

PLAN SYMBOLS

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

- LOWLAND _____
- TIMBER _____
- ORCHARD _____
- BRUSH _____
- NURSERY _____

- CATTLE GUARD _____

- OVERPASS (Highway Over) _____

- UNDERPASS (Highway Under) _____

- BRIDGE _____

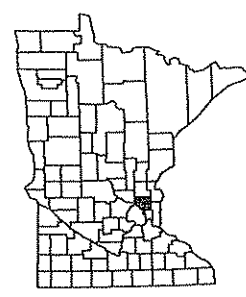
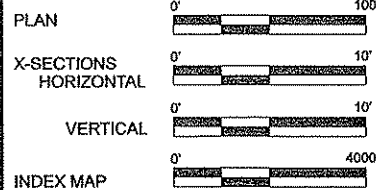
- BUILDING (One Story Frame) _____
- F-FRAME C-CONCRETE _____
- S-STONE T-TILE _____
- B-BRICK ST-STUCCO _____

- RAILROAD CROSSING BELL _____
- RAILROAD CROSSING GATE _____
- MANHOLE _____
- CATCH BASIN _____
- FIRE HYDRANT _____
- CAST IRON MONUMENT _____
- IRON PIN _____
- GRAVEL PIT _____
- SAND PIT _____
- BORROW PIT _____
- ROCK QUARRY _____

UTILITY SYMBOLS

- POWER POLE LINE _____
- TELEPHONE OR TELEGRAPH POLE LINE _____
- JOINT TELEPHONE & POWER ON POWER POLES _____
- ON TELEPHONE POLES _____
- ANCHOR _____
- STEEL TOWER _____
- STREET LIGHT _____
- PEDESTAL (Cable Termination) _____
- GAS MAIN _____
- WATERMAIN _____
- TELEPHONE CABLE IN CONDUIT _____
- ELECTRIC CABLE IN CONDUIT _____
- TELEPHONE MANHOLE _____
- ELECTRIC MANHOLE _____
- BURIED TELEPHONE CABLE _____
- BURIED ELECTRIC CABLE _____
- AERIAL TEL CABLE _____
- SEWER (Sanitary or Storm) _____
- SEWER MANHOLE _____

SCALES



PROJECT LOCATION

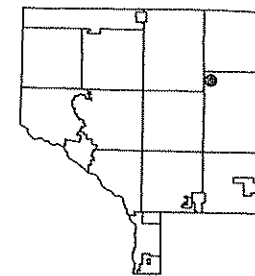
COLUMBUS TOWNSHIP
 EAST BETHEL
 HAM LAKE
 LINWOOD TOWNSHIP

SECTION 6, 7
 TOWNSHIP 32 NORTH WEST
 RANGE 22 WEST

SECTION 1
 TOWNSHIP 32 NORTH WEST
 RANGE 23 WEST

SECTION 19, 20, 29, 30, 31, 32
 TOWNSHIP 33 NORTH WEST
 RANGE 22 WEST

SECTION 24, 25, 36
 TOWNSHIP 33 NORTH WEST
 RANGE 23 WEST



MINNESOTA DEPARTMENT OF TRANSPORTATION ANOKA COUNTY

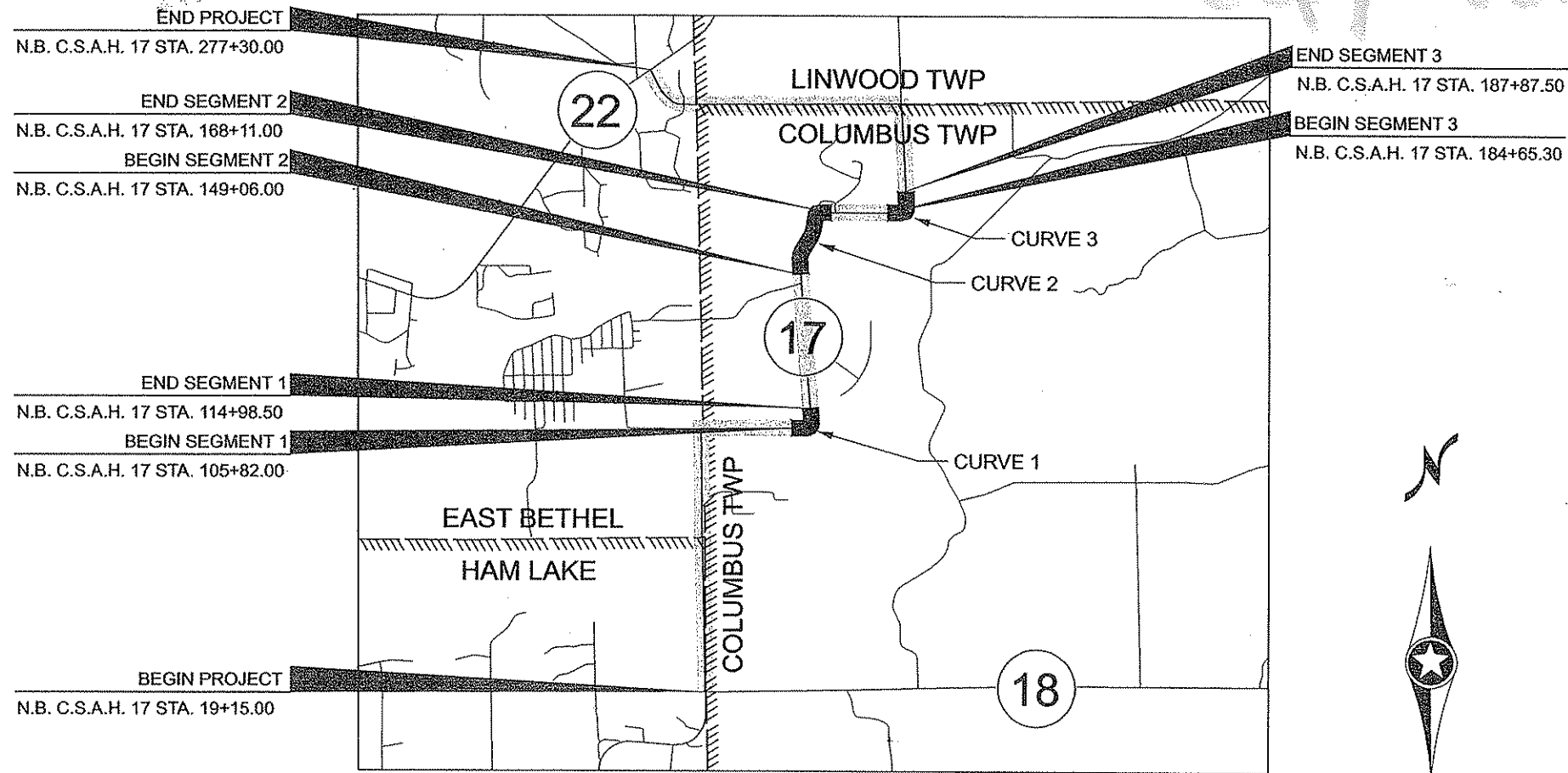
CONSTRUCTION PLAN FOR GRADING, AGGREGATE BASE, BITUMINOUS SURFACING, SIGNING & STRIPING

LOCATED ON C.S.A.H. 17 BETWEEN C.S.A.H. 18 AND C.S.A.H. 22

STATE PROJ. NO. 02-617-19
 C.S.A.H. 17

GROSS LENGTH	25,815 FEET	4.889 MILES
BRIDGES-LENGTH	0.00 FEET	0.000 MILES
EXCEPTIONS-LENGTH	0.00 FEET	0.000 MILES
NET LENGTH	25,815 FEET	4.889 MILES

100%
 Copy (Official)



MINN. PROJ. NO. _____ CSF08 (004)

GOVERNING SPECIFICATIONS

THE 2005 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE INSTALLED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MNMUTCD), AND PAR VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS."

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	GENERAL LAYOUT & ALIGNMENT PLAN
3	SEQ. BASIS OF QUANTITIES, INDEX OF TABS
4	TAB SHEET
5	PRIVATE UTILITY OWNERS
6	SOILS & CONSTRUCTION NOTES
7	EARTHWORK QUANTITIES
8	TYPICAL SECTIONS
9	MISCELLANEOUS DETAILS
10	INPLACE TOPOGRAPHY AND REMOVAL PLAN
11	CONSTRUCTION PLAN
12	UTILITY PLAN
13	SIGN REMOVAL TAB
14	SIGNING TAB
15 - 24	SIGNING & STRIPING PLAN
25 - 29	SIGNING & STRIPING DETAILS
30 - 31	SWPPP NARRATIVE
32	EROSION CONTROL PLAN
33 - 36	STANDARD PLANS
37 - 44	CROSS SECTIONS

THIS PLAN CONTAINS 44 SHEETS
 DESIGN DESIGNATION

ESAL 20	254,211
SOIL FACTOR	130
ADT (2008) =	1,764
Proj. ADT (2028) =	2,646
Proj. HCADT (2028) =	156
10 TON DESIGN	

Functional Classification A MINOR EXPANDER
 No. of Traffic Lanes 2 No. of Parking Lanes 0

Shoulder Width
 Inplace 0.0' BIT. - 0.0' AGG. Proposed 4.0' BIT. - 1.5' AGG.

Approved 4/9/10 ANOKA COUNTY ENGINEER

REVIEWED FOR COMPLIANCE WITH STATE AND FEDERAL AID RULES/POLICY _____, 20 _____ DISTRICT STATE AID ENGINEER

APPROVED FOR STATE AND/OR FEDERAL AID FUNDING _____, 20 _____ STATE AID ENGINEER

NO.	DATE	BY	CHKD	APPR	REVISION
1	4-9-10	NJD	JED	CAK	REVISED PER MN/DOT COMMENTS DATED 3/30/2010

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.

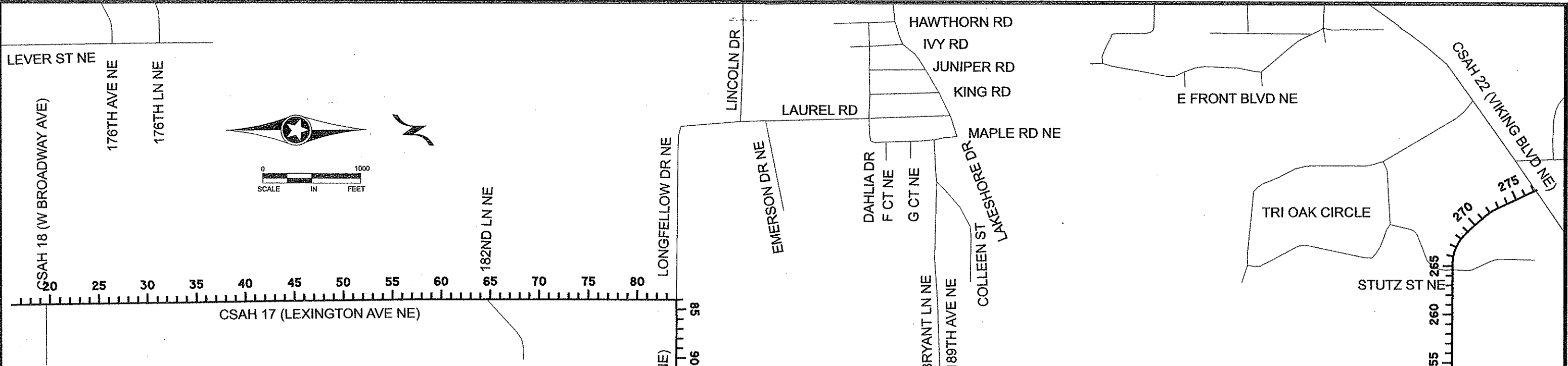
PRINT NAME: CURT A. KOBILARCSIK
 SIGNATURE:
 DATE: 4-9-10 LICENSE NO. 24756



ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. 02-617-19

TITLE SHEET
 Sheet 1 of 44 Sheets



ALIGNMENT TABULATION											
POINT NUMBER	POINT	ALIGNMENT	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH	
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y		
C.S.A.H. 17 <17N_1> NOTE: ALIGNMENT OUTSIDE OF TABULATION FOR REFERENCE ONLY											
1000	POT	Q C.S.A.H. 17	100+00.000						533,566.6102	198,218.9434	
1001	POT		108+82.078						534,448.5935	198,205.9906	
	PC		109+58.376						534,524.8910	198,206.2152	N 87° 13' 08.30" E
17N_1-1	PI		110+15.592	35° 35' 37.10" LT	32° 08' 42.08"	178.242'	57.216'	110.728'	534,582.0398	198,208.9913	PI
	CC								534,516.2429	198,384.2468	
	PCC		110+69.104						534,626.8954	198,244.5111	N 51° 37' 31.21" E
	PCC		110+69.104						534,626.8954	198,244.5111	N 44° 50' 48.92" E
17N_1-2	PI		111+38.222	49° 24' 40.99" LT	38° 08' 16.24"	150.233'	69.118'	129.560'	534,675.6383	198,293.5151	PI
	CC								534,520.3809	198,350.4580	
	PT		111+98.664						534,670.1378	198,362.4137	N 4° 33' 52.07" W
1002	POT		119+77.789						534,608.1346	199,139.0670	
1003	POT		135+00.512						534,498.8918	200,657.8669	
	PC		152+05.926						534,414.3219	202,361.1822	N 2° 50' 32.67" W
17N_1-3	PI		153+18.467	35° 39' 00.44" RT	16° 22' 12.80"	350.000'	112.542'	217.774'	534,408.7411	202,473.5853	PI
	CC								534,763.8913	202,378.5383	
	PT		154+23.700						534,469.7185	202,568.1758	N 32° 48' 27.76" E
1004	POT		156+13.818						534,572.7284	202,727.9687	
	PC		158+33.227						534,681.3903	202,918.5810	N 30° 19' 27.89" E
17N_1-4	PI		159+70.532	24° 02' 03.15" LT	8° 52' 58.00"	645.021'	137.305'	270.571'	534,750.7148	203,037.0997	PI
	CC								534,124.6208	203,244.2491	
	PT		161+03.798						534,765.7585	203,173.5778	N 6° 17' 24.74" E
	PC		162+92.865						534,789.6070	203,361.1344	N 6° 32' 13.51" E
17N_1-5	PI		163+49.992	36° 00' 15.18" RT	32° 35' 31.17"	175.797'	57.127'	110.470'	534,796.1107	203,417.8901	PI
	CC								534,964.2612	203,341.1206	
	PCC		164+03.334						534,834.7356	203,459.9808	N 42° 32' 28.70" E
	PCC		164+03.334						534,834.7356	203,459.9808	N 47° 00' 30.69" E
17N_1-6	PI		164+58.747	40° 35' 24.96" RT	38° 14' 18.62"	149.838'	55.412'	106.150'	534,875.2672	203,497.7658	PI
	CC								534,936.9085	203,350.3810	
	PT		165+09.485						534,930.6308	203,500.0874	N 87° 35' 55.66" E
1005	POT		165+58.837						534,979.9400	203,502.1551	
	PC		184+93.098						536,914.1298	203,485.5674	S 89° 54' 12.17" E
17N_1-7	PI		186+19.166	92° 49' 31.37" LT	47° 44' 47.34"	120.000'	126.068'	194.413'	537,040.1979	203,485.3548	PI
	CC								536,914.3321	203,605.5673	
	PT		186+87.511						537,034.1961	203,611.2802	N 2° 43' 43.55" W
1006	POT		191+33.834						537,012.9476	204,057.0969	

BEGIN ALIGNMENT TABULATION
N.B. C.S.A.H. 17 STA. 100+00.00

END ALIGNMENT TABULATION
N.B. C.S.A.H. 17 STA. 191+33.83

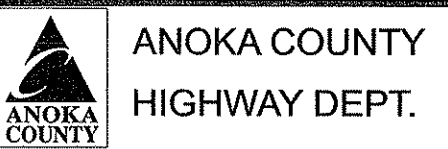
NO	DATE	BY	CKD	APPR	REVISION

NAME: p:\02-617-19\plant\0261719_LO_P1.dgn 3/5/2010 1:37:17 PM

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

PRINT NAME: CURT A. KOBLARCSIK
SIGNATURE: *Curt A. Koblarczik*
DATE: 3-8-10 LICENSE NO. 24758

DRAWN BY: NJD DATE 1-19-10
DESIGN BY: NJD DATE 1-15-10
CHECKED BY: JEO DATE JEO



STATE PROJECT NO. 02-617-19

GENERAL LAYOUT & ALIGNMENT PLAN
Sheet 2 of 44 Sheets

TAB / NOTE	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL PROJECT QUANTITIES ESTIMATED	PARTICIPATING
					SP 02-617-19 ANOKA COUNTY ROADWAY QUANTITIES ESTIMATED
	2021.501	MOBILIZATION	LUMP SUM	1	1
C	2104.509	REMOVE SIGN TYPE C	EACH	123	123
B	2104.513	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LIN FT	5,547	5,547
[1]	2104.601	HAUL SALVAGED MATERIAL	LUMP SUM	1	1
A	2105.501	COMMON EXCAVATION (CV)(P)	CU YD	1,059	1,059
A	2105.523	COMMON BORROW (LV)	CU YD	1,728	1,728
	2123.509	DOZER	HOURL	16	16
	2130.501	WATER	M GALLONS	25	25
G	2211.503	AGGREGATE BASE (CV) CLASS 5 (P)	CU YD	355	355
G	2211.604	AGGREGATE BASE SPECIAL	SQ YD	119	119
G	2221.607	AGGREGATE SHOULDERING SPECIAL (CV)	CU YD	153	153
B	2232.501	MILL BITUMINOUS SURFACE (2.0")	SQ YD	159	159
E	2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	673	673
E	2360.501	TYPE SP 12.5 WEARING COURSE MIX (2,B)	TON	1,249	1,249
E	2360.502	TYPE SP 12.5 NON WEARING COURSE MIX (2,B)	TON	285	285
D	2540.602	RELOCATE MAIL BOX SUPPORT	EACH	4	4
	2563.601	TRAFFIC CONTROL	LUMP SUM	1	1
I	2564.531	SIGN PANELS TYPE C	SQ FT	963	963
[2]	2564.537	INSTALL SIGN TYPE D	EACH	1	1
[3]	2564.602	RELOCATE SIGN	EACH	1	1
F	2573.502	SILT FENCE, TYPE MACHINE SLICED	LIN FT	6,067	6,067
F	2575.501	SEEDING	ACRE	1.3	1.3
F	2575.502	SEED MIXTURE 240	POUND	95	95
F	2575.511	MULCH MATERIAL TYPE 3	TON	2.52	2.52
F	2575.519	DISK ANCHORING	ACRE	1.2	1.2
F	2575.523	EROSION CONTROL BLANKETS CATEGORY 3	SQ YD	720	720
F	2575.532	FERTILIZER TYPE 3	POUND	441	441
H	2582.502	4" SOLID LINE WHITE - EPOXY	LIN FT	51,301	51,301
H	2582.502	4" BROKEN LINE WHITE-EPOXY	LIN FT	290	290
H	2582.502	4" SOLID LINE YELLOW-EPOXY	LIN FT	10,662	10,662
H	2582.502	4" BROKEN LINE YELLOW-EPOXY	LIN FT	21,848	21,848
H	2582.502	4" DOUBLE SOLID LINE YELLOW - EPOXY	LIN FT	3,253	3,253

NOTES:

- 1). THE DESIGNATED STORAGE AREA IS THE ANOKA COUNTY HIGHWAY DEPARTMENT SIGN SHOP, 1440 BUNKER LAKE BLVD., ANDOVER, MN 55304
- 2). QUANTITY FOR RE-INSTALLING COON CREEK PARK & BEACH SIGN
- 3). QUANTITY FOR TEMPORARILY RELOCATING COON CREEK PARK & BEACH SIGN

BASIS OF QUANTITIES		
SPEC NO	DESCRIPTION	RATE
2123.509	DOZER	0.5 HOURS / ROAD STATION
2350.503	TYPE SP 12.5 WEARING COURSE MIXTURE (2,B)	115 LBS / SQ YD / IN
2350.503	TYPE SP 12.5 NON WEARING COURSE MIXTURE (2,B)	115 LBS / SQ YD / IN
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	0.05 GAL / SQ YD / LIFT
2575.502	SEED MIXTURE 240	75 LBS / ACRE
2575.511	MULCH MATERIAL TYPE 3	2 TONS / ACRE
2575.531	FERTILIZER TYPE 3	350 LBS / ACRE

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

STANDARD PLATES		
PLATE NO.		DESCRIPTION
9350	A	MAILBOX SUPPORT - SWING AWAY TYPE

INDEX OF TABULATION CHARTS		
TAB.	DESCRIPTION	SHEET NO.
A	EARTHWORK SUMMARY	7
B	REMOVALS	4
C	SALVAGE SIGNS	13
D	MAILBOX	4
E	BITUMINOUS SUMMARY	4
F	TURF ESTABLISHMENT AND EROSION CONTROL	4
G	AGGREGATE	4
H	STRIPING SUMMARY	14
I	SIGN PANELS TYPE C	14
AA	PRIVATE UTILITY OWNERS	5
BB	CONNEXUS ENERGY - POWER	5
CC	QWEST - TELEPHONE	5
DD	XCEL ENERGY - GAS	5

1	4-9-10	NJD	JEO	CAK	REVISED PER MNDOT COMMENTS DATED 3/30/2010
NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\02-617-19\Plan\0261719_SEQ_P1.dgn 4/9/2010 11:08:52 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: CURT A. KOBILARCSIK
 SIGNATURE: *Curt Kobilarsik*
 DATE: 4-9-10 LICENSE NO. 24756

DRAWN BY: NJD DATE: 1-19-10
 DESIGN BY: NJD DATE: 1-19-10
 CHECKED BY: JEO DATE:



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. 02-617-19

STATEMENT OF ESTIMATED QUANTITIES

REMOVALS, SAWING & MILLING					B
STATION TO STATION	OFFSET	SAWING (SPEC. 2104)	MILLING (SPEC. 2232)	NOTES	
		BITUMINOUS PAVEMENT (LIN FT)	BITUMINOUS SURFACE (2") (SQ YD)		
105+82.00 - 114+98.50	L	623			
105+82.00 - 114+98.50	R	937			
149+06.00 - 168+11.00	L	1913			
149+06.00 - 155+56.75	R	643			
160+07.20 - 168+11.00	R	786			
184+65.30 - 187+87.50	L	303			
184+65.30 - 187+87.50	R	342			
105+82.00 - 114+98.50			53	1	
149+06.00 - 168+11.00			53	1	
184+65.30 - 187+87.50			53	1	
PROJECT TOTAL		5547	159		

NOTES:
1). QUANTITY FOR 10.0' END MILLING

BITUMINOUS SUMMARY				E
STATION TO STATION	2350 TYPE SPWEB240B	2350 TYPE SPNWB230B	2357 BIT. TACK COAT	
	TON	TON	GAL	
105+82.00 - 114+98.50	361	80	198	
149+06.00 - 168+11.00	756	172	403	
184+65.30 - 187+87.50	132	33	72	
PROJECT TOTAL	1249	285	673	

TURF ESTABLISHMENT AND EROSION CONTROL								F
LOCATION		SILT FENCE	SEEDING	SEED MIXTURE 240	MULCH MATERIAL TYPE 3	DISK ANCHOR	FERTILIZER TYPE 3	EROSION CONTROL BLANKET
STATION TO	STATION	LIN FT	ACRE	POUND	TON	ACRE	POUND	SQ YD
105+82.00 - 114+98.50		1570	0.31	24	0.62	0.3	109	
149+06.00 - 168+11.00		3839	0.82	61	1.63	0.8	285	564
184+65.30 - 187+87.50		658	0.13	10	0.27	0.1	47	156
PROJECT TOTAL		6,067	1.3	95	2.52	1.2	441	720

MAILBOX				D
STATION	OFFSET	RELOCATE MAILBOX SUPPORT (SPEC 2540) (EACH)	NOTES	
106+76.62	24.5	1	1,2,3,4	
114+36.01	24.5	1	1,2,3,4	
150+44.26	-24.5	1	1,2,3,4	
150+49.26	-24.5	1	1,2,3,4	
PROJECT TOTAL			4	

NOTES:
1). INCLUDES SALVAGING OF OLD MAILBOX, INSTALLING TEMPORARY MAILBOX, AND FURNISHING + INSTALLING NEW MAILBOX.
2). INSTALL COUNTY APPROVED MAILBOX SUPPORT TYPE SWING AWAY (PER STANDARD PLATE 9350A)
3). SALVAGED MAILBOXES TO BE RETURNED TO PROPERTY OWNER
4). NEW MAILBOXES TO BE PROVIDED BY ANOKA COUNTY HIGHWAY DEPARTMENT

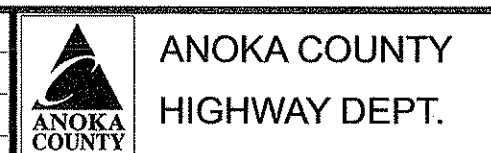
AGGREGATE					G
LOCATION		AGG SHOULDER SPECIAL (CV) (CY)	AGG BASE CLASS 5 (CV) (CY)	AGG BASE SPECIAL (SY)	NOTES
STATION TO	STATION				
107+10				29	5318 185TH AVE DRIVEWAY
114+11				27	18546 LEXINGTON AVE DRIVEWAY
112+10				31	UNASSIGNED DRIVEWAY
150+40				32	19034 LEXINGTON AVE DRIVEWAY
105.82.00 - 114+98.50		45			
149+06.00 - 168+11.00		92			
184+65.30 - 187+87.50		16			
105+82.00 - 114+98.50			100		SEE EARTHWORK TAB PAGE 7
149+06.00 - 168+11.00			214		SEE EARTHWORK TAB PAGE 7
184+65.30 - 187+87.50			41		SEE EARTHWORK TAB PAGE 7
PROJECT TOTAL		153	355	119	

NO	DATE	BY	CKD	APPR	REVISION

NAME: p:\02-617-19\plan\0261719_TAB_P1.dgn 3/5/2010 1:37:20 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: CURT A. KOBILARCSIK
SIGNATURE: *Curt Kobilarcsik*
DATE: 3-8-10 LICENSE NO. 24756

DRAWN BY: NJD DATE: 2-10-09
DESIGN BY: NJD DATE: 2-1-09
CHECKED BY: JEO DATE:



STATE PROJECT NO. 02-617-19

TAB SHEET
Sheet 4 of 44 Sheets

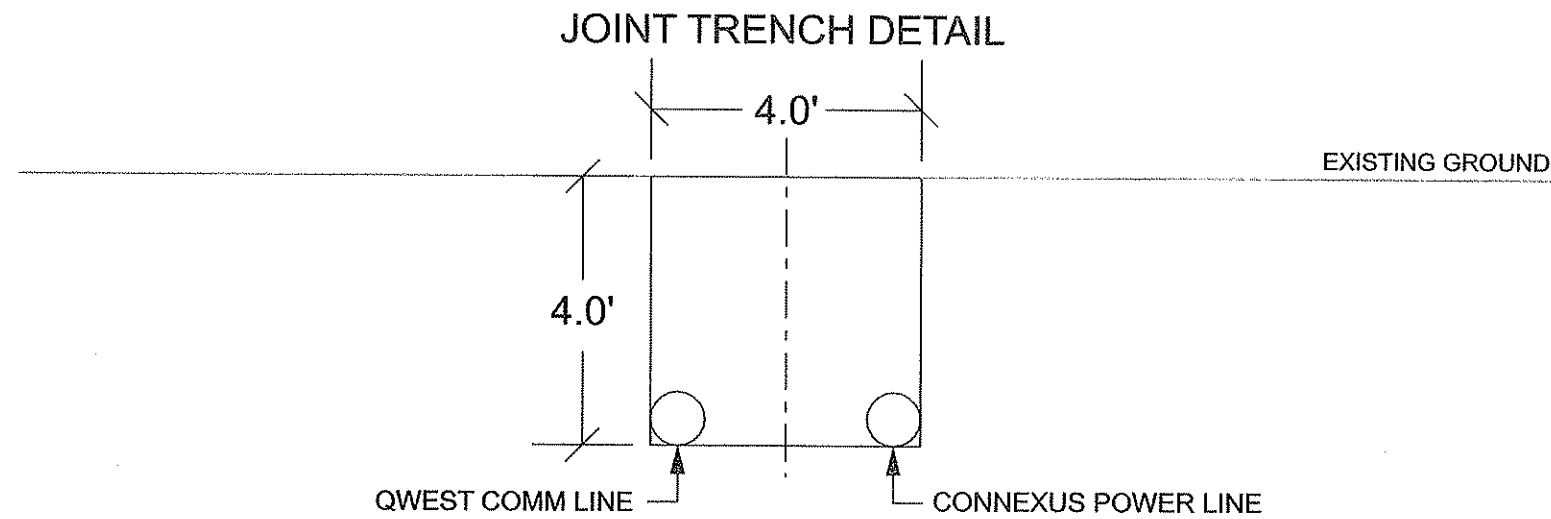
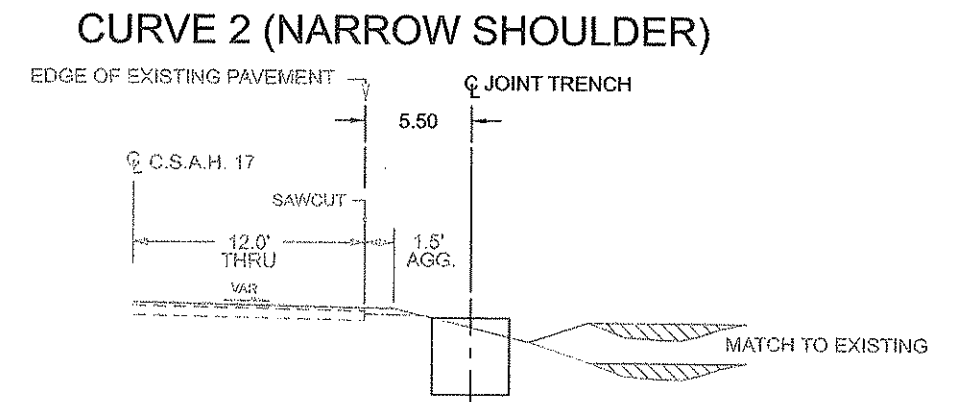
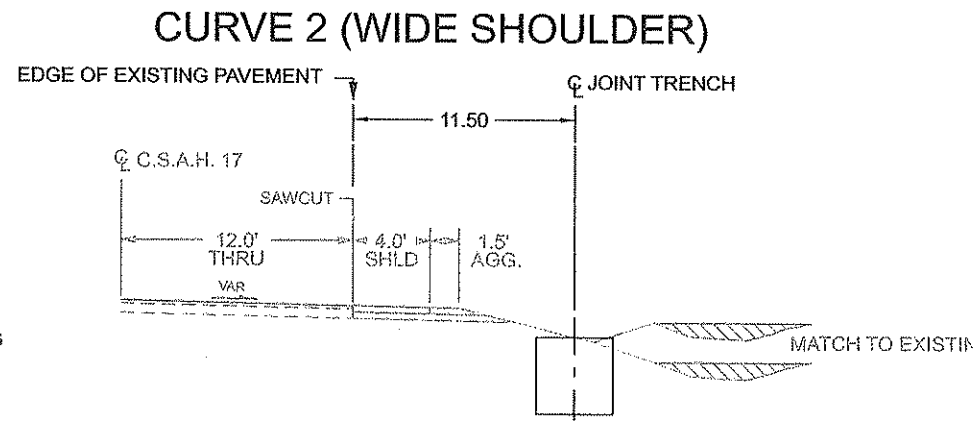
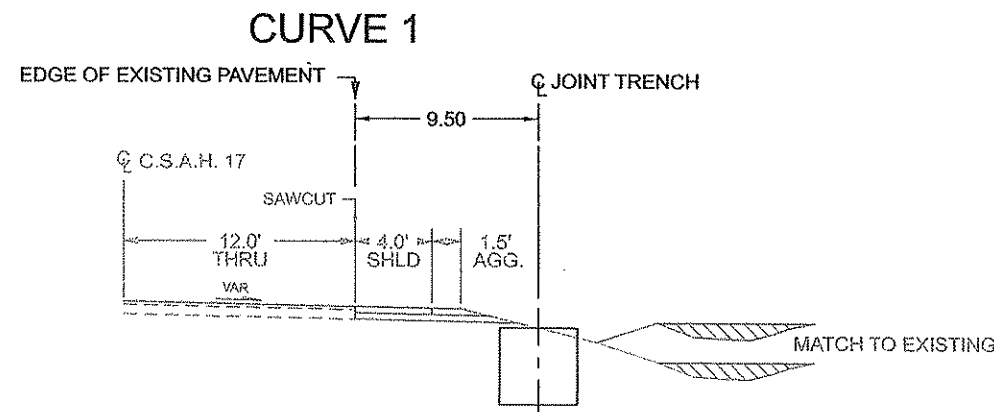
PRIVATE UTILITY OWNERS		AA
CITY OF COLUMBUS 444 CEDAR ST, SUITE 1500 SAINT PAUL, MN 55151 CONTACT LARRY BOHRER CITY ENGINEER TEL: 651-292-4400	XCEL ENERGY CONTACT CATHY RONNING TEL 651-462-6201	
CENTERPOINT ENERGY PO BOX 1165 MINNEAPOLIS, MN 55440-1165 CONTACT: ANDREW BALGOBIN TEL: 612-321-5426	CONNEXUS ENERGY 14601 RAMSEY BLVD RAMSEY, MN 55303 CONTACT SUE OVERBEEK TEL. 763-323-2760	
QWEST COMMUNICATIONS 390 COMMERCE DRIVE WOODBURY, MN 55125 CONTACT: THOMAS FRANKFURTH TEL. 651-714-7520	US CABLE CONTACT: JERRY OWENS TEL 612-221-6455	

CONNEXUS ENERGY - POWER					BB
STATION		OFFSET	SIZE & ITEM	REMARKS	
BEGIN	END				
104+79.86		23.4	PWR POLE	LEAVE AS IS	
108+00.16		23.7	PWR POLE	REMOVE	
110+73.71		98.3	PWR POLE	REMOVE	
113+40.20		20.8	PWR POLE	RELOCATE	
114+21.14		-72.8	PWR POLE	LEAVE AS IS	
148+83.94		28.0	PWR POLE	LEAVE AS IS	
150+88.18		28.3	PWR POLE	LEAVE AS IS	
150+85.90		61.2	PWR POLE	LEAVE AS IS	
153+07.96		24.3	PWR POLE	REMOVE	
153+15.82		-26.5	GUY POLE	REMOVE	
159+73.44		28.0	PWR POLE	REMOVE	
162+41.90		29.7	PWR POLE	REMOVE	
164+45.24		-35.2	PWR POLE	REMOVE	
167+79.71		41.0	PWR POLE	LEAVE AS IS	
167+79.71	167+85.67	41 TO -14.8	BURIED CROSSING	LEAVE AS IS	
167+85.67	168+36.15	-15.0	BURIED	LEAVE AS IS	
185+60.66		41.0	PWR POLE	LEAVE AS IS	

