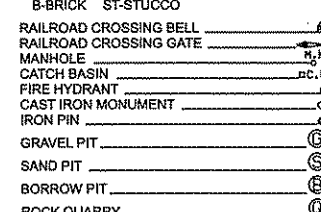
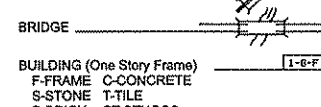
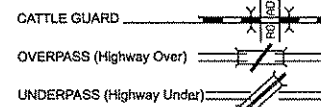
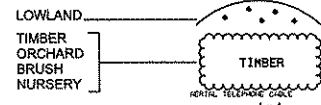


PLAN SYMBOLS

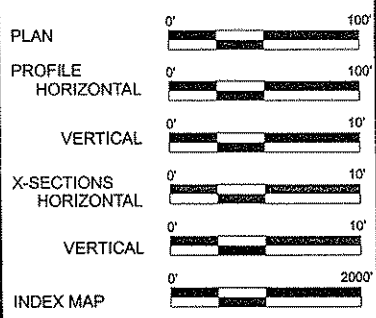
- COUNTY LINE _____
- TOWNSHIP OR RANGE LINE _____
- SECTION LINE _____
- QUARTER LINE _____
- SIXTEENTH LINE _____
- RIGHT OF WAY LINE _____
- SLOPE EASEMENT _____
- EXISTING RIGHT OF WAY _____
- PROPERTY LINE _____
- CORPORATE OR CITY LIMITS _____
- RETAINING WALL _____
- RAILROAD _____
- RAILROAD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



UTILITY SYMBOLS

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

SCALES



MINNESOTA DEPARTMENT OF TRANSPORTATION ANOKA COUNTY

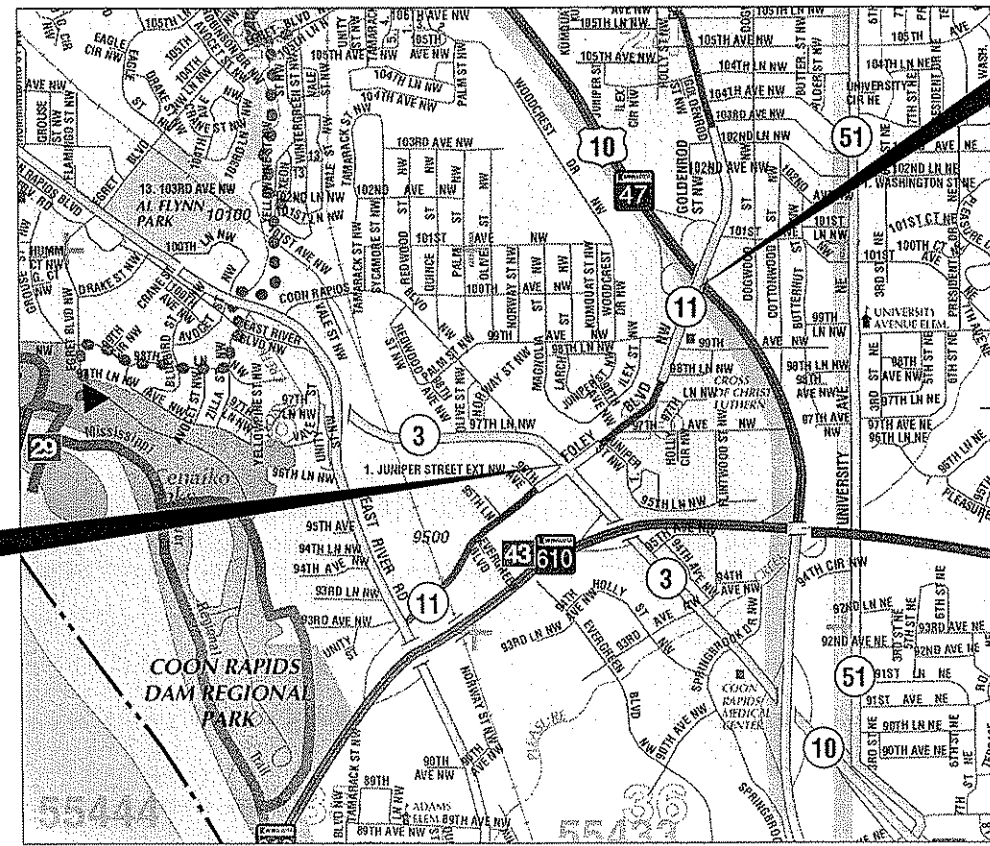
CONSTRUCTION PLAN FOR _____ 2" MILL SURFACE & OVERLAY

LOCATED ON C.S.A.H. 11 BETWEEN COON RAPIDS BLVD (CSAH 3) AND HWY 10

STATE PROJ. NO. 11-11-11

C.S.A.H. 11

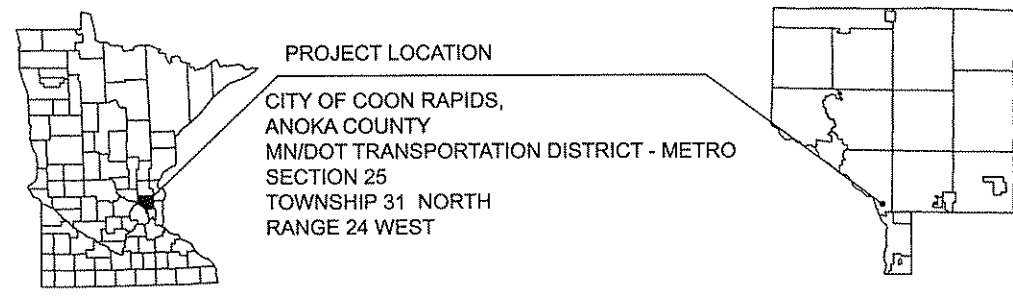
GROSS LENGTH	3116 FEET	0.590 MILES
BRIDGES-LENGTH	0.00 FEET	0.000 MILES
EXCEPTIONS-LENGTH	0.00 FEET	0.000 MILES
NET LENGTH	3116 FEET	0.590 MILES



END C.P. 11-11-11
C.S.A.H. STA. 41+02

BEGIN C.P. 11-11-11
C.S.A.H. 11 STA. 9+86

CITY OF
COON RAPIDS



PROJECT LOCATION
CITY OF COON RAPIDS,
ANOKA COUNTY
MN/DOT TRANSPORTATION DISTRICT - METRO
SECTION 25
TOWNSHIP 31 NORTH
RANGE 24 WEST

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 PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS."

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	STATEMENT OF ESTIMATED QUANTITIES & STORM TAB
3	TYPICAL SECTIONS
4	MISCELLANEOUS DETAILS
5-6	CONSTRUCTION STAGING PLAN
7A	PERMANENT MARKING TABULATION
7-8	TEMPORARY SIGNING, PERMANENT STRIPPING, PAVEMENT MESSAGES
9-10	SIGNING & STRIPING PLAN, TAB, & DETAILS
11-17	MISCELLANEOUS SIGNAL PLANS

THIS PLAN CONTAINS 17 SHEETS

DESIGN DESIGNATION

ESAL 20	NA
R VALUE	NA
ADT (2006) =	16857
Proj. ADT (2026) =	23600
Proj. HCADT (2026) =	23600
Soil Factor	NA
<u>10</u> TON DESIGN	

Functional Classification	MAJOR COLLECTOR
No. of Traffic Lanes <u>4</u>	No. of Parking Lanes <u>0</u>
Design Speed <u>40</u> MPH	N/A
Based on Stopping Sight Distance	N/A
Height of eye <u>3.5'</u>	Height of object <u>2.0'</u>
Design Speed not achieved at:	
STA. _____ TO STA. _____	MPH _____

Approved: 3/1/2012
ANOKA COUNTY ENGINEER

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_11 (ERR-TH10)\Plan\TITLE SHEET.dgn 02/28/2012 8:57:16 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: CHARLES CADENHEAD
 SIGNATURE:
 DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY: CSO DATE: 1/28/2011
 DESIGN BY: CSO DATE: 1/28/2011
 CHECKED BY: JO DATE: _____

ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 11-11-11

TITLE SHEET
 Sheet 1 of 17 Sheets

CSAH 11		STATEMENT OF ESTIMATED QUANTITIES		
ITEM NO.	ITEM	NOTES	UNIT	TOTAL EST. QUANT.
2011.601	CONSTRUCTION SURVEY		LUMP SUM	1
2021.501	MOBILIZATION		LUMP SUM	1
2104.501	REMOVE CURB AND GUTTER		LIN FT	290
2104.503	REMOVE CONCRETE WALK	3	SQ FT	100
2104.505	REMOVE BITUMINOUS PAVEMENT	9	SQ YD	41.1
2104.509	REMOVE MANHOLES OR CATCH BASINS	9	EACH	2
2104.511	SAWING CONCRETE PAVEMENT (FULL DEPTH)	7	LIN FT	36
2104.513	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	9	LIN FT	318
2232.501	MILL BITUMINOUS SURFACE (2.0")	11	SQ YD	25451
2232.604	MILL BITUMINOUS SURFACE (SPECIAL)	12	SQ YD	396
2357.502	BITUMINOUS MATERIAL FOR TACK COAT		GAL	1273
2360.501	TYPE SP 12.5 WEARING COURSE MIXTURE(4,B)	2	TON	46
2360.501	TYPE SP 12.5 WEARING COURSE MIXTURE(4,E)		TON	2927
2360.502	TYPE SP 12.5 NON-WEARING COURSE MIXTURE(4,B)	5	TON	5
2504.602	ADJUST GATE VALVE	10	EACH	2
2506.501	CONST DRAINAGE STRUCTURE DES 48-4020	9	LIN FT	7.5
2506.503	RECONSTRUCT DRAINAGE STRUCTURE	1	LIN FT	15.8
2506.516	CASTING ASSEMBLY	9	EACH	21
2521.501	4" CONCRETE WALK	15	SQ FT	200
2521.501	6" CONCRETE WALK	3	SQ FT	704
2531.501	CONCRETE CURB & GUTTER DESIGN B618	9	LIN FT	290
2531.618	TRUNCATED DOMES		SQ FT	40
2563.601	TRAFFIC CONTROL	14	LUMP SUM	1
2563.610	POLICE OFFICER	13	HOUR	8
2573.530	STORM DRAINAGE INLET PROTECTION	8	EACH	14
2575.523	EROSION CONTROL BLANKET CATEGORY 3		SQ YD	43
2581.501	REMOVABLE PREFORMED PLASTIC MARKING	4	LIN FT	498
2582.502	4" SOLID LINE WHITE-EPOXY	6	LIN FT	6623
2582.502	4" BROKEN LINE WHITE - EPOXY	6	LIN FT	1160
2582.502	4" SOLID LINE YELLOW-EPOXY	6	LIN FT	4190
2582.502	4" BROKEN LINE YELLOW -EPOXY	6	LIN FT	600
2582.502	4" DOUBLE SOLID LINE YELLOW-EPOXY	6	LIN FT	777
2582.602	PAVT MSSG (ONLY) PREF THERMOPLASTIC	6	EACH	2
2582.602	PAVT MSSG (LT ARROW) PREF THERMOPLASTIC	6	EACH	16
2582.602	PAVT MSSG (RT ARROW) PREF THERMOPLASTIC	6	EACH	4
2582.603	24" YELLOW PREF THERMOPLASTIC	6	LIN FT	178
2582.603	24" WHITE PREF THERMOPLASTIC	6	LIN FT	228
2582.618	3 X 6 ZEBRA CROSSWALK - PREFORMED THERMOPLASTIC	6	SQ FT	414

NOTES:

- ITEM INCLUDES STORM AND SANITARY M.H.
- ITEM FOR PAVING SIDE STREETS
- ITEM FOR PED RAMPS AND ISLAND NOSE
- SKIPS WILL BE PLACED AS SOON AS POSSIBLE AFTER MILLING AND PAVING OPERATIONS
- ITEM FOR BACK FILLING AROUND CATCH BASINS AND MAN HOLE REPAIRS (BIT. PATCHING)
- ITEM MUST BE PLACED WITHIN 72 HOURS OF COMPLETION OF FINAL BITUMINOUS WEAR COURSE
- ITEM USED FOR SAWING CONCRETE CURB AND GUTTER
- ALL DRAINAGE STRUCTURES ON THIS ROAD SEGMENT MUST HAVE INLET PROTECTION
- REFERENCE STORM STRUCTURE REPAIR TAB (INCLUDES INSTALATION, SETTING TO PROPER ELEVATION PER FIELD ENGINEER)
- REFERENCE CONSTRUCTION PLAN
- DETAIL MILLING AROUND MANHOLE AND CATCH BASINS IS INCIDENTAL TO THIS ITEM
- ITEM FOR MILLING SIDE STREETS
- TO BE USED AT THE INTERSECTIONS OF HWY 10 OFF RAMP, 99TH & COON RAPIDS BLVD DURING MILLING AND PAVING OPERATIONS
- ROAD WORK AHEAD, DO NOT PASS, PASS WITH CARE, NO CENTERLINE STRIPE, BUMP AND BUMP AHEAD SIGNS TO BE INPLACE AT THE START OF RECLAIM AND OVERLAY OPERATIONS
- ITEM USED TO TIE 6" CONCRETE WALK INTO EXISTING CONCRETE WALK

BASIS OF PLANNED QUANTITIES

<u>ITEM NO.</u>		
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	.05 GAL / SQ YD
2361.501	TYPE SP 12.5 WEARING COURSE MIX (4, E)	115/SQ.YD./IN THICKNESS
2362.502	TYPE SP 12.5 NON-WEARING COURSE MIX (4, B)	115/SQ.YD./IN THICKNESS
2581.501	REMOVABLE PREFORMED PLASTIC MARKING	2' AT 50' INTERVALS FOR SKIPS

NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\12-01-00\CSAH_11_ERR-T110\Plant\SEQ.dgn					
03/01/2012 11:05:33 AM					

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PRINT NAME: CHARLES CADENHEAD

SIGNATURE: *[Signature]*

DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY CSO DATE 1/28/2011

DESIGN BY CSO DATE 1/28/2011

CHECKED BY JO DATE



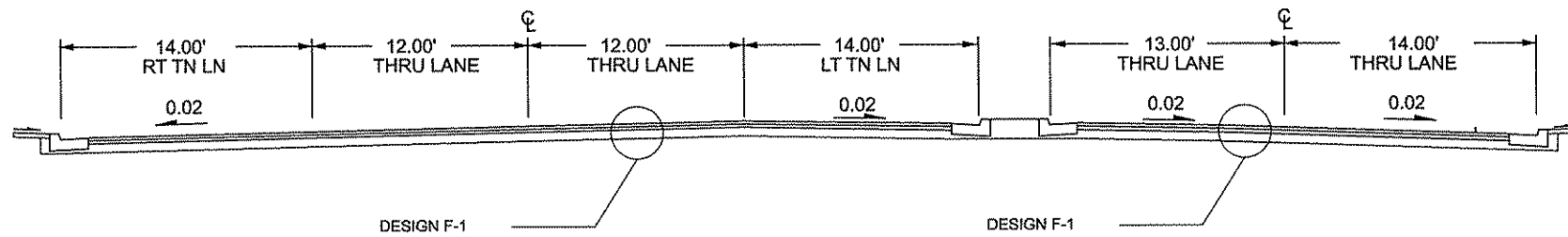
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STATE AID PROJECT NO. _____

CITY PROJECT NO. _____

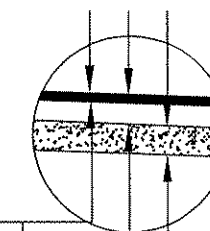
COUNTY PROJECT NO. 11-11-11

C.S.A.H. 11
EXISTING MEDIAN CURB SECTION
 STA. 9+86.5 TO STA. 15+25
 STA. 36+92.5 TO STA. 39+14
 STA. 40+08 TO STA. 41+02

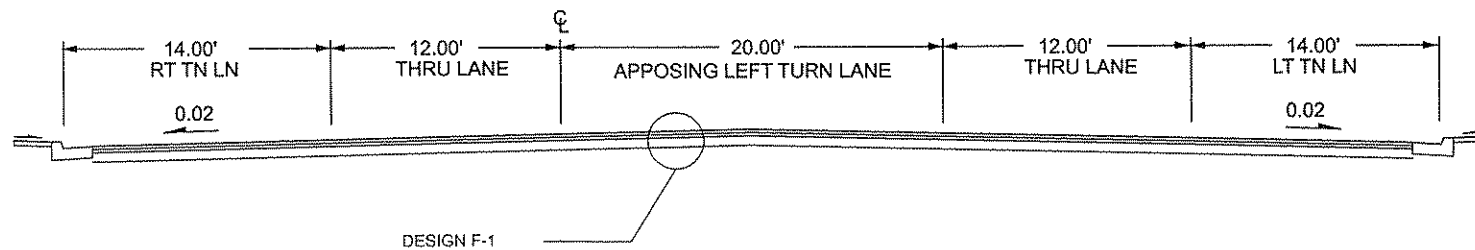


DESIGN F-1

MILL 2.0" OF INPLACE BITUMINOUS
 PAVE 2.0" TYPE 12.5 WEARING COURSE (SPWEB440E)
 EXISTING BITUMINOUS
 EXISTING BASE



C.S.A.H. 11
EXISTING APPOSING LEFT TURN LANE SECTION
 STA. 15+25 TO STA. 36+92.5
 STA. 39+14 TO STA. 40+08



GENERAL NOTES:

- ALL CROSS SLOPES ARE APPROXIMATE

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_11_(ERR-T110)\Plan\ITS.dgn 02/28/2012 8:59:52 AM

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 CHECKED BY JO DATE



ANOKA COUNTY
HIGHWAY DEPT.

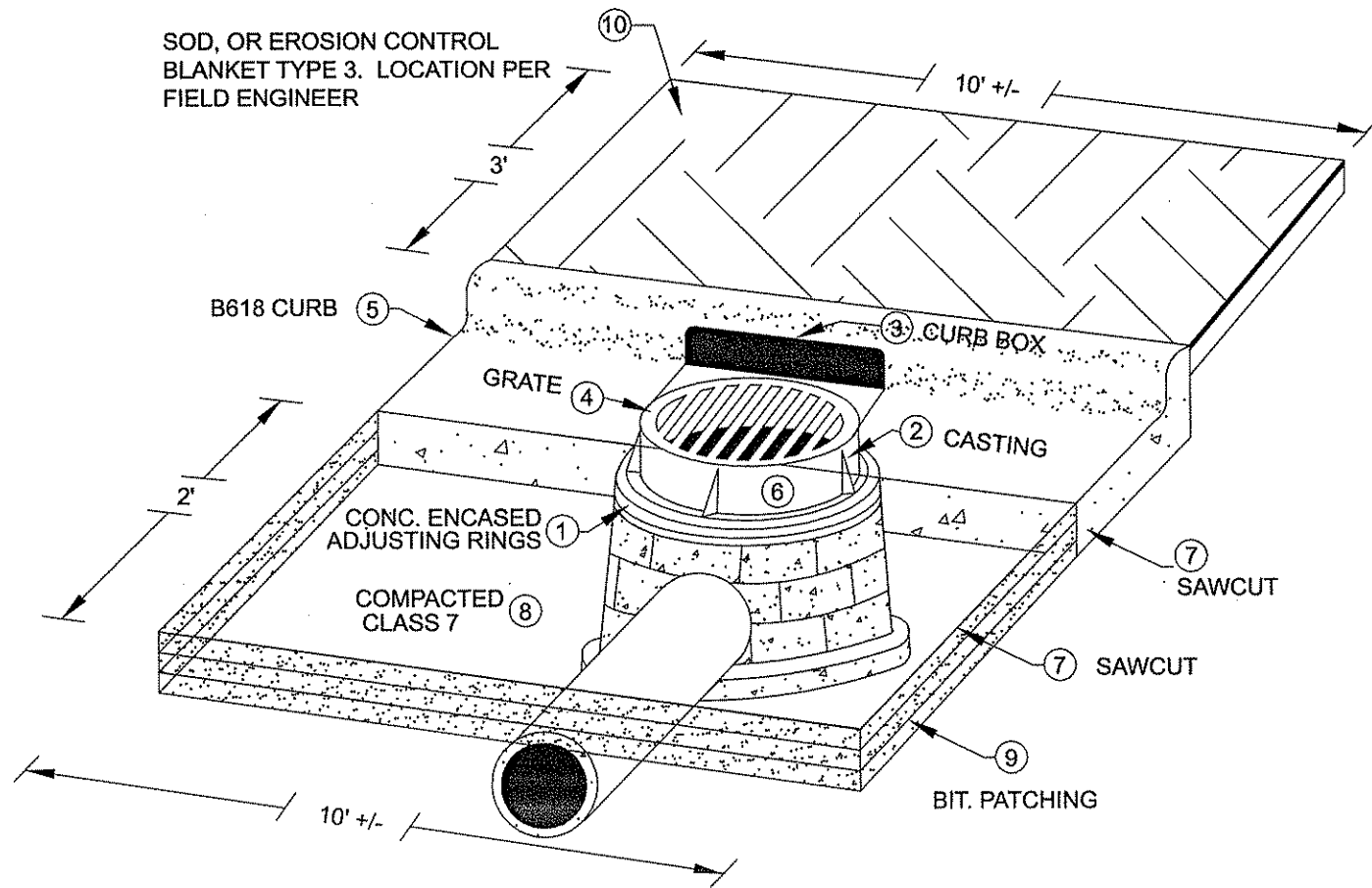
STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 11-11-11

TYPICAL SECTIONS

Sheet 3 of 17 Sheets

C.B. REPAIR DETAIL

NOTE: NOT TO SCALE



NOTES. FOR TRAFFIC CONTROL AT CATCH BASIN REPAIRS REFER TO THE MINNESOTA MANUAL ON TEMPORARY TRAFFIC CONTROL LAYOUTS FIELD MANUAL. REFER TO MINNESOTA STANDARD PLATES MANUAL FOR THE FOLLOWING:

- ① CONCRETE ENCASED CONCRETE ADJUSTING RINGS STANDARD PLATE 4026A
- ② RING AND FRAME CASTING. REFERENCE CHART B FOR CASTING TYPE
- ③ CURB BOX MATCHES CASTING REFERENCE CHART B FOR CASTING TYPE
- ④ GRATE CASTING. REFERENCE CHART B FOR CASTING TYPE
- ⑤ CONCRETE CURB AND GUTTER DESIGN B STANDARD PLATE 7100G
- ⑥ INSTALLATION OF CATCH BASIN CASTINGS REFERENCE STANDARD PLATE PER TYPE OF CASTING
- ⑦ SAWCUT BIT PAVEMENT / CONCRETE CURB FULL DEPTH.
- ⑧ ADD AND COMPACT CL-7 AROUND REPAIRED STRUCTURE. ITEM INCIDENTAL TO C.B. REPAIR
- ⑨ REMOVE VAR. DEPTH BITUMINOUS, PATCH WITH 2" LIFTS OF BITUMINOUS.
- ⑩ REPLACE DISTURBED AREA BEHIND CATCH BASIN WITH EITHER SOD, ERSION CONTROL BLANKET

A. STRUCTURE REPAIRS													
STRUCTURE	STATION	LOC.	SAW BIT. PAVEMENT OR BIT. CURB	REMOVE BIT. PAVEMENT	REPLACE BIT. PAVEMENT	SAW CONC. CURB & GUTTER	EROSION CONTROL BLANKET	REMOVE C&G	REPLACE B618 C&G	CASTING	RECONSTRUCT DRAINAGE STR. (RING HT)	CONSTRUCT DRAIN STR 48-4020	ACTION
			LF	SY	TON	LF	SY	LF	LF	EA	FT	FT	
100	10+48	51' RT	16.0	1.8	0.2					1			RE-RING
101	10+20	53' RT	14.0	2.2	0.3	4.0	2.2	10	10	1		4.3	RECONSTRUCT
102	10+30	17' LT	16.0	1.8	0.2						0.2		RE-RING
103	10+30	25' LT	14.0	2.2	0.3	4.0	2.2	10	10	1		3.2	RECONSTRUCT
104	10+40	25' LT	14.0	2.2	0.3	4.0	2.2	10	10	1	0.7		RE-RING
105	13+02	6' RT	16.0	1.8	0.2					1	1.6		RE-RING
106	13+59	4' LT	16.0	1.8	0.2					1	1.2		RE-RING
107	15+41	3' RT	16.0	1.8	0.2					1	1.0		RE-RING
108	15+91	6' LT	14.0	2.2	0.3	4.0	2.2	10	10	1	1.1		RE-RING
109	15+91	17' LT	16.0	1.8	0.2					1	1.2		RE-RING
110	17+15	CL	16.0	1.8	0.2					1	1.0		RE-RING
111	17+80	27' RT	16.0	1.8	0.2					1	0.7		RE-RING
112	13+90	9' LT	16.0	1.8	0.2					1	1.0		RE-RING
113	13+90	22' LT	14.0	2.2	0.3	4.0	2.2	10	10	1	0.5		RE-RING
114	13+90	47' RT	14.0	2.2	0.3	4.0	2.2	10	10	1	0.5		RE-RING
115	20+05	5' LT	16.0	1.8	0.2					1	1.4		RE-RING
116	23+83	4' LT											NONE
117	25+00	4' RT											NONE
118	28+40	7' LT											NONE
119	28+90	35' RT											NONE
120	31+60	31' LT	14.0	2.2	0.3	4.0	2.2	10	10	1	0.9		RE-RING
121	31+60	33' RT											NONE
122	31+60	38' RT											NONE
123	91+95	12' LT											NONE
124	32+72	33' RT	16.0	1.8	0.2					1	0.8		RE-RING
125	32+72	38' RT											NONE
126	33+35	13' LT											NONE
127	34+15	18' RT											NONE
128	34+57	31' LT	14.0	2.2	0.3	4.0	2.2	10	10	1	1.0		RE-RING
129	34+57	32' RT	16.0	1.8	0.2					1	0.2		RE-RING
130	34+57	38' RT	14.0	2.2	0.3	4.0	2.2	10	10	1	0.8		RE-RING
131	35+80	30' RT											NONE
132	36+50	39' RT											NONE
133	36+97	33' RT											NONE
134	37+00	53' RT											NONE
135	37+02	4' RT											NONE
136	37+03	29' LT											NONE
137	37+90	32' RT											NONE
138	38+15	55' RT											NONE
139	40+72	45' RT											NONE
140	41+15	40' LT											NONE
TOTALS			318.0	41.4	4.8	36.0	19.8	90	90	21	15.8	7.5	

B. SCHEDULE OF CASTING	
ASSEMBLY	QUANTITY
R-3275	5
R-3246	3
A-7D	13

NOTES. FOR TRAFFIC CONTROL AT MANHOLES REFER TO MINNESOTA TEMPORARY CONTROL ZONE LAYOUTS FIELD MANUAL.

- 1 ALL CASTING HEIGHTS ARE TO BE DETERMINED IN THE FIELD.
- 2 ALL MANHOLE CASTINGS NEED TO HAVE "SANITARY SEWER" OR "WATER" STAMPED ON THEM.
- 3 CONCRETE ENCASED CONCRETE ADJUSTING RINGS STANDARD PLATE 4026A

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_11_(ERR-TH10)\PlanDETAILS.dgn 02/28/2012 9:01:26 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: CHARLES CADENHEAD
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 CHECKED BY: JO DATE: _____



**ANOKA COUNTY
HIGHWAY DEPT.**

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 11-11-11

MISCELLANEOUS DETAILS
 Sheet 4 of 17 Sheets

PERMANENT PAVEMENT MARKING PLAN
NOTES AND GUIDELINES

GENERAL INFORMATION:

THE ENGINEER'S INVOLVEMENT IN THE APPLICATION OF THE MATERIAL SHALL BE LIMITED TO FIELD CONSULTATION AND INSPECTION. ANOKA COUNTY HIGHWAY DEPARTMENT WILL PLACE NECESSARY "SPOTTING" AT APPROPRIATE POINTS TO PROVIDE HORIZONTAL CONTROL FOR STRIPING AND TO DETERMINE NECESSARY STARTING AND CUTOFF POINTS, LONGITUDINAL JOINTS, PAVEMENT EDGES AND EXISTING MARKINGS MAY SERVE AS HORIZONTAL CONTROL WHEN SO DIRECTED.

EDGE LINES AND LANE LINES ARE TO BE BROKEN ONLY AT INTERSECTIONS WITH PUBLIC ROADS AND AT PRIVATE ENTRANCES IF THEY ARE CONTROLLED BY A YIELD SIGN, STOP SIGN OR TRAFFIC SIGNAL. THE BREAK POINT IS TO BE AT THE START OF THE RADIUS FOR THE INTERSECTION OR AT MARKED STOP LINES OR CROSSWALKS.

A TOLERANCE OF 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.

EPOXY:

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 EPOXY PAVEMENT MARKINGS.

THE EPOXY MARKING APPLICATION SHALL IMMEDIATELY FOLLOW THE PAVEMENT CLEANING. GLASS BEANS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE EPOXY RESIN LINE TO PROVIDE AN IMMEDIATE NO-TRACK SYSTEM.

AN EPOLY RESIN LINE 4" WIDE AND 15 MILL THICKNESS (WET), REQUIRES AN APPLICATION RATE OF ONE (1) GALLON OF COMPONENTS FOR 320 FEET OF LINE. GLASS BEADS SHALL BE APPLIED AT A POUND PER GALLON RATE SUFFICIENT TO ACHIEVE AN ACCEPTABLE NO-TRACK SYSTEM.

OPERATIONS SHALL BE CONDUCTED ONLY WHEN THE ROAD PAVEMENT SURFACE TEMPERATURES ARE 50 DEGREES FAHRENHEIT OR GREATER.

PERMANENT PAVEMENT MARKINGS SHALL NOT BE PLACED OVER TEMPORARY TAPE MARKINGS.

PREFORMED THERMOPLASTIC:

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

PAINT:

AT THE TIME OF APPLYING THE MARKING MATERIAL, THE APPLICATION AREA SHALL BE FREE OF CONTAMINATION. THE CONTRACTOR SHALL CLEAN THE ROADWAY SURFACE PRIOR TO THE LINE APPLICAITON IN A MANNER AND TO THE EXTENT REQUIRED BY THE ENGINEER.

GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE PAINT LINE.

EXCEPT WHEN USED AS A TEMPORARY MARKING, PAVEMENT MARKINGS SHALL ONLY BE APPLIED IN SEASONABLE WEATHER WHEN AIR TEMPERATURE IS 50 DEGREES FARHENHEIT OR HIGHER AND SHALL NOT BE APPLIED WHEN THE WIND OR OTHER CONDITIONS CAUSE A FILD OR DUST TO BE DEPOSITED ON THE PAVEMENT SURFACE AFTER CLEANING AND BEFORE THE MARKING MATERIAL CAN BE APPLIED.

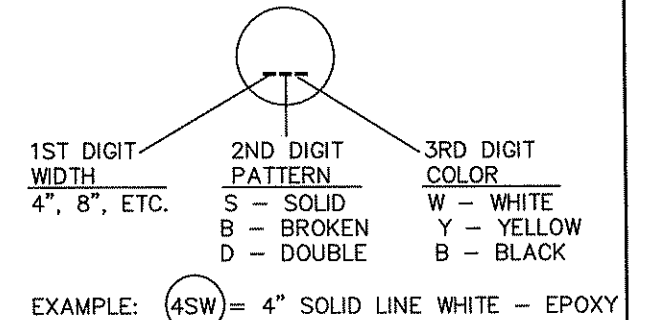
THE FILLING OF TANKS, POURING OF MATERIALS OR CLEANING OF EQUIPMENT SHALL NOT BE PERFORMED ON UNPROTECTED PAVEMENT SURFACES UNLESS ADEQUATE PROVISIONS ARE MADE TO PREVENT SPILLAGE OF MATERIAL.

SYMBOLS & MATERIALS LEGEND

- CROSSWALK BLOCK WHITE PREFORMED THERMOPLASTIC
- ↩ PAVEMENT MESSAGE (LEFT ARROW) PREFORMED THERMOPLASTIC

STRIPING KEY

- CIRCLE - EPOXY
- SQUARE PREFORMED THERMOPLASTIC
- △ TRIANGLE - PAINT
- ⬠ PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING



PAVEMENT MARKING QUANTITIES		
Item	Quantity	Units
4" Double Solid Line Yellow - Epoxy	777	Lin Ft
4" Solid Line Yellow - Epoxy	4190	Lin Ft
4" Broken Line Yellow - Epoxy (10 ft stripe / 40 ft gap)	600	Lin Ft
4" Solid Line White - Epoxy	6623	Lin Ft
4" Broken Line White - Epoxy (10 ft stripe / 40 ft gap)	1160	Lin Ft
24" Yellow Pref Thermoplastic	178	Lin Ft
24" White Pref Thermoplastic	228	Lin Ft
3'x6' Zebra Crossw alk - Preformed Thermoplastic	414	SQ FT
Pavt Mssg (Rt Arrow) Pref Thermoplastic	4	Each
Pavt Mssg (Lt Arrow) Pref Thermoplastic	16	Each
Pavt Mssg (Only) Pref Thermoplastic	2	Each

NO	DATE	BY	CKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *Charles Cadenhead*
 DATE: 3/2/12 LICENSE NO. 40416

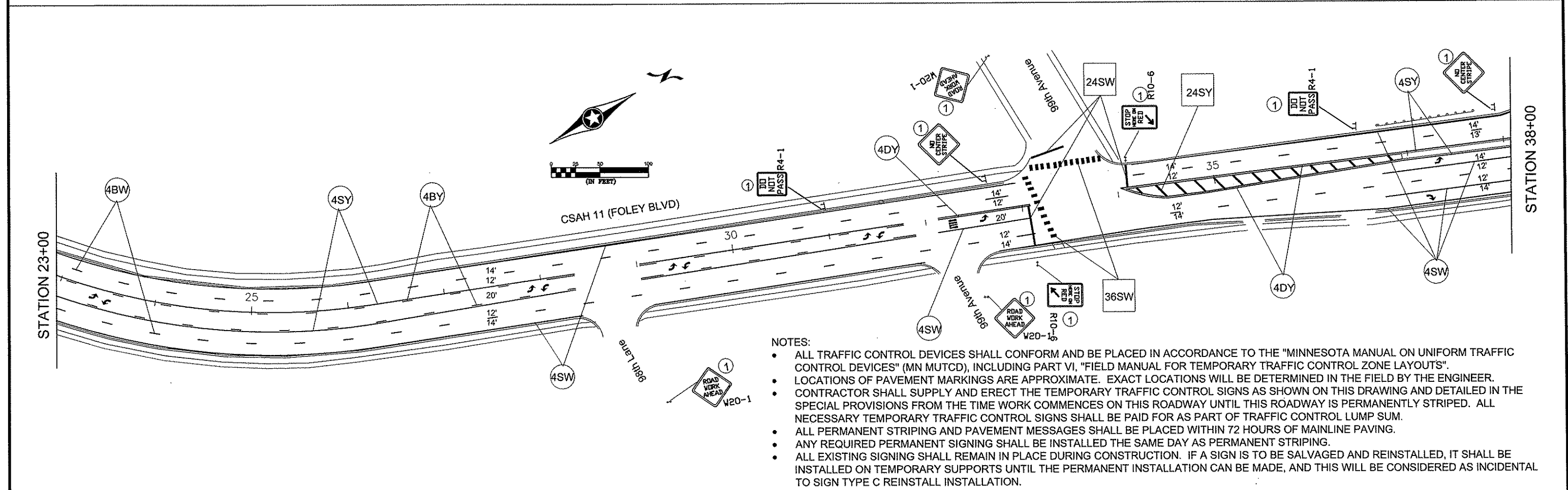
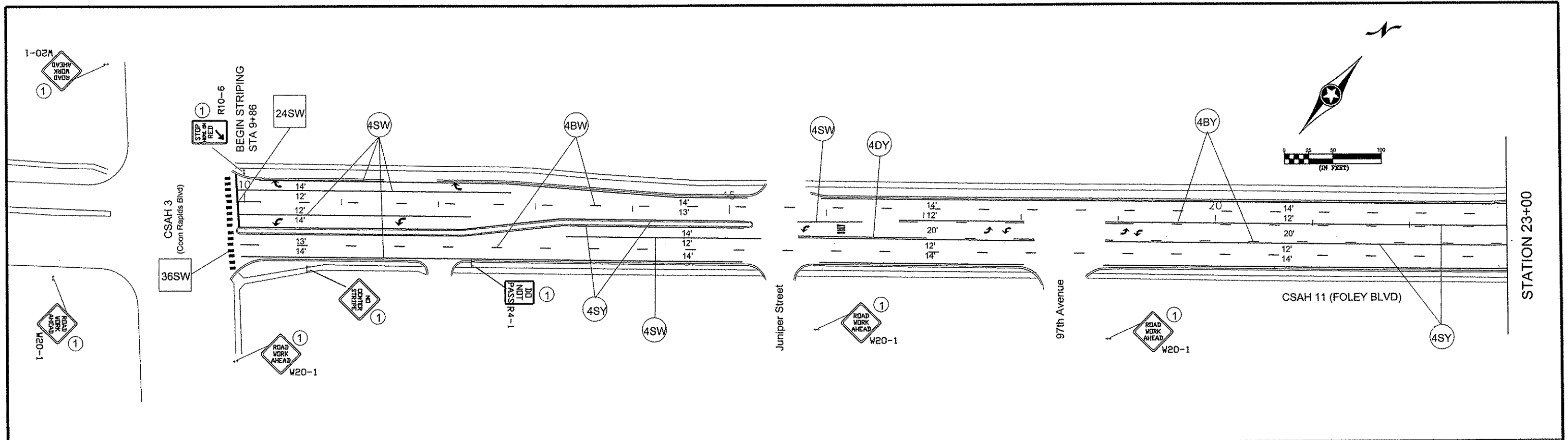
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 DESIGN BY: MTH DATE: 12/30/11
 CHECKED BY: JR DATE: 2/14/12



ANOKA COUNTY
HIGHWAY DEPT.

COUNTY PROJECT NO. 11-11-11

PERMANENT MARKING TABULATION
Sheet 7A of 17 Sheets



- NOTES:**
- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
 - LOCATIONS OF PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
 - CONTRACTOR SHALL SUPPLY AND ERECT THE TEMPORARY TRAFFIC CONTROL SIGNS AS SHOWN ON THIS DRAWING AND DETAILED IN THE SPECIAL PROVISIONS FROM THE TIME WORK COMMENCES ON THIS ROADWAY UNTIL THIS ROADWAY IS PERMANENTLY STRIPED. ALL NECESSARY TEMPORARY TRAFFIC CONTROL SIGNS SHALL BE PAID FOR AS PART OF TRAFFIC CONTROL LUMP SUM.
 - ALL PERMANENT STRIPING AND PAVEMENT MESSAGES SHALL BE PLACED WITHIN 72 HOURS OF MAINLINE PAVING.
 - ANY REQUIRED PERMANENT SIGNING SHALL BE INSTALLED THE SAME DAY AS PERMANENT STRIPING.
 - ALL EXISTING SIGNING SHALL REMAIN IN PLACE DURING CONSTRUCTION. IF A SIGN IS TO BE SALVAGED AND REINSTALLED, IT SHALL BE INSTALLED ON TEMPORARY SUPPORTS UNTIL THE PERMANENT INSTALLATION CAN BE MADE, AND THIS WILL BE CONSIDERED AS INCIDENTAL TO SIGN TYPE C REINSTALL INSTALLATION.

NO	DATE	BY	CKD	APPR	REVISION

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

PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 LICENSE NO. 40416

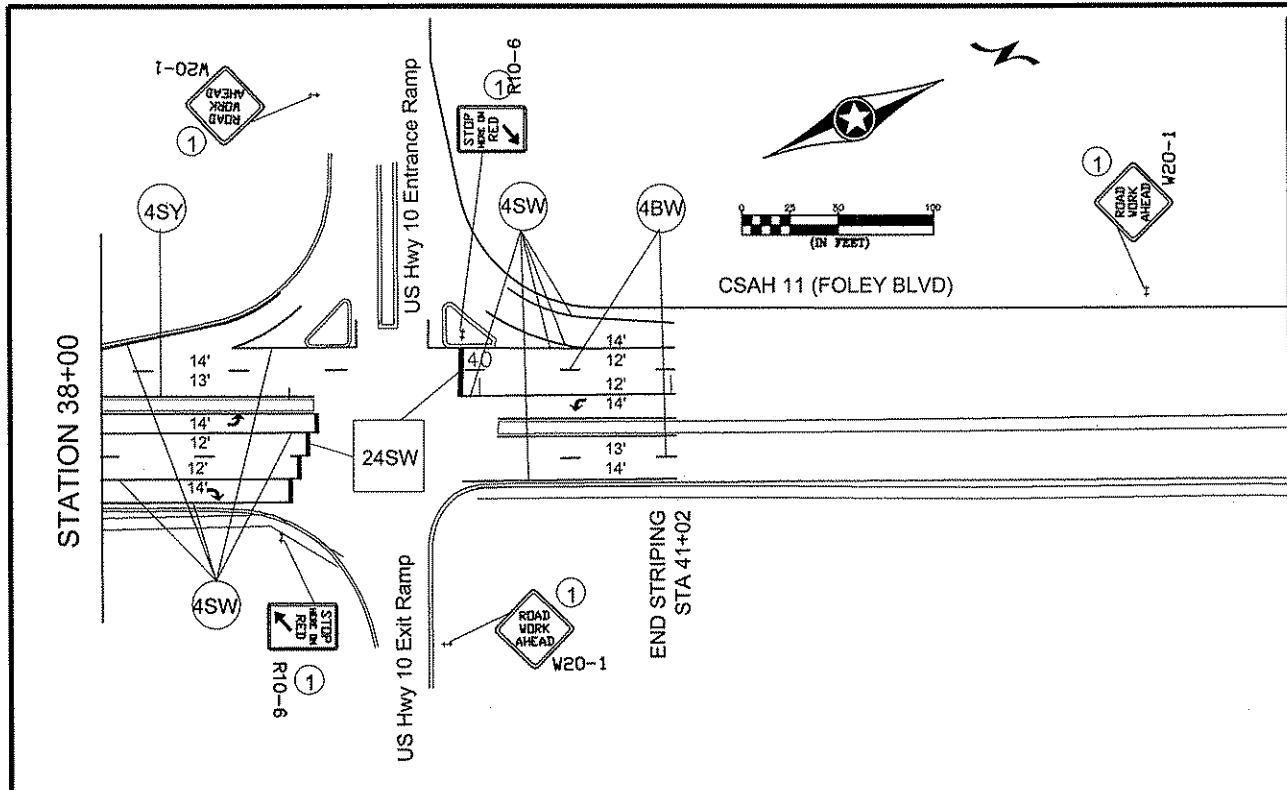
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 DESIGN BY: MTH DATE 1/15/11
 CHECKED BY: JR DATE 2/14/12



STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 11-11-11

CSAH 11 (Foley Blvd)
 TEMPORARY SIGNING
 PERMANENT STRIPING
 AND PAVEMENT MESSAGES

Sheet 7 of 17 Sheets



↗	PAVEMENT MESSAGE RIGHT	SEE SPECIAL PROVISIONS
↖	PAVEMENT MESSAGE LEFT	① TEMPORARY TRAFFIC CONTROL SIGN
	PAVEMENT MESSAGE "ONLY"	② F & I PERMANENT SIGN
		③ SALVAGE PERMANENT SIGN
		④ RE-INSTALL PERMANENT SIGN

- NOTES:
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 - ANY REQUIRED PERMANENT SIGNING SHALL BE INSTALLED THE SAME DAY AS PERMANENT STRIPING.
 - ALL EXISTING SIGNING SHALL REMAIN IN PLACE DURING CONSTRUCTION. IF A SIGN IS TO BE SALVAGED AND REINSTALLED, IT SHALL BE INSTALLED ON TEMPORARY SUPPORTS UNTIL THE PERMANENT INSTALLATION CAN BE MADE, AND THIS WILL BE CONSIDERED AS INCIDENTAL TO SIGN TYPE C REINSTALL INSTALLATION.

M.U.T.C.D. CODE	SIZE	PANEL AREA FT. ²	INSERT	QUANTITY		MOUNTING HEIGHT TO TOP OF SIGN (SEE)
				No.	POST	
W8-12	48" x 48"	16.00		2	2	7.0'
R4-1	24" x 30"	5.00		3	1	7.0'
R4-2	24" x 30"	5.00		0	1	7.0'
R10-6	24" x 36"	6.00		5	1	7.0'
W8-1A	48" x 48"	16.00		AS NEEDED		
W8-1A	48" x 48"	16.00		AS NEEDED		
W8-8	48" x 48"	16.00		AS NEEDED		
W8-11	48" x 48"	16.00		AS NEEDED		
W20-1	48" x 48"	16.00		AS NEEDED (ESTIMATED 11)		

NO	DATE	BY	CKD	APPR	REVISION

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PRINT NAME: CHARLES CADENHEAD

SIGNATURE: *Charles Cadenhead*

DATE: 3/1/12 LICENSE NO. 40416

DRAWN BY: MTH DATE 3/01/11

DESIGN BY: MTH DATE 1/15/11

CHECKED BY: JR DATE 2/14/12



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____

STATE AID PROJECT NO. _____

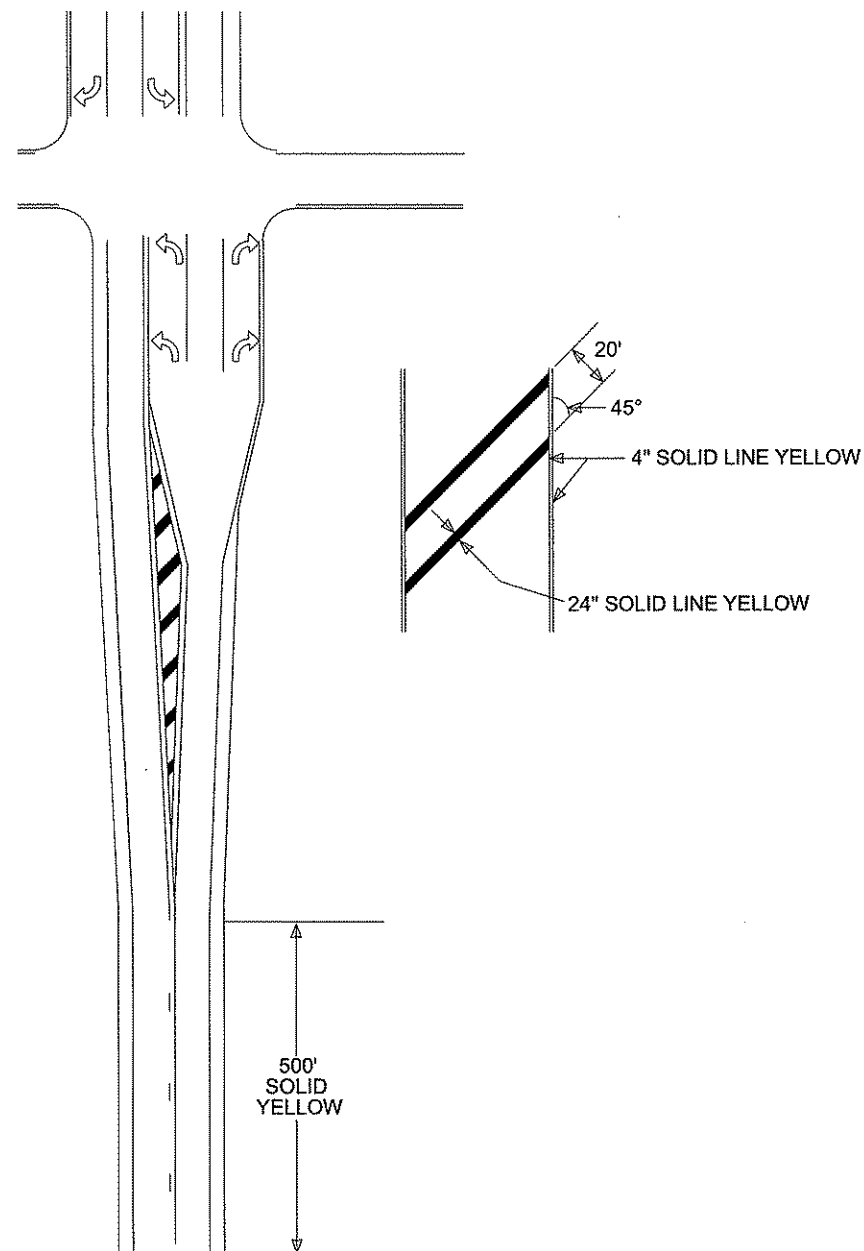
CITY PROJECT NO. _____

COUNTY PROJECT NO. 11-11-11

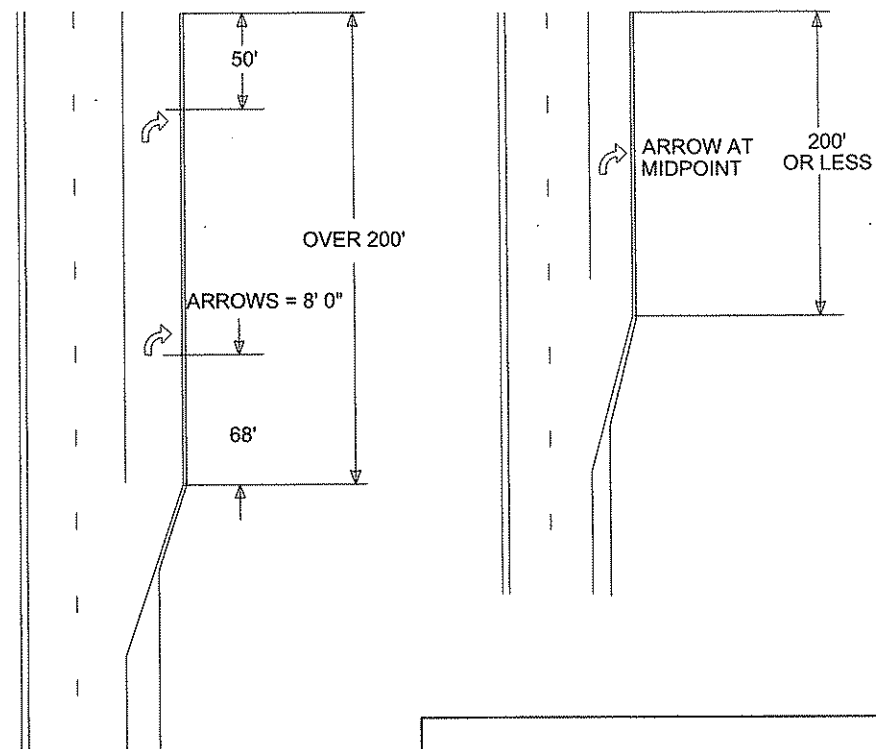
CSAH 11 (Foley Blvd)
TEMPORARY SIGNING
PERMANENT STRIPING
AND PAVEMENT MESSAGES

Sheet 8 of 17 Sheets

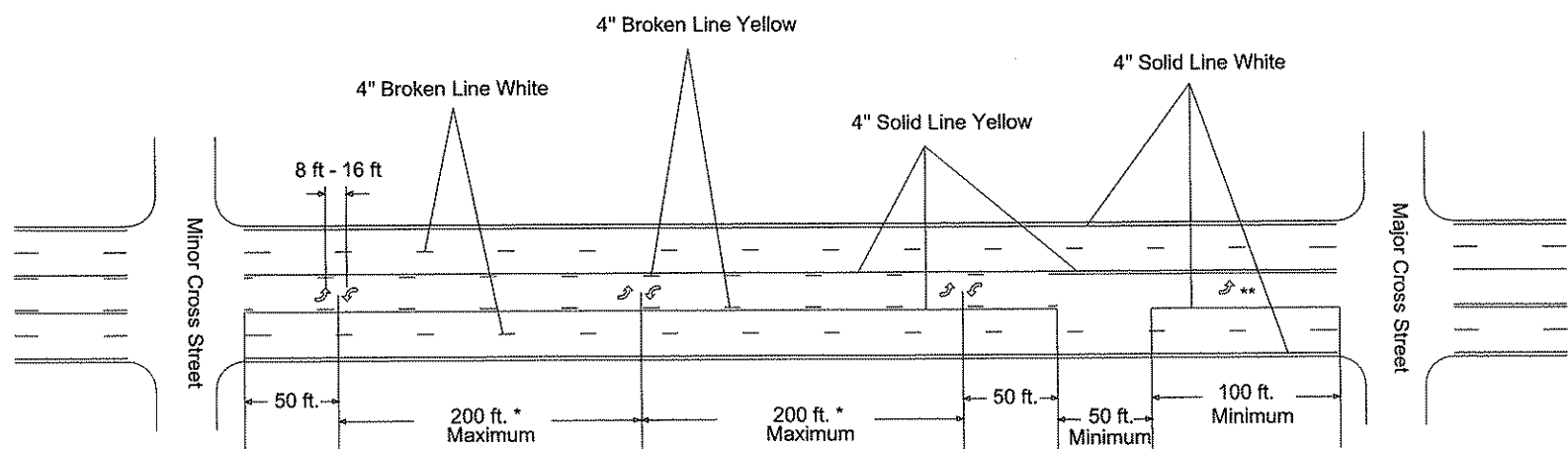
TYPICAL MARKINGS FOR LEFT TURN ISLANDS



TYPICAL MESSAGE PLACEMENT FOR TURN LANES



TYPICAL TWO-WAY LEFT-TURN MARKING APPLICATION

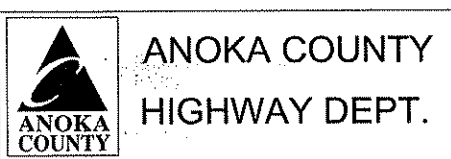


- * These distances should be equal. The Pavement Arrows are placed to show the operation and do not have to line up with any of the driveways.
- ** See "TYPICAL MESSAGE PLACEMENT FOR TURN LANES" for the number and placement of turn arrows and how to introduce this lane.

NO	DATE	BY	CHKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 LICENSE NO. 40416

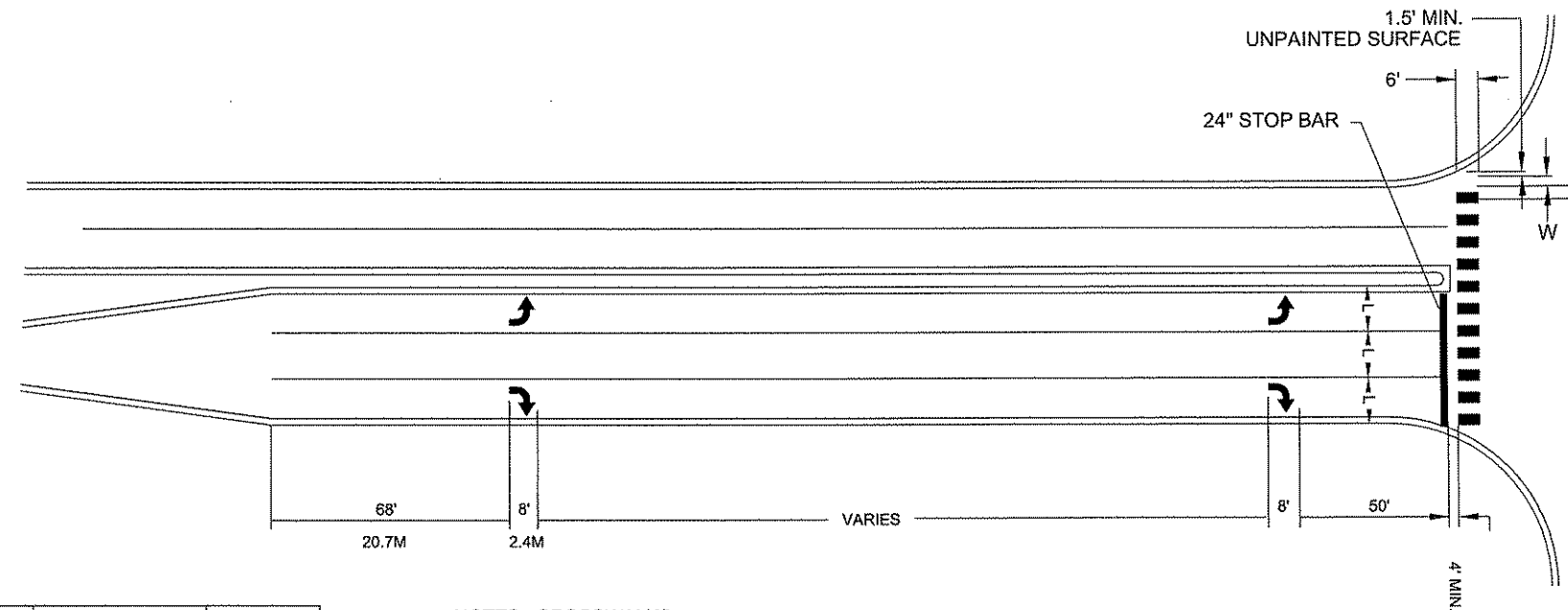
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 DESIGN BY MTH DATE 1-21-11
 CHECKED BY JR DATE 2-14-12



STATE PROJECT NO. _____
 STATE PROJECT NO. _____
 STATE PROJECT NO. _____
 COUNTY PROJECT NO. 11-11-11

SIGNING & STRIPING DETAILS
 Sheet 9 of 17 Sheets

MARKINGS FOR PEDESTRIAN CROSSWALKS



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

NOTES: CROSSWALKS:

- 1.) PAINTED AREAS ARE TO BE CENTERED ON CENTER AND LANE LINES, EVEN IF INTERSECTION IS NOT ALIGNED.
- 2.) LOCATION OF ZEBRA CROSSWALKS AND STOP BARS, SIGNAL LOOPS AND PED RAMP 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' (450mm) CLEAR DISTANCE MUST BE LEFT ADJACENT TO THE CURB. IF LAST PAINTED AREA FALLS INTO THIS AREA, IT MUST BE OMITTED.
- 5.) ON TWO LANE STREETS, USE SPACING SHOWN FOR AN 11' (3.3m) INSIDE LANE.

NO	DATE	BY	CHKD	APPR	REVISION

NAME: I:\Traffic\Dwg\CSAH 11 (Foley\Northdale)\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: CHARLES CADENHEAD

SIGNATURE: *[Signature]*

DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY: MTH DATE: 1-21-11

DESIGN BY: MTH DATE: 1-21-11

CHECKED BY: JR DATE: 1-21-11



**ANOKA COUNTY
HIGHWAY DEPT.**

STATE PROJECT NO. _____

STATE PROJECT NO. _____

STATE PROJECT NO. _____

COUNTY PROJECT NO. 11-11-11

SIGNING & STRIPING DETAILS

Sheet 10 of 17 Sheets

7500

LED SIGNAL SYSTEM "N" NOTES:

- ALL ITEMS OF SIGNAL SYSTEM ARE IN PLACE AND SHALL BE REUSED AND MAINTAINED IN PLACE, UNLESS OTHERWISE NOTED ON PLANS.
- CONTRACTOR SHALL REMOVE THE INPLACE 12" x 12" 2-SECTION PED SIGNAL INDICATIONS & HOUSINGS, AND SHALL FURNISH AND INSTALL NEW ONE SECTION COUNTDOWN TIMER LED "HAND/WALKING PERSON" PED SIGNALS (HOUSING, VISOR, LENS) IN THEIR PLACE.
- CONTRACTOR SHALL REMOVE THE INPLACE TYPE 100 BRACKETING (270°) ON POLES 1 AND 4; SHALL FURNISH & INSTALL NEW TYPE 30A BRACKETING (90°) AND NEW TYPE 10B BRACKETING (180°) IN THEIR PLACE, SHALL SALVAGE, INSTALL, AND MAKE OPERATIONAL SIGNAL HEADS 4-3 AND 8-3; AND SHALL INCORPORATE NEW ONE SECTION PEDESTRIAN SIGNALS WITHIN NEW BRACKETINGS. CAP UNUSED HUB AT 270°. ALL WORK LISTED ABOVE SHALL BE CONSIDERED INCIDENTAL TO THE PEDESTRIAN INDICATION PAY ITEM.
- CONTRACTOR SHALL REMOVE THE INPLACE TYPE 1D BRACKETING ON POLES 3 AND 6; SHALL FURNISH AND INSTALL NEW TYPE 1D BRACKETING IN THEIR PLACE; SHALL SALVAGE, INSTALL, AND MAKE OPERATIONAL SIGNAL HEADS 4-4 AND 8-4; & SHALL INCORPORATE NEW ONE SECTION PEDESTRIAN SIGNALS WITHIN NEW BRACKETINGS. ALL WORK LISTED ABOVE SHALL BE CONSIDERED INCIDENTAL TO THE PEDESTRIAN INDICATION PAY ITEM.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ANY MODIFICATIONS TO INPLACE POLE MOUNTED BRACKETING ON EACH TRAFFIC SIGNAL POLE TO ACCOMMODATE INSTALLATION OF NEW ONE SECTION PEDESTRIAN SIGNAL INDICATIONS (INCLUDING THE REPLACEMENT OF THE POLE MOUNTED BRACKETING IF NEEDED TO ACCOMMODATE EACH PEDESTRIAN SIGNAL INDICATION INSTALLATION) (INCIDENTAL).
- ANY DAMAGE TO INPLACE TRAFFIC SIGNAL POLES OR VEHICLE SIGNAL HEADS DUE TO WORK ON THIS PROJECT SHALL BE REPAIRED BY CONTRACTOR TO THE SATISFACTION OF THE ENGINEER, AT NO EXPENSE TO THE CITY.
- NEW PEDESTRIAN HOUSINGS AND VISORS SHALL BE FABRICATED USING NEW POLYCARBONATE MATERIALS.
- CONTRACTOR SHALL REMOVE ALL INPLACE INCANDESCENT "RED", "YELLOW", AND "GREEN" VEHICLE SIGNAL INDICATION LENSES, AND SHALL FURNISH AND INSTALL NEW LED INDICATIONS IN THEIR PLACE.

- CONTRACTOR SHALL REMOVE ALL INPLACE PEDESTRIAN PUSH BUTTONS (8 TOTAL), R10-4c STICKER SIGNS, AND "MEANING OF WALK" STICKER SIGNS, & SHALL FURNISH & INSTALL NEW SOLID STATE PED PUSH BUTTONS AND R10-3e SIGNS IN THEIR PLACE.
- CONTRACTOR SHALL ALSO REMOVE TWO (2) INPLACE "LEFT TURN SIGNAL" SIGNS AND MOUNTING HARDWARE FROM THE MAST ARMS OF POLES 2 AND 5 (INCIDENTAL).
- CONTRACTOR SHALL MAINTAIN OPERATION OF THE SIGNAL SYSTEM AT ALL TIMES, EXCEPT AS OTHERWISE APPROVED BY THE ENGINEER.
- SEE STATEMENT OF ESTIMATED QUANTITIES FOR BID ITEMS FOR WORK AT THIS SIGNAL SYSTEM.

LOOP DETECTORS			
NUMBER	SIZE	LOCATION	FUNCTION
D1-1	MULTIPLE	—	1
D2-1	2-6"x6"	365'	1
D3-1	MULTIPLE	—	1
D4-1	2-6"x6"	300'	1, 8
D4-2	4-6"x6"	—	1
D4-3	2-6"x6"	—	7
D5-1	MULTIPLE	—	1
D6-1	2-6"x6"	365'	1
D7-1	MULTIPLE	—	1
D8-1	2-6"x6"	300'	1, 8
D8-2	4-6"x6"	—	1
D8-3	2-6"x6"	—	7

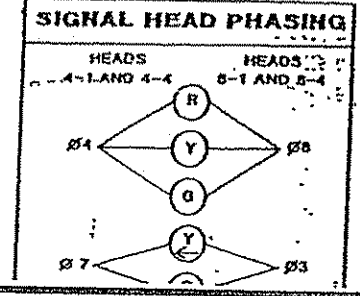
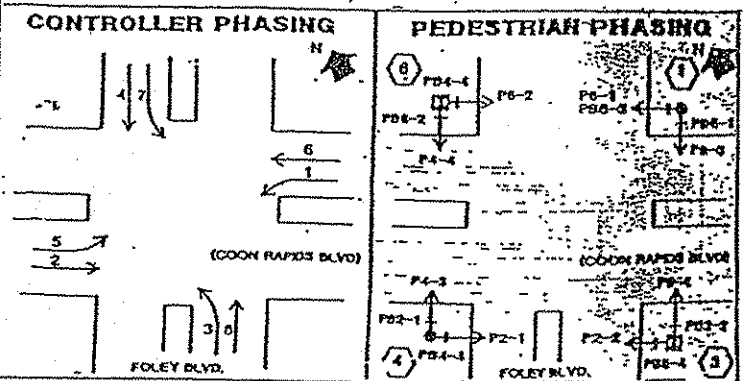
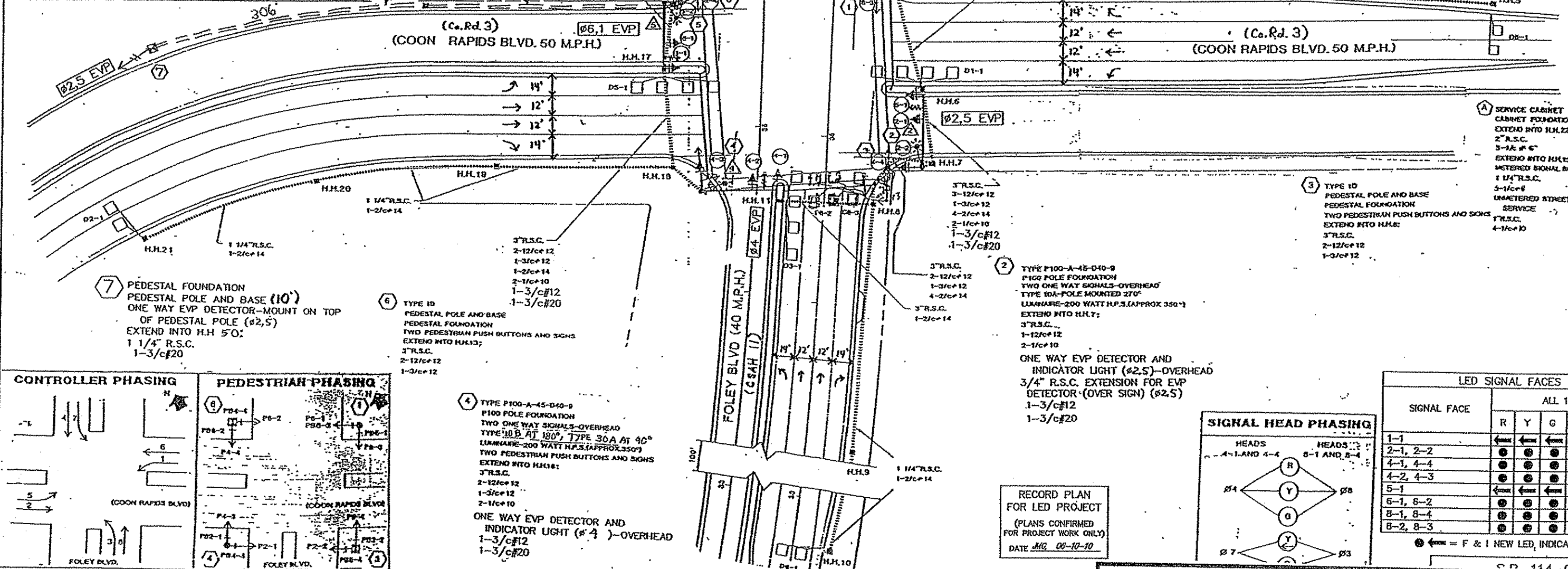
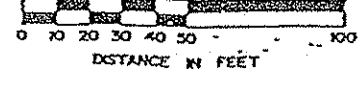
NOTE: LOCATION: DISTANCE FROM STOP BAR TO DETECTOR

- FUNCTIONS:**
- CALL AND EXTEND
 - CALL ONLY
 - EXTEND ONLY
 - CALL ONLY DENSITY
 - DELAYED CALL ONLY
 - DELAYED CALL ONLY DENSITY
 - DELAYED CALL - IMMEDIATE EXTEND
 - CARRY OVER (STRETCH)
 - ADVISORY DETECTOR
 - SAMPLING DETECTOR
 - SPECIAL DETECTOR

- CONTROLLER AND CABINET**
CABINET FOUNDATION
EXTEND INTO H.H. 22:
4" R.S.C.
5-12/c#12
2-3/c#12
8-2/c#14
2-1/c#10
- METERED SIGNAL SERVICE**
1 1/4" R.S.C.
3-1/c#6
EXTEND INTO H.H. 22:
4" R.S.C.
5-12/c#12
2-3/c#12
8-2/c#14
2-1/c#10
- SERVICE CABINET**
CABINET FOUNDATION
EXTEND INTO H.H. 22:
2" R.S.C.
3-1/c#6
EXTEND INTO H.H. 22:
METERED SIGNAL SERVICE
1 1/4" R.S.C.
3-1/c#6
UNMETERED STREET LIGHT SERVICE
4" R.S.C.
4-1/c#10

ONE WAY EVP DETECTOR AND INDICATOR LIGHT (# 8)-OVERHEAD
1-3/c#12
1-3/c#20

- TYPE P100-A-45-D40-9**
P100 POLE FOUNDATION
TWO ONE WAY SIGNALS-OVERHEAD
TYPE 10B AT 180°, TYPE 30A AT 90°
LUMINAIRE-200 WATT H.P.S.(APPROX.350°)
TWO PEDESTRIAN PUSH BUTTONS AND SIGNS
EXTEND INTO H.H. 22:
3" R.S.C.
2-12/c#12
1-3/c#12
1-3/c#12
1-3/c#12
4-1/c#10
- TYPE P100-A-45-D40-9**
P100 POLE FOUNDATION
TWO ONE WAY SIGNALS-OVERHEAD
TYPE 10A-POLE MOUNTED 270°
LUMINAIRE-200 WATT H.P.S.(APPROX.350°)
EXTEND INTO H.H. 22:
3" R.S.C.
2-12/c#12
1-3/c#12
4-2/c#14
2-1/c#10
1-3/c#12
1-3/c#20
- TYPE 1D**
PEDESTAL POLE AND BASE
PEDESTAL FOUNDATION
TWO PEDESTRIAN PUSH BUTTONS AND SIGNS
EXTEND INTO H.H. 13:
3" R.S.C.
2-12/c#12
1-3/c#12



LED SIGNAL FACES

SIGNAL FACE	ALL 12"				
	R	Y	G	Y	G
1-1	←	←	←		
2-1, 2-2	●	●	●		
4-1, 4-4	●	●	●	←	←
4-2, 4-3	●	●	●		
5-1	←	←	←		
6-1, 8-2	●	●	●	←	←
8-1, 8-4	●	●	●	←	←
8-2, 8-3	●	●	●		

← = F & I NEW LED INDICATION.

RECORD PLAN FOR LED PROJECT
(PLANS CONFIRMED FOR PROJECT WORK ONLY)
DATE: JUN 06-10-10

DESIGN TEAM

NO.	BY	DATE
1	JMG	6/10

REVISIONS

NO.	BY	DATE
-----	----	------

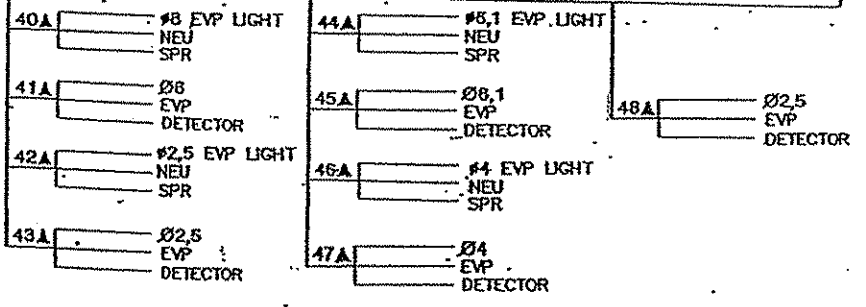
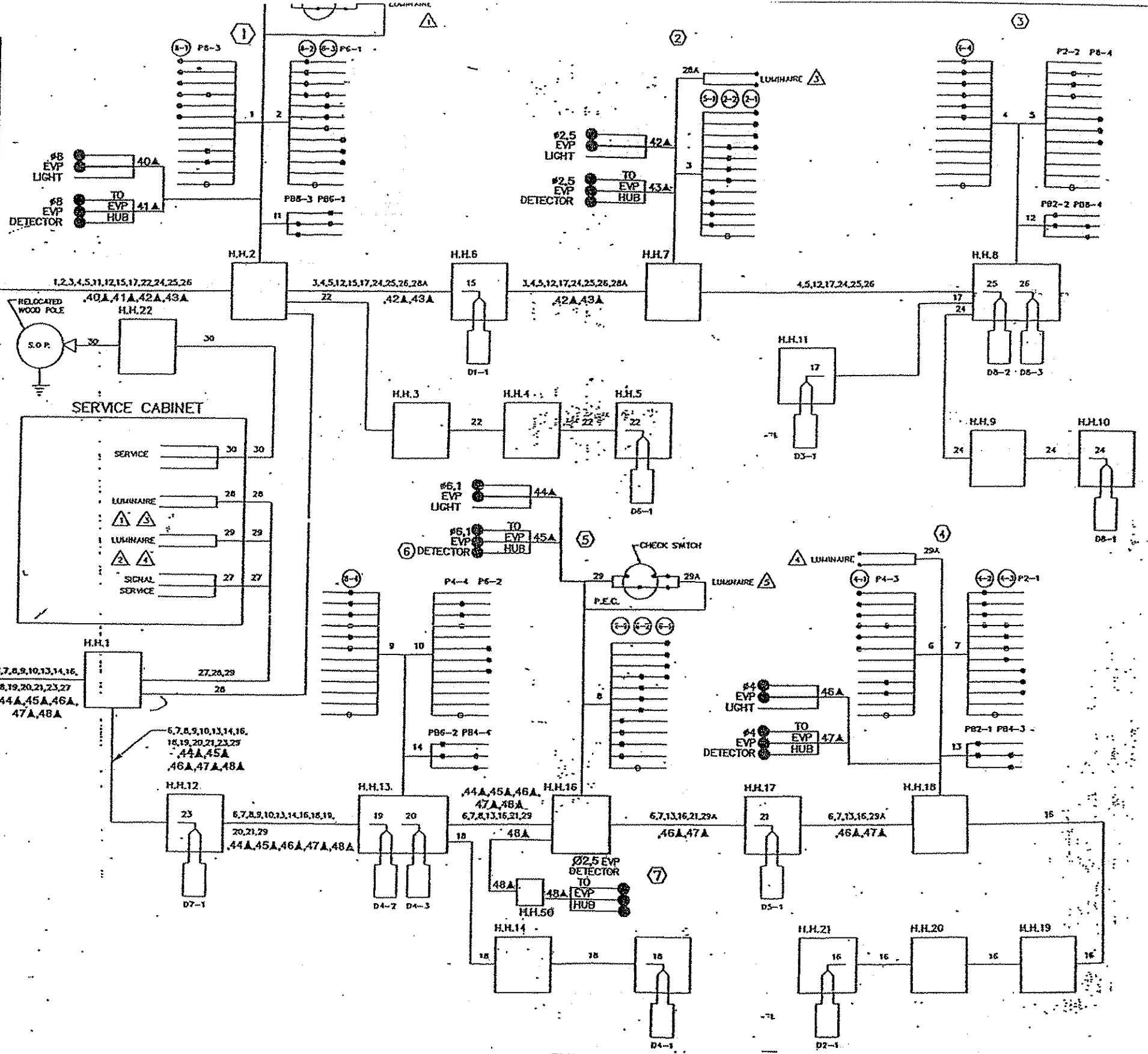
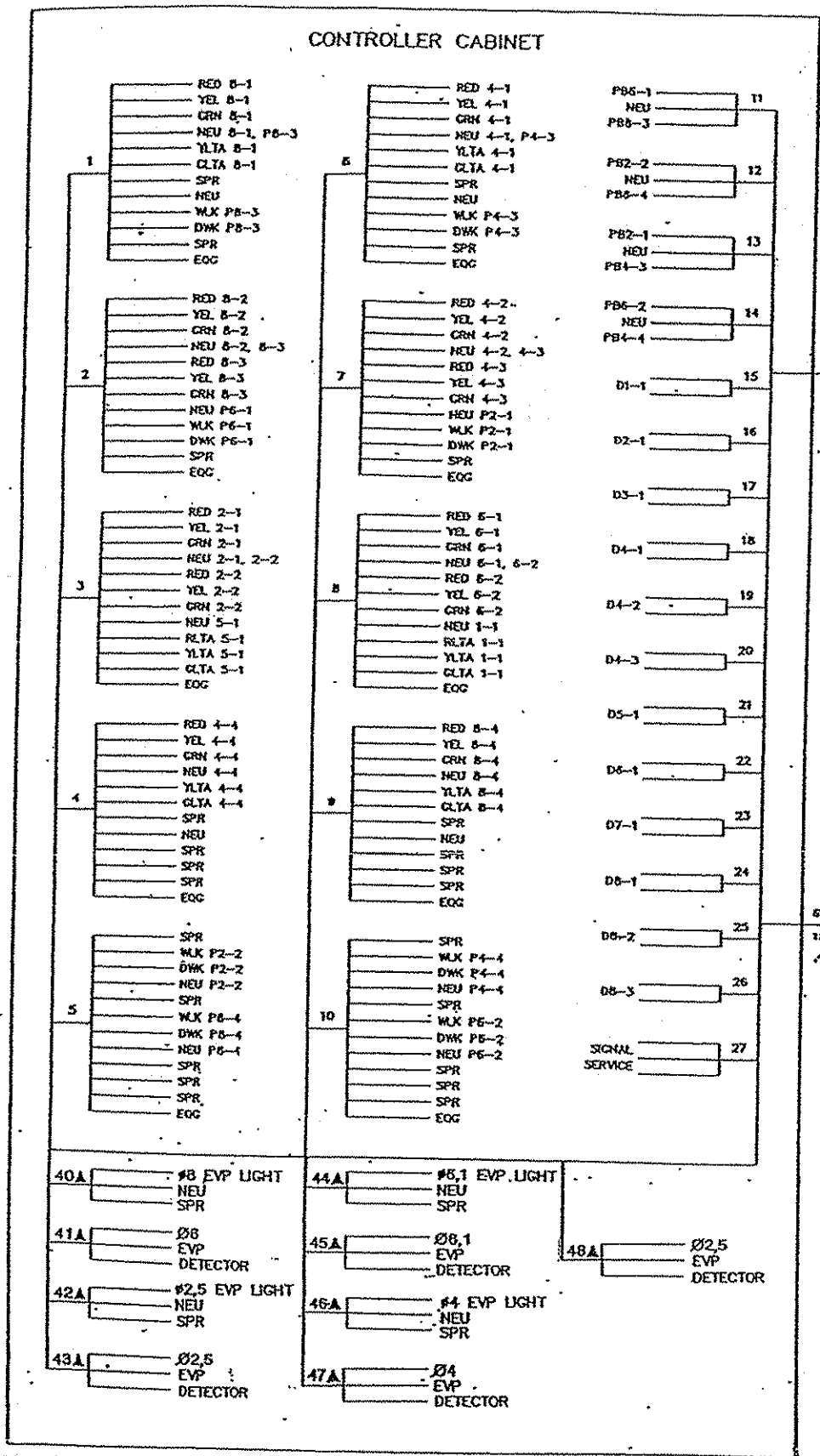
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

Date: Nov 18, 2009 Name: John H. Gray, PE Lic. No. 22457

SEH
PHONE: (651) 490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

STATE PROJECT NO. _____
STATE AID PROJECT NO. _____
CITY PROJECT NO. _____
COUNTY PROJECT NO. 11-11-11

MISCELLANEOUS SIGNAL DETAILS
Sheet 11 of 17 Sheets



ALL TERMINATIONS OF CABLES AND CONDUCTORS ARE IN PLACE AND SHALL BE REFINISHED AND MAINTAINED AS S

DRAWN BY: JMG
 DESIGNER: JMG
 CHECKED BY: JMG

NO.	BY	DATE	REVISIONS

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.

John M. Gray
 Name: John M. Gray, PE
 Date: May 18, 2009
 Lic. No.: 22457

SEH
 PHONE: (651) 450-2000
 3835 WADSWORTH CENTER DR.
 ST. PAUL, MN 55110

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 11-11-11

MISCELLANEOUS SIGNAL DETAILS
 Sheet 12 of 17 Sheets

NOTES:

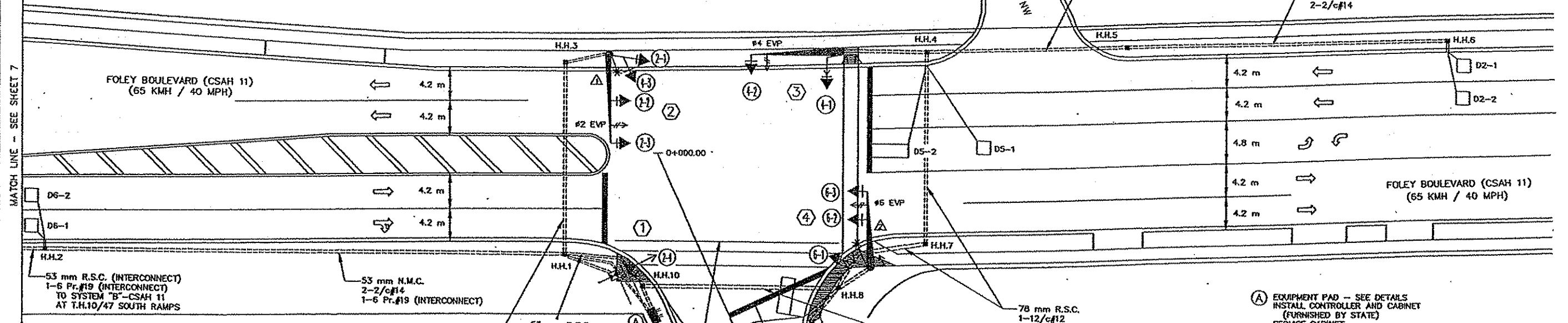
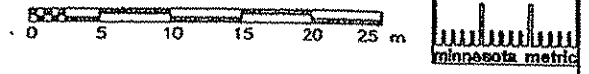
- 1) LOCATION OF POLES, EQUIPMENT PAD, LOOP DETECTORS AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY MN/DOT METRO TRAFFIC OFFICE PERSONNEL.
- 2) SEE SPECIAL PROVISIONS FOR COUNTY AND STATE FURNISHED MATERIALS.
- 3) ALL LOOP DETECTORS SHALL BE INSTALLED IN NON-METALLIC CONDUIT. SEE SPECIAL PROVISIONS AND DETAILS.
- 4) NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS AND SHALL CONTAIN A STATE FURNISHED "BALL LOCATOR". SEE SPECIAL PROVISIONS.
- 5) EACH SIGNAL FACE SHALL HAVE BACKGROUND SHIELD.
- 6) EACH PEDESTRIAN INDICATION SHALL BE A ONE SECTION HAND/WALKING PERSON INDICATION, WITH THE HAND INDICATION BEING AN LED INDICATION. SEE SPECIAL PROVISIONS.
- 7) ALL "RED" VEHICLE SIGNAL INDICATIONS SHALL BE LED. SEE SPECIAL PROVISIONS.
- 8) SEE SPECIAL PROVISIONS AND DETAILS REGARDING SIGN PANELS, AND CONCRETE WALKWAY (DENOTED BY SHADED AREAS), TO BE FURNISHED AND INSTALLED BY CONTRACTOR (INCIDENTAL TO ITEM NO.2565.511).

LOOP DETECTORS		
NUMBER	SIZE (m)	LOCATION
D2-1	1.7x1.7	76 m
D2-2	1.7x1.7	76 m
D4-1	1.7x1.7	36 m
D4-2	1.7x4.6	0 m
D4-3	1.7x1.7	15 m
D5-1	1.7x1.7	15 m
D5-2	1.7x4.6	0 m
D6-1	1.7x1.7	76 m
D6-2	1.7x1.7	76 m

NOTE: LOCATION = DISTANCE FROM CROSSWALK OR STOP BAR TO FRONT OF LOOP DETECTOR.

- 2) PA90 POLE FOUNDATION
INSTALL TYPE PA90-A-10.7-D12-3 (DAVT AT 350)
(FURNISHED BY COUNTY)
LUMINAIRE-200 WATT H.P.S.
2-ONE WAY SIGNALS-OVERHEAD (0 m and 5.1 m FROM LEFT END OF MAST ARM)
TYPE 20A-POLE MOUNTED 270°
R9-3a SIGN PANEL (460 mm x 460 mm)-POLE MOUNTED (FACING POLE 1)
R10-12 SIGN PANEL (915 mm x 1220 mm)-OVERHEAD (ADJACENT TO 2-3)
TYPE "D" SIGN PANEL (3050 mm x 460 mm)-OVERHEAD (D-1)
ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD (#2)
EXTEND INTO H.H.3:
78 mm R.S.C.
2-12/c#12
1-3/c#12
1-3/c#20
1-3/c#12 (LUM)

- 3) PA90 POLE FOUNDATION
INSTALL TYPE PA90-A-10.7
(FURNISHED BY COUNTY)
ONE WAY SIGNAL-OVERHEAD
TYPE 10B-POLE MOUNTED 0°
PEDESTRIAN PUSH BUTTON AND SIGN (R10-4b)
TYPE "D" SIGN PANEL (3050 mm x 460 mm)-OVERHEAD (D-2)
ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD (#4)
EXTEND INTO H.H.4:
78 mm R.S.C.
1-12/c#12
2-3/c#12
1-3/c#20



- 9) CONTRACTOR SHALL PROVIDE EXTENDED BRACKETS FOR EACH POLE MOUNTED VEHICLE SIGNAL FACE.
- 10) A 21 mm HALF COUPLING, 21 mm PIPE NIPPLE AND CONDUIT OUTLET BODY SHALL BE FURNISHED AND INSTALLED APPROX. 1.8 m FROM THE LEFT END OF EACH MAST ARM (FOR EVP).
- 11) (INTERCONNECT) DENOTES ITEMS TO BE MEASURED AND PAID FOR SEPARATELY FROM ITEM NO. 2565.511. SEE SPECIAL PROVISIONS AND ESTIMATED QUANTITIES.
- 12) SEE SHEET 4 AND SPECIAL PROVISIONS REGARDING MILL AND OVERLAY WORK TO BE COMPLETED BY CONTRACTOR (TO BE MEASURED AND PAID FOR SEPARATELY FROM ITEM NO. 2565.511).

78 mm R.S.C.
2-12/c#12
1-3/c#12
1-3/c#20
1-3/c#12 (LUM)

BEGIN 50 mm MILL AND OVERLAY (STATION 0 + 012.19)-SEE SHEET 4 FOR TYPICAL SECTION

FUTURE 1.5 m CONCRETE SIDEWALK (TO BE F & I BY OTHERS)

- 4) PA90 POLE FOUNDATION
INSTALL TYPE PA90-A-9.1-D12-3 (DAVT AT 350)
(FURNISHED BY COUNTY)
LUMINAIRE-200 WATT H.P.S.
2-ONE WAY SIGNALS-OVERHEAD (0 m AND 3.3 m FROM LEFT END OF MAST ARM)
TYPE 30A-POLE MOUNTED 90°
TYPE 10B-POLE MOUNTED 270°
2-PEDESTRIAN PUSH BUTTONS AND SIGNS (R10-4b)
TYPE "D" SIGN PANEL (3050 mm x 460 mm)-OVERHEAD (D-3)
ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD (#6)
EXTEND INTO H.H.8:
78 mm R.S.C.
2-12/c#12
2-3/c#12
1-3/c#20
1-3/c#12 (LUM)

A) EQUIPMENT PAD - SEE DETAILS
INSTALL CONTROLLER AND CABINET (FURNISHED BY STATE)
SERVICE CABINET.

CONTROLLER CABINET TO H.H.1:
103 mm R.S.C.
3-12/c#12
2-3/c#12
1-3/c#20
2-2/c#14
1-6 Pr.#19 (INTERCONNECT)

SERVICE CABINET TO H.H.10:
53 mm R.S.C.
2-3/c#12 (LUM)

SERVICE CABINET TO H.H.11:
53 mm R.S.C.
(FOR SERVICE BY AEC)

BETWEEN SERVICE CABINET AND CONTROLLER CABINET:
35 mm R.S.C.
2-1/c#6
1-1/c#6 Br.Gr.

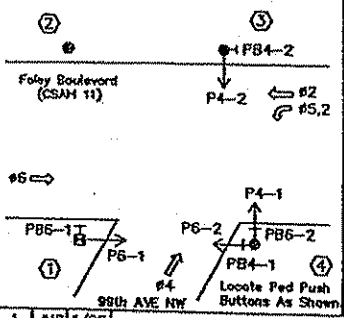
STUB OUT 53 mm R.S.C. FROM H.H.11 (FOR SERVICE BY AEC)

STUB OUT 1-53 mm R.S.C. AND 1-78 mm R.S.C. FROM CONTROLLER CABINET TO SOUTH (THREAD AND CAP BOTH ENDS-FOR FUTURE USE)

- 1) PEDESTAL FOUNDATION
3 m PEDESTAL POLE AND BASE
TYPE 1C
PEDESTRIAN PUSH BUTTON AND SIGN (R10-4b)
R9-3a SIGN PANEL (460 mm x 460 mm)-POLE MOUNTED (FACING POLE 2)
EXTEND INTO H.H.1:
78 mm R.S.C.
1-12/c#12
1-3/c#12

- B) INPLACE WOOD POLE (S.O.P.) (POWER CABLES TO BE FURNISHED AND INSTALLED TO SERVICE CABINET, VIA H.H.11, BY AEC)

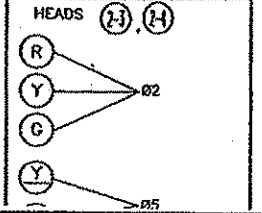
CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



SIGNAL SYSTEM OPERATIONS:

- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 3 PHASE, WITH PHASE 5 BEING A PROTECTED/PERMISSIVE LEFT TURN PHASE.
- VEHICLE SIGNAL PHASES 2 AND 6 SHALL OPERATE ON RECALL.

SIGNAL HEAD PHASING



SIGNAL SYSTEM I.D. = 22229
METER ADDRESS = 99TH AVENUE NW.

SIGNAL FACES					
ALL SIGNAL INDICATIONS SHALL BE 300 mm.					
SIGNAL FACE	LED R	Y	LED G	LED R	Y
2-1, 2-2	•	•	•	•	•
2-3, 2-4	•	•	•	•	•

NO.	BY DATE	REVISIONS	ITEM	DESIGN	CHECKED
1	JMG 1/98		ADDED STATE AID NUMBER		
2	JMG 1/98		PER MN/DOT COMMENTS		

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.
Date: 12/23/97 Reg. No. 22457



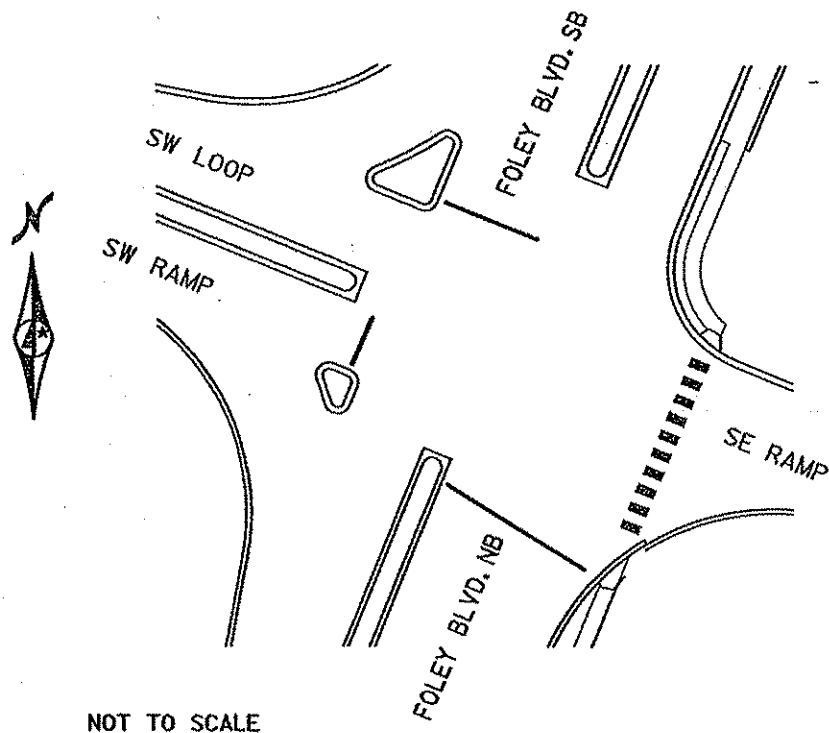
ANOKA CITY COUNTY S.A.P. 11

STATE PROJECT NO. _____
STATE AID PROJECT NO. _____
CITY PROJECT NO. _____
COUNTY PROJECT NO. 11-11-11

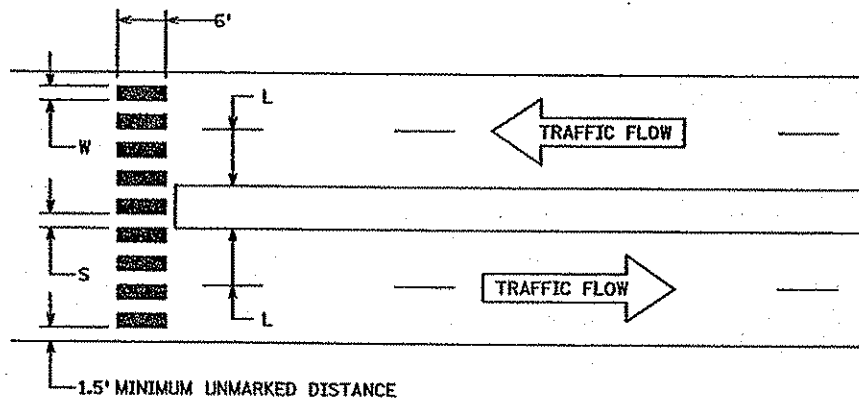
MISCELLANEOUS SIGNAL DETAILS
Sheet 13 of 17 Sheets

PLOTTED/REVISED: 3/2/2011

PAVEMENT MARKINGS LAYOUT



PAVEMENT MARKINGS DETAIL

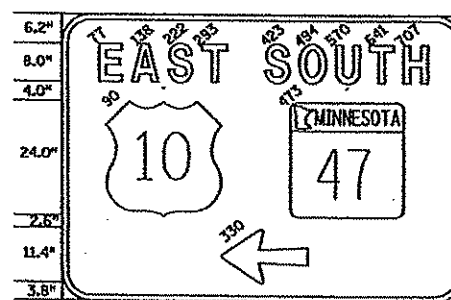


WIDTH OF INSIDE LANE (L)	WIDTH OF TAPED AREA (W)	WIDTH OF SPACE (S)
9'	2.0'	2.5'
10'	2.5'	2.5'
11'	2.5'	3.0'
12'	3.0'	3.0'
13'	3.0'	3.5'

- NOTES:
1. TAPED AREAS TO BE CENTERED AND ALIGNED ON CENTER LINE AND LANE LINES.
 2. ZEBRA CROSSWALKS (TYPICAL SIZE 3'X6') AND 24" WIDE STOP LINES REQUIRE REFLECTORIZED WHITE POLYMER PREFORMED TAPE.
 3. A MINIMUM OF 1.5 FEET CLEAR DISTANCE MUST BE LEFT ADJACENT TO CURB. IF LAST TAPED AREA FALLS INTO THIS DISTANCE, IT MUST BE OMITTED.
 4. FURNISHING & INSTALLING PEDESTRIAN MARKINGS (APPROX. 180 SQ. FT.) AND STOP LINES (APPROX. 100 LIN. FT.) SHALL BE INCIDENTAL TO THE SIGNAL SYSTEM.

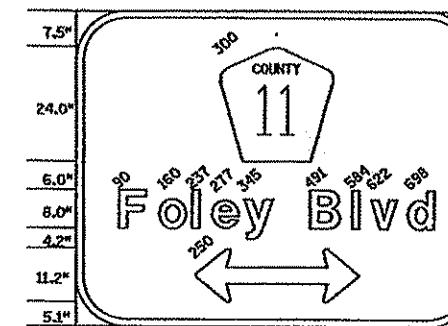
DISTRICT #: METRO
PLOT NAME: sign
PATH & FILENAME: IP_PWP-0078019NT21249_spl.dgn

D-1



84" X 60", 1.2" B. 6.0" R. BLACK/ORANGE
 LINE 1 68.6 : 8" D MOD
 LINE 2 62.3 : 24" X 24" OL, 24" X 24" OL
 LINE 3 18.0 : 14-18 ARROW-180

D-2



84" X 66", 1.5" B. 9.0" R. WHITE/GREEN
 LINE 1 24.0 : 24" X 24" OL
 LINE 2 65.9 : 8" E MOD.
 LINE 3 34.0 : 5-34 DBL HEADED ARROW-0

TYPE "D" SIGNS

SIGN PANEL	SIZE IN. X IN.	NO. REQ'D	NO. OF POSTS PER SIGN	POST SPACING IN.	SQ. FT. PER SIGN	a	b	POLE NO.
D-1	84 X 60	1	3	39	35	10'		3
D-2	84 X 66	1	2	54	38.5	3'		4

- NOTES:
1. FOR STRUCTURAL DETAILS, TYPE "D" SIGNS, SEE STANDARD SIGNS MANUAL, PAGES 105A AND 105B.
 2. FOR TYPE "D" STRINGER AND PANEL JOINT DETAIL, SEE STANDARD SIGNS MANUAL.
 3. FURNISHING AND INSTALLING TYPE "D" & TYPE "R" SIGNS SHALL BE INCIDENTAL TO THE SIGNAL SYSTEM.
 4. COLOR - WHITE LEGEND AND BORDER ON GREEN BACKGROUND, FULLY REFLECTORIZED.
 5. CORNERS EXTENDING BEYOND THE BORDER SHALL NOT BE TRIMMED.
 6. SEE STANDARD SIGNS MANUAL FOR ARROW AND OVERLAY DETAILS.

OVERLAYS

CODE NO.	QUANTITY	SIZE	LEGEND	SQ. FT. PER OVERLAY
M1-4A	1	24" X 24"	US 10	4
M1-5B	1	24" X 24"	MN 47	4
M1-6A	1	24" X 24"	CO 11	4

DRAWN BY: BRUCE W.	REVISED BY:	AS BUILT BY:
CKD BY: BAF DATE: 10/10/95	CKD BY: DATE:	CKD BY: DATE:
SYSTEM ID: 21949		
CITY S.A. 114-1 CO. S.A. 02-611	STATE PROJECT NO. _____	
CERTIFIED BY:	STATE AID PROJECT NO. _____	
STATE	CITY PROJECT NO. _____	
	COUNTY PROJECT NO. 11-11-11	

PAVEMENT MARKINGS LAYOUT AND DETAIL
 MAST ARM SIGN LOCATION DETAIL
 TYPE "D" SIGNS SYSTEM "A"
 T.H. 10 AT C.S.A.H. 11/FOLEY BLVD.

MISCELLANEOUS SIGNAL
 DETAILS

PLOTTED/REVISED: 3/2/2011

- 1** PA90 POLE FOUNDATION
PA90-A35-D40-9 (DAVIT AT 350")
2-ONE WAY SIGNALS OVERHEAD
0' & 18' FROM END OF MAST ARM
TYPE 10A AT 270"
2-R9-3a SIGN (NO PED)
FACING POLES 2 & 4
LUMINAIRE-200W HPS WITH
PEC & CK. SW.
ONE WAY EVP DETECTOR &
CONFIRMATORY LIGHT
3" RSC TO HH 3 WITH
2-12/C#12
2-3/C#12
1-3/C#20
- 2** PEDESTAL FOUNDATION
10' SIGNAL PEDESTAL
TYPE 1A
2-R9-3a SIGNS (NO PED)
FACING POLES 1 & 3
3"RSC INTO HH 4 WITH
1-12/C#12
- 3** PA100 POLE FOUNDATION
PA100-A55-D40-9 (DAVIT AT 350")
2-ONE WAY SIGNALS OVERHEAD
0' & 18' FROM END OF MAST ARM
TYPE 10A AT 0"
TYPE 10A AT 270"
1-R9-3a SIGN (NO PED)
FACING POLE 2
LUMINAIRE-200W HPS WITH
PEC & CK. SW.
ONE WAY EVP DETECTOR &
CONFIRMATORY LIGHT
3" RSC TO HH 8 WITH
2-12/C#12
2-3/C#12
1-3/C#20
- 4** PA90 POLE FOUNDATION
TYPE PA90-A30
ONE WAY SIGNAL OVERHEAD
TYPE 10B AT 0"
TYPE 10A AT 270"
1-R9-3a SIGN (NO PED)
FACING POLE 1
ONE WAY EVP DETECTOR &
CONFIRMATORY LIGHT
3" RSC INTO HH 9 WITH
2-12/C#12
1-3/C#12
1-3/C#20

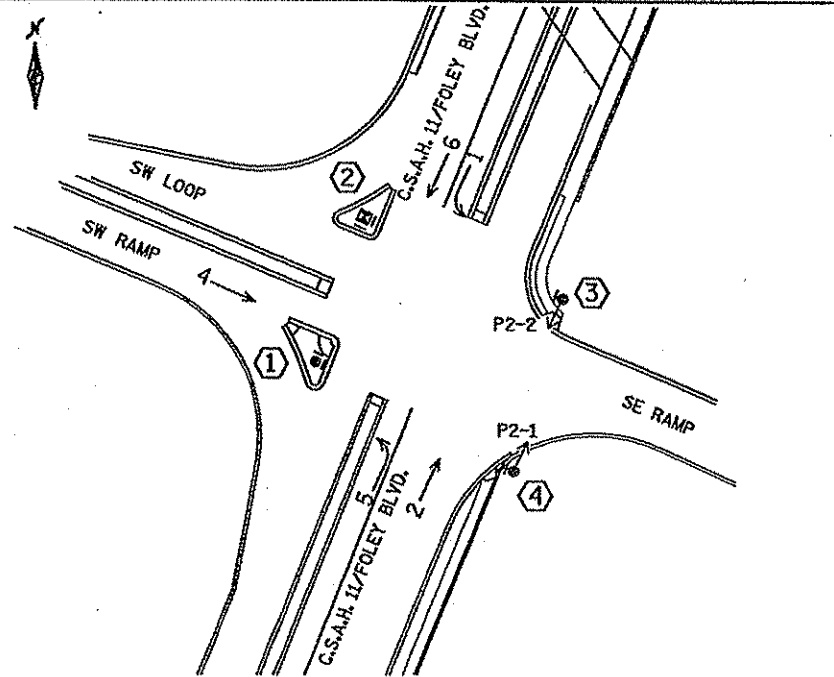
SIGNAL FACES			
SIGNAL INDICATIONS SHALL BE 12"			
FACES	L	E	D
* 1-1,1-2	←	←	←
2-1,2-2	●	●	●
4-1,4-2,4-3	●	●	●
5-1,5-2	←	←	←
6-1,6-2	●	●	●

LOOP DETECTORS			
NUMBER	SIZE (FT.)	FUNCTION	LOCATION
D1-1	6X6	1	40
D1-2	6X6	1	10
D2-1	6X6	1	300
D2-2	6X6	1	300
D4-1	6X6	3	180
D4-2	6X10	1	20
D5-1	6X6	1	40
D5-2	6X6	1	10
D6-1	6X6	1	300
D6-2	6X6	1	300

LOOP DETECTOR FUNCTIONS
1 = CALL & EXTEND
3 = EXTEND ONLY
LOCATION = DISTANCE IN FT. FROM STOP BAR/PEDESTRIAN MARKINGS TO FRONT OF DETECTOR

- A** EQUIPMENT PAD (SEE DETAIL SHEET NO. 230)
CONTROLLER & CABINET
SERVICE EQUIPMENT (PAD MOUNTED)
CABINET TO HH 1 CABINET TO HH 13
4" RSC 4" RSC
5-12/C#12 2-12/C#12
2-3/C#12 1-3/C#12
6-2/C#14 4-2/C#14
2-3/C#20 1-3/C#20
1-6PR#19
- 3" RSC STUBBED OUT OF CABINET
THREADED & CAPPED BOTH ENDS.
LOAD CENTER TO CABINET
1 1/4" RSC
2-1/C#6
1-1/C#6 BR. GR.
LOAD CENTER TO HH 13
1 1/4" RSC
2-3/C#12 (LUM)

CONTROLLER PHASING, PEDESTRIAN INDICATIONS, PUSH BUTTONS AND TYPE 'R' SIGNS



PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE.

SIGNAL SYSTEM OPERATION

- SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 5 PHASE, WITH PHASES 1 & 5 BEING PROTECTED LEFT TURNS.
- PHASE 6 SHALL BE ON VEHICLE RECALL.
- PHASE 2 SHALL BE ON PEDESTRIAN RECALL.

* TO BE BAGGED UNTIL COMPLETION OF SE RAMP



0 20'
SCALE

- NOTES:**
- SEE SPECIAL PROVISIONS FOR STATE FURNISHED MATERIALS, PEDESTRIAN INDICATIONS, PVC HANDHOLES WITH METAL FRAMES & COVERS AND RED L-E-D VEHICLE INDICATIONS.
 - EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.
 - ALL Y & G VEHICLE SIGNAL INDICATIONS SHALL HAVE GLASS LENSES.
 - LOCATION OF CABINET, LOOP DETECTORS, HANDHOLES AND POLES SHALL BE DETERMINED BY TRAFFIC OFFICE PERSONNEL.
 - SEE SHEET NO. 240 FOR INTERCONNECT DETAILS.
 - CONTRACTOR SHALL INSTALL PREFORMED NMC LOOP DETECTORS IN ROADWAY. SEE SHEET NO. 231 FOR DETAILS.
 - FOR PAVEMENT MARKINGS & TYPE "D" SIGNS SEE SHEET 232. FURNISHING & INSTALLING PAVEMENT MARKINGS, TYPE "D" SIGN PANELS & TYPE "R" SIGNS SHALL BE INCIDENTAL TO THE SIGNAL SYSTEM.
 - A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE AND CONDUIT OUTLET BODY FOR EMERGENCY VEHICLE PRE-EMPTION EQUIPMENT SHALL BE INSTALLED 2' FROM THE END OF POLES 1, 3 & 4.
 - REFER TO GRADING PLAN FOR QUANTITIES REGARDING THE SIDEWALK AND PED RAMP TO BE F&I.
 - REFER TO RETAINING WALL PLAN SHEETS FOR PLACEMENT OF POLE 4 FOUNDATION.
 - THE CONTRACTOR FOR THE SIGNAL SYSTEM SHALL COORDINATE THE PLACEMENT OF D6-1 & D6-2 WITH THE BRIDGE CONTRACTOR.

DRAWN BY: B. WILSON	REVISED BY: B. WILSON	REVISED BY:	AS BUILT
CKD BY: BAF DATE: 9/5/95	CKD BY: BAF DATE: 2-7-96	CKD BY:	CKD BY:
SYSTEM ID: 21949			
METER ADDRESS: CITY S.A. 114-0 CO. S.A. 02-611			
CERTIFIED BY:			
State			

**SYSTEM "A"
INTERSECTION LAYOUT
T.H. 10 AT C.S.A.H. 11/FOLEY BLVD.**

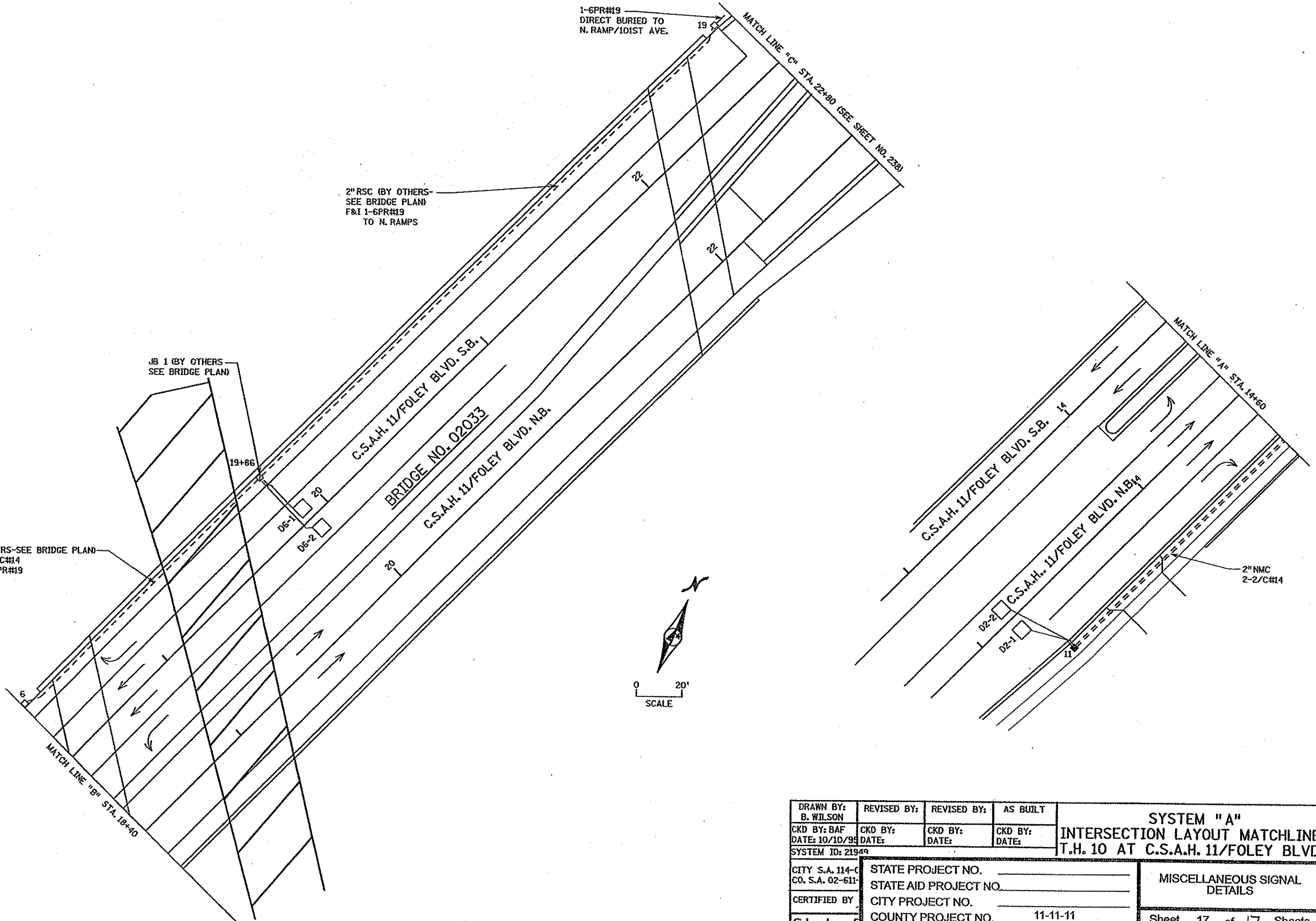
STATE PROJECT NO.	
STATE AID PROJECT NO.	
CITY PROJECT NO.	
COUNTY PROJECT NO.	11-11-11

MISCELLANEOUS SIGNAL
DETAILS
Sheet 16 of 17 Sheets

DISTRICT: METRO
PLOT NAME: 102
PATH & FILENAME: IP_PWP-07-BOIGNT212-49_spl.dgn

PLOTTED/REVISED: 3/2/2011

DISTRICT #: METRO
PLOT NAME: m121
PATH & FILENAME: IP_PWP-d07809NT21249_sgl.dgn



DRAWN BY: B. WILSON	REVISED BY:	REVISED BY:	AS BUILT	SYSTEM "A" INTERSECTION LAYOUT MATCHLINES T.H. 10 AT C.S.A.H. 11/FOLEY BLVD.
CKD BY: BAF DATE: 10/10/99	CKD BY: DATE:	CKD BY: DATE:	CKD BY: DATE:	
SYSTEM ID: 21949				
CITY S.A. 114-C CO. S.A. 02-611	STATE PROJECT NO. _____	STATE AID PROJECT NO. _____	MISCELLANEOUS SIGNAL DETAILS	
CERTIFIED BY:	CITY PROJECT NO. _____	COUNTY PROJECT NO. 11-11-11	Sheet 17 of 17 Sheets	
State F				

MINNESOTA DEPARTMENT OF TRANSPORTATION

ANOKA COUNTY

CONSTRUCTION PLAN FOR BITUMINOUS RECLAMATION, BITUMINOUS SURFACING.

LOCATED ON CSAH 14 BETWEEN 4TH AVE AND 120' WEST OF AENON PL

11-12-14

GROSS LENGTH	4710 FEET	0.892 MILES
BRIDGES-LENGTH	0.00 FEET	0.000 MILES
EXCEPTIONS-LENGTH	0.00 FEET	0.000 MILES
NET LENGTH	4710 FEET	0.892 MILES

CITY OF LINO LAKES



BEGIN COUNTY PROJECT 11-12-14
CSAH 14 STA. 40+00

END COUNTY PROJECT 11-12-14
CSAH 14 STA. 87+10

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

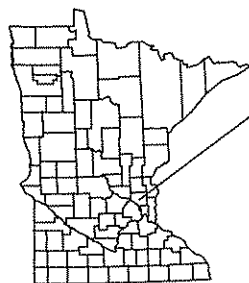
- LOWLAND
- TIMBER
- ORCHARD
- BRUSH
- NURSERY
- CATTLE GUARD
- OVERPASS (Highway Over)
- UNDERPASS (Highway Under)
- BRIDGE
- BUILDING (One Story Frame)
- F-FRAME C-CONCRETE
- S-STONE T-TILE
- B-BRICK ST-STUCCO
- RAILROAD CROSSING BELL
- RAILROAD CROSSING GATE
- MANHOLE
- CATCH BASIN
- FIRE HYDRANT
- 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 Terminal)
- GAS MAIN
- WATER MAIN
- TELEPHONE CABLE IN CONDUIT
- ELECTRIC CABLE IN CONDUIT
- TELEPHONE MANHOLE
- ELECTRIC MANHOLE
- BURIED TELEPHONE CABLE
- BURIED ELECTRIC CABLE
- SEWER (Sanitary or Storm)
- SEWER MANHOLE

SCALES

- PLAN: 0' to 100'
- PROFILE HORIZONTAL: 0' to 100'
- PROFILE VERTICAL: 0' to 10'
- X-SECTIONS HORIZONTAL: 0' to 10'
- X-SECTIONS VERTICAL: 0' to 10'
- INDEX MAP: 0' to 2000'



PROJECT LOCATION

CITY LINO LAKES
ANOKA COUNTY
MN/DOT TRANSPORTATION DISTRICT - METRO
SECTIONS 5, 8
TOWNSHIP 31 NORTH
RANGE 22 WEST

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

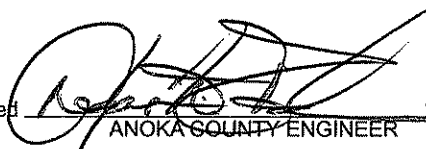
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	STATEMENT OF ESTIMATED QUANTITIES
3-5	TYPICAL SECTIONS
6-7	MISCELLANEOUS DETAILS
8-9	CONSTRUCTION PLAN
10-15	STRIPING PLAN

THIS PLAN CONTAINS 15 SHEETS

DESIGN DESIGNATION

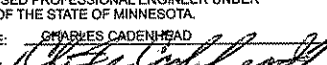
ESAL 20	995,202
R VALUE	50
ADT (2010) =	7,670
Proj. ADT (2030) =	10,738
Soil Factor	NA
9 TON DESIGN	NA

Functional Classification	PRINCIPAL ARTERIAL
No. of Traffic Lanes	2
No. of Parking Lanes	0
Design Speed	50 MPH
Based on Stopping Sight Distance	N/A
Height of eye	3.5'
Height of object	2.0'
Design Speed not achieved at:	
STA. 40+00 TO STA. 87+10	MPH


Approved:  ANOKA COUNTY ENGINEER 3/4/2012

NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_14 (4th-CSAH23)\Plant1 Title.dgn 02/28/2012 12:27:41 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: CHARLES CADENHEAD
SIGNATURE: 
DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY: JJ DATE: 2-28-2012
DESIGN BY: JJ DATE: 2-28-2012
CHECKED BY: BL/JD DATE: 2-28-2012

 ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. _____
STATE AID PROJECT NO. _____
CITY PROJECT NO. _____
COUNTY PROJECT NO. 11-12-14

TITLE SHEET
Sheet 1 of 15 Sheets

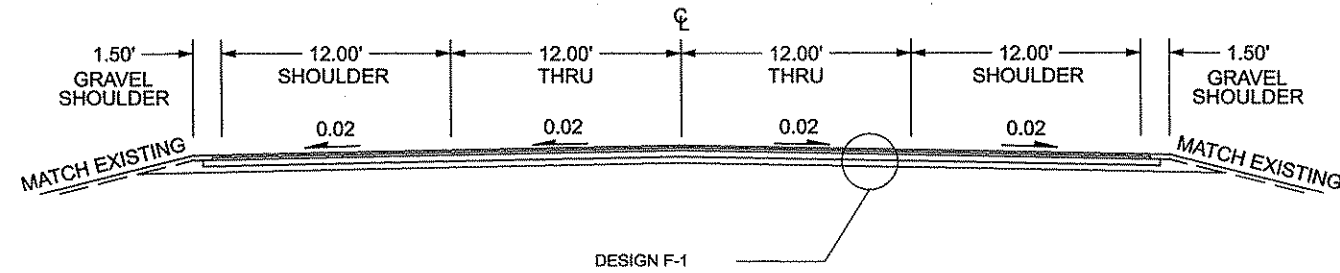
CSAH 14		STATEMENT OF ESTIMATED QUANTITIES		
ITEM NO.	ITEM	NOTE NO.	UNIT	TOTAL EST. QUANT.
2011.601	CONSTRUCTION SURVEYING		LUMP SUM	1
2021.501	MOBILIZATION		LUMP SUM	1
2104.501	REMOVE CURB AND GUTTER	7	LIN FT	25
2104.503	REMOVE CONCRETE WALK		SQ FT	55
2104.505	REMOVE BITUMINOUS DRWEWAY PAVEMENT		SQ YD	573
2104.605	REMOVE BITUMINOUS PAVEMENT		SQ YD	884
2104.513	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)		LIN FT	352
2105.522	SELECT GRANULAR BORROW (LV)		CU YD	130
2123.503	MOTOR GRADER		HOUR	10
2130.501	WATER		MGAL	56
2211.501	AGGREGATE BASE CLASS 5		TON	766
2221.501	AGGREGATE SHOULDERING CLASS 5		TON	246
2232.501	MILL BITUMINOUS SURFACE (2.0") (JOINTS)	1	SQ YD	110
2331.604	BITUMINOUS PAVEMENT RECLAMATION	9	SQ YD	25486
2331.607	HAUL BITUMINOUS PAVEMENT RECLAMATION (LV)	6	CU YD	880
2357.502	BITUMINOUS MATERIAL FOR TACK COAT		GALLON	1007
2360.501	TYPE SP 12.5 WEARING COURSE MIX (4,E)	10	TON	2931
2360.501	TYPE SP 12.5 WEARING COURSE MIX (4,B)	7	TON	159
2360.502	TYPE SP 12.5 NON WEAR COURSE MIX (4,B)		TON	1880
2451.513	FINE FILTER AGGREGATE (LV)		CU YD	28
2502.501	PRECAST CONCRETE HEADWALL		EACH	4
2502.541	4" PERF PE PIPE DRAIN	5	LIN FT	3950
2504.602	ADJUST GATE VALVE	7	EACH	3
2506.503	RECONSTRUCT DRAINAGE STRUCTURE		LIN FT	2
2506.516	CASTING ASSEMBLY		EACH	4
2506.602	GROUT CATCH BASIN OR MANHOLE		EACH	1
2511.502	RANDOM RIPRAP CLASS II	10	CU YD	1
2521.501	6" CONCRETE WALK		SQ FT	55
2531.501	CONCRETE CURB & GUTTER DESIGN B618		LIN FT	25
2531.618	TRUNCATED DOMES		SQ FT	8
2540.602	INSTALL MAIL BOX SUPPORT		EACH	18
2563.601	TRAFFIC CONTROL	3	LUMP SUM	1
2564.533	FURNISH SIGN PANEL TYPE C	8	SQ FT	5
2573.508	BITUMINOUS LINED FLUME		SQ YD	2
2575.523	EROSION CONTROL BLANKETS CATEGORY 3		SQ YD	1500
2581.501	REMOVABLE PREFORMED PLASTIC MARKING	2	LIN FT	376
2582.502	4" SOLID LINE WHITE - EPOXY	4	LIN FT	10119
2582.502	4" SOLID LINE YELLOW - EPOXY	4	LIN FT	637
2582.502	4" BROKEN LINE YELLOW-EPOXY	4	LIN FT	790
2582.502	4" DOUBLE SOLID LINE YELLOW - EPOXY	4	LIN FT	630
2582.603	24" WHITE PREF THERMOPLASTIC	4	LIN FT	24
2582.618	3 X 6 ZEBRA CROSSWALK PREFORMED THERMOPLASTIC	4	SQ FT	126

CSAH 14		CONSTRUCTION NOTES	
1	LOCATION TO BE DETERMINED BY ENGINEER		
2	MARKINGS SHALL BE PLACED AT THE END OF DAYS PAVING		
3	DO NOT PASS, PASS WITH CARE, AND NO CENTER STRIPE SIGNS TO BE INPLACE DURING RECLAIM / PAVING OPERATIONS		
4	PERMANENT MARKINGS TO BE IN PLACE WITHIN 72 HOURS OF FINAL MAINLINE PAVING.		
5	THIS INCLUDES T JOINTS AND ELBOW JOINTS		
6	ITEM FOR REMOVING 4" OF RECLAIM IN CURB AREAS		
7	PAVING STREET APPROACHES OF DRWEWAYS		
8	ITEM INCLUDES FURNISHING SIGN POST		
9	INPLACE MH IN THE ROAD MUST BE PROTECTED AT ALL TIMES. IF DISTURBED, IT IS CONTRACTORS RESPONSIBILITY TO REPLACE CASTING AND RINGS.		
10	INCLUDES SAFTEY EDGE (SEE MISCELLANEOUS DETAILS PAGE 6)		

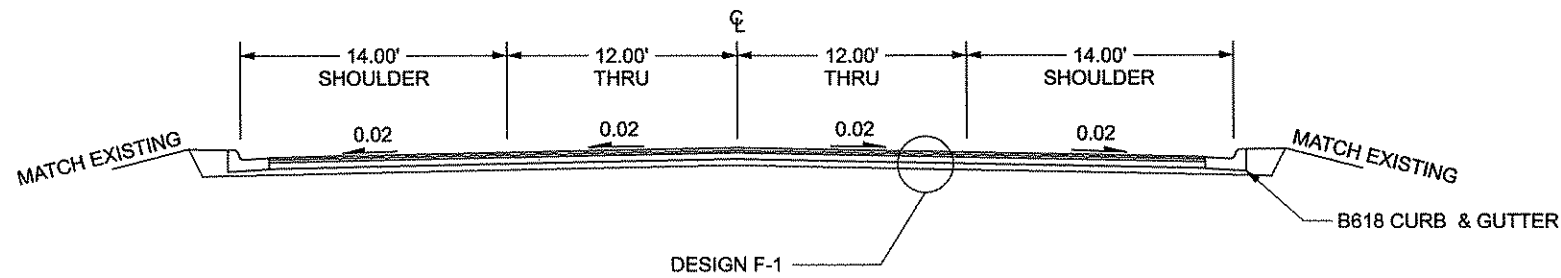
CSAH 14		BASIS OF PLANNED QUANTITIES	
2211.501	AGGREGATE BASE CLASS 5	CU YDS * 1.8 = TONS	
2221.501	AGGREGATE SHOULDERING CLASS 5	CU YDS * 1.8 = TONS	
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	.05 GAL / SQ YD	
2360.501	TYPE SP 12.5 WEARING COURSE MIX (4,E)	115 LBS/SQYD/IN THICKNESS	
2360.502	TYPE SP 12.5 NON WEAR COURSE MIX (4,B)	115 LBS/SQYD/IN THICKNESS	
2580.603	REMOVABLE PREFORMED PLASTIC MARKING	2' AT 50' INTERVALS FOR SKIPS	

CASTING ASSEMBLIES SUMMARY					
ASSEMBLY	RING OR FRAME CASTING	COVER OR GRATE CASTING	CURB BOX	STANDARD PLAT NO.	QUANTITY
A-7D	700-7	715		4101, 4110	4
ALL CASTING HIEGHTS ARE TO BE DETERMINED IN THE FIELD.					
ALL MANHOLE CASTINGS NEED TO HAVE "SANITARY SEWER" OR "WATER" STAMPED ON THEM.					

