

MINNESOTA DEPARTMENT OF TRANSPORTATION ANOKA COUNTY

CONSTRUCTION PLAN FOR RIGHT TURN LANES AND CULVERT EXTENSION

LOCATED ON CR 60 BETWEEN 500' WEST OF TIPPECANOE ST AND 500' EAST OF TIPPECANOE ST

GOVERNING SPECIFICATIONS
THE 2018 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE INSTALLED IN ACCORDANCE WITH THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MNMUTCD), AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS."

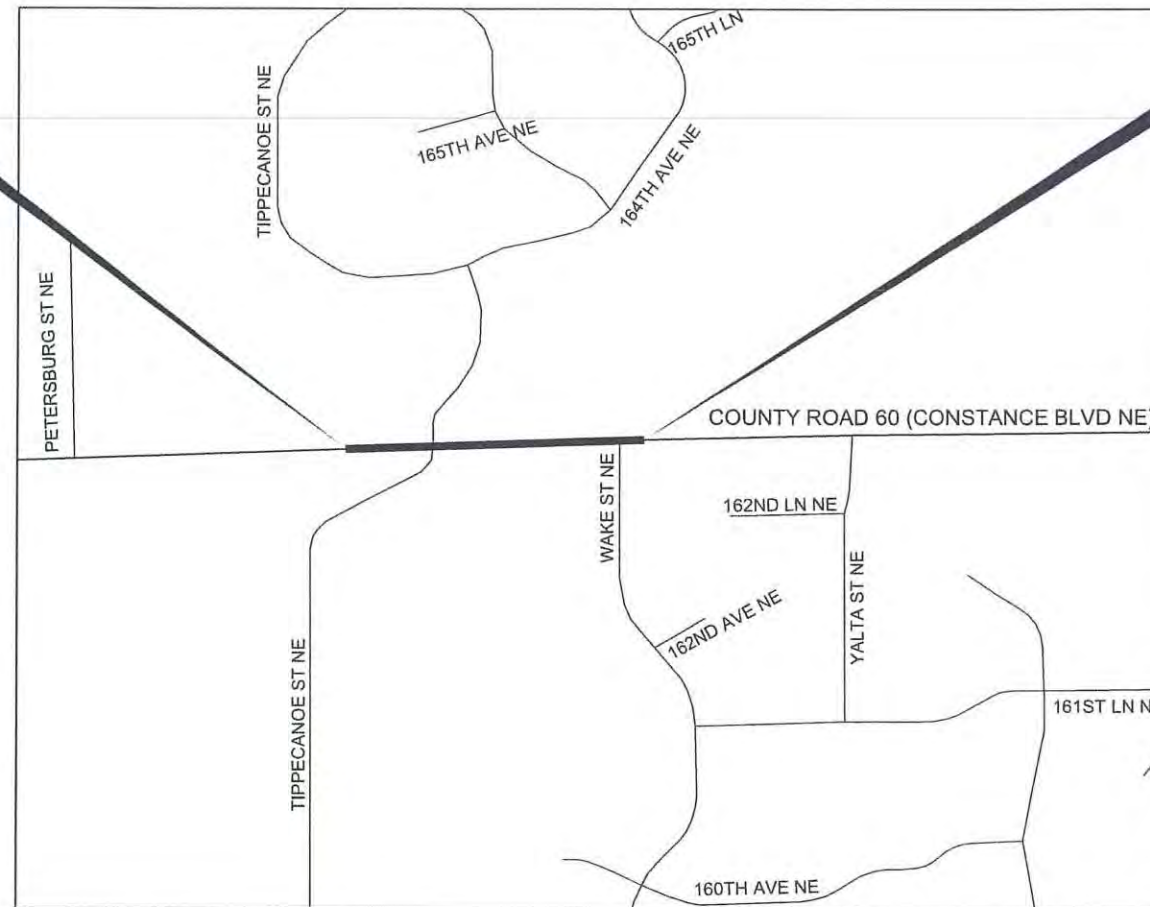
THIS PLAN CONTAINS 19 SHEETS

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
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3	TYPICAL SECTION
4	DETAILS
5	STANDARD PLAN 5-297.441
6	CONSTRUCTION PLAN
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BEGIN CP 20-20-60
CR 60, STA: 11+25.46

END CP 20-20-60
CR 60, STA: 21+43.45



PROJECT LOCATION

CR 60			
GROSS LENGTH	1017.99	FEET	0.193
EXCEPTIONS-LENGTH	0.00	FEET	0.000
NET LENGTH	1017.99	FEET	0.193
			MILES



CITY OF HAM LAKE
ANOKA COUNTY
MN/DOT TRANSPORTATION DISTRICT - METRO
SECTION 14
TOWNSHIP 32 NORTH
RANGE 23 WEST

Approved Thomas P. Gill 2/25, 2021
CITY OF HAM LAKE ENGINEER

Approved [Signature] 2-23, 2021
ANOKA COUNTY 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.

PRINT NAME: NICHOLAS J DOBDA
SIGNATURE: [Signature]
DATE: 2/23/21 LICENSE NO. 49046

DRAWN BY DFF DATE 02/12/2021
DESIGN BY DFF DATE 02/12/2021
CHECKED BY NJD DATE 02/12/2021



**ANOKA COUNTY
HIGHWAY DEPT.**

CP 20-20-60

TITLE SHEET

Sheet 1 of 19 Sheets

NO	DATE	BY	CKD	APPR	REVISION	TIME

NAME: P:\20-20-60\Plan\20-20-60_TS.dgn

TAB / NOTE	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL PROJECT QUANTITIES ESTIMATED	ANOKA COUNTY 20-20-60 ROADWAY QUANTITIES ESTIMATED	CITY OF HAM LAKE ROADWAY QUANTITIES ESTIMATED
	2021.501	MOBILIZATION	LUMP SUM	1	0.71	0.29
	2102.503	PAVEMENT MARKING REMOVAL	LIN FT	1000	500	500
	2104.502	REMOVE SIGN TYPE C	EACH	5	5	
11, 12	2104.502	SALVAGE ECCENTRIC LOADER (ELT)	EACH	1	1	
11, 12	2104.502	SALVAGE TANGENT TERMINAL (ET-PLUS)	EACH	1	1	
	2104.502	SALVAGE CONCRETE APRON	EACH	2	2	
	2104.502	SALVAGE SIGN TYPE C	EACH	2	1	1
	2104.503	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LIN FT	1162	589	573
	2104.503	REMOVE PIPE CULVERTS	LIN FT	37	37	
9, 11, 12	2104.503	SALVAGE GUARDRAIL-PLATE BEAM	LIN FT	291	291	
	2104.504	REMOVE BITUMINOUS PAVEMENT	SQ YD	468	271	197
	2104.607	SALVAGE RANDOM RIPRAP	CU YD	26	26	
15	2105.507	SELECT GRANULAR BORROW (LV)	CU YD	120	120	
14	2105.601	TEMPORARY STREAM DIVERSION	LUMP SUM	1	1	
4	2105.602	CONSTRUCT TURN LANE (A)	EACH	1		1
4	2105.602	CONSTRUCT TURN LANE (B)	EACH	1	1	
6	2123.510	DOZER	HOUR	8	4	4
	2221.509	SHOULDER BASE AGGREGATE CLASS 5 (LV)	TON	39	20	19
	2232.504	MILL BITUMINOUS SURFACE (2.0")	SQ YD	62	31	31
	2357.506	BITUMINOUS MATERIAL FOR TACK COAT	GAL	91	47	44
	2360.509	TYPE SP 12.5 WEARING COURSE MIXTURE (4,C)	TON	413	213	200
7	2451.607	PIPE BEDDING MATERIAL	CU YD	91	91	
11	2501.502	INSTALL CONCRETE APRON	EACH	2	2	
7, 8	2501.503	72" RC PIPE CULVERT CLASS III	LIN FT	64	64	
	2511.507	GRANULAR FILTER	CU YD	6	6	
	2511.504	GEOTEXTILE FILTER TYPE 3	SQ YD	160	160	
	2511.607	INSTALL RANDOM RIPRAP	CU YD	26	26	
1	2563.601	TRAFFIC CONTROL	LUMP SUM	1	0.71	0.29
2	2563.613	PORTABLE CHANGEABLE MESSAGE SIGN	UNIT DAY	20	20	
	2564.502	INSTALL SIGN PANEL TYPE C	EACH	2	1	1
	2564.518	SIGN PANELS TYPE C	SQ FT	12.5	6.25	6.25
	2573.503	SILT FENCE, TYPE MS	LIN FT	1084	523	561
5	2574.507	COMMON TOPSOIL BORROW (LV)	CU YD	30	30	
13	2575.504	EROSION CONTROL BLANKETS CATEGORY 0	SQ YD	674	375	299
3	2582.503	4" SOLID LINE MULTI COMP	LIN FT	1600	800	800

CONSTRUCTION NOTES	
1	ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO, AND BE INSTALLED IN ACCORDANCE WITH, THE MOST CURRENT REVISION OF THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES". DO NOT PASS, PASS WITH CARE, AND NO CENTER STRIPE SHALL BE IN PLACE WHENEVER PAVEMENT MARKINGS ARE NOT PRESENT.
2	2 MESSAGE BOARDS, ONE ON EACH END OF PROJECT, WILL BE INSTALLED 10 DAYS PRIOR TO ANY CONSTRUCTION; REFERENCE STRIPING PLAN FOR DETAILS.
3	FINAL STRIPING SHALL BE INSTALLED WITHIN 72 HOURS OF COMPLETION OF MAINLINE WEAR COURSE PAVING.
4	THIS ITEM INCLUDES: COMMON EXCAVATION, SELECT GRANULAR BORROW, TOPSOIL AND AGG BASE CL-5. INCLUDING STREET APPROACHES (SEE RIGHT TURN LANE TAB "A" PAGE 6 FOR QUANTITIES) SHAPING OF SUB-GRADE AND AGGREGATE BASE ARE INCIDENTAL TO CONSTRUCT TURN LANE ITEM. CULVERT EXTENSION NEEDS TO BE IN PLACE BEFORE TURN LANE CAN BE CONSTRUCTED. ONLY ONE TURN LANE CAN BE CONSTRUCTED AT A TIME DUE TO LIMITED WIDTH FOR TRAFFIC.
5	ITEM USED AT ENGINEER'S DISCRETION FOR RESTORATION OF DISTURBED AREAS
6	ITEM USED FOR DITCH GRADING FOLLOWING CONSTRUCTION OF RIGHT TURN LANE. ITEM SHALL BE USED ONLY AS NECESSARY AS DETERMINED BY THE ENGINEER.
7	CLASS "B" PIPE BEDDING REQUIRED
8	EXTEND PIPE 8' TO THE NORTH; EXTEND PIPE 56' TO THE SOUTH; DOES NOT INCLUDE APRON LENGTH; INCLUDES ALL COSTS TO EXTEND CULVERT EXCEPT FOR ITEMS PROVIDED ELSEWHERE IN PROJECT; INCLUDES TREE REMOVAL.
9	INCLUDES REMOVAL OF WOOD POSTS
10	REINSTALL SALVAGED APRONS TO EXTENDED CULVERT PIPE
11	SALVAGE AND DELIVER TO HIGHWAY DEPARTMENT (1440 BUNKER LAKE BLVD, ANDOVER, MN), CONTACT JIM PLEMON.
12	CULVERT MUST BE EXTENDED AND A SAFE SLOPE PROVIDED BEFORE GUARDRAIL CAN BE REMOVED.
13	FERTILIZER TYPE 3 AND SEED MIXTURE 25-121 INCLUDED WITH AND INCIDENTAL TO THIS ITEM.
14	ITEM USED TO DIVERT CREEK DURING CONSTRUCTION OF CULVERT EXTENSION
15	ITEM USED FOR FILL ABOVE SOUTH CULVERT EXTENSION.

INDEX OF TABULATION CHARTS		
TAB.	DESCRIPTION	SHEET NO.
A	RIGHT TURN LANE	6
B	EXISTING SIGN PANELS TYPE C	9
C	TEMPORARY PAVEMENT MARKING TABULATION	9
D	TEMPORARY TRAFFIC CONTROL SIGNS	9
E	PAVEMENT MARKING TABULATION	10

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 (6 SHEETS)
3006H	GASKET JOINT FOR R.C. PIPE (2 SHEETS)
3133D	RIPRAP AT RCP OUTLETS
3145G	CONCRETE PIPE OR PRECAST BOX CULVERT TIES
8000J	CHANNELIZERS

BASIS OF QUANTITIES		
SPEC NO	DESCRIPTION	RATE
2211	AGGREGATE BASE CLASS 5	1.8 TONS / CU YD (CV)
2221	SHOULDERING BASE AGGREGATE CLASS 5 (LV)	1.4 TONS / CU YD
2357	BITUMINOUS MATERIAL FOR TACK COAT	0.05 GAL / SQ YD / LIFT
2360	ALL BITUMINOUS PAVEMENT	115 LBS / SQ YD / IN
2575	SEED MIXTURE TYPE 25-121	61 LBS / ACRE
2574	FERTILIZER TYPE 3	60 LBS / ACRE

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\20-20-60\Plan\20-20-60_TABS.dgn 02/10/2021 10:04:38 AM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: NICHOLAS J DOBDA
 SIGNATURE: *[Signature]*
 DATE: 2/23/21 LICENSE NO. 49046

DRAWN BY: DFF DATE: 09/30/20
 DESIGN BY: DFF DATE: 09/30/20
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ANOKA COUNTY
HIGHWAY DEPT.

