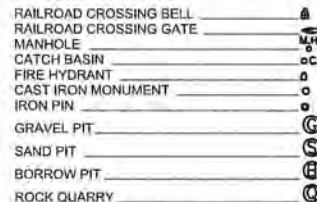
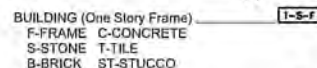
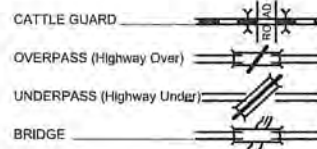
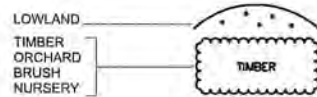
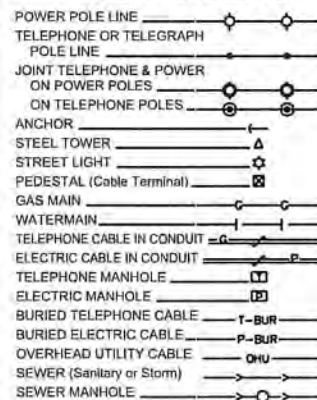


PLAN SYMBOLS

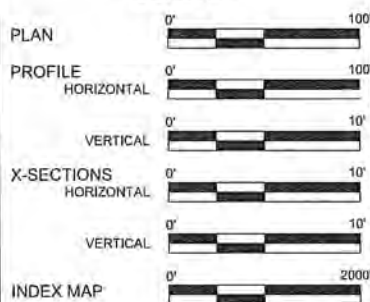
- COUNTY LINE
- TOWNSHIP OR RANGE LINE
- SECTION LINE
- QUARTER LINE
- SIXTEENTH LINE
- RIGHT OF WAY LINE
- SLOPE EASEMENT
- EXISTING RIGHT OF WAY
- PROPERTY LINE
- CORPORATE OR CITY LIMITS
- RETAINING WALL
- RAILROAD
- RAILROAD RIGHT OF WAY
- RIVER OR CREEK
- DRAINAGE DITCH
- CULVERT
- DROP INLET
- GUARD RAIL
- BARBED WIRE FENCE
- WOVEN WIRE FENCE
- CHAIN LINK FENCE
- WOOD FENCE
- STONE WALL OR FENCE
- HEDGE



UTILITY SYMBOLS



SCALES

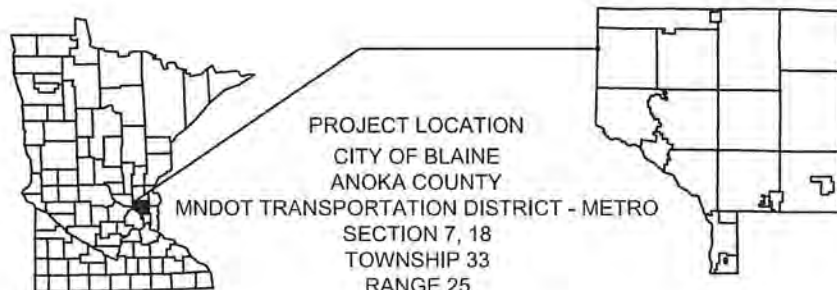
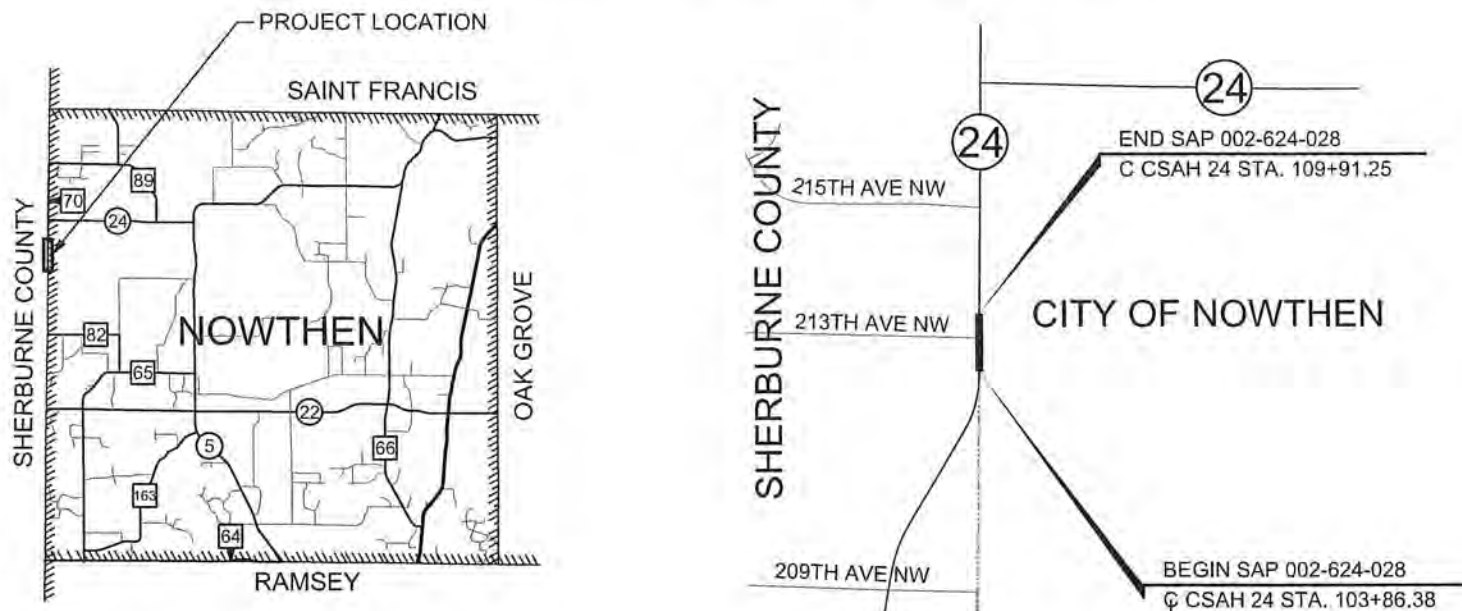


# MINNESOTA DEPARTMENT OF TRANSPORTATION ANOKA COUNTY

CONSTRUCTION PLAN FOR GRADING, AGGREGATE BASE, AND BITUMINOUS SURFACING  
LOCATED ON CSAH 24 BETWEEN 350' SOUTH OF 213TH AVE NW AND 250' NORTH OF 213TH AVE NW

STATE AID PROJ. NO. 002-624-028  
CSAH 24

GROSS LENGTH	604.87	FEET	0.115	MILES
BRIDGES-LENGTH	0.00	FEET	0.000	MILES
EXCEPTIONS-LENGTH	0.00	FEET	0.000	MILES
NET LENGTH	604.87	FEET	0.115	MILES





**GOVERNING SPECIFICATIONS**  
THE 2018 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN  
ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	STATEMENT OF ESTIMATED QUANTITIES & TAB INDEX
3	TABULATIONS & EARTHWORK SUMMARY
4	EARTHWORK BALANCE
5	SOIL & CONSTRUCTION NOTES
6	INPLACE UTILITY TABULATIONS
7	INPLACE UTILITY PLANS
8 - 9	TYPICAL SECTIONS
10	INSETS AND DETAILS
11	ALIGNMENT PLANS AND TABULATIONS
12	INPLACE TOPOGRAPHY & REMOVAL PLAN
13	CONSTRUCTION PLAN
14 - 15	TRAFFIC CONTROL PLAN AND TABULATIONS
16	PERMANENT MARKING TABULATION
17 - 20	SIGNING & STRIPING PLAN, TABULATIONS, AND DETAILS
21 - 25	CROSS SECTIONS

THIS PLAN CONTAINS 25 SHEETS

APPROVED  1-26-21  
ANOKA COUNTY ENGINEER DATE

APPROVED  2-11-21  
CITY OF NOWTHEN ENGINEER DATE

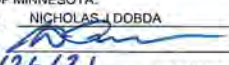
DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY \_\_\_\_\_ DATE \_\_\_\_\_

STATE AID ENGINEER: APPROVED FOR STATE AID FUNDING \_\_\_\_\_ DATE \_\_\_\_\_


DESIGN DESIGNATION (CSAH 24)			
ESAL <sub>20</sub>	1,856,000	FUNCTIONAL CLASSIFICATION	OTHER ARTERIAL
R VALUE	50	NO. OF TRAFFIC LANES	<u>2</u> NO. OF PARKING LANES <u>0</u>
ADT (2021)	3,420	DESIGN SPEED	<u>55</u> MPH
PROJ. ADT (2041)	7,810	BASED ON STOPPING SIGHT DISTANCE:	
PROJ. HCADT (2041)	732	HEIGHT OF EYE	<u>3.5'</u> HEIGHT OF OBJECT <u>2.0'</u>
SOIL FACTOR	N/A	DESIGN SPEED NOT ACHIEVED AT:	
<u>10</u> TON DESIGN		STA. _____ TO STA. _____	MPH _____

NO.	DATE	BY	CHKD	APPR	REVISION

NAME: P:\002-624-028\Plan\002624028\_TSH.dgn 01/21/2021 1:20:39 PM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
PRINT NAME: NICHOLAS DORBA  
SIGNATURE:   
DATE: 1/26/21 LICENSE NO. 49046

DRAWN BY BTU DATE 11/23/20  
DESIGN BY BTU DATE 11/23/20  
CHECKED BY NJD DATE 11/23/20

 **ANOKA COUNTY  
HIGHWAY DEPT.**

SAP 002-624-028

TITLE SHEET  
Sheet 1 of 25 Sheets



**STATEMENT OF ESTIMATED QUANTITIES**

TAB	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL PROJECT QUANTITIES ESTIMATED	ANOKA COUNTY SAP 002-624-028 ROADWAY QUANTITIES ESTIMATED	NOTES
	2021.501	MOBILIZATION	LUMP SUM	1	1	
A	2104.503	SAWING BIT PAVEMENT (FULL DEPTH)	LIN FT	289	289	
J	2102.503	PAVEMENT MARKING REMOVAL	LIN FT	479	479	
I	2104.502	REMOVE SIGN TYPE C	EACH	2	2	
C	2104.503	REMOVE PIPE CULVERTS	LIN FT	82	82	[1] [2]
A	2104.504	REMOVE BITUMINOUS PAVEMENT	SQ YD	124	124	
B	2104.504	REMOVE BITUMINOUS DRIVEWAY PAVEMENT	SQ YD	77	77	
E	2105.507	COMMON EXCAVATION	CU YD	102	102	
E	2105.507	SUBGRADE EXCAVATION	CU YD	57	57	
F	2105.507	COMMON BORROW (LV)	CU YD	342	342	
F	2105.507	SELECT GRANULAR BORROW (LV)	CU YD	39	39	
A, B	2211.507	AGGREGATE BASE (CV) CLASS 5 (P)	CU YD	71	71	
A	2221.509	SHOULDER BASE AGGREGATE CLASS 2	TON	22	22	
A	2357.506	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	37	37	
A	2360.509	TYPE SP 12.5 WEARING COURSE MIX (3,C) (MAINLINE)	TON	84	84	
B	2360.509	TYPE SP 12.5 WEARING COURSE MIX (3,C) (DRIVEWAY)	TON	16	16	
A	2360.509	TYPE SP 12.5 NON WEAR COURSE MIX (3,B)	TON	42	42	
C	2501.502	18" RC SAFETY APRON & GRATE DES 3128	EACH	2	2	
C	2501.503	18" RC PIPE CULVERT	LIN FT	88	88	[2]
	2563.601	TRAFFIC CONTROL	LUMP SUM	1	1	
G	2563.610	FLAGGER	HOUR	20	20	
G	2563.613	PORTABLE CHANGEABLE MESSAGE SIGN	UDAY	20	20	
J	2564.518	SIGN PANELS TYPE C	SQ FT	12.75	12.75	
D	2573.503	SILT FENCE, TYPE MS	LIN FT	300	300	
D	2574.507	COMMON TOPSOIL BORROW	CU YD	5	5	[3]
D	2574.508	FERTILIZER TYPE 3	POUND	36	36	
D	2575.504	EROSION CONTROL BLANKETS CATEGORY 0	SQ YD	464	464	
D	2575.508	SEED MIXTURE 25-121	POUND	6.3	6.3	
D	2575.605	SEEDING	ACRE	0.1	0.1	
H	2582.503	4" SOLID LINE - MULTI COMP	LIN FT	620	620	
H	2582.503	8" DOTTED LINE - MULTI COMP	LIN FT	36	36	

**NOTES:**

[1] INCLUDES PIPE APRONS.

[2] LENGTH IS FROM END OF APRON TO END OF APRON

[3] COMMON TOPSOIL BORROW TO BE USED IN ADDITION TO THE INPLACE TOPSOIL TO BE REUSED AS NEEDED AND DIRECTED BY THE ENGINEER.

**INDEX OF TABULATION CHARTS**

TAB.	DESCRIPTION	SHEET NO.
A	AGGREGATE AND BITUMINOUS SUMMARIES	3
B	DRIVEWAY REMOVAL AND CONSTRUCTION	3
C	CULVERT TABULATION	3
D	TURF ESTABLISHMENT AND EROSION CONTROL	3
E	EARTHWORK SUMMARY	4
F	EARTHWORK BALANCE	4
G	TRAFFIC CONTROL QUANTITIES TABULATION	15
H	PERMANENT MARKING TABULATION	16
I	EXISTING SIGN TABULATION	17
J	TEMPORARY PAVEMENT MARKINGS	17
K	F & T SIGN PANELS TYPE C	17
Y	OVERHEAD POWER	6
Z	TELEPHONE	6

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

**STANDARD PLATES**

PLATE NO.	DESCRIPTION
3000M	REINFORCED CONCRETE PIPE
3006H	GASKET JOINT FOR R.C. PIPE
3007F	SHEAR REINFORCEMENT FOR PRECAST DRAINAGE STRUCTURES
3022C	PRECAST CONCRETE SAFETY APRON
8000J	CHANNELIZERS
8150C	INSTALLATION OF CULVERT MARKERS

**BASIS OF QUANTITIES**

SPEC NO	DESCRIPTION	RATE
2221.509	SHOULDER BASE AGGREGATE CLASS 2	1.8 TONS / CU YD
2357.506	BITUMINOUS MATERIAL FOR TACK COAT	0.05 GAL / SQ YD / LIFT
2360.509	TYPE SP12.5 WEARING COURSE MIXTURE	115 LBS / SQ YD / IN
2360.509	TYPE SP12.5 NON-WEARING COURSE MIXTURE	115 LBS / SQ YD / IN
2575.508	SEED MIXTURE 25-121	70 LBS / ACRE
2575.508	FERTILIZER TYPE 3	400 LBS / ACRE