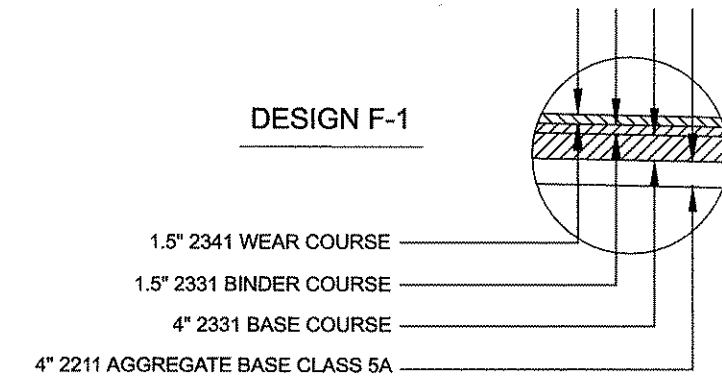
C.S.A.H. 14
EXISTING ROAD - RURAL SECTION
 STA 40+00 - STA 69+84 LT RT
 STA 73+04 - STA 78+86 LT STA 73+04 - STA 79+65 RT



C.S.A.H. 14
EXISTING ROAD - URBAN SECTION
 STA 69+84 - STA 73+04
 STA 78+86 LT - STA 87+10 LT
 STA 79+65 RT - STA 87+10 RT



DESIGN F-1



1.5" 2341 WEAR COURSE

1.5" 2331 BINDER COURSE

4" 2331 BASE COURSE

4" 2211 AGGREGATE BASE CLASS 5A

GENERAL NOTES:

- ALL CROSS SLOPES ARE APPROXIMATE
- UNLESS OTHERWISE SPECIFIED, THE CLASS 5 CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE OF THE MAINLINE.

NO	DATE	BY	CHKD	APPR	REVISION

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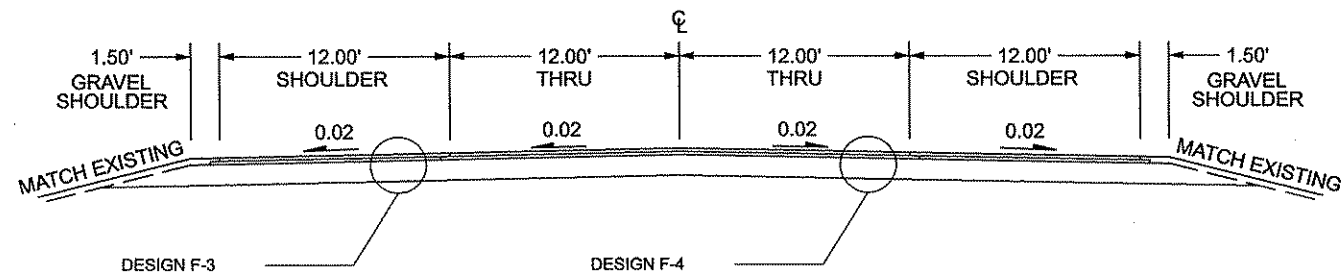
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY JJ DATE 2-28-2012
 DESIGN BY JJ DATE 2-28-2012
 CHECKED BY BL/JQ DATE 2-28-2012

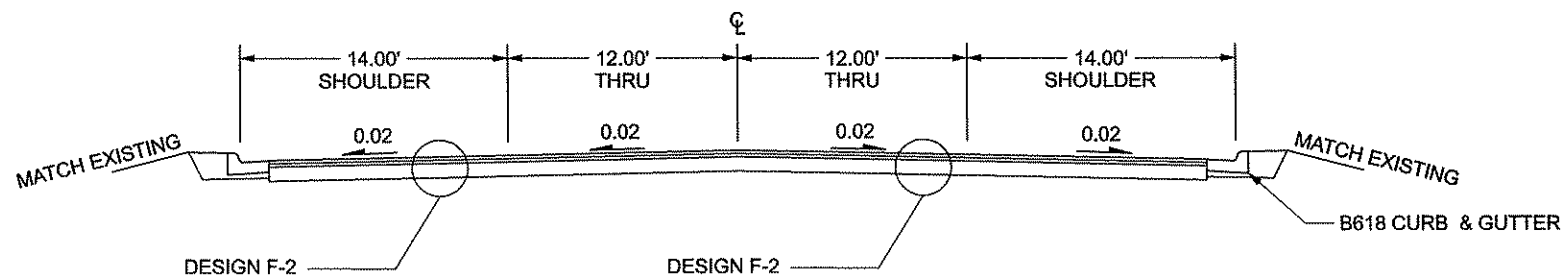
ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 11-12-14

C.S.A.H. 14
PROPOSED ROAD - RURAL SECTION
 STA 40+00 - STA 68+34
 STA 74+54 - STA 77+29

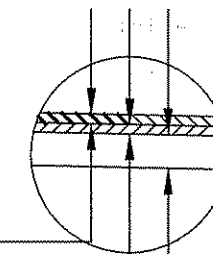


C.S.A.H. 14
PROPOSED ROAD - URBAN SECTION
 STA 68+34 - STA 74+54
 STA 77+29 - STA 87+10



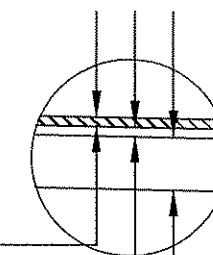
DESIGN F-2

2" WEAR COURSE 12.5 SPWEB440E
 2" NON WEAR COURSE 12.5 SPNWB430B
 7" RECLAIMED BITUMINOUS



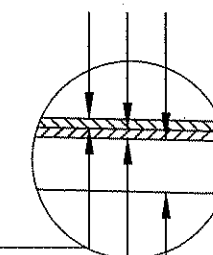
DESIGN F-3

2" WEAR COURSE 12.5 SPWEB440E
 2" AGGREGATE BASE CLASS 5
 11" RECLAIMED BITUMINOUS



DESIGN F-4

2" WEAR COURSE 12.5 SPWEB440E
 2" NON WEAR COURSE 12.5 SPNWB430B
 11" RECLAIMED BITUMINOUS



GENERAL NOTES:

- ALL CROSS SLOPES ARE APPROXIMATE
- UNLESS OTHERWISE SPECIFIED, THE CLASS 5 CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE OF THE MAINLINE.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\112-01-00\CSAH_14 (4th-CSAH23)\Plan3 typicals.dgn 02/28/2012 12:47:31 PM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY JJ DATE 2-28-2012
 DESIGN BY JJ DATE 2-28-2012
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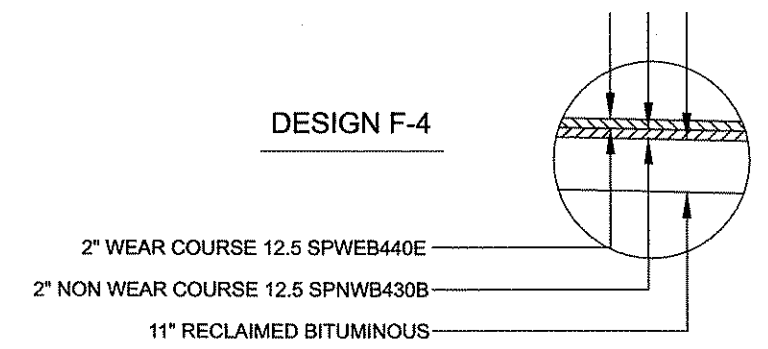
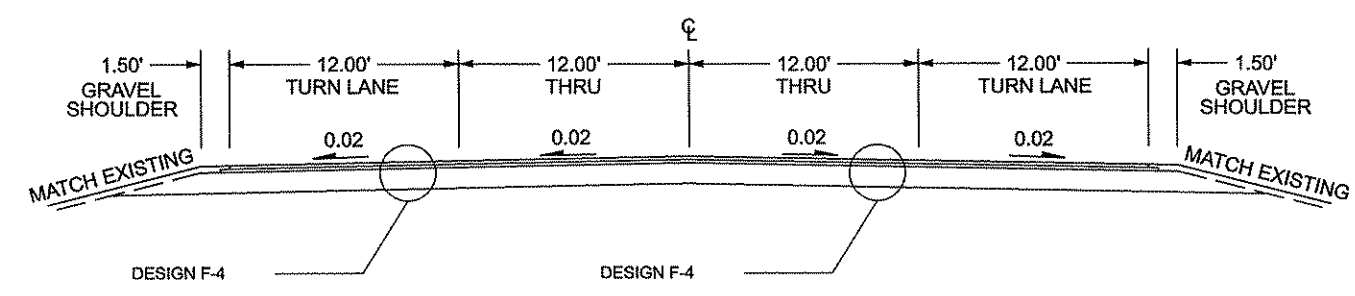


ANOKA COUNTY
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 COUNTY PROJECT NO. 11-12-14

TYPICAL SECTIONS
 Sheet 4 of 15 Sheets

C.S.A.H. 14
PROPOSED ROAD - RURAL SECTION - TURN LANES
 STA 40+72 - 45+52 LT STA 57+77 - 62+57 RT
 STA 54+28 - 59+08 LT STA 77+29 - 82+19 RT
 STA 62+87 - 67+67 LT



GENERAL NOTES:

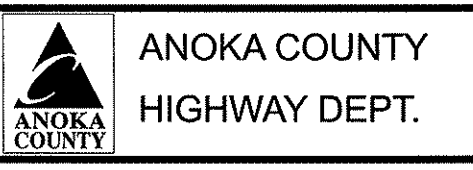
- ALL CROSS SLOPES ARE APPROXIMATE
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NO	DATE	BY	CHKD	APPR	REVISION

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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: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 2/2/12 LICENSE NO. 40418

DRAWN BY JJ DATE 2-28-2012
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 COUNTY PROJECT NO. 11-12-14

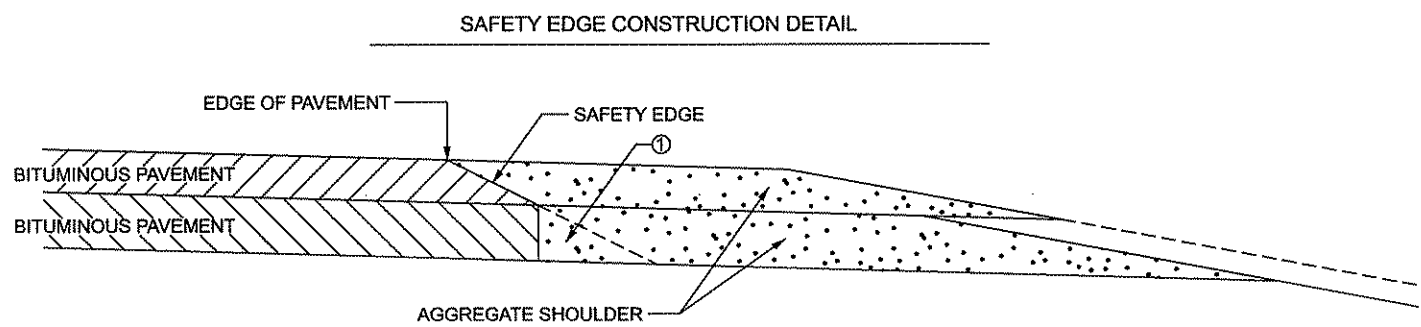
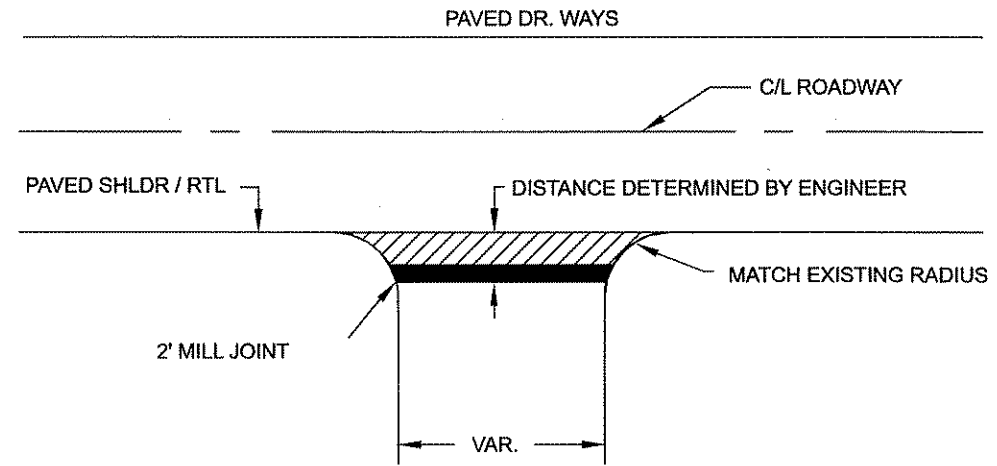
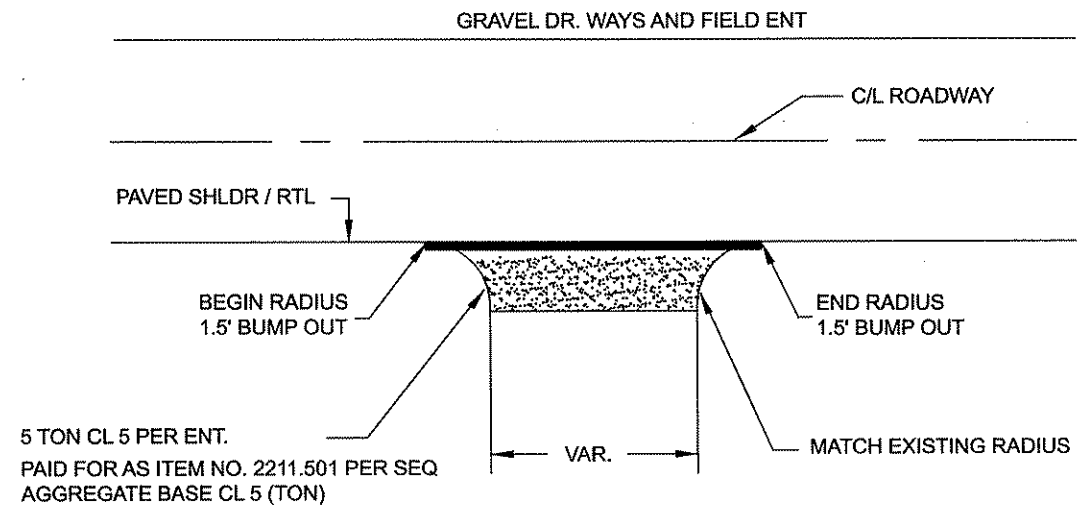
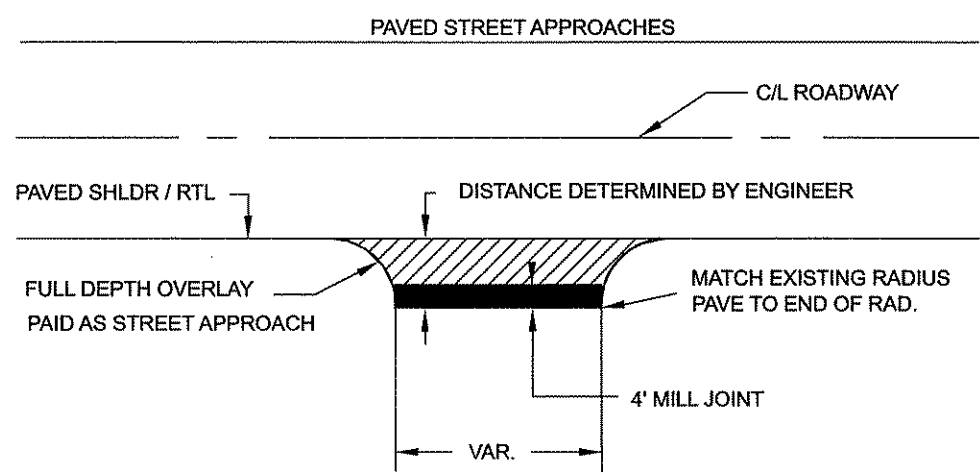


FIGURE B
BITUMINOUS PAVEMENT

① OPTIONAL DESIGN EXTENDS SAFETY EDGE DEEPER THAN 6" AND WIDER THAN 10.5". SEE PLAN DESIGN DETAILS.



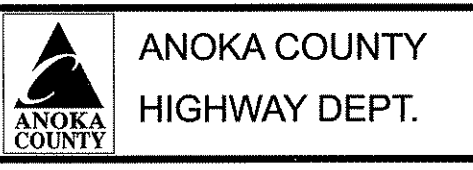
DRIVEWAYS TO BE PAVED IN SEPARATE OPERATION FROM MAINLINE WEAR.
PAID AS STREET APPROACH WEAR

NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_14_(4th-CSAH23)\Plan\4 Details.dgn
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PRINT NAME: CHARLES CADENHEAD
SIGNATURE: *[Signature]*
DATE: 2/2/12 LICENSE NO. 49416

DRAWN BY JJ DATE 2-28-2012
DESIGN BY JJ DATE 2-28-2012
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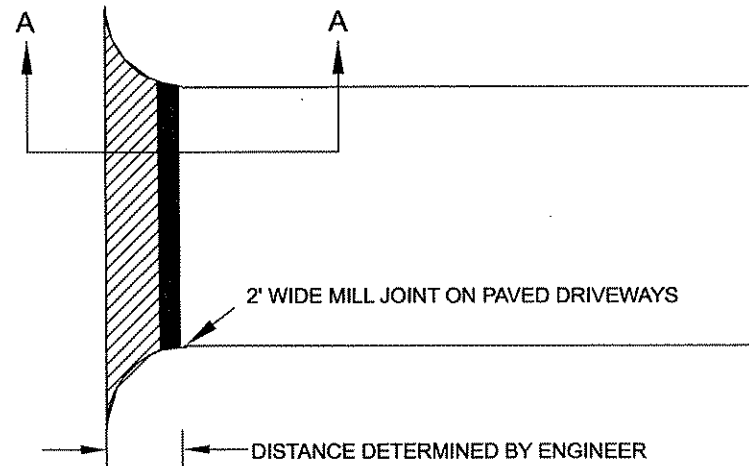


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STATE AID PROJECT NO. _____
CITY PROJECT NO. _____
COUNTY PROJECT NO. 11-12-14

MISCELLANEOUS DETAILS
Sheet 6 of 15 Sheets

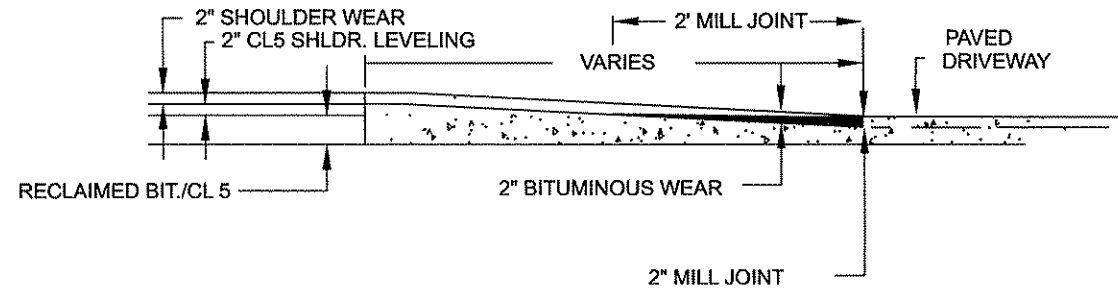
PAVED DRIVEWAYS

JOINT DETAILS



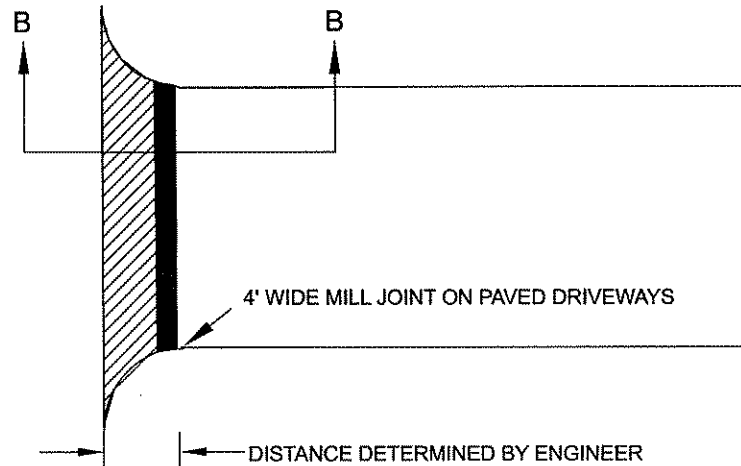
DRIVEWAYS TO BE PAVED IN SEPARATE OPERATION OTHER THAN MAINLINE WEAR.
PAID AS DRIVEWAY/STREET APPROACH WEAR

DRIVEWAY JOINT DETAILS



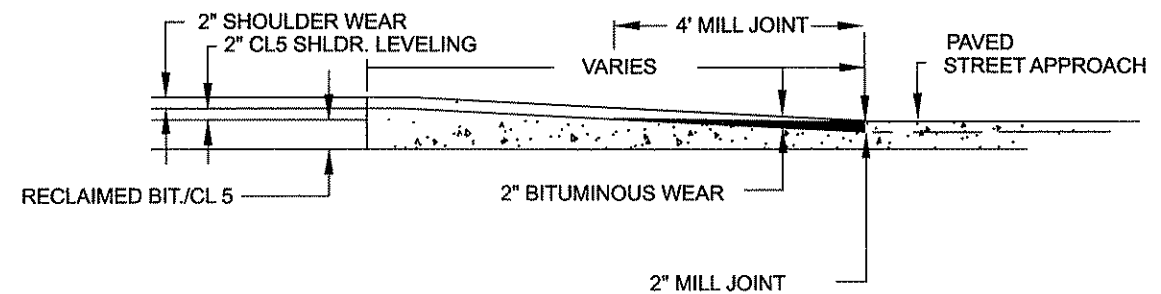
PAVED STREETS

JOINT DETAILS



OVERLAY EXISTING STEET APPROACH, DO NOT RECLAIM
STREETS TO BE PAVED IN SEPARATE OPERATION OTHER THAN MAINLINE WEAR.
PAID AS DRIVEWAY/STREET APPROACH BASE AND WEAR

STREET APPROACH JOINT DETAILS



NO	DATE	BY	CHKD	APPR	REVISION
NAME: P:\12-01-00\CSAH_14_(4th-CSAH23)\Plan4 Details.dgn					
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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: CHARLES CADENHEAD
SIGNATURE: *[Signature]*
DATE: 3/2/12 LICENSE NO. 40416

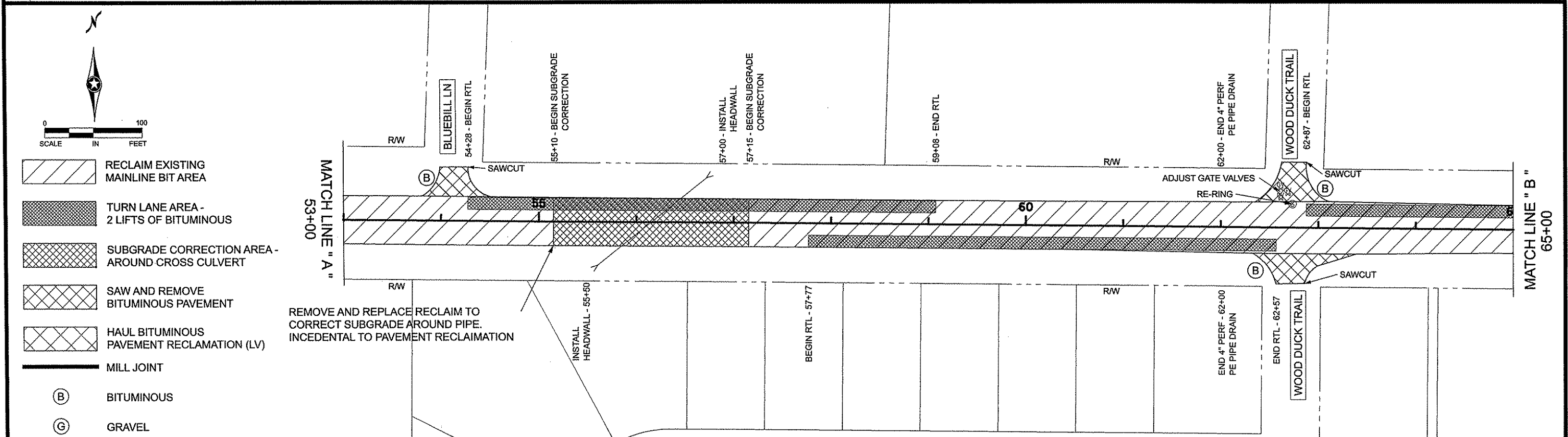
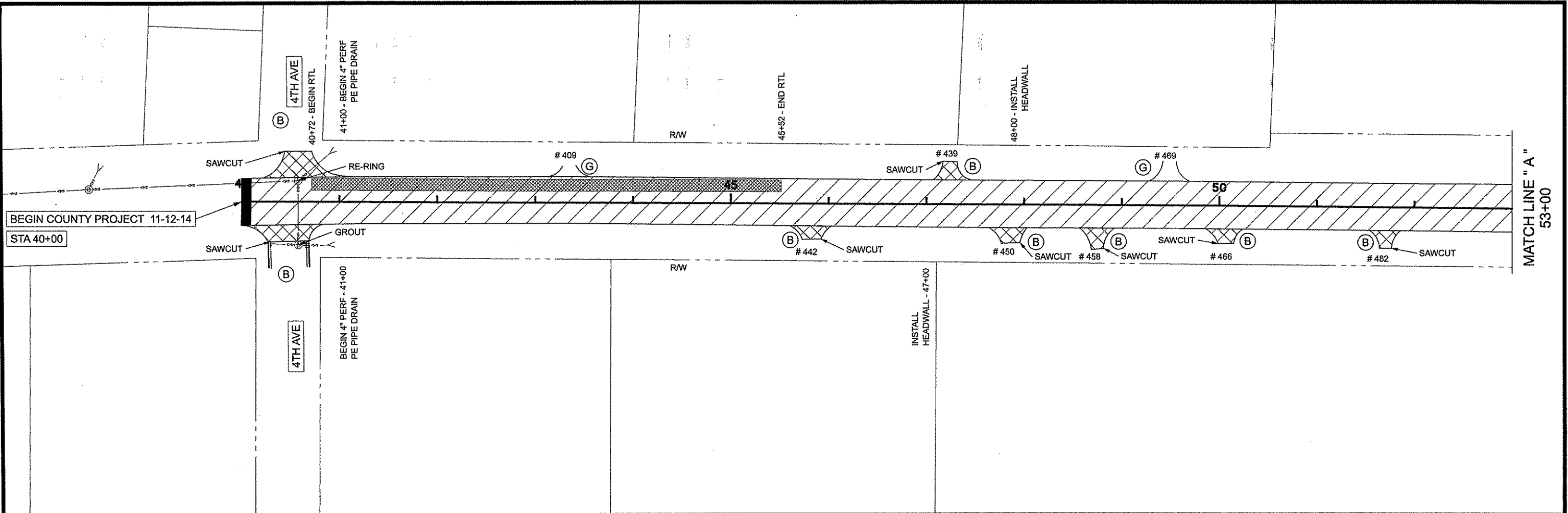
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DESIGN BY JJ DATE 2-28-2012
CHECKED BY BL / JO DATE 2-28-2012



ANOKA COUNTY
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STATE PROJECT NO. _____
STATE AID PROJECT NO. _____
CITY PROJECT NO. _____
COUNTY PROJECT NO. 11-12-14

MISCELLANEOUS
DETAILS
Sheet 7 of 15 Sheets



- RECLAIM EXISTING MAINLINE BIT AREA
- TURN LANE AREA - 2 LIFTS OF BITUMINOUS
- SUBGRADE CORRECTION AREA - AROUND CROSS CULVERT
- SAW AND REMOVE BITUMINOUS PAVEMENT
- HAUL BITUMINOUS PAVEMENT RECLAMATION (LV)
- MILL JOINT
- BITUMINOUS
- GRAVEL

NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\12-01-00\CSAH_14 (40-CSAH23)\Plan5 plan.dgn					

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

PRINT NAME: CHARLES CADENHEAD

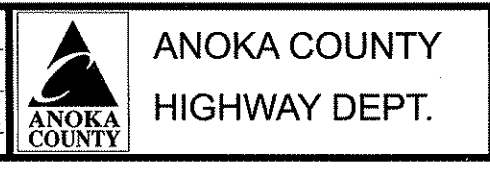
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DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY: JJ DATE: 2-28-2012

DESIGN BY: JJ DATE: 2-28-2012

CHECKED BY: BL / JO DATE: 2-28-2012



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STATE AID PROJECT NO. _____

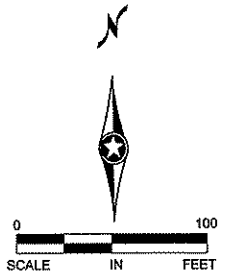
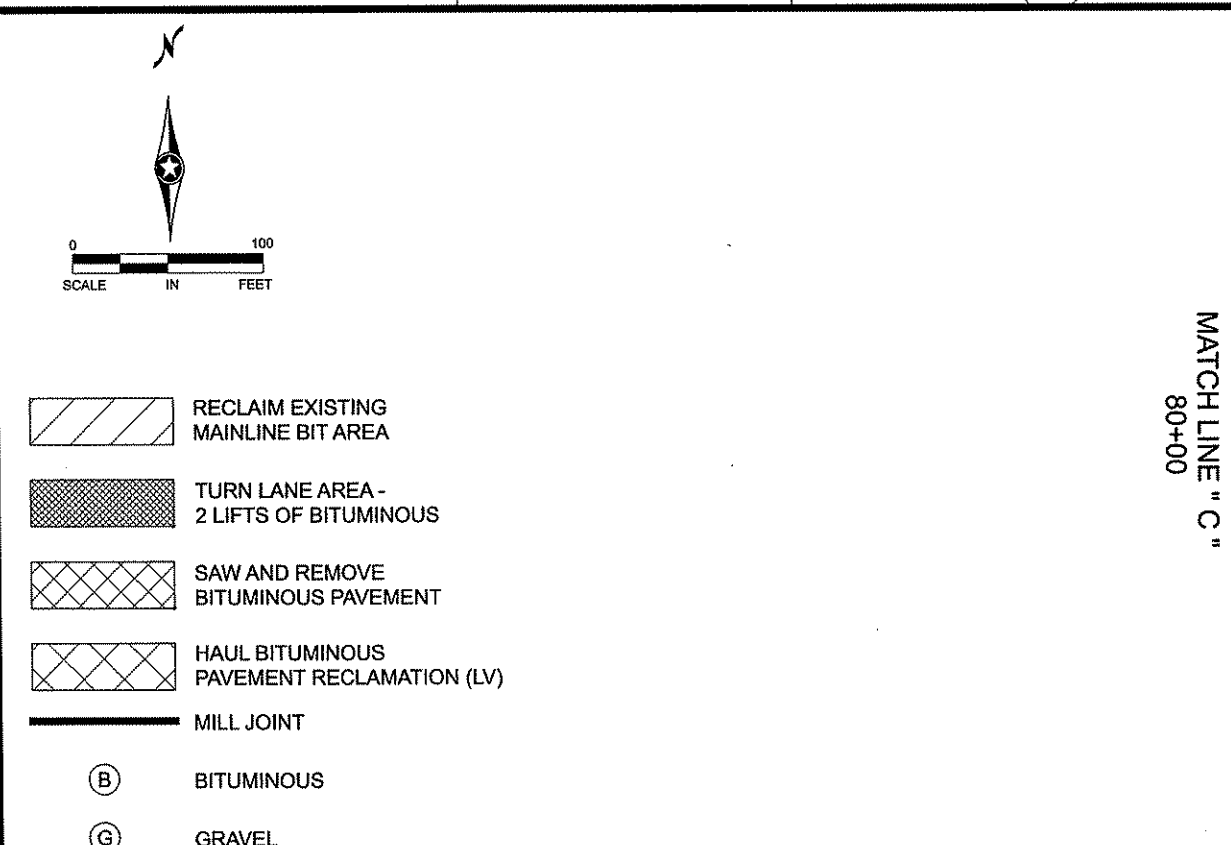
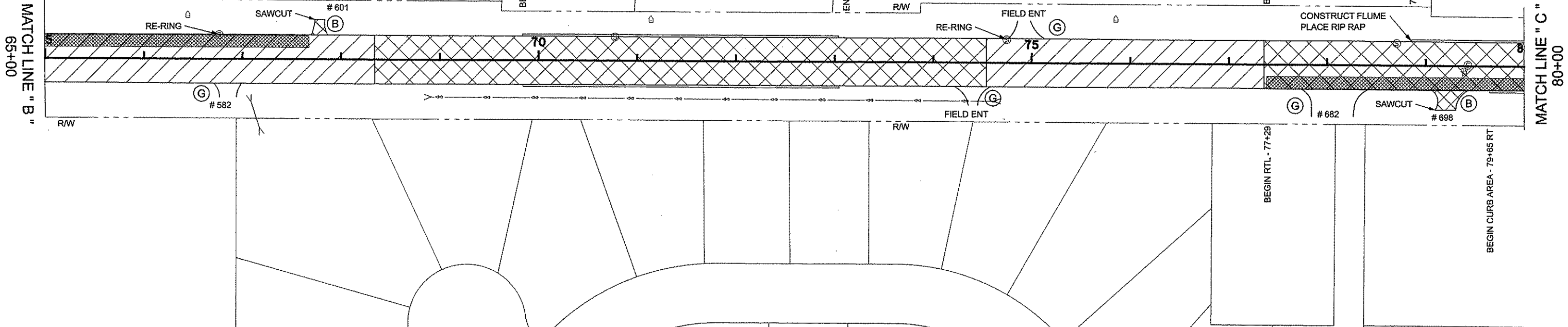
CITY PROJECT NO. _____

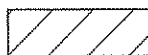


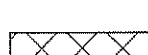
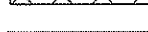


COUNTY PROJECT NO. 11-12-14

CONSTRUCTION PLAN

STA 40+00 TO 65+00

Sheet 8 of 15 Sheets



-  RECLAIM EXISTING MAINLINE BIT AREA
-  TURN LANE AREA - 2 LIFTS OF BITUMINOUS
-  SAW AND REMOVE BITUMINOUS PAVEMENT
-  HAUL BITUMINOUS PAVEMENT RECLAMATION (LV)
-  MILL JOINT
-  BITUMINOUS
-  GRAVEL


NO	DATE	BY	CKD	APPR	REVISION

NAME: P:112-01-00\CSAH_14 (4th-CSAH23)\Plan5 plan.dgn 02/28/2012 12:33:36 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: CHARLES CADEMHEAD
 SIGNATURE: *[Signature]*
 DATE: 2/2/12 LICENSE NO. 40416

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 ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 11-12-14

CONSTRUCTION PLAN
 STA 65+00 TO 87+10
 Sheet 9 of 15 Sheets

PERMANENT PAVEMENT MARKING PLAN
NOTES AND GUIDELINES

GENERAL INFORMATION:

THE ENGINEER'S INVOLVEMENT IN THE APPLICATION OF THE MATERIAL SHALL BE LIMITED TO FIELD CONSULTATION AND INSPECTION. ANOKA COUNTY HIGHWAY DEPARTMENT WILL PLACE NECESSARY "SPOTTING" AT APPROPRIATE POINTS TO PROVIDE HORIZONTAL CONTROL FOR STRIPING AND TO DETERMINE NECESSARY STARTING AND CUTOFF POINTS, LONGITUDINAL JOINTS, PAVEMENT EDGES AND EXISTING MARKINGS MAY SERVE AS HORIZONTAL CONTROL WHEN SO DIRECTED.

EDGE LINES AND LANE LINES ARE TO BE BROKEN ONLY AT INTERSECTIONS WITH PUBLIC ROADS AND AT PRIVATE ENTRANCES IF THEY ARE CONTROLLED BY A YIELD SIGN, STOP SIGN OR TRAFFIC SIGNAL. THE BREAK POINT IS TO BE AT THE START OF THE RADIUS FOR THE INTERSECTION OR AT MARKED STOP LINES OR CROSSWALKS.

A TOLERANCE OF 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.

EPOXY:

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 EPOXY PAVEMENT MARKINGS.

THE EPOXY MARKING APPLICATION SHALL IMMEDIATELY FOLLOW THE PAVEMENT CLEANING. GLASS BEANS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE EPOXY RESIN LINE TO PROVIDE AN IMMEDIATE NO-TRACK SYSTEM.

AN EPOLY RESIN LINE 4" WIDE AND 15 MILL THICKNESS (WET), REQUIRES AN APPLICATION RATE OF ONE (1) GALLON OF COMPONENTS FOR 320 FEET OF LINE. GLASS BEADS SHALL BE APPLIED AT A POUND PER GALLON RATE SUFFICIENT TO ACHIEVE AN ACCEPTABLE NO-TRACK SYSTEM.

OPERATIONS SHALL BE CONDUCTED ONLY WHEN THE ROAD PAVEMENT SURFACE TEMPERATURES ARE 50 DEGREES FAHRENHEIT OR GREATER.

PERMANENT PAVEMENT MARKINGS SHALL NOT BE PLACED OVER TEMPORARY TAPE MARKINGS.

PREFORMED THERMOPLASTIC:

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

PAINT:

AT THE TIME OF APPLYING THE MARKING MATERIAL, THE APPLICATION AREA SHALL BE FREE OF CONTAMINATION. THE CONTRACTOR SHALL CLEAN THE ROADWAY SURFACE PRIOR TO THE LINE APPLICATION IN A MANNER AND TO THE EXTENT REQUIRED BY THE ENGINEER.

GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE PAINT LINE.

EXCEPT WHEN USED AS A TEMPORARY MARKING, PAVEMENT MARKINGS SHALL ONLY BE APPLIED IN SEASONABLE WEATHER WHEN AIR TEMPERATURE IS 50 DEGREES FARHENHEIT OR HIGHER AND SHALL NOT BE APPLIED WHEN THE WIND OR OTHER CONDITIONS CAUSE A FILD OR DUST TO BE DEPOSITED ON THE PAVEMENT SURFACE AFTER CLEANING AND BEFORE THE MARKING MATERIAL CAN BE APPLIED.

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

SYMBOLS & MATERIALS LEGEND

■ CROSSWALK BLOCK WHITE PREFORMED THERMOPLASTIC

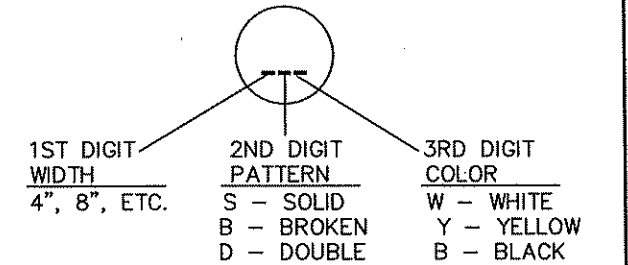
↩ PAVEMENT MESSAGE (LEFT ARROW) PREFORMED THERMOPLASTIC

STRIPING KEY

○ CIRCLE - EPOXY □ SQUARE PREFORMED THERMOPLASTIC

△ TRIANGLE - PAINT

⬠ PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING



EXAMPLE: (4SW) = 4\" SOLID LINE WHITE - EPOXY

PAVEMENT MARKING QUANTITIES		
Item	Quantity	Units
4" Double Solid Line Yellow - Epoxy	630	Lin Ft
4" Solid Line Yellow - Epoxy	637	Lin Ft
4" Broken Line Yellow - Epoxy (10 ft stripe / 40 ft gap)	790	Lin Ft
4" Solid Line White - Epoxy	10119	Lin Ft
24" White Pref Thermoplastic	24	Lin Ft
3'x6' Zebra Crosswalk Preformed Thermoplastic	126	SQ FT

NO	DATE	BY	CHKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY: MTH DATE: 1/03/12
 DESIGN BY: MTH DATE: 1/03/12
 CHECKED BY: JR DATE: 2/14/12



ANOKA COUNTY
HIGHWAY DEPT.

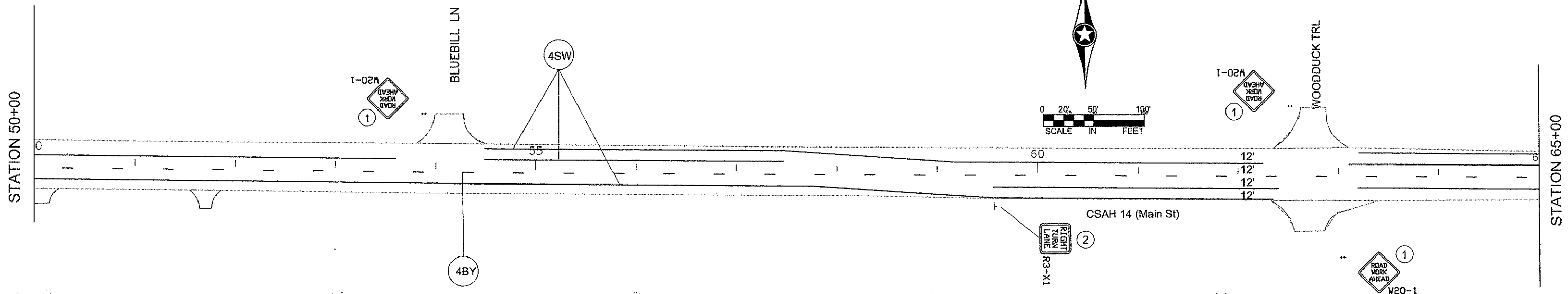
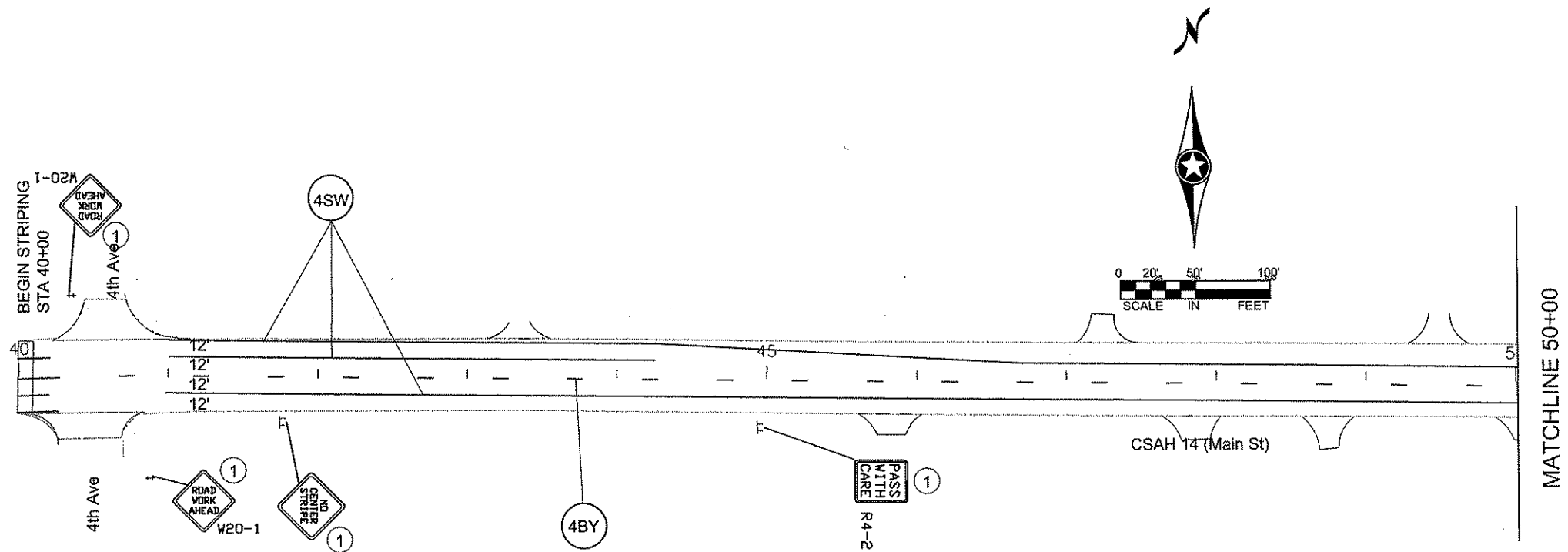
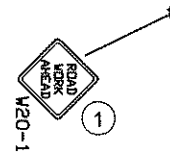
COUNTY PROJECT NO. 11-12-14

PERMANENT MARKING
TABULATION

Sheet 10a of 15 Sheets

NOTES:

- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
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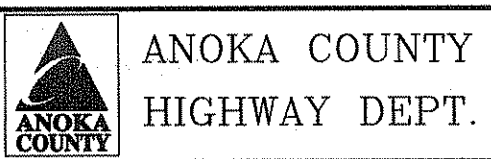


NO	DATE	BY	CKD	APPR	REVISION

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

PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY: MTH DATE: 1/03/12
 DESIGN BY: MTH DATE: 1/25/11
 CHECKED BY: JR DATE: 3/01/11



STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 11-12-14

CSAH 14 (MAIN ST)
 TEMPORARY SIGNING
 PERMANENT SIGNING & STRIPING
 AND PAVEMENT MESSAGES

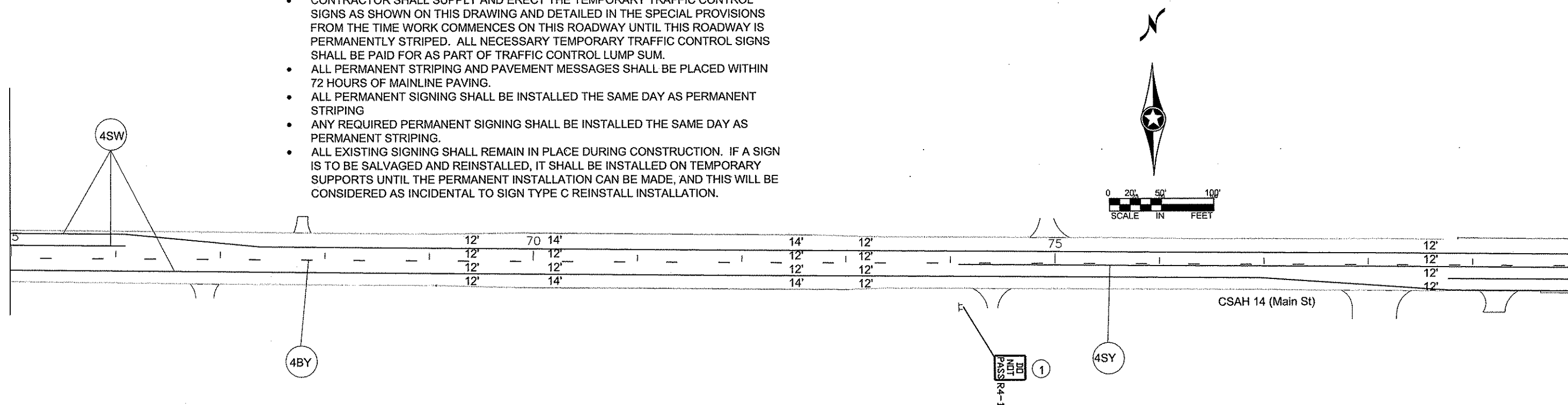
Sheet 10 of 15 Sheets

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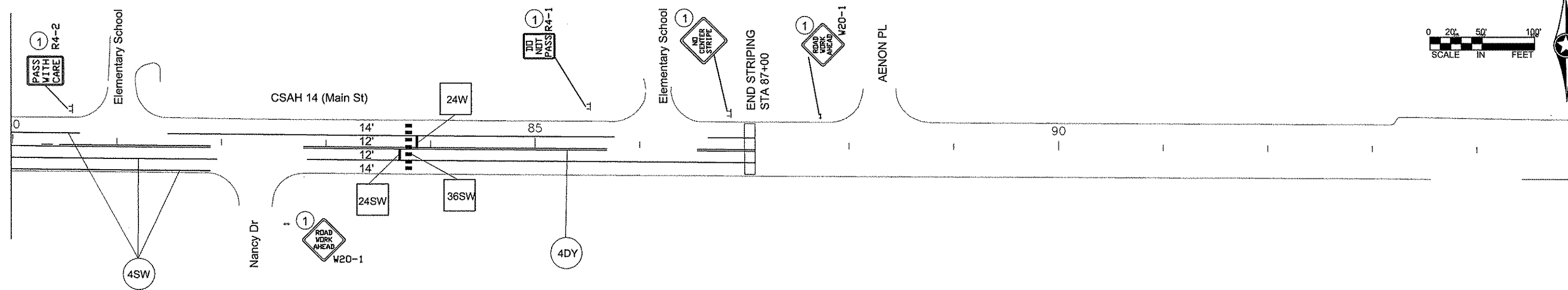
STATION 65+00

STATION 80+00



STATION 80+00

95



NO	DATE	BY	CKD	APPR	REVISION

NAME: T:\Traffic\dwg\CSAH 14 (Main St)\11-12-14\11-12-14.dwg

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 DESIGN BY: MTH DATE: 1/25/11
 CHECKED BY: JR DATE: 3/01/11












ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 11-12-14

CSAH 14 (MAIN ST)
 TEMPORARY SIGNING
 PERMANENT SIGNING & STRIPING
 AND PAVEMENT MESSAGES

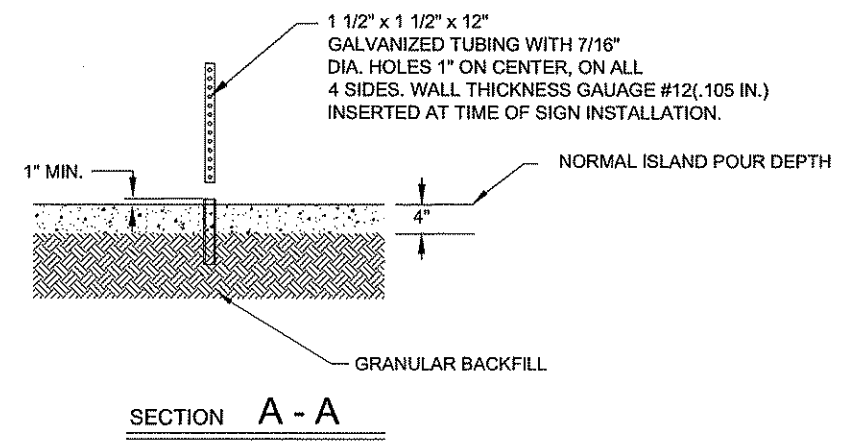
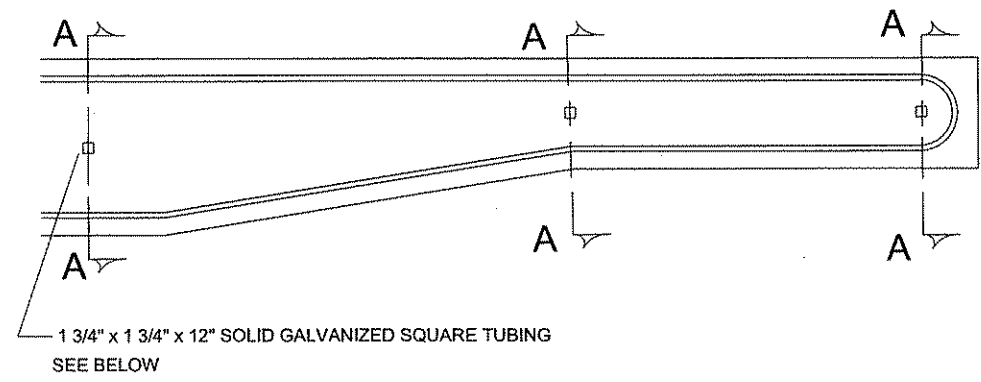
Sheet 11 of 15 Sheets

TEMPORARY TRAFFIC CONTROL SIGNS						
M.U.T.C.D. CODE	SIZE	PANEL AREA	INSERT	QUANTITY		MOUNTING HEIGHT (to pavement edge) FT.
		FT. ²			Nd. POST	
W8-12	48" x 48"	16.00		2	2	7.0'
R4-1	24" x 30"	5.00	 R4-1	2	1	7.0'
R4-2	24" x 30"	5.00	 R4-2	2	1	7.0'
W8-1A	48" x 48"	16.00	 W8-1A	AS NEEDED		
W8-1A	48" x 48"	16.00	 W8-1A	AS NEEDED		
W8-8	48" x 48"	16.00	 W8-8	AS NEEDED		
W8-11	48" x 48"	16.00	 W8-11	AS NEEDED		
W8-11	48" x 48"	16.00	 W20-1	AS NEEDED (ESTIMATED 8)		

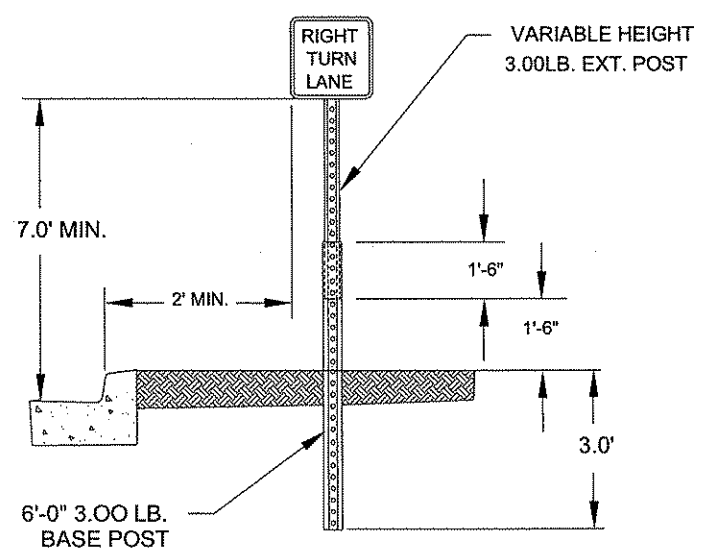
F & I PERMANENT SIGNS							
M.U.T.C.D. CODE	SIZE	PANEL AREA	INSERT	QUANTITY		MOUNTING HEIGHT (to pavement edge) FT.	TOTAL PANEL AREA FT.
		FT. ²			Nd. POST		
R3-X1	30" x 30"	6.25		1	1	7.0'	6.25
TOTAL PANEL AREA							6.25

SEE SPECIAL PROVISIONS
 ① TEMPORARY TRAFFIC CONTROL SIGN
 ② F & I PERMANENT SIGN
 ③ SALVAGE PERMANENT SIGN
 ④ RE-INSTALL PERMANENT SIGN

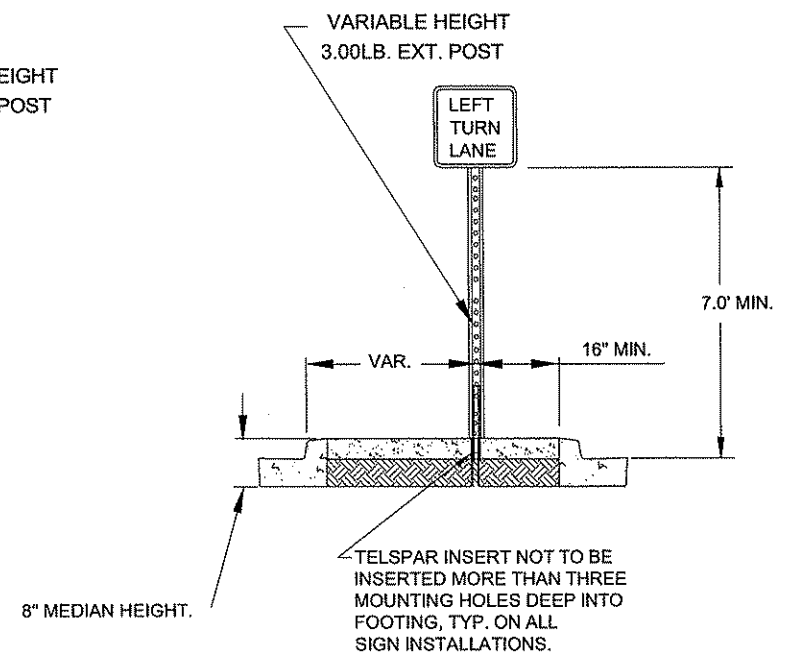
- NOTES:
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GROUND POST MOUNT SIGN
INSTALLATION TYPICAL



ISLAND MOUNT BREAK-AWAY SIGN
INSTALLATION TYPICAL



NO	DATE	BY	CKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY MTH DATE 3-01-11
 DESIGN BY #ZZB DATE 8-13-08
 CHECKED BY JR DATE 3-01-11

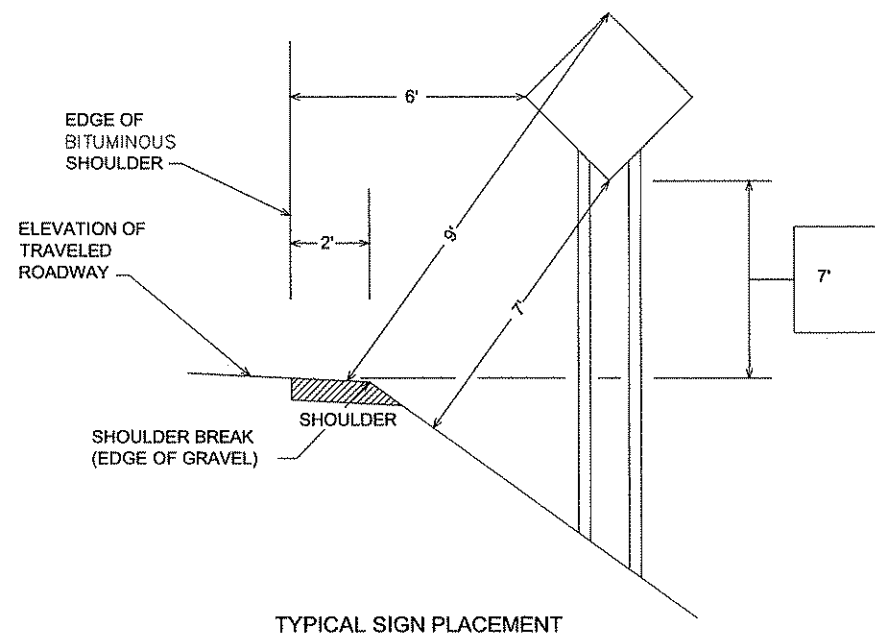


ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE PROJECT NO. _____
 STATE PROJECT NO. _____
 COUNTY PROJECT NO. 11-12-14

SIGNING & STRIPING DETAILS
 Sheet 13 of 15 Sheets

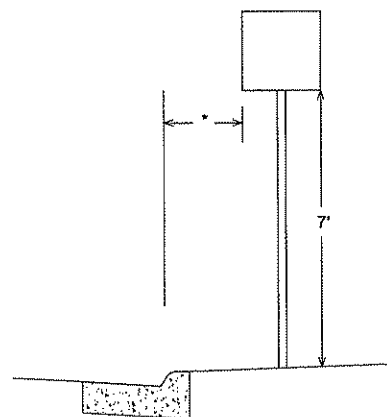
RURAL



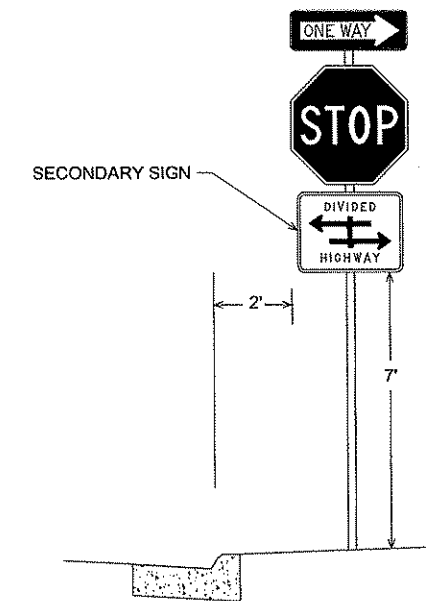
TYPICAL SIGN PLACEMENT

URBAN

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



TYPICAL SIGN PLACEMENT



NOTE:

- ALL DIMENSIONS ARE MINIMUMS
- MAINTAIN 2' CLEAR FROM SIGNS TO BITUMINOUS TRAIL

NO	DATE	BY	CKD	APPR	REVISION

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DESIGN BY: #ZZB DATE: 8-13-08

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ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____

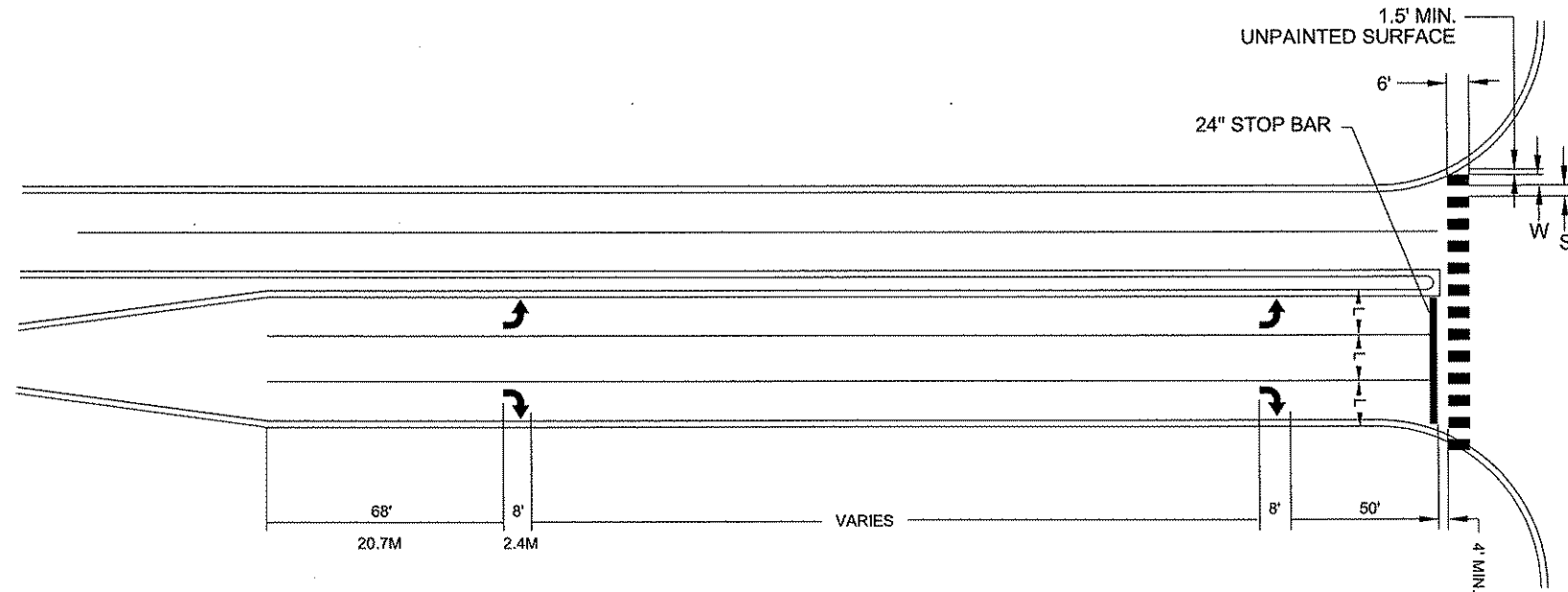
STATE PROJECT NO. _____

STATE PROJECT NO. _____

COUNTY PROJECT NO. 11-12-14

SIGNING & STRIPING DETAILS

MARKINGS FOR PEDESTRIAN CROSSWALKS



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

NOTES: CROSSWALKS:

- 1.) PAINTED AREAS ARE TO BE CENTERED ON CENTER AND LANE LINES, EVEN IF INTERSECTION IS NOT ALIGNED.
- 2.) LOCATION OF ZEBRA CROSSWALKS AND STOP BARS, SIGNAL LOOPS AND PED RAMPS ARE APPROXIMATE. FINAL LOCATIONS ARE TO BE DETERMINED AND FIELD 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' (450mm) CLEAR DISTANCE MUST BE LEFT ADJACENT TO THE CURB. IF LAST PAINTED AREA FALLS INTO THIS AREA, IT MUST BE OMITTED.
- 5.) ON TWO LANE STREETS, USE SPACING SHOWN FOR AN 11' (3.3mm) NSIDE LANE.

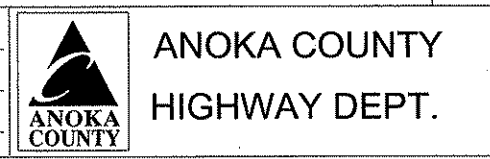
NO	DATE	BY	CHKD	APPR	REVISION

NAME: T:\Traffic\Dwg\CSAH 14\11-12-14\Sign&Stripe_Details.dwg

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PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *Charles Cadenhead*
 DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY: MTH DATE: 3-01-11
 DESIGN BY: #ZZB DATE: 8-13-08
 CHECKED BY: JR DATE: 2-14-12



STATE PROJECT NO. _____
 STATE PROJECT NO. _____
 STATE PROJECT NO. _____
 COUNTY PROJECT NO. 11-12-14

SIGNING & STRIPING DETAILS

Sheet 15 of 15 Sheets

MINNESOTA DEPARTMENT OF TRANSPORTATION ANOKA COUNTY

CONSTRUCTION PLAN FOR 2" BITUMINOUS OVERLAY

LOCATED ON CR 16 BETWEEN DRAKE STREET AND UNIVERSITY AVE

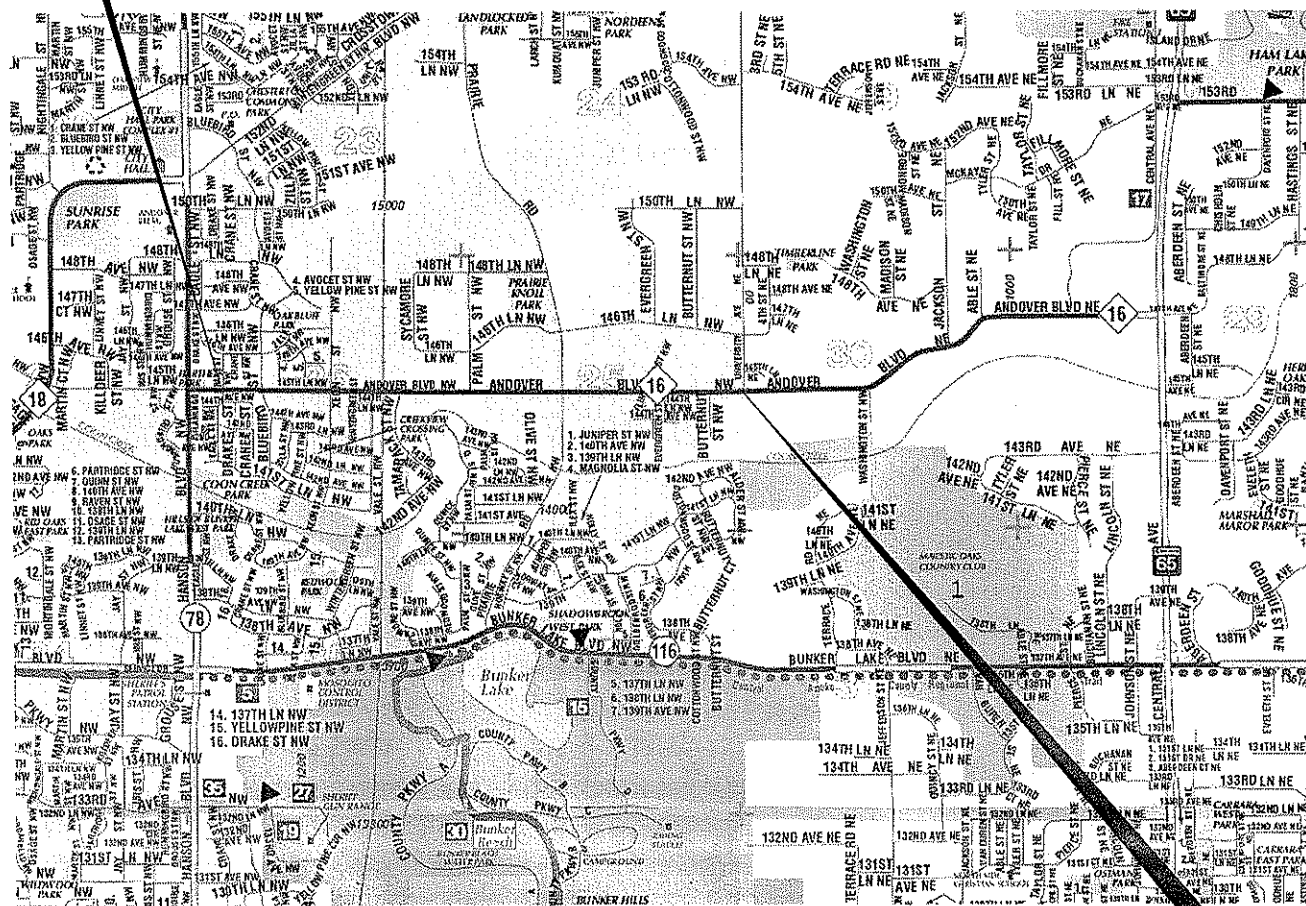
11-13-16

GROSS LENGTH	9975 FEET	1.889 MILES
BRIDGES-LENGTH	0.00 FEET	0.000 MILES
EXCEPTIONS-LENGTH	0.00 FEET	0.000 MILES
NET LENGTH	9975 FEET	1.889 MILES

BEGIN COUNTY PROJECT 11-13-16

CR 16 STA. 25+50

CITY OF ANDOVER



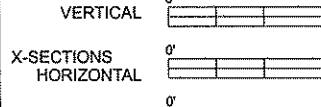
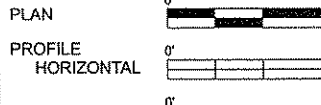
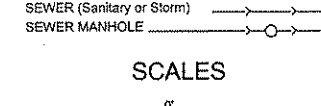
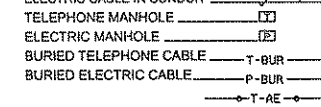
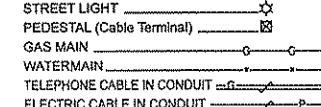
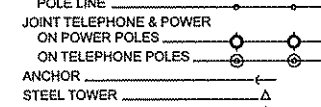
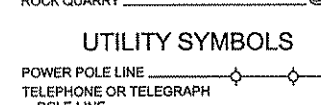
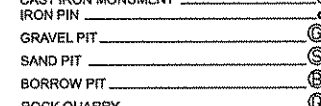
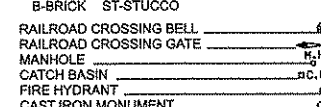
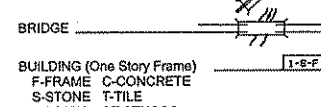
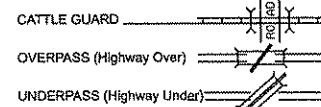
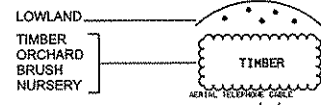
END COUNTY PROJECT 11-13-16

CR 16 STA. 125+25



PLAN SYMBOLS

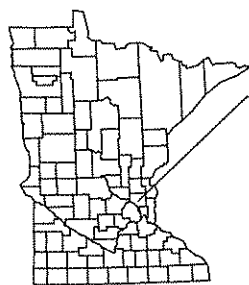
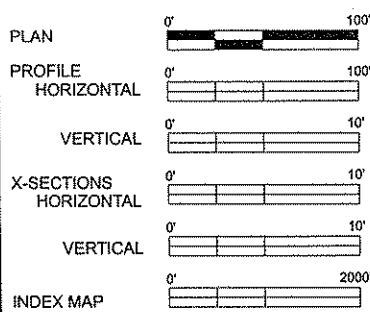
- COUNTY LINE _____
- TOWNSHIP OR RANGE LINE _____
- SECTION LINE _____
- QUARTER LINE _____
- SIXTEENTH LINE _____
- RIGHT OF WAY LINE _____
- SLOPE EASEMENT _____
- EXISTING RIGHT OF WAY _____
- PROPERTY LINE _____
- CORPORATE OR CITY LIMITS _____
- RETAINING WALL _____
- RAILROAD _____
- RAILROAD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



UTILITY SYMBOLS

- 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 _____
- SEWER (Sanitary or Storm) _____
- SEWER MANHOLE _____

SCALES



PROJECT LOCATION

ANDOVER
ANOKA COUNTY
MN/DOT TRANSPORTATION DISTRICT - METRO
SECTIONS 25, 26
TOWNSHIP 32 NORTH
RANGE 24 WEST

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 PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS."

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	STATEMENT OF ESTIMATED QUANTITIES
3-4	TYPICAL SECTIONS
5-6	MISCELLANEOUS DETAILS
7-10	CONSTRUCTION PLAN
11-14	STRIPING PLAN

THIS PLAN CONTAINS 14 SHEETS

DESIGN DESIGNATION

ESAL 20	513,042
R VALUE	50
ADT (2010) =	3,954
Proj. ADT (2030) =	5,536
Proj. HCADT (2030) =	NA
Soil Factor	NA
9 TON DESIGN	

Functional Classification	MAJOR COLLECTOR		
No. of Traffic Lanes	2	No. of Parking Lanes	0
Design Speed	50 MPH	N/A	
Based on Stopping Sight Distance			
Height of eye	3.5'	Height of object	2.0'
Design Speed not achieved at:			
STA. 25+50	TO STA. 125+25	MPH	

Approved ANOKA COUNTY ENGINEER 3/4/2012

NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:12-01-09:CR_16_CSAH78-University\Plan1 Title.dgn 02/29/2012 1:33:08 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: CHARLES CADENHEAD
SIGNATURE:
DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY: JJ DATE: 2-29-2012
DESIGN BY: JJ DATE: 2-29-2012
CHECKED BY: SO DATE: 2-29-2012



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
STATE AID PROJECT NO. _____
CITY PROJECT NO. _____
COUNTY PROJECT NO. 11-13-16

TITLE SHEET
Sheet 1 of 14 Sheets

CSAH 16		STATEMENT OF ESTIMATED QUANTITIES		
ITEM NO.	ITEM	NOTE NO.	UNIT	TOTAL EST. QUANT.
2011.601	CONSTRUCTION SURVEYING		LUMP SUM	1
2021.501	MOBILIZATION		LUMP SUM	1
2104.505	REMOVE CONCRETE DRIVEWAY PAVEMENT		SQ YD	42
2104.511	SAWING CONCRETE PAVEMENT (FULL DEPTH)		LIN FT	121
2211.501	AGGREGATE BASE CLASS 5	10	TON	116
2221.501	AGGREGATE SHOULDERING CLASS 5		TON	635
2232.501	MILL BITUMINOUS SURFACE (2.0") (JOINTS)	1,5,6	SQ YD	376
2357.502	BITUMINOUS MATERIAL FOR TACK COAT		GALLON	1538
2360.501	TYPE SP 12.5 WEARING COURSE MIX (4,B)	7	TON	316
2360.501	TYPE SP 12.5 WEARING COURSE MIX (4,E)	5,6	TON	3298
2531.507	6" CONCRETE DRIVEWAY PAVEMENT		SQ YD	42
2540.602	INSTALL MAIL BOX SUPPORT		EACH	25
2563.601	TRAFFIC CONTROL	3,5,6,8,9	LUMP SUM	1
2581.501	REMOVABLE PREFORMED PLASTIC MARKING	2	LIN FT	200
2582.502	4" SOLID LINE WHITE - EPOXY	4	LIN FT	19927
2582.502	4" BROKEN LINE WHITE - EPOXY	4	LIN FT	40
2582.502	4" SOLID LINE YELLOW - EPOXY	4	LIN FT	4520
2582.502	4" BROKEN LINE YELLOW-EPOXY	4	LIN FT	1990
2582.502	4" DOUBLE SOLID LINE YELLOW - EPOXY	4	LIN FT	392
2582.602	PAVT MSSG (RR CROSSING) PREFORM THERMOPLASTIC	4	EACH	2
2582.603	24" WHITE PREF THERMOPLASTIC	4,8	LIN FT	24

CSAH 16		CONSTRUCTION NOTES
1	LOCATION TO BE DETERMINED BY ENGINEER	
2	MARKINGS SHALL BE PLACED AT THE END OF DAYS PAVING	
3	DO NOT PASS, PASS WITH CARE, AND NO CENTER STRIPE SIGNS TO BE INPLACE DURING PAVING OPERATIONS	
4	PERMANENT MARKINGS TO BE IN PLACE WITHIN 72 HOURS OF FINAL MAINLINE PAVING.	
5	CONTRACTOR IS RESPONSIBLE TO CORDINATE WITH RXR FOR WORK DONE INSIDE THEIR RIGHT OF WAY.	
6	RAILROAD SAFTEY SUPERVISOR IS INCIDENTAL TO PROJECT (CONTRACTOR'S RESPONSIBILITY)	
7	PAVING STREET APPROACHES OF DRIVEWAYS	
8	24" X 12' TEMPORARY WHITE STOPBARS MUST BE INSTALLELD EB & WB IMMEDIATELY FOLLOWING ROLLING ON EACH LIFT	
9	ALL TRAFFIC CONTROL METHODS SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.	
10	ITEM FOR UNPAVED DRIVEWAYS / ENTRANCES	

CSAH 16		BASIS OF PLANNED QUANTITIES
2211.501	AGGREGATE BASE CLASS 5	CU YDS * 1.8 = TONS
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	.05 GAL / SQ YD
2360.501	TYPE SP 12.5 WEARING COURSE MIX (4,E)	115 LBS/SQYD/IN THICKNESS
2360.502	TYPE SP 12.5 WEAR COURSE MIX (4,B)	115 LBS/SQYD/IN THICKNESS
2580.603	REMOVABLE LANE TAPE	2' AT 50' INTERVALS FOR SKIPS

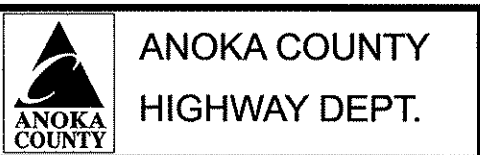
NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CR_16_CSAH78-University\Plan2 Seq.dgn 03/01/2012 7:10:05 AM

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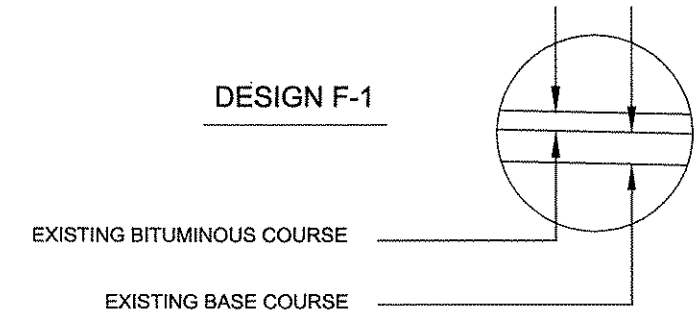
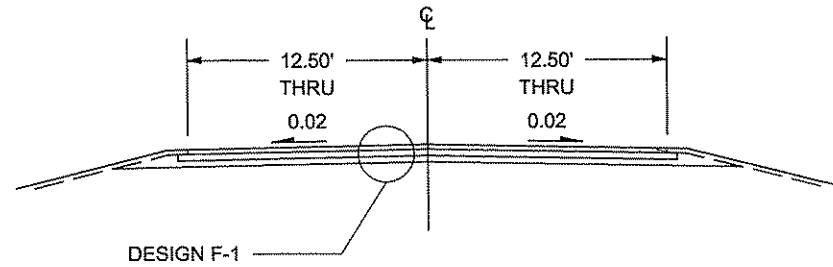
PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/1/12 LICENSE NO. 40416

DRAWN BY JJ DATE 2-29-2012
 DESIGN BY JJ DATE 2-29-2012
 CHECKED BY JO DATE 2-29-2012

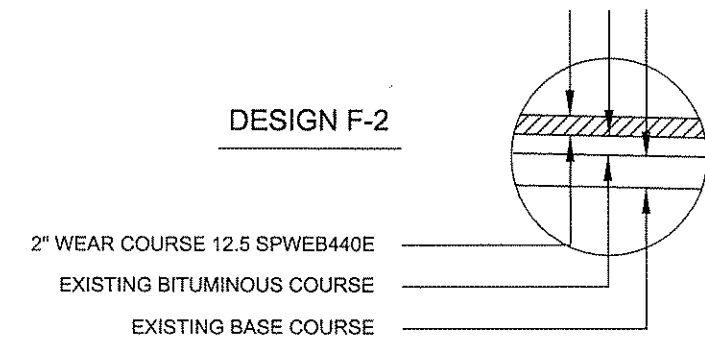
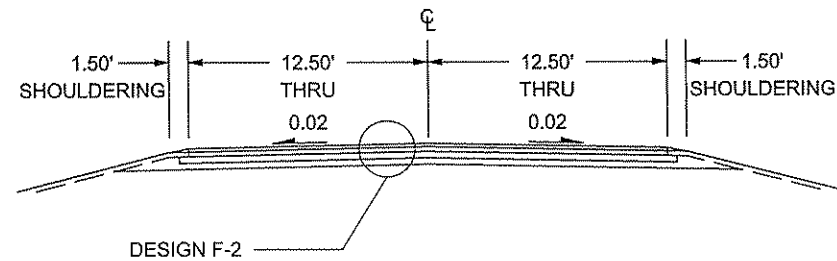


STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 11-13-16

C.R. 16
EXISTING ROAD - RURAL SECTION
 STA 25+50 - STA 104+70
 STA 113+50 - STA 125+25



C.R. 16
PROPOSED ROAD - RURAL SECTION
 STA 25+50 - STA 104+70
 STA 113+50 - STA 125+25



GENERAL NOTES:

- ALL CROSS SLOPES ARE APPROXIMATE
- UNLESS OTHERWISE SPECIFIED, THE CLASS 5 CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE OF THE MAINLINE.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CR_16_(CSAH78-University)\Plan\3 typicals.dgn
 02/29/2012 1:34:17 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: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY JJ DATE 2-29-2012
 DESIGN BY JJ DATE 2-29-2012
 CHECKED BY JO DATE 2-29-2012



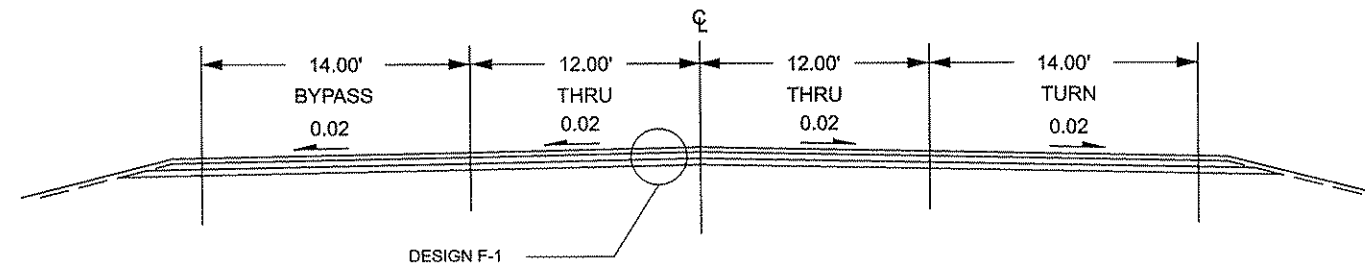
ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 11-13-16

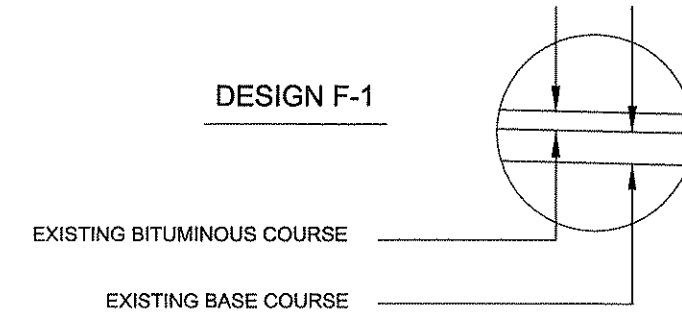
TYPICAL SECTIONS

Sheet 3 of 14 Sheets

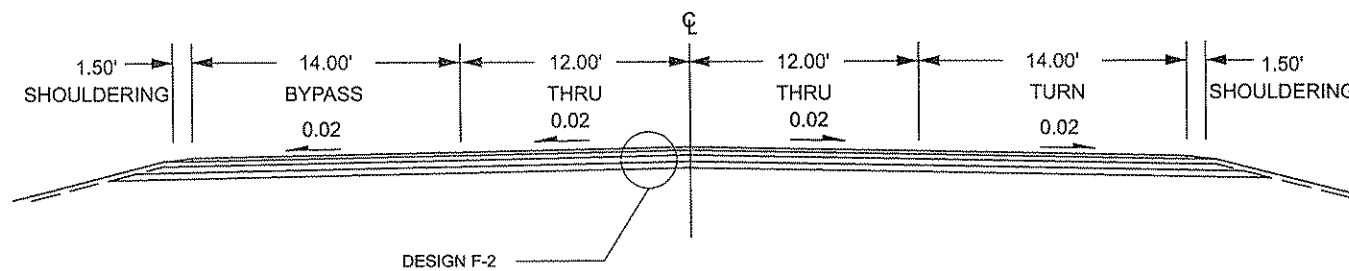
C.R. 16
EXISTING ROAD - RURAL SECTION
STA 104+70 - STA 113+50



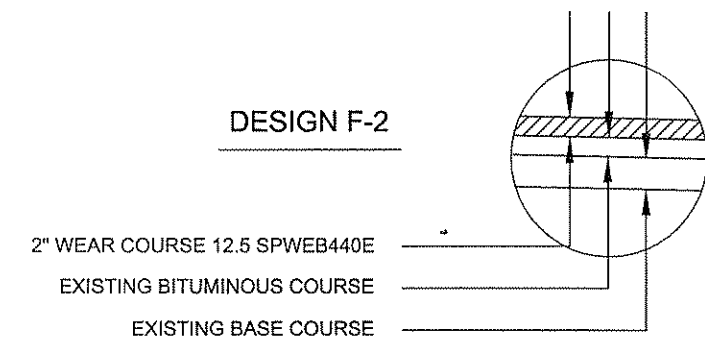
DESIGN F-1



C.R. 16
PROPOSED ROAD - RURAL SECTION - TURN LANES
104+70 - 109+50 LT 107+30 - 113+50 RT



DESIGN F-2



GENERAL NOTES:

- ALL CROSS SLOPES ARE APPROXIMATE
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NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CR_16_(CSAH78-University)\Plant3 typicals.dgn 02/29/2012 1:34:27 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: CHARLES CADENHEAD
 SIGNATURE: *Charles Cadenhead*
 DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY JJ DATE 2-28-2012
 DESIGN BY JJ DATE 2-29-2012
 CHECKED BY JO DATE 2-28-2012



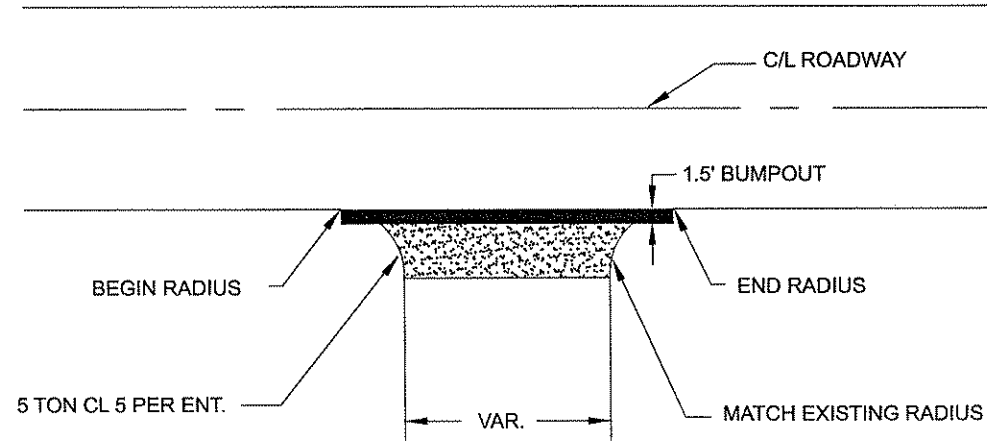
ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 11-13-16

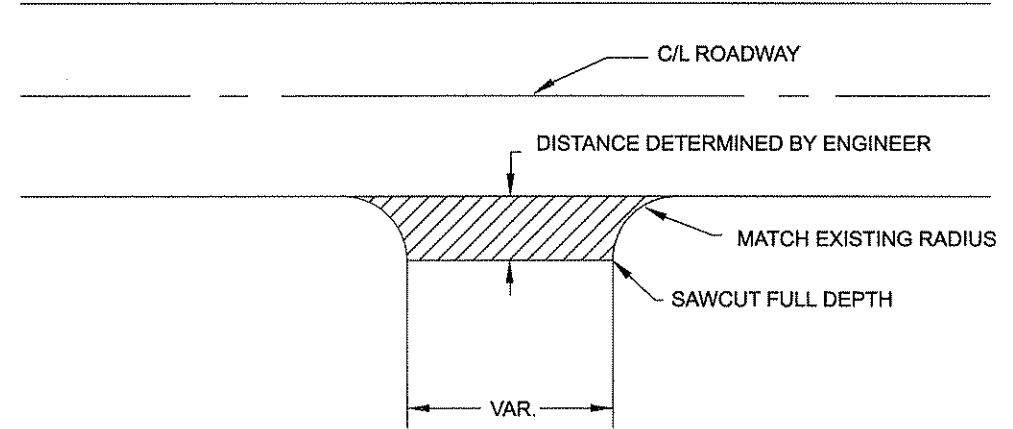
TYPICAL SECTIONS

Sheet 4 of 14 Sheets

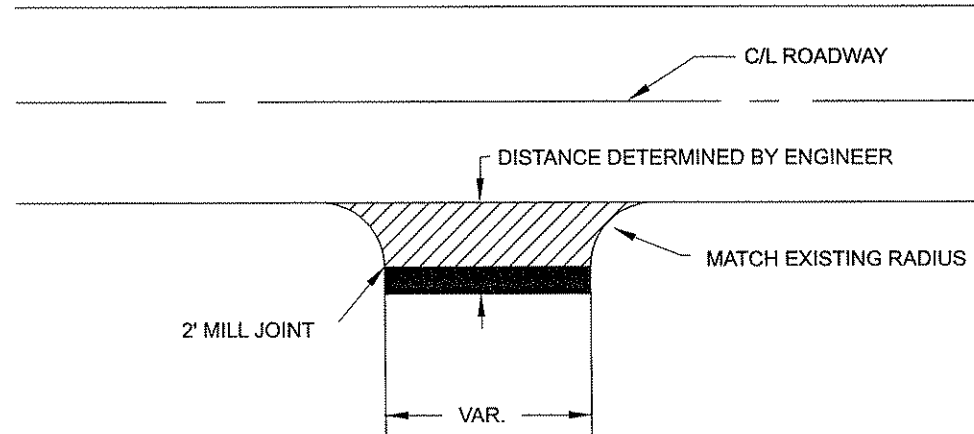
GRAVEL DRIVEWAYS & FIELD ENTRANCES



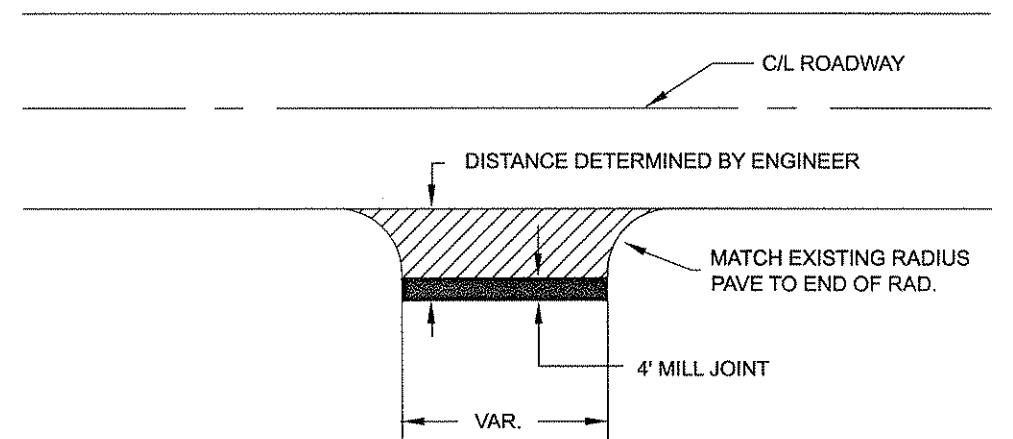
CONCRETE DRIVEWAYS



BIT. DRIVEWAYS



PAVED STREET APPROACHES



DRIVEWAYS BUMPED OUT AND PAVED WITH MAINLINE PAID AS MAINLINE.

DRIVEWAYS PAVED IN DIFFERENT OPERATION FROM MAIN LINE PAVING PAID AS ST./DR. APPROACH.

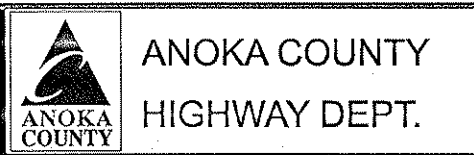
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NAME: P312-01-001CR_16_(CSA)78-University)Plan4 Details.dgn 02/28/2012 1:34:58 PM

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: Charles Cadenhead
 SIGNATURE: *Charles Cadenhead*
 DATE: 2/28/12 LICENSE NO. 40416

DRAWN BY JJ DATE 2-29-2012
 DESIGN BY JJ DATE 2-29-2012
 CHECKED BY JO DATE 2-29-2012

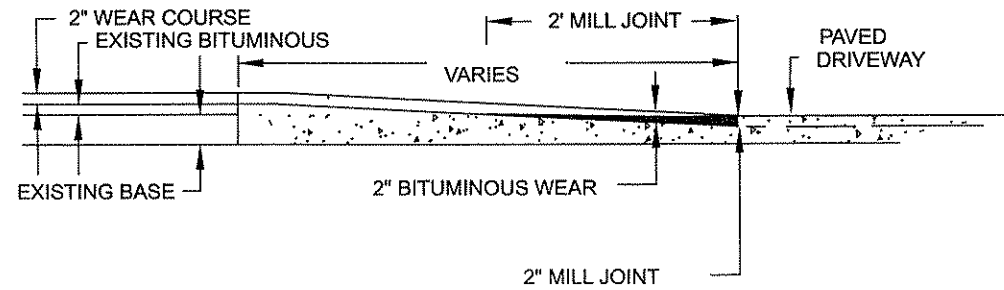


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 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 11-13-16

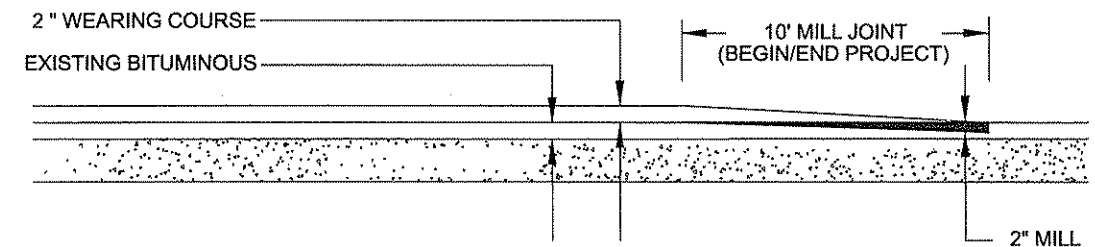
MISCELLANEOUS DETAILS

Sheet 5 of 14 Sheets

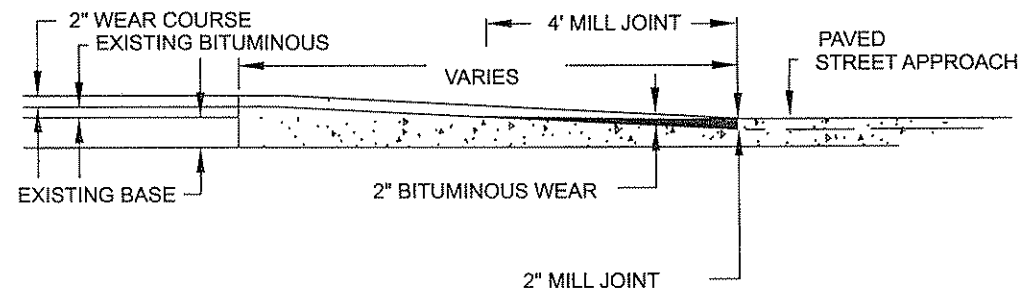
DRIVEWAY JOINT DETAILS A - A



MAINLINE MILL JOINT DETAIL



STREET APPROACH JOINT DETAILS B - B



NO	DATE	BY	CHKD	APPR	REVISION
NAME: P:\12-01-00\CR_16_(CSAH78-University)\Plan\4 Details.dgn					
02/29/2012 1:35:08 PM					

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

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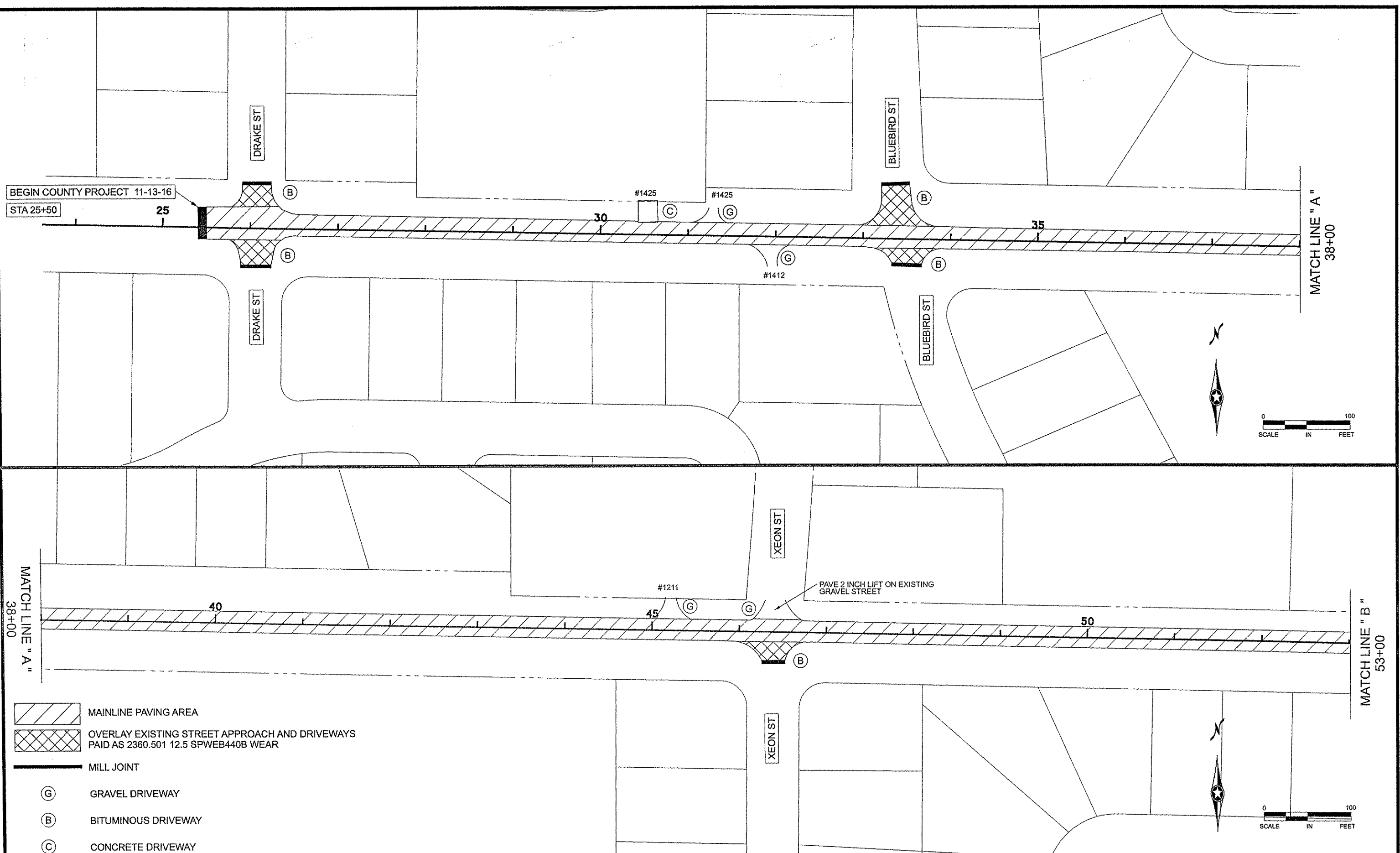
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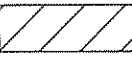







ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 11-13-16

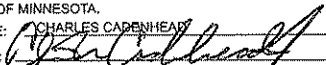
MISCELLANEOUS
 DETAILS
 Sheet 6 of 14 Sheets




-  MAINLINE PAVING AREA
-  OVERLAY EXISTING STREET APPROACH AND DRIVEWAYS PAID AS 2360.501 12.5 SPWEB440B WEAR
-  MILL JOINT
-  GRAVEL DRIVEWAY
-  BITUMINOUS DRIVEWAY
-  CONCRETE DRIVEWAY

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CR_16 (CSAH78-University)\Plan5 plan .dgn
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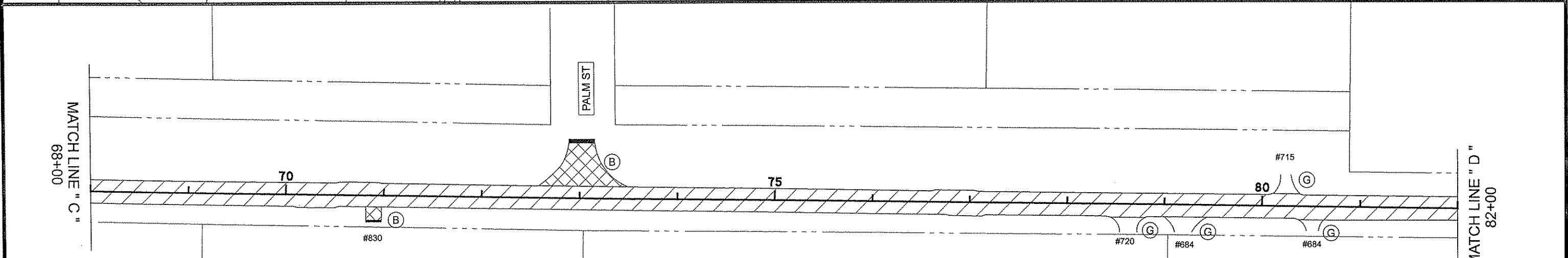
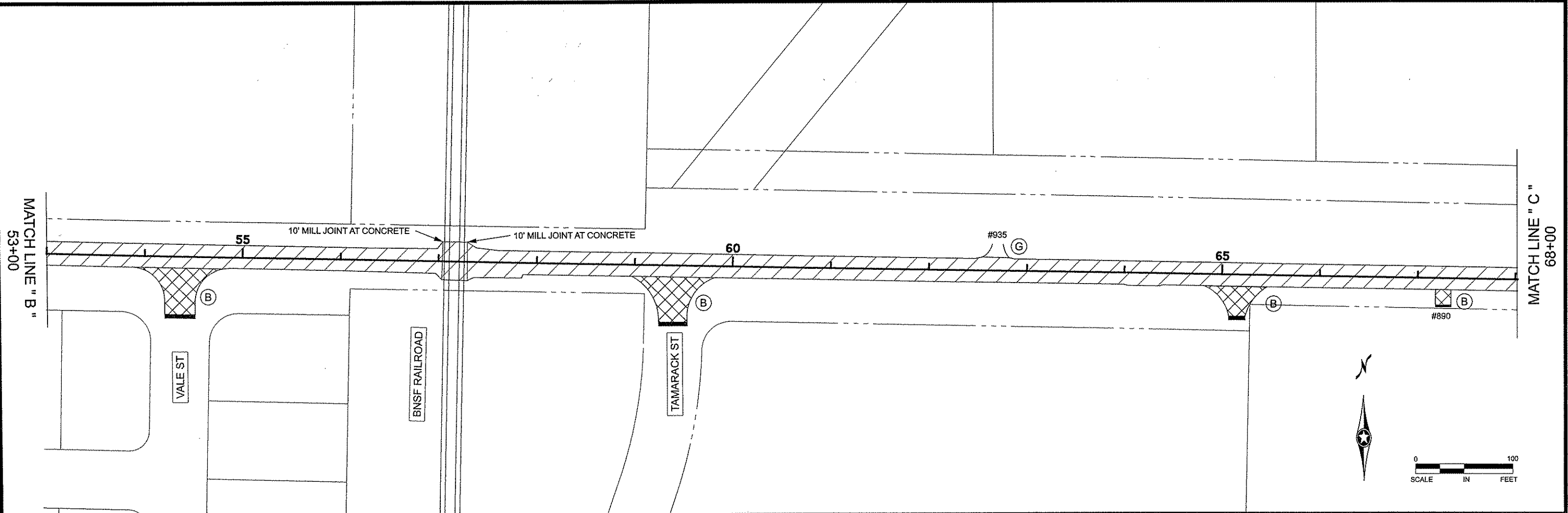
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: CHARLES CAPENHEAD
 SIGNATURE: 
 DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY JJ DATE 2-29-2012
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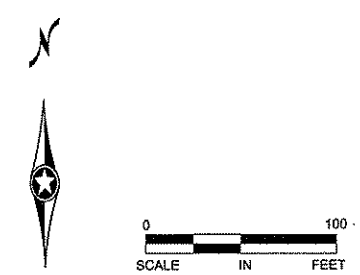
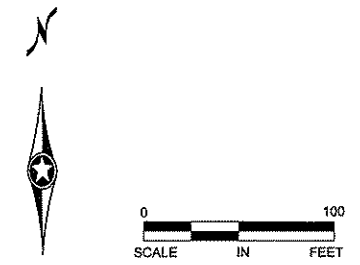
 ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 11-13-16

CONSTRUCTION PLAN
 STA 25+50 TO 53+00
 Sheet 7 of 14 Sheets



- MAINLINE PAVING AREA
- OVERLAY EXISTING STREET APPROACH AND DRIVEWAYS PAID AS 2360.501 12.5 SPWEB440B WEAR
- MILL JOINT
- GRAVEL DRIVEWAY
- BITUMINOUS DRIVEWAY
- CONCRETE DRIVEWAY



NO	DATE	BY	CHKD	APPR	REVISION
NAME: P:\12-01-00\CR_16_(CSAH78-University)\Plan\5 plan.dgn					
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PRINT NAME: CHARLES CADENHEAD

SIGNATURE:

DATE: 2/2/12 LICENSE NO. 40416

DRAWN BY JJ DATE 2-29-2012

DESIGN BY JJ DATE 2-29-2012

CHECKED BY JO DATE 2-29-2012

ANOKA COUNTY

HIGHWAY DEPT.

STATE PROJECT NO. _____

STATE AID PROJECT NO. _____

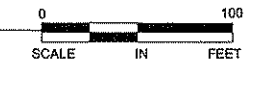
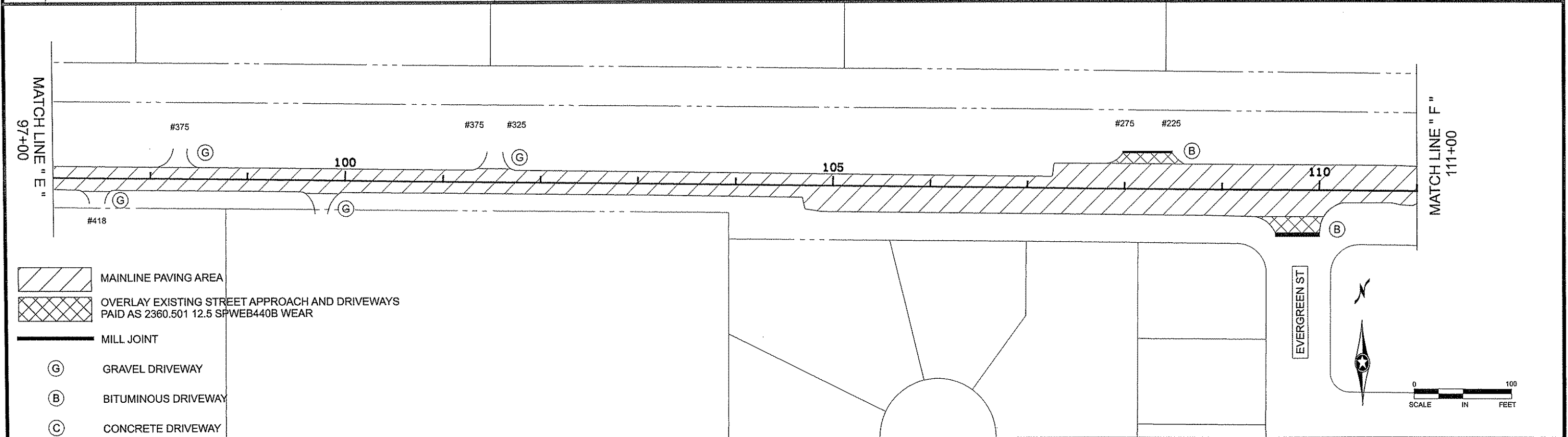
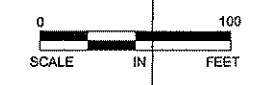
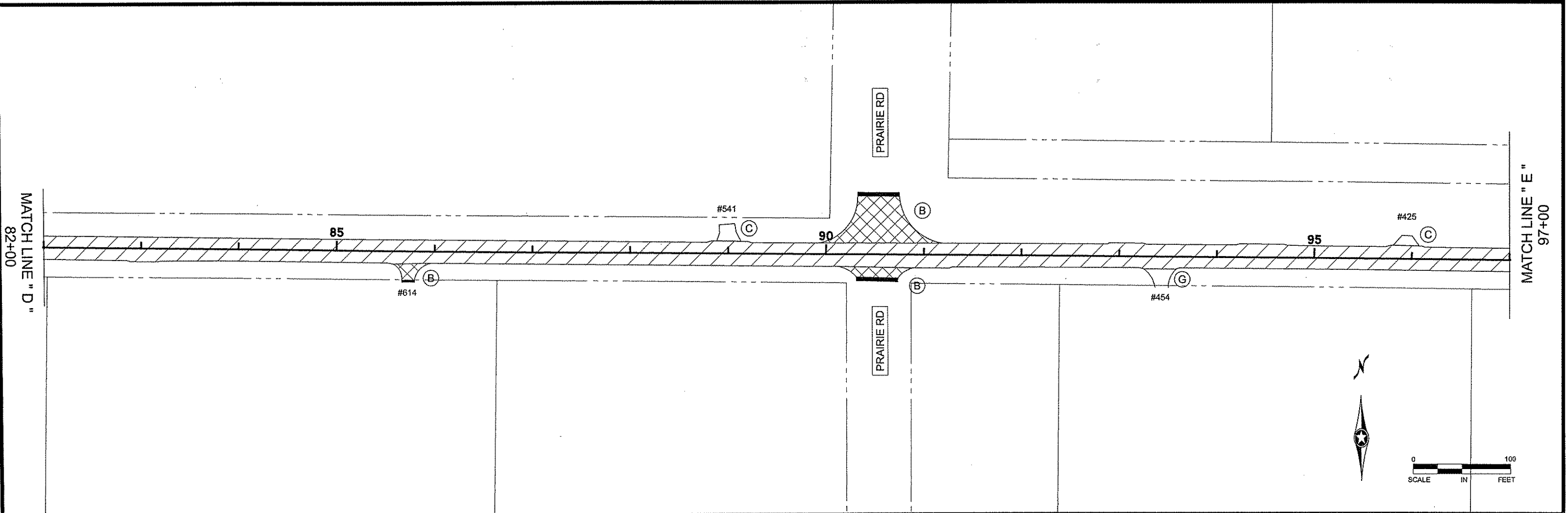
CITY PROJECT NO. _____

COUNTY PROJECT NO. 11-13-16

CONSTRUCTION PLAN

STA 53+00 TO 82+00

Sheet 8 of 14 Sheets



- MAINLINE PAVING AREA
- OVERLAY EXISTING STREET APPROACH AND DRIVEWAYS
PAID AS 2360.501 12.5 SPWEB440B WEAR
- MILL JOINT
- GRAVEL DRIVEWAY
- BITUMINOUS DRIVEWAY
- CONCRETE DRIVEWAY

NO	DATE	BY	CKD	APPR	REVISION
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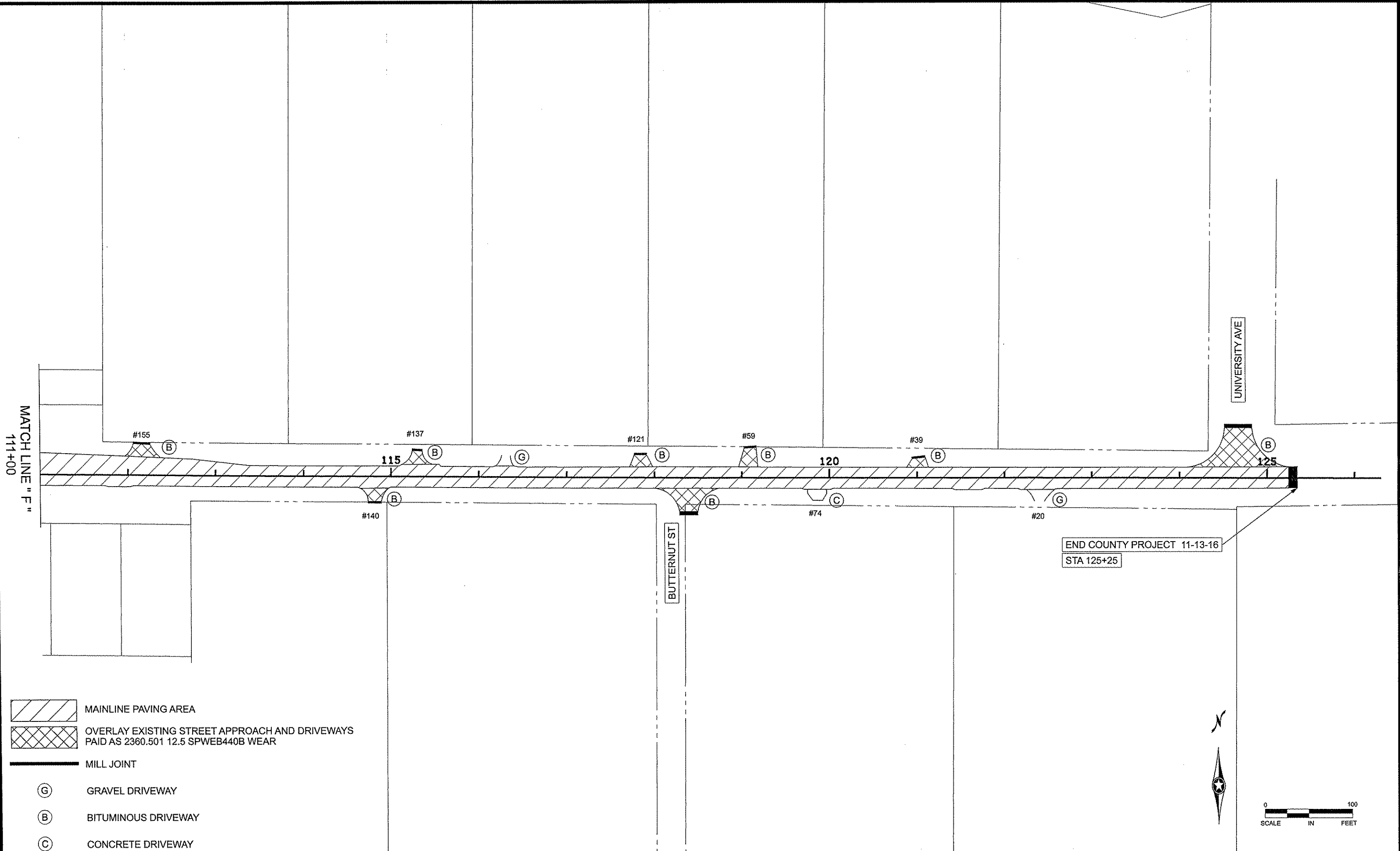
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ANOKA COUNTY
 HIGHWAY DEPT.

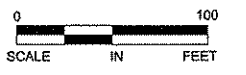
STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 11-13-16

CONSTRUCTION PLAN
 STA 82+00 TO 111+00
 Sheet 9 of 14 Sheets



- MAINLINE PAVING AREA
- OVERLAY EXISTING STREET APPROACH AND DRIVEWAYS PAID AS 2360.501 12.5 SPWEB440B WEAR
- MILL JOINT
- GRAVEL DRIVEWAY
- BITUMINOUS DRIVEWAY
- CONCRETE DRIVEWAY

END COUNTY PROJECT 11-13-16
 STA 125+25



NO	DATE	BY	CHKD	APPR	REVISION
NAME: P:\12-01-00\CR_16_(CSAH78-University)\Plan\5 plan.dgn					
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PRINT NAME: CHARLES CADENHEAD
 SIGNATURE:
 DATE: 2/29/12 LICENSE NO. 40416

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ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 11-13-16

CONSTRUCTION PLAN
 STA 111+00 TO 125+25
 Sheet 10 of 14 Sheets

PERMANENT PAVEMENT MARKING PLAN

NOTES AND GUIDELINES

GENERAL INFORMATION:

THE ENGINEER'S INVOLVEMENT IN THE APPLICATION OF THE MATERIAL SHALL BE LIMITED TO FIELD CONSULTATION AND INSPECTION. ANOKA COUNTY HIGHWAY DEPARTMENT WILL PLACE NECESSARY "SPOTTING" AT APPROPRIATE POINTS TO PROVIDE HORIZONTAL CONTROL FOR STRIPING AND TO DETERMINE NECESSARY STARTING AND CUTOFF POINTS, LONGITUDINAL JOINTS, PAVEMENT EDGES AND EXISTING MARKINGS MAY SERVE AS HORIZONTAL CONTROL WHEN SO DIRECTED.

EDGE LINES AND LANE LINES ARE TO BE BROKEN ONLY AT INTERSECTIONS WITH PUBLIC ROADS AND AT PRIVATE ENTRANCES IF THEY ARE CONTROLLED BY A YIELD SIGN, STOP SIGN OR TRAFFIC SIGNAL. THE BREAK POINT IS TO BE AT THE START OF THE RADIUS FOR THE INTERSECTION OR AT MARKED STOP LINES OR CROSSWALKS.

A TOLERANCE OF 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.

EPOXY:

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 EPOXY PAVEMENT MARKINGS.

THE EPOXY MARKING APPLICATION SHALL IMMEDIATELY FOLLOW THE PAVEMENT CLEANING. GLASS BEANS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE EPOXY RESIN LINE TO PROVIDE AN IMMEDIATE NO-TRACK SYSTEM.

AN EPOLY RESIN LINE 4" WIDE AND 15 MILL THICKNESS (WET), REQUIRES AN APPLICATION RATE OF ONE (1) GALLON OF COMPONENTS FOR 320 FEET OF LINE. GLASS BEADS SHALL BE APPLIED AT A POUND PER GALLON RATE SUFFICIENT TO ACHIEVE AN ACCEPTABLE NO-TRACK SYSTEM.

OPERATIONS SHALL BE CONDUCTED ONLY WHEN THE ROAD PAVEMENT SURFACE TEMPERATURES ARE 50 DEGREES FAHRENHEIT OR GREATER.

PERMANENT PAVEMENT MARKINGS SHALL NOT BE PLACED OVER TEMPORARY TAPE MARKINGS.

PREFORMED THERMOPLASTIC:

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

PAINT:

AT THE TIME OF APPLYING THE MARKING MATERIAL, THE APPLICATION AREA SHALL BE FREE OF CONTAMINATION. THE CONTRACTOR SHALL CLEAN THE ROADWAY SURFACE PRIOR TO THE LINE APPLICATION IN A MANNER AND TO THE EXTENT REQUIRED BY THE ENGINEER.

GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE PAINT LINE.

EXCEPT WHEN USED AS A TEMPORARY MARKING, PAVEMENT MARKINGS SHALL ONLY BE APPLIED IN SEASONABLE WEATHER WHEN AIR TEMPERATURE IS 50 DEGREES FARHENHEIT OR HIGHER AND SHALL NOT BE APPLIED WHEN THE WIND OR OTHER CONDITIONS CAUSE A FILD OR DUST TO BE DEPOSITED ON THE PAVEMENT SURFACE AFTER CLEANING AND BEFORE THE MARKING MATERIAL CAN BE APPLIED.

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

SYMBOLS & MATERIALS LEGEND

■ CROSSWALK BLOCK WHITE PREFORMED THERMOPLASTIC

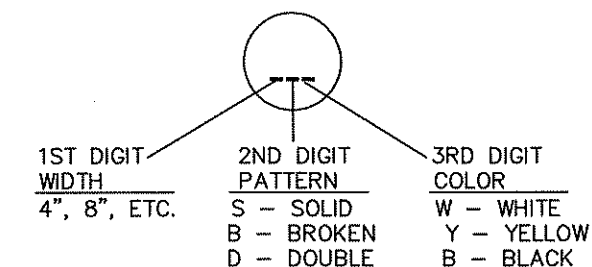
↩ PAVEMENT MESSAGE (LEFT ARROW) PREFORMED THERMOPLASTIC

STRIPING KEY

○ CIRCLE - EPOXY □ SQUARE PREFORMED THERMOPLASTIC

△ TRIANGLE - PAINT □ RxR POLYPREFORMED THERMOPLASTIC

⬠ PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING



EXAMPLE: (4SW) = 4\" SOLID LINE WHITE - EPOXY

PAVEMENT MARKING QUANTITIES		
Item	Quantity	Units
4" Double Solid Line Yellow - Epoxy	392	Lin Ft
4" Solid Line Yellow - Epoxy	4520	Lin Ft
4" Broken Line Yellow - Epoxy (10 ft stripe / 40 ft gap)	1990	Lin Ft
4" Solid Line White - Epoxy	19927	Lin Ft
4" Broken Line White - Epoxy (10 ft stripe / 40 ft gap)	40	Lin Ft
24" White Pref Thermoplastic	24	Lin Ft
Pavt Mssg (RR XING) Pref Thermoplastic	2	Each

NO	DATE	BY	CHKD	APPR	REVISION

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 PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 LICENSE NO. 40416

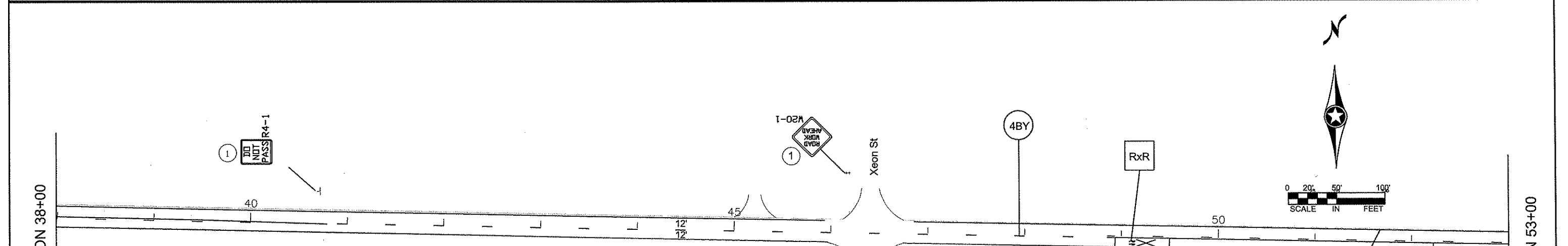
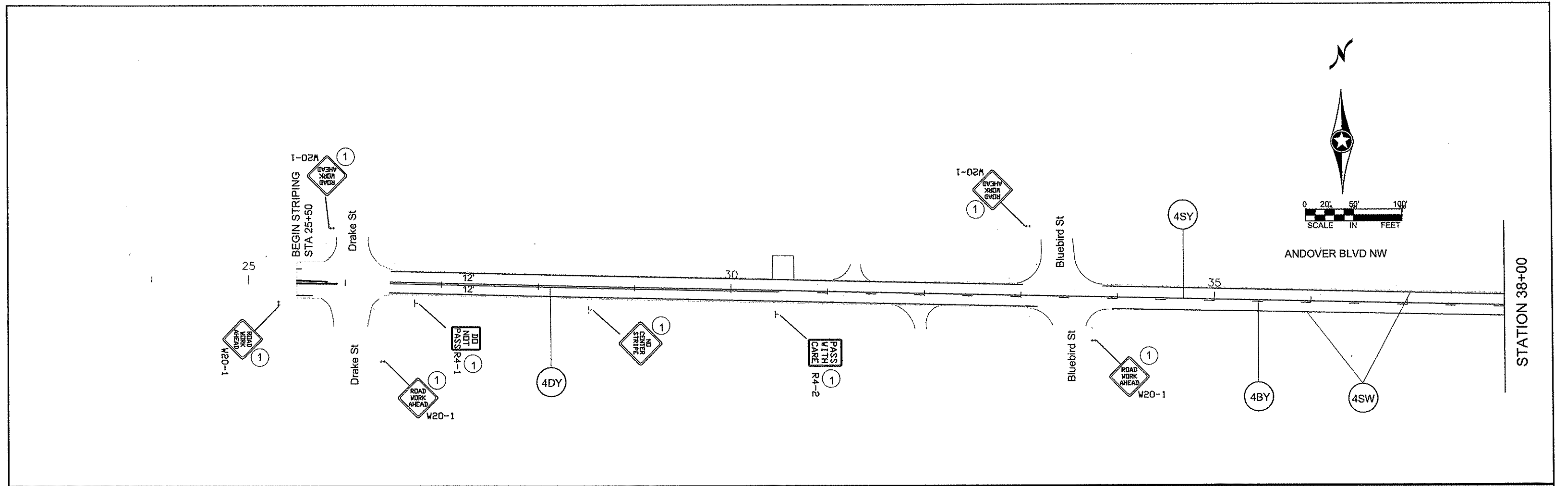
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**ANOKA COUNTY
HIGHWAY DEPT.**

COUNTY PROJECT NO. 11-13-16

PERMANENT MARKING
TABULATION
Sheet 11A of 14 Sheets



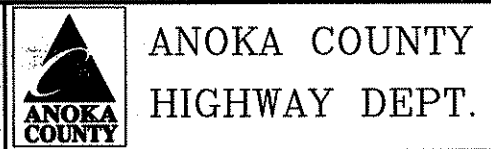
- NOTES:
- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
 - LOCATIONS OF PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
 - CONTRACTOR SHALL SUPPLY AND ERECT THE TEMPORARY TRAFFIC CONTROL SIGNS AS SHOWN ON THIS DRAWING AND DETAILED IN THE SPECIAL PROVISIONS FROM THE TIME WORK COMMENCES ON THIS ROADWAY UNTIL THIS ROADWAY IS PERMANENTLY STRIPED. ALL NECESSARY TEMPORARY TRAFFIC CONTROL SIGNS SHALL BE PAID FOR AS PART OF TRAFFIC CONTROL LUMP SUM.
 - ALL PERMANENT STRIPING AND PAVEMENT MESSAGES SHALL BE PLACED WITHIN 72 HOURS OF MAINLINE PAVING.
 - ANY REQUIRED PERMANENT SIGNING SHALL BE INSTALLED THE SAME DAY AS PERMANENT STRIPING
 - ALL EXISTING SIGNING SHALL REMAIN IN PLACE DURING CONSTRUCTION. IF A SIGN IS TO BE SALVAGED AND REINSTALLED, IT SHALL BE INSTALLED ON TEMPORARY SUPPORTS UNTIL THE PERMANENT INSTALLATION CAN BE MADE, AND THIS WILL BE CONSIDERED AS INCIDENTAL TO SIGN TYPE C REINSTALL INSTALLATION.