XCEL ENERGY - GAS				DD
STATION		OFFSET	SIZE & ITEM	REMARKS
BEGIN	END			
108+04.51	114+51.54	20' LT TO 30' LT		LEAVE AS IS
151+31.29	168+20.51	18' LT TO 30' LT		LEAVE AS IS
182+41.42	190+14.47	23' LT TO 30' LT		LEAVE AS IS

QWEST - TELEPHONE				CC
STATION		OFFSET	SIZE & ITEM	REMARKS
BEGIN	END			
106+62.82	115+39.68	16' RT TO 20' RT		RELOCATE

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



1	4-9-10	NJD	JEO	CAK	REVISED PER MN/DOT COMMENTS DATED 3/30/2010
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: CURT A. KOBILARCSIK
SIGNATURE: *Curt A. Kobilarsik*
DATE: 4-9-10 LICENSE NO. 24756

DRAWN BY: NJD DATE: 2-2-10
DESIGN BY: NJD DATE: 2-2-10
CHECKED BY: JEO DATE:




ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. 02-617-19

PRIVATE UTILITIES
JOINT TRENCH DETAIL
Sheet 5 of 44 Sheets

1. TOP OF THE SUBGRADE IS CONSIDERED THE CONTACT GRADE BETWEEN THE AGGREGATE BASE LAYER AND THE UNDERLYING SUBGRADE.
2. TOPSOIL SHALL BE DEFINED AS EXISTING SOILS WHICH MEET MN/DOT SPECIFICATION 3877 THAT WOULD BE SUITABLE FOR REUSE.
3. AGGREGATE SHOULDERING MATERIAL FOR THIS PROJECT SHALL BE CLASS 7 GRADATION IN ACCORDANCE WITH MN/DOT 2221 AND 3138.
4. SUITABLE GRADING MATERIAL CONSISTS OF MINERAL SOILS WHICH ARE FREE OF ORGANIC CONTENT AND DEBRIS, ARE NON-EXPANSIVE, AND ARE IN A CONDITION WHICH CAN MEET SPECIFIED COMPACTION LEVELS.
5. SLOPE DRESSING ON THE PROJECT IS DEFINED AS THE TOPSOIL OR OTHER SOIL PLACED DURING PRIOR CONSTRUCTION TO PROVIDE A MEDIUM FOR ESTABLISHING TURF. THESE SOILS MAY NOT MEET THE MINIMUM ORGANIC CONTENT AND OTHER REQUIREMENTS FOR TOPSOIL BORROW
6. 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.
7. WHERE CONNECTING NEW SURFACING ADJACENT TO ANY INPLACE PAVEMENTS TO BE WIDENED, CUT VERTICALLY TO THE BOTTOM OF THE INPLACE SURFACING OR TO THE BOTTOM OF THE NEW SURFACING DESIGN, WHICHEVER IS DEEPER, THEN AT 1:2 SLOPE TO THE BOTTOM OF THE RECOMMENDED SUBGRADE EXCAVATION.
8. 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.
9. WHERE MATCHING INTO INPLACE CROSSROADS, 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.
10. USE TACK COAT BETWEEN ALL BITUMINOUS MIXTURES AND PRIOR TO PLACING ANY BITUMINOUS MIXTURES ON THE EXISTING PAVEMENT. THE BITUMINOUS TACK COAT MATERIAL SHALL BE APPLIED AT A UNIFORM RATE OF 0.03 TO 0.05 GALLONS/SQ. YD. BETWEEN BITUMINOUS LAYERS AND 0.07 TO 0.10 GALLONS/SQ. YD. ON CONCRETE OR MILLED BITUMINOUS SURFACES PRIOR TO BEING OVERLAID. THE APPLICATION RATES ARE FOR UNDILUTED EMULSIONS (AS SUPPLIED FROM THE REFINERY) OR MC AND RC LIQUID ASPHALTS. THE ASPHALT EMULSION MAY BE FURTHER DILUTED IN THE FIELD IN ACCORDANCE WITH SPECIFICATION 2357.
11. PROVIDE A SAWCUT WHERE PLACING NEW PAVEMENT ADJACENT TO INPLACE PAVEMENT TO ENSURE A UNIFORM JOINT.
12. 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.
13. EMBANKMENT QUANTITIES SHOWN ON THE EARTHWORK TABULATION REPRESENT ALL EARTHWORK QUANTITIES BELOW THE TOP OF SUBGRADE. QUANTITIES REQUIRED ABOVE THE TOP OF SUBGRADE OR FOR TEMPORARY CONSTRUCTION ARE PROVIDED IN DETAIL ON THE BITUMINOUS AND AGGREGATE SUMMARY TABS.
14. 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.
15. DITCH BOTTOMS, TOE OF FILL, CUT RUNOUTS AND THE TOP EDGE OF THE BACKSLOPES SHALL BE ROUNDED REGARDLESS OF THE SECTION USED ON THE CROSS SECTION SHEETS.
16. ANY DEBRIS WHICH MAY BE ENCOUNTERED DURING GRADING SHALL BECOME PROPERTY OF THE CONTRACTOR AND DISPOSED OF OFF THE PROJECT RIGHT OF WAY IN A SUITABLE DISPOSAL AREA AS APPROVED BY THE ENGINEER.
17. UNSUITABLE SOILS NOT USED ON THE PROJECT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND REMOVED FROM THE PROJECT AND DISPOSED OF IN ACCORDANCE WITH MN/DOT SPECIFICATIONS.
18. INPLACE BITUMINOUS PAVEMENT RANGES FROM 4" TO 9" THICK. (AVERAGE 5"). FOR INFORMATION ONLY, CONTRACTOR TO VERIFY PAVEMENT DEPTH PRIOR TO PLACING BID. SEE BORING REPORTS
19. AGGREGATE BASE MATERIAL SHALL BE 100% CRUSHED AND MEET THE REQUIREMENTS OF MN/DOT SPEC. 3138, CLASS 5.
20. COMPACTION OF ALL AGGREGATE SURFACING, AGGREGATE SHOULDERING, AND AGGREGATE BASE SHALL BE ACHIEVED BY THE "SPECIFIC DENSITY COMPACTION METHOD" DESCRIBED IN MN/DOT 2211.3C.
21. EMBANKMENT CONSTRUCTION SHALL BE PERFORMED AS REQUIRED BY MN/DOT SPECIFICATION 2105.
22. COMPACTION OF ALL EMBANKMENT CONSTRUCTION SHALL BE OBTAINED BY THE "MODIFIED PENETRATION INDEX METHOD" DESCRIBED IN MN/DOT 2105.3F
23. COMPACTION OF ALL PERMANENT BITUMINOUS MIXTURES SHALL BE THE "MAXIMUM DENSITY METHOD" DESCRIBED IN MN/DOT 2360.6B

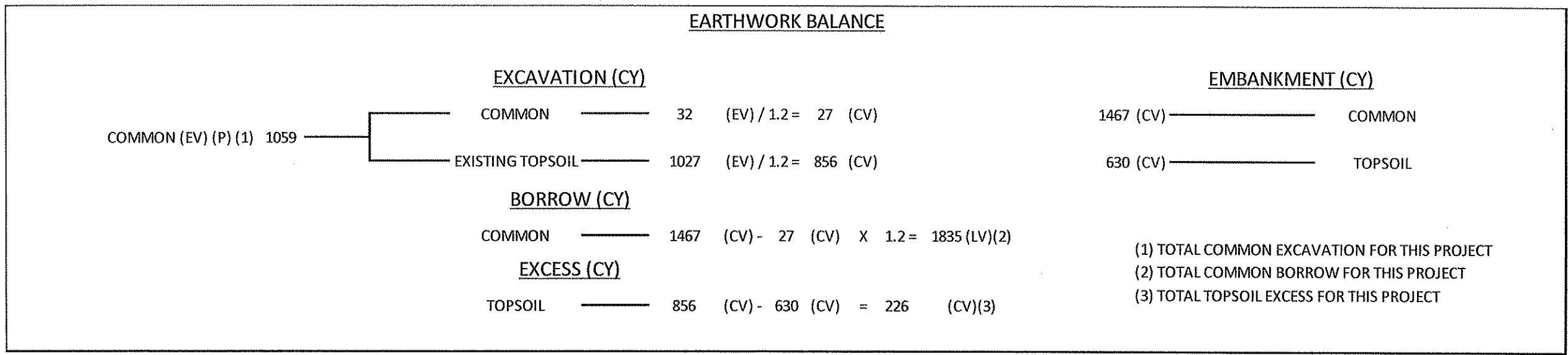
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NO	DATE	BY	CHKD	APPR	REVISION												

STATION	EMBANKMENT VOLUMES			
	EXCAVATION COMMON (C.Y.)	SLOPE DRESSING (C.Y.)	SUITABLE GRADING (C.Y.)	AGGREGATE (C.Y.)
105+82.08				
106+50.00	25	14	29	9
107+00.00	16	8	18	7
107+50.00	16	8	19	6
108+00.00	18	11	26	6
108+50.00	18	11	25	7
109+00.00	17	11	24	6
109+50.00	17	10	27	6
110+00.00	15	8	22	6
110+50.00	15	6	11	7
111+00.00	13	5	5	7
111+50.00	14	6	9	7
112+00.00	15	8	18	6
112+50.00	15	8	14	5
113+00.00	14	9	15	3
113+50.00	16	10	21	3
114+00.00	13	8	21	3
114+50.00	12	7	22	3
114+98.66	14	8	24	3
SUBTOTAL (A)	283	156	350	100

STATION	EMBANKMENT VOLUMES			
	EXCAVATION COMMON (C.Y.)	SLOPE DRESSING (C.Y.)	SUITABLE GRADING (C.Y.)	AGGREGATE (C.Y.)
149+05.93				
149+50.00	17	10	27	6
150+00.00	21	13	32	7
150+50.00	19	11	29	7
151+00.00	17	10	33	6
151+50.00	18	11	34	6
152+00.00	20	12	36	6
152+50.00	21	13	37	7
153+00.00	17	9	22	7
153+50.00	15	7	11	6
154+00.00	17	10	10	6
154+50.00	20	13	22	6
155+00.00	20	14	29	6
155+50.00	19	13	26	6
156+00.00	16	11	23	5
156+50.00	13	9	18	3
157+00.00	13	9	16	3
157+50.00	13	9	20	3
158+00.00	14	10	22	3
158+50.00	13	9	15	3
159+00.00	13	9	11	3
159+50.00	12	8	8	3
160+00.00	14	8	7	6
160+50.00	17	11	15	8
161+00.00	18	11	18	6
161+50.00	18	11	15	6
162+00.00	18	12	19	6
162+50.00	18	11	24	6
163+00.00	17	10	22	6
163+50.00	17	10	17	6
164+00.00	16	8	7	6
164+50.00	17	9	5	6
165+00.00	18	12	28	6
165+50.00	19	12	46	6
166+00.00	19	13	45	6
166+50.00	22	12	44	6
167+00.00	22	11	38	6
167+50.00	18	12	37	6
168+10.92	24	14	47	8
SUBTOTAL (B)	660	407	915	214

STATION	EMBANKMENT VOLUMES			
	EXCAVATION COMMON (C.Y.)	SLOPE DRESSING (C.Y.)	SUITABLE GRADING (C.Y.)	AGGREGATE (C.Y.)
184+65.30				
185+00.00	17	11	40	4
185+50.00	20	13	34	6
186+00.00	14	7	14	7
186+50.00	14	6	15	7
187+00.00	18	10	33	6
187+50.00	19	12	40	6
187+87.51	14	8	26	5
SUBTOTAL (C)	116	67	202	41

EARTHWORK SUMMARY				A
STATION	EMBANKMENT VOLUMES			
	EXCAVATION COMMON (C.Y.)	SLOPE DRESSING (C.Y.)	SUITABLE GRADING (C.Y.)	AGGREGATE (C.Y.)
TOTAL (A+B+C)	1059	630	1467	355



NO	DATE	BY	CKD	APPR	REVISION

NAME: p:\02-617-19\plan\0261719_EW_P1.dgn 3/5/2010 1:37:24 PM

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PRINT NAME: CURT A. KOBILARCSIK

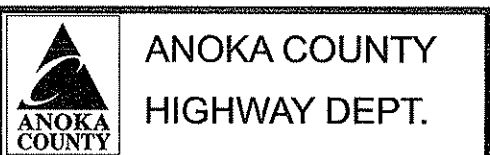
SIGNATURE: *Curt Kobilarsik*

DATE: 3-8-10 LICENSE NO. 24758

DRAWN BY: NJD DATE: 1-19-10

DESIGN BY: NJD DATE: 1-19-10

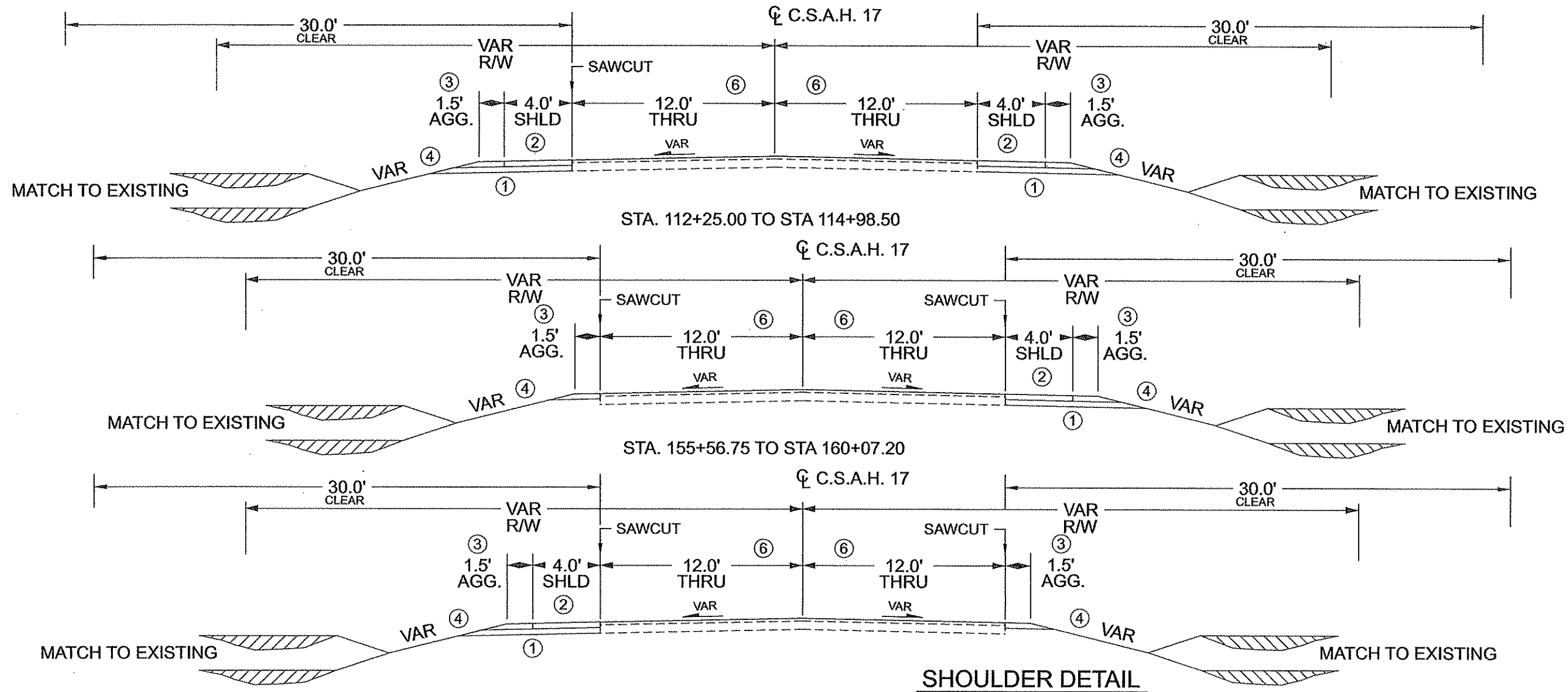
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STATE PROJECT NO. 02-617-19

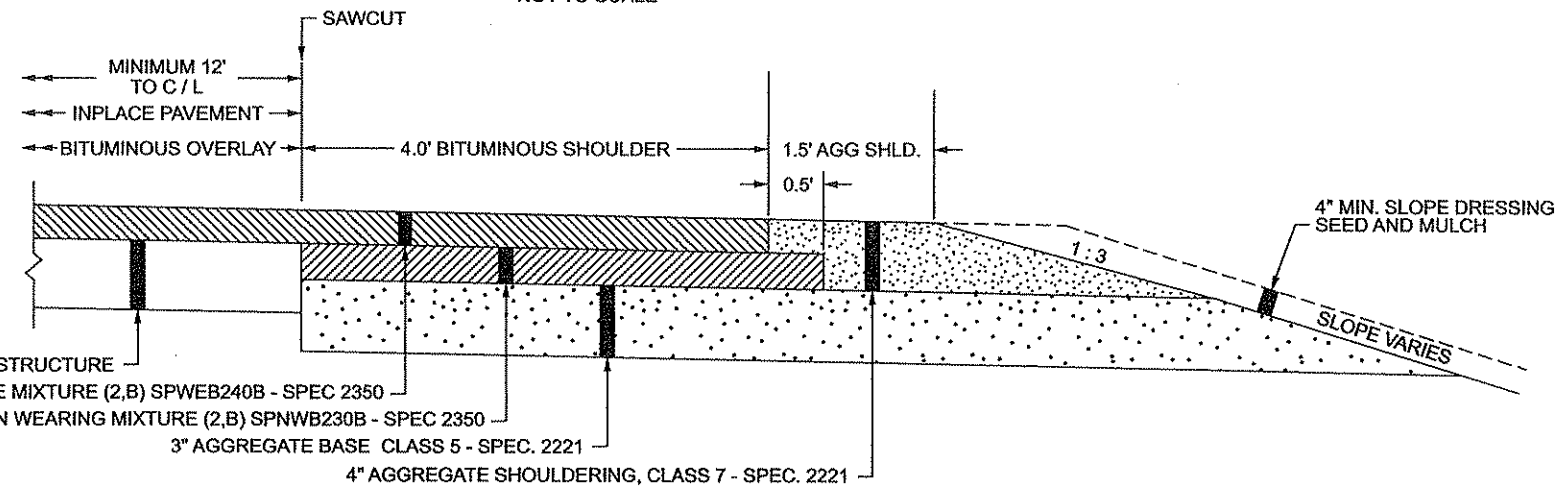
C.S.A.H. 17 (LEXINGTON AVE.) LANE EXPANSION

STA. 105+82.00 TO STA 112+25.00 STA. 149+06.00 TO STA 155+56.75
 STA. 184+65.30 TO STA 187+87.50 STA. 160+07.20 TO STA 168+11.00



SHOULDER DETAIL

NOT TO SCALE



TYPICAL SECTION NOTES

- ① GRADING GRADE CROSS SLOPES WILL BE THE SAME AS FINISHED GRADE UNLESS OTHERWISE SPECIFIED
- ② SHOULDER CROSS SLOPES WILL BE THE SAME AS THE EXISTING CROSS SLOPE AT EACH CROSS SECTION.
- ③ CLASS 7 AGGREGATE SHOULDER
- ④ 4" SLOPE DRESSING AND SEED ON ALL DISTURBED AREAS
- ⑤ 3.5" EXISTING BITUMINOUS CURVE 1
6.0" EXISTING BITUMINOUS CURVE 2
8.5" EXISTING BITUMINOUS CURVE 3
FOR REFERENCE ONLY
- ⑥ INPLACE GRAVEL EQUIVALENCY RANGES FROM 19.9 TO 31.1 FOR REFERENCE ONLY

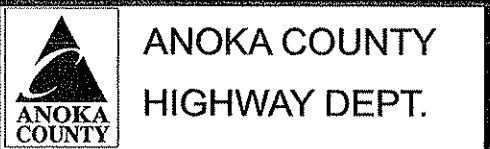
NO	DATE	BY	CKD	APPR	REVISION

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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: CURTA, KOBILARCSIK
 SIGNATURE: *Curta Kobilarsik*
 DATE: 3-8-10 LICENSE NO. 24756

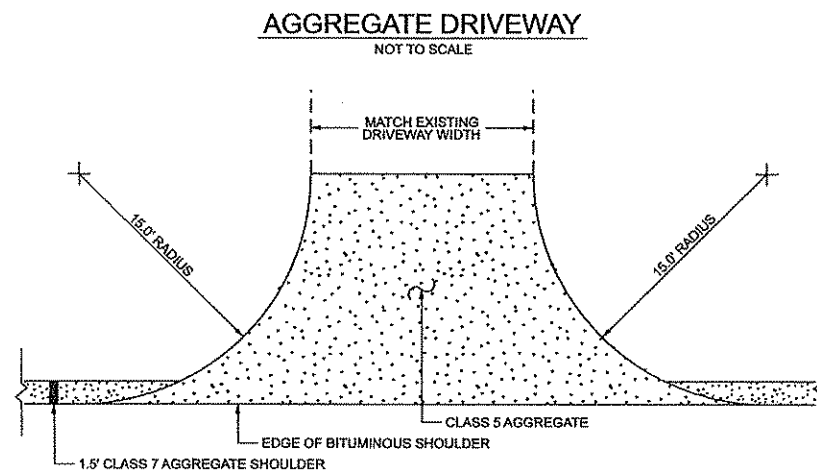
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STATE PROJECT NO. 02-617-19

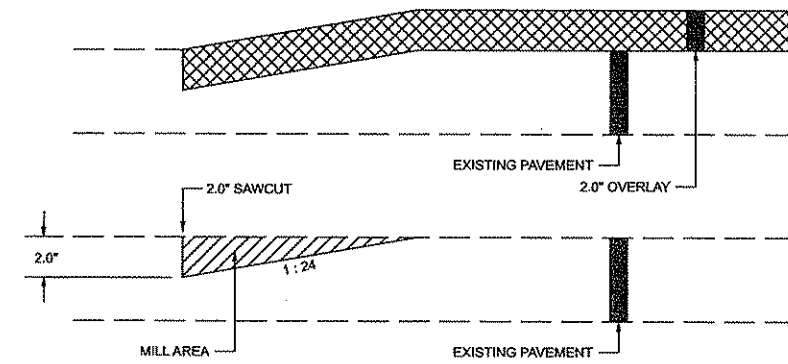
TYPICAL SECTIONS

Sheet 8 of 44 Sheets



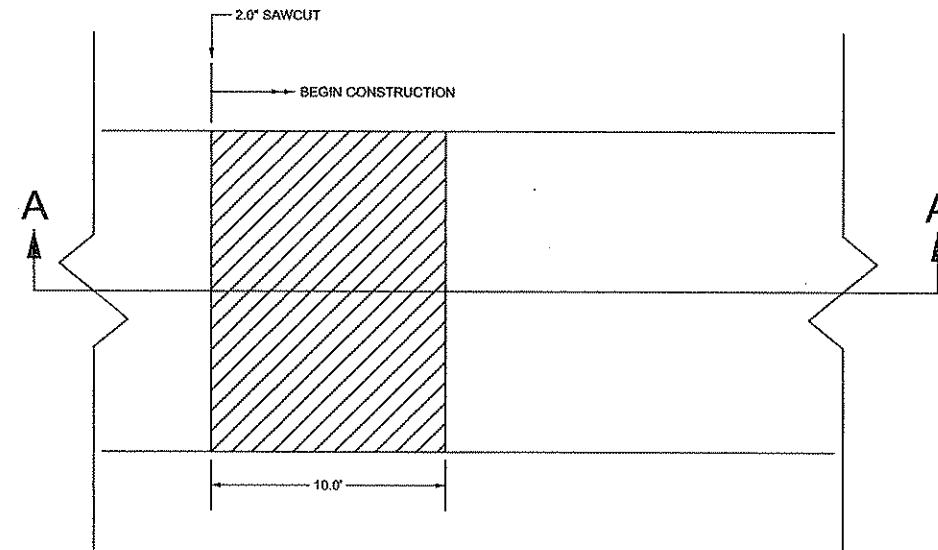
AGGREGATE DRIVEWAY DEPTH SHALL BE 5.0"

END MILLING / OVERLAY
NOT TO SCALE



SECTION AA (OVERLAY)
NOT TO SCALE

SECTION AA (EDGE MILL)
NOT TO SCALE



EDGE MILL PLAN VIEW
NOT TO SCALE

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-19\Plan\0261719_MDET.dgn

3/6/2010 1:37:28 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: CURT A. KOBIARCSIK

SIGNATURE: *Curt A. Kobiarcsik*

DATE: 3-8-10 LICENSE NO. 24756

DRAWN BY: NJD DATE: 1-19-10

DESIGN BY: NJD DATE: 1-19-10

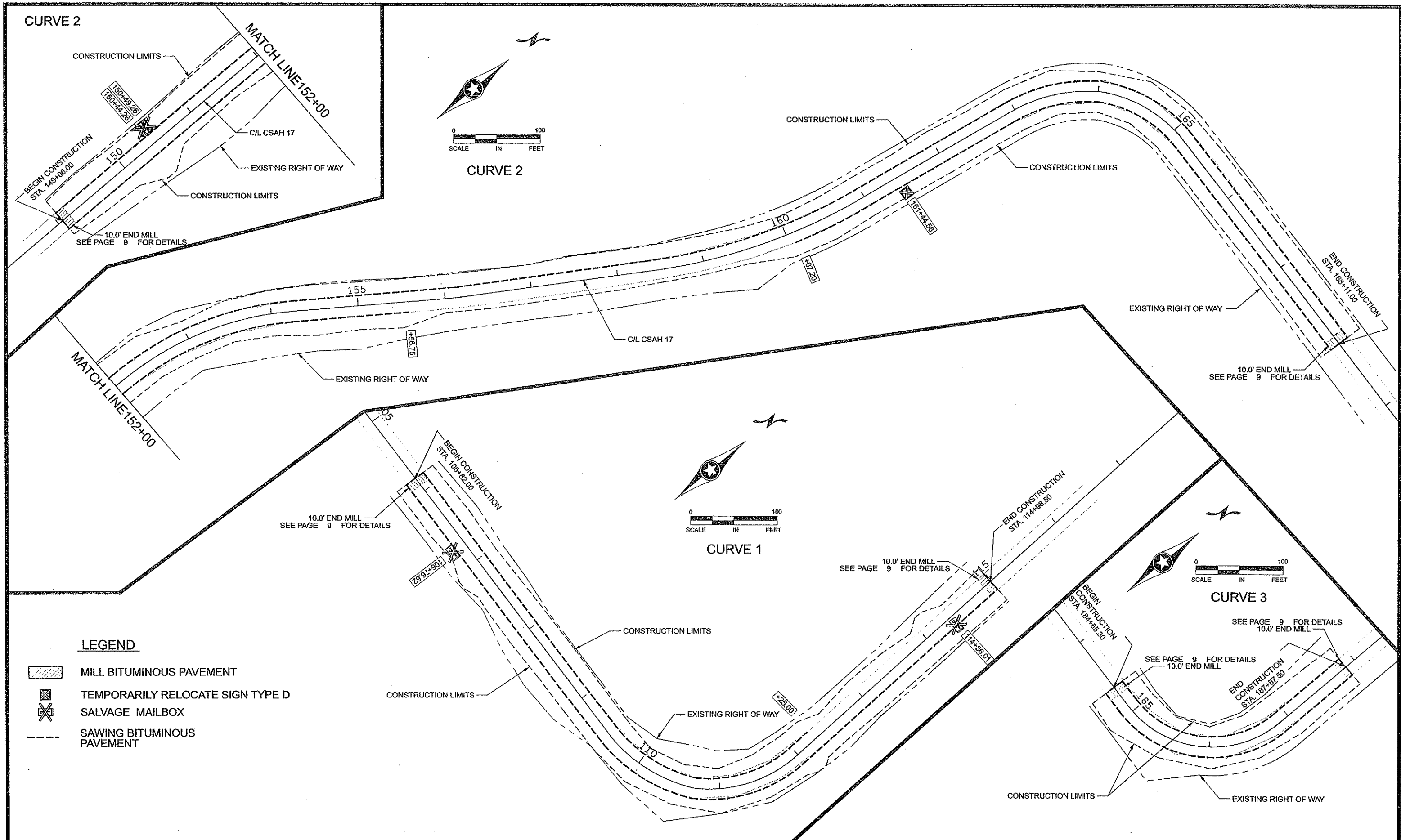
CHECKED BY: JEO DATE:



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. 02-617-19

MISCELLANEOUS DETAILS







CURVE 2

CURVE 2

CURVE 1

CURVE 3

LEGEND

-  MILL BITUMINOUS PAVEMENT
-  TEMPORARILY RELOCATE SIGN TYPE D
-  SALVAGE MAILBOX
-  SAWING BITUMINOUS PAVEMENT

THEREBY 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: CURT A. KOBIARCSIK
 SIGNATURE: *Curt A. Kobiarsik*
 DATE: 3-8-10 LICENSE NO. 24756

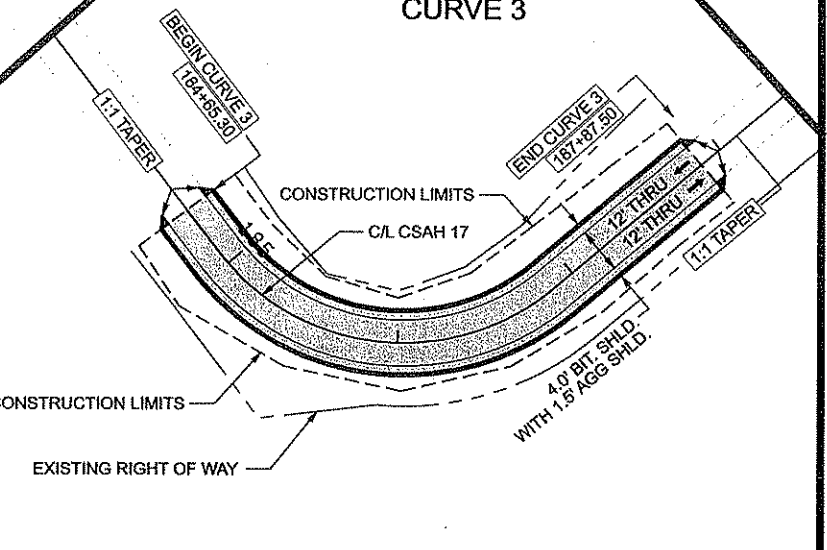
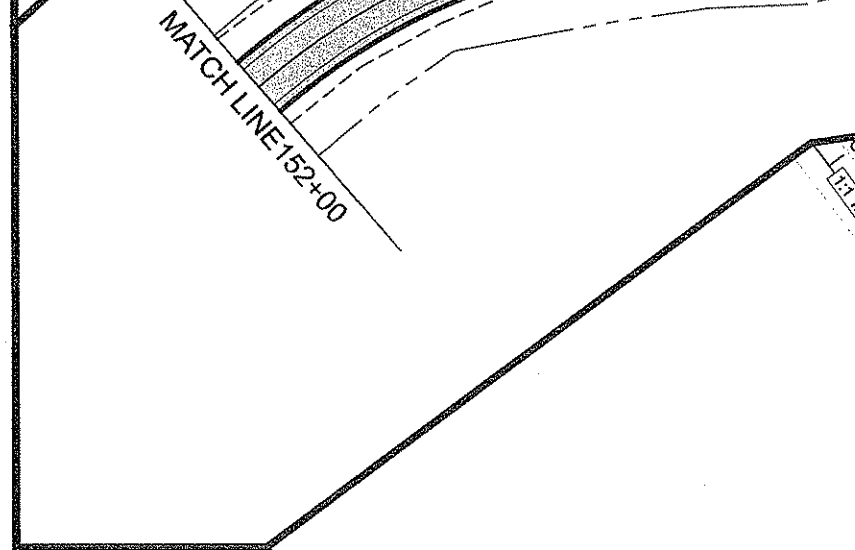
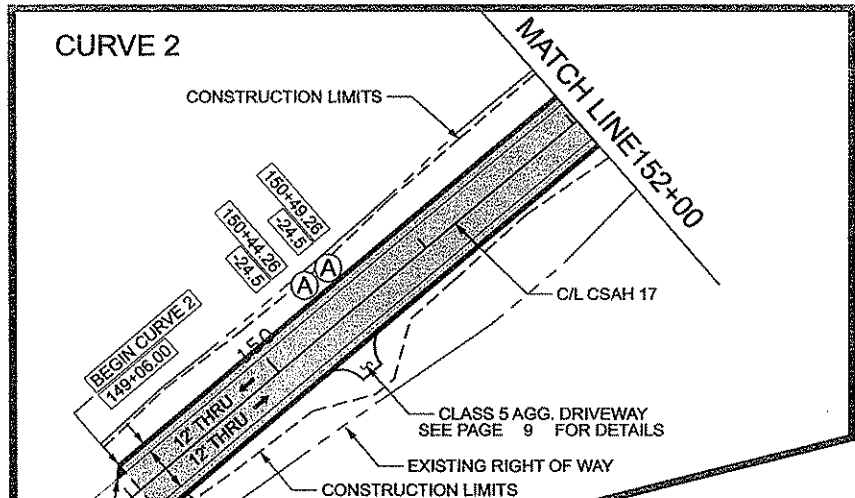
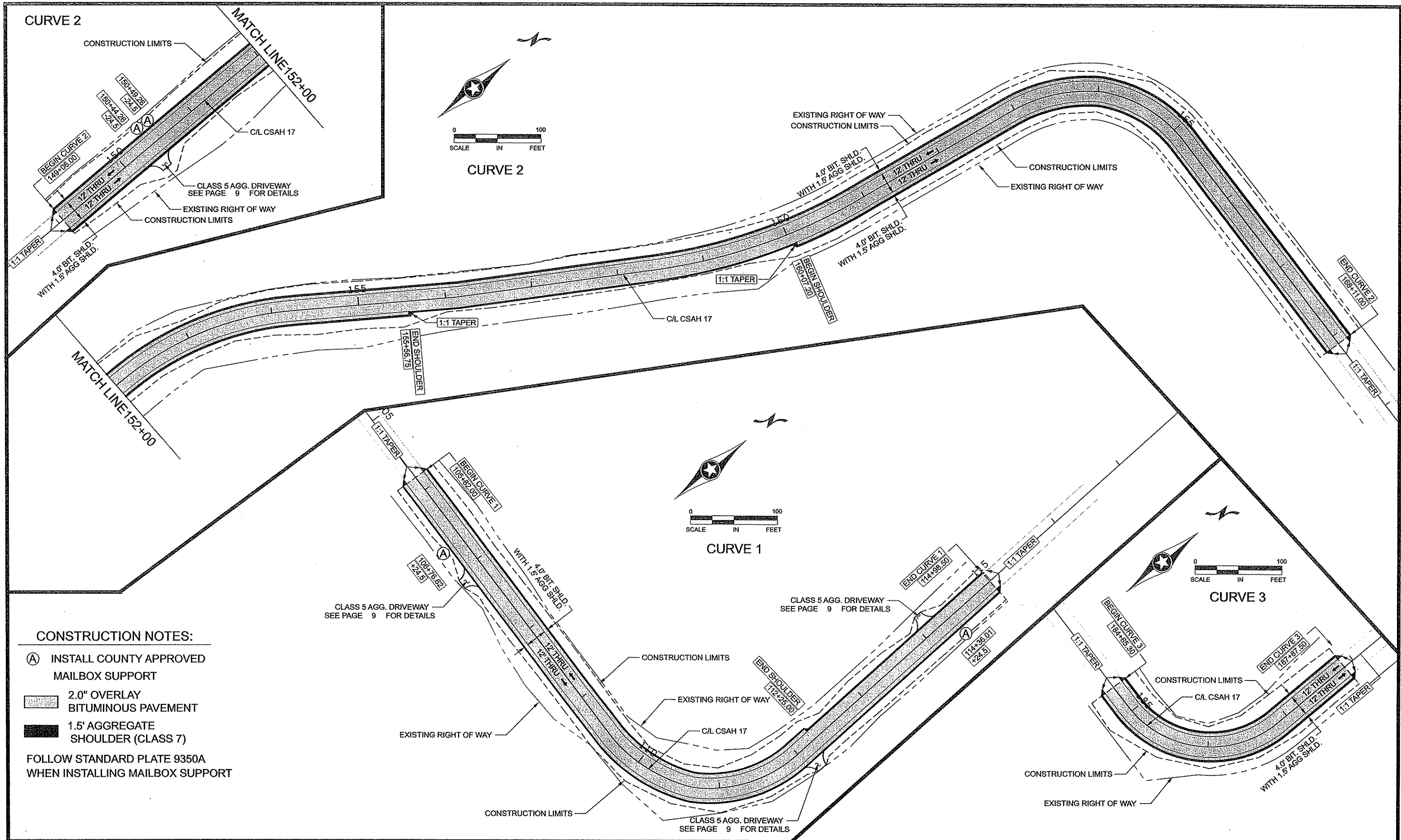
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 DESIGN BY: NJD DATE: 1-19-10
 CHECKED BY: JEO DATE:



**ANOKA COUNTY
HIGHWAY DEPT.**

STATE PROJECT NO. 02-617-19

REMOVAL PLAN



CONSTRUCTION NOTES:

- (A) INSTALL COUNTY APPROVED MAILBOX SUPPORT
 - 2.0" OVERLAY BITUMINOUS PAVEMENT
 - 1.5' AGGREGATE SHOULDER (CLASS 7)
- FOLLOW STANDARD PLATE 9350A WHEN INSTALLING MAILBOX SUPPORT

NO	DATE	BY	CKD	APPR	REVISION

NAME: p:\02-617-19\plan\0261719_CP_P1.dgn 3/5/2010 1:37:33 PM

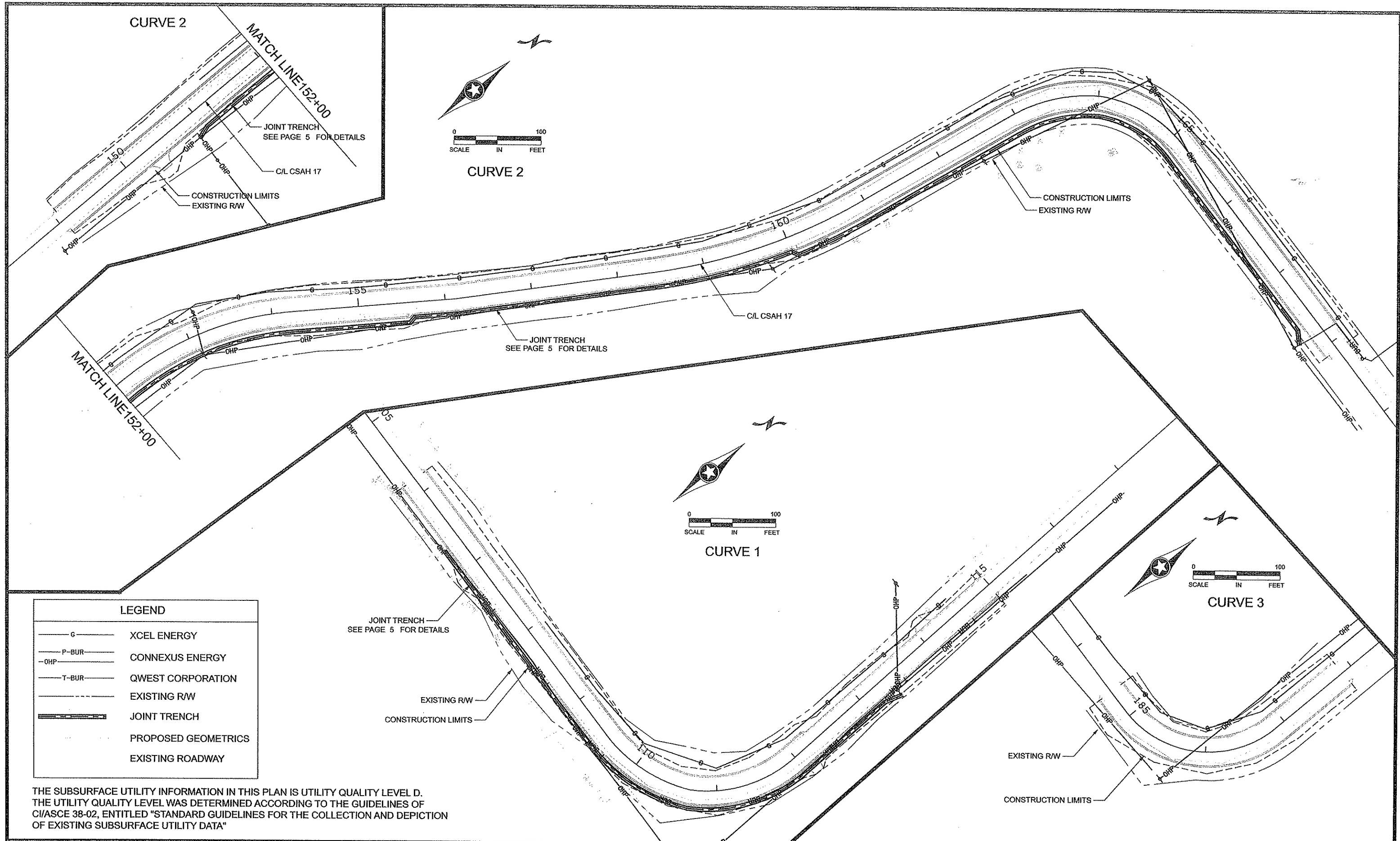
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PRINT NAME: CURT A. KOBIARCSIK
 SIGNATURE: *Curt Kobiarcsik*
 DATE: 3-8-10 LICENSE NO. 24756

DRAWN BY: NJD DATE: 1-19-10
 DESIGN BY: NJD DATE: 1-19-10
 CHECKED BY: JEO DATE:

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-19



LEGEND

	XCEL ENERGY
	CONNEXUS ENERGY
	QWEST CORPORATION
	EXISTING R/W
	JOINT TRENCH
	PROPOSED GEOMETRICS
	EXISTING ROADWAY

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

1	4-9-10	NJD	JEO	CAK	REVISED PER MNDOT COMMENTS DATED 3/30/2010
NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\02-617-19\Plan\0261719_UTIL_P1.dgn					
4/9/2010 11:09:40 AM					

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PRINT NAME: CURT A. KOBILARCSIK
 SIGNATURE: *Curt A. Kobilarsik*
 DATE: 4-9-10 LICENSE NO. 24756

DRAWN BY: NJD DATE: 2-2-10
 DESIGN BY: NJD DATE: 2-2-10
 CHECKED BY: JEO DATE:



**ANOKA COUNTY
HIGHWAY DEPT.**

STATE PROJECT NO. 02-617-19

UTILITY PLAN
 Sheet 12 of 44 Sheets

SALVAGE SIGN TYPE C						C
STATION	OFFSET	SIGN DESIGNATION	SIGN SIZE	TOTAL INSTALLATIONS	NOTES	SIGN MATERIAL TYPE
99+85	LT	W14-3	36" x 48"	1		EG
100+25	RT	W1-1L	36" x 36"	1		DG
100+25	RT	W13-1	24" x 24"	1	A	DG
109+00	RT	W1-8	18" x 24"	2	C	HI
109+50	RT	W1-8	18" x 24"	2	C	HI
110+00	RT	W1-8	18" x 24"	2	C	HI
110+50	RT	W1-8	18" x 24"	2	C	HI
110+50	RT	W1-6	48" x 24"	1		HI
110+50	RT	X4-2	18" x 18"	2	B	HI
110+50	RT	W1-6	48" x 24"	1		HI
110+50	RT	X4-2	18" x 18"	2	B	HI
111+00	RT	W1-8	18" x 24"	2	C	HI
111+50	RT	W1-8	18" x 24"	2	C	HI
112+00	RT	W1-8	18" x 24"	2	C	HI
112+50	RT	W1-8	18" x 24"	2	C	HI
121+16	LT	W1-1R	36" x 36"	1		DG
121+16	LT	W13-1	24" x 24"	1	A	DG
122+35	RT	W14-3	36" x 48"	0	D	DG
142+50	LT	W14-3	36" x 48"	1		HI
143+50	RT	W1-5R	36" x 36"	1		DG
143+50	RT	W13-1	24" x 24"	1	A	DG
152+28	LT	W1-8	18" x 24"	2	C	HI
152+77	LT	W1-8	18" x 24"	2	C	HI
153+00	LT	W1-8	18" x 24"	2	C	HI
153+40	LT	W1-8	18" x 24"	2	C	HI
153+40	LT	W1-6	48" x 24"	1		HI
153+40	LT	X4-2	18" x 18"	2	B	DG
153+40	LT	W1-6	48" x 24"	1		HI
153+40	LT	X4-2	18" x 18"	2	B	DG
153+70	LT	W1-8	18" x 24"	2	C	HI
161+00	RT	W1-1R	36" x 36"	1		DG
161+00	RT	W13-1	24" x 24"	1	A	DG
163+50	LT	W1-8	18" x 24"	2	C	HI
163+90	LT	W1-8	18" x 24"	2	C	HI
164+30	LT	W1-8	18" x 24"	2	C	HI
164+20	LT	W1-6	48" x 24"	1		HI
164+20	LT	X4-2	18" x 18"	2	B	DG
164+50	LT	W1-6	48" x 24"	1		DG
TOTAL A				58		

SALVAGE SIGN TYPE C						C
STATION	OFFSET	SIGN DESIGNATION	SIGN SIZE	TOTAL INSTALLATIONS	NOTES	SIGN MATERIAL TYPE
164+50	LT	X4-2	18" x 18"	2	B	DG
164+70	LT	W1-8	18" x 24"	2	C	HI
165+20	LT	W1-8	18" x 24"	2	C	HI
174+00	LT	W1-5L	36" x 36"	1		DG
174+00	LT	W13-1	24" x 24"	1	A	HI
178+00	RT	W1-1L	36" x 36"	1		DG
178+00	RT	W13-1	24" x 24"	1	A	DG
178+80	LT	W14-3	36" x 48"	1		HI
179+20	RT	W14-3	36" x 48"	1		HI
185+00	RT	W1-8	18" x 24"	2	C	HI
185+50	RT	W1-8	18" x 24"	2	C	HI
185+70	RT	W1-8	18" x 24"	2	C	HI
185+90	RT	W1-6	48" x 24"	1		DG
185+90	RT	X4-2	18" x 18"	2	B	DG
185+90	RT	W1-6	48" x 24"	1		DG
185+90	RT	X4-2	18" x 18"	2	B	DG
186+10	RT	W1-8	18" x 24"	2	C	HI
186+50	RT	W1-8	18" x 24"	2	C	HI
187+00	RT	W1-8	18" x 24"	2	C	HI
195+70	LT	W1-1R	36" x 36"	1		DG
195+70	LT	W13-1	24" x 24"	1	A	DG
197+50	RT	W14-3	36" x 48"	1		HI
201+00	LT	W14-3	36" x 48"	1		HI
202+10	RT	W1-1L	36" x 36"	1		DG
202+10	RT	W13-1	24" x 24"	1	A	DG
210+90	RT	W1-8	18" x 24"	2	C	HI
211+40	RT	W1-8	18" x 24"	2	C	HI
212+00	RT	W1-6	48" x 24"	1		DG
212+00	RT	X4-2	18" x 18"	2	B	DG
212+00	RT	W1-6	48" x 24"	1		DG
212+00	RT	X4-2	18" x 18"	2	B	DG
213+00	RT	W1-8	18" x 24"	2	C	HI
221+60	LT	W1-1R	36" x 36"	1		DG
221+60	LT	W13-1	24" x 24"	1	A	DG
222+10	RT	W14-3	36" x 48"	0	D	DG
233+80	LT	W14-3	36" x 48"	1		HI
252+00	RT	W14-3	36" x 48"	1		HI
253+60	LT	W14-3	36" x 48"	1		HI
256+00	RT	W1-2R	36" x 36"	1		DG
256+00	RT	W13-1	24" x 24"	1	A	DG
265+50	LT	W1-8	18" x 24"	2	C	HI
266+50	LT	W1-8	18" x 24"	2	C	HI
267+50	LT	W1-8	18" x 24"	2	C	HI
268+50	LT	W1-8	18" x 24"	2	C	HI
274+70	LT	W1-2L	36" x 36"	1		DG
274+70	LT	W13-1	24" x 24"	1	A	HI
TOTAL B				65		
GRAND TOTAL (A) + (B)				123		

NOTES: THIS TABLE ILLUSTRATES QUANTITIES FOR SALVAGE SIGN TYPE "C".

A	SIGN MOUNTED BELOW W1-XX SIGN ASSEMBLY	DG	DIAMOND GRADE
B	SIGN MOUNTED BELOW W1-6 SIGN ASSEMBLY	HI	HIGH INTENSITY
C	CHEVRON SIGNS MOUNTED BACK TO BACK ON SIGN POST.	EG	ENGINEER GRADE
D	W14-3 ALREADY DIAMOND GRADE. LEAVE INPLACE		

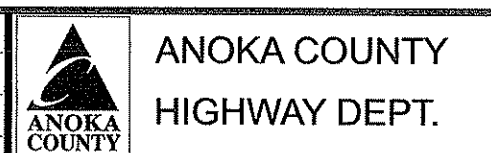
NO	DATE	BY	CKD	APPR	REVISION

NAME: p:\02-617-19\plant\0261719_SSTAB_P1.dgn
3/5/2010 1:38:00 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: CURTA KOBLARCSIK
SIGNATURE: *Curta Koblarcsik*
DATE: 3-8-10 LICENSE NO. 24756

DRAWN BY: NJD DATE: 1-19-10
DESIGN BY: MTH DATE: 1-19-10
CHECKED BY: JEO DATE:



STATE PROJECT NO. 02-617-19

SIGN PANELS TYPE							I
M. U. T. C. D. CODE	SIZE	PANEL AREA FT. ²	INSERT	QUANTITY	No. POST	MOUNTING HEIGHT (To Panel Top Edge) FT. (*4)	
W1-1L	48' x 48'	16.00		3	2	7.0'	
W1-1R	48' x 48'	16.00		3	2	7.0'	
W1-2L	48' x 48'	16.00		1	2	7.0'	
W1-2R	48' x 48'	16.00		1	2	7.0'	
W1-5L	48' x 48'	16.00		1	2	7.0'	
W1-5R	48' x 48'	16.00		1	2	7.0'	
W1-6	72' x 36'	18.00		10	2	7.0'	
W1-8	30' x 36'	7.50		62	2 *3	7.0'	
W13-1	30' x 30'	6.25		10	*1		
W14-3	36' x 48'	5.56		9	2	7.0'	
X4-2	18' x 18'	2.25		20	*2	4.0'	

GENERAL NOTES:

- 1.) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
- 2.) POST LENGTHS ARE APPROXIMATE AND INCLUDE EMBEDMENT, BUT DO NOT INCLUDE ADDITIONAL LENGTH REQUIRED FOR SPLICE.
- 3.) SEE SHEETS 27-29 FOR STRUCTURAL DETAILS.
- 4.) SEE STANDARD SIGNS MANUAL FOR PUNCHING CODE AND DETAILED DRAWINGS OF TYPE C SIGN PANELS.

SPECIFIC NOTES:

- *1 MOUNTED BELOW W1-XX
- *2 MOUNTED BELOW W1-6
- *3 MOUNTED BACK TO BACK
- *4 MOUNTING HEIGHT IS MINIMUM
SEE SHEET 25-26 FOR TYPICAL MOUNTING

STRIPING SUMMARY							H
STATION FROM	STATION TO	OFFSET RT OR LT	4" SOLID LINE WHITE	4" BROKEN LINE WHITE	4" BROKEN LINE YELLOW	4" SOLID LINE YELLOW	4" DOUBLE YELLOW
			LIN FT	LIN FT	LIN FT	LIN FT	LIN FT
18+60	21+50	LT		290			
17+94	83+50	LT	6556		6121	1584	190
19+53	64+40	RT	4487				
65+44	84+60	RT	1816				
84+35	105+82.08	RT	2147.08		2147	1444	
84+35	105+82.08	LT	2147.08				
105+82.08	114+98.66	RT	916.58		619	619	300
105+82.08	114+98.66	LT	916.58				
114+98.66	129+11	RT	1412.34		1093	714	
114+98.66	129+11	LT	1412.34				
129+68	149+05.93	RT	1937.93		1938	654.5	
129+68	149+05.93	LT	1937.93				
149+05.93	168+10.92	RT	1904.99		573	573	1332
149+05.93	168+10.92	LT	1904.99				
168+10.92	184+65.30	RT	1654.38		1654	876	
168+10.92	184+65.30	LT	1654.38				
184+65.30	187+87.51	RT	322.21		222	222	110
184+65.30	187+87.51	LT	322.21				
187+87.51	211+63	RT	2375.5		2324.5	1956	51
187+87.51	264+46	LT	7658.49				
212+20	264+46	RT	5226		5156	2019	70
261+68	264+68	RT	300				
265+24	276+60	RT	1136				1200
265+24	276+60	LT	1155				
PROJECT TOTAL			51301	290	21848	10662	3253

1	4-9-10	NJD	JEO	CAK	REVISED PER MN/DOT COMMENTS DATED 3/30/2010
NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\02-617-19\base\Traffic\Curves from CSAH 18 to CSAH 22.dwg					

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: CURT A. KOBILARCSIK
 SIGNATURE:
 DATE: 4-9-10 REG. NO. 24756

DRAWN BY: MTH DATE: 1/15/10
 DESIGN BY: MTH DATE: 1/15/10
 CHECKED BY: RB DATE: 3/01/10

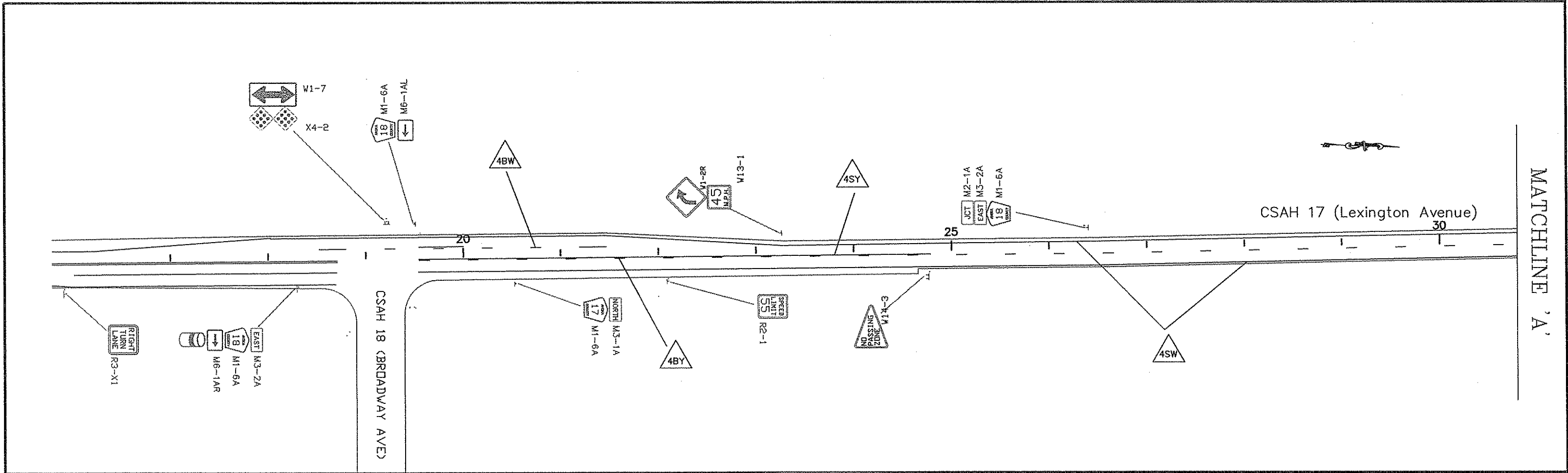


ANOKA COUNTY
HIGHWAY DEPT.

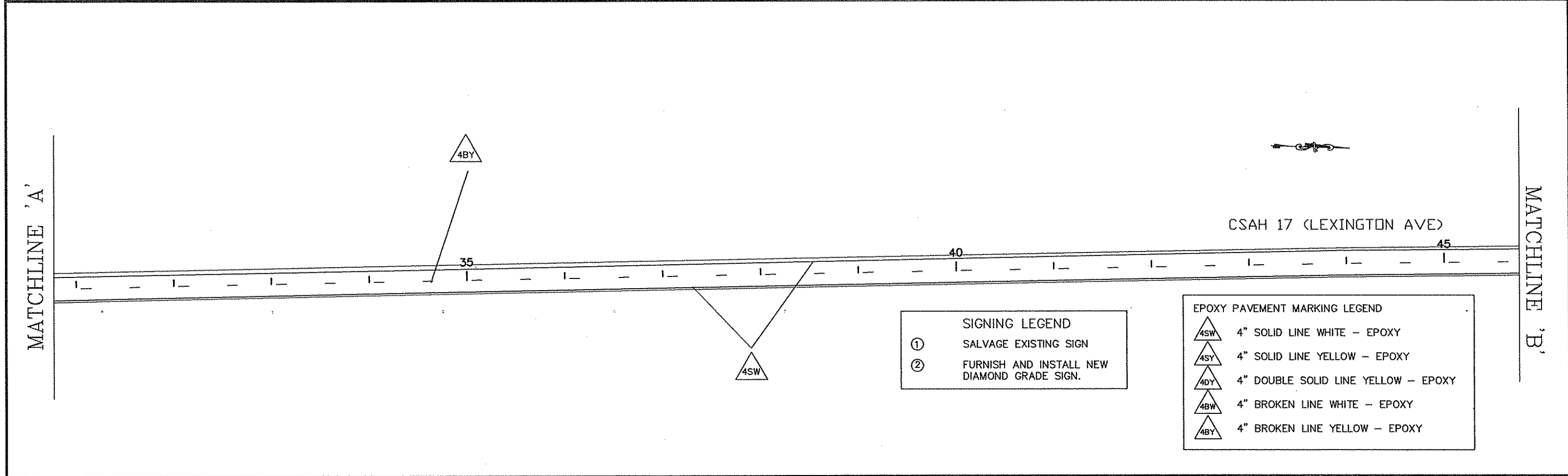
STATE PROJECT NO. 02-617-19

PERMANENT SIGNING AND STRIPING QUANTITIES

Sheet 14 of 44 Sheets



MATCHLINE 'A'



MATCHLINE 'B'

SIGNING LEGEND	
①	SALVAGE EXISTING SIGN
②	FURNISH AND INSTALL NEW DIAMOND GRADE SIGN.

EPOXY PAVEMENT MARKING LEGEND	
	4" SOLID LINE WHITE - EPOXY
	4" SOLID LINE YELLOW - EPOXY
	4" DOUBLE SOLID LINE YELLOW - EPOXY
	4" BROKEN LINE WHITE - EPOXY
	4" BROKEN LINE YELLOW - EPOXY

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-19\base\Traffic\Curves from CSAH 18 to CSAH 22.dwg

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

PRINT NAME: CURT KUBILARCSIK

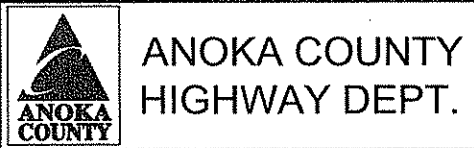
SIGNATURE: *Curt Kubilarcsik*

DATE: 3-8-10 REG. NO. 24756

DRAWN BY: MTH DATE: 11/24/09

DESIGN BY: MTH DATE: 11/24/09

CHECKED BY: _____ DATE: _____



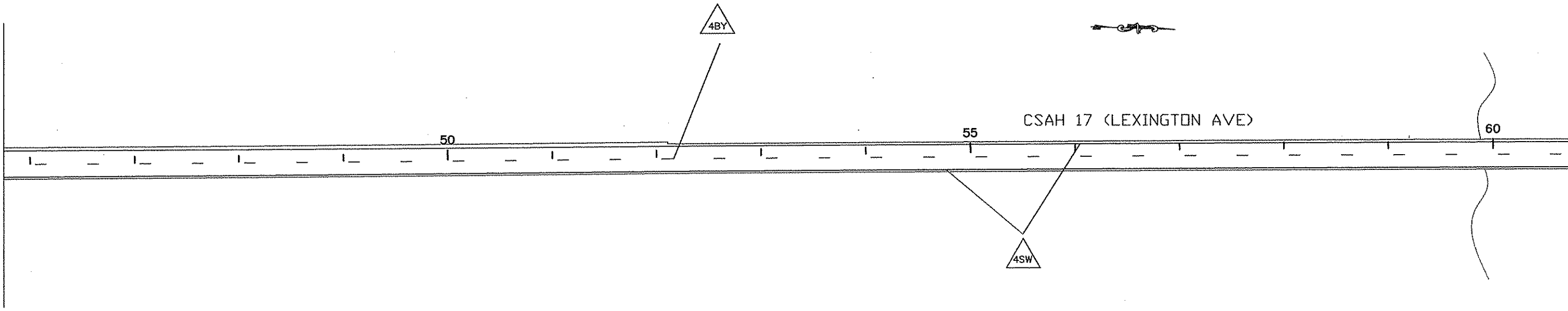
STATE PROJECT NO. 02-617-19

PERMANENT SIGNING AND STRIPING

Sheet 15 of 44 Sheets

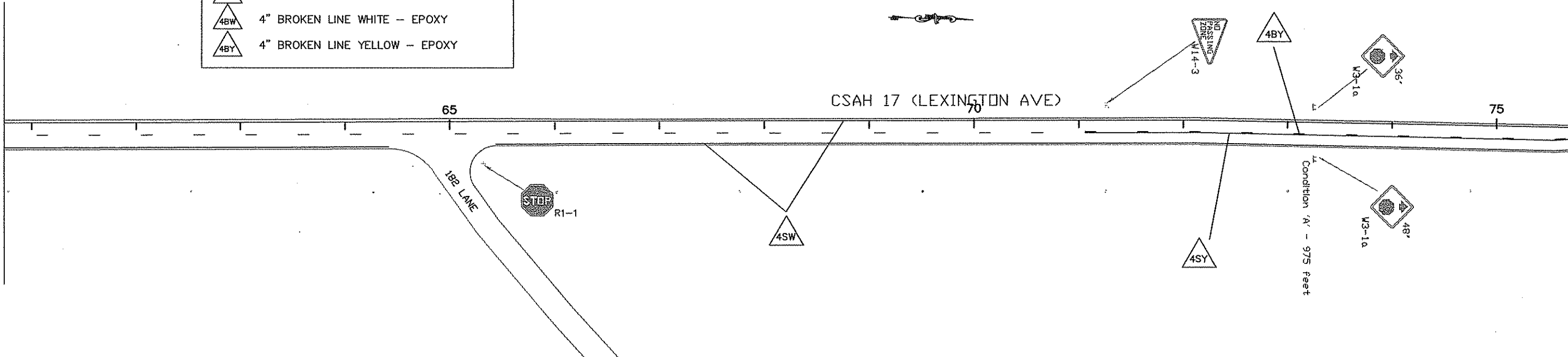
MATCHLINE 'B'

MATCHLINE 'C'



MATCHLINE 'C'

MATCHLINE 'D'



EPOXY PAVEMENT MARKING LEGEND

	4" SOLID LINE WHITE - EPOXY
	4" SOLID LINE YELLOW - EPOXY
	4" DOUBLE SOLID LINE YELLOW - EPOXY
	4" BROKEN LINE WHITE - EPOXY
	4" BROKEN LINE YELLOW - EPOXY

SIGNING LEGEND

①	SALVAGE EXISTING SIGN
②	FURNISH AND INSTALL NEW DIAMOND GRADE SIGN.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-19\base\Traffic\Curves from CSAH 18 to CSAH 22.dwg

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

PRINT NAME: CURT KOBIKARSIK

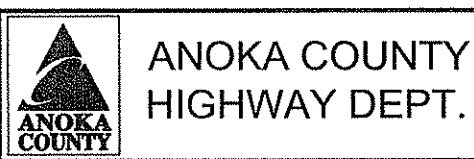
SIGNATURE: *Curt Kobikarsik*

DATE: 3-8-10 REG. NO. 24756

DRAWN BY: MTH DATE: 11/24/09

DESIGN BY: MTH DATE: 11/24/09

CHECKED BY: _____ DATE: _____

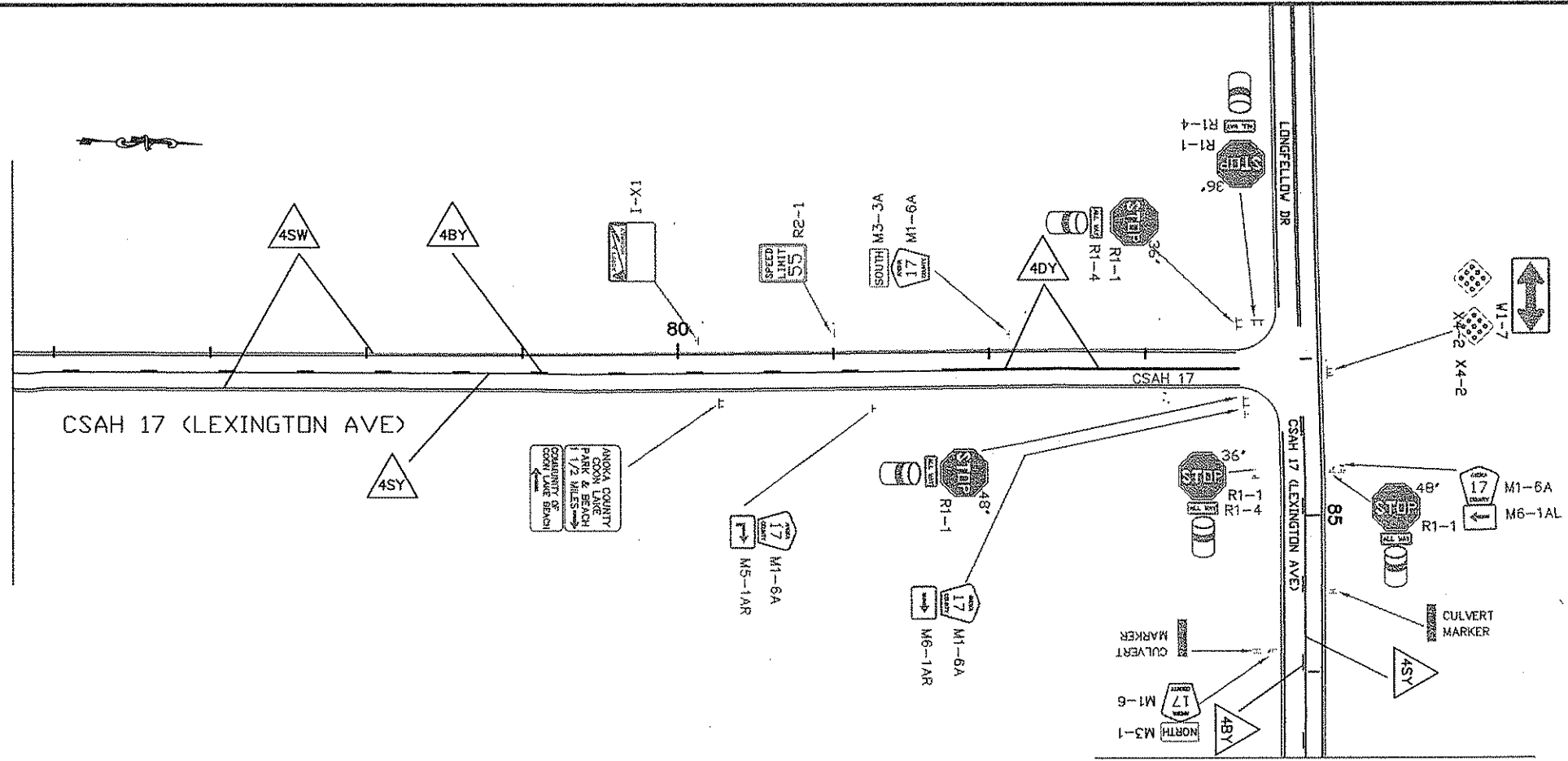


STATE PROJECT NO. 02-617-19

PERMANENT SIGNING AND STRIPING

Sheet 16 of 44 Sheets

MATCHLINE 'D'



SIGNING LEGEND

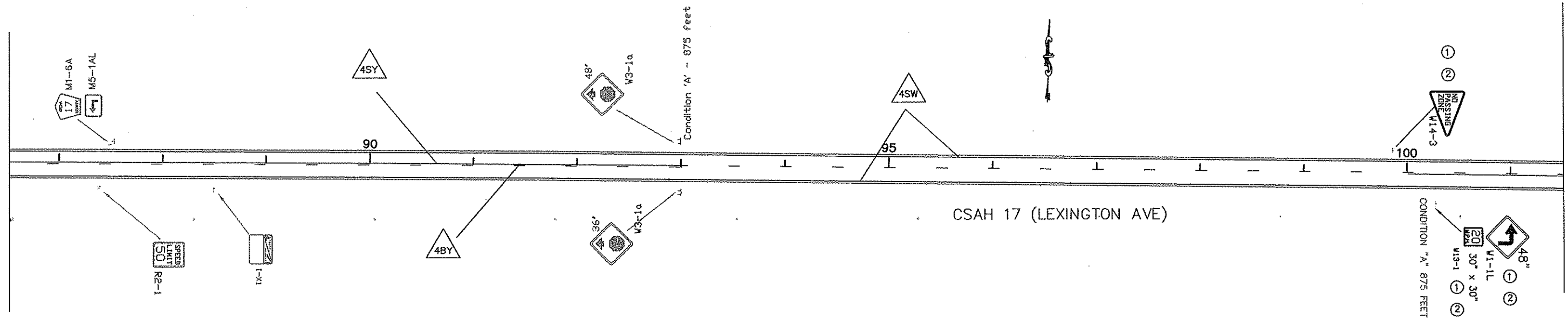
- ① SALVAGE EXISTING SIGN
- ② FURNISH AND INSTALL NEW DIAMOND GRADE SIGN.

