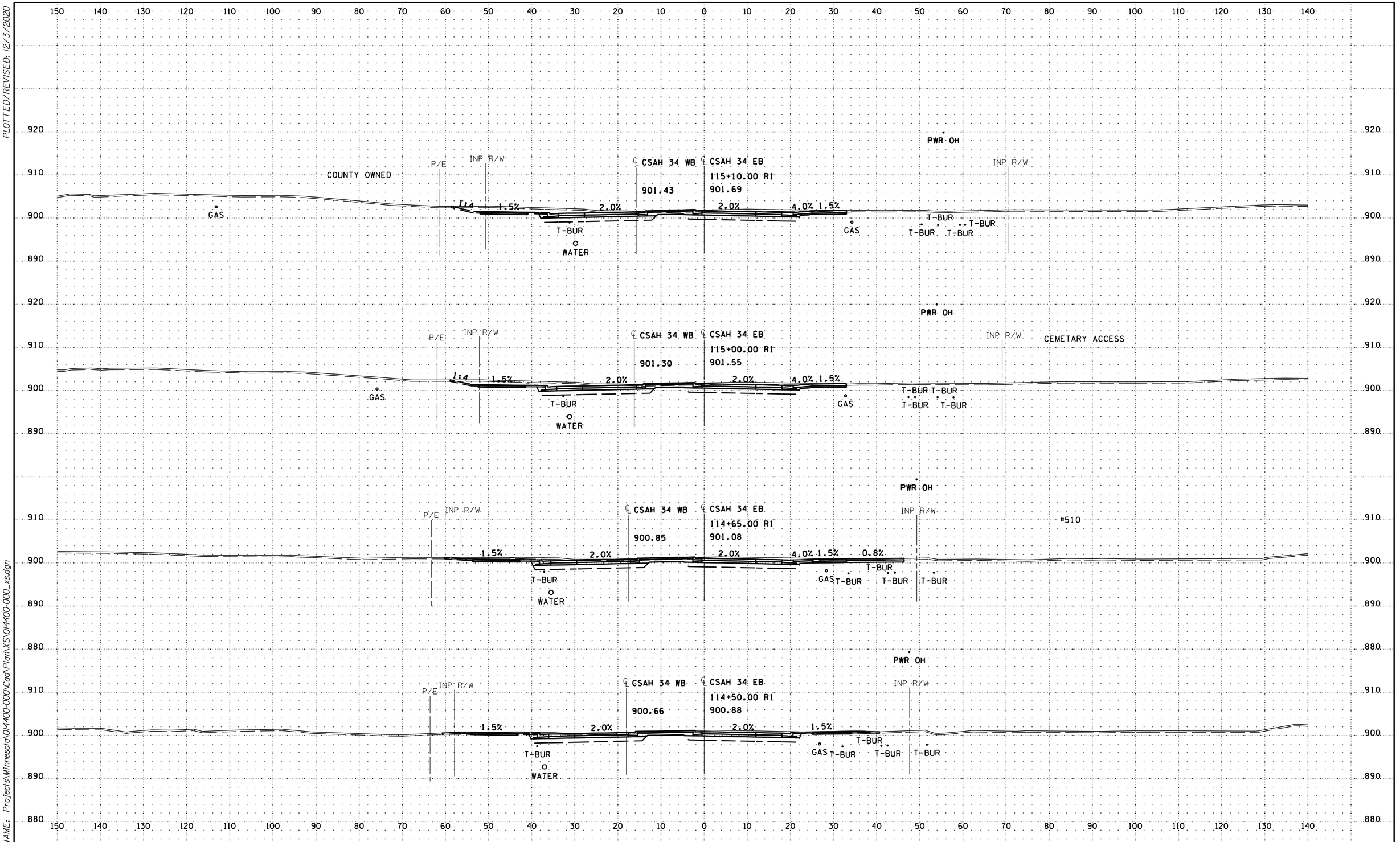

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Design By:	AJP
Plan By:	CWK
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Approved By:	AJP

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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements

Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

CSAH 34

CROSS SECTIONS

S.A.P. 002-634-003 & S.A.P. 210-020-010

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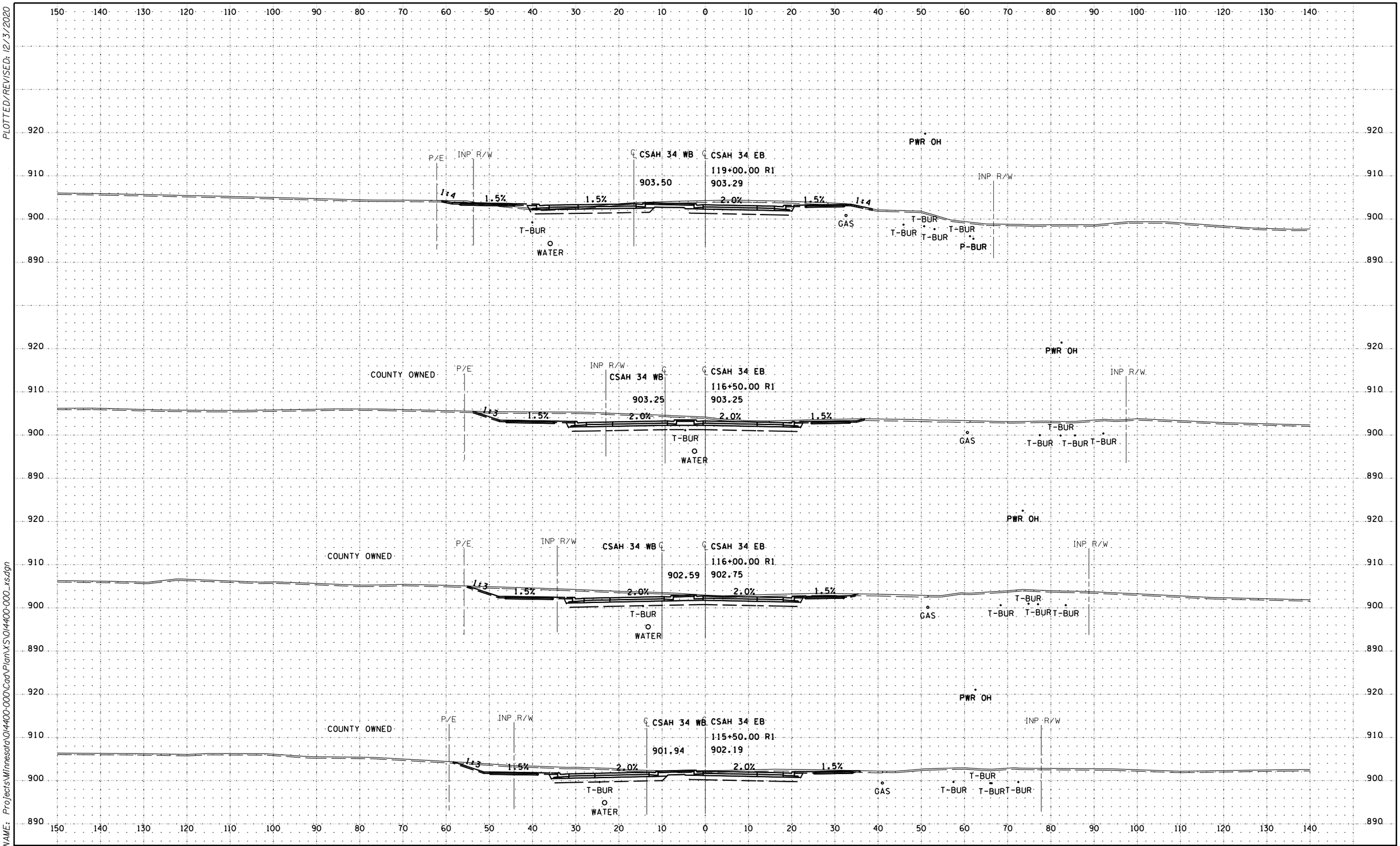

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NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
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Approved By: AJP

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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
CSAH 34
CROSS SECTIONS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **X10** OF **X35** SHEETS

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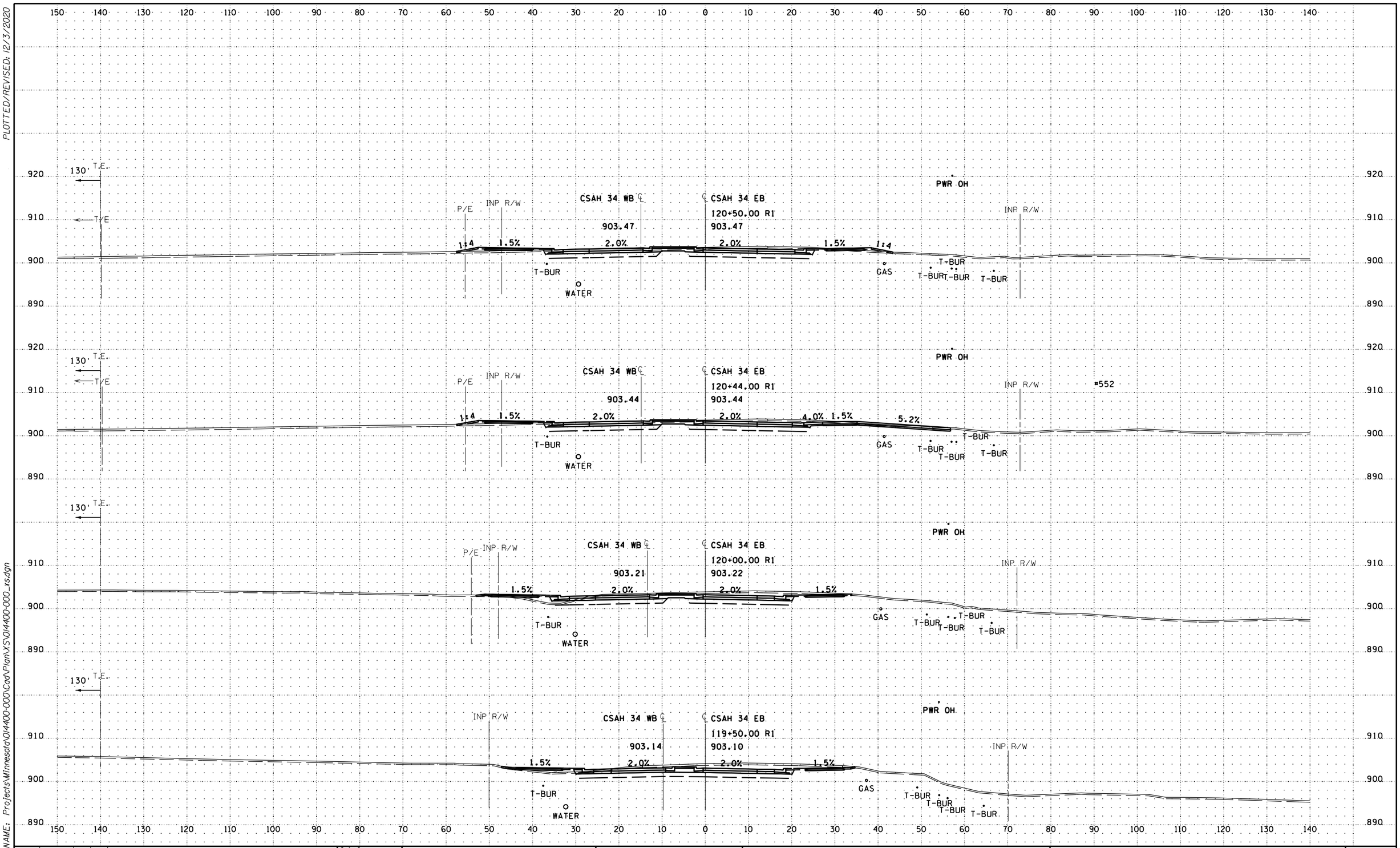

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NO.	DATE	BY	CHK	REVISIONS

Design By:	AJP
Plan By:	CWK
Checked By:	AJP
Approved By:	AJP

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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements

Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

CSAH 34

CROSS SECTIONS

S.A.P. 002-634-003 & S.A.P. 210-020-010

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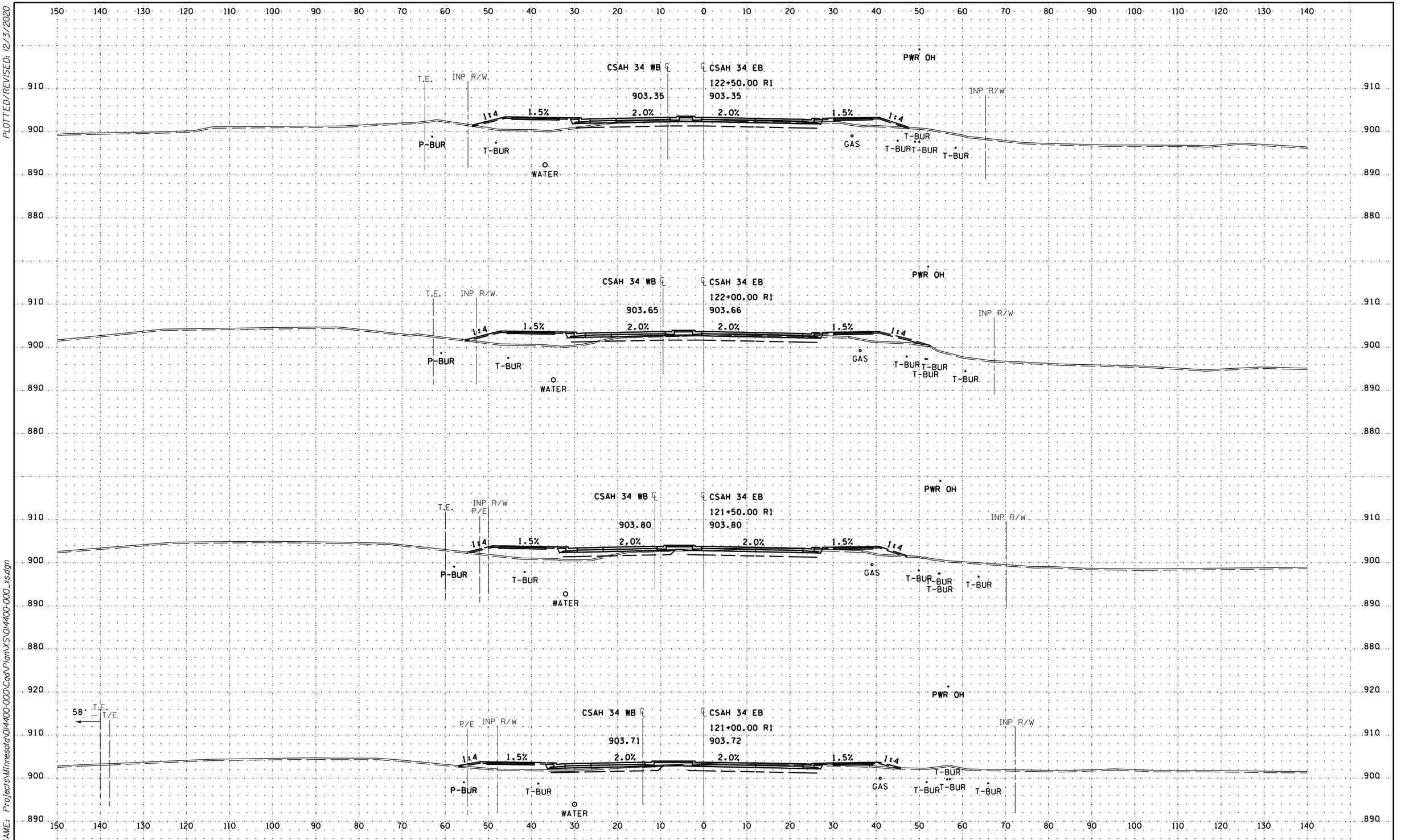


NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

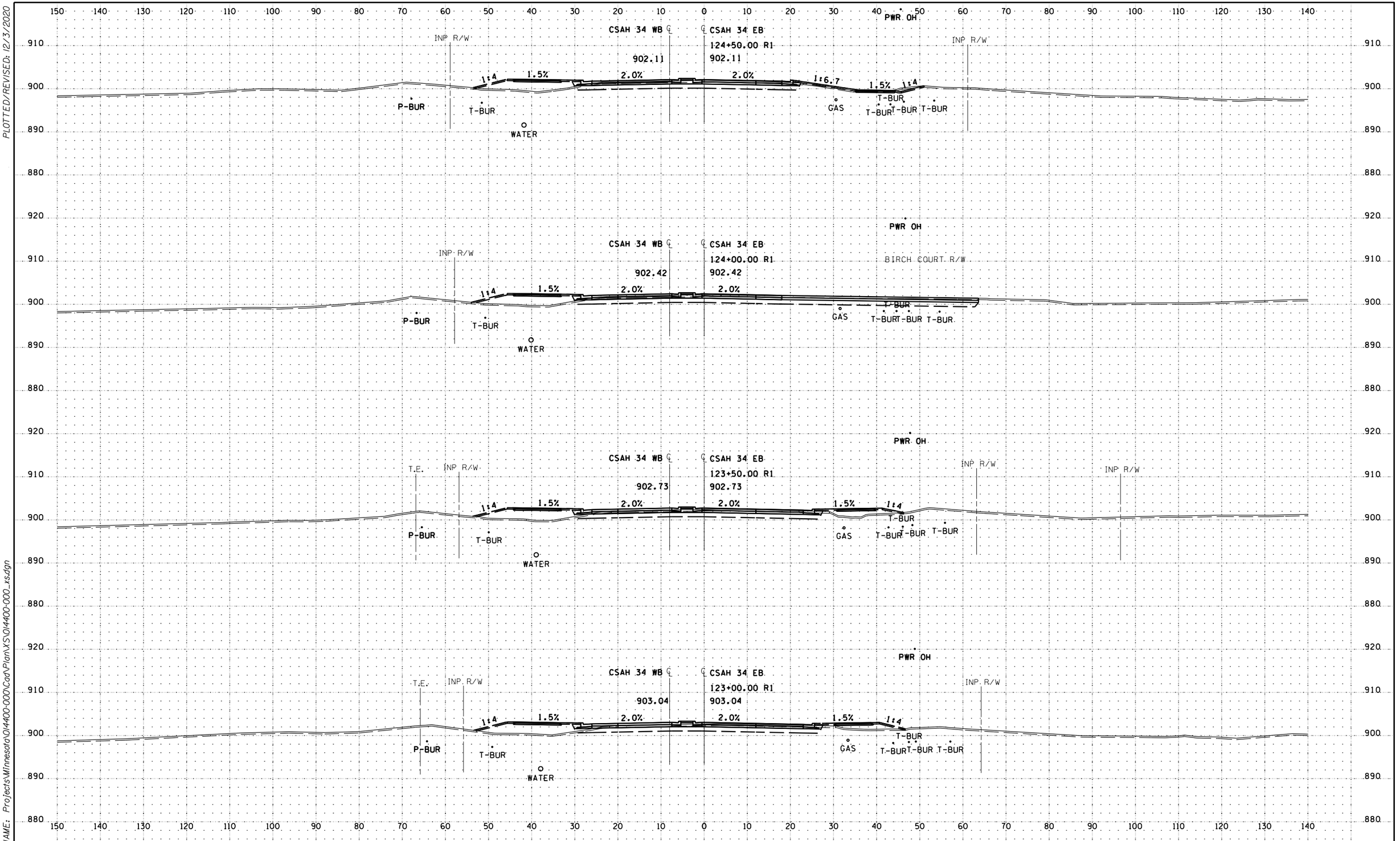
wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
CSAH 34
CROSS SECTIONS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **X12** OF **X35** SHEETS



NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
CSAH 34
CROSS SECTIONS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **X13** OF **X35** SHEETS

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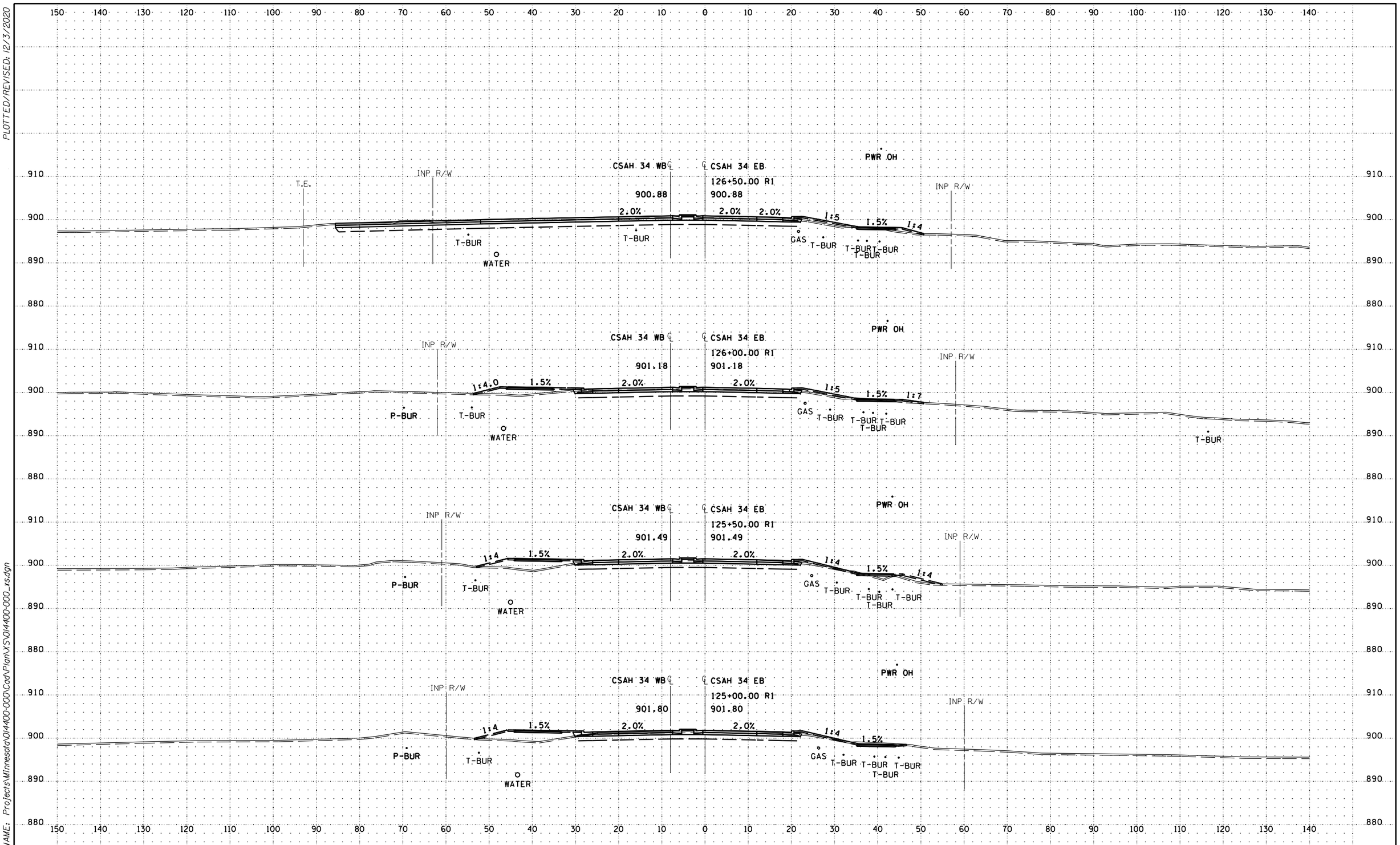

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Design By: AJP
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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
CSAH 34
CROSS SECTIONS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **X14** OF **X35** SHEETS

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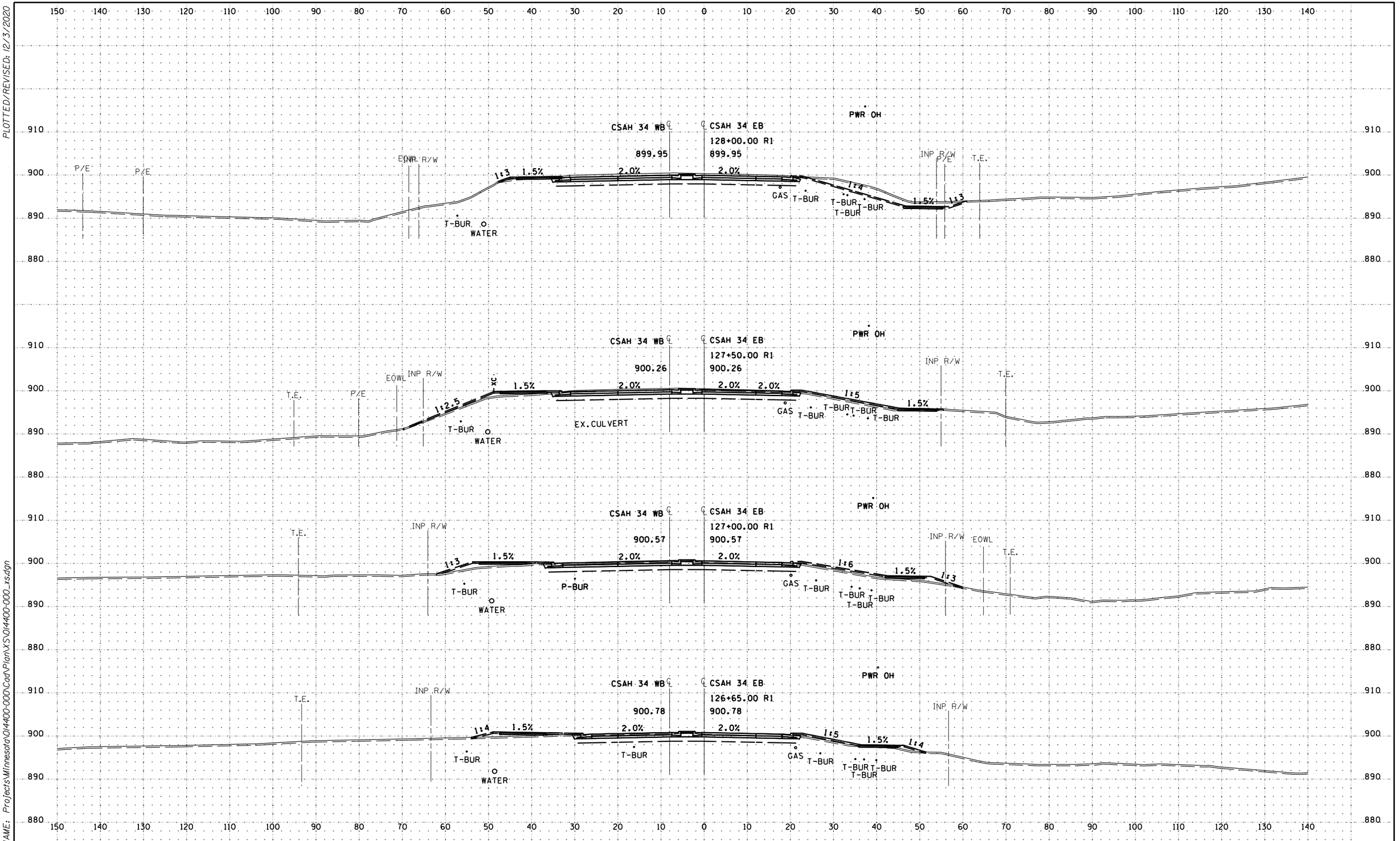