NO	DATE	BY	CKD	APPR	REVISION

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

PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 LICENSE NO. 40416

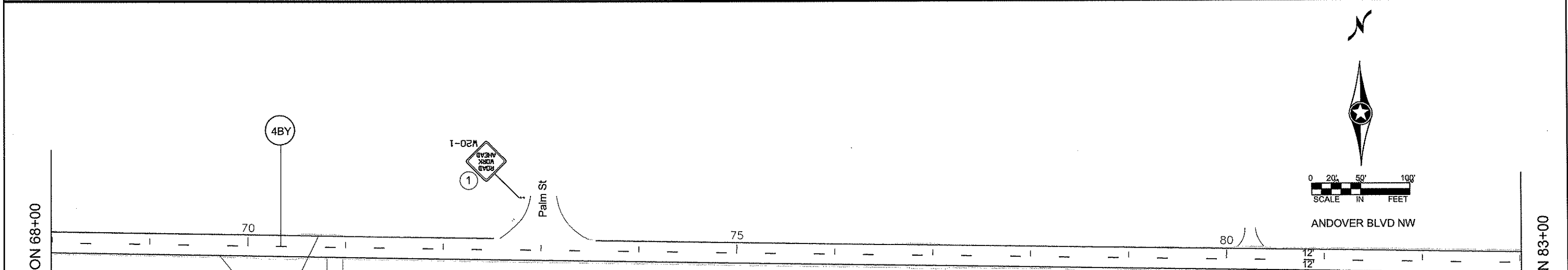
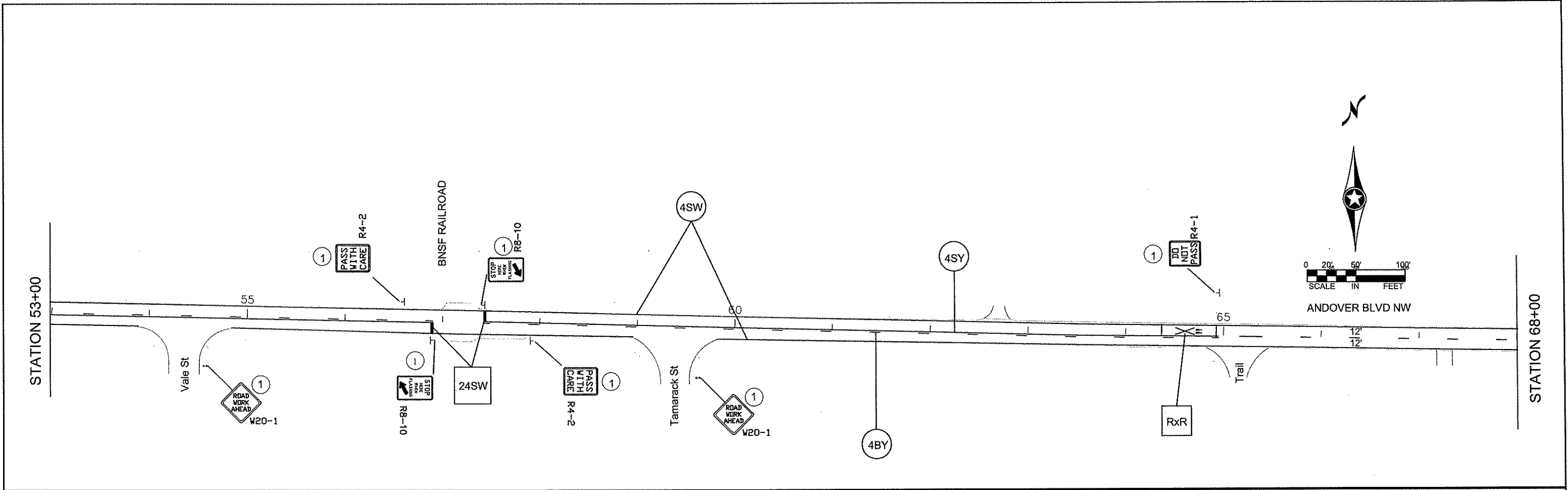
DRAWN BY: MTH DATE 01/03/12
 DESIGN BY: MTH DATE 03/01/11
 CHECKED BY: JR DATE 03/01/11



STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 11-13-16

CR 16 (Andover Blvd)
 TEMPORARY SIGNING
 PERMANENT STRIPING
 AND PAVEMENT MESSAGES

Sheet 11 of 14 Sheets



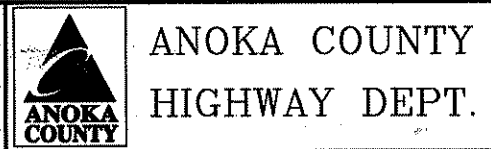
- NOTES:
- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
 - LOCATIONS OF PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
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 - ALL PERMANENT STRIPING AND PAVEMENT MESSAGES SHALL BE PLACED WITHIN 72 HOURS OF MAINLINE PAVING.
 - ANY REQUIRED PERMANENT SIGNING SHALL BE INSTALLED THE SAME DAY AS PERMANENT STRIPING
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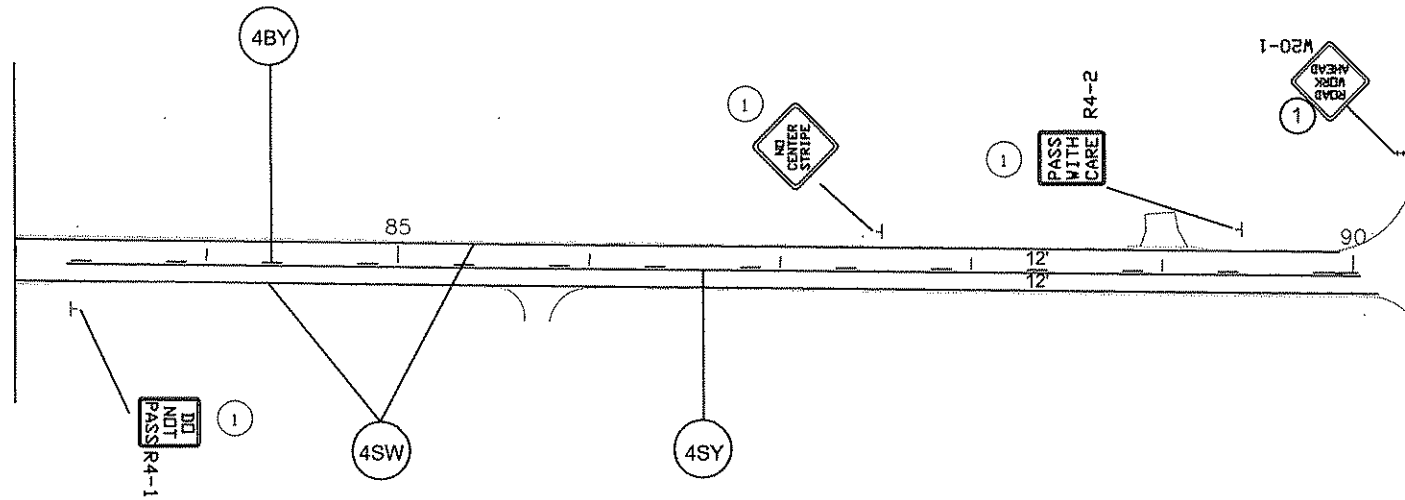


STATE PROJECT NO. _____
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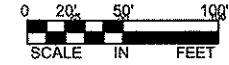
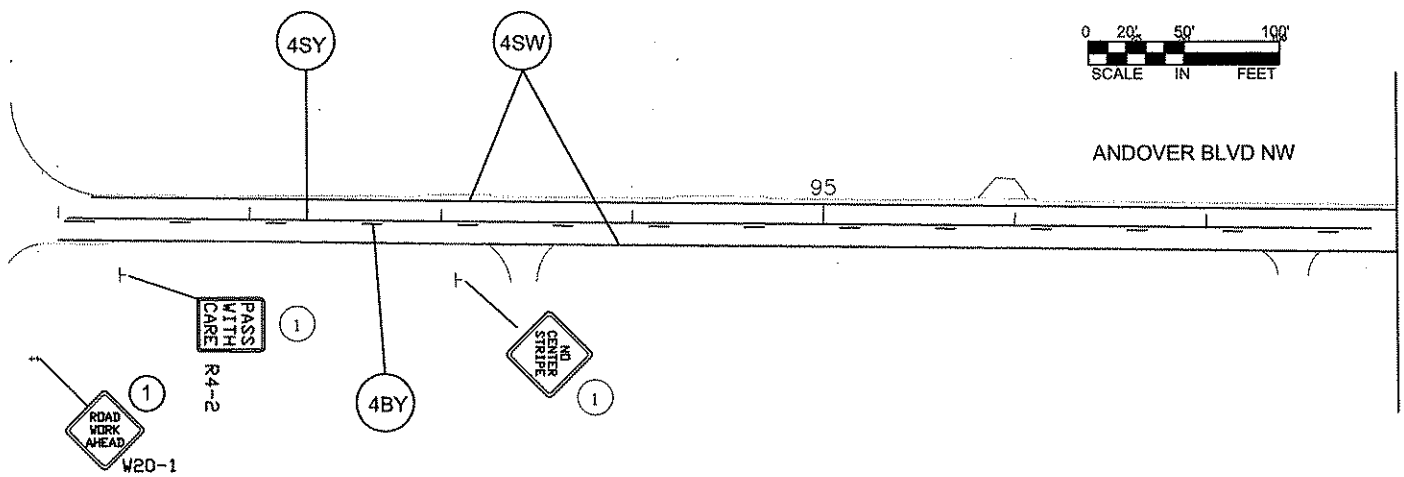
CR 16 (Andover Blvd)
 TEMPORARY SIGNING
 PERMANENT STRIPING
 AND PAVEMENT MESSAGES

Sheet 12 of 14 Sheets

STATION 83+00



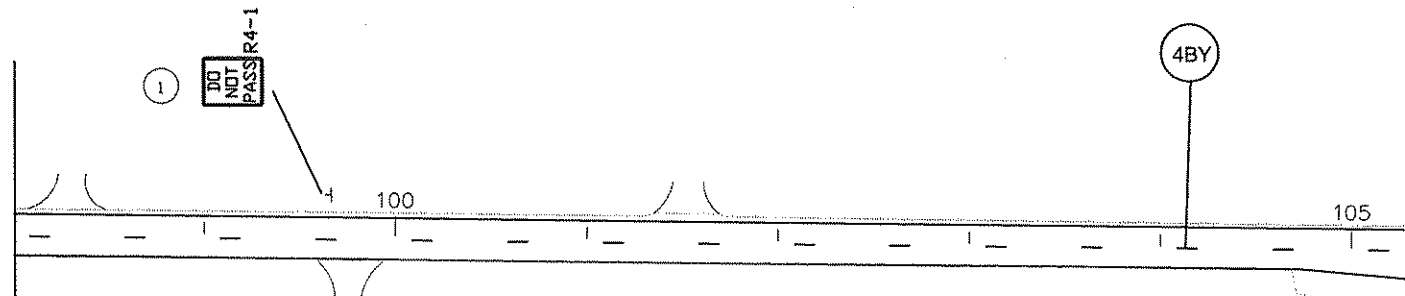
Prairie Rd



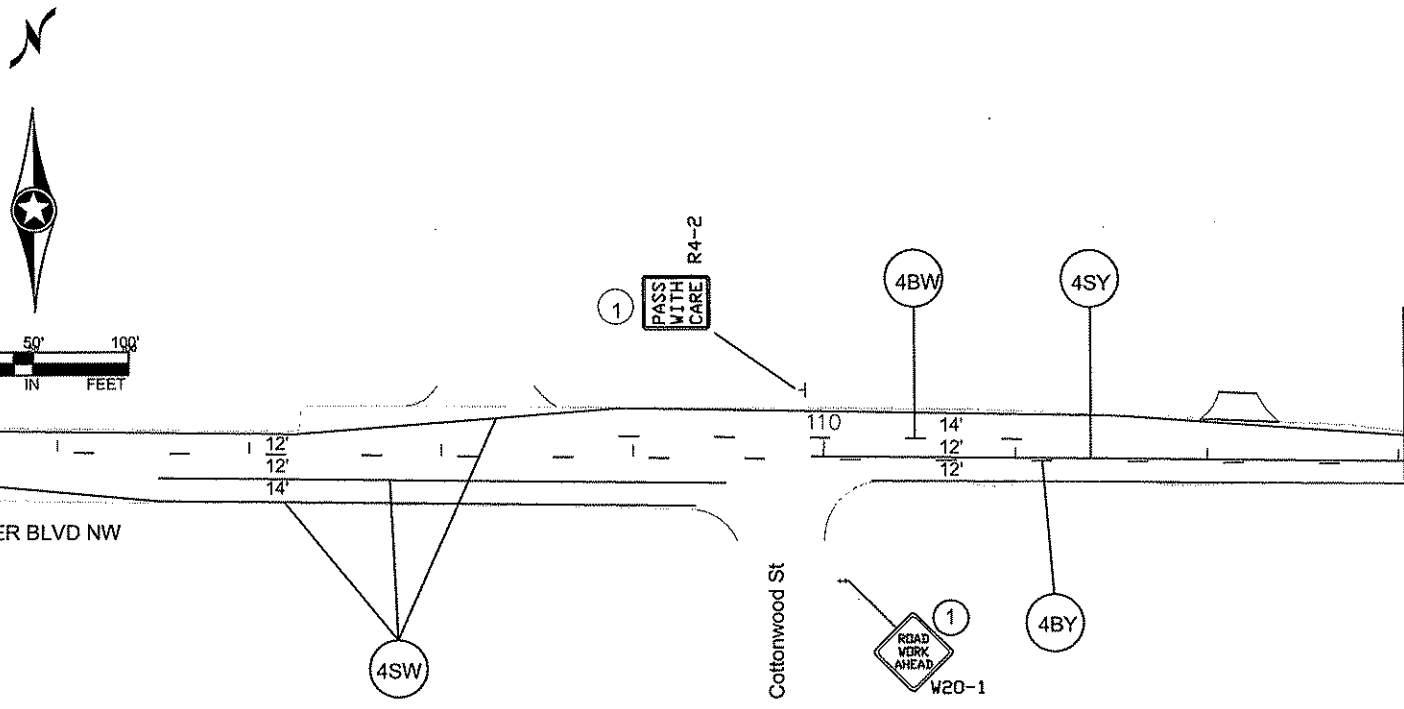
ANDOVER BLVD NW

STATION 98+00

STATION 98+00



ANDOVER BLVD NW



Cottonwood St

STATION 113+00

NOTES:

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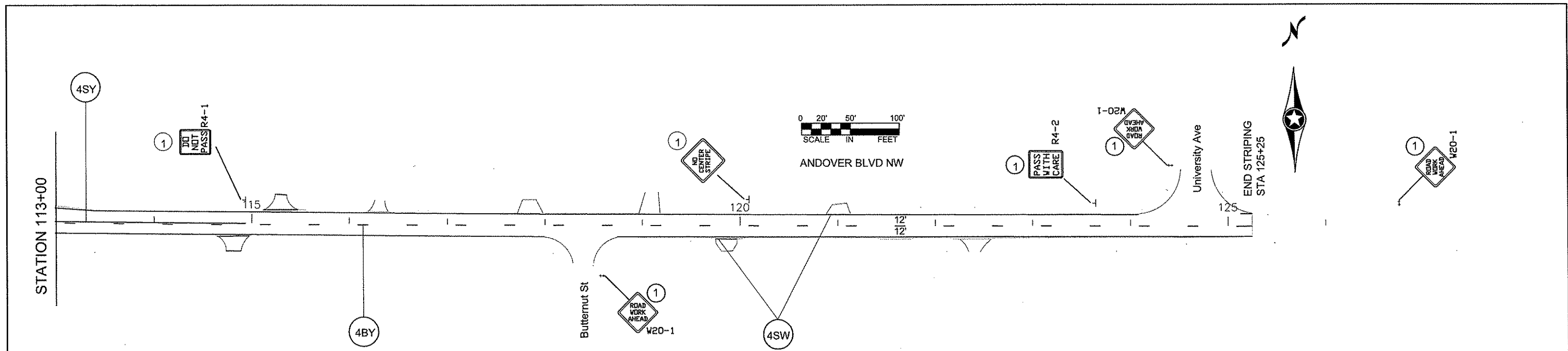


ANOKA COUNTY
HIGHWAY DEPT.

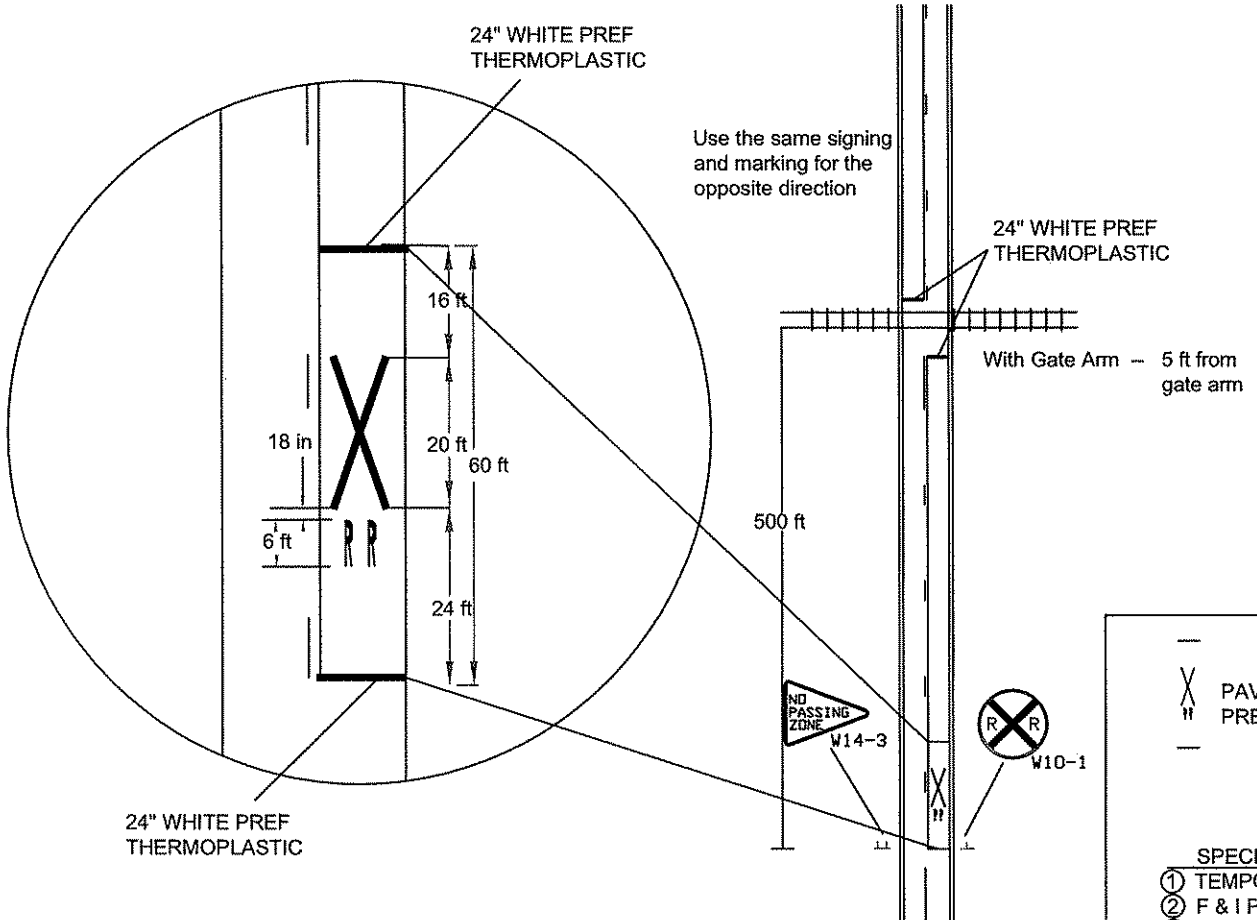
STATE PROJECT NO. _____
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 COUNTY PROJECT NO. 11-13-16

CR 16 (Andover Blvd)
 TEMPORARY SIGNING
 PERMANENT STRIPING
 AND PAVEMENT MESSAGES

Sheet 13 of 14 Sheets



RAILROAD CROSSING PAVEMENT MARKINGS



Use the same signing and marking for the opposite direction

TEMPORARY TRAFFIC CONTROL SIGNS						
M.U.T.C.D. CODE	SIZE	PANEL AREA FT. ²	INSERT	QUANTITY	No. POST	MOUNTING HEIGHT TO PANEL/POST EDGE FT.
W8-12	48" x 48"	16.00		2	2	7.0'
R4-1	24" x 30"	5.00		7	1	7.0'
R4-2	24" x 30"	5.00		4	1	7.0'
R8-10	24" x 30"	5.00		2	1	7.0'

TEMPORARY TRAFFIC CONTROL SIGNS						
M.U.T.C.D. CODE	SIZE	PANEL AREA FT. ²	INSERT	QUANTITY	No. POST	MOUNTING HEIGHT TO PANEL/POST EDGE FT.
W8-1A	48" x 48"	16.00		AS NEEDED		
W8-1A	48" x 48"	16.00		AS NEEDED		
W8-8	48" x 48"	16.00		AS NEEDED		
W8-11	48" x 48"	16.00		AS NEEDED		
W8-11	48" x 48"	16.00		AS NEEDED (ESTIMATED 8)		

— X —
PAVEMENT MESSAGE RR CROSSING
PERFORMED THERMOPLASTIC

SPECIAL PROVISIONS

- TEMPORARY TRAFFIC CONTROL SIGN
- F & I PERMANENT SIGN
- SALVAGE PERMANENT SIGN
- RE-INSTALL PERMANENT SIGN

- NOTES:**
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MINNESOTA DEPARTMENT OF TRANSPORTATION

ANOKA COUNTY

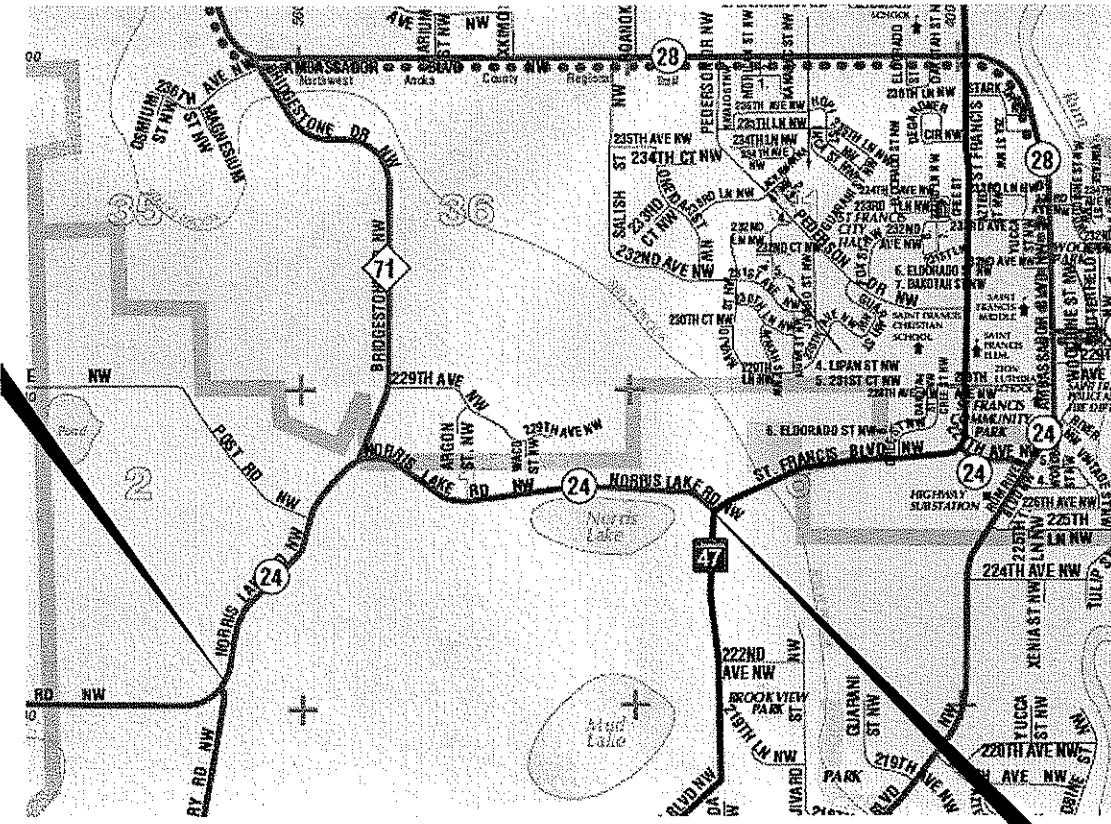
CONSTRUCTION PLAN FOR BITUMINOUS RECLAMATION AND OVERLAY, CONSTRUCT RIGHT TURN LANES AND BYPASSES

LOCATED ON CSAH 24 BETWEEN CR 66 AND TH 47

11-17-24

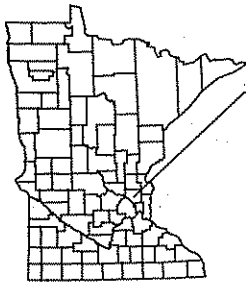
GROSS LENGTH	10575 FEET	2.003 MILES
BRIDGES-LENGTH	0.00 FEET	0.000 MILES
EXCEPTIONS-LENGTH	0.00 FEET	0.000 MILES
NET LENGTH	10575 FEET	2.003 MILES

CITY OF NOWTHEN
CITY OF OAK GROVE



BEGIN COUNTY PROJECT 11-17-24
CSAH 24 STA. 298+50

END COUNTY PROJECT 11-17-24
CSAH 24 STA. 404+25



PROJECT LOCATION
OAK GROVE
NOWTHEN
ANOKA COUNTY
MN/DOT TRANSPORTATION DISTRICT - METRO
SECTIONS 1, 2, 6
TOWNSHIP 34 NORTH
RANGE 24, 25 WEST

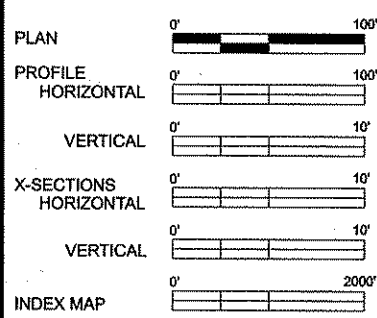
PLAN SYMBOLS

- 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 Terminal)
- GAS MAIN
- WATERMAIN
- TELEPHONE CABLE IN CONDUIT
- ELECTRIC CABLE IN CONDUIT
- TELEPHONE MANHOLE
- ELECTRIC MANHOLE
- BURIED TELEPHONE CABLE
- BURIED ELECTRIC CABLE
- SEWER (Sanitary or Storm)
- SEWER MANHOLE

SCALES



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	STATEMENT OF ESTIMATED QUANTITIES
3	CALCULATIONS FOR TURN LANES AND BYPASSES
4-5	TYPICAL SECTION
6-9	MISCELLANEOUS DETAILS
10-13	CONSTRUCTION PLAN
14	PERMANENT MARKING TABULATION
15-19	TEMP. SIGNING, PERM STRIPING, AND PAVE. MESSAGES
20	SIGNING & STRIPING PLAN DETAILS

THIS PLAN CONTAINS 20 SHEETS

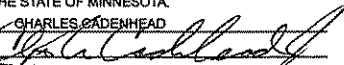
DESIGN DESIGNATION

ESAL 20	242,767
R VALUE	50
ADT (2010) =	2150
Proj. ADT (2030) =	3000
Proj. HCADT (2030) =	130
Soil Factor	NA
9 TON DESIGN	
Functional Classification	MAJOR COLLECTOR
No. of Traffic Lanes	2
No. of Parking Lanes	0
Design Speed	55 MPH
Based on Stopping Sight Distance	N/A
Height of eye	3.5'
Height of object	2.0'


Approved:  3/5/12
ANOKA COUNTY ENGINEER

NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\12-01-00\CSAH 24 (CR66-TH47)\Plan1 Title.dgn
03/05/2012 10:28:03 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: CHARLES ADENHEAD
SIGNATURE: 
DATE: 3/5/12 LICENSE NO. 44416

DRAWN BY: KPR DATE: 1/20/12
DESIGN BY: KPR DATE: 1/20/12
CHECKED BY: OFF DATE:


ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO.
STATE AID PROJECT NO.
CITY PROJECT NO.
COUNTY PROJECT NO. 11-17-24

TITLE SHEET
Sheet 1 of 20 Sheets

CSAH 24		STATEMENT OF ESTIMATED QUANTITIES		
ITEM NO.	ITEM	NOTE NO.	UNIT	TOTAL EST. QUANT.
2011.601	CONSTRUCTION SURVEYING		LUMP SUM	1
2021.501	MOBILIZATION		LUMP SUM	1
2104.501	REMOVE PIPE SEWERS		LIN FT	60
2104.505	REMOVE CONCRETE DRIVEWAY PAVEMENT		SQ YD	154
2104.505	REMOVE BITUMINOUS PAVEMENT		SQ YD	1016
2104.511	SAWING CONCRETE PAVEMENT (FULL DEPTH)		LIN FT	44
2104.513	SAWING BIT PAVEMENT (FULL DEPTH)		LIN FT	105
2104.523	SALVAGE SIGN TYPE C		EACH	13
2105.525	TOPSOIL BORROW (LV)	1	CU YD	1033
2105.602	CONSTRUCT TURN LANE	6	EACH	1
2105.602	CONSTRUCT BYPASS	6	EACH	2
2123.503	MOTOR GRADER		hour	10
2130.501	WATER		M-GAL	10
2211.501	AGGREGATE BASE CLASS 5	3,9,12	TON	362
2221.501	AGGREGATE SHOULDERING CLASS 5	4,9	TON	931
2232.501	MILL BITUMINOUS SURFACE (2") (JOINTS)	1	SQ YD	23
2331.604	BITUMINOUS PAVEMENT RECLAMATION	1	SQ YD	28337
2357.502	BITUMINOUS MATERIAL FOR TACK COAT		GALLON	1620
2360.501	TYPE SP 12.5 WEARING COURSE MIX (4,B)	2,5,9	TON	117
2360.501	TYPE SP 12.5 WEARING COURSE MIX (4,B)	14	TON	7180
2501.511	15" CS PIPE CULVERT		LIN FT	60
2501.515	15" GS PIPE APRON		EACH	2
2501.569	15" RC SAFETY APRON	13	EACH	2
2503.541	15" RC PIPE SEWER DES 3006 CL III		LIN FT	220
2506.501	CONST DRAINAGE STRUCTURE DES 48-4020		LIN FT	4
2506.516	CASTING ASSEMBLY		EACH	1
2531.507	6" CONCRETE DRIVEWAY PAVEMENT		SQ YD	160
2540.602	INSTALL MAIL BOX SUPPORT	10	EACH	19
2563.601	TRAFFIC CONTROL	8	LUMP SUM	1
2564.533	FURNISH SIGN PANEL TYPE C		SQ FT	68.63
2564.536	INSTALL SIGN PANEL TYPE C		EACH	3
2573.602	CULVERT PROTECTION		EACH	2
2575.523	EROSION CONTROL BLANKET CATEGORY 3	1,11	SQ YD	200
2575.571	RAPID STABILIZATION METHOD 3	1	M-GAL	23
2581.501	REMOVABLE PREFORMED PLASTIC MARKING	7	LIN FT	846
2582.502	4" SOLID LINE WHITE - EPOXY	9	LIN FT	21460
2582.502	4" BROKEN LINE WHITE-EPOXY	9	LIN FT	80
2582.502	4" SOLID LINE YELLOW-EPOXY	9	LIN FT	1456
2582.502	4" BROKEN LINE YELLOW-EPOXY	9	LIN FT	300
2582.502	4" DOUBLE SOLID LINE YELLOW-EPOXY	9	LIN FT	9055

NOTES:

- 1 LOCATION TO BE DETERMINED BY ENGINEER.
- 2 CONTRACTORS RESPONSIBILITY TO CONTACT OWNER 48 HOURS BEFORE STARTING OPERATION.
- 3 GRAVEL BASE FOR CONCRETE AND BITUMINOUS DRIVEWAYS AND FINISHED GRAVEL ENTRANCES.
- 4 MATERIAL FOR FINISHED GRAVEL SHOULDERS AND GRAVEL ENTRANCES.
- 5 ITEM USED FOR PAVING DRIVEWAYS AND STREET APPROACHES.
- 6 INCLUDES ALL TIME AND MATERIAL TO CONSTRUCT ITEM AS SHOWN IN PLAN AND AS DIRECTED BY ENGINEER. COMMON EXCAVATION, SELECT GRANULAR, AGGREGATE BASE CLASS 5, SILT FENCE, EROSION CONTROL BLANKET, SEED, FERTILIZER, & DOZER / MOTOR GRADER TIME TO CONSTRUCT TURN / BY-PASS LANE NOTE -BITUMINOUS BASE AND WEAR COURSE IS NOT INCLUDED IN THIS ITEM.
- 7 SHALL BE PLACED AFTER EACH DAYS PAVING OPERATION.
- 8 ROAD WORK AHEAD, DO NOT PASS, PASS WITH CARE, NO CENTERLINE STRIPE, BUMP AND BUMP AHEAD SIGNS TO BE INPLACE AT THE START OF RECLAIM AND OVERLAY OPERATIONS.
- 9 SHALL BE INSTALLED WITHIN 72 HOURS OF COMPLTION OF MAINLINE WEAR COURSE PAVING.
- 10 MAILBOXES TO BE INSTALLED AT THE EXSTING MAILBOX LOCATION. MAILBOX REMOVAL / INSTALLATION, INCIDENTAL TO ITEM.
- 11 ITEM INCLUDES BLANKET, FERTILIZER, AND SEED.
- 12 ITEM INCLUDES ADDING CLASS 5 TO MAINLINE AT 359+00 - 368+00 AND 398+00 - 404+00 (FOR LEVELING PRIOR TO PAVING BASE COURSE).
- 13 ITEM INCLUDES SAFETY APRON GRATE.
- 14 ITEM INCLUDES CONSTRUCTION OF SAFTEY EDGE, REFER TO SPECAIL PROVISIONS.

BASIS OF PLANNED QUANTITIES

2211.501	AGGREGATE BASE CLASS 5	CU YDS * 1.8 = TONS
2221.501	AGGREGATE SHOULDERING CLASS 5	CU YDS * 1.8 = TONS
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	.05 GAL / SQ YD
2360.501	TYPE SP 12.5 WEARING COURSE (SPWEB440B) 2" THICK	115 LBS/SQYD/IN THICKNESS
2575.601	RAPID STABILIZATION METHOD 3	6 MGAL / ACRE
2581.501	REMOVABLE PREFORM PLASTIC MARKINGS	2' AT 50' INTERVALS FOR SKIPS

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_24_(CR66-TH47)\Plan2 Seq.dgn 02/24/2012 2:41:44 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: CHARLES CALDENHEAD
SIGNATURE: *[Signature]*
DATE: 2/2/12 LICENSE NO. 40416

DRAWN BY: KPR DATE: 1/29/12

DESIGN BY: KPR DATE: 1/29/12

CHECKED BY: OFF DATE: _____



**ANOKA COUNTY
HIGHWAY DEPT.**

STATE PROJECT NO. _____
STATE AID PROJECT NO. _____
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COUNTY PROJECT NO. 11-17-24

STATEMENT OF ESTIMATED QUANTITIES

Sheet 2 of 20 Sheets

ESTIMATED AVERAGE DEPTH FOR RT. TURN LANES AND BYPASSES USING ELEVATION AT EDGE OF MAT, SHOULDER PI, AND DITCH BOTTOM.											
BRIDGESTONE RT TURN LANE				BRIDGESTONE BYPASS				CR 66 BYPASS			
EM	SH PI	BOTTOM		EM	SH PI	BOTTOM		EM	SH PI	BOTTOM	
920.56	919.89	916.37		914.45	913.92	910.57		929.38	929.30	925.58	
921.47	920.95	918.18		915.17	914.30	909.67		930.00	930.00	926.06	
920.58	920.03	919.84		915.84	915.08	910.21		931.10	930.78	926.98	
921.28	920.67	919.51		916.98	915.90	910.42		932.33	931.76	927.87	
921.56	921.43	919.32		920.42	919.70	916.91		932.78	931.91	928.24	
921.00	920.76	919.44		920.88	920.26	917.94		933.39	932.69	929.51	
5526.45	5523.73	5512.66		5503.74	5499.16	5475.72		5588.98	5586.44	5564.24	
921.08	920.62	918.78		917.29	916.53	912.62		931.50	931.07	927.37	
AVERAGE DEPTH				AVERAGE DEPTH				AVERAGE DEPTH			
2.30				4.67				4.12			
minus 0.5'				minus 0.5'				minus 0.5'			
1.80				4.17				3.62			

ESTIMATED QUANTITIES FOR RT. TURN LANES AND BYPASSES														
CONSTRUCT BYPASS (CSAH 66)														
STATION	STATION	LENGTH	WIDTH	COMMON EX		WIDTH	SELECT GRANULAR		WIDTH	CLASS 5		DOZER (HOURS)	SILT FENCE (LF)	EROSION CONTROL BLANKET (SY)
				DEPTH	VOLUME (CY)		DEPTH	VOLUME (CY)		DEPTH	VOLUME (CY)			
298+50	304+70	620.0	22	0.5	252.6	15.0	3.6	1246.9	14.0	0.5	160.7	8.0	660.0	880.0
CONSTRUCT BYPASS (BRIDGESTONE)														
STATION	STATION	LENGTH	WIDTH	COMMON EX		WIDTH	SELECT GRANULAR		WIDTH	CLASS 5		DOZER (HOURS)	SILT FENCE (LF)	EROSION CONTROL BLANKET (SY)
				DEPTH	VOLUME (CY)		DEPTH	VOLUME (CY)		DEPTH	VOLUME (CY)			
341+95	348+15	620.0	22	0.5	252.6	15.0	4.2	1446.7	14.0	0.5	160.7	8.0	660.0	880.0
CONSTRUCT TURN LANES (BRIDGESTONE)														
STATION	STATION	LENGTH	WIDTH	COMMON EX		WIDTH	SELECT GRANULAR		WIDTH	CLASS 5		DOZER (HOURS)	SILT FENCE (LF)	EROSION CONTROL BLANKET (SY)
				DEPTH	VOLUME (CY)		DEPTH	VOLUME (CY)		DEPTH	VOLUME (CY)			
345+80	350+60	480.0	18	0.5	160.0	15.0	1.8	480.0	14.0	0.5	124.4	8.0	520.0	640.0

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_24_(CR66-TH47)\Plant2 Seq.dgn 02/24/2012 2:42:33 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: CHARLES GADEKHEAD
SIGNATURE: *[Signature]*
DATE: 2/2/12 LICENSE NO. 40416

DRAWN BY: KPR DATE: 1/29/12
DESIGN BY: KPR DATE: 1/29/12
CHECKED BY: DFF DATE: _____



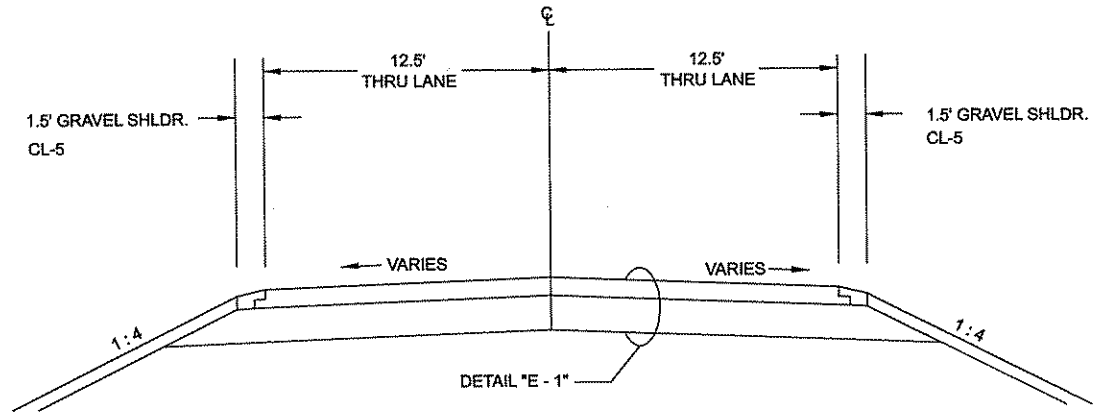
STATE PROJECT NO. _____
STATE AID PROJECT NO. _____
CITY PROJECT NO. _____
COUNTY PROJECT NO. 11-17-24

CALCULATIONS FOR TURN LANES AND BYPASSES

Sheet 3 of 20 Sheets

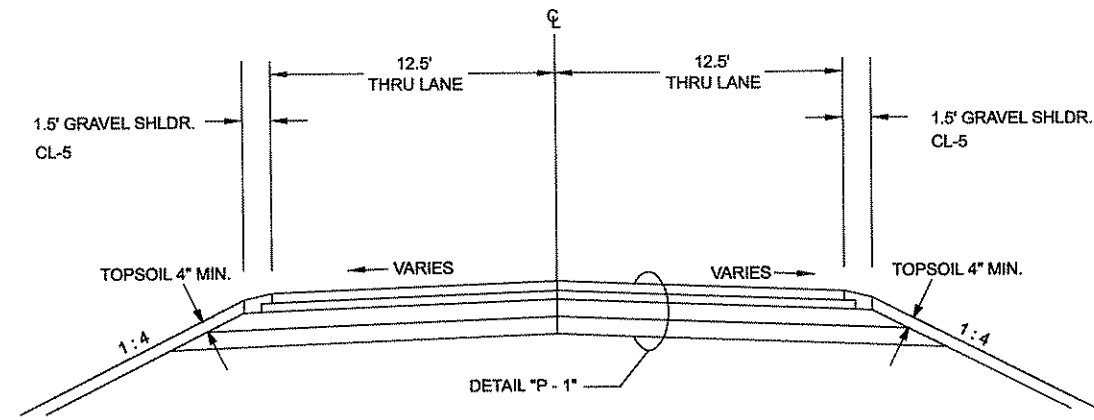
EXISTING TYPICAL SECTION

STA. 298+50 - 404+25

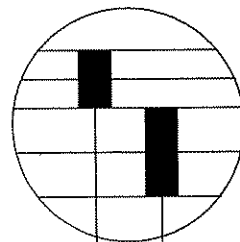


PROPOSED TYPICAL SECTION

STA. 298+50 - 404+25

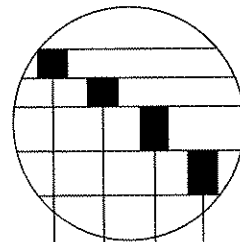


DETAIL "E - 1"



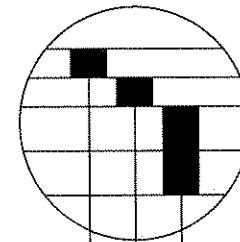
EXISTING BITUMINOUS APPROX. 5 1/2" THICK
EXISTING BASE

DETAIL "P - 1"



2" TYP SP 12.5 WEARING COURSE (SPWEB440B)
2" TYP SP 12.5 WEARING COURSE (SPWEB440B)
RECLAIM EXISTING BIT / AGG. BASE
EXISTING BASE

DETAIL "P - 2"



2" TYP SP 12.5 WEARING COURSE (SPWEB440B)
2" TYP SP 12.5 WEARING COURSE (SPWEB440B)
6" AGGREGATE BASE CL 5

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_24_(CR66-TH47)\Plan\3 typicals.dgn 02/24/2012 2:50:12 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: CHARLES CADENHEAD
SIGNATURE: *[Signature]*
DATE: 3/2/17 LICENSE NO. 40416

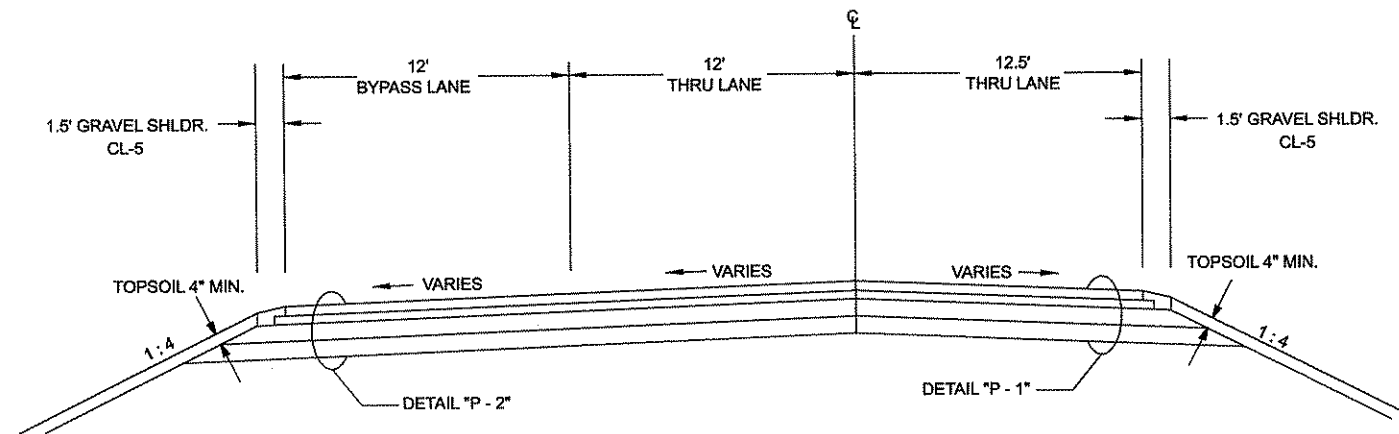
DRAWN BY: KPR DATE: 1/20/12
DESIGN BY: KPR DATE: 1/20/12
CHECKED BY: DFF DATE:



STATE PROJECT NO. _____
STATE AID PROJECT NO. _____
CITY PROJECT NO. _____
COUNTY PROJECT NO. 11-17-24

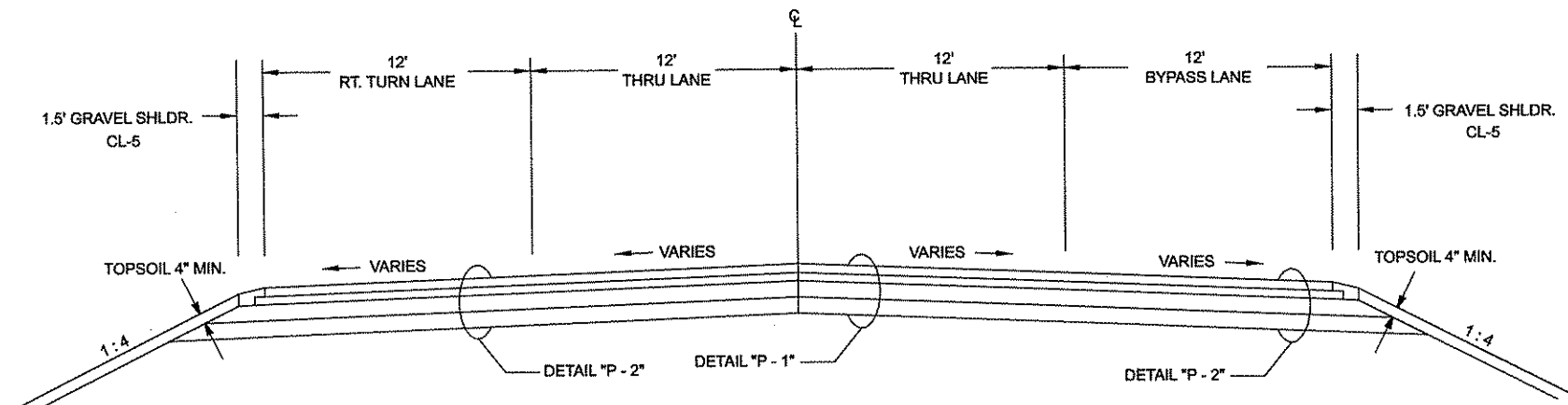
PROPOSED TYPICAL SECTION (BYPASS LANE EB)

STA. 298+50 - 304+70



PROPOSED TYPICAL SECTION (BYPASS LANE AND RT. TURN LANE)

STA. 341+95 - 350+55



NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\12-01-00\CSAH_24_(CR66-TH47)\Plan\3 typicals.dgn					
02/24/2012 2:50:36 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: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 LICENSE NO. 40416

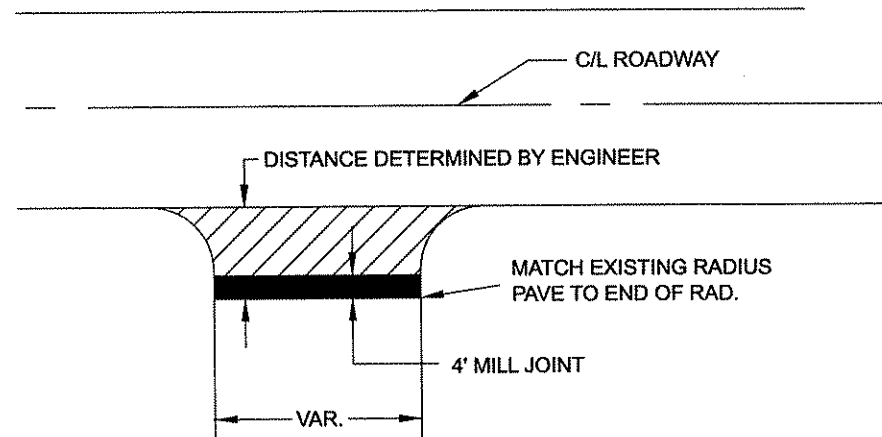
DRAWN BY: KPR DATE: 1/20/12
 DESIGN BY: KPR DATE: 1/20/12
 CHECKED BY: DFF DATE: _____



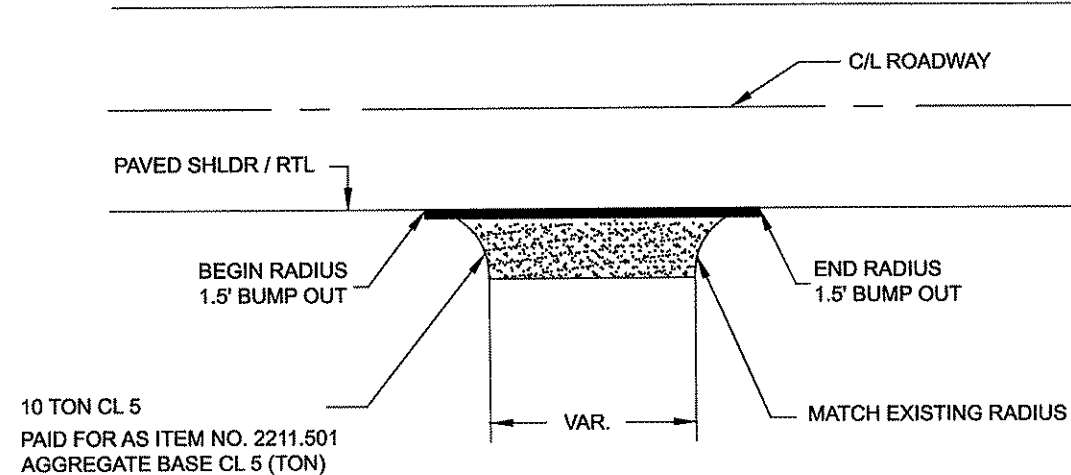
STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 11-17-24

TYPICAL SECTION
 Sheet 5 of 20 Sheets

PAVED STREET APPROACHES



UN-PAVED STREET APPROACHES

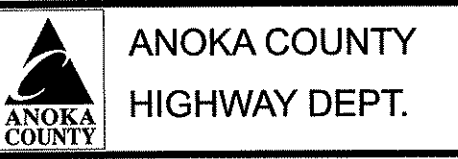


UNPAVED STREET APPROCHES AND DRIVEWAYS BUMPED OUT,
PAVED WITH MAINLINE, PAID AS MAINLINE

NO	DATE	BY	CHKD	APPR	REVISION
NAME: P:112-01-00\CSAH_24_(CR66-TH47)\Plan3 typical.dgn					
02/24/2012 2:48:21 PM					

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 LICENSE NO. 40416

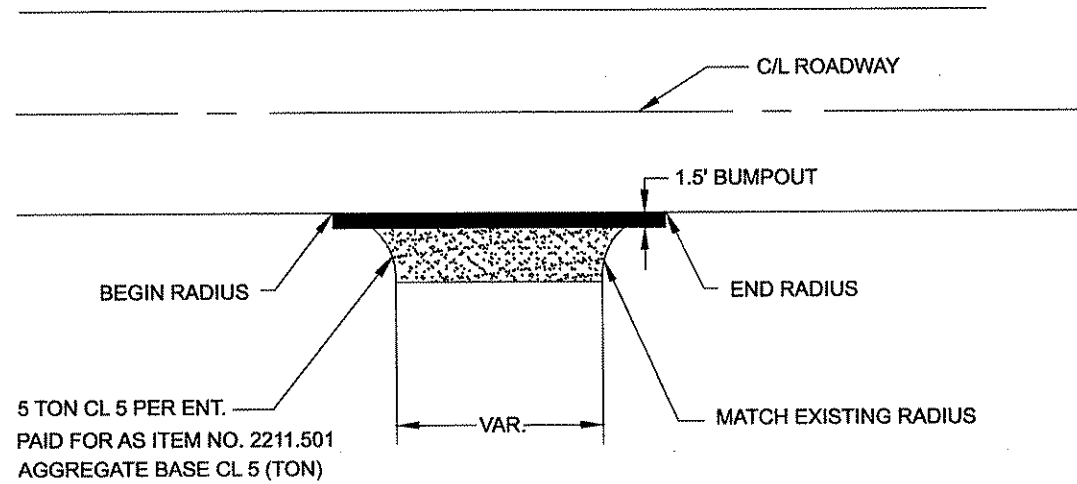
DRAWN BY: KPR DATE: 1/20/12
 DESIGN BY: KPR DATE: 1/20/12
 CHECKED BY: DFF DATE: _____



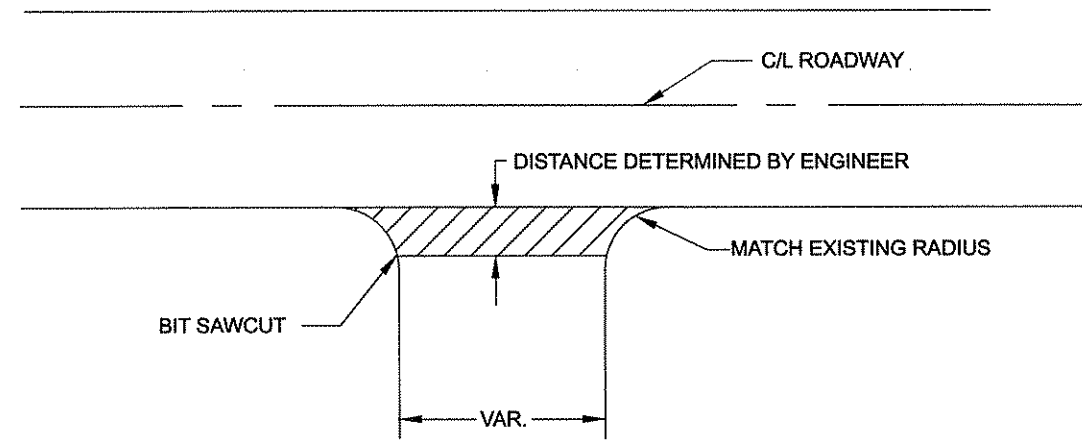
STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 11-17-24

MISCELLANEOUS DETAILS
 Sheet 6 of 20 Sheets

GRAVEL DR. WAYS AND FEILD ENT.

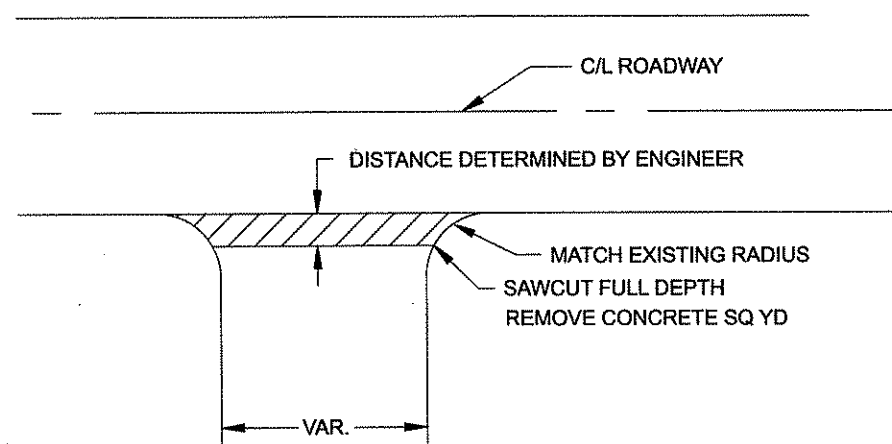


PAVED DR. WAYS



DRIVEWAYS BUMPED OUT AND PAVED WITH MAINLINE PAID AS MAINLINE.
 DRIVEWAYS PAVED IN DIFFERENT OPERATION FROM MAIN LINE PAVING PAID AS ST./DR. APPROACH.

CONCRETE DR. WAYS



NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_24_(CR66-TH47)\Plan\3 typcats.dgn
 02/24/2012 2:48:49 PM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY KPR DATE 1/20/12
 DESIGN BY KPR DATE 1/20/12
 CHECKED BY DFF DATE



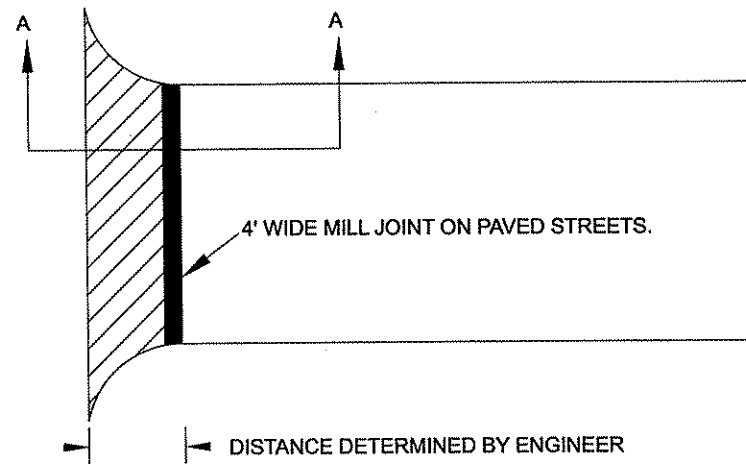
ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 11-17-24

MISCELLANEOUS DETAILS
 Sheet 7 of 20 Sheets

PAVED STREET APPROACHES

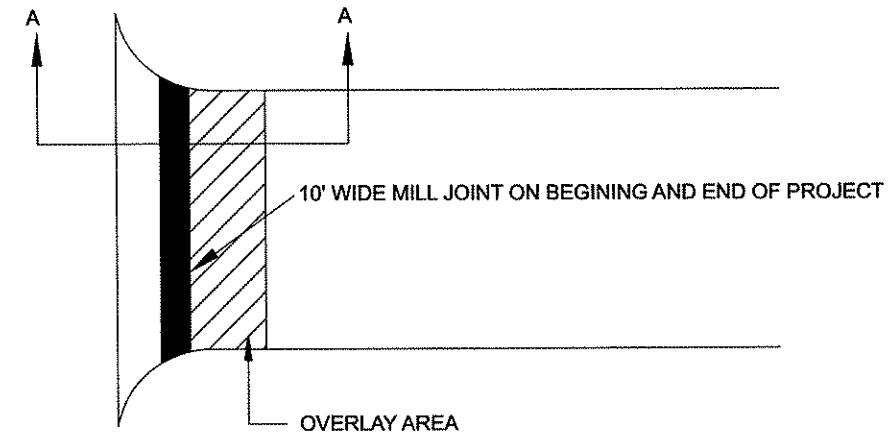
JOINT DETAILS



DRIVEWAYS BUMPED OUT TO BE PAVED WITH MAINLINE, PAID AS MAINLINE.
 DRIVEWAYS PAVED IN DIFFERENT OPERATION FROM MAIN LINE PAVING PAID AS ST./DR. APPROACH.
 STREETS PAID AS ST./DR. APPROACH.

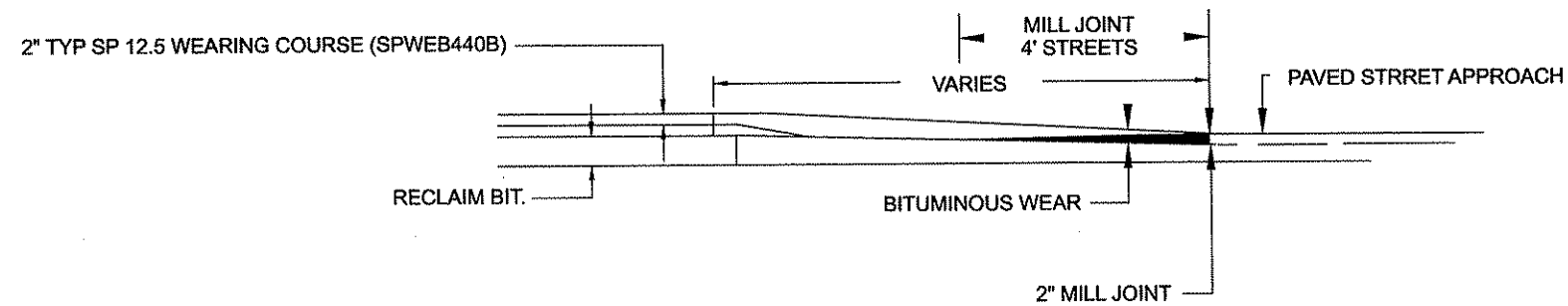
MAINLINE

JOINT DETAILS



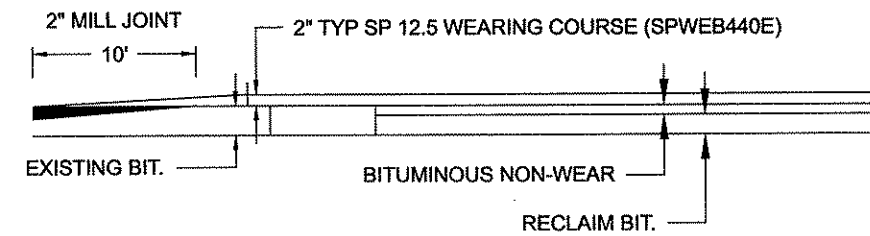
GRADING NEEDED TO TIE NONWEAR INTO EXISTING PAVING. TO BE PAID UNDER 2123.503 MOTOR GRADER HOURS

JOINT DETAILS A - A



PAID AS STREET APPROACH

JOINT DETAILS A - A



NO	DATE	BY	CHKD	APPR	REVISION
NAME: P:12-01-00ICSAH_24_(CR66-TH47)Plan13 typlocals.dgn					
02/24/2012 2:49:23 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: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 2/2/12 LICENSE NO. 40418

DRAWN BY KPR DATE 1/20/12
 DESIGN BY KPR DATE 1/20/12
 CHECKED BY DFF DATE

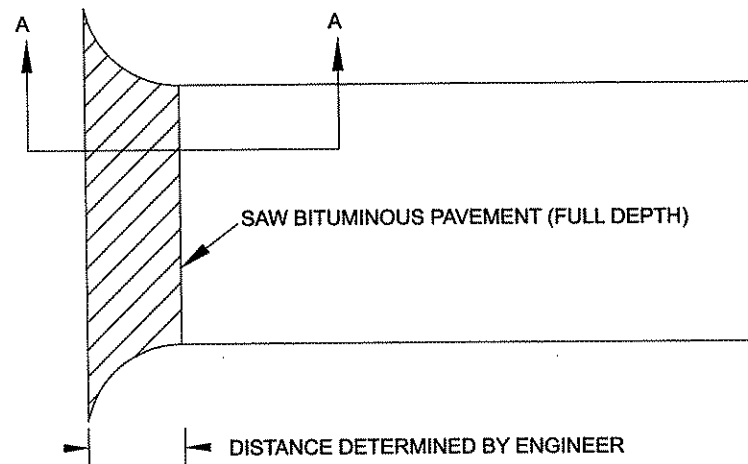


ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 11-17-24

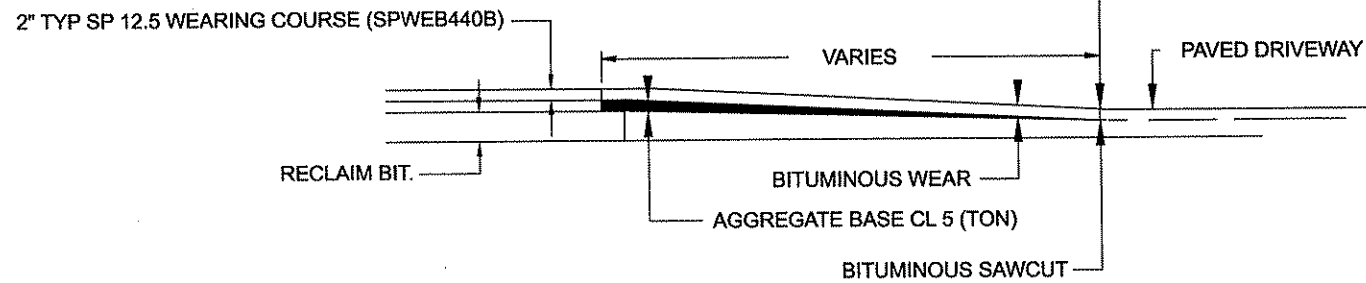
PAVED DRIVEWAYS

JOINT DETAILS



DRIVEWAYS BUMPED OUT TO BE PAVED WITH MAINLINE, PAID AS MAINLINE.
 DRIVEWAYS PAVED IN DIFFERENT OPERATION FROM MAIN LINE PAVING PAID AS ST./DR. APPROACH.
 STREETS PAID AS ST./DR. APPROACH.

JOINT DETAILS A - A



SAFETY EDGE CONSTRUCTION DETAIL

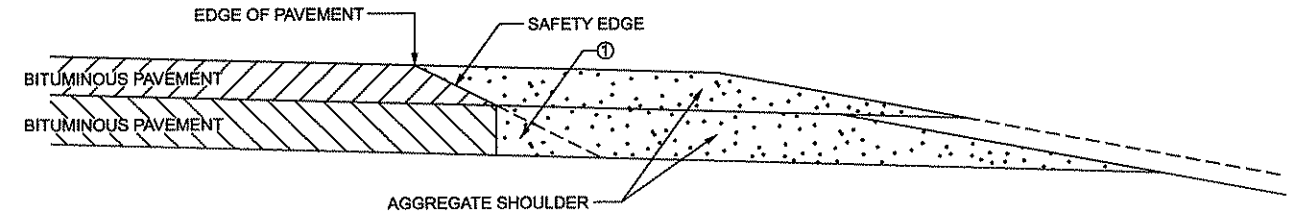


FIGURE B
 BITUMINOUS PAVEMENT

① OPTIONAL DESIGN EXTENDS SAFETY EDGE DEEPER THAN 6" AND WIDER THAN 10.5". SEE PLAN DESIGN DETAILS.

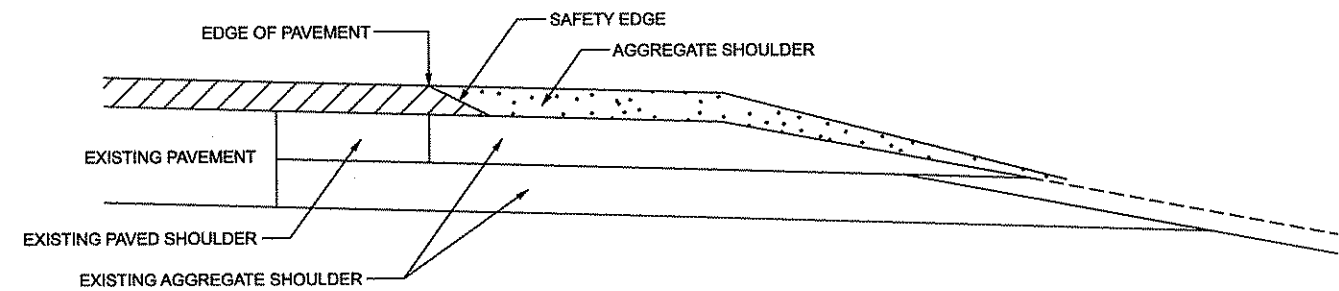


FIGURE C
 BITUMINOUS OVERLAY

NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\12-01-00\CSAH_24_(CR66-TH47)\Plan\3 typical.dgn					
02/24/2012 2:49:48 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: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY KPR DATE 1/20/12
 DESIGN BY KPR DATE 1/20/12
 CHECKED BY DFF DATE

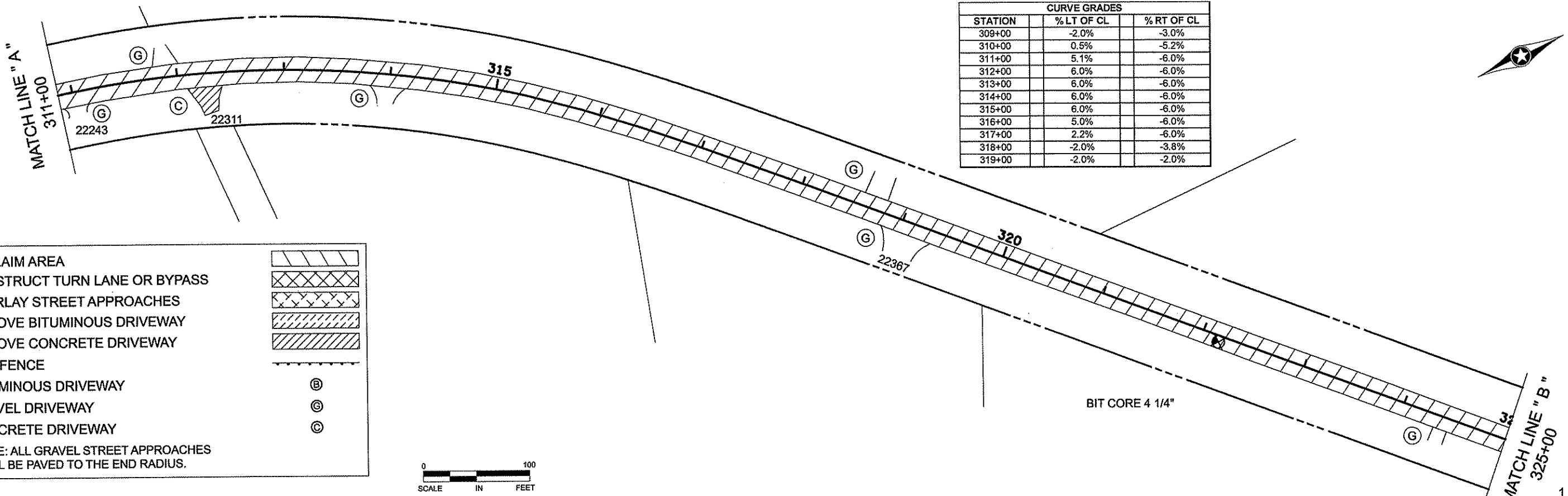
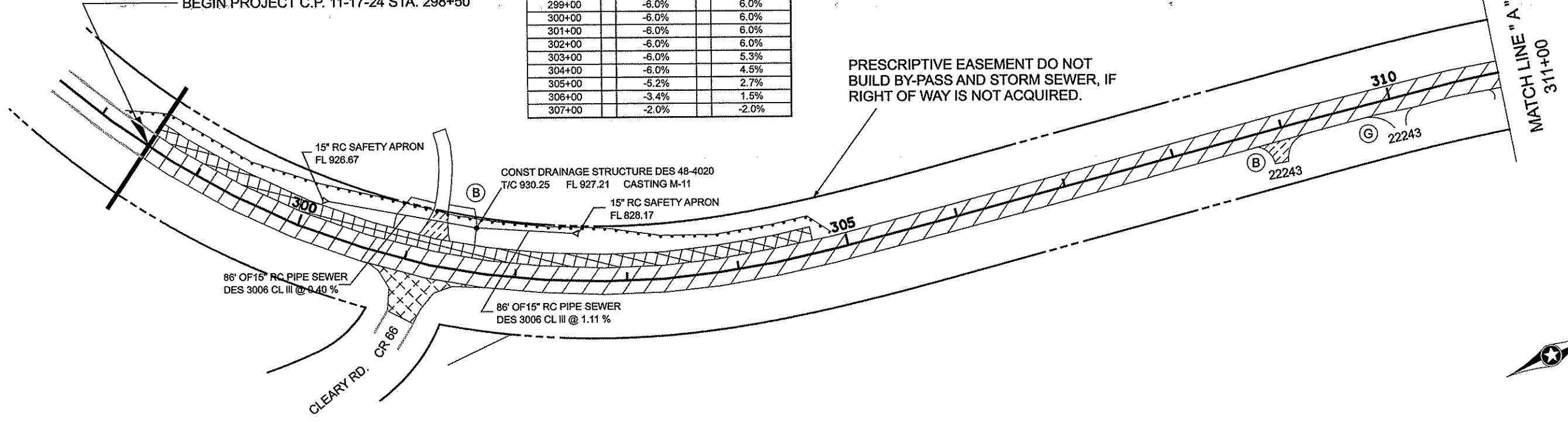
ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 11-17-24

BEGIN PROJECT C.P. 11-17-24 STA. 298+50

CURVE GRADES		
STATION	% LT OF CL	% RT OF CL
298+00	-6.0%	6.0%
299+00	-6.0%	6.0%
300+00	-6.0%	6.0%
301+00	-6.0%	6.0%
302+00	-6.0%	6.0%
303+00	-6.0%	5.3%
304+00	-6.0%	4.5%
305+00	-5.2%	2.7%
306+00	-3.4%	1.5%
307+00	-2.0%	-2.0%

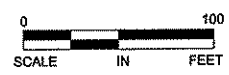
PRESCRIPTIVE EASEMENT DO NOT BUILD BY-PASS AND STORM SEWER, IF RIGHT OF WAY IS NOT ACQUIRED.



CURVE GRADES		
STATION	% LT OF CL	% RT OF CL
309+00	-2.0%	-3.0%
310+00	0.5%	-5.2%
311+00	5.1%	-6.0%
312+00	6.0%	-6.0%
313+00	6.0%	-6.0%
314+00	6.0%	-6.0%
315+00	6.0%	-6.0%
316+00	5.0%	-6.0%
317+00	2.2%	-6.0%
318+00	-2.0%	-3.8%
319+00	-2.0%	-2.0%

RECLAIM AREA	
CONSTRUCT TURN LANE OR BYPASS	
OVERLAY STREET APPROACHES	
REMOVE BITUMINOUS DRIVEWAY	
REMOVE CONCRETE DRIVEWAY	
SILT FENCE	
BITUMINOUS DRIVEWAY	(B)
GRAVEL DRIVEWAY	(C)
CONCRETE DRIVEWAY	(C)

*NOTE: ALL GRAVEL STREET APPROACHES SHALL BE PAVED TO THE END RADIUS.



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_24_(CR66-TH47)\Plan\plan sheet 1.dgn 02/24/2012 3:23:26 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.

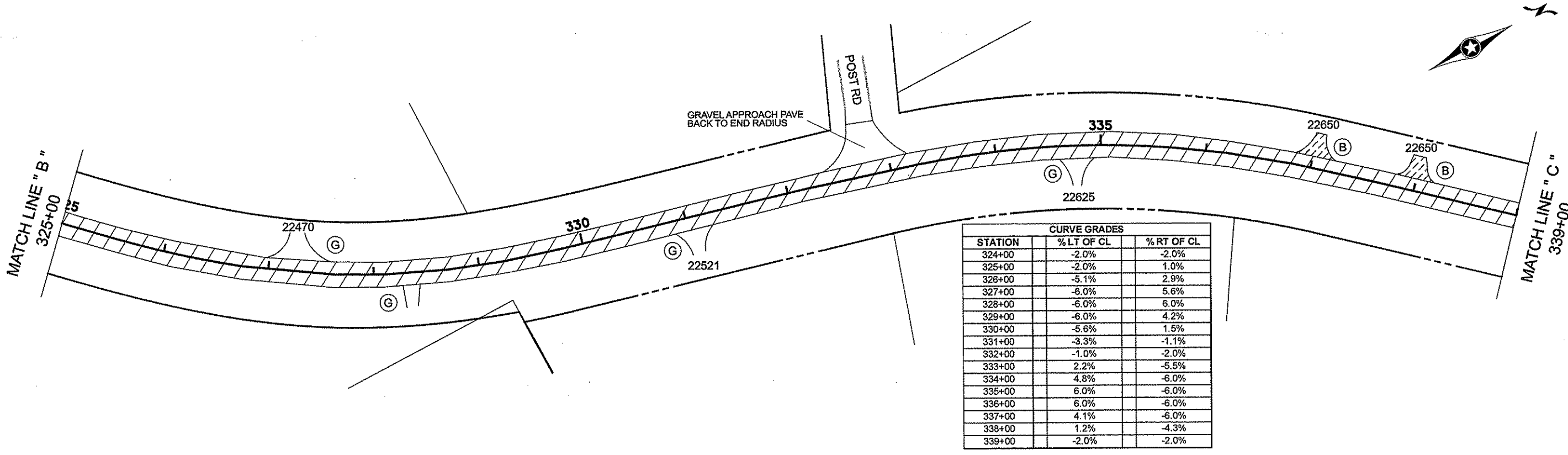
PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 LICENSE NO. 40418

DRAWN BY: KPR DATE: 1/20/12
 DESIGN BY: KPR DATE: 1/20/12
 CHECKED BY: OFF DATE:

ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 11-17-24

CONSTRUCTION PLAN
 STA 298+50 TO 325+00
 Sheet 10 of 20 Sheets

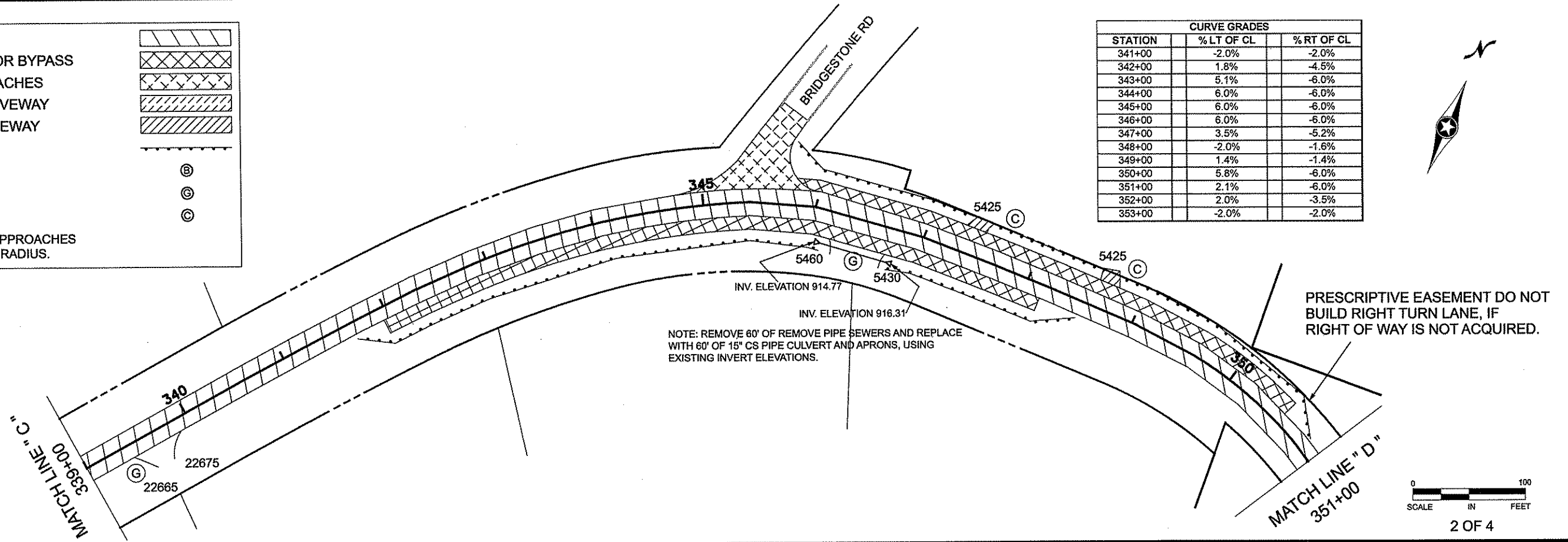


CURVE GRADES		
STATION	% LT OF CL	% RT OF CL
324+00	-2.0%	-2.0%
325+00	-2.0%	1.0%
326+00	-5.1%	2.9%
327+00	-6.0%	5.6%
328+00	-6.0%	6.0%
329+00	-6.0%	4.2%
330+00	-5.6%	1.5%
331+00	-3.3%	-1.1%
332+00	-1.0%	-2.0%
333+00	2.2%	-5.5%
334+00	4.8%	-6.0%
335+00	6.0%	-6.0%
336+00	6.0%	-6.0%
337+00	4.1%	-6.0%
338+00	1.2%	-4.3%
339+00	-2.0%	-2.0%

RECLAIM AREA
 CONSTRUCT TURN LANE OR BYPASS
 OVERLAY STREET APPROACHES
 REMOVE BITUMINOUS DRIVEWAY
 REMOVE CONCRETE DRIVEWAY
 SILT FENCE
 BITUMINOUS DRIVEWAY
 GRAVEL DRIVEWAY
 CONCRETE DRIVEWAY

*NOTE: ALL GRAVEL STREET APPROACHES SHALL BE PAVED TO THE END RADIUS.

CURVE GRADES		
STATION	% LT OF CL	% RT OF CL
341+00	-2.0%	-2.0%
342+00	1.8%	-4.5%
343+00	5.1%	-6.0%
344+00	6.0%	-6.0%
345+00	6.0%	-6.0%
346+00	6.0%	-6.0%
347+00	3.5%	-5.2%
348+00	-2.0%	-1.6%
349+00	1.4%	-1.4%
350+00	5.8%	-6.0%
351+00	2.1%	-6.0%
352+00	2.0%	-3.5%
353+00	-2.0%	-2.0%



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_24_(CR66-TH47)\Plan\plan sheet 2.dgn 02/24/2012 2:56:26 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: CHARLES CADENHEAD
 SIGNATURE: *Charles Cadenhead*
 DATE: 3/2/12 LICENSE NO. 40418

DRAWN BY: KPR DATE: 1/20/12
 DESIGN BY: KPR DATE: 1/20/12
 CHECKED BY: DFF DATE: _____

ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 11-17-24

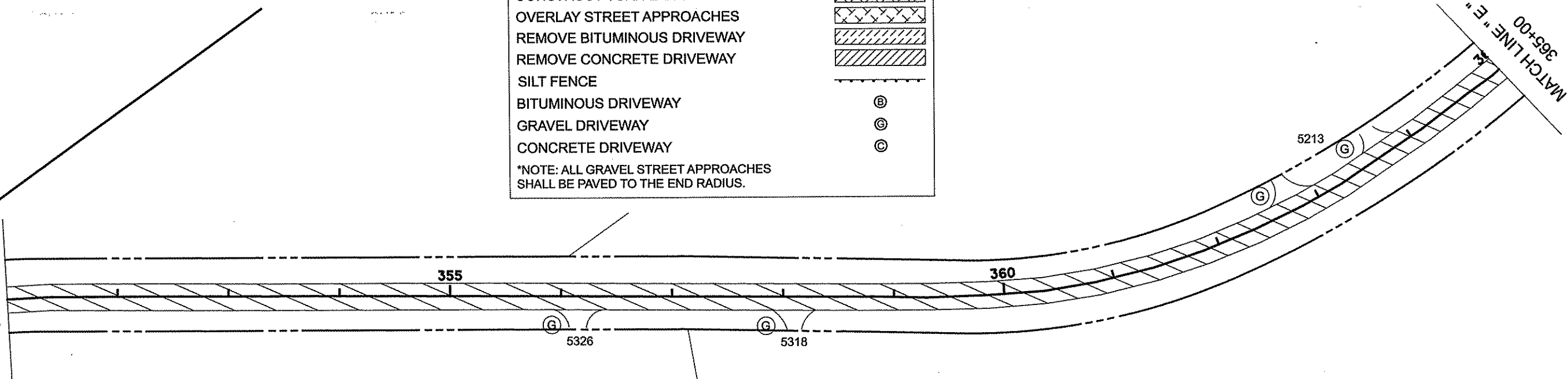
CONSTRUCTION PLAN
 STA 325+00 TO 351+00
 Sheet 11 of 20 Sheets



RECLAIM AREA
 CONSTRUCT TURN LANE OR BYPASS
 OVERLAY STREET APPROACHES
 REMOVE BITUMINOUS DRIVEWAY
 REMOVE CONCRETE DRIVEWAY
 SILT FENCE
 BITUMINOUS DRIVEWAY
 GRAVEL DRIVEWAY
 CONCRETE DRIVEWAY

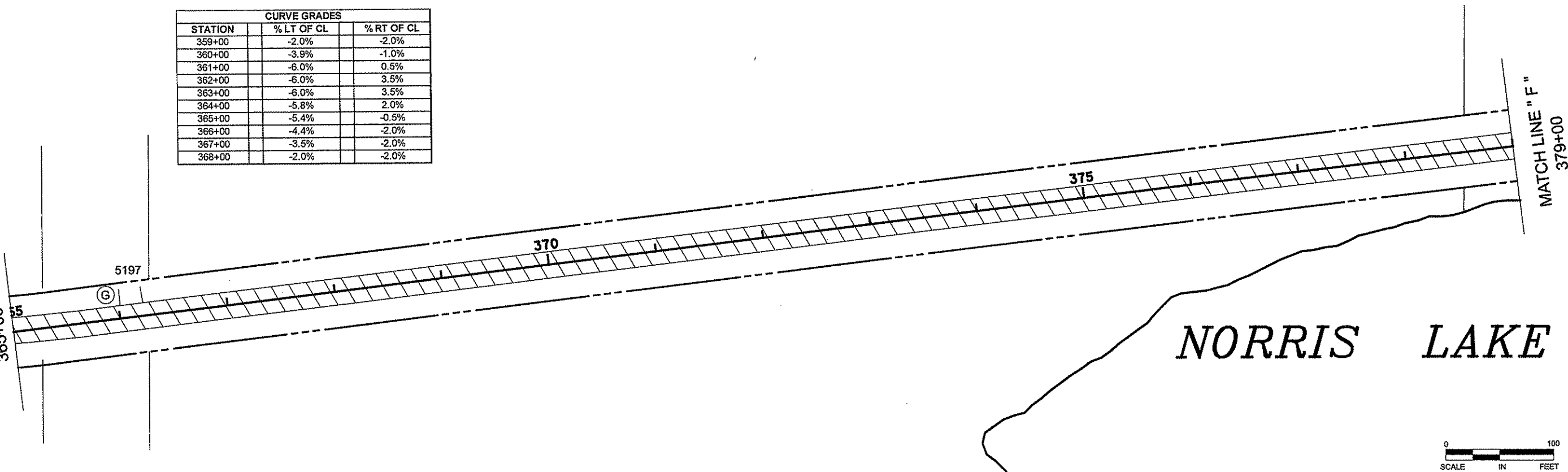
*NOTE: ALL GRAVEL STREET APPROACHES SHALL BE PAVED TO THE END RADIUS.

MATCH LINE "D"
351+00



CURVE GRADES		
STATION	% LT OF CL	% RT OF CL
359+00	-2.0%	-2.0%
360+00	-3.9%	-1.0%
361+00	-6.0%	0.5%
362+00	-6.0%	3.5%
363+00	-6.0%	3.5%
364+00	-5.8%	2.0%
365+00	-5.4%	-0.5%
366+00	-4.4%	-2.0%
367+00	-3.5%	-2.0%
368+00	-2.0%	-2.0%

MATCH LINE "E"
365+00



NORRIS LAKE



3 OF 4

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_24_(CR66-TH47)\Plan\plan sheet 3.dgn
 02/24/2012 2:55:12 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.

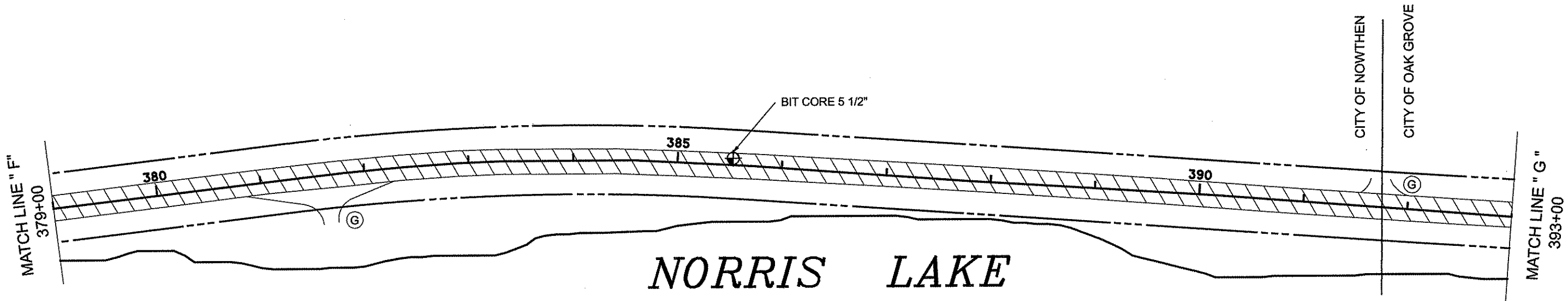
PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 2/2/12 LICENSE NO. 40418

DRAWN BY: KPR DATE: 1/20/12
 DESIGN BY: KPR DATE: 1/20/12
 CHECKED BY: DFF DATE: _____

ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 11-17-24

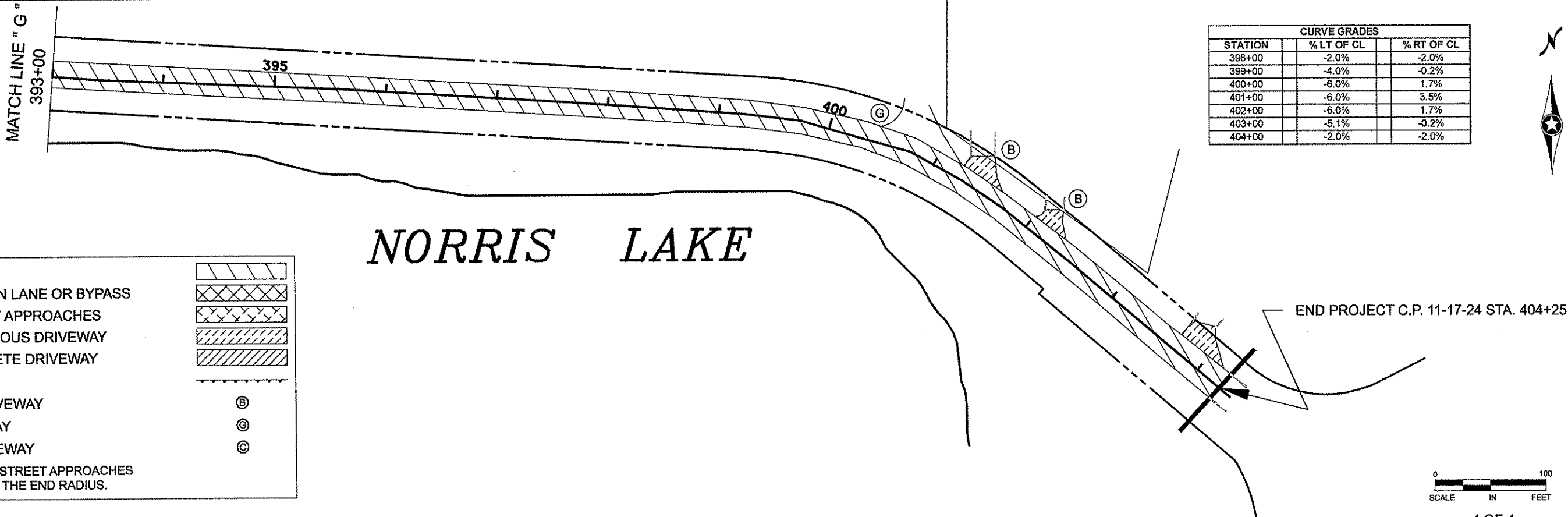
CONSTRUCTION PLAN
 STA 351+00 TO 379+00
 Sheet 12 of 20 Sheets



NORRIS LAKE

CITY OF NOWTHEN
CITY OF OAK GROVE

CURVE GRADES		
STATION	% LT OF CL	% RT OF CL
398+00	-2.0%	-2.0%
399+00	-4.0%	-0.2%
400+00	-6.0%	1.7%
401+00	-6.0%	3.5%
402+00	-6.0%	1.7%
403+00	-5.1%	-0.2%
404+00	-2.0%	-2.0%



NORRIS LAKE

RECLAIM AREA	
CONSTRUCT TURN LANE OR BYPASS	
OVERLAY STREET APPROACHES	
REMOVE BITUMINOUS DRIVEWAY	
REMOVE CONCRETE DRIVEWAY	
SILT FENCE	
BITUMINOUS DRIVEWAY	Ⓟ
GRAVEL DRIVEWAY	Ⓞ
CONCRETE DRIVEWAY	Ⓢ

*NOTE: ALL GRAVEL STREET APPROACHES SHALL BE PAVED TO THE END RADIUS.

NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_24_(CR68-TH47)\Plan\plan sheet 4.dgn 02/24/2012 2:54:11 PM

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

PRINT NAME: CHARLES CADENHEAD
SIGNATURE:
DATE: 2/24/12 LICENSE NO. 40418

DRAWN BY: KPR DATE: 1/20/12
DESIGN BY: KPR DATE: 1/20/12
CHECKED BY: DFF DATE: _____

ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
STATE AID PROJECT NO. _____
CITY PROJECT NO. _____
COUNTY PROJECT NO. 11-17-24

CONSTRUCTION PLAN
STA 379+00 TO 404+25
Sheet 13 of 20 Sheets

PERMANENT PAVEMENT MARKING PLAN
NOTES AND GUIDELINES

GENERAL INFORMATION:

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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.

EPOXY:

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 EPOXY PAVEMENT MARKINGS.

THE EPOXY MARKING APPLICATION SHALL IMMEDIATELY FOLLOW THE PAVEMENT CLEANING. GLASS BEANS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE EPOXY RESIN LINE TO PROVIDE AN IMMEDIATE NO-TRACK SYSTEM.

AN EPOXY RESIN LINE 4" WIDE AND 15 MILL THICKNESS (WET), REQUIRES AN APPLICATION RATE OF ONE (1) GALLON OF COMPONENTS FOR 320 FEET OF LINE. GLASS BEANS SHALL BE APPLIED AT A POUND PER GALLON RATE SUFFICIENT TO ACHIEVE AN ACCEPTABLE NO-TRACK SYSTEM.

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PREFORMED THERMOPLASTIC:

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

PAINT:

AT THE TIME OF APPLYING THE MARKING MATERIAL, THE APPLICATION AREA SHALL BE FREE OF CONTAMINATION. THE CONTRACTOR SHALL CLEAN THE ROADWAY SURFACE PRIOR TO THE LINE APPLICATION IN A MANNER AND TO THE EXTENT REQUIRED BY THE ENGINEER.

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SYMBOLS & MATERIALS LEGEND

■ CROSSWALK BLOCK WHITE PREFORMED THERMOPLASTIC

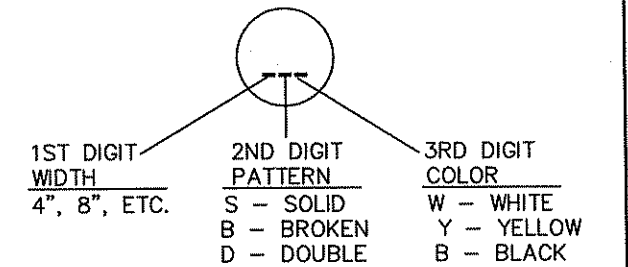
↩ PAVEMENT MESSAGE (LEFT ARROW) PREFORMED THERMOPLASTIC

STRIPING KEY

○ CIRCLE - EPOXY □ SQUARE PREFORMED THERMOPLASTIC

△ TRIANGLE - PAINT

⬠ PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING



EXAMPLE: (4SW) = 4" SOLID LINE WHITE - EPOXY

PAVEMENT MARKING QUANTITIES		
Item	Quantity	Units
4" Double Solid Line Yellow - Epoxy	9055	Lin Ft
4" Solid Line Yellow - Epoxy	1456	Lin Ft
4" Broken Line Yellow Epoxy (10 ft stripe / 40 ft gap)	300	Lin Ft
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4" Broken Line White - Epoxy (10 ft stripe / 40 ft gap)	80	Lin Ft

NO	DATE	BY	CKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 LICENSE NO. 40416

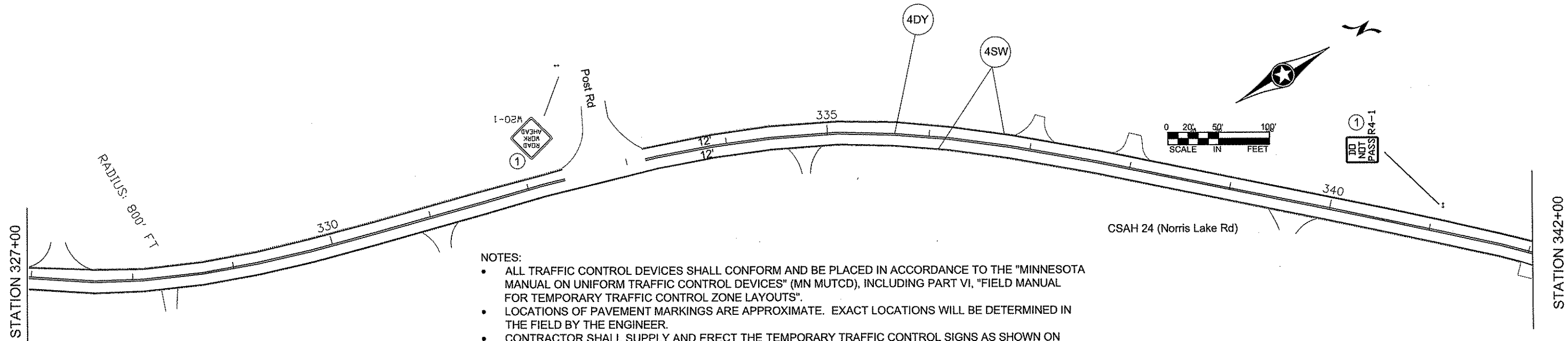
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 DESIGN BY: MTH DATE: 1/27/12
 CHECKED BY: JR DATE: 2/14/12



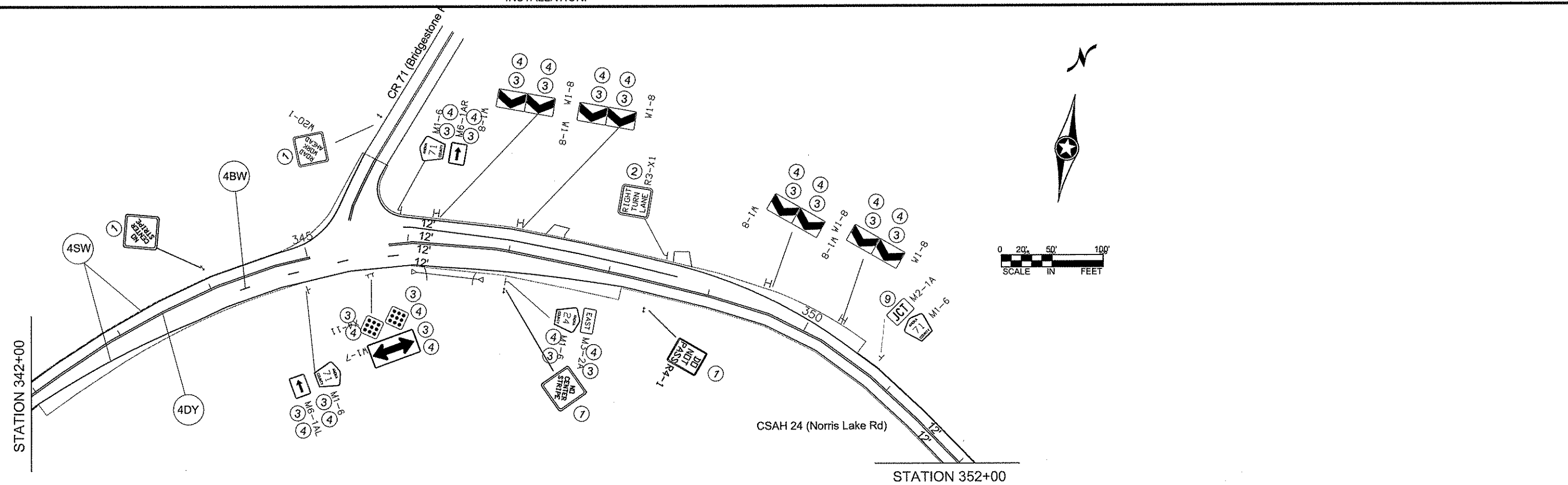
ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. 11-17-24

PERMANENT MARKING
TABULATION
 Sheet 14 of 20 Sheets



- NOTES:
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NO	DATE	BY	CKD	APPR	REVISION

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STATE PROJECT NO. _____
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 COUNTY PROJECT NO. 12-17-24

CSAH 24 (Norris Lake Rd)
 TEMPORARY SIGNING
 PERMANENT STRIPING
 AND PAVEMENT MESSAGES

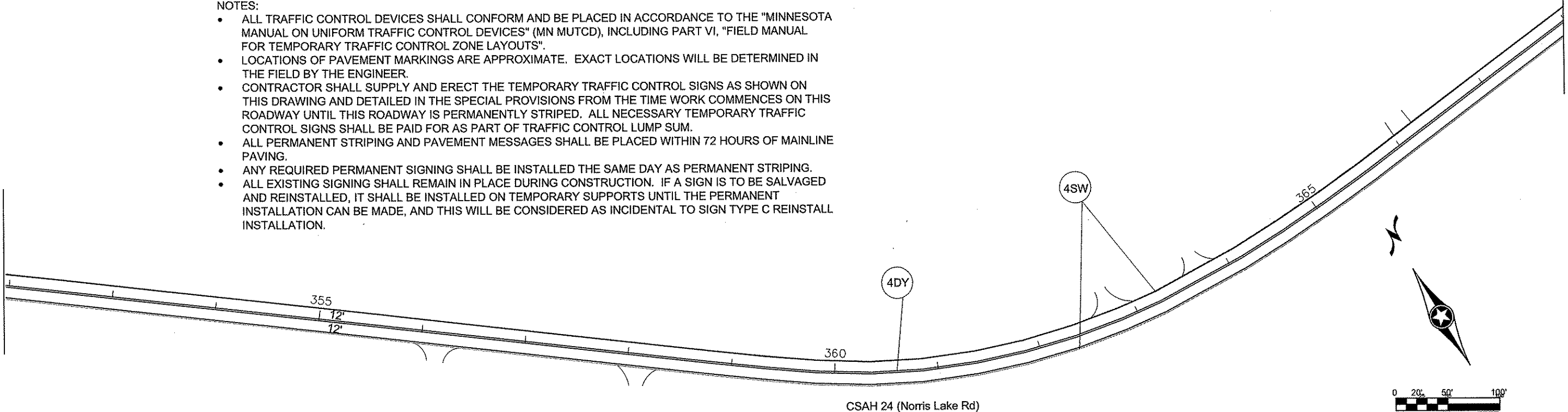
Sheet 16 of 20 Sheets

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STATION 352+00

STATION 368+00

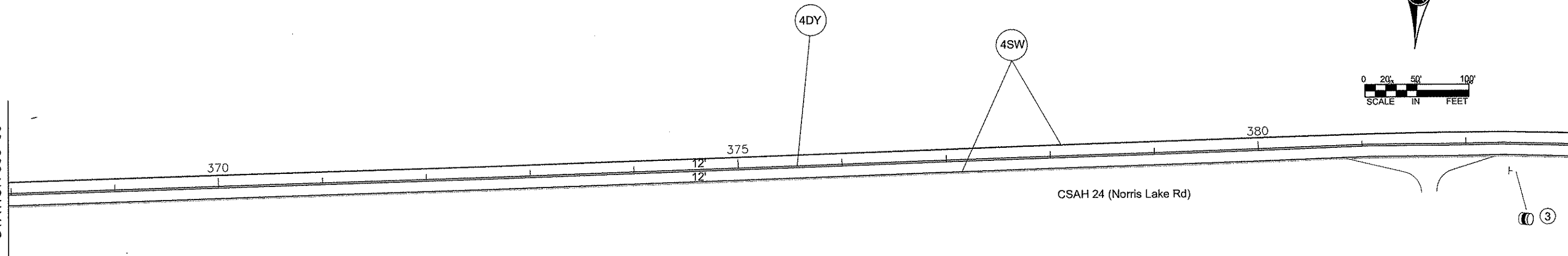


CSAH 24 (Norris Lake Rd)

0 20' 50' 100'
SCALE IN FEET

STATION 368+00

STATION 383+00



CSAH 24 (Norris Lake Rd)

0 20' 50' 100'
SCALE IN FEET

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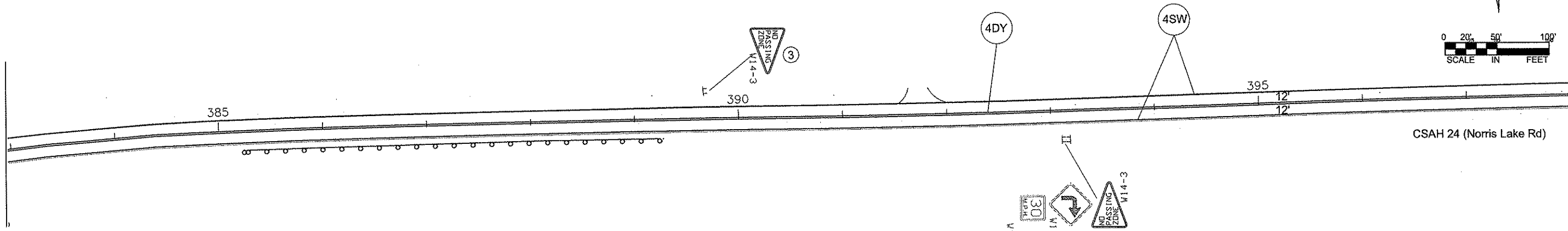
ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
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CSAH 24 (Norris Lake Rd)
TEMPORARY SIGNING
PERMANENT STRIPING
AND PAVEMENT MESSAGES

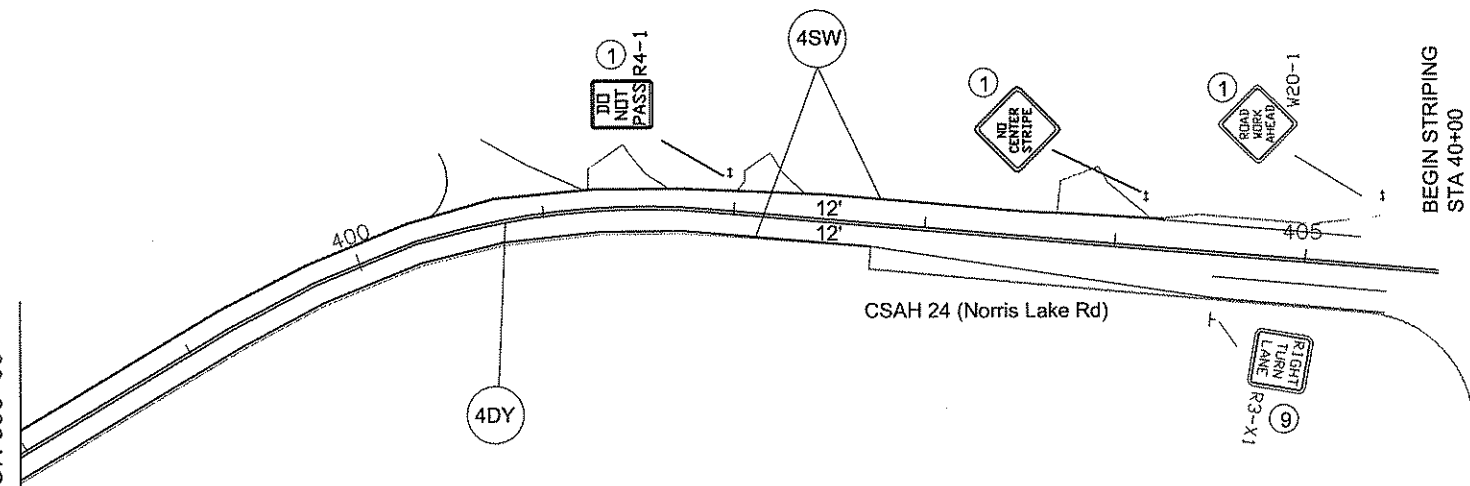
STATION 383+00

STATION 398+00



STATION 398+00

BEGIN STRIPING STA 40+00



NOTES:

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CSAH 24 (Norris Lake Rd)
 TEMPORARY SIGNING
 PERMANENT STRIPING
 AND PAVEMENT MESSAGES

Sheet 18 of 20 Sheets

SALVAGE & RE-INSTALL PERMANENT SIGNS				
STATION		SALVAGE	INSTALL	SIGN NUMBER
		SIGN TYPE C	SIGN TYPE C	
		EACH	EACH	
300+00	Lt			M3-4a
300+00	Lt	1	1	M1-6
301+70	Lt			M1-6
301+70	Lt	1	1	M6-1AL
345+00	Rt			M1-6
345+00	Rt	1	1	M6-1AL
345+50	Rt			W1-7
345+50	Rt	1	1	x4-2
345+50	Rt			x4-2
345+90	Lt			M1-6
345+90	Lt	1	1	M6-1AR
346+20	Lt			W1-8
346+20	Lt	1	1	W1-8
347+00	Rt			M3-2A
347+00	Rt	1	1	M1-6
347+05	Lt			W1-8
347+05	Lt	1	1	W1-8
349+50	Lt			W1-8
349+50	Lt	1	1	W1-8
350+30	Lt			W1-8
350+30	Lt	1	1	W1-8
382+40	Rt	1		terminal post
389+60	Lt	1		W14-3
393+10	Rt	1		W14-3
TOTAL		13	10	

TEMPORARY TRAFFIC CONTROL SIGNS						
M.U.T.C.D. CODE	SIZE	PANEL AREA FT. ²	INSERT	QUANTITY	No. POST MOUNTING HEIGHT (TO PAVEMENT EDGE)	
W8-12	48" x 48"	16.00		4	7.00	
R4-1	24" x 30"	5.00	 R4-1	4	7.00	
R4-2	24" x 30"	5.00	 R4-2	0	7.00	
W8-1A	48" x 48"	16.00	 W8-1A	AS NEEDED		
W8-1A	48" x 48"	16.00		AS NEEDED		
W8-8	48" x 48"	16.00		AS NEEDED		
W8-11	48" x 48"	16.00	 W8-11	AS NEEDED		
W20-1	48" x 48"	16.00	 W20-1	AS NEEDED (ESTIMATED 5)		

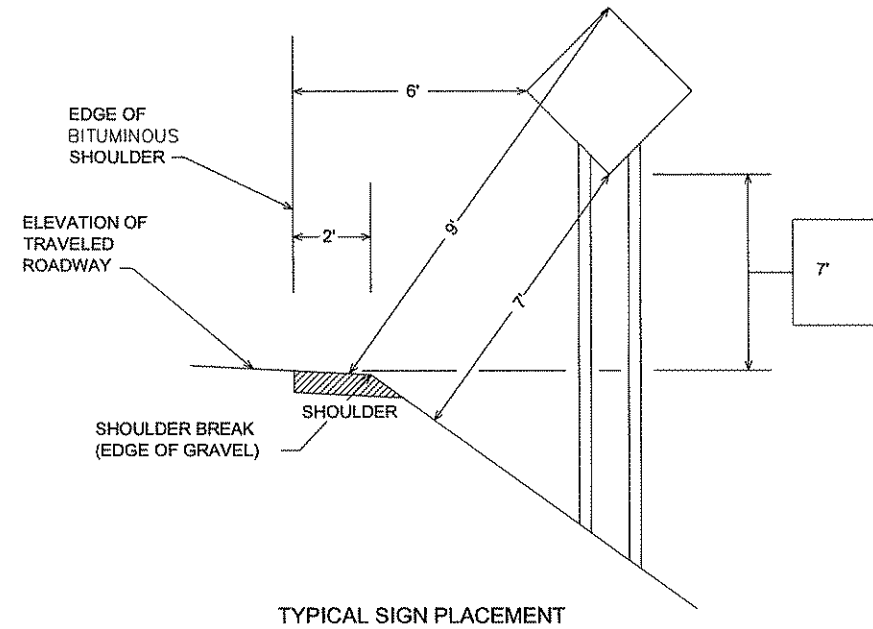
F & I PERMANENT SIGNS							
M.U.T.C.D. CODE	SIZE	PANEL AREA FT. ²	INSERT	QUANTITY	No. POST MOUNTING HEIGHT (TO PAVEMENT EDGE)	TOTAL PANEL AREA FT. ²	
R3-X1	30" x 30"	6.25	 R3-X1	1	7.00	6.25	
TOTAL PANEL AREA						6.25	

- SEE SPECIAL PROVISIONS**
- ① TEMPORARY TRAFFIC CONTROL SIGN
 - ② F & I PERMANENT SIGN
 - ③ SALVAGE PERMANENT SIGN
 - ④ RE-INSTALL PERMANENT SIGN
 - ⑨ INPLACE - RETAIN

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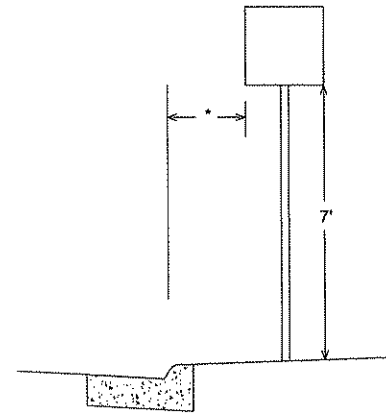
RURAL



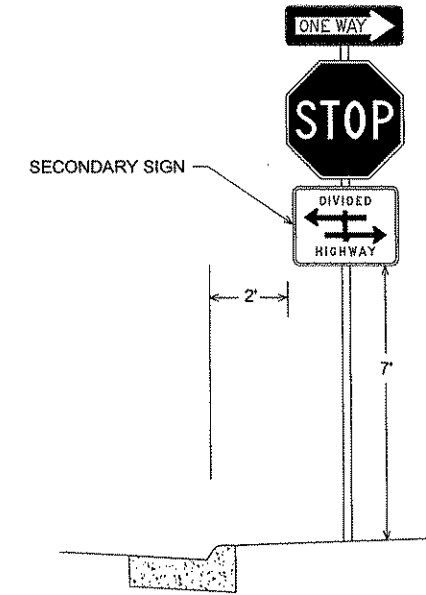
TYPICAL SIGN PLACEMENT

URBAN

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



TYPICAL SIGN PLACEMENT



NOTE:

- ALL DIMENSIONS ARE MINIMUMS
- MAINTAIN 2' CLEAR FROM SIGNS TO BITUMINOUS TRAIL

NO	DATE	BY	CHKD	APPR	REVISION

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PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *Charles Cadenhead*
 DATE: 7/2/12 LICENSE NO. 40416

DRAWN BY: MTH DATE: 1-21-11
 DESIGN BY: MTH DATE: 1-21-11
 CHECKED BY: JR DATE: 12-14-12



ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
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SIGNING & STRIPING DETAILS

Sheet 20 of 20 Sheets

PERMANENT PAVEMENT MARKING PLAN
NOTES AND GUIDELINES

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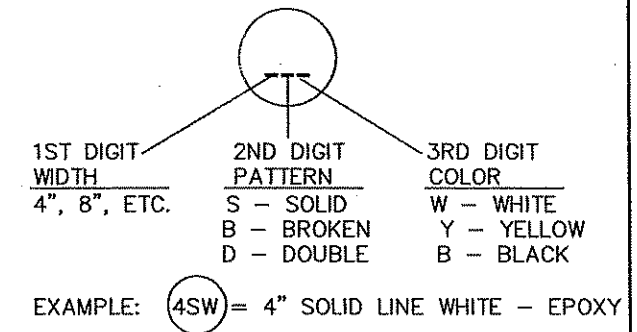
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STRIPING KEY

○ CIRCLE - EPOXY □ SQUARE PREFORMED THERMOPLASTIC

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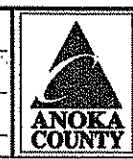


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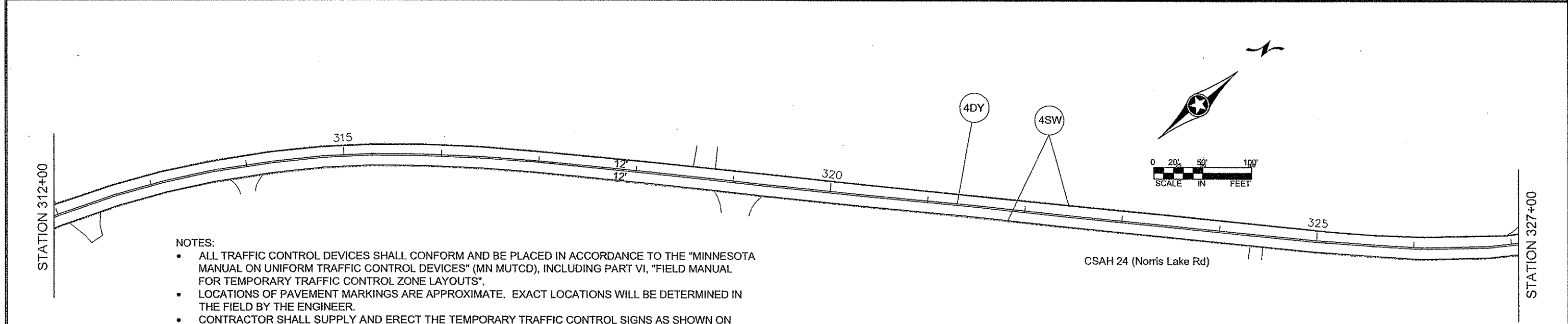
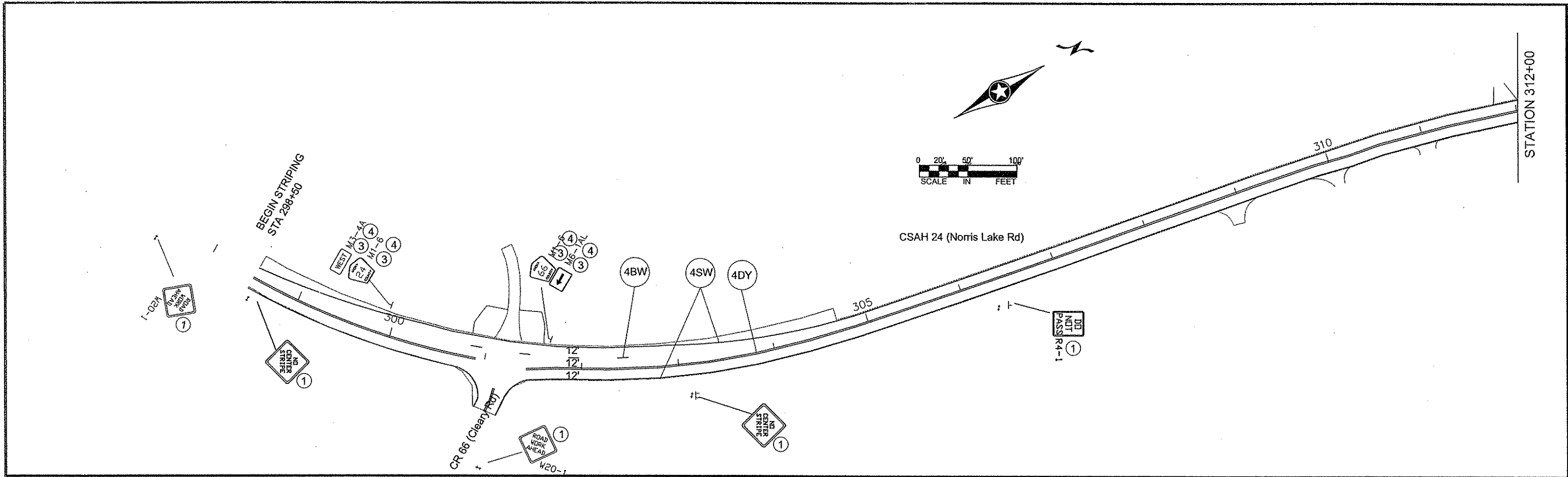
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PERMANENT MARKING
 TABULATION
 Sheet 14 of 20 Sheets



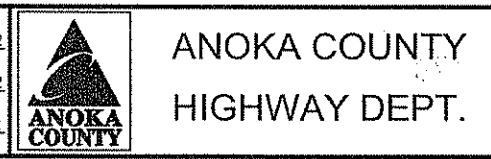
- NOTES:
- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
 - LOCATIONS OF PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
 - CONTRACTOR SHALL SUPPLY AND ERECT THE TEMPORARY TRAFFIC CONTROL SIGNS AS SHOWN ON THIS DRAWING AND DETAILED IN THE SPECIAL PROVISIONS FROM THE TIME WORK COMMENCES ON THIS ROADWAY UNTIL THIS ROADWAY IS PERMANENTLY STRIPED. ALL NECESSARY TEMPORARY TRAFFIC CONTROL SIGNS SHALL BE PAID FOR AS PART OF TRAFFIC CONTROL LUMP SUM.
 - ALL PERMANENT STRIPING AND PAVEMENT MESSAGES SHALL BE PLACED WITHIN 72 HOURS OF MAINLINE PAVING.
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NO	DATE	BY	CKD	APPR	REVISION

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

PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/9/12 REG. NO. 40416

DRAWN BY: MTH DATE 1/27/2012
 DESIGN BY: MTH DATE 1/27/2012
 CHECKED BY: JR DATE 2/14/2012



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. 12-17-24

CSAH 24 (Norris Lake Rd)
 TEMPORARY SIGNING
 PERMANENT STRIPING
 AND PAVEMENT MESSAGES

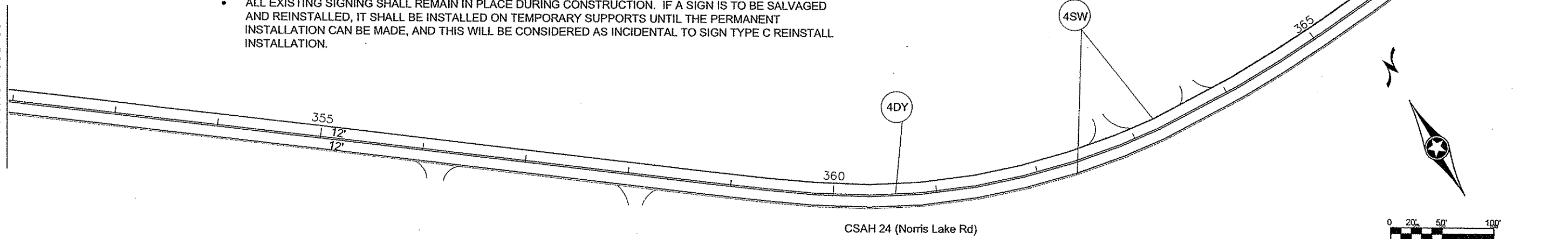
Sheet 15 of 20 Sheets

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STATION 352+00

STATION 368+00

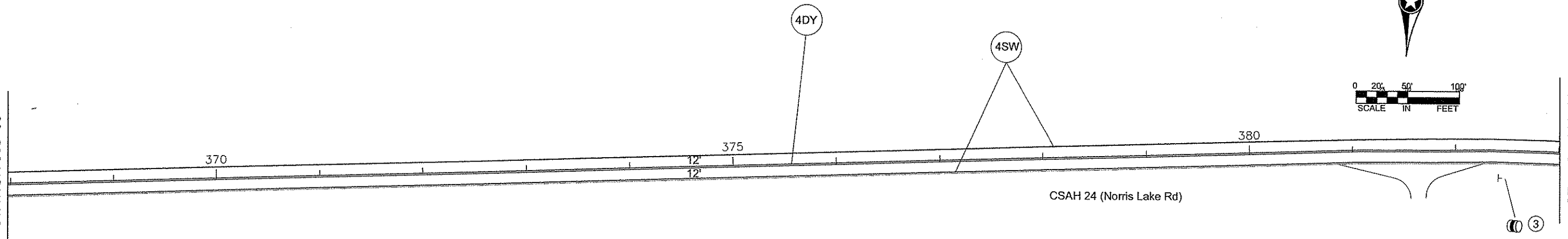


CSAH 24 (Norris Lake Rd)



STATION 368+00

STATION 383+00



CSAH 24 (Norris Lake Rd)



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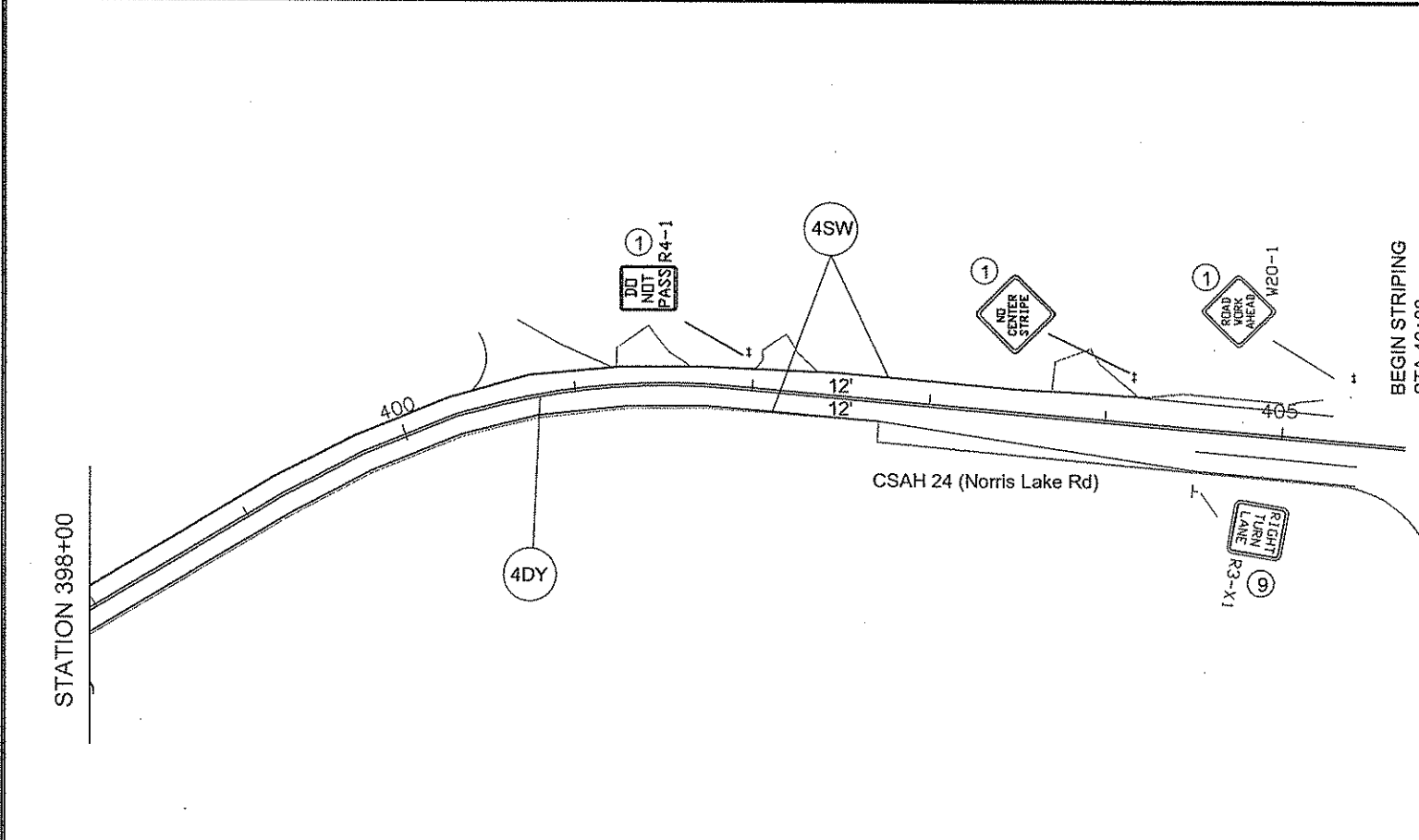
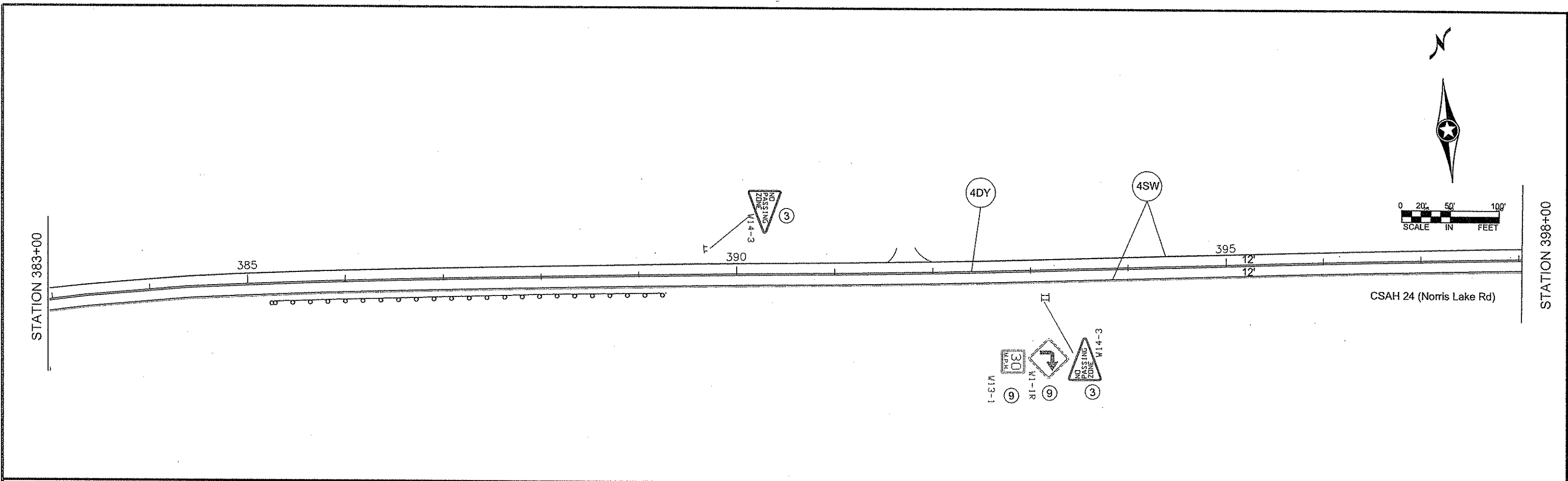
DRAWN BY: MTH DATE 1/27/2012
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ANOKA COUNTY
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CSAH 24 (Norris Lake Rd)
 TEMPORARY SIGNING
 PERMANENT STRIPING
 AND PAVEMENT MESSAGES



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CSAH 24 (Norris Lake Rd)
 TEMPORARY SIGNING
 PERMANENT STRIPING
 AND PAVEMENT MESSAGES

Sheet 18 of 20 Sheets

SALVAGE & RE-INSTALL PERMANENT SIGNS				
STATION		SALVAGE SIGN TYPE C	INSTALL SIGN TYPE C	SIGN NUMBER
		EACH	EACH	
300+00	Lt	1	1	M3-4a
300+00	Lt			M1-6
301+70	Lt	1	1	M1-6
301+70	Lt			M6-1AL
345+00	Rt	1	1	M1-6
345+00	Rt			M6-1AL
345+50	Rt	1	1	W1-7
345+50	Rt			x4-2
345+50	Rt			x4-2
345+90	Lt	1	1	M1-6
345+90	Lt			M6-1AR
346+20	Lt	1	1	W1-8
346+20	Lt			W1-8
347+00	Rt	1	1	M3-2A
347+00	Rt			M1-6
347+05	Lt	1	1	W1-8
347+05	Lt			W1-8
349+50	Lt	1	1	W1-8
349+50	Lt			W1-8
350+30	Lt	1	1	W1-8
350+30	Lt			W1-8
382+40	Rt	1		terminal post
389+60	Lt	1		W14-3
393+10	Rt	1		W14-3
TOTAL		13	10	

TEMPORARY TRAFFIC CONTROL SIGNS						
M.U.T.C.D. CODE	SIZE	PANEL AREA FT. ²	INSERT	QUANTITY	No. POST MOUNTING HEIGHT (TO PAVEMENT EDGE)	
W8-12	48" x 48"	16.00		4	7.00	
R4-1	24" x 30"	5.00	 R4-1	4	7.00	
R4-2	24" x 30"	5.00	 R4-2	0	7.00	
W8-1A	48" x 48"	16.00	 W8-1A	AS NEEDED		
W8-1A	48" x 48"	16.00		AS NEEDED		
W8-8	48" x 48"	16.00		AS NEEDED		
W8-11	48" x 48"	16.00	 W8-11	AS NEEDED		
W20-1	48" x 48"	16.00	 W20-1	AS NEEDED (ESTIMATED 5)		

F & I PERMANENT SIGNS							
M.U.T.C.D. CODE	SIZE	PANEL AREA FT. ²	INSERT	QUANTITY	No. POST MOUNTING HEIGHT (TO PAVEMENT EDGE)	TOTAL PANEL AREA FT. ²	
R3-X1	30" x 30"	6.25	 R3-X1	1	7.00	6.25	
TOTAL PANEL AREA						6.25	

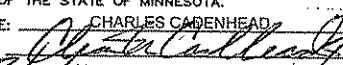
- SEE SPECIAL PROVISIONS
- ① TEMPORARY TRAFFIC CONTROL SIGN
 - ② F & I PERMANENT SIGN
 - ③ SALVAGE PERMANENT SIGN
 - ④ RE-INSTALL PERMANENT SIGN
 - ⑨ INPLACE - RETAIN

NOTES:

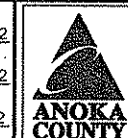
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NO	DATE	BY	CHKD	APPR	REVISION

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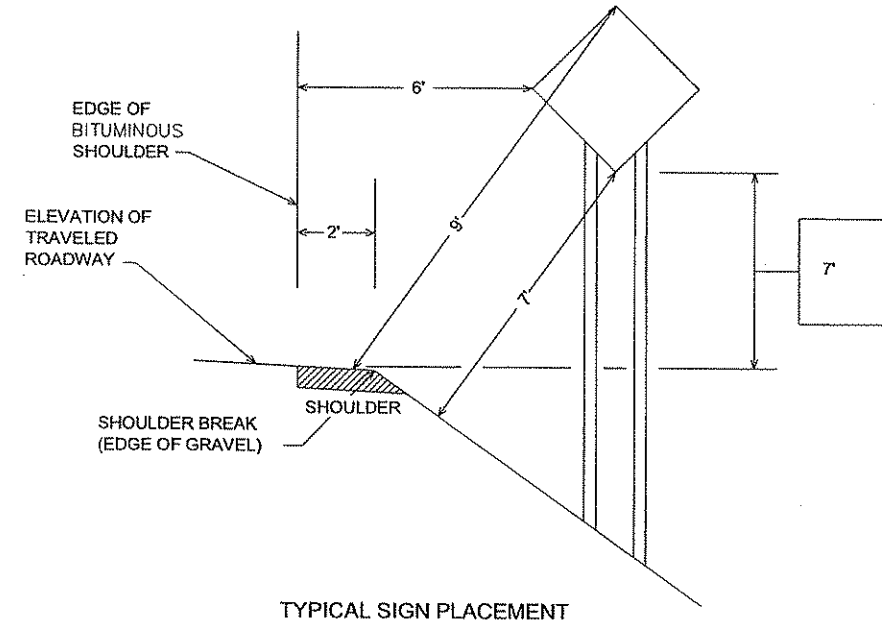


ANOKA COUNTY
HIGHWAY DEPT.