EPOXY PAVEMENT MARKING LEGEND

- ▲4SW 4" SOLID LINE WHITE - EPOXY
- ▲4SY 4" SOLID LINE YELLOW - EPOXY
- ▲4DY 4" DOUBLE SOLID LINE YELLOW - EPOXY
- ▲4BW 4" BROKEN LINE WHITE - EPOXY
- ▲4BY 4" BROKEN LINE YELLOW - EPOXY

MATCHLINE 'E'

MATCHLINE 'E'



MATCHLINE 'F'

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-19\base\Traffic\Curves from CSAH 18 to CSAH 22.dwg

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

PRINT NAME: CHRISTOPHER KUBILARCIK

SIGNATURE: *Christopher Kubilarcik*

DATE: 3-8-10 REG. NO. 24756

DRAWN BY: MTH DATE: 11/24/09

DESIGN BY: MTH DATE: 11/24/09

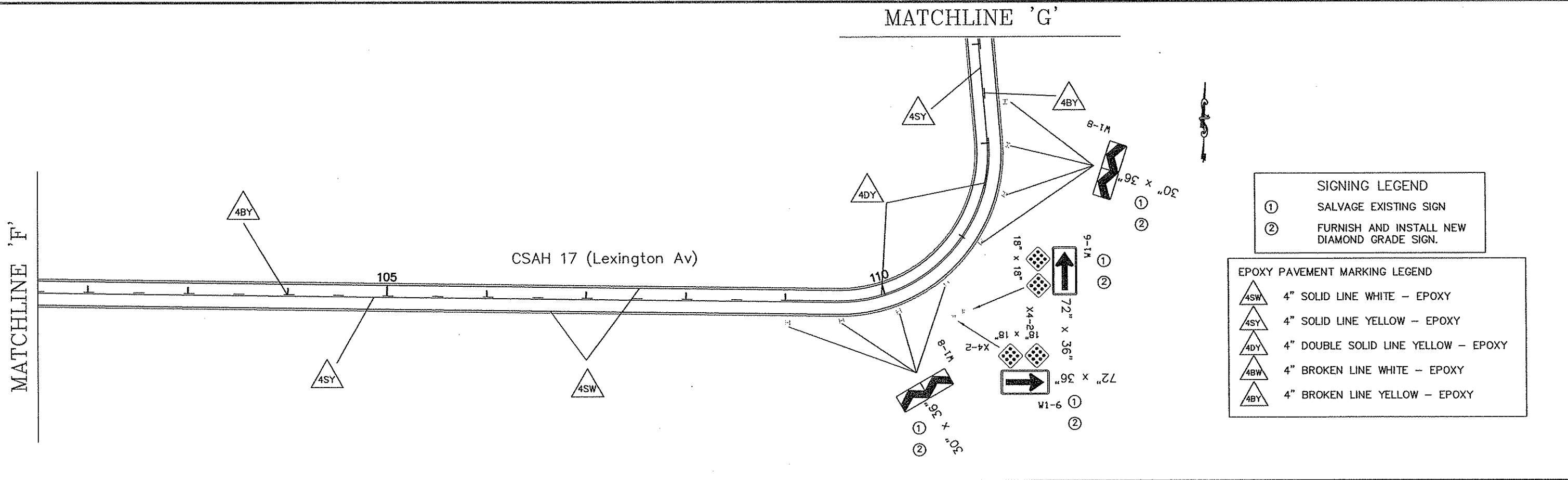
CHECKED BY: _____ DATE: _____

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-19

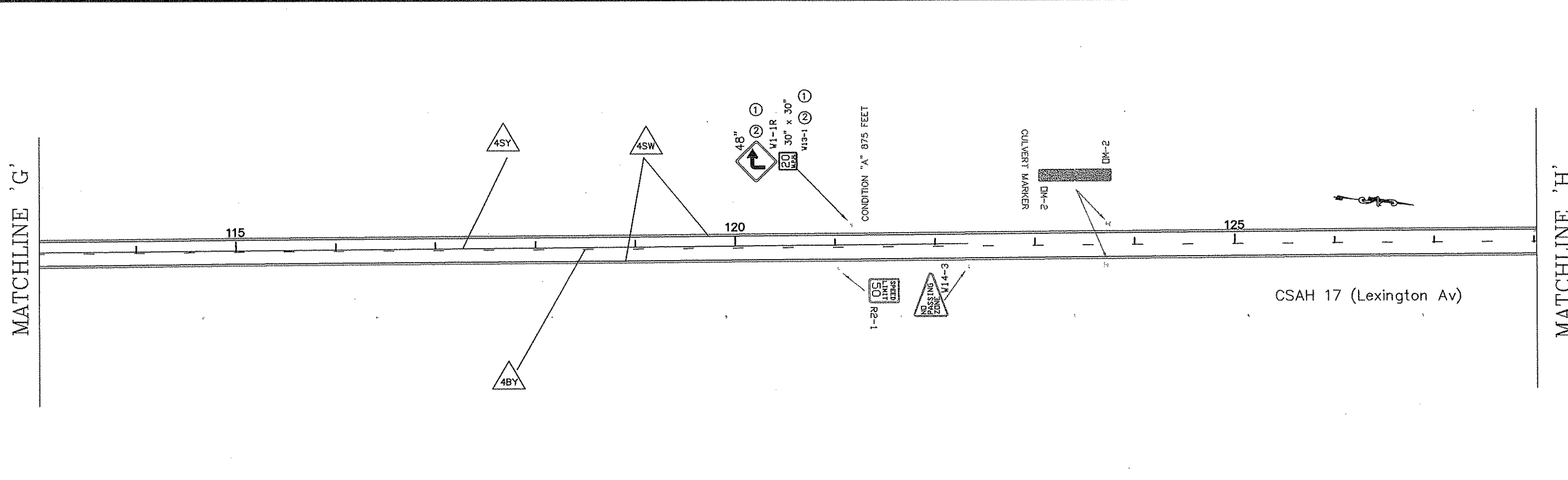
PERMANENT SIGNING AND STRIPING

Sheet 17 of 44 Sheets



- SIGNING LEGEND**
- ① SALVAGE EXISTING SIGN
 - ② FURNISH AND INSTALL NEW DIAMOND GRADE SIGN.

- EPOXY PAVEMENT MARKING LEGEND**
- △4SW 4" SOLID LINE WHITE - EPOXY
 - △4SY 4" SOLID LINE YELLOW - EPOXY
 - △4DY 4" DOUBLE SOLID LINE YELLOW - EPOXY
 - △4BW 4" BROKEN LINE WHITE - EPOXY
 - △4BY 4" BROKEN LINE YELLOW - EPOXY



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-19\base\Traffic\Curves from CSAH 18 to CSAH 22.dwg

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

PRINT NAME: **CURT KOBILARCIK**

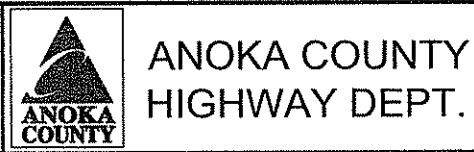
SIGNATURE: *Curt Kobilarsik*

DATE: **3-8-10** REG. NO. **24756**

DRAWN BY: MTH DATE 11/24/09

DESIGN BY: MTH DATE 11/24/09

CHECKED BY: _____ DATE _____



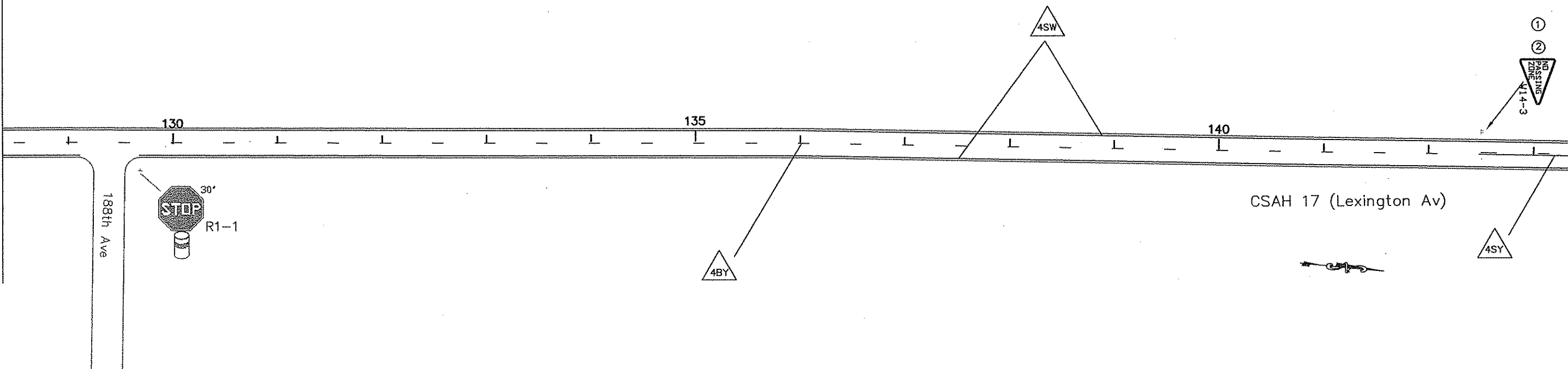
STATE PROJECT NO. 02-617-19

PERMANENT SIGNING AND STRIPING

Sheet 18 of 44 Sheets

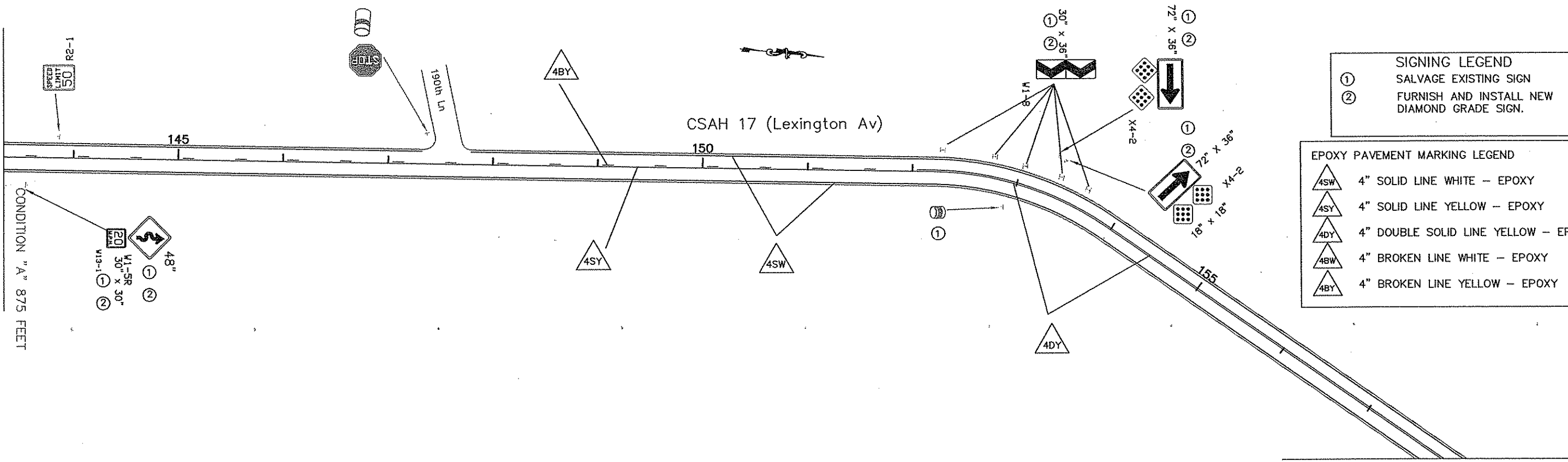
MATCHLINE 'H'

MATCHLINE 'I'



MATCHLINE 'I'

MATCHLINE 'J'



SIGNING LEGEND

① SALVAGE EXISTING SIGN
 ② FURNISH AND INSTALL NEW DIAMOND GRADE SIGN.

EPOXY PAVEMENT MARKING LEGEND

4SW 4" SOLID LINE WHITE - EPOXY
 4SY 4" SOLID LINE YELLOW - EPOXY
 4DY 4" DOUBLE SOLID LINE YELLOW - EPOXY
 4BW 4" BROKEN LINE WHITE - EPOXY
 4BY 4" BROKEN LINE YELLOW - EPOXY

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-19\base\Traffic\Curves from CSAH 18 to CSAH 22.dwg

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

PRINT NAME: **CHRIS KUBIARSIK**
 SIGNATURE: *Chris Kubiarzik*
 DATE: **3-8-10** REG. NO. **24756**

DRAWN BY: MTH DATE 11/24/09
 DESIGN BY: MTH DATE 11/24/09
 CHECKED BY: _____ DATE _____

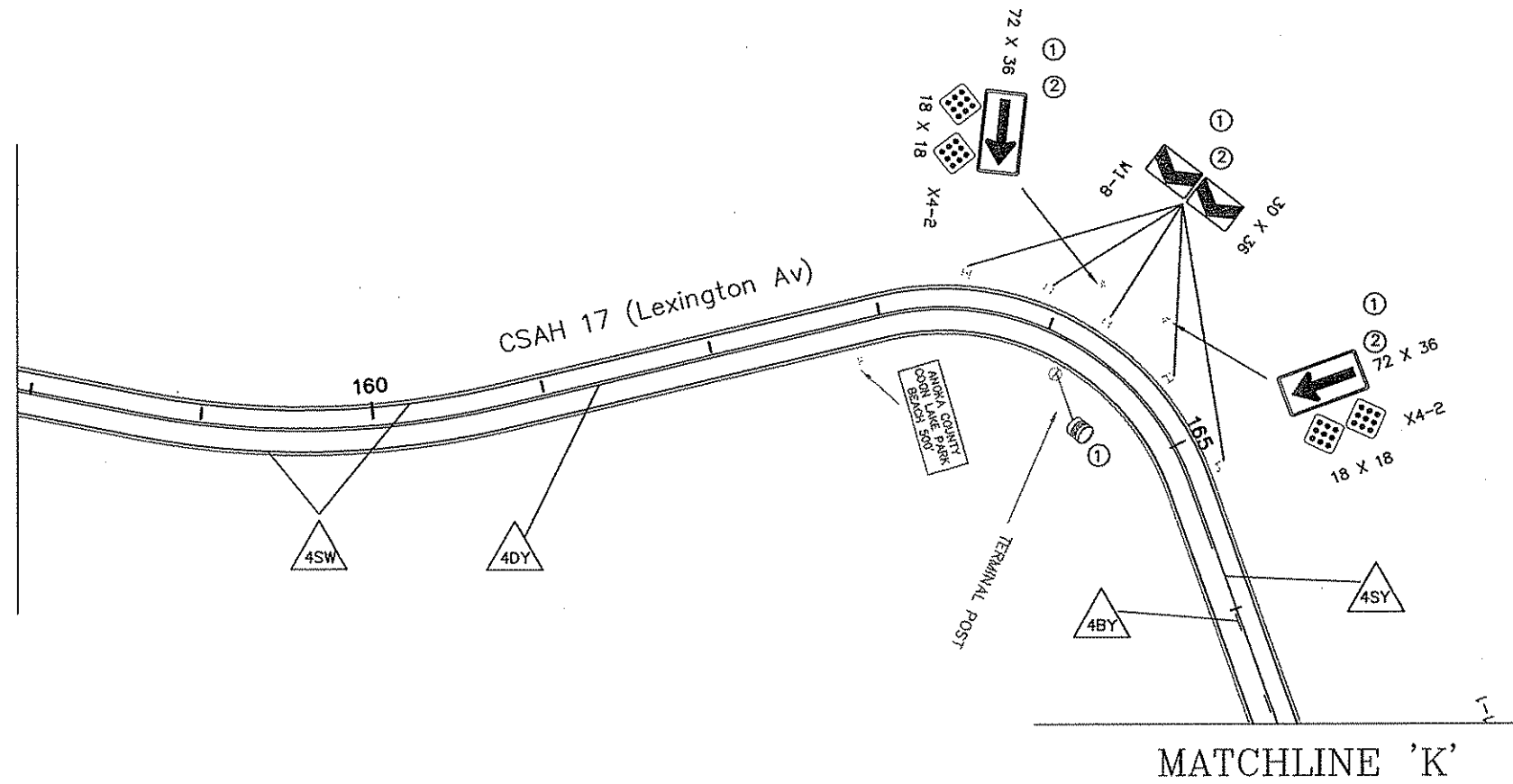


ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-19

PERMANENT SIGNING AND STRIPING
 Sheet 19 of 44 Sheets

MATCHLINE 'J'



SIGNING LEGEND

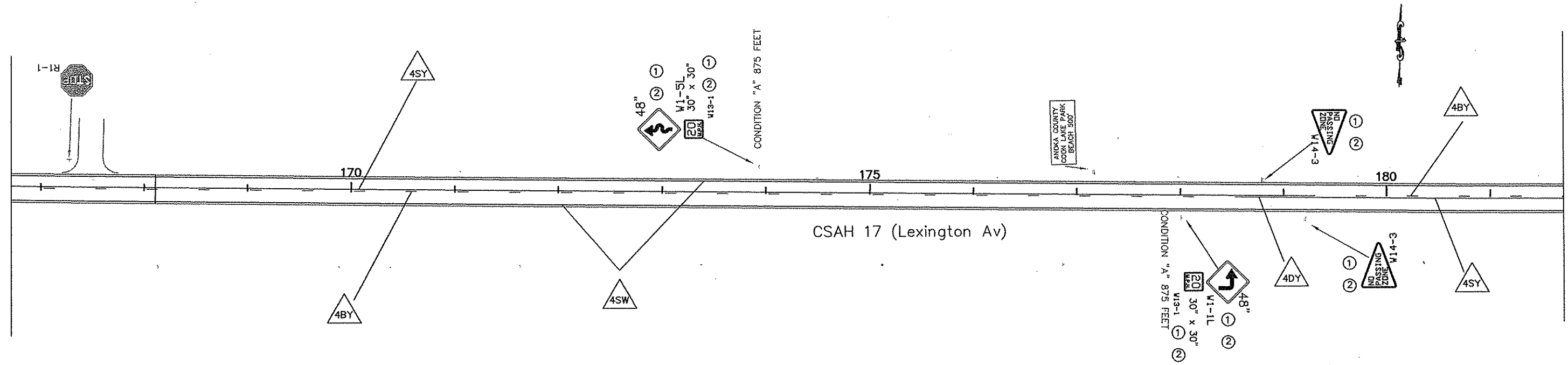
① SALVAGE EXISTING SIGN
 ② FURNISH AND INSTALL NEW DIAMOND GRADE SIGN.

EPOXY PAVEMENT MARKING LEGEND

4SW 4" SOLID LINE WHITE - EPOXY
 4SY 4" SOLID LINE YELLOW - EPOXY
 4DY 4" DOUBLE SOLID LINE YELLOW - EPOXY
 4BW 4" BROKEN LINE WHITE - EPOXY
 4BY 4" BROKEN LINE YELLOW - EPOXY

MATCHLINE 'K'

MATCHLINE 'K'



MATCHLINE 'L'

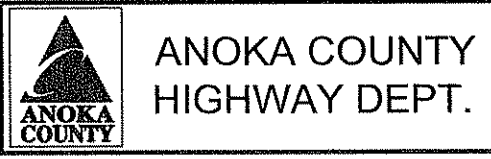
NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-19\base\Traffic\Curves from CSAH 18 to CSAH 22.dwg

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

PRINT NAME: **CURT KUJARCSIK**
 SIGNATURE: *Curt Kujarcsik*
 DATE: **3-8-10** REG. NO. **24756**

DRAWN BY: MTH DATE 11/24/09
 DESIGN BY: MTH DATE 11/24/09
 CHECKED BY: _____ DATE _____



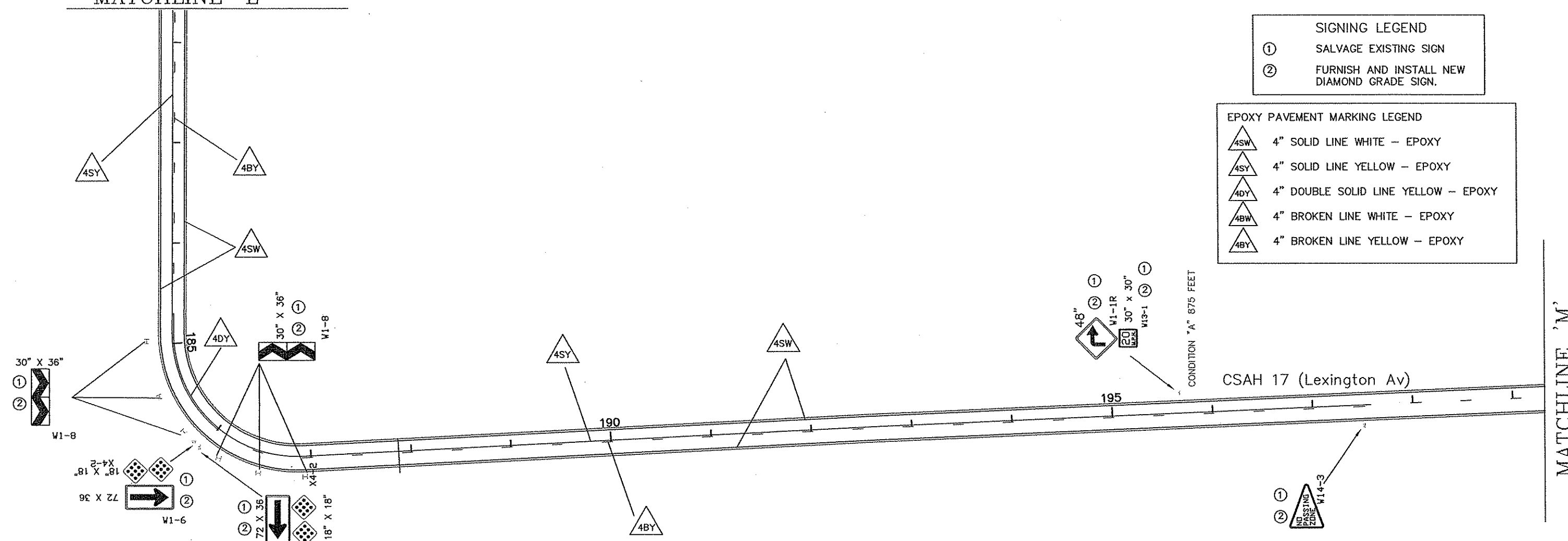
STATE PROJECT NO. 02-617-19

PERMANENT SIGNING AND STRIPING
 Sheet 20 of 44 Sheets

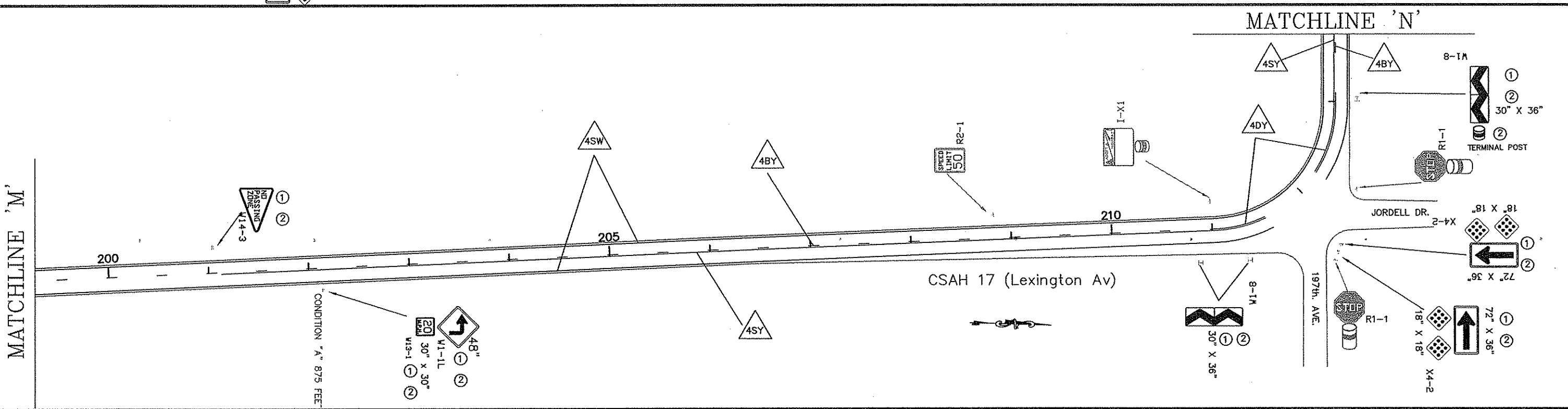
MATCHLINE 'L'

- SIGNING LEGEND**
- ① SALVAGE EXISTING SIGN
 - ② FURNISH AND INSTALL NEW DIAMOND GRADE SIGN.

- EPOXY PAVEMENT MARKING LEGEND**
- 4SW 4" SOLID LINE WHITE - EPOXY
 - 4SY 4" SOLID LINE YELLOW - EPOXY
 - 4DY 4" DOUBLE SOLID LINE YELLOW - EPOXY
 - 4BW 4" BROKEN LINE WHITE - EPOXY
 - 4BY 4" BROKEN LINE YELLOW - EPOXY

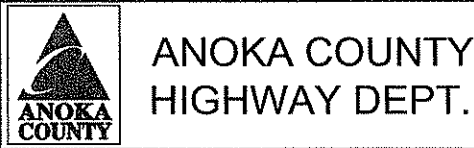


MATCHLINE 'N'



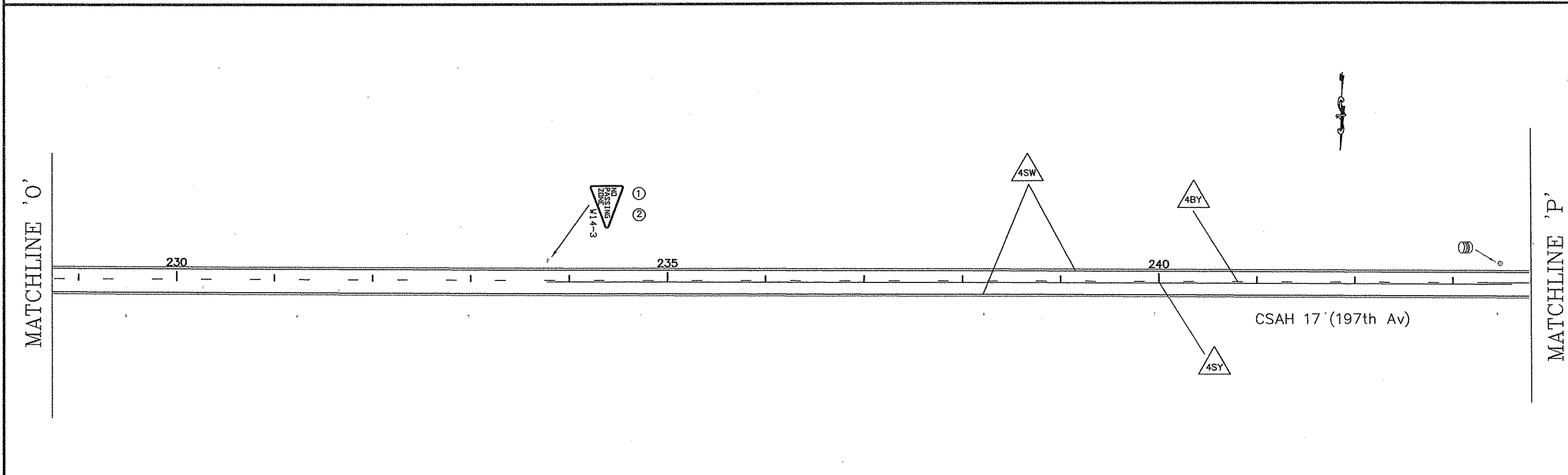
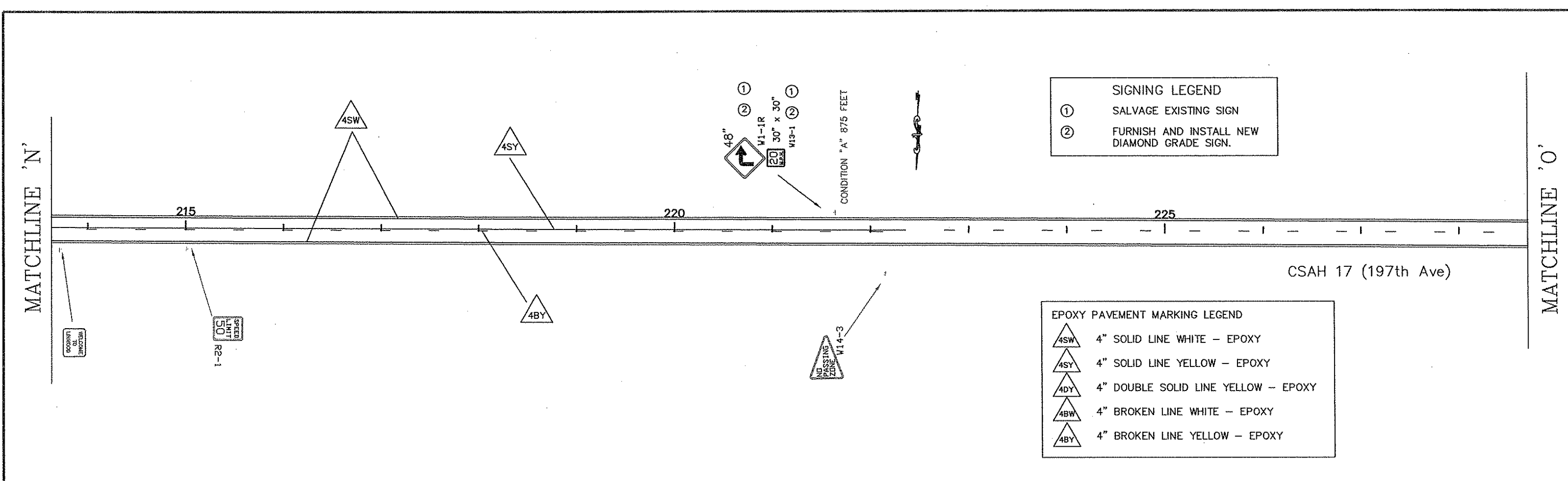
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: CURT KOBILOVIC
 SIGNATURE: Curt Kobilovic
 DATE: 3-8-10 REG. NO. 27756

DRAWN BY: MTH DATE: 11/24/09
 DESIGN BY: MTH DATE: 11/24/09
 CHECKED BY: _____ DATE: _____



STATE PROJECT NO. 02-617-19

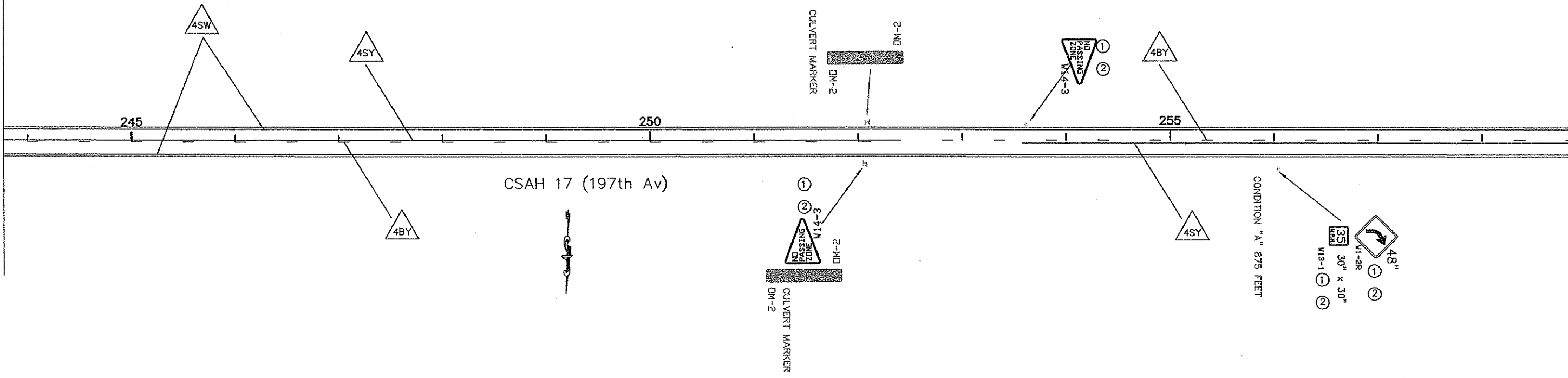
PERMANENT SIGNING AND STRIPING
 Sheet 21 of 44 Sheets



I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINT NAME: <u>CURT KUBIARCIK</u> SIGNATURE: <u>Curt Kubiarzik</u> DATE: <u>3-8-10</u> REG. NO. <u>24756</u>					DRAWN BY: <u>MTH</u> DATE: <u>11/24/09</u> DESIGN BY: <u>MTH</u> DATE: <u>11/24/09</u> CHECKED BY: _____ DATE: _____	ANOKA COUNTY HIGHWAY DEPT.	STATE PROJECT NO. <u>02-617-19</u>	PERMANENT SIGNING AND STRIPING Sheet <u>22</u> of <u>44</u> Sheets	
NO	DATE	BY	CKD	APPR	REVISION				
NAME: P:\02-617-19\base\Traffic\Curves from CSAH 18 to CSAH 22.dwg									

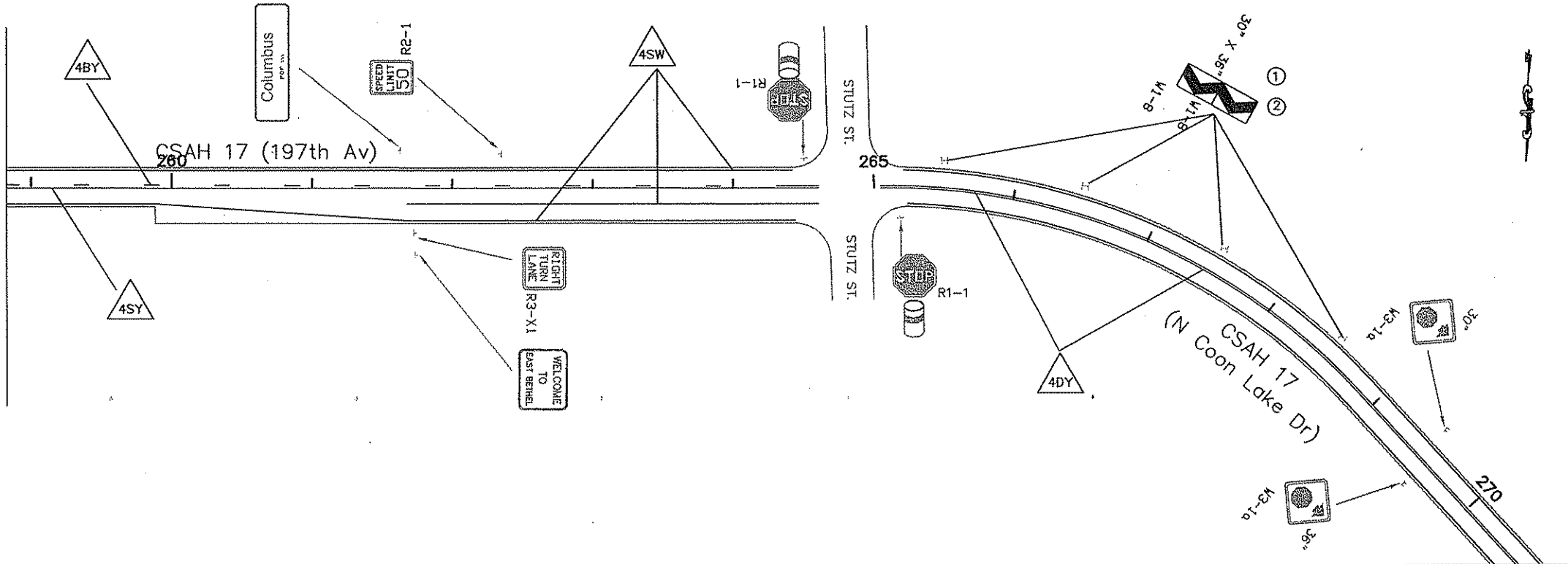
MATCHLINE 'P'

MATCHLINE 'Q'



MATCHLINE 'Q'

MATCHLINE 'R'



SIGNING LEGEND

①	SALVAGE EXISTING SIGN
②	FURNISH AND INSTALL NEW DIAMOND GRADE SIGN.