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINT NAME: NICHOLAS J DOBDA SIGNATURE: <i>NJD</i> DATE: 1/26/21 LICENSE NO. 49046					DRAWN BY: BTU DATE: 11/23/20 DESIGN BY: BTU DATE: 11/23/20 CHECKED BY: NJD DATE: 11/23/20		ANOKA COUNTY HIGHWAY DEPT.		SAP 002-624-028		STATEMENT OF ESTIMATED QUANTITIES & TAB INDEX Sheet 2 of 25 Sheets	
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AGGREGATE AND BITUMINOUS SUMMARIES									A
ALIGNMENT	STATION TO STATION	REMOVE	SAWING	MAINLINE					NOTES
		SPEC. 2104	SPEC. 2104	SPEC. 2211	SPEC. 2221	SPEC. 2357	SPEC. 2360		
		BIT. PAVEMENT	BIT. PAVEMENT	AGGREGATE BASE (CV) CLASS 5	SHOULDER BASE AGGREGATE CLASS 2	BITUMINOUS MATERIAL FOR TACK COAT	TYPE SP 12.5 WEAR (3,C)	TYPE SP 12.5 NON-WEAR (3,B)	
		(SQ YD)	(LIN FT)	(CU YD)	TONS	(GALLON)	(TON)	(TON)	
<24_1>	107+01.85 - 109+76.25	124	289.0	61	22	37	84	42	
PROJECT TOTAL		124	289	61	22	37	84	42	

DRIVEWAY REMOVAL AND CONSTRUCTION								B
ALIGNMENT	STATION	OFFSET	DESCRIPTION	REMOVE	CONSTRUCT			NOTES
				SPEC. 2104	WIDTH	SPEC. 2360	SPEC. 2211	
				BIT.		TYPE SP 12.5 WEAR (3,C) (3.0")	AGGREGATE BASE (CV) CLASS 5 (4.0")	
		FROM TO		(SQ YD)	(LIN FT)	(TON)	(CU YD)	
<24_1>	107+36.81	23' RT - 52' RT	FARMING EQUIP. ACCESS	77	12	16	10	
PROJECT TOTAL				77		16	10	

CULVERT TABULATION							C
ALIGNMENT	STATION TO STATION	OFFSET	SPEC. 2104	FURNISH AND INSTALL		NOTES	
			REMOVE PIPE CULVERTS	SPEC. 2501			
				18" RC PIPE CULVERT	18" RC SAFETY APRON & GRATE		
		FROM TO	LIN FT	LIN FT	EACH		
<24_1>	106+90.02 - 107+71.92	36' RT - 37' RT	82	88	2	[1]	
PROJECT TOTAL			82	88	2		

NOTES:  
[1] LENGTH IS FROM END OF APRON TO END OF APRON


TURF ESTABLISHMENT AND EROSION CONTROL						D
STATION TO STATION	SPEC. 2573	SPEC. 2575		SPEC. 2574		SPEC. 2575
	SILT FENCE TYPE MACHINE SLICED	SEEDING	SEED MIXTURE 25-121	FERTILIZER TYPE 3	COMMON TOPSOIL BORROW	EROSION CONTROL BLANKETS CAT. 0
	LIN FT	ACRE	POUND	POUND	CU YD	SQ YD
106+90.04 - 107+36.81	39	0.01	0.7	4	0	61
107+36.81 - 109+91.25	261	0.08	5.6	32	5	382
PROJECT TOTAL	300	0.09	6.3	36	5	464

NOTES:  
COMMON TOPSOIL BORROW TO BE USED IN ADDITION TO THE INPLACE TOPSOIL TO BE REUSED AS NEEDED AND DIRECTED BY THE ENGINEER.

EARTHWORK SUMMARY					E
STATION	EXCAVATION TOTALS		EMBANKMENT TOTALS (CV)		
	COMMON (CU YD)	SUBGRADE (CU YD)	TOPSOIL (CU YD)	SELECT GRANULAR (CU YD)	SUITABLE GRADING (CU YD)
CSAH 24	102	57	52	95	284
TOTAL	102	57	52	95	284

NO	DATE	BY	CHKD	APPR	REVISION

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I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
PRINT NAME: NICHOLAS J DORBA  
SIGNATURE:   
DATE: 1/26/21 LICENSE NO. 49046

DRAWN BY BTU DATE 11/23/20  
DESIGN BY BTU DATE 11/23/20  
CHECKED BY NJD DATE 11/23/20



ANOKA COUNTY  
HIGHWAY DEPT.

SAP 002-624-028

TABULATIONS  
& EARTHWORK SUMMARY



**EARTHWORK BALANCE**

**F**

AVAILABLE EXCAVATION (CY)

[1] COMMON EXCAVATION	102	[3] COMMON EXCAVATION	25	(EV) / 1.2 =	21 (CV)
[2] SUBGRADE EXCAVATION	57	[4] EXISTING TOPSOIL	77	(EV) / 1.1 =	70 (CV)
		SUBGRADE EXCAVATION	78	(EV) / 1.2 =	65 (CV)

NEEDED EMBANKMENT (CY)

[5] SUITABLE GRADING	284 (CV)	284 (CV)
[6] TOPSOIL	52 (CV)	52 (CV)
[7] SUBGRADE	95 (CV)	95 (CV)

**EXCESS (CY)**

[6] TOPSOIL	NEEDED 52 (CV)	-	AVAILABLE 70 (CV)	[4]	=	[8] EXCESS (CY) 18 (CV)
-------------	----------------	---	-------------------	-----	---	-------------------------

**BORROW (CY)**

[5] SUITABLE GRADING	NEEDED 284 (CV)	-	AVAILABLE 21 (CV)	[3]	=	263 X 1.3 = 342 [9] COMMON BORROW (LV)
[7] SELECT GRANULAR	NEEDED 95 (CV)	-	AVAILABLE 65 (CV)	[2]	=	30 X 1.3 = 39 [10] SELECT GRANULAR BORROW (LV)

[1] TOTAL COMMON EXCAVATION FOR PROJECT (INCLUDING TOPSOIL). PAID FOR AS 2105.507 COMMON EXCAVATION.

[2] TOTAL SUBGRADE EXCAVATION FOR PROJECT PAID FOR AS 2105.507 SUBGRADE EXCAVATION. SUBGRADE EXCAVATION MATERIAL IS ASSUMED TO MEET REQUIREMENTS TO BE RE-USED AS SUBGRADE MATERIAL.

[3] WITH THE EXCEPTION OF TOPSOIL, IT IS ASSUMED THAT COMMON EXCAVATION WILL MEET REQUIREMENTS TO BE USED AS SUITABLE GRADING MATERIAL.

[4] FOR ESTIMATING PURPOSES THE DEPTH OF EXISTING TOPSOIL IS CONSIDERED TO BE 4 INCHES. CONTRACTOR SHALL VERIFY PRIOR TO PLACING BID.

[7] SUBGRADE QUANTITY NEEDED BEFORE DEDUCTING SUBGRADE EXCAVATION MATERIAL ASSUMED TO BE RE-USED.

[8] EXCESS TOPSOIL TO BE DISTRIBUTED WITHIN PROJECT CONSTRUCTION LIMITS AT ENGINEER'S DISCRETION. EXCESS TOPSOIL AND EXCESS GRANULAR MATERIAL NOT DISTRIBUTED SHALL BECOME PROPERTY OF CONTRACTOR, TO BE DISPOSED OF OFFSITE.

[9] TOTAL COMMON BORROW FOR PROJECT PAID FOR AS 2105.507 COMMON BORROW (LV).

[10] TOTAL SELECT GRANULAR BORROW FOR PROJECT PAID FOR AS 2105.507 SELECT GRANULAR BORROW

NO	DATE	BY	CHKD	APPR	REVISION
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I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: NICHOLAS J DOBDA  
 SIGNATURE: *[Signature]*  
 DATE: 1/26/21 LICENSE NO. 49046

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 CHECKED BY NJD DATE 11/23/20



**ANOKA COUNTY  
HIGHWAY DEPT.**

SAP 002-624-028

EARTHWORK BALANCE

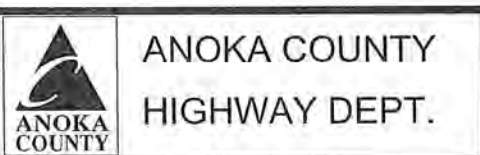


1. TOP OF THE GRADING SUBGRADE (GRADING GRADE) IS DEFINED AS THE BOTTOM OF THE CLASS 5 AGGREGATE BASE LAYER.
2. BOTTOM OF THE SUBBASE GRADE SHALL BE DEFINED AS THE BOTTOM OF THE 1' SUBGRADE EXCAVATION (SEE X-SECTIONS FOR DETAILS).
3. SUITABLE GRADING MATERIAL ON THIS PROJECT SHALL CONSIST OF ALL GRANULAR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

NO	DATE	BY	CHK	APPR	REVISION
NAME: P:\002-624-028\Plan\002624028_TAB.dgn					

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: NICHOLAS J DOBDA  
 SIGNATURE: *[Signature]*  
 DATE: 1/26/21 LICENSE NO. 49046

DRAWN BY: BTU DATE: 11/23/20  
 DESIGN BY: BTU DATE: 11/23/20  
 CHECKED BY: NJD DATE: 11/23/20



SAP 002-624-028



POWER					Y
ALIGNMENT	STATION	OFFSET		INPLACE ITEM	REMARKS
		FROM	TO		
<24_1>	103+84.82	41	RT	POLE	LEAVE
<24_1>	105+65.72	39	RT	POLE	LEAVE
<24_1>	106+92.48	41	LT	CABINET	LEAVE
<24_1>	106+98.46	41	LT	CABINET	LEAVE
<24_1>	107+18.53	124	LT	POLE	LEAVE
<24_1>	107+60.71	37	LT	LIGHT POLE	LEAVE
<24_1>	107+63.25	39	RT	POLE	LEAVE
<24_1>	108+03.26	43	LT	POLE	LEAVE
<24_1>	109+47.66	32	RT	POLE	LEAVE
<24_1>	111+27.99	40	LT	CABINET	LEAVE
<24_1>	113+32.35	33	RT	POLE	LEAVE

TELEPHONE / FIBER OPTIC / CABLE TV					Z
ALIGNMENT	STATION	OFFSET		INPLACE FACILITY	REMARKS
		FROM	TO		
<24_1>	104+27.64	39	LT	POLE	LEAVE
<24_1>	107+03.24	42	LT	PEDESTAL	LEAVE
<24_1>	107+17.31	46	LT	PEDESTAL	LEAVE
<24_1>	107+65.65	40	RT	PEDESTAL	LEAVE
<24_1>	107+73.62	52	RT	PEDESTAL	LEAVE
<24_1>	107+77.27	45	RT	PEDESTAL	LEAVE
<24_1>	107+77.85	46	LT	PEDESTAL	LEAVE
<24_1>	114+75.35	35	LT	PEDESTAL	LEAVE
<24_1>	114+77.95	31	RT	PEDESTAL	LEAVE

NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\002-624-028\Plan\002624028\_TAB.dgn 01/21/2021 1:21:06 PM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: NICHOLAS J DOBDA  
 SIGNATURE: *NJD*  
 DATE: 1/26/21 LICENSE NO. 49046

DRAWN BY BTU DATE 11/23/20  
 DESIGN BY BTU DATE 11/23/20  
 CHECKED BY NJD DATE 11/23/20

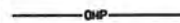
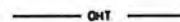





ANOKA COUNTY  
 HIGHWAY DEPT.

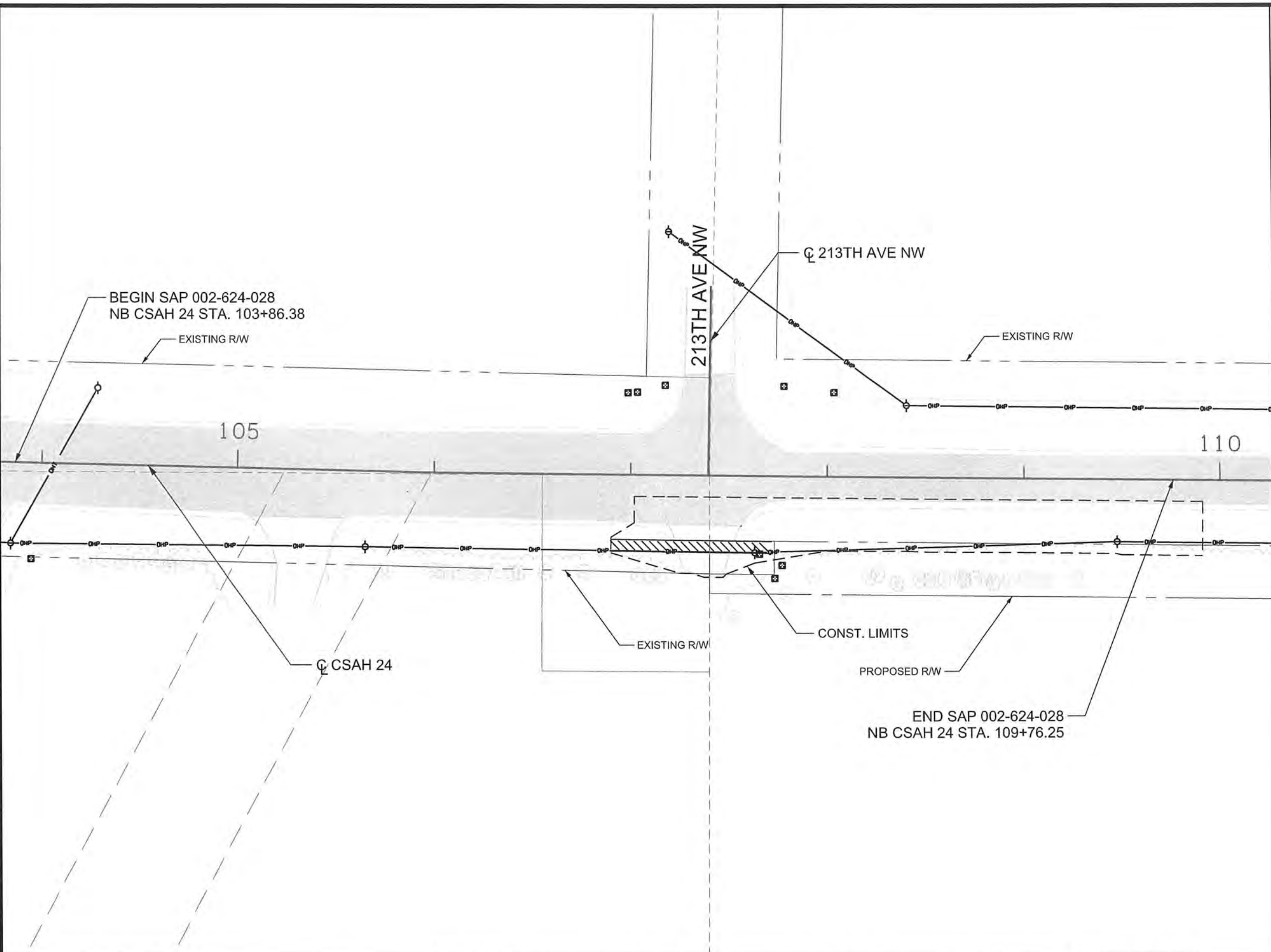
SAP 002-624-028

INPLACE  
 UTILITY TABULATIONS

LEGEND

-  OVERHEAD POWER
-  OVERHEAD TELEPHONE
-  EXISTING R/W
-  PROPOSED R/W
-  EXISTING ROADWAY

1. CONTRACTOR RESPONSIBLE TO GET LOCATES PRIOR TO ANY EXCAVATION ACTIVITIES
2. ABOVE GROUND UTILITIES SHOWN FOR REFERENCE PURPOSES ONLY. BELOW GROUND UTILITIES NOT SHOWN.