CP 20-20-60

STATEMENT OF ESTIMATED QUANTITIES

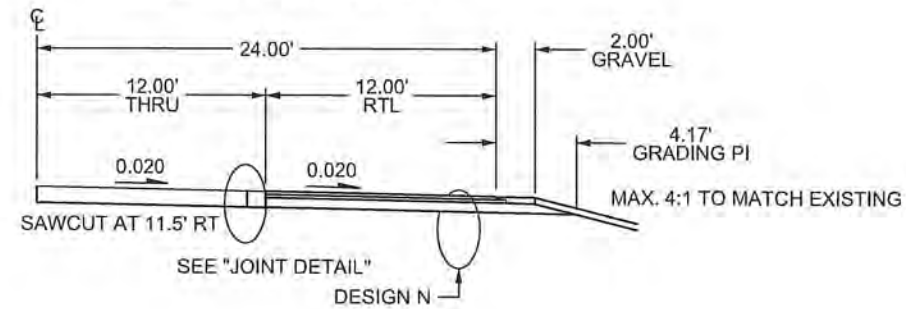
Sheet 2 of 19 Sheets

STREET APPROACH DETAIL

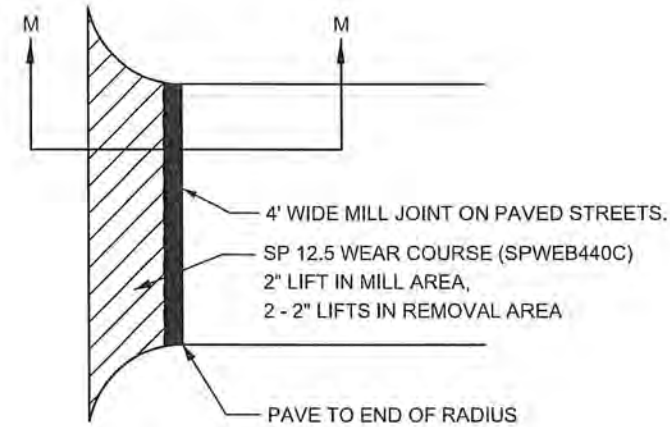
BITUMINOUS STREET

CR 60 - CONSTANCE BLVD

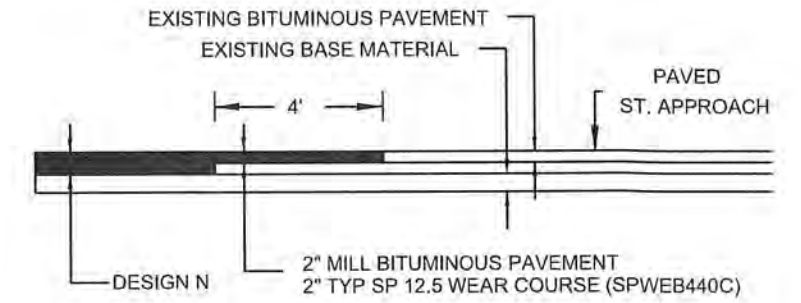
RIGHT TURN
10+25.46 - 16+73.96 RT
15+80.44 - 21+43.45 LT



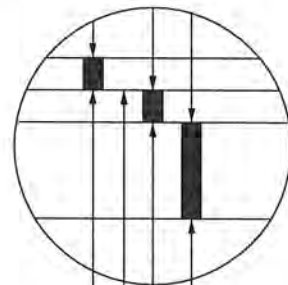
PLAN VIEW



SECTION M - M

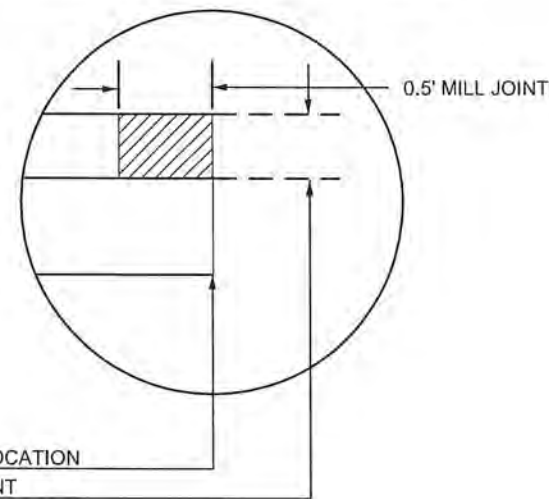


DESIGN N TURN LANE SECTION



2.0" BITUMINOUS WEAR (SPWEB440C)
BIT MATERIAL FOR TACK COAT MNDOT SPEC 2357
2.0" BITUMINOUS WEAR (SPWEB440C)
6.0" CLASS 5 AGGREGATE BASE

JOINT DETAIL



SAWCUT LOCATION
2" MILL JOINT

CONSTRUCTION NOTE:
ALL PAVING SHALL BE PULLED IN THE SAME
DIRECTION AS TRAFFIC FOR THAT LANE OF TRAVEL.

NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\20-20-60\Plan\20-20-60_TABS.dgn 02/08/2021 6:53:07 AM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: NICHOLAS J DOBDA
SIGNATURE: *NJD*
DATE: 2/23/21 LICENSE NO. 49046

DRAWN BY: DFF DATE: 09/30/20
DESIGN BY: DFF DATE: 09/30/20
CHECKED BY: NJD DATE: 09/30/20

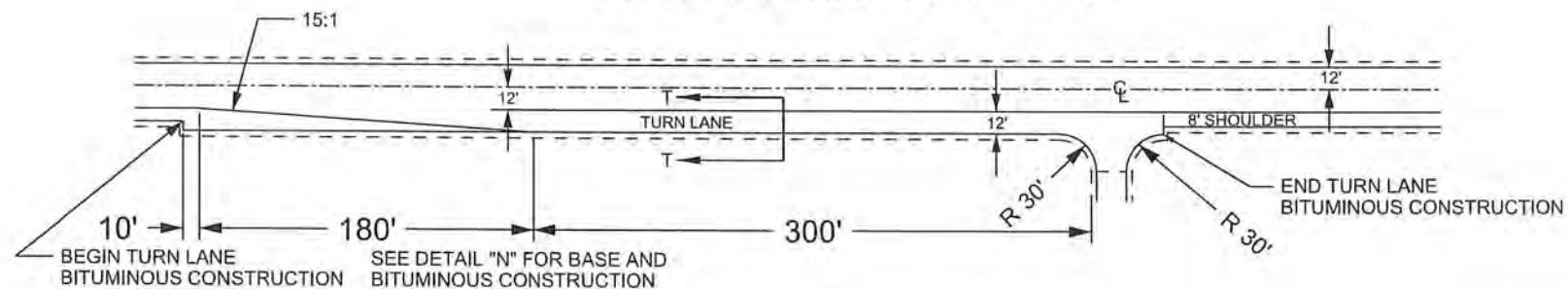


ANOKA COUNTY
HIGHWAY DEPT.

CP 20-20-60

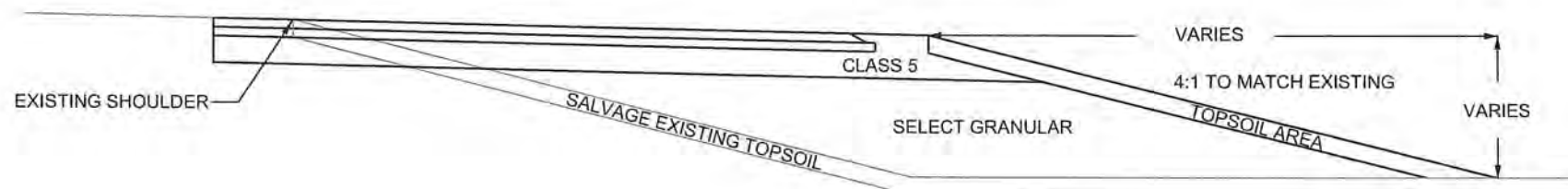
TYPICAL SECTION

TYPICAL RIGHT TURN LANE



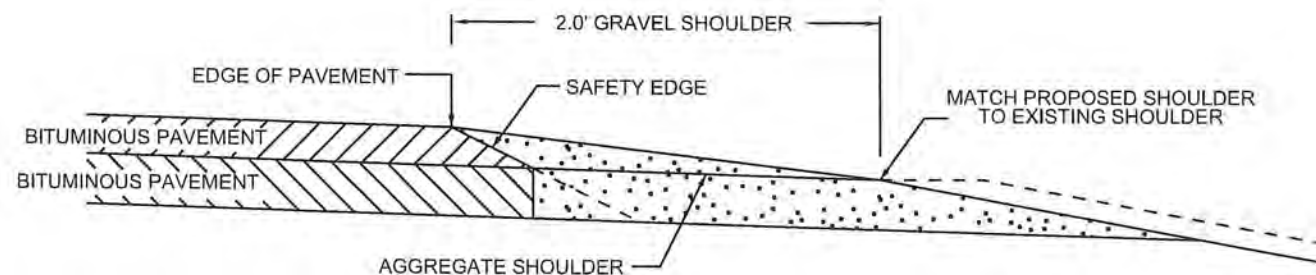
RIGHT TURN LANE

SECTION T - T



SHOULDER DETAIL

BITUMINOUS SAFETY EDGE
GRAVEL SHOULDER

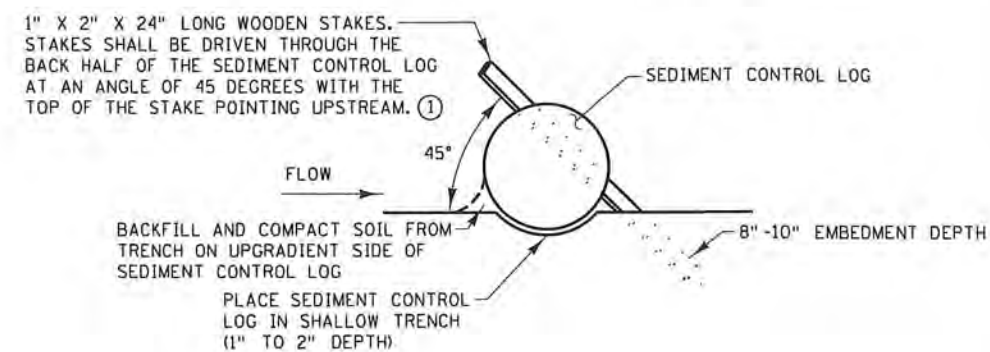


SAFETY EDGE TO BE USED IN ALL NON-CURB AREAS ON SHOULDER.

OPTIONAL DESIGN EXTENDS SAFETY EDGE DEEPER THAN 6" AND WIDER THAN 10.5". SEE SPECIAL PROVISIONS.

SEDIMENT CONTROL LOGS

TYPES: STRAW, WOOD FIBER, OR COIR



NO	DATE	BY	CHKD	APPR	REVISION

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 PRINT NAME: NICHOLAS J DOBDA
 SIGNATURE: *NJD*
 DATE: 2/23/21 LICENSE NO. 48046

DRAWN BY: DFF DATE: 09/30/20
 DESIGN BY: DFF DATE: 09/30/20
 CHECKED BY: NJD DATE: 09/30/20



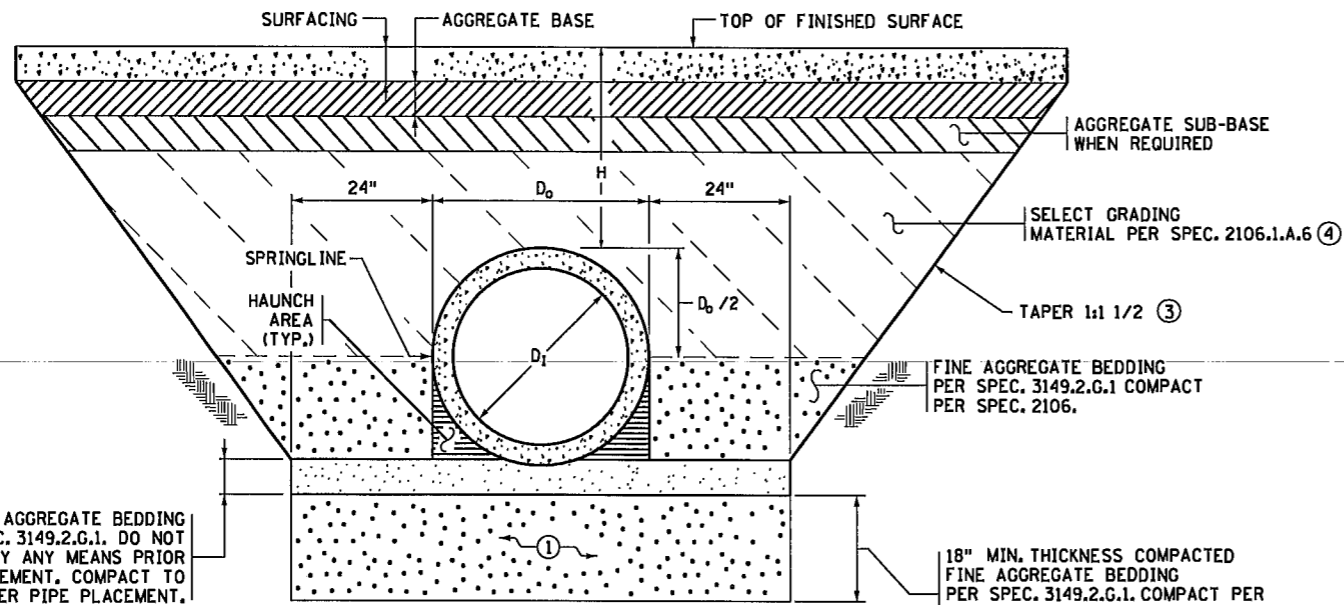
ANOKA COUNTY
HIGHWAY DEPT.