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NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
CSAH 34
CROSS SECTIONS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **X15** OF **X35** SHEETS

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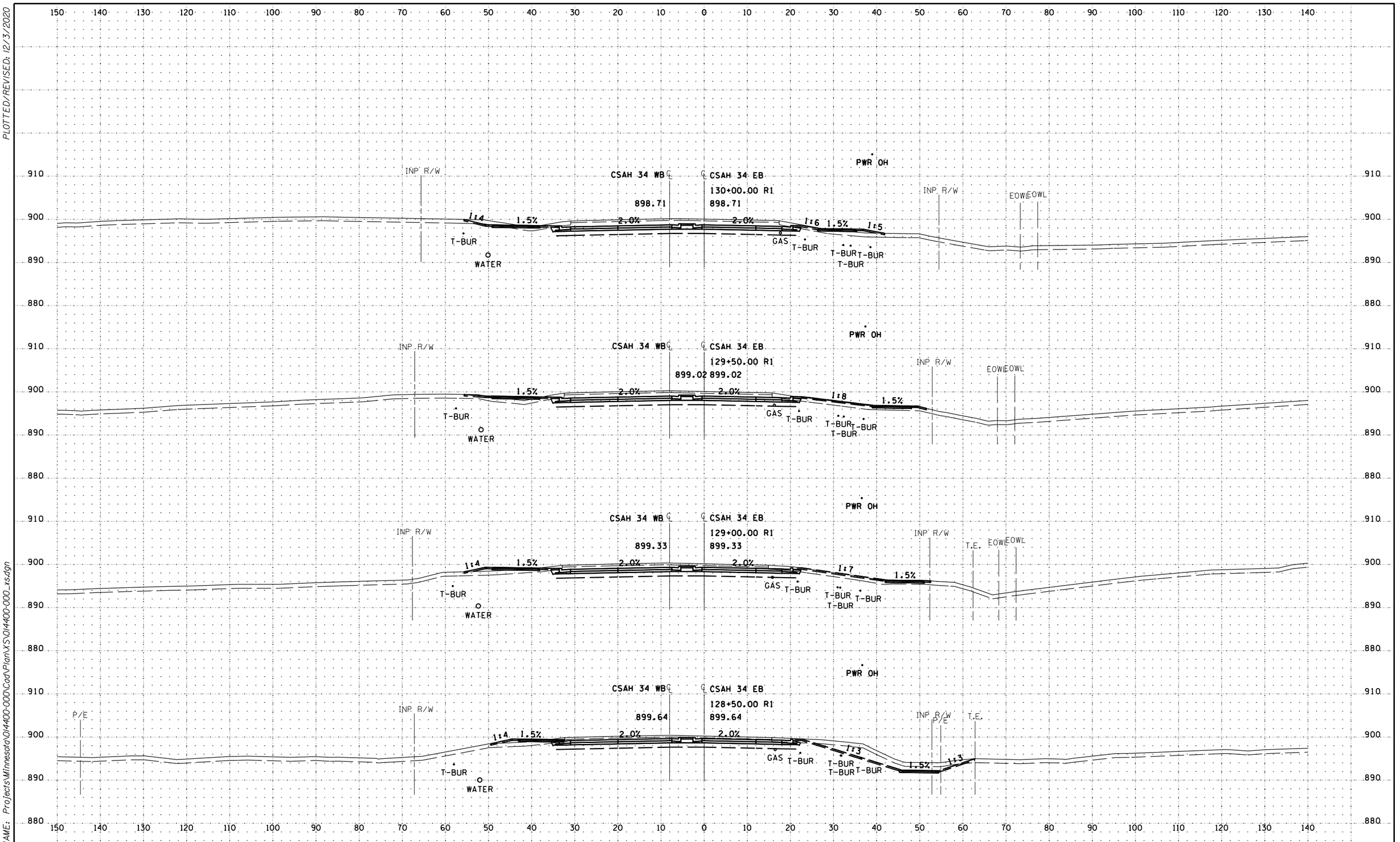

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NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

wsb

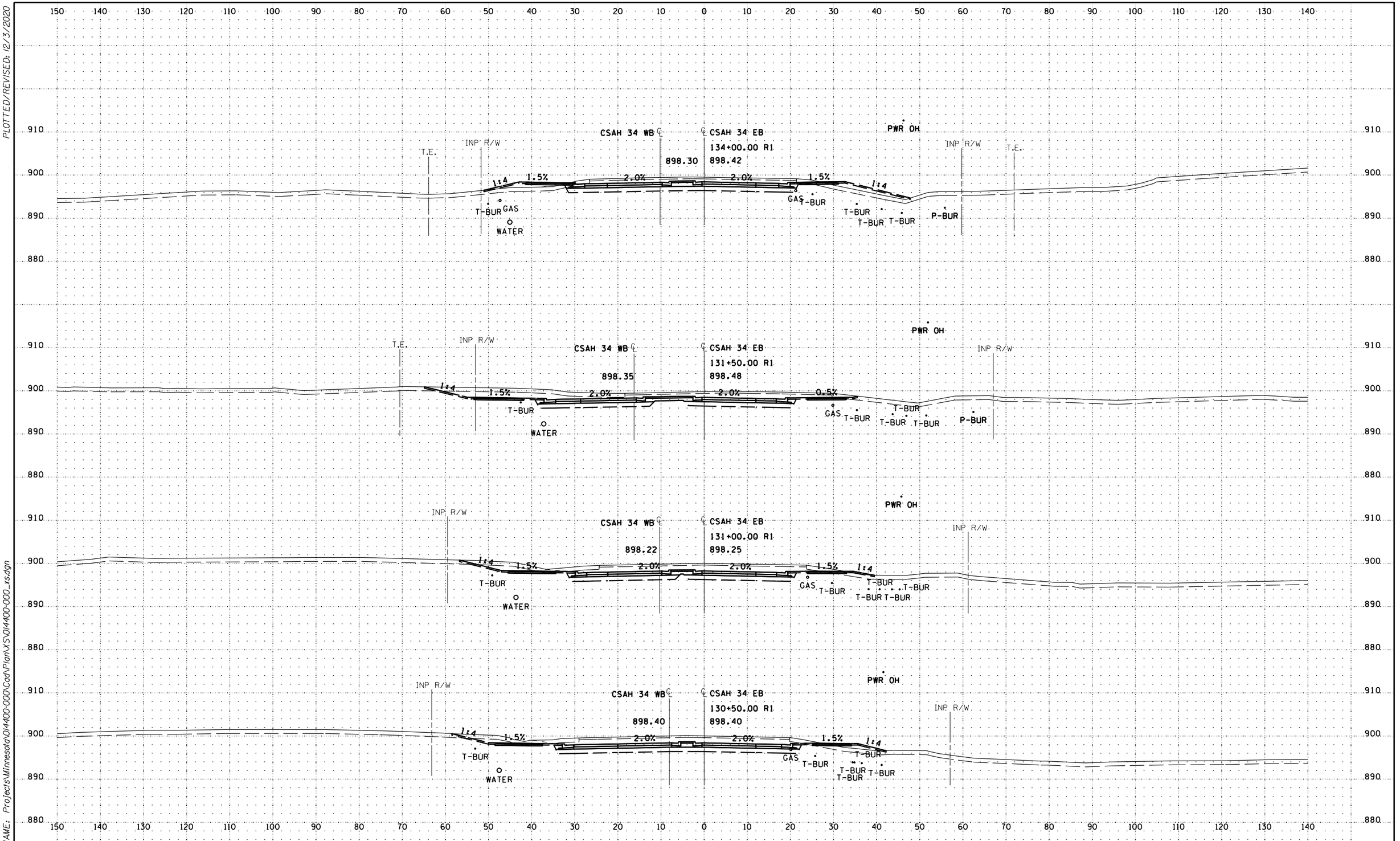
ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
CSAH 34
CROSS SECTIONS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **X16** OF **X35** SHEETS

PLOTTED/REVISED: 12/3/2020



NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
CSAH 34
CROSS SECTIONS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **X17** OF **X35** SHEETS

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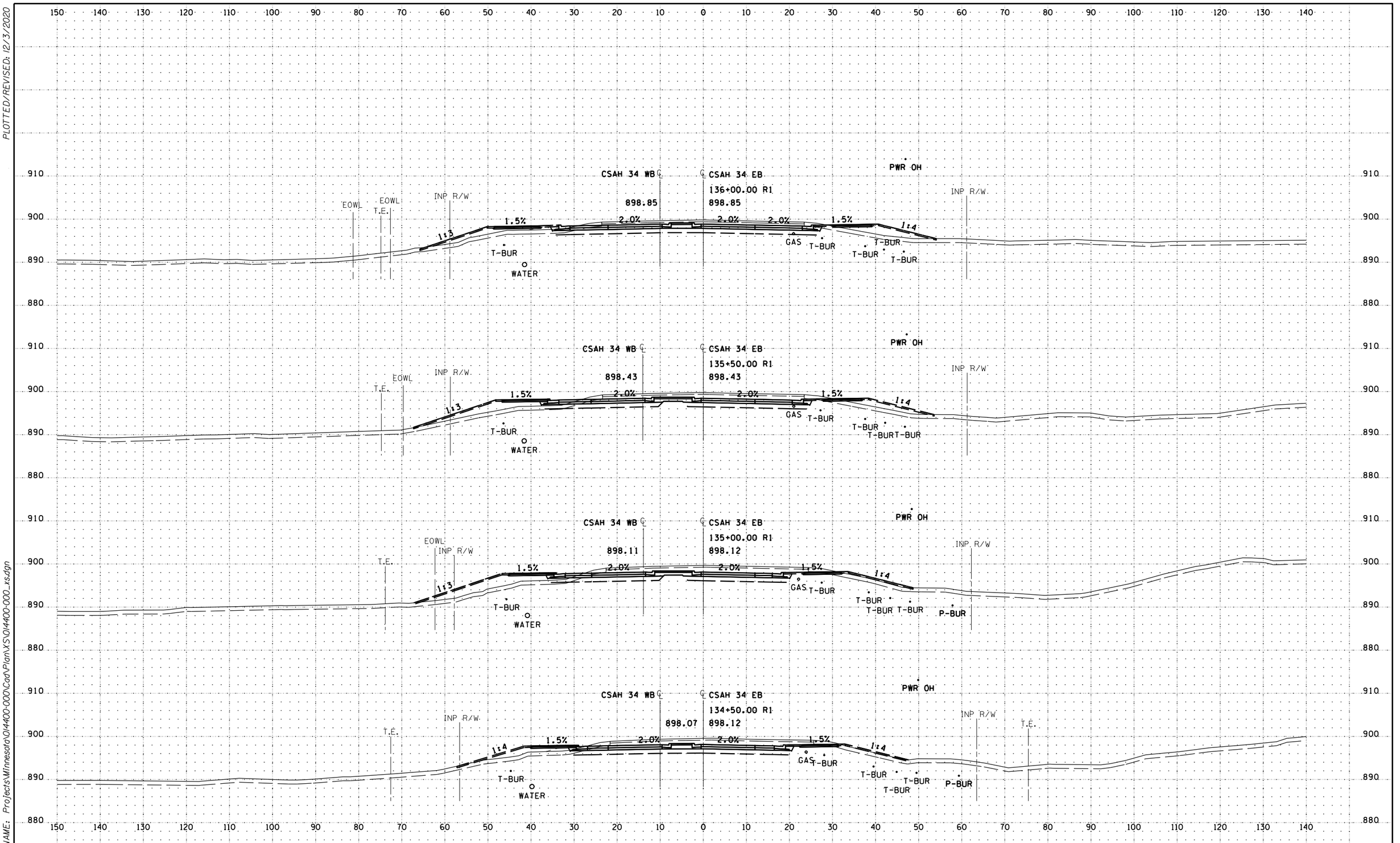