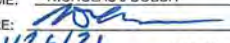


1 OF 1


NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-624-028\Plan\002624028\_UT1\_P1.dgn 01/21/2021 1:21:32 PM

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

PRINT NAME: NICHOLAS J DOBDA  
 SIGNATURE:   
 DATE: 1/26/21 LICENSE NO. 49046

DRAWN BY: BTU DATE: 11/23/20  
 DESIGN BY: BTU DATE: 11/23/20  
 CHECKED BY: NJD DATE: 11/23/20

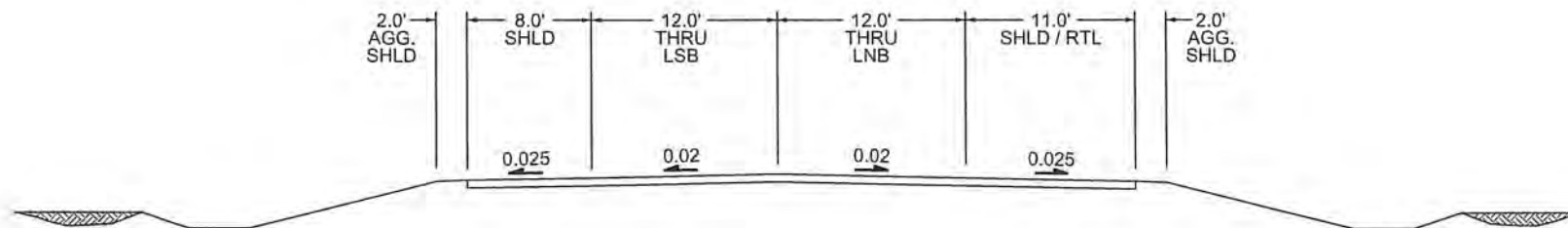
 ANOKA COUNTY  
 HIGHWAY DEPT.

SAP 002-624-028

UTILITY PLAN  
 CSAH 24  
 STA 103+86.38 TO 109+91.25  
 Sheet 7 of 25 Sheets

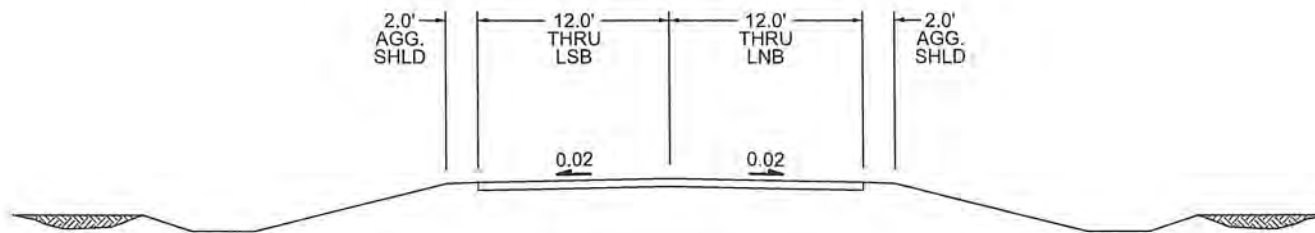
CSAH 24 (JARVIS ST NE) EXISTING

STA. 103+86.38 - 107+39.38



CSAH 24 (JARVIS ST NE) EXISTING

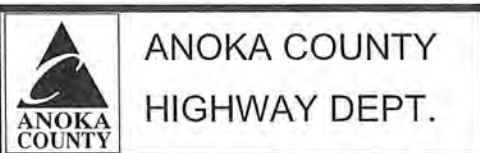
STA. 107+39.38 - 109+76.25



NO	DATE	BY	CKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: NICHOLAS J DOBDA  
 SIGNATURE: *[Signature]*  
 DATE: 1/26/21 LICENSE NO. 49046

DRAWN BY BTU DATE 11/23/20  
 DESIGN BY BTU DATE 11/23/20  
 CHECKED BY NJD DATE 11/23/20



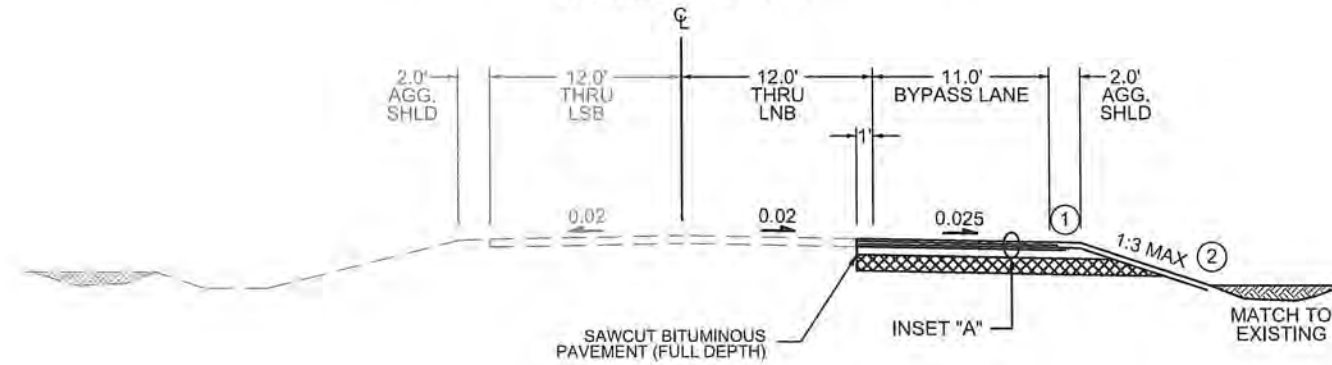
SAP 002-624-028

EXISTING TYPICAL SECTIONS CSAH 24  
 Sheet 8 of 25 Sheets



CSAH 24 (JARVIS ST NE) PROPOSED

STA. 107+18.28 - 109+76.25



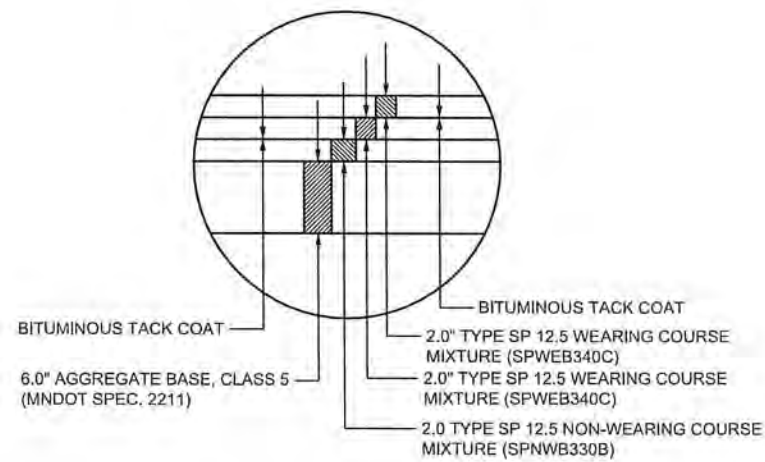
GENERAL NOTES:

- SEE CONSTRUCTION PLAN SHEET FOR BYPASS LANE LOCATION
- ALL CROSS SLOPES ARE EXPRESSED IN FT/FT
- UNLESS OTHERWISE SPECIFIED, THE GRADING GRADE CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE OF THE MAINLINE.
- 4.0" TOPSOIL & SEED ON ALL DISTURBED AREAS
- THE TOPSOIL TO BE PLACED IS THE SALVAGED INPLACE TOPSOIL THAT WILL BE REMOVED FOR CONSTRUCTION AND THEN REUSED ON THE SLOPES IN ADDITION TO THE COMMON TOPSOIL BORROW 2574.507.
- 1.0' SUBGRADE EXCAVATION SHALL BE THE BLENDING OF THE EXISTING SUBGRADE AS TO UNIFY THE SOILS AT LEAST 1.0' BENEATH THE GRADING GRADE. PAID FOR AS 2105.507 - (SUBGRADE EXCAVATION)

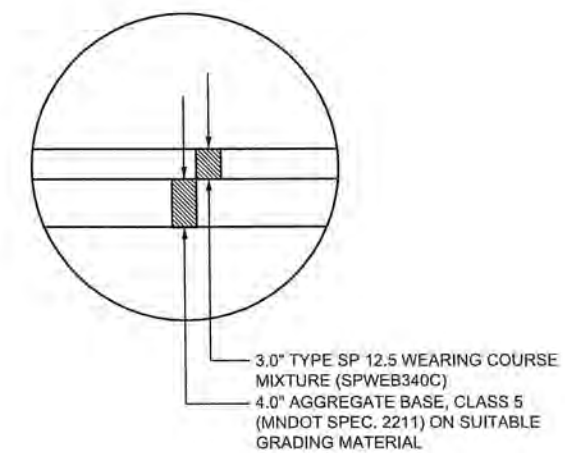
NOTES:

- ① SHOULDER BASE AGGREGATE CLASS 2
- ② 4" TOPSOIL

INSET "A"  
BYPASS CONSTRUCTION



INSET "B"  
BITUMINOUS DRIVEWAY



NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\002-624-028\Plan\002624028\_TYP.dgn 01/21/2021 1:21:45 PM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: NICHOLAS J DORBA  
 SIGNATURE: *[Signature]*  
 DATE: 1/26/21 LICENSE NO. 49046

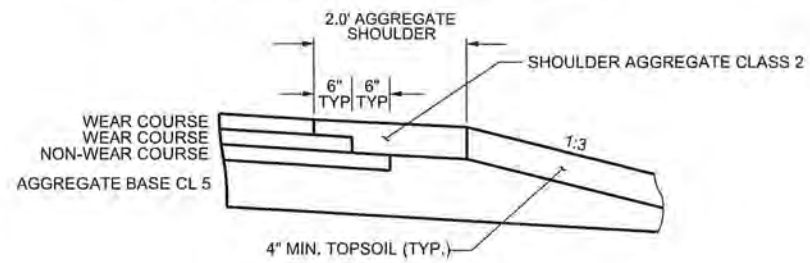
DRAWN BY: BTU DATE: 11/23/20  
 DESIGN BY: BTU DATE: 11/23/20  
 CHECKED BY: NJD DATE: 11/23/20

**ANOKA COUNTY**  
**HIGHWAY DEPT.**

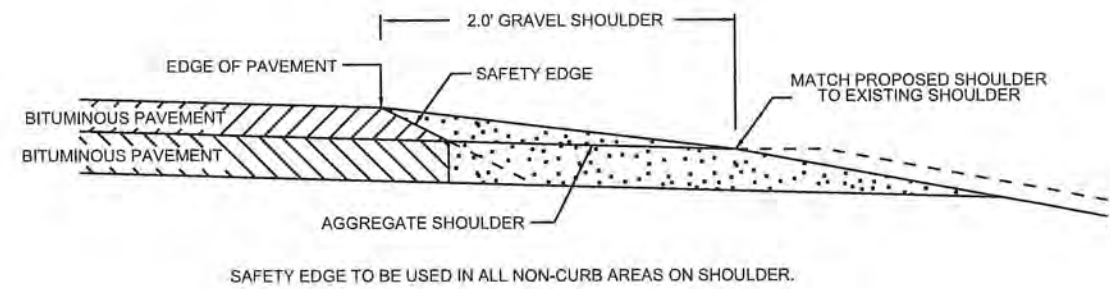
SAP 002-624-028



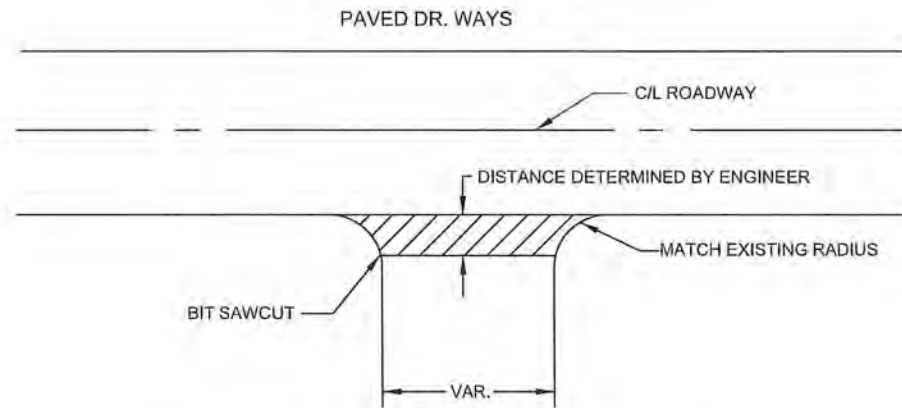
**BITUMINOUS PAVEMENT EDGE AND AGGREGATE SHOULDER DETAIL**



**BITUMINOUS SAFETY EDGE GRAVEL SHOULDER**

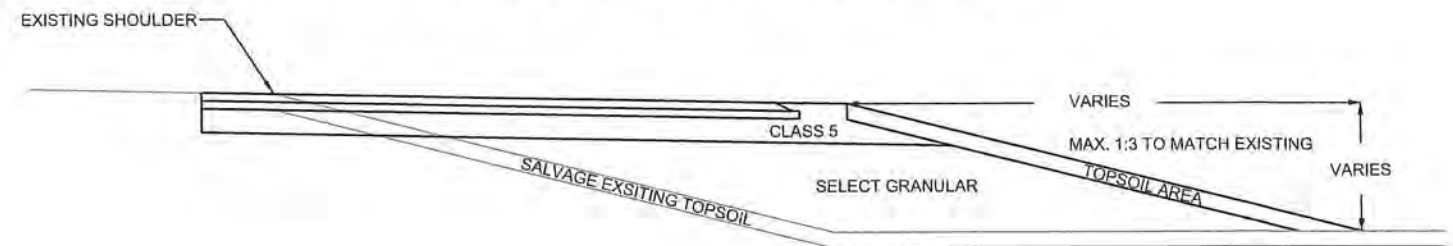


**BITUMINOUS DRIVEWAY DETAIL**

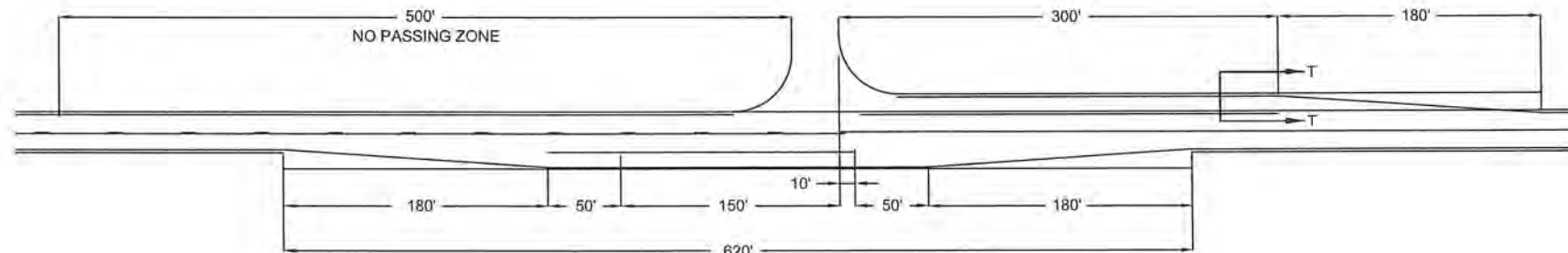


DRIVEWAYS PAVED IN DIFFERENT OPERATION FROM MAIN LINE PAVING PAID AS DRIVEWAY OR STREET APPROACH.