EPOXY PAVEMENT MARKING LEGEND

4SW	4" SOLID LINE WHITE - EPOXY
4SY	4" SOLID LINE YELLOW - EPOXY
4DY	4" DOUBLE SOLID LINE YELLOW - EPOXY
4BW	4" BROKEN LINE WHITE - EPOXY
4BY	4" BROKEN LINE YELLOW - EPOXY

NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\02-617-19\base\Traffic\Curves from CSAH 18 to CSAH 22.dwg

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

PRINT NAME: **CURT KOBILARCZIK**

SIGNATURE: *Curt Kobilarcik*

DATE: **3-8-10** REG. NO. **24756**

DRAWN BY: MTH DATE: 11/24/09

DESIGN BY: MTH DATE: 11/24/09

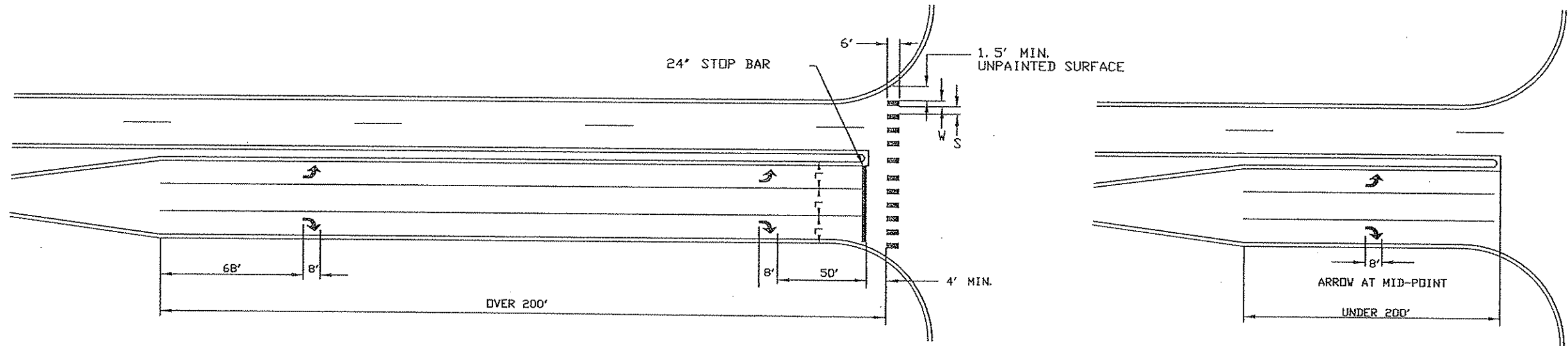
CHECKED BY: DATE:



STATE PROJECT NO. 02-617-19

PERMANENT SIGNING AND STRIPING

Sheet 23 of 44 Sheets

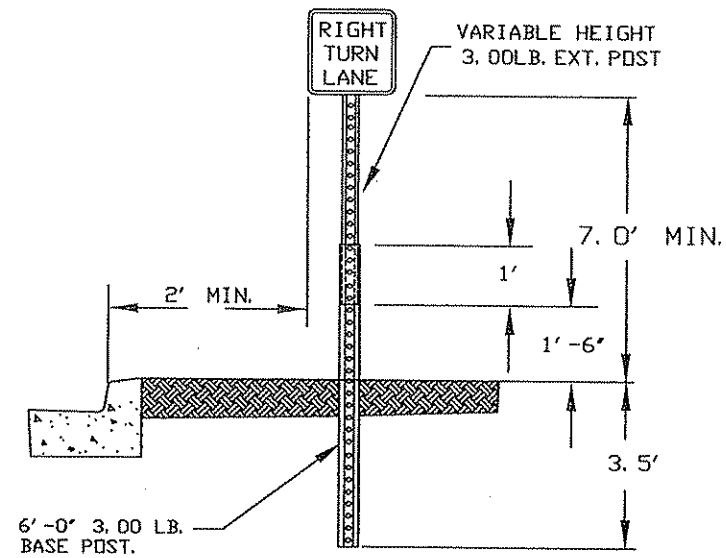


(L)	(W)	(S)
WIDTH OF INSIDE LANE	WIDTH OF PAINTED AREAS	WIDTH OF SPACE
9'	2.0'	2.5'
10'	2.5'	2.5'
11'	2.5'	3.0'
12'	3.0'	3.0'
13'	3.0'	3.5'

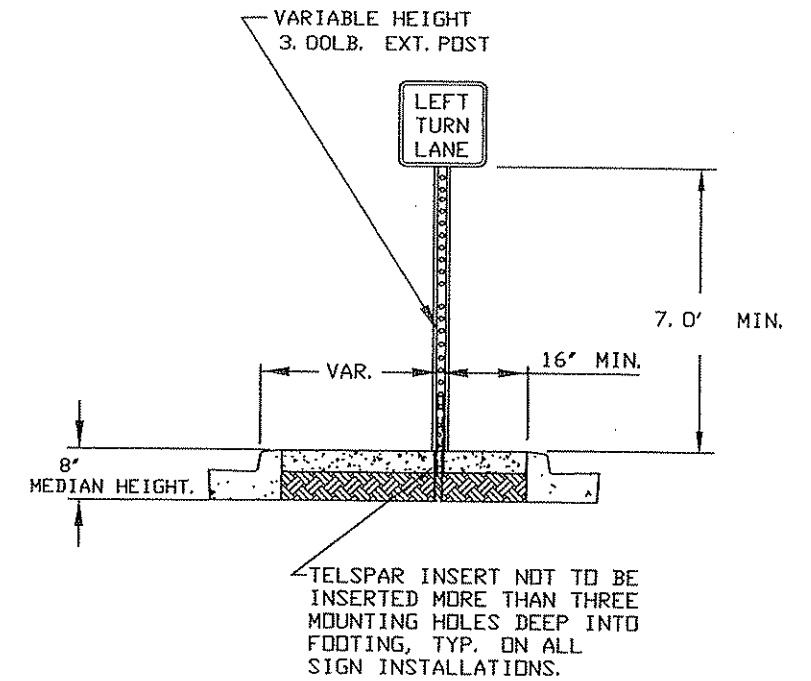
NOTES: CROSSWALKS:

- 1.) PAINTED AREAS ARE TO BE CENTERED ON CENTER AND LANE LINES, EVEN IF INTERSECTION IS NOT ALIGNED.
- 2.) LOCATION OF ZEBRA CROSSWALKS AND STOP BARS, SIGNAL LODPS AND PED RAMPS ARE APPROXIMATE. FINAL LOCATIONS ARE TO BE DETERMINED AND FIELD VERIFIED DURING CONSTRUCTION BY THE FIELD ENGR.
- 3.) ZEBRA CROSSWALKS ARE TO BE PARALLEL TO THE DRIVING LANE OR LANES. EVEN IF THE STREET IS ON AN ANGLE TO THE INTERSECTION.
- 4.) A MIN. OF 1.5' CLEAR DISTANCE MUST BE LEFT ADJACENT TO THE CURB. IF LAST PAINTED AREA FALLS INTO THIS AREA, IT MUST BE OMITTED.
- 5.) ON TWO LANE STREETS, USE SPACING SHOWN FOR AN 11' INSIDE LANE.

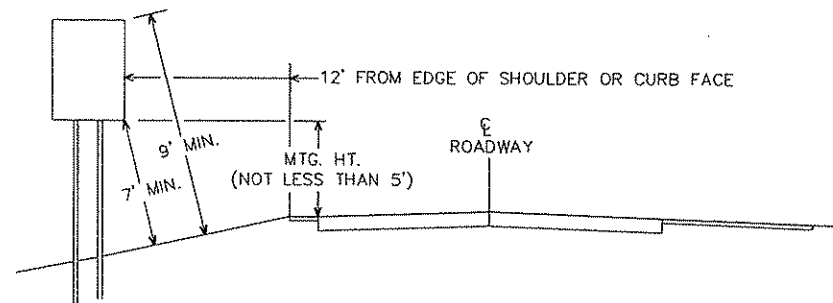
GROUND POST MOUNT SIGN INSTALLATION TYPICAL - URBAN



ISLAND MOUNT BREAK-AWAY SIGN INSTALLATION TYPICAL



RURAL ROADSIDE PLACEMENT



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-19\Bose\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 REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: CURT A. KOBILARCSIK
 SIGNATURE: *Curt Kobilarsik*
 DATE: 3-2-10 REG. NO. 24756

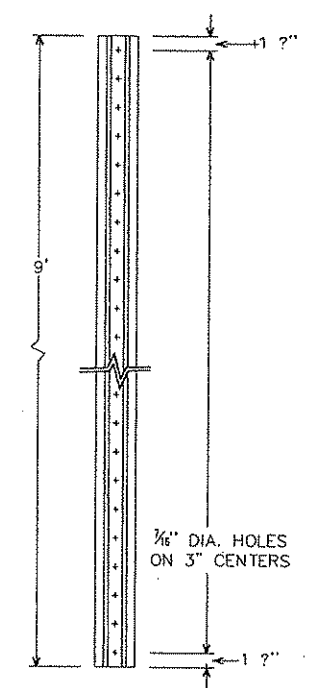
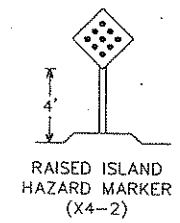
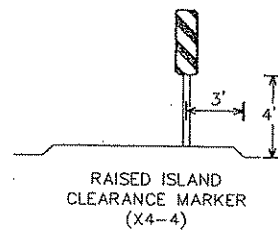
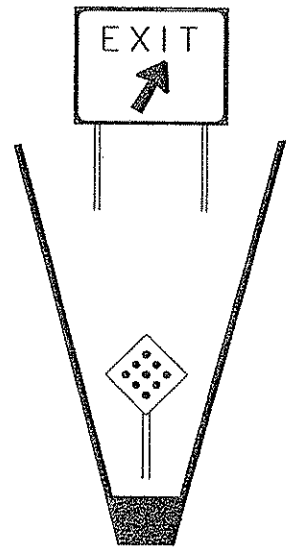
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 DESIGN BY: MTH DATE 1/15/10
 CHECKED BY: RB DATE XX/XX/10



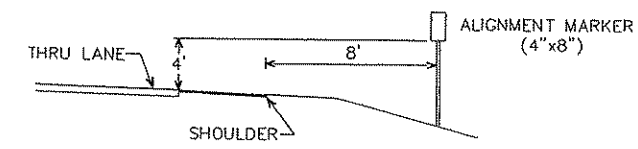
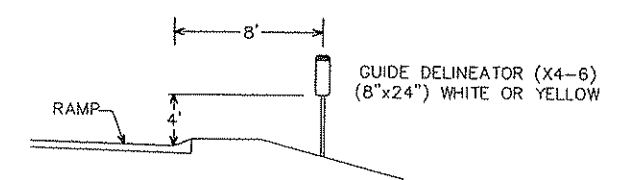
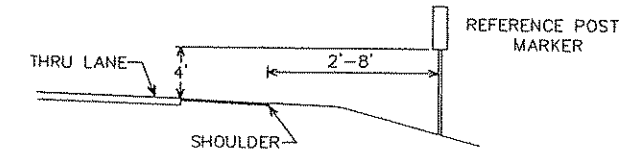
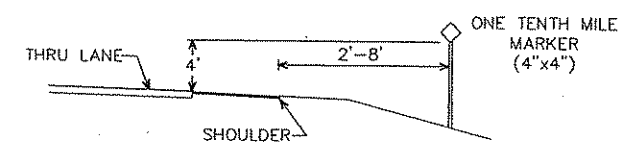
ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. 02-617-19

SIGNING/
 STRIPING DETAILS



DELINEATOR POST



TYPICAL PLACEMENT

DELINEATORS AND MARKERS

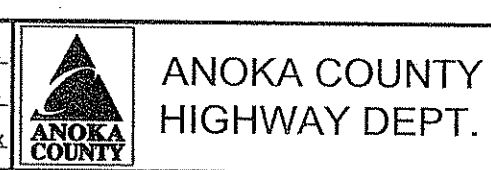
NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-19\Bases\Traffic\SIGN&STRIFE_DETAILS.dwg

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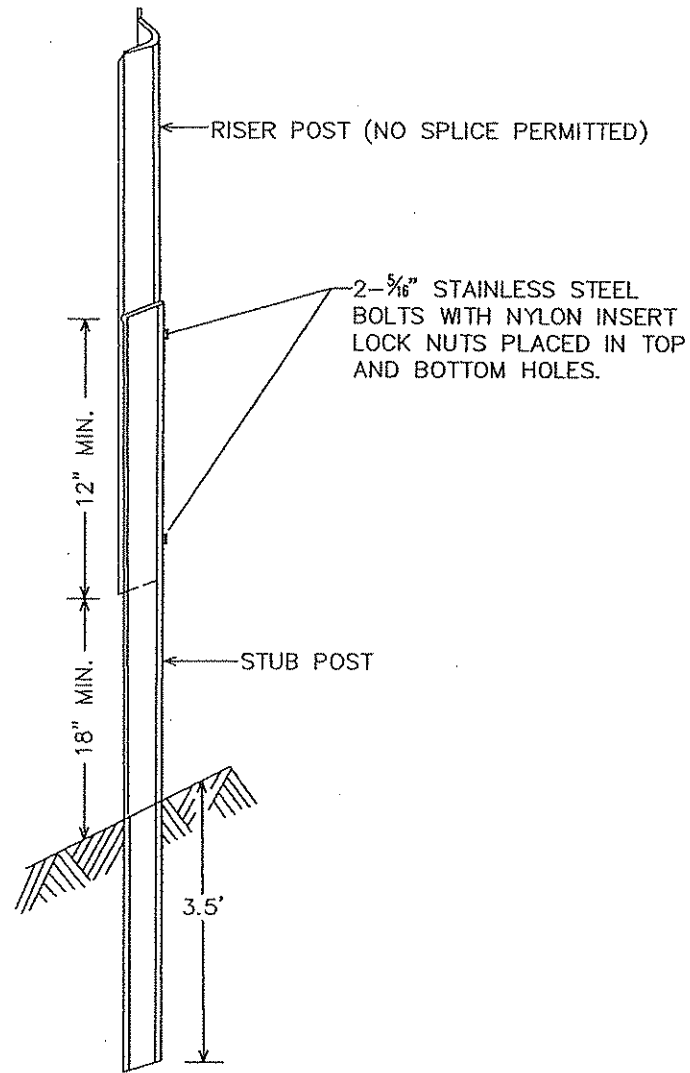
PRINT NAME: CURT A. KOBILARCSIK
SIGNATURE: *Curt A. Kobilarsik*
DATE: 3-8-10 REG. NO. 24756

DRAWN BY: MTH DATE 01/15/10
DESIGN BY: MTH DATE 01/15/10
CHECKED BY: RR DATE XX/05/XX

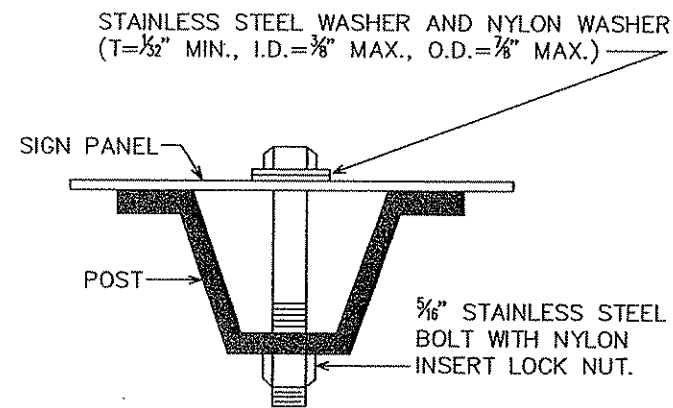


STATE PROJECT NO. 02-617-19

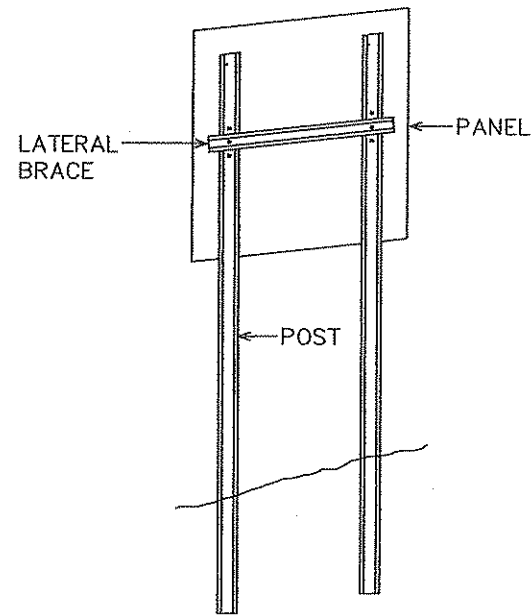
TYPE C & D POST



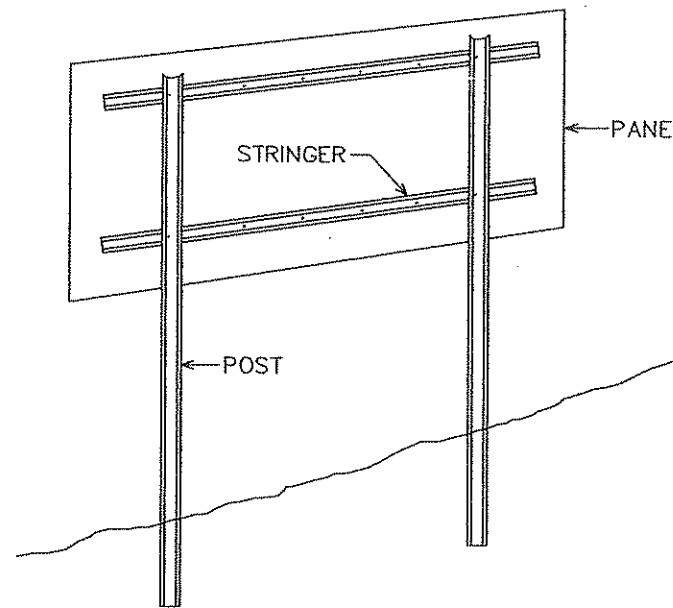
U POST SPLICE



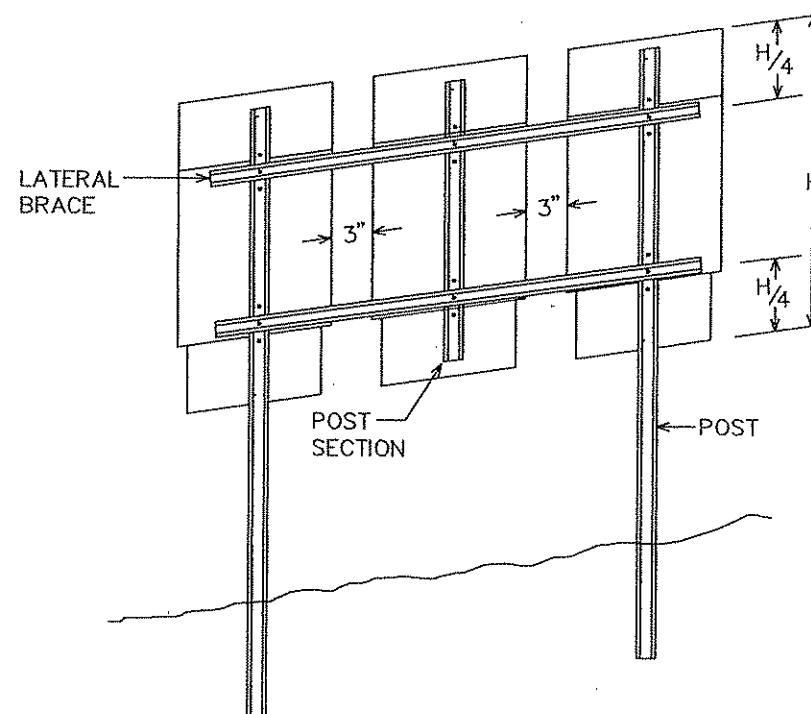
U POST MOUNTING
TYPE C SIGNS



TYPICAL TYPE C INSTALLATION



TYPICAL TYPE D INSTALLATION

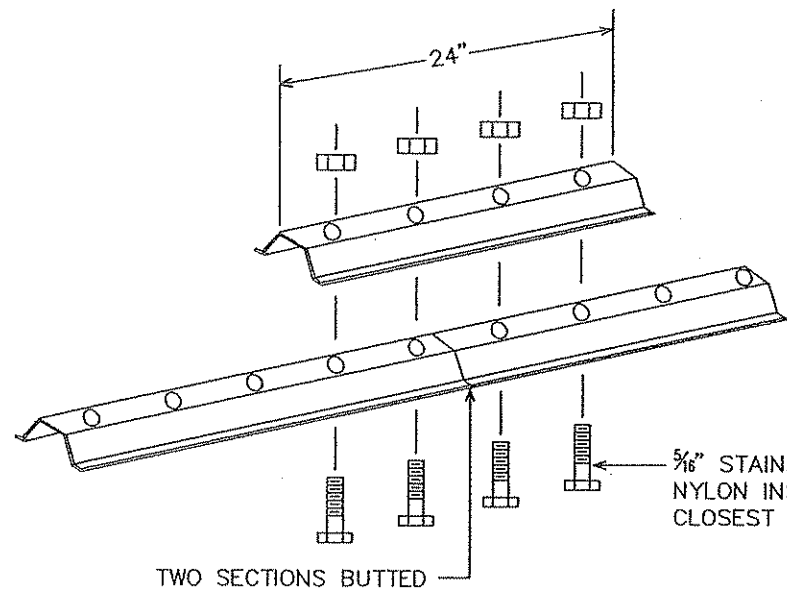


MODIFIED TYPE C INSTALLATION

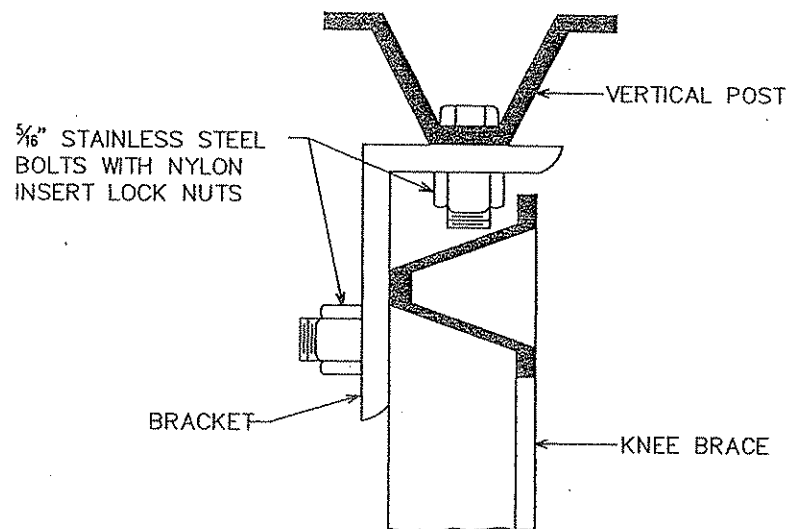
NOTES:

1. USE 3 LB/FT STUB POSTS, RISER POSTS, STRINGERS, KNEE BRACES, LATERAL BRACES AND KNEE BRACE STUB POSTS. ALL SHALL CONFORM TO MN/DOT 3401.
2. FOR TYPE D SIGN POSTS LENGTHS AND SPACINGS, SEE SIGN DATA SHEET.
3. TYPE D SIGN PANELS SHALL BE BOLTED TO STRINGERS AT 24" MAXIMUM INTERVALS IN ACCORDANCE WITH THE TYPE D STRINGER AND PANEL-JOINT DETAIL (SEE STANDARD SIGNS MANUAL).
4. MOUNTING (PUNCH CODE) FOR TYPE C SIGN PANELS SHALL BE AS INDICATED IN THE STANDARD SIGNS MANUAL UNLESS OTHERWISE SPECIFIED.
5. ALL RISER (VERTICAL) U POSTS SHALL BE SPLICED. DRIVEN STUB POSTS SHALL BE AT LEAST 7' LONG.
6. USE STAINLESS STEEL 7/8" BOLTS, WASHERS AND NYLON INSERT LOCK NUTS AS SHOWN FOR ALL GROUND MOUNTED AND OVERHEAD MOUNTED SIGNS.
7. STAINLESS STEEL WASHER WITH SAME DIMENSIONS SHALL BE PROVIDED BETWEEN ALL NYLON WASHERS AND BOLT HEADS.
8. BRACING STUBS SHALL BE NO MORE THAN 4" ABOVE GROUND AND EMBEDDED AT LEAST 3'.
9. A-FRAME BRACKET SHALL BE STEEL CONFORMING TO MN/DOT 3306 AND GALVANIZED IN ACCORDANCE WITH MN/DOT 3394.
10. COLLARS SHALL BE USED TO SHIM OVERLAYS AND DEMOUNTABLE LEGEND AWAY FROM PANEL WHERE INTERFERENCE WITH BOLT HEADS IS ENCOUNTERED.
11. ^{MN/DOT 3352.2A5} 2 POST TYPE C SIGNS SHALL BE REINFORCED WITH AT LEAST ONE LATERAL BRACE. INSTALLATIONS WHERE THE TOTAL PANEL HEIGHT IS 60" OR MORE SHALL HAVE TWO LATERAL BRACES LOCATED APPROXIMATELY AT THE QUARTER POINTS.
12. WHERE 2 SINGLE POST TYPE C SIGNS ARE INSTALLED SIDE BY SIDE, THEY SHALL BE REINFORCED Laterally BY AT LEAST 2 BRACES, BOLTED AT EACH POST AND LOCATED APPROXIMATELY AT THE QUARTER POINTS.
13. WHERE 3 OR MORE TYPE C SIGNS ARE INSTALLED SIDE BY SIDE, THEY SHALL BE REINFORCED Laterally BY AT LEAST 2 BRACES, BOLTED AT EACH POST AND POST SECTION AND LOCATED APPROXIMATELY AT THE QUARTER POINTS AS SHOWN IN MODIFIED TYPE C INSTALLATION.

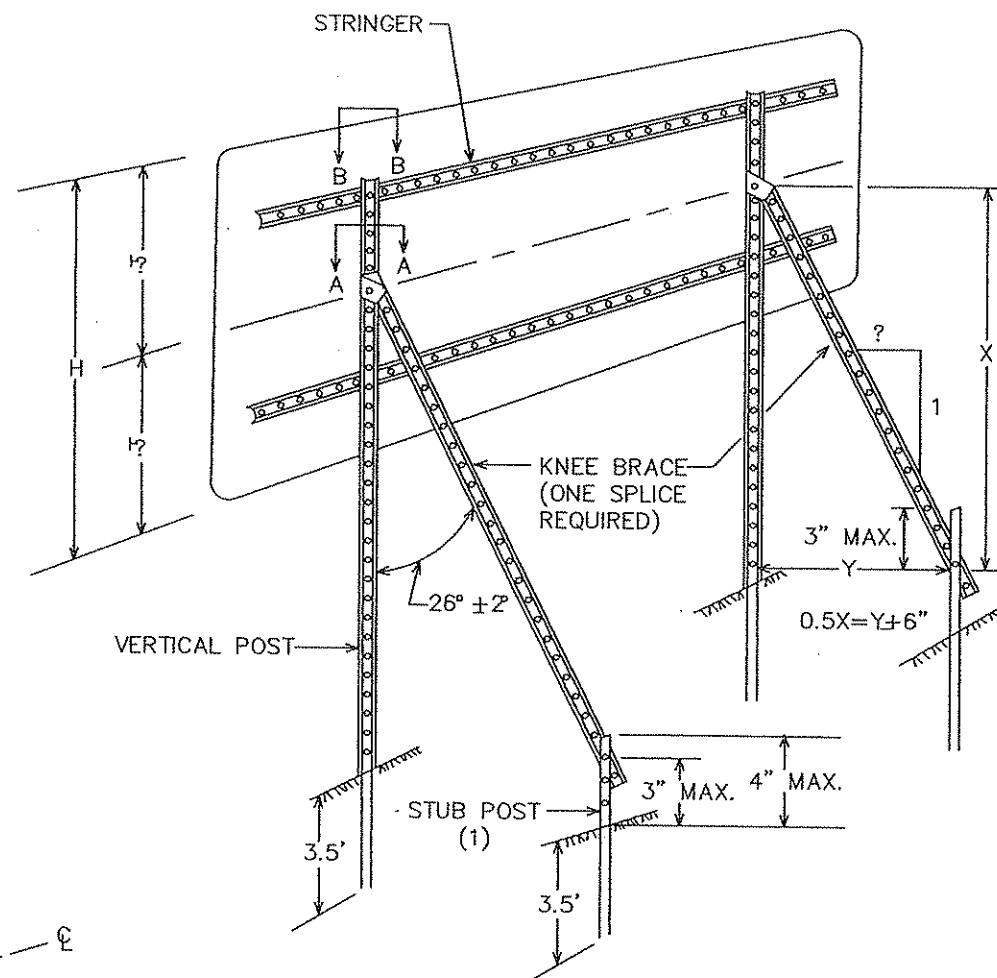
TYPE C & D SIGN
STRUCTURAL DETAILS



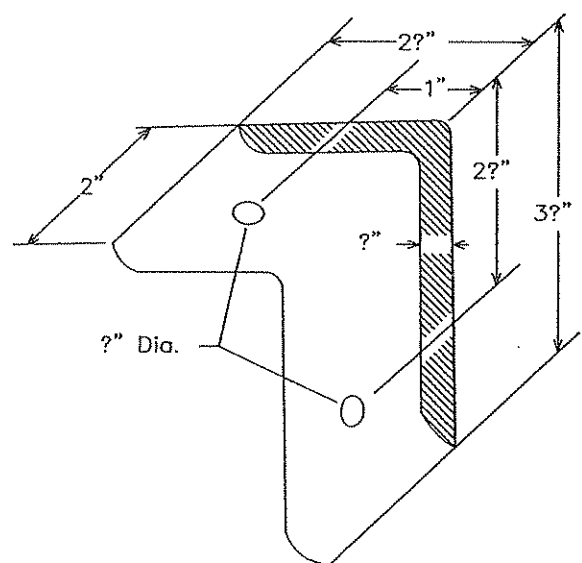
LATERAL BRACE OR STRINGER
SPlice DETAIL (EXPLODED VIEW)