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NO.	DATE	BY	CHK	REVISIONS

Design By:	AJP
Plan By:	CWK
Checked By:	AJP
Approved By:	AJP

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements

Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

CSAH 34

CROSS SECTIONS

S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **X18** OF **X35** SHEETS

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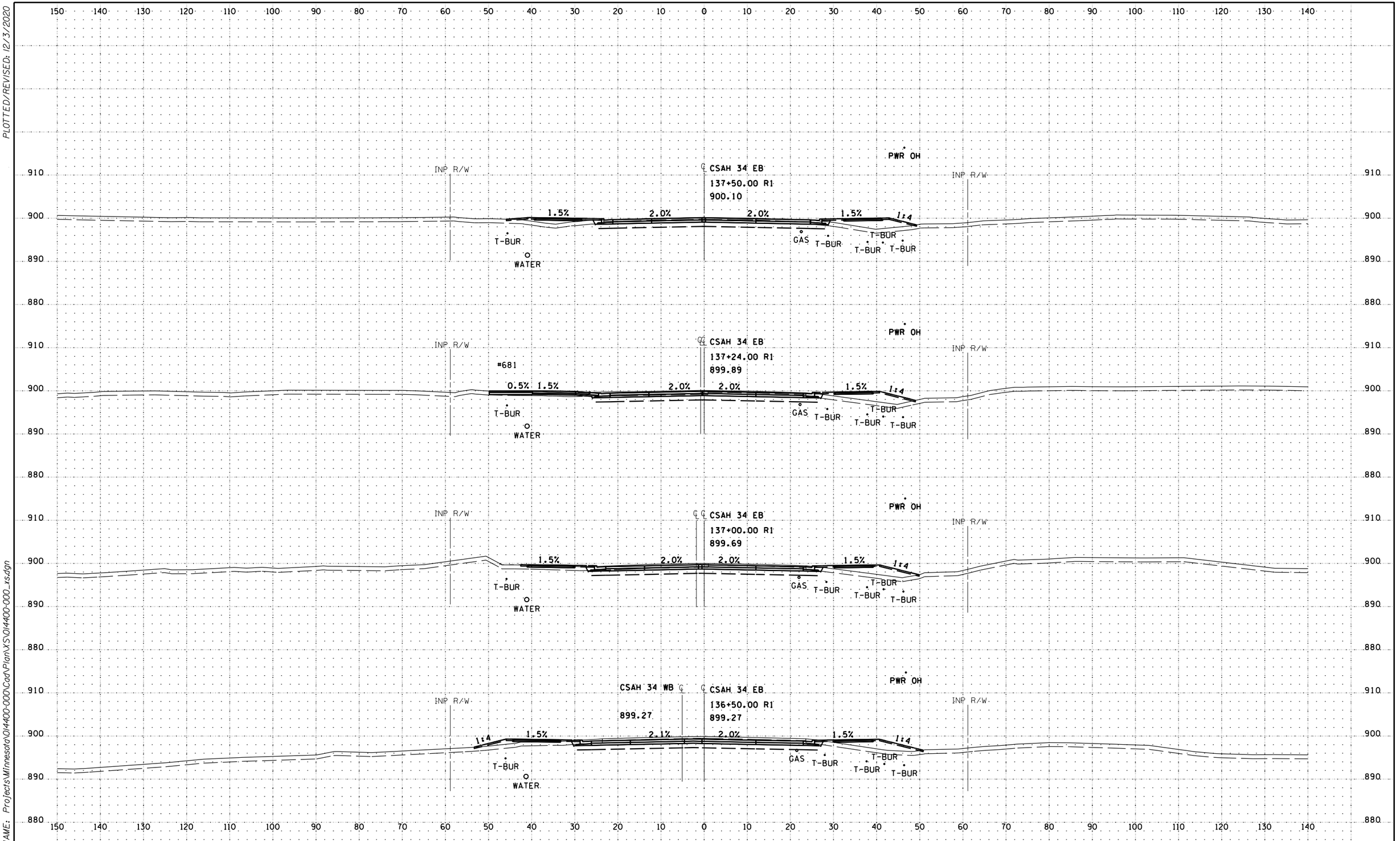

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Design By: AJP
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ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
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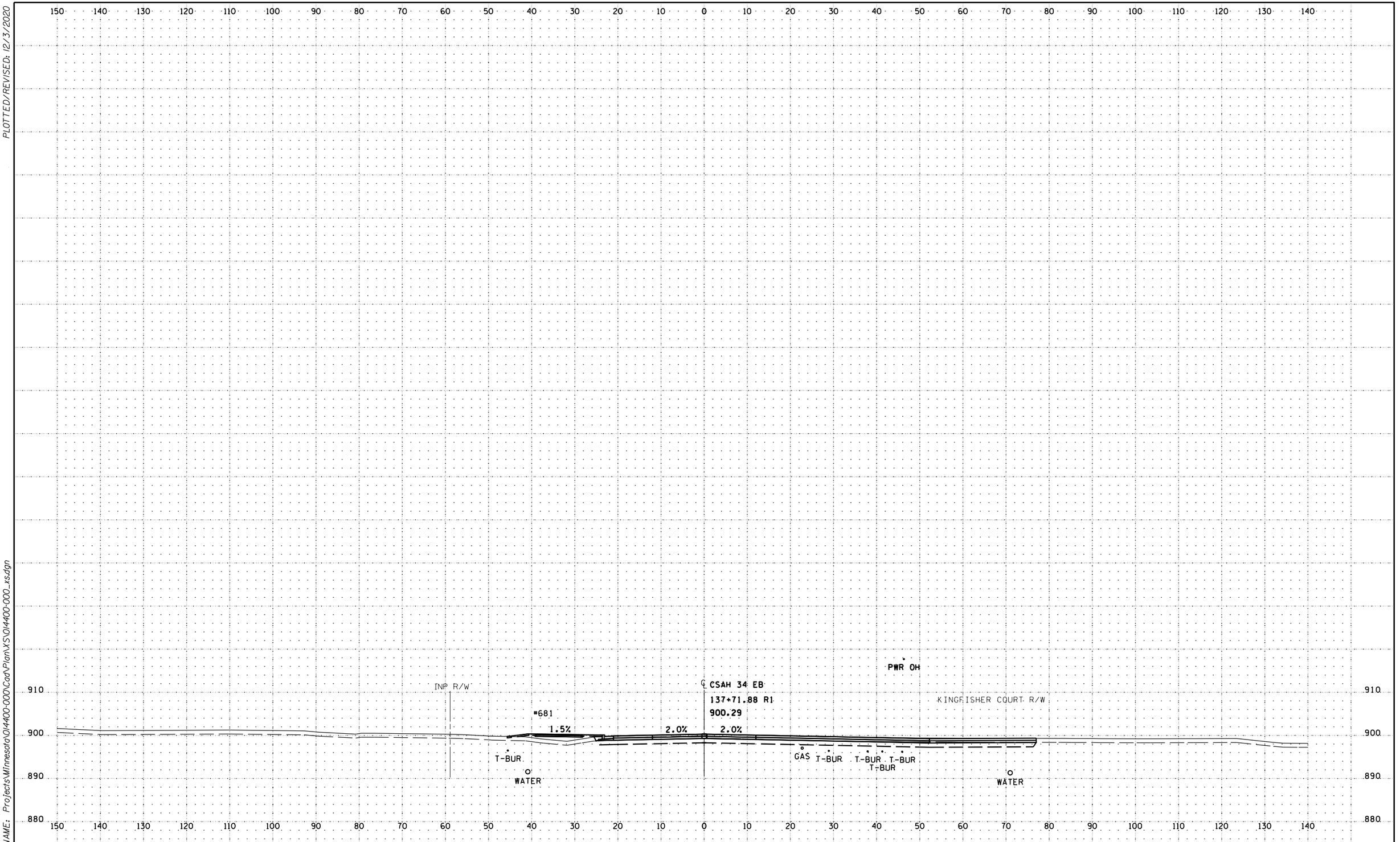
ANOKA COUNTY, MINNESOTA
CSAH 34
CROSS SECTIONS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **X19** OF **X35** SHEETS

PLOTTED/REVISED: 12/3/2020



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NO.	DATE	BY	CHK	REVISIONS

Design By:	AJP
Plan By:	CWK
Checked By:	AJP
Approved By:	AJP

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements

Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

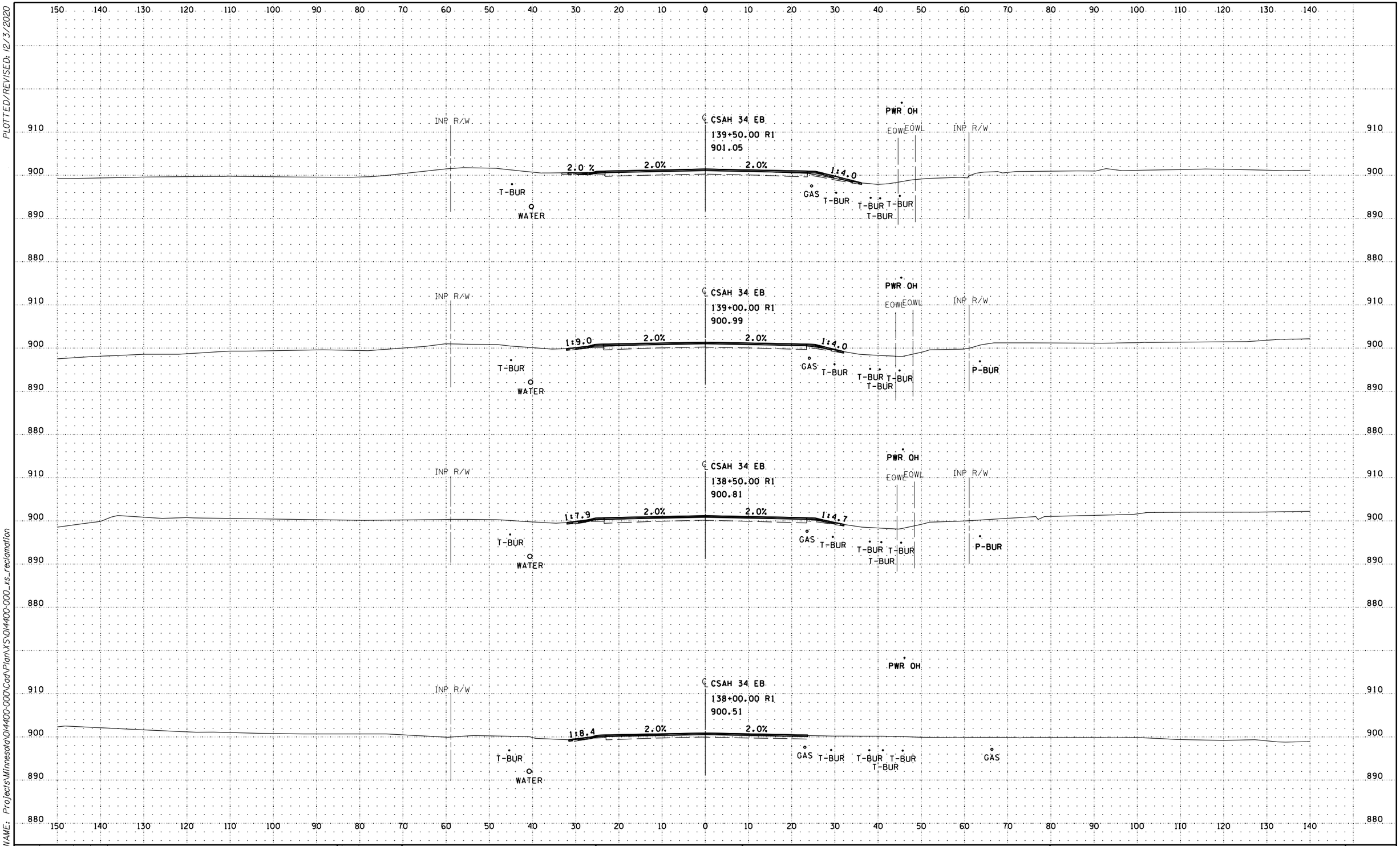
CSAH 34

CROSS SECTIONS

S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **X20** OF **X35** SHEETS

PLOTTED/REVISED: 12/3/2020



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NO.	DATE	BY	CHK	REVISIONS

Design By:	AJP
Plan By:	CWK
Checked By:	AJP
Approved By:	AJP

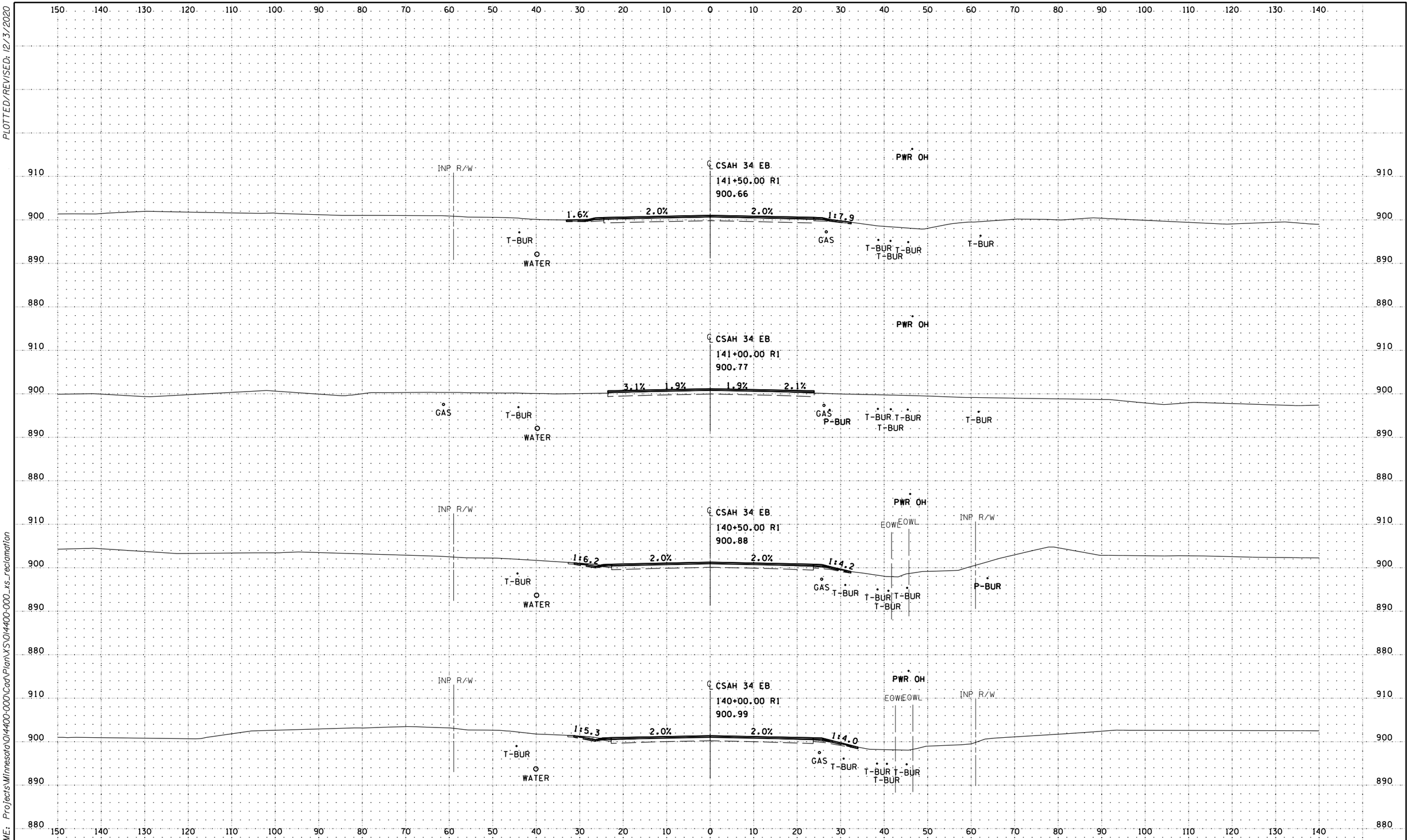
wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
CSAH 34
CROSS SECTIONS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **X21** OF **X35** SHEETS



NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

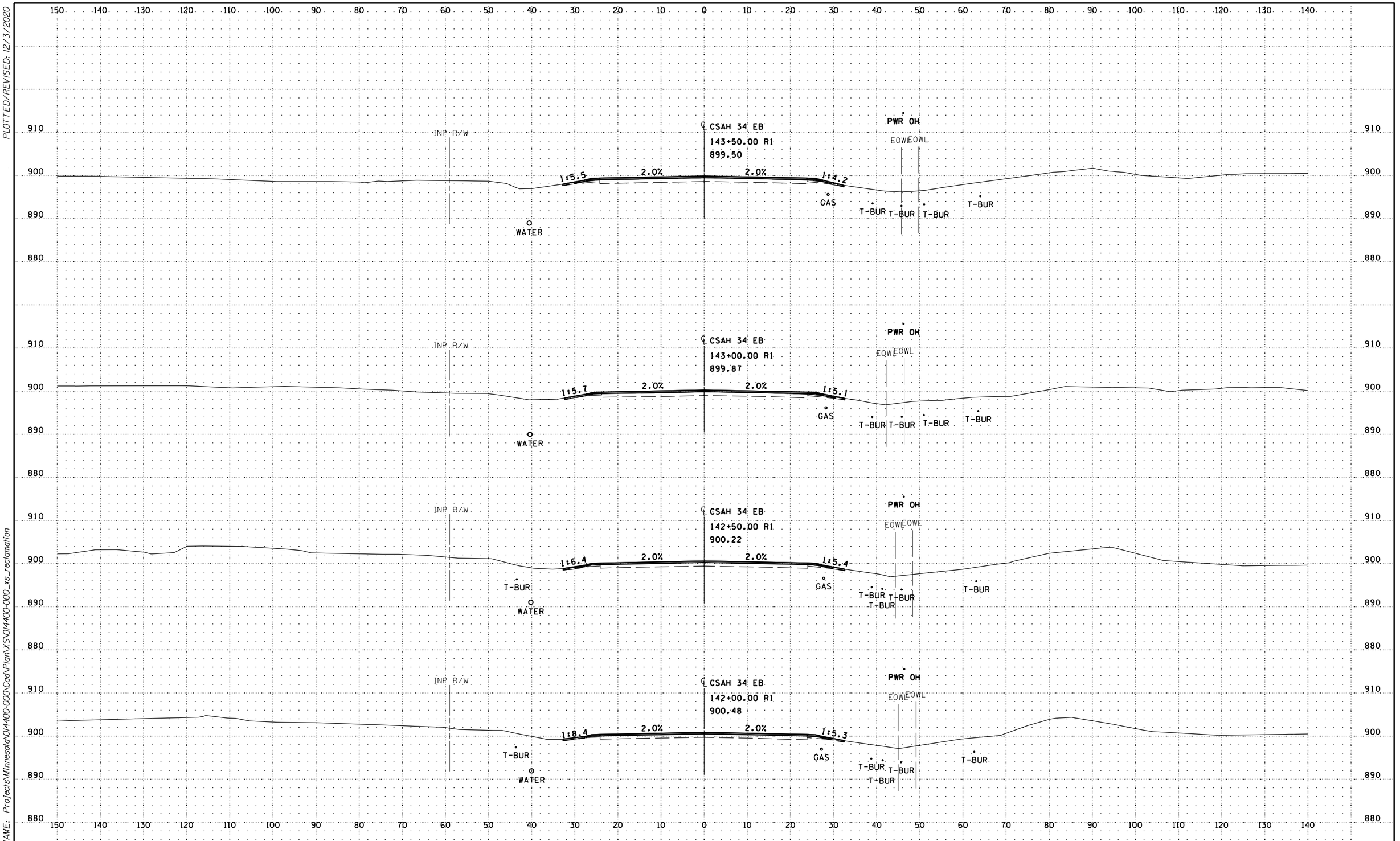
wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
CSAH 34
CROSS SECTIONS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **X22** OF **X35** SHEETS



NO.	DATE	BY	CHK	REVISIONS

Design By:	AJP
Plan By:	CWK
Checked By:	AJP
Approved By:	AJP

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements

Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

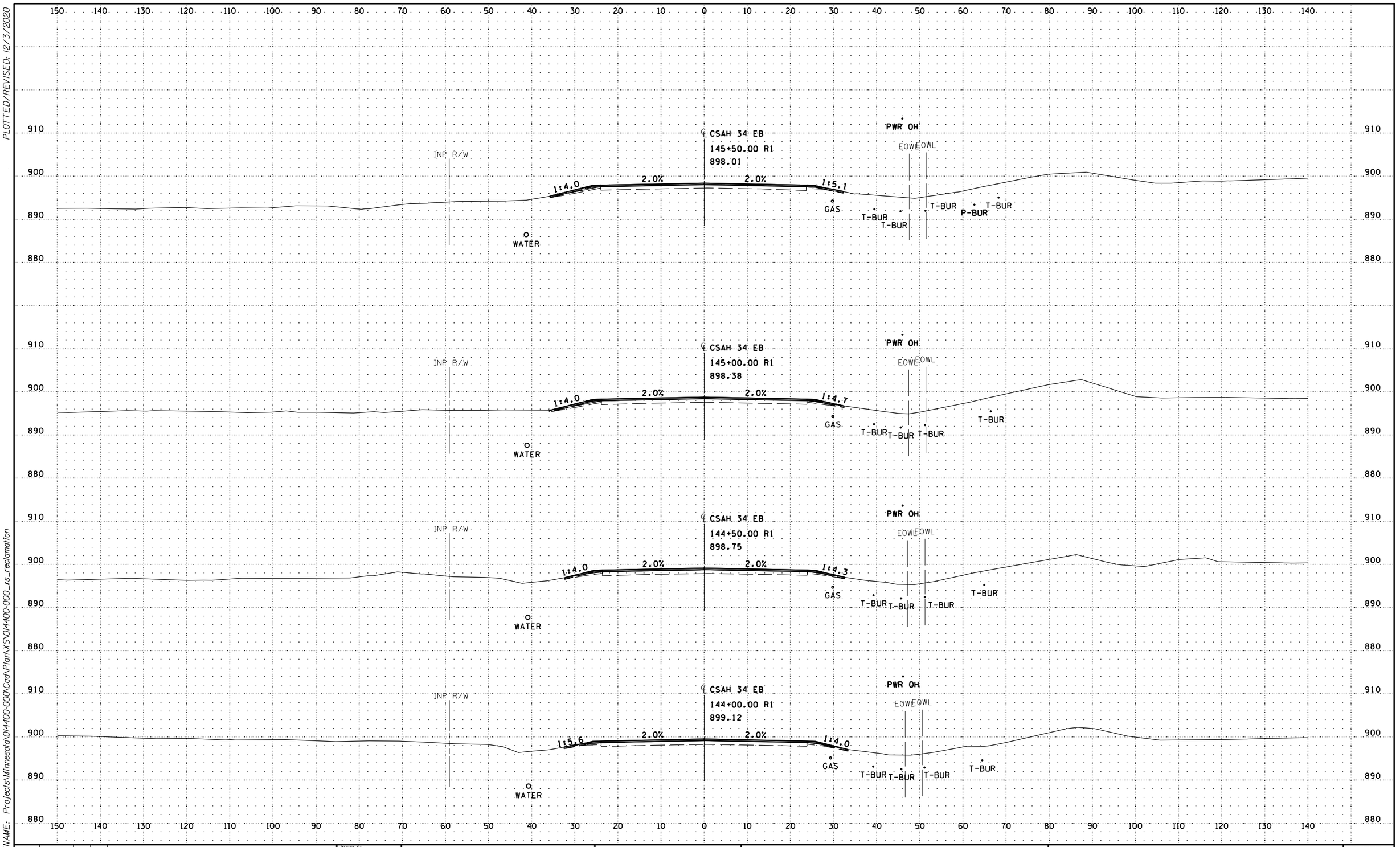
CSAH 34

CROSS SECTIONS

S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **X23** OF **X35** SHEETS

PLOTTED/REVISED: 12/3/2020



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NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

wsb

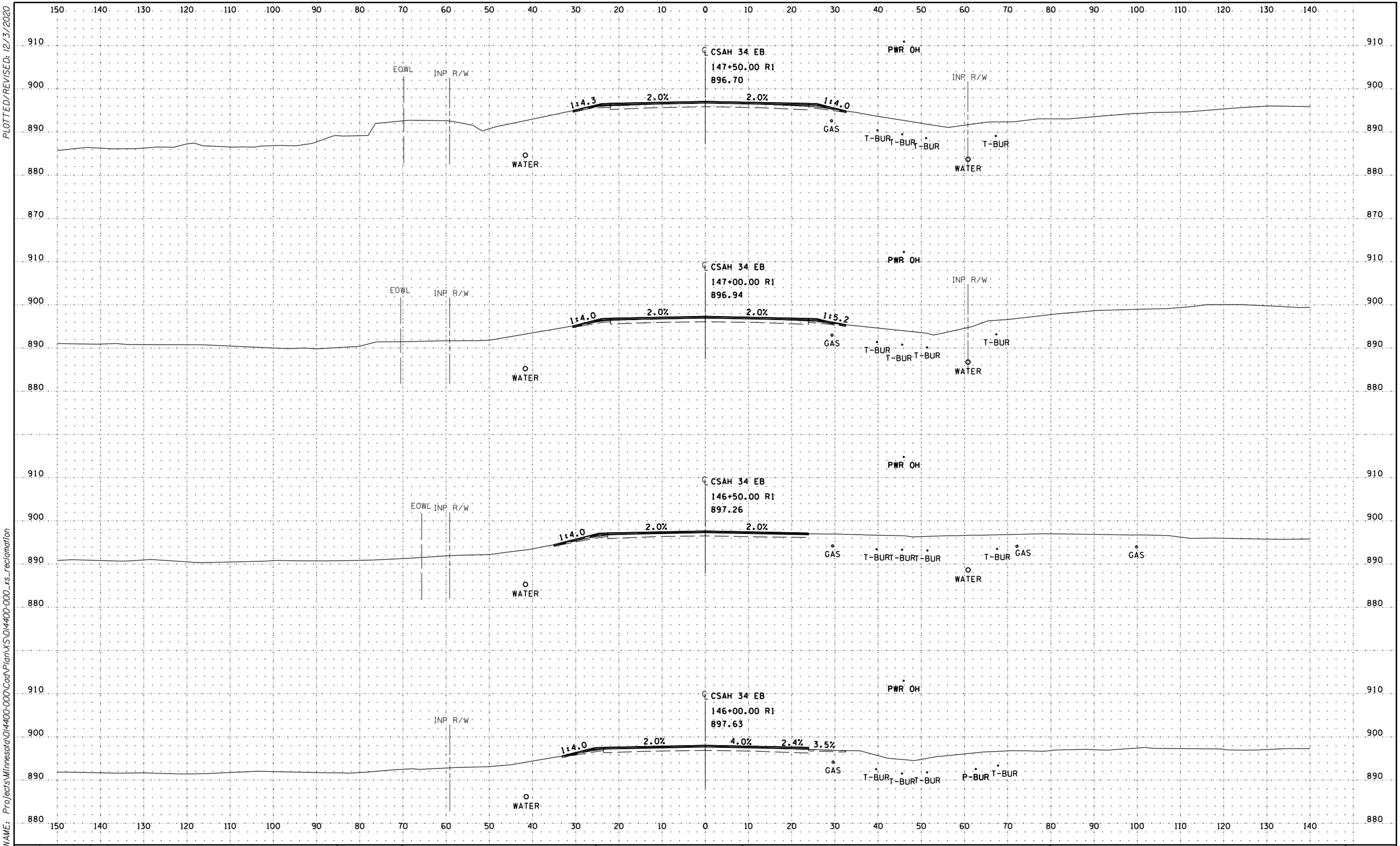
ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
CSAH 34
CROSS SECTIONS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **X24** OF **X35** SHEETS

PLOTTED/REVISED: 12/3/2020



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NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