CP 20-20-60

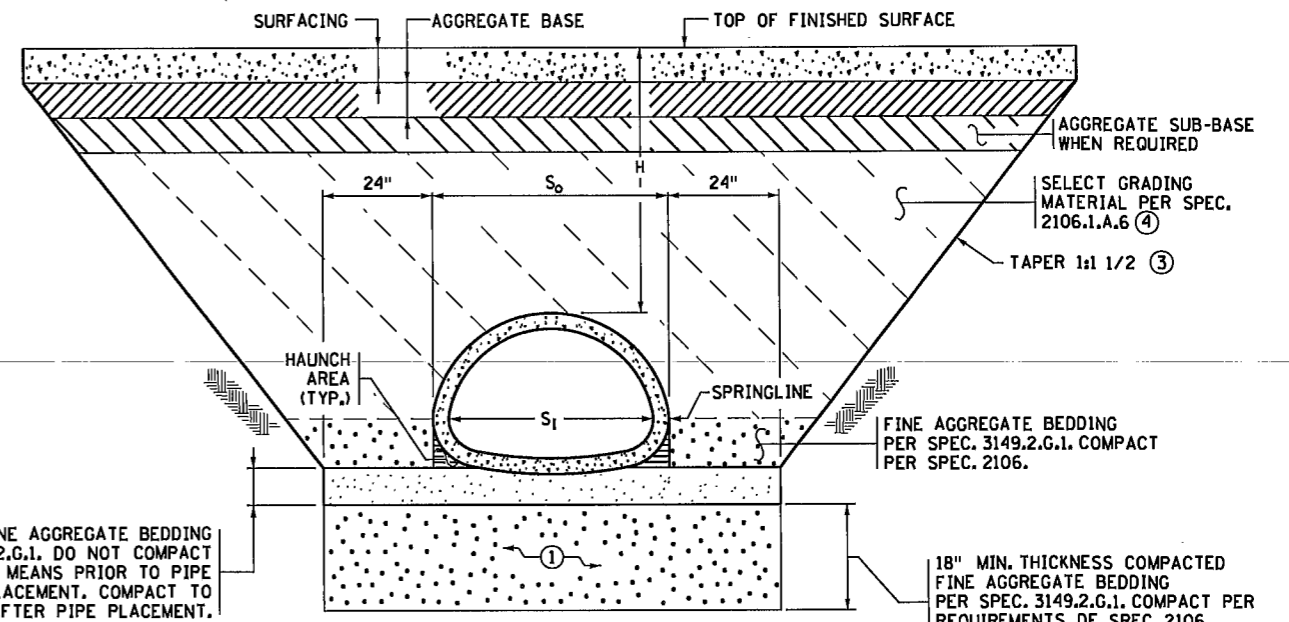
DETAILS

PLOTTED/REVISED:
02/08/2021

DISTRICT #: DFFrey
USER NAME: DFFrey
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STANDARD RIGID CULVERT PIPE BEDDING



STANDARD RIGID PIPE ARCH CULVERT BEDDING

-LEGEND-

- D₁ = INSIDE DIAMETER OF ROUND PIPE (INCHES).
- D₀ = OUTSIDE DIAMETER OF ROUND PIPE (INCHES).
- S₁ = INSIDE SPAN OF PIPE-ARCH (INCHES).
- S₀ = 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 SHOVEL THE BLADE END OF A SHOVEL AT AN ANGLE DOWN THE ENTIRE LENGTH OF THE PIPE IN THE HAUNCH AREA) THEN COMPACT THE HAUNCH AT AN ANGLE USING A POWERED MECHANICAL OR PNEUMATIC DEVICE (I.E. POLE TAMPER, JUMPING JACK, OR SIMILAR).
6. COMPACT THE REMAINING MATERIAL OUTSIDE THE HAUNCH AREA TO THE REQUIREMENTS OF SPEC. 2106 ENSURING THAT THE ENTIRE LENGTH OF PIPE IS SUPPORTED UNIFORMLY BY BEDDING.
7. PLACE AND COMPACT BACKFILL EVENLY AND SIMULTANEOUSLY IN 6" LIFTS ON EACH SIDE OF THE PIPE UP TO THE SPRINGLINE WHEN COMPACTED.
8. COMPLETE REMAINING BACKFILL.

NOTES

- STANDARD BEDDING FOR RIGID PIPE CULVERTS WITHOUT TREATMENTS.
- RIGID PIPE INCLUDES CONCRETE.
- ENTRANCE CULVERTS (FIELD AND DRIVEWAY CULVERTS) DO NOT NEED BEDDING UNLESS SPECIFIED IN THE PLANS OR SPECIAL PROVISIONS.
- UNLESS OTHERWISE NOTED IN THE PLAN, BEDDING QUANTITIES ARE COMPUTED FOR THE FULL LENGTH OF THE PIPE AND APRON, AND WILL NOT BE ADJUSTED FOR CHANGES TO MEET OSHA REQUIREMENTS.
- WHEN RIPRAP IS REQUIRED AT THE APRON END, SEE STANDARD PLATE OR PLAN FOR RIPRAP INSTALLATION AND QUANTITIES. FOR APRONS WITHOUT RIPRAP PLACE 6" MIN. FINE AGGREGATE BEDDING UNDER APRONS. USE A TRENCH WIDTH EQUAL TO THE PIPE TRENCH WIDTH.
- CONTRACT PAY ITEM FOR FINE AGGREGATE BEDDING INCLUDES THE COST OF EXCAVATION, PLACEMENT AND COMPACTION.
- EXCAVATION AND BACKFILL WITH SELECT GRADING MATERIAL ARE NOT TABULATED SEPARATELY BUT ARE INCLUDED IN THE CONTRACT UNIT PRICE OF THE RELEVANT CULVERT PAY ITEM.
- EXCAVATE & CONSTRUCT ALL TRENCHES AND SLOPES PER OSHA REQUIREMENTS.
- ALL SLOPES SHOWN AS (V) : (H).
- PIPE SIZE IS BASED ON THE NOMINAL INSIDE DIAMETER OR SPAN.
- PROTECT ALL PIPE DURING CONSTRUCTION PER SPEC. 2501.
- PLACE MULTIPLE PIPE CULVERTS WITH A CLEARANCE OF 24 INCHES OR GREATER BETWEEN STRINGS OF PIPE.
- ① IF APPROVED BY THE ENGINEER, IN WET CONDITIONS THE CONTRACTOR MAY SUBSTITUTE 18" OF COARSE FILTER AGGREGATE PER SPEC. 3149.2.H COMPACTED TO THE QUALITY COMPACTION REQUIREMENTS OF SPEC. 2106. WRAP WITH GEOTEXTILE FABRIC TYPE IV PER SPEC. 3733. SEAM ALL FABRIC SIDES AND ENDS PER SPEC. TABLE 3733-1 INCLUDING FOOTNOTE (a) OR OVERLAP A MINIMUM OF 3 FT., ALL AT NO ADDITIONAL COST.
- ② FOR INSTALLATIONS ON INTACT BEDROCK, OMIT THIS LAYER.
- ③ OVER-EXCAVATION BENEATH TAPERS IS NOT PERMITTED UNLESS REQUIRED BY OSHA. (TYP.)
- ④ MAXIMUM EMBANKMENT PARTICLE SIZE WITHIN 2 FT. OF RIGID PIPE IS 3".

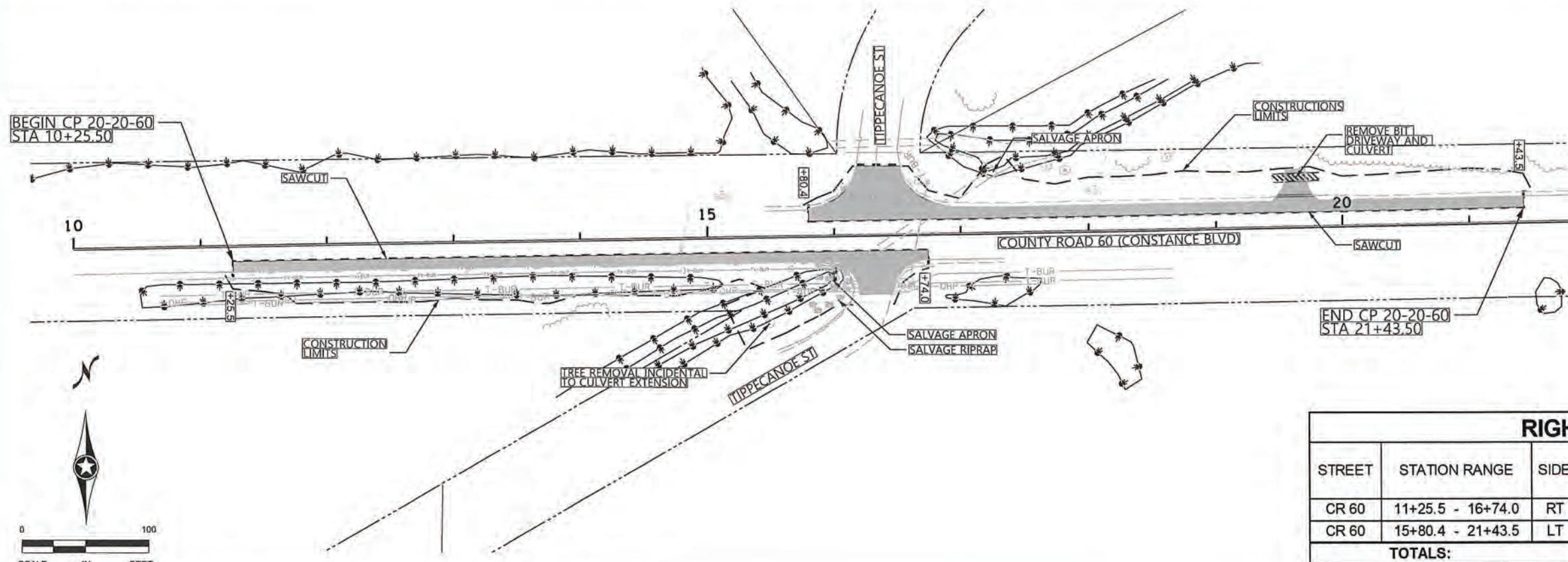
REVISION:
APPROVED: JANUARY 18, 2019
Kevin Westlund
STATE BRIDGE ENGINEER



STANDARD PLAN 5-297.441 1 OF 1
APPROVED: 01-18-2019
REVISED:
Rom S. J.
STATE DESIGN ENGINEER
CP 20-20-60

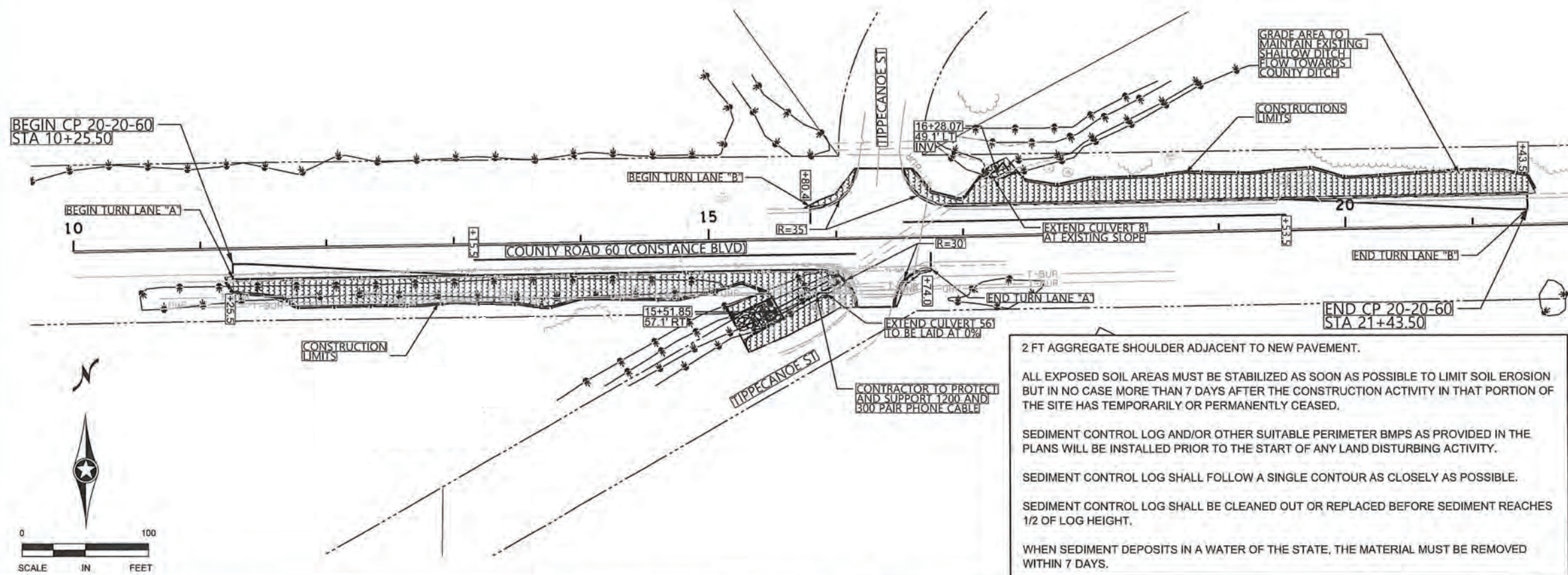
**STANDARD CULVERT BEDDING FOR RIGID PIPE
(WITHOUT TREATMENTS)**

SHEET NO. 5 OF 19 SHEETS



REMOVAL LEGEND	
	REMOVE BITUMINOUS PAVEMENT
	SAWING BITUMINOUS PAVEMENT
	CONSTRUCTION LIMIT
	TEMPORARY EASEMENT
	PERMANENT EASEMENT

RIGHT TURN LANE TAB						
STREET	STATION RANGE	SIDE	COMMON EXCAVATION (CU YDS)	GRANULAR BORROW (LV) (CU YDS)	TOPSOIL BORROW (LV) (CU YDS)	CLASS 5 (TON) (CV)
CR 60	11+25.5 - 16+74.0	RT	286	253	92	290
CR 60	15+80.4 - 21+43.5	LT	299	85	112	309
TOTALS:			585	338	204	599



CONSTRUCTION LEGEND	
	PROPOSED APRON
	INPLACE APRON
	INPLACE CULVERT
	PROPOSED CULVERT
	SEDIMENT CONTROL LOG WOOD FIBER
	FLOTATION SILT CURTAIN
	RIPRAP (CLASS II UNLESS OTHERWISE NOTED)
	WETLAND BOUNDARIES
	EROSION CONTROL BLANKET CATEGORY 0, SEEDING & FERTILIZER

2 FT AGGREGATE SHOULDER ADJACENT TO NEW PAVEMENT.

ALL EXPOSED SOIL AREAS MUST BE STABILIZED AS SOON AS POSSIBLE TO LIMIT SOIL EROSION BUT IN NO CASE MORE THAN 7 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED.