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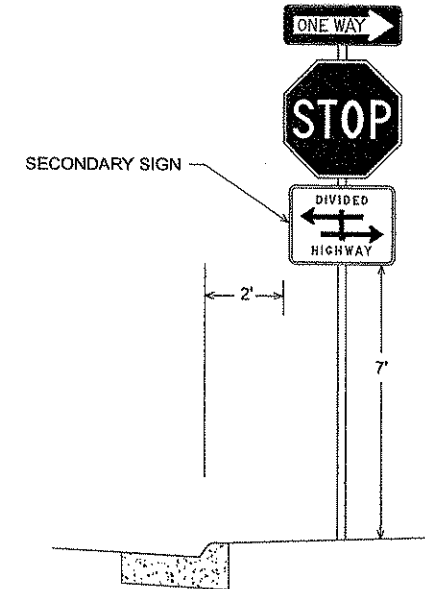
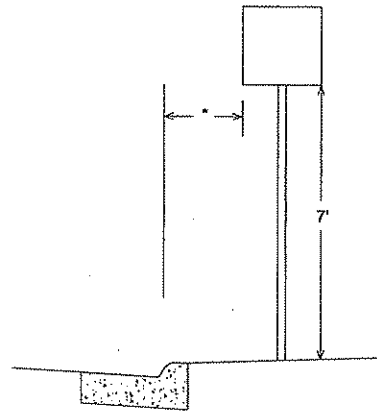
CSAH 24 (Norris Lake Rd)
TEMPORARY SIGNING
PERMANENT STRIPING
AND PAVEMENT MESSAGES

RURAL



URBAN

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



NOTE:

- ALL DIMENSIONS ARE MINIMUMS
- MAINTAIN 2' CLEAR FROM SIGNS TO BITUMINOUS TRAIL

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH 20\Bose\PROPOSED\Sign&Stripe_Details.dwg

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PRINT NAME: CHARLES GADENHEAD

SIGNATURE: *[Signature]*

DATE: 9/2/12 LICENSE NO. 40416

DRAWN BY: MTH DATE: 1-21-11

DESIGN BY: MTH DATE: 1-21-11

CHECKED BY: JR DATE: 12-14-12



ANOKA COUNTY
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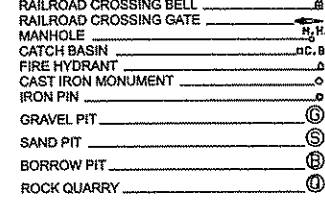
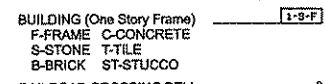
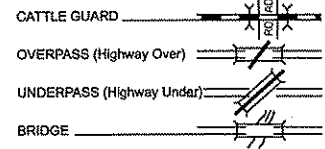
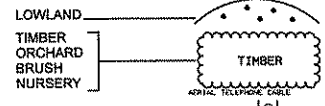
COUNTY PROJECT NO. 11-17-24

SIGNING & STRIPING DETAILS

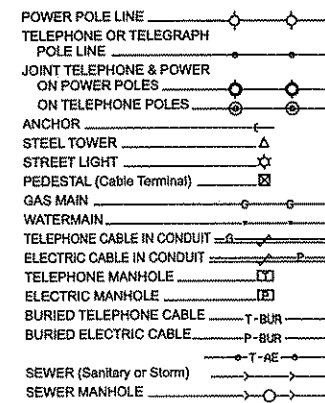
Sheet 20 of 20 Sheets

PLAN SYMBOLS

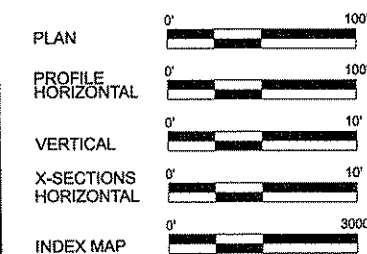
- COUNTY LINE
- TOWNSHIP OR RANGE LINE
- SECTION LINE
- QUARTER LINE
- SIXTEENTH LINE
- RIGHT OF WAY LINE
- SLOPE EASEMENT
- EXISTING RIGHT OF WAY
- PROPERTY LINE
- CORPORATE OR CITY LIMITS
- RETAINING WALL
- RAILROAD
- RAILROAD RIGHT OF WAY
- RIVER OR CREEK
- DRAINAGE DITCH
- CULVERT
- DROP INLET
-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



UTILITY SYMBOLS



SCALES



MINNESOTA DEPARTMENT OF TRANSPORTATION ANOKA COUNTY

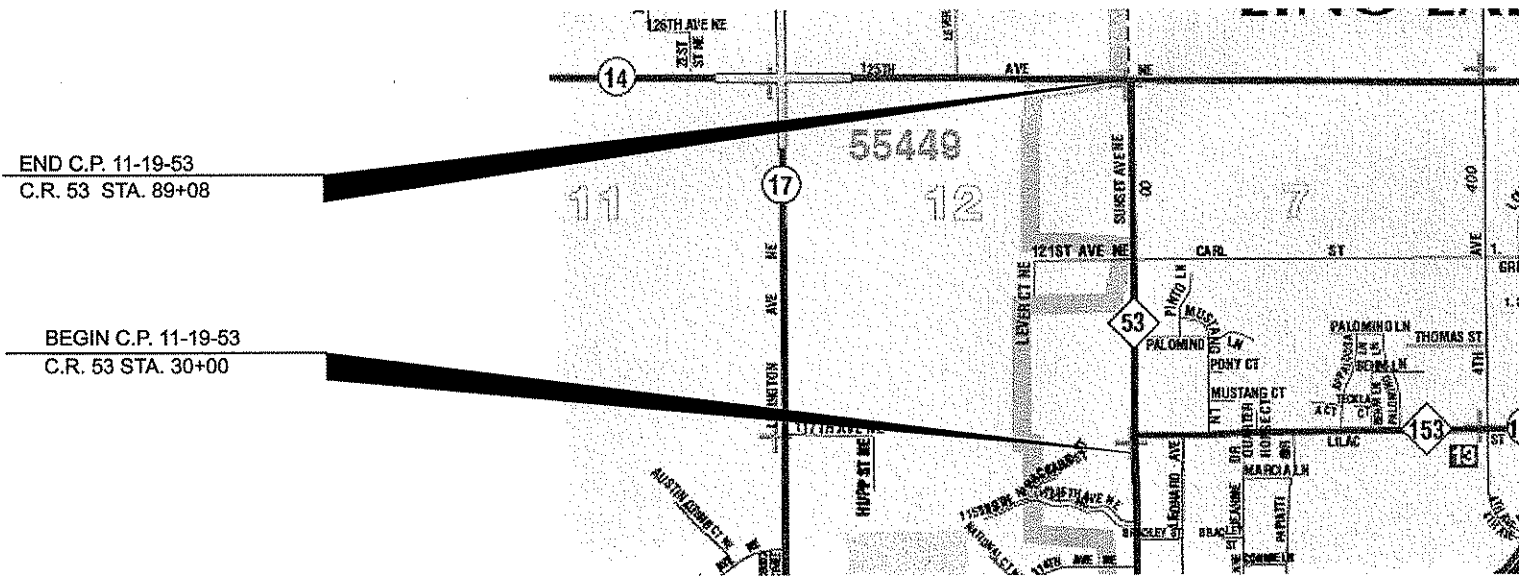
2" BITUMINOUS OVERLAY, AGGREGATE SHOULDERING,
BITUMINOUS WIDENING FOR RIGHT TURN LANES

LOCATED ON C.R. 53 BETWEEN 500' S OF LILAC ST. AND CSAH 14

CO. PROJ. NO. 11-19-53

C.R. 53

GROSS LENGTH	5908 FEET	1.119 MILES	
BRIDGES-LENGTH	0.00 FEET	0.000 MILES	
EXCEPTIONS-LENGTH	0.00 FEET	0.000 MILES	
NET LENGTH	5908 FEET	1.119 MILES	



END C.P. 11-19-53
C.R. 53 STA. 89+08

BEGIN C.P. 11-19-53
C.R. 53 STA. 30+00

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 PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS."

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	STATEMENT OF ESTIMATED QUANTITIES
3 - 5	TYPICAL SECTIONS
6 - 7	MISCELLANEOUS DETAILS
8	CALCULATIONS FOR RIGHT TURN LANES
9 - 11	CONSTRUCTION PLAN
12	PERMANENT MARKING TABULATION
13 - 15	TEMPORARY SIGNING, PERMANENT STRIPING, & PAVEMENT MESSAGES
16	SIGNING & STRIPING DETAILS

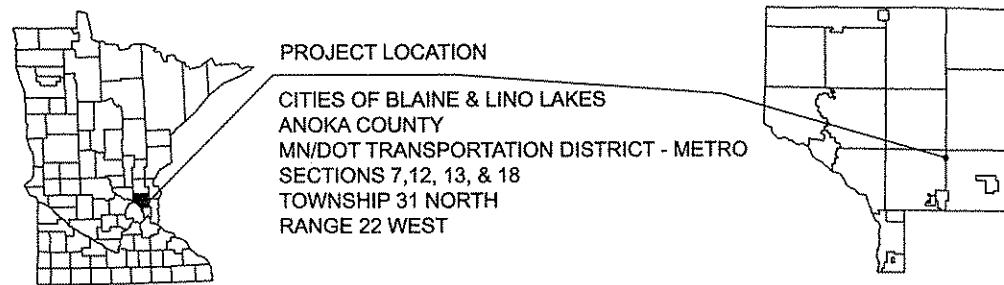
THIS PLAN CONTAINS 16 SHEETS

DESIGN DESIGNATION

ESAL 20	000
R VALUE	000
ADT (2010) =	2100
Proj. ADT (2030) =	3440
Proj. HCADT (2030) =	000
Soil Factor	NA
<u>10</u> TON DESIGN	

Functional Classification	MAJOR COLLECTOR
No. of Traffic Lanes	<u>2</u> No. of Parking Lanes <u>0</u>
Design Speed	<u>55</u> MPH <u>N/A</u>
Based on Stopping Sight Distance	<u>N/A</u>
Height of eye	<u>3.5'</u> Height of object <u>2.0'</u>
Design Speed not achieved at:	
STA. _____ TO STA. _____	MPH _____

Approved: 3/1/2012
ANOKA COUNTY ENGINEER



PROJECT LOCATION
CITIES OF BLAINE & LINO LAKES
ANOKA COUNTY
MN/DOT TRANSPORTATION DISTRICT - METRO
SECTIONS 7, 12, 13, & 18
TOWNSHIP 31 NORTH
RANGE 22 WEST

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TITLE SHEET

Sheet 1 of 16 Sheets

STATEMENT OF ESTIMATED QUANTITIES				
ITEM NO.	ITEM	NOTE NO.	UNIT	TOTAL EST. QUANT.
2021.501	MOBILIZATION		LUMP SUM	1
2104.505	REMOVE CONCRETE DRIVEWAY PAVEMENT	1, 10	SQ YD	77
2104.511	SAWING CONCRETE PAVEMENT (FULL DEPTH)	1, 10	LIN FT	66
2104.523	SALVAGE SIGN TYPE C		EACH	4
2105.602	CONSTRUCT TURN LANE	8	EACH	2
2130.501	WATER		M-GAL	13
2221.501	AGGREGATE SHOULDERING CLASS 5	2	TON	266
2232.501	MILL BITUMINOUS SURFACE (2.0")	1	SQ YD	280
2357.502	BITUMINOUS MATERIAL FOR TACK COAT		GALLON	1099
2360.501	TYPE SP 12.5 WEARING COURSE MIX (4,B)	5, 7, 10	TON	90
2360.501	TYPE SP 12.5 WEARING COURSE MIX (4,E)		TON	2302
2360.502	TYPE SP 12.5 NON-WEAR COURSE MIX (4,B)		TON	189
2531.507	6" CONCRETE DRIVEWAY PAVEMENT		SQ YD	77
2540.602	INSTALL MAIL BOX SUPPORT	6	EACH	27
2563.601	TRAFFIC CONTROL	3, 4, 5, 11	LUMP SUM	1
2564.533	FURNISH SIGN PANEL TYPE C	9	SQ FT	21.50
2564.536	INSTALL SIGN PANEL TYPE C	9	EACH	4
2564.550	DELINEATOR, TYPE X4-13		EACH	2
2581.501	REMOVABLE PREFORM PLASTIC MARKINGS	3	LIN FT	236
2582.502	4" SOLID LINE WHITE - EPOXY	5	LIN FT	12083
2582.502	4" SOLID LINE YELLOW - EPOXY	5	LIN FT	970
2582.502	4" BROKEN LINE YELLOW-EPOXY	5	LIN FT	1050
NOTES				
1	LOCATION TO BE DETERMINED BY ENGINEER.			
2	MATERIAL FOR FINISHED 1.5' GRAVEL SHOULDER AND GRAVEL ENTRANCES.			
3	CL YELLOW SKIPS TO BE APPLIED AS SOON AS POSSIBLE ON WEAR COURSE (MUST BE APPLIED BEFORE CONTRACTOR LEAVES FOR DAY).			
4	DO NOT PASS, PASS WITH CARE, NO CENTER STRIPE, AND BUMP/BUMP AHEAD SIGNS - TO BE INPLACE DURING PAVING OPERATIONS.			
5	PERMANENT MARKINGS TO BE IN PLACE WITHIN 72 HOURS OF FINAL MAINLINE PAVING.			
6	MAILBOXES TO BE INSTALLED AT THE EXISTING MAILBOX LOCATION. MAILBOX MATERIALS INCIDENTAL TO INSTALLATION.			
7	TO BE DONE IN A SEPARATE OPERATION FROM THE MAINLINE PAVING.			
8	INCLUDES TIME AND MATERIALS TO CONSTRUCT-COMMON EX., SELECT GRANULAR, AGG. BASE CL-5, TOPSOIL, MOTOR GRADER HRS., DOZER HRS., PNEUMATIC-TIRE ROLLER HRS., EROSION CONTROL BLANKET (TYPE 3), SEEDING, SEED TYPE 350, FERT. TYPE 3, AND SILT FENCE MACHINE SLICED. ESTIMATED CALCULATIONS AND QUANTITIES FOR THESE ITEMS CAN BE FOUND IN PLAN DETAILS.			
9	FURNISH AND INSTALL SIGN PANEL TYPE C, MOUNTING POSTS ARE INCIDENTAL TO ITEM.			
10	CONTRACTOR RESPONSIBLE TO CONTACT OWNER 48 HOURS BEFORE STARTING OPERATION.			
11	ALL TRAFFIC CONTROL METHODS SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.			
BASIS OF PLANNED QUANTITIES				
2130.501	WATER		70M-GAL/MILE	
2221.501	AGGREGATE SHOULDERING CLASS 5		CU YDS * 1.8 = TONS	
2357.502	BITUMINOUS MATERIAL FOR TACK COAT		.05 GAL / SQ YD	
2360.501	TYPE SP 12.5 WEARING COURSE (SPWEB440E) (4,E)		115 LBS/SQYD/IN THICKNESS	
2360.501	TYPE SP 12.5 WEARING COURSE (SPWEB440B) (4,B)		115 LBS/SQYD/IN THICKNESS	
2360.502	TYPE SP 12.5 NON-WEAR COURSE (SPNWEB440B) (4,B)		115 LBS/SQYD/IN THICKNESS	
2581.501	REMOVABLE PREFORM PLASTIC MARKINGS		2' AT 50' INTERVALS FOR SKIPS	

NO	DATE	BY	CHKD	APPR	REVISION
NAME: P:\12-01-09\CR_53_(South_of_CSAH14)\Plan\2 Seq.dgn					

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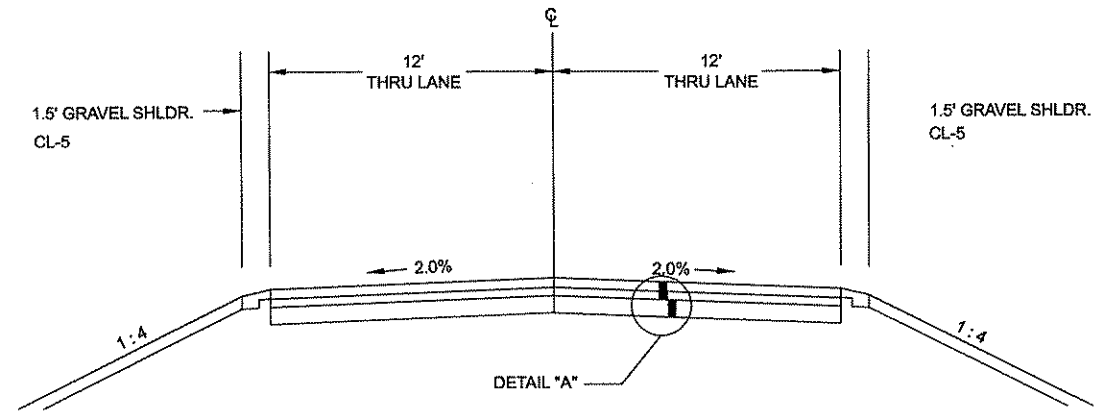
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CITY PROJECT NO. _____

COUNTY PROJECT NO. 11-19-53

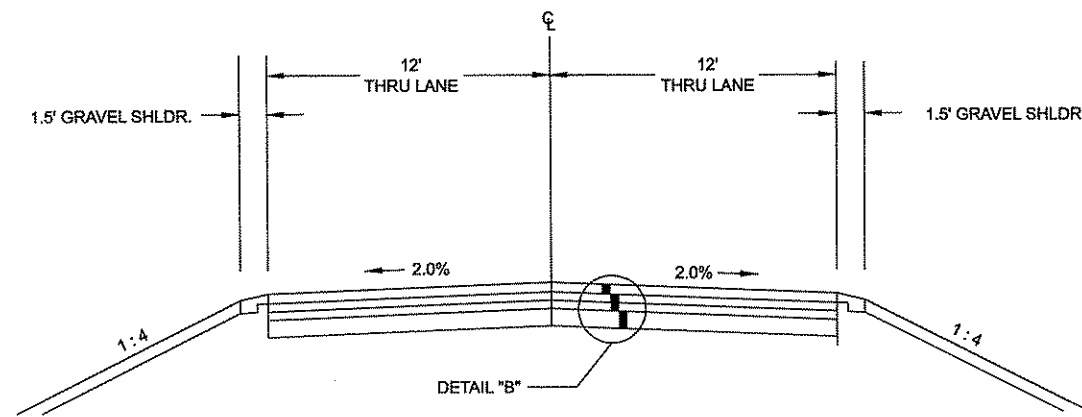
EXISTING TYPICAL SECTION

STA. 30+00 - 31+20, 36+00 - 44+60, 50+00 - 51+50, 57+00 - 84+28

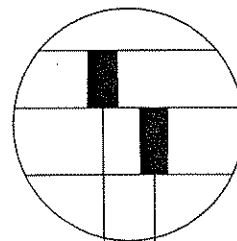


PROPOSED TYPICAL SECTION

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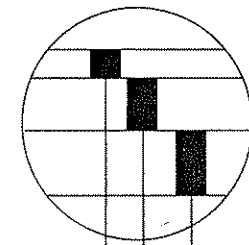


DETAIL "A"



EXISTING BITUMINOUS
6.0" CL - 5A AGG. BASE

DETAIL "B"



2" TYP SP 12.5 WEAR COURSE (SPWEB440E)
EXISTING BITUMINOUS
6.0" CL - 5A AGG. BASE

NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\12-01-00\CR_53_(South_of_CSAH14)\P\PartDetails.dgn 02/28/2012 7:13:33 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: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 LICENSE NO. 30416

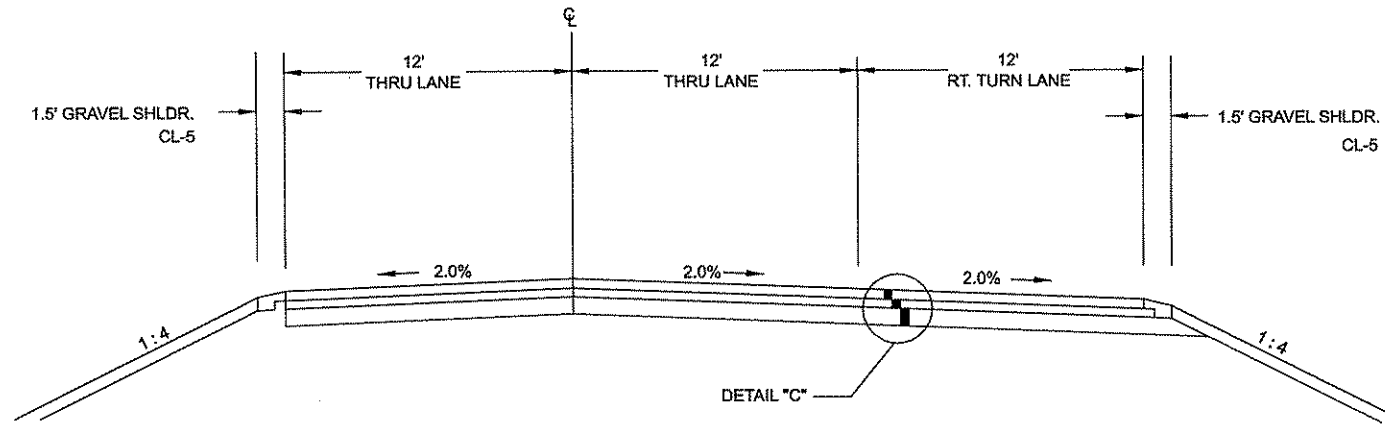
DRAWN BY: SRK DATE: 2/24/2011
 DESIGN BY: SRK DATE: 2/24/2011
 CHECKED BY: JO DATE: _____

ANOKA COUNTY
HIGHWAY DEPT.

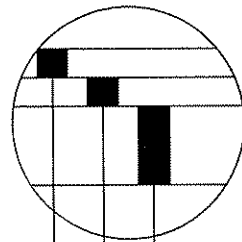
STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 11-19-53

EXISTING TYPICAL SECTION (RT. TURN LANE - LNB)

STA. 44+60 - 50+00, STA. 51+50 - 57+00



DETAIL "C"



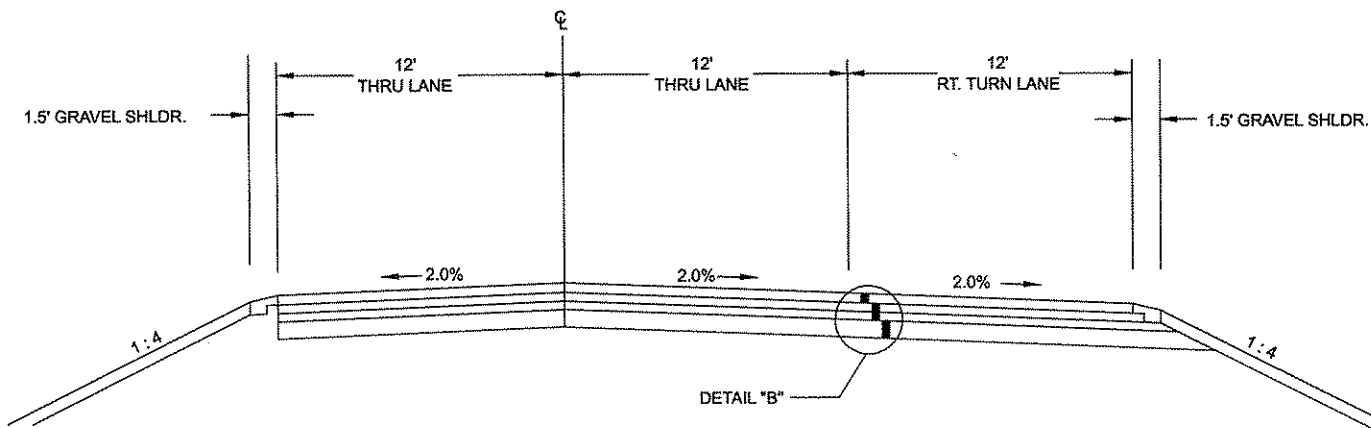
2.0" TYP SP 12.5 WEAR COURSE (SPWEB440E)

2.0" TYP SP 12.5 NON-WEAR COURSE (SPNWB440B)

6.0" CL - 5A AGG. BASE

PROPOSED TYPICAL SECTION (RT. TURN LANE - LNB)

STA. 44+60 - 50+00, STA. 51+50 - 57+00



DETAIL "B"

NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\12-01-00\CR_53 (South of CSAH14)\Plan\Details.dgn 02/28/2012 7:21:48 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: CHARLES CADENHEAD

SIGNATURE: *[Signature]*

DATE: 2/2/12 LICENSE NO. 40416

DRAWN BY: SRK DATE: 2/24/2011

DESIGN BY: SRK DATE: 2/24/2011

CHECKED BY: JO DATE: _____

ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____

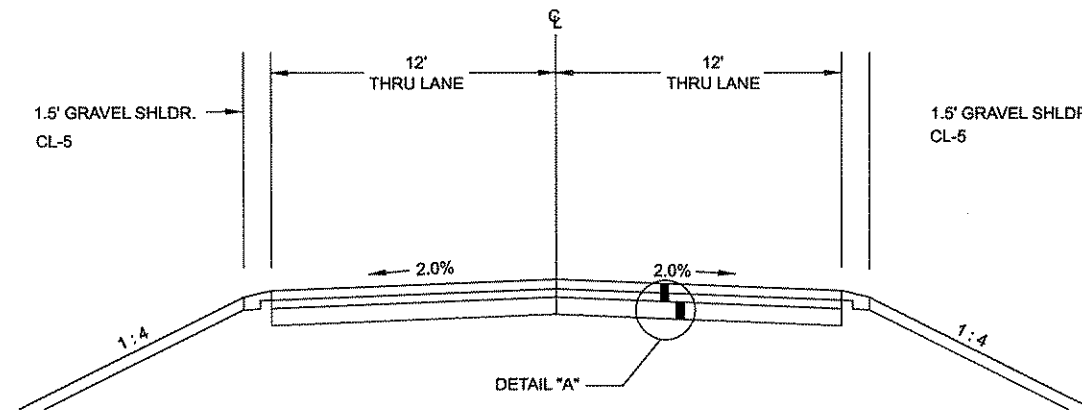
STATE AID PROJECT NO. _____

CITY PROJECT NO. _____

COUNTY PROJECT NO. 11-19-53

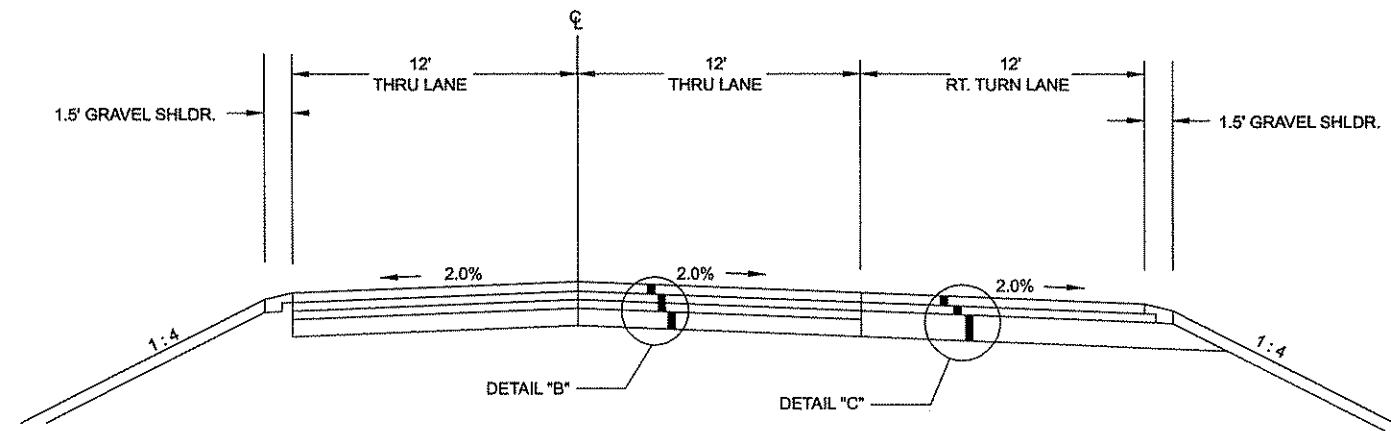
EXISTING TYPICAL SECTION

STA. 31+20 - 39+80, 84+28 - 89+08



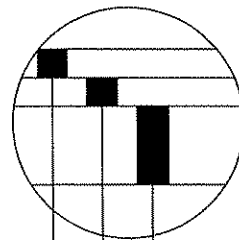
**PROPOSED TYPICAL SECTION
(RT. TURN LANE @ CSAH 14 & LILAC ST.)**

STA. 31+20 - 39+80, 84+28 - 89+08



DETAIL "C"

- 2.0" TYP SP 12.5 WEAR COURSE (SPWEB440E)
- 2.0" TYP SP 12.5 NON-WEAR COURSE (SPNWB440B)
- 6.0" CL - 5A AGG. BASE



NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\12-01-00\CR_53_(South_of_CSAH14)\Plan\Details.dgn 02/28/2012 7:22:42 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: CHARLES CADENHEAD

SIGNATURE: *[Signature]*

DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY SRK DATE 2/24/2011

DESIGN BY SRK DATE 2/24/2011

CHECKED BY JO DATE



**ANOKA COUNTY
HIGHWAY DEPT.**

STATE PROJECT NO. _____

STATE AID PROJECT NO. _____

CITY PROJECT NO. _____

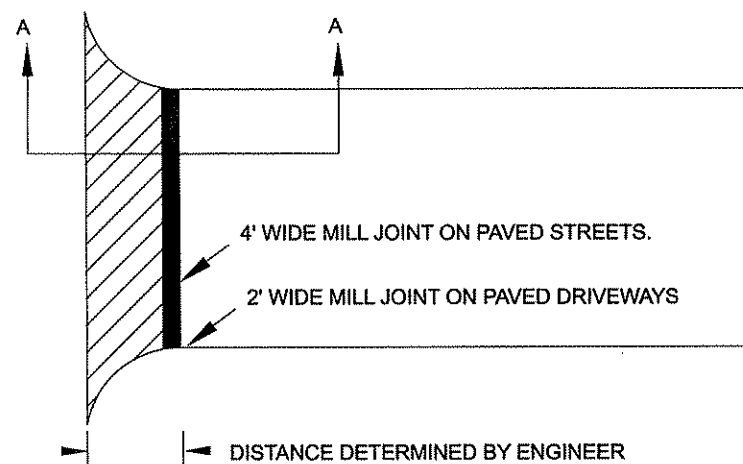
COUNTY PROJECT NO. 11-19-53

TYPICAL SECTION

Sheet 5 of 16 Sheets

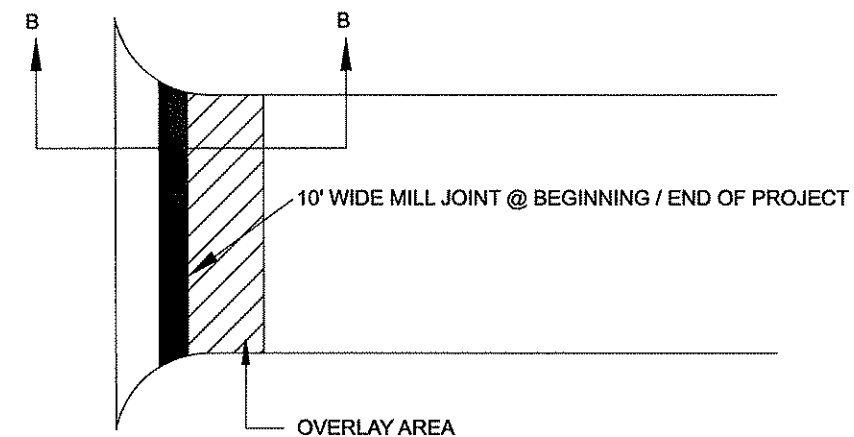
PAVED DRIVEWAYS / PAVED STREETS

JOINT DETAILS



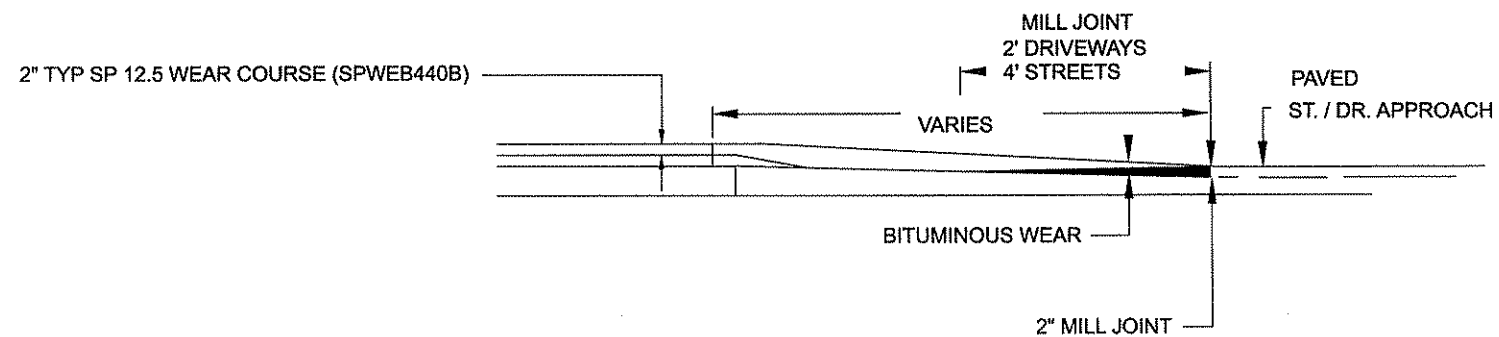
MAINLINE

JOINT DETAILS



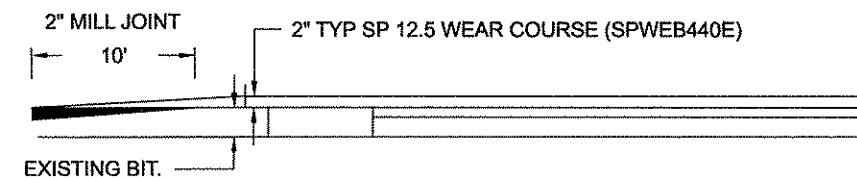
DRIVEWAYS BUMPED OUT TO BE PAVED WITH MAINLINE, PAID AS MAINLINE.
DRIVEWAYS PAVED IN DIFFERENT OPERATION FROM MAIN LINE PAVING PAID AS ST. APPROACH.
STREETS PAID AS ST. APPROACH.

JOINT DETAILS A - A



PAID AS STREET APPROACH

JOINT DETAILS B - B



NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\12-01-00\CR_53_South_of_CSAH14\PlanDetails.dgn 02/28/2012 7:24:58 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: CHARLES CADENHEAD
SIGNATURE: *[Signature]*
DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY SRK DATE 2/24/2011
DESIGN BY SRK DATE 2/24/2011
CHECKED BY JO DATE

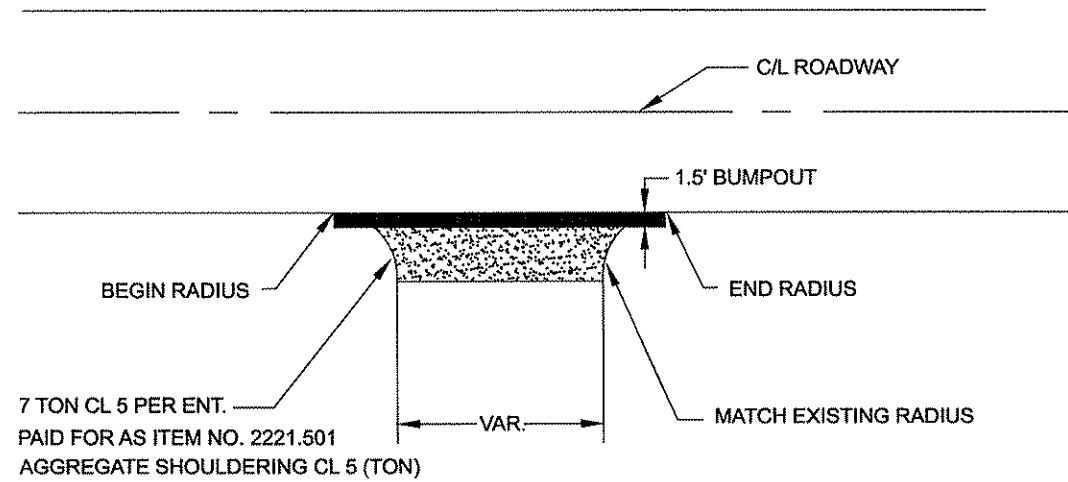


ANOKA COUNTY
HIGHWAY DEPT.

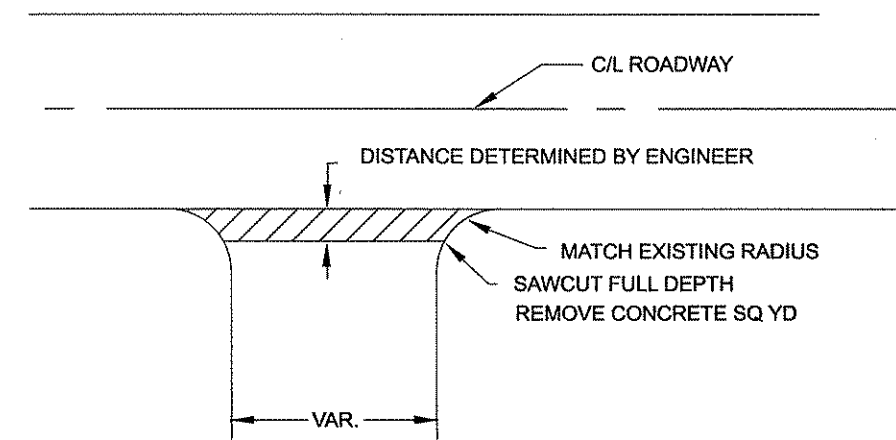
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STATE AID PROJECT NO. _____
CITY PROJECT NO. _____
COUNTY PROJECT NO. 11-19-53

MISCELLANEOUS DETAILS
Sheet 6 of 16 Sheets

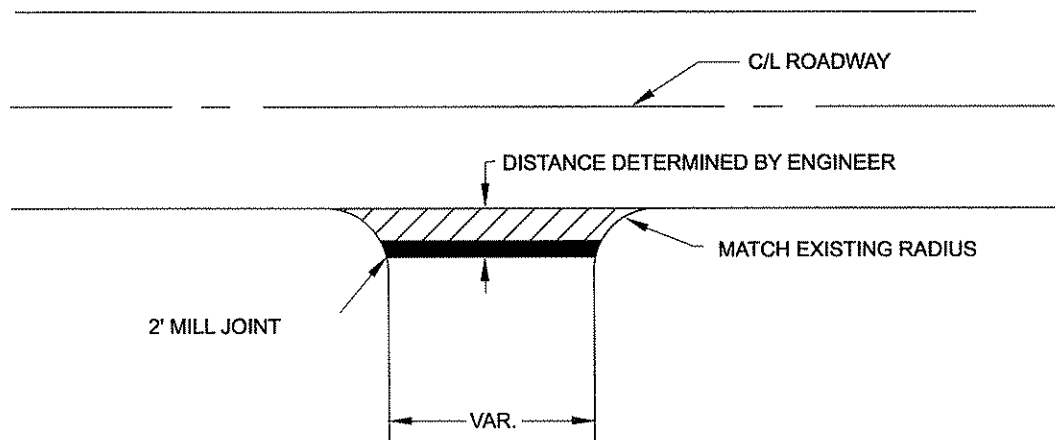
GRAVEL DRIVEWAYS AND FEILD ENTRANCES



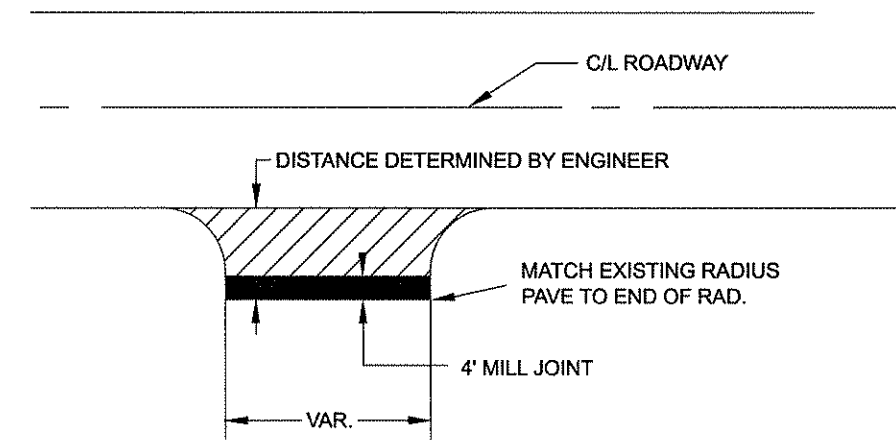
CONCRETE DRIVEWAYS



PAVED DRIVEWAYS



PAVED STREET APPROACHES



DRIVEWAYS BUMPED OUT AND PAVED WITH MAINLINE PAID AS MAINLINE.
 DRIVEWAYS PAVED IN DIFFERENT OPERATION FROM MAIN LINE PAVING PAID AS ST./DR. APPROACH.

NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\12-01-00\CR_53 (South of CSAH14)\Plan\Details.dgn 02/28/2012 7:38:50 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: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 2/28/12 LICENSE NO. 40416

DRAWN BY: SRK DATE: 2/24/2011
 DESIGN BY: SRK DATE: 2/24/2011
 CHECKED BY: JO DATE: _____



ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 11-19-53

MISCELLANEOUS DETAILS
 Sheet 7 of 16 Sheets

ESTIMATED QUANTITIES FOR RIGHT TURN LANES											
CONSTRUCT TURN LANE (LILAC ST.)											
	STATION	STATION	LENGTH	WIDTH	DEPTH	CU YDS	SQ YDS	TONS	ACRE	LBS	HOURS
COMMON EX	31+80	36+00	420.0	6.3	0.5	48.8					
SELECT GRANULAR (CV)	31+80	36+00	420.0	12	1.0	192.3					
CLASS 5	31+80	36+00	420.0	12	0.5	93.3					
TOPSOIL	31+80	36+00	420.0					19.6			
MOTOR GRADER TIME	31+80	36+00	420.0								2.0
PNEUMATIC TIRE ROLLER TIME	31+80	36+00	420.0								2.0
DOZER TIME	31+80	36+00	420.0								2.0
SEEDING (ACRE)	31+80	36+00	420.0						0.09		
SEED MIXTURE 350 (LBS)	31+80	36+00	420.0							7.6	
EROSION CONTROL BLANKET	31+80	36+00	420.0				426.7				
FERTILIZER TYPE 3 (LBS)	31+80	36+00	420.0							31.5	
SILT FENCE	31+80	36+00	465.0								
CONSTRUCT TURN LANE (CSAH 14)											
	STATION	STATION	LENGTH	WIDTH	DEPTH	CU YDS					HOURS
COMMON EX	84+28	89+08	480.0	16.6	0.5	147.5					
SELECT GRANULAR (CV)	84+28	89+08	480.0	12	3.5	753.1					
CLASS 5	84+28	89+08	480.0	12	0.5	106.7					
TOPSOIL	84+28	89+08	480.0					19.6			
MOTOR GRADER TIME	84+28	89+08	480.0								2.0
PNEUMATIC TIRE ROLLER TIME	84+28	89+08	480.0								2.0
DOZER TIME	84+28	89+08	480.0								2.0
SEEDING (ACRE)	84+28	89+08	480.0						0.09		
SEED MIXTURE 350 (LBS)	84+28	89+08	480.0							7.6	
EROSION CONTROL BLANKET	84+28	89+08	480.0				426.7				
FERTILIZER TYPE 3 (LBS)	84+28	89+08	480.0							31.5	
SILT FENCE	84+28	89+08	525.0								

AVG. DEPTH ESTIMATES IN RT TURN LANES & BYPASS AREA USING EDGE MAT, SHOULDER PI, AND DITCH BOTTOM ELEVATIONS							
CSAH 14 RIGHT TURN LANE				LILAC ST RIGHT TURN LANE			
STA	EM	SH PI	BOTTOM	STA	EM	SH PI	BOTTOM
84+50	899.56	899.28	895.29	31+80	905.34	905.19	903.56
85+50	899.44	899.19	895.66	32+00	905.18	905.03	904.13
86+50	899.32	899.10	895.27	33+00	904.93	904.93	903.73
87+50	899.37	899.05	895.34	34+00	904.89	904.76	902.88
88+50	899.41	899.01	895.40	35+00	904.22	903.92	902.61
AVG.	899.42	899.13	895.39	AVG.	904.91	904.77	903.38
AVG DEPTH = 4.03' minus 0.5' = 3.53'				AVG DEPTH = 1.53' minus 0.5' = 1.03'			

NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\12-01-00\CR_53_South_of_CSAH14\PlantDetails.dgn					
02/28/2012 7:45:41 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: CHARLES CADENHEAD

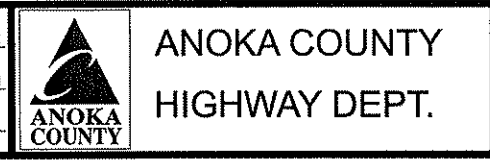
SIGNATURE: *[Signature]*

DATE: 2/2/12 LICENSE NO. 40416

DRAWN BY: SRK DATE: 2/24/2011

DESIGN BY: SRK DATE: 2/24/2011

CHECKED BY: JO DATE: _____

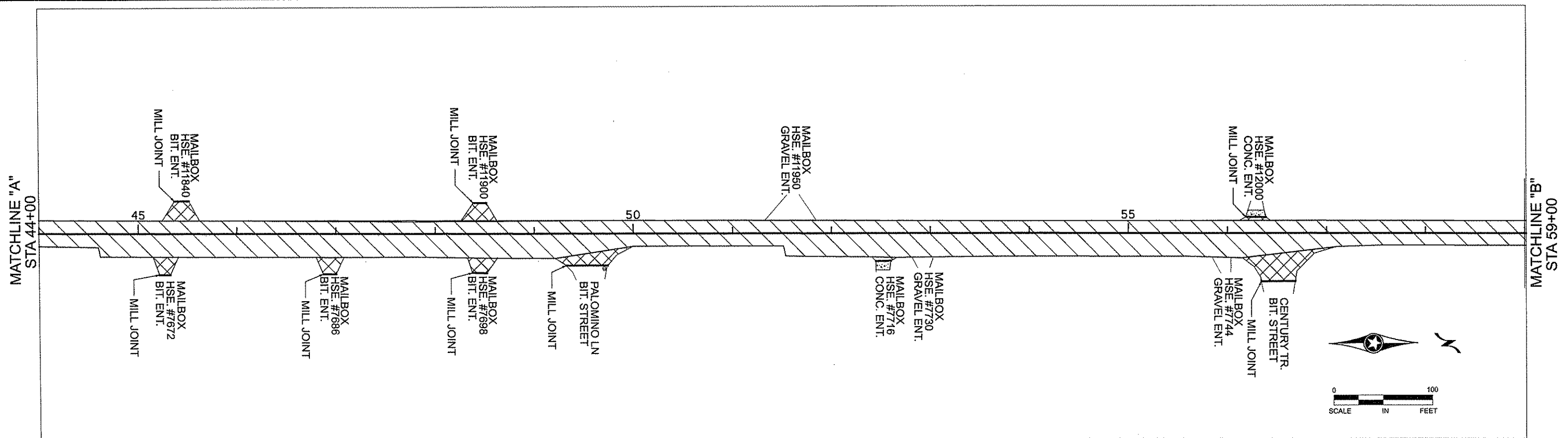
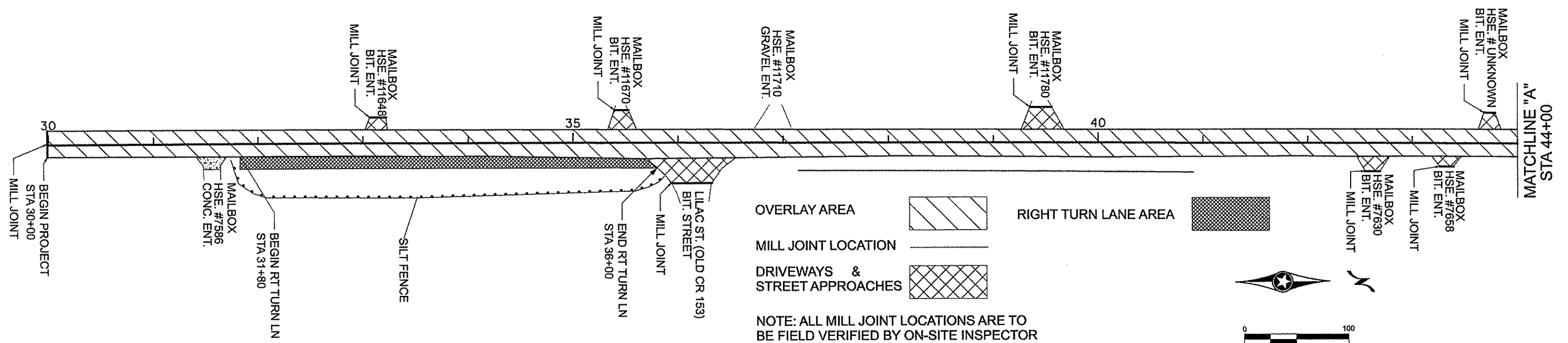


STATE PROJECT NO. _____

STATE AID PROJECT NO. _____

CITY PROJECT NO. _____

COUNTY PROJECT NO. 11-19-53



NO	DATE	BY	CKD	APPR	REVISION

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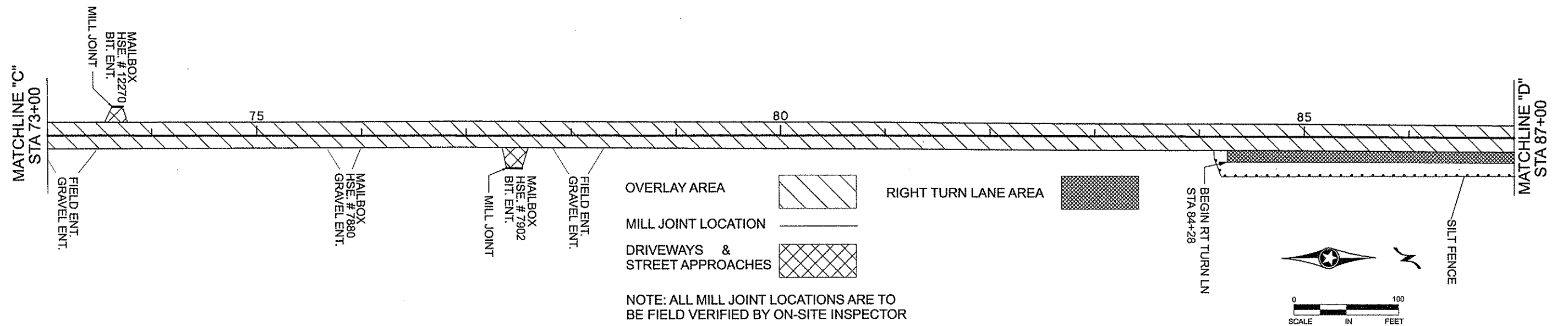
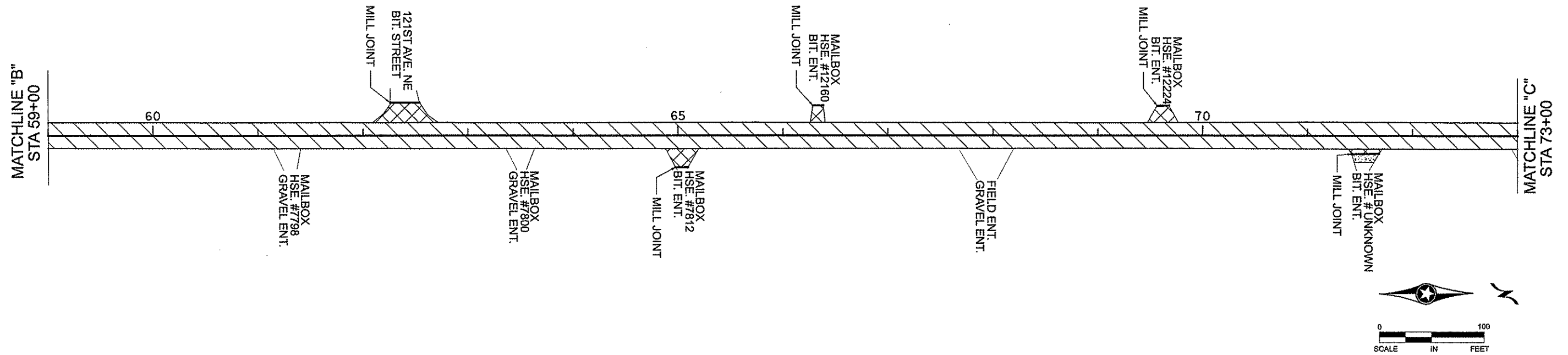
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY: SRK DATE: 2/24/2011
 DESIGN BY: SRK DATE: 2/24/2011
 CHECKED BY: JO DATE:

ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 11-19-53

CONSTRUCTION PLAN
 STA 30+00 TO 59+00
 Sheet 9 of 16 Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CR_53_(South_of_CSAH14)\Plan\3 plan sheet 1.dgn 02/28/2012 8:11:29 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: CHARLES CADENHEAD

SIGNATURE: *[Signature]*

DATE: 2/2/12 LICENSE NO. 40416

DRAWN BY: SRK DATE: 2/24/2011

DESIGN BY: SRK DATE: 2/24/2011

CHECKED BY: JO DATE: _____

ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____

STATE AID PROJECT NO. _____

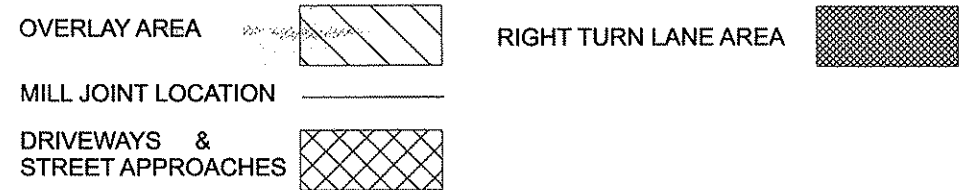
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COUNTY PROJECT NO. 11-19-53

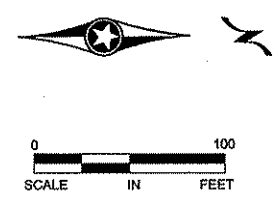
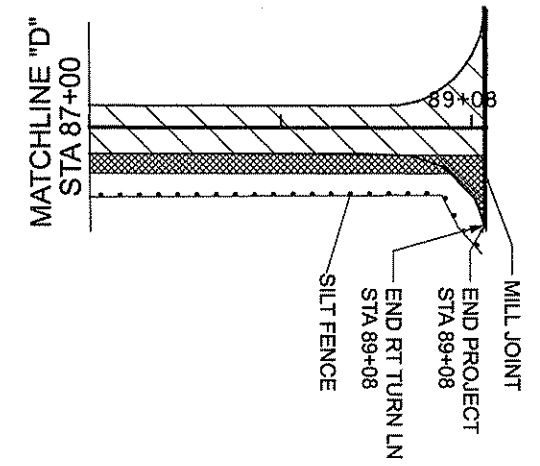
CONSTRUCTION PLAN

STA 59+00 TO 87+00

Sheet 10 of 16 Sheets



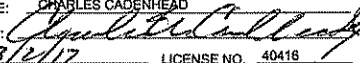
NOTE: ALL MILL JOINT LOCATIONS ARE TO BE FIELD VERIFIED BY ON-SITE INSPECTOR



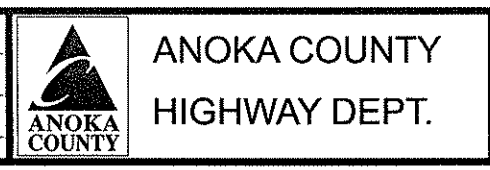
NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\12-01-00\CR_53 (South of CSAH14)\Plan\3 plan sheet 1.dgn 02/28/2012 8:11:50 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: CHARLES CADENHEAD
 SIGNATURE: 
 DATE: 3/2/12 LICENSE NO. 40418

DRAWN BY SRK DATE 2/24/2011
 DESIGN BY SRK DATE 2/24/2011
 CHECKED BY JO DATE



STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 11-19-53

CONSTRUCTION PLAN
 STA 87+00 TO 89+08
 Sheet 11 of 16 Sheets

PERMANENT PAVEMENT MARKING PLAN
NOTES AND GUIDELINES

GENERAL INFORMATION:

THE ENGINEER'S INVOLVEMENT IN THE APPLICATION OF THE MATERIAL SHALL BE LIMITED TO FIELD CONSULTATION AND INSPECTION. ANOKA COUNTY HIGHWAY DEPARTMENT WILL PLACE NECESSARY "SPOTTING" AT APPROPRIATE POINTS TO PROVIDE HORIZONTAL CONTROL FOR STRIPING AND TO DETERMINE NECESSARY STARTING AND CUTOFF POINTS, LONGITUDINAL JOINTS, PAVEMENT EDGES AND EXISTING MARKINGS MAY SERVE AS HORIZONTAL CONTROL WHEN SO DIRECTED.

EDGE LINES AND LANE LINES ARE TO BE BROKEN ONLY AT INTERSECTIONS WITH PUBLIC ROADS AND AT PRIVATE ENTRANCES IF THEY ARE CONTROLLED BY A YIELD SIGN, STOP SIGN OR TRAFFIC SIGNAL. THE BREAK POINT IS TO BE AT THE START OF THE RADIUS FOR THE INTERSECTION OR AT MARKED STOP LINES OR CROSSWALKS.

A TOLERANCE OF 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.

EPOXY:

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 EPOXY PAVEMENT MARKINGS.

THE EPOXY MARKING APPLICATION SHALL IMMEDIATELY FOLLOW THE PAVEMENT CLEANING. GLASS BEANS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE EPOXY RESIN LINE TO PROVIDE AN IMMEDIATE NO-TRACK SYSTEM.

AN EPOXY RESIN LINE 4" WIDE AND 15 MILL THICKNESS (WET), REQUIRES AN APPLICATION RATE OF ONE (1) GALLON OF COMPONENTS FOR 320 FEET OF LINE. GLASS BEADS SHALL BE APPLIED AT A POUND PER GALLON RATE SUFFICIENT TO ACHIEVE AN ACCEPTABLE NO-TRACK SYSTEM.

OPERATIONS SHALL BE CONDUCTED ONLY WHEN THE ROAD PAVEMENT SURFACE TEMPERATURES ARE 50 DEGREES FAHRENHEIT OR GREATER.

PERMANENT PAVEMENT MARKINGS SHALL NOT BE PLACED OVER TEMPORARY TAPE MARKINGS.

PREFORMED THERMOPLASTIC:

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

PAINT:

AT THE TIME OF APPLYING THE MARKING MATERIAL, THE APPLICATION AREA SHALL BE FREE OF CONTAMINATION. THE CONTRACTOR SHALL CLEAN THE ROADWAY SURFACE PRIOR TO THE LINE APPLICATION IN A MANNER AND TO THE EXTENT REQUIRED BY THE ENGINEER.

GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE PAINT LINE.

EXCEPT WHEN USED AS A TEMPORARY MARKING, PAVEMENT MARKINGS SHALL ONLY BE APPLIED IN SEASONABLE WEATHER WHEN AIR TEMPERATURE IS 50 DEGREES FARHENHEIT OR HIGHER AND SHALL NOT BE APPLIED WHEN THE WIND OR OTHER CONDITIONS CAUSE A FILD OR DUST TO BE DEPOSITED ON THE PAVEMENT SURFACE AFTER CLEANING AND BEFORE THE MARKING MATERIAL CAN BE APPLIED.

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

SYMBOLS & MATERIALS LEGEND

■ CROSSWALK BLOCK WHITE PREFORMED THERMOPLASTIC

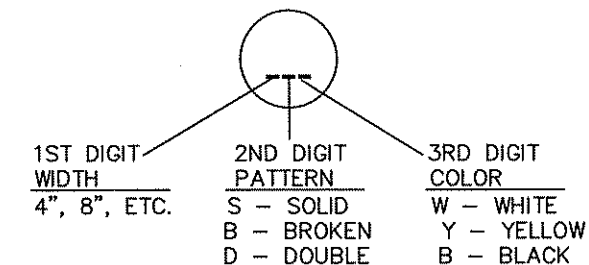
↩ PAVEMENT MESSAGE (LEFT ARROW) PREFORMED THERMOPLASTIC

STRIPING KEY

○ CIRCLE - EPOXY □ SQUARE PREFORMED THERMOPLASTIC

△ TRIANGLE - PAINT

⬠ PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING



EXAMPLE: (4SW) = 4\" SOLID LINE WHITE - EPOXY

PAVEMENT MARKING QUANTITIES

Item	Quantity	Units
4\" Solid Line Yellow - Epoxy	970	Lin Ft
4\" Broken Line Yellow - Epoxy (10 ft stripe / 40 ft gap)	1050	Lin Ft
4\" Solid Line White - Epoxy	12083	Lin Ft

NO	DATE	BY	CKD	APPR	REVISION

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 DATE: 3/2/12 LICENSE NO. 40416

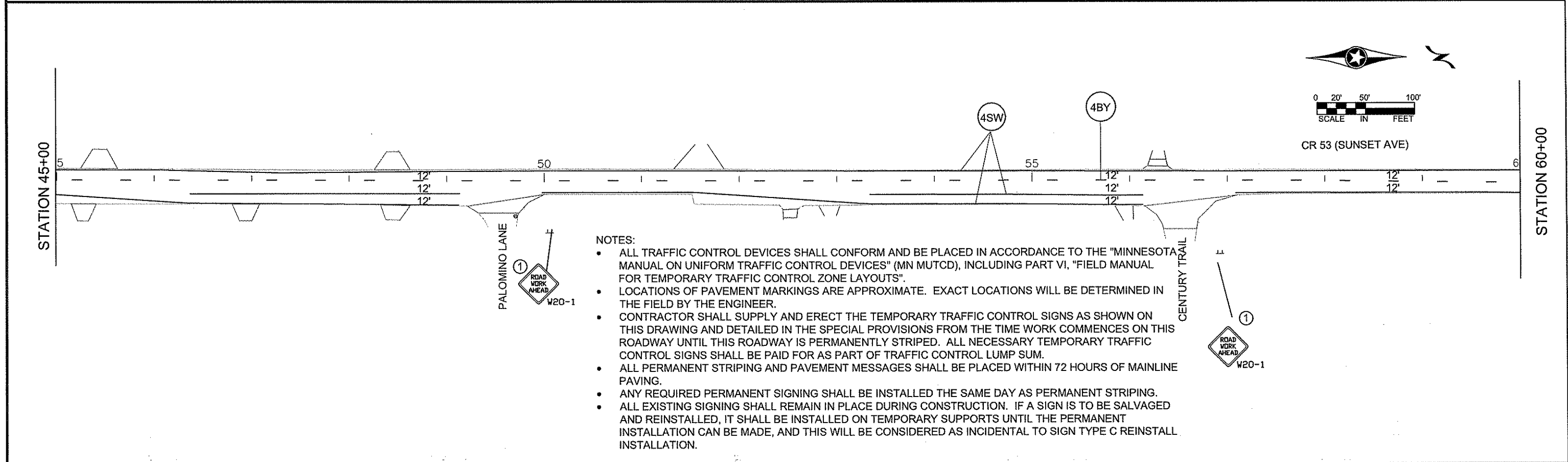
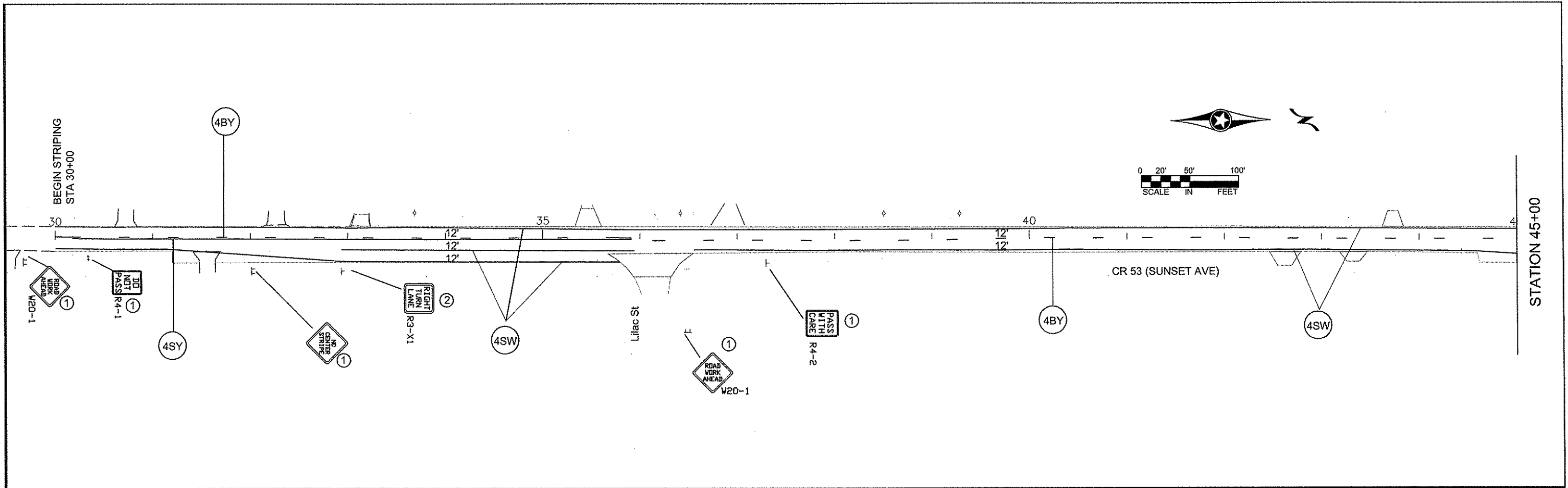
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 DESIGN BY: _____ DATE: _____
 CHECKED BY: JR DATE: 02/14/12



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. 11-19-53

PERMANENT MARKING
 TABULATION
 Sheet 12 of 16 Sheets



NOTES:

- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
- LOCATIONS OF PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- CONTRACTOR SHALL SUPPLY AND ERECT THE TEMPORARY TRAFFIC CONTROL SIGNS AS SHOWN ON THIS DRAWING AND DETAILED IN THE SPECIAL PROVISIONS FROM THE TIME WORK COMMENCES ON THIS ROADWAY UNTIL THIS ROADWAY IS PERMANENTLY STRIPED. ALL NECESSARY TEMPORARY TRAFFIC CONTROL SIGNS SHALL BE PAID FOR AS PART OF TRAFFIC CONTROL LUMP SUM.
- ALL PERMANENT STRIPING AND PAVEMENT MESSAGES SHALL BE PLACED WITHIN 72 HOURS OF MAINLINE PAVING.
- ANY REQUIRED PERMANENT SIGNING SHALL BE INSTALLED THE SAME DAY AS PERMANENT STRIPING.
- ALL EXISTING SIGNING SHALL REMAIN IN PLACE DURING CONSTRUCTION. IF A SIGN IS TO BE SALVAGED AND REINSTALLED, IT SHALL BE INSTALLED ON TEMPORARY SUPPORTS UNTIL THE PERMANENT INSTALLATION CAN BE MADE, AND THIS WILL BE CONSIDERED AS INCIDENTAL TO SIGN TYPE C REINSTALL INSTALLATION.

NO	DATE	BY	CKD	APPR	REVISION

NAME: T:\Traffic\dwg\CR 53 (Sunset Ave)\from CR 49 to CSAH 14.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: CHARLES CADENHEAD

SIGNATURE: *[Signature]*

DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY: MTH DATE 1/31/11

DESIGN BY: MTH DATE 1/31/11

CHECKED BY: JR DATE 2/14/12

ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____

STATE AID PROJECT NO. _____

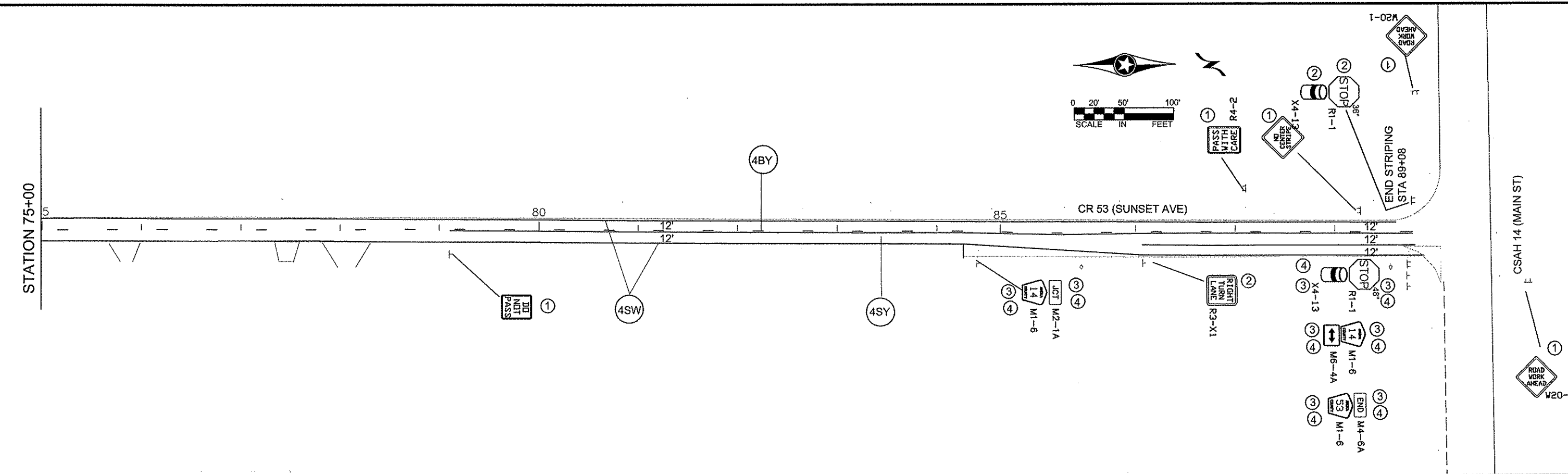
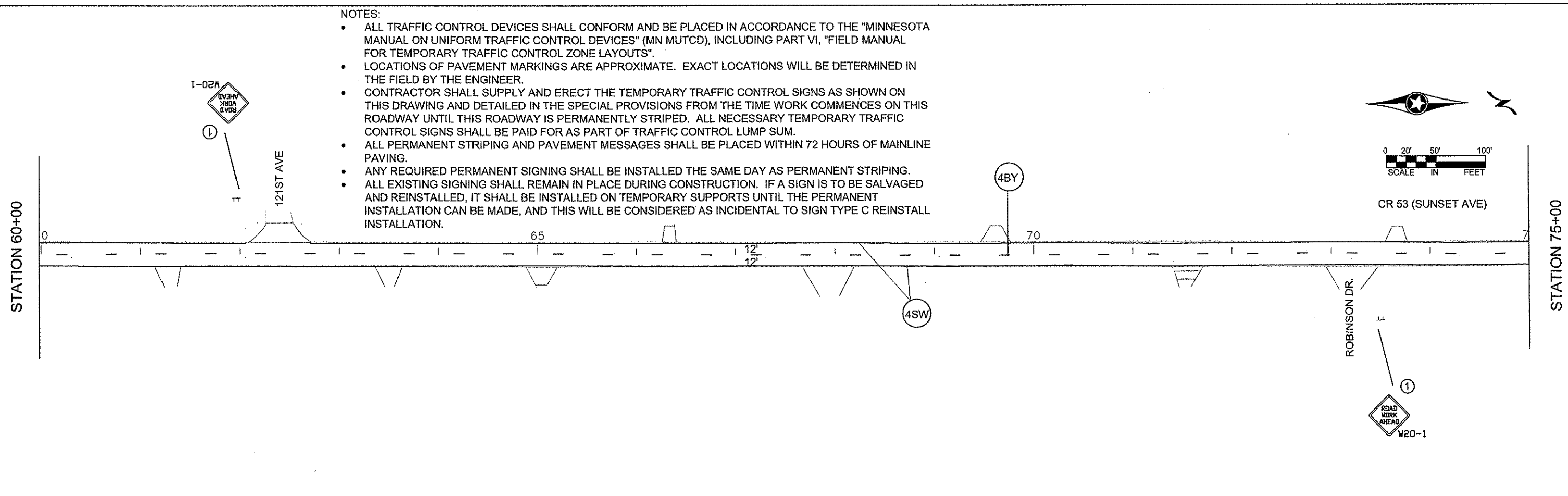
CITY PROJECT NO. _____

COUNTY PROJECT NO. 11-19-53

CR 53 SUNSET RD
TEMPORARY SIGNING
PERMANENT SIGNING & STRIPING
AND PAVEMENT MESSAGES

Sheet 13 of 16 Sheets

- NOTES:
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NO	DATE	BY	CKD	APPR	REVISION

NAME: T:\Traffic\dwg\CR 53 (Sunset Ave)\from CR 49 to CSAH 14.dwg

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PRINT NAME: CHARLES CADENHEAD

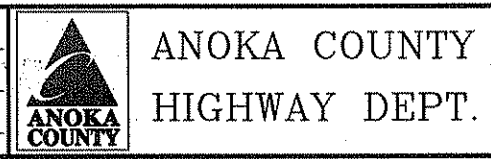
SIGNATURE: *Charles Cadenhead*

DATE: 3/9/12 LICENSE NO. 40416

DRAWN BY: MTH DATE 1/31/11

DESIGN BY: MTH DATE 1/31/11

CHECKED BY: JR DATE 2/14/12



STATE PROJECT NO. _____

STATE AID PROJECT NO. _____




CITY PROJECT NO. _____









COUNTY PROJECT NO. 11-19-53

CR 53 SUNSET RD
TEMPORARY SIGNING
PERMANENT SIGNING & STRIPING
AND PAVEMENT MESSAGES

Sheet 14 of 16 Sheets

SALVAGE & RE-INSTALL PERMANENT SIGNS						
STATION		SALVAGE SIGN	INSTALL	INSTALL SIGN	SIGN NUMBER	NOTES
		TYPE C	DELINEATOR	TYPE C		
		EACH	EACH	EACH		
84+40	Rt	1		1	M2-1A	
84+40	Rt			1	M1-6	
88+50	Lt		1		delineator	
88+50	Rt	1		1	R1-1	
88+50	Rt			1	delineator	
88+50	Rt	1		1	M1-6	
88+50	Rt			1	M6-4A	
88+50	Rt	1		1	M4-6A	
88+50	Rt			1	M1-6	
TOTAL		4	1	4		

PERMANENT SIGNS								
M.U.T.C.D.	CODE	SIZE	PANEL AREA	INSERT	QUANTITY	No. POST	MOUNTING HEIGHT (TO CENTER OF SIGN)	TOTAL AREA
			FT. ²				FT.	FT. ²
R1-1		36" x 36"	9.00		1	2	7.00	9.00
x4-13		8" x 12"			1			
R3-X1		30" x 30"	6.25		2	1	7.00	12.50
TOTAL PANEL AREA								21.50

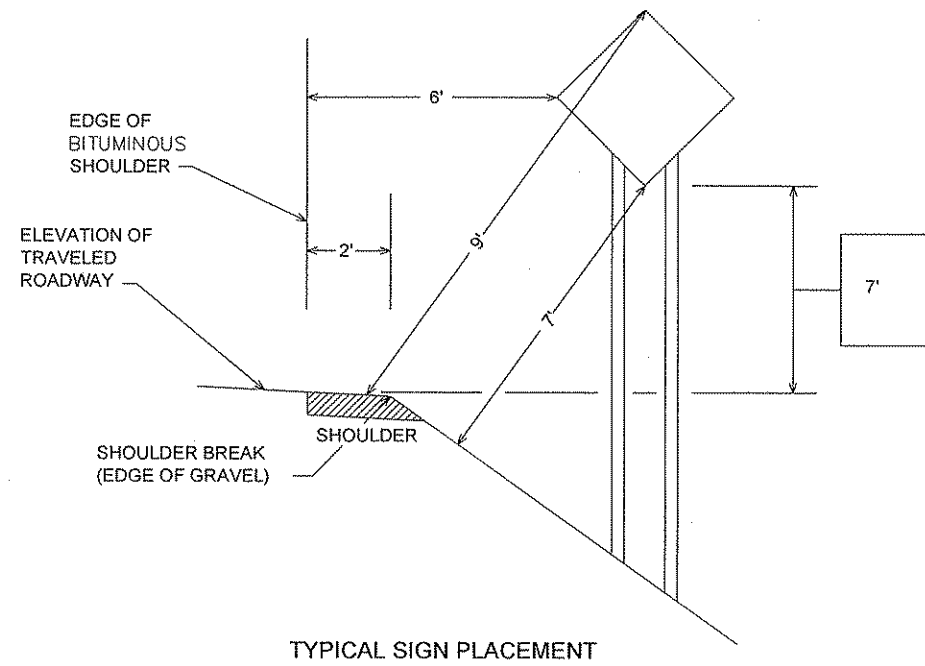
TEMPORARY TRAFFIC CONTROL SIGNS								
M.U.T.C.D.	CODE	SIZE	PANEL AREA	INSERT	QUANTITY	No. POST	MOUNTING HEIGHT (TO CENTER OF SIGN)	TOTAL AREA
			FT. ²				FT.	FT. ²
W8-12		48" x 48"	16.00		2	2	7.0'	
R4-1		24" x 30"	5.00		1	1	7.0'	
R4-2		24" x 30"	5.00		2	1	7.0'	
W8-1A		48" x 48"	16.00		AS NEEDED			
W8-1A		48" x 48"	16.00		AS NEEDED			
W8-8		48" x 48"	16.00		AS NEEDED			
W8-11		48" x 48"	16.00		AS NEEDED			
W20-1		48" x 48"	16.00		AS NEEDED (ESTIMATED 8)			

SEE SPECIAL PROVISIONS

- ① TEMPORARY TRAFFIC CONTROL SIGN
- ② F & I PERMANENT SIGN
- ③ SALVAGE PERMANENT SIGN
- ④ RE-INSTALL PERMANENT SIGN

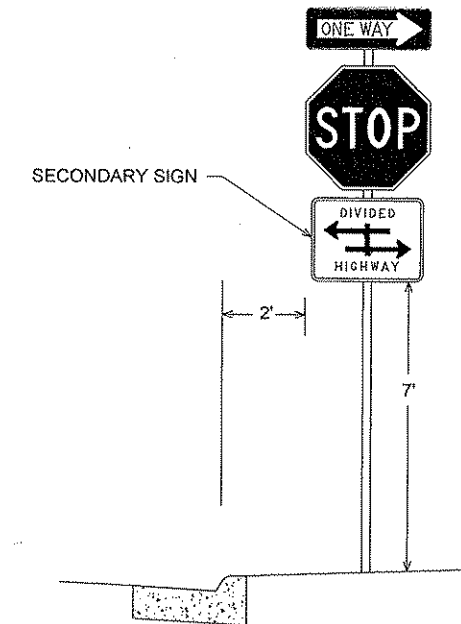
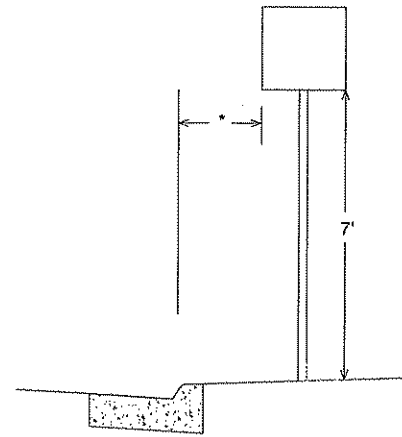
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RURAL



URBAN

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



NOTE:

- ALL DIMENSIONS ARE MINIMUMS
- MAINTAIN 2' CLEAR FROM SIGNS TO BITUMINOUS TRAIL

NO	DATE	BY	CKD	APPR	REVISION

NAME: T:\Traffic\Dwg\CR 53 (Sunset Ave)\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: CHARLES CADENHEAD
SIGNATURE: *Charles Cadenhead*
DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY MTH DATE 1-21-11
DESIGN BY MTH DATE 1-21-11
CHECKED BY JR DATE 2-14-12



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
STATE PROJECT NO. _____
STATE PROJECT NO. _____
COUNTY PROJECT NO. 11-19-53

SIGNING & STRIPING DETAILS

Sheet 16 of 16 Sheets

MINNESOTA DEPARTMENT OF TRANSPORTATION ANOKA COUNTY

CONSTRUCTION PLAN FOR BITUMINOUS RECLAMATION AND OVERLAY, CONSTRUCT RIGHT TURN LANES AND BY-PASS LANES

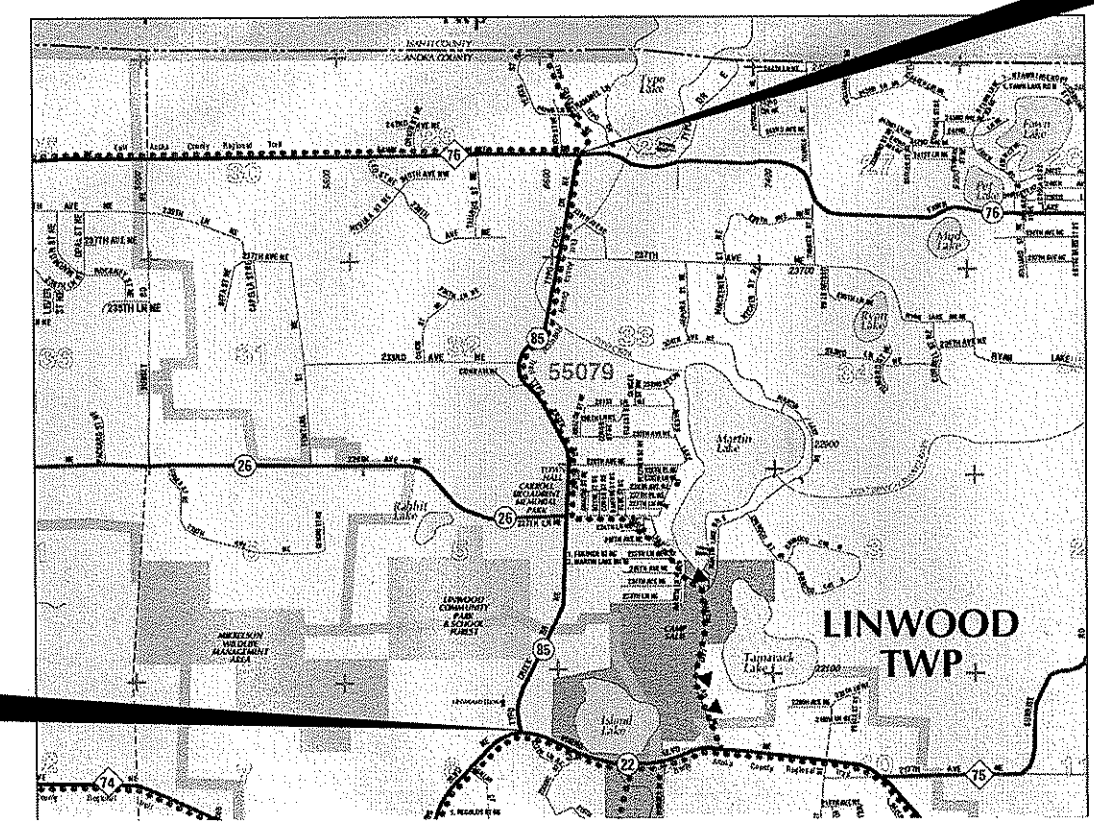
LOCATED ON C.S.A.H. 85 BETWEEN C.S.A.H. 22 AND C.S.A.H. 76

COUNTY PROJ. NO. 11-25-85

C.S.A.H. 85

GROSS LENGTH	15781 FEET	2.989 MILES
BRIDGES-LENGTH	0.00 FEET	0.000 MILES
EXCEPTIONS-LENGTH	0.00 FEET	0.000 MILES
NET LENGTH	15781 FEET	2.989 MILES

END C.P. 11-25-85
C.S.A.H. 85 STA. 167+40



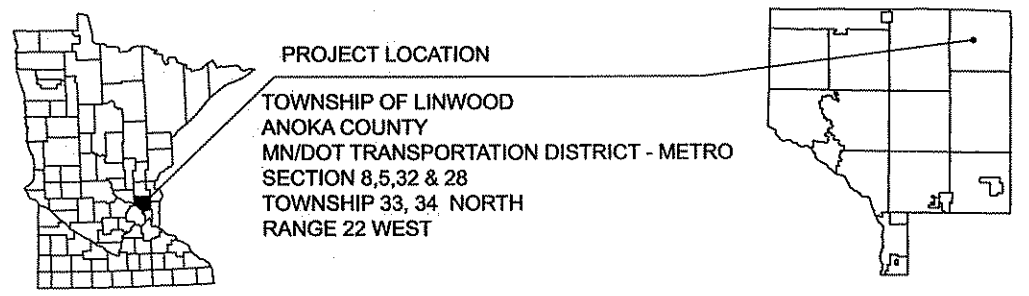
BEGIN C.P. 11-25-85
C.S.A.H. 85 STA. 9+59

TOWNSHIP OF
LINWOOD

THIS PLAN CONTAINS 22 SHEETS
DESIGN DESIGNATION

ESAL 20	000
R VALUE	000
ADT (2006) =	1729
Proj. ADT (2026) =	2420
Proj. HCADT (2026) =	2420
Soil Factor	NA
10 TON DESIGN	
Functional Classification	B MINOR ARTERIAL
No. of Traffic Lanes	<u>2</u>
No. of Parking Lanes	<u>0</u>
Design Speed	50/55 MPH
Based on Stopping Sight Distance	N/A
Height of eye	<u>3.5'</u>
Height of object	<u>2.0'</u>
Design Speed not achieved at:	N/A
STA. <u>9+59</u> TO STA. <u>167+40</u>	MPH <u>50/55</u>

- ### 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 Terminal)
 - GAS MAIN
 - WATERMAIN
 - TELEPHONE CABLE IN CONDUIT
 - ELECTRIC CABLE IN CONDUIT
 - TELEPHONE MANHOLE
 - ELECTRIC MANHOLE
 - BURIED TELEPHONE CABLE
 - BURIED ELECTRIC CABLE
 - SEWER (Sanitary or Storm)
 - SEWER MANHOLE
- ### SCALES
- PLAN: 0' to 100'
- PROFILE HORIZONTAL: 0' to 100'
- VERTICAL: 0' to 10'
- X-SECTIONS HORIZONTAL: 0' to 10'
- VERTICAL: 0' to 10'



Approved 3/5/12
ANOKA COUNTY ENGINEER

NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\12-01-00\CSAH_85_(CSAH22-CR76)\Plan\TITLE_SHEET.dgn					
03/05/2012 10:28:57 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: CHARLES CABENHEAD
SIGNATURE:
DATE: 3/5/12 LICENSE NO. 40416

DRAWN BY: CSO DATE: 2/18/2011
DESIGN BY: CSO DATE: 2/18/2011
CHECKED BY: JO DATE: _____

**ANOKA COUNTY
HIGHWAY DEPT.**

STATE PROJECT NO. _____
STATE AID PROJECT NO. _____
CITY PROJECT NO. _____
COUNTY PROJECT NO. 11-25-85

TITLE SHEET

Sheet 1 of 22 Sheets

STATEMENT OF ESTIMATED QUANTITIES

ITEM NO.	ITEM	NOTES	UNIT	TOTAL EST. QUANT.
2011.601	CONSTRUCTION SURVEY		LUMP SUM	
2021.501	MOBILIZATION		LUMP SUM	1
2104.501	REMOVE PIPE CULVERTS	15, 16	LIN FT	96
2104.503	REMOVE CONCRETE DRIVEWAY PAVEMENT	11	SQ FT	435
2104.503	REMOVE BITUMINOUS DRIVEWAY PAVEMENT	11	SQ FT	427
2104.511	SAWING CONCRETE PAVEMENT (FULL DEPTH)		LIN FT	14
2104.513	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)		LIN FT	317
2104.523	SALVAGE SIGN TYPE C		EACH	28
2104.523	SALVAGE SIGN TYPE D		EACH	3
2105.525	TOPSOIL BORROW (LV)	5	CU YD	193
2105.602	CONSTRUCT TURN LANE	12	EACH	9
2105.602	CONSTRUCT BYPASS LANE	12	EACH	5
2123.503	MOTOR GRADER	13	HOUR	10
2130.501	WATER	14	M-GAL	168
2211.501	AGGREGATE BASE CLASS 5	10, 9	TON	2806
2221.501	AGGREGATE SHOULDERING CLASS 5	9	TON	526
2232.501	MILL BITUMINOUS SURFACE (2.0")		SQ YD	300
2331.604	BITUMINOUS PAVEMENT RECLIMATION	2	SQ YD	70576
2357.502	BITUMINOUS MATERIAL FOR TACK COAT		GAL	2777
2360.501	TYPE SP 12.5 WEARING COURSE MIX (4,B)	1,9,11	TON	243
2360.501	TYPE SP 12.5 WEARING COURSE MIXTURE(4,B)	18	TON	15172
2501.511	48" CS PIPE CULVERT	16	LIN FT	52
2501.515	24" CS PIPE APRON	16	EACH	2
2501.515	48" CS PIPE APRON	16	EACH	2
2503.603	24" HDPE PIPE SEWER	16	LIN FT	52
2511.501	RANDOM RIPRAP CLASS II	17	CU YD	25
2531.507	6" CONCRETE DRIVEWAY PAVEMENT	11	SQ YD	17
2535.501	BITUMINOUS CURB (MODIFIED)	6,7	LIN FT	2630
2540.602	INSTALL MAIL BOX SUPPORTS		EACH	59
2563.601	TRAFFIC CONTROL	3,4	LUMP SUM	1
2564.533	FURNISH SIGN PANNEL TYPE C		SQ FT	177.25
2564.536	INSTALL SIGN PANEL TYPE C		EACH	5
2564.536	INSTALL SIGN PANEL TYPE D		EACH	3
2573.508	BITUMINOUS LINED FLUME	19	SQ YD	69
2575.523	EROSION CONTROL BLANKET, CATEGORY 3	17	SQ YD	14
2575.571	RAPID STABILIZATION METHOD 3	5	M-GAL	18
2581.501	REMOVABLE PREFORMED PLASTIC MARKING	8	LIN FT	1262
2582.502	4" SOLID LINE WHITE-EPOXY	9	LIN FT	33441
2582.502	4" BROKEN LINE WHITE-EPOXY	9	LIN FT	200
2582.502	4" SOLID LINE YELLOW - EPOXY	9	LIN FT	1100
2582.502	4" BROKEN YELLOW LINE-EPOXY	9	LIN FT	1180
2582.502	4" DOUBLE SOLID LINE YELLOW-EPOXY	9	LIN FT	9626

NOTES:

- 1 USED FOR PAVING DRIVEWAYS AND STREET APPROACHES
- 2 ITEM INCLUDES THE REMOVAL OF BITUMINOUS CURB
- 3 ALL TRAFFIC CONTROL DEVICES AND METHODS SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL
- 4 ROAD WORK AHEAD, DO NOT PASS, PASS WITH CARE, NO CENTERLINE STRIPE, BUMP AND BUMP AHEAD SIGNS TO BE INPLACE AT THE START OF RECLAIM AND OVERLAY OPERATIONS
- 5 ITEM FOR BEHIND BITUMINOUS CURB
- 6 SHALL BE INSTALLED WITH SAME OPERATION AS MAINLINE BITUMINOUS WEAR COURSE
- 7 BITUMINOUS TONS TO CREATE BIT CURB SHALL BE PAID UNDER 2360.501 WEARING COURSE MIX (4,E)
- 8 SHALL BE PLACED AFTER EACH DAYS PAVING OPERATION
- 9 SHALL BE INSTALLED WITHIN 72 HOURS OF COMPLETION OF MAINLINE WEAR COURSE PAVING
- 10 ITEM INCLUDES ADDING CLASS 5 TO MAINLINE AT 112+00 TO 114+00 (FOR LEVELING PRIOR TO PAVING BASE COURSE), ALSO ADDING 2" TO SHOULDER AFTER MAINLINE BASE PAVING IS COMPLETE
- 11 CONTRACTORS RESPONSIBILITY TO CONTACT OWNER 48 HOURS BEFORE STARTING OPERATION
- 12 INCLUDES TIME AND MATERIAL TO CONSTRUCT ITEM. COMMON EXCAVATION, SELECT GRANULAR, AGGREGATE BASE CLASS 5, SILT FENCE, EROSION CONTROL BLANKET CATEGORY 3, SEED & DOZER / MOTOR GRADER TIME TO CONSTRUCT TURN / BY-PASS LANE (TAB F) NOTE -BITUMINOUS BASE AND WEAR COURSE IS NOT INCLUDED IN THIS ITEM
- 13 INCLUDES TIME TO REMOVE EXCESS RECLAIMED MATERIAL AT BEGINNING AND END OF RECLAIM AREAS TO MATCH EXISTING BITUMINOUS HEIGHT
- 14 FOR DUST CONTROL AT ENGINEERS REQUEST
- 15 INCLUDES APRON IN LENGTH
- 16 TO BE DONE UNDER TRAFFIC, PAID FOR UNDER TRAFIC CONTROL
- 17 FLUMES
- 18 INCLUDES SAFTEY EDGE CONSTRUCTION
- 19 AT END OF BITUMINOUS CURB, DOWN STREAM SIDE

BASIS OF PLANNED QUANTITIES

ITEM NO.	DESCRIPTION	UNIT
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	.05-GAL / SQ YD
2360.501	TYPE SP 12.5 WEARING COURSE MIX (4, B)	115/SQ.YD./IN THICKNESS
2211.501	AGGREGATE BASE CLASS 5	CU YDS * 1.8 = TONS
2221.501	AGGREGATE SHOULDERING CLASS 5	CU YDS * 1.8 = TONS
2581.501	REMOVABLE PREFORMED PLASTIC MARKING	2' AT 50' INTERVALS FOR SKIPS

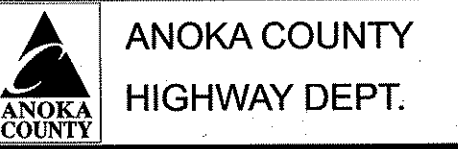
NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_85_(CSAH22-CR76)\Plan\SEQ.dgn 03/01/2012 11:07:37 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: CHARLES CADENHEAD
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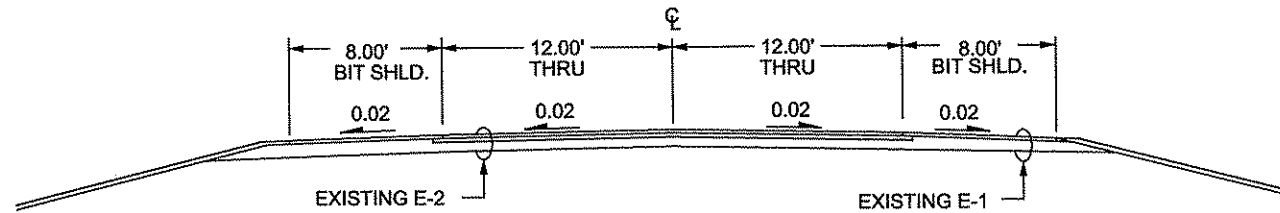


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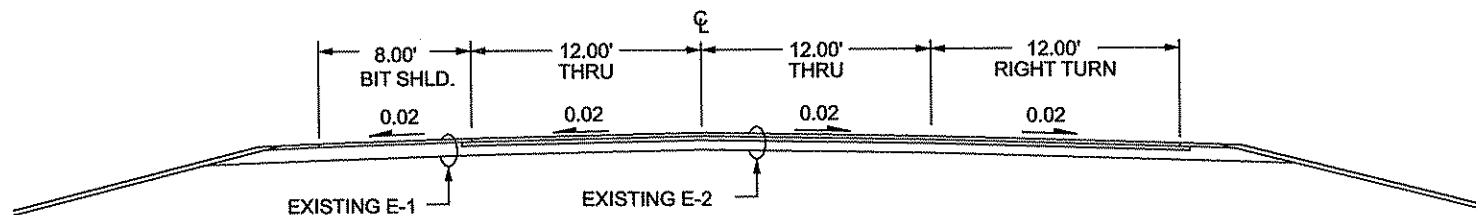
STATEMENT OF ESTIMATED QUANTITIES

Sheet 2 of 22 Sheets

C.S.A.H. 85
EXISTING TYPICAL SECTION
 STA. 14+39 - STA. 63+12
 STA. 68+00 - STA. 162+60

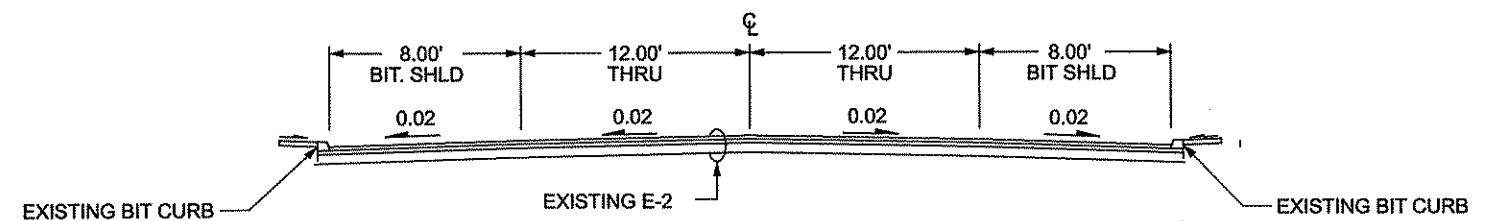


C.S.A.H. 85
EXISTING RIGHT TURN LANE
 STA. 9+59 - STA. 14+39
 STA. 63+12 - STA. 68+00
 STA. 162+60 - STA. 167+40

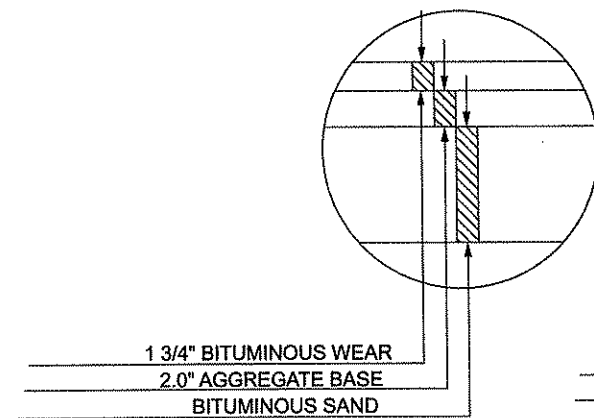


C.S.A.H. 85
EXISTING ROAD WITH BIT CURB

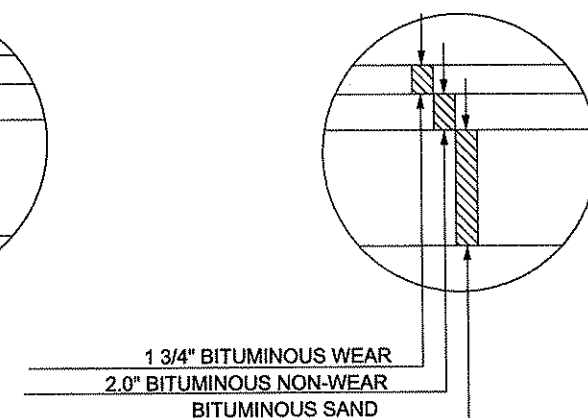
- STA. 56+50 - STA. 58+55 RT
- STA. 69+00 - STA. 72+82 LT
- STA. 75+75 - STA. 79+75 LT
- STA. 78+10 - STA. 78+95 RT
- STA. 79+35 - STA. 81+19 RT
- STA. 95+35 - STA. 96+35 RT
- STA. 96+67 - STA. 97+69 RT
- STA. 97+00 - STA. 98+53 LT
- STA. 123+56 - STA. 125+25 RT
- STA. 124+30 - STA. 125+44 LT
- STA. 125+65 - STA. 127+76 RT
- STA. 135+10 - STA. 137+65 LT



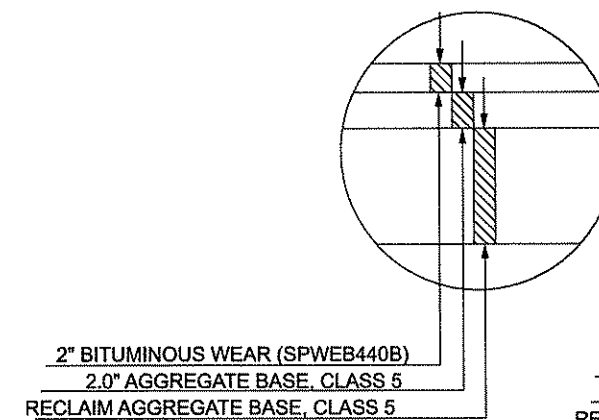
**EXISTING "E-1" SHOULDER
 PAVEMENT DESIGN**



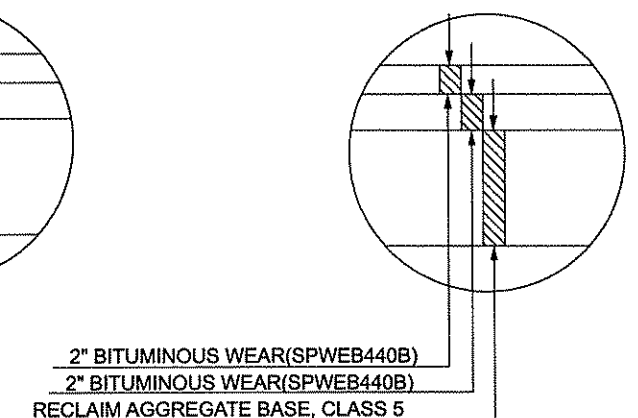
**EXISTING "E-2" MAINLINE
 PAVEMENT DESIGN**



**DESIGN "F-1" MAINLINE
 PAVEMENT DESIGN**



**DESIGN "F-2" MAINLINE
 PAVEMENT DESIGN**

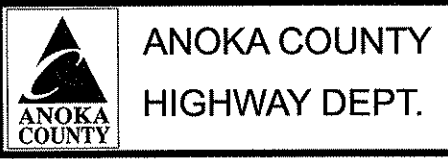


NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_85_(CSAH22-CR76)\Plan\TS.dgn
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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: CHARLES CABENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY: CSO DATE: 2/18/2011
 DESIGN BY: CSO DATE: 2/18/2011
 CHECKED BY: JO DATE: _____

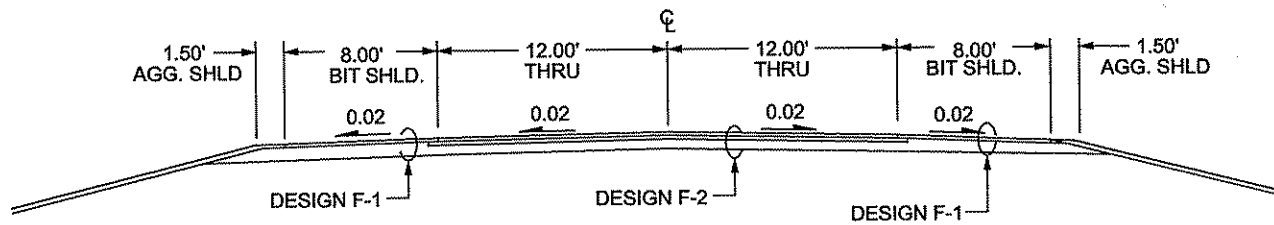


STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 11-25-85

C.S.A.H. 85
PROPOSED TYPICAL SECTION

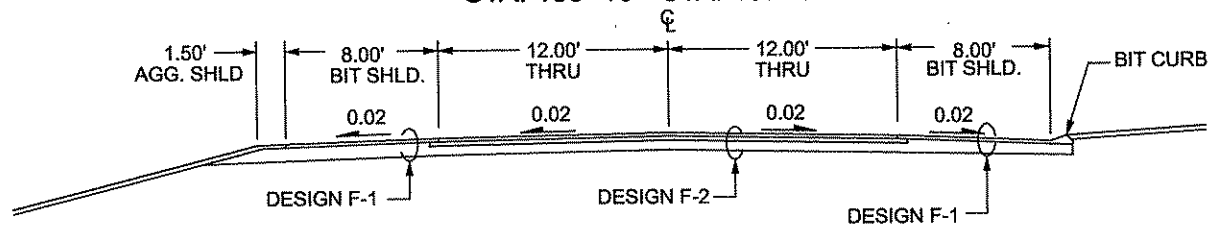
STA. 9+59 - STA. 167+40

EXCEPT: RIGHT TURN LANE, BY-PASS LANES & BIT. CURB SECTION



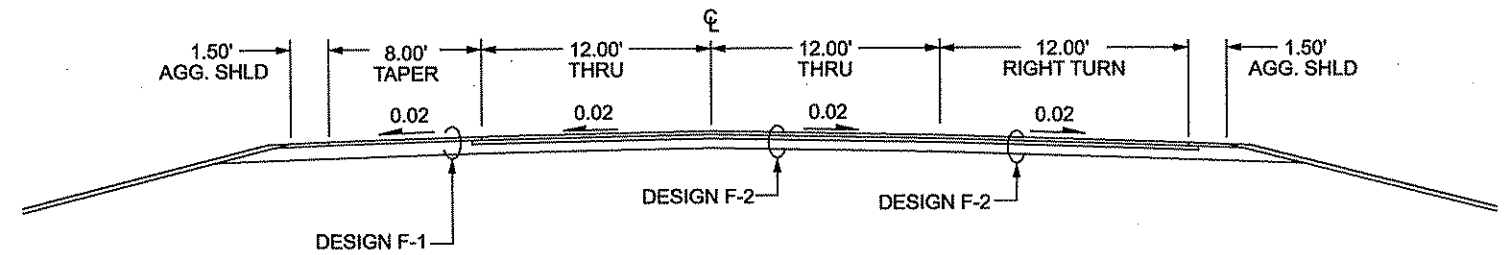
C.S.A.H. 85
PROPOSED BITUMINOUS CURB SECTION

- STA. 56+50 - STA. 58+55 RT
- STA. 69+00 - STA. 72+82 LT
- STA. 75+75 - STA. 79+75 LT
- STA. 78+10 - STA. 78+95 RT
- STA. 79+35 - STA. 81+19 RT
- STA. 95+35 - STA. 96+35 RT
- STA. 96+67 - STA. 97+69 RT
- STA. 97+00 - STA. 98+53 LT
- STA. 123+56 - STA. 125+25 RT
- STA. 124+30 - STA. 125+44 LT
- STA. 125+65 - STA. 127+76 RT
- STA. 135+10 - STA. 137+65 LT



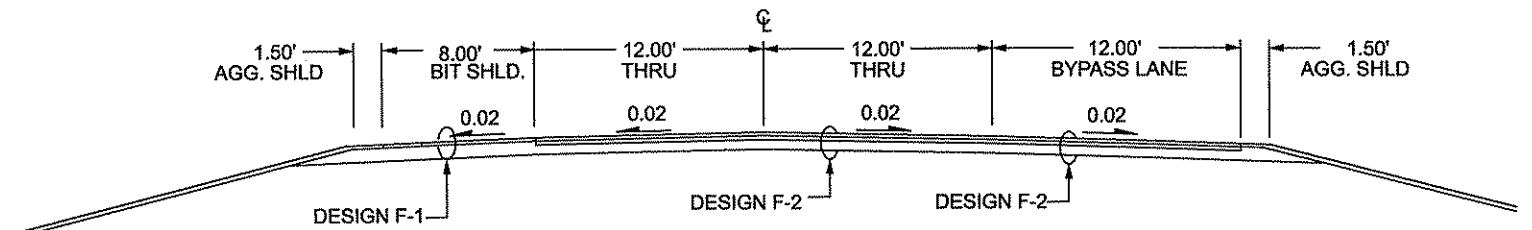
C.S.A.H. 85
PROPOSED TURN LANE SECTION

- STA. 9+59 - STA. 14+39
- STA. 16+24 - STA. 21+04
- STA. 68+30 - STA. 73+10
- STA. 63+12 - STA. 67+92
- STA. 76+67 - STA. 81+47
- STA. 82+64 - STA. 97+44
- STA. 104+93 - STA. 109+73
- STA. 109+91 - STA. 114+71
- STA. 123+56 - STA. 128+36
- STA. 135+37 - STA. 140+17
- STA. 151+80 - STA. 156+60
- STA. 162+60 - STA. 167+40



C.S.A.H. 85
PROPOSED BYPASS LANE SECTION

- STA. 12+44 - STA. 18+64
- STA. 85+04 - STA. 91+24
- STA. 107+22 - STA. 112+31
- STA. 125+96 - STA. 132+16
- STA. 148+00 - STA. 154+20



NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\12-01-00\CSAH_85_(CSAH22-CR76)\Plan\TS.dgn					
02/27/2012 12:55:02 PM					

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: CHARLES CABENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 LICENSE NO. 40416

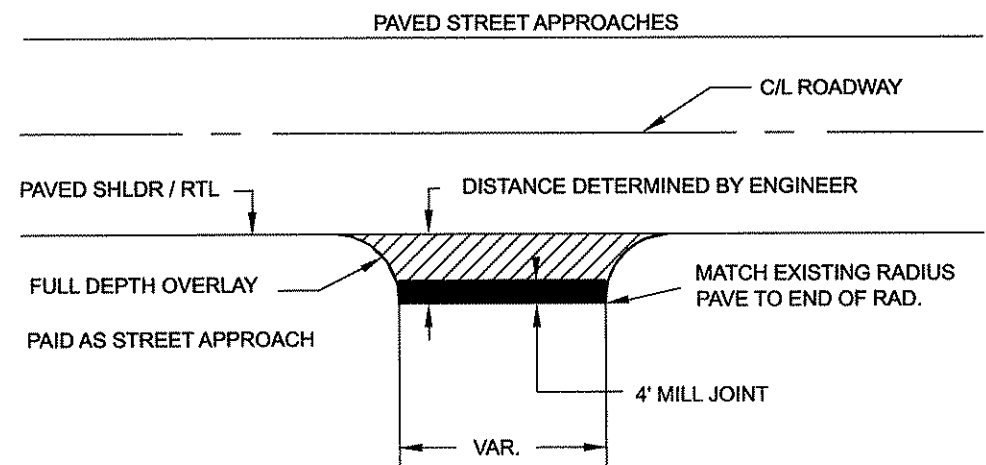
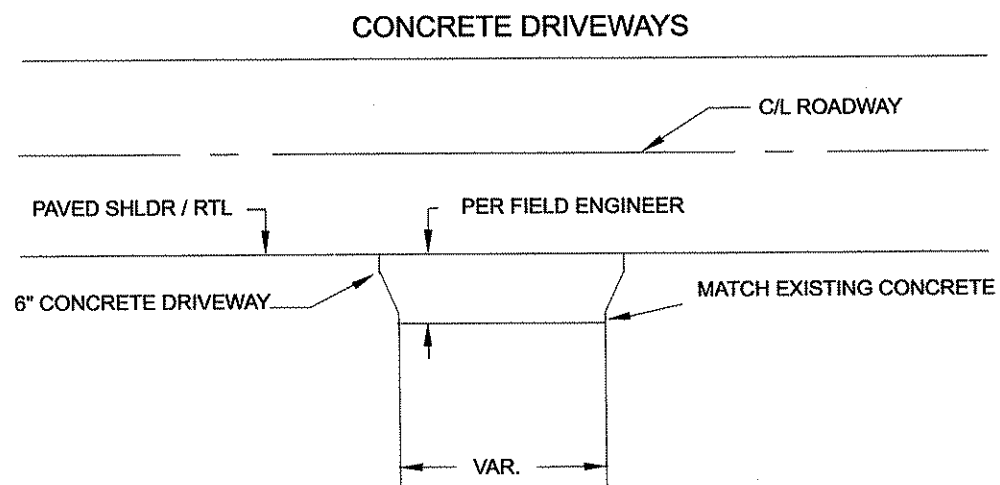
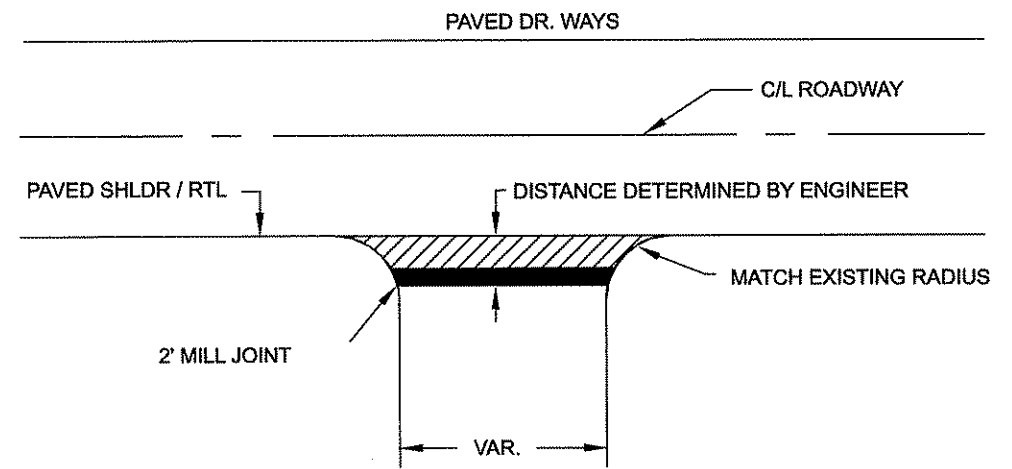
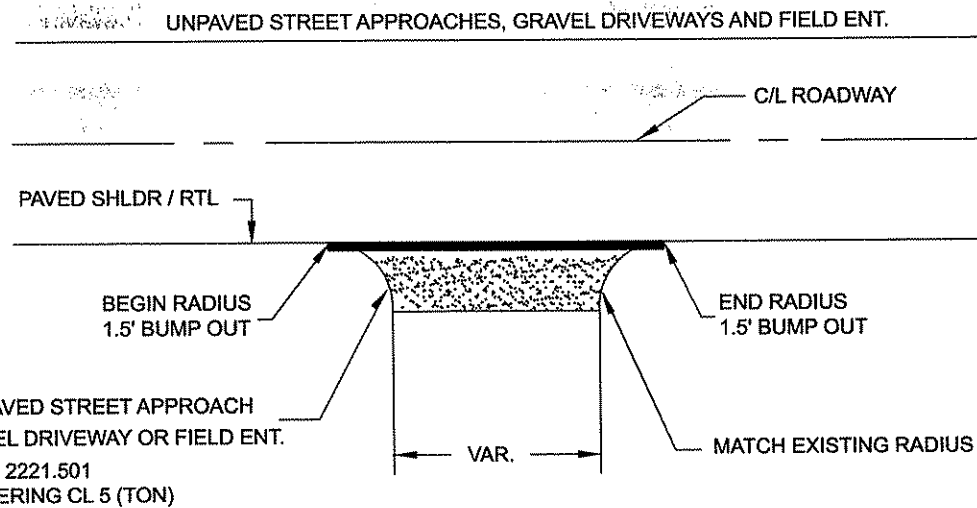
DRAWN BY CSO DATE 2/18/2011
 DESIGN BY CSO DATE 2/18/2011
 CHECKED BY JO DATE



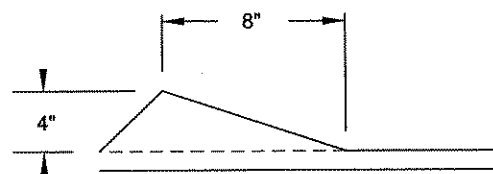
ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 11-25-85

TYPICAL SECTIONS
 Sheet 4 of 22 Sheets



BITUMINOUS CURB
(PLACED DURING THE PAVING OF MAIN LINE WEAR COURSE)



EXISTING BITUMINOUS CURB (LIP) TO BE RECLAIMED WITH SHOULDER
PROPOSED BITUMINOUS CURB (LIP) TO BE PAID UNDER ITEM NO. 2535.501

DRIVEWAYS TO BE PAVED IN SEPERATE OPERATION OTHER THAN MAINLINE WEAR.
PAID AS STREET APPROACH WEAR

NO	DATE	BY	CHKD	APPR	REVISION
NAME: P:\12-01-00\CSAH_85_(CSAH22-CR76)\Plan\Details.dgn					
02/27/2012 11:39:35 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: CHARLES GADENHEAD
SIGNATURE: *Charles Gadenhead*
DATE: 3/2/12 LICENSE NO. # 40416

DRAWN BY CSO DATE 2/18/2011
DESIGN BY CSO DATE 2/18/2011
CHECKED BY JO DATE

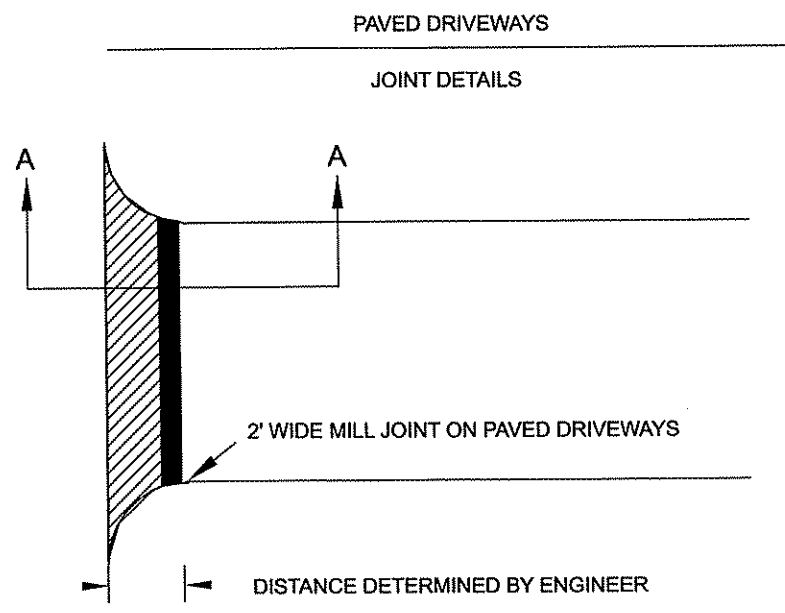


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HIGHWAY DEPT.