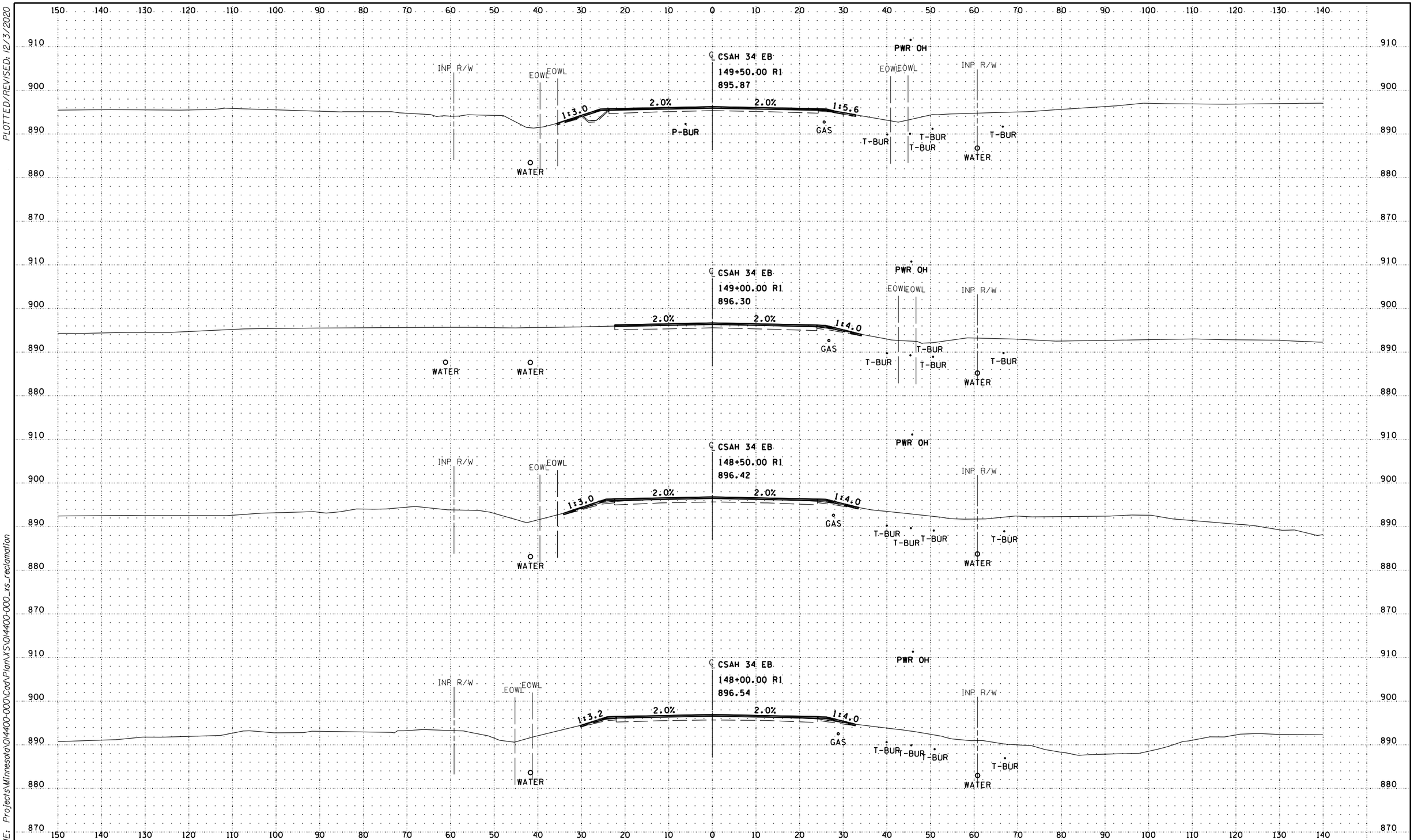
wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
CSAH 34
CROSS SECTIONS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **X25** OF **X35** SHEETS



NO.	DATE	BY	CHK	REVISIONS

Design By:	AJP
Plan By:	CWK
Checked By:	AJP
Approved By:	AJP

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements

Anoka County Highway Department

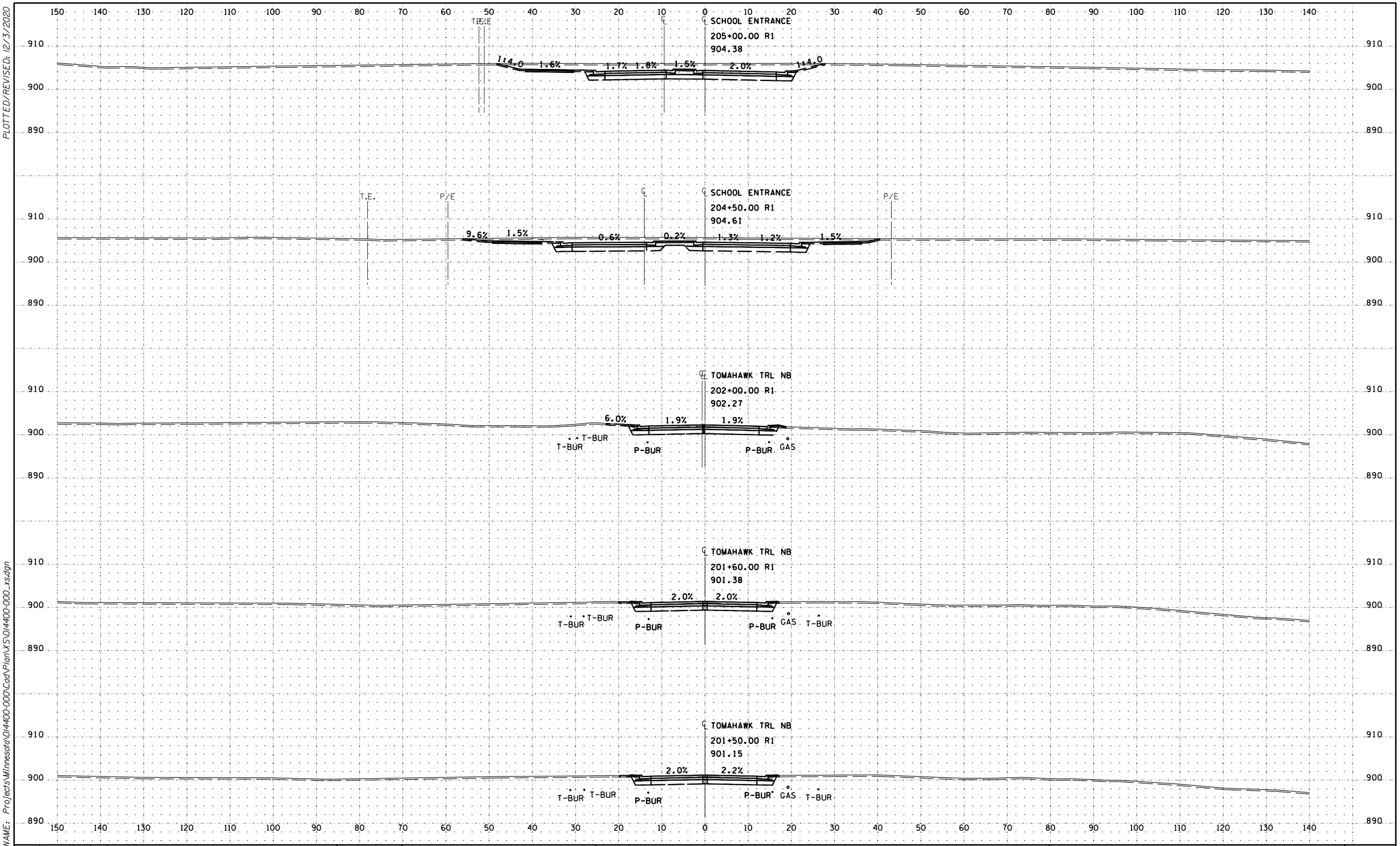
ANOKA COUNTY, MINNESOTA

CSAH 34

CROSS SECTIONS

S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **X26** OF **X35** SHEETS



NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

wsb

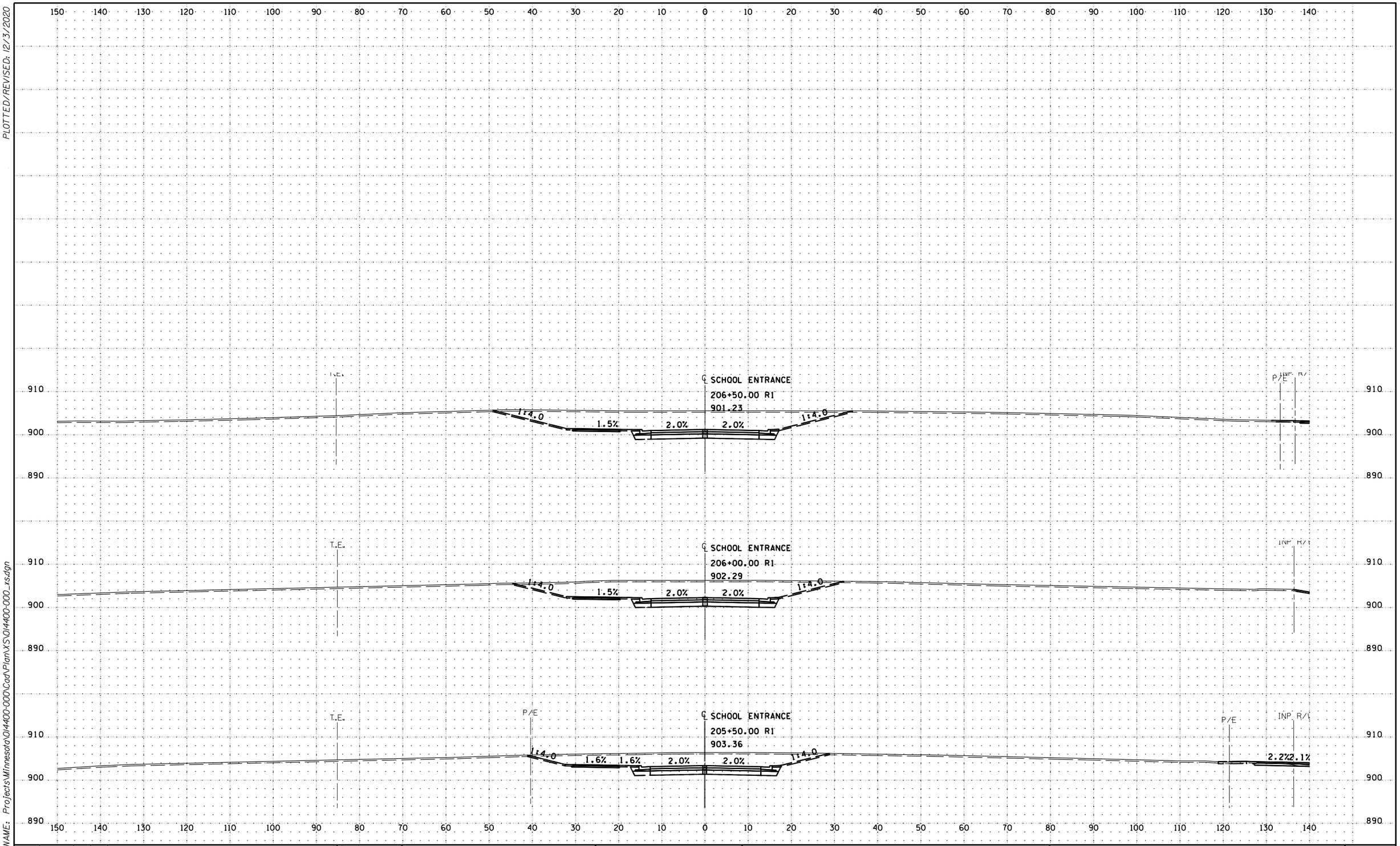
ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
TOMAHAWK TRAIL
CROSS SECTIONS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **X27** OF **X35** SHEETS