SEDIMENT CONTROL LOG AND/OR OTHER SUITABLE PERIMETER BMPs AS PROVIDED IN THE PLANS WILL BE INSTALLED PRIOR TO THE START OF ANY LAND DISTURBING ACTIVITY.

SEDIMENT CONTROL LOG SHALL FOLLOW A SINGLE CONTOUR AS CLOSELY AS POSSIBLE.

SEDIMENT CONTROL LOG SHALL BE CLEANED OUT OR REPLACED BEFORE SEDIMENT REACHES 1/2 OF LOG HEIGHT.

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

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\20-20-60\Plan\20-20-60_P1.dgn 02/10/2021 9:58:48 AM

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

PRINT NAME: NICHOLAS J DOBBA

SIGNATURE:

DATE: 2/21/21 LICENSE NO. 49046

DRAWN BY: DFF DATE: 09/30/20

DESIGN BY: DFF DATE: 09/30/20

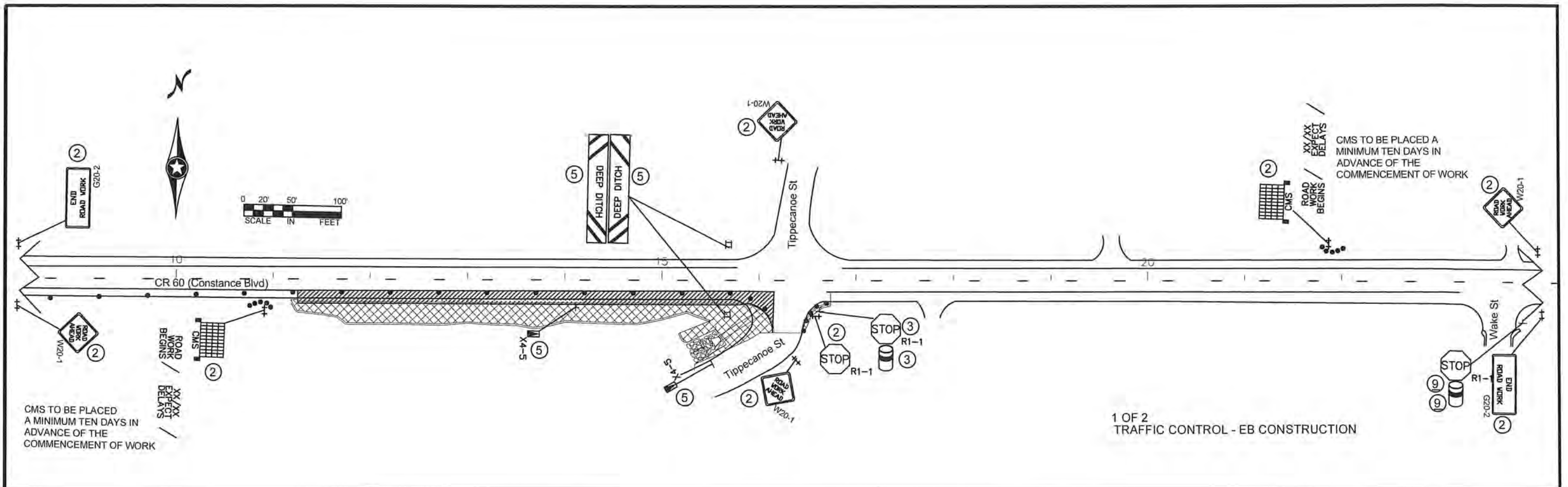
CHECKED BY: NJD DATE: 09/30/20

ANOKA COUNTY HIGHWAY DEPT.

CP 20-20-60

REMOVAL & CONSTRUCTION PLAN

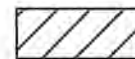
Sheet 6 of 19 Sheets



1 OF 2
TRAFFIC CONTROL - EB CONSTRUCTION

SIGN NOTES:

- ② TEMPORARY TRAFFIC CONTROL SIGN
- ③ SALVAGE FOR RE-USE ON THIS PROJECT
- ⑤ REMOVE SIGN
- ⑨ RETAIN INPLACE SIGN



CONSTRUCTION UNDER TRAFFIC



CONSTRUCTION UNDER TRAFFIC

TRAFFIC CONTROL NOTES:

1. CONSTRUCTION SHALL OCCUR IN ONE DIRECTION AT A TIME. EB & WB SHALL NOT BE CONSTRUCTED SIMULTANEOUSLY.
2. CONTRACTOR SHALL COMPLY WITH THE LONGITUDINAL DROP-OFF GUIDELINES PER THE CURRENT MN TEMPORARY TRAFFIC CONTROL FIELD MANUAL.
3. THE EXISTING GUARDRAIL FOR WB CSAH 18 & TIPPECANOE ST. SHALL NOT BE REMOVED UNTIL THE CULVERT IS EXTENDED AND UNTIL ROADWAY SLOPES ARE CONSTRUCTED TO 4:1.
4. ALL SIGNS SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.
5. ACCESS SHALL BE MAINTAINED TO ALL STREETS AND DRIVEWAY ACCESS LOCATIONS IN THE CONSTRUCTION AREA.
6. FOR RELOCATING TRAFFIC SIGNS DURING CONSTRUCTION, AS DIRECTED BY THE ENGINEER, RELOCATION INCIDENTAL TO TRAFFIC CONTROL.
7. ALL TEMPORARY TRAFFIC CONTROL SETUPS SHALL BE IN ACCORDANCE WITH THE MOST RECENT EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS- FIELD MANUAL OF THE SAME MANUAL.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\20-20-60\Basetraffic\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, P.E.

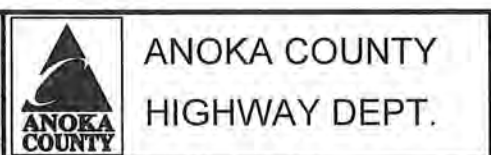
SIGNATURE: *[Signature]*

DATE: 2-23-21 LICENSE NO. 46732

DRAWN BY: TMV DATE: 11/04/20

DESIGN BY: TMV DATE: 11/04/20

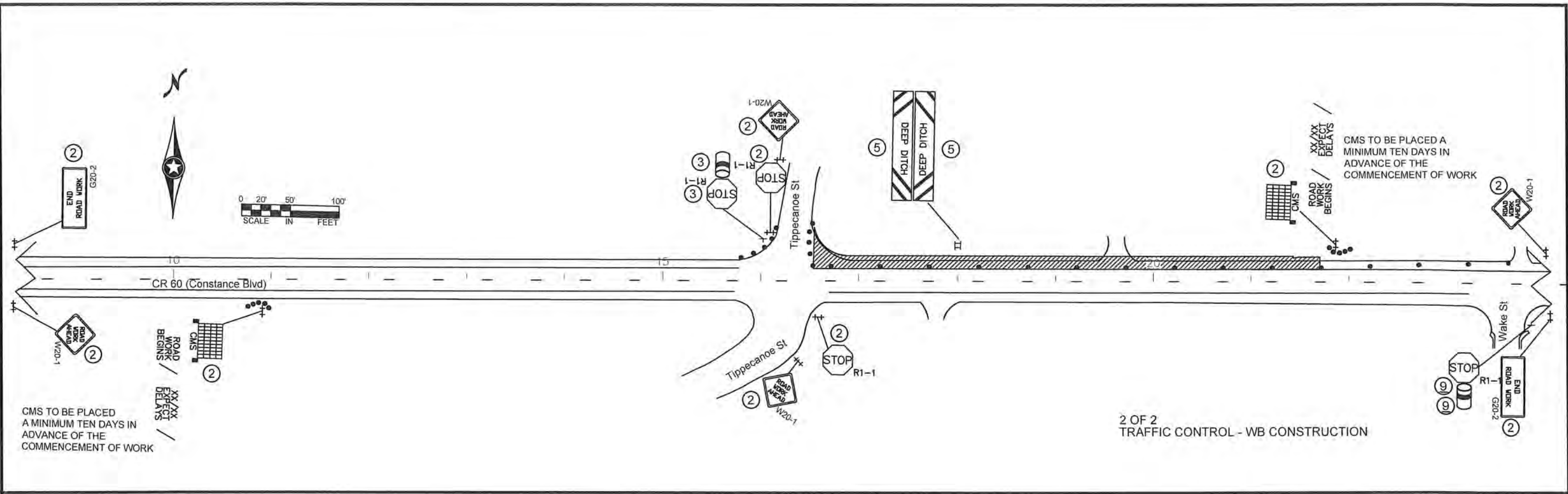
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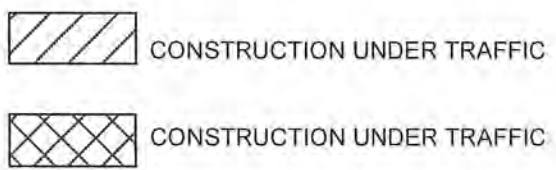
CP 20-20-60

TRAFFIC CONTROL PLAN

Sheet 7 of 19 Sheets



- SIGN NOTES:
- ② TEMPORARY TRAFFIC CONTROL SIGN
 - ③ SALVAGE FOR RE-USE ON THIS PROJECT
 - ⑤ REMOVE SIGN
 - ⑨ RETAIN INPLACE SIGN





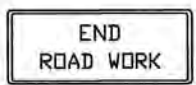

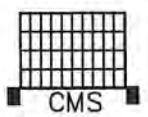
TRAFFIC CONTROL NOTES:

1. CONSTRUCTION SHALL OCCUR IN ONE DIRECTION AT A TIME. EB & WB SHALL NOT BE CONSTRUCTED SIMULTANEOUSLY.
2. CONTRACTOR SHALL COMPLY WITH THE LONGITUDINAL DROP-OFF GUIDELINES PER THE CURRENT MN TEMPORARY TRAFFIC CONTROL FIELD MANUAL.
3. THE EXISTING GUARDRAIL FOR WB CSAH 18 & TIPPECANOE ST. SHALL NOT BE REMOVED UNTIL THE CULVERT IS EXTENDED AND UNTIL ROADWAY SLOPES ARE CONSTRUCTED TO 4:1.
4. ALL SIGNS SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.
5. ACCESS SHALL BE MAINTAINED TO ALL STREETS AND DRIVEWAY ACCESS LOCATIONS IN THE CONSTRUCTION AREA.
6. FOR RELOCATING TRAFFIC SIGNS DURING CONSTRUCTION, AS DIRECTED BY THE ENGINEER, RELOCATION INCIDENTAL TO TRAFFIC CONTROL.
7. ALL TEMPORARY TRAFFIC CONTROL SETUPS SHALL BE IN ACCORDANCE WITH THE MOST RECENT EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS- FIELD MANUAL OF THE SAME MANUAL.

<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">NO</td> <td style="width: 10%;">DATE</td> <td style="width: 10%;">BY</td> <td style="width: 10%;">CKD</td> <td style="width: 10%;">APPR</td> <td style="width: 50%;">REVISION</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>	NO	DATE	BY	CKD	APPR	REVISION							<p>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.</p> <p>PRINT NAME: <u>JOSEPH J. MACPHERSON, P.E.</u></p> <p>SIGNATURE: <u>[Signature]</u></p> <p>DATE: <u>2-27-25</u> LICENSE NO. <u>46732</u></p>	<p>DRAWN BY: <u>TMV</u> DATE: <u>11/04/20</u></p> <p>DESIGN BY: <u>TMV</u> DATE: <u>11/04/20</u></p> <p>CHECKED BY: _____ DATE: _____</p>	<p>ANOKA COUNTY HIGHWAY DEPT.</p>	<p>CP 20-20-60</p>	<p>TRAFFIC CONTROL PLAN</p> <p>Sheet <u>8</u> of <u>19</u> Sheets</p>
NO	DATE	BY	CKD	APPR	REVISION												

B EXISTING SIGN PANELS TYPE C						
STATION	ADDRESS/ DESCRIPTION (NOTES)	REMOVE SIGN TYPE C	SALVAGE SIGN TYPE C	INSTALL SALVAGE SIGN TYPE C	SIGN NUMBER	SIGN LEGEND
		EACH	EACH	EACH		
14+11	RT	1			X4-5	PLOW MKR
15+70	RT	1				DEEP DITCH
15+70	LT	1				DEEP DITCH
TIPPECANOE ST		1			X4-5	PLOW MKR
16+00	LT		1	1	R1-1 X4-3	STOP DELINEATOR
16+62	RT		1	1	R1-1 X4-3	STOP DELINEATOR
18+00	LT	1				DEEP DITCH
						DEEP DITCH
	TOTAL	5	2	2		

C TEMPORARY PAVEMENT MARKING TABULATION		
PAVEMENT MARKING REMOVAL 4" SOLID WHITE PAINT	LIN FT	1000
PORTABLE CHANGEABLE MESSAGE SIGN	UDAY	20

D TEMPORARY TRAFFIC CONTROL SIGNS			
M.U.T.C.D. CODE	SIZE	INSERT	QUANTITY
R1-1	30" x 30"		2
W20-1	48" x 48"		4
G20-2	36" x 18"		2
			59
			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 placed a minimum of ten days prior to actual commencement of road work. Signs to be removed when road work begins.