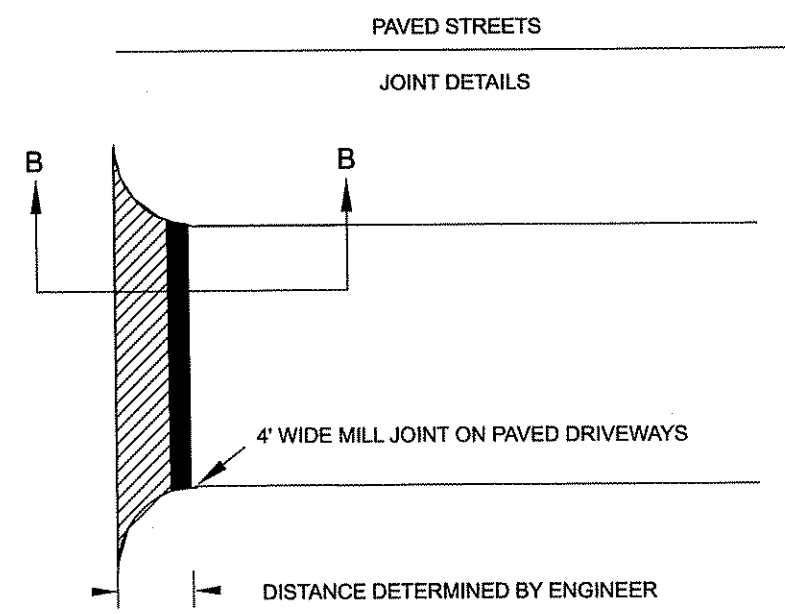
STATE PROJECT NO. _____
STATE AID PROJECT NO. _____
CITY PROJECT NO. _____
COUNTY PROJECT NO. 11-25-85

MISCELLANEOUS DETAILS

Sheet 5 of 22 Sheets



DRIVEWAYS TO BE PAVED IN SEPERATE OPERATION OTHER THAN MAINLINE WEAR.
PAID AS DRIVEWAY/STREET APPROACH WEAR



OVERLAY EXISTING STEET APPROACH, DO NOT RECLAIM
STREETS TO BE PAVED IN SEPERATE OPERATION OTHER THAN MAINLINE WEAR.
PAID AS DRIVEWAY/STREET APPROACH WEAR

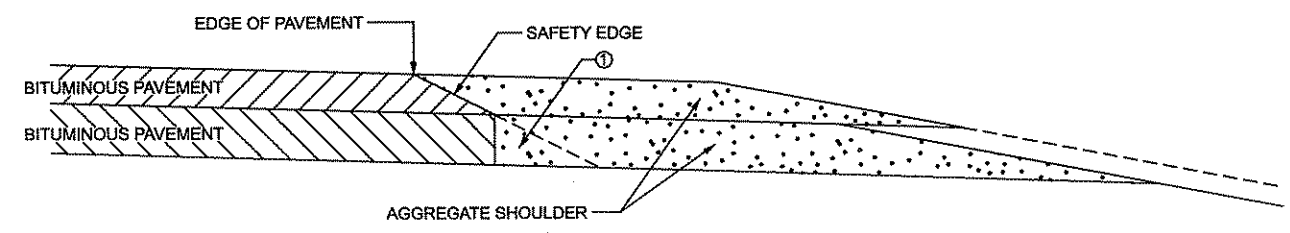
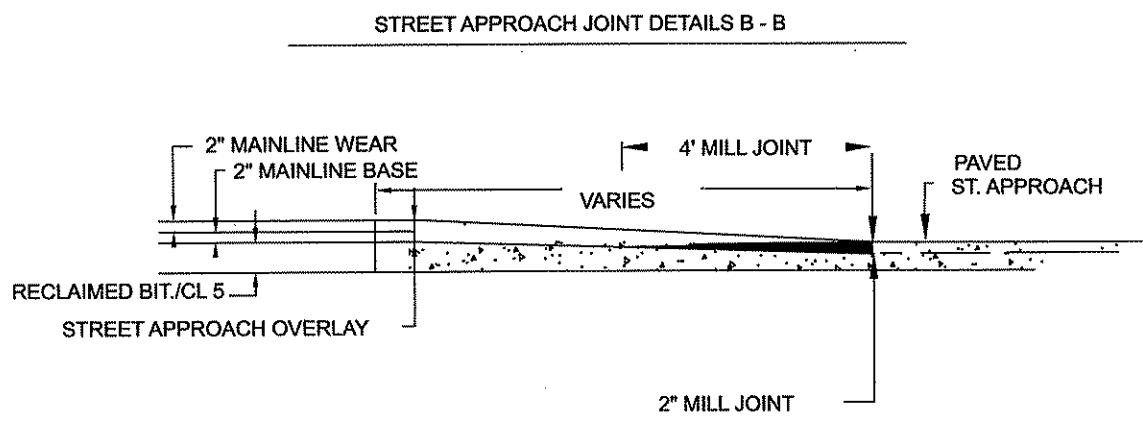
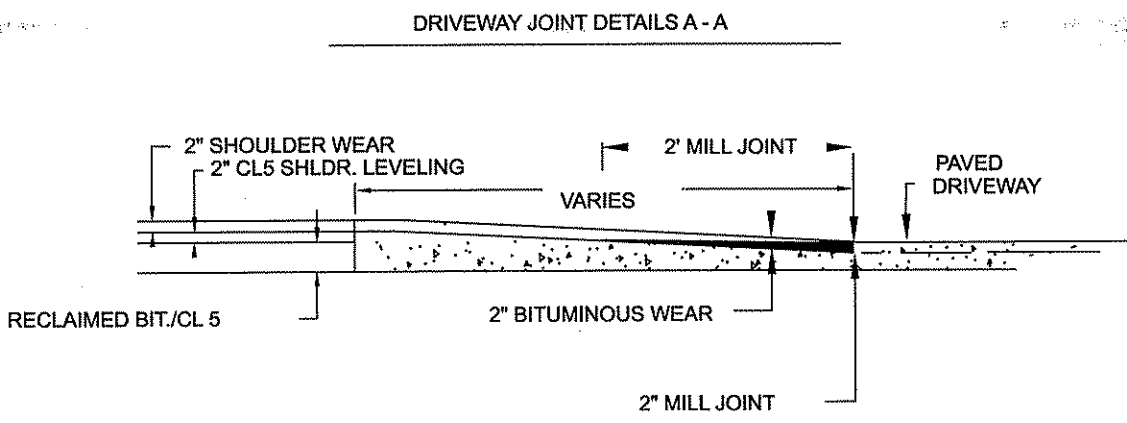


FIGURE B
BITUMINOUS PAVEMENT

① OPTIONAL DESIGN EXTENDS SAFETY EDGE DEEPER
THAN 6" AND WIDER THAN 10.5". SEE SPECAIL PROVISIONS FOR DETAILS.

NO	DATE	BY	CKD	APPR	REVISION
NAME: P:112-01-00.CSAH_85_(CSAH22-CR76)PlantDetails.dgn					
02/27/2012 11:39:38 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: CHARLES CADENHEAD

SIGNATURE: *[Signature]*

DATE: 3/2/12 LICENSE NO. #40416

DRAWN BY CSO DATE 2/18/2011

DESIGN BY CSO DATE 2/18/2011

CHECKED BY JO DATE



STATE PROJECT NO. _____

STATE AID PROJECT NO. _____

CITY PROJECT NO. _____

COUNTY PROJECT NO. 11-25-85

MISCELLANEOUS DETAILS

Sheet 6 of 22 Sheets

RIGHT TURN LANES AND BY-PASS LANES CALCULATIONS												
RIGHT TURN LANE LOCATION	STATION	STATION	LENGTH	EXRTA WIDTH	COMMON EX		SELECT GRANULAR		CLASS 5 (CU YD)	DOZER (HOURS)	SILT FENCE (LIN FT)	EROSION CONTROL BLANKET (SQ YD)
					DEPTH (FT)	VOLUME (CY)	DEPTH (FT)	VOLUME (CY)				
CSAH 22	9+59	14+39	480	EXISTING								
LINWOOD ELEM	16+24	21+04	480	4	0.5	26.3	0.26	58.9	36	2	540	213
CSAH 26	68+30	73+10	480	4	0.5	39.3	0.52	94.2	36	2	60	213
227TH	63+12	67+92	480	EXISTING								
229TH	76+67	81+47	480	4	0.5	32.5	0.03	4.6	36	2	60	213
230TH	82+64	87+44	480	4	0.5	17.0	0.01	1.6	36	2	60	213
232ND	104+93	109+73	480	4	0.5	27.8	-1.05	0.0	36	2	0	213
233RD	109+91	114+71	480	4	0.5	21.9	-0.68	0.0	36	2	0	213
235TH	123+56	128+36	480	4	0.5	26.9	0.15	0.0	36	2	60	213
237TH	135+37	140+17	480	4	0.5	12.2	1.09	240.7	36	2	540	213
239TH	151+80	156+60	480	4	0.5	14.6	1.47	299.2	36	2	540	213
CR 76	162+60	167+40	480	EXISTING								

BY-PASS LANE LOCATION	STATION	STATION	LENGTH	EXRTA WIDTH	COMMON EX		SELECT GRANULAR		CLASS 5 (CU YD)	DOZER (HOURS)	SILT FENCE (LIN FT)	EROSION CONTROL BLANKET (SQ YD)
					DEPTH (FT)	VOLUME (CY)	DEPTH (FT)	VOLUME (CY)				
LINWOOD ELEM	12+44	18+64	620	4	0.5	21.5	0.55	167.5	46	3	680	276
230TH	85+04	91+24	620	4	0.5	20.0	0.44	99.0	46	3	680	276
233RD	107+22	112+31	620	4	0.5	12.7	1.23	335.7	46	3	680	276
235TH	125+96	132+16	620	4	0.5	8.2	-0.33	0.0	46	3	0	276
239TH	148+00	154+20	620	4	0.5	15.0	1.12	305.2	46	3	680	276

NOTE:
DOZER, MOTOR GRADER, AND PNEUMATIC-TIRED ROLLER ARE INCIDENTAL TO CONSTRUCTING RIGHT TURN LANES AND BY-PASS LANES
SEEDING, SEED MIXTURE 240 AND FERTILIZER TYPE 3 ARE INCIDENTAL TO EROSION CONTROL BLANKET

CONSTRUCT. BYPASS LANE	STATION	EXISTING EM	EXISTING SH.PI.	EXISTING SH. PI. LOCATION	EXISTING DITCH BOTTOM	EXISTING DITCH BOTTOM LOCATION
LINWOOD ELEM	BEGIN BY LN	12+44	912.65	911.90	4.00	909.30
		12+59	912.80	911.83	4.00	909.29
		13+11	912.50	911.89	4.60	909.11
		13+65	912.33	911.89	5.00	908.77
		14+17	912.11	911.60	4.20	908.68
		14+70	911.87	911.56	4.10	908.31
		15+22	911.66	911.46	3.20	908.75
		15+74	911.44	909.93	4.10	908.51
		16+47	911.18	910.59	3.40	908.29
		17+07	910.83	910.42	2.70	908.31
		17+56	910.55	910.28	1.70	908.32
		18+12	910.30	910.02	1.60	907.30
	END BY LN	18+64	910.22	909.87	2.30	907.23
230TH	BEGIN BY LN	85+04	909.56	909.01	3.60	907.70
		85+43	909.03	908.64	3.70	907.03
		85+94	908.19	907.86	3.70	905.83
		86+38	907.71	907.06	3.70	904.08
		86+90	906.79	906.26	2.90	904.25
		87+33	906.11	905.59	3.00	903.01
		87+83	905.20	904.55	3.00	901.98
		88+33	904.43	903.79	3.80	900.73
		88+83	903.27	902.83	3.30	900.05
		89+36	902.56	901.77	2.80	898.90
		89+88	901.83	900.91	4.30	898.05
		90+38	900.76	900.46	4.00	897.27
		90+94	899.93	899.07	4.00	896.56
	END BY LN	91+24	899.36	898.68	4.00	896.35
233RD	BEGIN BY LN	107+22	906.32	905.84	2.50	904.80
		107+66	906.40	906.12	3.30	905.70
		108+13	906.11	905.39	5.40	904.53
		108+46	905.53	904.65	2.40	902.76
		108+98	904.75	903.79	2.40	901.20
		109+48	904.00	903.41	1.30	900.63
		109+99	903.35	902.35	3.40	900.09
		110+51	902.44	901.60	2.20	899.69
		110+94	901.73	900.80	3.40	899.08
		111+50	900.46	899.91	2.30	898.01
		111+99	899.38	898.84	1.80	896.90
		112+46	898.64	898.07	3.20	895.48
		112+94	898.12	897.54	2.60	895.50
	END BY LN	112+31	897.87	897.25	2.60	895.61
235TH	BEGIN BY LN	125+96	901.60	901.02	4.30	900.13
		126+13	902.16	901.26	4.60	899.88
		127+19	902.40	901.72	4.30	899.06
		127+69	902.48	901.58	5.00	898.65
		128+39	902.48	901.36	4.50	898.65
		128+82	902.20	901.20	4.10	897.95
		129+30	901.99	901.19	4.10	898.68
		129+82	901.55	900.60	4.90	898.30
		130+31	901.40	899.96	5.80	897.48
		130+80	901.43	900.64	4.00	897.93
		131+34	901.63	900.74	3.80	898.04
		131+88	902.10	901.10	3.40	898.17
	END BY LN	132+16	903.19	902.35	3.50	898.85
239TH	BEGIN TN LN	148+00	902.52	901.80	2.70	899.01
		148+51	903.15	902.52	2.60	899.48
		148+98	903.48	902.84	3.00	899.68
		149+49	903.80	903.10	3.00	900.03
		149+97	904.10	903.34	2.70	900.99
		150+46	904.35	903.10	2.70	901.15
		150+98	904.70	904.38	2.10	901.46
		151+43	905.01	904.58	2.10	901.81
		151+77	905.25	904.96	3.60	902.29
		152+41	905.53	904.99	3.50	902.24
		152+87	905.75	905.19	3.60	902.54
		153+38	906.01	905.59	2.90	902.88
		153+97	906.28	905.57	2.90	903.43
	END BY LN	154+20	906.52	905.74	2.90	903.61

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_85_(CSAH22-CR76)\Plan\Details.dgn 02/27/2012 11:39:42 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: CHARLES CADENHEAR
 SIGNATURE: *[Signature]*
 DATE: 2/27/12 LICENSE NO. 40416

DRAWN BY CSO DATE 2/18/2011
 DESIGN BY CSO DATE 2/18/2011
 CHECKED BY JO DATE



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 11-25-85

RIGHT TURN LANE & BY-PASS LANE TABS
 Sheet 7 of 22 Sheets

CONSTRUCT TURN LANE	STATION	EXISTING EM	EXISTING SH.PI.	EXISTING SH.PI. LOCATION	EXISTING DITCH BOTTOM	EXISTING DITCH BOTTOM LOCATION	
CSAH 22	BEGIN TN LN	9+59	NO NEW WIDTH NEEDED				
	END TN LN	14+39					
LINWOOD ELEM	BEGIN TN LN	16+24	912.38	911.83	3.40	910.22 14.80	
		16+51	911.67	911.04	3.70	909.22 18.00	
		17+05	911.56	911.56	3.60	908.93 16.70	
		18+12	911.52	911.13	5.80	908.05 19.20	
		18+64	911.29	911.03	4.00	908.33 17.90	
		19+19	911.19	910.93	4.00	908.05 18.90	
		19+70	910.97	910.80	2.20	908.30 17.60	
		20+74	910.68	910.51	3.40	908.62 13.60	
	END TN LN	21+04	910.52	910.35	3.60	908.20 13.70	
	CSAH 26	BEGIN TN LN	68+30	914.62			914.28 17.90
			68+45	914.47	914.22	5.10	914.04 18.40
		68+99	914.64	916.46	2.40	915.89 12.80	
		69+53	914.96	914.90	3.20	916.20 11.30	
		70+06	915.25	915.57	3.80	916.63 11.80	
		70+57	915.56	915.63	2.80	917.21 13.00	
		71+09	915.81	915.72	3.10	916.56 10.10	
		71+63	915.90	915.78	2.40	916.79 11.90	
		72+16	915.90	915.93	3.90	916.24 11.70	
		72+67	915.60	915.40	4.10	914.24 15.80	
END TN LN		73+10	915.19	914.92	4.00	913.30 15.70	
227TH	BEGIN TN LN	63+12	NO NEW WIDTH NEEDED				
	END TN LN	67+92					
229TH	BEGIN TN LN	76+67	914.06	913.41	3.40	912.47 11.10	
		77+14	914.13	913.67	4.10	912.96 12.40	
		77+66	914.11	913.66	6.10	913.74 12.00	
		78+18	913.74	913.81	3.20	914.85 11.80	
		78+84	913.47	913.50	3.20	914.70 11.90	
		79+33	913.38	913.36	3.00	914.28 13.50	
		79+83	913.36	913.52	3.30	915.05 11.50	
		80+31	913.23	913.29	4.10	914.12 12.00	
		80+79	913.01	912.99	3.50	912.80 12.50	
	END TN LN	81+47	912.98	912.68	5.80	912.17 17.10	
	230TH	BEGIN TN LN	82+64	912.84	912.27	3.90	909.64 15.00
		83+06	912.81	912.52	3.20	909.82 15.50	
		83+56	912.34	911.97	3.50	909.81 14.60	
		84+04	912.22	911.65	4.40	909.58 15.30	
		84+55	911.87	911.12	4.40	908.88 14.10	
		85+04	911.20	910.32	4.30	908.24 16.00	
		85+54	910.34	909.64	4.20	907.40 15.40	
		86+04	909.30	908.66	3.90	906.92 14.50	
		86+39	908.76	908.08	4.20	905.30 14.60	
		86+74	907.61	907.48	4.30	905.12 14.70	
END TN LN		87+44	907.31	906.35	3.60	904.13 14.90	
232ND	BEGIN TN LN	104+93	908.13	907.58	5.30	906.58 16.00	
		105+32	908.15	907.40	4.50	905.81 16.10	
		105+81	908.35	907.93	3.90	906.68 9.10	
		106+31	908.47	908.09	4.70	907.57 9.50	
		106+83	908.42	908.05	2.80	907.65 7.50	
		107+41	908.15	908.09	4.20	907.66 11.70	
		107+86	907.81	907.33	6.00	906.63 12.10	
		108+38	907.32	907.02	5.70	906.24 11.30	
		108+84	906.75	906.23	5.30	904.91 11.20	
		109+33	906.36	905.68	6.20	904.20 13.80	
	END TN LN	109+73	905.76	905.20	7.00	903.61 17.80	
233RD	BEGIN TN LN	110+91	903.86	903.87	5.00	903.87 10.00	
		111+54	902.20	901.72	4.90	900.75 15.00	
		112+06	901.30	900.64	3.50	899.18 14.60	
		112+56	900.32	899.72	4.40	897.85 15.20	
		113+06	899.70	899.11	4.00	897.20 14.30	
		113+57	899.23	898.67	4.40	896.43 13.70	
		114+09	898.92	898.30	5.40	895.72 14.20	
		114+55	898.75	898.34	4.20	895.33 16.90	
		115+05	898.27	897.90	4.50	895.49 14.50	
		115+63	897.47	896.66	6.00	894.10 16.40	
	END TN LN	115+71	897.07	896.06	5.20	894.00 15.00	

CONSTRUCT TURN LANE	STATION	EXISTING EM	EXISTING SH.PI.	EXISTING SH.PI. LOCATION	EXISTING DITCH BOTTOM	EXISTING DITCH BOTTOM LOCATION
235TH	BEGIN TN LN	123+56	900.65	900.20	9.00	900.01 14.50
		124+20	901.00	900.80	2.40	902.16 14.30
		124+71	900.71	900.89	2.50	902.53 12.00
		125+23	902.45	901.45	3.80	902.82 12.10
		125+73	902.45	901.23	3.90	902.17 11.30
		126+19	901.88	902.14	2.80	903.15 12.00
		126+69	902.29	902.25	3.50	903.59 11.70
		127+18	902.60	902.44	2.80	904.15 12.40
		127+69	902.81	902.68	3.10	904.63 13.00
	END TN LN	128+36	902.60	902.41	4.70	902.73 10.40
	237TH	BEGIN TN LN	135+37	908.95	908.54	2.00
		135+87	909.13	908.69	2.40	906.41 15.70
		136+37	909.22	908.79	2.20	906.20 15.70
		136+83	909.03	908.73	1.40	905.98 16.40
		137+30	908.80	908.07	3.40	905.39 15.20
		137+77	908.42	907.73	2.80	905.14 14.90
		138+27	907.88	906.83	4.00	904.64 16.00
		138+75	907.35	906.21	4.70	904.18 16.30
		139+24	906.44	905.83	1.80	903.23 16.00
		139+73	905.28	904.84	3.30	902.64 13.90
END TN LN		140+17	904.85	904.38	4.00	902.32 12.00
239TH	BEGIN TN LN	151+80	904.86	904.76	4.00	904.42 12.00
		152+07	904.91	904.71	2.60	903.25 16.00
		152+52	905.05	904.43	3.50	902.11 15.60
		153+01	905.30	904.66	2.20	902.41 13.20
		153+50	905.65	905.20	2.40	902.60 13.70
		154+00	905.94	905.42	2.60	903.15 14.10
		154+49	906.17	905.64	2.10	903.45 12.70
		154+97	906.42	906.04	1.80	903.40 15.40
		155+56	906.94	906.54	3.40	904.05 16.10
		155+96	907.17	906.72	2.10	904.35 14.30
	END TN LN	156+44	907.38	906.92	1.70	904.74 12.00
CR 76	BEGIN TN LN	162+60	NO NEW WIDTH NEEDED			
	END TN LN	167+40				

NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\12-01-00\CSAH_85_(CSAH22-CR76)\PlantDetails.dgn					
02/27/2012 11:39:46 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: CHARLES CAPENHEAD
SIGNATURE: *[Signature]*
DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY: CSO DATE: 2/18/2011
DESIGN BY: CSO DATE: 2/18/2011
CHECKED BY: JO DATE:



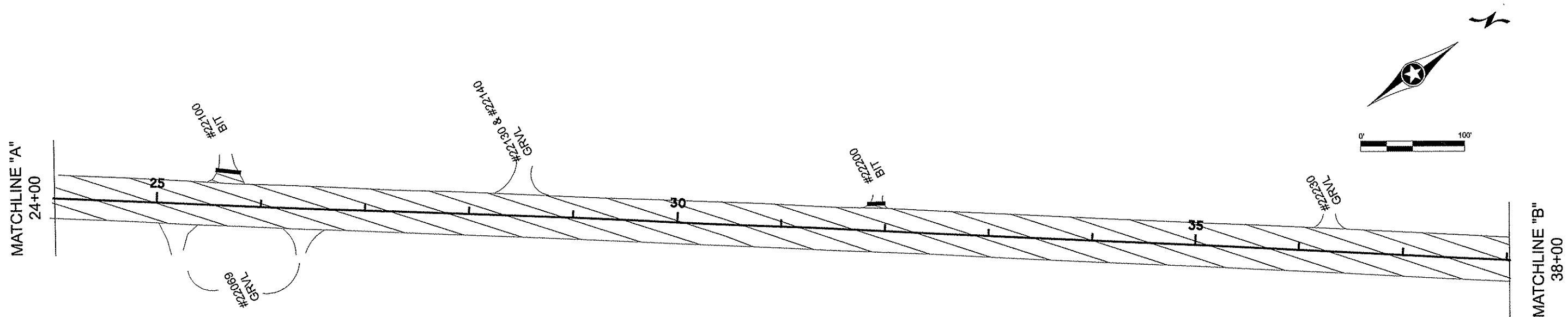
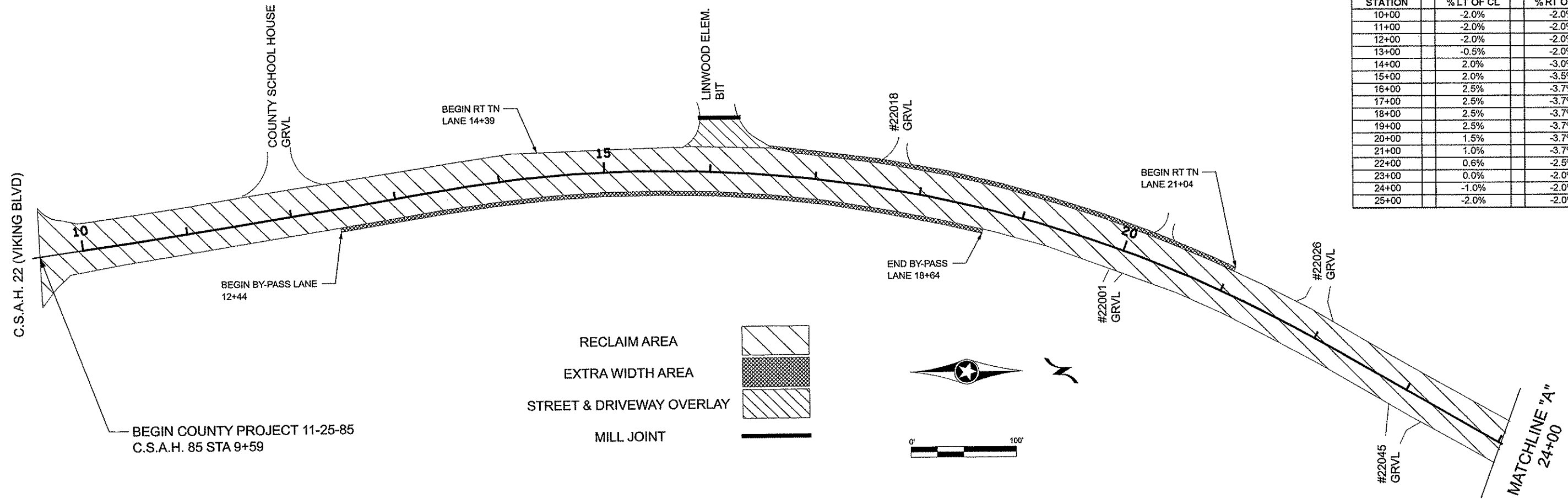
ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
STATE AID PROJECT NO. _____
CITY PROJECT NO. _____
COUNTY PROJECT NO. 11-25-85

RIGHT TURN LANE
& BY-PASS LANE TABS

Sheet 8 of 22 Sheets

CURVE GRADES		
STATION	% LT OF CL	% RT OF CL
10+00	-2.0%	-2.0%
11+00	-2.0%	-2.0%
12+00	-2.0%	-2.0%
13+00	-0.5%	-2.0%
14+00	2.0%	-3.0%
15+00	2.0%	-3.5%
16+00	2.5%	-3.7%
17+00	2.5%	-3.7%
18+00	2.5%	-3.7%
19+00	2.5%	-3.7%
20+00	1.5%	-3.7%
21+00	1.0%	-3.7%
22+00	0.6%	-2.5%
23+00	0.0%	-2.0%
24+00	-1.0%	-2.0%
25+00	-2.0%	-2.0%



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_85_(CSAH22-CR76)\Plan\Plan.dgn 01/12/2012 10:32:02 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: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY CSO DATE 2/18/2011
 DESIGN BY CSO DATE 2/18/2011
 CHECKED BY JO DATE



ANOKA COUNTY
HIGHWAY DEPT.

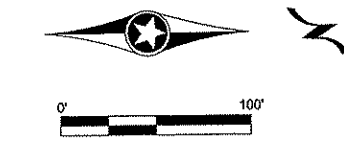
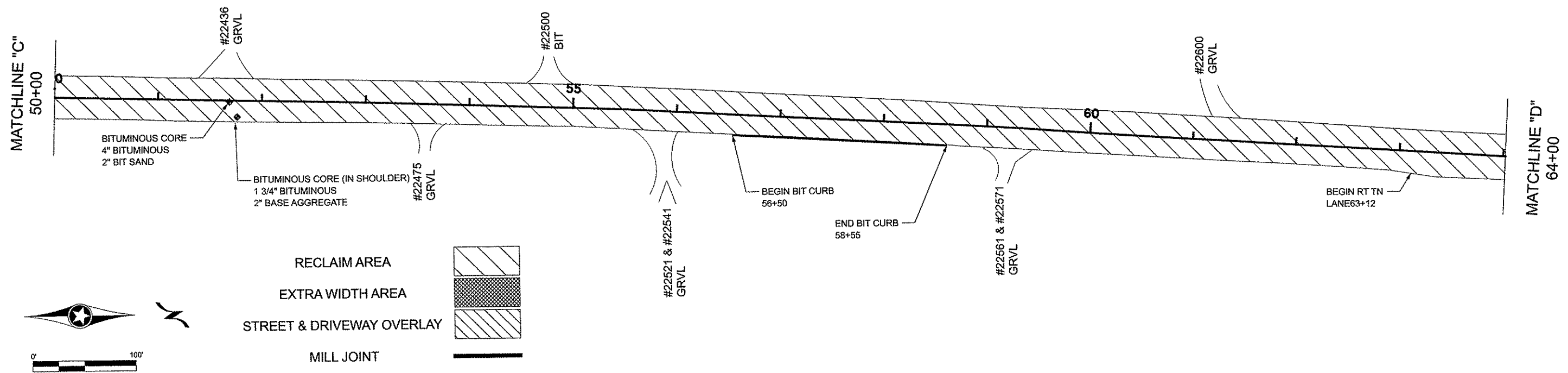
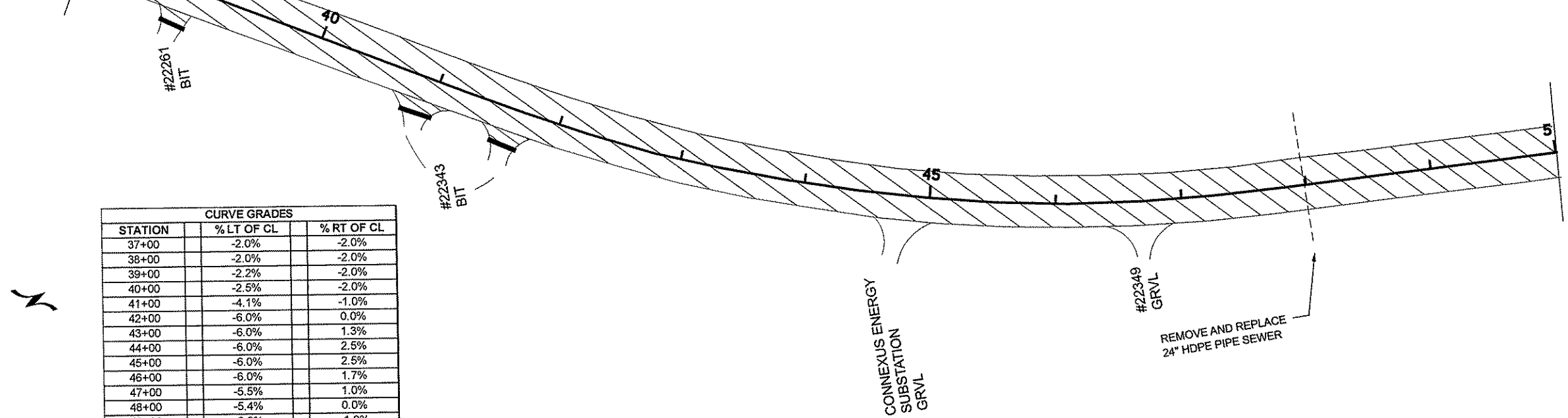
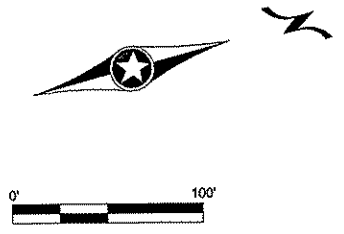
STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 11-25-85

CONSTRUCTION PLAN
 STA 9+59 TO 38+00
 Sheet 9 of 22 Sheets

MATCHLINE "B"
38+00

MATCHLINE "C"
50+00

CURVE GRADES		
STATION	% LT OF CL	% RT OF CL
37+00	-2.0%	-2.0%
38+00	-2.0%	-2.0%
39+00	-2.2%	-2.0%
40+00	-2.5%	-2.0%
41+00	-4.1%	-1.0%
42+00	-6.0%	0.0%
43+00	-6.0%	1.3%
44+00	-6.0%	2.5%
45+00	-6.0%	2.5%
46+00	-6.0%	1.7%
47+00	-5.5%	1.0%
48+00	-5.4%	0.0%
49+00	-2.2%	-1.0%
50+00	-2.0%	-1.5%
51+00	-2.0%	-2.0%

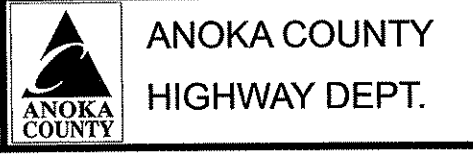


NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_85_(CSAH22-CR76)\PlantPlan.dgn 01/12/2012 10:32:07 AM

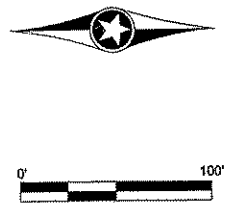
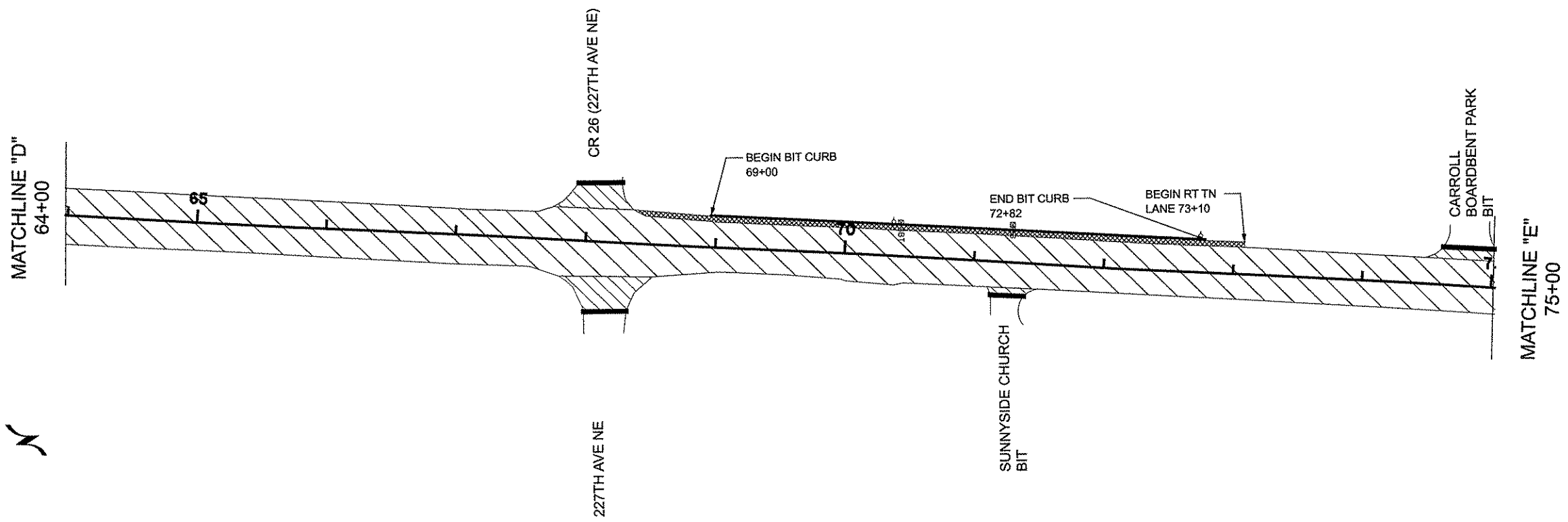
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: CHARLES GARDENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY: CSO DATE: 2/18/2011
 DESIGN BY: CSO DATE: 2/18/2011
 CHECKED BY: JO DATE: _____

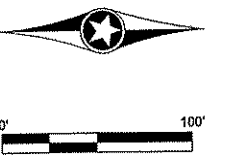
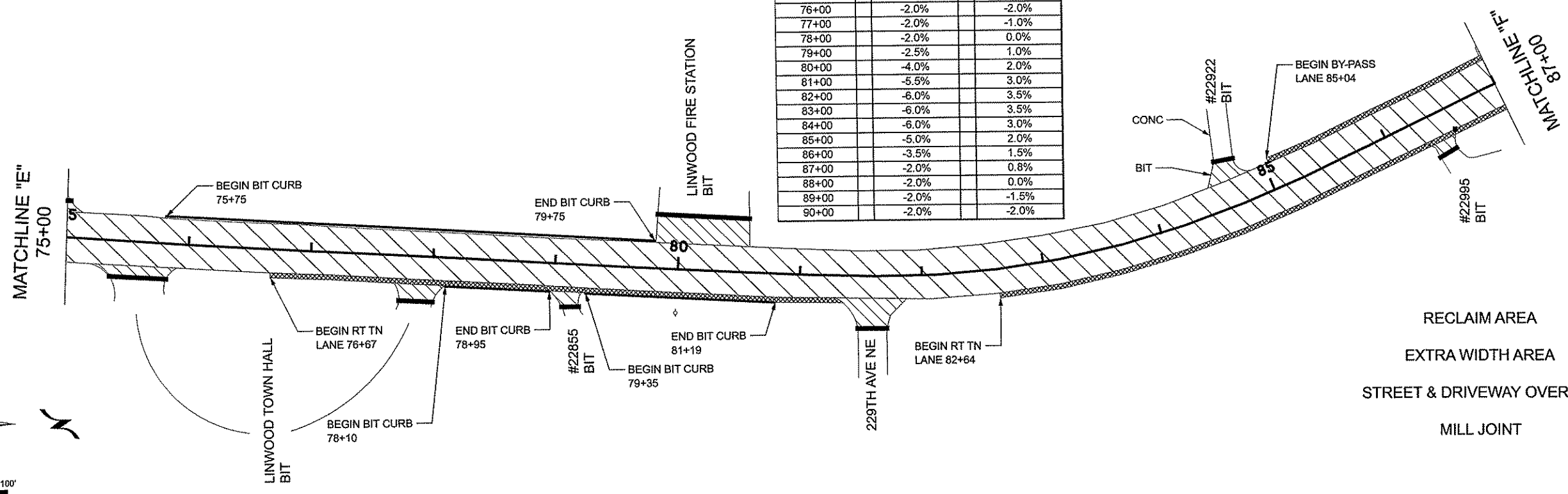


STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 11-25-85

CONSTRUCTION PLAN
 STA 38+00 TO 64+00
 Sheet 10 of 22 Sheets



CURVE GRADES		
STATION	% LT OF CL	% RT OF CL
76+00	-2.0%	-2.0%
77+00	-2.0%	-1.0%
78+00	-2.0%	0.0%
79+00	-2.5%	1.0%
80+00	-4.0%	2.0%
81+00	-5.5%	3.0%
82+00	-6.0%	3.5%
83+00	-6.0%	3.5%
84+00	-6.0%	3.0%
85+00	-5.0%	2.0%
86+00	-3.5%	1.5%
87+00	-2.0%	0.8%
88+00	-2.0%	0.0%
89+00	-2.0%	-1.5%
90+00	-2.0%	-2.0%



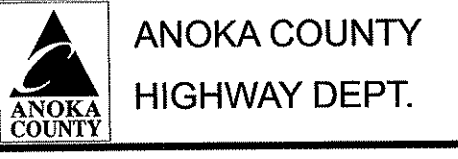
NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_85_(CSAH22-CR76)\Plan\Plan.dgn 01/12/2012 10:32:11 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.

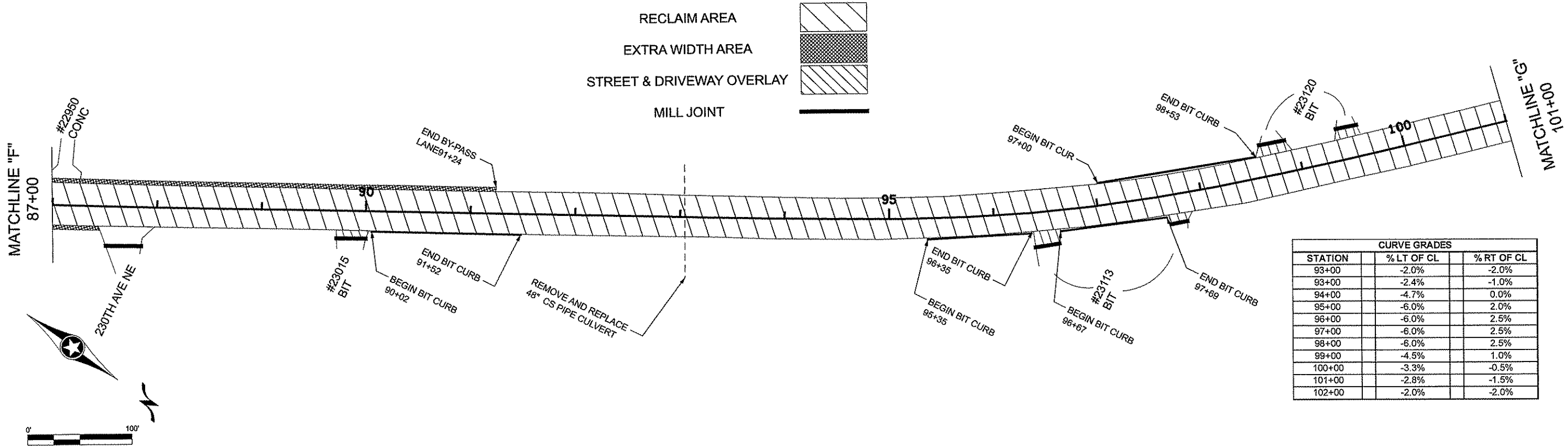
PRINT NAME: CHARLES CADENHEAP
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY: CSO DATE: 2/18/2011
 DESIGN BY: CSO DATE: 2/18/2011
 CHECKED BY: JO DATE:



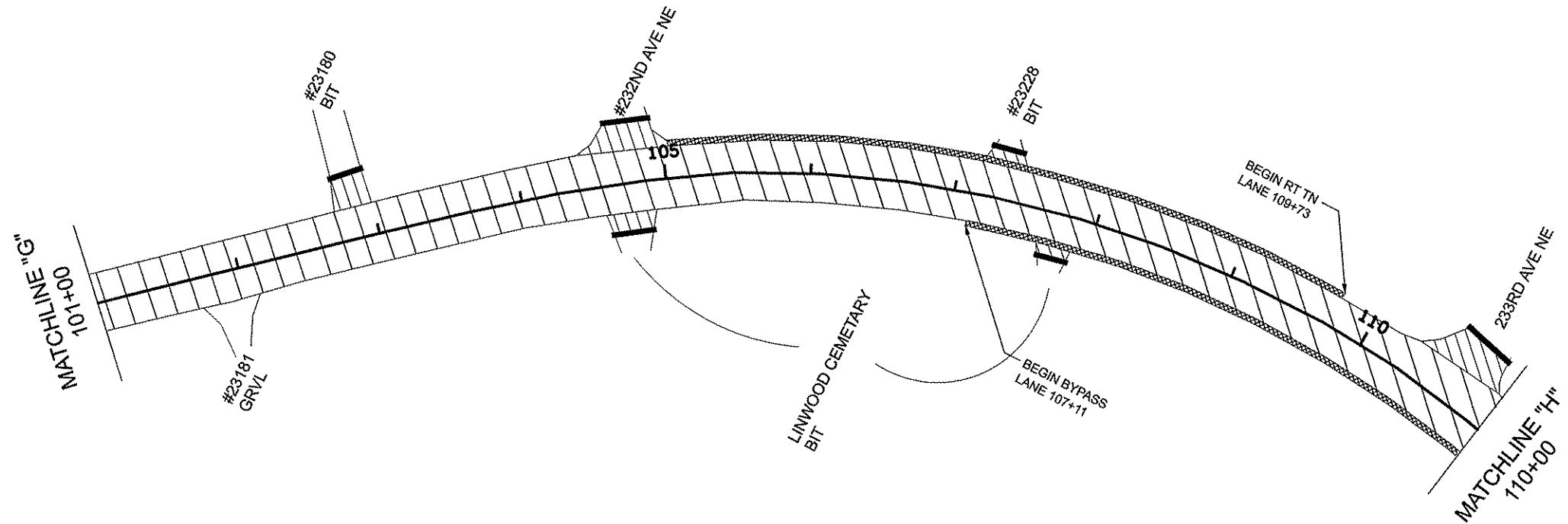
STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 11-25-85

CONSTRUCTION PLAN
 STA 64+00 TO 87+00
 Sheet 11 of 22 Sheets



CURVE GRADES		
STATION	% LT OF CL	% RT OF CL
93+00	-2.0%	-2.0%
93+00	-2.4%	-1.0%
94+00	-4.7%	0.0%
95+00	-6.0%	2.0%
96+00	-6.0%	2.5%
97+00	-6.0%	2.5%
98+00	-6.0%	2.5%
99+00	-4.5%	1.0%
100+00	-3.3%	-0.5%
101+00	-2.8%	-1.5%
102+00	-2.0%	-2.0%

CURVE GRADES		
STATION	% LT OF CL	% RT OF CL
102+00	-2.0%	-2.0%
103+00	-0.4%	-3.0%
104+00	1.3%	-4.0%
105+00	2.4%	-5.0%
106+00	3.5%	-6.0%
107+00	3.5%	-6.0%
108+00	3.5%	-6.0%
109+00	3.5%	-6.0%
110+00	3.5%	-6.0%
111+00	3.5%	-6.0%
112+00	3.5%	-6.0%
113+00	3.5%	-6.0%
114+00	3.5%	-6.0%
115+00	3.5%	-5.0%
116+00	2.7%	-3.5%
117+00	1.0%	-2.0%
118+00	-1.3%	-0.5%
119+00	-3.9%	1.0%



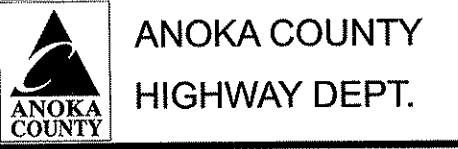
NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_85 (CSAH22-CR76)\PlantPlan.dgn 01/12/2012 10:32:15 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: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 LICENSE NO. 42416

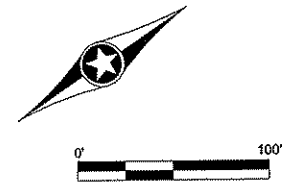
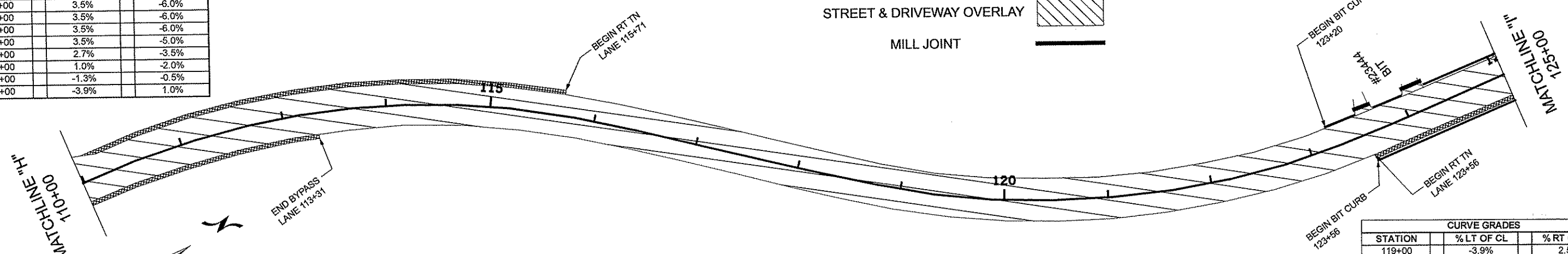
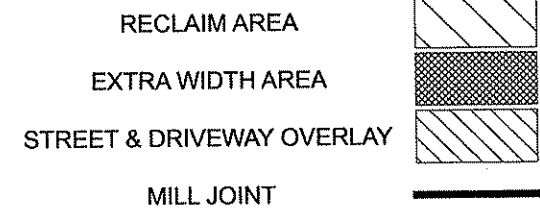
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 CHECKED BY: JO DATE:



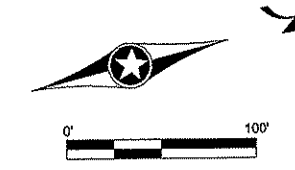
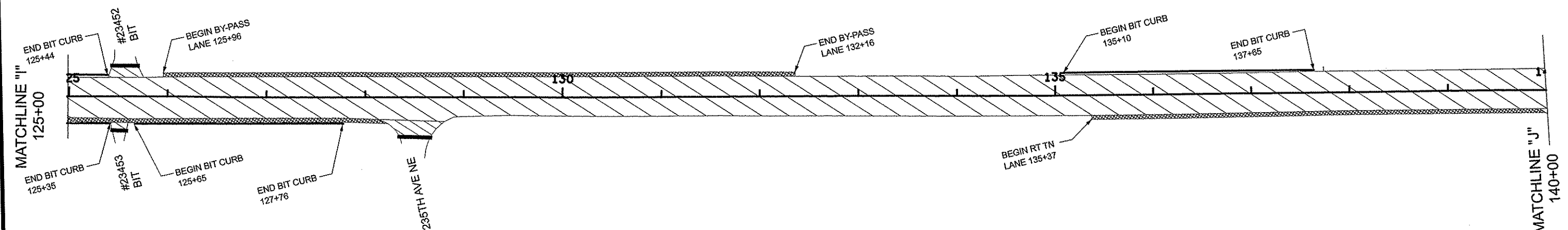
STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 11-25-85

CONSTRUCTION PLAN
 STA 87+00 TO 110+00
 Sheet 12 of 22 Sheets

CURVE GRADES		
STATION	% LT OF CL	% RT OF CL
102+00	-2.0%	-2.0%
103+00	-0.4%	-3.0%
104+00	1.3%	-4.0%
105+00	2.4%	-5.0%
106+00	3.5%	-6.0%
107+00	3.5%	-6.0%
108+00	3.5%	-6.0%
109+00	3.5%	-6.0%
110+00	3.5%	-6.0%
111+00	3.5%	-6.0%
112+00	3.5%	-6.0%
113+00	3.5%	-6.0%
114+00	3.5%	-6.0%
115+00	3.5%	-5.0%
116+00	2.7%	-3.5%
117+00	1.0%	-2.0%
118+00	-1.3%	-0.5%
119+00	-3.9%	1.0%



CURVE GRADES		
STATION	% LT OF CL	% RT OF CL
119+00	-3.9%	2.5%
120+00	-6.0%	4.0%
121+00	-6.0%	5.0%
122+00	-6.0%	5.0%
123+00	-6.0%	3.5%
124+00	-4.2%	2.0%
125+00	-2.4%	0.5%
126+00	-2.0%	-1.0%
127+00	-2.0%	-2.0%



NO	DATE	BY	CKD	APPR	REVISION	TIME

NAME: P:\112-01-00\CSAH_85_(CSAH22-CR76)\Plan\Plan.dgn 01/12/2012 10:32:19 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: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/12/12 LICENSE NO. 40416

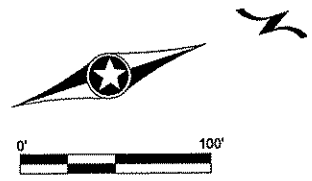
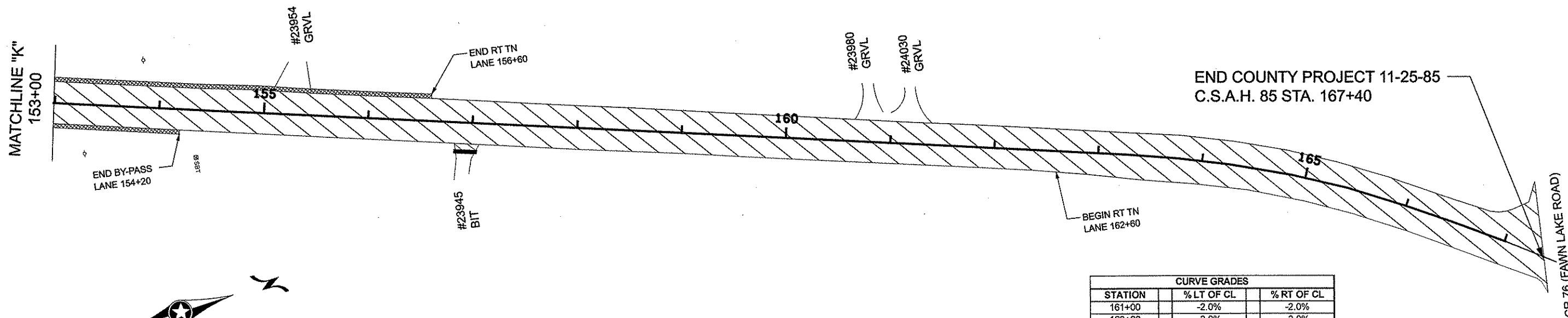
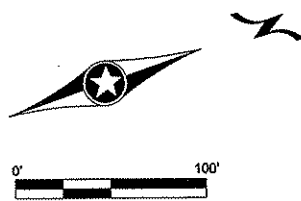
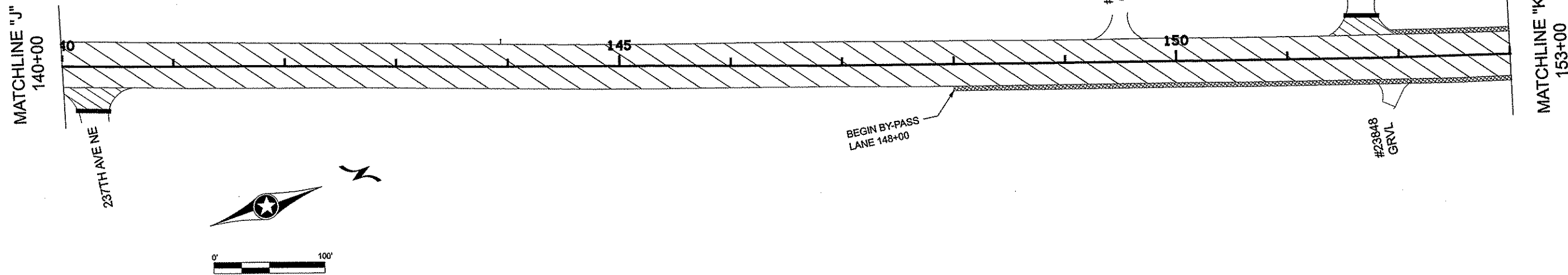
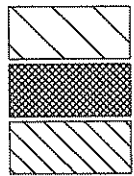
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 DESIGN BY: CSO DATE: 2/18/2011
 CHECKED BY: JO DATE:

ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 11-25-85

CONSTRUCTION PLAN
 STA 110+00 TO 140+00
 Sheet 13 of 22 Sheets

RECLAIM AREA
 EXTRA WIDTH AREA
 STREET & DRIVEWAY OVERLAY
 MILL JOINT



CURVE GRADES		
STATION	% LT OF CL	% RT OF CL
161+00	-2.0%	-2.0%
162+00	-2.0%	-2.0%
163+00	-0.5%	-3.0%
164+00	1.3%	-4.0%
165+00	2.0%	-5.0%
166+00	0.0%	-4.0%
167+00	-1.0%	-2.0%

NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_85_(CSAH22-CR76)\Plan\Plan.dgn
 02/27/2012 1:00:30 PM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 2/27/12 LICENSE NO. 40416

DRAWN BY CSO DATE 2/18/2011
 DESIGN BY CSO DATE 2/18/2011
 CHECKED BY JO DATE



STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 11-25-85

CONSTRUCTION PLAN
 STA 140+00 TO 167+40
 Sheet 13A of 22 Sheets

PERMANENT PAVEMENT MARKING PLAN
NOTES AND GUIDELINES

GENERAL INFORMATION:

THE ENGINEER'S INVOLVEMENT IN THE APPLICATION OF THE MATERIAL SHALL BE LIMITED TO FIELD CONSULTATION AND INSPECTION. ANOKA COUNTY HIGHWAY DEPARTMENT WILL PLACE NECESSARY "SPOTTING" AT APPROPRIATE POINTS TO PROVIDE HORIZONTAL CONTROL FOR STRIPING AND TO DETERMINE NECESSARY STARTING AND CUTOFF POINTS, LONGITUDINAL JOINTS, PAVEMENT EDGES AND EXISTING MARKINGS MAY SERVE AS HORIZONTAL CONTROL WHEN SO DIRECTED.

EDGE LINES AND LANE LINES ARE TO BE BROKEN ONLY AT INTERSECTIONS WITH PUBLIC ROADS AND AT PRIVATE ENTRANCES IF THEY ARE CONTROLLED BY A YIELD SIGN, STOP SIGN OR TRAFFIC SIGNAL. THE BREAK POINT IS TO BE AT THE START OF THE RADIUS FOR THE INTERSECTION OR AT MARKED STOP LINES OR CROSSWALKS.

A TOLERANCE OF 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.

EPOXY:

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 EPOXY PAVEMENT MARKINGS.

THE EPOXY MARKING APPLICATION SHALL IMMEDIATELY FOLLOW THE PAVEMENT CLEANING. GLASS BEANS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE EPOXY RESIN LINE TO PROVIDE AN IMMEDIATE NO-TRACK SYSTEM.

AN EPOXY RESIN LINE 4" WIDE AND 15 MILL THICKNESS (WET), REQUIRES AN APPLICATION RATE OF ONE (1) GALLON OF COMPONENTS FOR 320 FEET OF LINE. GLASS BEADS SHALL BE APPLIED AT A POUND PER GALLON RATE SUFFICIENT TO ACHIEVE AN ACCEPTABLE NO-TRACK SYSTEM.

OPERATIONS SHALL BE CONDUCTED ONLY WHEN THE ROAD PAVEMENT SURFACE TEMPERATURES ARE 50 DEGREES FAHRENHEIT OR GREATER.

PERMANENT PAVEMENT MARKINGS SHALL NOT BE PLACED OVER TEMPORARY TAPE MARKINGS.

PREFORMED THERMOPLASTIC:

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

PAINT:

AT THE TIME OF APPLYING THE MARKING MATERIAL, THE APPLICATION AREA SHALL BE FREE OF CONTAMINATION. THE CONTRACTOR SHALL CLEAN THE ROADWAY SURFACE PRIOR TO THE LINE APPLICATION IN A MANNER AND TO THE EXTENT REQUIRED BY THE ENGINEER.

GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE PAINT LINE.

EXCEPT WHEN USED AS A TEMPORARY MARKING, PAVEMENT MARKINGS SHALL ONLY BE APPLIED IN SEASONABLE WEATHER WHEN AIR TEMPERATURE IS 50 DEGREES FARHENHEIT OR HIGHER AND SHALL NOT BE APPLIED WHEN THE WIND OR OTHER CONDITIONS CAUSE A FILD OR DUST TO BE DEPOSITED ON THE PAVEMENT SURFACE AFTER CLEANING AND BEFORE THE MARKING MATERIAL CAN BE APPLIED.

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

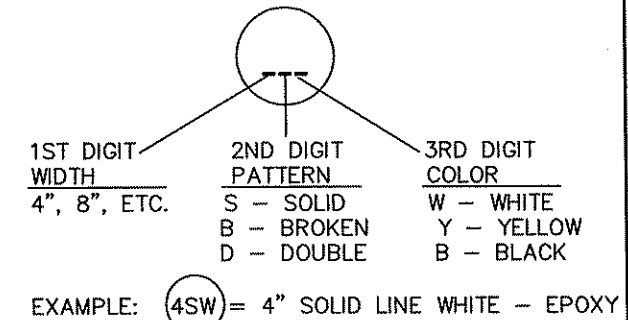
PERMANENT PAVEMENT MARKING TABULATION		
Item	Quantity	Units
4" Double Solid Line Yellow - Epoxy	9626	Lin Ft
4" Solid Line Yellow - Epoxy	1100	Lin Ft
4" Broken Yellow Line - Epoxy (10 ft stripe / 40 ft gap)	1180	Lin Ft
4" Solid Line White - Epoxy	33441	Lin Ft
4" Broken Line White - Epoxy (10 ft stripe / 40 ft gap)	200	Lin Ft

SYMBOLS & MATERIALS LEGEND

- CROSSWALK BLOCK WHITE PREFORMED THERMOPLASTIC
- ↩ PAVEMENT MESSAGE (LEFT ARROW) PREFORMED THERMOPLASTIC

STRIPING KEY

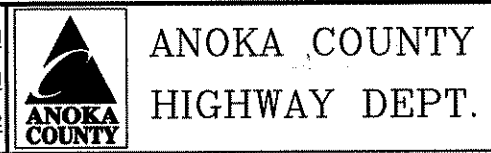
- CIRCLE - EPOXY
- SQUARE PREFORMED THERMOPLASTIC
- △ TRIANGLE - PAINT
- ⬠ PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING



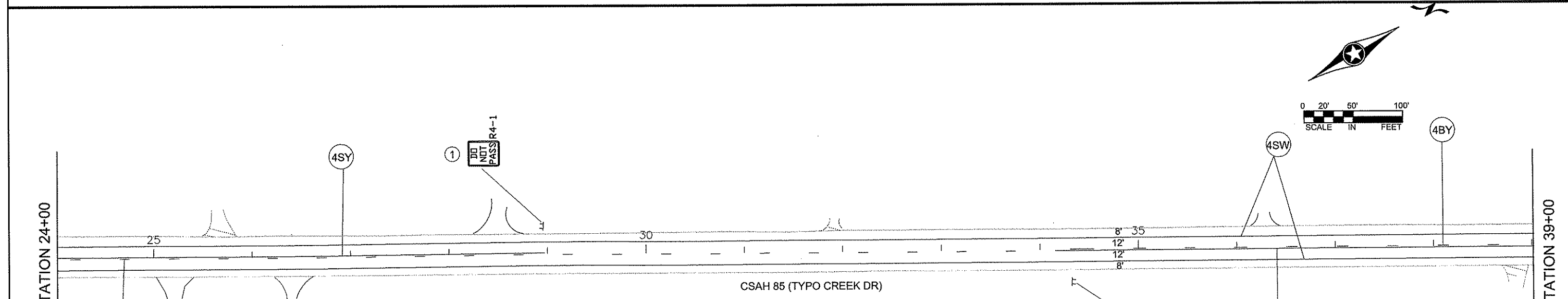
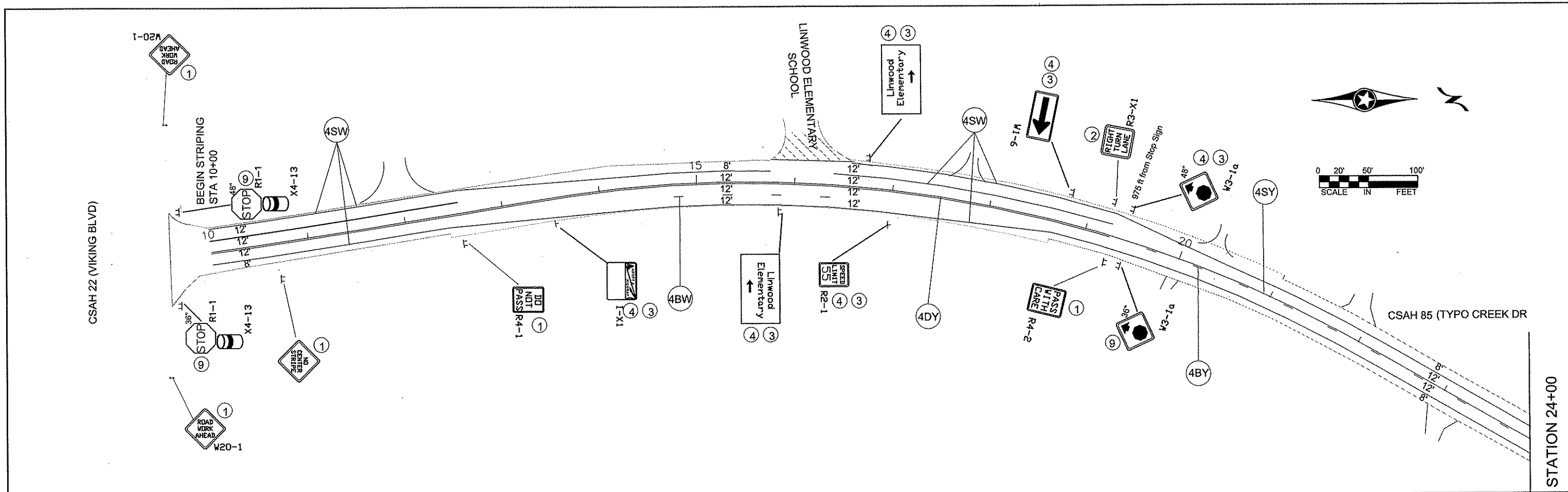
NO	DATE	BY	CKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY: MTH DATE 12/01/2011
 DESIGN BY: MTH DATE 12/01/2011
 CHECKED BY: JR DATE 2/14/2012



STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. 11-25-85



- NOTES:**
- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
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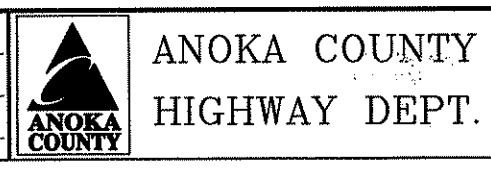
NO	DATE	BY	CKD	APPR	REVISION

NAME: T:\Traffic\dwg\CSAH 85\2012 Dvortoy.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: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY: MTH DATE 1/20/12
 DESIGN BY: MTH DATE 1/20/12
 CHECKED BY: JR DATE 2/14/12



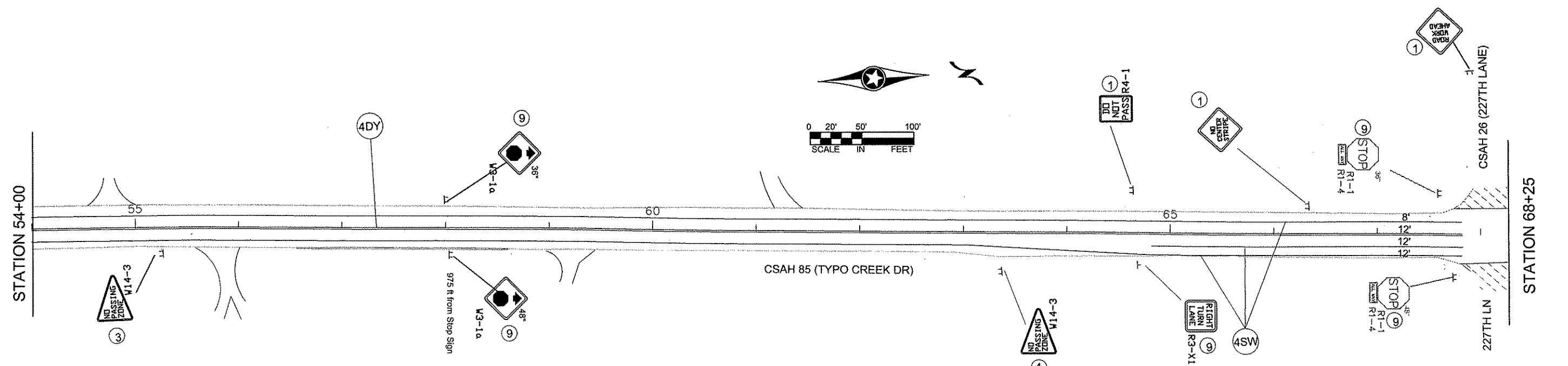
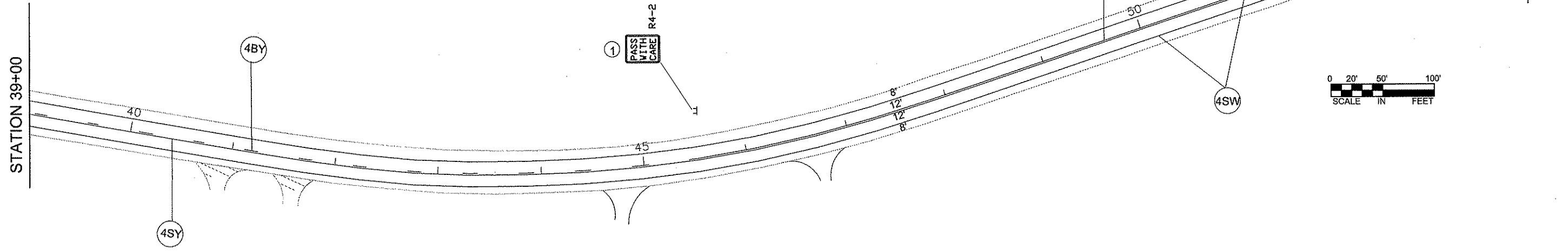
STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 11-25-85

CSAH 85 (TYPO CREEK DR)
 TEMPORARY SIGNING
 PERMANENT SIGNING, STRIPING
 AND PAVEMENT MESSAGES

Sheet 15 of 22 Sheets

NOTES:

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NO	DATE	BY	CKD	APPR	REVISION

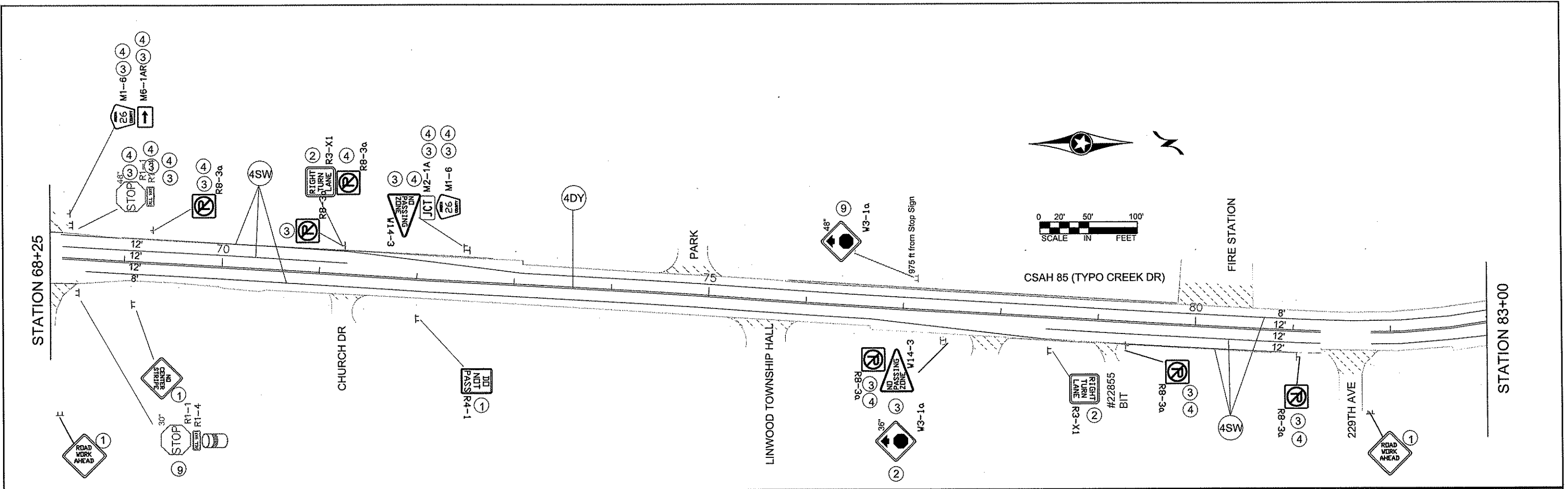
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ANOKA COUNTY
HIGHWAY DEPT.

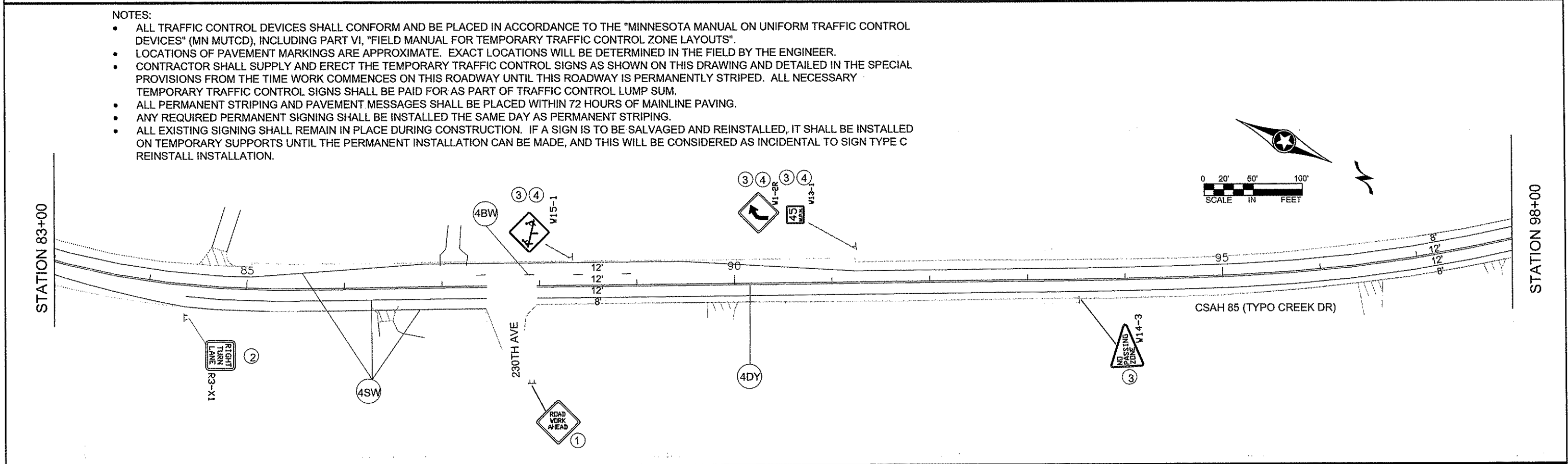
STATE PROJECT NO. _____
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 COUNTY PROJECT NO. 11-25-85

CSAH 85 (TYPO CREEK DR)
 TEMPORARY SIGNING
 PERMANENT SIGNING, STRIPING
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 Sheet 16 of 22 Sheets

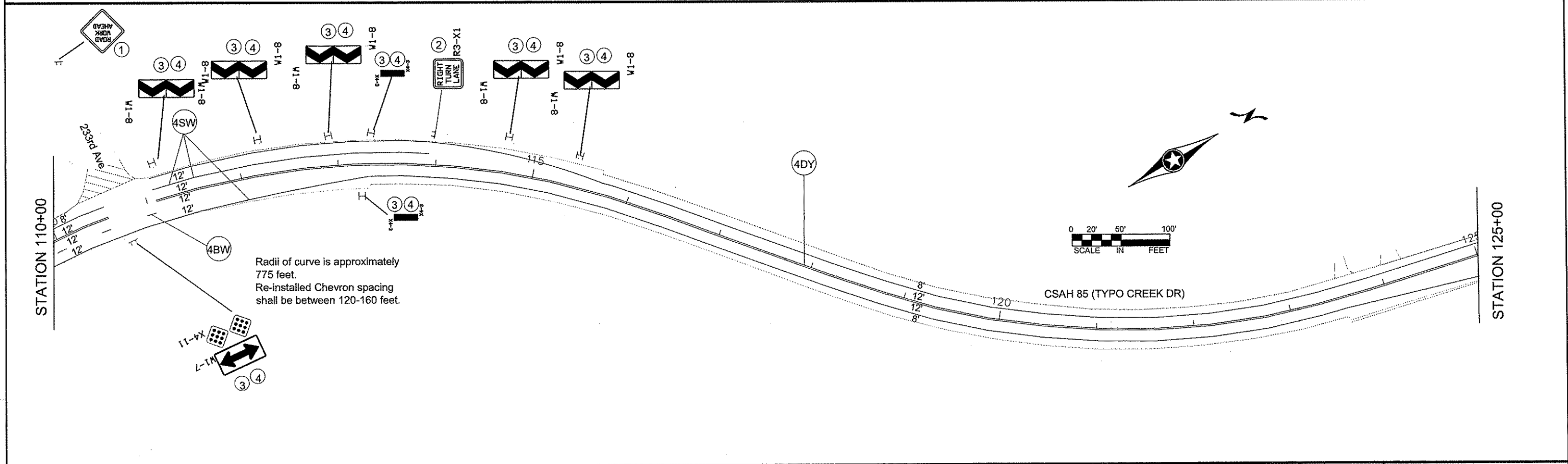
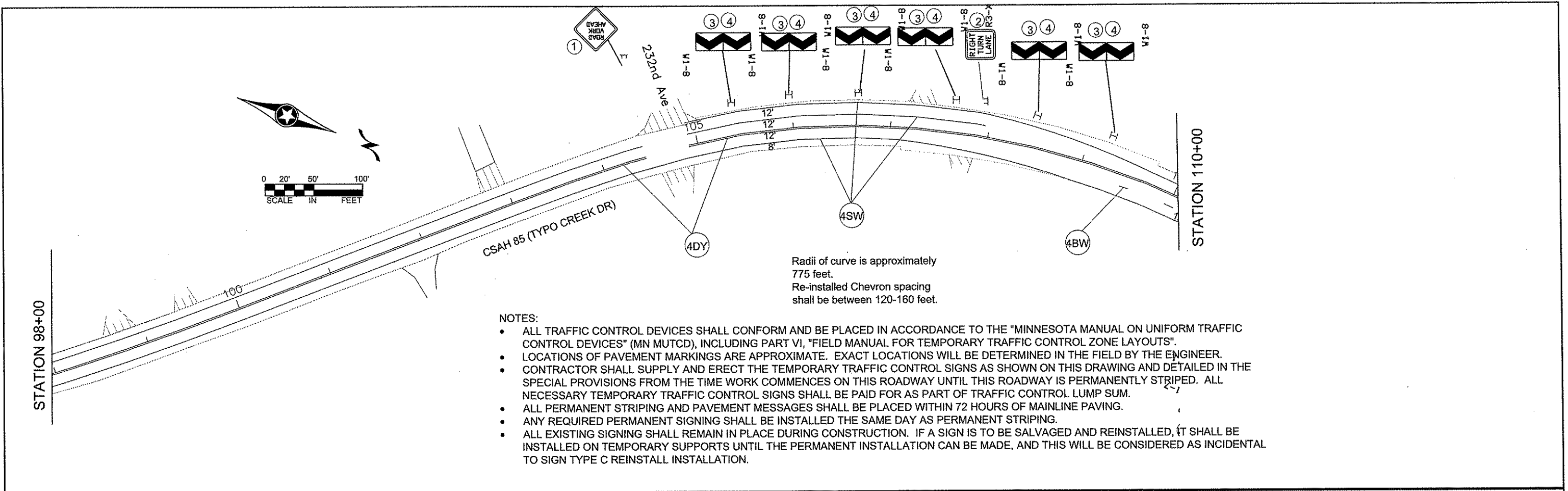


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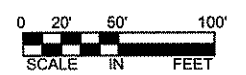
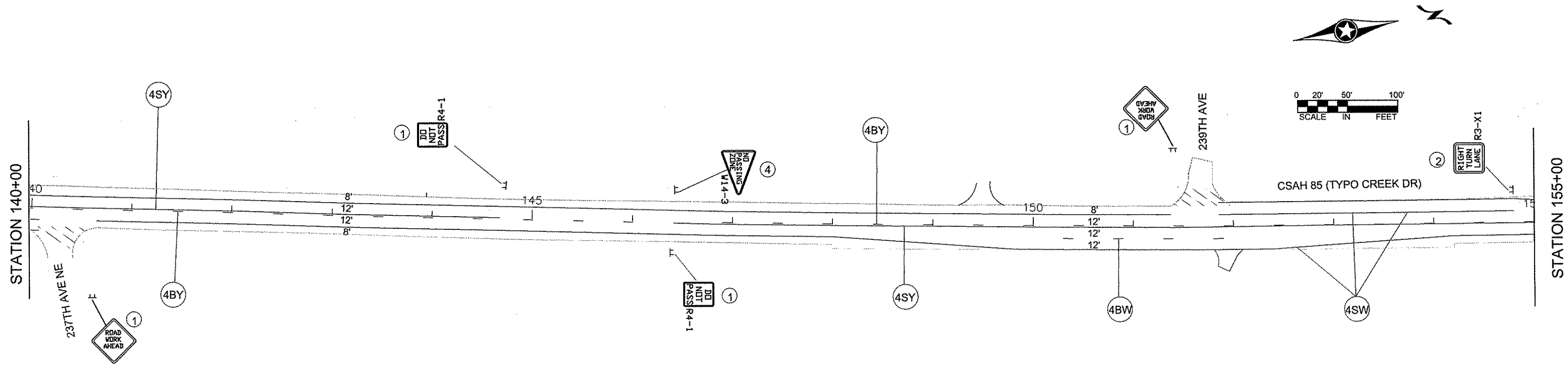
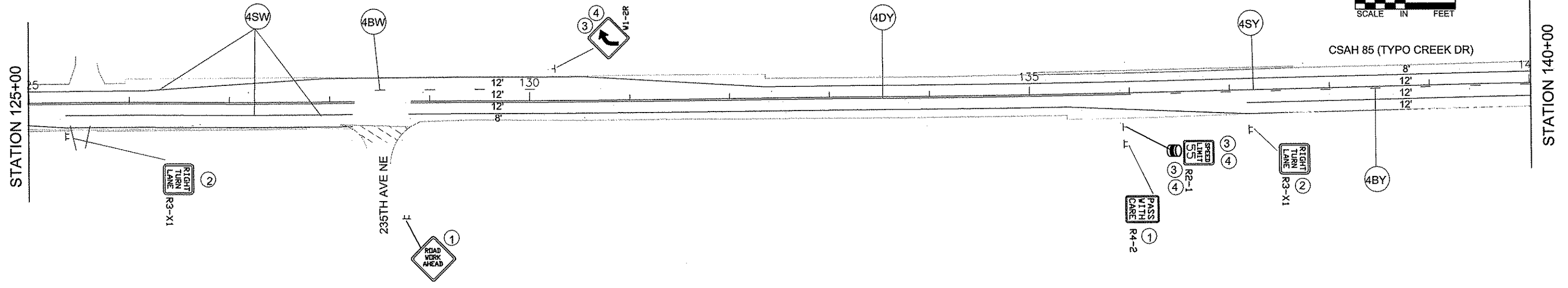
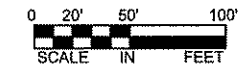
NO	DATE	BY	CKD	APPR
REVISION				
NAME: T:\Traffic\dwg\CSAH 85\2012 D\erlay.dwg				
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINT NAME: CHARLES CADENHEAD SIGNATURE: <i>[Signature]</i> DATE: 2/2/12 LICENSE NO. 40416				
DRAWN BY: MTH DATE: 1/20/12		ANOKA COUNTY HIGHWAY DEPT.		
DESIGN BY: MTH DATE: 1/20/12		STATE PROJECT NO. _____ STATE AID PROJECT NO. _____ CITY PROJECT NO. _____ COUNTY PROJECT NO. 11-25-85		
CHECKED BY: JR DATE: 2/14/12		CSAH 85 (TYPO CREEK DR) TEMPORARY SIGNING PERMANENT SIGNING, STRIPING AND PAVEMENT MESSAGES Sheet 17 of 22 Sheets		



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NO	DATE	BY	CKD	APPR	REVISION							
NAME: T:\Traffic\dwg\CSAH 85\2012 D\vertay.dwg												

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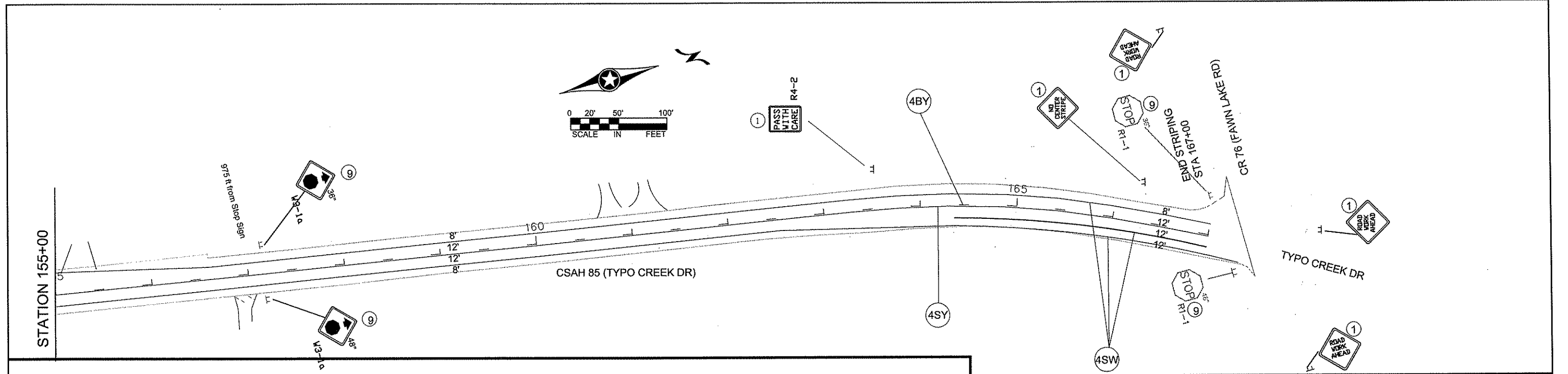
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ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
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 COUNTY PROJECT NO. 11-25-85

CSAH 85 (TYPO CREEK DR)
 TEMPORARY SIGNING
 PERMANENT SIGNING, STRIPING
 AND PAVEMENT MESSAGES

Sheet 19 of 22 Sheets



TEMPORARY TRAFFIC CONTROL SIGNS						
M.U.T.C.D. CODE	SIZE	PANEL AREA FT. ²	INSERT	QUANTITY		MOUNTING HEIGHT (TO PANELMENT EDGE) FT.
				No.	POST	
W8-12	48" x 48"	16.00		4	2	7.0'
R4-1	24" x 30"	5.00		7	1	7.0'
R4-2	24" x 30"	5.00		4	1	7.0'
W8-1A	48" x 48"	16.00		AS NEEDED		
W8-1A	48" x 48"	16.00		AS NEEDED		
W8-8	48" x 48"	16.00		AS NEEDED		
W8-11	48" x 48"	16.00		AS NEEDED		
W20-1	48" x 48"	16.00		AS NEEDED (ESTIMATED 14)		

F & I PERMANENT SIGNS							
M.U.T.C.D. CODE	SIZE	PANEL AREA FT. ²	INSERT	QUANTITY		MOUNTING HEIGHT (TO PANELMENT EDGE) FT.	TOTAL PANEL AREA FT. ²
				No.	POST		
R3-X1	30" x 30"	6.25		9	1	7.00	56.25
W3-1a	36" x 36"	9.00		1	2	7.00	9.00
TOTAL PANEL AREA							65.25

SEE SPECIAL PROVISIONS

- ① TEMPORARY TRAFFIC CONTROL SIGN
- ② F & I PERMANENT SIGN
- ③ SALVAGE PERMANENT SIGN
- ④ RE-INSTALL PERMANENT SIGN
- ⑤ INPLACE - RETAIN

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SALVAGE AND RE-INSTALL PERMANENT SIGNS							
STATION		SALVAGE SIGN TYPE C	SALVAGE SIGN TYPE D	INSTALL SIGN TYPE C	INSTALL SIGN TYPE D	SIGN NUMBER	NOTES
		EACH	EACH	EACH	EACH		
13+50	Rt		1		1	Adopt	
16+00	Rt		1		1	School	
16+70	Lt		1		1	School	
17+00	Rt	1		1		R2-1	
18+80	Lt	1		1		W1-6	
19+20	Lt	1		1		W3-1	
51+00	Lt	1				W14-3	
55+20	Rt	1				W14-3	
63+30	Rt			1		W14-3	
68+50	Lt	1		1		R1-1 / R1-4 / delineator	
68+50	Lt	1		1		M1-6 / M6-1AR	
69+30	Lt	1		1		R8-3a	
71+30	Lt	1		1		R8-3a	
72+50	Lt	1		1		W14-3 / M2-1a / M1-6	
77+40	Rt	1		1		R8-3a	
77+40	Rt						W14-3
79+30	Rt	1		1		R8-3a	
81+00	Rt	1		1		R8-3a	
88+30	Lt	1		1		W15-1	
91+30	Lt	1		1		W1-2RW13-1	
93+60	Rt	1				W14-3	
105+40	Lt	1		1		W1-8 / W1-8	
106+00	Lt	1		1		W1-8 / W1-8	
106+70	Lt	1		1		W1-8 / W1-8	
107+60	Lt	1		1		W1-8 / W1-8	
108+40	Lt	1		1		W1-8 / W1-8	
109+30	Lt	1		1		W1-8 / W1-8	
110+70	Rt	1		1		W1-7 / x4-2 / x4-2	
111+20	Lt	1		1		W1-8 / W1-8	
112+20	Lt	1		1		W1-8 / W1-8	
112+90	Lt	1		1		W1-8 / W1-8	
112+20	Rt	1		1		X4-3 / x4-3	
112+30	Lt	1		1		X4-3 / x4-3	
114+70	Lt	1		1		W1-8 / W1-8	
115+40	Lt	1		1		W1-8 / W1-8	
130+20	Lt	1		1		W1-2R	
135+90	Rt	1		1		R2-1/terminal post	
146+40	Lt			1		W14-3	
TOTAL		32	3	31	3		

NO	DATE	BY	CKD	APPR	REVISION

NAME: T:\Traffic\dwg\CSAH 85\2012 Overlay.dwg

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PRINT NAME: CHARLES CADENHEAD
SIGNATURE: *[Signature]*
DATE: 7/2/12 LICENSE NO. 40416

DRAWN BY: MTH DATE 1/20/12
DESIGN BY: MTH DATE 1/20/12
CHECKED BY: JR DATE 2/14/12



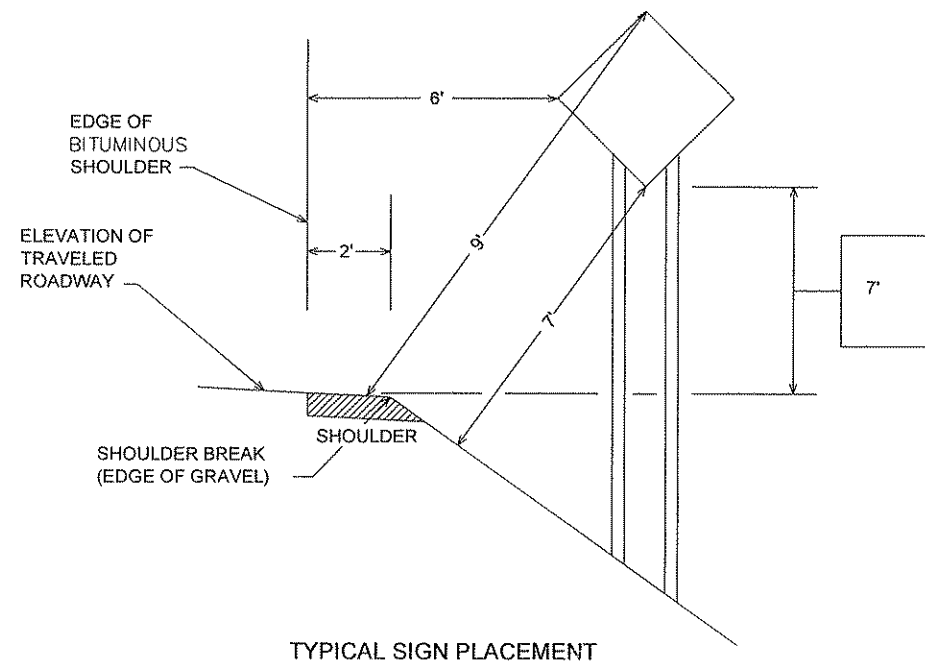
ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
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CITY PROJECT NO. _____
COUNTY PROJECT NO. 11-25-85

CSAH 85 (TYPO CREEK DR)
TEMPORARY SIGNING
PERMANENT SIGNING, STRIPING
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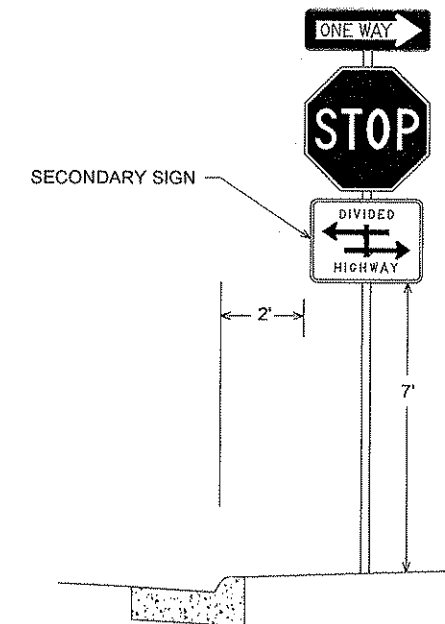
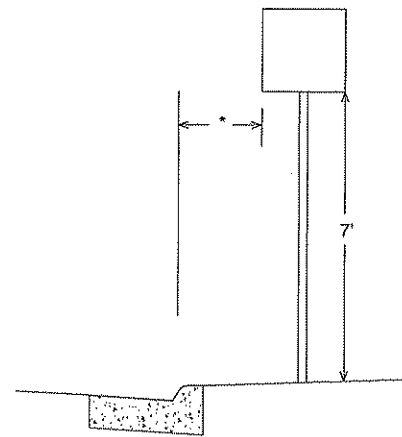
Sheet 21 of 22 Sheets

RURAL



URBAN

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



- NOTE:
- ALL DIMENSIONS ARE MINIMUMS
 - MAINTAIN 2' CLEAR FROM SIGNS TO BITUMINOUS TRAIL

NO	DATE	BY	CKD	APPR	REVISION

NAME: T:\Traffic\Dwg\CSAH 18 (Crosstown Blvd)\Sign&Stripe_Details.dwg

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DRAWN BY MTH DATE 1-21-11

DESIGN BY MTH DATE 1-21-11

CHECKED BY JR DATE 1-21-11



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____

STATE PROJECT NO. _____

STATE PROJECT NO. _____

COUNTY PROJECT NO. 11-25-85

SIGNING & STRIPING DETAILS

Sheet 22 of 22 Sheets

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 _____

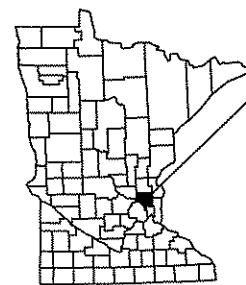
- RAILROAD CROSSING BELL _____
- RAILROAD CROSSING GATE _____
- MANHOLE _____
- CATCH BASIN _____
- FIRE HYDRANT _____
- CAST IRON MONUMENT _____
- IRON PIN _____
- GRAVEL PIT _____
- SAND PIT _____
- BORROW PIT _____
- ROCK QUARRY _____

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 Terminal) _____
- GAS MAIN _____
- WATERMAIN _____
- TELEPHONE CABLE IN CONDUIT _____
- ELECTRIC CABLE IN CONDUIT _____
- TELEPHONE MANHOLE _____
- ELECTRIC MANHOLE _____
- BURIED TELEPHONE CABLE _____
- BURIED ELECTRIC CABLE _____
- SEWER (Sanitary or Storm) _____
- SEWER MANHOLE _____

SCALES

- PLAN _____
- PROFILE _____
- HORIZONTAL _____
- VERTICAL _____
- X-SECTIONS _____
- HORIZONTAL _____
- VERTICAL _____



PROJECT LOCATION

CITY OF FRIDLEY
 ANOKA COUNTY
 MN/DOT TRANSPORTATION DISTRICT - METRO
 SECTION 22
 TOWNSHIP 30 NORTH
 RANGE 24 WEST

MINNESOTA DEPARTMENT OF TRANSPORTATION

ANOKA COUNTY

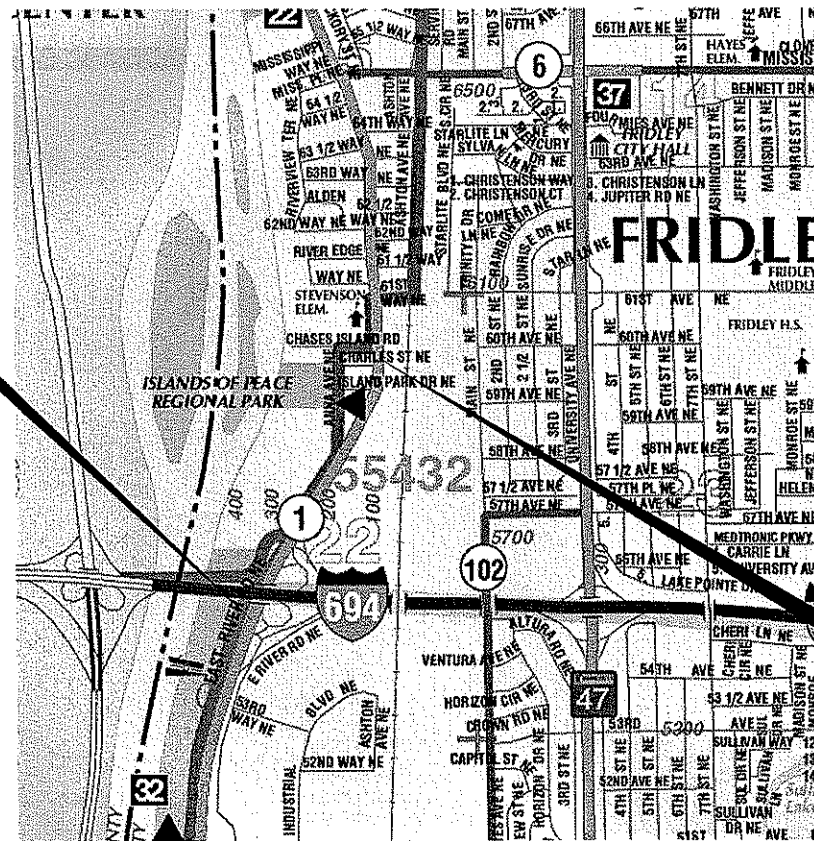
CONSTRUCTION PLAN FOR MILL BITUMINOUS SURFACE, BITUMINOUS SURFACING, DRAINAGE AND CURB AND GUTTER

LOCATED ON C.S.A.H. 1 BETWEEN S. On/Off ramp AND Charles St.

COUNTY PROJ. NO. C.P. 12-10-01

C.S.A.H. 1

GROSS LENGTH	3669 FEET	0.695 MILES
BRIDGES-LENGTH	0.00 FEET	0.000 MILES
EXCEPTIONS-LENGTH	0.00 FEET	0.000 MILES
NET LENGTH	3669 FEET	0.695 MILES



CITY OF FRIDLEY

BEGIN C.P. 12-10-01
 C.S.A.H. 1 STA. 17+25

END C.P. 12-10-01
 C.S.A.H. 1 STA. 53+94

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 PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS."


INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	STATEMENT OF ESTIMATED QUANTITIES
3-5	TYPICAL SECTION
6-7	DRAINAGE TABULATIONS AND DETAILS
8-10	CONSTRUCTION PLAN
11	SIGNAL LOOP DETAIL
12	PERMANENT MARKING TABULATION
13-14	TEMP. SIGNING, PERM STRIPING, AND PAVE. MESSAGES
15-16	SIGNING & STRIPING PLAN DETAILS
17-22	MISCELLANEOUS SIGNAL SHEETS

THIS PLAN CONTAINS 22 SHEETS
 DESIGN DESIGNATION

ESAL 20	753300
R VALUE	50
ADT (2010) =	19100
Proj. ADT (2030) =	26500
Proj. HCADT (2030) =	760
Soil Factor	NA
9 TON DESIGN	

Functional Classification A MINOR EXPANDER
 No. of Traffic Lanes 4 No. of Parking Lanes 0
 Design Speed 40 MPH N/A
 Based on Stopping Sight Distance
 Height of eye 3.5' Height of object 2.0'

Approved  3/4/12
 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: CHARLES CADENHEAD
 SIGNATURE: 
 DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY KPR DATE 1/26/12
 DESIGN BY KPR DATE 1/26/12
 CHECKED BY DFP DATE _____



ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 12-10-01

TITLE SHEET

Sheet 1 of 22 Sheets

CSAH 1		STATEMENT OF ESTIMATED QUANTITIES		
ITEM NO.	ITEM	NOTES	UNIT	TOTAL EST. QUANT.
2011.601	CONSTRUCTION SURVEYING		LUMP SUM	1
2021.501	MOBILIZATION		LUMP SUM	1
2104.501	REMOVE CURB AND GUTTER	1	LIN FT	1051
2104.503	REMOVE CONCRETE WALK		SQ FT	1190
2104.503	REMOVE BRICK MEDIAN		SQ FT	12283
2104.505	REMOVE BITUMINOUS PAVEMENT	1	SQ YD	339
2104.509	REMOVE MANHOLES OR CATCH BASINS		EACH	8
2104.511	SAWING CONCRETE PAVEMENT (FULL DEPTH)	1	LIN FT	176
2104.513	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	1	LIN FT	850
2232.501	MILL BITUMINOUS SURFACE (2.0")	11	SQ YD	33953
2232.604	MILL BITUMINOUS PAVEMENT (SPECIAL)	13	SQ YD	422
2357.502	BITUMINOUS MATERIAL FOR TACK COAT		GAL	1719
2360.501	TYPE SP 12.5 WEARING COURSE MIXTURE(4,B)	2	TON	50
2360.501	TYPE SP 12.5 WEARING COURSE MIXTURE(4,E)	16	TON	3905
2360.502	TYPE SP 12.5 NON-WEARING COURSE MIXTURE(4,B)	1.3	TON	48
2504.602	ADJUST GATE VALVE		EACH	3
2506.501	CONST DRAINAGE STRUCTURE G	1,10,12	LIN FT	8.1
2506.501	CONST DRAINAGE STRUCTURE H	1,10,12	LIN FT	15.2
2506.501	CONST DRAINAGE STRUCTURE DES 48-4020	1,10,12	LIN FT	7.6
2506.503	RECONSTRUCT DRAINAGE STRUCTURE	1,4,10,12	LIN FT	11.8
2506.516	CASTING ASSEMBLY	14	EACH	40
2506.602	GROUT CATCH BASIN OR MANHOLE	1	EACH	8
2521.501	4" CONCRETE WALK	15	SQ FT	12586
2521.501	6" CONCRETE WALK		SQ FT	194
2531.501	CONCRETE CURB & GUTTER DESIGN B612		LIN FT	362
2531.501	CONCRETE CURB & GUTTER DESIGN B618		LIN FT	308
2531.501	CONCRETE CURB & GUTTER DESIGN B624		LIN FT	130
2531.501	CONCRETE CURB & GUTTER DESIGN B824		LIN FT	251
2531.501	CONCRETE CURB & GUTTER DESIGN D424		LIN FT	10
2531.618	TRUNCATED DOMES	5	SQ FT	72
2563.601	TRAFFIC CONTROL	8	LUMP SUM	1
2565.602	NMC LOOP DETECTOR 6'X6'		EACH	24
2573.530	STORM DRAINAGE INLET PROTECTION	1	EACH	42
2575.601	RAPID STABILIZATION METHOD 3	1.6	M-GAL	1
2581.501	REMOVABLE PREFORMED PLASTIC MARKING	7	LIN FT	591
2582.502	4" SOLID LINE WHITE-EPOXY	9	LIN FT	11197
2582.502	4" BROKEN WHITE LINE-EPOXY	9	LIN FT	1450
2582.502	8" SOLID LINE WHITE-EPOXY	9	LIN FT	1280
2582.502	8" BROKEN WHITE LINE-EPOXY	9	LIN FT	183
2582.503	4" SOLID LINE YELLOW-EPOXY	9	LIN FT	7500
2582.602	PAVT MSSG (RT ARROW) PREF THERMOPLASTIC	9	EACH	3
2582.602	PAVT MSSG (LT ARROW) PREF THERMOPLASTIC	9	EACH	4
2582.603	24" SOLID LINE WHITE PREF THERMOPLASTIC	9	LIN FT	230
2582.618	3 X 6 ZEBRA CROSSWALK - PREFORMED THERMOPLASTIC	9	SQ FT	846

NOTES:

- REFERENCE STRUCTURE REPAIR TAB.
- ITEM FOR PAVING STREET APPROACHES.
- ITEM FOR PATCHING AROUND M.H., C.B., INFRONT OF NEW CURB, AND DRIVEWAY TIE-IN TO NEW CURB.
- ITEM INCLUDES STORM AND SANITARY M.H.
- ITEM INCLUDES RADIAL TRUNCATED DOMES AS NEEDED.
- ITEM INCLUDES FERTILIZER, SEED, AND TOPSOIL.
- CENTERLINE WHITE SKIPS MUST BE APPLIED BEFORE CONTRACTOR LEAVES FOR THE DAY.
- ROAD WORK AHEAD, DO NOT PASS, PASS WITH CARE, NO CENTER STRIPE, AND BUMP / BUMP AHEAD SIGNS TO BE INPLACE DURING MILL / OVERLAY OPERATIONS.
- MARKINGS SHALL BE IN PLACE WITH IN 72 HOURS OF FINAL MAINLINE PAVING.
- AGGREGATE BASE CLASS 5 IS INCIDENTAL FOR COMPACTING AROUND CB'S AND MHS.
- MAINLINE MILLING INCLUDES DETAIL MILLING AROUND MANHOLES, GATE VALVES, AND ALL STRUCTURES IN BIT. PAVEMENT AREA TO BE MILLED.
- ALL MANHOLES MUST BE LOCATED AND PROTECTED AT ALL TIMES DURING MILLING AND PAVING OPERATIONS. CONTRACTORS RESPONSIBILITY.
- ITEM USED FOR MILLING 2" ON DRIVEWAYS STREET APPROACHES.
- FURNISH AND INSTALL. CASTING TYPE TO BE DETERMINED BY ENGINEER
- ALL 4" MEDIAN WALK IS PAID UNDER 4" CONCRETE WALK.
- ITEM INCLUDES CONSTRUCTION OF SAFTEY EDGE, REFER TO SPECIAL PROVISIONS.