SECTION A-A

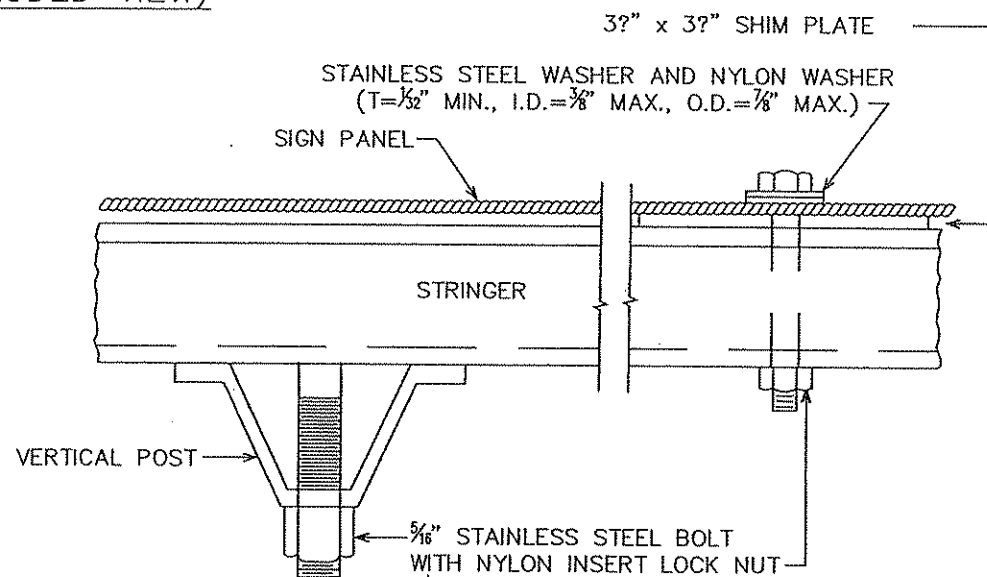


TYPICAL "A-FRAME" INSTALLATION
TYPE "D" SIGNS

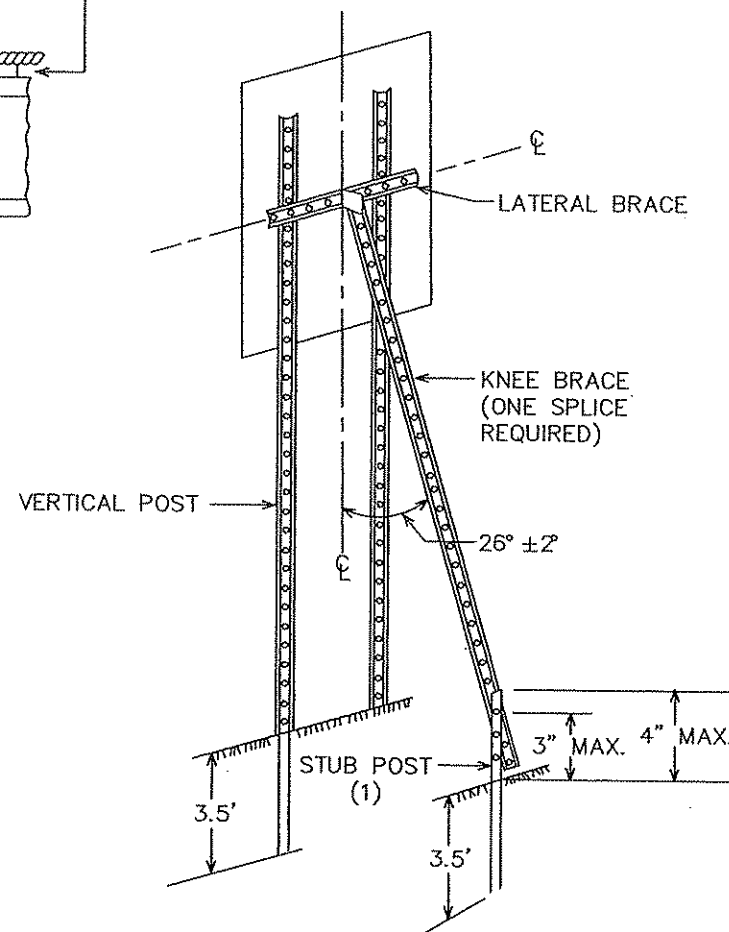


A-FRAME BRACKET

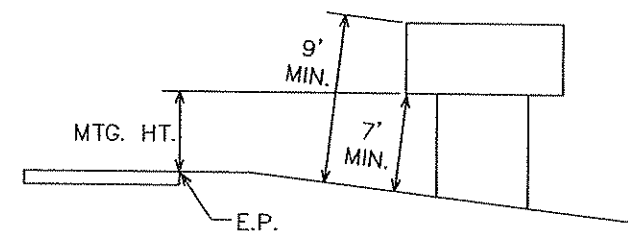
(STEEL MN/DOT 3306 GALVANIZED PER MN/DOT 3394)



SECTION B-B

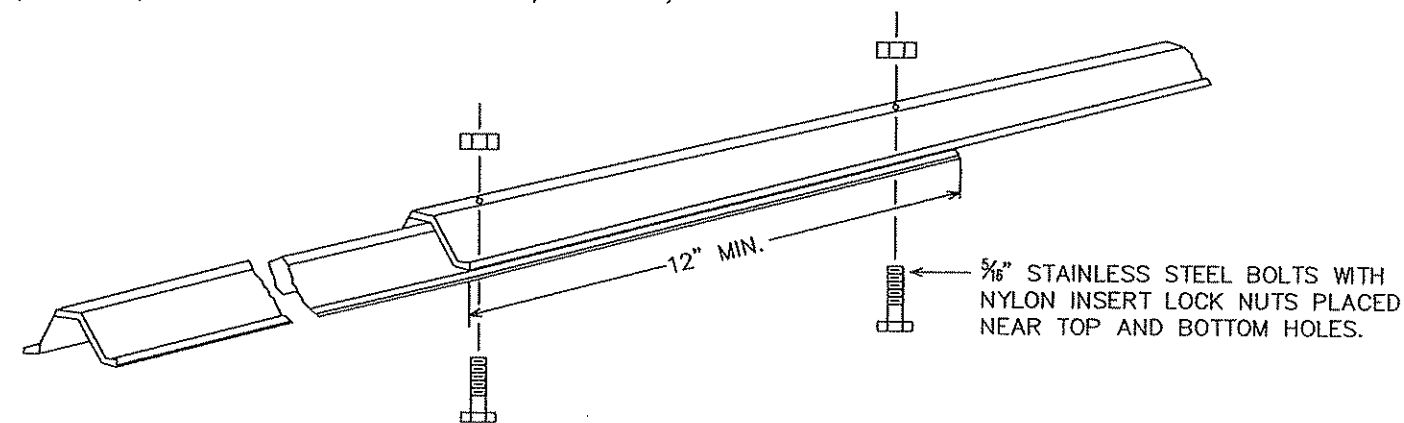


TYPICAL "A-FRAME" INSTALLATION
TYPE "C" SIGNS



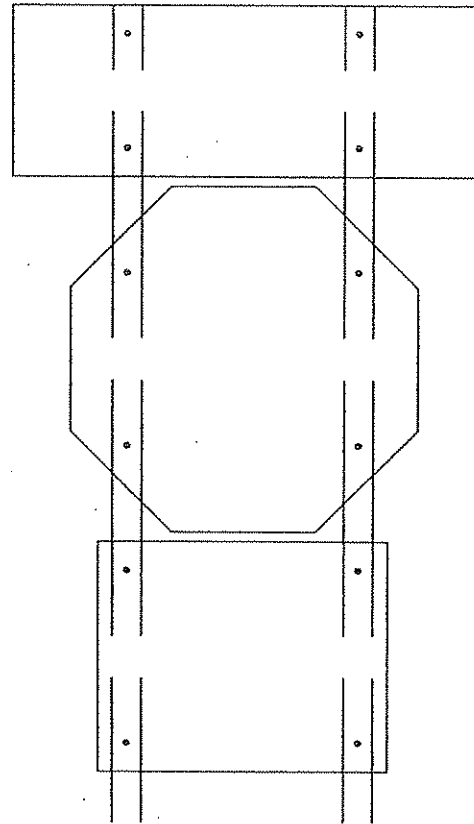
TYPICAL MOUNTING

(1) OFFSET STUB POST 1' TOWARD ROADWAY
RELATIVE TO VERTICAL POST. ATTACH STUB
POST AND KNEE BRACE BACK TO BACK.

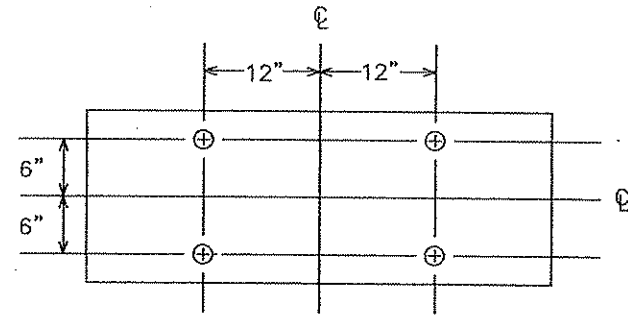


KNEE BRACE SPLICE

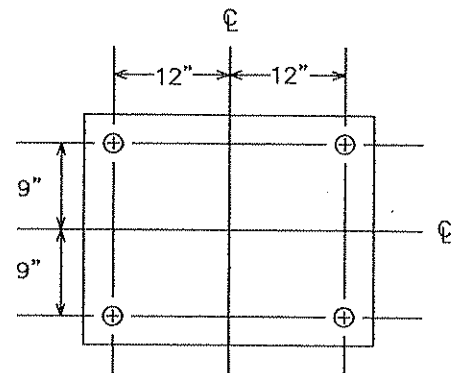
TYPE C & D SIGN
STRUCTURAL DETAILS



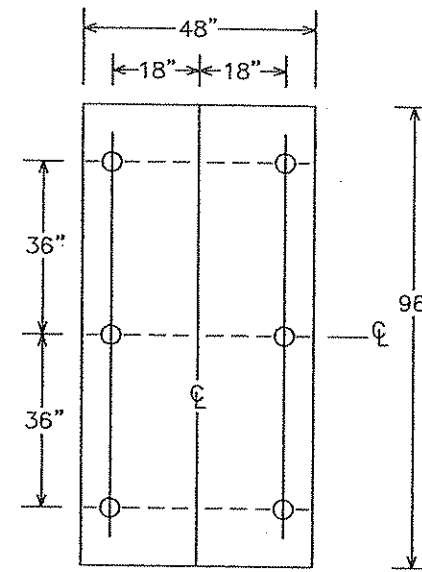
R6-1, R1-1 & (R6-3 OR R6-3a)
MOUNTING



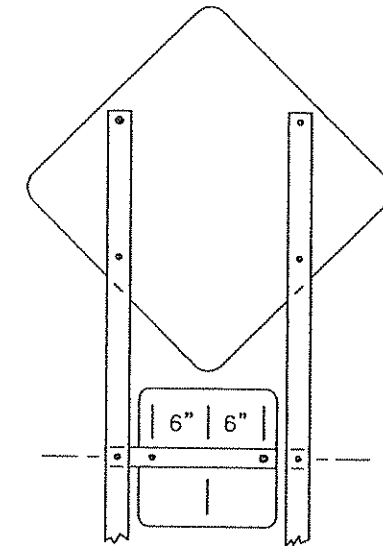
PUNCHING FOR R6-1(48"x18")



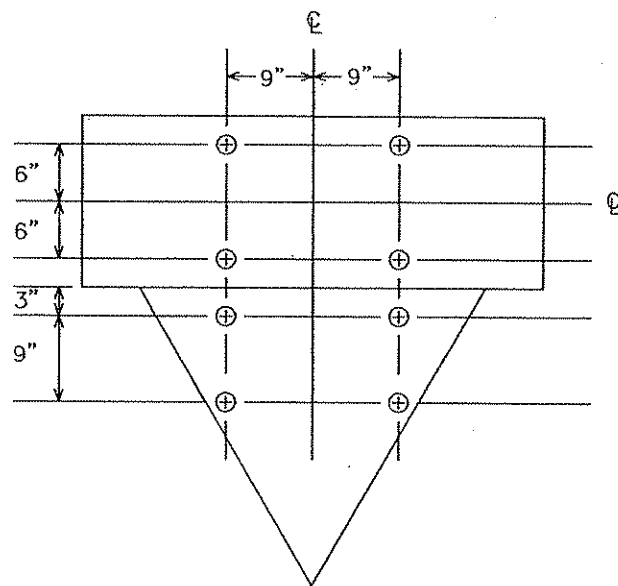
PUNCHING FOR R6-3 OR R6-3a(30"x24")



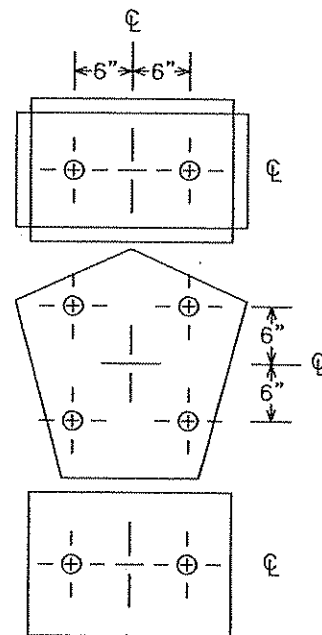
PUNCHING FOR R2-4b
SPEED LIMIT



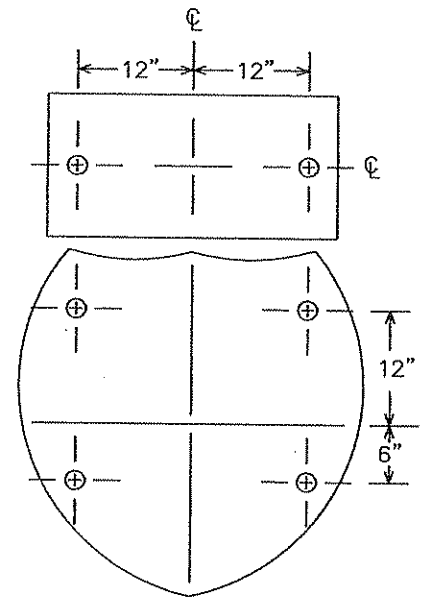
(W1-1, W1-2, W1-3, W1-4 OR W1-5) & W13-1
MOUNTING



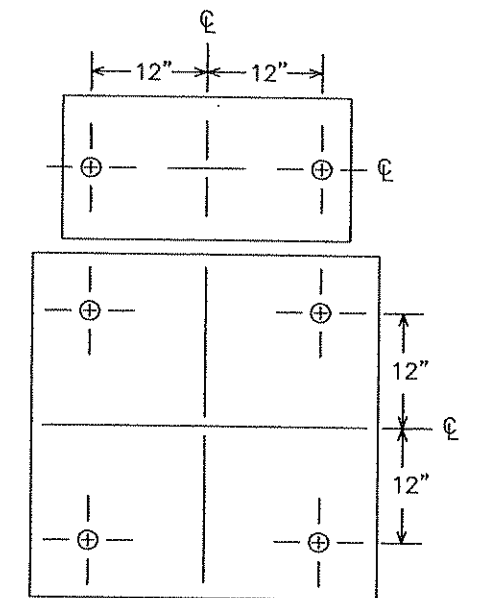
PUNCHING FOR R6-1(48"x18")
& R1-2(36"x36"x36")



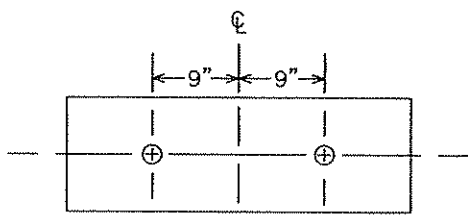
M2-1A [21"x15"] OR
(M3-1A, M3-2A, M3-3A OR M3-4A) [24"x12"] AND
M1-6 [24"x24"] AND
(M5-1A, M5-2A, M6-1A, M6-2A, M6-3A M6-4A, M6-5A OR M6-6A) [21"x15"]
PUNCHING



(M3-1A, M3-2A, M3-3A OR M3-4A) [30"x15"] AND
M1-1 [45"x36" OR 36"x36"]
PUNCHING



(M3-1, M3-1A, M3-2, M3-2A, M3-3, M3-3A M3-4 OR
M3-4A) [30"x15"] AND (M1-4 OR M1-5A) [36"x36"]
PUNCHING



PUNCHING FOR R6-1(36"x12")

TYPE C & D SIGN
STRUCTURAL DETAILS

Sheet 3 of 3

STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

Project Description

SP 02-614-19 consists of adding a shoulder to three segments of CSAH 17 by grading, adding bituminous, and adding aggregate surfacing. This project is located in the cities of East Bethel, Linwood Twp, Columbus Twp, and Ham Lake.

Site Maps

In addition to what is located within this plan, existing and proposed site maps have been created and kept on file with the Anoka County Highway Department. The site maps are roll maps that show project limits, alignment, soil types, existing and proposed contours, drainage areas, storm sewer locations, flow arrows, and impervious surface. If applicable, impaired waters and wetlands are also shown.

Environmentally Sensitive Areas

There are several impacted wetlands within the project limits. There are no Impaired or Special Waters within this project's limits.

Outstanding Resource Value Waters

There are no outstanding resource value waters within the project limits.

Calcareous Fens

There are no calcareous fens within the project limits

TMDL Implementation Plans Containing Storm Water Requirements

No TMDL Implementation Plans currently exist for the receiving waters on this project.

Land Feature Changes

Total Project Area Disturbed:	3.74 acres
Total Existing Impervious Surface:	1.76 acres
Total Existing Pervious Surface:	1.98 acres
Total Proposed Impervious Surface:	2.24 acres
Total Proposed Pervious Surface:	1.5 acres

Timing of BMP Installation

The erosion prevention and sediment control BMP's shall be installed as necessary to minimize erosion from disturbed surfaces and capture sediment on site, and shall meet the NPDES Permit Part IV Construction Activity Requirements. All silt fence used for containment shall be installed prior to grading operations.

Drainage Calculations

Computations are kept on file with the Anoka County Highway Department. Changes in the field should be discussed with the Project Manager and noted in the Contractor's log.

Project Contacts

The Project Engineer and the Contractor are responsible for implementation of the SWPPP and the installation, inspection, and maintenance of the erosion prevention and sediment control BMPs before and during construction. Anoka County and the City of Nowthen are responsible for long term operation and maintenance of the permanent storm water management system.

Anoka County Project Manager:
Douglas W Fischer, PE
Anoka County Engineer
1440 Bunker Lake Boulevard NW
Andover, MN 55304
(763) 862-4200


MPCA 24 HOUR EMERGENCY NOTIFICATION:

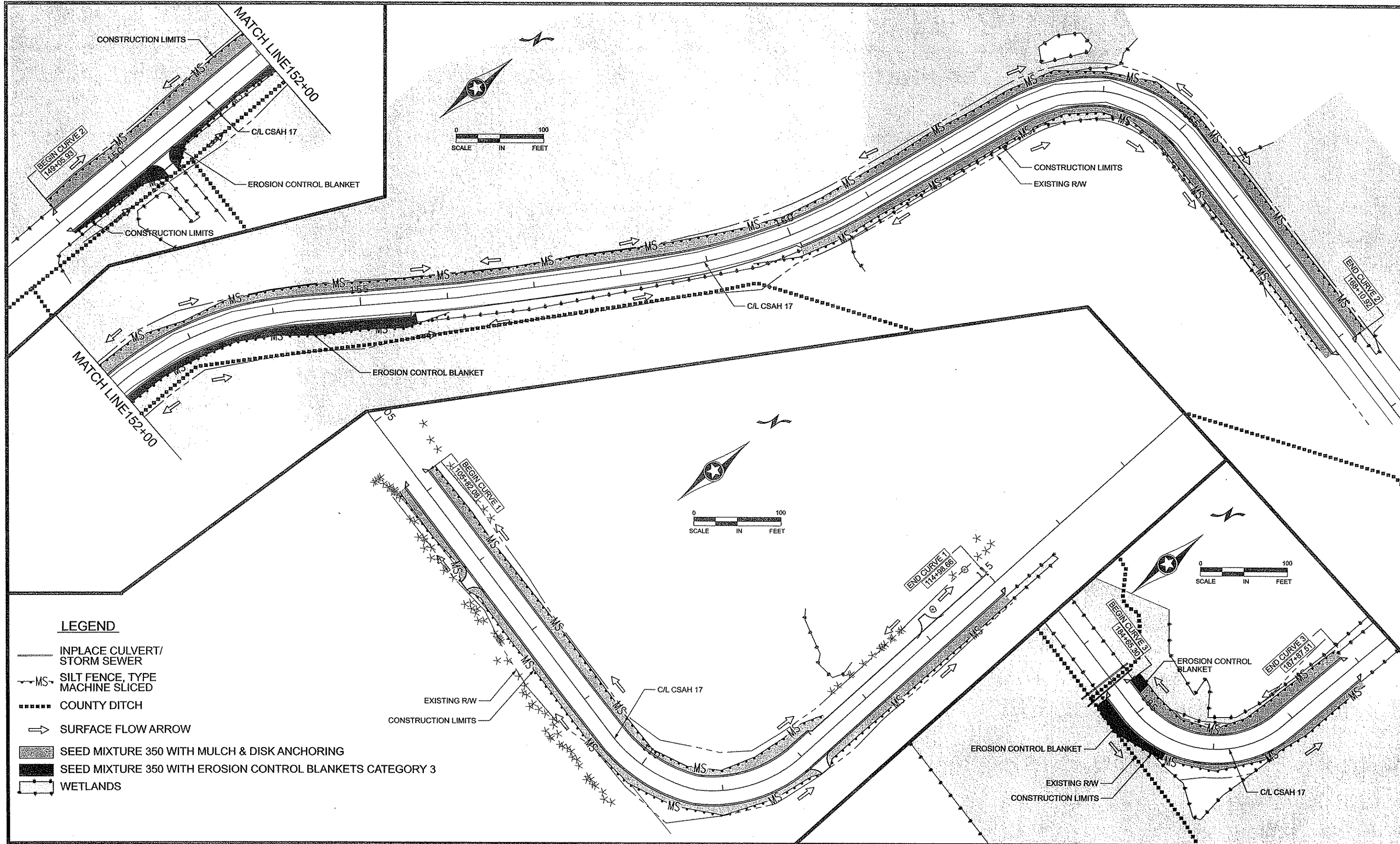
651-649-5451
800-422-0798

Construction Notes

Construction shall be governed by MN/DOT Spec Book and the special provisions. The contractor shall keep the inspection and maintenance log.

Description	Plan Sheet Title	Location
Temporary Erosion Control	Erosion Control Plan	Sheet No. 32
Permanent Erosion Control	Erosion Control Plan & Turf Establishment Plan	Sheet No. 32
	Direction of Flow	
Final Stabilization	Erosion Control Plan	Sheet No. 32
Drainage Structures	Turf Establishment Plan	Sheet No. 32
Drainage Tabulation	Drainage Plan	Sheet No. N/A
Drainage Profile Sheets	Drainage Tabulation	Sheet No. N/A
Erosion Control Details	Drainage Plan	Sheet No. N/A
Turf Establishment / Erosion	Erosion Control Plan	Sheet No. 33 - 36
	Erosion Control Plan & Turf Establishment Plan	Sheet No. 32

	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: CURT A. KOBILARCSIK SIGNATURE: <i>Curt Kobilarsik</i> DATE: 3-8-10 LICENSE NO. 24756	DRAWN BY: NJD DATE: 1-19-10 DESIGN BY: NJD DATE: 1-19-10 CHECKED BY: JEO DATE:	 ANOKA COUNTY HIGHWAY DEPT.	STATE PROJECT NO. 02-617-19	SWPPP NARRATIVE												
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>NO</th> <th>DATE</th> <th>BY</th> <th>CKD</th> <th>APPR</th> <th>REVISION</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table> NAME: P:\02-617-19\Plant\0261719_SWPPP.dgn 3/5/2010 2:32:05 PM	NO	DATE	BY	CKD	APPR	REVISION							Sheet 30 of 44 Sheets				
NO	DATE	BY	CKD	APPR	REVISION												



LEGEND

- INPLACE CULVERT/
STORM SEWER
- MS SILT FENCE, TYPE
MACHINE SLICED
- COUNTY DITCH
- ⇒ SURFACE FLOW ARROW
- SEED MIXTURE 350 WITH MULCH & DISK ANCHORING
- SEED MIXTURE 350 WITH EROSION CONTROL BLANKETS CATEGORY 3
- WETLANDS

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
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DRAWN BY: NJD DATE: 1-19-10
 DESIGN BY: NJD DATE: 1-19-10
 CHECKED BY: JEO DATE:



**ANOKA COUNTY
HIGHWAY DEPT.**

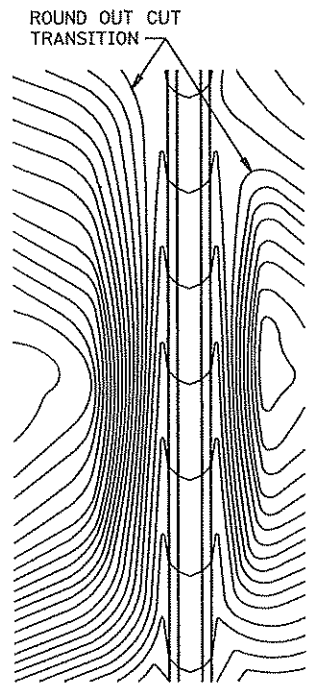
STATE PROJECT NO. 02-617-19

**EROSION CONTROL &
TURF ESTABLISHMENT PLAN**
 Sheet 32 of 44 Sheets

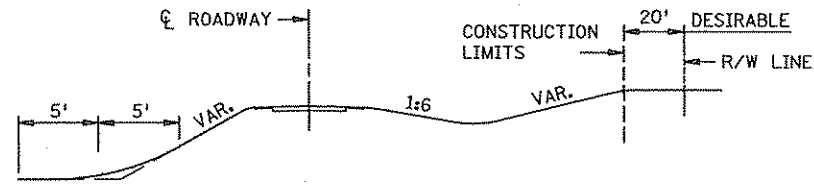
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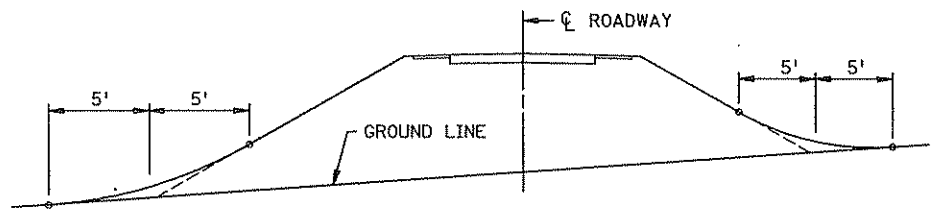
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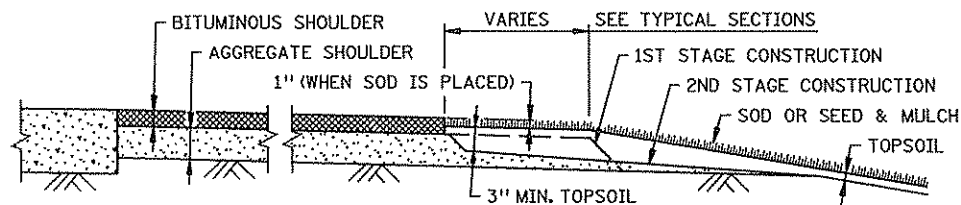
CONTOURING ROAD CUTS



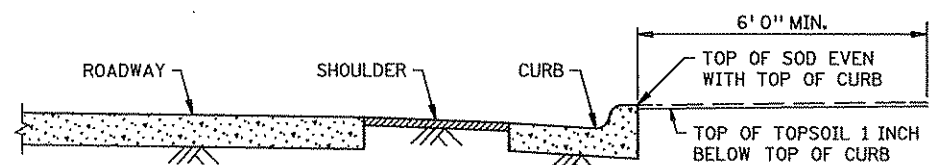
ROUNDING SHOULDERS AND BACKSLOPES



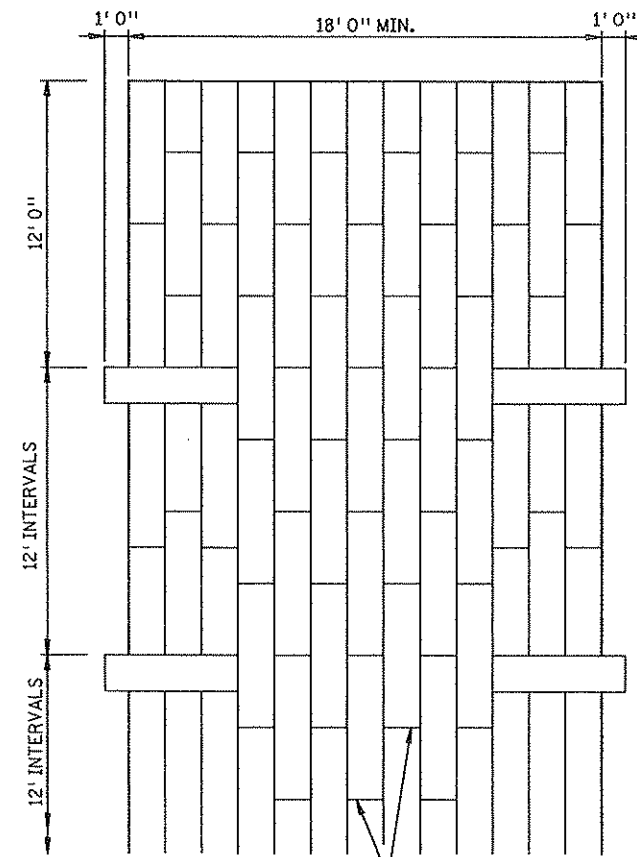
SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES



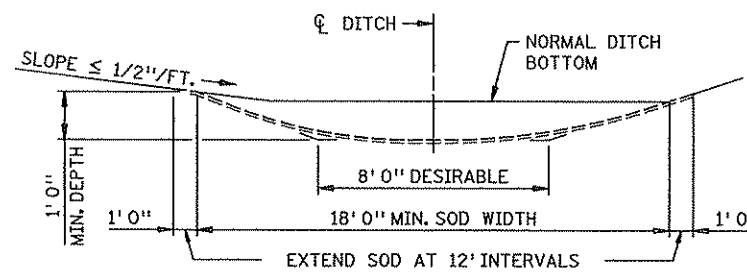
SHAPING AND TOPSOILING INSLOPES



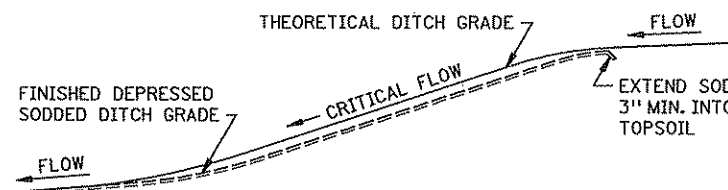
SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED



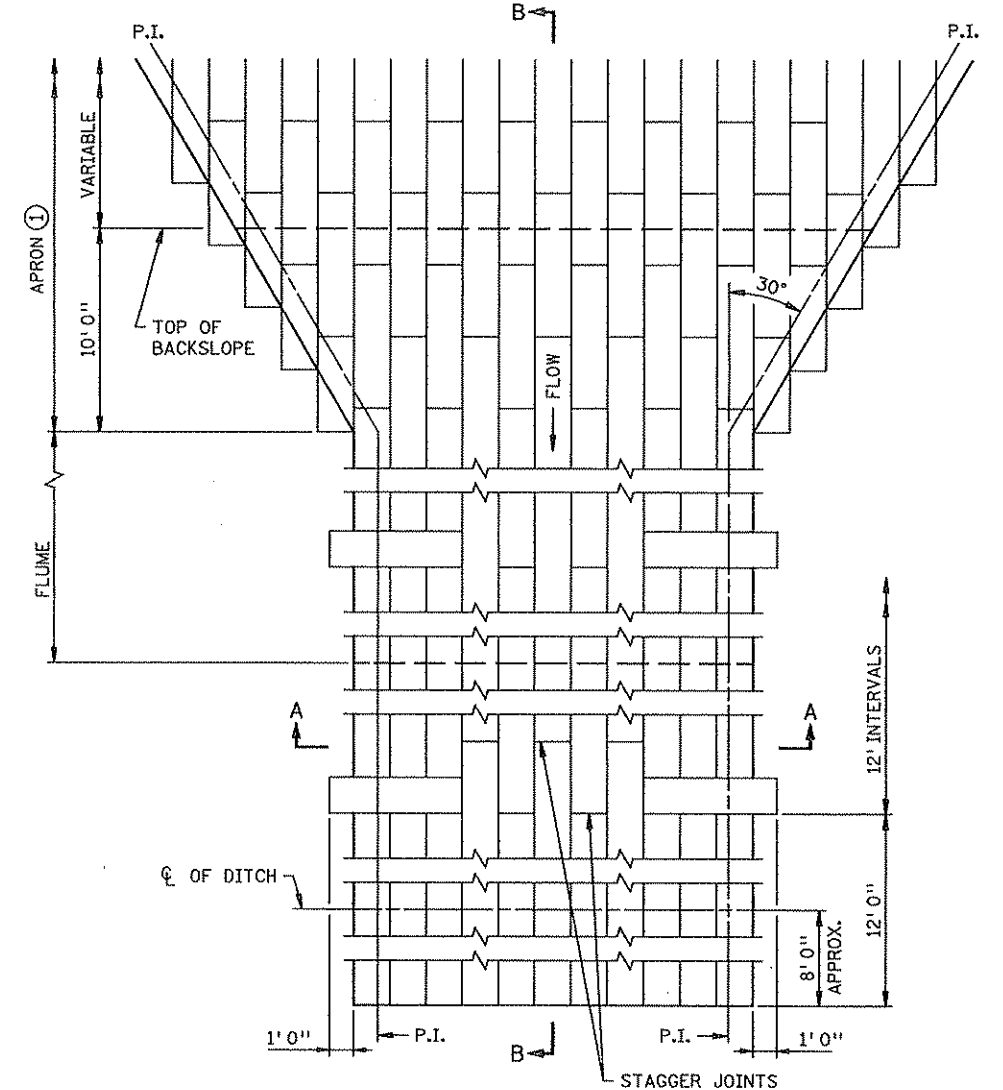
STAGGER JOINTS
PLAN VIEW



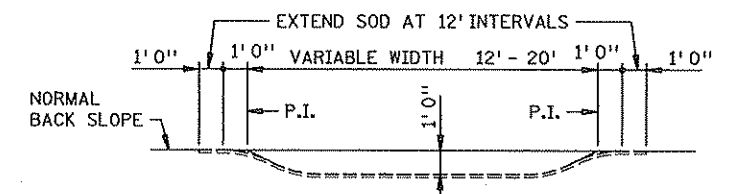
SODDED DITCH CROSS SECTION
WHERE FRONT OR BACK SLOPE IS FLAT (LESS THAN 1/2"/FT.),
FIRST NOTCH DITCH AND THEN PROVIDE ROUNDING.