NOTES:

- 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.
- ADDITIONS OR CHANGES TO THIS PLAN MAY BE MADE AS DETERMINED BY THE ENGINEER.

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.

PERFORMED THERMOPLASTIC:

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

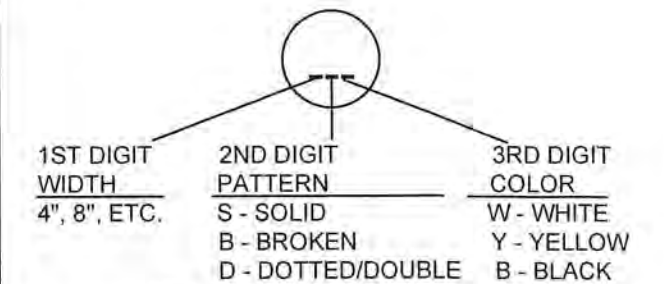
THE FILLING OF TANKS, POURING OF MATERIALS OR CLEANING OF EQUIPMENT SHALL NOT BE PERFORMED ON UNPROTECTED PAVEMENT SURFACES UNLESS ADEQUATE PROVISIONS ARE MADE TO PREVENT SPILLAGE OF MATERIAL.


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 PERFORMED PLASTIC MARKING



EXAMPLE:  = 4" SOLID LINE WHITE - MULTI COMP

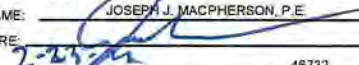
E PAVEMENT MARKING TABULATION		
ITEM	UNIT	TOTAL QUANTITY
4" SOLID LINE WHITE - MULTI COMP	LIN FT	1600

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\20-20-60\BaselTrafficPerm Pvmt Mrkg Guide Notes.dwg

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

PRINT NAME: JOSEPH J. MACPHERSON, P.E.

SIGNATURE: 

DATE: 2-23-11 48732

DRAWN BY: TMV DATE: 11/05/20

DESIGN BY: TMV DATE: 11/05/20

CHECKED BY: DATE:



ANOKA COUNTY
HIGHWAY DEPT.

CP 20-20-60

PERMANENT MARKING
TABULATION

Sheet 10 of 19 Sheets

NOTES:

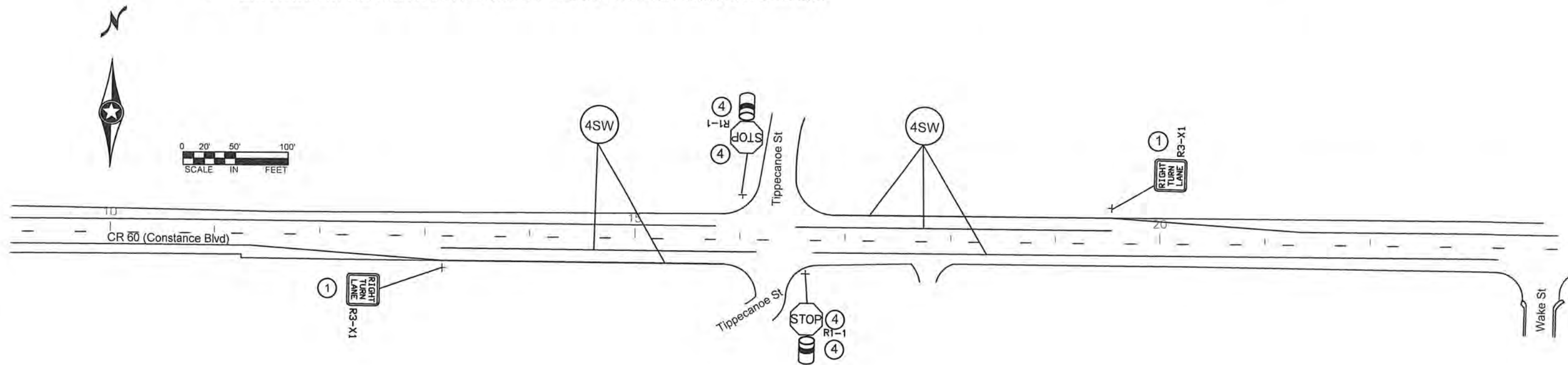
- ALL PERMANENT STRIPING SHALL BE PLACED WITHIN 72 HOURS OF MAINLINE PAVING.
- LOCATIONS OF ALL PERMANENT STRIPING ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- ALL SIGNS SHALL BE FURNISHED AND INSTALLED UNLESS OTHERWISE NOTED.
- ALL PERMANENT SIGNING SHALL BE INSTALLED THE SAME DAY AS PERMANENT STRIPING.

SIGN NOTES:

- ① FURNISH & INSTALL SIGN
- ④ INSTALL SALVAGED SIGN

STRIPING KEY

○ CIRCLE - MULTI COMP



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.		
R3-7	30" x 30"		2	6.25	12.50	1	7.0'
TOTAL TYPE C SIGN SQ FT					12.50		
PROJECT TOTAL SQ FT					12.50		

NO	DATE	BY	CKD	APPR	REVISION

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 PRINT NAME: JOSEPH W. MACPHERSON, P.E.
 SIGNATURE:
 DATE: 2-23-21 LICENSE NO. 46732

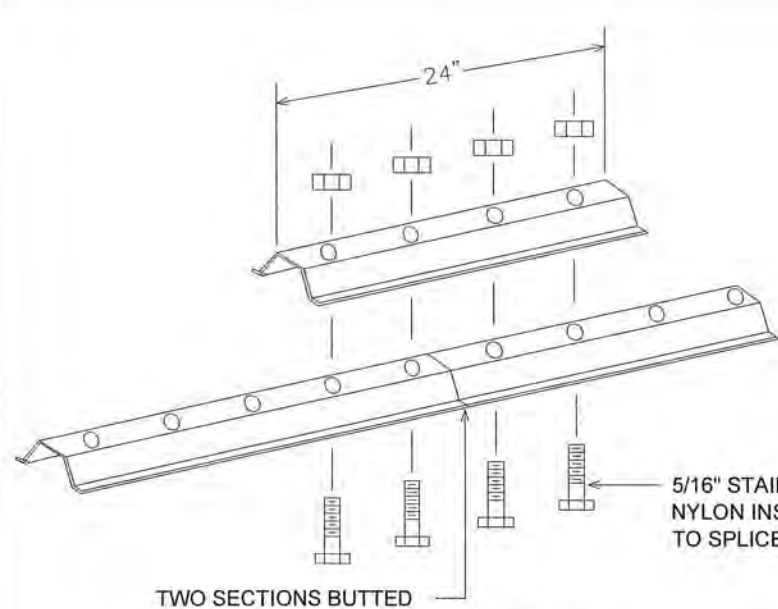
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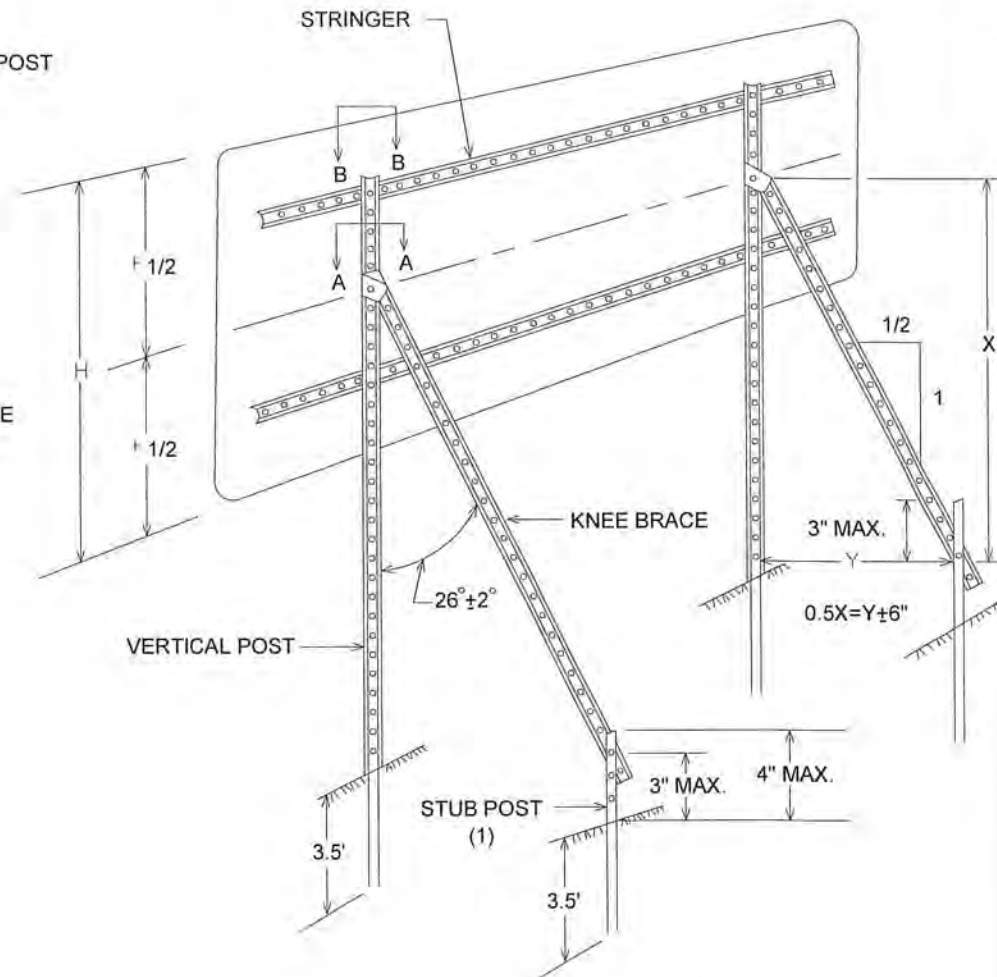
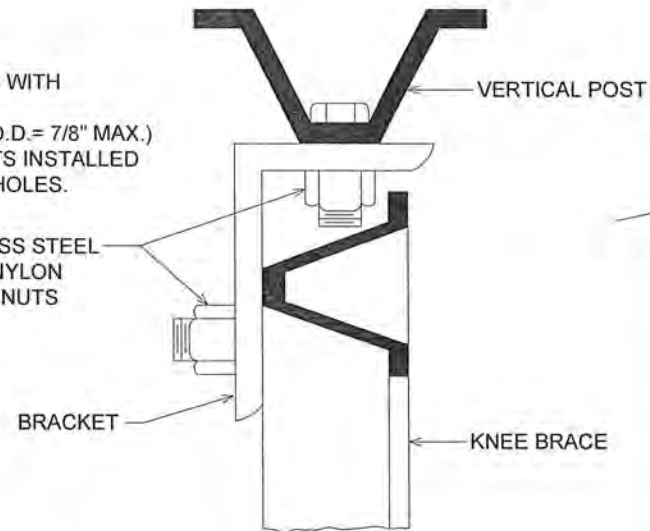
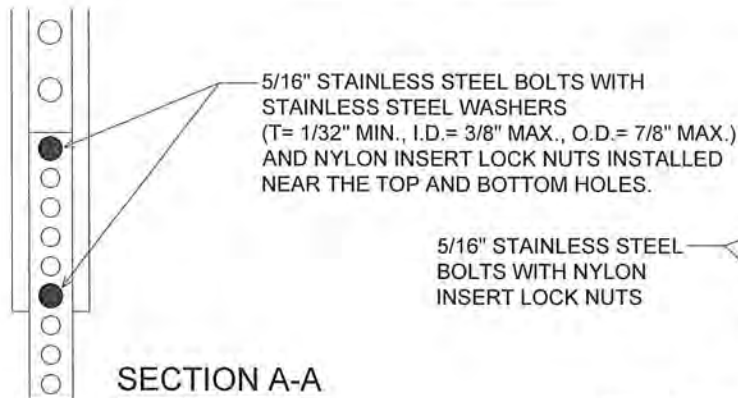
ANOKA COUNTY
HIGHWAY DEPT.