BASIS OF PLANNED QUANTITIES

<u>ITEM NO.</u>			
2357.502	BITUMINOUS MATERIAL FOR TACK COAT		.05 GAL / SQ YD
2360.501	TYPE SP 12.5 WEARING COURSE MIXTURE (4, E)		115 LBS / SQ YD / INCH THICKNESS
2360.502	TYPE SP 12.5 NON-WEARING COURSE MIXTURE (4, B)		115 LBS / SQ YD / INCH THICKNESS
2575.601	RAPID STABILIZATION METHOD 3		6 MGAL / ACRE
2581.501	REMOVABLE PREFORMED PLASTIC MARKING		2' AT 50' INTERVALS FOR SKIPS

NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\12-01-00\CSAH_01_(694-Charles)\Planseq.dgn					
03/01/2012 11:00:50 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: CHARLES CADENHEAD

SIGNATURE: *[Signature]*

DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY: KPR DATE: 1/06/12

DESIGN BY: KPR DATE: 1/08/12

CHECKED BY: JO DATE:



**ANOKA COUNTY
HIGHWAY DEPT.**

STATE PROJECT NO. _____

STATE AID PROJECT NO. _____

CITY PROJECT NO. _____

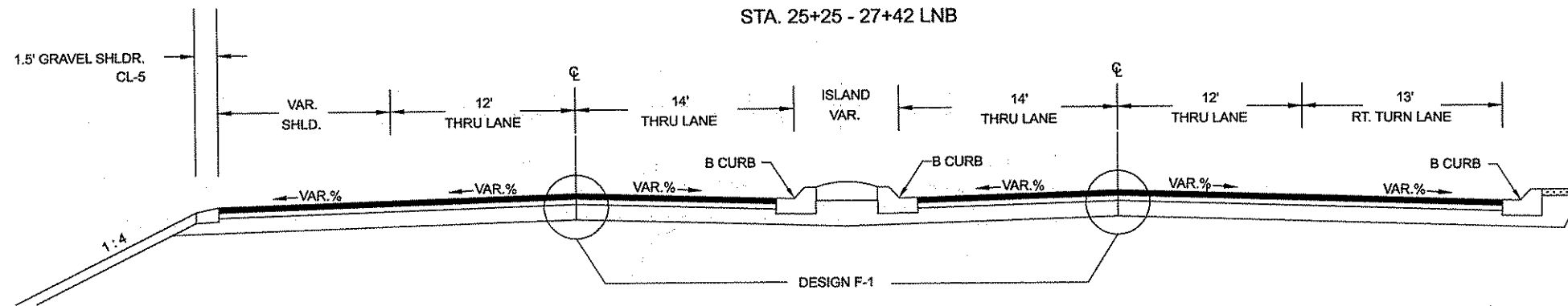
COUNTY PROJECT NO. 12-10-01

STATEMENT OF ESTIMATED QUANTITIES

Sheet 2 of 22 Sheets

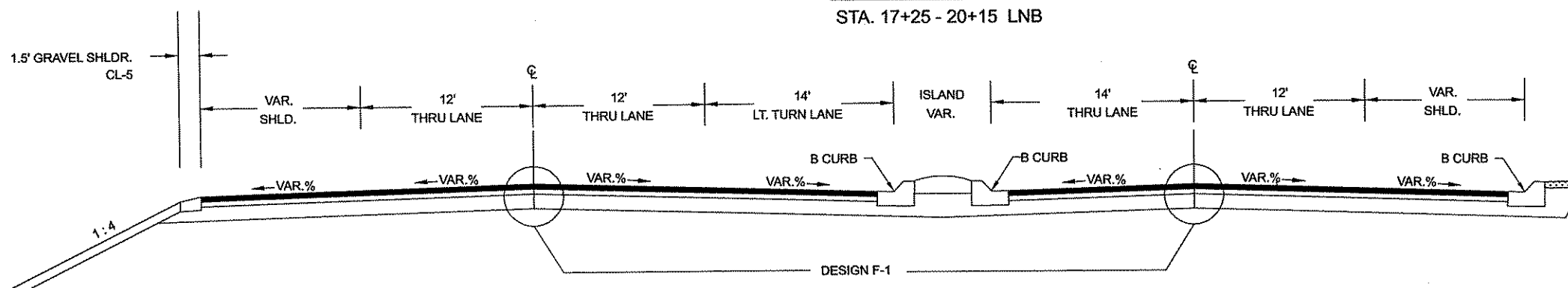
TYPICAL SECTION

STA. 25+25 - 27+42 LNB

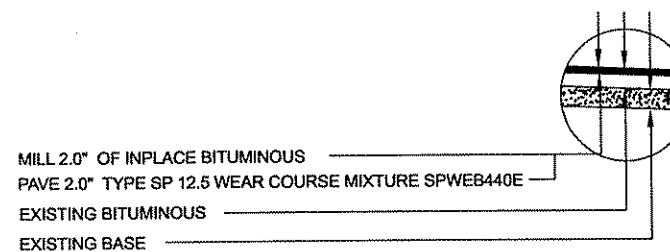


TYPICAL SECTION

STA. 17+25 - 20+15 LNB



DESIGN F-1



NO	DATE	BY	CKD	APPR	REVISION
NAME: p:\12-01-00\csah_01_(694-charles)\plan\typ.dgn					

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

PRINT NAME: Charles Cadenhead

SIGNATURE: *Charles Cadenhead*

DATE: 7/2/12 LICENSE NO. 40416

DRAWN BY: KPR DATE: 1/06/12

DESIGN BY: KPR DATE: 1/06/12

CHECKED BY: JO DATE:

ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____

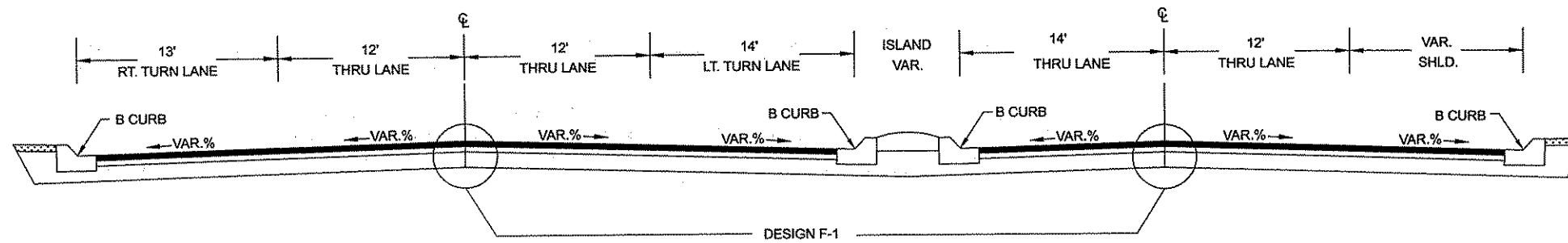
STATE AID PROJECT NO. _____

CITY PROJECT NO. _____

COUNTY PROJECT NO. 12-10-01

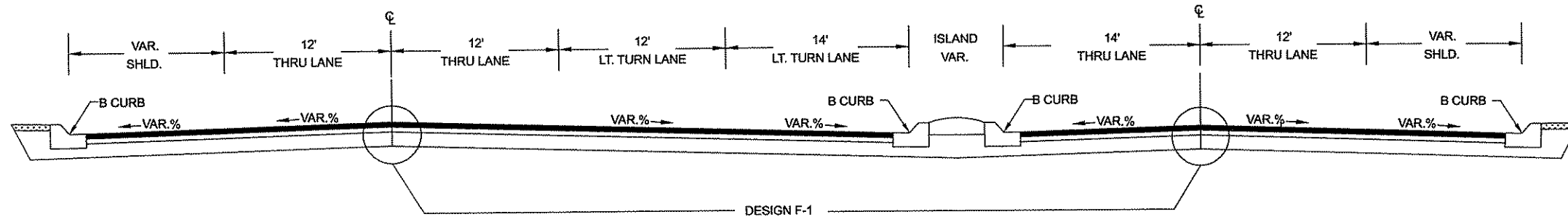
TYPICAL SECTION

STA. 36+60 - 43+42 LNB

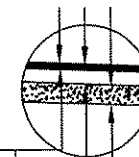


TYPICAL SECTION

STA. 27+42 - 34+45 LNB



DESIGN F-1



MILL 2.0" OF INPLACE BITUMINOUS
 PAVE 2.0" TYPE SP 12.5 WEAR COURSE MIXTURE SPWEB440E
 EXISTING BITUMINOUS
 EXISTING BASE

NO	DATE	BY	CKD	APPR	REVISION
NAME: p:\12-01-00\csah_01_(694-charles)\plan\typ.dgn					
01/19/2012 1:30:21 PM					

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: Charles Cadenhead
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY: KPR DATE: 1/06/12
 DESIGN BY: KPR DATE: 1/06/12
 CHECKED BY: JO DATE:

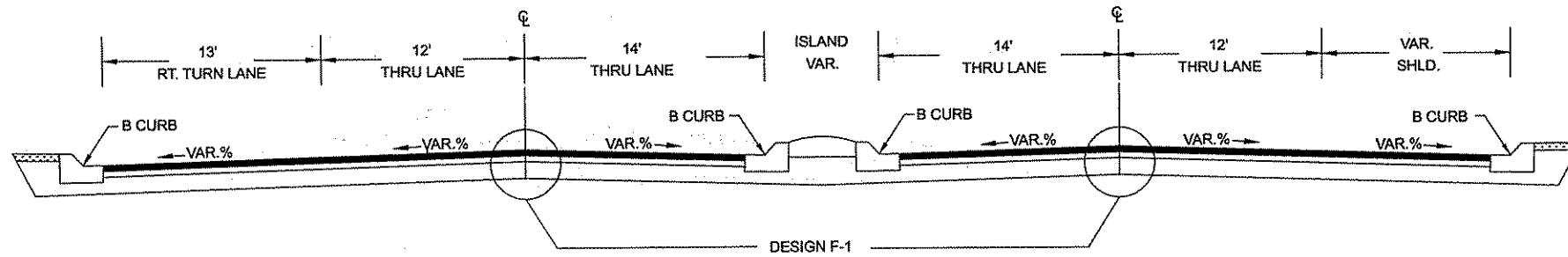


STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 12-10-01

TYPICALS SECTIONS
 Sheet 4 of 22 Sheets

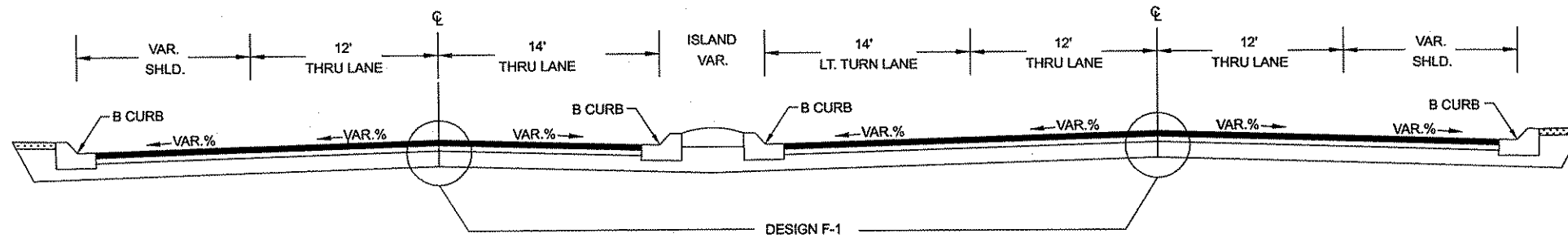
TYPICAL SECTION

STA. 34+45 - 36+60, 53+00 - 53+94 LNB



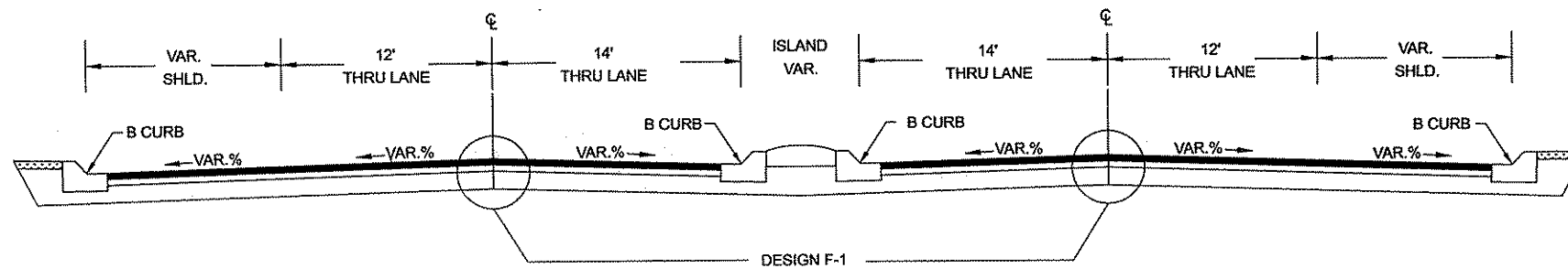
TYPICAL SECTION

STA. 50+75 - 53+00 LNB

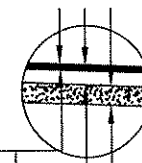


TYPICAL SECTION

43+42 - 50+75 LNB



DESIGN F-1



MILL 2.0" OF INPLACE BITUMINOUS
 PAVE 2.0" TYPE SP 12.5 WEAR COURSE MIXTURE SPWEB440E
 6" EXISTING BITUMINOUS
 8" EXISTING BASE

NO	DATE	BY	CHKD	APPR	REVISION
NAME: p:\12-01-00\csh_01_694-charles\plantyp.dgn					

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: Charles Cadenhead
 SIGNATURE: *[Signature]*
 DATE: 3/12/12 LICENSE NO. 40416

DRAWN BY: KPR DATE: 1/08/12
 DESIGN BY: KPR DATE: 1/08/12
 CHECKED BY: JO DATE:

ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 12-10-01

A.	STRUCTURE REPAIRS																								ACTION
	STRUCTURE	STATION	LOC.		REMOVE C&G	REMOVE CONCRETE WALK	REMOVE BIT. PAVEMENT	REMOVE DRAINAGE STRUCTURE	SAW CONC.	SAW BIT. PAVEMENT OR BIT. CURB	REPLACE BIT. PAVEMENT	CONSTRUCT DRAIN STR H	CONSTRUCT DRAIN STR G	CONSTRUCT DRAIN STR 48-4020	RECONSTRUCT DRAINAGE STR. (RING HT)	GROUT AND CLEAN OUT STRUCTURE	FURNISH & INSTALL CASTING	CURB AND GUTTER B612	CURB AND GUTTER B618	CURB AND GUTTER B624	CURB AND GUTTER B824	CURB AND GUTTER D424	INLET PROTECTION	EROSION CONT. BLANKET	
				LF	SF	SY	EA	LF	LF	TON	FT	FT	FT	FT	FT	EA	LF	LF	LF	LF	LF	EA	SY		
101	17+29	RT	LNB																						
102	19+40	RT	LNB	10		4.4	1	6	18	1		3.9				1				10			1	5	
103	121+44	RT	LSB																				1		
104	21+47	LT	LNB													1							1		
105	21+47	RT	LNB	10		4.4		6	18	1				0.6		1				10			1		
106	122+04	LT	LSB	10		4.4		6	18	1				0.4		1				10			1		
107	122+04	RT	LSB													1							1		
108	22+00	LT	LNB													1							1		
109	22+00	RT	LNB	10		4.4		6	18	1				0.4		1				10			1		
110	22+55	LT	LNB	10		4.4		6	18	1				0.4		1				10	10		1	5	
111	22+50	RT	LNB	10		4.4		6	18	1				0.2		1				10			1	5	
112	123+70	RT	LSB	10		4.4	1	6	18	1	2.7					1				10			1	5	
113	124+00	RT	LSB	10		4.4		6	18	1				0.4		1				10			1	5	
114	23+92	LT	LNB	10		4.4	1	6	18	1		4.2				1				10			1	5	
115	23+92	RT	LNB	10		4.4		6	18	1				0.6		1				10			1	5	
116	27+53	RT	LNB	10		4.4	1	6	18	1	4.2					1					10		1	5	
117	128+37	LT	LSB												1								1		
118	128+63	RT	LSB	10		4.4		6	18	1				0.4		1				10			1		
119	129+84	RT	LSB	10		4.4		4	18	1				0.4		1	10						1		
120	29+62	LT	LNB	10		4.4		6	18	1				0.4		1				10			1		
121	29+55	RT	LNB	10		4.4	1	6	18	1			4.9			1				10			1	5	
122	130+45	LT	LSB	10		4.4	1	6	18	1	2.7					1				10			1	5	
123	131+35	RT	LSB	10		4.4		4	18	1				0.2		1	10						1		
124	31+26	LT	LNB	10		4.4		6	18	1				0.2		1				10			1		
125	31+26	RT	LNB	10		4.4		4	18	1				0.6		1		10					1	5	
126	136+50	LT	LSB	10		4.4		6	18	1				0.2		1				10			1	5	
127	136+50	RT	LSB	10		4.4		4	18	1				0.4		1	10						1		
128	137+15	LT	LSB	10		4.4		6	18	1				0.4		1				10			1	5	
129	136+90	RT	LSB	10		4.4		4	18	1				0.0		1	10						1		
130	37+11	LT	LNB	10		4.4		4	18	1	3.2					1	10						1		
131	37+11	RT	LNB	10		4.4		4	18	1				0.6		1		10					1	5	
132	39+53	RT	LNB	10		4.4		4	18	1				0.4		1		10					1		
133	143+15	LT	LSB	10		4.4	1	4	18	1	2.4					1				10			1	5	
134	143+15	RT	LSB	10	4.4	4.4	1	4	18	1			2.9			1	10						1	5	
135	43+10	LT	LNB	10	4.4	4.4		4	18	1						1	10						1		
136	43+10	RT	LNB			11.1			40	2.5				0.6		1							1	5	
137	43+10	RT	LNB	10		4.4		4	18	1				0.6		1		10					1	5	
138	45+34	RT	LNB			11.1			40	2.5				0.4		1									
139	46+21	LT	LNB			11.1			40	2.5				0.4		1									
140	48+05	RT	LNB			11.1			40	2.5				0.6		1									
141	149+03	LT	LSB	10		4.4		4	18	1				0.2		1		10					1	5	
142	150+44	LT	LSB			4.4		4	18	1				0.2		1		10					1	5	
143	52+35	LT	LNB	10	4.4	4.4		4	18	1				0.4		1	10						1		
144	52+35	RT	LNB												1								1		
145	52+90	RT	LNB			11.1			40	2.5				0.2		1							1		
146	53+38	LT	LNB												1								1		
147	53+46	RT	LNB																				1		
201	43+20	RT	LNB	10		4.4		4	18	1				0.2		1		10					1	5	
202	46+13	RT	LNB	10		4.4		4	18	1				0.4		1		10					1	5	
TOTALS				340	13	210	8	176	830	48	15.2	8.1	7.8	11.8	8	40	80	90	130	40	10	42	100		

B. SCHEDULE OF CASTING					
ASSEMBLY	FRAME	COVER	CURB BOX	PLATE	REMARKS
A-7	700-7			4101	CHECK WITH CITY FOR TYPE OF CASTING AND LID FOR SANITARY MAN-HOLES.
		716		4110	
B-1	801	810		4126	
				821B	
B-9	805	816		4132	USE NEENAH R-3250 EVSP CB OR EQUIVALENT
B-17	806	816		4125	USE NEENAH R-3250 DVSP CB OR EQUIVALENT
				825	
C-1				4134	
					USE NEENAH R-3070 OR EQUIVALENT

NOTE: NOT TO SCALE

NO	DATE	BY	CKD	APPR	REVISION

NAME: p:\12-01-00\csah_01_(694-charles)\plan\dm.dgn
01/19/2012 1:30:37 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: CHARLES CADENHEAD
SIGNATURE: *[Signature]*
DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY: KPR DATE: 1/06/12
DESIGN BY: KPR DATE: 1/06/12
CHECKED BY: JO DATE:

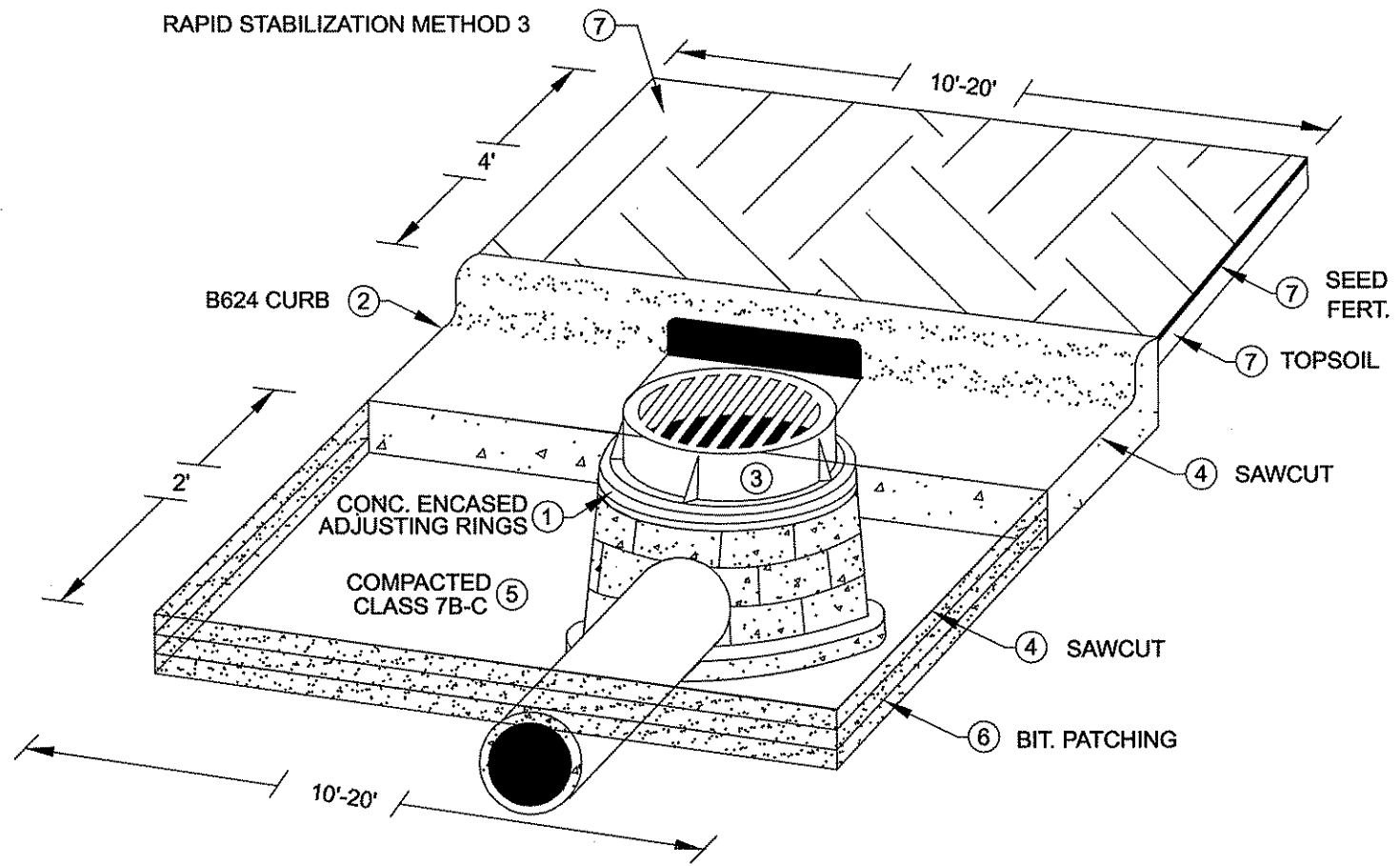


ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
STATE AID PROJECT NO. _____
CITY PROJECT NO. _____
COUNTY PROJECT NO. 12-10-01

DRAINAGE TABULATIONS
AND DETAILS

C.B. REPAIR DETAIL



- NOTES:
- 1 ALL STRUCTURE TYPES AND BUILD HIEGHTS ARE TO BE VERIFIED AND DETERMINED IN THE FIELD.
 - 2 R-1733, R-3250, R-3250 EVSP, R-3250 DVSP CB DENOTE NEENAH CASTING ASSEMBLIES OR APPROVED EQUALS.
 - 3 ALL CASTING TYPES AND CASTING HIEGHTS ARE TO BE VERIFIED AND DETERMINED IN THE FIELD.
 - 4 ALL MANHOLE CASTINGS NEED TO HAVE "SANITARY SEWER" OR "STORM" STAMPED ON THEM.
 - 5 CONCRETE ENCASED CONCRETE ADJUSTING RINGS STANDARD PLATE 4026A.

NOTES.. FOR TRAFFIC CONTROL AT CATCH BASIN REPAIRS REFER TO THE MINNESOTA MANUAL ON TEMPORARY TRAFFIC CONTROL LAYOUTS FIELD MANUAL. REFER TO MINNESOTA STANDARD PLATES MANUAL FOR THE FOLLOWING...

- ① CONCRETE ENCASED CONCRETE ADJUSTING RINGS STANDARD PLATE 4026A
- ② CONCRETE CURB AND GUTTER DESIGN B STANDARD PLATE 7100G
- ③ INSTALLATION OF CATCH BASIN CASTINGS STANDARD PLATE 7111J
- ④ SAWCUT BIT./CONCRETE BUS PADS/CONCRETE CURB FULL DEPTH.
- ⑤ ADD AND COMPACT CL-5 AROUND REPAIRED STRUCTURE.
- ⑥ REMOVE VAR. DEPTH BITUMINOUS 3"-7" / PATCH 2-LIFTS OF BITUMINOUS.
- ⑦ REPLACE DISPLACED TOPSOIL- WITH RAPID STABILIZATION METHOD 3. SEED , FERT. AND TOPSOIL INNCCIDENTAL.

NOTE: NOT TO SCALE

SAFETY EDGE CONSTRUCTION DETAIL

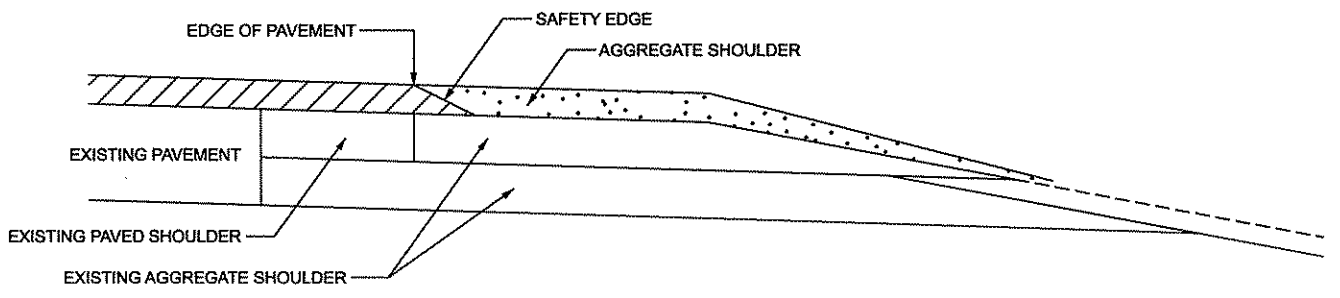


FIGURE C
BITUMINOUS MILL AND OVERLAY

NOTE: NOT TO SCALE

NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\12-01-00\CSAH_01_(694-Charles)\Plan\dm.dgn					
02/24/2012 9:25:46 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: CHARLES GADENHEAD
 SIGNATURE: *Charles Gadenhead*
 DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY: KPR DATE: 01/06/12
 DESIGN BY: KPR DATE: 01/06/12
 CHECKED BY: JO DATE:

ANOKA COUNTY
HIGHWAY DEPT.

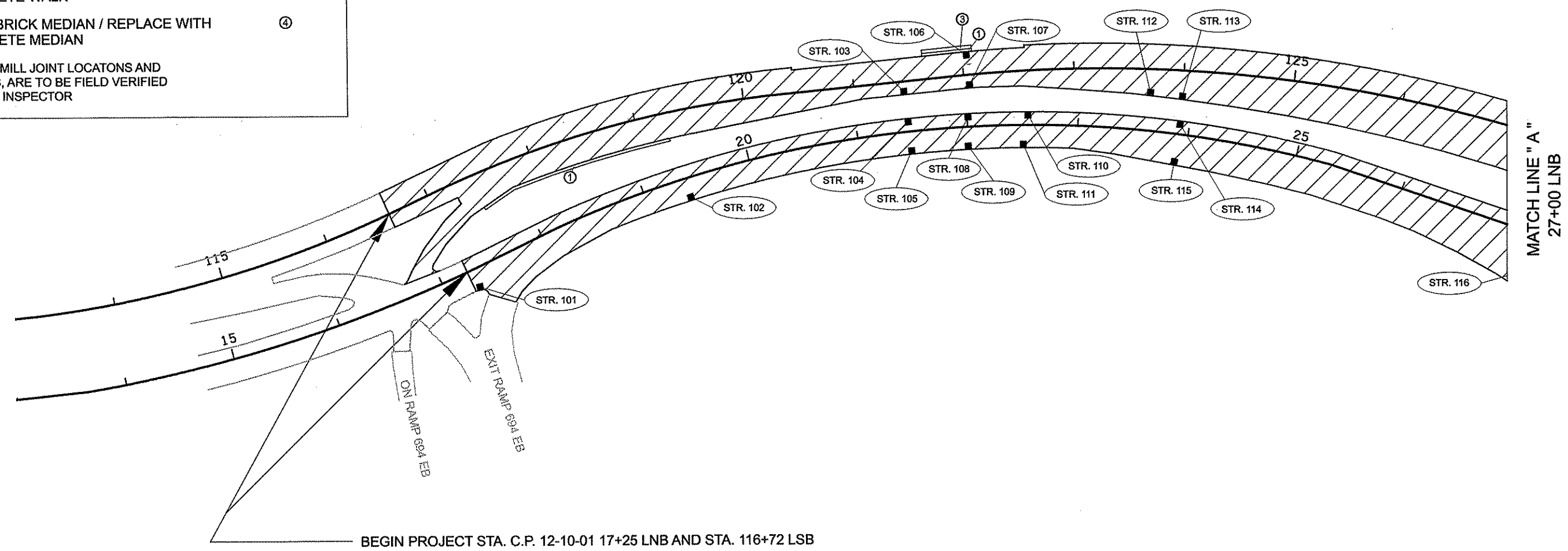
STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 12-10-01

DRAINAGE TABULATIONS AND DETAILS
 Sheet 7 of 22 Sheets



MILLED AREA	
MILLED DRIVEWAYS AND APPROACHES	
STORM SEWER MANHOLE	⊙
SANITARY SEWER MANHOLE	⊗
GATE VALVE	⊠
CATCH BASIN	● ■
REMOVE CURB AND GUTTER / REPLACE CURB AND GUTTER	①
REMOVE CONCRETE WALK / REPLACE WITH 6" CONCRETE WALK AND TRUNCATED DOMES	②
REMOVE CONCRETE WALK / REPLACE WITH 4" CONCRETE WALK	③
REMOVE BRICK MEDIAN / REPLACE WITH 4" CONCRETE MEDIAN	④

*NOTE: ALL MILL JOINT LOCATIONS AND MILL AREAS, ARE TO BE FIELD VERIFIED BY ON SITE INSPECTOR



BEGIN PROJECT STA. C.P. 12-10-01 17+25 LNB AND STA. 116+72 LSB



1 OF 3

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-01\CSAH_01_(694-Charles)\Plan\plan sheet 3.dgn 02/24/2012 9:06:40 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: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 LICENSE NO. 40418

DRAWN BY: KPR DATE: 01/06/12
 DESIGN BY: KPR DATE: 01/06/12
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ANOKA COUNTY
HIGHWAY DEPT.

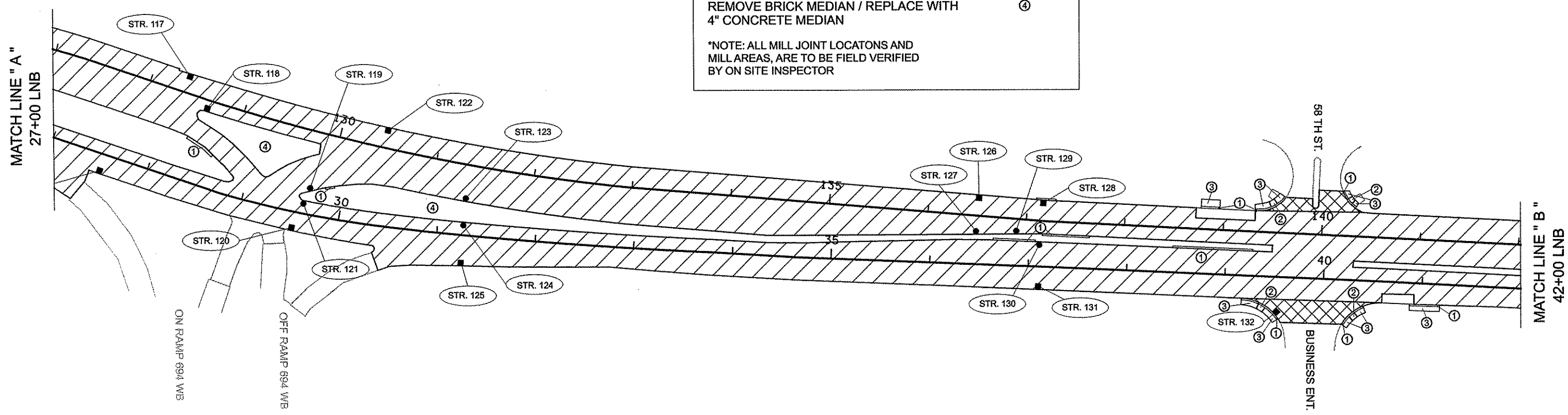
STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 12-10-01

CONSTRUCTION PLAN
 STA 10+25 LNB TO 27+00 LNB
 Sheet 8 of 22 Sheets



MILLED AREA	
MILLED DRIVEWAYS AND APPROACHES	
STORM SEWER MANHOLE	⊙
SANITARY SEWER MANHOLE	⊚
GATE VALVE	⊗
CATCH BASIN	● ■
REMOVE CURB AND GUTTER / REPLACE CURB AND GUTTER	①
REMOVE CONCRETE WALK / REPLACE WITH 6" CONCRETE WALK AND TRUNCATED DOMES	②
REMOVE CONCRETE WALK / REPLACE WITH 4" CONCRETE WALK	③
REMOVE BRICK MEDIAN / REPLACE WITH 4" CONCRETE MEDIAN	④

*NOTE: ALL MILL JOINT LOCATIONS AND MILL AREAS, ARE TO BE FIELD VERIFIED BY ON SITE INSPECTOR



2 OF 3

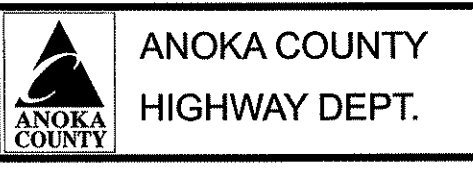
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PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY KPR DATE 01/08/12
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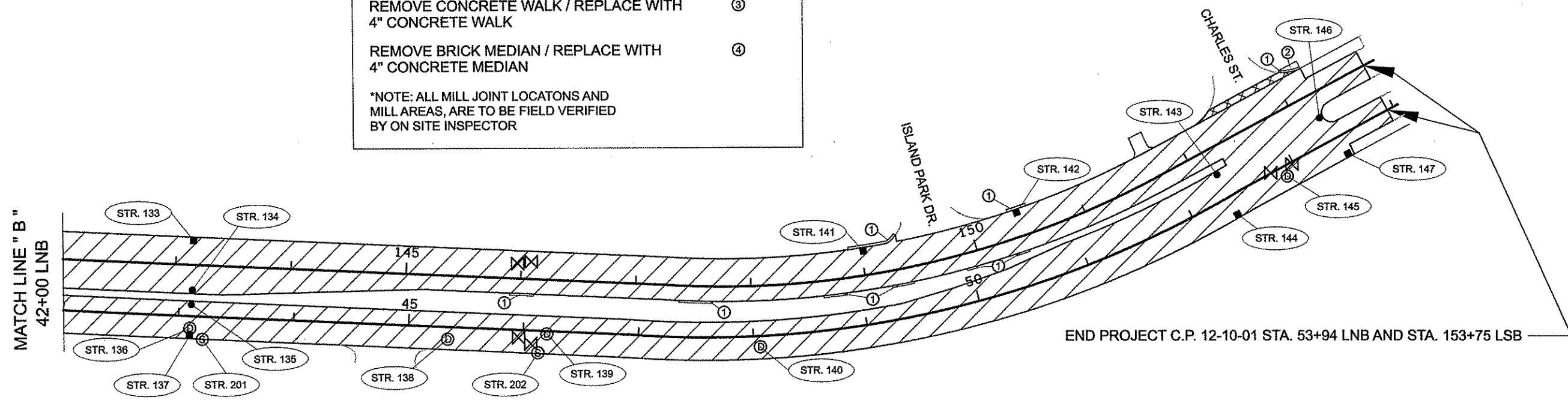


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 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 12-10-01

CONSTRUCTION PLAN
 STA 27+00 LNB TO 42+00 LNB
 Sheet 9 of 22 Sheets



MILLED AREA	
MILLED DRIVEWAYS AND APPROACHES	
STORM SEWER MANHOLE	⊙
SANITARY SEWER MANHOLE	⊕
GATE VALVE	⊗
CATCH BASIN	● ■
REMOVE CURB AND GUTTER / REPLACE CURB AND GUTTER	①
REMOVE CONCRETE WALK / REPLACE WITH 6" CONCRETE WALK AND TRUNCATED DOMES	②
REMOVE CONCRETE WALK / REPLACE WITH 4" CONCRETE WALK	③
REMOVE BRICK MEDIAN / REPLACE WITH 4" CONCRETE MEDIAN	④
*NOTE: ALL MILL JOINT LOCATIONS AND MILL AREAS, ARE TO BE FIELD VERIFIED BY ON SITE INSPECTOR	



3 OF 3

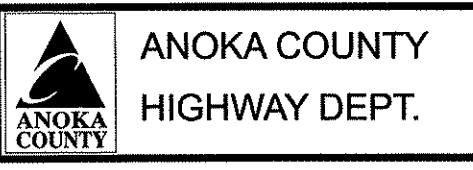
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PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *Charles Cadenhead*
 DATE: 3/2/12 LICENSE NO. 40416

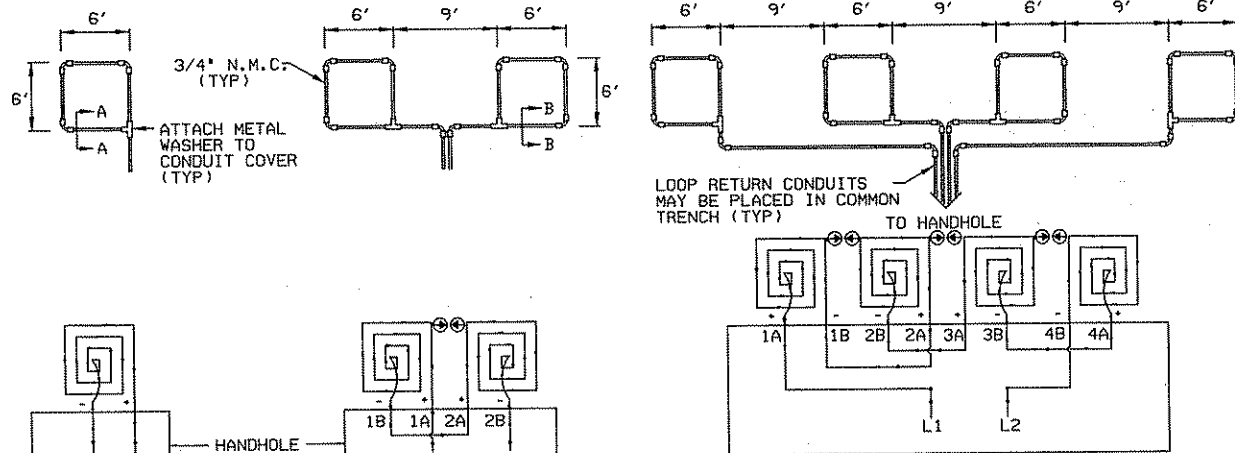
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 DESIGN BY: KPR DATE: 01/06/12
 CHECKED BY: JO DATE:



STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 12-10-01

CONSTRUCTION PLAN
 STA 42+00 LNB TO 53+94 LNB
 Sheet 10 of 22 Sheets

ANOKA COUNTY SIGNAL LOOP DETAIL



**LOOP DETECTOR
DETAIL 'A'**
(LOOP PHASING FOR
SINGLE CONNECTION)

LOOP CONNECTIONS SHALL BE
LABELED AND SPLICED IN THE
HANDHOLE AS FOLLOWS:

L1 TO 1A
1B TO 2A
2B TO L2

**LOOP DETECTOR
DETAIL 'B'**
(LOOP PHASING FOR
SERIES CONNECTION)

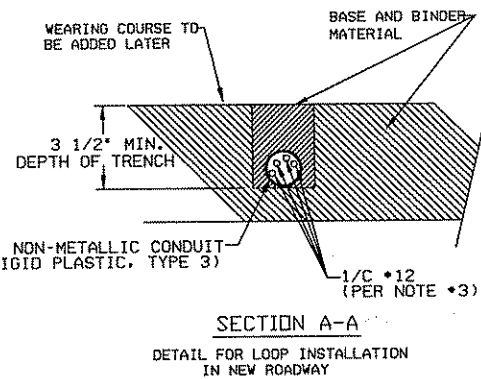
LOOP RETURN CONDUITS
MAY BE PLACED IN COMMON
TRENCH (TYP)

LOOP CONNECTIONS SHALL BE LABELED AND SPLICED
IN THE HANDHOLE AS FOLLOWS:

L1 TO 1A 3B TO 4A
1B TO 2A 4B TO L2
2B TO 3A

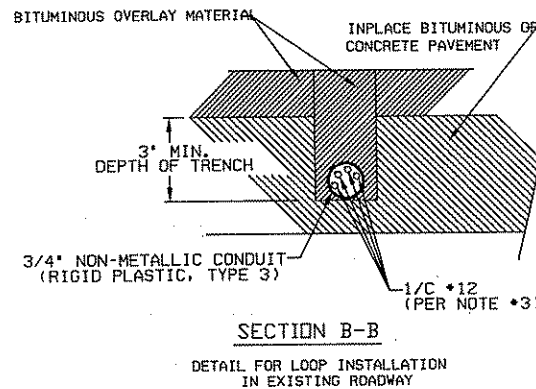
SPLICE CONTROL CABLE TO L1 & L2 IN HANDHOLE.
ALL CONDUCTORS SHALL BE TAGGED IN HANDHOLE
(1A, 1B, ECT)

**LOOP DETECTOR
DETAIL 'C'**
(LOOP PHASING FOR
SERIES CONNECTION)



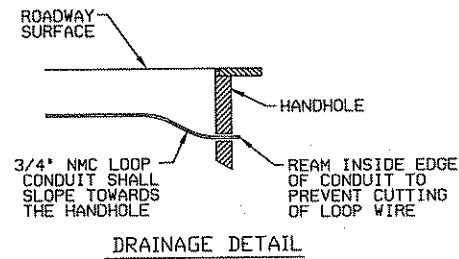
SECTION A-A

DETAIL FOR LOOP INSTALLATION
IN NEW ROADWAY



SECTION B-B

DETAIL FOR LOOP INSTALLATION
IN EXISTING ROADWAY



DRAINAGE DETAIL

LOOP DETECTOR WIRING

- 1) ALL CORNERS SHALL BE 90° CONDUIT BENDS.
- 2) CONNECT WIRES IN HANDHOLES USING SPLICE KIT METHOD DESCRIBED IN THE SPECIAL PROVISIONS.
- 3) LOOP DETECTOR WIRES SHALL BE #12 AWG CROSSED LINKED POLYETHYLENE (XLP). SEE SPECIAL PROVISIONS.
- 4) LOOP LEAD IN WIRES SHALL BE TWISTED A MIN. OF (5) TURNS PER FOOT THROUGH THE CONDUIT TO THE HANDHOLE.
- 5) NMC DESIGNATES NON-METALLIC CONDUIT (SPEC. 3803)
- 6) LOOPS 6' X 6' THRU 6' X 14' SHALL HAVE (4) TURNS.
- 7) LOOPS 6' X 15' AND LARGER SHALL HAVE (2) TURNS.

ABBREVIATIONS			
3-1(EG)	SIGNAL HEAD PHASE '3' - NO. '1'	P2-1(EG)	PED INDICATION PHASE '2' - NO. '1'
BR. GR.	BARE GROUND	PB	PUSH BUTTON
CH. SW.	CHECK SWITCH	PB2-1(EG)	PUSH BUTTON PHASE '2' - NO. '1'
CLR	CLEAR	PEC	PHOTOELECTRIC CELL
D2-1(EG)	DETECTOR PHASE '2' - NO. '1'	PE	PEDESTRIAN
DWK	DONT WALK	R	RED
EGG	EQUIPMENT GROUND	R&S	REMOVE AND SALVAGE
EVP	EMERGENCY VEHICLE PRE-EMPTION	RLTA	RED LEFT TURN ARROW
F&I	FURNISH AND INSTALL	RRTA	RED RIGHT TURN ARROW
FL	FLASH/FLASHING	RSC	RIGID STEEL CONDUIT
G	GREEN	SOP	SOURCE OF POWER
GLTA	GREEN LEFT TURN ARROW	SPR	SPARE
GRN	GREEN	ST. LHT	STREET LIGHT
GR. R	GROUND ROD	STA	STATION
GRTA	GREEN RIGHT TURN ARROW	SW	SWITCH
GTHA	GREEN THRU ARROW	SWD	SWITCHED
HH	HANDHOLE	S&R	SALVAGE AND REINSTALL
HPS	HIGH PRESSURE SODIUM	T&W	TELEPHONE DROP WIRE
JB	JUNCTION BOX	WLK	WALK
LUM	LUMINAIRE	YEL	YELLOW
NEU	NEUTRAL	YLTA	YELLOW LEFT TURN ARROW
NMC	NONMETALLIC CONDUIT	YRTA	YELLOW RIGHT TURN ARROW
		YTHA	YELLOW THRU ARROW

STANDARD PLATES	
THESE STANDARD PLATES AS APPROVED BY FHWA SHALL APPLY.	
PLATE NO.	DESCRIPTION
7035 I	CONCRETE WALK AND CURB RETURNS AT ENTRANCES
7036 E	PEDESTRIAN CURB RAMP
7100 G	CONCRETE CURB AND GUTTER (DESIGN B)
8110 D	TRAFFIC SIGNAL BRACKETING - POLE MOUNTED
8111 C	TRAFFIC SIGNAL BRACKETING - PEDESTAL MOUNTED
8112 C	PEDESTAL FOUNDATION
8114 A	PVC HANDHOLE/PULLBOX
8115 D	PEDESTRIAN PUSH BUTTON INSTALLATION
8118 C	SERVICE EQUIPMENT AND POLE-TRAFFIC CONTROL SIGNALS
8119 C	GROUND MOUNTED CABINET FOUNDATION
8120 K	P&S POLE FOUNDATION
8121 D	TRANSFORMER BASE AND POLE BASE PLATE
8122 C	PEDESTAL AND PEDESTAL BASE
8123 E	POLE AND MAST ARM
8124 E	MAST ARM SIGNAL HEAD MOUNTS
8126 F	PA90 AND PA100 POLE FOUNDATION

CONDUCTOR COLOR CODE	
R	RED
O	ORANGE
BL	BLUE
WH	WHITE
R/BLK	RED WITH BLACK TRACER
O/BLK	ORANGE WITH BLACK TRACER
BL/BLK	BLUE WITH BLACK TRACER
WH/BLK	WHITE WITH BLACK TRACER
BLK	BLACK
BLK/WH	BLACK WITH WHITE TRACER
G/BLK	GREEN WITH BLACK TRACER
G	GREEN

LEGEND OF SYMBOLS	
CONTROLLER AND SERVICE EQUIP. NO'S	⊗
SIGNAL BASE NO.	⊙
SIGNAL FACE NO.	⊚
LUMINAIRE NO.	⊛
CONTROLLER AND CABINET	⊜
CONTROLLER AND CABINET - IN PLACE	⊝
HANDHOLE	⊞
HANDHOLE - IN PLACE	⊟
RIGID STEEL CONDUIT (RSC)	⊠
RIGID STEEL CONDUIT (RSC) - IN PLACE	⊡
SIGNAL FACE WITH BACKGROUND SHIELD	⊢
SIGNAL FACE W/D BACKGROUND SHIELD	⊣
SIGNAL FACE - IN PLACE	⊤
PEDESTRIAN INDICATORS	⊥
PEDESTRIAN INDICATORS - IN PLACE	⊦
PEDESTRIAN PUSH BUTTONS ON PEDESTAL OR POLE	⊧
PEDESTRIAN PUSH BUTTON STATION	⊨
TRAFFIC SIGNAL PEDESTAL	⊩
TRAFFIC SIGNAL PEDESTAL - INPLACE	⊪
TRAFFIC SIGNAL POLE AND MAST ARM	⊫
TRAFFIC SIGNAL POLE AND MAST ARM - IN PLACE	⊬
STREET LIGHT POLE AND LUMINAIRE	⊭
STREET LIGHT POLE AND LUMINAIRE - IN PLACE	⊮
MAST ARM AND LUMINAIRE	⊯
MAST ARM AND LUMINAIRE - INPLACE	⊰
WOOD POLE	⊱
WOOD POLE - IN PLACE	⊲
SOURCE OF POWER	⊳
RAILROAD SIGNAL - IN PLACE	⊴
RIGHT OF WAY LINE	⊵
CENTERLINE	⊶
EDGE OF ROADWAY	⊷
SHOULDERLINE	⊸
CURB LINE	⊹
STOP BAR	⊺
EMERGENCY VEHICLE PREEMPTION DETECTOR	⊻

NOTE: NOT TO SCALE

NO	DATE	BY	CHKD	APPR	REVISION

NAME: p:\12-01-00\lcsah_01_(694-charles)\plan\dtloop.dgn
01/19/2012 1:30:40 PM

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

PRINT NAME: CHARLES CADENHEAD
SIGNATURE: *[Signature]*
DATE: 3/2/12 LICENSE NO. 4016

DRAWN BY: KPR DATE: 1/06/12
DESIGN BY: KPR DATE: 1/06/12
CHECKED BY: JO DATE:

**ANOKA COUNTY
HIGHWAY DEPT.**

STATE PROJECT NO. _____
STATE AID PROJECT NO. _____
CITY PROJECT NO. _____
COUNTY PROJECT NO. 12-10-01

SIGNAL LOOP DETAIL

Sheet 11 of 22 Sheets

PERMANENT PAVEMENT MARKING PLAN
NOTES AND GUIDELINES

GENERAL INFORMATION:

THE ENGINEER'S INVOLVEMENT IN THE APPLICATION OF THE MATERIAL SHALL BE LIMITED TO FIELD CONSULTATION AND INSPECTION. ANOKA COUNTY HIGHWAY DEPARTMENT WILL PLACE NECESSARY "SPOTTING" AT APPROPRIATE POINTS TO PROVIDE HORIZONTAL CONTROL FOR STRIPING AND TO DETERMINE NECESSARY STARTING AND CUTOFF POINTS, LONGITUDINAL JOINTS, PAVEMENT EDGES AND EXISTING MARKINGS MAY SERVE AS HORIZONTAL CONTROL WHEN SO DIRECTED.

EDGE LINES AND LANE LINES ARE TO BE BROKEN ONLY AT INTERSECTIONS WITH PUBLIC ROADS AND AT PRIVATE ENTRANCES IF THEY ARE CONTROLLED BY A YIELD SIGN, STOP SIGN OR TRAFFIC SIGNAL. THE BREAK POINT IS TO BE AT THE START OF THE RADIUS FOR THE INTERSECTION OR AT MARKED STOP LINES OR CROSSWALKS.

A TOLERANCE OF 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.

EPOXY:

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 EPOXY PAVEMENT MARKINGS.

THE EPOXY MARKING APPLICATION SHALL IMMEDIATELY FOLLOW THE PAVEMENT CLEANING. GLASS BEANS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE EPOXY RESIN LINE TO PROVIDE AN IMMEDIATE NO-TRACK SYSTEM.

AN EPOXY RESIN LINE 4" WIDE AND 15 MILL THICKNESS (WET), REQUIRES AN APPLICATION RATE OF ONE (1) GALLON OF COMPONENTS FOR 320 FEET OF LINE. GLASS BEANS SHALL BE APPLIED AT A POUND PER GALLON RATE SUFFICIENT TO ACHIEVE AN ACCEPTABLE NO-TRACK SYSTEM.

OPERATIONS SHALL BE CONDUCTED ONLY WHEN THE ROAD PAVEMENT SURFACE TEMPERATURES ARE 50 DEGREES FAHRENHEIT OR GREATER.

PERMANENT PAVEMENT MARKINGS SHALL NOT BE PLACED OVER TEMPORARY TAPE MARKINGS.

PREFORMED THERMOPLASTIC:

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

PAINT:

AT THE TIME OF APPLYING THE MARKING MATERIAL, THE APPLICATION AREA SHALL BE FREE OF CONTAMINATION. THE CONTRACTOR SHALL CLEAN THE ROADWAY SURFACE PRIOR TO THE LINE APPLICATION IN A MANNER AND TO THE EXTENT REQUIRED BY THE ENGINEER.

GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE PAINT LINE.

EXCEPT WHEN USED AS A TEMPORARY MARKING, PAVEMENT MARKINGS SHALL ONLY BE APPLIED IN SEASONABLE WEATHER WHEN AIR TEMPERATURE IS 50 DEGREES FAHRENHEIT 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.

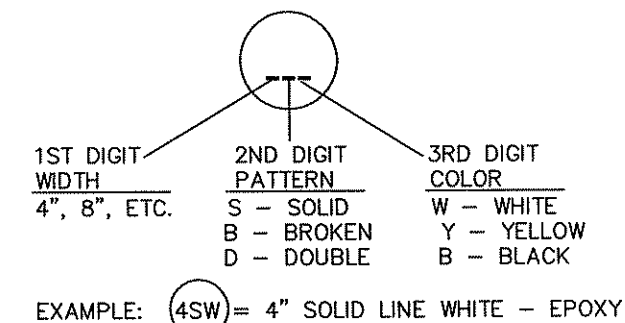
PERMANENT PAVEMENT MARKING TABULATION		
ITEM	Quantity	Units
4" Solid Line Yellow - Epoxy	7500	Lin Ft
4" Solid Line White - Epoxy	11197	Lin Ft
4" Broken White Line - Epoxy (10 ft stripe / 40 ft gap)	1450	Lin Ft
8" Broken White Line - Epoxy (3 ft stripe / 12 ft gap)	183	Lin Ft
8" Solid White Line - Epoxy	1280	Lin Ft
24" White Pref Thermoplastic	230	Lin Ft
3'x6' Zebra Crossw alk Pref Thermoplastic	846	SQ FT
Pvmt Mssg (Rt Arrow) Pref Thermoplastic	3	Each
Pvmt Mssg (Lt Arrow) Pref Thermoplastic	4	Each

SYMBOLS & MATERIALS LEGEND

- CROSSWALK BLOCK WHITE-POLY PREFORM
- ↩ PAVEMENT MESSAGE (LEFT ARROW) POLY PREFORM

STRIPING KEY

- CIRCLE - EPOXY
- SQUARE - POLY PREFORM
- △ TRIANGLE - PAINT
- ⬠ PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING



NO	DATE	BY	CHKD	APPR	REVISION

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 PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 LICENSE NO. 40418

DRAWN BY: MTH DATE 12/01/2011
 DESIGN BY: MTH DATE 12/01/2011
 CHECKED BY: RB DATE 12/01/2011

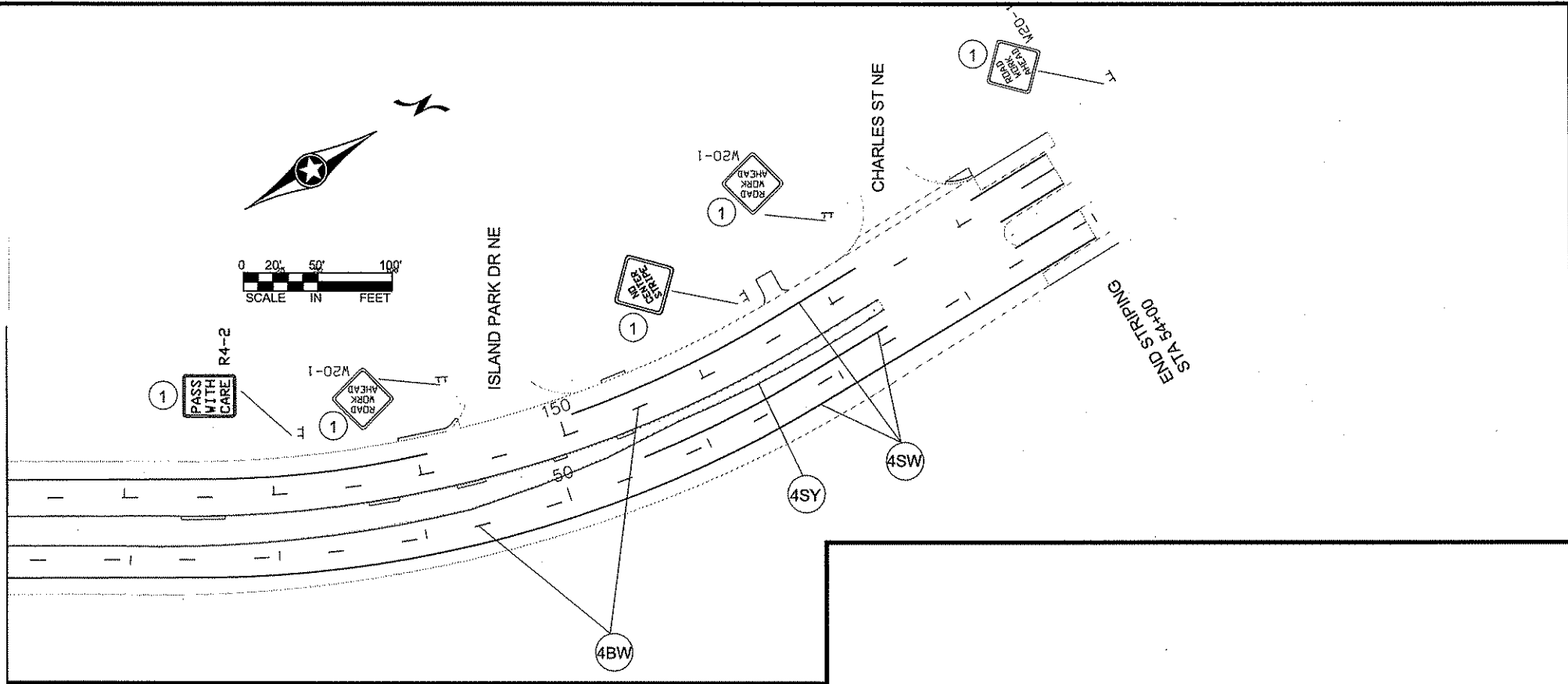


ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. 12-10-01

PERMANENT MARKING
TABULATION
 Sheet 12 of 22 Sheets

STATION 46+00



NOTES:

- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
- LOCATIONS OF PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- CONTRACTOR SHALL SUPPLY AND ERECT THE TEMPORARY TRAFFIC CONTROL SIGNS AS SHOWN ON THIS DRAWING AND DETAILED IN THE SPECIAL PROVISIONS FROM THE TIME WORK COMMENCES ON THIS ROADWAY UNTIL THIS ROADWAY IS PERMANENTLY STRIPED. ALL NECESSARY TEMPORARY TRAFFIC CONTROL SIGNS SHALL BE PAID FOR AS PART OF TRAFFIC CONTROL LUMP SUM.
- ALL PERMANENT STRIPING AND PAVEMENT MESSAGES SHALL BE PLACED WITHIN 72 HOURS OF MAINLINE PAVING.
- ANY REQUIRED PERMANENT SIGNING SHALL BE INSTALLED THE SAME DAY AS PERMANENT STRIPING.
- ALL EXISTING SIGNING SHALL REMAIN IN PLACE DURING CONSTRUCTION. IF A SIGN IS TO BE SALVAGED AND REINSTALLED, IT SHALL BE INSTALLED ON TEMPORARY SUPPORTS UNTIL THE PERMANENT INSTALLATION CAN BE MADE, AND THIS WILL BE CONSIDERED AS INCIDENTAL TO SIGN TYPE C REINSTALL INSTALLATION.

SEE SPECIAL PROVISIONS

- ① TEMPORARY TRAFFIC CONTROL SIGN
- ② F & I PERMANENT SIGN
- ③ SALVAGE PERMANENT SIGN
- ④ RE-INSTALL PERMANENT SIGN

TEMPORARY TRAFFIC CONTROL SIGNS						
M.U.T.C.D. CODE	SIZE	PANEL AREA FT. ²	INSERT	QUANTITY		No. POST
W8-12	48" x 48"	16.00		2	2	
R4-1	24" x 30"	5.00		0	1	
R4-2	24" x 30"	5.00		2	1	
R10-6	48" x 48"	16.00		AS NEEDED		
W8-1A	48" x 48"	16.00		AS NEEDED		
W8-1A	48" x 48"	16.00		AS NEEDED		
W8-8	48" x 48"	16.00		AS NEEDED		
W8-11	48" x 48"	16.00		AS NEEDED		
W20-1	48" x 48"	16.00		AS NEEDED (ESTIMATED 7)		

NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\12-01-00\CSAH_01_(694_Charles)\Plan\permanent signing & striping.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: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 12/12 REG. NO. #0416

DRAWN BY: MTH DATE 12/04/11
 DESIGN BY: MTH DATE 12/04/11
 CHECKED BY: DATE



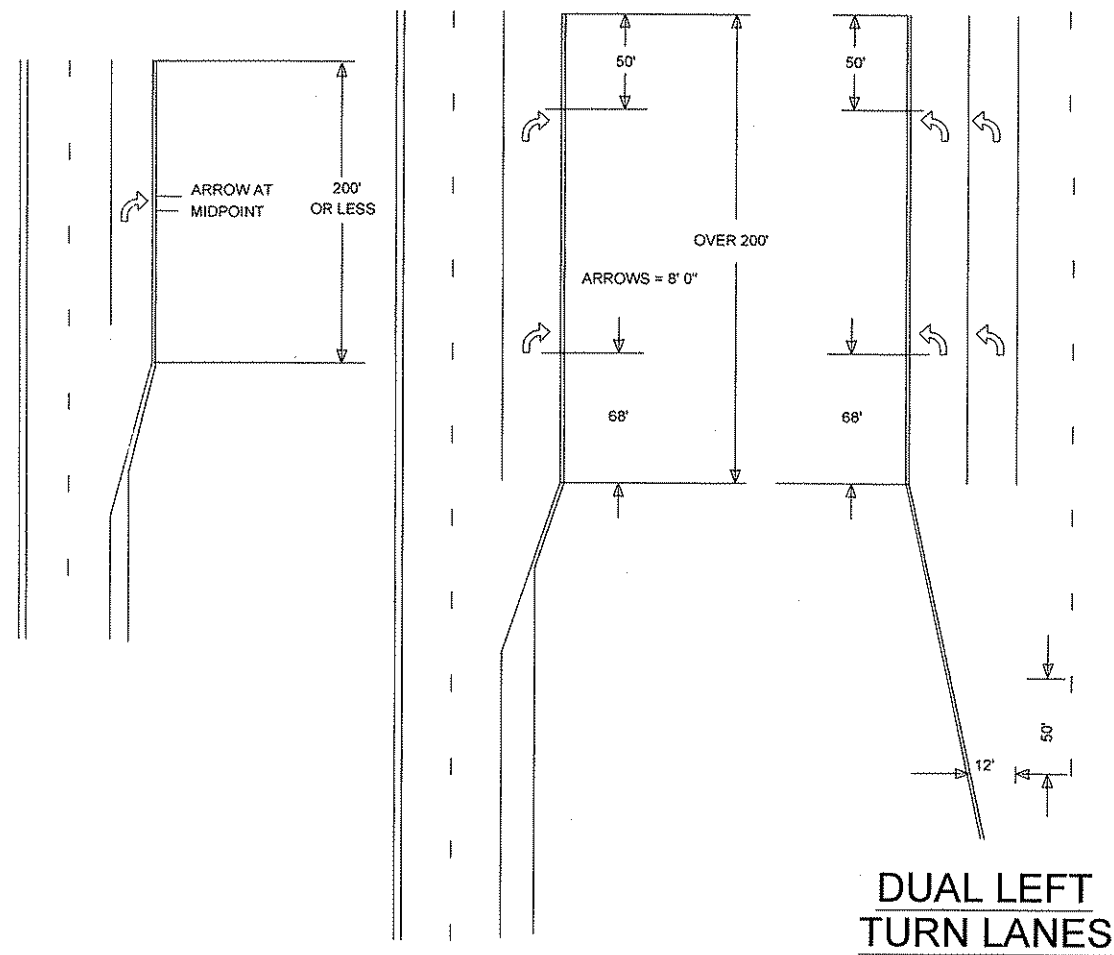
ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. 12-10-01

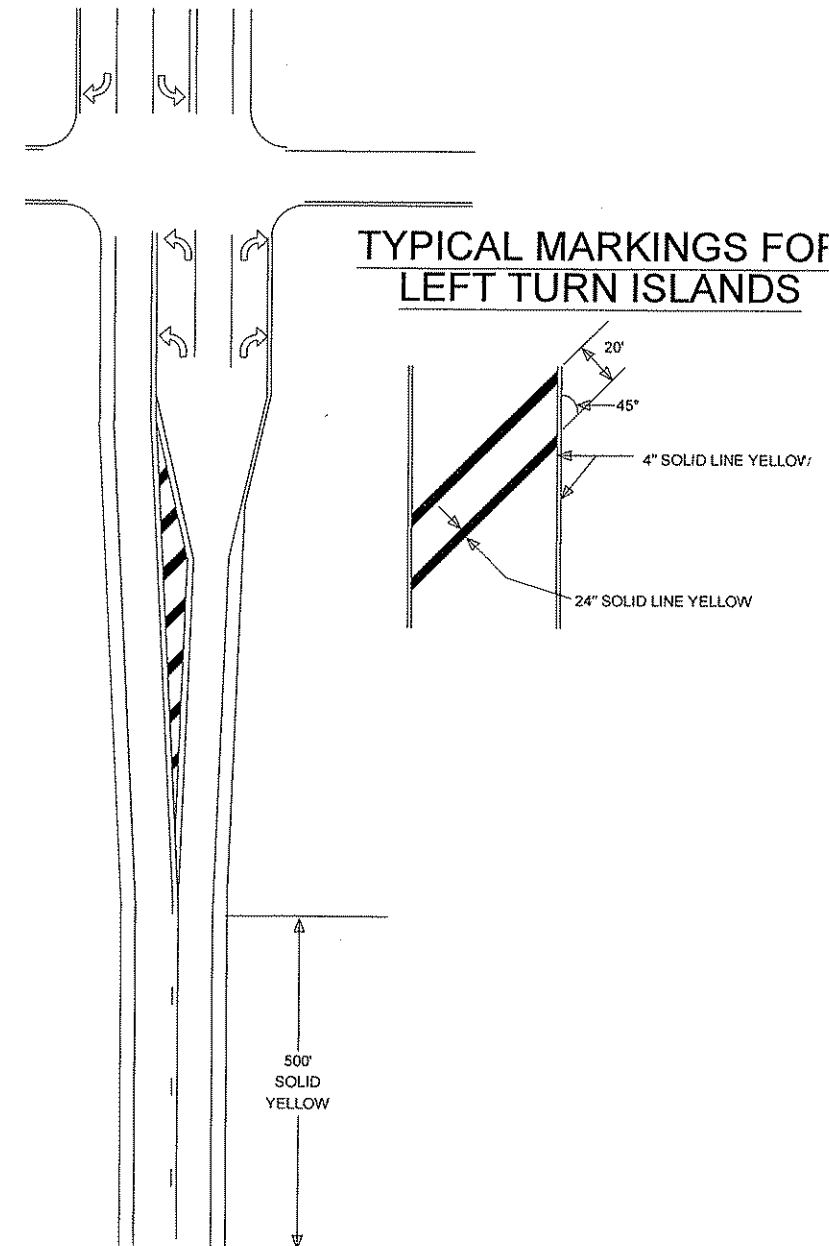
CSAH 1 (EAST RIVER RD)
 TEMPORARY SIGNING
 PERMANENT STRIPING
 AND PAVEMENT MESSAGES

Sheet 14 of 22 Sheets

**TYPICAL MESSAGE PLACEMENT
FOR TURN LANES**



**TYPICAL MARKINGS FOR
LEFT TURN ISLANDS**



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH 1\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 LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: CHARLES CADENHEAD

SIGNATURE: *[Signature]*

DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY MTH DATE 1-21-12

DESIGN BY MTH DATE 1-21-12

CHECKED BY JR DATE 1-21-12



**ANOKA COUNTY
HIGHWAY DEPT.**

STATE PROJECT NO. _____

STATE PROJECT NO. _____

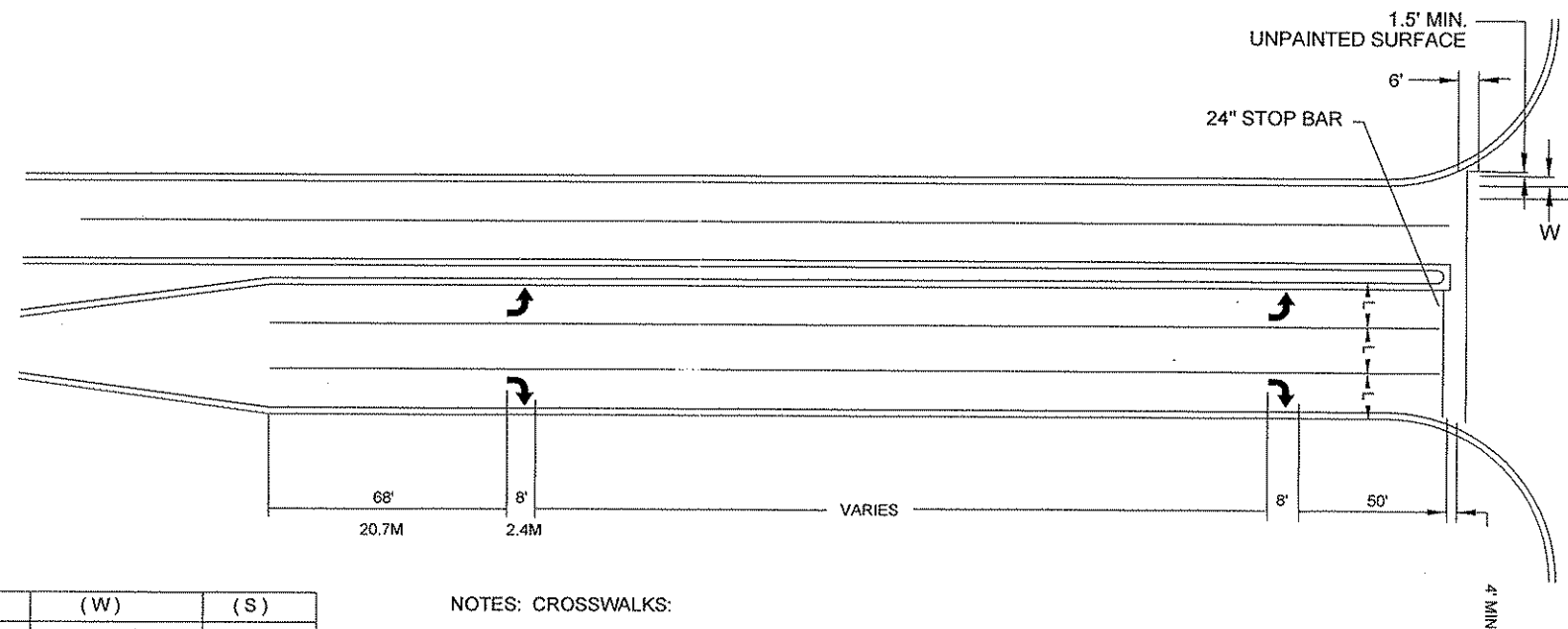
STATE PROJECT NO. _____

COUNTY PROJECT NO. 12-10-01

SIGNING & STRIPING DETAILS

Sheet 15 of 22 Sheets

MARKINGS FOR PEDESTRIAN CROSSWALKS



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

NOTES: CROSSWALKS:

- 1.) PAINTED AREAS ARE TO BE CENTERED ON CENTER AND LANE LINES, EVEN IF INTERSECTION IS NOT ALIGNED.
- 2.) LOCATION OF ZEBRA CROSSWALKS AND STOP BARS, SIGNAL LOOPS AND PED RAMP 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' (450mm) CLEAR DISTANCE MUST BE LEFT ADJACENT TO THE CURB. IF LAST PAINTED AREA FALLS INTO THIS AREA, IT MUST BE OMITTED.
- 5.) ON TWO LANE STREETS, USE SPACING SHOWN FOR AN 11' (3.3m) NSIDE LANE.

NOTES & GUIDELINES

GENERAL INFORMATION:

THE ENGINEER'S INVOLVEMENT IN THE APPLICATION OF THE MATERIAL SHALL BE LIMITED TO FIELD CONSULTATION AND INSPECTION. THE CONTRACTOR 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.

EPOXY:

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 TREATMENTS AND/OR LAITANCE. ON LOW SPEED (SPEED LIMIT 35 OR LESS) URBAN PORTLAND CEMENT CONCRETE ROADWAYS, SANDBLAST CLEANING SHALL BE USED FOR ALL EPOXY PAVEMENT MARKINGS.

THE EPOXY MARKING APPLICATION SHALL IMMEDIATELY FOLLOW THE PAVEMENT CLEANING. GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE EPOXY RESIN LINE TO PROVIDE AN IMMEDIATE NO-TRACK SYSTEM.

AN EPOXY RESIN LINE 4" WIDE AND 15 MILL THICKNESS (WET), REQUIRES AN APPLICATION RATE OF ONE (1) GALLON OF COMPONENTS FOR 320 FEET OF LINE. GLASS BEADS SHALL BE APPLIED AT A POUND 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 F° OR GREATER.

PERMANENT PAVEMENT MARKINGS SHALL NOT BE PLACED OVER TEMPORARY TAPE MARKINGS.

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°F OR HIGHER AND SHALL NOT BE APPLIED WHEN THE WIND OR OTHER CONDITIONS CAUSE A FILM OF 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.

NO	DATE	BY	CKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY MTH DATE 1-21-12
 DESIGN BY MTH DATE 1-21-12
 CHECKED BY JR DATE 1-21-12



**ANOKA COUNTY
HIGHWAY DEPT.**

STATE PROJECT NO. _____
 STATE PROJECT NO. _____
 STATE PROJECT NO. _____
 COUNTY PROJECT NO. 12-10-01

SIGNING & STRIPING DETAILS

Sheet 16 of 22 Sheets

PERMANENT PAVEMENT MARKING PLAN
NOTES AND GUIDELINES

GENERAL INFORMATION:

THE ENGINEER'S INVOLVEMENT IN THE APPLICATION OF THE MATERIAL SHALL BE LIMITED TO FIELD CONSULTATION AND INSPECTION. ANOKA COUNTY HIGHWAY DEPARTMENT WILL PLACE NECESSARY "SPOTTING" AT APPROPRIATE POINTS TO PROVIDE HORIZONTAL CONTROL FOR STRIPING AND TO DETERMINE NECESSARY STARTING AND CUTOFF POINTS, LONGITUDINAL JOINTS, PAVEMENT EDGES AND EXISTING MARKINGS MAY SERVE AS HORIZONTAL CONTROL WHEN SO DIRECTED.

EDGE LINES AND LANE LINES ARE TO BE BROKEN ONLY AT INTERSECTIONS WITH PUBLIC ROADS AND AT PRIVATE ENTRANCES IF THEY ARE CONTROLLED BY A YIELD SIGN, STOP SIGN OR TRAFFIC SIGNAL. THE BREAK POINT IS TO BE AT THE START OF THE RADIUS FOR THE INTERSECTION OR AT MARKED STOP LINES OR CROSSWALKS.

A TOLERANCE OF 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.

EPOXY:

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 EPOXY PAVEMENT MARKINGS.

THE EPOXY MARKING APPLICATION SHALL IMMEDIATELY FOLLOW THE PAVEMENT CLEANING. GLASS BEANS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE EPOXY RESIN LINE TO PROVIDE AN IMMEDIATE NO-TRACK SYSTEM.

AN EPOLY RESIN LINE 4" WIDE AND 15 MILL THICKNESS (WET), REQUIRES AN APPLICATION RATE OF ONE (1) GALLON OF COMPONENTS FOR 320 FEET OF LINE. GLASS BEADS SHALL BE APPLIED AT A POUND PER GALLON RATE SUFFICIENT TO ACHIEVE AN ACCEPTABLE NO-TRACK SYSTEM.

OPERATIONS SHALL BE CONDUCTED ONLY WHEN THE ROAD PAVEMENT SURFACE TEMPERATURES ARE 50 DEGREES FAHRENHEIT OR GREATER.

PERMANENT PAVEMENT MARKINGS SHALL NOT BE PLACED OVER TEMPORARY TAPE MARKINGS.

PREFORMED THERMOPLASTIC:

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

PAINT:

AT THE TIME OF APPLYING THE MARKING MATERIAL, THE APPLICATION AREA SHALL BE FREE OF CONTAMINATION. THE CONTRACTOR SHALL CLEAN THE ROADWAY SURFACE PRIOR TO THE LINE APPLICATION IN A MANNER AND TO THE EXTENT REQUIRED BY THE ENGINEER.

GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE PAINT LINE.

EXCEPT WHEN USED AS A TEMPORARY MARKING, PAVEMENT MARKINGS SHALL ONLY BE APPLIED IN SEASONABLE WEATHER WHEN AIR TEMPERATURE IS 50 DEGREES FARHENHEIT OR HIGHER AND SHALL NOT BE APPLIED WHEN THE WIND OR OTHER CONDITIONS CAUSE A FILD OR DUST TO BE DEPOSITED ON THE PAVEMENT SURFACE AFTER CLEANING AND BEFORE THE MARKING MATERIAL CAN BE APPLIED.

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

PERMANENT PAVEMENT MARKING TABULATION		
ITEM	Quantity	Units
4" Solid Line Yellow - Epoxy	7500	Lin Ft
4" Solid Line White - Epoxy	11197	Lin Ft
4" Broken White Line - Epoxy (10 ft stripe / 40 ft gap)	1450	Lin Ft
8" Broken White Line - Epoxy (3 ft stripe / 12 ft gap)	183	Lin Ft
8" Solid White Line - Epoxy	1280	Lin Ft
24" White Pref Thermoplastic	230	Lin Ft
3'x6' Zebra Crossw alk Pref Thermoplastic	846	SQ FT
Pvmt Mssg (Rt Arrow) Pref Thermoplastic	3	Each
Pvmt Mssg (Lt Arrow) Pref Thermoplastic	4	Each

SYMBOLS & MATERIALS LEGEND

■ CROSSWALK BLOCK WHITE PREFORMED THERMOPLASTIC

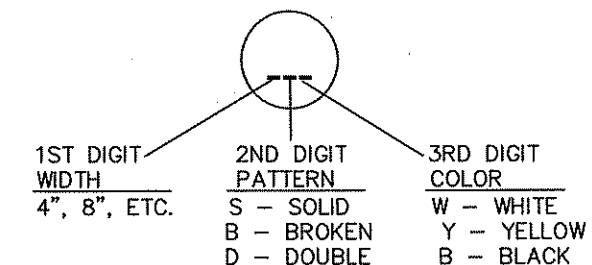
↩ PAVEMENT MESSAGE (LEFT ARROW) PREFORMED THERMOPLASTIC

STRIPING KEY

○ CIRCLE - EPOXY □ SQUARE PREFORMED THERMOPLASTIC

△ TRIANGLE - PAINT

⬠ PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING



EXAMPLE: (4SW) = 4" SOLID LINE WHITE - EPOXY

NO	DATE	BY	CKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *Charles Cadenhead*
 DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY: MTH DATE 12/01/2011
 DESIGN BY: MTH DATE 12/01/2011
 CHECKED BY: JR DATE 2/14/2012

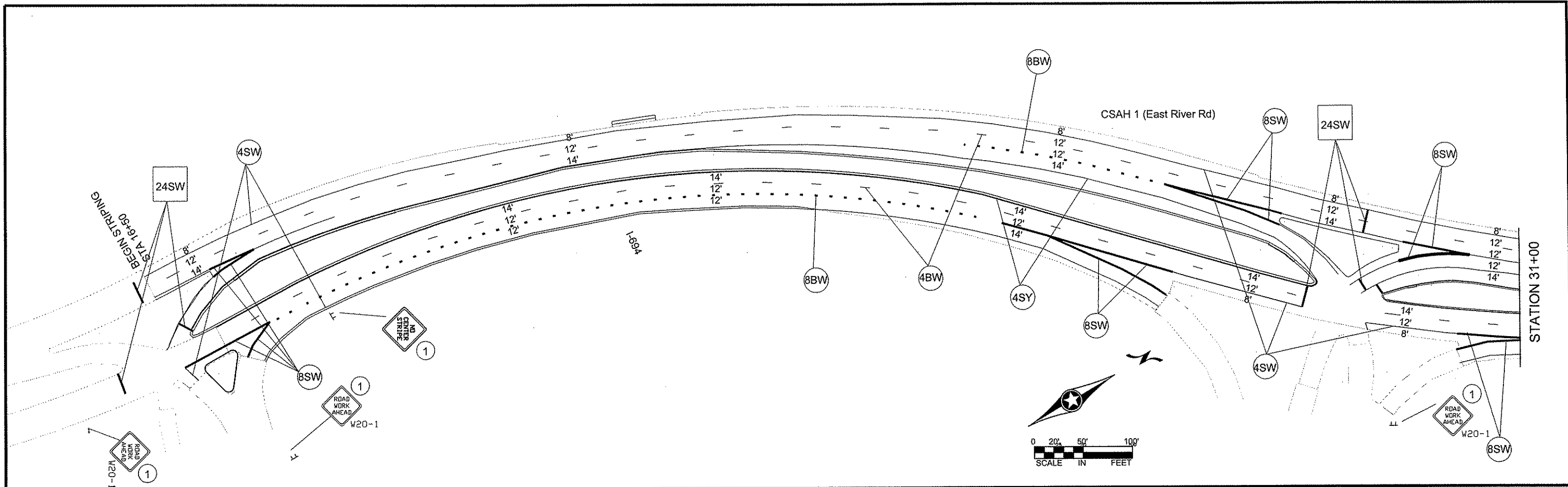


ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. 12-10-01

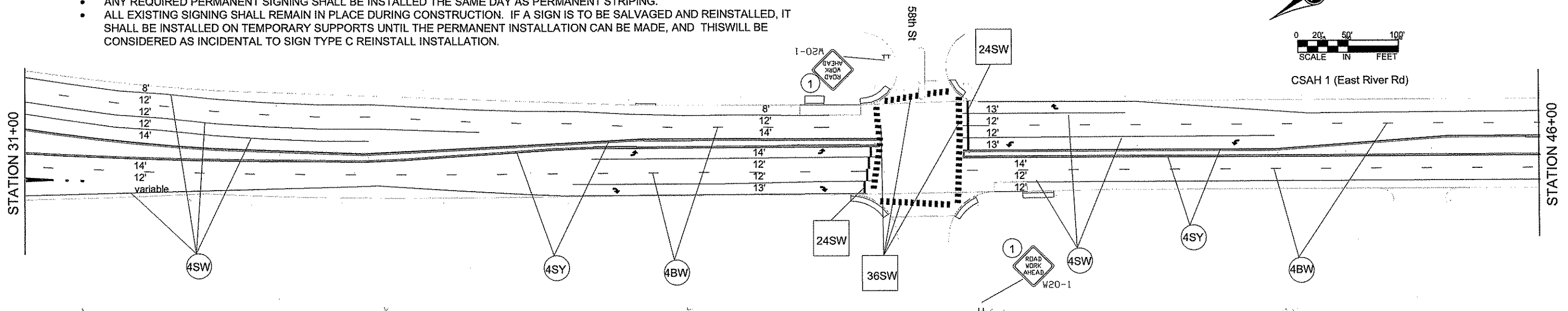
PERMANENT MARKING
TABULATION

Sheet 12 of 22 Sheets



NOTES:

- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
- LOCATIONS OF PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- CONTRACTOR SHALL SUPPLY AND ERECT THE TEMPORARY TRAFFIC CONTROL SIGNS AS SHOWN ON THIS DRAWING AND DETAILED IN THE SPECIAL PROVISIONS FROM THE TIME WORK COMMENCES ON THIS ROADWAY UNTIL THIS ROADWAY IS PERMANENTLY STRIPED. ALL NECESSARY TEMPORARY TRAFFIC CONTROL SIGNS SHALL BE PAID FOR AS PART OF TRAFFIC CONTROL LUMP SUM.
- ALL PERMANENT STRIPING AND PAVEMENT MESSAGES SHALL BE PLACED WITHIN 72 HOURS OF MAINLINE PAVING.
- ANY REQUIRED PERMANENT SIGNING SHALL BE INSTALLED THE SAME DAY AS PERMANENT STRIPING.
- ALL EXISTING SIGNING SHALL REMAIN IN PLACE DURING CONSTRUCTION. IF A SIGN IS TO BE SALVAGED AND REINSTALLED, IT SHALL BE INSTALLED ON TEMPORARY SUPPORTS UNTIL THE PERMANENT INSTALLATION CAN BE MADE, AND THIS WILL BE CONSIDERED AS INCIDENTAL TO SIGN TYPE C REINSTALL INSTALLATION.



NO	DATE	BY	CKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *Charles Cadenhead*
 DATE: 7/2/12 REG. NO. 40416

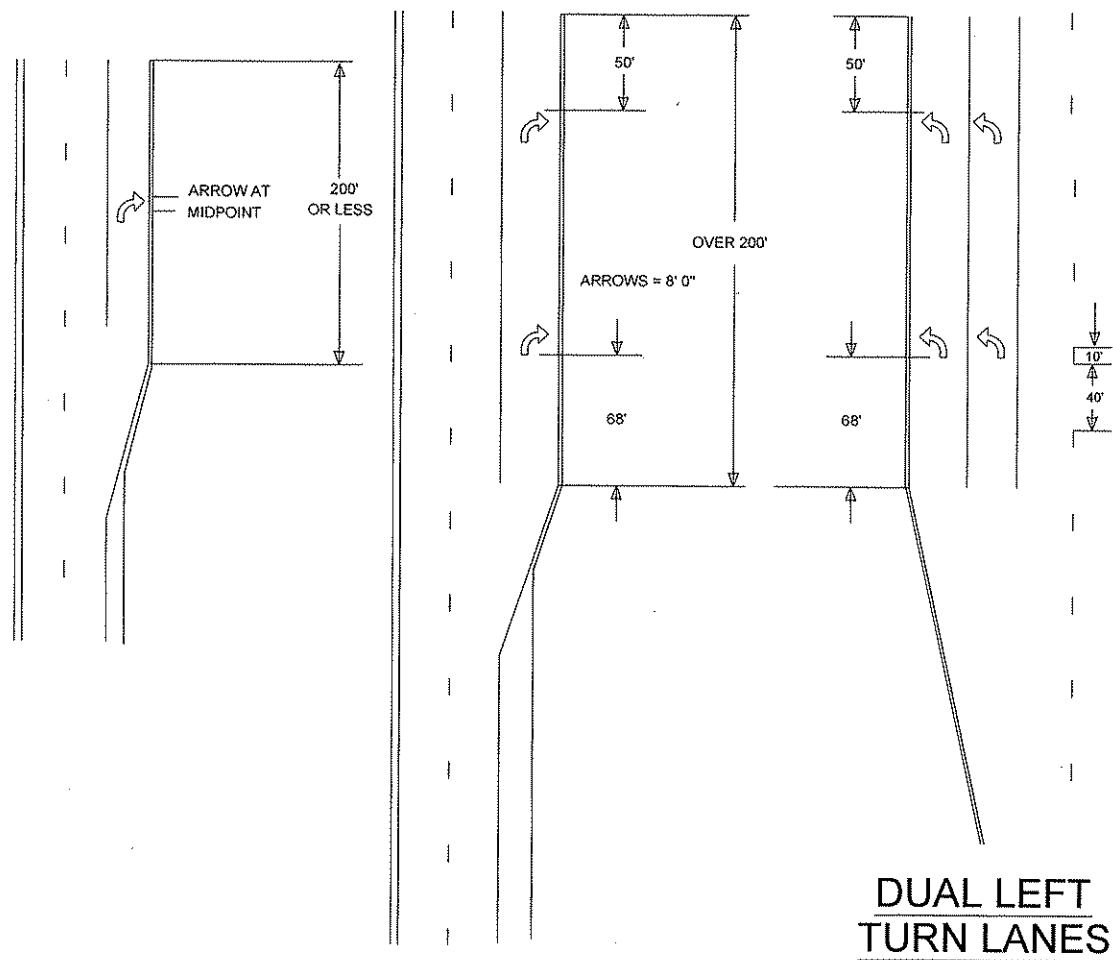
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 CHECKED BY: JR DATE 02/14/12

ANOKA COUNTY
HIGHWAY DEPT.

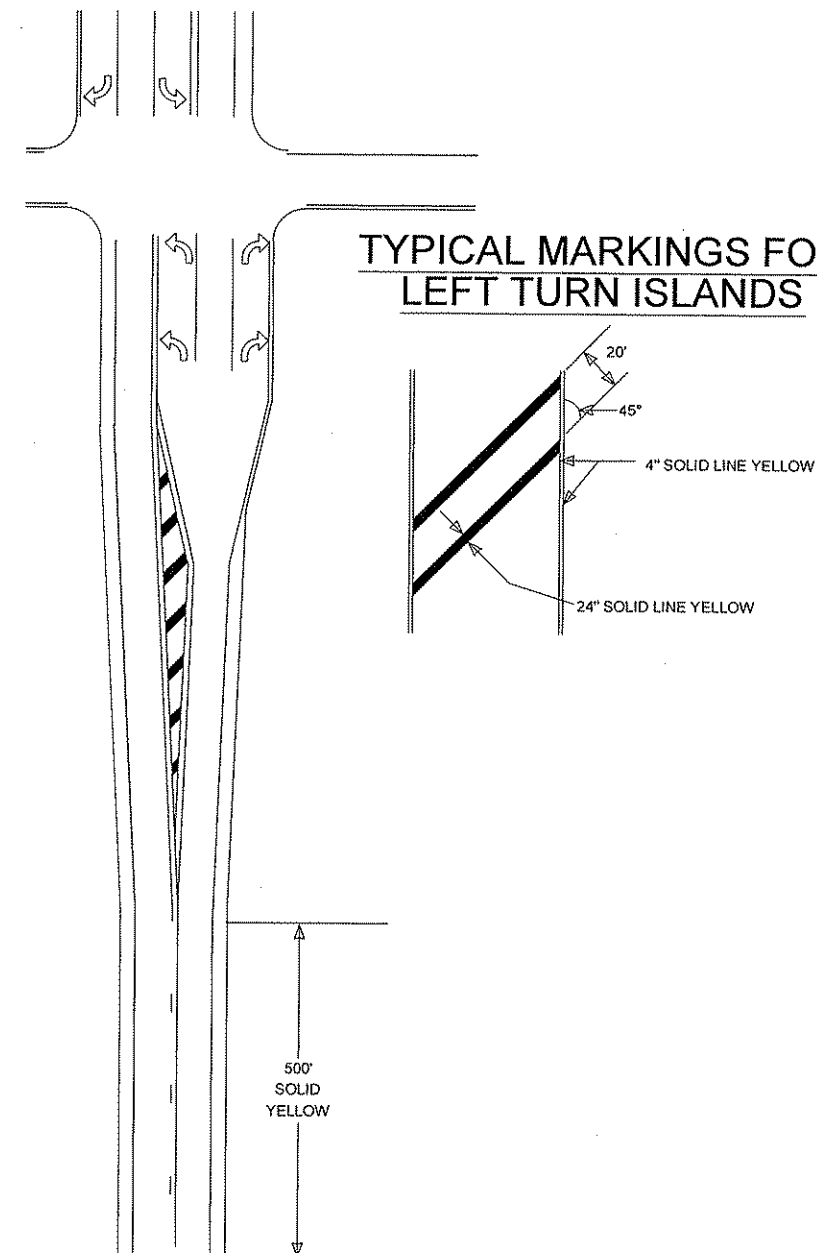
STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. 12-10-01

CSAH 1 (EAST RIVER RD)
 TEMPORARY SIGNING
 PERMANENT STRIPING
 AND PAVEMENT MESSAGES
 Sheet 13 of 22 Sheets

**TYPICAL MESSAGE PLACEMENT
FOR TURN LANES**



**TYPICAL MARKINGS FOR
LEFT TURN ISLANDS**



NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\12-01-00\CSAH 1\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: CHARLES CADENHEAD

SIGNATURE: *Charles Cadenhead*

DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY MTH DATE 1-21-12

DESIGN BY MTH DATE 1-21-12

CHECKED BY JR DATE 2-14-12



**ANOKA COUNTY
HIGHWAY DEPT.**

STATE PROJECT NO. _____

STATE PROJECT NO. _____

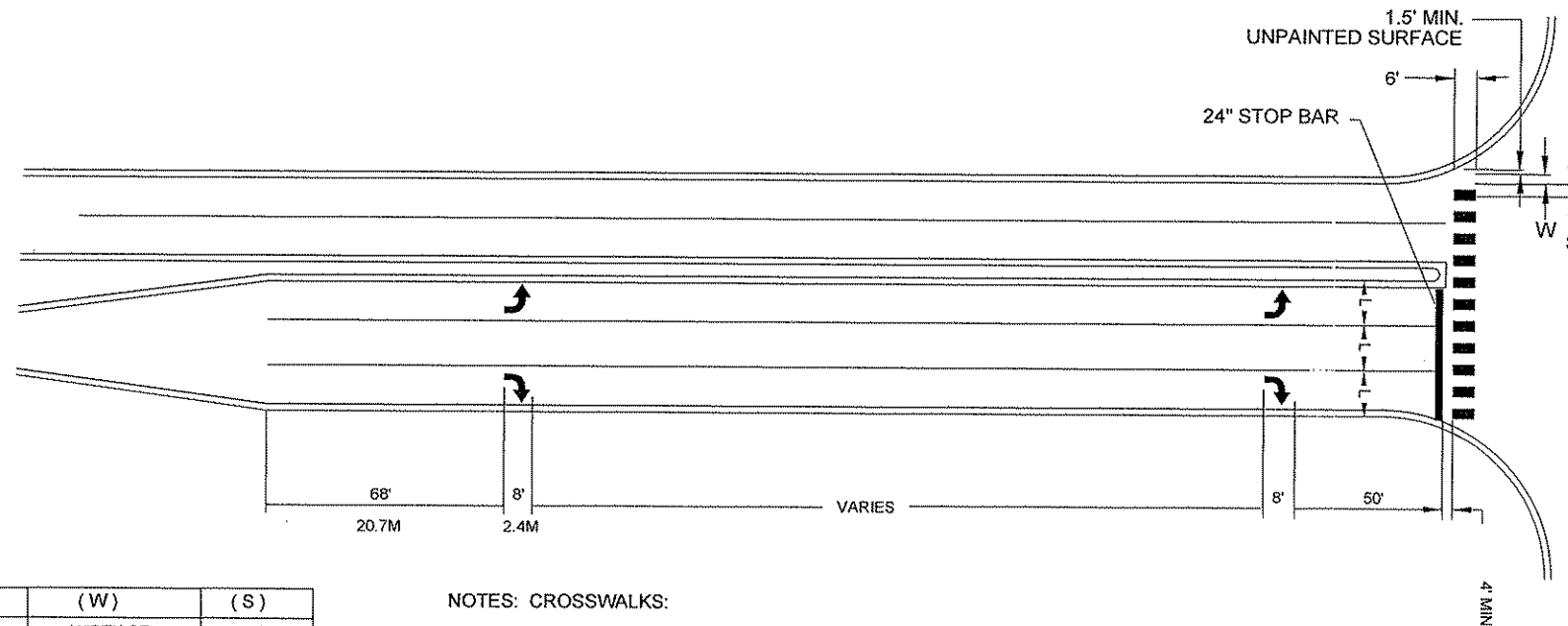
STATE PROJECT NO. _____

COUNTY PROJECT NO. 12-10-01

SIGNING & STRIPING DETAILS

Sheet 15 of 22 Sheets

MARKINGS FOR PEDESTRIAN CROSSWALKS



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

NOTES: CROSSWALKS:

- 1.) PAINTED AREAS ARE TO BE CENTERED ON CENTER AND LANE LINES, EVEN IF INTERSECTION IS NOT ALIGNED.
- 2.) LOCATION OF ZEBRA CROSSWALKS AND STOP BARS, SIGNAL LOOPS AND PED RAMP'S 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' (450mm) CLEAR DISTANCE MUST BE LEFT ADJACENT TO THE CURB. IF LAST PAINTED AREA FALLS INTO THIS AREA, IT MUST BE OMITTED.
- 5.) ON TWO LANE STREETS, USE SPACING SHOWN FOR AN 11' (3.3mm) NSIDE LANE.

NO	DATE	BY	CHKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *Charles Cadenhead*
 DATE: 2/2/12 LICENSE NO. 40416

DRAWN BY MTH DATE 1-21-12
 DESIGN BY MTH DATE 1-21-12
 CHECKED BY JR DATE 2-14-12



**ANOKA COUNTY
 HIGHWAY DEPT.**

STATE PROJECT NO. _____
 STATE PROJECT NO. _____
 STATE PROJECT NO. _____
 COUNTY PROJECT NO. 12-10-01

SIGNING & STRIPING DETAILS

Sheet 16 of 22 Sheets

SIGNAL FACE CHART				LOOP DETECTOR CHART		
FACE	R	Y	G	NUMBER	SIZE (FT)	LOCATION
1-1, 1-2	○	○	△	D1-1	6X12	40'
2-1, 2-2	○	○	△	D2-1, D2-2	6X6	330'
6-1, 6-2, 6-3	○	○	△	D6-1, D6-2	6X6	330'
8-1, 8-2, 8-3	○	○	△	D8-1	2-6X6	40'

-ALL SIGNAL INDICATIONS SHALL BE 12"
-ALL SIGNAL FACES SHALL HAVE A BACKGROUND SHIELD

-ALL LOOPS ARE ON FUNCTION CALL AND EXTEND
-LOCATION: DISTANCE FROM CROSSWALK/STOP BAR IN FEET



(A) CONTROLLER, MASTER CONTROLLER, AND CABINET
4" RSC TO HH 1 WITH
2-1C #6
1-1/C #6 BR. GR.
6-12/C #12
7-3/C #12
1-25 PR. #19
6-2/C #14
3-3/C #20

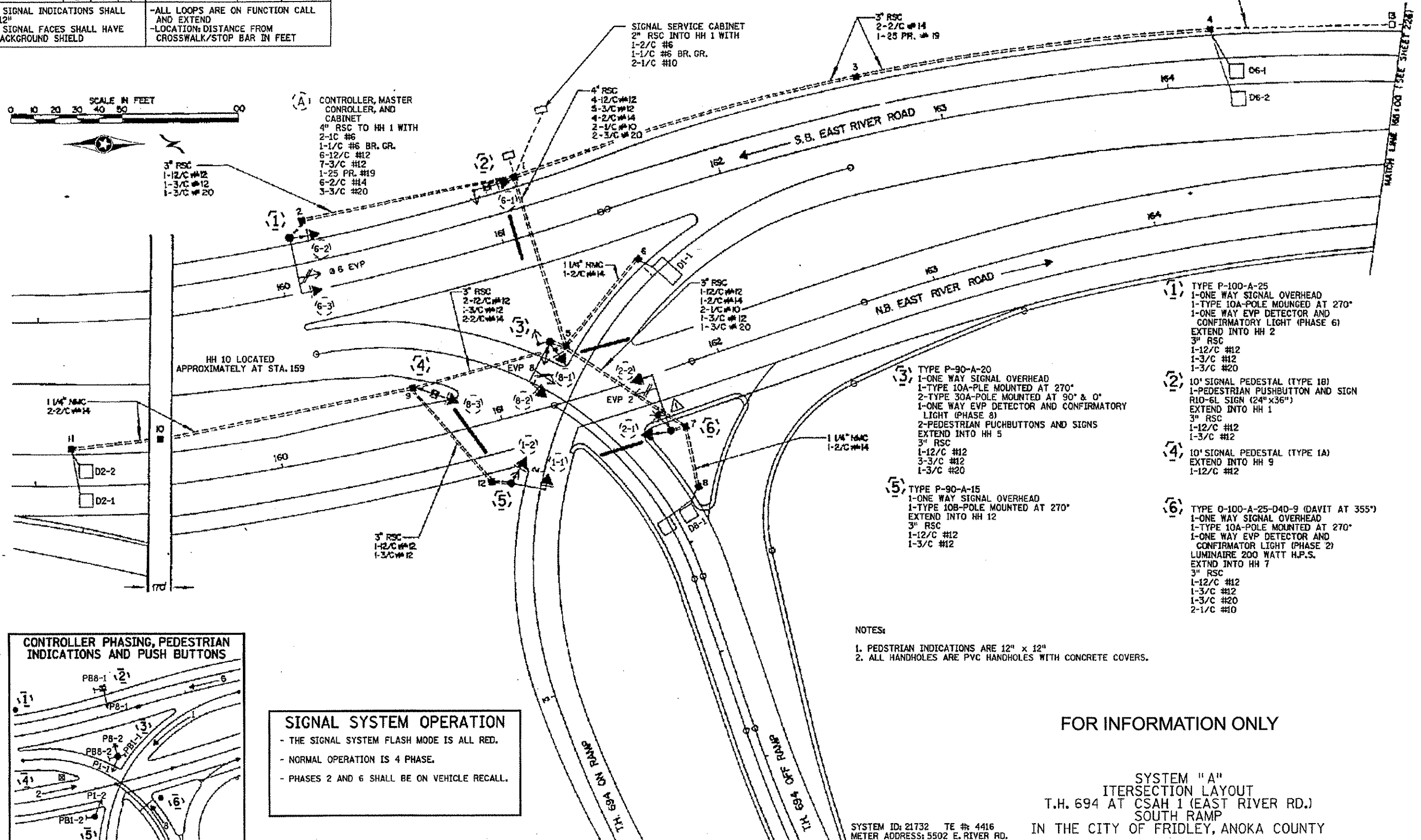
3" RSC
1-12/C #12
1-3/C #12
1-3/C #20

SIGNAL SERVICE CABINET
2" RSC INTO HH 1 WITH
1-2/C #6
1-1/C #6 BR. GR.
2-1/C #10

4" RSC
4-12/C #12
5-3/C #12
4-2/C #14
2-1/C #10
2-3/C #20

3" RSC
2-2/C #14
1-25 PR. #19

4" RSC
1-25 PR. #19



HH 10 LOCATED APPROXIMATELY AT STA. 159

1 1/4" NMC
2-2/C #14

3" RSC
1-12/C #12
1-3/C #12

3" RSC
1-12/C #12
1-2/C #14
2-1/C #10
1-3/C #12
1-3/C #20

1 1/4" NMC
1-2/C #14

(5) TYPE P-90-A-15
1-ONE WAY SIGNAL OVERHEAD
1-TYPE 10B-POLE MOUNTED AT 270°
EXTEND INTO HH 12
3" RSC
1-12/C #12
1-3/C #12

(1) TYPE P-100-A-25
1-ONE WAY SIGNAL OVERHEAD
1-TYPE 10A-POLE MOUNTED AT 270°
1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 6)
EXTEND INTO HH 2
3" RSC
1-12/C #12
1-3/C #12
1-3/C #20

(2) 10' SIGNAL PEDESTAL (TYPE 1B)
1-PEDESTRIAN PUSHBUTTON AND SIGN R10-6L SIGN (24" X 36")
EXTEND INTO HH 1
3" RSC
1-12/C #12
1-3/C #12

(4) 10' SIGNAL PEDESTAL (TYPE 1A)
EXTEND INTO HH 9
1-12/C #12

(6) TYPE D-100-A-25-D40-9 (DAVIT AT 355")
1-ONE WAY SIGNAL OVERHEAD
1-TYPE 10A-POLE MOUNTED AT 270°
1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 2)
LUMINAIRE 200 WATT H.P.S.
EXTEND INTO HH 7
3" RSC
1-12/C #12
1-3/C #12
1-3/C #20
2-1/C #10

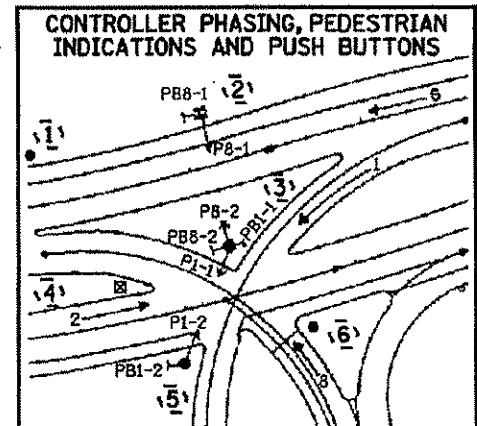
NOTES:

1. PEDESTRIAN INDICATIONS ARE 12" x 12"
2. ALL HANDHOLES ARE PVC HANDHOLES WITH CONCRETE COVERS.

FOR INFORMATION ONLY

SYSTEM "A"
INTERSECTION LAYOUT
T.H. 694 AT CSAH 1 (EAST RIVER RD.)
SOUTH RAMP
IN THE CITY OF FRIDLEY, ANOKA COUNTY

SYSTEM ID: 21732 TE #: 4416
METER ADDRESS: 5502 E. RIVER RD.
MASTER ID: 38579 TE #: 4422



SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 4 PHASE.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.

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: CHARLES CADENHEAD
SIGNATURE: *Charles Cadenhead*
DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY: KPR DATE: 1/08/12
DESIGN BY: KPR DATE: 1/08/12
CHECKED BY: DFF DATE:



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
STATE AID PROJECT NO. _____
CITY PROJECT NO. _____
COUNTY PROJECT NO. 12-10-01

MISCELLANEOUS SIGNAL SHEETS

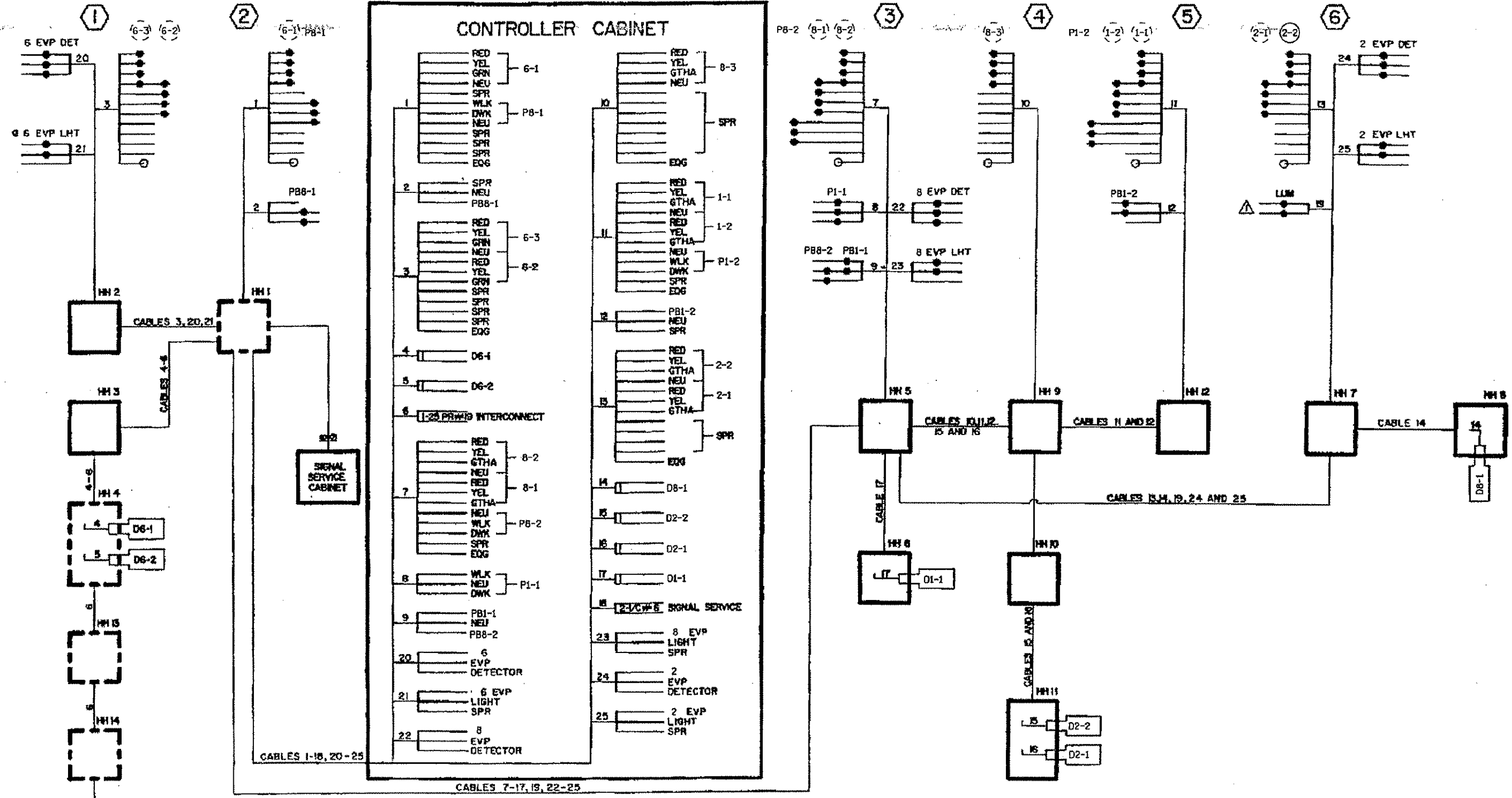
Sheet 17 of 22 Sheets

PLOTTED/REVISED: 5/17/2007

DISTRICT #: METRO
PILOT NAME: LAYOUT
PATH & FILENAME: SATRAFF\FIC\Signal Design\plans\T.H. 694\21732\pend_3-07\21732a_sgl.dgn

PLOTTED/REVISED: 5/11/2007

DISTRICT #: METRO
 IPLOT NAME: WIRE
 PATH & FILENAME: S:\TRAFFIC\Signal Design\Plans\TH_694\21732\pend_3-07\21732a_spl.dgn



R	BLK
O	WH
B	R
GRN	BLK
BRN	COLR
2/C/WH	BLK
2/C/WH	WH
2/C/WH	BLK
2/C/WH	WH
2/C/WH	BLK
2/C/WH	WH
2/C/WH	BLK
2/C/WH	WH
2/C/WH	BLK
2/C/WH	WH

ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SHOWN ABOVE

FOR INFORMATION ONLY

SYSTEM "A"
 INTERSECTION LAYOUT
 T.H. 694 AT CSAH 1 (EAST RIVER RD.)
 SOUTH RAMP
 IN THE CITY OF FRIDLEY, ANOKA COUNTY

SYSTEM ID: 21732 TE #: 4416
 METER ADDRESS: 5502 E. RIVER RD.
 MASTER ID: 38679 TE #: 4422

NO	DATE	BY	CKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: CHASLES CADENHEAD
 SIGNATURE: *Chasles Cadenehead*
 DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY: KPR DATE: 1/06/12
 DESIGN BY: KPR DATE: 1/06/12
 CHECKED BY: DFF DATE: _____



STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 12-10-01

MISCELLANEOUS SIGNAL SHEETS
 Sheet 18 of 22 Sheets

PLOTTED/REVISED: 7/14/2009

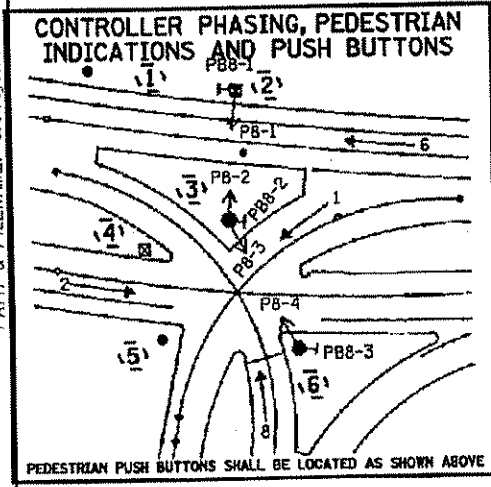
DISTRICT: METRO
IPLOT NAME: 121731a.sgl
PATH & FILENAME: C:\projects\121731a\121731a.dwg

SIGNAL FACE CHART				LOOP DETECTOR CHART		
FACE	R	Y	G	NUMBER	SIZE (FT)	LOCATION
1-1, 1-2	○	○	△	D1-1	6X12	40'
2-1, 2-2	○	○	△	D1-2	6X6	40'
6-1, 6-2, 6-3	○	○	○	D2-1, D2-2	6X6	300'
8-1, 8-2, 8-3	○	○	△	D6-1, D6-2	6X6	300'
-ALL SIGNAL INDICATIONS SHALL BE 12"				-ALL LOOPS ARE ON FUNCTION CALL AND EXTEND		
-ALL SIGNAL FACES SHALL HAVE A BACKGROUND SHIELD				-LOCATION: DISTANCE FROM CROSSWALK/STOP BAR IN FEET		
				-D6-1 IS A SAWCUT LOOP		

SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 4 PHASE.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.

- (1) TYPE P-100-A-25
1-ONE WAY SIGNAL OVERHEAD
1-TYPE 10A-POLE MOUNTED 270°
1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 6)
EXTEND INTO HH 29
3" RSC
1-12/C #12
1-3/C #12
1-3/C #20
- (2) 10' SIGNAL PEDESTAL (TYPE 1B)
1-PEDESTRIAN PUSHBUTTON AND SIGN R10-6L SIGN (24" X35")
EXTEND INTO HH 29
3" RSC
1-12/C #12
1-3/C #12



- (4) 10' SIGNAL PEDESTAL (TYPE 1A)
EXTEND INTO HH 20
3" RSC
1-12/C #12
- (5) TYPE P-90-A-20
1-ONE WAY SIGNAL OVERHEAD
1-TYPE 10B-POLE MOUNTED AT 270°
EXTEND INTO HH 21
3" RSC
1-12/C #12
- (6) TYPE P-100-A-30-D40-9 (DAVIT AT 355')
1-ONE WAY SIGNAL OVERHEAD
1-TYPE 10B-POLE MOUNTED AT 270°
1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 2)
LUMINAIRE 200 W HPS
1-PEDESTRIAN PUSHBUTTON AND SIGN
EXTEND INTO HH 23
3" RSC

AS BUILT DONE AT MN/DOT BY MAS 7-13-09.
ADDED D8-1 AND STRIPED OFF LEFT OFF RAMP
LANE PER J.L.

NOTES:
1. PEDESTRIAN INDICATIONS ARE 12" x 12"
2. ALL HANDHOLES ARE PVC HANDHOLES WITH CONCRETE COVERS.

FOR INFORMATION ONLY

SYSTEM "B"
INTERSECTION LAYOUT
T.H. 694 AT CSAH 1 (EAST RIVER RD.)
NORTH RAMP
IN THE CITY OF FRIDLEY, ANOKA COUNTY

SYSTEM ID: 21731 TE # 4413
METER ADDRESS: 5602 E. RIVER RD.
MASTER ID: 38679 TE # 4422

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:112-01-00ICSAH_01_(694-Charles)Plantsig.dgn
02/24/2012 9:49:40 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: CHARLES CADENHEAD
SIGNATURE: *Charles Cadenhead*
DATE: 7/2/12 LICENSE NO. 40416

DRAWN BY: KPR DATE: 1/08/12
DESIGN BY: KPR DATE: 1/08/12
CHECKED BY: DFF DATE:

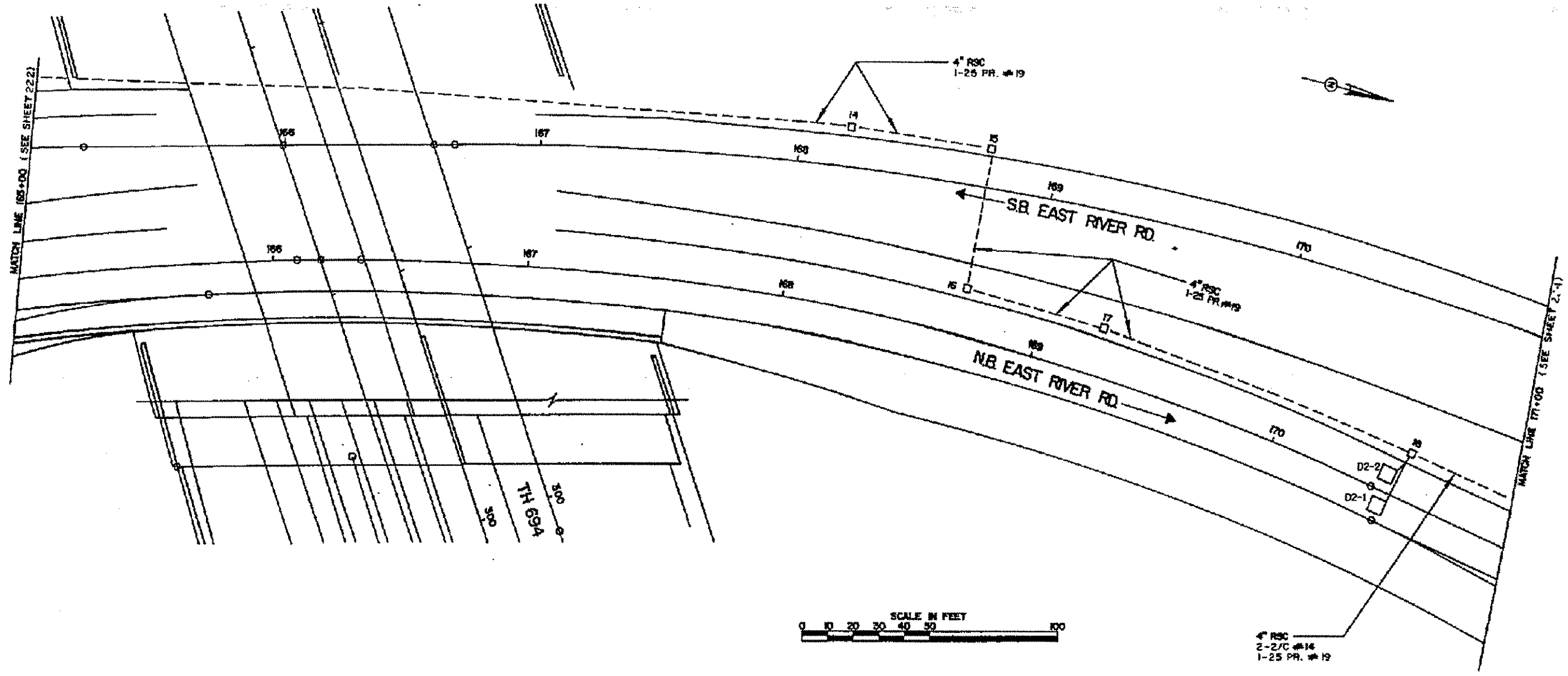
**ANOKA COUNTY
HIGHWAY DEPT.**

STATE PROJECT NO. _____
STATE AID PROJECT NO. _____
CITY PROJECT NO. _____
COUNTY PROJECT NO. 12-10-01

MISCELLANEOUS SIGNAL SHEETS
Sheet 19 of 22 Sheets

PLOTTED/REVISED: 4/26/2007

DISTRICT #: METRO
PLOT NAME: MATCHLINE
PATH & FILENAME: S:\TRAFFIC\Signal Design\plans\TH 694\21732\pend_3-07\N21732a_spl.dgn



FOR INFORMATION ONLY

SYSTEM ID: 21732 TE #: 4416
 METER ADDRESS: 5502 E. RIVER RD.
 MASTER ID: 36679 TE #: 4422

INTERCONNECT LAYOUT
 T.H. 694 AT CSAH 1 (EAST RIVER RD.)
 IN THE CITY OF FRIDLEY, ANOKA COUNTY

NO	DATE	BY	CHKD	APPR	REVISION
NAME: P:\12-01-00\CSAH_01_(694-Charles)\Plans\sig.dgn					
02/24/2012 9:50:18 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: CHARLES GADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 LICENSE NO: 40416

DRAWN BY: KPR DATE: 1/06/12
 DESIGN BY: KPR DATE: 1/06/12
 CHECKED BY: OFF DATE:



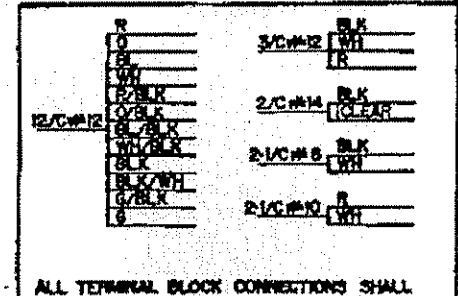
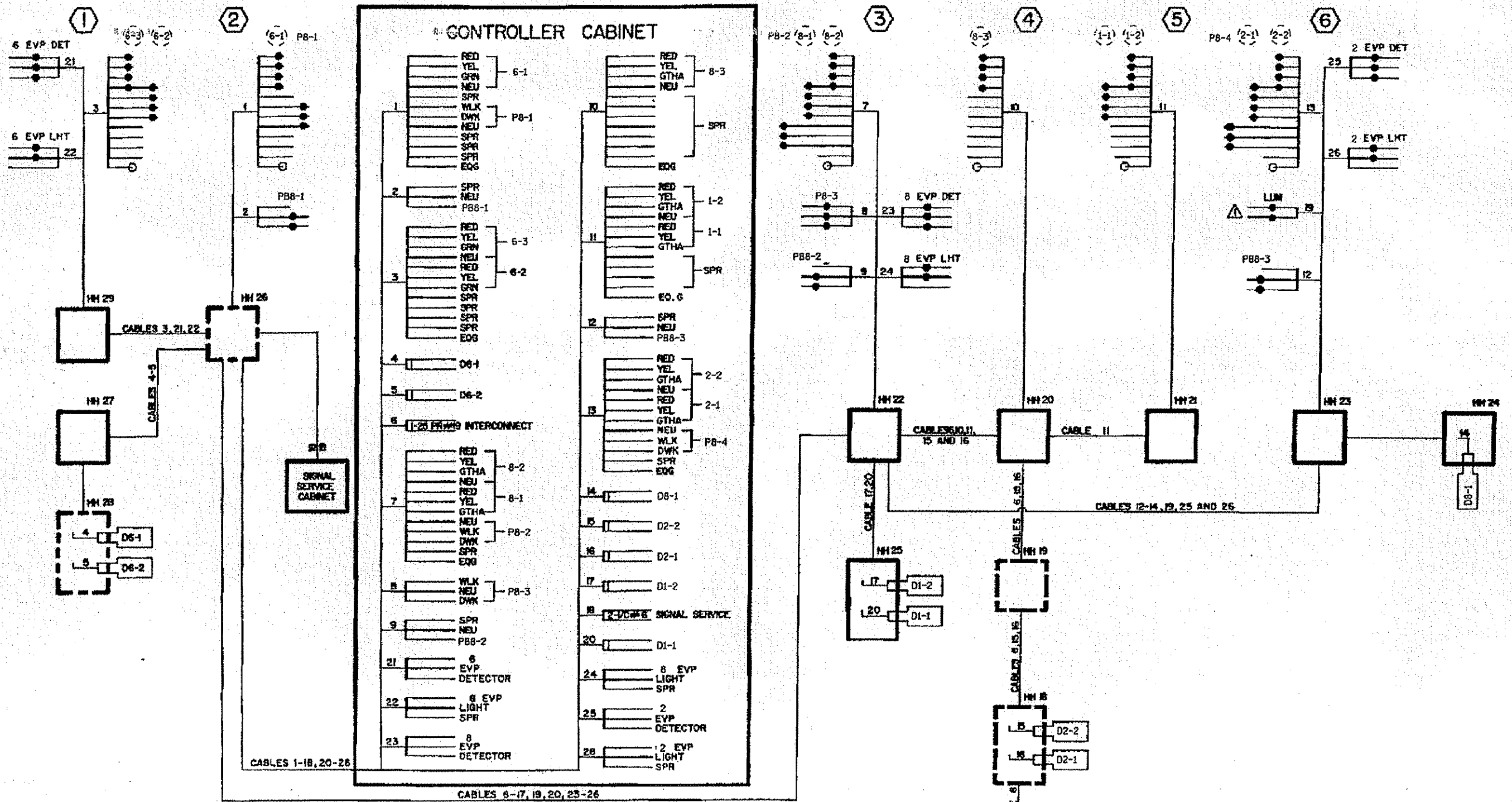
STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 12-10-01

MISCELLANEOUS SIGNAL SHEETS

Sheet 20 of 22 Sheets

PLOTTED/REVISED: 4/26/2007

DISTRICT: METRO
PLOT NAME: WIRE
PATH & FILENAME: SATRAFF\Signal Design\plans\TH 694\273\PEND 3-07\273ia_sgl.dgn



ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SHOWN

FOR INFORMATION ONLY

SYSTEM "B"
INTERSECTION LAYOUT
T.H. 694 AT CSAH 1 (EAST RIVER RD.)
NORTH RAMP
IN THE CITY OF FRIDLEY, ANOKA COUNTY

NO	DATE	BY	CKD	APPR	REVISION
NAME: P1312-01-00ICSAH_01_(694-Charles)Plantsig.dgn					
DATE: 02/24/2012 9:50:46 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: CHARLES CADENHEAD

SIGNATURE: *Charles Cadenhead*

DATE: 3/2/12 LICENSE NO. 48416

DRAWN BY: KPR DATE: 1/06/12

DESIGN BY: KPR DATE: 1/09/12

CHECKED BY: DFF DATE:



STATE PROJECT NO. _____

STATE AID PROJECT NO. _____

CITY PROJECT NO. _____

COUNTY PROJECT NO. 12-10-01

MISCELLANEOUS SIGNAL SHEETS

Sheet 21 of 22 Sheets

MINNESOTA DEPARTMENT OF TRANSPORTATION

ANOKA COUNTY

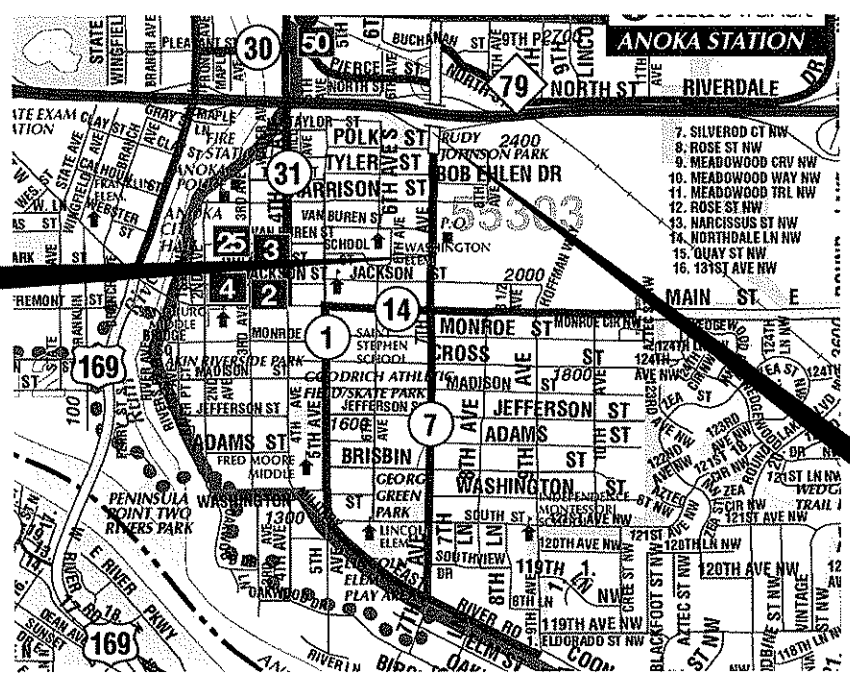
CONSTRUCTION PLAN FOR MILL BITUMINOUS SURFACE, BITUMINOUS SURFACING, REMOVE B624 CURB AND INSTALL B612 CURB

LOCATED ON CSAH 7 BETWEEN SCHOOL ST AND TH-10

12-11-07

GROSS LENGTH	1353 FEET	0.256 MILES
BRIDGES-LENGTH	0.00 FEET	0.000 MILES
EXCEPTIONS-LENGTH	0.00 FEET	0.000 MILES
NET LENGTH	1353 FEET	0.256 MILES

CITY OF ANOKA



BEGIN COUNTY PROJECT 12-11-07
CSAH 7 STA. 102+13

END COUNTY PROJECT 12-11-07
CSAH 7 STA. 115+66

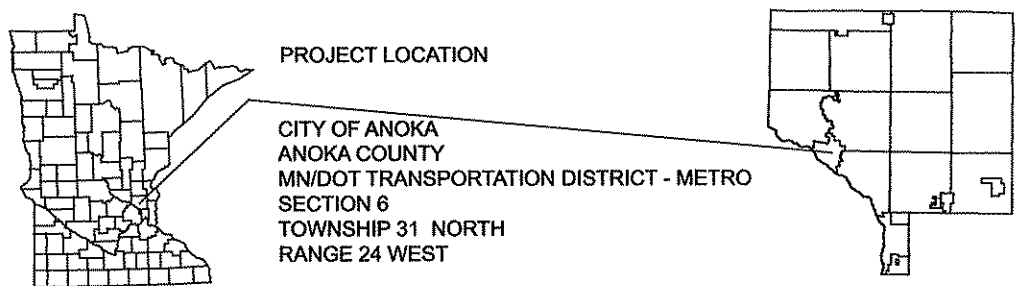
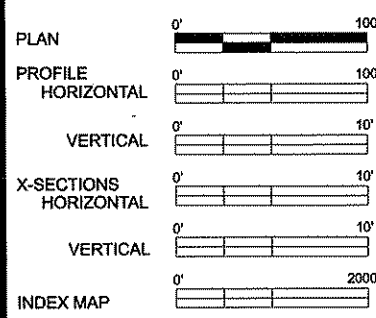
PLAN SYMBOLS

- 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 Terminal)
- GAS MAIN
- WATERMAIN
- TELEPHONE CABLE IN CONDUIT
- ELECTRIC CABLE IN CONDUIT
- TELEPHONE MANHOLE
- ELECTRIC MANHOLE
- BURIED TELEPHONE CABLE
- BURIED ELECTRIC CABLE
- SEWER (Sanitary or Storm)
- SEWER MANHOLE

SCALES



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 PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS."