**SECTION T-T RIGHT TURN AND BYPASS LANE DETAIL**



**RIGHT TURN AND BYPASS LANE GENERAL LAYOUT DETAIL**



NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\002-624-028\Plan\002624028\_TYP.dgn 01/21/2021 1:21:46 PM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: NICHOLAS J DOBDA  
 SIGNATURE: *Nicholas J Dobda*  
 DATE: 1/26/21 LICENSE NO. 49046

DRAWN BY: BTU DATE: 11/23/20  
 DESIGN BY: BTU DATE: 11/23/20  
 CHECKED BY: NJD DATE: 11/23/20

**ANOKA COUNTY**  
**HIGHWAY DEPT.**

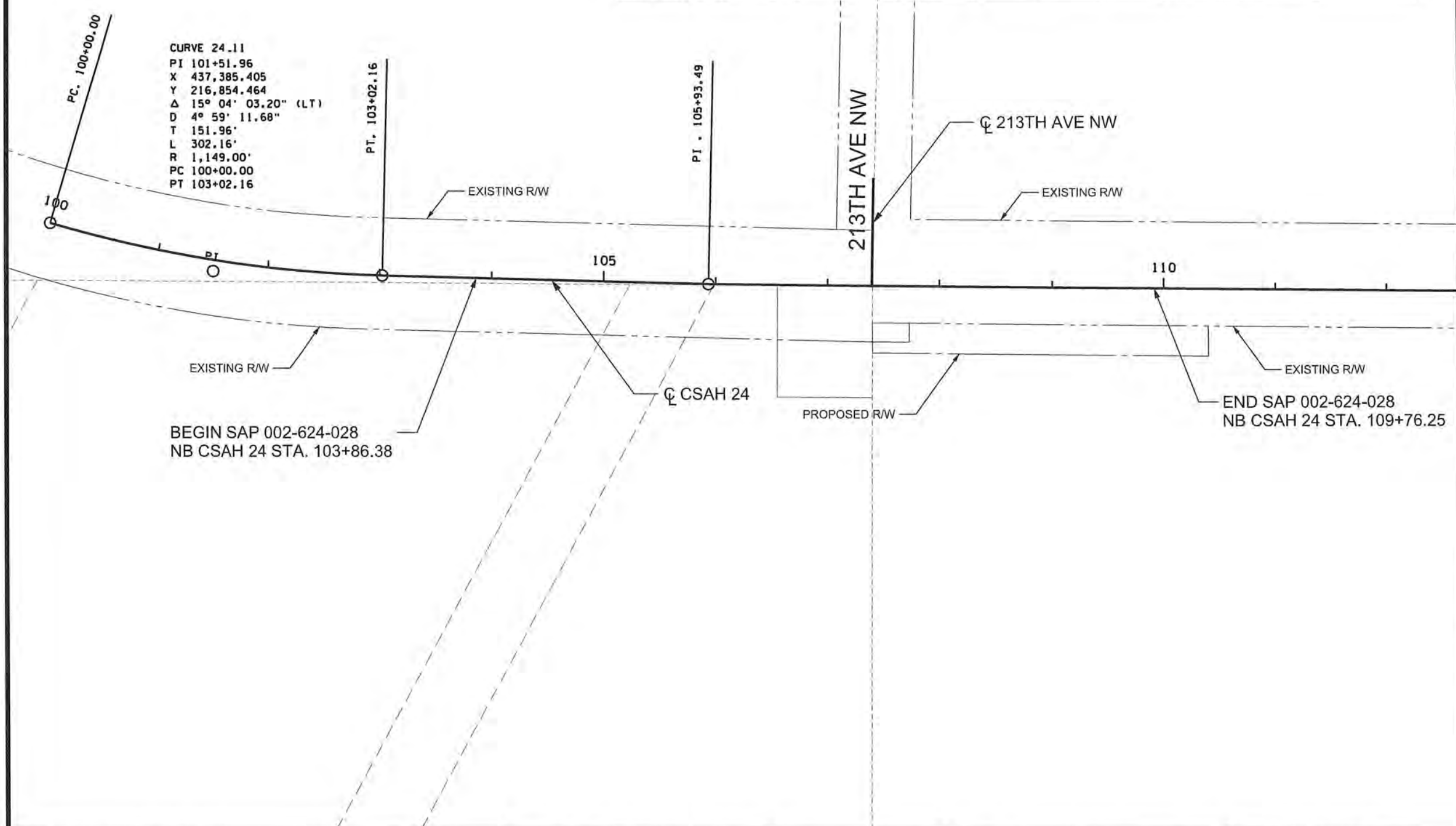
SAP 002-624-028

TYPICAL SECTIONS  
 INSETS AND DETAILS  
 Sheet 10 of 25 Sheets



ALIGNMENT TABULATION										
POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	E	N	
<b>☉ JARVIS ST NW</b>						<b>&lt;24_1&gt;</b>				
	PC	100+00.000						437,342.2389	216,708.7660	N 16° 30' 10.95" E
24_11	PI	101+51.958	15° 04' 03.20" LT	4° 59' 11.68"	1,149.000'	151.958'	302.162'	437,385.4050	216,854.4640	PI
	CC							436,240.5723	217,035.1581	
	PT	103+02.162						437,389.2118	217,006.3742	N 1° 26' 07.75" E
1001	POT	105+93.493						437,396.5100	217,297.6137	
1002	POT	114+77.946						437,405.9688	218,182.0157	

**ALIGNMENT NOTES:**  
 1. HORIZONTAL CONTROL IS BASED ON ANOKA COUNTY COORDINATE SYSTEM NAD 83 (1996 ADJUSTMENT)  
 2. 213TH AVE NW ALIGNMENT SHOWN FOR REFERENCE ONLY.



**CURVE 24.11**  
 PI 101+51.96  
 X 437,385.405  
 Y 216,854.464  
 Δ 15° 04' 03.20" (LT)  
 D 4° 59' 11.68"  
 T 151.96'  
 L 302.16'  
 R 1,149.00'  
 PC 100+00.00  
 PT 103+02.16

BEGIN SAP 002-624-028  
 NB CSAH 24 STA. 103+86.38

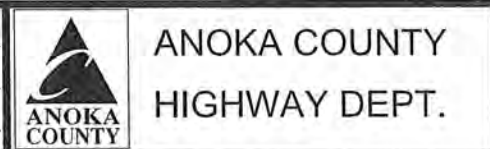
END SAP 002-624-028  
 NB CSAH 24 STA. 109+76.25

NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\002-624-028\Plan\002624028\_AL1\_P1.dgn 01/21/2021 1:22:03 PM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: NICHOLAS J DOBDA  
 SIGNATURE: *[Signature]*  
 DATE: 1/26/21 LICENSE NO. 49046

DRAWN BY: BTU DATE: 11/23/20  
 DESIGN BY: BTU DATE: 11/23/20  
 CHECKED BY: NJD DATE: 11/23/20








SAP 002-624-028

ALIGNMENT PLAN  
 CSAH 24  
 STA 103+86.38 TO 109+91.25  
 Sheet 11 of 25 Sheets



LEGEND

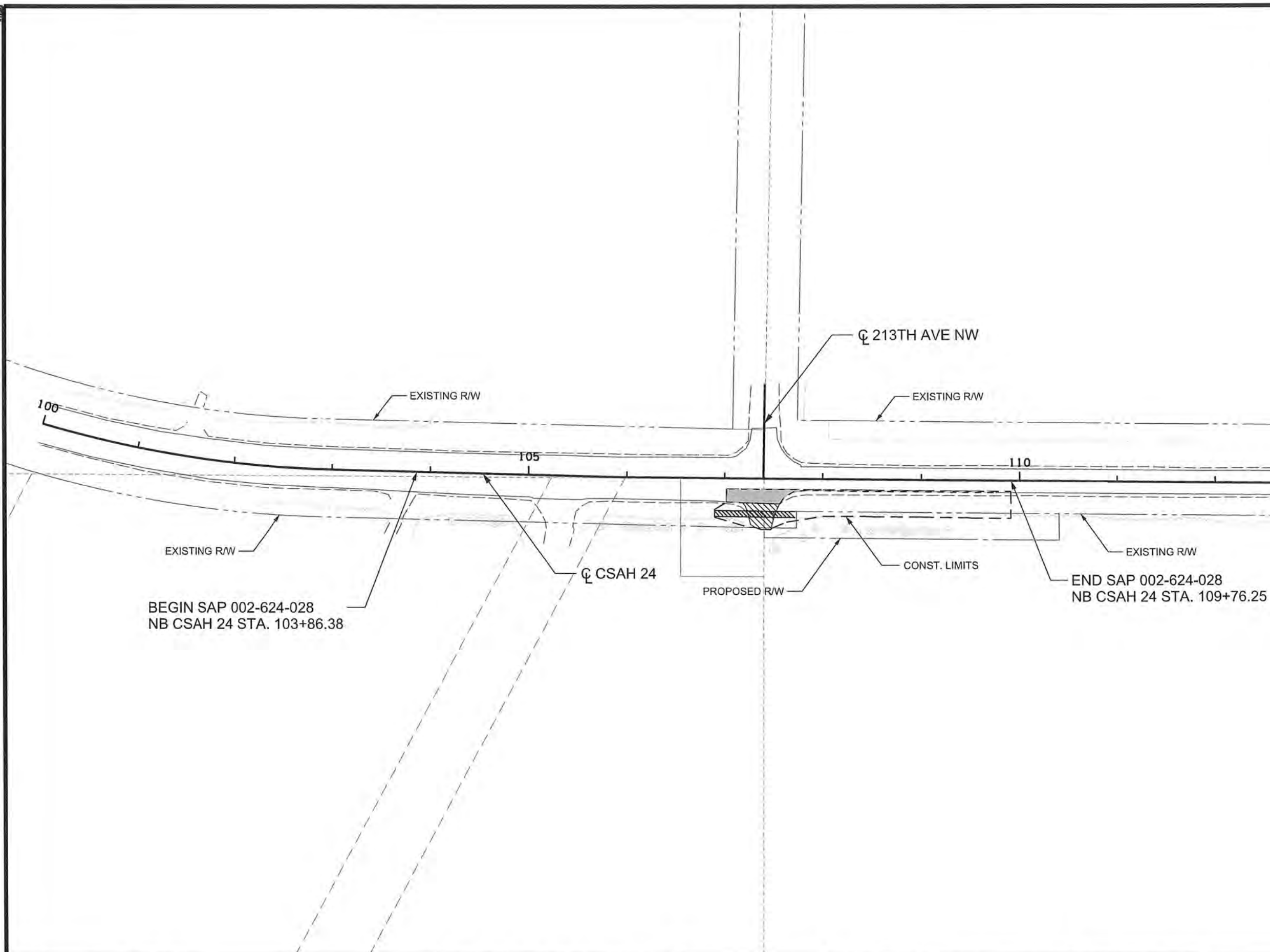
-  REMOVE BITUMINOUS PAVEMENT
-  REMOVE DRIVEWAY
-  REMOVE STORM SEWER / PIPE CULVERTS
-  SAWING BITUMINOUS PAVEMENT
-  CONSTRUCTION LIMIT

REMOVAL NOTES:

REMOVE MISC. STRUCTURES INCLUDES BOULDERS, SIGNS AND LANDSCAPING AS DIRECTED BY ENGINEER.  
 ALL PRIVATE UTILITIES TO BE RELOCATED BY OTHERS AS REQUIRED.  
 ALL ROADWAY SIGNS WITHIN THE CONSTRUCTION LIMITS AND CONFLICTING SIGNS SHALL BE SALVAGED BY THE CONTRACTOR



1 OF 1

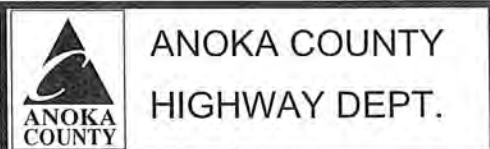


NO	DATE	BY	CKD	APPR	REVISION

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I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: NICHOLAS J DOBDA  
 SIGNATURE: *[Signature]*  
 DATE: 1/26/21 LICENSE NO. 49045

DRAWN BY BTU DATE 11/23/20  
 DESIGN BY BTU DATE 11/23/20  
 CHECKED BY NJD DATE 11/23/20






SAP 002-624-028

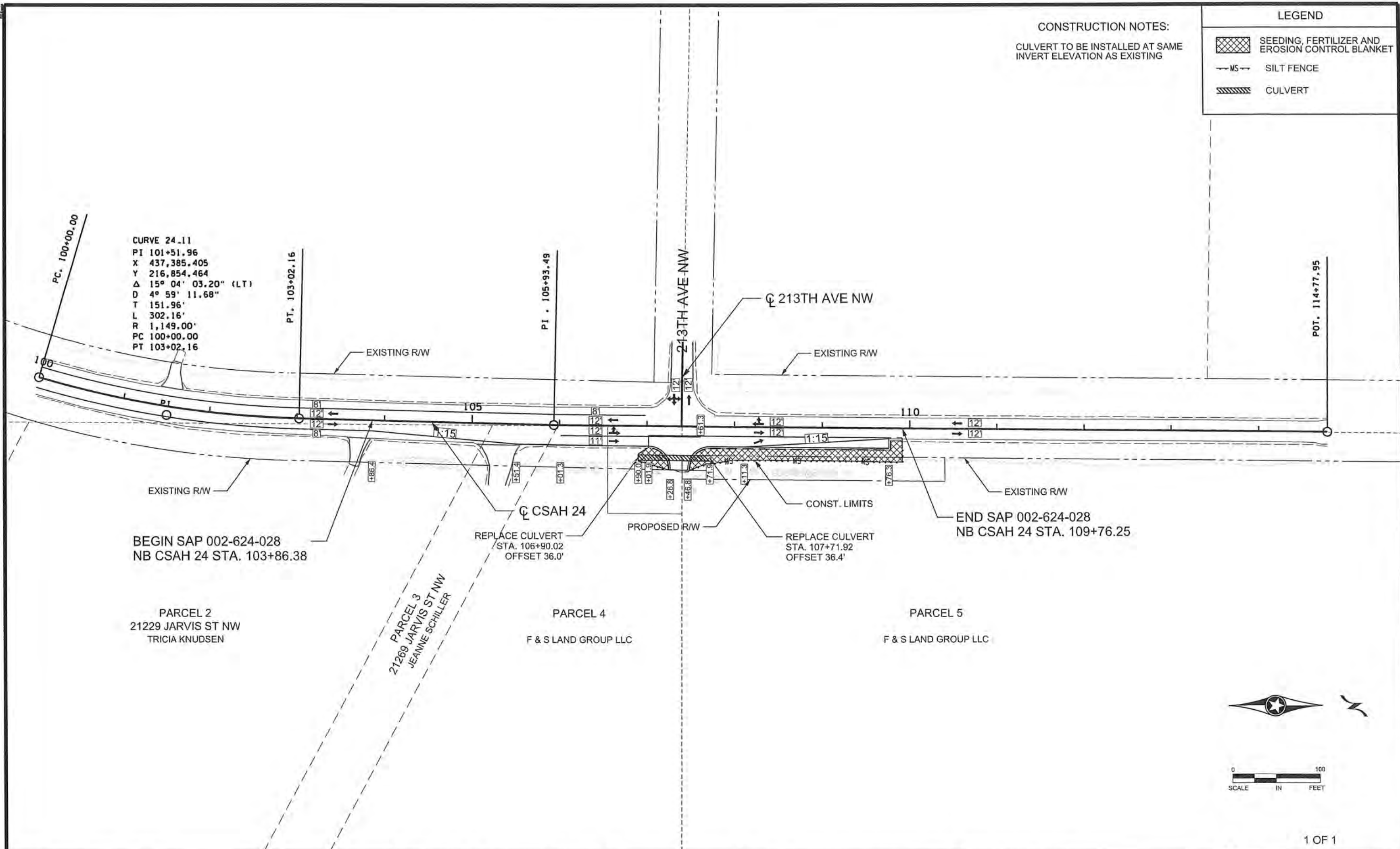
REMOVAL PLAN  
 CSAH 24  
 STA 103+86.38 TO 109+91.25  
 Sheet 12 of 25 Sheets