C.P. 20-20-60

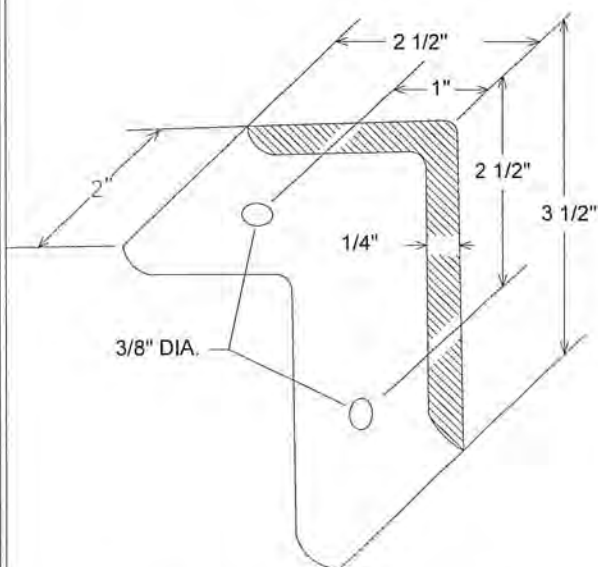
PERMANENT SIGNING
 AND STRIPING PLAN



LATERAL BRACE OR STRINGER SPLICE DETAIL (EXPLODED VIEW)

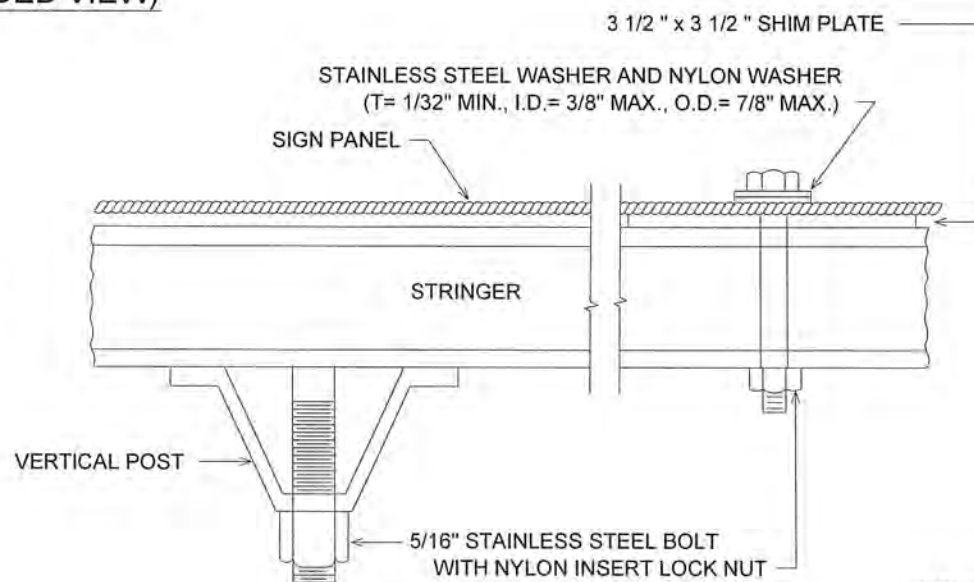


TYPICAL "A-FRAME" INSTALLATION TYPE "D" SIGNS

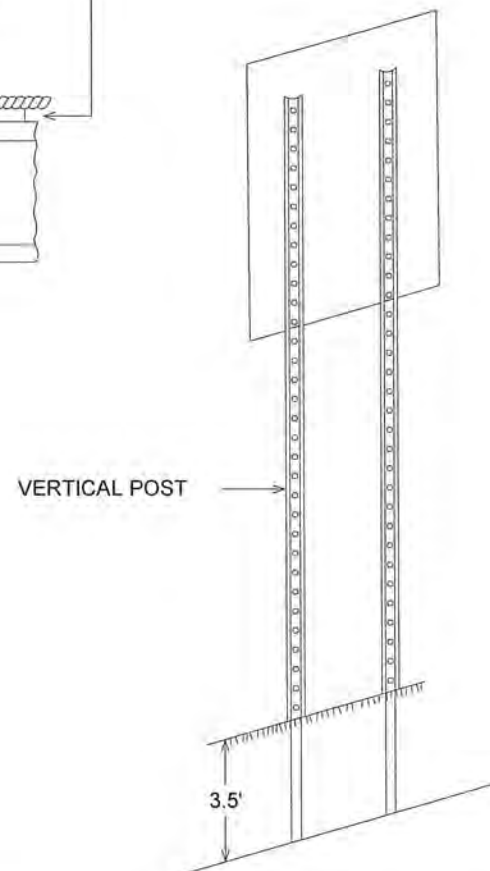


A-FRAME BRACKET

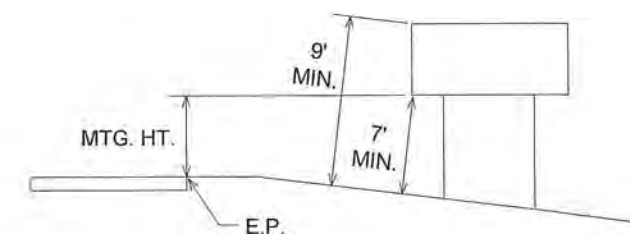
(STEEL MN/DOT 3306 GALVANIZED PER MN/DOT 3394)



SECTION B-B



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

NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\20-20-60\Base\Traffic\Sign&Stripe Details.dwg

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

PRINT NAME: JOSEPH J. MACPHERSON, P.E.

SIGNATURE: *[Signature]*

DATE: *[Date]* LICENSE NO. 46732

DRAWN BY: TMV DATE: 12/21/20

DESIGN BY: TMV DATE: 12/21/20

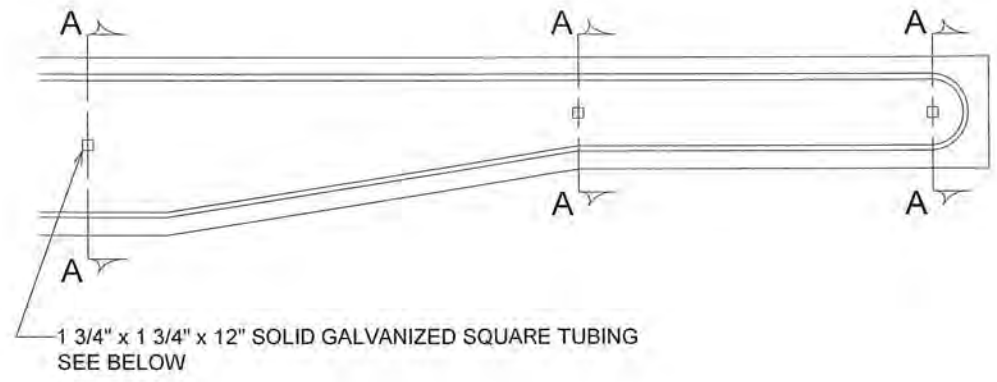
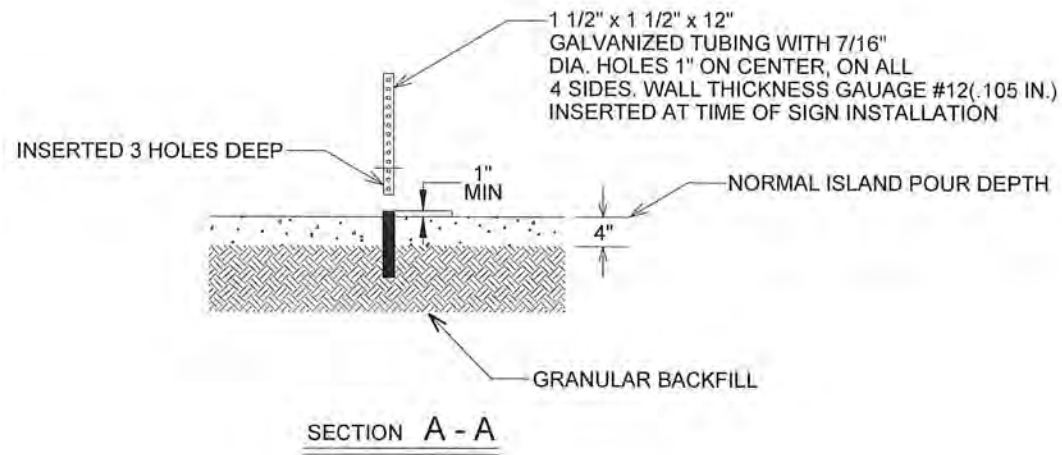
CHECKED BY: _____ DATE: _____



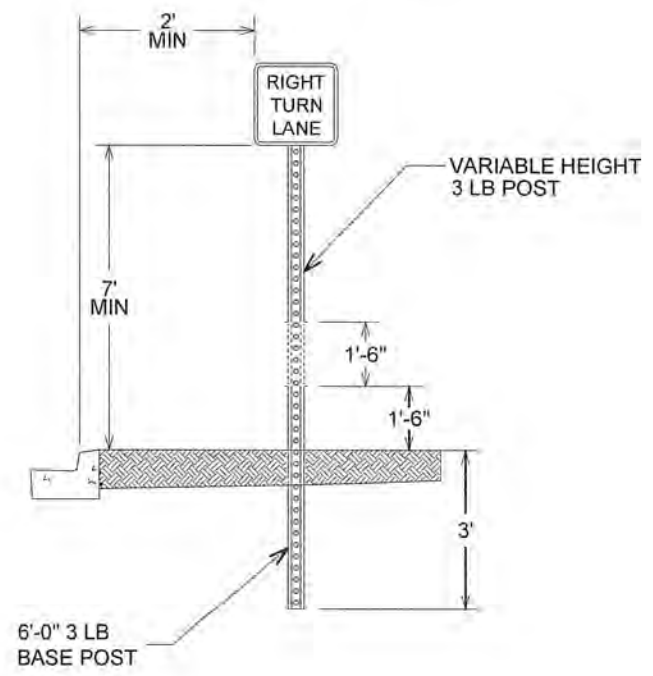
ANOKA COUNTY
HIGHWAY DEPT.

CP 20-20-60

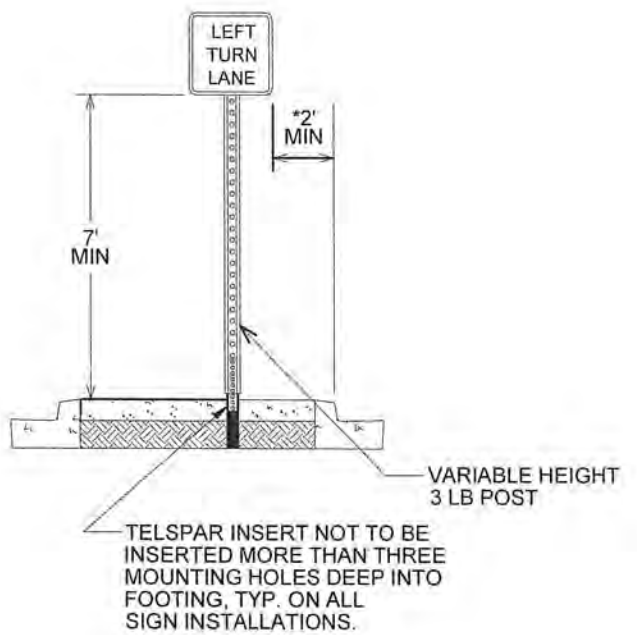
SIGNING & STRIPING
DETAILS



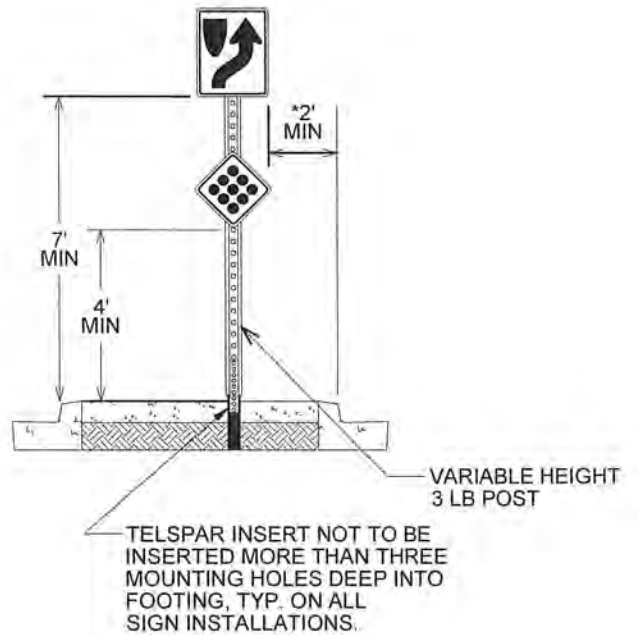
GROUND POST MOUNT SIGN INSTALLATION TYPICAL



ISLAND MOUNT BREAK-AWAY SIGN INSTALLATION TYPICAL



ISLAND MOUNT BREAK-AWAY 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.

NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\20-20-60\Base\Traffic\Sign&Stripe Details.dwg					

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

PRINT NAME: JOSEPH J. MACPHERSON, P.E.

SIGNATURE: *[Signature]*

DATE: 2-22-14 LICENSE NO. 48732

DRAWN BY: TMV DATE: 12/21/20

DESIGN BY: TMV DATE: 12/21/20

CHECKED BY: DATE:



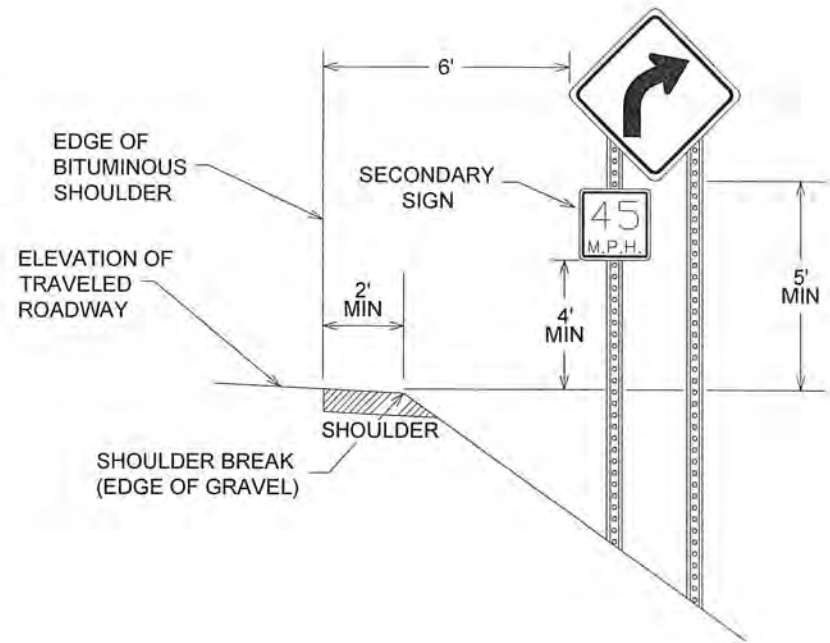
ANOKA COUNTY
HIGHWAY DEPT.