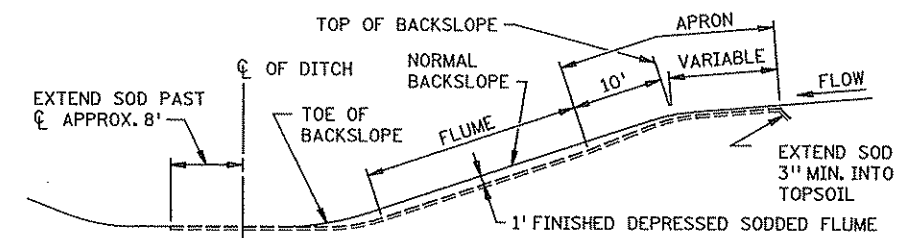
DITCH PROFILE
SODDED DITCH DETAILS



PLAN VIEW



SECTION A-A



SECTION B-B
SODDED FLUME DETAILS

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

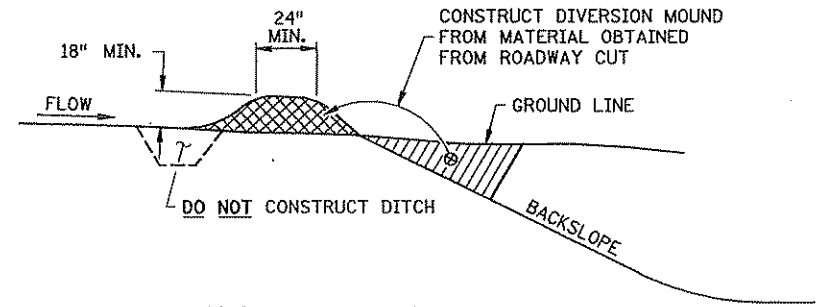
S.P. 02-617-19
S.P. *****
S.P. *****

STANDARD SHEET NO.
5-297.404
STANDARD APPROVED:
NOVEMBER 20, 2002

TITLE:
PERMANENT EROSION CONTROL
ALONG ROADWAYS, DITCHES AND FLUMES

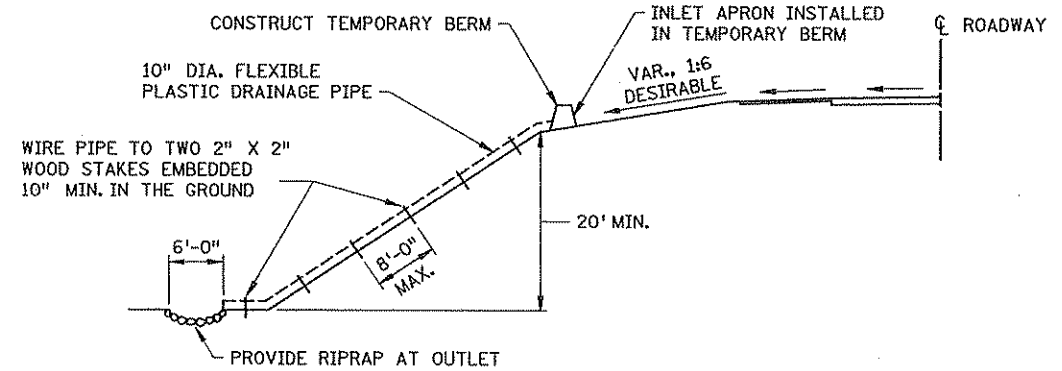
FILE NAME:
p:\02-617-19\plan\5-297.404_spn.dgn

PLOTTED/REVISED: 3/5/2010



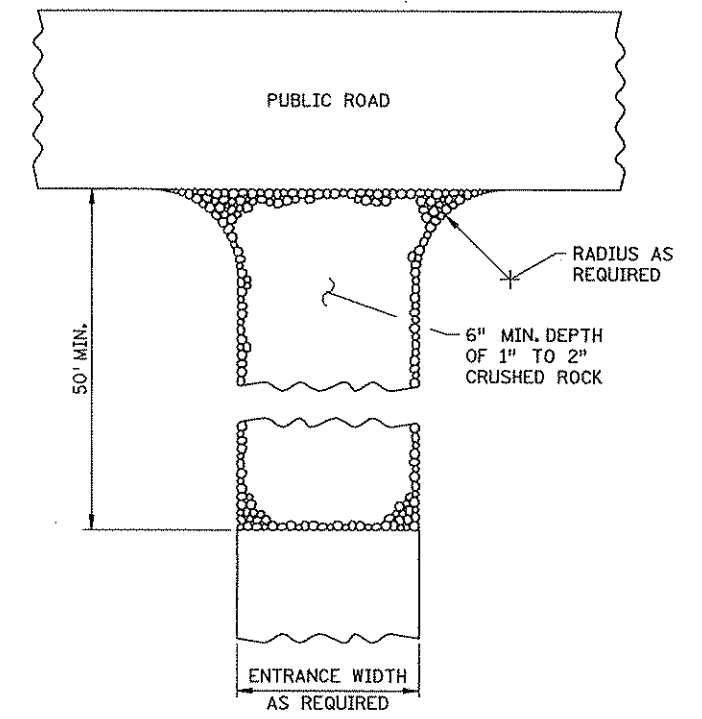
DIVERSION MOUND

DESIGN GUIDELINES:
 STORM FREQUENCY: 10 YEAR - 24 HOUR
 MAXIMUM DRAINAGE AREA: 5 ACRES
 MAXIMUM DIVERSION: GRADE 5%

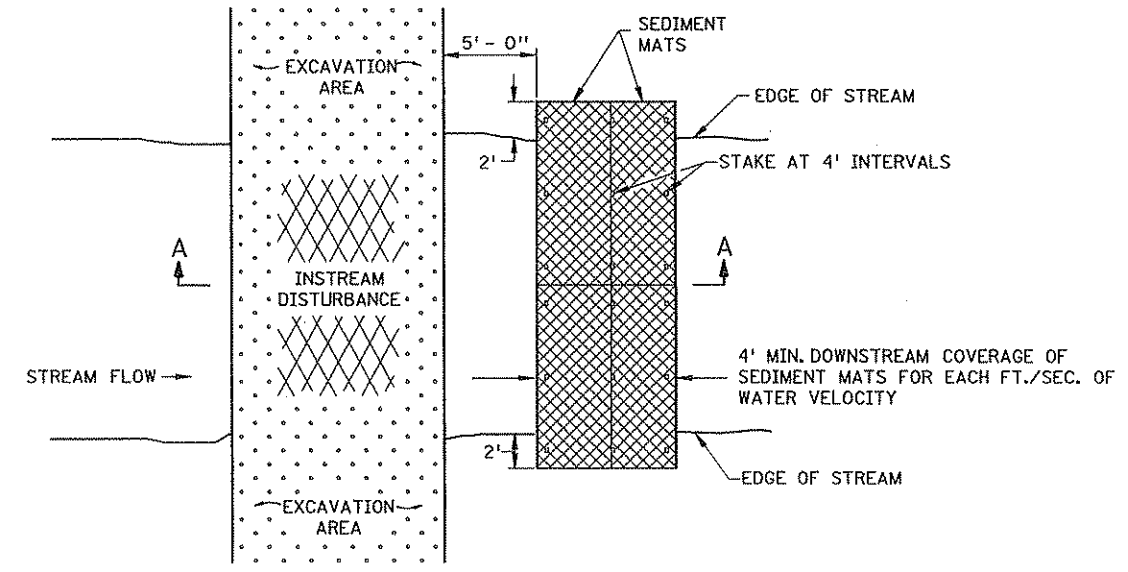


TEMPORARY DOWN DRAIN ON FILL SLOPE

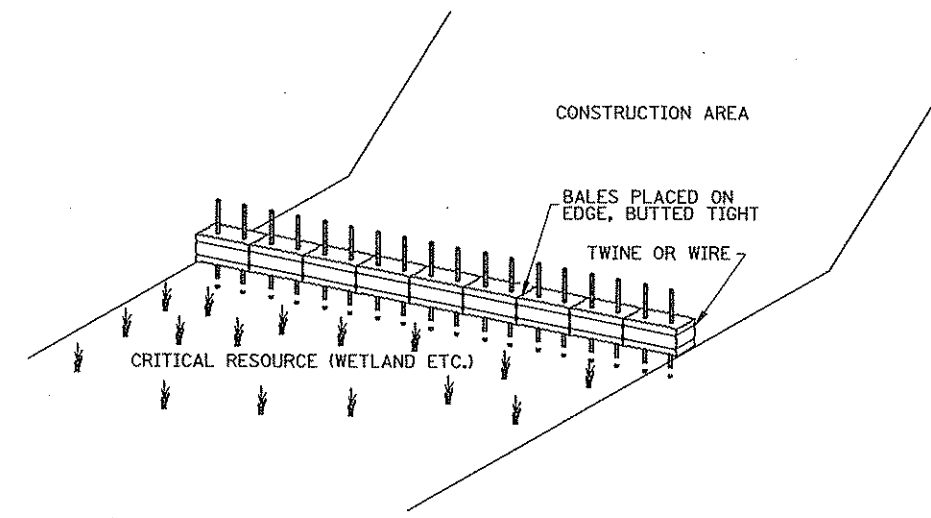
DESIGN GUIDELINES:
 STORM FREQUENCY: 2 YEAR - 24 HOUR
 MAXIMUM DRAINAGE AREA: 3 ACRES



ROCK CONSTRUCTION ENTRANCE ①

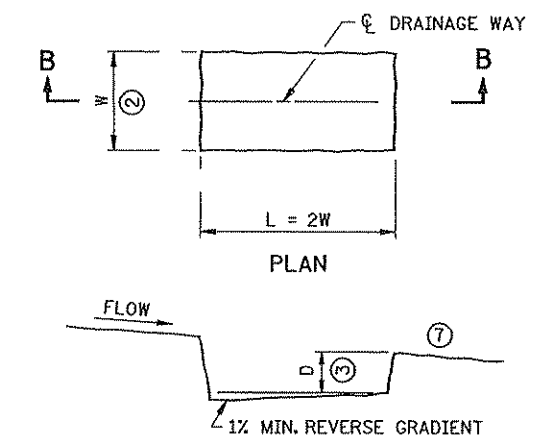


PLAN VIEW

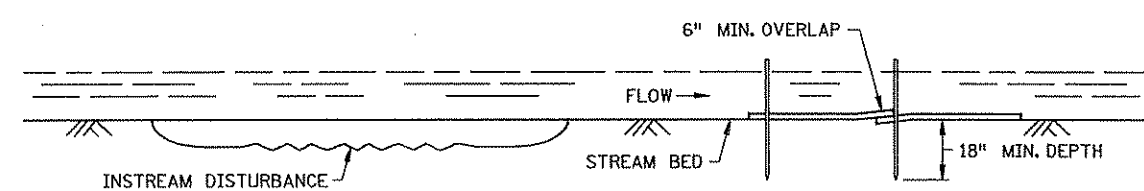


BALE BARRIERS

TO BE USED FOR CRITICAL PERIMETER CONTROL AREAS



**SECTION B-B
 SEDIMENT TRAP DETAIL**

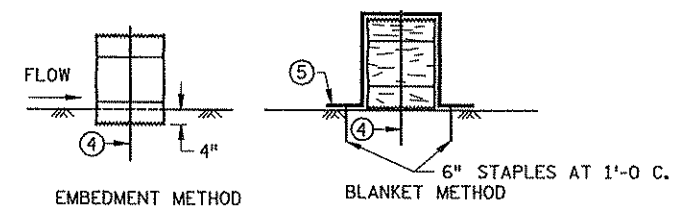


SECTION A-A

SEDIMENT MAT ⑥

TYPICAL STREAM BED INSTALLATION

DESIGN GUIDELINES:
 MAXIMUM FLOW VELOCITY: 5 FT./SEC.
 MAXIMUM FLOW DEPTH: 2 FT.



BALE BARRIER DETAIL

APPROX. BALE SIZE: 14" X 18" X 36" LONG

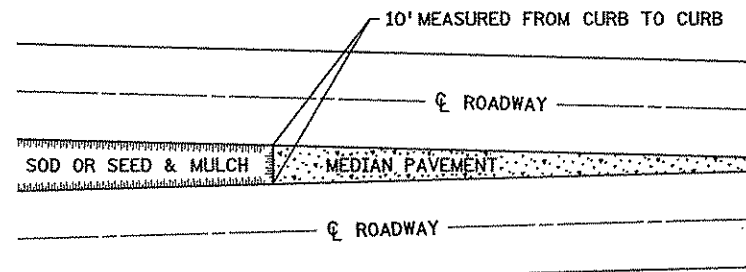
NOTES:

- SEE SPECS. 2573, 3892, & 3894.
- ① ROCKS AT ENTRANCE CLEAN WORKSITE MUD OFF OF TRUCK TIRES BEFORE TRUCKS ENTER MAIN ROAD. KEEPING MUD OFF THE ROAD WILL PREVENT AUTO DAMAGE AND KEEP CONSTRUCTION SEDIMENT OUT OF DRAINAGE SYSTEMS AND WETLANDS. GEOTEXTILE MAY BE PLACED UNDER THE ROCK TO KEEP ROCKS SEPARATE FROM SOIL.
- ② W = 10 FT. MIN., 20 FT. MAX.
- ③ D = 2 FT.
- ④ TWO 2 IN. X 2 IN. WOOD STAKES OR REINFORCING BARS IN EACH BALE EMBEDDED 10 INCHES MINIMUM IN THE GROUND.
- ⑤ PLACE A CATEGORY 3 EROSION CONTROL BLANKET, 6 FT. WIDE MINIMUM, OVER THE BALE INSTEAD OF TRENCHING.
- ⑥ THIS DETAIL MAY NOT BE ACCEPTABLE FOR WORK ON PUBLIC WATERS, SEE GENERAL PUBLIC WATERS PERMIT (GP) 2004-0001.
- ⑦ LOCATION OF DOWNSTREAM TEMPORARY SEDIMENT CONTROL DEVICE.

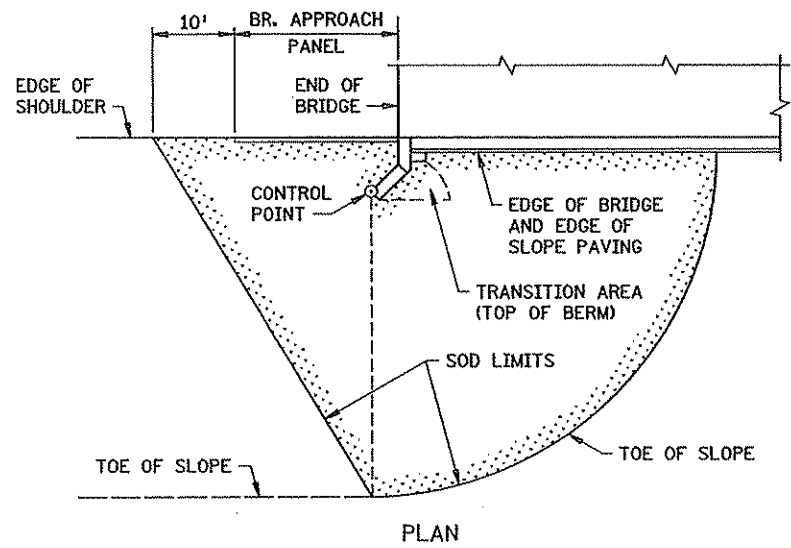
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S.P. 02-617-19 S.P. ***** S.P. *****	STANDARD SHEET NO. 5-297.405 (2 of 4)	TITLE:
	STANDARD APPROVED: SEPTEMBER 27, 2006	TEMPORARY SEDIMENT CONTROL MISCELLANEOUS DETAILS
SHEET NO. 34 OF 44 SHEETS		

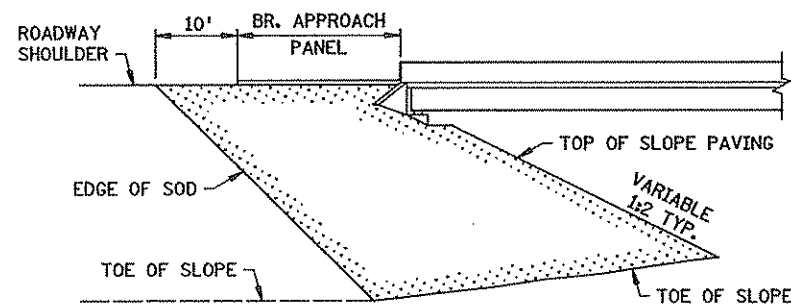
PLOTTED/REVISED: 3/5/2010



SODDING LIMITS AT GORE AREA

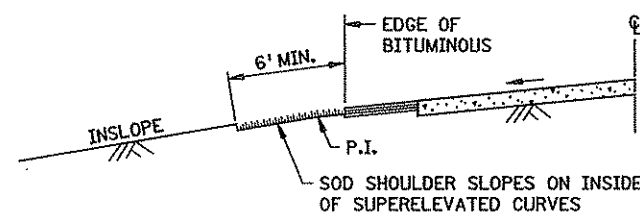


PLAN

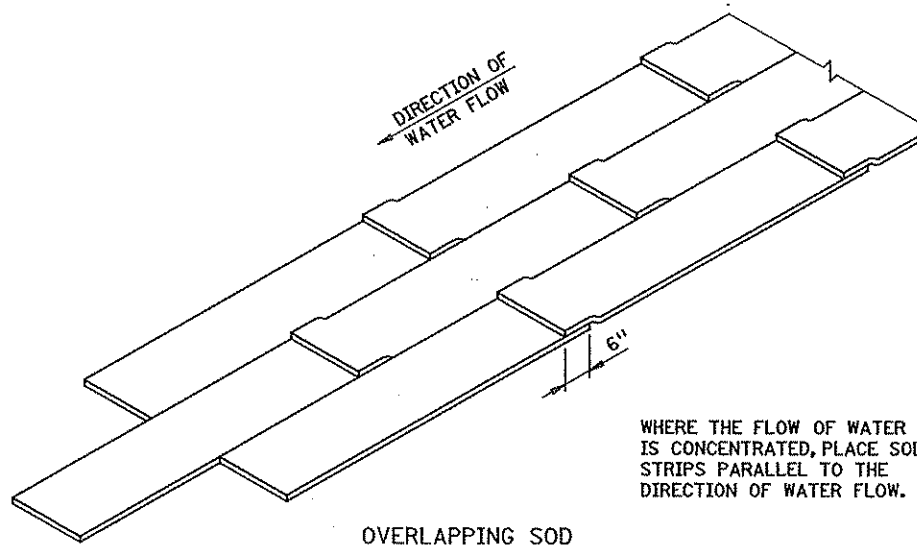


ELEVATION

SODDING LIMITS AT BRIDGE APPROACH FILLS

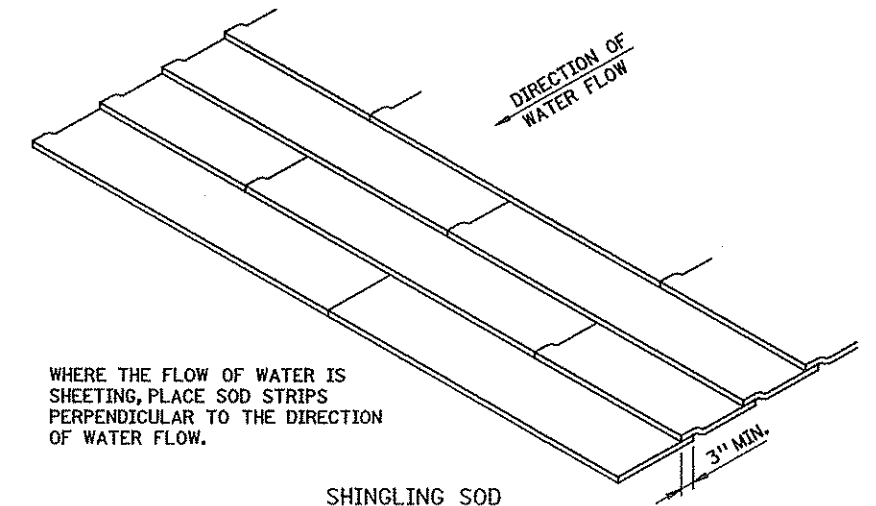


SODDING INSLOPES OF SUPERELEVATED CURVES



OVERLAPPING SOD

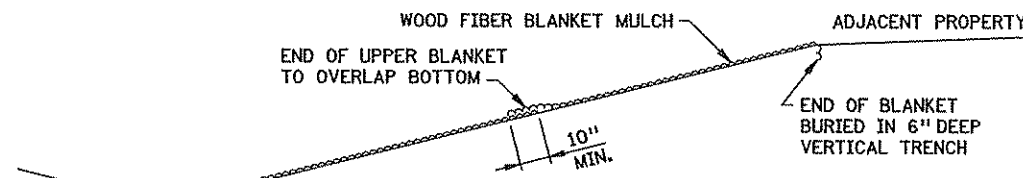
WHERE THE FLOW OF WATER IS CONCENTRATED, PLACE SOD STRIPS PARALLEL TO THE DIRECTION OF WATER FLOW.



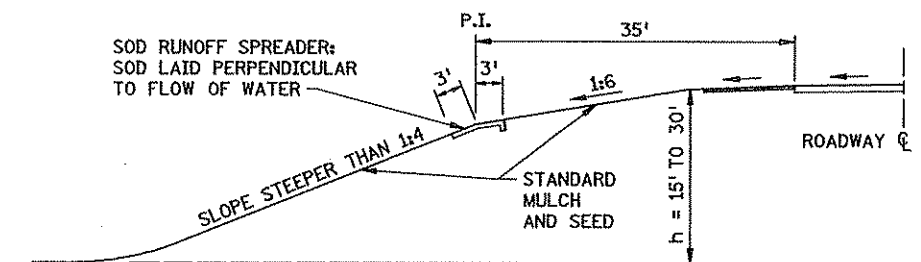
SHINGLING SOD

WHERE THE FLOW OF WATER IS SHEETING, PLACE SOD STRIPS PERPENDICULAR TO THE DIRECTION OF WATER FLOW.

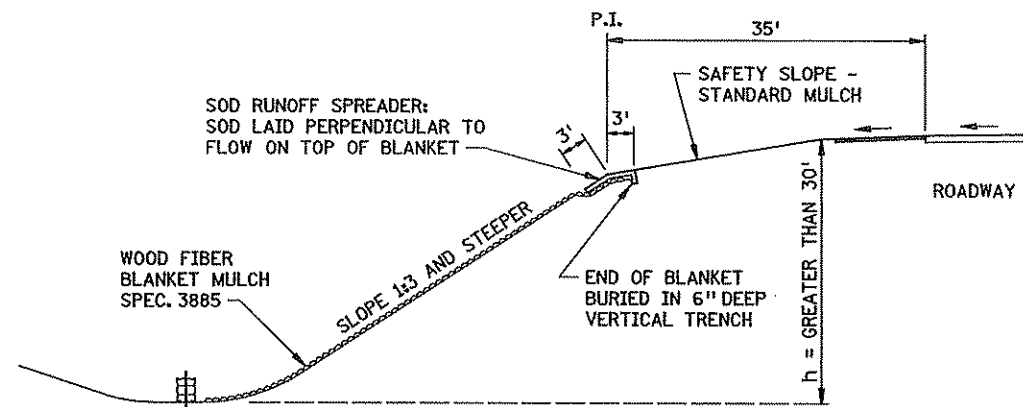
SPECIAL SOD PLACEMENT TECHNIQUES



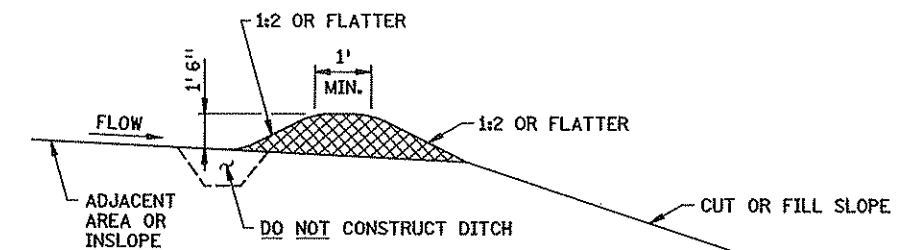
WOOD FIBER BLANKET INSTALLATION ON A CUT SLOPE



BROKEN-BACK SAFETY FILL SLOPE



WOOD FIBER BLANKET INSTALLATION ON AN INSLOPE (WHEN REQUIRED)

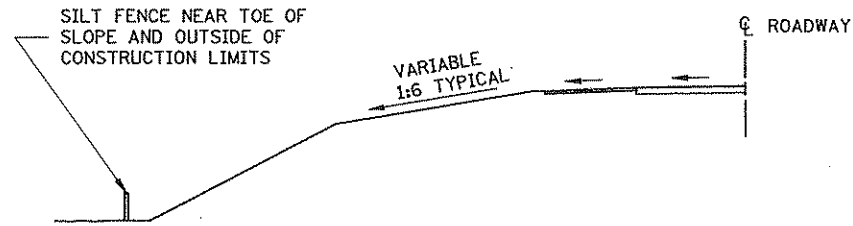


PERMANENT SLOPE PROTECTION DIKE

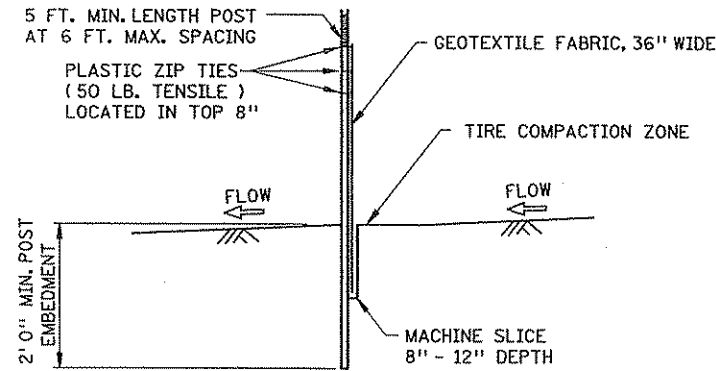
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S.P. 02-617-19 S.P. ****-****-**** S.P. ****-****-****	STANDARD SHEET NO. 5-297.406	TITLE: PERMANENT EROSION CONTROL ALONG ROADWAYS AND AT GORE AREAS & BRIDGE APPROACH FILLS
	STANDARD APPROVED: JANUARY 31, 1985	
	REVISION DATE 10-26-2000	SHEET NO. 35 OF 44 SHEETS

PLOTTED/REVISED: 3/5/2010

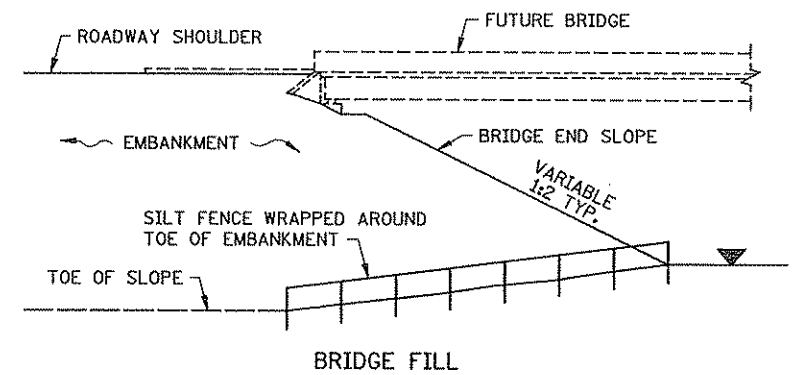


LOCATION OF SILT FENCE AT TOE OF ROADWAY EMBANKMENT

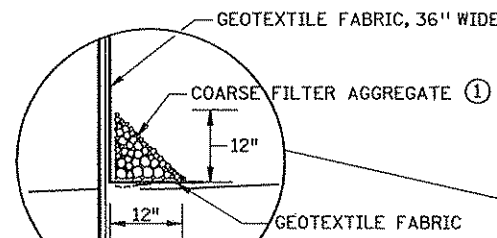


SILT FENCE, MACHINE SLICED

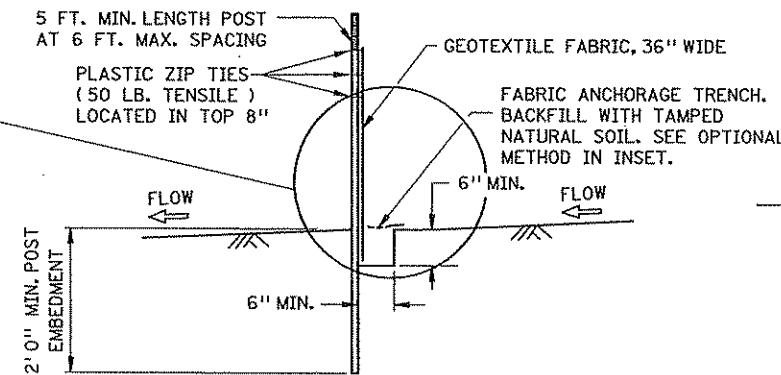
DESIGN GUIDELINES:
TO PROTECT AREAS FROM SHEET FLOW.
MAXIMUM CONTRIBUTING AREA: 1 ACRE.



DESIGN GUIDELINES:
WATER COURSE FLOW VELOCITY: STAGNANT
CONTRIBUTING SLOPE AREA: 1/2 ACRE

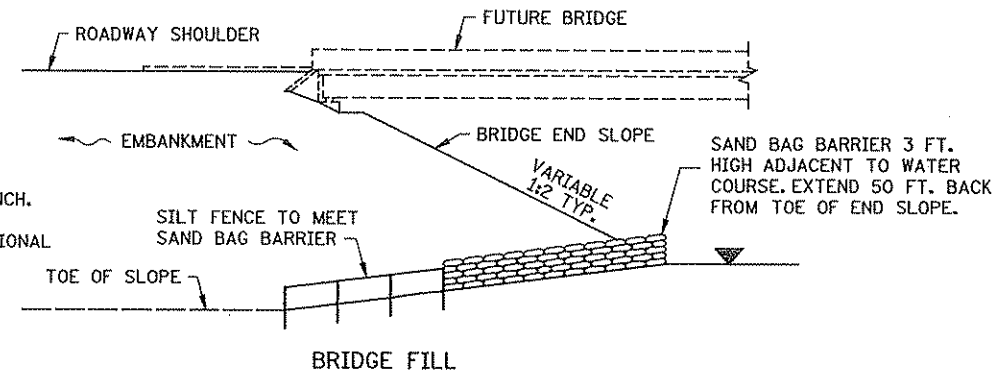


OPTIONAL METHOD FOR SILT FENCE, HEAVY DUTY

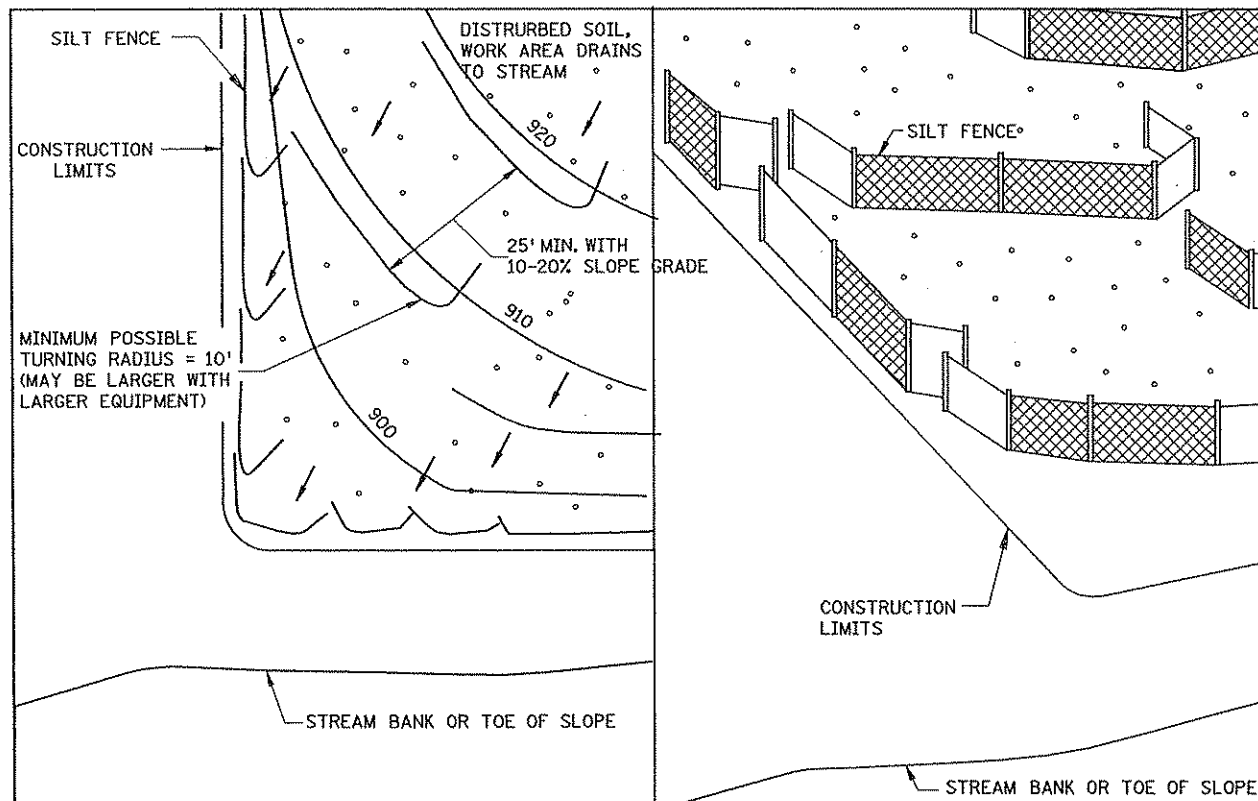


SILT FENCE, HEAVY DUTY (HAND INSTALLED)

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



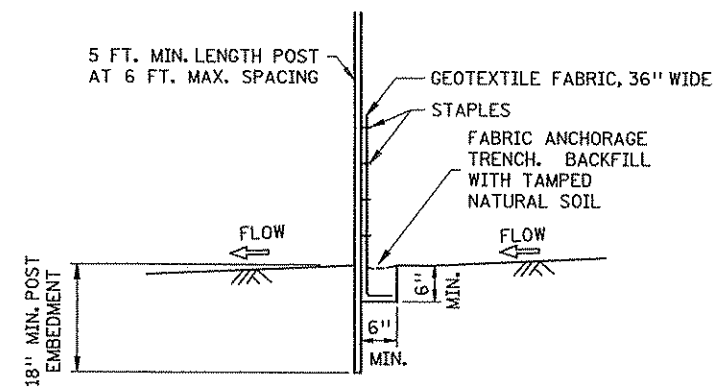
DESIGN GUIDELINES:
WATER COURSE FLOW VELOCITY: 1 TO 7 FT./SEC.
CONTRIBUTING SLOPE AREA: 1 ACRE



PLAN VIEW

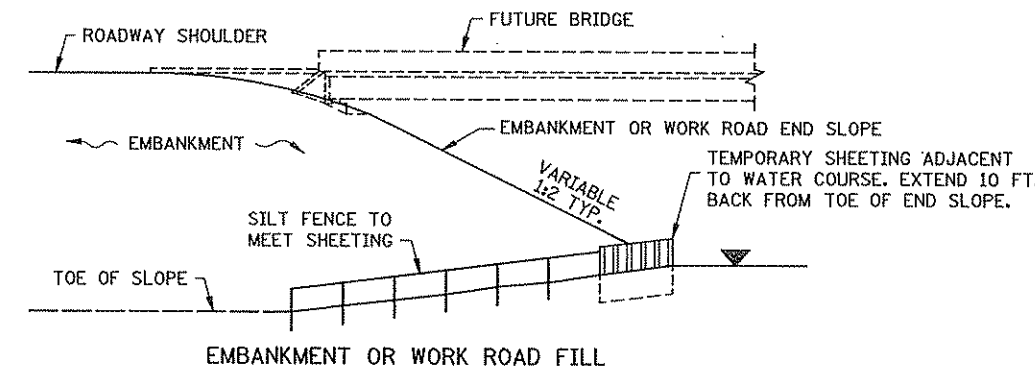
SIDE VIEW

SILT FENCE, J-HOOK INSTALLATION



SILT FENCE, PREASSEMBLED

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



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

SILT FENCE AT BRIDGE EMBANKMENT ADJACENT TO WATER

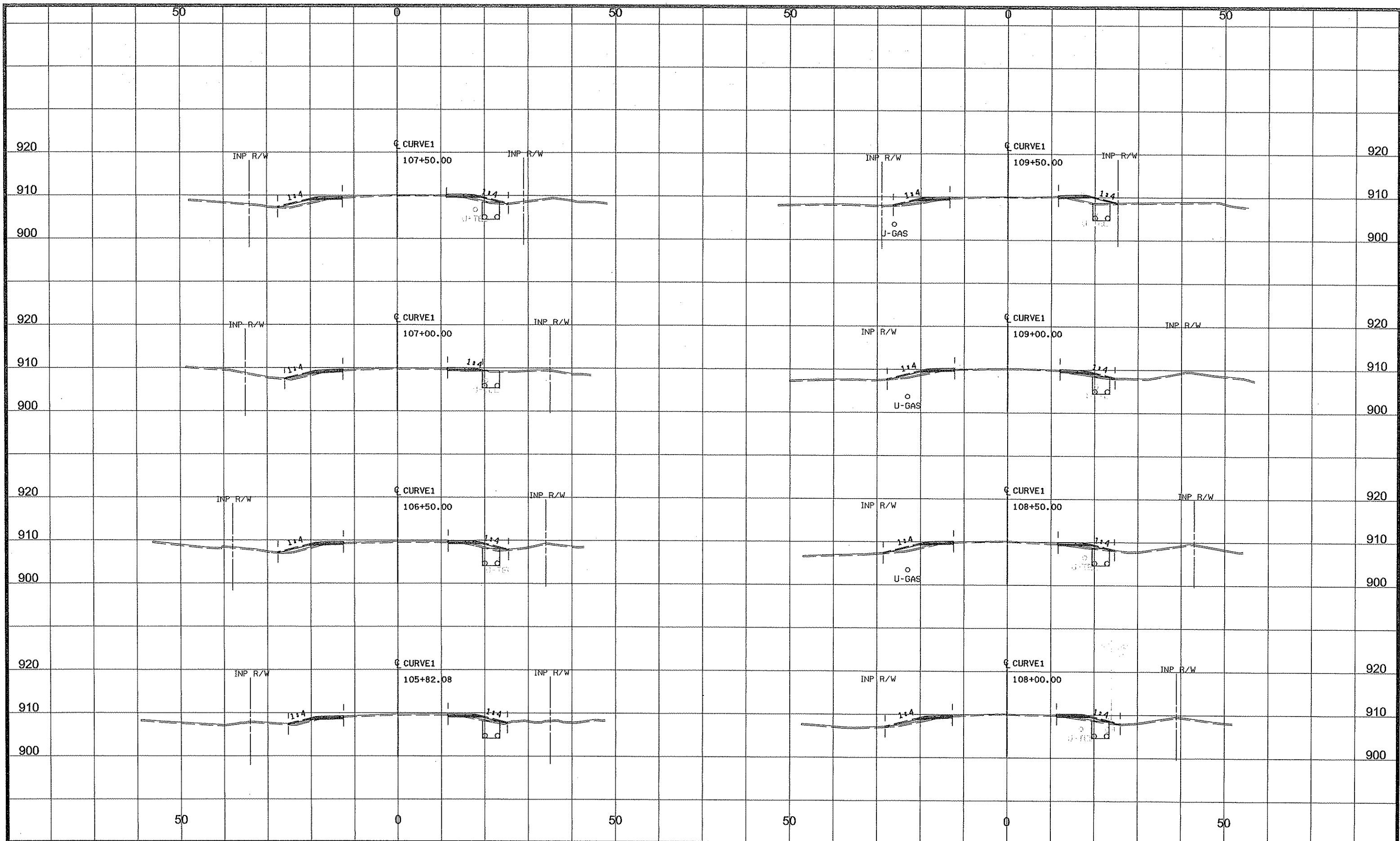
NOTES:

SEE SPECS. 2573, 3149 & 3886.