CONSTRUCTION NOTES:  
 CULVERT TO BE INSTALLED AT SAME  
 INVERT ELEVATION AS EXISTING

LEGEND	
	SEEDING, FERTILIZER AND EROSION CONTROL BLANKET
	SILT FENCE
	CULVERT

CURVE 24.11  
 PI 101+51.96  
 X 437,385.405  
 Y 216,854.464  
 Δ 15° 04' 03.20" (LT)  
 D 4° 59' 11.68"  
 T 151.96'  
 L 302.16'  
 R 1,149.00'  
 PC 100+00.00  
 PT 103+02.16



BEGIN SAP 002-624-028  
 NB CSAH 24 STA. 103+86.38

PARCEL 2  
 21229 JARVIS ST NW  
 TRICIA KNUDSEN

PARCEL 3  
 21269 JARVIS ST NW  
 JEANNE SCHILLER

REPLACE CULVERT  
 STA. 106+90.02  
 OFFSET 36.0'

PARCEL 4  
 F & S LAND GROUP LLC


REPLACE CULVERT  
 STA. 107+71.92  
 OFFSET 36.4'

PARCEL 5  
 F & S LAND GROUP LLC


END SAP 002-624-028  
 NB CSAH 24 STA. 109+76.25

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-624-028\Plan\002624028\_PP1\_P1.dgn 01/21/2021 1:23:02 PM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: NICHOLAS J DOBDA  
 SIGNATURE:   
 DATE: 1/26/21 LICENSE NO. 49046

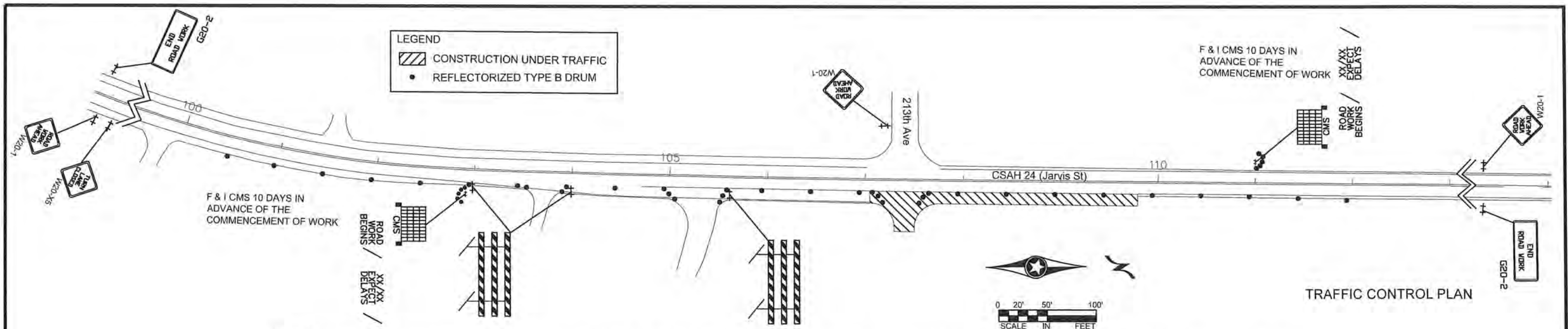
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 DESIGN BY: BTU DATE: 11/23/20  
 CHECKED BY: NJD DATE: 11/23/20

 ANOKA COUNTY  
 HIGHWAY DEPT.

SAP 002-624-028

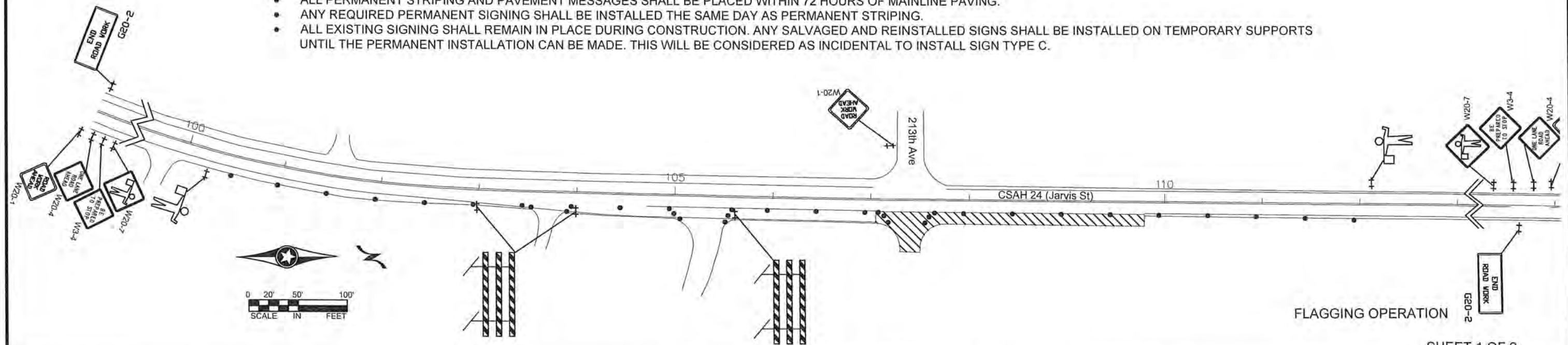
CONSTRUCTION PLAN  
 CSAH 24  
 STA 103+86.38 TO 109+91.25  
 Sheet 13 of 25 Sheets





**NOTES:**

- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
- FOR RELOCATING TRAFFIC SIGNS DURING CONSTRUCTION, AS DIRECTED BY THE ENGINEER, RELOCATION INCIDENTAL TO TRAFFIC CONTROL.
- CONTRACTOR SHALL COMPLY WITH THE LONGITUDINAL DROP-OFF GUIDELINES AS PER THE FIELD MANUAL. DROP-OFF EDGE SHALL BE RAMPED AT THE END OF DAYTIME WORK ACTIVITIES.
- CONTRACTOR SHALL SUPPLY AND INSTALL THE PORTABLE CHANGEABLE MESSAGE SIGN (CMS) A MINIMUM TEN DAYS PRIOR TO ACTUAL COMMENCEMENT OF ROAD WORK, TO A LOCATION AS SPECIFIED BY THE ENGINEER. SIGNS TO BE REMOVED WHEN ROAD WORK BEGINS. PAYMENT SHALL BE MADE AS PER ITEM 2563.613 PORTABLE CHANGEABLE MESSAGE SIGN BY THE UNIT/DAY.
- CONTRACTOR SHALL SUPPLY AND ERECT THE TEMPORARY TRAFFIC CONTROL SIGNS AS SHOWN ON THIS DRAWING AND DETAILED IN THE SPECIAL PROVISIONS FROM THE TIME WORK COMMENCES ON THIS ROADWAY UNTIL THIS ROADWAY IS PERMANENTLY STRIPED. ALL NECESSARY TEMPORARY TRAFFIC CONTROL SIGNS SHALL BE PAID FOR AS PART OF TRAFFIC CONTROL LUMP SUM.
- DURING DAYTIME WORK ACTIVITIES, A FLAGGING OPERATION SHALL BE USED.
- ALL SIGNS RELATED TO THE FLAGGING OPERATION, WITH THE EXCEPTION OF ROAD WORK AHEAD AND END ROAD WORK SIGNS, SHALL BE LAID DOWN OR REMOVED AT THE END OF EACH WORK DAY AND RESET FOR THE FOLLOWING WORK DAY ACTIVITIES.
- TRAFFIC CONTROL SETUP SHALL REMAIN IN PLACE AT ALL TIMES.
- ACCESS SHALL BE MAINTAINED TO ALL STREETS AND DRIVEWAYS IN CONSTRUCTION AREA.
- ALL PERMANENT STRIPING AND PAVEMENT MESSAGES SHALL BE PLACED WITHIN 72 HOURS OF MAINLINE PAVING.
- ANY REQUIRED PERMANENT SIGNING SHALL BE INSTALLED THE SAME DAY AS PERMANENT STRIPING.
- ALL EXISTING SIGNING SHALL REMAIN IN PLACE DURING CONSTRUCTION. ANY SALVAGED AND REINSTALLED SIGNS SHALL BE INSTALLED ON TEMPORARY SUPPORTS UNTIL THE PERMANENT INSTALLATION CAN BE MADE. THIS WILL BE CONSIDERED AS INCIDENTAL TO INSTALL SIGN TYPE C.



SHEET 1 OF 2

NO	DATE	BY	CKD	APPR	REVISION

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

PRINT NAME: JOSEPH J. MACPHERSON

SIGNATURE: *[Signature]*

DATE: 1-26-21 LICENSE NO. 46732

DRAWN BY: TMV DATE 09/02/20

DESIGN BY: TMV DATE 09/02/20

CHECKED BY: JKR DATE 11/19/20







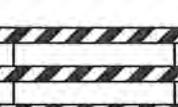

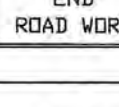

**ANOKA COUNTY**  
HIGHWAY DEPT.

SAP 002-624-028

TRAFFIC CONTROL PLAN  
FLAGGING OPERATION

Sheet 14 of 25 Sheets



G TRAFFIC CONTROL QUANTITIES			
M.U.T.C.D. CODE	SIZE	INSERT	QUANTITY
W3-4	48" x 48"		2
W20-1	48" x 48"		3
W20-4	48" x 48"		2
W20-7	48" x 48"		2
W20-X5	48" x 48"		1
TYPE III	8 FOOT		3
G20-2	36" X 18"		2
REFLECTORIZED REBOUNDABLE DRUM			45
FLAGGER			2
CMS sign to be installed a minimum of ten days prior to actual commencement of road closure. Signs to be removed when road closure begins.			2 (AT 10 DAYS EACH)

CHANGEABLE MESSAGE BOARD - MESSAGE SEQUENCE LAYOUT

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

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

CMS SIGN TO BE INSTALLED A MIMUMUM OF TEN DAYS PRIOR TO ACTUAL COMMENCEMENT OF ROAD WORK. SIGNS TO BE REMOVED WHEN ROAD WORK BEGINS.

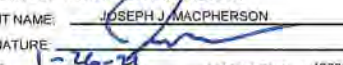
NOTES:

1. ALL BARRICADES SHALL BE PROPERLY WEIGHTED WITH SANDBAGS.
2. ALL BARRICADES SHALL HAVE REFLECTIVE MATERIAL ON BOTH SIDES.
3. ALL BARRICADE MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
4. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MOST RECENT EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE FIELD MANUAL DATED, JANUARY 2018.
5. ADDITIONS OR CHANGES TO THIS PLAN MAY BE MADE AS DETERMINED BY THE ENGINEER.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-624-028\Base\Traffic\TC Plan.dwg

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

PRINT NAME: JOSEPH J. MACPHERSON  
SIGNATURE:   
DATE: 1-26-20 LICENSE NO. 48732

DRAWN BY: TMV DATE: 09/02/20  
DESIGN BY: TMV DATE: 09/02/20  
CHECKED BY: JKR DATE: 11/19/20



ANOKA COUNTY  
HIGHWAY DEPT.

SAP 002-624-028

TRAFFIC CONTROL QUANTITIES



**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 1/4 INCH UNDER OR 1/4 INCH OVER THE SPECIFIED WIDTH WILL BE ALLOWED FOR STRIPING PROVIDED THE VARIATION IS GRADUAL AND DOES NOT DETRACT FROM THE GENERAL APPEARANCE. BROKEN LINE SEGMENTS MAY VARY UP TO ONE-HALF FOOT FROM THE SPECIFIED LENGTHS PROVIDED THE OVER AND UNDER VARIATIONS ARE REASONABLY COMPENSATORY. ALIGNMENT DEVIATIONS FROM THE CONTROL GUIDE SHALL NOT EXCEED 1 INCH. MATERIAL SHALL NOT BE APPLIED OVER LONGITUDINAL JOINTS, ESTABLISHMENT OF APPLICATION TOLERANCES SHALL NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY TO COMPLY AS CLOSELY AS PRACTICABLE WITH THE PLANNED DIMENSIONS.

**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 BEANS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE MULTI COMP RESIN LINE TO PROVIDE AN IMMEDIATE NO-TRACK SYSTEM.

A MULTI COMP RESIN 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 APPLICATION 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.

H PAVEMENT MARKING TABULATION		
ITEM	UNIT	TOTAL QUANTITY
4" SOLID LINE WHITE - MULTI COMP	LIN FT	620
8" DOTTED LINE WHITE - MULTI COMP	LIN FT	36

1

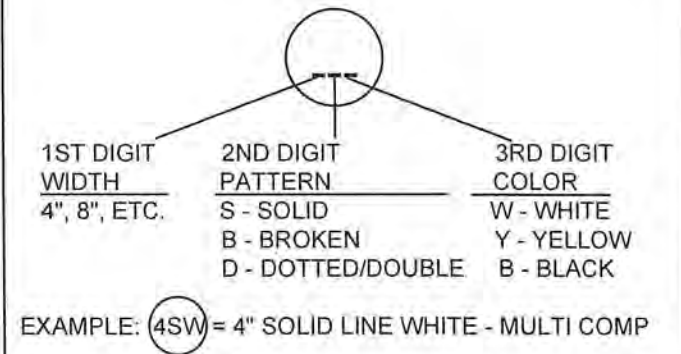
1 3' STRIPE, 12' GAP

**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



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-624-028\BaselTraffic\Perm Pvmt Mrkg Guide Notes.dwg

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PRINT NAME: JOSEPH J. MACPHERSON, P.E.  
 SIGNATURE: *[Signature]*  
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**ANOKA COUNTY**  
HIGHWAY DEPT.