CP 20-20-60

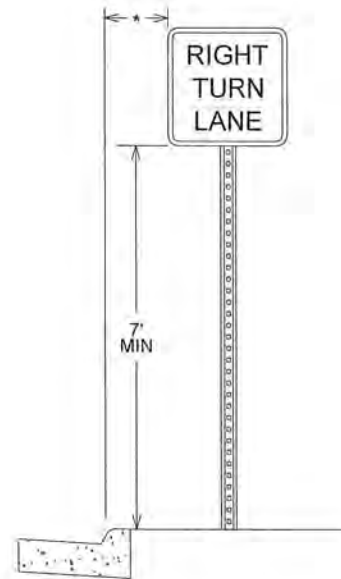
SIGNING & STRIPING
DETAILS

Sheet 13 of 19 Sheets

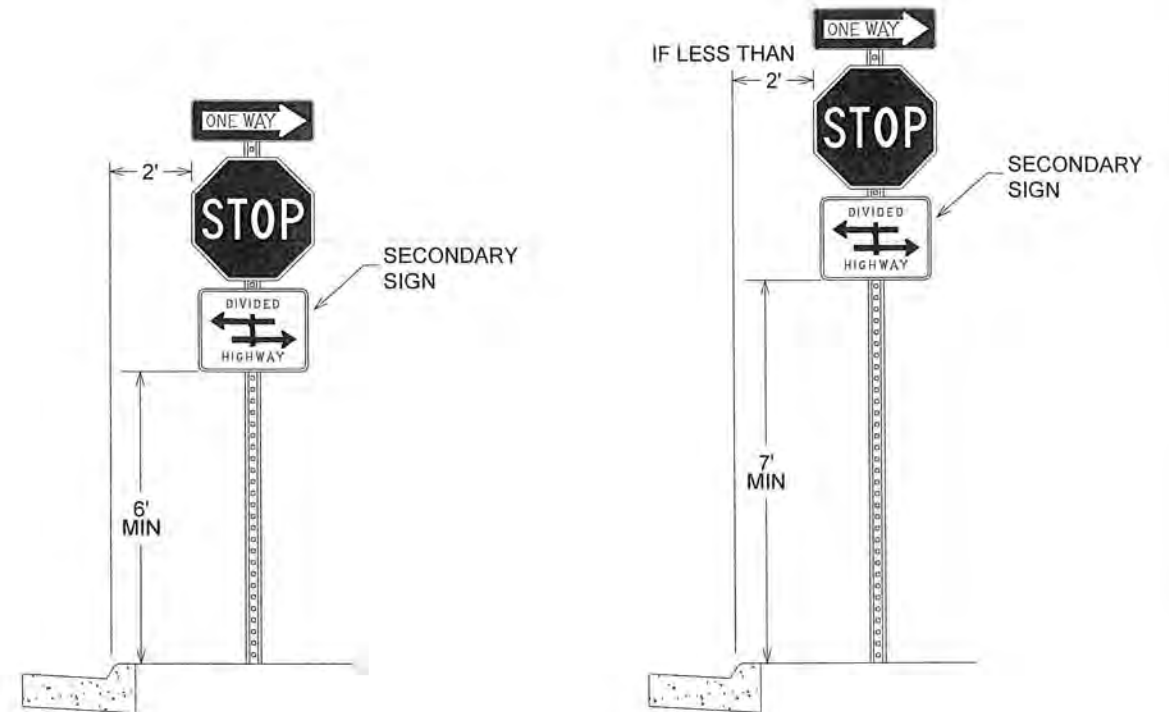
TYPICAL SIGN PLACEMENT
(RURAL)



TYPICAL SIGN PLACEMENT
(URBAN)



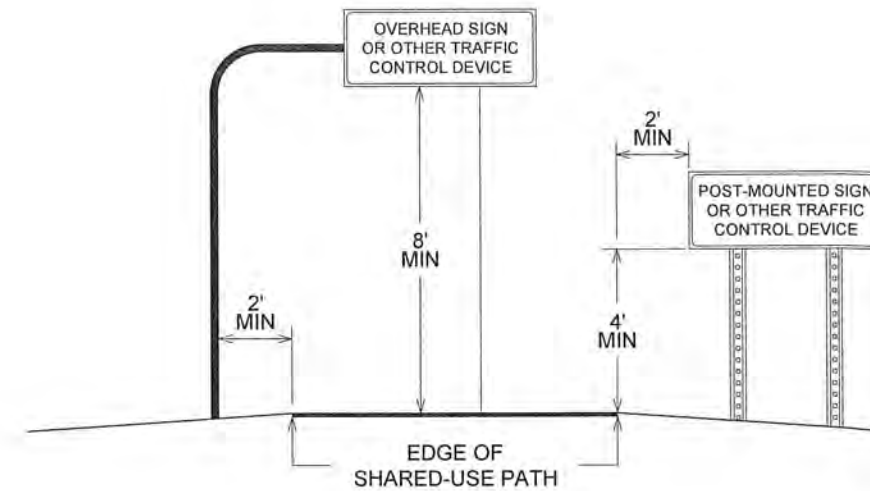
*2' - NARROW BOULEVARD (≤ 8' WIDE)
6' - WIDE BOULEVARD



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



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\20-20-60\BaselTraffic\Sign&Stripe Details.dwg

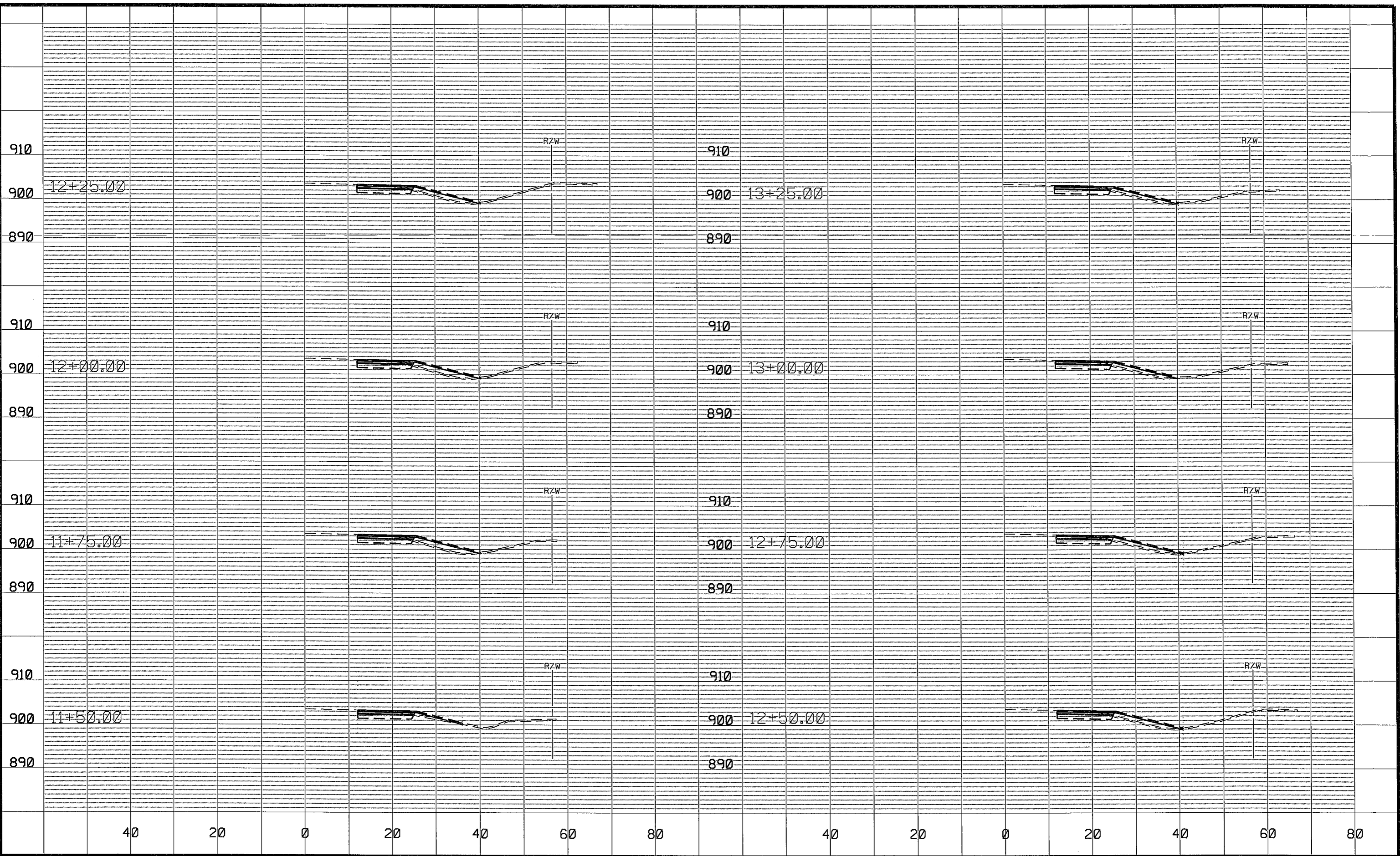
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DRAWN BY: TMV DATE: 12/21/20
 DESIGN BY: TMV DATE: 12/21/20
 CHECKED BY: _____ DATE: _____

ANOKA COUNTY
HIGHWAY DEPT.

CP 20-20-60

SIGNING & STRIPING
 DETAILS
 Sheet 14 of 19 Sheets



NO	DATE	BY	CHKD	APPR	REVISION
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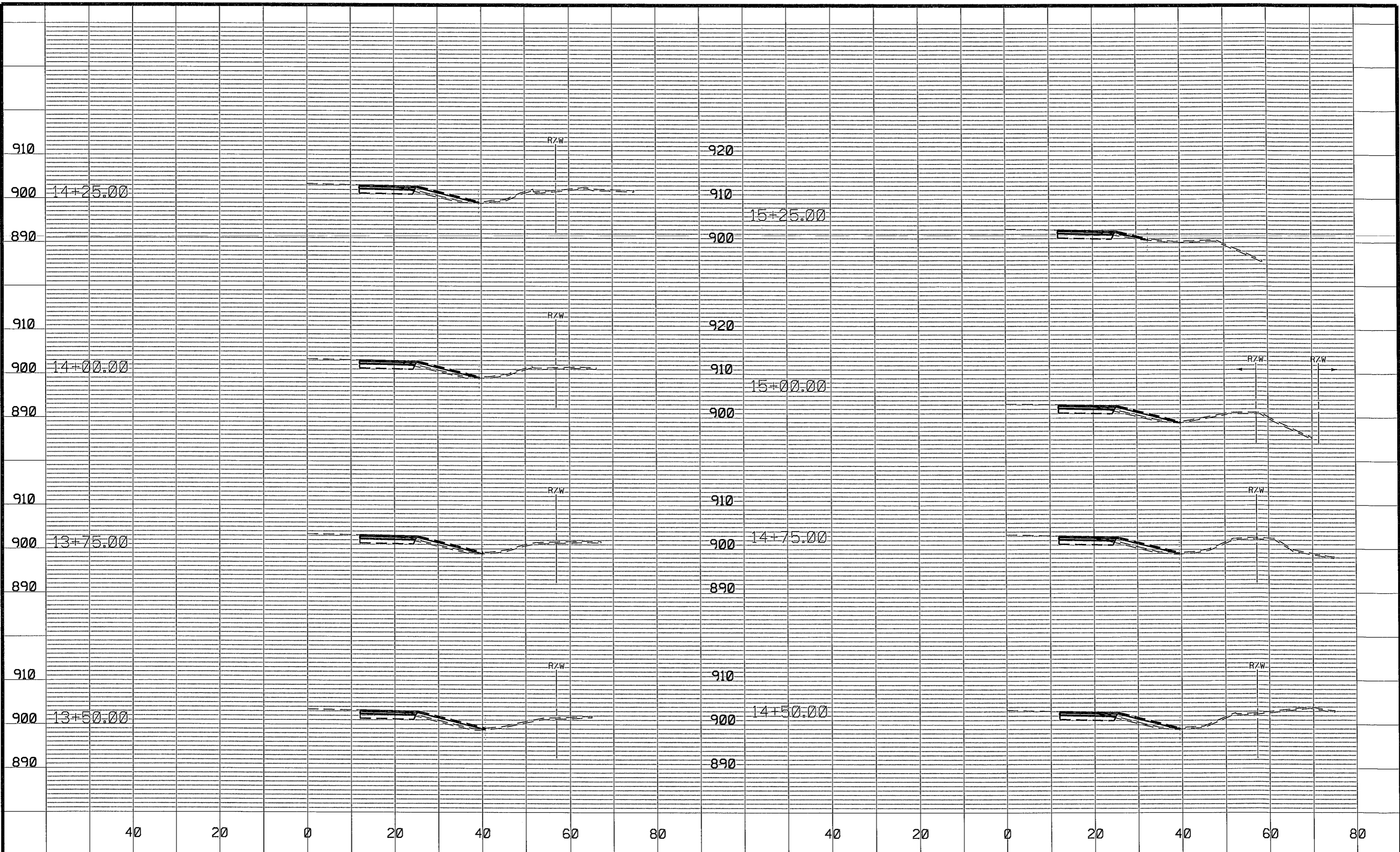
DRAWN BY DFE DATE 09/30/20
 DESIGN BY DFE DATE 09/30/20
 CHECKED BY NJD DATE 09/30/20



ANOKA COUNTY
HIGHWAY DEPT.