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

FILE NAME: P:\02-617-19\plan\5-297.408.1.spr.dgn

S.P. 02-617-19 S.P. ***-***-*** S.P. ***-***-***	STANDARD SHEET NO. 5-297.408 (1 OF 2)	TITLE: TEMPORARY SEDIMENT CONTROL SILT FENCE
	STANDARD APPROVED: SEPTEMBER 27, 2006	
SHEET NO. 36 OF 44 SHEETS		



NO	DATE	BY	CKD	APPR	REVISION

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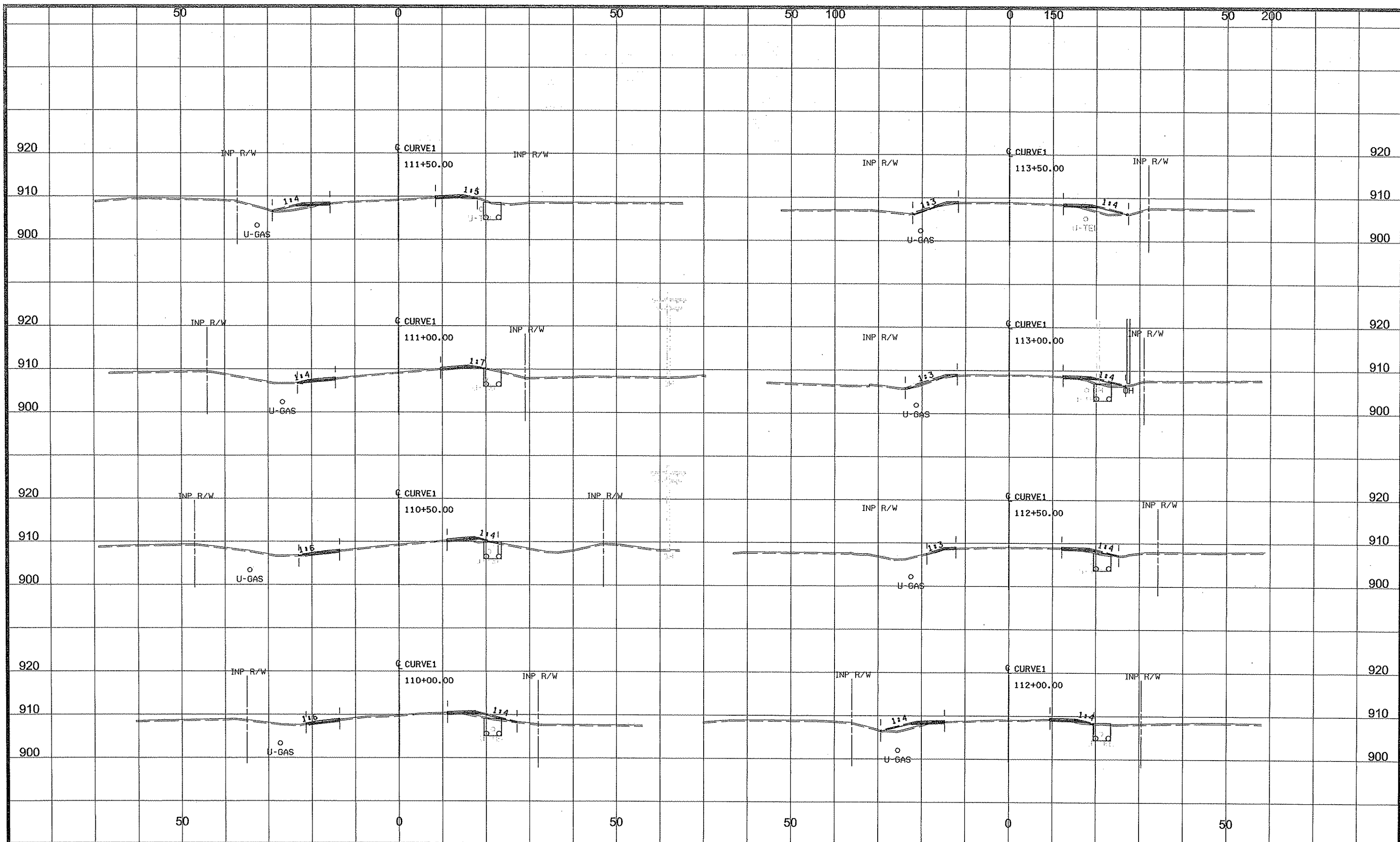
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 DESIGN BY NJD DATE 2-2-10
 CHECKED BY JEO DATE _____



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. 02-617-19

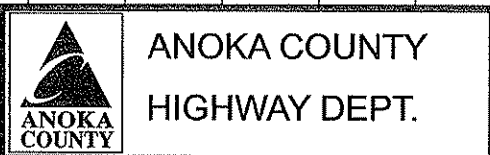
CROSS SECTIONS
 STA 105+82.08 TO 109+50.00
 Sheet 37 of 44 Sheets



NO	DATE	BY	CKD	APPR	REVISION

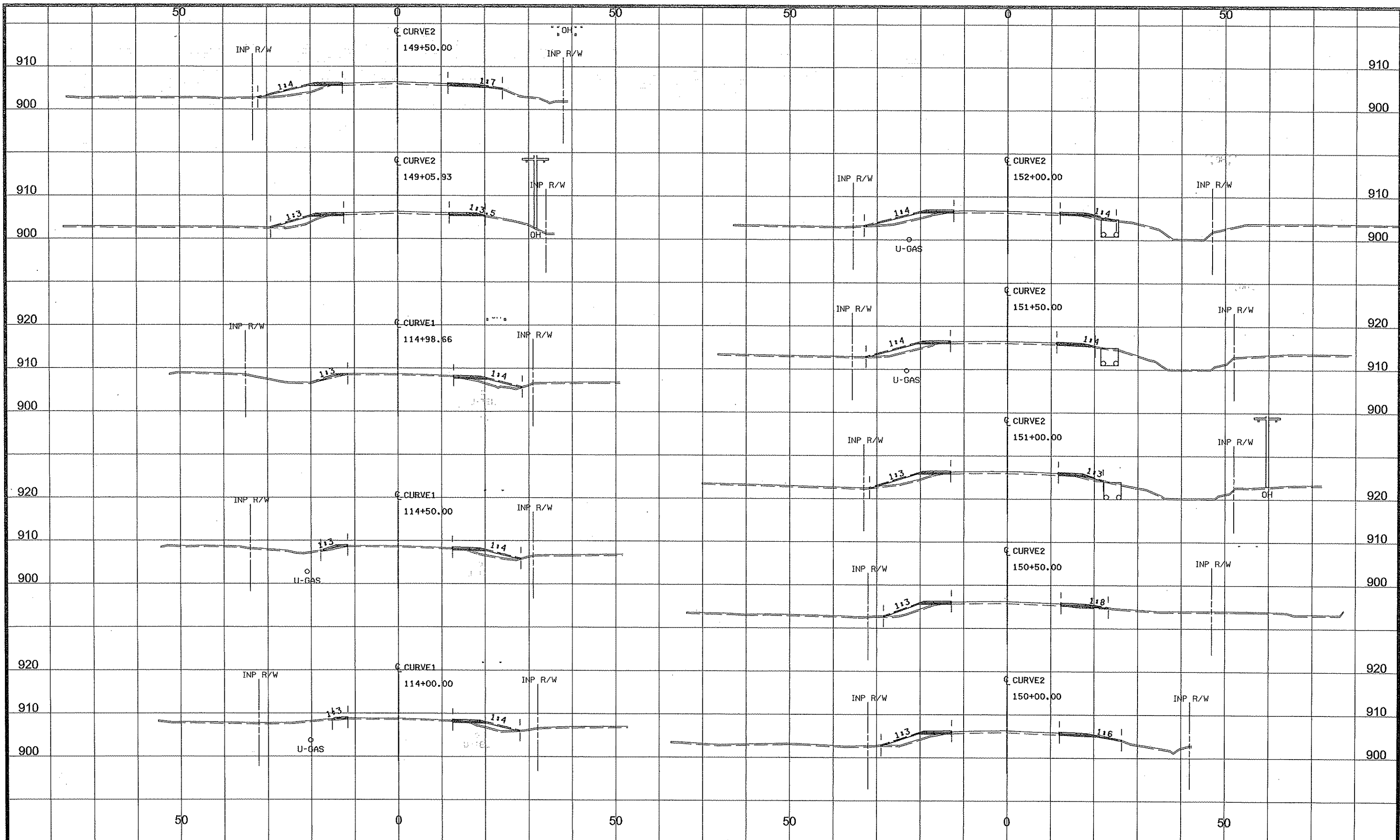
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 DESIGN BY NJD DATE 2-2-10
 CHECKED BY JEO DATE _____



STATE PROJECT NO. 02-617-19

CROSS SECTIONS
 STA 110+00.00 TO 113+50.00
 Sheet 38 of 44 Sheets



NO	DATE	BY	CKD	APPR	REVISION

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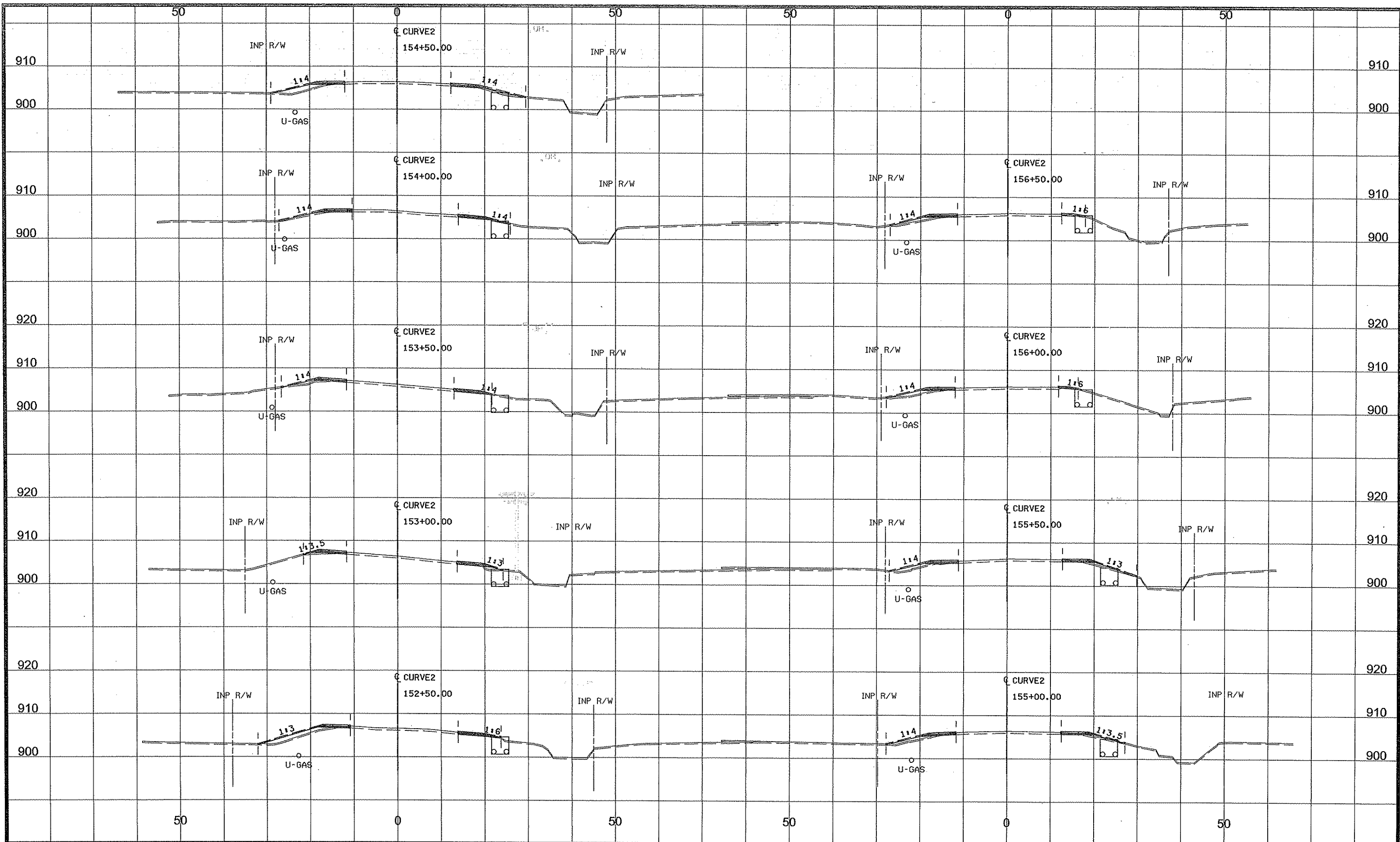
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 CHECKED BY JEO DATE _____



ANOKA COUNTY
HIGHWAY DEPT.

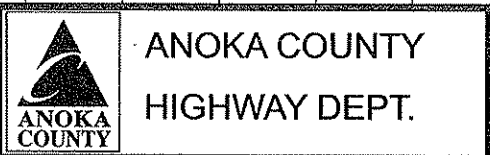
STATE PROJECT NO. 02-617-19

CROSS SECTIONS
 STA 114+00.00 TO 152+00.00
 Sheet 39 of 44 Sheets



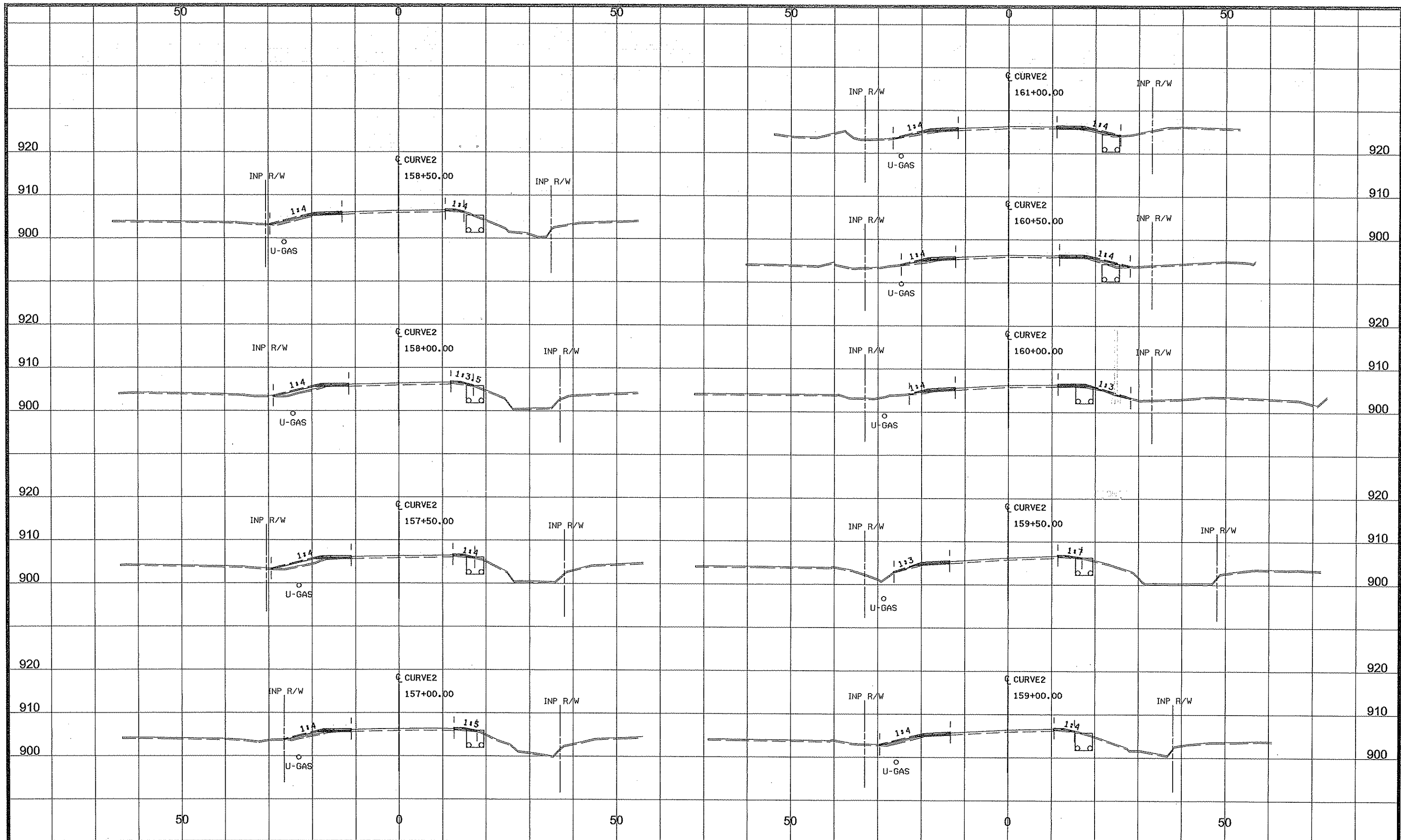
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3/5/2010 1:38:13 PM					

DRAWN BY NJD DATE 2-2-10
 DESIGN BY NJD DATE 2-2-10
 CHECKED BY JEO DATE _____



STATE PROJECT NO. 02-617-19

CROSS SECTIONS
 STA 152+50.00 TO 156+50.00
 Sheet 40 of 44 Sheets



NO	DATE	BY	CKD	APPR	REVISION
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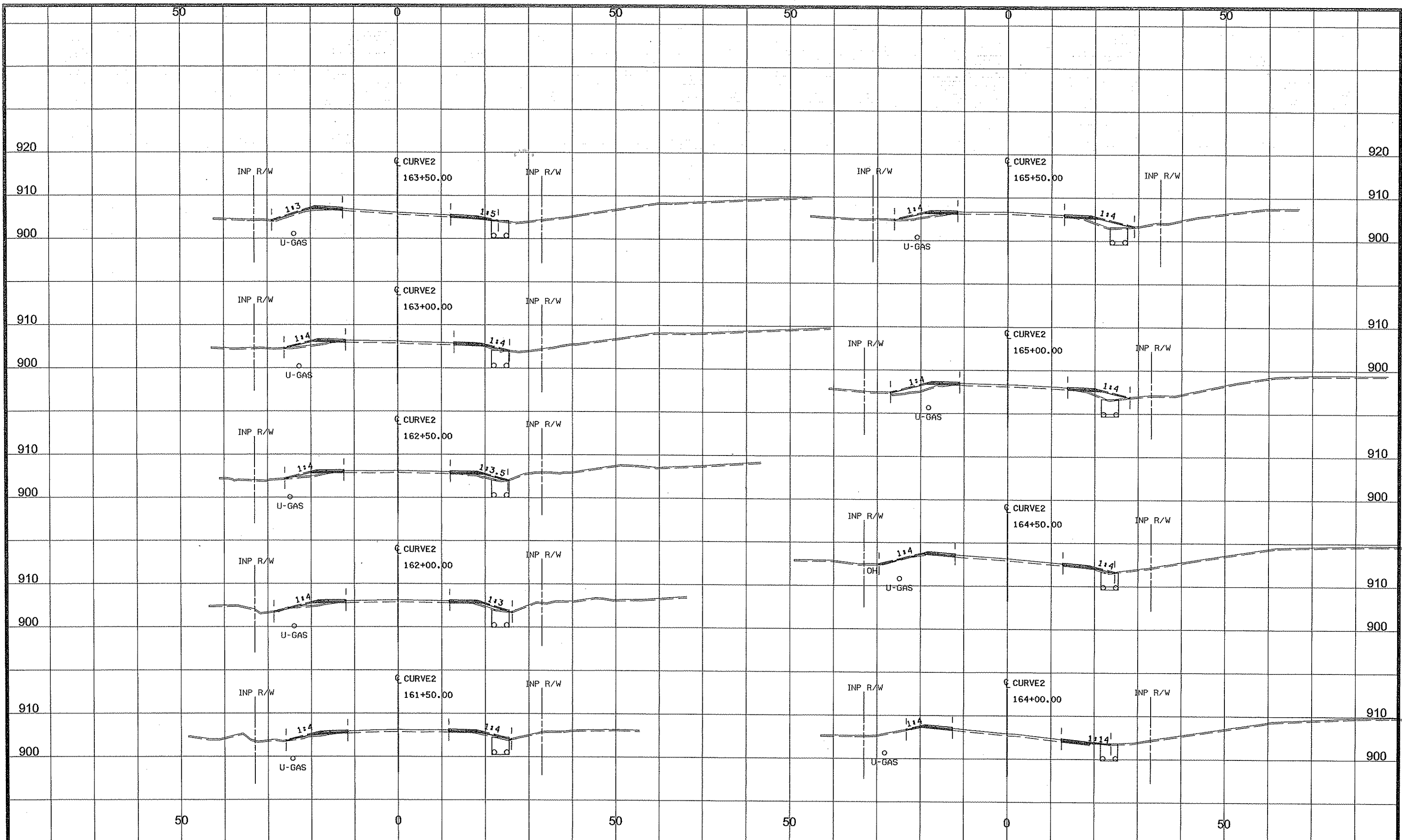
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ANOKA COUNTY
HIGHWAY DEPT.

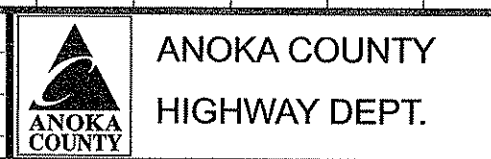
STATE PROJECT NO. 02-617-19

CROSS SECTIONS
 STA 157+00.00 TO 161+00.00
 Sheet 41 of 44 Sheets

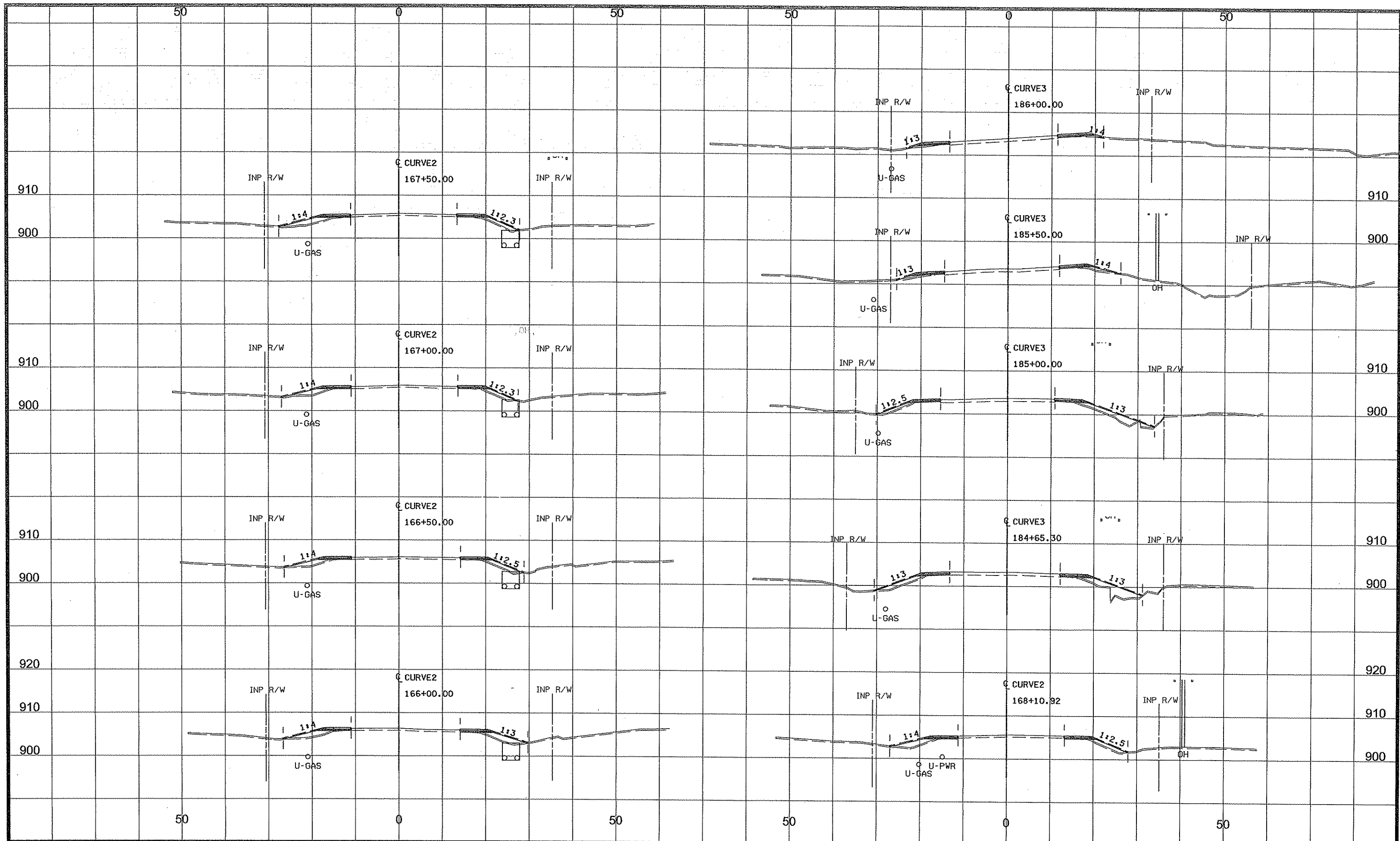


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 DESIGN BY NJD DATE 2-2-10
 CHECKED BY JEO DATE _____



STATE PROJECT NO. 02-617-19
 CROSS SECTIONS
 STA 161+50.00 TO 165+50.00
 Sheet 42 of 44 Sheets



NO	DATE	BY	CKD	APPR	REVISION
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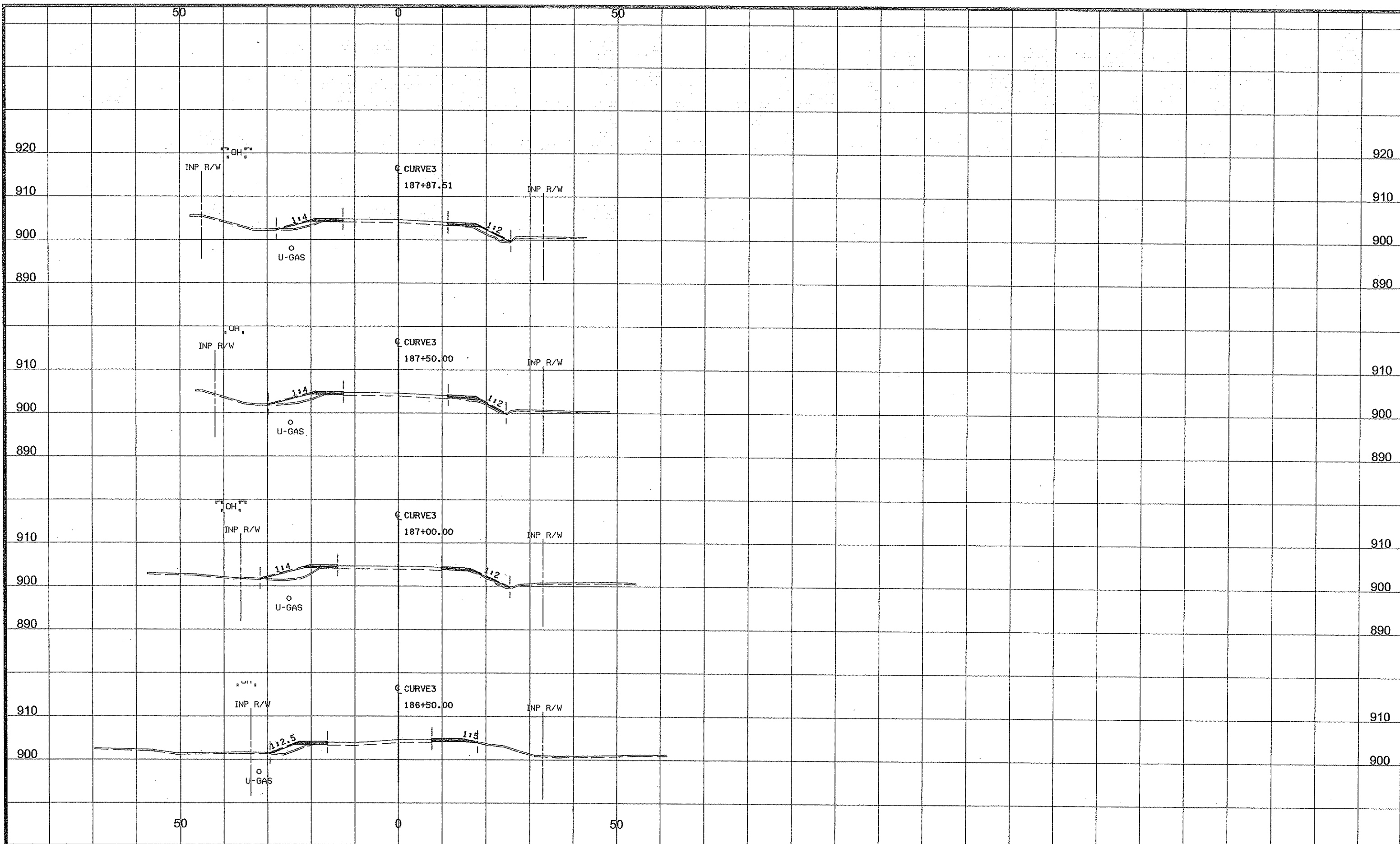
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 DESIGN BY NJD DATE 2-2-10
 CHECKED BY JEO DATE



ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. 02-617-19

CROSS SECTIONS
 STA 166+00.00 TO 186+00.00
 Sheet 43 of 44 Sheets



NO	DATE	BY	CKD	APPR	REVISION
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 CHECKED BY JEO DATE



ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. 02-617-19

CROSS SECTIONS
 STA 186+50.00 TO 187+87.51
 Sheet 44 of 44 Sheets