SAP 002-624-028

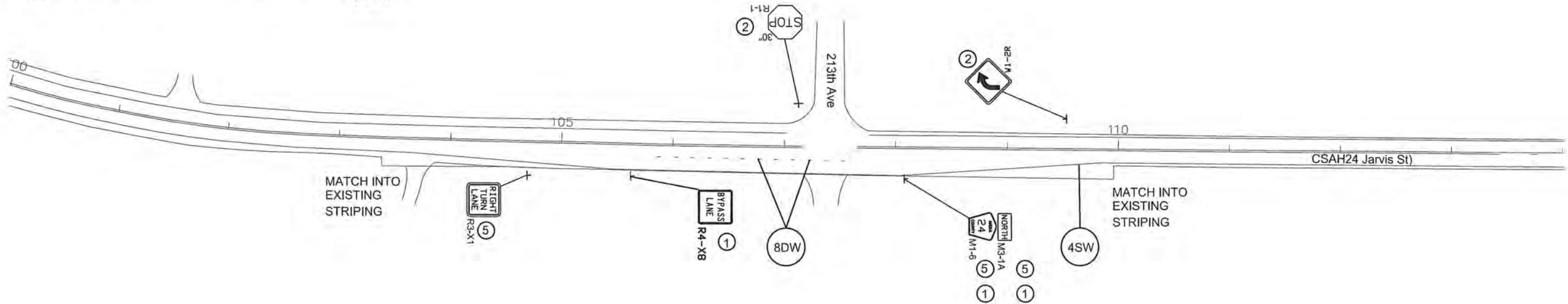
PERMANENT MARKING TABULATION  
 Sheet 16 of 25 Sheets



- SIGN NOTES:  
 ① FURNISH & INSTALL SIGN  
 ② INPLACE SIGNS  
 ⑤ REMOVE SIGN

STRIPING KEY

○ CIRCLE - MULTI COMP



I EXISTING SIGN TAB				
STATION	ADDRESS/ DESCRIPTION (NOTES)	REMOVE SIGN TYPE C EACH	SIGN NUMBER	SIGN LEGEND
104+69	RT	1	R3-X1	RIGHT TURN LANE
108+07	RT	1	M3-1 M1-6M	NORTH ROUTE MARKER
TOTAL		2		

J TEMPORARY PAVEMENT MARKING TAB		
DESCRIPTION	LIN FT	QUANTITY
PAVEMENT MARKING REMOVAL 4" SOLID LINE WHITE	LIN FT	429
PAVEMENT MARKING REMOVAL 4" SOLID DOUBLE LINE YELLOW	LIN FT	50

K F & I SIGN PANELS TYPE C							
M.U.T.C.D. CODE	SIZE	INSERT	QUANTITY	PANEL AREA	TOTAL AREA	MOUNTING POST PER INSTALLATION	MOUNTING HEIGHT To pavement edge
				SQ. FT.	SQ. FT.		
M3-1	24" x 12"		1	2.00	2.00	1	7.0'
M1-6M	24" x 24"		1	4.00	4.00		
R4-X8	30" x 30"		1	6.25	6.25	1	7.0'
TOTAL TYPE C SIGN SQ FT					12.25		
PROJECT TOTAL SQ FT					12.25		

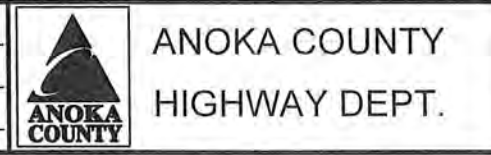
NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:1002-624-028(Base)TrafficSigning & Striping.dwg

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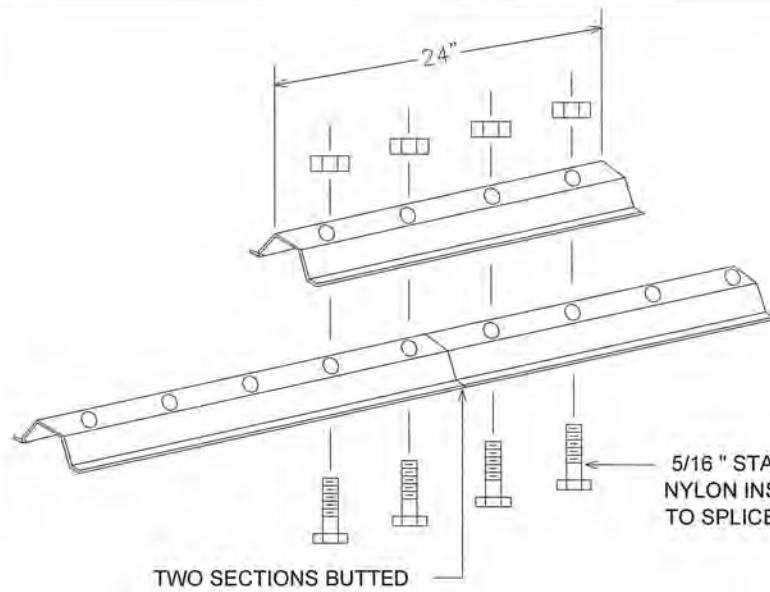
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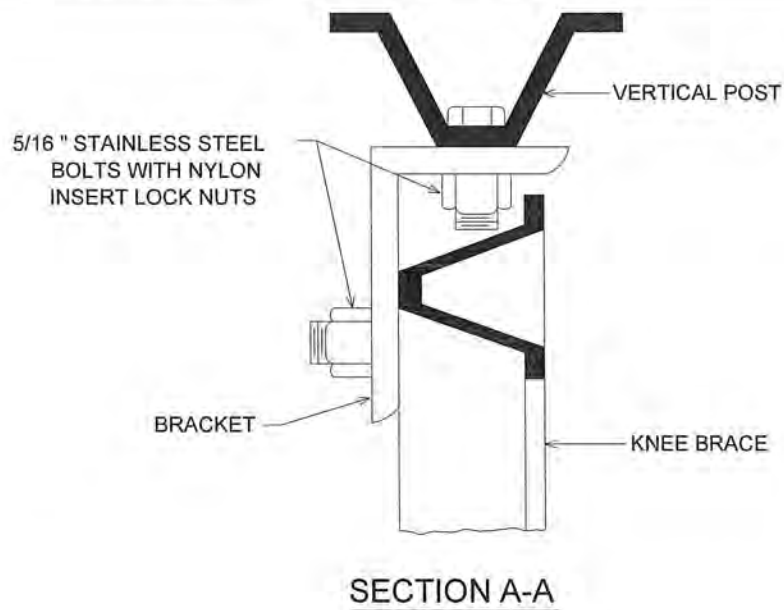


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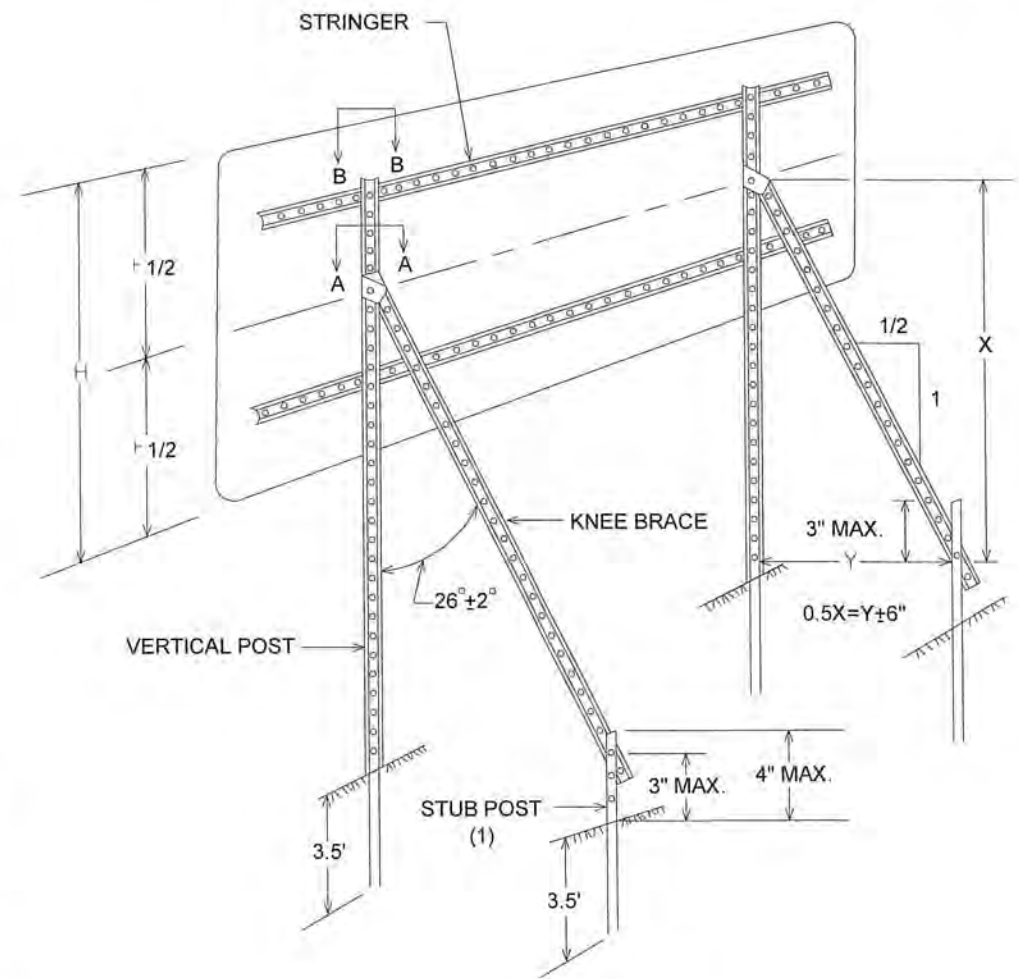




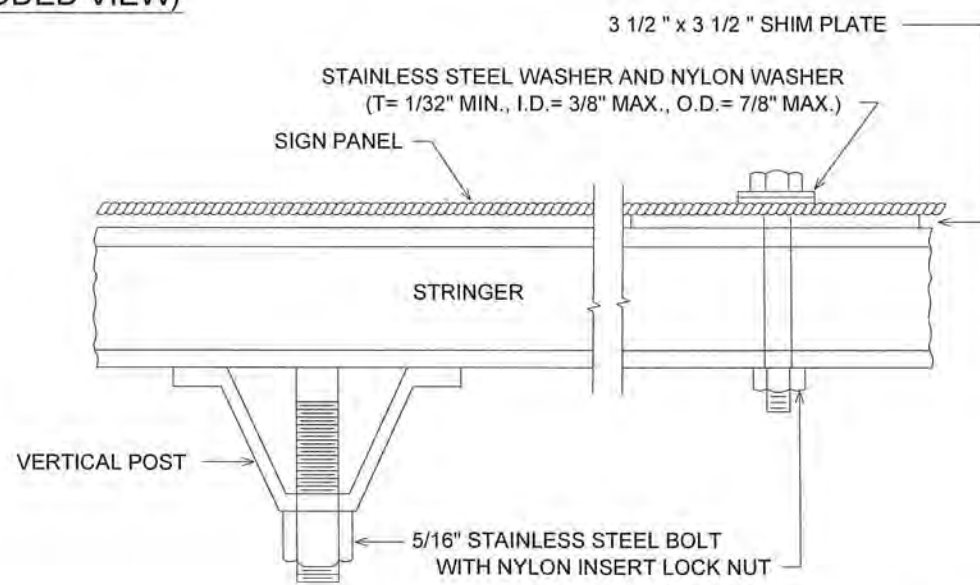
LATERAL BRACE OR STRINGER  
SPlice DETAIL (EXPLODED VIEW)



SECTION A-A



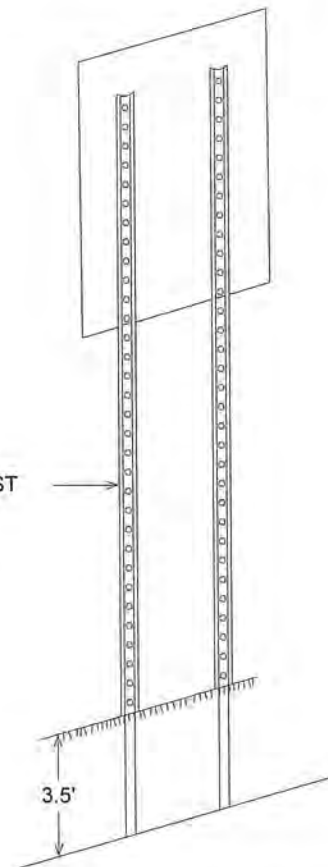
TYPICAL "A-FRAME" INSTALLATION  
TYPE "D" SIGNS



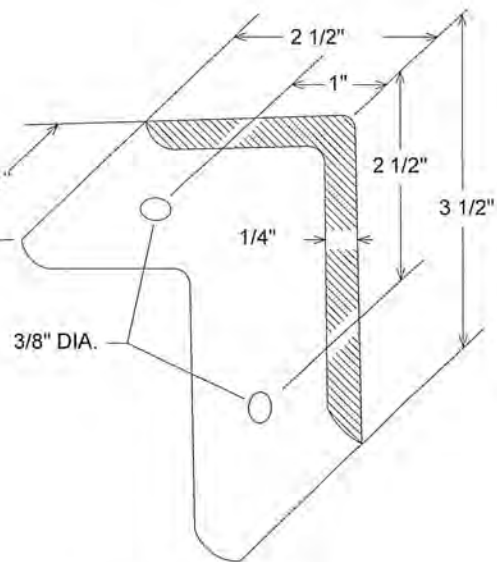
SECTION B-B

VERTICAL POST

VERTICAL POST

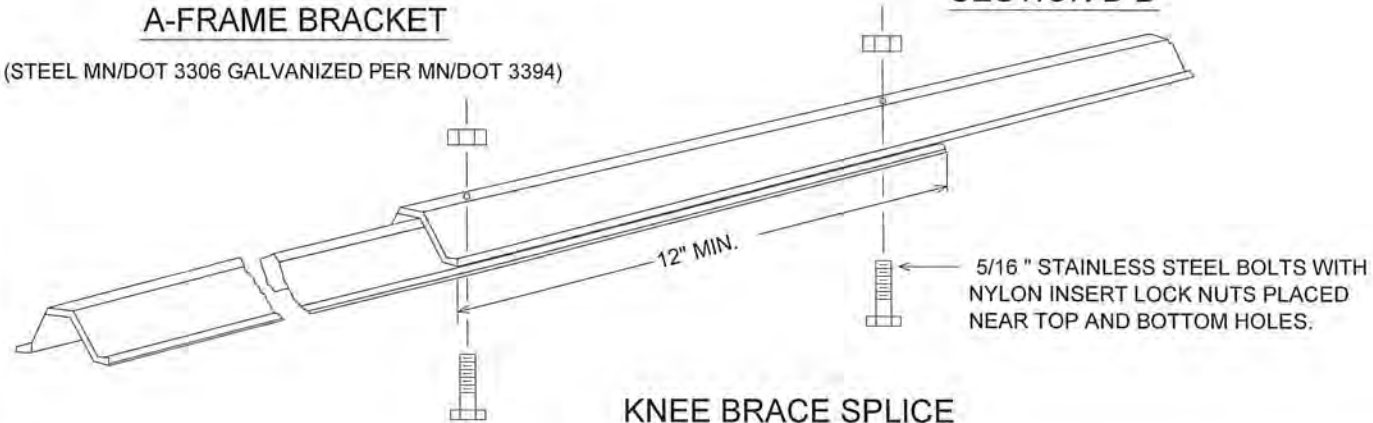


TYPICAL INSTALLATION 36" AND LARGER  
TYPE "C" SIGNS

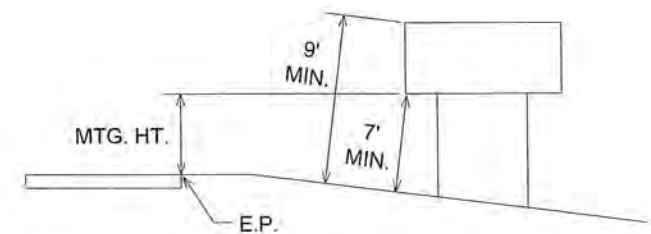


A-FRAME BRACKET

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



KNEE BRACE SPLICE



TYPICAL MOUNTING

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

TYPE C & D SIGN  
STRUCTURAL DETAILS

SHEET 1 OF 3

NO	DATE	BY	CKD	APPR	REVISION

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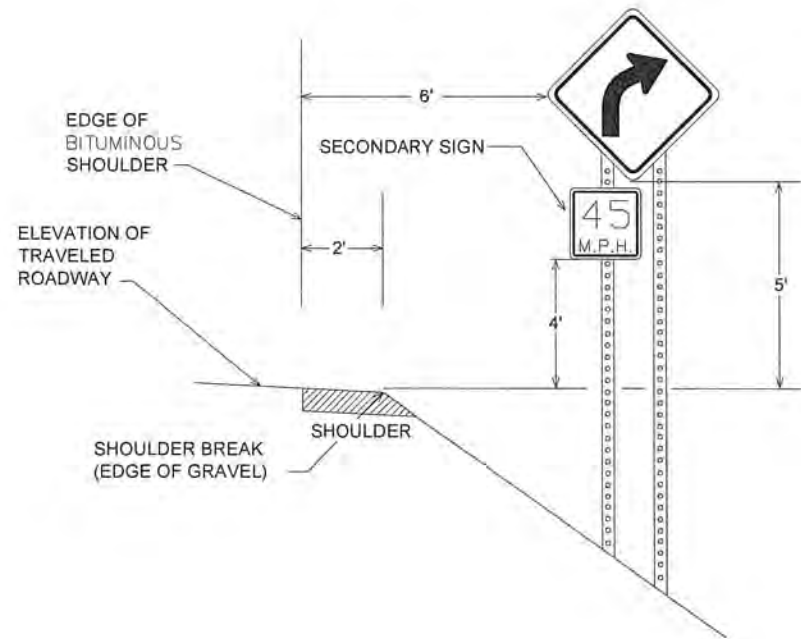
ANOKA COUNTY  
 HIGHWAY DEPT.