CP 20-20-60

CROSS SECTIONS
 STA 11+50.00 TO 13+25.00
 Sheet 15 of 19 Sheets



NO	DATE	BY	CKD	APPR	REVISION
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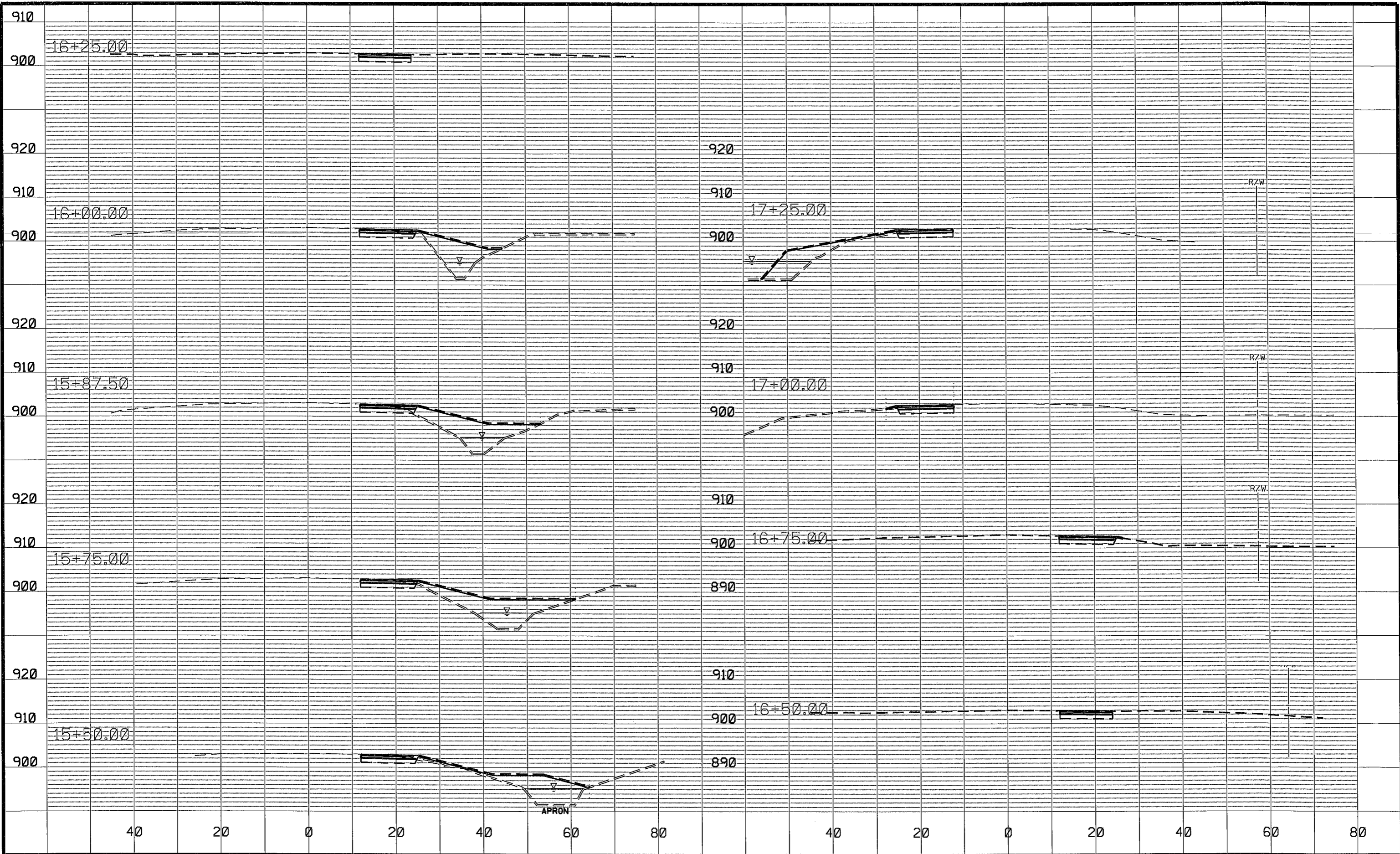
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ANOKA COUNTY
 HIGHWAY DEPT.



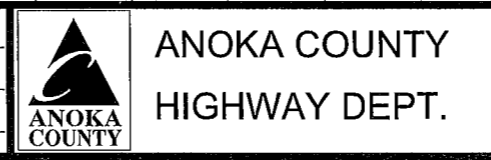
CP 20-20-60

CROSS SECTIONS
 STA 13+50.00 TO 15+25.00
 Sheet 16 of 19 Sheets



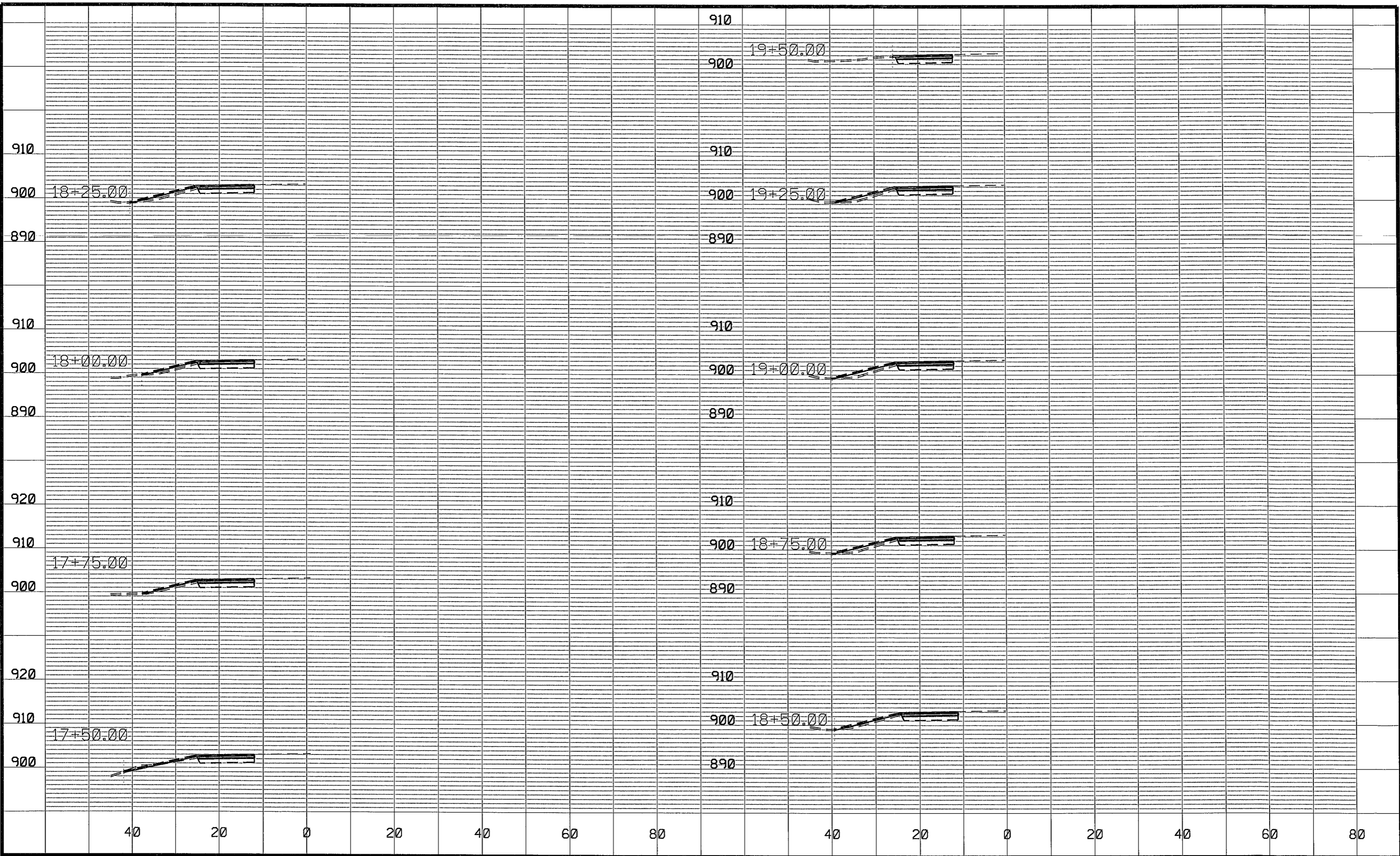
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DRAWN BY DFF DATE 09/30/20
 DESIGN BY DFF DATE 09/30/20
 CHECKED BY NJD DATE 09/30/20



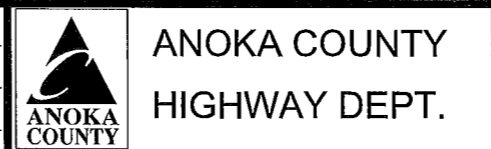
CP 20-20-60

CROSS SECTIONS
 STA 15+50.00 TO 17+25.00
 Sheet 17 of 19 Sheets

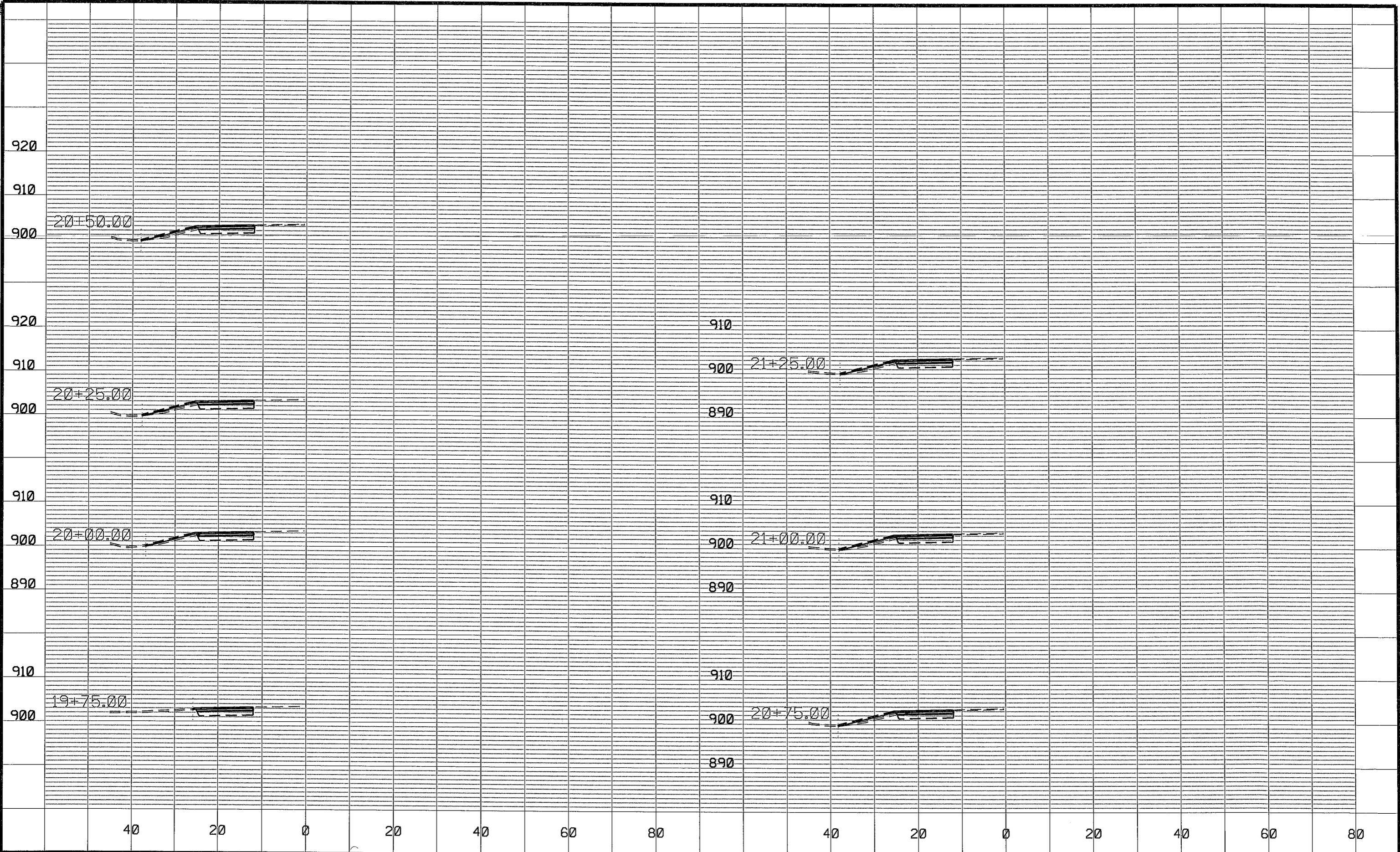


NO	DATE	BY	CKD	APPR	REVISION
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DRAWN BY DFF DATE 09/30/20
 DESIGN BY DFF DATE 08/30/20
 CHECKED BY NJD DATE 09/30/20

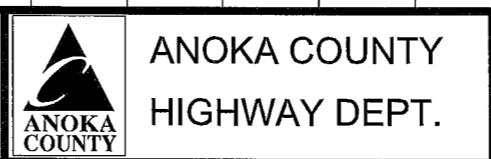


CP 20-20-60
 CROSS SECTIONS
 STA 17+50.00 TO 19+50.00
 Sheet 18 of 19 Sheets



NO	DATE	BY	CHKD	APPR	REVISION
NAME: P:\20-20-60\Plan\20-20-60_XS1.dgn 02/08/2021 8:53:18 AM					

DRAWN BY DFE DATE 09/30/20
 DESIGN BY DFE DATE 09/30/20
 CHECKED BY NJD DATE 09/30/20



CP 20-20-60
 CROSS SECTIONS
 STA 19+75.00 TO 21+25.00
 Sheet 19 of 19 Sheets