PLOTTED/REVISED: 12/3/2020



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NO.	DATE	BY	CHK	REVISIONS

Design By:	AJP
Plan By:	CWK
Checked By:	AJP
Approved By:	AJP

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements

Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

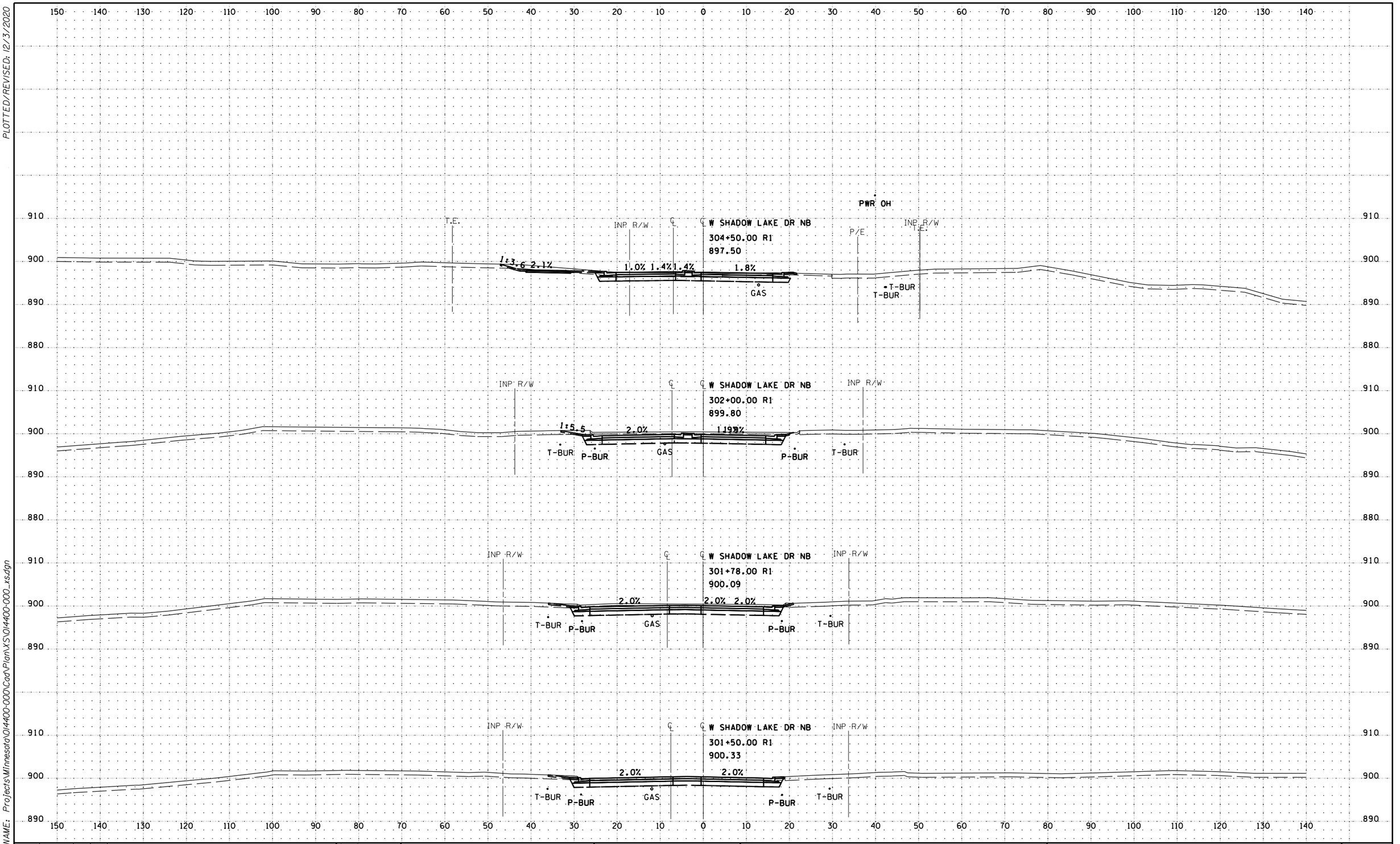
SCHOOL ENTRANCE

CROSS SECTIONS

S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **X28** OF **X35** SHEETS

PLOTTED/REVISED: 12/3/2020



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NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

wsb

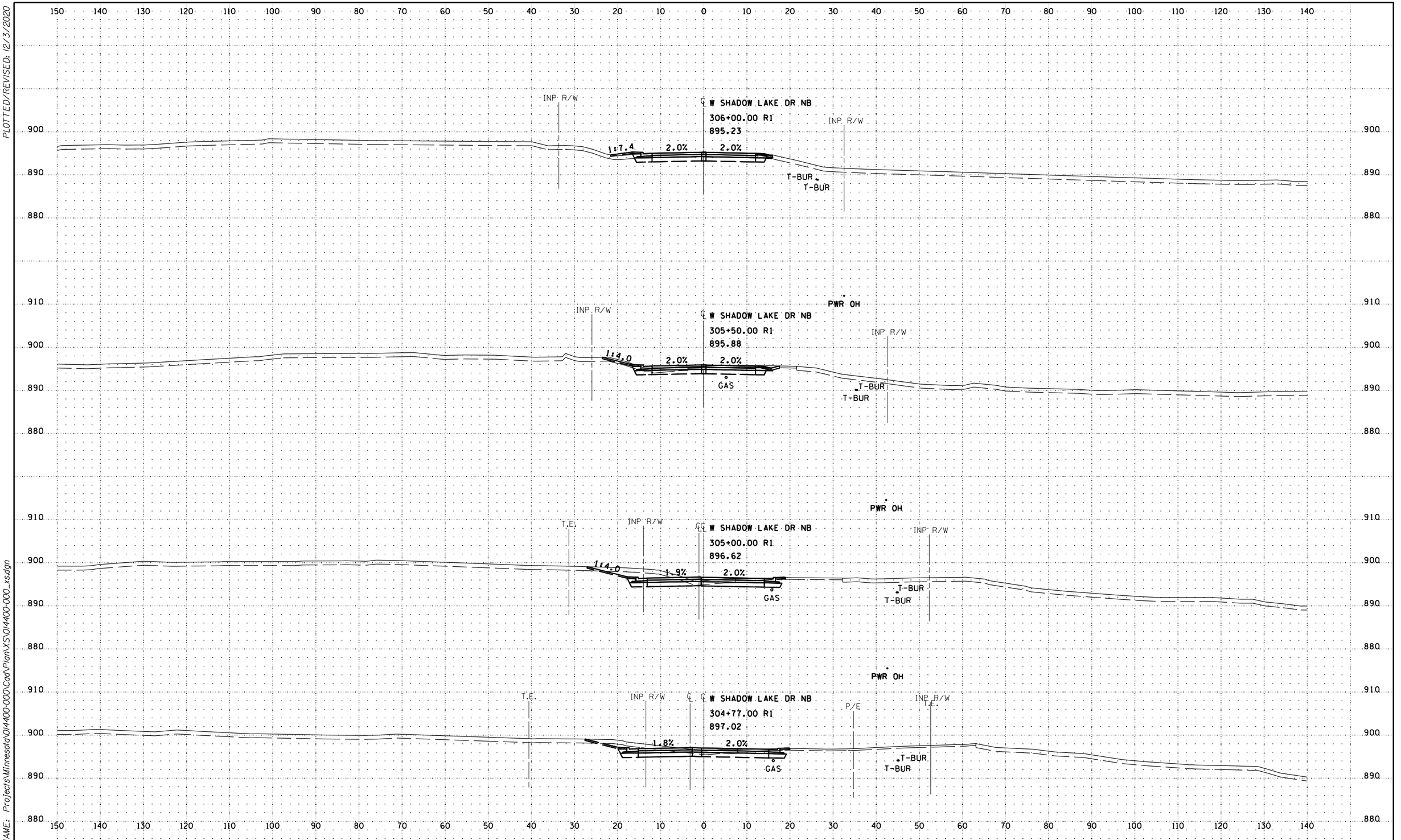
ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
W SHADOW LAKE DRIVE
CROSS SECTIONS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **X29** OF **X35** SHEETS

PLOTTED/REVISED: 12/3/2020



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NO.	DATE	BY	CHK	REVISIONS

Design By:	AJP
Plan By:	CWK
Checked By:	AJP
Approved By:	AJP

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements

Anoka County Highway Department

ANOKA COUNTY, MINNESOTA

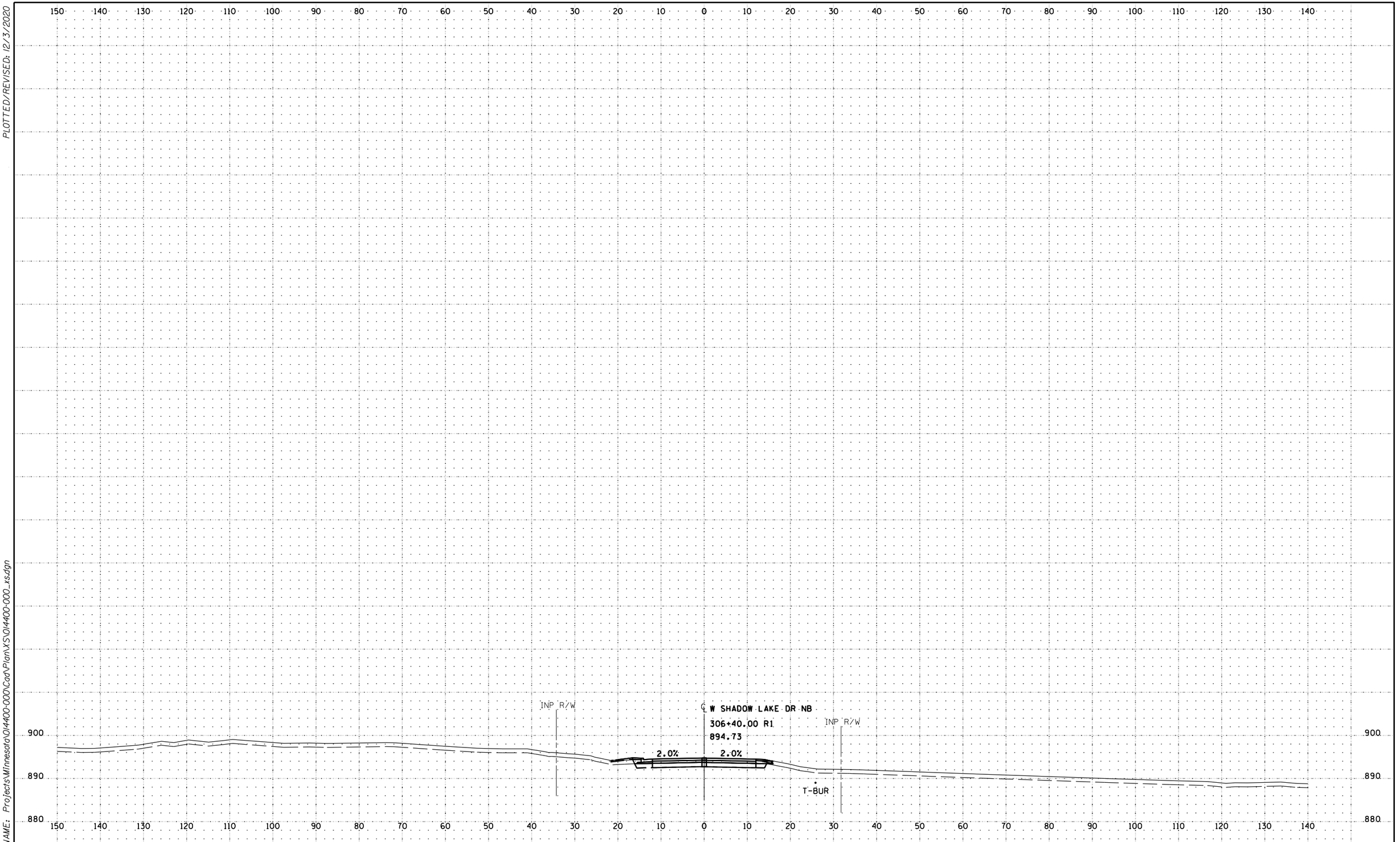
W SHADOW LAKE DRIVE

CROSS SECTIONS

S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **X30** OF **X35** SHEETS

PLOTTED/REVISED: 12/3/2020



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NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

wsb

ANOKA COUNTY

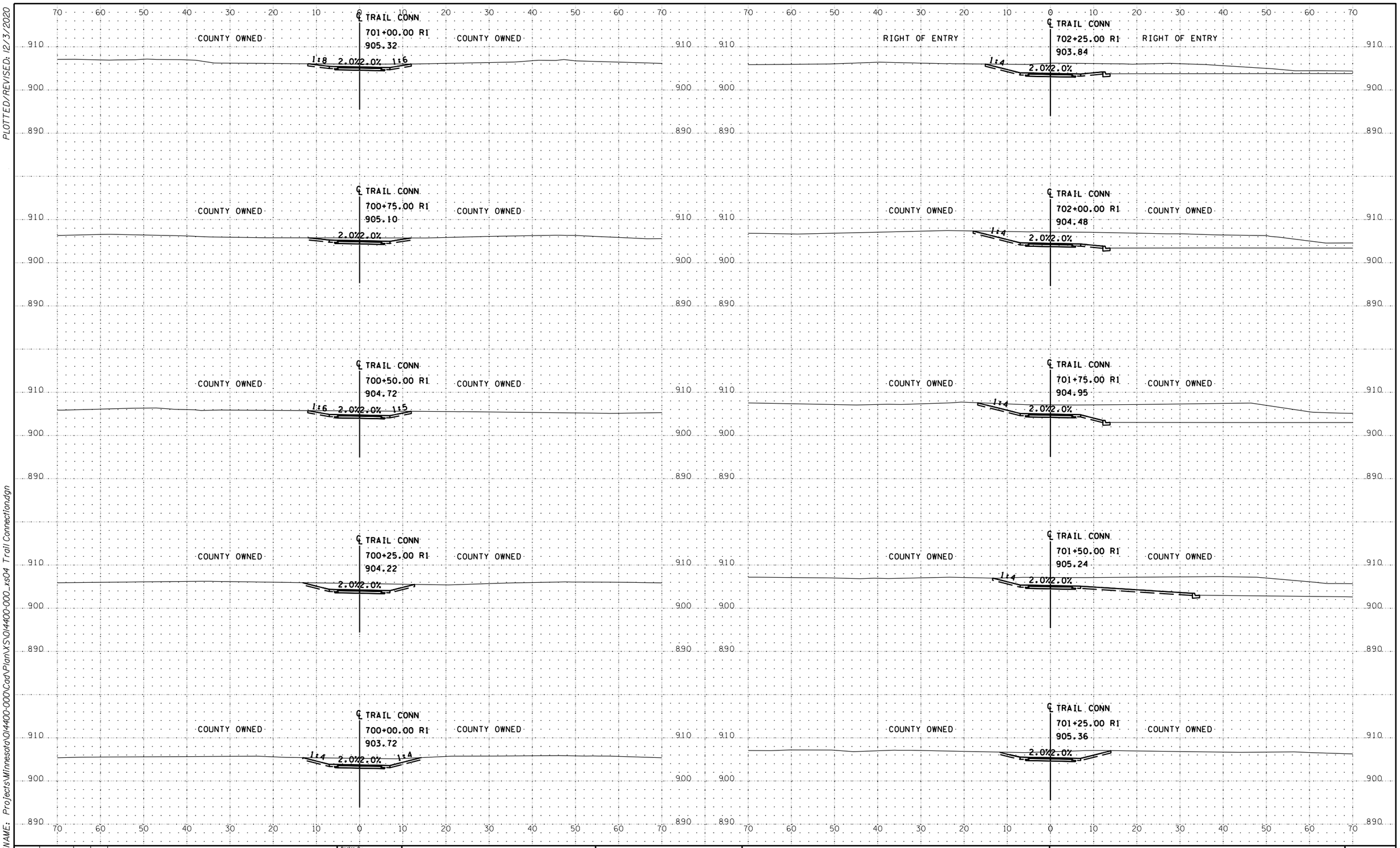
CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
W SHADOW LAKE DRIVE
CROSS SECTIONS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **X31** OF **X35** SHEETS