SAP 002-624-028

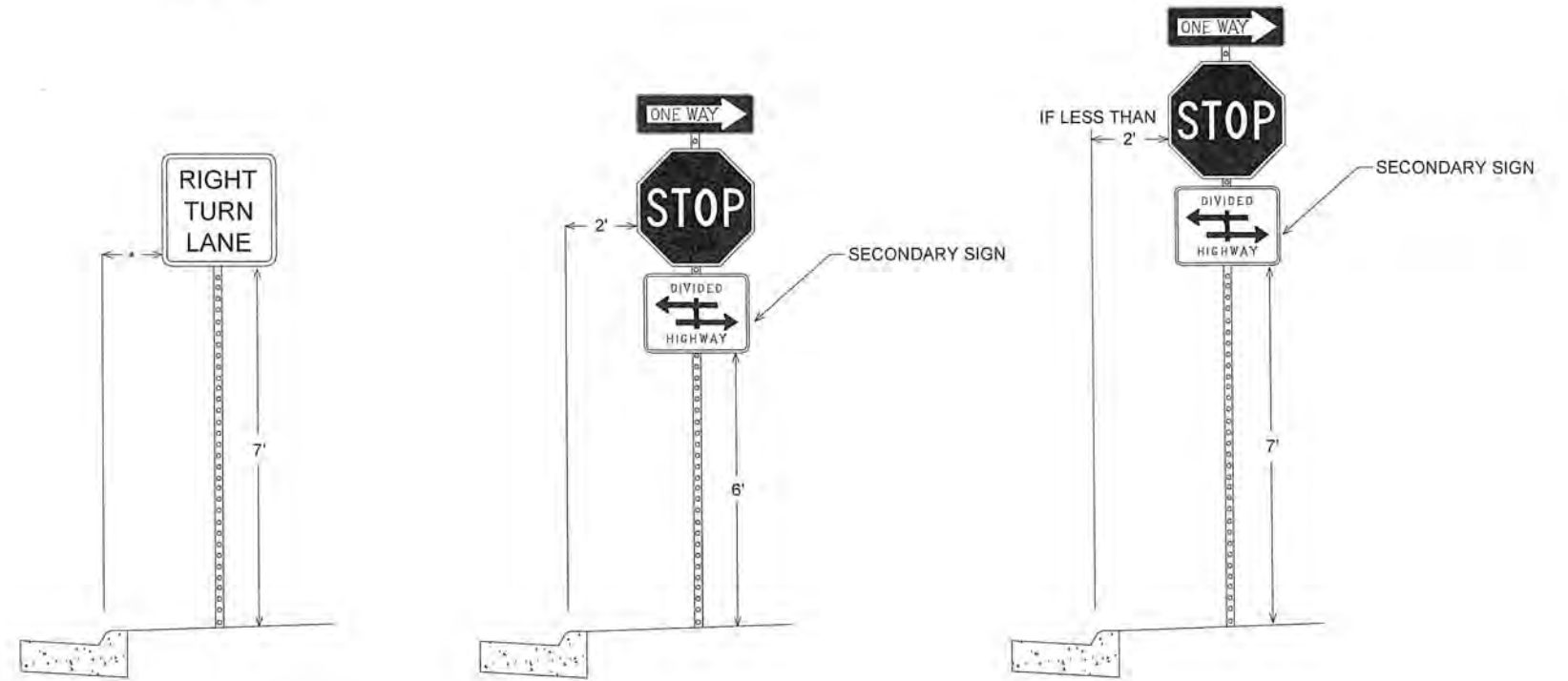
SIGNING & STRIPING  
 DETAILS  
 Sheet 18 of 25 Sheets



TYPICAL SIGN PLACEMENT  
(RURAL)



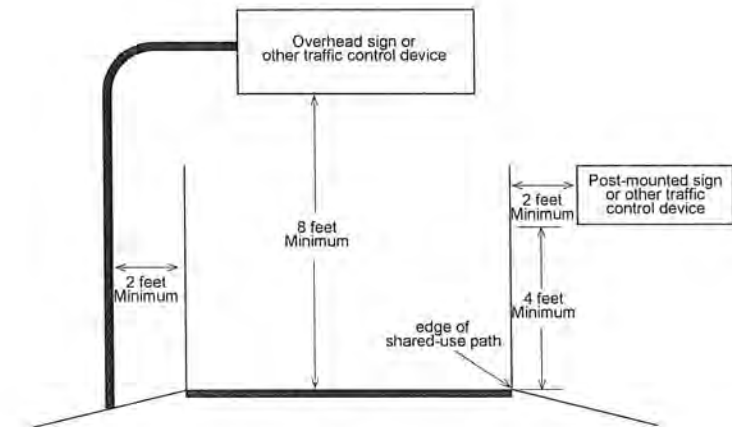
TYPICAL SIGN PLACEMENT  
(URBAN)



- 2' - NARROW BOULEVARD (< 8' WIDE)
- 6' - WIDE BOULEVARD

NOTES:

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



TYPICAL SIGN PLACEMENT  
SHARED-USE PATH

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ANOKA COUNTY  
HIGHWAY DEPT.

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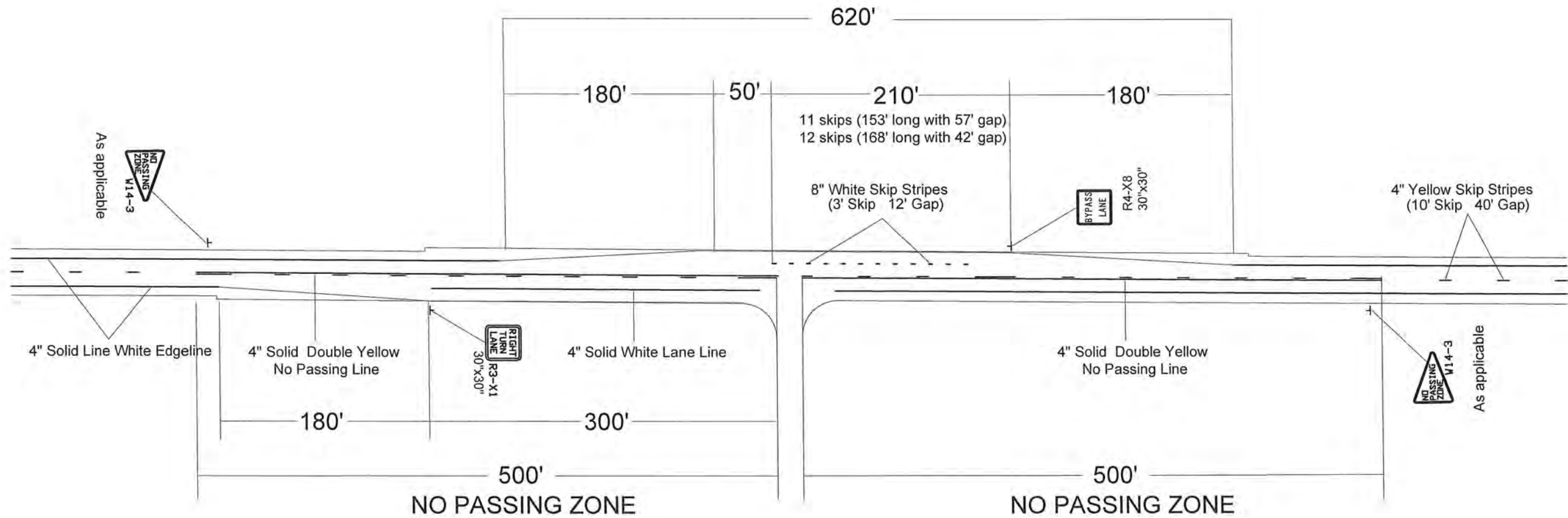
SIGNING & STRIPING  
DETAILS  
Sheet 19 of 25 Sheets



# A.C.H.D.

## BY-PASS TYPICAL

REVISED 10.8.18



SHEET 3 OF 3

NO	DATE	BY	CKD	APPR	REVISION

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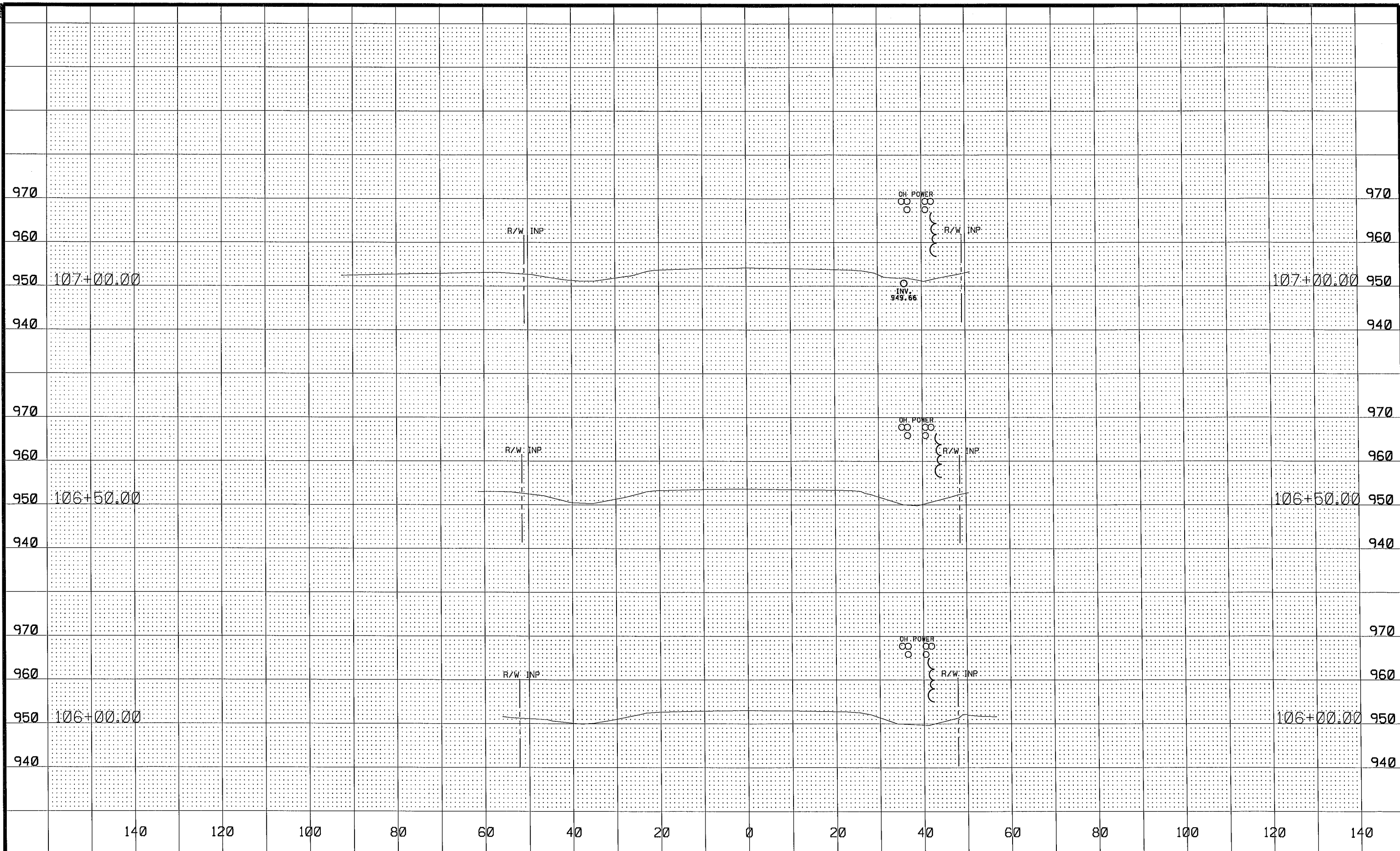
**ANOKA COUNTY**  
HIGHWAY DEPT.

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SIGNING & STRIPING  
DETAILS

Sheet 20 of 25 Sheets

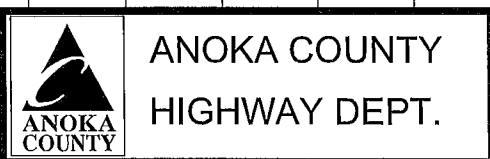




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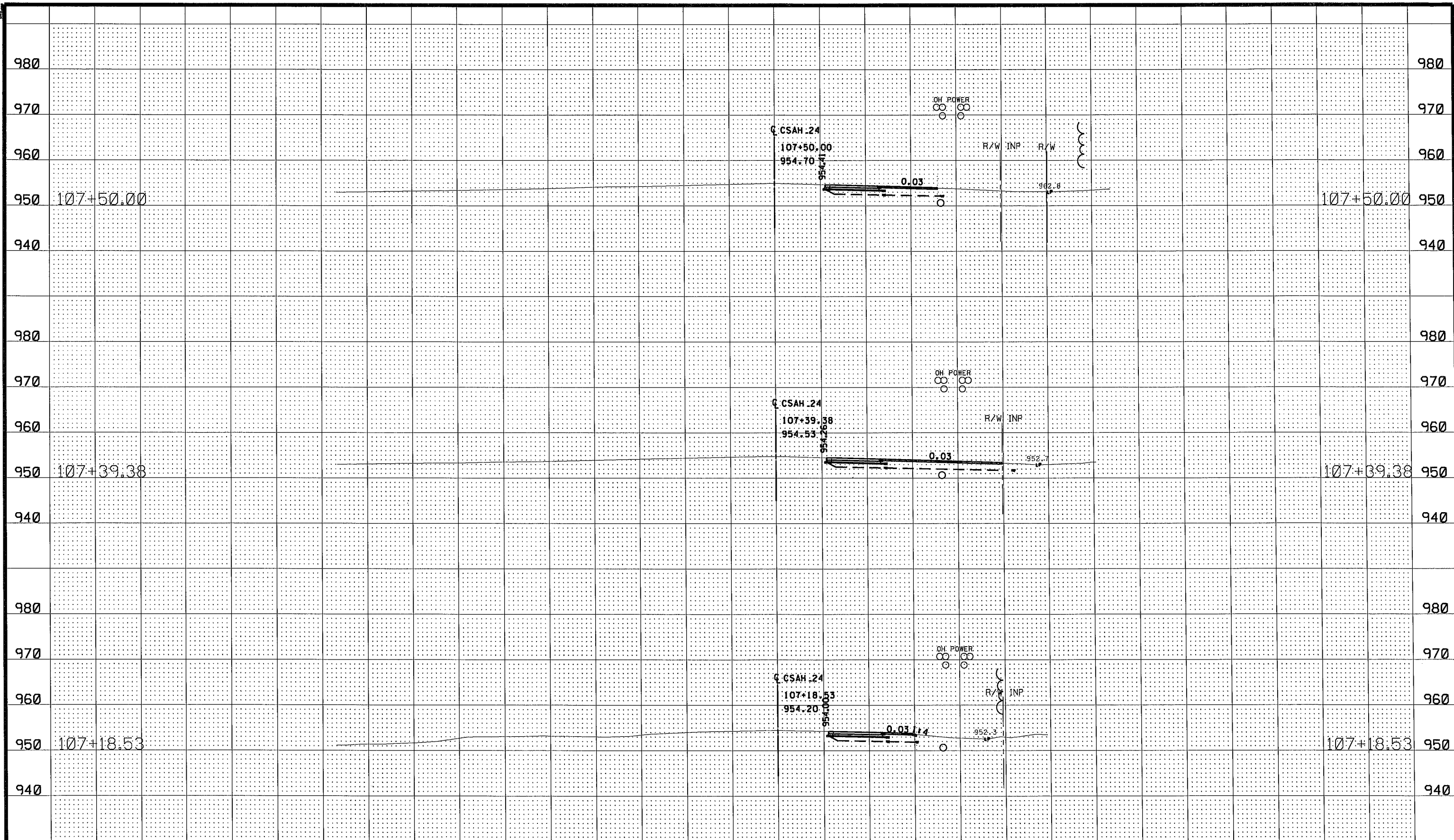
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 CROSS SECTIONS  
 STA 106+00.00 TO 107+00.00  
 Sheet 21 of 25 Sheets

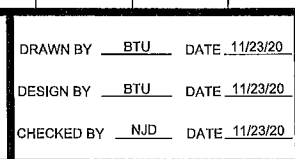




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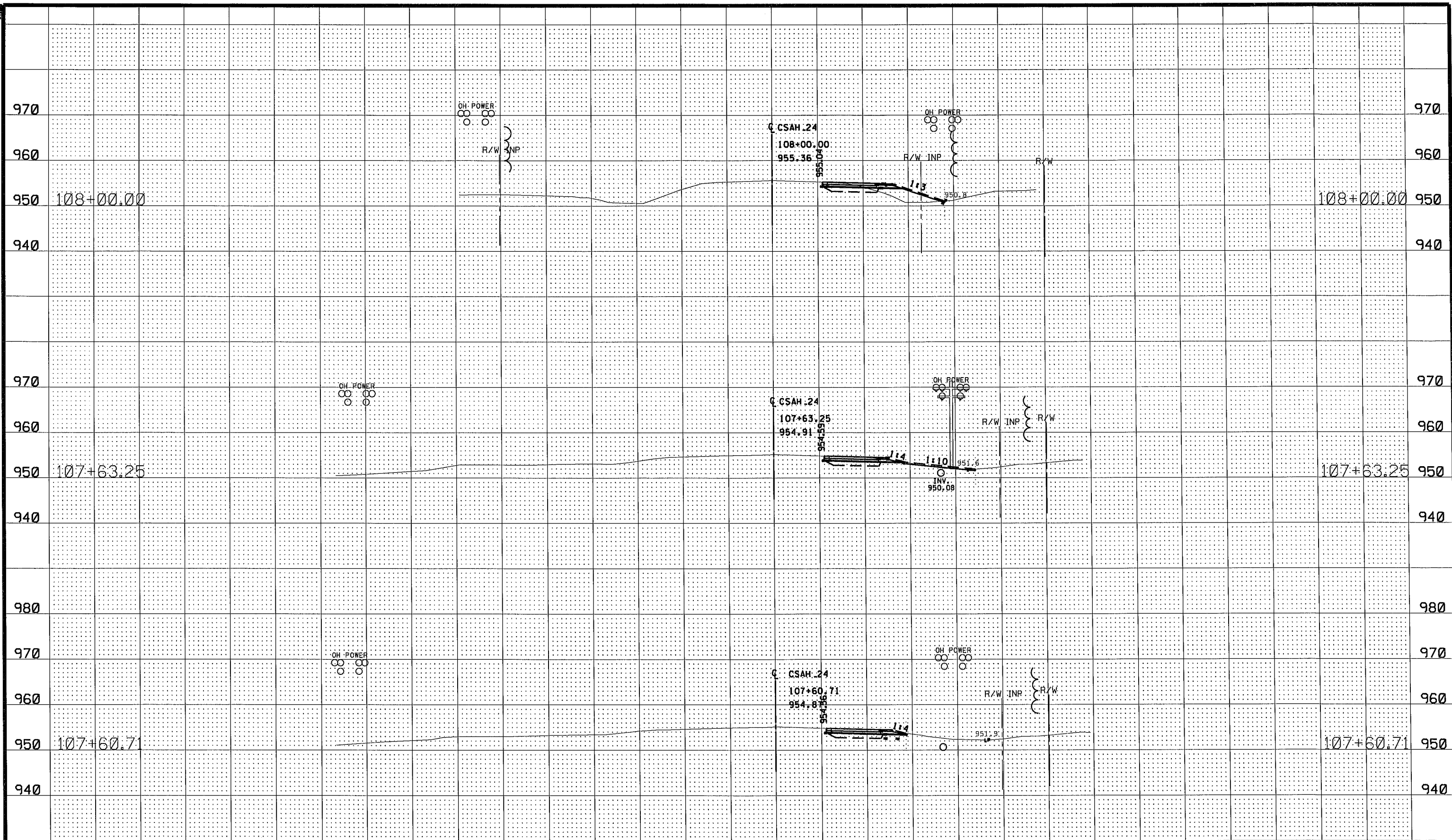


**ANOKA COUNTY  
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SAP 002-624-028

CROSS SECTIONS  
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 Sheet 22 of 25 Sheets

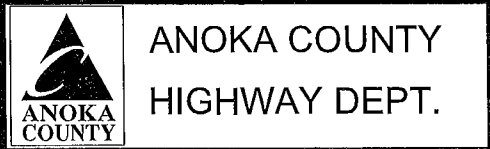




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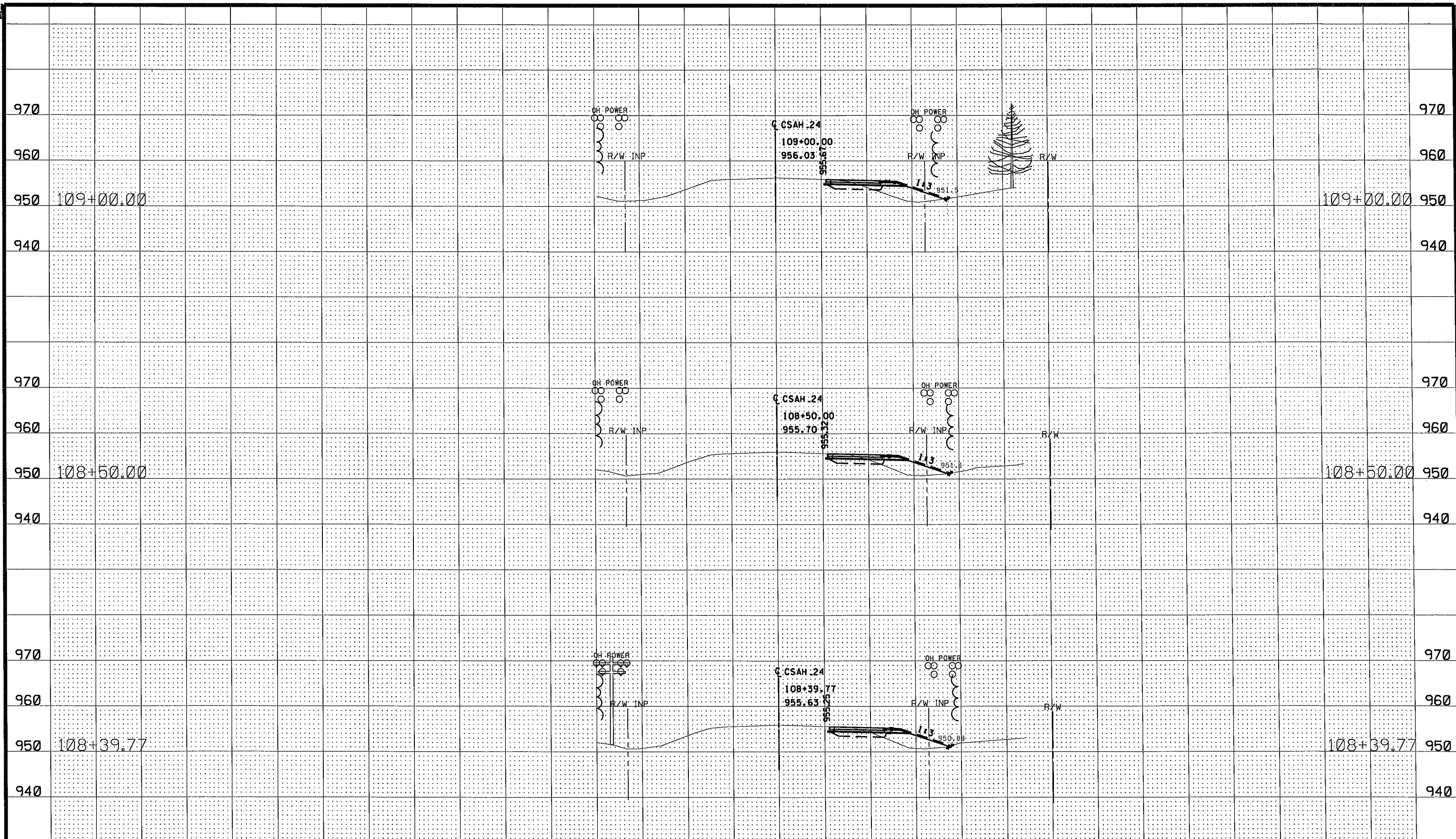
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 Sheet 23 of 25 Sheets

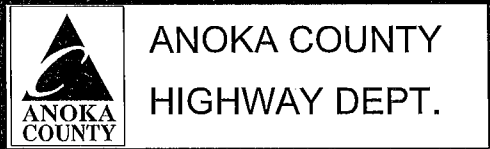




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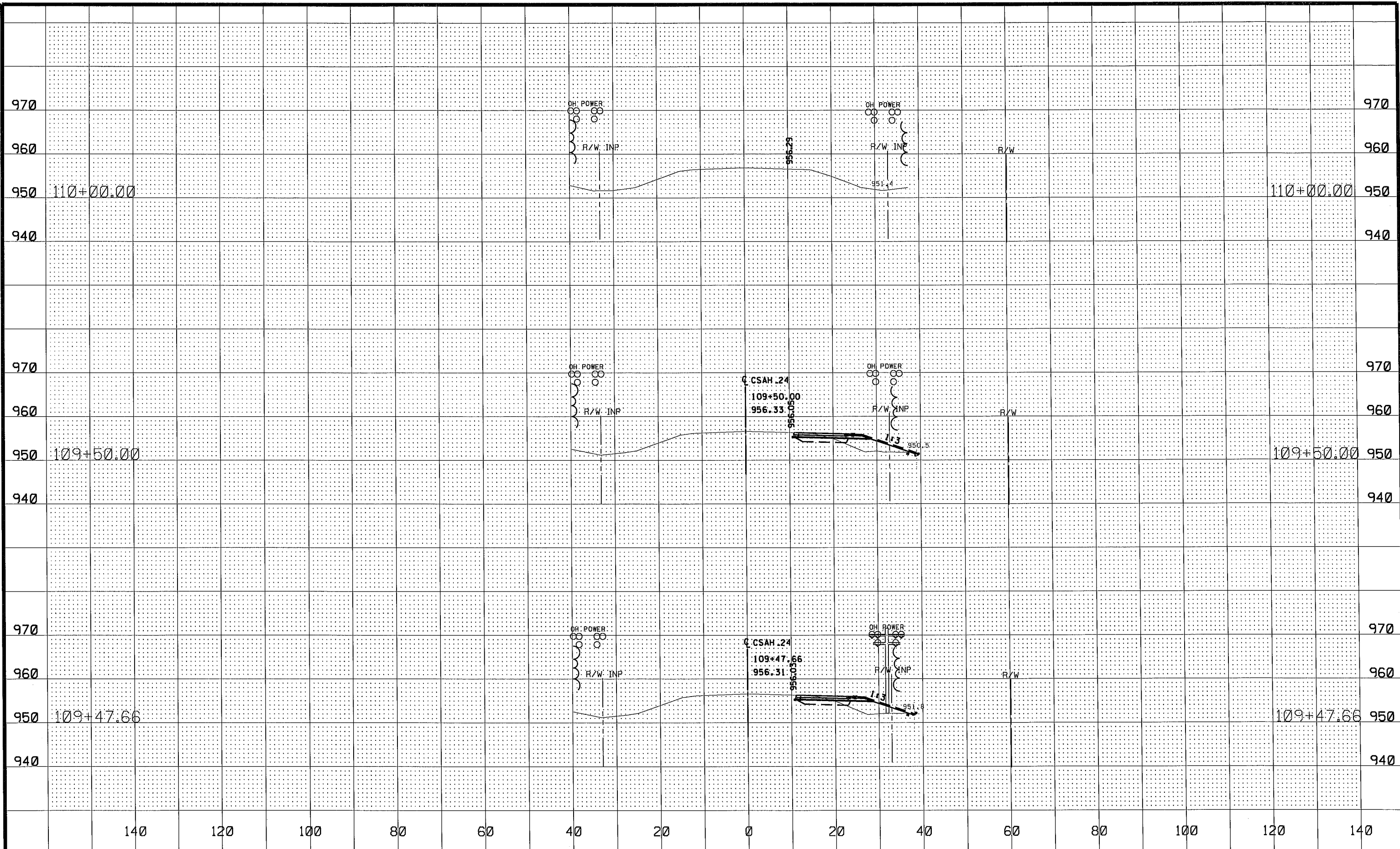
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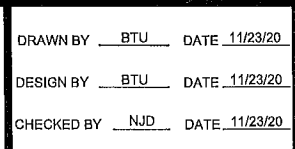
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 Sheet 24 of 25 Sheets





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CROSS SECTIONS  
 STA 109+47.66 TO 110+00.00  
 Sheet 25 of 25 Sheets