PLOTTED/REVISED: 12/3/2020

PATH & FILENAME: Projects\Minnesota\0l4400-000\Cad\Plan\XS\0l4400-000_xs04 Trail Connection.dgn



NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

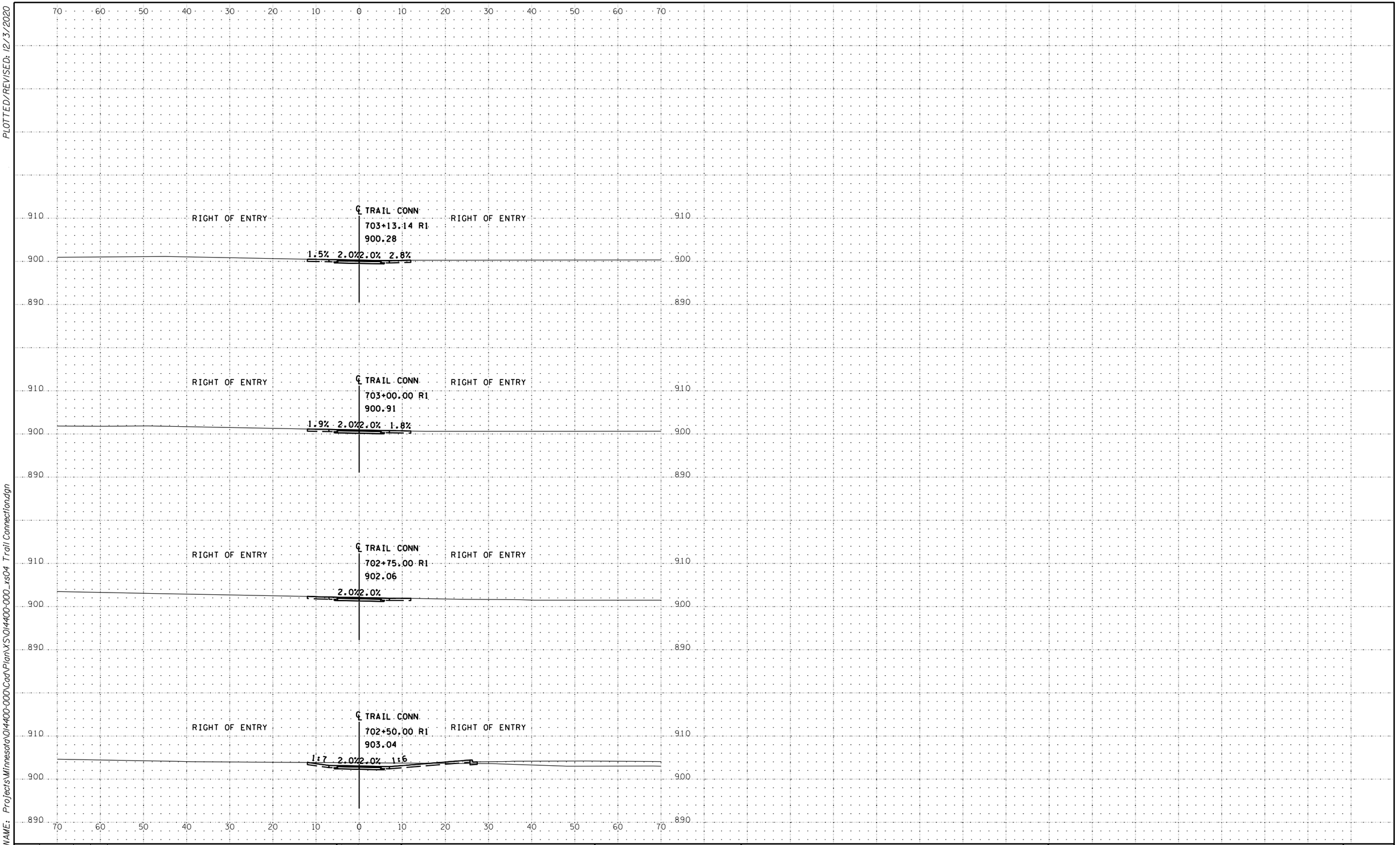
wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
STA. 700+00.00 TO STA. 702+25.00
CROSS SECTIONS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **X32** OF **X35** SHEETS



NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

wsb

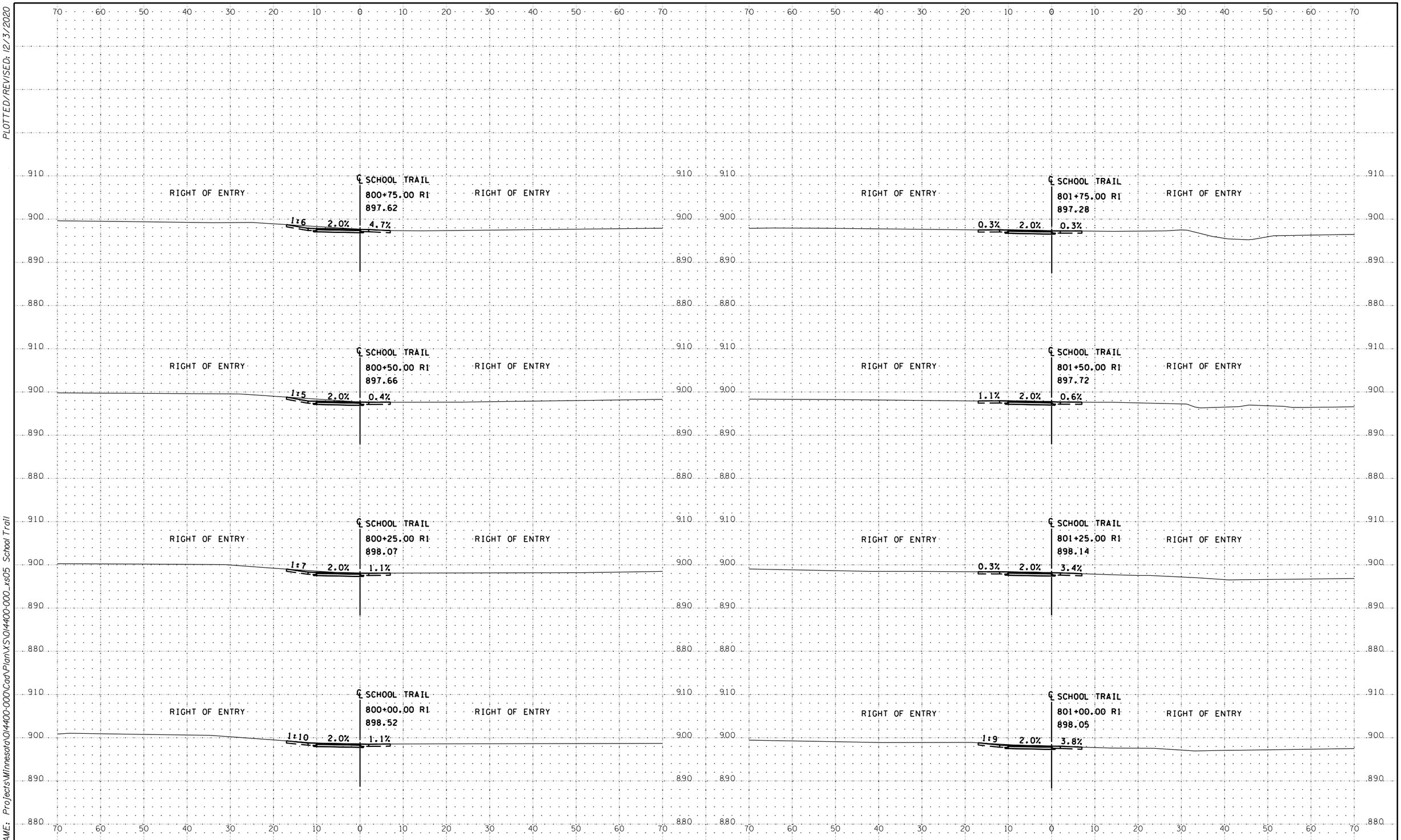
ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
STA. 702+50.00 TO STA. 703+13.14
CROSS SECTIONS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **X33** OF **X35** SHEETS

PLOTTED/REVISED: 12/3/2020



PATH & FILENAME: Projects\Minnesota\014400-000\Cad\Plan\XS\014400-000_xs05 School Trail

NO.	DATE	BY	CHK	REVISIONS

Design By:	AJP
Plan By:	CWK
Checked By:	AJP
Approved By:	AJP

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements

Anoka County Highway Department

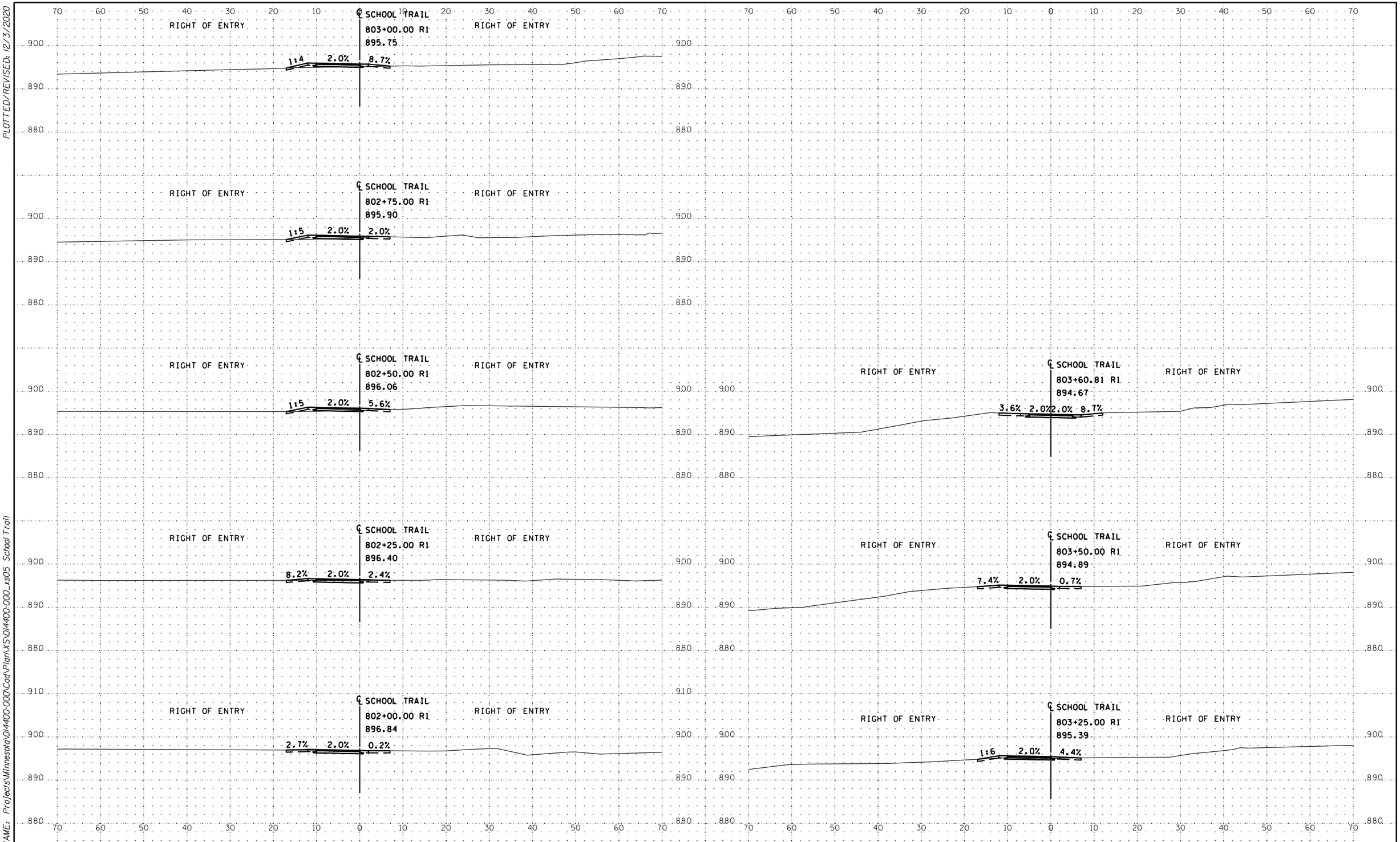
ANOKA COUNTY, MINNESOTA

STA. 800+00.00 TO STA. 801+75.00

CROSS SECTIONS

S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **X34** OF **X35** SHEETS



NO.	DATE	BY	CHK	REVISIONS

Design By: AJP
Plan By: CWK
Checked By: AJP
Approved By: AJP

wsb

ANOKA COUNTY

CSAH 34 (Birch Street) Improvements
Anoka County Highway Department

ANOKA COUNTY, MINNESOTA
STA. 802+00.00 TO STA. 803+60.81
CROSS SECTIONS
S.A.P. 002-634-003 & S.A.P. 210-020-010

SHEET **X35** OF **X35** SHEETS