INDEX


SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	STATEMENT OF ESTIMATED QUANTITIES
3-6	TYPICAL SECTIONS
7-9	MISCELLANEOUS DETAILS
10	CONSTRUCTION PLAN
11	STORMSEWER PLAN
12-15	STRIPING PLAN

THIS PLAN CONTAINS _____ SHEETS


DESIGN DESIGNATION

ESAL 20	1,912,183
R VALUE	50
ADT (2010) =	13,513
Proj. ADT (2030) =	20,400
Proj. HCADT (2030) =	NA
Soil Factor	NA
9 TON DESIGN	


Functional Classification MAJOR COLLECTOR
 No. of Traffic Lanes 4 No. of Parking Lanes 0
 Design Speed 35 MPH N/A
 Based on Stopping Sight Distance
 Height of eye 3.5' Height of object 2.0'
 Design Speed not achieved at:
 STA. 102+13 TO STA. 115+66 MPH

Approved:  3/4/2012
 ANOKA COUNTY ENGINEER

NO	DATE	BY	CKD	APPR	REVISION	SDATES	STIMES

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: CHARLES ADENHEAD
 SIGNATURE: 
 DATE: 3/4/12 LICENSE NO. 40416

DRAWN BY: JJ DATE: 3-1-2012
 DESIGN BY: JJ DATE: 3-1-2012
 CHECKED BY: BL/JD DATE: 3-1-2012


ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 12-11-07

TITLE SHEET
 Sheet 1 of 15 Sheets

CSAH 7		STATEMENT OF ESTIMATED QUANTITIES		
ITEM NO.	ITEM	NOTES	UNIT	TOTAL EST. QUANT.
2011.601	CONSTRUCTION SURVEYING		LUMP SUM	1
2021.501	MOBILIZATION		LUMP SUM	1
2104.501	REMOVE CURB AND GUTTER	7	LIN FT	2259
2104.503	REMOVE CONCRETE WALK		SQ FT	2862
2104.503	REMOVE CONCRETE DRIVEWAY PAVEMENT		SQ FT	1235
2104.505	REMOVE BITUMINOUS PAVEMENT	1	SQ YD	867
2104.509	REMOVE MANHOLES OR CATCH BASINS		EACH	19
2104.511	SAWING CONCRETE PAVEMENT (FULL DEPTH)		LIN FT	613
2104.513	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	8	LIN FT	2864
2105.501	COMMON EXCAVATION	16	CU YD	100
2105.525	TOPSOIL BORROW (LV)	9	CU YD	93
2211.501	AGGREGATE BASE CLASS 5	15	TON	180
2232.501	MILL BITUMINOUS SURFACE (3.0")	11	SQ YD	6316
2357.502	BITUMINOUS MATERIAL FOR TACK COAT		GAL	733
2360.501	TYPE SP 12.5 WEARING COURSE MIXTURE(4,E)		TON	1131
2360.502	TYPE SP 12.5 NON WEARING COURSE MIXTURE (4,B)	1	TON	130
2360.503	TYPE SP 12.5 NON WR CRS MX(4,B)1.5" THICK	15	SQ YD	584
2360.503	TYPE SP 12.5 WEAR CRS MX(4,E)1.5" THICK	15	SQ YD	584
2504.602	ADJUST GATE VALVE	7	EACH	18
2506.501	CONST DRAINAGE STRUCTURE DESIGN G		LIN FT	5
2506.501	CONST DRAINAGE STRUCTURE DESIGN H		LIN FT	4
2506.503	RECONSTRUCT DRAINAGE STRUCTURE		LIN FT	10
2506.516	CASTING ASSEMBLY	13	EACH	19
2506.602	GROUT CATCH BASIN OR MANHOLE		EACH	5
2521.501	6" CONCRETE WALK		SQ FT	2862
2531.501	CONCRETE CURB & GUTTER DESIGN B612		LIN FT	2148
2531.501	CONCRETE CURB & GUTTER DESIGN B624		LIN FT	111
2531.507	6" CONCRETE DRIVEWAY PAVEMENT	12	SQ YD	137
2531.618	TRUNCATED DOMES	7	SQ FT	96
2563.601	TRAFFIC CONTROL	2,3,5	LUMP SUM	1
2565.602	NMC LOOP DETECTORS 6' X 6'	4	EACH	9
2573.530	STORM DRAINAGE INLET PROTECTION	10	EACH	13
2575.505	SODDING TYPE SALT RESISTANT	14	SQ YD	846
2581.501	REMOVABLE PREFORMED PLASTIC MARKING	6A	LIN FT	220
2581.501	REMOVABLE PREFORMED PLASTIC MARKING	6B	LIN FT	220
2582.502	4" SOLID LINE WHITE-EPOXY	7	LIN FT	2280
2582.502	4" BROKEN LINE WHITE-EPOXY	7	LIN FT	500
2582.502	4" SOLID LINE YELLOW - EPOXY	7	LIN FT	250
2582.502	4" DOUBLE SOLID LINE YELLOW-EPOXY	7	LIN FT	1080
2582.603	24" WHITE PREF THERMOPLASTIC	7	LIN FT	80
2582.603	24" YELLOW PREF THERMOPLASTIC	7	LIN FT	35
2582.618	3 X 6 ZEBRA CROSSWALK - PREFORMED THERMOPLASTIC	7	SQ FT	432

CSAH 7		CONSTRUCTION NOTES
1	ITEM FOR PATCHING OR REMOVING AROUND NEW CURB AREA	
2	DO NOT PASS, PASS WITH CARE, NO CENTER STRIPE AND BUMP/BUMP AHEAD SIGNS TO BE INPLACE	
3	MARKINGS SHALL BE IN PLACE WITH IN 72 HOURS OF FINAL MAINLINE PAVING	
4	ONLY NEED TO REPLACE IF HIT DURING MILLING OPERATION	
5	ALL TRAFFIC CONTROL DEVICES AND METHODS SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL	
6A	SINGLE WHITE LANE LINE SKIPS WILL BE PLACED AS SOON AS POSSIBLE AFTER MILLING AND PAVING OPERATIONS	
6B	DOUBLE YELLOW CENTER LINE SKIPS WILL BE PLACED AS SOON AS POSSIBLE AFTER MILLING AND PAVING OPERATIONS	
7	INSTALL AT EVERY CROSSING	
8	SAW 2' FROM PROPOSED LIP OF CONCRETE CURB AND GUTTER	
9	ITEM USED AT LOCATION FOR SOD AREAS	
10	ALL DRAINAGE STRUCTURES ON THIS ROAD SEGMENT MUST HAVE INLET PROTECTION	
11	DETAIL MILLING AROUND MANHOLE AND CATCH BASINS IS INCIDENTAL TO THIS ITEM	
12	HIGH EARLY CONCRETE TO BE USED FOR THIS ITEM (ALL COMMERCIAL DRIVEWAYS TO BE CONSTRUCTED IN 2 STAGES)	
13	ITEM INCLUDES FURNISH AND INSTALL	
14	ITEM TO BE USED BEHIND NEW CURB	
15	ITEM FOR STREET APPROACHES	
16	ITEM FOR GRADING BOULEVARDS AND STREET APPROACHES	

CSAH 7		BASIS OF PLANNED QUANTITIES		
2357.502	BITUMINOUS MATERIAL FOR TACK COAT		.05 GAL / SQ YD	
2361.501	TYPE SP 12.5 WEARING COURSE MIX (4, E)		115/SQ.YD./IN THICKNESS	
2362.502	TYPE SP 12.5 NON-WEARING COURSE MIX (4, B)		115/SQ.YD./IN THICKNESS	
2581.501	REMOVABLE PREFORMED PLASTIC MARKING		2' AT 50' INTERVALS FOR SKIPS	

CSAH 7		STRUCTURE REPAIRS														
STRUCTURE	STATION	OFFSET	FURNISH AND INSTALL CASTING		GROUT REMOVE C&G	SAW BITUMINOUS PAVEMENT	SAW CONC. PAVEMENT OR CONC. CURB & GUTTER	REMOVE BIT. PAVEMENT	REMOVE CONC. WALK	REPLACE 6" CONC. WALK	RECONSTRUCT DRAINAGE STR. (RING HT)	CONSTRUCT DRAIN STR G	CONSTRUCT DRAIN STR H	REPLACE B624 C&G	REPLACE BIT. PAVEMENT	ACTION
			EA	EA LF												
100	100+86.0	0.8														NONE
101	104+16.2	1.0														NONE
102	107+33.8	1.1														NONE
103	107+48.6	-0.5			1											GROUT
104	107+59.3	0.8			1											GROUT
105	109+93.0	0.8														NONE
106	110+80.9	0.9		1		32		7.1			0.2					2.5 RE-RING
107	114+09.2	1.1														NONE
108	115+84.7	-0.9														NONE
200	100+54.7	-21.0														NONE
201	100+67.8	-7.3			1											GROUT
202	100+59.3	21.0														NONE
203	102+52.4	21.0		1							0.6					RE-RING
204	102+62.3	-21.0		1							0.8					RE-RING
205	102+70.8	58.7														NONE
206	102+67.1	-11.1														NONE
207	104+22.0	-41.3		1		32		7.1			0.8					2.5 RE-RING
208	104+31.3	-10.7														NONE
209	104+53.6	-21.0		1							0.4					RE-RING
210	107+08.3	-21.0		1							0.6					RE-RING
211	107+13.6	21.0		1							0.4					RE-RING
212	107+42.6	41.2														NONE
213	107+59.6	-41.1		1		32		7.1			0.6					2.5 RE-RING
214	107+73.6	-11.4		1		32		7.1			0.6					2.5 RE-RING
215	109+31.4	0.4		1		32		7.1			0.2					2.5 RE-RING
216	109+53.6	21.0		1							0.2					RE-RING
217	109+70.7	-10.9		1		32		7.1			0.2					2.5 RE-RING
218	109+71.6	-21.0		1							0.8					RE-RING
219	110+33.0	21.0		1							0.6					RE-RING
220	110+32.2	43.1														NONE
221	111+12.8	-10.9		1												GROUT
222	111+13.3	-21.0		1							0.8					RE-RING
223	113+70.8	-11.1		1		32		7.1			1.2					2.5 RE-RING
224	113+98.3	42.5		1								5				CONSTRUCT (G)
225	114+26.0	44.3		1	35	39		11	8.5	87	87			4	35	3 CONSTRUCT (H)
226	115+52.5	-35.6		1	23	27		24	5.1	28	28	0.6			23	2.06 RE-RING
227	115+63.2	37.0		1												GROUT
228	115+96.2	80.1														NONE
300	107+44.3	-21.8														NONE
TOTAL:			19	6	58	280	35	63.3	115	115	9.6	5	4	58	22.56	

CASTING ASSEMBLIES SUMMARY					
ASSEMBLY	RING OR FRAME CASTING	COVER OR GRATE CASTING	CURB BOX	STANDARD PLAT NO.	QUANTITY
A-7D	700-7	715		4101, 4110	6
B-17	806	816	825	4125, 4154, 4134	3
NEENAH	R-3070	V			10

ALL CASTING HEIGHTS ARE TO BE DETERMINED IN THE FIELD.

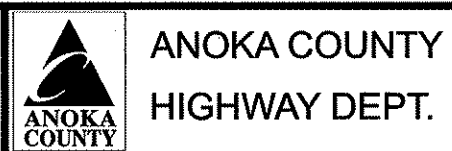
ALL MANHOLE CASTINGS NEED TO HAVE "SANITARY SEWER" OR "WATER" STAMPED ON THEM.

NO	DATE	BY	CKD	APPR	REVISION	\$TIMES

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: CHARLES CADENHEAD
SIGNATURE: *Charles Cadenhead*
DATE: 3/2/12 LICENSE NO. 40416

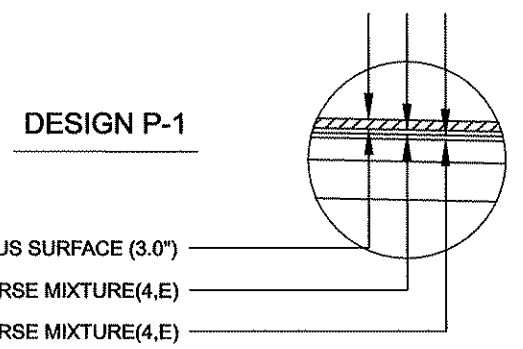
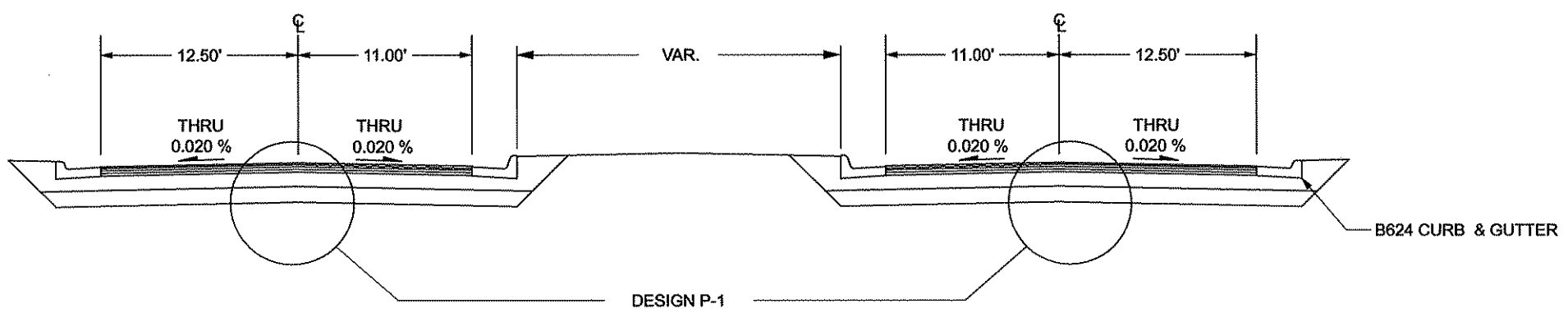
DRAWN BY JJ DATE 3-1-2012
DESIGN BY JJ DATE 3-1-2012
CHECKED BY BL/JO DATE 3-1-2012



STATE PROJECT NO. _____
STATE AID PROJECT NO. _____
CITY PROJECT NO. _____
COUNTY PROJECT NO. 12-11-07

STATEMENT OF ESTIMATED QUANTITIES
Sheet 2 of 15 Sheets

C.S.A.H. 7
PROPOSED ROAD
 STA 114+38 - STA 115+66



GENERAL NOTES:

- ALL CROSS SLOPES ARE APPROXIMATE
- UNLESS OTHERWISE SPECIFIED, THE CLASS 5 CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE OF THE MAINLINE.

NO	DATE	BY	CHKD	APPR	REVISION

NAME: \$DGN\$ \$DATES\$ \$TIMES\$

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: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 LICENSE NO. 40416

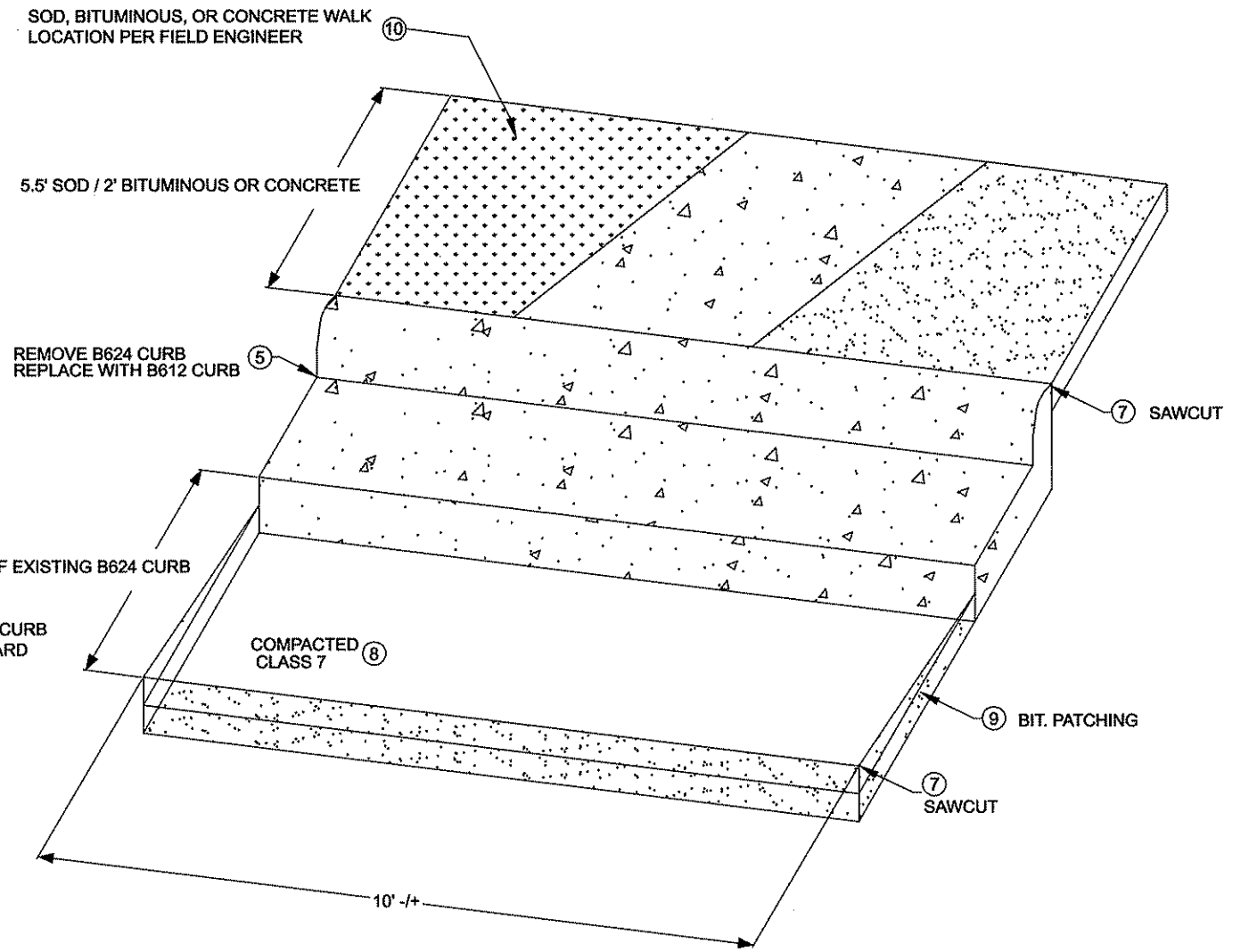
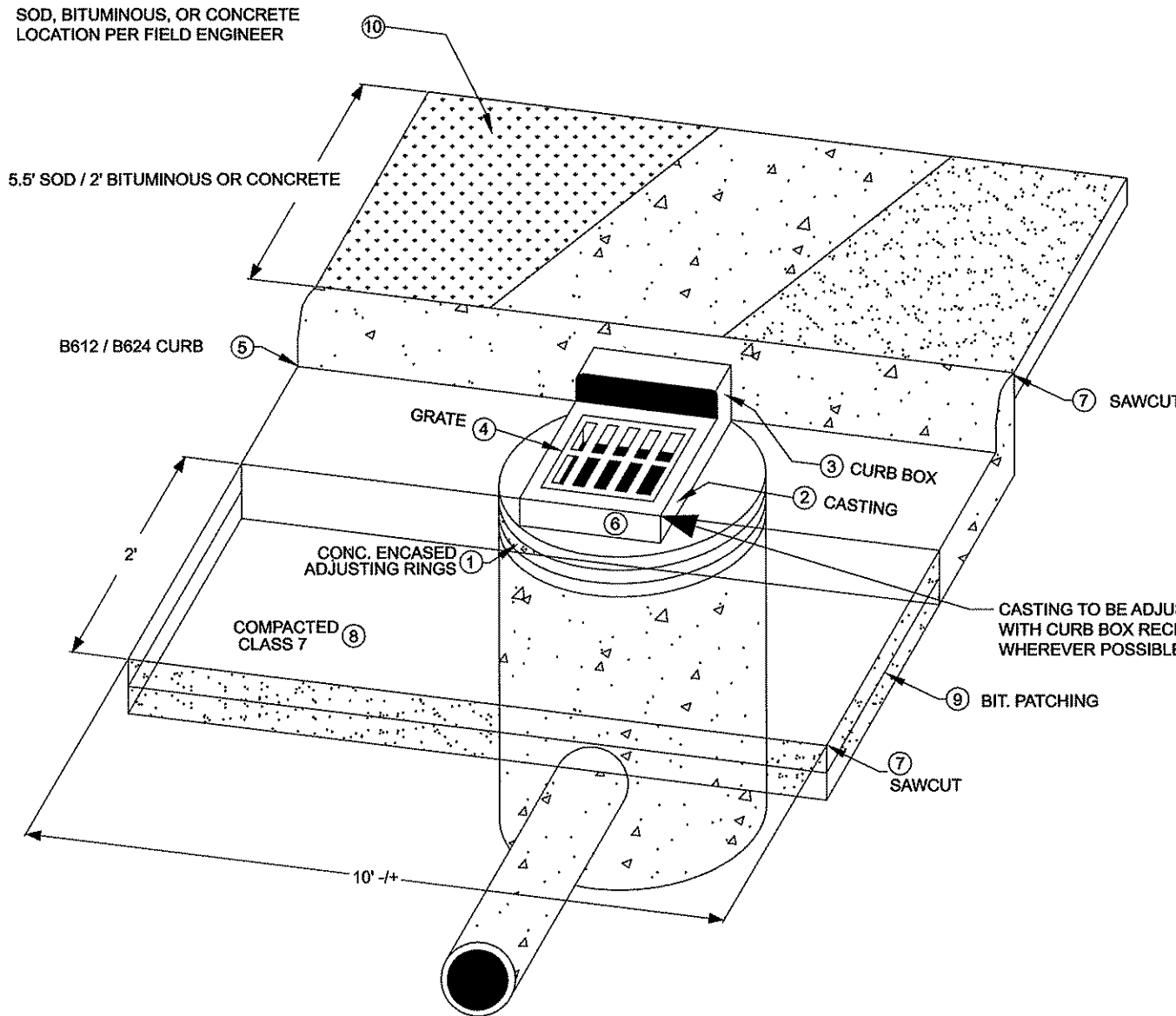
DRAWN BY JJ DATE 3-1-2012
 DESIGN BY JJ DATE 3-1-2012
 CHECKED BY BL/JQ DATE 3-1-2012



STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 12-11-07

TYPICAL SECTIONS

Sheet 6 of 15 Sheets



NOTES.. FOR TRAFFIC CONTROL AT CATCH BASIN AND MANHOLE REPAIRS REFER TO THE MINNESOTA MANUAL ON TEMPORARY TRAFFIC CONTROL LAYOUTS FIELD MANUAL.
REFER TO MINNESOTA STANDARD PLATES MANUAL FOR THE FOLLOWING...

- ① CONCRETE ENCASED CONCRETE ADJUSTING RINGS STANDARD PLATE 4026A
- ② RING AND FRAME CASTING. REFERENCE CASTING ASSEMBLIES SUMMARY CHART FOR CASTING TYPE
- ③ CURB BOX MATCHES CASTING REFERENCE CHART FOR CASTING TYPE
- ④ GRATE CASTING. REFERENCE CASTING ASSEMBLIES SUMMARY CHART FOR CASTING TYPE
- ⑤ CONCRETE CURB AND GUTTER DESIGN B STANDARD PLATE 7100G
- ⑥ INSTALLATION OF CATCH BASIN CASTINGS REFERENCE STANDARD PLATE PER TYPE OF CASTING
- ⑦ SAWCUT BIT PAVEMENT / CONCRETE CURB FULL DEPTH.
- ⑧ ADD AND COMPACT CL-7 AROUND REPAIRED STRUCTURE. ITEM INCIDENTAL TO C.B. REPAIR
- ⑨ REMOVE VAR. DEPTH BITUMINOUS, PATCH WITH 2, 3" LIFTS OF BITUMINOUS, TOP LIFT SHOULD TAPER TO BOTTOM LIFT AT CURB.
- ⑩ REPLACE DISTURBED AREA BEHIND CATCH BASIN WITH EITHER SOD (RESIDENTIAL AREAS), ERSION CONTROL BLANKET, BITUMINOUS ,OR CONCRETE

CURB STAKING NOTES:

OFFSET HUB AT 3 FEET TO THE BACK OF EXISTING CURB.
TRANSFER EXISTING GUTTER GRADE TO HUB.
GRADE IS TO MATCH EXISTING.

NO	DATE	BY	CKD	APPR	REVISION	\$DGN\$	\$TIMES\$

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: CHARLES CADENHEAD
SIGNATURE: *Charles Cadenhead*
DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY JJ DATE 3-1-2012
DESIGN BY JJ DATE 3-1-2012
CHECKED BY BL / JO DATE 3-1-2012



**ANOKA COUNTY
HIGHWAY DEPT.**

STATE PROJECT NO. _____
STATE AID PROJECT NO. _____
CITY PROJECT NO. _____
COUNTY PROJECT NO. 12-11-07

MISCELLANEOUS
DETAILS

Sheet 7 of 15 Sheets

NOTES:

- 1) LOCATION OF POLES, CABINET FOUNDATIONS, LOOP DETECTORS, AND HANDHOLES SHALL BE DETERMINED IN FIELD BY ENGINEER.
- 2) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
- 3) LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) IN 3/4" N.M.C. SEE SPECIAL PROVISIONS AND DETAILS.
- 4) NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS.
- 5) EACH SIGNAL FACE SHALL HAVE BACKGROUND SHIELD.
- 6) EACH PEDESTRIAN INDICATION SHALL BE A ONE SECTION "FILLED" HAND/WALKING PERSON INDICATION.
- 7) ALL VEHICLE AND PEDESTRIAN SIGNAL INDICATIONS SHALL BE LED.
- 8) ALL MAST ARM POLE AND PEDESTAL POLE MOUNTED VEHICLE AND PEDESTRIAN SIGNAL INDICATIONS SHALL BE MOUNTED USING ONE-WAY SIGNAL HEAD MOUNTS. SEE SPECIAL PROVISIONS AND DETAILS.
- 9) A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE AND CONDUIT OUTLET BODY SHALL BE FURNISHED AND INSTALLED 6" FROM THE END OF EACH MAST ARM (FOR EVP).
- 10) SEE SPECIAL PROVISIONS, DETAILS AND REMAINDER OF PLANS FOR INFORMATION REGARDING SIGN PANELS, STRIPING, DRIVEWAY REMOVAL AND CONSTRUCTION, AND CONCRETE WALK TO BE FURNISHED AND INSTALLED BY CONTRACTOR (SEPARATE FROM ITEM NO. 2565 - FULL TRAFFIC ACTUATED TRAFFIC CONTROL SIGNAL SYSTEM).
- 11) CONTRACTOR SHALL MAINTAIN OPERATION OF INPLACE SIGNAL SYSTEM AT ALL TIMES, UNTIL APPROVED BY ENGINEER FOR SIGNAL SYSTEM TO BE TURNED OFF AND REMOVED.
- 12) SEE SPECIAL PROVISIONS REGARDING REMOVAL OF INPLACE SIGNAL SYSTEM (INCIDENTAL TO ITEM NO. 2565 FOR THIS SIGNAL SYSTEM).

NMC LOOP DETECTORS			
NUMBER	SIZE (FT)	LOCATION	FUNCTION
D2-1	6 x 8	180'	1
D2-2	6 x 8	180'	1
D3-1	6 x 6	100'	3,8
D3-2	6 x 6	100'	3,8
D3-3	2-6 x 6	0' & 15'	7
D3-4	2-6 x 6	0' & 15'	7
D4-1	6 x 6	120'	3,8
D4-2	2-6 x 6	0' & 15'	7
D6-1	6 x 6	180'	1
D6-2	6 x 6	180'	1

NOTE: LOCATION-DISTANCE FROM STOP BAR TO FRONT OF LOOP DETECTOR.

DETECTOR FUNCTIONS:

- 1) CALL AND EXTEND
- 2) CALL ONLY
- 3) EXTEND ONLY
- 4) CALL ONLY DENSITY
- 5) DELAYED CALL ONLY
- 6) DELAYED CALL ONLY DENSITY
- 7) DELAYED CALL-IMMEDIATE EXTEND
- 8) CARRY OVER (STRETCH)
- 9) ADVISORY DETECTOR
- 10) SAMPLING DETECTOR
- 11) COUNT DETECTOR

③ PEDESTAL FOUNDATION
14' PEDESTAL POLE (INCLUDES BASE)
WIND COLLAR FOR PEDESTAL POLE
1-ONE WAY SIGNAL-POLE MOUNTED
1-SET PEDESTRIAN INDICATIONS-POLE MOUNTED
1-PEDESTRIAN PUSH BUTTON
EXTEND INTO H.H.4:
3"R.S.C.
1-12/c#14
1-3/c#14
1-3/c#20

② PEDESTAL FOUNDATION
14' PEDESTAL POLE (INCLUDES BASE)
WIND COLLAR FOR PEDESTAL POLE
1-ONE WAY SIGNAL-POLE MOUNTED
1-SET PEDESTRIAN INDICATIONS-POLE MOUNTED
1-PEDESTRIAN PUSH BUTTON
EXTEND INTO H.H.3:
3"R.S.C.
1-12/c#14
1-2/c#14

④ PAB5 POLE FOUNDATION
TYPE PAB5-A-15-D40-9 (DAMT AT 350')
LUMINAIRE-250 W HPS
ONE WAY SIGNAL-POLE MOUNTED
1-ONE WAY SIGNAL-POLE MOUNTED 225'
1-SET PEDESTRIAN INDICATIONS-POLE MOUNTED 225'
1-PEDESTRIAN PUSH BUTTON
TYPE D SIGN PANEL-OVERHEAD (D-1)
ONE WAY EVP DETECTOR AND LIGHT (#6)
EXTEND INTO H.H.5:
3"R.S.C.
1-12/c#14
1-3/c#14
1-3/c#20
1-2/c#14
1-3/c#14 (LUM)

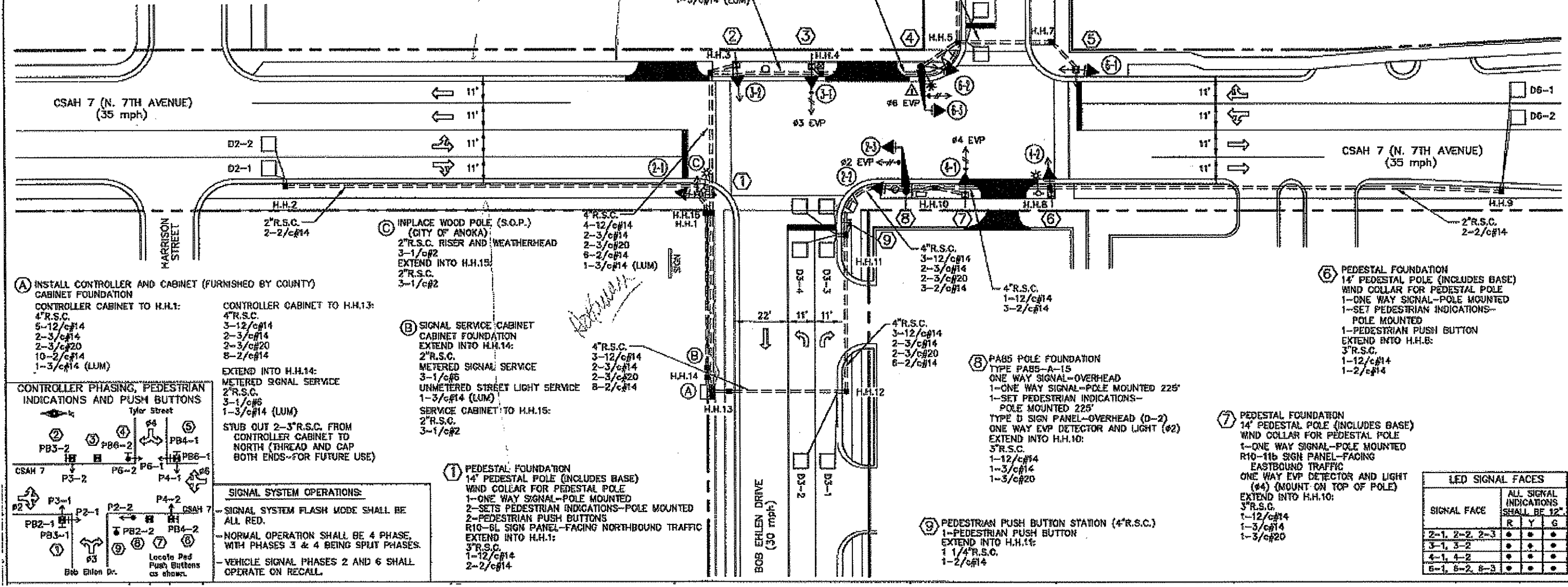
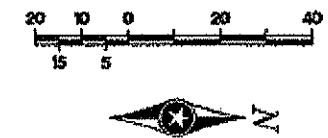
⑤ PEDESTAL FOUNDATION
14' PEDESTAL POLE (INCLUDES BASE)
WIND COLLAR FOR PEDESTAL POLE
1-ONE WAY SIGNAL-POLE MOUNTED
2-SETS PEDESTRIAN INDICATIONS-POLE MOUNTED
2-PEDESTRIAN PUSH BUTTONS
R10-6L SIGN PANEL-FACING SOUTHBOUND TRAFFIC
EXTEND INTO H.H.7:
3"R.S.C.
1-12/c#14
2-2/c#14

⑥ PEDESTAL FOUNDATION
14' PEDESTAL POLE (INCLUDES BASE)
WIND COLLAR FOR PEDESTAL POLE
1-ONE WAY SIGNAL-POLE MOUNTED
1-SET PEDESTRIAN INDICATIONS-POLE MOUNTED
1-PEDESTRIAN PUSH BUTTON
EXTEND INTO H.H.8:
3"R.S.C.
1-12/c#14
1-2/c#14

⑦ PEDESTAL FOUNDATION
14' PEDESTAL POLE (INCLUDES BASE)
WIND COLLAR FOR PEDESTAL POLE
1-ONE WAY SIGNAL-POLE MOUNTED
R10-11b SIGN PANEL-FACING EASTBOUND TRAFFIC
ONE WAY EVP DETECTOR AND LIGHT (#4) (MOUNT ON TOP OF POLE)
EXTEND INTO H.H.10:
3"R.S.C.
1-12/c#14
1-3/c#14
1-3/c#20

⑧ PEDESTRIAN PUSH BUTTON STATION (4"R.S.C.)
1-PEDESTRIAN PUSH BUTTON
EXTEND INTO H.H.11:
1 1/4"R.S.C.
1-2/c#14

LED SIGNAL FACES				
SIGNAL FACE	ALL SIGNAL INDICATIONS SHALL BE 12"			
	R	Y	G	
2-1, 2-2, 2-3	•	•	•	
3-1, 3-2	•	•	•	
4-1, 4-2	•	•	•	
6-1, 6-2, 6-3	•	•	•	

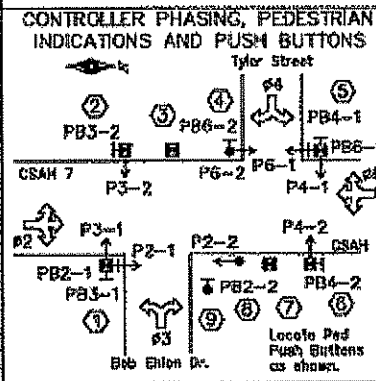


A) INSTALL CONTROLLER AND CABINET (FURNISHED BY COUNTY)
CABINET FOUNDATION
CONTROLLER CABINET TO H.H.1:
4"R.S.C.
5-12/c#14
2-3/c#14
2-3/c#20
10-2/c#14
1-3/c#14 (LUM)

CONTROLLER CABINET TO H.H.13:
4"R.S.C.
3-12/c#14
2-3/c#14
2-3/c#20
8-2/c#14

EXTEND INTO H.H.14:
METERED SIGNAL SERVICE
2"R.S.C.
3-1/c#5
1-3/c#14 (LUM)

STUB OUT 2-3"R.S.C. FROM CONTROLLER CABINET TO NORTH (THREAD AND CAP BOTH ENDS-FOR FUTURE USE)



SIGNAL SYSTEM OPERATIONS:
- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 4 PHASE, WITH PHASES 3 & 4 BEING SPLIT PHASES.
- VEHICLE SIGNAL PHASES 2 AND 6 SHALL OPERATE ON RECALL.

① PEDESTAL FOUNDATION
14' PEDESTAL POLE (INCLUDES BASE)
WIND COLLAR FOR PEDESTAL POLE
1-ONE WAY SIGNAL-POLE MOUNTED
2-SETS PEDESTRIAN INDICATIONS-POLE MOUNTED
2-PEDESTRIAN PUSH BUTTONS
R10-6L SIGN PANEL-FACING NORTHBOUND TRAFFIC
EXTEND INTO H.H.1:
3"R.S.C.
1-12/c#14
2-2/c#14

B) SIGNAL SERVICE CABINET
CABINET FOUNDATION
EXTEND INTO H.H.14:
2"R.S.C.
METERED SIGNAL SERVICE
3-1/c#5
UNMETERED STREET LIGHT SERVICE
1-3/c#14 (LUM)

SERVICE CABINET TO H.H.15:
2"R.S.C.
3-1/c#2

C) INPLACE WOOD POLE (S.O.P.)
(CITY OF ANOKA)
2"R.S.C. RISER AND WEATHERHEAD
3-1/c#2
EXTEND INTO H.H.15:
2"R.S.C.
3-1/c#2

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: CHARLES CADENHEAD
SIGNATURE: *[Signature]*
DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY JJ DATE 3-1-2012
DESIGN BY JJ DATE 3-1-2012
CHECKED BY BL/JO DATE 3-1-2012

ANOKA COUNTY HIGHWAY DEPT.

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CITY PROJECT NO. _____
COUNTY PROJECT NO. 12-11-07

MISCELLANEOUS DETAILS
Sheet 8 of 15 Sheets

NO	DATE	BY	CHKD	APPR	REVISION

NAME: SDGNS STMS

LOOP DETECTOR CHART		
NUMBER	SIZE (FT)	LOCATION
D1-1	6X6	20' & 50'
D1-2	6X6	5' & 35'
D2-1, D2-2	6X6	150'
D4-1, D4-2	6X6	120'
D4-3	2-6X6	5' & 20'
D4-4	2-6X6	5' & 20'
D6-1, D6-2	6X6	170'

-ALL LOOP DETECTORS SHALL BE PVC UNLESS NOTED OTHERWISE
-LOCATION: DISTANCE FROM CROSSWALK/STOP BAR IN FEET

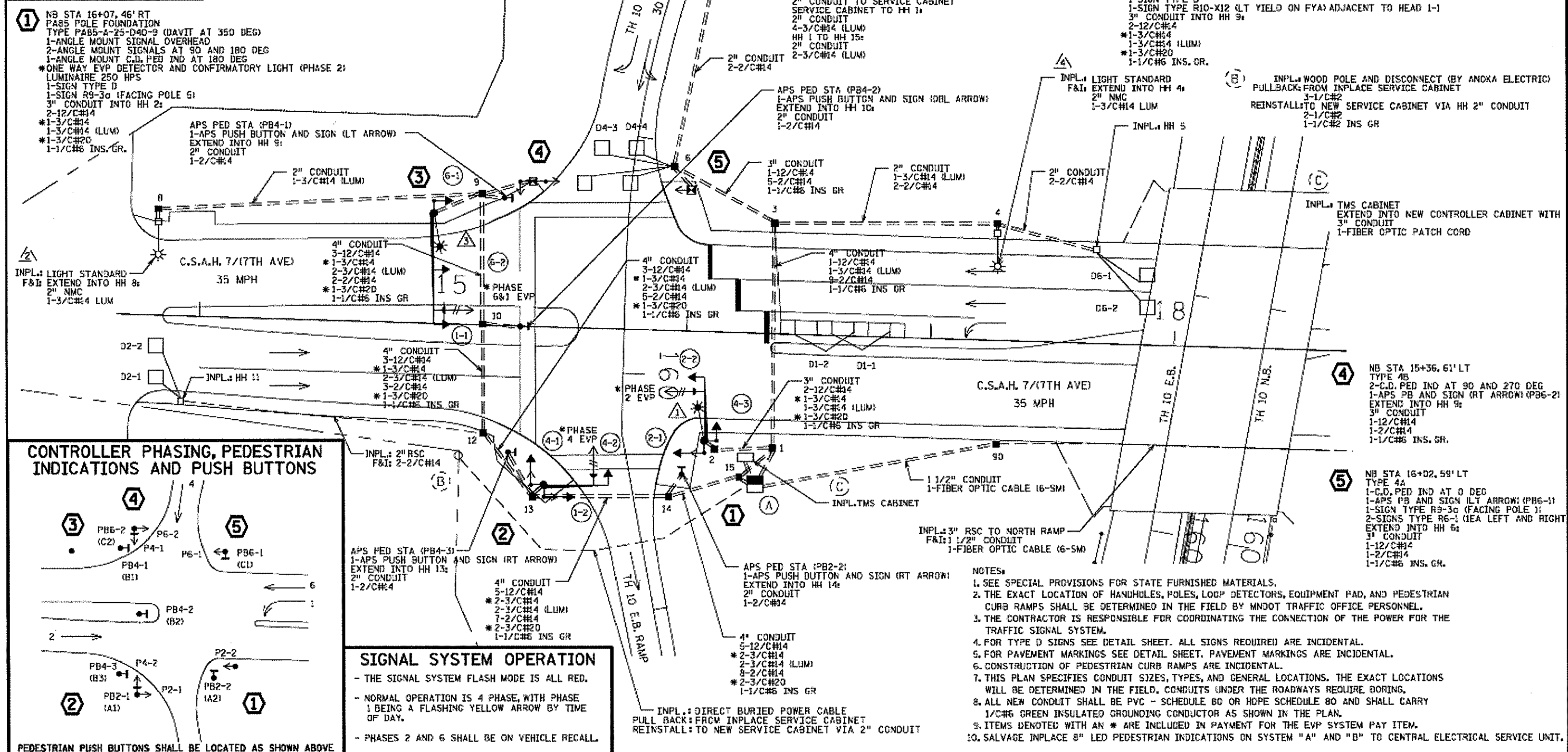
② NB STA 15+41, 66' RT
PA85 POLE FOUNDATION
TYPE PA85-A-25
1-ANGLE MOUNT SIGNAL OVERHEAD
2-ANGLE MOUNT SIGNALS AT 90 AND 180 DEG
2-ANGLE MOUNT C.D. PED IND AT 90 AND 180 DEG
*ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 4)
1-APS PB AND SIGN (LT ARROW) (PB 2-1)
2-SIGNS TYPE R6-1 (1EA LEFT AND RIGHT)
1-SIGN TYPE D
3" CONDUIT INTO HH 13:
2-12/C#4
*1-3/C#14
1-2/C#14
*1-3/C#20
1-1/C#6 INS. GR.

① NB STA 16+07, 46' RT
PA85 POLE FOUNDATION
TYPE PA85-A-25-D40-9 (DAVIT AT 350 DEG)
1-ANGLE MOUNT SIGNAL OVERHEAD
2-ANGLE MOUNT SIGNALS AT 90 AND 180 DEG
1-ANGLE MOUNT C.D. PED IND AT 180 DEG
*ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 2)
LUMINAIRE 250 HPS
1-SIGN TYPE D
1-SIGN R9-3a (FACING POLE S)
3" CONDUIT INTO HH 2:
2-12/C#4
*1-3/C#14
1-3/C#14 (LUM)
*1-3/C#20
1-1/C#6 INS. GR.

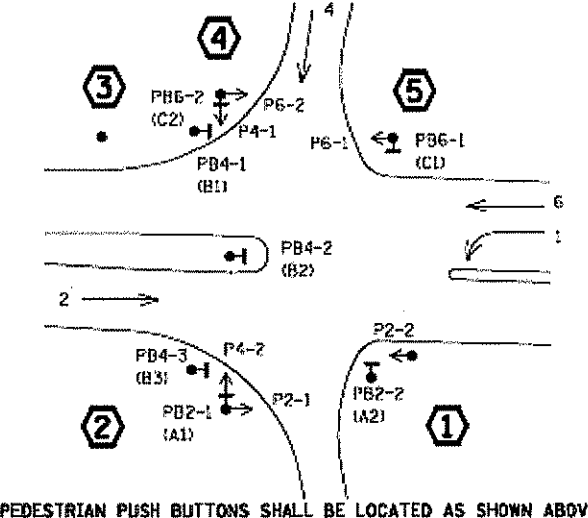
③ NB STA 14+95, 47' LT
PA100 POLE FOUNDATION
TYPE PA100-A-45-D40-9 (DAVIT AT 350 DEG)
1-ANGLE MOUNT SIGNAL OVERHEAD
1-STRAIGHT MOUNT SIGNAL OVERHEAD AT 23'
1-ANGLE MOUNT SIGNAL AT 180 DEG
*ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 6&1)
1-SIGN TYPE D
1-SIGN TYPE R10-X12 (LT YIELD ON FYA) ADJACENT TO HEAD 1-1
3" CONDUIT INTO HH 9:
2-12/C#4
*1-3/C#14
1-3/C#14 (LUM)
*1-3/C#20
1-1/C#6 INS. GR.

SIGNAL FACE CHART				
FACE	R	Y	FYA	G
1-1, 1-2	←	←	←	←
2-1, 2-2	●	●	●	●
4-1, 4-2, 4-3	●	●	●	●
6-1, 6-2	●	●	●	●

-ALL SIGNAL INDICATIONS SHALL BE 12" LED
-ALL SIGNAL HEADS SHALL BE BLACK POLYCARBONATE WITH BACKGROUND SHIELDS
-FYA DENOTES FLASHING YELLOW ARROW



CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 4 PHASE, WITH PHASE 1 BEING A FLASHING YELLOW ARROW BY TIME OF DAY.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.

- NOTES:**
- SEE SPECIAL PROVISIONS FOR STATE FURNISHED MATERIALS.
 - THE EXACT LOCATION OF HANDHOLES, POLES, LOOP DETECTORS, EQUIPMENT PAD, AND PEDESTRIAN CURB RAMPS SHALL BE DETERMINED IN THE FIELD BY MNDOT TRAFFIC OFFICE PERSONNEL.
 - THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE CONNECTION OF THE POWER FOR THE TRAFFIC SIGNAL SYSTEM.
 - FOR TYPE D SIGNS SEE DETAIL SHEET. ALL SIGNS REQUIRED ARE INCIDENTAL.
 - FOR PAVEMENT MARKINGS SEE DETAIL SHEET. PAVEMENT MARKINGS ARE INCIDENTAL.
 - CONSTRUCTION OF PEDESTRIAN CURB RAMPS ARE INCIDENTAL.
 - THIS PLAN SPECIFIES CONDUIT SIZES, TYPES, AND GENERAL LOCATIONS. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD. CONDUITS UNDER THE ROADWAYS REQUIRE BORING.
 - ALL NEW CONDUIT SHALL BE PVC - SCHEDULE 80 OR HDPE SCHEDULE 80 AND SHALL CARRY 1/C#6 GREEN INSULATED GROUNDING CONDUCTOR AS SHOWN IN THE PLAN.
 - ITEMS DENOTED WITH AN * ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM.
 - SALVAGE INPLACE 8" LED PEDESTRIAN INDICATIONS ON SYSTEM "A" AND "B" TO CENTRAL ELECTRICAL SERVICE UNIT.

CURB REPLACEMENT AREA [Pattern]

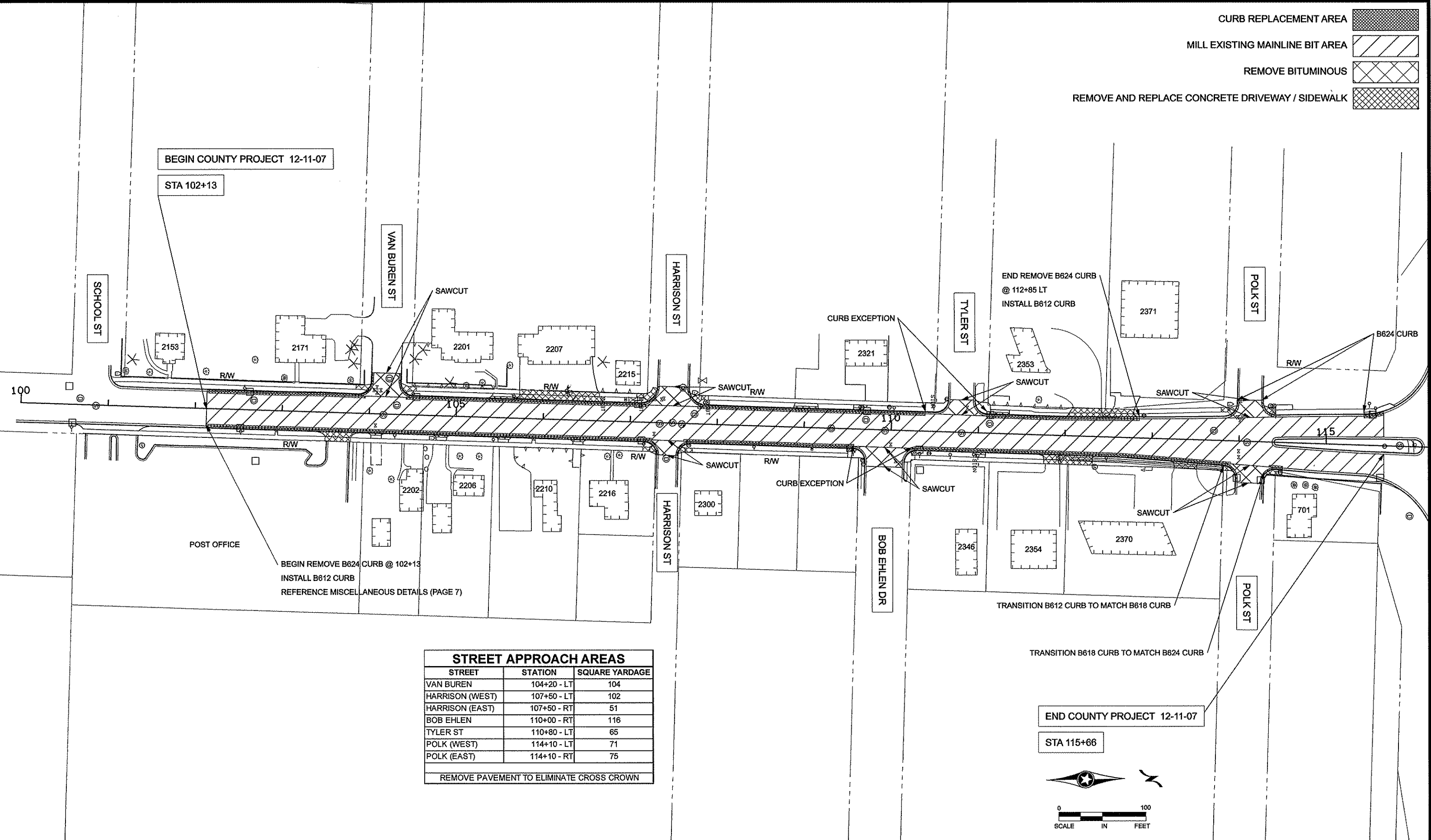
MILL EXISTING MAINLINE BIT AREA [Pattern]

REMOVE BITUMINOUS [Pattern]

REMOVE AND REPLACE CONCRETE DRIVEWAY / SIDEWALK [Pattern]

BEGIN COUNTY PROJECT 12-11-07

STA 102+13



END REMOVE B624 CURB @ 112+85 LT
INSTALL B612 CURB

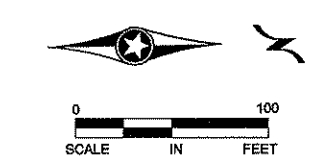
POST OFFICE

BEGIN REMOVE B624 CURB @ 102+13
INSTALL B612 CURB
REFERENCE MISCELLANEOUS DETAILS (PAGE 7)

STREET APPROACH AREAS		
STREET	STATION	SQUARE YARDAGE
VAN BUREN	104+20 - LT	104
HARRISON (WEST)	107+50 - LT	102
HARRISON (EAST)	107+50 - RT	51
BOB EHLEN	110+00 - RT	116
TYLER ST	110+80 - LT	65
POLK (WEST)	114+10 - LT	71
POLK (EAST)	114+10 - RT	75
REMOVE PAVEMENT TO ELIMINATE CROSS CROWN		

END COUNTY PROJECT 12-11-07

STA 115+66



NO	DATE	BY	CKD	APPR	REVISION	\$DATES	\$TIMES

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: CHARLES CADENHEAD

SIGNATURE: *[Signature]*

DATE: 7/2/12 LICENSE NO. 40416

DRAWN BY JJ DATE 3-1-2012

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CHECKED BY BL / JO DATE 3-1-2012

ANOKA COUNTY
HIGHWAY DEPT.

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STATE AID PROJECT NO. _____

CITY PROJECT NO. _____

COUNTY PROJECT NO. 12-11-07

CONSTRUCTION PLAN

STA 100+00 TO 116+00

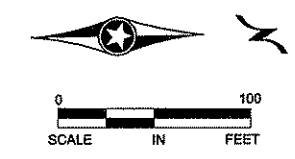
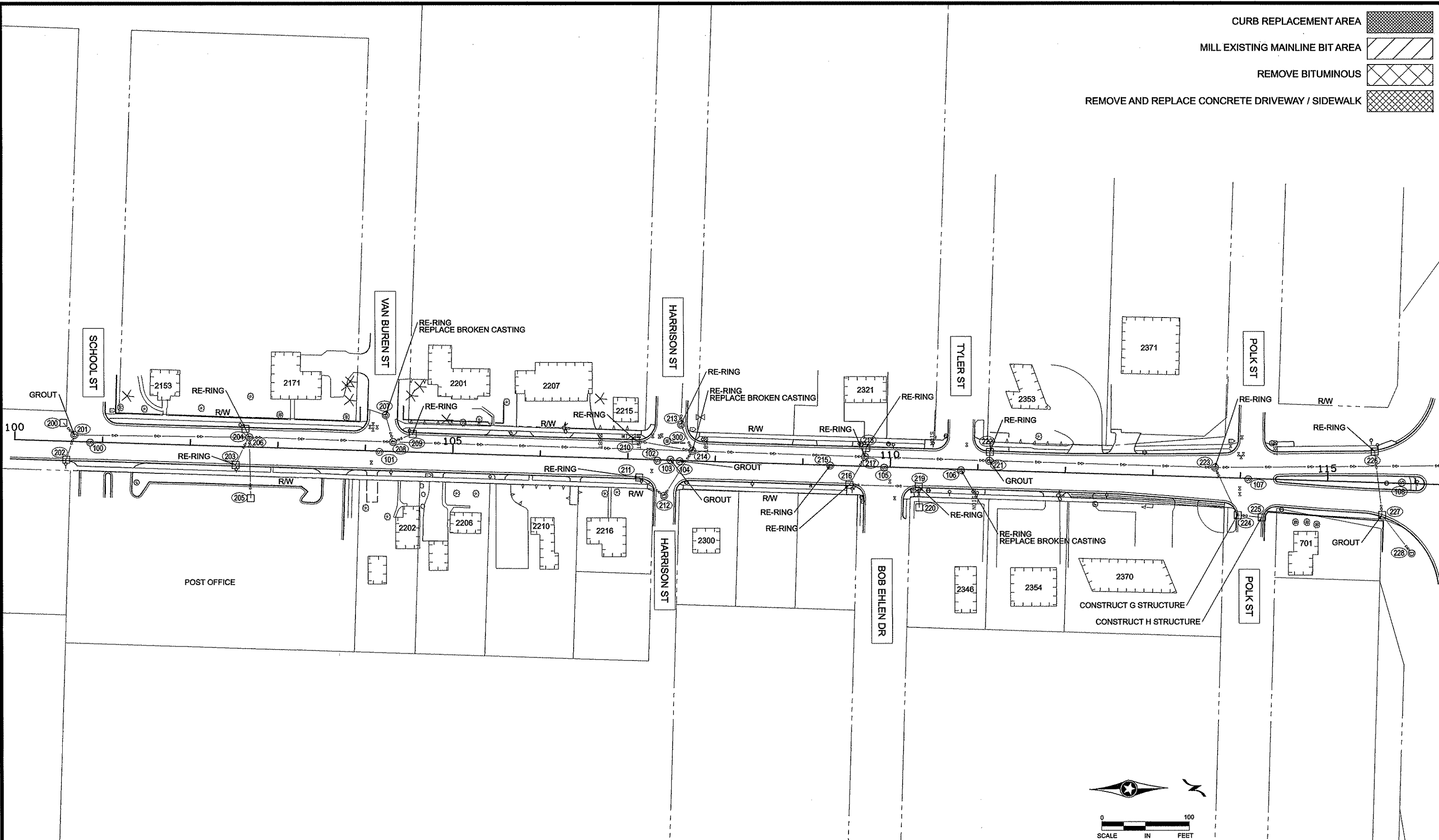
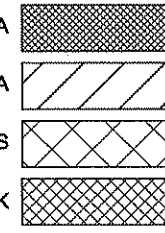
Sheet 10 of 15 Sheets

CURB REPLACEMENT AREA

MILL EXISTING MAINLINE BIT AREA

REMOVE BITUMINOUS

REMOVE AND REPLACE CONCRETE DRIVEWAY / SIDEWALK



NO	DATE	BY	CKD	APPR	REVISION	\$DATES	\$TIMES

NAME: \$DGN\$

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

PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
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DRAWN BY JJ DATE 3-1-2012
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ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
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 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 12-11-07

STORM SEWER PLAN
 STA 100+00 TO 116+00
 Sheet 11 of 15 Sheets

PERMANENT PAVEMENT MARKING PLAN
NOTES AND GUIDELINES

GENERAL INFORMATION:

THE ENGINEER'S INVOLVEMENT IN THE APPLICATION OF THE MATERIAL SHALL BE LIMITED TO FIELD CONSULTATION AND INSPECTION. ANOKA COUNTY HIGHWAY DEPARTMENT WILL PLACE NECESSARY "SPOTTING" AT APPROPRIATE POINTS TO PROVIDE HORIZONTAL CONTROL FOR STRIPING AND TO DETERMINE NECESSARY STARTING AND CUTOFF POINTS, LONGITUDINAL JOINTS, PAVEMENT EDGES AND EXISTING MARKINGS MAY SERVE AS HORIZONTAL CONTROL WHEN SO DIRECTED.

EDGE LINES AND LANE LINES ARE TO BE BROKEN ONLY AT INTERSECTIONS WITH PUBLIC ROADS AND AT PRIVATE ENTRANCES IF THEY ARE CONTROLLED BY A YIELD SIGN, STOP SIGN OR TRAFFIC SIGNAL. THE BREAK POINT IS TO BE AT THE START OF THE RADIUS FOR THE INTERSECTION OR AT MARKED STOP LINES OR CROSSWALKS.

A TOLERANCE OF 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.

EPOXY:

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 EPOXY PAVEMENT MARKINGS.

THE EPOXY MARKING APPLICATION SHALL IMMEDIATELY FOLLOW THE PAVEMENT CLEANING. GLASS BEANS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE EPOXY RESIN LINE TO PROVIDE AN IMMEDIATE NO-TRACK SYSTEM.

AN EPOXY RESIN LINE 4" WIDE AND 15 MILL THICKNESS (WET), REQUIRES AN APPLICATION RATE OF ONE (1) GALLON OF COMPONENTS FOR 320 FEET OF LINE. GLASS BEANS SHALL BE APPLIED AT A POUND PER GALLON RATE SUFFICIENT TO ACHIEVE AN ACCEPTABLE NO-TRACK SYSTEM.

OPERATIONS SHALL BE CONDUCTED ONLY WHEN THE ROAD PAVEMENT SURFACE TEMPERATURES ARE 50 DEGREES FAHRENHEIT OR GREATER.

PERMANENT PAVEMENT MARKINGS SHALL NOT BE PLACED OVER TEMPORARY TAPE MARKINGS.

PREFORMED THERMOPLASTIC:

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

PAINT:

AT THE TIME OF APPLYING THE MARKING MATERIAL, THE APPLICATION AREA SHALL BE FREE OF CONTAMINATION. THE CONTRACTOR SHALL CLEAN THE ROADWAY SURFACE PRIOR TO THE LINE APPLICATION IN A MANNER AND TO THE EXTENT REQUIRED BY THE ENGINEER.

GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE PAINT LINE.

EXCEPT WHEN USED AS A TEMPORARY MARKING, PAVEMENT MARKINGS SHALL ONLY BE APPLIED IN SEASONABLE WEATHER WHEN AIR TEMPERATURE IS 50 DEGREES FARHENHEIT OR HIGHER AND SHALL NOT BE APPLIED WHEN THE WIND OR OTHER CONDITIONS CAUSE A FILD OR DUST TO BE DEPOSITED ON THE PAVEMENT SURFACE AFTER CLEANING AND BEFORE THE MARKING MATERIAL CAN BE APPLIED.

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

PERMANENT PAVEMENT MARKING TABULATION		
ITEM	Quantity	Units
4" Solid Line Yellow - Epoxy	250	Lin Ft
4" Solid Line White - Epoxy	2260	Lin Ft
4" Broken White Line - Epoxy (10 ft stripe / 40 ft gap)	500	Lin Ft
4" Double Solid Line Yellow - Epoxy	1080	Lin Ft
24" White Pref Thermoplastic	80	Lin Ft
24" Yellow Pref Thermoplastic	35	Lin Ft
3'x6' Zebra Crosswalk - Preformed Thermoplastic	432	SQ FT

SYMBOLS & MATERIALS LEGEND

■ CROSSWALK BLOCK WHITE PREFORMED THERMOPLASTIC

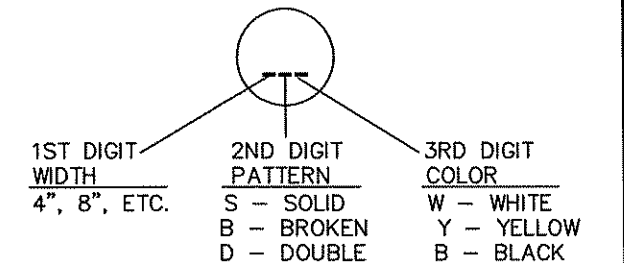
← PAVEMENT MESSAGE (LEFT ARROW) PREFORMED THERMOPLASTIC

STRIPING KEY

○ CIRCLE - EPOXY □ SQUARE PREFORMED THERMOPLASTIC

△ TRIANGLE - PAINT

⬠ PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING



EXAMPLE: (4SW) = 4" SOLID LINE WHITE -- EPOXY

NO	DATE	BY	CKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 7/2/12 LICENSE NO. 40416

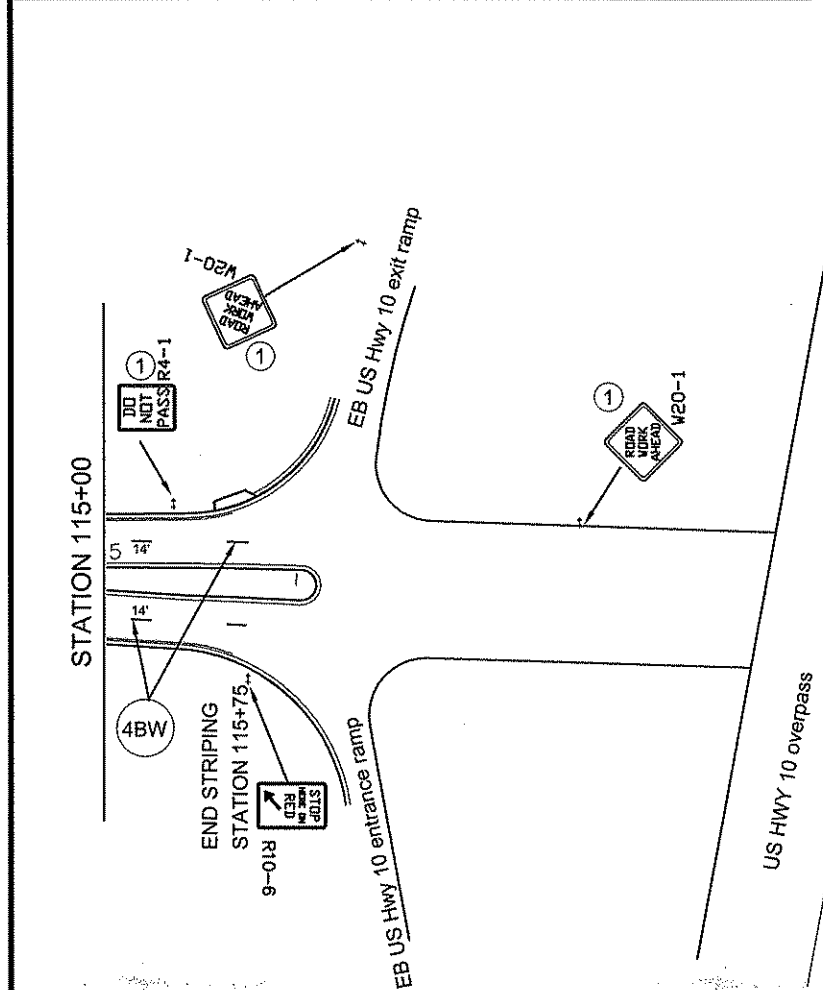
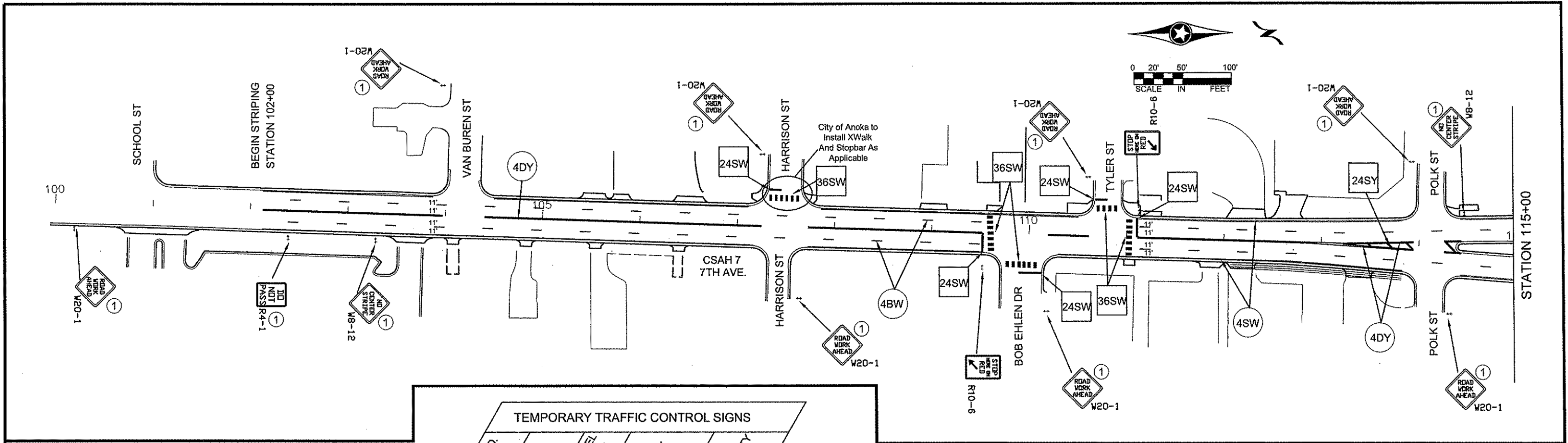
DRAWN BY: ST DATE 02/07/2012
 DESIGN BY: ST DATE 02/07/2012
 CHECKED BY: JR DATE 02/14/2012



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. 12-11-07

PERMANENT MARKING TABULATION
 Sheet 12 of 15 Sheets



TEMPORARY TRAFFIC CONTROL SIGNS				
M.U.T.C.D. CODE	SIZE	PANEL AREA FT. ²	INSERT	QUANTITY
W8-12	48" x 48"	16.00		2
R4-1	24" x 30"	5.00		2
R8-10	24" x 36"	6.00		3
W8-1A	48" x 48"	16.00		AS NEEDED
W8-1A	48" x 48"	16.00		AS NEEDED
W8-8	48" x 48"	16.00		AS NEEDED
W8-11	48" x 48"	16.00		AS NEEDED
W20-1	48" x 48"	16.00		AS NEEDED (ESTIMATED 10)

- SEE SPECIAL PROVISIONS
- ① TEMPORARY TRAFFIC CONTROL SIGN
 - ② F & I PERMANENT SIGN
 - ③ SALVAGE PERMANENT SIGN
 - ④ RE-INSTALL PERMANENT SIGN

- NOTES:
- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
 - LOCATIONS OF PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
 - CONTRACTOR SHALL SUPPLY AND ERECT THE TEMPORARY TRAFFIC CONTROL SIGNS AS SHOWN ON THIS DRAWING AND DETAILED IN THE SPECIAL PROVISIONS FROM THE TIME WORK COMMENCES ON THIS ROADWAY UNTIL THIS ROADWAY IS PERMANENTLY STRIPED. ALL NECESSARY TEMPORARY TRAFFIC CONTROL SIGNS SHALL BE PAID FOR AS PART OF TRAFFIC CONTROL LUMP SUM.
 - ALL PERMANENT STRIPING AND PAVEMENT MESSAGES SHALL BE PLACED WITHIN 72 HOURS OF MAINLINE PAVING.
 - ANY REQUIRED PERMANENT SIGNING SHALL BE INSTALLED THE SAME DAY AS PERMANENT STRIPING.
 - ALL EXISTING SIGNING SHALL REMAIN IN PLACE DURING CONSTRUCTION. IF A SIGN IS TO BE SALVAGED AND REINSTALLED, IT SHALL BE INSTALLED ON TEMPORARY SUPPORTS UNTIL THE PERMANENT INSTALLATION CAN BE MADE, AND THIS WILL BE CONSIDERED AS INCIDENTAL TO SIGN TYPE C REINSTALL INSTALLATION.

NO	DATE	BY	CKD	APPR	REVISION

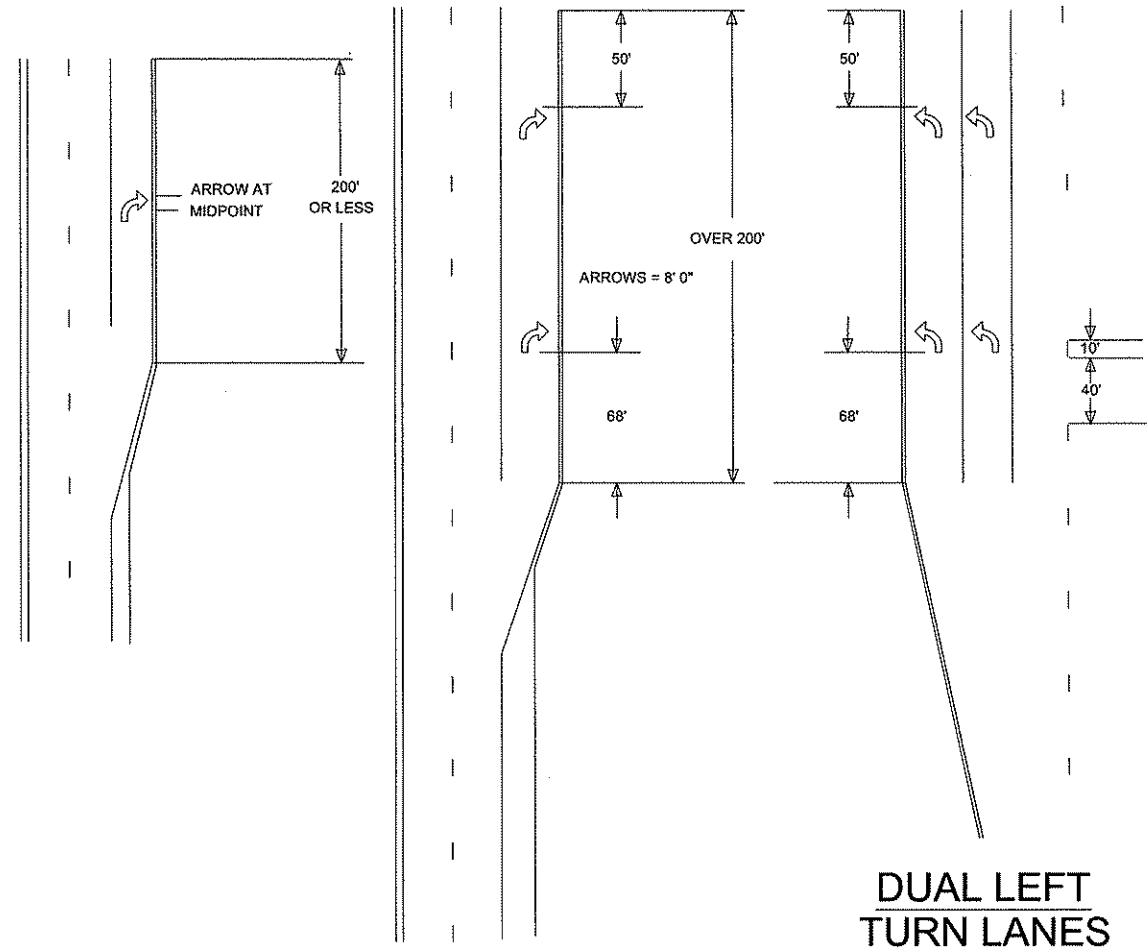
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *Charles Cadenhead*
 DATE: 3/2/12 REG. NO. 40416

DRAWN BY: S.T. DATE: 02/07/12
 DESIGN BY: S.T. DATE: 02/07/12
 CHECKED BY: J.R. DATE: 02/14/12

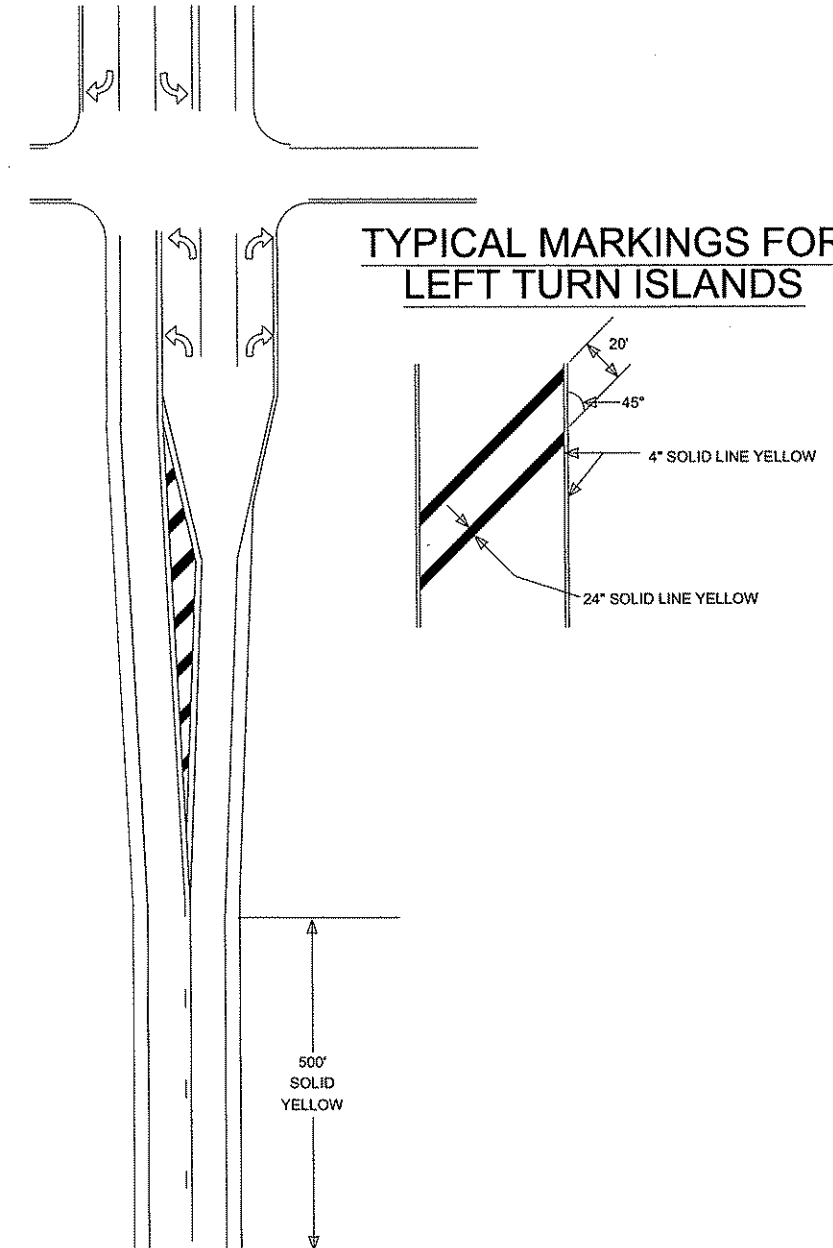
ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. 12-11-07

**TYPICAL MESSAGE PLACEMENT
FOR TURN LANES**



**TYPICAL MARKINGS FOR
LEFT TURN ISLANDS**



NO	DATE	BY	CKD	APPR	REVISION

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

PRINT NAME: CHARLES CADENHEAD

SIGNATURE: *Charles Cadenhead*

DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY ST DATE 02-07-12

DESIGN BY ST DATE 02-07-12

CHECKED BY JR DATE 02-XX-12



**ANOKA COUNTY
HIGHWAY DEPT.**

STATE PROJECT NO. _____

STATE PROJECT NO. _____

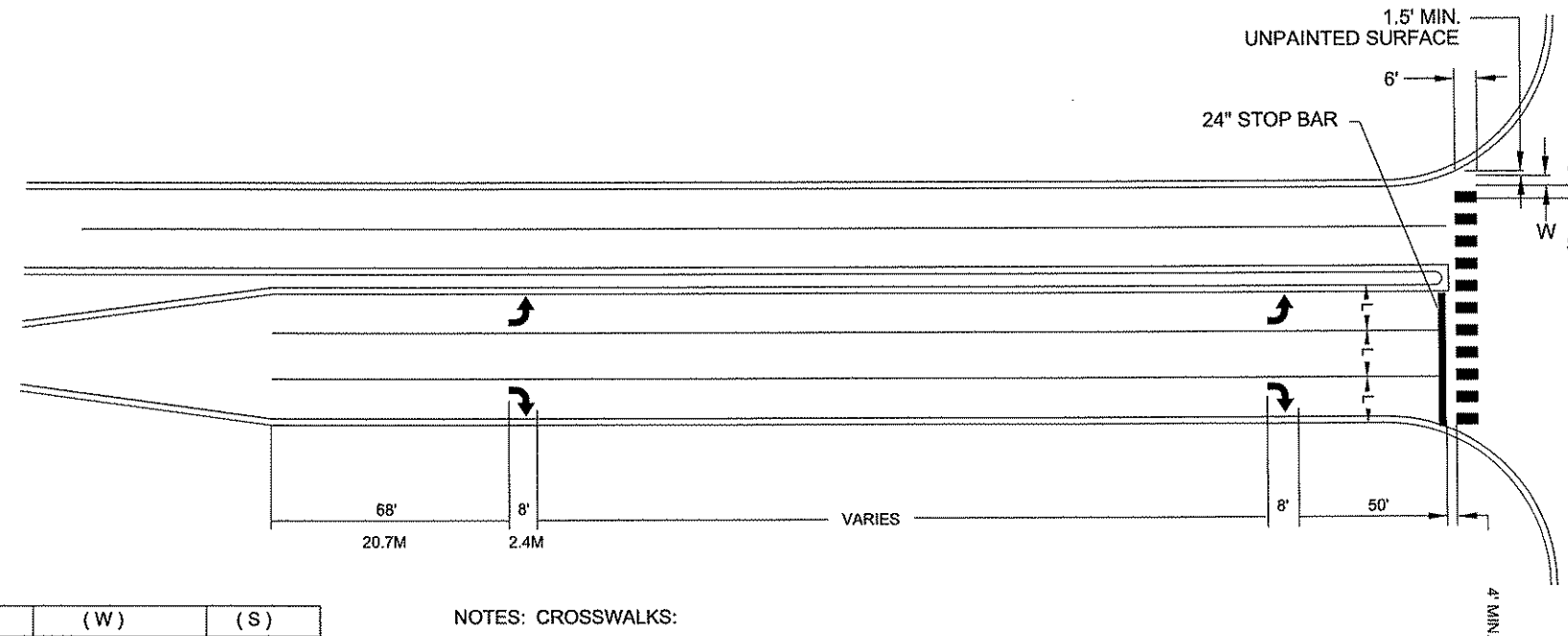
STATE PROJECT NO. _____

COUNTY PROJECT NO. 12-11-07

SIGNING & STRIPING DETAILS

Sheet 14 of 15 Sheets

MARKINGS FOR PEDESTRIAN CROSSWALKS



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

NOTES: CROSSWALKS:

- 1.) PAINTED AREAS ARE TO BE CENTERED ON CENTER AND LANE LINES, EVEN IF INTERSECTION IS NOT ALIGNED.
- 2.) LOCATION OF ZEBRA CROSSWALKS AND STOP BARS, SIGNAL LOOPS AND PED RAMP 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' (450mm) CLEAR DISTANCE MUST BE LEFT ADJACENT TO THE CURB. IF LAST PAINTED AREA FALLS INTO THIS AREA, IT MUST BE OMITTED.
- 5.) ON TWO LANE STREETS, USE SPACING SHOWN FOR AN 11' (3.3m) INSIDE LANE.

NO	DATE	BY	CKD	APPR	REVISION

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PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *Charles Cadenhead*
 DATE: 7/2/12 LICENSE NO. 40416

DRAWN BY ST DATE 02-07-12
 DESIGN BY ST DATE 02-07-12
 CHECKED BY JR DATE 02-14-12



**ANOKA COUNTY
HIGHWAY DEPT.**

STATE PROJECT NO. _____
 STATE PROJECT NO. _____
 STATE PROJECT NO. _____
 COUNTY PROJECT NO. 12-11-07

SIGNING & STRIPING DETAILS

Sheet 15 of 15 Sheets

PLAN SYMBOLS

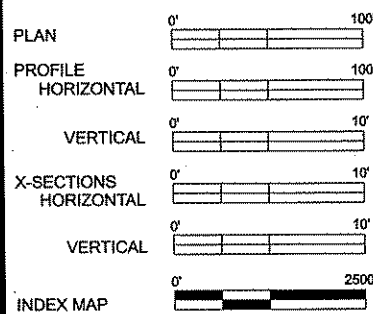
- COUNTY LINE _____
- TOWNSHIP OR RANGE LINE _____
- SECTION LINE _____
- QUARTER LINE _____
- SIXTEENTH LINE _____
- RIGHT OF WAY LINE _____
- SLOPE EASEMENT _____
- EXISTING RIGHT OF WAY _____
- PROPERTY LINE _____
- CORPORATE OR CITY LIMITS _____
- RETAINING WALL _____
- RAILROAD _____
- RAILROAD 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 Terminal) _____
- GAS MAIN _____
- WATER MAIN _____
- TELEPHONE CABLE IN CONDUIT _____
- ELECTRIC CABLE IN CONDUIT _____
- TELEPHONE MANHOLE _____
- ELECTRIC MANHOLE _____
- BURIED TELEPHONE CABLE _____
- BURIED ELECTRIC CABLE _____
- SEWER (Sanitary or Storm) _____
- SEWER MANHOLE _____

SCALES



MINNESOTA DEPARTMENT OF TRANSPORTATION

ANOKA COUNTY

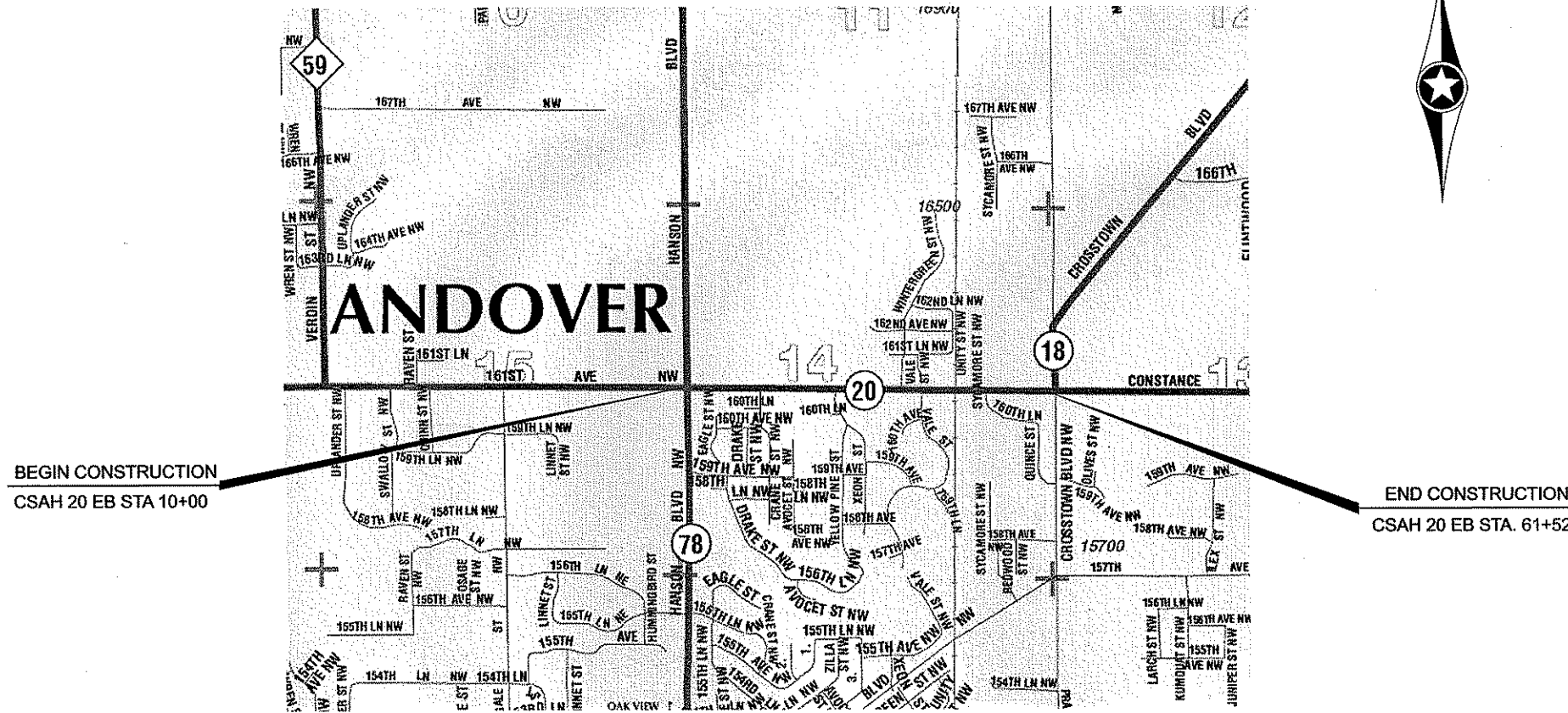
CONSTRUCTION PLAN FOR _____ OVERLAY, RECLAIM AND OVERLAY, 4' - 8' WIDENING FOR NEW RTL / BYPASSES

LOCATED ON CSAH 20 FROM CSAH 78 TO CSAH 18

12-12-20

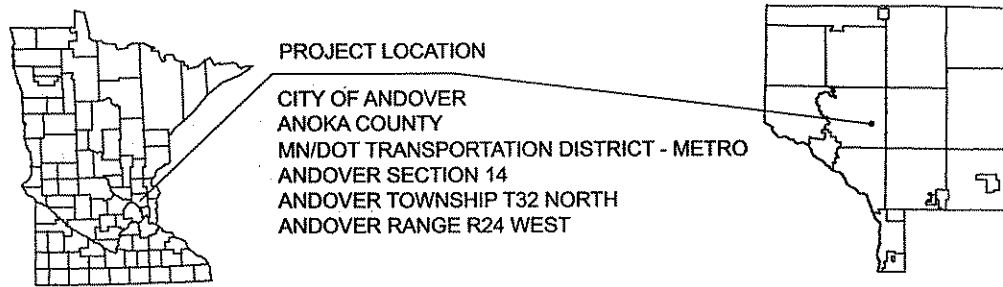
GROSS LENGTH	5152.00 FEET	0.98 MILES
BRIDGES-LENGTH	0.00 FEET	0.00 MILES
EXCEPTIONS-LENGTH	0.00 FEET	0.00 MILES
NET LENGTH	5152.00 FEET	0.98 MILES

CITY OF ANDOVER



BEGIN CONSTRUCTION
CSAH 20 EB STA. 10+00

END CONSTRUCTION
CSAH 20 EB STA. 61+52



MINN. PROJ. NO. _____

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 PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS."

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	STATEMENT OF ESTIMATED QUANTITIES
3-4	CONSTRUCTION TABS
5	CALCULATIONS FOR RTL / BYPASS CONSTRUCTION
6-15	TYPICAL SECTIONS
16-17	CONSTRUCTION DETAILS
18-19	CONSTRUCTION PLAN
20	PERMANENT MARKING TABULATION
21-23	SIGNING AND STRIPING LAYOUTS
24-25	SIGNING AND STRIPING DETAILS
26-28	DETOUR LAYOUT (SEE SPECIAL PROVISIONS & NOTE #21)

THIS PLAN CONTAINS 28 SHEETS

DESIGN DESIGNATION

ESAL 20	788,827
R VALUE	50
ADT (2010) =	5445
Proj. ADT (2032) =	9131
Proj. HCA DT (2032) =	539
Soil Factor	NA
10	TON DESIGN

Functional Classification	A-MINOR EXPANDER		
No. of Traffic Lanes	2	No. of Parking Lanes	0
Design Speed	55 MPH		
Based on Stopping Sight Distance			
Height of eye	3.5'	Height of object	2.0'
Design Speed not achieved at:			
STA. ---	TO STA. ---	MPH ---	

Approved 3/4/12
ANOKA COUNTY ENGINEER

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH 20 (CSAH78-CSAH18)\Plan1 TITLE.dgn 03/01/2012 8:04:35 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: CHARLES CADENHEAD
SIGNATURE:
DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY: JF DATE: 1/18/2012
DESIGN BY: JF DATE: 1/18/2012
CHECKED BY: JO DATE: 4/11/2012

ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
STATE AID PROJECT NO. _____
CITY PROJECT NO. _____
COUNTY PROJECT NO. CP 12-12-20

TITLE SHEET

Sheet 1 of 28 Sheets

STATEMENT OF ESTIMATED QUANTITIES						
ITEM NO.		ITEM	TAB	NOTE NO.	UNIT	TOTAL EST. QUANT.
2011.601	00003	CONSTRUCTION SURVEYING		32	LUMP SUM	1.00
2021.501	00010	MOBILIZATION			LUMP SUM	1.00
2021.601	00050	RAILROAD PROTECTIVE SERVICES		1	LUMP SUM	1.00
2101.502	00010	CLEARING		2	TREE	26.00
2101.507	00010	GRUBBING		2	TREE	26.00
2104.501	00012	REMOVE METAL CULVERT		2	LIN FT	50.00
2104.501	00024	REMOVE CURB AND GUTTER	A	3	LIN FT	30.00
2104.505	00120	REMOVE BITUMINOUS PAVEMENT	B	4	SQ YD	459.45
2104.513	00011	SAW BITUMINOUS PAVEMENT FULL DEPTH	C	5	LIN FT	312.00
2104.523	00543	SALVAGE SIGN TYPE C			EACH	2.00
2105.602	00020	CONSTRUCT NEW TURN LANE (YELLOWPINE ST)		6	EACH	1.00
2105.602	00024	CONSTRUCT NEW BY-PASS LANE (YELLOWPINE ST)		6	EACH	1.00
2105.602	00024	CONSTRUCT NEW BY-PASS LANE EXT. (WINTERGREEN ST)		6	EACH	1.00
2105.609	00100	TOPSOIL BORROW	D	7	TON	62.06
2123.503	00010	MOTOR GRADER	E	8	HOUR	8.00
2130.501	00010	WATER		9	M-GAL	56.00
2211.501	00050	AGGREGATE BASE CLASS 5	F	10	TON	398.00
2221.501	00050	AGGREGATE SHOULDERING CLASS 5	G	11	TON	386.00
2232.501	00050	MILL BITUMINOUS SURFACE (2") JOINTS	H	12	SQ YD	262.00
2331.604	00060	BITUMINOUS PAVEMENT RECLAMATION	I	13	SQ YD	21443.00
2331.607	00010	HAUL BITUMINOUS PAVEMENT RECLAMATION (LV)	J	14	CU YD	286.00
2357.502	00010	BITUMINOUS MATERIAL FOR TACK COAT	K		GALLON	1260.00
2360.501	24500	TYPE SP 12.5 WEARING COURSE MIX (4 , E)	L	15,16,31	TON	5296.00
2360.501	24200	TYPE SP 12.5 WEARING COURSE MIX (4 , B)	N	17	TON	191.00
2501.511	20150	15" CS PIPE CULVERT		2	LIN FT	44.00
2501.567	02150	15" CS SAFTY APR. AND GRATE DES.3128		2	EACH	2.00
2511.502	00012	RANDOM RIPRAP CLASS II	O	18	TON	20.00
2535.501	00010	BITUMINOUS CURB	P	19	LIN FT	335.00
2540.602	00140	INSTALL MAIL BOX SUPPORT	Q	20	EACH	7.00
2563.601	00010	TRAFFIC CONTROL		21	LUMP SUM	1.00
2563.601	00200	DETOUR SIGNING		22	LUMP SUM	1.00
2564.531	00130	SIGN PANEL TYPE C	R	23	SQ FT	6.25
2564.536	00013	INSTALL SIGN PANEL TYPE C			EACH	1.00
2573.508	00010	BITUMINOUS LINED FLUME	S	24	SQ YD	71.00
2573.502	00040	SILT FENCE TYPE MACHINE SLICED	T	25	LIN FT	192.00
2573.602	00090	CULVERT END PROTECTION	U	26	EACH	3.00
2575.523	00013	EROSION CONTROL BLANKET CATOGORY 3	V	27	SQ YD	142.00
2575.601	00010	RAPID STABILIZATION METHOD 3	W	28	SQ YD	298.00
2581.501	00010	REMOVABLE PREFORMED PLASTIC MARKING	X	29	LIN FT	412.00
2582.502	21124	24" WHITE PREF THERMOPLASTIC		30	LIN FT	24.00
2582.502	22124	24" YELLOW PREF THERMOPLASTIC		30	LIN FT	497.00
2582.502	41104	4" SOLID LINE WHITE - EPOXY		30	LIN FT	11578.00
2582.502	41204	4" BROKEN LINE WHITE-EPOXY		30	LIN FT	120.00
2582.502	42104	4" SOLID LINE YELLOW - EPOXY		30	LIN FT	400.00
2582.502	42404	4" DOUBLE SOLID LINE YELLOW - EPOXY		30	LIN FT	6033.00
2582.602	08010	PAVT MSSG (RR CROSSING) PREF THERMOPLASTIC		30	EACH	2.00
2582.602	08012	PAVT MSSG (RT ARROW) PREF THERMOPLASTIC		30	EACH	2.00
2582.602	08013	PAVT MSSG (LT ARROW) PREF THERMOPLASTIC		30	EACH	3.00
2582.602	08014	PAVT MSSG (THURRT ARROW) PREF THERMOPLASTIC		30	EACH	2.00

INDEX OF TABULATION CHARTS

TAB.	SHEET NO.	DESCRIPTION	TAB.	SHEET NO.	DESCRIPTION
A	3	REMOVE CURB AND GUTTER	L	4	TYPE SP 12.5 WEAR COURSE MIX (SPWEB440E)
B	3	REMOVE BITUMINOUS PAVEMENT	M	4	TYPE SP 12.5 WEAR COURSE MIX (SPWEB440B)
C	3	SAW BITUMINOUS PAVEMENT FULL DEPTH	N	4	RANDOM RIPRAP CLASS II
D	3	TOPSOIL BORROW (LV)	O	4	BITUMINOUS CURB
E	3	MOTOR GRADER	P	4	INSTALL MAIL BOX SUPPORT
F	3	AGGREGATE BASE CLASS 5	Q	4	FURNISH AND INSTALL SIGN PANEL TYPE C
G	3	AGGREGATE SHOULDERING CLASS 5	R	4	BITUMINOUS LINED FLUME
H	3	MILL BITUMINOUS SURFACE (2") JOINTS	S	4	SILT FENCE MACHINED SLICED
I	3	BITUMINOUS PAVEMENT RECLAMATION	T	4	CULVERT END PROTECTION
J	3	HAUL BITUMINOUS PAVEMENT RECLAMATION (LV)	U	4	EROSION CONTROL BLANKET CATOGORY 3
K	3	BITUMINOUS MATERIAL FOR TACK COAT	V	4	RAPID STABILIZATION METHOD 3
			W	4	REMOVABLE PREFORMED PLASTIC MARKING

NOTES

- CONTRACTOR RESPONSIBLE TO CORRDATE WITH RAIL ROAD FOR RXR PROTECTIVE SERVICES. PROTECTIVE SERVICES MUST BE PRESENT DURING ALL WORK IN AND AROUND RXR CROSSING R/W.
- FOR NEW RTL LEB AT YELLOW PINE ST.
- CONCRETE CURB TO BE REMOVED FROM CHURCH ENT., LOCATION TO BE DETERMINED BY THE ENGINEER.
- BITUMINOUS DR WAYS TO BE SAWCUT, BITUMINOUS REMOVED, GRVL ADDED AS NECESSARY AND REPAVED.
- LOCATION TO BE DETERMINED BY ENGINEER.
- EST. CALCS AND QTYS FOR THIS ITEM BY THE EACH CAN BE FOUND ON PAGE 5, CALCULATIONS FOR RIGHT TURN & BYPASS LANES.
- RE-ESTABLISHING AREA BEHIND BITUMINOUS CURB AND AROUND FLUMES. PLACEMENT INCIDENTAL TO ITEM.
- INCLUDES TIME AND EQUIPMENT TO REMOVE EXCESS RECLAIMED MATERIAL AT BEG. AND END OF RECLAIM AREAS FOR A SMOOTH TRANSITION TO EXISTING BITUMINOUS.
- WATER TO BE USED AS DUST CONTROL AT THE DISCRETION OF THE ENGINEER.
- LEVELING 8' PAVED SHLDR AREAS AND 1.5' GRVL SHLDR AREAS UP TO MAINLINE BASE COURSE , PRIOR TO WEAR.
- SHOULDERING CLASS 5 FOR FINISHED 1.5' GRVL. SHLDR. AND ADDITIONAL GRAVEL FOR DR WAYS.(CALC. AT 3" DEPTH)
- 2" DEEP BY 4' WIDE MILL AT BEGINNING AND END OF PROJECT AND ALL PAVED ST APPROACHES.
- FULL DEPTH RECLAMATION FROM STA 19+00 TO STA 61+52. ALL INPLACE CURB TO REMAIN INPLACE EXCEPT AT CHURCH ENT. CONCRETE CURB DAMAGED DURING RECLAIMING PROSSES TO BE REPLACED AT THE CONTRACTORS COST.
- REMOVING EXCESS RECLAIMED MATERIAL IN CONCRETE CURB AREAS TO TRANSITION NEW ROAD PROFILE TO EXISTING CURB. PAID FOR BY THE TON REMOVED IN THE AREA OF STA.46+00 TO STA 51+00. AT THE DECRETION OF THE ENGINEER.
- MAINLINE TOP COURSE 2" (SPWEB440 E) TOP WEARING SURFACE.
- MAINLINE BOTTOM COURSE 2" (SPWEB440 E) PLACED ON RECLAIMED GRAVEL SURFACE.
- STREET APPROACH / DR WAY BITUMINOUS 2" (SPWEB440 B) PAVED IN SEPARATE OPERATION THEN MAINLINE PAVING.
- RIPRAP CLASS II TO BE PLACED AT BOTTOM OF NEW AND EXISTING CONC/BIT FLUMES. AREA TO BE COVERD IN RIPRAP TO BE AT THE DESCETION OF THE ENGINEER.
- INTEGRAL BITUMINOUS CURB TO BE PAVED IN CONJUNCTION WITH MAINLINE WEAR PAVING. BITUMINOUS CURB TO BE INSTALLED AT ALL EXISTING BITUMINOUS CURB LOCATIONS.
- MAILBOXES TO BE INSTALLED AT THE EXISTING MAILBOX LOCATION. MAILBOX MATERIALS INCIDENTAL TO INSTALLATION.
- " ALL TRAFFIC CONTROL METHODS SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. " DO NOT PASS, PASS WITH CARE, NO CENTER STRIPE AND STOP HERE WHEN FLASHING SIGNS TO BE INPLACE DURING RECLAIM / PAVING OPERATIONS.
- DETOUR MAY NOT BE PUT INPLACE UNTIL ANOKA COUNTY PROJECT 11-24-78 HANSON BLVD NORTH OF CSAH 20 IS OPEN TO TRAFFIC. ANOKA COUNTY PROJECT 11-24-78 HANSON BLVD NORTH OF CSAH 20 HAS A COMPLETION DATE OF JULY 1ST, 2012. A DETOUR DOES NOT EXCLUDE THE NEED FOR RAILROAD PROTECTIVE SERVICES WHICH WILL STILL NEED TO BE PRESENT DURING CONSTRUCTION ACTMVTIES IN AND AROUND THE RAILROADS R/W. (DETOUR COST EST. BASED ON A 10 WORKING DAY DETOUR OF COMPRABLE SIZE AND LOCATION.)
- FURNISH AND INSTALL SIGN PANEL TYPE C , MOUNTING POSTS ARE INCIDENTAL TO ITEM.
- MATERIAL TO BE ADDED TO EXISTING FLUMES TO MATCH NEW ROAD SURFACE AND TO EXTEND FLUMES TO BOTTOM OF DITCH. ADDITIONAL FLUMES TO BE CONSTRUCTED AS NEEDED AND DIRECTED BY THE ENGINEER.
- INSTALL SILT FENCE SURROUNDING DISTURBED AREA AROUND FLUMES.
- INSTALL 1 PER CULVERT INSIDE RTL / BYPASS WIDENING AREAS - AT THE HIGH INVERT.
- EROSION CONTROL BLANKET CAT. 3 TO BE INSTALLED ALONG FLUMES IN STEEP, HIGH EROSION AREAS ON ADDED TOPSOIL. PLACEMENT, SEED AND FERTILIZER INCIDENTAL TO BLANKET. SEED MIXTURE 250 (RATE - 70 LBS PER ACRE) AND FERTILIZER TYP 3 (RATE - 350 LBS PER ACRE)
- RAPID STABILIZATION METHOD 3 TO BE USED IN DISTURBED AREAS BEHIND BITUMINOUS CURB INSTALATION SEED AND FERTILIZER INCIDENTAL TO RAPID STABILIZATION METHOD 3. SEED MIXTURE 250 (RATE - 70 LBS PER ACRE) AND FERTILIZER TYP 3 (RATE - 350 LBS PER ACRE) RAPID STABILIZATION METHOD 3 TO BE APPLIED AT A RATE OF 6 M-GAL PER ACRE. ITEM PAID FOR BY THE SQ YD.
- CL YLW SKIPS TO BE APPLIED AS SOON AS POSSIBLE ON EACH LIFT (MUST BE APPLIED BEFORE CONTRACTOR LEAVES FOR THE DAY).
- PERMANENT MARKINGS TO BE IN PLACE WITHIN 72 HOURS OF FINAL MAINLINE PAVING.
- ITEM INCLUDES CONSTRUCTION OF SAFTY EDGE, REFER TO SPECIAL PROVISIONS.
- CONSTRUCTION SURVEYING. CONTRACTOR RESPONSIBLE FOR ALL CONSTRUCTION STAKING REQUIRED FOR PROJECT. CONSTRUCTION CENTERLINE ALIGNMENT FOR CSAH 20 IS ONE ELEMENT, A STRAIGHT LINE FROM- PT # 1 STA. 10+00 N = 182884.8600 , E = 489853.3250 - TO - PT# 2 STA. 61+52 N = 182768.0439 , E = 495003.9905

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: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 7/2/12 LICENSE NO. 40416

DRAWN BY: JF DATE: 1/18/2012
 DESIGN BY: JF DATE: 1/18/2012
 CHECKED BY: JO DATE: 4/1/2012



ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
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 CITY PROJECT NO. _____
 COUNTY PROJECT NO. CP 12-12-20

STATEMENT OF
 ESTIMATED QUANTITIES
 Sheet 2 of 28 Sheets

A REMOVE CURB AND GUTTER	
LOCATION	LIN FT
CHURCH ENT	30.0
TOTAL SQ YDS	30.0

B REMOVE BITUMINOUS PAVEMENT	
LOCATION	SQ YDS
#1487	30.61
#1341	25.04
#1374	28.84
#1326	48.50
#1177	59.63
#971	44.07
CONST FREE CHR.	69.21
REFUGE CHR.	27.47
W CEMETARY	22.67
MID CEMETARY	11.09
E REFUGE CHR.	56.11
E CEMETARY	36.21
TOTAL SQ YDS	459.5

C SAWING BITUMINOUS PAVEMENT FULL DEPTH	
LOCATION	LIN FT
MAINLINE STA. 19+00	46.00
MAINLINE STA 49+60	41.00
MAINLINE STA 49+75	44.00
#1487	17.50
#1326	17.00
#971	17.50
CONST FREE CHR.	40.00
REFUGE CHR.	15.00
W CEMETARY	13.00
MID CEMETARY	9.00
E REFUGE CHR.	34.00
E CEMETARY	18.00
TOTAL LIN FT	312.00

D TOPSOIL BORROW	
LOCATION	TONS
BIT CURB 18+68 - 20+00	19
FLUME 41+90	3.45
FLUME 48+25	3.45
FLUME 49+00	3.45
FLUME 50+70	3.45
BIT CURB 58+81 - 60+84	29.23
TOTAL TONS	62.03

E MOTOR GRADER	
LOCATION	HRS
19+00 - 20+00	4
60+52 - 61+52	4
TOTAL HOURS	8

F AGGREGATE BASE CLASS 5							
MAINLINE	STATION	STATION	LENGTH	WIDTH	2" DEPTH	CU YDS	TONS
LEB	19+00	20+00	100.0	10.0	0.17	6.3	11.33
LEB	20+80	26+50	570.0	10.0	0.17	35.9	64.60
LEB	32+25	36+25	400.0	10.0	0.17	25.2	45.33
LEB	45+25	48+25	300.0	10.0	0.17	18.9	34.00
LEB	54+00	57+75	375.0	10.0	0.17	23.6	42.50
LWB	19+00	20+00	100.0	10.0	0.17	6.3	11.33
LWB	25+50	29+00	350.0	10.0	0.17	22.0	39.67
LWB	35+15	39+40	425.0	10.0	0.17	26.8	48.17
LWB	45+10	49+50	440.0	10.0	0.17	27.7	49.87
LWB	57+00	61+52	452.0	10.0	0.17	28.5	51.23
TOTAL TONS							398.00

G AGGREGATE SHLDR CL-5 (INC ALL DR WAYS.)						
MAINLINE	STATION	STATION	LENGTH	WIDTH	3" DEPTH	CU YDS
LEB	10+00	61+52	5152.0	2.0	0.25	95.4
LWB	10+00	61+52	5152.0	2.0	0.25	95.4
SUB TOTAL CU YDS						190.8
SUBTRACT ST.				SHLDR		
CRANE ST S.			100.0	2.0	0.25	1.9
CRANE ST N.			100.0	2.0	0.25	1.9
YELLOW PINE S.			100.0	2.0	0.25	1.9
WINTERGREEN N.			100.0	2.0	0.25	1.9
VALE ST S.			100.0	2.0	0.25	1.9
SYCAMORE S.			100.0	2.0	0.25	1.9
LWB 19+00 - 20+00	BIT CURB		100.0	2.0	0.25	1.9
LWB 41+90 - 44+60	CONC CURB		270.0	2.0	0.25	5.0
LEB 48+25 - 49+60	CONC CURB		135.0	2.0	0.25	2.5
LWB 49+75 - 51+00	CONC CURB		125.0	2.0	0.25	2.3
LWB 58+90 - 61+00	BIT CURB		210.0	2.0	0.25	3.9
SUBTRACT ST OPEN						26.7
SHLDR CU YDS						190.8
SUBTRACT ST.OPENINGS						26.7
CU YDS						164.1
GRVL FACTOR						1.8
TONS						295.5
GRAVEL FOR ALL ENT.						
#1487						7.0
#1341						7.0
#1374						7.0
#1326						7.0
#1177						7.0
#1055						7.0
#971						7.0
CONST FREE CHR.						7.0
REFUGE CHR.						7.0
W CEMETARY						7.0
MID CEMETARY						7.0
E REFUGE CHR.						7.0
E CEMETARY						7.0
TOTAL TONS						386.00

H MILL BITUMINOUS SURFACE 2" (JOINTS)				
LOCATION	STATION	LENGTH	WIDTH	SQ YDS
MAINLINE	10+00	136.00	4.0	60.4
MAINLINE	61+52	47.00	4.0	20.9
BIT STREETS				
CRANE ST S.		62.00	4.0	27.6
CRANE ST N.		63.00	4.0	28.0
YELLOW PINE S.		72.00	4.0	32.0
WINTERGREEN N.		64.00	4.0	28.4
VALE ST S.		75.00	4.0	33.3
SYCAMORE ST S.		70.00	4.0	31.1
TOTAL SQ YDS				262.00

I BITUMINOUS PAVEMENT RECLAMATION				
LOCATION	STATION	STATION		MICRO
MAINLINE	19+00	48+25		14947.3
MAINLINE	48+25	51+00		1025.0
MAINLINE	51+00	61+52		5471.0
TOTAL SQ YDS				21443.00

J HAUL BITUMINOUS PAVEMENT RECLAMATION (LV)				
LOCATION	SQ FT	DEPTH	CU FT	CU YDS
41+90 - 44+60	12420.00	0.33	4098.6	163.94
48+25 - 51+00	9224.91	0.33	3044.2	121.77
TOTAL CU YDS				286.00

K BITUMINOUS MATERIAL FOR TACK			
LOCATION	SQ YDS	GAL/SQYD	GAL
BASE AREA (MICRO)			
STA 10+00 - 19+00	5055.66	0.05	252.8
STA 19+00 - 48+25	12016.70	0.05	600.8
STA 48+25 - 51+00	1025.00	0.05	51.3
STA 51+00 - 61+52	4736.37	0.05	236.8
NEW RT/BYPASS	1699	0.05	85.0
BIT ST APP			
CRANE ST S.	110.33	0.05	5.5
CRANE ST N.	106.46	0.05	5.3
YELLOW PINE S.	109.81	0.05	5.5
WINTERGREEN N.	115.3	0.05	5.8
VALE ST S.	116.51	0.05	5.8
SYCAMORE S.	111.71	0.05	5.6
TOTAL GAL			1260.00

NO	DATE	BY	CKD	APPR	REVISION

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PRINT NAME: CHARLES CADENHEAD

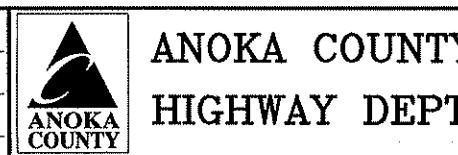
SIGNATURE: *[Signature]*

DATE: 3/2/12 LICENSE NO. 40416

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CHECKED BY: JO DATE: 4/1/2012



STATE PROJECT NO. _____

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CITY PROJECT NO. _____

COUNTY PROJECT NO. CP 12-12-20

CONSTRUCTION TABS

Sheet 3 of 28 Sheets

L TYPE SP 12.5 WEARING COURSE MIX (SPWEB440 E)	
MAINLINE (TOP SURFACE) MICRO	SQ YDS
STA 10+00 - 19+00	5055.7
STA 19+00 - 48+25	14381.9
STA 48+25 - 51+00	1025.0
STA 51+00 - 61+52	5331.0
NEW RTL/BYPASS	780.0
	TOP SQ YDS 26573.6
MAINLINE (BOTTOM SURFACE) MICRO	SQ YDS
STA 19+00 - 48+25	12016.0
STA 48+25 - 51+00	1025.0
STA 51+00 - 61+52	4736.4
NEW RTL/BYPASS	1699.0
	BOTTOM SQ YDS 19476.4
	TOTAL TONS 5296.00

O BITUMINOUS CURB	
LOCATION	LIN FT
LWB STA 18+68 - 20+00	132
LWB STA 58+81 - 60+84	203
TOTAL LIN FT	335

T CULVERT END PROTECTION	
LOCATION	QTY
LEB NEW RTL FOR YELLOW PINE ST	2
LEB BYPASS EXT. TO VALE ST	1
TOTAL	3

P INSTALL MAIL BOX SUPPORT			
ADDRESS	BOX LOC	DR LOC	QTY
#1487	LT	LT	1
#1341	LT	LT	1
#1374	RT	RT	1
#1326	RT	RT	1
#1177	LT	LT	1
#1055	LT	LT	1
#971	LT	LT	1
	TOTAL		7

U EROSION CONTROL BLANKET CAT 3				
LOCATION	WIDTH	LENGTHX2	SQ FT	SQ YD
FLUME AREAS				
LEB STA 41+90	8	40	320.0	35.6
LWB STA 48+25	8	40	320.0	35.6
LWB STA 49+00	8	40	320.0	35.6
LWB STA 56+00	8	40	320.0	35.6
		TOTAL SQ YDS		142.0

M TYPE SP 12.5 WEARING COURSE MIX (SPWEB440 B)	
STREETS	SQ.YDS.
CRANE ST S.	110.33
CRANE ST N.	106.46
YELLOW PINE S.	109.81
WINTERGREEN N.	115.3
VALE ST S.	116.51
SYCAMORE S.	111.71
BIT ENTRANCES	
#1487	30.61
#1341	25.04
#1374	28.84
#1326	28.26
#1177	59.63
#971	44.07
CONST FREE CHR.	69.21
REFUGE CHR.	27.47
WC METARY	22.67
MID CEMETARY	11.09
E REFUGE CHR.	56.11
E CEMETARY	36.21
(BASED ON 3" DEPTH VAR. ST APP.)	TOTAL SQ YDS 1109.3
	TOTAL TONS 191.00

Q FURNISH AND INSTALL SIGN PANEL TYPE C			
LOCATION	SIGN	QTY	SQ FT
LEB STA 28+25	30X30 RTL	1	6.25

V RAPID STABILIZATION METHOD 3			
LOCATION	LENGTH	WIDTH	SQ YD
BIT CURB 18+68 - 20+00	132	8	117.3
BIT CURB 58+81 - 60+84	203	8	180.4
	TOTAL SQ YDS		298.0

R BITUMINOUS LINED FLUME				
LOCATION	WIDTH	LENGTH	SQ FT	SQ YD
LEB STA 41+90	8	20	160.0	17.8
LWB STA 48+25	8	20	160.0	17.8
LWB STA 49+00	8	20	160.0	17.8
LWB STA 56+00	8	20	160.0	17.8
	TOTAL SQ YDS			71.0

W REMOVABLE PREFORMED PLASTIC MARKINGS				
BEG. STA.	END STA.	LENGTH	DIV BY 50'	X 2'
BASE 10+00	61+52	5152	103.0	206.1
WEAR 10+00	61+52	5152	103.0	206.1
	TOTAL LIN FT			412.0

N RANDOM RIPRAP CLASS II	
FLUME LOCATION	TONS EACH
LEB STA 41+90	4
LWB STA 48+25	4
LWB STA 49+00	4
LWB STA 50+70	4
LWB STA 56+00	4
	TOTAL TONS 20

S SILT FENCE TYPE MACHINE SLICED			
LOCATION AROUND DIST. FLUMES			LENGTH
LEB STA 41+90			48.0
LWB STA 48+25			48.0
LWB STA 49+00			48.0
LWB STA 56+00			48.0
	TOTAL LIN FT		192.0

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-20\CSAH_28_(CSAH78-CSAH18)\PLANK_3.CONSTRUCTION TABS.DGN 03/01/2012 8:28:24 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: CHARLES BADENHEAD

SIGNATURE: *Charles Badenhead*

DATE: 7/2/12 LICENSE NO. 40416

DRAWN BY: JF DATE: 1/18/2012

DESIGN BY: JF DATE: 1/18/2012

CHECKED BY: JO DATE: 4/1/2012



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____

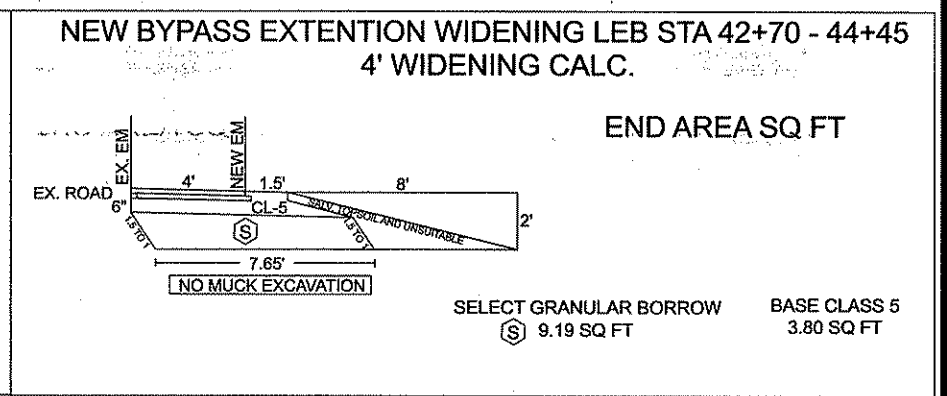
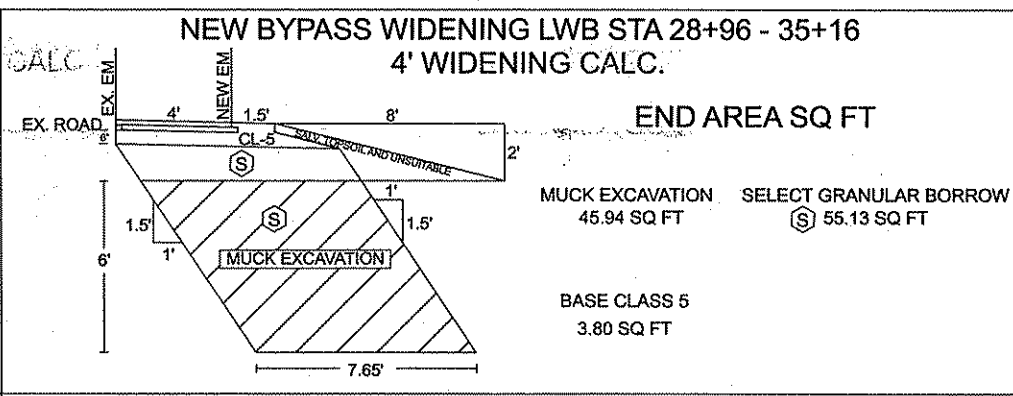
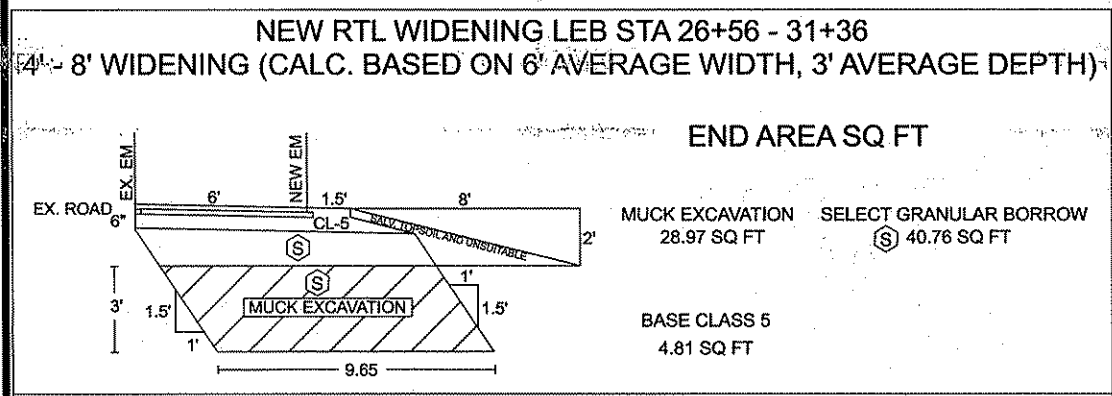
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CITY PROJECT NO. _____

COUNTY PROJECT NO. CP 12-12-20

CONSTRUCTION TABS

Sheet 4 of 28 Sheets



CU YDS PER 100'

MUCK EXCAVATION
 28.97 SQ FT X 100' = 2897 CU FT / 27 = 107.29 CU YDS
 SELECT GRANULAR BORROW
 40.76 SQ FT X 100' = 4076 CU FT / 27 = 150.96 CU YDS

BASE CLASS 5
 4.81 SQ FT X 100' = 481 CU FT / 27 = 17.81 CU YDS

CU YDS PER 100'

MUCK EXCAVATION
 45.94 SQ FT X 100' = 4594 CU FT / 27 = 170.14 CU YDS
 SELECT GRANULAR BORROW
 55.13 SQ FT X 100' = 5513 CU FT / 27 = 204.18 CU YDS

BASE CLASS 5
 3.80 SQ FT X 100' = 380 CU FT / 27 = 14.07 CU YDS

CU YDS PER 100'

SELECT GRANULAR BORROW
 9.19 SQ FT X 100' = 919 CU FT / 27 = 34.03 CU YDS

BASE CLASS 5
 3.80 SQ FT X 100' = 380 CU FT / 27 = 14.07 CU YDS

SUMMARY
480' RIGHT TURN LANE

MUCK EXCAVATION
 107.29 CU YDS (PER 100') X 4.8 RTL = 514.99 CU YDS (CV)

SELECT GRANULAR BORROW
 150.96 CU YDS (PER 100') X 4.8 RTL = 724.60 CU YDS X 1.8 = 1304.29 TONS (CV)

BASE CLASS 5
 17.81 CU YDS (PER 100') X 4.8 RTL = 85.48 CU YDS X 1.8 = 153.87 TONS (CV)

SUMMARY
620' BYPASS

MUCK EXCAVATION
 170.14 CU YDS (PER 100') X 6.2 BYPASS = 1054.86 CU YDS (CV)

SELECT GRANULAR BORROW
 204.18 CU YDS (PER 100') X 6.2 BYPASS = 1265.91 CU YDS X 1.8 = 2278.64 TONS (CV)

BASE CLASS 5
 14.07 CU YDS (PER 100') X 6.2 BYPASS = 87.23 CU YDS X 1.8 = 157.02 TONS (CV)

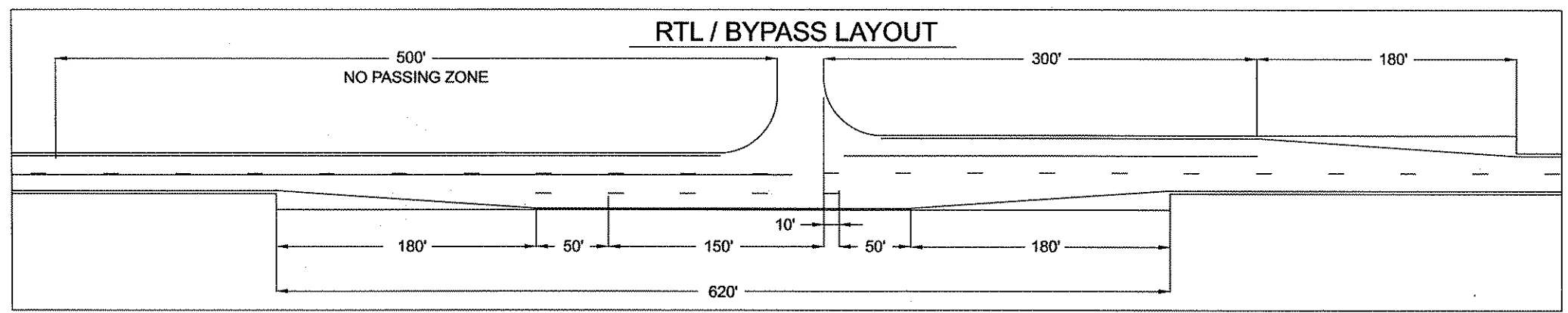
SUMMARY
175' BYPASS EXTENTION

SELECT GRANULAR BORROW
 34.03 CU YDS (PER 100') X 1.75 BYPASS = 59.55 CU YDS X 1.8 = 107.19 TONS (CV)

BASE CLASS 5
 14.07 CU YDS (PER 100') X 1.75 BYPASS = 24.62 CU YDS X 1.8 = 44.32 TONS (CV)

NEW RTL / BYPASS LOC BY THE EACH TOTALS

STREET	DIR.	RTL / BYPASS	ADD. BIT. WIDTH NEEDED	LENGTH	MUCK EXCAVATION 2105.505 (CU YD)	SELECT GRANULAR BORROW 2105.522 (TON)	AGG BASE CLASS 5 2211.501 (TON)	SILT FENCE MACHINE SLICED 2573.502 (LIN FT)	RAPID STABILIZATIO N METHOD 3 2575.601 (SQ YD)
YELLOW PINE	EB	RTL	4' - 8'	480.0	515.0	1304.3	153.9	480.0	960.00
YELLOW PINE	WB	BYPASS	4'	620.0	1054.9	2278.6	157.0	620.0	1240.00
WINTERGREEN	EB	BYPASS	4'	175.0		107.2	44.3	175.0	350.00
EST. TOTALS					1569.90	3690.09	355.22	1275.00	2550.00



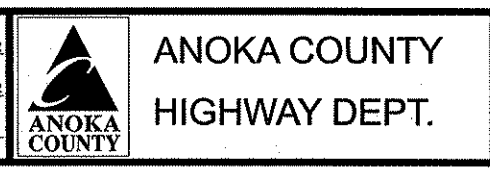
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NAME: P:\12-01-00\CSAH_20_(CSAH78-CSAH18)\Plan4_CALCULATIONS RTL.dgn 03/01/2012 8:23:07 AM

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: CHARLES M. CADEMEHEAD JR.
 SIGNATURE: *[Signature]*
 DATE: 3/1/12 LICENSE NO. 40416

DRAWN BY: JF DATE: 1/18/2012
 DESIGN BY: JF DATE: 1/18/2012
 CHECKED BY: JO DATE: 4/1/2012



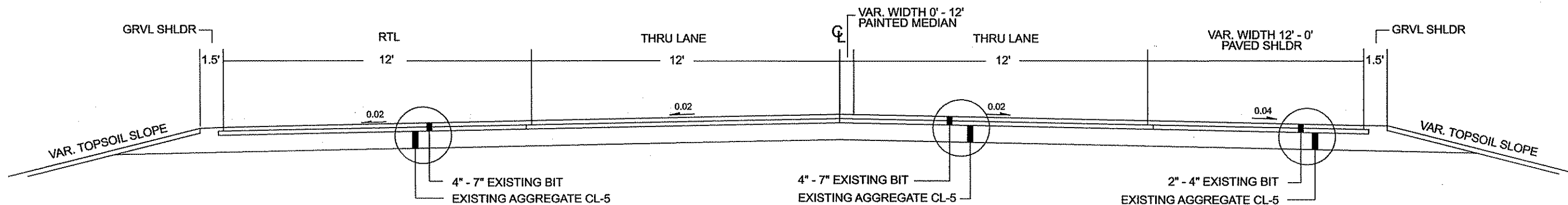
STATE PROJECT NO. _____
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 CITY PROJECT NO. _____
 COUNTY PROJECT NO. CP 12-12-20

CALCULATIONS FOR RTL / BYPASS CONSTRUCTION

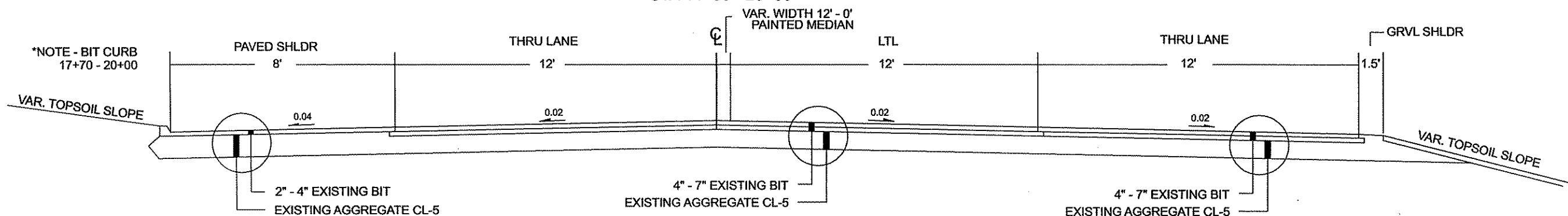
Sheet 5 of 28 Sheets

EXISTING TYPICALS

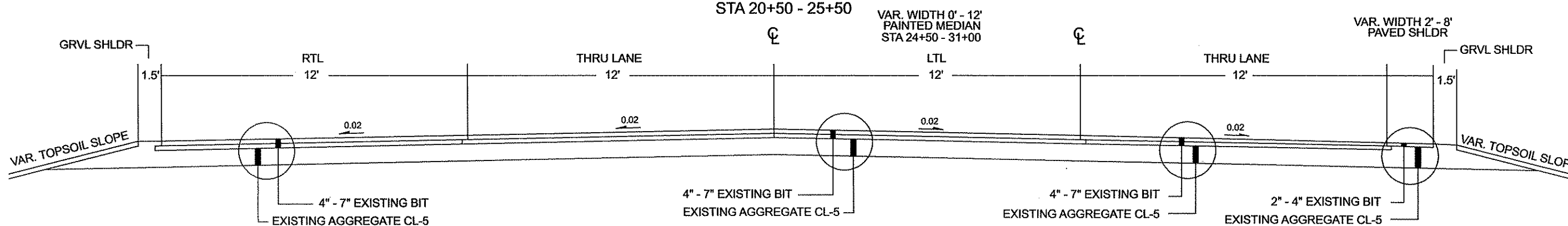
STA 10+00 - 14+80



STA 14+80 - 20+50



STA 20+50 - 25+50



GENERAL NOTES:

- ALL CROSS SLOPES ARE APPROXIMATE
- UNLESS OTHERWISE SPECIFIED, THE CLASS 5 CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE OF THE MAINLINE.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_20_(CSAH78-CSAH18)\Plan5_TYPICALS.dgn 03/01/2012 8:24:01 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: CHARLES CADENHEAD

SIGNATURE: *[Signature]*

DATE: 2/2/12 LICENSE NO. 40416

DRAWN BY JF DATE 1/18/2012

DESIGN BY JF DATE 1/18/2012

CHECKED BY JO DATE 4/1/2012



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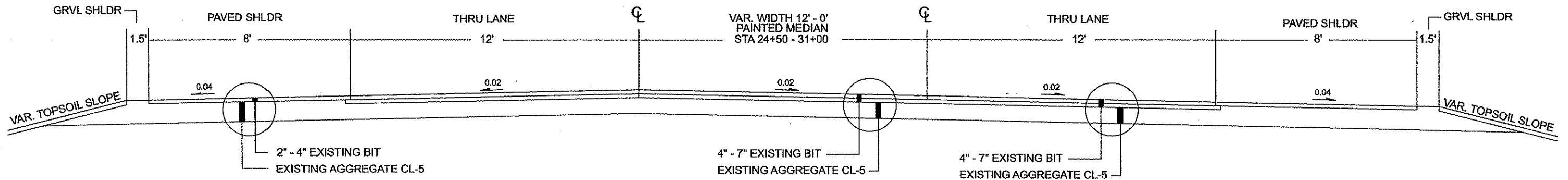
COUNTY PROJECT NO. CP 12-12-20

TYPICALS

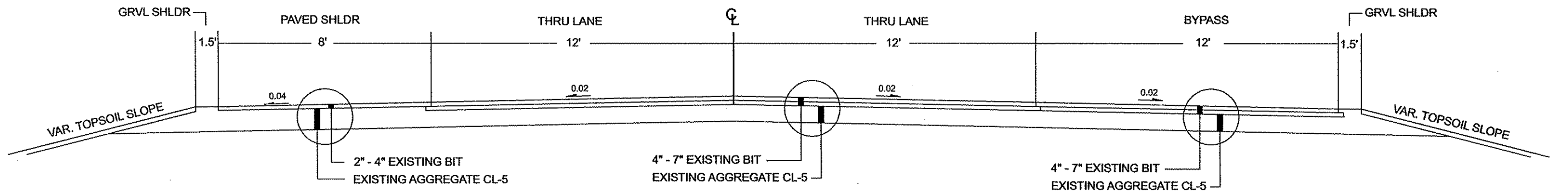
Sheet 6 of 28 Sheets

EXISTING TYPICALS

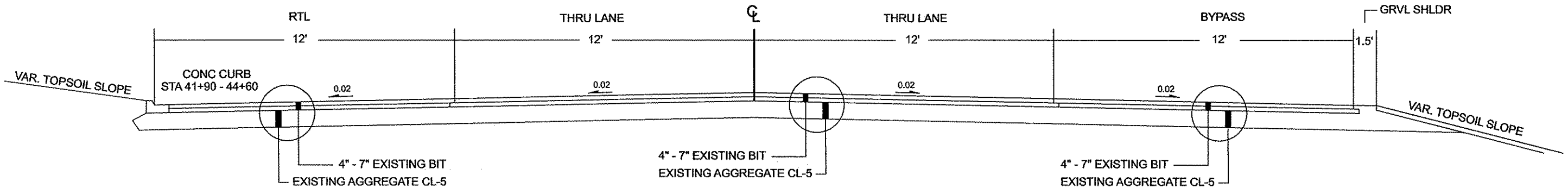
STA 25+50 - 36+25



STA 36+25 - 40+00



STA 40+00 - 42+70



GENERAL NOTES:

- ALL CROSS SLOPES ARE APPROXIMATE
- UNLESS OTHERWISE SPECIFIED, THE CLASS 5 CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE OF THE MAINLINE.

NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_20_(CSAH78-CSAH18)\Plan5_TYPICALS.dgn 03/01/2012 8:24:14 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.

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 CHECKED BY JO DATE 4/1/2012



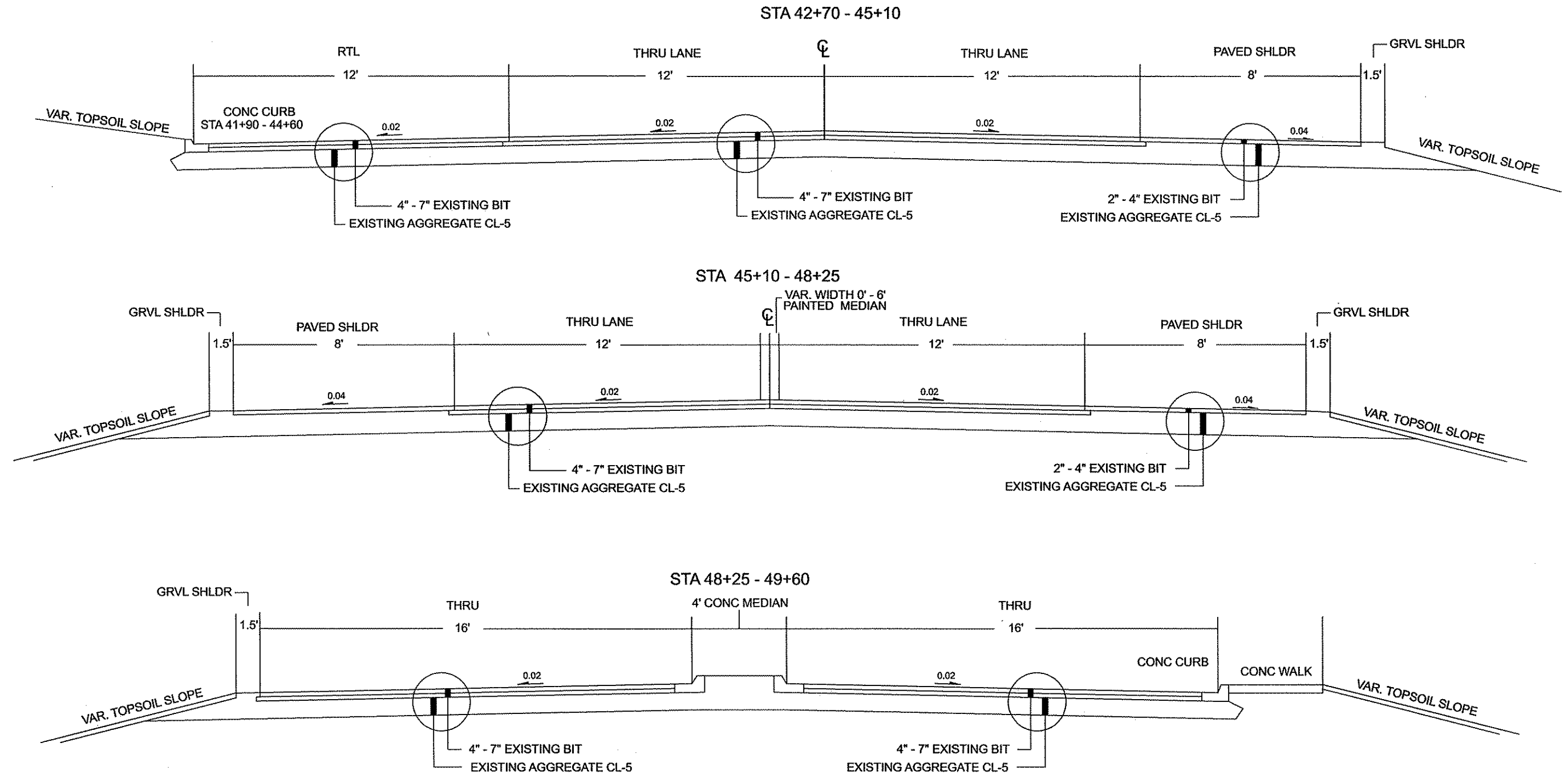
**ANOKA COUNTY
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STATE PROJECT NO. _____
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 COUNTY PROJECT NO. CP 12-12-20

TYPICALS

Sheet 7 of 28 Sheets

EXISTING TYPICALS



GENERAL NOTES:

- ALL CROSS SLOPES ARE APPROXIMATE
- UNLESS OTHERWISE SPECIFIED, THE CLASS 5 CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE OF THE MAINLINE.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_20_(CSAH78-CSAH18)\Plan\5_TYPICALS.dgn 03/01/2012 8:24:29 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: CHARLES CADENHEAD

SIGNATURE: *[Signature]*

DATE: 1/18/12 LICENSE NO. 40316

DRAWN BY: JF DATE: 1/18/2012

DESIGN BY: JF DATE: 1/18/2012

CHECKED BY: JO DATE: 4/1/2012



**ANOKA COUNTY
HIGHWAY DEPT.**

STATE PROJECT NO. _____

STATE AID PROJECT NO. _____

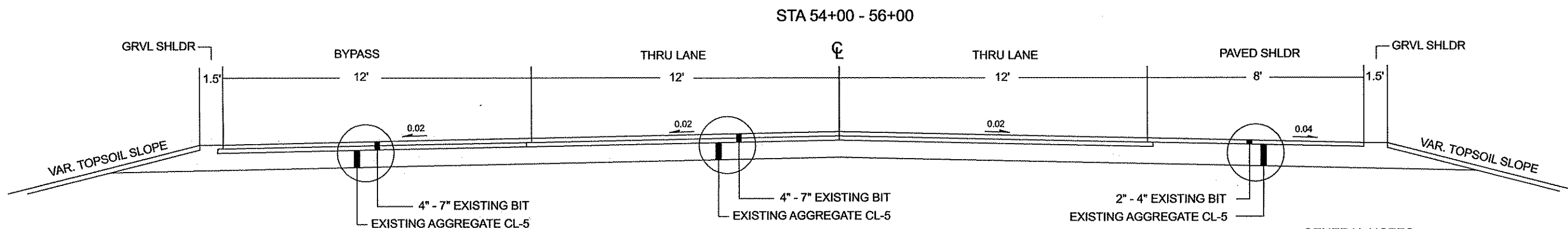
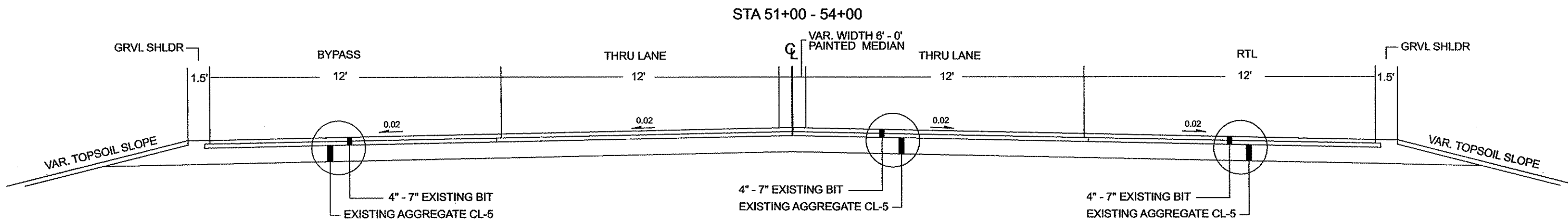
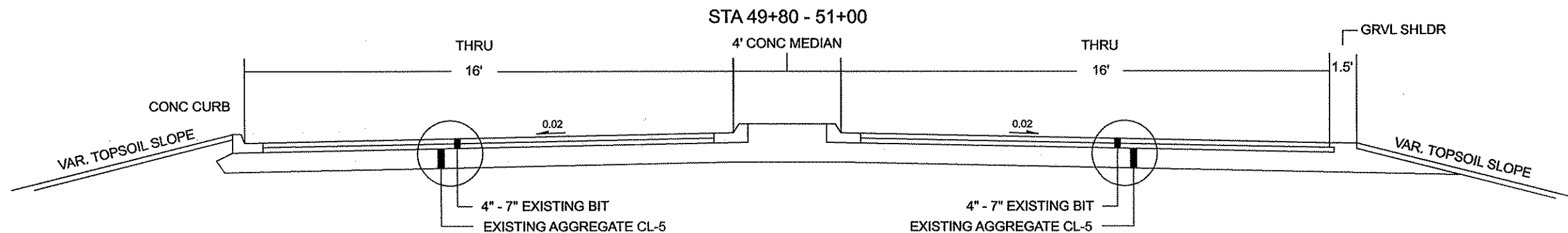
CITY PROJECT NO. _____

COUNTY PROJECT NO. CP 12-12-20

TYPICALS

Sheet 8 of 28 Sheets

EXISTING TYPICALS



GENERAL NOTES:
 - ALL CROSS SLOPES ARE APPROXIMATE
 - UNLESS OTHERWISE SPECIFIED, THE CLASS 5 CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE OF THE MAINLINE.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_20_CSAH78-CSAH18\Plan6_TYPICALS.dgn 03/01/2012 8:24:50 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: CHARLES CADERHEAD

SIGNATURE: *Charles Caderehead*

DATE: 1/12/12 LICENSE NO. 40416

DRAWN BY: JF DATE: 1/18/2012

DESIGN BY: JF DATE: 1/18/2012

CHECKED BY: JO DATE: 4/1/2012



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____

STATE AID PROJECT NO. _____

CITY PROJECT NO. _____

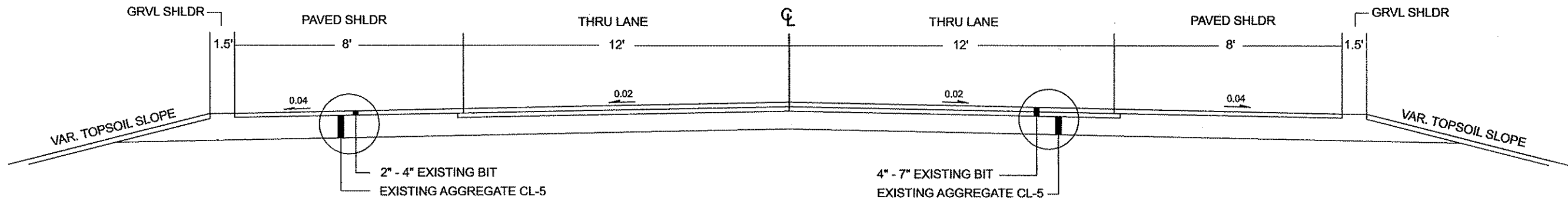
COUNTY PROJECT NO. CP 12-12-20

TYPICALS

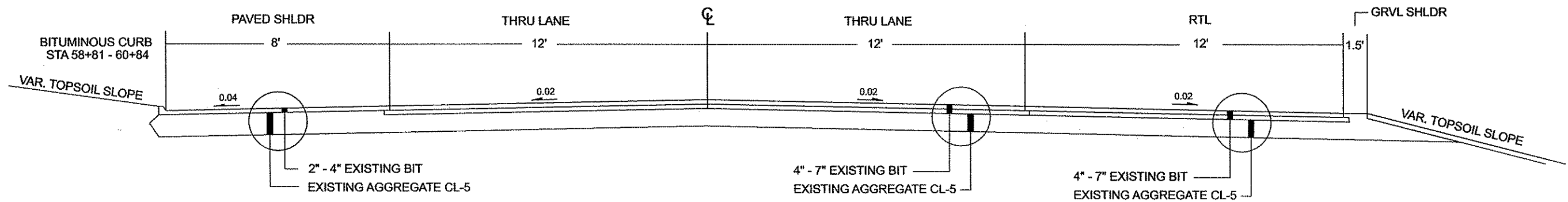
Sheet 9 of 28 Sheets

EXISTING TYPICALS

STA 56+00 - 57+75



STA 57+75 - 61+52



GENERAL NOTES:

- ALL CROSS SLOPES ARE APPROXIMATE
- UNLESS OTHERWISE SPECIFIED, THE CLASS 5 CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE OF THE MAINLINE.

NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_20_(CSAH78-CSAH18)\Plan5_TYPICALS.dgn 03/01/2012 8:25:04 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: CHARLES CADENHEAD

SIGNATURE: *[Signature]*

DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY JF DATE 1/18/2012

DESIGN BY JF DATE 1/18/2012

CHECKED BY JO DATE 4/1/2012



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____

STATE AID PROJECT NO. _____

CITY PROJECT NO. _____

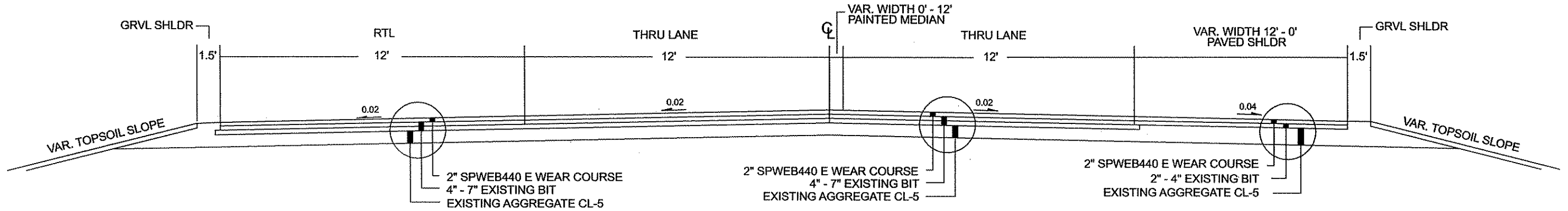
COUNTY PROJECT NO. CP 12-12-20

TYPICALS

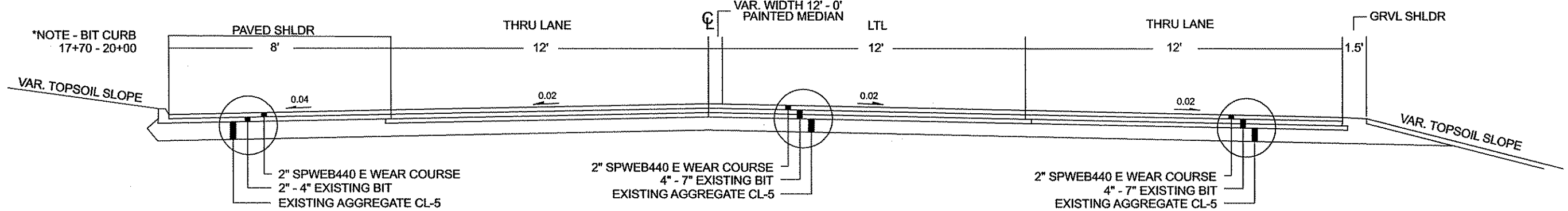
Sheet 10 of 28 Sheets

PROPOSED TYPICALS

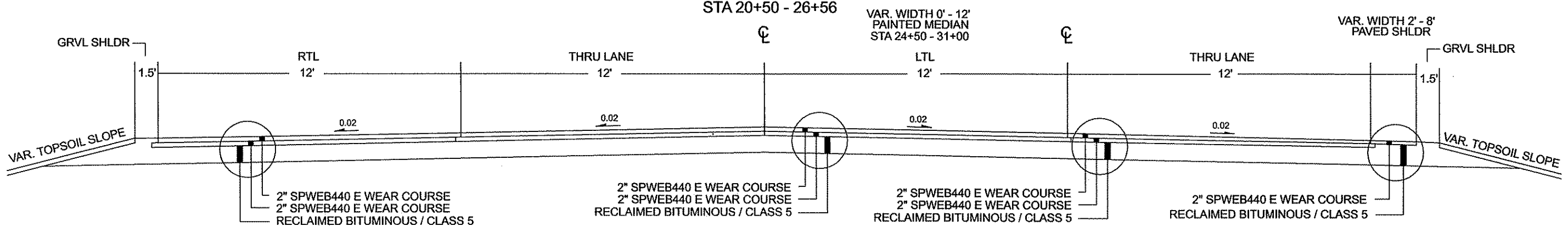
STA 10+00 - 14+80



STA 14+80 - 20+50
OVERLAY ENDS AT 19+00. RECLAIM AND OVERLAY BEGINS AT 19+00



STA 20+50 - 26+56



GENERAL NOTES:

- ALL CROSS SLOPES ARE APPROXIMATE
- UNLESS OTHERWISE SPECIFIED, THE CLASS 5 CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE OF THE MAINLINE.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_20_CS\AH78-CSAH18\Plan6_TYPICALS.dgn 03/01/2012 8:25:20 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: CHARLES CADENHEAD

SIGNATURE: *[Signature]*

DATE: 3/1/12 LICENSE NO. 40416

DRAWN BY: JF DATE: 1/18/2012

DESIGN BY: JF DATE: 1/18/2012

CHECKED BY: JO DATE: 4/1/2012



**ANOKA COUNTY
HIGHWAY DEPT.**

STATE PROJECT NO. _____

STATE AID PROJECT NO. _____

CITY PROJECT NO. _____

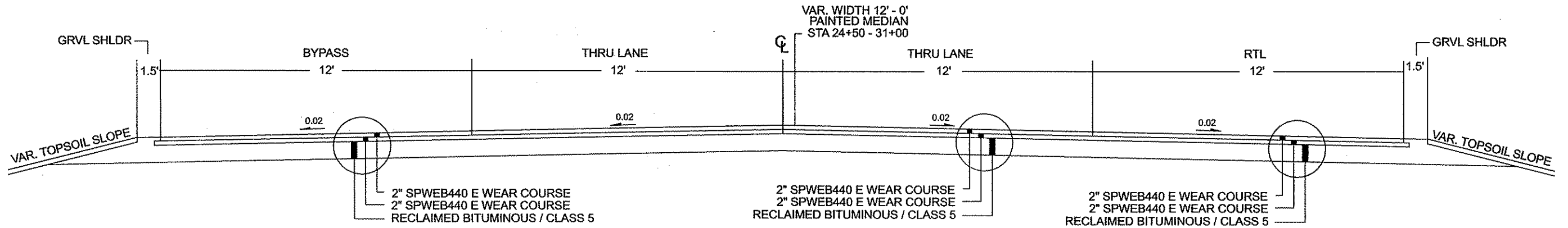
COUNTY PROJECT NO. CP 12-12-20

TYPICALS

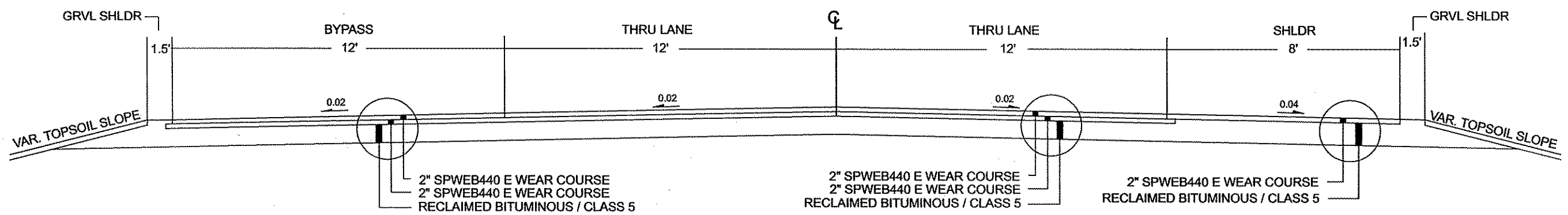
Sheet 11 of 28 Sheets

PROPOSED TYPICALS

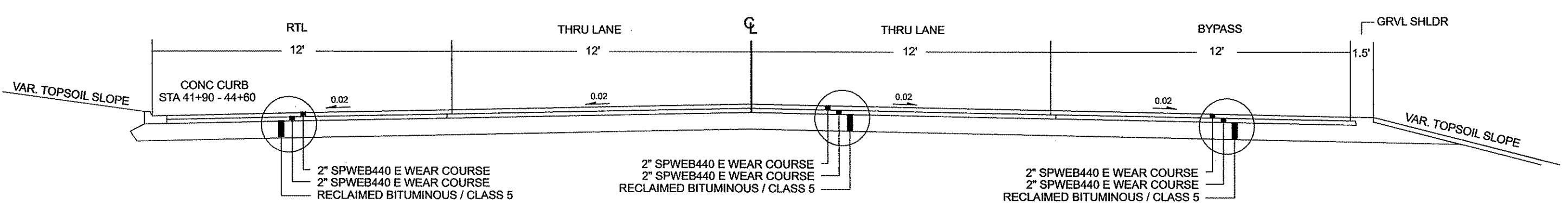
STA 26+56 - 31+00



STA 31+00 - 40+00



STA 40+00 - 42+70



GENERAL NOTES:

- ALL CROSS SLOPES ARE APPROXIMATE
- UNLESS OTHERWISE SPECIFIED, THE CLASS 5 CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE OF THE MAINLINE.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:12-01-00\CSAH_20_(CSAH78-CSAH18)\Plan5_TYPICALS.dgn 03/01/2012 8:25:31 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: CHARLES CADENHEAD

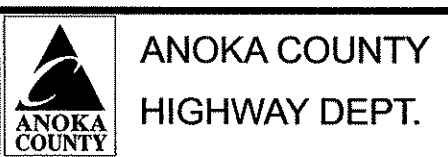
SIGNATURE: *[Signature]*

DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY: JF DATE: 1/18/2012

DESIGN BY: JF DATE: 1/18/2012

CHECKED BY: JO DATE: 4/1/2012



STATE PROJECT NO. _____

STATE AID PROJECT NO. _____

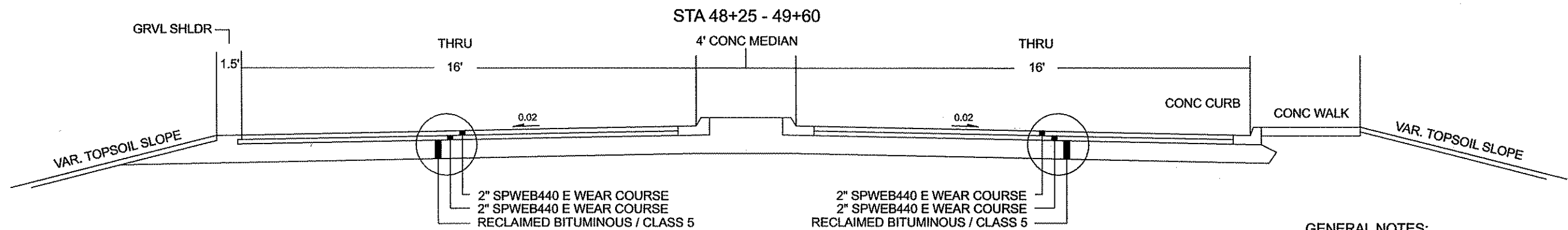
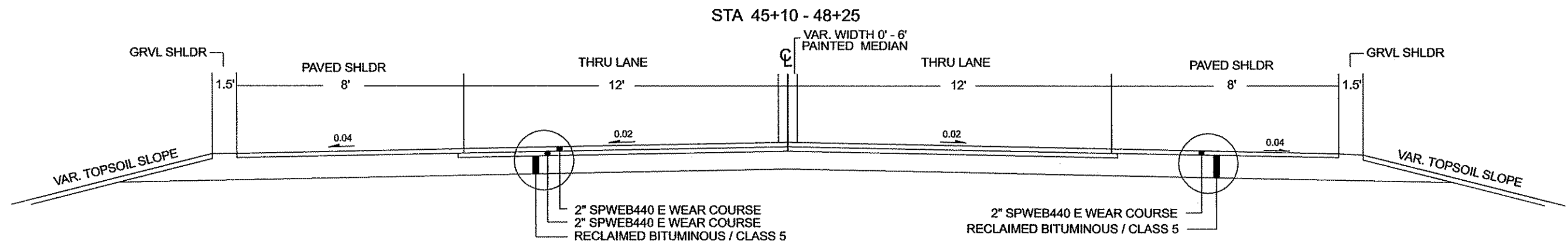
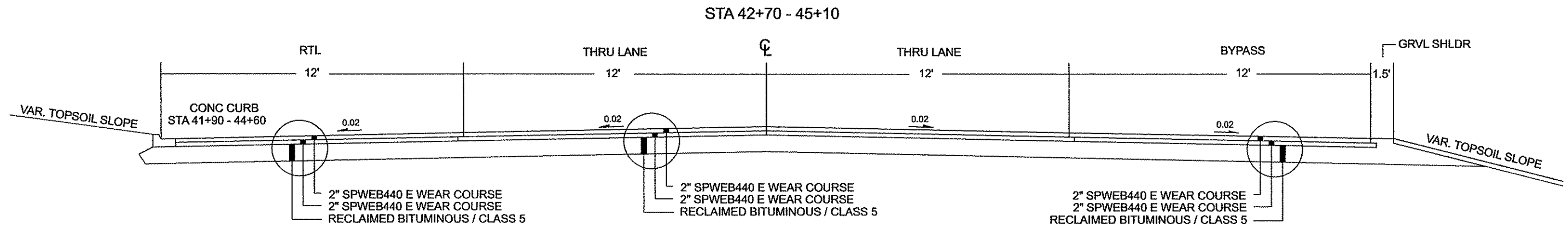
CITY PROJECT NO. _____

COUNTY PROJECT NO. CP 12-12-20

TYPICALS

Sheet 12 of 28 Sheets

PROPOSED TYPICALS



GENERAL NOTES:
 - ALL CROSS SLOPES ARE APPROXIMATE
 - UNLESS OTHERWISE SPECIFIED, THE CLASS 5 CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE OF THE MAINLINE.

NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:112-01-001CSAH_20_CSAH78-CSAH18)Plan5_TYPICALS.dgn 03/01/2012 8:25:43 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: CHARLES CADENHEAD

SIGNATURE: *[Signature]*

DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY: JF DATE: 1/18/2012

DESIGN BY: JF DATE: 1/18/2012

CHECKED BY: JO DATE: 4/1/2012



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____

STATE AID PROJECT NO. _____

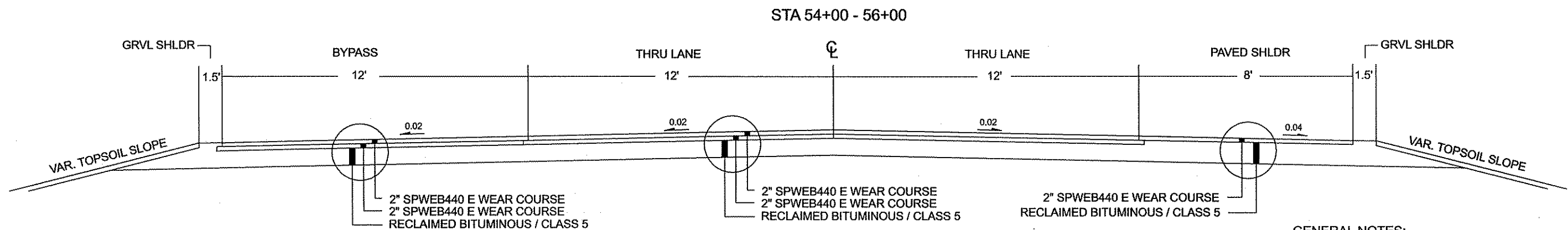
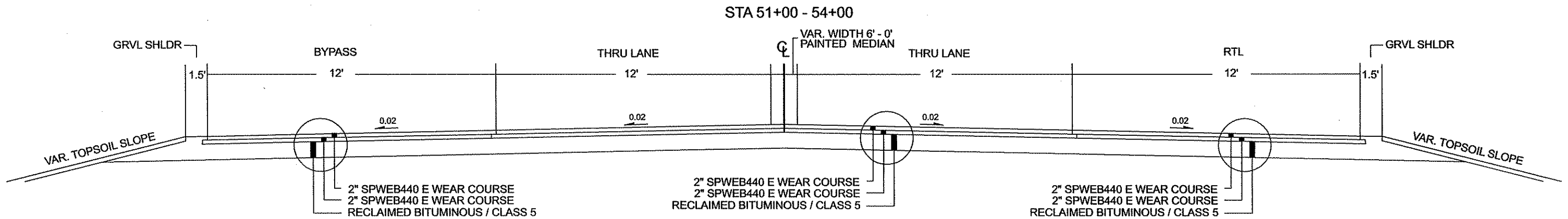
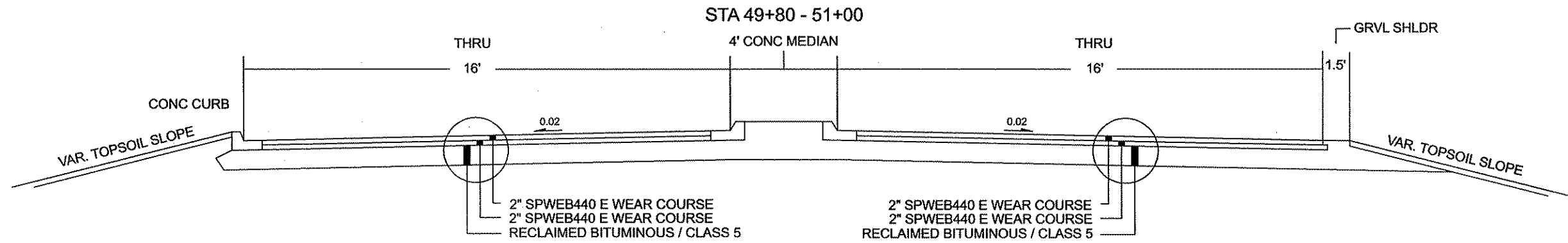
CITY PROJECT NO. _____

COUNTY PROJECT NO. CP 12-12-20

TYPICALS

Sheet 13 of 28 Sheets

PROPOSED TYPICALS



GENERAL NOTES:
 - ALL CROSS SLOPES ARE APPROXIMATE
 - UNLESS OTHERWISE SPECIFIED, THE CLASS 5 CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE OF THE MAINLINE.

NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\112-01-00\CSAH_20_(CSAH78-CSAH18)\Plan5_TYPICALS.dgn 03/01/2012 8:25:58 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: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY: JF DATE: 1/18/2012
 DESIGN BY: JF DATE: 1/18/2012
 CHECKED BY: JO DATE: 4/1/2012

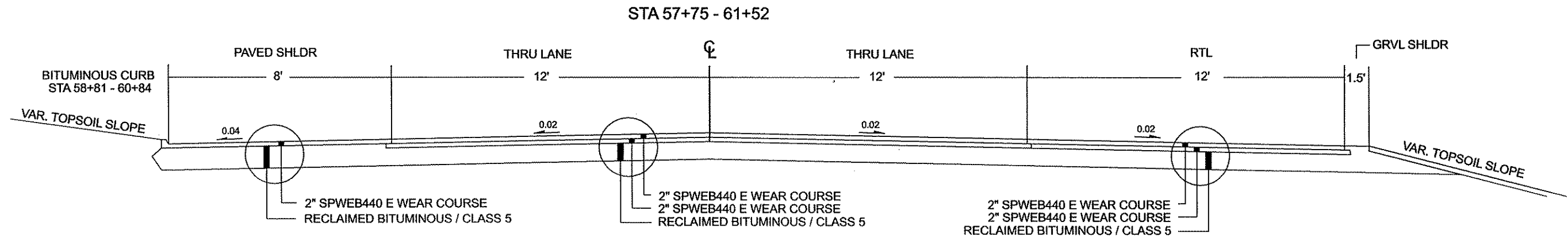
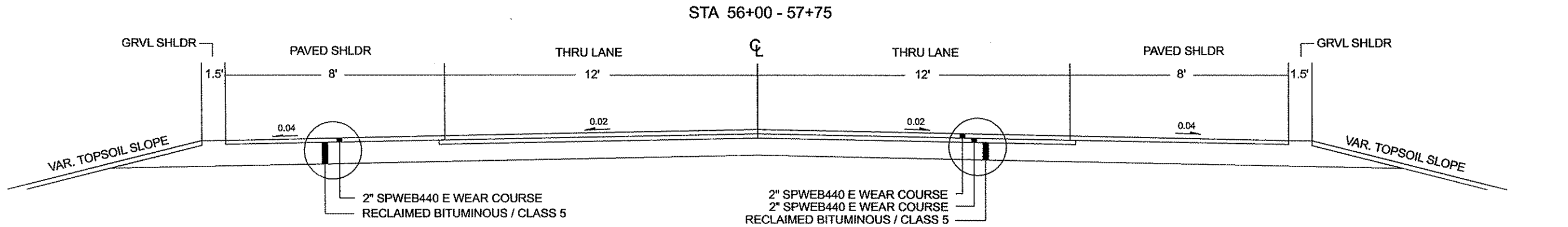


ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. CP 12-12-20

TYPICALS
 Sheet 14 of 28 Sheets

PROPOSED TYPICALS



GENERAL NOTES:

- ALL CROSS SLOPES ARE APPROXIMATE
- UNLESS OTHERWISE SPECIFIED, THE CLASS 5 CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE OF THE MAINLINE.

NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_20_(CSAH78-CSAH18)\Plan5_TYPICALS.dgn 03/01/2012 8:26:11 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: CHARLES CADENHEAD

SIGNATURE: *[Signature]*

DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY JF DATE 1/18/2012

DESIGN BY JF DATE 1/18/2012

CHECKED BY JO DATE 4/1/2012



**ANOKA COUNTY
HIGHWAY DEPT.**

STATE PROJECT NO. _____

STATE AID PROJECT NO. _____

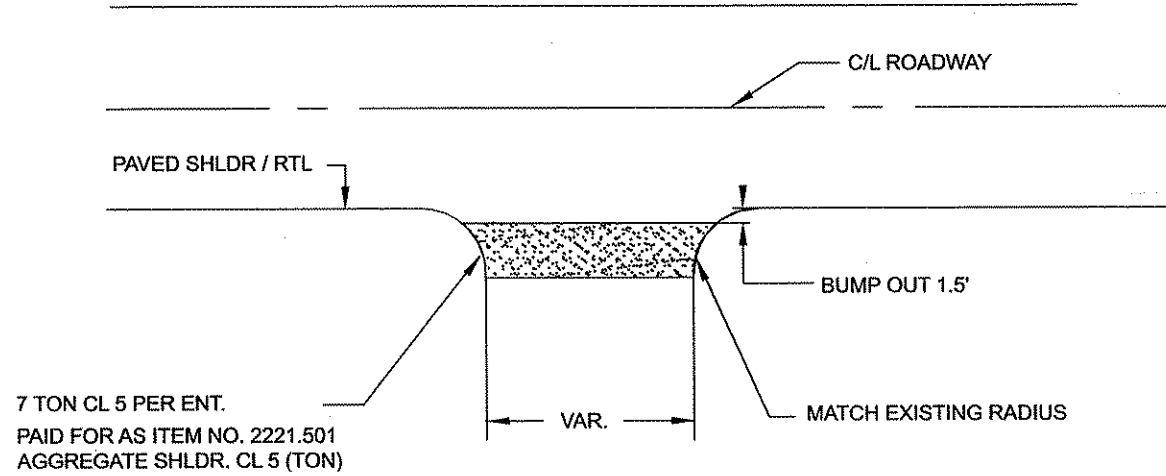
CITY PROJECT NO. _____

COUNTY PROJECT NO. CP 12-12-20

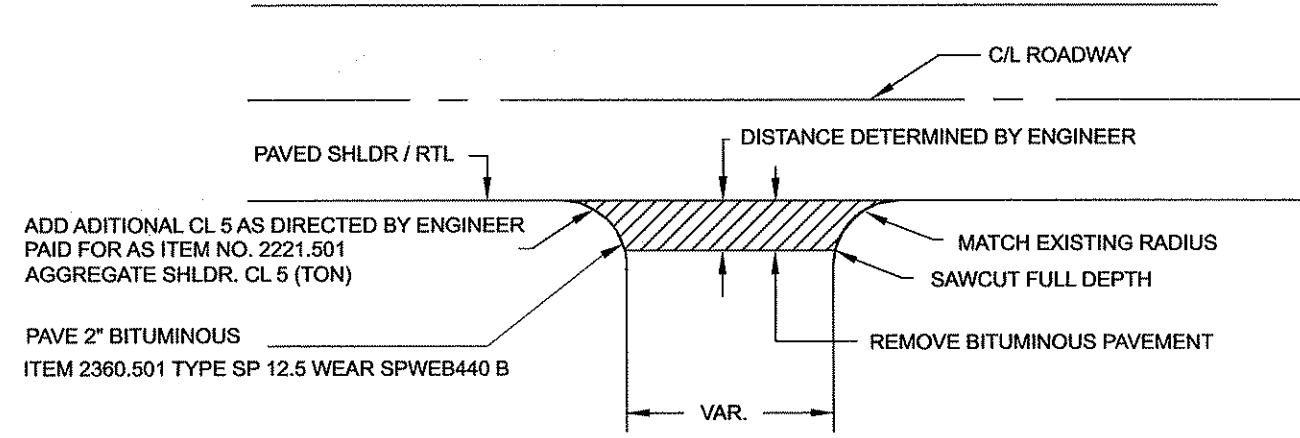
TYPICALS

Sheet 15 of 28 Sheets

GRAVEL DR. WAYS AND FEILD ENT.



PAVED DR. WAYS



PAVED STREET APPROACHES

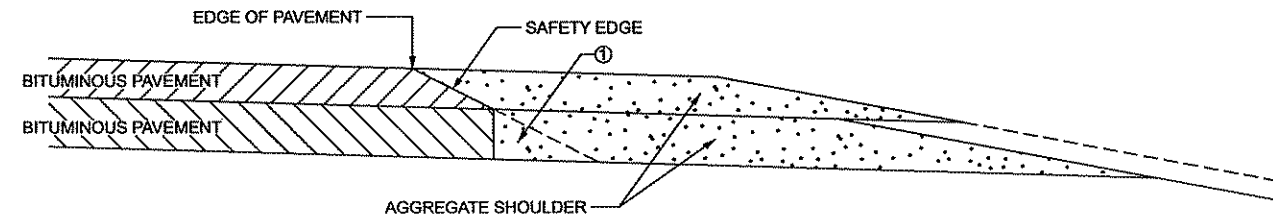
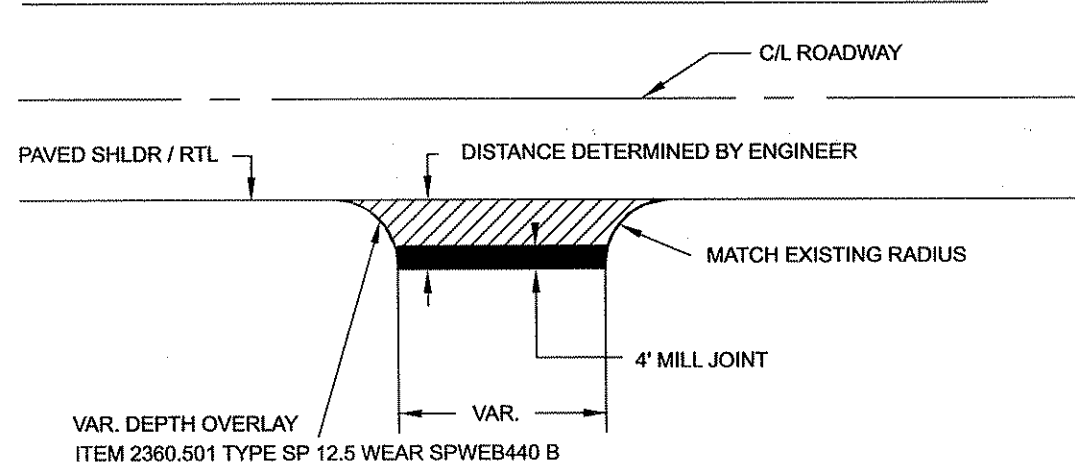


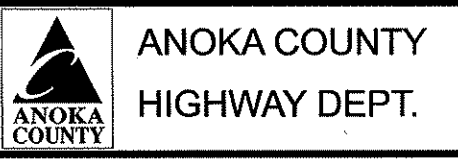
FIGURE B
BITUMINOUS PAVEMENT
 SAFETY EDGE TO BE USED IN ALL NON-CURB AREAS ON SHOULDER.
 ① OPTIONAL DESIGN EXTENDS SAFETY EDGE DEEPER THAN 6" AND WIDER THAN 10.5". SEE SPECIAL PROVISIONS.

NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_20_(CSAH78-CSAH18)\Plan6_DETAILS.dgn 03/01/2012 8:27:00 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: CHARLES CADEN (READ)
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 LICENSE NO. 40416

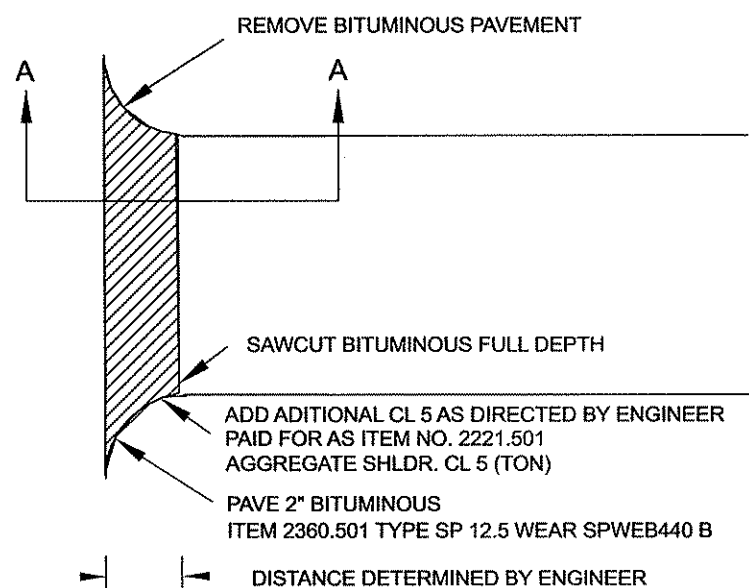
DRAWN BY JF DATE 1/18/2012
 DESIGN BY JF DATE 1/18/2012
 CHECKED BY JO DATE 4/1/2012



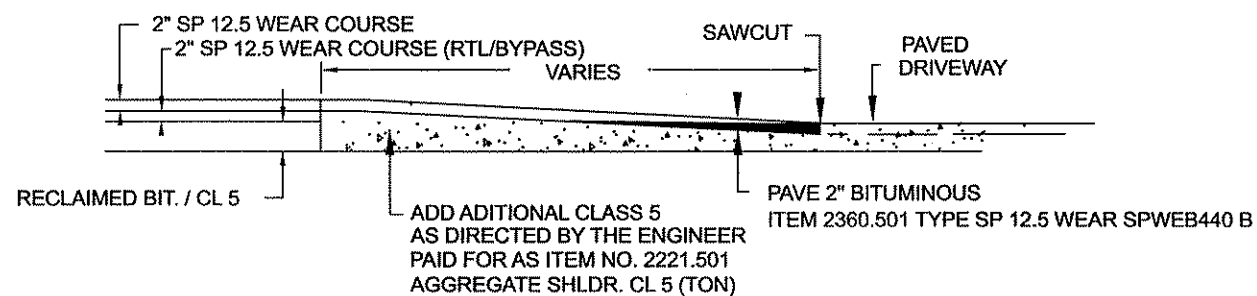
STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. CP 12-12-20

PAVED DRIVEWAYS

DETAILS

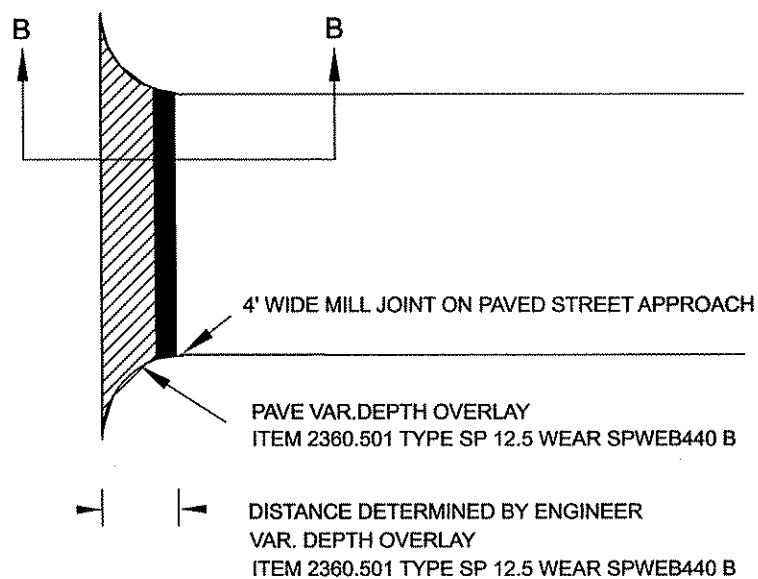


PAVED DRIVEWAY DETAILS A - A

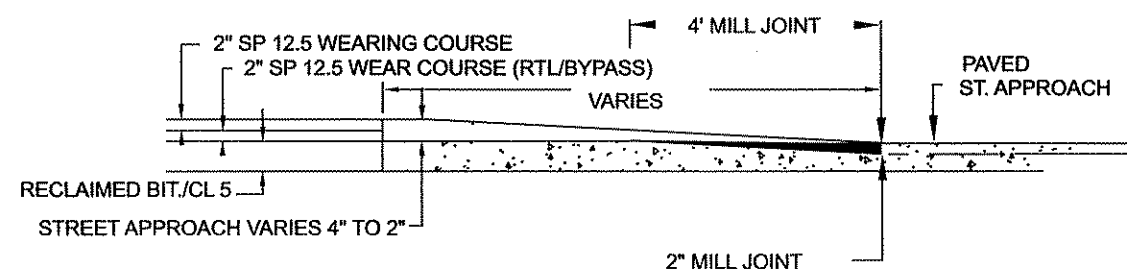


PAVED STREET APPROACH

JOINT DETAILS



PAVED STREET APPROACH JOINT DETAILS B - B



NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_20_(CSAH78-CSAH118)\Plan6_DETAILS.dgn 03/01/2012 8:27:15 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: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY: JF DATE: 1/18/2012
 DESIGN BY: JF DATE: 1/18/2012
 CHECKED BY: JO DATE: 4/1/2012



ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. CP 12-12-20

CONSTRUCTION DETAILS
 Sheet 17 of 28 Sheets

BEGIN CP 12-12-20
STA 10+00

CSAH 78 HANSON BLVD

#1487
(B)

CRANE ST
(B)

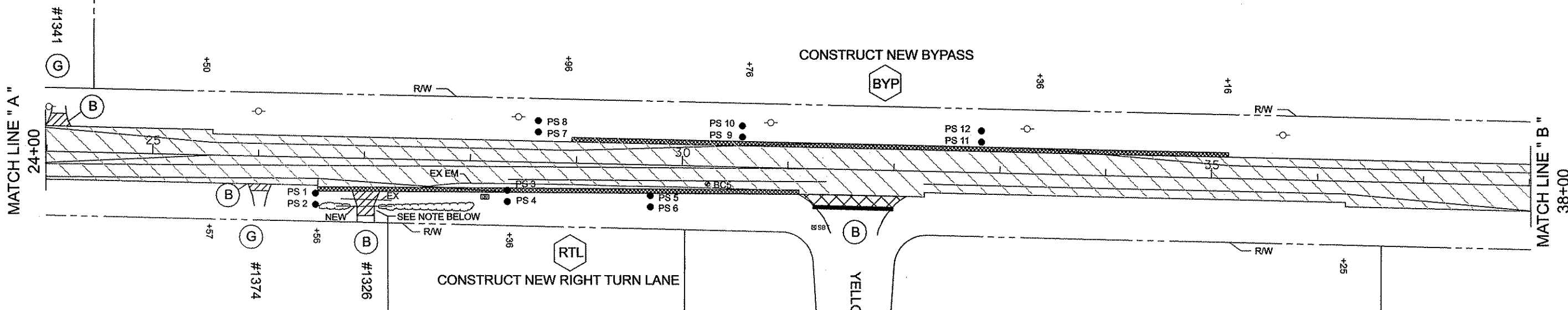
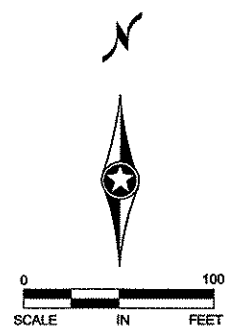
MATCH LINE "A"
24+00

BITUMINOUS CORES		PUSH SOUNDINGS	
BC1	4.0" BIT	5.5" GRVL	PS1 0.0' @ 6' EM
BC2	5.5" BIT	6.0" GRVL	PS2 0.0' @ 18' EM
BC3	4.5" BIT	7.5" GRVL	PS3 0.0' @ 6' EM
BC4	5.5" BIT	4.0" GRVL	PS4 3.9' @ 18' EM
BC5	2.0" BIT	5.5" GRVL	PS5 6.0' @ 6' EM
BC6	5.0" BIT	6.0" GRVL	PS6 3.1' @ 18' EM
BC7	6.5" BIT	3.0" GRVL	PS7 6.0' @ 6' EM
BC8	6.0" BIT	6.0" GRVL	PS8 5.2' @ 18' EM
BC9	7.0" BIT	3.0" GRVL	PS9 6.9' @ 6' EM
BC10	5.0" BIT	6.0" GRVL	PS10 5.1' @ 18' EM
BC11	3.3" BIT	7.0" GRVL	PS11 7.7' @ 6' EM
			PS12 6.8' @ 18' EM
			PS13 0.0' @ 6' EM
			PS14 0.0' @ 18' EM

	OVERLAY 2"		CONSTRUCT NEW BYPASS
	FULL DEPTH RECLAIM / 4" OVERLAY		CONSTRUCT NEW RTL
	OVERLAY ST. APP.		BITUMINOUS CORE
	REMOVE / REPAVE BIT ENT.		PUSH SOUNDING
	RTL / BYPASS WIDENING		POWER POLE
	MILL JOINT		

(G) = GRAVEL, (B) = BIT, (C) = CONC

NOTE - PUSH SOUNDING DIST. FROM EX. EM.



REMOVE 50' 15" CMP INCLUDING APRONS
INSTALL 44' 15" CMP AND 2 APRONS AND SAFTY GRATES AT EXISTING APRON ELEV. 45' RT CL.
CLEAR AND GRUB PAID BY THE TREE (APPROX 15 - EVERGREEN, 11- DECIDUOUS)
(WEST AREA 30' L X 10' W, EAST AREA 92' L X 10' W) BACK TO FIRST 2 ROWS OF PINES FROM ROAD.
* NOTE EXISTING FIBER SPLICEBOX BELOW GROUND IN NEW RTL INSLOPE.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:112-01-00\CSAH_20_(CSAH78-CSAH18)\Plan6_PLAN.dgn 03/01/2012 8:28:09 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: CHARLES CADENHEAD
SIGNATURE: *[Signature]*
DATE: 3/2/12 LICENSE NO. 49416

DRAWN BY: JF DATE: 1/18/2012
DESIGN BY: JF DATE: 1/18/2012
CHECKED BY: JO DATE: 4/1/2012

ANOKA COUNTY
HIGHWAY DEPT.

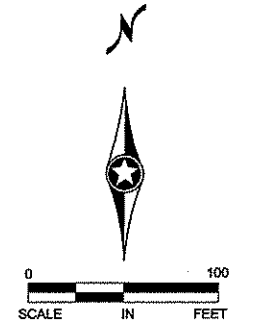
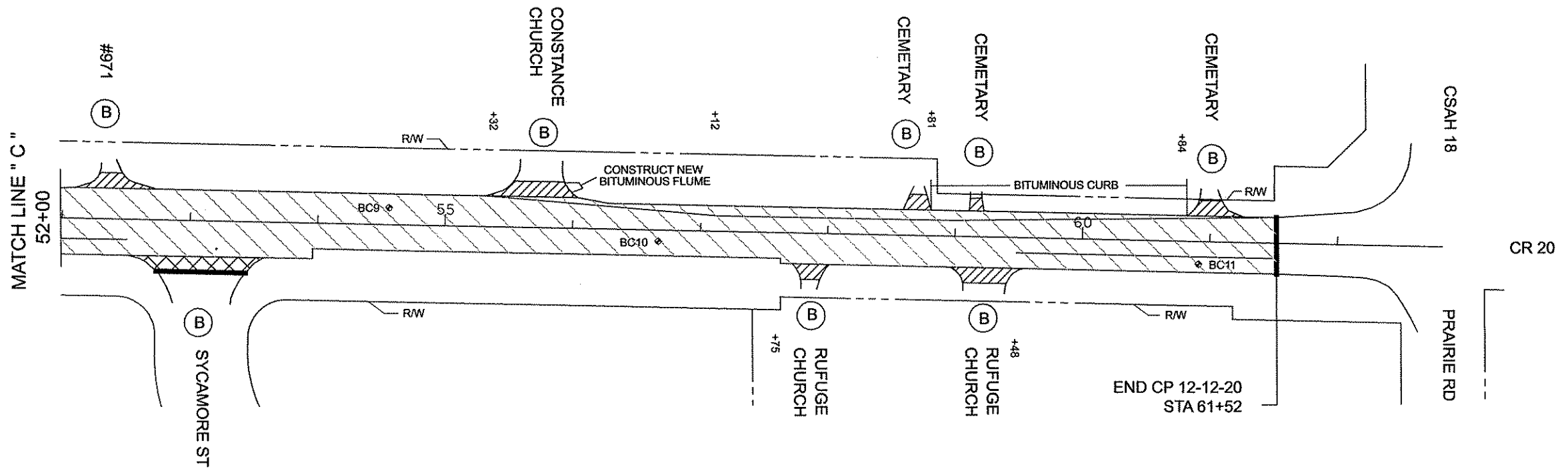
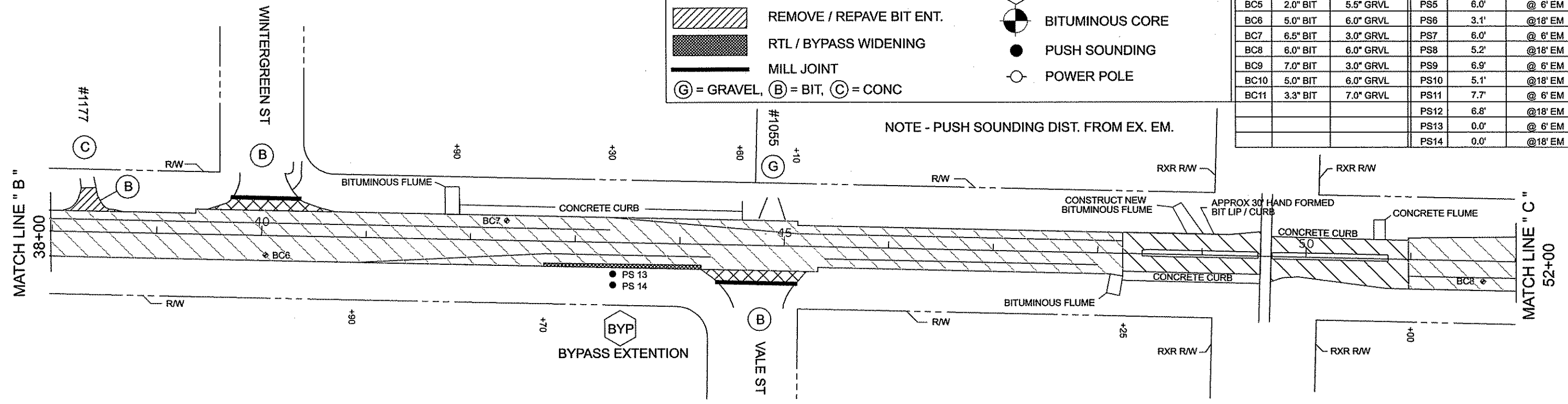
STATE PROJECT NO. _____
STATE AID PROJECT NO. _____
CITY PROJECT NO. _____
COUNTY PROJECT NO. CP 12-12-20

CONSTRUCTION PLAN
STA 10+00 TO 38+00
Sheet 18 of 28 Sheets

OVERLAY 2"
 FULL DEPTH RECLAIM / 4" OVERLAY
 OVERLAY ST. APP.
 REMOVE / REPAVE BIT ENT.
 RTL / BYPASS WIDENING
 MILL JOINT
 (G) = GRAVEL, (B) = BIT, (C) = CONC

CONSTRUCT NEW BYPASS
 CONSTRUCT NEW RTL
 BITUMINOUS CORE
 PUSH SOUNDING
 POWER POLE

BITUMINOUS CORES			PUSH SOUNDINGS		
BC1	4.0" BIT	5.5" GRVL	PS1	0.0'	@ 6' EM
BC2	5.5" BIT	6.0" GRVL	PS2	0.0'	@ 18' EM
BC3	4.5" BIT	7.5" GRVL	PS3	0.0'	@ 6' EM
BC4	5.5" BIT	4.0" GRVL	PS4	3.9'	@ 18' EM
BC5	2.0" BIT	5.5" GRVL	PS5	6.0'	@ 6' EM
BC6	5.0" BIT	6.0" GRVL	PS6	3.1'	@ 18' EM
BC7	6.5" BIT	3.0" GRVL	PS7	6.0'	@ 6' EM
BC8	6.0" BIT	6.0" GRVL	PS8	5.2'	@ 18' EM
BC9	7.0" BIT	3.0" GRVL	PS9	6.9'	@ 6' EM
BC10	5.0" BIT	6.0" GRVL	PS10	5.1'	@ 18' EM
BC11	3.3" BIT	7.0" GRVL	PS11	7.7'	@ 6' EM
			PS12	6.8'	@ 18' EM
			PS13	0.0'	@ 6' EM
			PS14	0.0'	@ 18' EM



NO	DATE	BY	CHKD	APPR	REVISION

NAME: P112-01-00CSAH_20 (CSAH78-CSAH18)Plan6_PLAN.dgn
 03/01/2012 8:28:28 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: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/12/12 LICENSE NO. 40416

DRAWN BY: JF DATE: 1/18/2012
 DESIGN BY: JF DATE: 1/18/2012
 CHECKED BY: JO DATE: 4/1/2012

ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. CP 12-12-20

CONSTRUCTION PLAN
 STA 38+00 TO 61+52
 Sheet 19 of 28 Sheets

PERMANENT PAVEMENT MARKING PLAN
NOTES AND GUIDELINES

GENERAL INFORMATION:

THE ENGINEER'S INVOLVEMENT IN THE APPLICATION OF THE MATERIAL SHALL BE LIMITED TO FIELD CONSULTATION AND INSPECTION. ANOKA COUNTY HIGHWAY DEPARTMENT WILL PLACE NECESSARY "SPOTTING" AT APPROPRIATE POINTS TO PROVIDE HORIZONTAL CONTROL FOR STRIPING AND TO DETERMINE NECESSARY STARTING AND CUTOFF POINTS, LONGITUDINAL JOINTS, PAVEMENT EDGES AND EXISTING MARKINGS MAY SERVE AS HORIZONTAL CONTROL WHEN SO DIRECTED.

EDGE LINES AND LANE LINES ARE TO BE BROKEN ONLY AT INTERSECTIONS WITH PUBLIC ROADS AND AT PRIVATE ENTRANCES IF THEY ARE CONTROLLED BY A YIELD SIGN, STOP SIGN OR TRAFFIC SIGNAL. THE BREAK POINT IS TO BE AT THE START OF THE RADIUS FOR THE INTERSECTION OR AT MARKED STOP LINES OR CROSSWALKS.

A TOLERANCE OF 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.

EPOXY:

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 EPOXY PAVEMENT MARKINGS.

THE EPOXY MARKING APPLICATION SHALL IMMEDIATELY FOLLOW THE PAVEMENT CLEANING. GLASS BEANS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE EPOXY RESIN LINE TO PROVIDE AN IMMEDIATE NO-TRACK SYSTEM.

AN EPOXY RESIN LINE 4" WIDE AND 15 MILL THICKNESS (WET), REQUIRES AN APPLICATION RATE OF ONE (1) GALLON OF COMPONENTS FOR 320 FEET OF LINE. GLASS BEANS SHALL BE APPLIED AT A POUND PER GALLON RATE SUFFICIENT TO ACHIEVE AN ACCEPTABLE NO-TRACK SYSTEM.

OPERATIONS SHALL BE CONDUCTED ONLY WHEN THE ROAD PAVEMENT SURFACE TEMPERATURES ARE 50 DEGREES FAHRENHEIT OR GREATER.

PERMANENT PAVEMENT MARKINGS SHALL NOT BE PLACED OVER TEMPORARY TAPE MARKINGS.

PREFORMED THERMOPLASTIC:

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

PAINT:

AT THE TIME OF APPLYING THE MARKING MATERIAL, THE APPLICATION AREA SHALL BE FREE OF CONTAMINATION. THE CONTRACTOR SHALL CLEAN THE ROADWAY SURFACE PRIOR TO THE LINE APPLICATION IN A MANNER AND TO THE EXTENT REQUIRED BY THE ENGINEER.

GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE PAINT LINE.

EXCEPT WHEN USED AS A TEMPORARY MARKING, PAVEMENT MARKINGS SHALL ONLY BE APPLIED IN SEASONABLE WEATHER WHEN AIR TEMPERATURE IS 50 DEGREES FARHENHEIT OR HIGHER AND SHALL NOT BE APPLIED WHEN THE WIND OR OTHER CONDITIONS CAUSE A FILD OR DUST TO BE DEPOSITED ON THE PAVEMENT SURFACE AFTER CLEANING AND BEFORE THE MARKING MATERIAL CAN BE APPLIED.

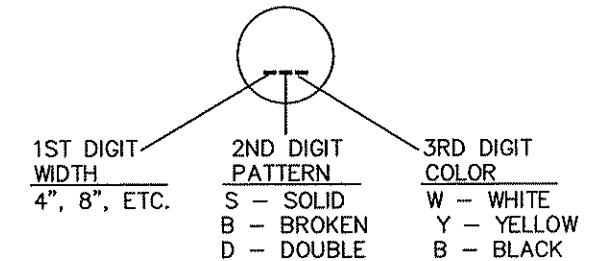
THE FILLING OF TANKS, POURING OF MATERIALS OR CLEANING OF EQUIPMENT SHALL NOT BE PERFORMED ON UNPROTECTED PAVEMENT SURFACES UNLESS ADEQUATE PROVISIONS ARE MADE TO PREVENT SPILLAGE OF MATERIAL.

SYMBOLS & MATERIALS LEGEND

- CROSSWALK BLOCK WHITE PREFORMED THERMOPLASTIC
- ← PAVEMENT MESSAGE (LEFT ARROW) PREFORMED THERMOPLASTIC


STRIPING KEY

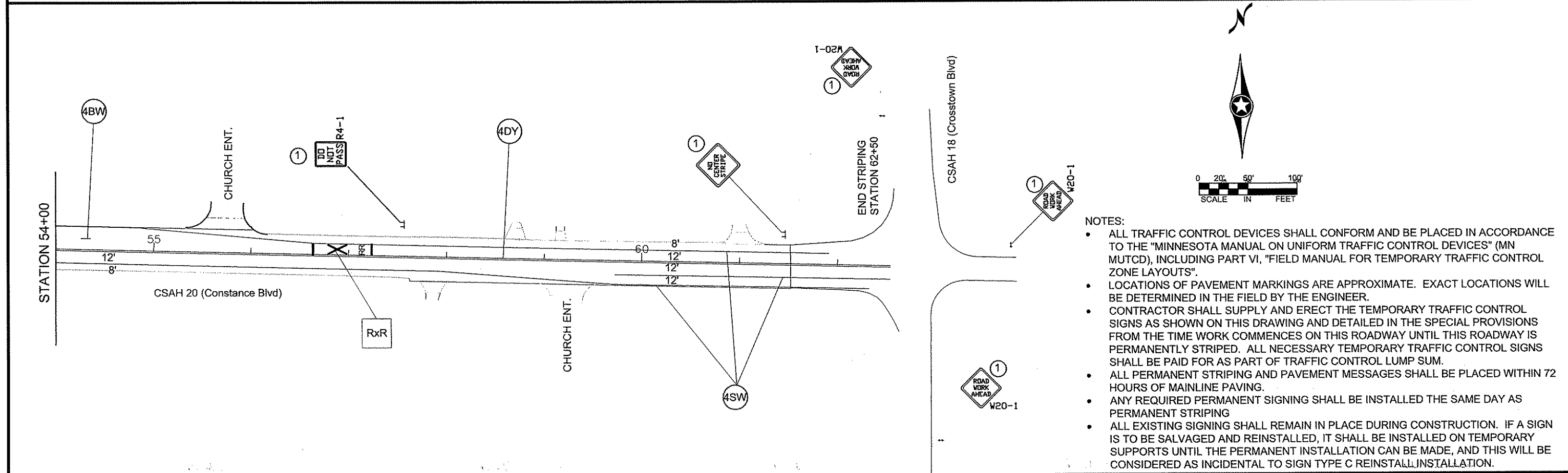
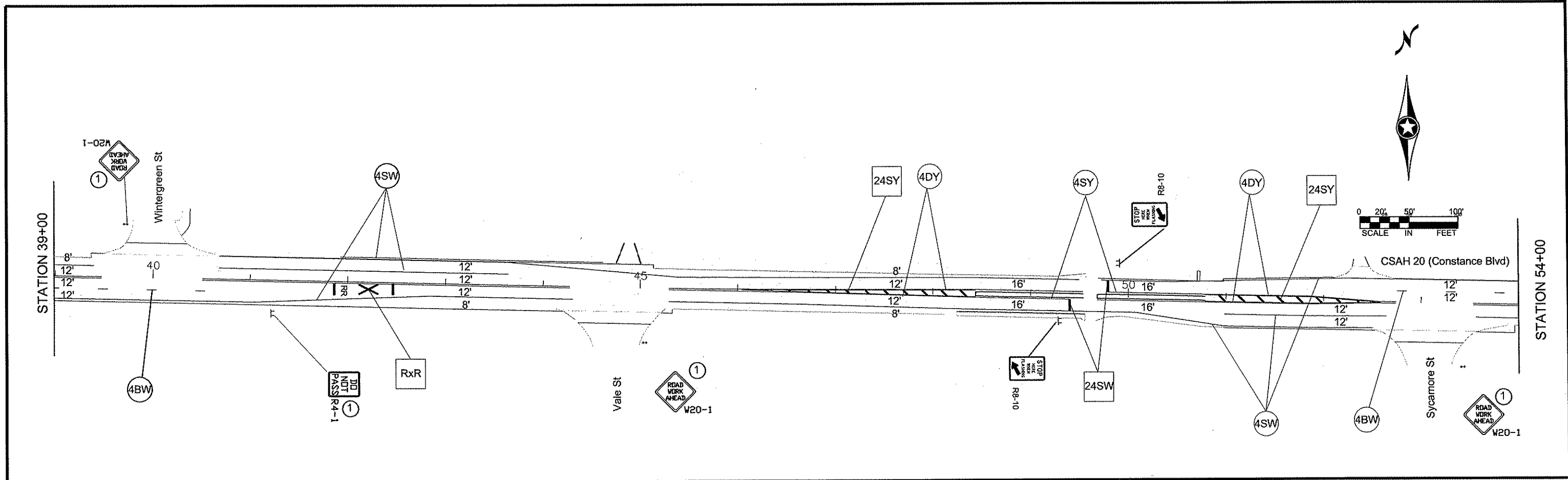
- CIRCLE - EPOXY
- SQUARE PREFORMED THERMOPLASTIC
- △ TRIANGLE - PAINT
- ◻ R x R PREFORMED THERMOPLASTIC
- ⬠ PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING



EXAMPLE: (4SW) = 4" SOLID LINE WHITE - EPOXY

PAVEMENT MARKING QUANTITIES		
Item	Quantity	Units
4" Double Solid Line Yellow - Epoxy	6033	Lin Ft
4" Solid Line Yellow - Epoxy	400	Lin Ft
4" Solid Line White - Epoxy	11578	Lin Ft
4" Broken Line White - Epoxy (10 ft stripe / 40 ft gap)	120	Lin Ft
24" Yellow Pref Thermoplastic	497	Lin Ft
24" White Pref Thermoplastic	24	Lin Ft
Pvmt Mssg (Rt Arrow) Pref Thermoplastic	2	Each
Pvmt Mssg (Lt Arrow) Pref Thermoplastic	3	Each
Pvmt Mssg (Thru/Rt Arrow) Pref Thermoplastic	2	Each
Pavt Mssg (RR XING) Pref Thermoplastic	2	Each

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: CHARLES CADENHEAD SIGNATURE: <i>[Signature]</i> DATE: 3/2/12 LICENSE NO. 40416					DRAWN BY: MTH DATE 12/01/2011 DESIGN BY: MTH DATE 12/01/2011 CHECKED BY: JR DATE 2/14/2014	 ANOKA COUNTY HIGHWAY DEPT.	STATE PROJECT NO. _____ STATE AID PROJECT NO. _____ STATE AID PROJECT NO. _____ COUNTY PROJECT NO. 12-12-20	PERMANENT MARKING TABULATION Sheet 20 of 28 Sheets								
<table border="1"> <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>	NO	DATE	BY	CKD	APPR	REVISION							NAME: P:\12-01-00\CSAH 20\base\PROPOSED\Perm pvmt mrkg guide notes_guidelines.dwg			
NO	DATE	BY	CKD	APPR	REVISION											



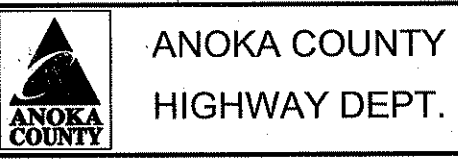
- NOTES:
- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
 - LOCATIONS OF PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
 - CONTRACTOR SHALL SUPPLY AND ERECT THE TEMPORARY TRAFFIC CONTROL SIGNS AS SHOWN ON THIS DRAWING AND DETAILED IN THE SPECIAL PROVISIONS FROM THE TIME WORK COMMENCES ON THIS ROADWAY UNTIL THIS ROADWAY IS PERMANENTLY STRIPED. ALL NECESSARY TEMPORARY TRAFFIC CONTROL SIGNS SHALL BE PAID FOR AS PART OF TRAFFIC CONTROL LUMP SUM.
 - ALL PERMANENT STRIPING AND PAVEMENT MESSAGES SHALL BE PLACED WITHIN 72 HOURS OF MAINLINE PAVING.
 - ANY REQUIRED PERMANENT SIGNING SHALL BE INSTALLED THE SAME DAY AS PERMANENT STRIPING
 - ALL EXISTING SIGNING SHALL REMAIN IN PLACE DURING CONSTRUCTION. IF A SIGN IS TO BE SALVAGED AND REINSTALLED, IT SHALL BE INSTALLED ON TEMPORARY SUPPORTS UNTIL THE PERMANENT INSTALLATION CAN BE MADE, AND THIS WILL BE CONSIDERED AS INCIDENTAL TO SIGN TYPE C REINSTALLATION.

NO	DATE	BY	CKD	APPR	REVISION

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

PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *Charles Cadenhead*
 DATE: 3/2/12 REG. NO. 40416

DRAWN BY: MTH DATE 1/12/2012
 DESIGN BY: MTH DATE 1/12/2012
 CHECKED BY: JR DATE 2/01/2012

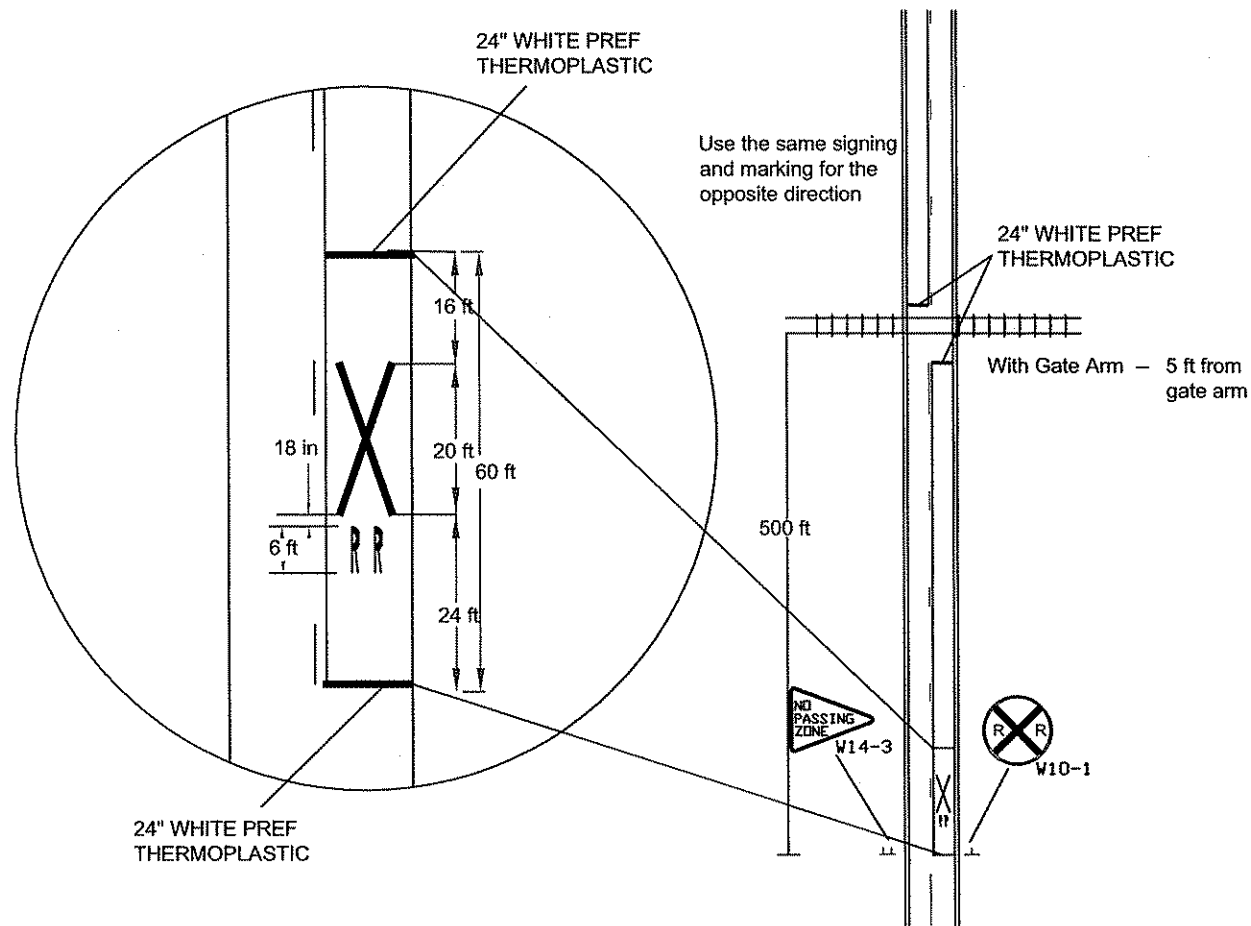


STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. 12-12-20

CSAH 20 (CONSTANCE BLVD)
 TEMPORARY SIGNING
 PERMANENT SIGNING, STRIPING AND PAVEMENT MESSAGES

Sheet 22 of 28 Sheets

RAILROAD CROSSING PAVEMENT MARKINGS



F & I PERMANENT SIGNS						
M.U.T.C.D. CODE	SIZE	PANEL AREA FT. ²	INSERT	QUANTITY	No. POST	MOUNTING HEIGHT TO PAVERMENT (EYES) FT.
R3-X1	30" x 30"	6.25	R3-X1	1	1	7.0'

TEMPORARY TRAFFIC CONTROL SIGNS						
M.U.T.C.D. CODE	SIZE	PANEL AREA FT. ²	INSERT	QUANTITY	No. POST	MOUNTING HEIGHT TO PAVERMENT (EYES) FT.
W8-12	48" x 48"	16.00	W8-12	2	2	7.0'
R4-1	24" x 30"	5.00	R4-1	5	1	7.0'
R4-2	24" x 30"	5.00	R4-2	0	1	7.0'
R8-10	24" x 36"	6.00	R8-10	2	1	7.0'
W8-1A	48" x 48"	16.00	W8-1A	AS NEEDED		
W8-1A	48" x 48"	16.00	W8-1A	AS NEEDED		
W8-8	48" x 48"	16.00	W8-8	AS NEEDED		
W8-11	48" x 48"	16.00	W8-11	AS NEEDED		
W8-11	48" x 48"	16.00	W20-1	AS NEEDED (ESTIMATED 13)		

SALVAGE AND RE-INSTALL PERM SIGNS				
STATION		SALVAGE SIGN TYPE C	INSTALL SIGN TYPE C	SIGN NUMBER
		EACH	EACH	
31+80	Lt			W1-7
31+80	Lt	1	1	X4-2
31+80	Lt			X4-2
33+50	Rt	1		W14-3
TOTAL		2	1	

—
X
H
—

PAVEMENT MESSAGE RR CROSSING PERFORMED THERMOPLASTIC

SPECIAL PROVISIONS

- TEMPORARY TRAFFIC CONTROL SIGN
- F & I PERMANENT SIGN
- SALVAGE PERMANENT SIGN
- RE-INSTALL PERMANENT SIGN

NOTES:

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NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH 20\base\PROPOSED\SIGNING AND STRIPING.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: CHARLES CABENHEAD

SIGNATURE: *Charles Cabenhead*

DATE: 12/12 REG. NO. 40416

DRAWN BY: MTH DATE 1/12/2012

DESIGN BY: MTH DATE 1/12/2012

CHECKED BY: JR DATE 2/01/2012



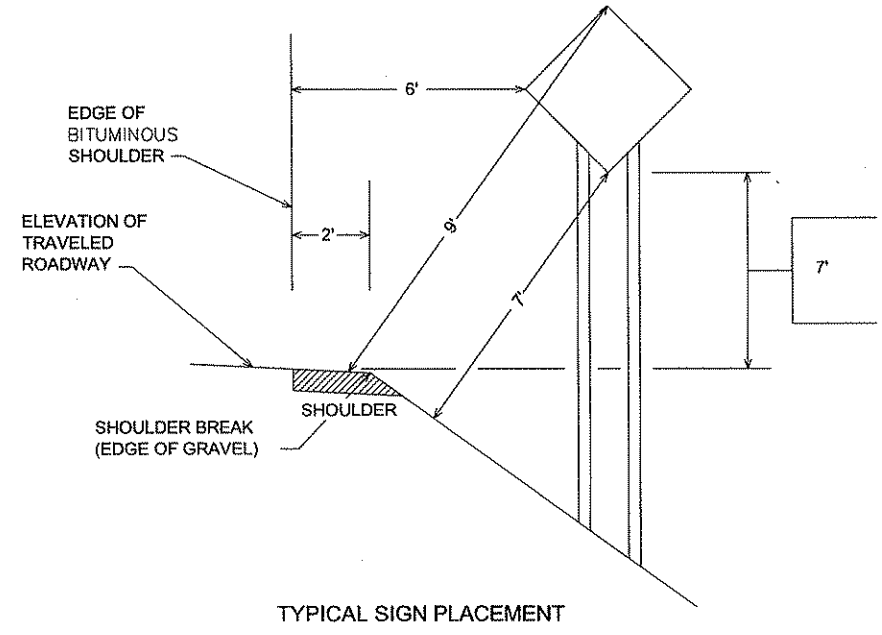
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STATE AID PROJECT NO. _____

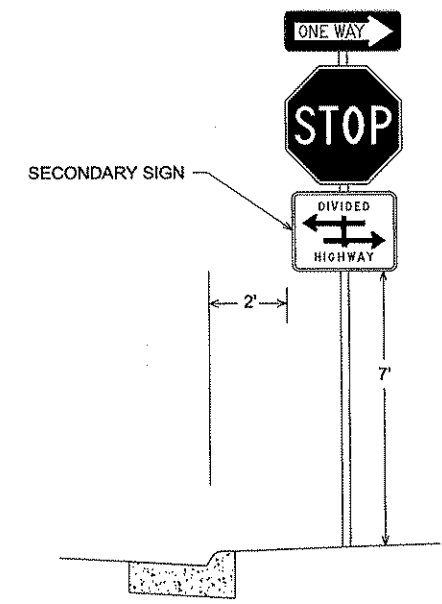
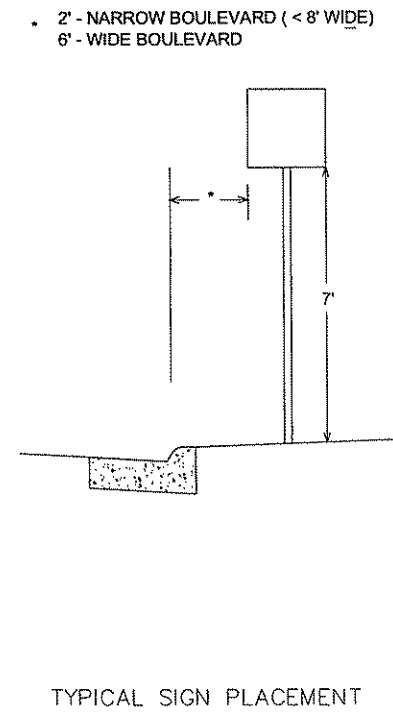
STATE AID PROJECT NO. _____

COUNTY PROJECT NO. 12-12-20

RURAL



URBAN



- NOTE:
- ALL DIMENSIONS ARE MINIMUMS
 - MAINTAIN 2' CLEAR FROM SIGNS TO BITUMINOUS TRAIL

NO	DATE	BY	CRD	APPR	REVISION

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PRINT NAME: CHARLES CADENHEAD

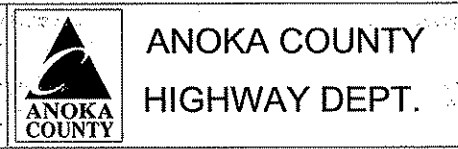
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DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY MTH DATE 1-21-11

DESIGN BY MTH DATE 1-21-11

CHECKED BY JR DATE 1-21-11



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STATE PROJECT NO. _____

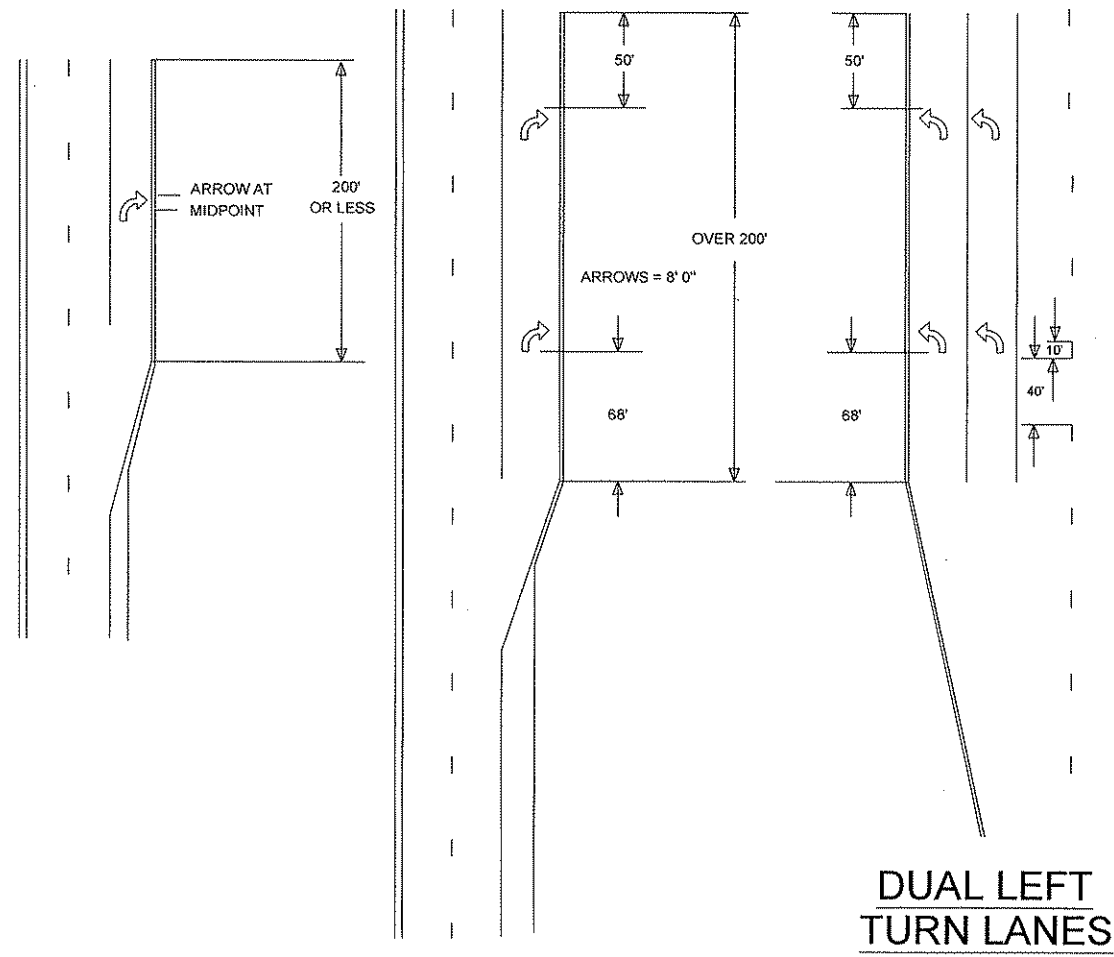
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COUNTY PROJECT NO. 12-12-20

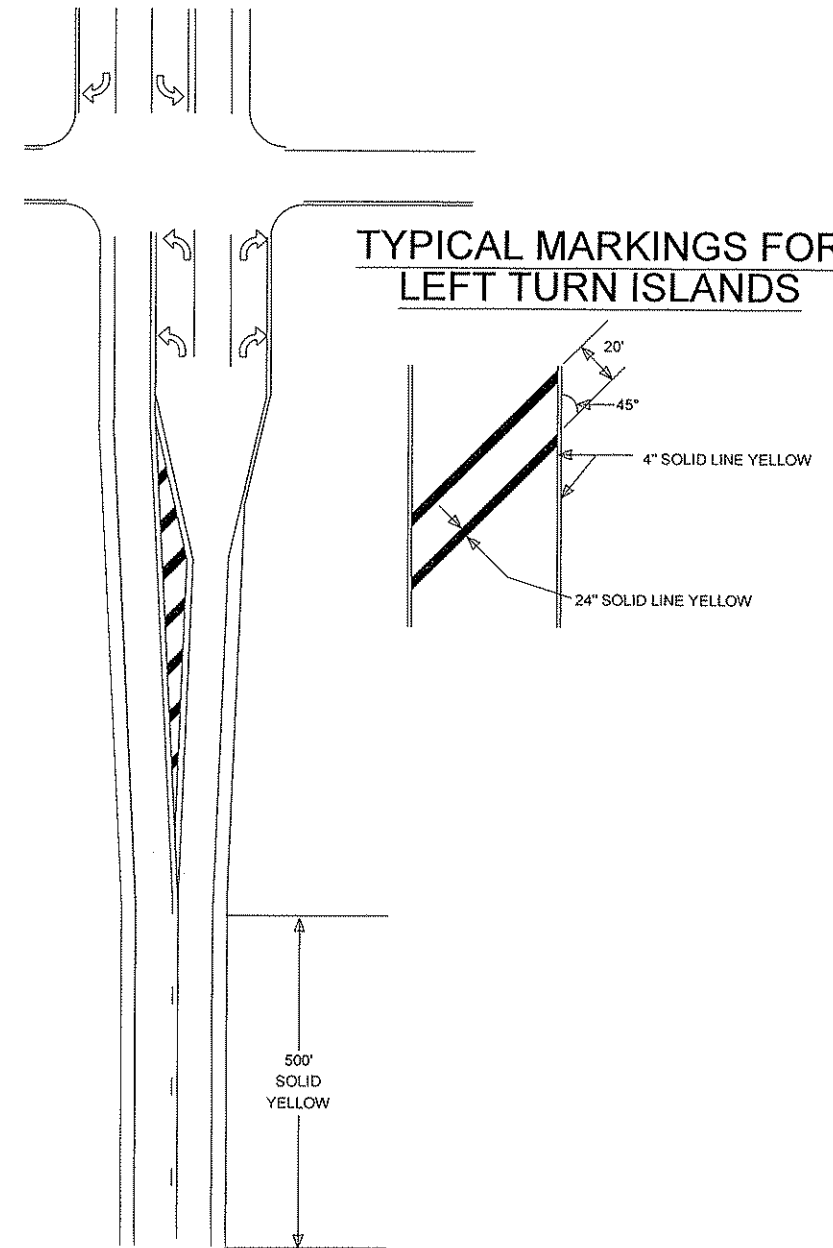
SIGNING & STRIPING DETAILS

Sheet 24 of 28 Sheets

**TYPICAL MESSAGE PLACEMENT
FOR TURN LANES**



**TYPICAL MARKINGS FOR
LEFT TURN ISLANDS**



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH 20\Bose\PROPOSED\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: CHARLES CADENHEAD

SIGNATURE: *Charles Cadenhead*

DATE: 3/2/12 LICENSE NO. 80416

DRAWN BY MTH DATE 1-21-11

DESIGN BY MTH DATE 1-21-11

CHECKED BY JR DATE 1-21-11



**ANOKA COUNTY
HIGHWAY DEPT.**

STATE PROJECT NO. _____

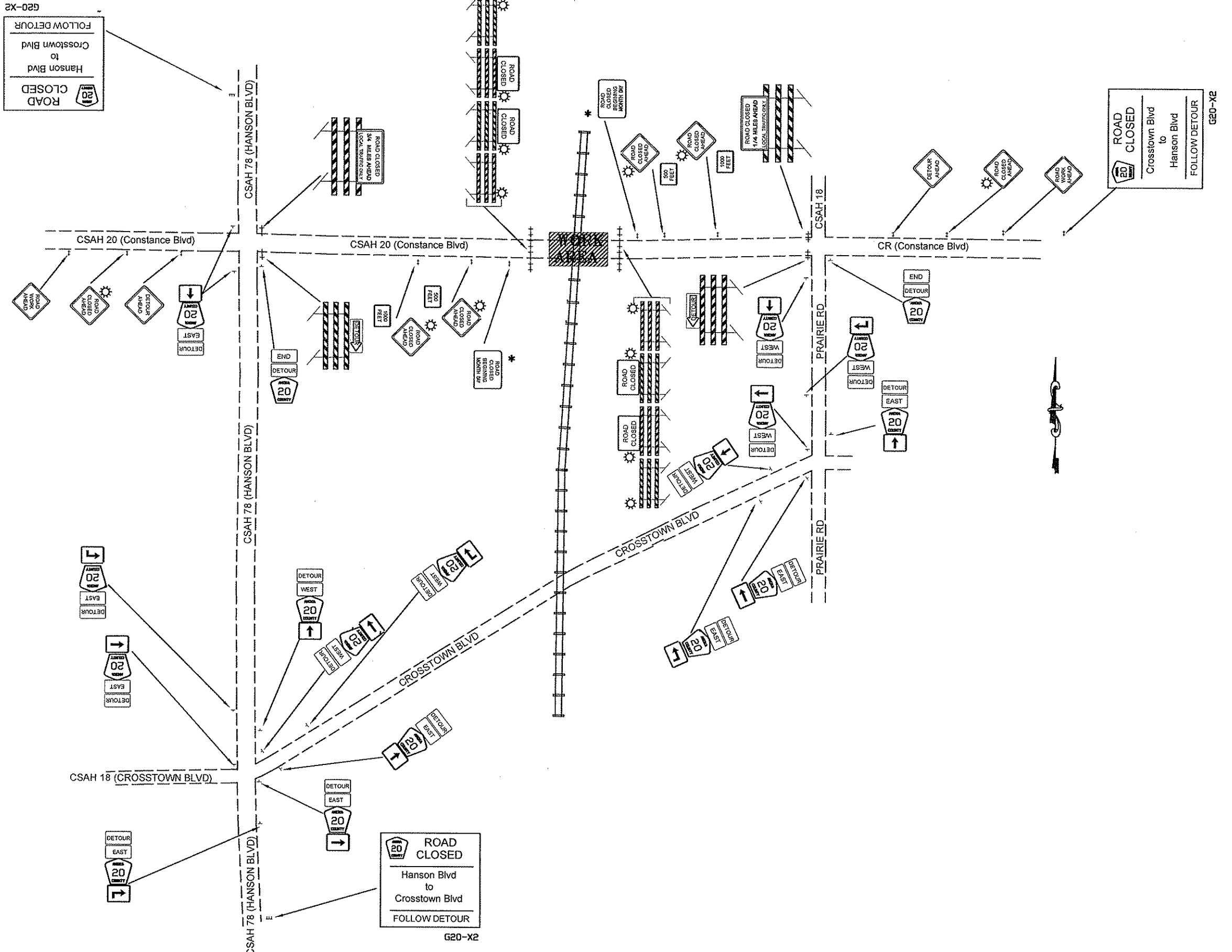
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STATE PROJECT NO. _____

COUNTY PROJECT NO. 12-12-20

SIGNING & STRIPING DETAILS

Sheet 25 of 28 Sheets



NO	DATE	BY	CKD	APPR	REVISION

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PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 2/1/12 REG. NO. 40416

DRAWN BY: RB DATE: 1/13/12
 DESIGN BY: RB DATE: 1/13/12
 CHECKED BY: JR DATE: 2/14/12

ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. 12-12-20

CSAH 20 (Constance Blvd)
 DETOUR
 Sheet 26 of 28 Sheets

M.U.T.C.D. CODE	SIZE	INSERT	QTY.
FLASHER			• 4
R11-2	48"x48"		• 2
M4-10L	48"x18"		• 1
TYPE III	8 FT.		• 5
FLASHER			• 4
R11-2	48"x48"		• 2
M4-10L	48"x18"		• 1
TYPE III	8 FT.		• 5
R11-3	60"x30"		• 1
TYPE III	8 FT.		• 1
R11-3	60"x30"		• 1
TYPE III	8 FT.		• 1
G20-X2	132"x108"		• 2
G20-X2	132"x108"		• 1

M.U.T.C.D. CODE	SIZE	INSERT	QTY.
W20-2	48"x48"		• 2
W20-2	48"x48"		• 2
FLASHER			• 6
W20-3	48"x48"		• 6
W20-100P	24"x18"		• 2
W20-100P	24"x18"		• 2
M4-8	24"x12"		• 1
M3-4	24"x12"		• 0
M1-6	24"x24"		• 2
	21"x15"		• 0
			• 2
			• 3
M4-8	24"x12"		• 1
M3-2	24"x12"		• 2
M1-6	24"x24"		• 1
	21"x15"		• 2
			• 1
			• 3
G20-X1	72"x60"		• 2

* SIGN TO BE INSTALLED A MINIMUM OF SEVEN DAYS PRIOR TO ACTUAL CLOSING DATE OF ROAD CLOSURE AND IMPLEMENTATION OF DETOUR SIGNING. SIGNS TO BE REMOVED AT TIME OF DETOUR INSTALLATION.

STANDARD TRAFFIC CONTROL NOTES:

1. ALL TYPE III BARRICADES SHALL BE REFLECTORIZED ON BOTH SIDES. BARRICADE MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH M.U.T.C.D.
2. 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 FEBRUARY, 2011

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH 20\Bases\PROPOSED\detour.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: CHARLES CADENHEAD
SIGNATURE:
DATE: 1/13/12 REG. NO. 40416


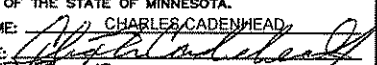
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CHECKED BY: JR DATE 2/14/12



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
STATE AID PROJECT NO. _____
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. 12-12-20

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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 REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.		DRAWN BY <u>RB</u> DATE <u>1/13/12</u>		 ANOKA COUNTY	STATE PROJECT NO. _____		CSAH 20 (Constance Blvd)	
						PRINT NAME: <u>CHARLES CADENHEAD</u>		DESIGN BY <u>RB</u> DATE <u>1/13/12</u>			STATE AID PROJECT NO. _____		DETOUR	
						SIGNATURE: 		CHECKED BY <u>JR</u> DATE <u>2/14/12</u>		STATE AID PROJECT NO. _____				
						DATE: <u>1/12</u> REG. NO. <u>40416</u>				COUNTY PROJECT NO. <u>12-12-20</u>		Sheet <u>28</u> of <u>28</u> Sheets		
NO	DATE	BY	CKD	APPR	REVISION	NAME: P:\12-01-00\CSAH 20\Bases\PROPOSED\detour.dwg								

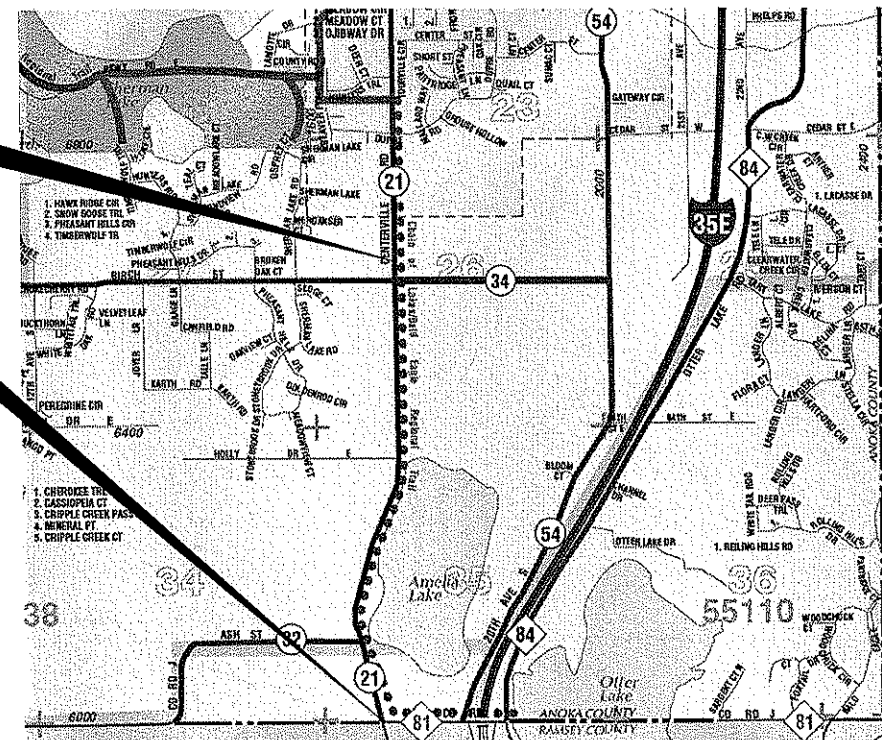
MINNESOTA DEPARTMENT OF TRANSPORTATION

ANOKA COUNTY

CONSTRUCTION PLAN FOR RECLAIM BITUMINOUS SURFACING & OVERLAY
 LOCATED ON C.S.A.H. 21 BETWEEN SOUTH ASH ST. (COUNTY ROAD J) AND 500' NORTH OF BIRCH ST. (C.S.A.H. 34)

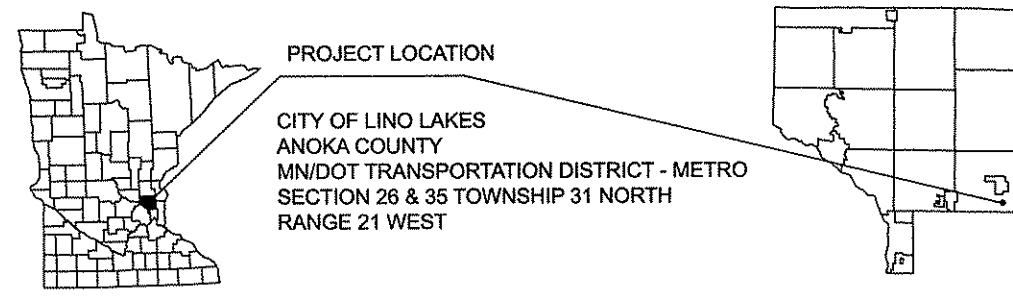
COUNTY PROJ. NO. 12-13-21
C.S.A.H. 21

GROSS LENGTH	8766 FEET	1.66 MILES
BRIDGES-LENGTH	0.00 FEET	0.000 MILES
EXCEPTIONS-LENGTH	0.00 FEET	0.000 MILES
NET LENGTH	8766 FEET	1.66 MILES



END COUNTY PROJECT 12-13-21
 C.S.A.H. 21 STA. 99+00

BEGIN COUNTY PROJECT 12-13-21
 C.S.A.H. 21 STA. 11+34



PLAN SYMBOLS

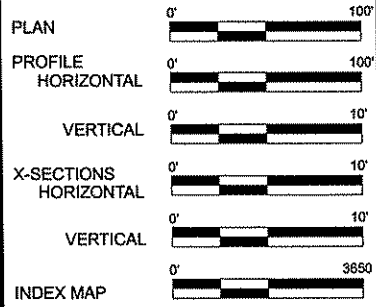
- COUNTY LINE
- TOWNSHIP OR RANGE LINE
- SECTION LINE
- QUARTER LINE
- SIXTEENTH LINE
- RIGHT OF WAY LINE
- SLOPE EASEMENT
- EXISTING RIGHT OF WAY
- PROPERTY LINE
- CORPORATE OR CITY LIMITS
- RETAINING WALL
- RAILROAD
- RAILROAD RIGHT OF WAY
- RIVER OR CREEK
- DRAINAGE DITCH
- CULVERT
- DROP INLET
- 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 Terminal)
- GAS MAIN
- WATERMAIN
- TELEPHONE CABLE IN CONDUIT
- ELECTRIC CABLE IN CONDUIT
- TELEPHONE MANHOLE
- ELECTRIC MANHOLE
- BURIED TELEPHONE CABLE
- BURIED ELECTRIC CABLE
- SEWER (Sanitary or Storm)
- SEWER MANHOLE

SCALES



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 PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS."

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	STATEMENT OF ESTIMATED QUANTITIES,
3-5	MISCELLANEOUS DETAILS
6-7	TYPICAL SECTIONS
8-11	CONSTRUCTION PLAN
12	PERMANENT MARKING TABULATION
13-16	TEMPORARY SIGNING, PERMANENT STRIPPING, PAVEMENT MESSAGES
17-18	SIGNING & STRIPING PLAN, TAB. & DETAILS

THIS PLAN CONTAINS 18 SHEETS
 DESIGN DESIGNATION

ESAL 20	NA
R VALUE	NA
ADT (2011) =	10412
Proj. ADT (2031) =	14576
Proj. HCADT (2031) =	14576
Soil Factor	NA
10 TON DESIGN	
Functional Classification	MAJOR COLLECTOR
No. of Traffic Lanes	2
No. of Parking Lanes	0
Design Speed	55 MPH
Based on Stopping Sight Distance	N/A
Height of eye	3.5'
Height of object	2.0'
Design Speed not achieved at:	_____
STA. _____ TO STA. _____	_____ MPH _____

Approved: 3/1/2012
 ANOKA COUNTY ENGINEER

NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_21_(CountyLine-CSAH14)\Plan1_Title.dgn 02/27/2012 1:23:01 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: CHARLES CADERHEAD
 SIGNATURE:
 DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY: CSO DATE: 1/9/2012
 DESIGN BY: CSO DATE: 1/9/2012
 CHECKED BY: JO DATE: _____

ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 12-13-21

TITLE SHEET

Sheet 1 of 18 Sheets

CSAH 21		STATEMENT OF ESTIMATED QUANTITIES		
ITEM NO.	ITEM	NOTES	UNIT	TOTAL EST. QUANT.
2011.601	CONSTRUCTION SURVEY		LUMP SUM	1
2021.501	MOBILIZATION		LUMP SUM	1
2104.501	REMOVE PIPE CULVERTS	15	LIN FT	108
2104.503	REMOVE CONCRETE DRIVEWAY PAVEMENT	11	SQ FT	615
2104.503	REMOVE BITUMINOUS DRIVEWAY PAVEMENT	11	SQ FT	8304
2104.511	SAWING CONCRETE PAVEMENT (FULL DEPTH)		LIN FT	35
2104.513	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)		LIN FT	364
2104.523	SALVAGE SIGN TYPE C		EACH	15
2104.523	SALVAGE SIGN TYPE D		EACH	1
2105.525	TOPSOIL BORROW (LV)	5	CU YD	187
2105.602	CONSTRUCT TURN LANE	12	EACH	3
2105.602	CONSTRUCT BY-PASS LANE	12	EACH	1
2123.503	MOTOR GRADER	13	HOUR	10
2130.501	WATER		M-GAL	84
2211.501	AGGREGATE BASE CLASS 5	10, 9	TON	125
2221.501	AGGREGATE SHOULDERING CLASS 5	14, 9	TON	1169
2232.501	MLL BITUMINOUS SURFACE (2.0")		SQ YD	123
2331.604	BITUMINOUS PAVEMENT RECLIMATION	2	SQ YD	25088
2357.502	BITUMINOUS MATERIAL FOR TACK COAT		GAL	1169
2360.501	TYPE SP 12.5 WEARING COURSE MIX (4,B)	1,11, 9	TON	106
2360.501	TYPE SP 12.5 WEARING COURSE MIXTURE(4,E)	16	TON	3191
2360.502	TYPE SP 12.5 NON-WEARING COURSE MIXTURE(4,B)		TON	3316
2501.515	18" CS PIPE APRON		EACH	2
2501.515	24" CS PIPE APRON		EACH	2
2503.603	18" HDPE PIPE SEWER		LIN FT	72
2503.603	24" HDPE PIPE SEWER		LIN FT	60
2531.507	6" CONCRETE DRIVEWAY PAVEMENT	11	SQ YD	68
2535.501	BITUMINOUS CURB (MODIFIED)	6,7	LIN FT	303
2540.602	INSTALL MAIL BOX SUPPORTS		EACH	14
2563.601	TRAFFIC CONTROL	3,4	LUMP SUM	1
2564.533	FURNISH SIGN PANNEL TYPE C		SQ FT	66
2564.536	INSTALL SIGN PANEL TYPE C		EACH	9
2564.536	INSTALL SIGN PANEL TYPE D		EACH	1
2575.523	EROSION CONTROL BLANKET, CATEGORY 3	5	SQ YD	600
2581.501	REMOVABLE PREFORMED PLASTIC MARKING	8	LIN FT	700
2582.502	4" SOLID LINE WHITE-EPOXY	9	LIN FT	18027
2582.502	4" SOLID LINE YELLOW - EPOXY	9	LIN FT	5671
2582.502	4" BROKEN YELLOW LINE-EPOXY	9	LIN FT	1130
2582.502	4" DOUBLE SOLID LINE YELLOW-EPOXY	9	LIN FT	3696

NOTES:

- 1 USED FOR PAVING DRIVEWAYS AND STREET APPROACHES
- 2 ITEM INCLUDES THE REMOVAL OF BITUMINOUS CURB
- 3 ALL TRAFFIC CONTROL DEVICES AND METHODS SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL
- 4 ROAD WORK AHEAD, DO NOT PASS, PASS WITH CARE, NO CENTERLINE STRIPE, BUMP AND BUMP AHEAD SIGNS TO BE IN PLACE AT THE START OF RECLAIM AND OVERLAY OPERATIONS
- 5 ITEM FOR AREA BEHIND BITUMINOUS CURB & FIX SLOPES IN LEFT TURN LANE AREA
- 6 SHALL BE INSTALLED WITH SAME OPERATION AS MAINLINE BITUMINOUS WEAR COURSE
- 7 BITUMINOUS TONS TO CREATE BIT CURB SHALL BE PAID UNDER 2360.501 WEARING COURSE MIX (4,E)
- 8 SHALL BE PLACED AFTER EACH DAYS PAVING OPERATION
- 9 SHALL BE INSTALLED WITHIN 72 HOURS OF COMPLETION OF MAINLINE WEAR COURSE PAVING
- 10 ITEM FOR GRAVEL ENTRANCES
- 11 CONTRACTORS RESPONSIBILITY TO CONTACT OWNER 48 HOURS BEFORE STARTING OPERATION
- 12 INCLUDES TIME AND MATERIAL TO CONSTRUCT ITEM. COMMON EXCAVATION, SELECT GRANULAR, AGGREGATE BASE CLASS 5, SILT FENCE, EROSION CONTROL BLANKET CATEGORY 3, SEED & DOZER / MOTOR GRADER TIME TO CONSTRUCT TURN (TAB F) NOTE -BITUMINOUS BASE AND WEAR COURSE IS NOT INCLUDED IN THIS ITEM
- 13 INCLUDES TIME TO REMOVE EXCESS RECLAIMED MATERIAL AT BEGINNING AND END OF RECLAIM AREAS TO MATCH EXISTING BITUMINOUS HEIGHT
- 14 MATERIAL FOR FINISHED GRAVEL SHOULDERS
- 15 INCLUDES APRON IN LENGTH
- 16 INCLUDES SAFTEY EDGE CONSTRUCTION

BASIS OF PLANNED QUANTITIES

ITEM NO.		
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	.05 GAL / SQ YD
2360.501	TYPE SP 12.5 WEARING COURSE MIX (4, E)	115/SQ.YD./IN THICKNESS
2361.502	TYPE SP 12.5 NON-WEARING COURSE MIX (4, B)	115/SQ.YD./IN THICKNESS
2211.501	AGGREGATE BASE CLASS 5	CU YDS * 1.8 = TONS
2221.501	AGGREGATE SHOULDERING CLASS 5	CU YDS * 1.8 = TONS
2581.501	REMOVABLE PREFORMED PLASTIC MARKING	2' AT 50' INTERVALS FOR SKIPS

NO	DATE	BY	CKD	APPR	REVISION

NAME: P112-01-001CSAH_21_(CountyLine-CSAH14)Plant2_SEQ.dgn 02/27/2012 1:32:33 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: CHARLES CADENHEAD

SIGNATURE: *[Signature]*

DATE: 2/27/12 LICENSE NO. 40416

DRAWN BY: CSO DATE: 1/9/2012

DESIGN BY: CSO DATE: 1/9/2012

CHECKED BY: JO DATE:



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____

STATE AID PROJECT NO. _____

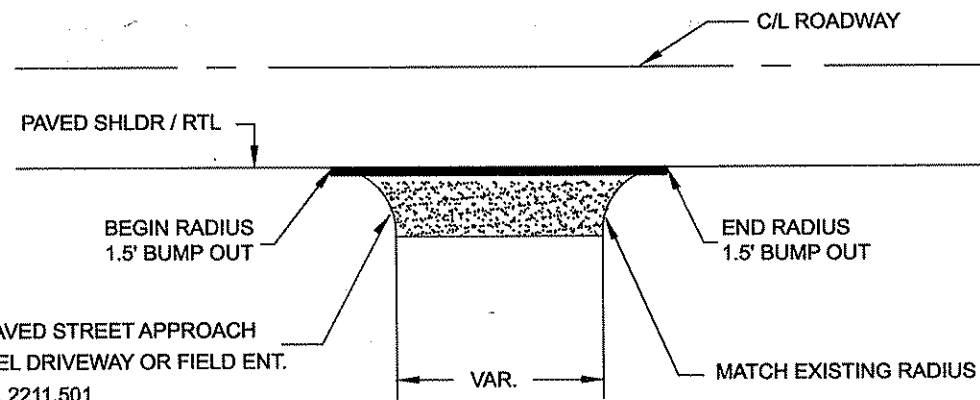
CITY PROJECT NO. _____

COUNTY PROJECT NO. 12-13-21

STATEMENT OF ESTIMATED QUANTITIES

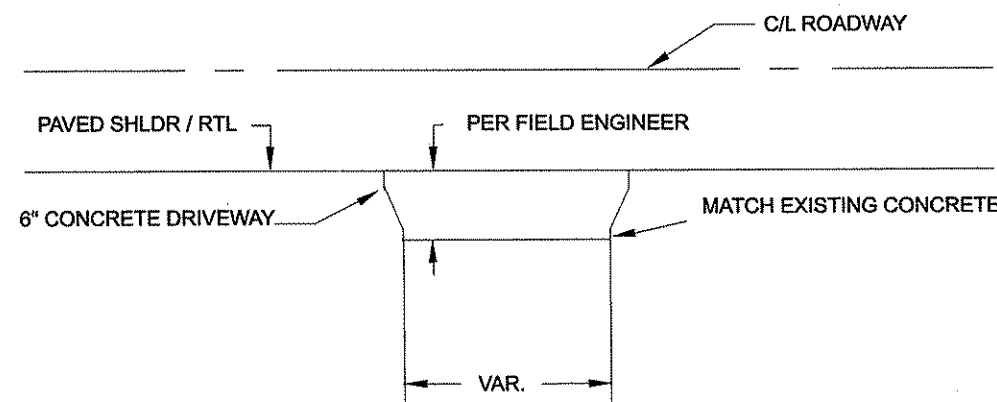
Sheet 2 of 18 Sheets

UNPAVED STREET APPROACHES, GRAVEL DRIVEWAYS AND FIELD ENT.



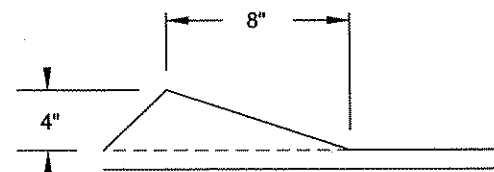
10 TON CL 5 PER UNPAVED STREET APPROACH
 5 TON CL 5 PER GRAVEL DRIVEWAY OR FIELD ENT.
 PAID FOR AS ITEM NO. 2211.501
 AGGREGATE BASE CL 5 (TON)

CONCRETE DRIVEWAYS

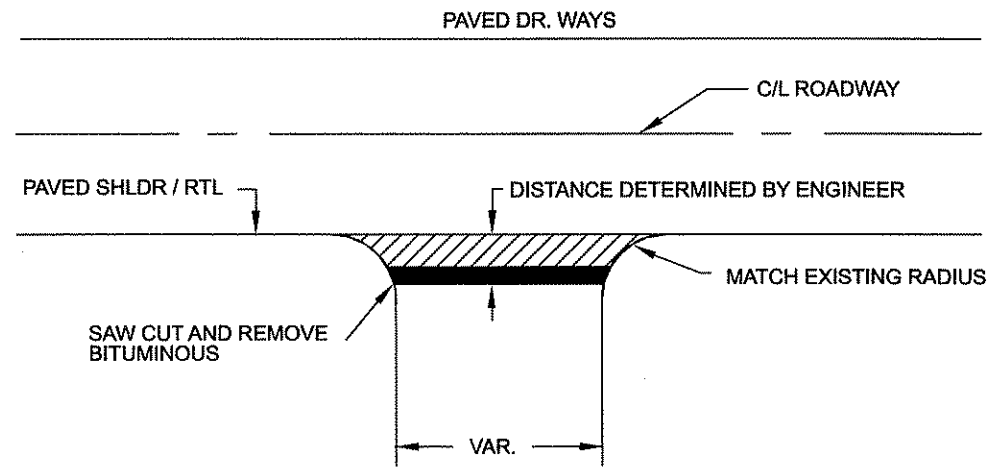


BITUMINOUS CURB

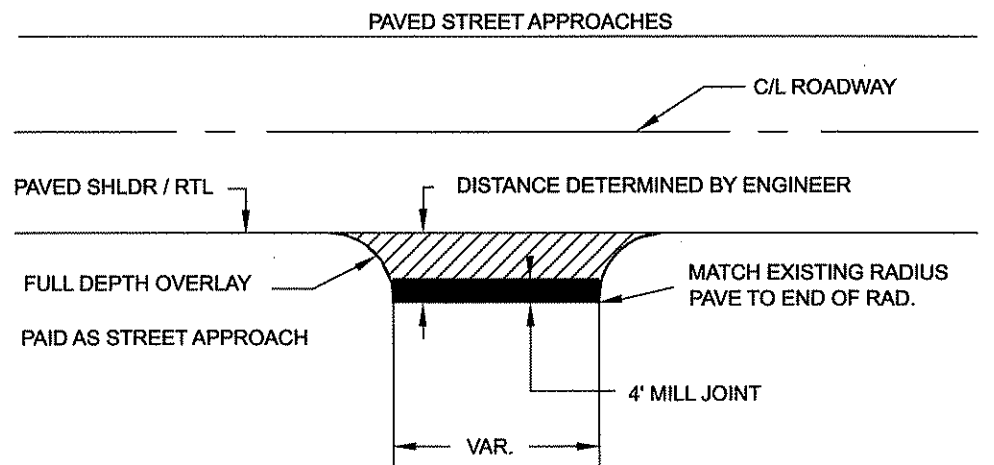
(PLACED DURING THE PAVING OF MAIN LINE WEAR COURSE)



EXISTING BITUMINOUS CURB (LIP) TO BE RECLAIMED WITH SHOULDER
 PROPOSED BITUMINOUS CURB (LIP) TO BE PAID UNDER ITEM NO. 2535.501



SAW CUT AND REMOVE BITUMINOUS



PAID AS STREET APPROACH

DRIVEWAYS TO BE PAVED IN SEPERATE OPERATION OTHER THAN MAINLINE WEAR.
 PAID AS STREET APPROACH WEAR

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_21_(CountyLine-CSAH14)\Plan3_Details.dgn 02/27/2012 1:34:19 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: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 LICENSE NO. #40416

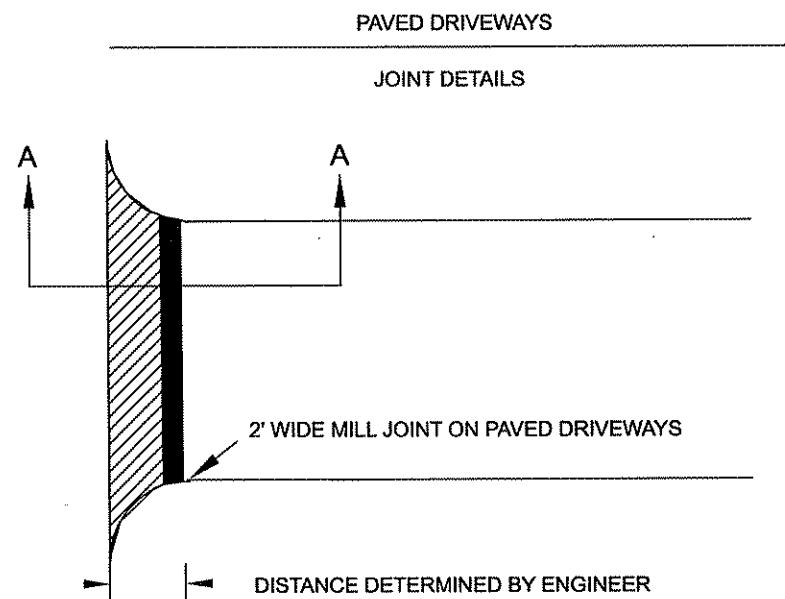
DRAWN BY CSO DATE 1/9/2012
 DESIGN BY CSO DATE 1/9/2012
 CHECKED BY JO DATE



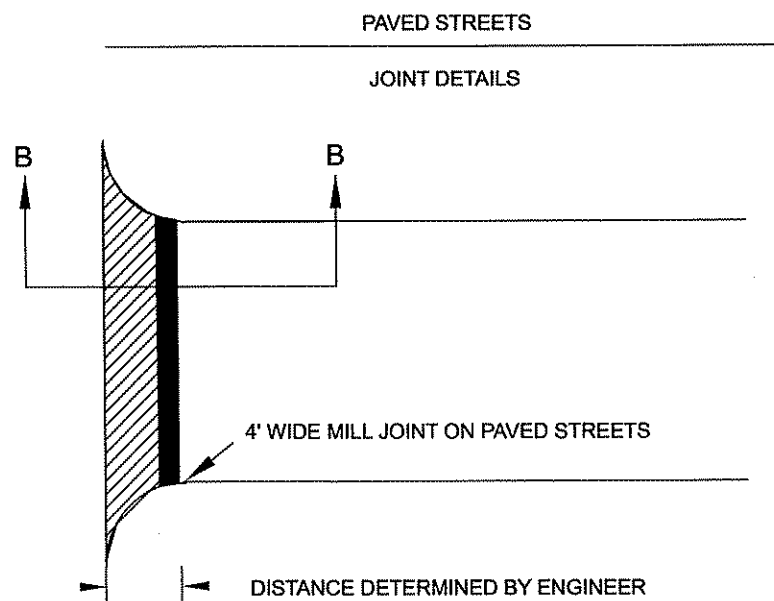
ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
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 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 12-13-21

MISCELLANEOUS DETAILS
 Sheet 3 of 18 Sheets



DRIVEWAYS TO BE PAVED IN SEPERATE OPERATION OTHER THAN MAINLINE WEAR.
PAID AS DRIVEWAY/STREET APPROACH WEAR



OVERLAY EXISTING STEET APPROACH, DO NOT RECLAIM
STREETS TO BE PAVED IN SEPERATE OPERATION OTHER THAN MAINLINE WEAR.
PAID AS DRIVEWAY/STREET APPROACH WEAR

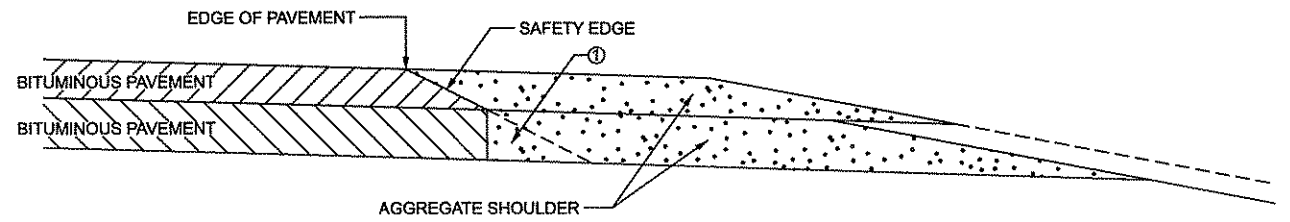
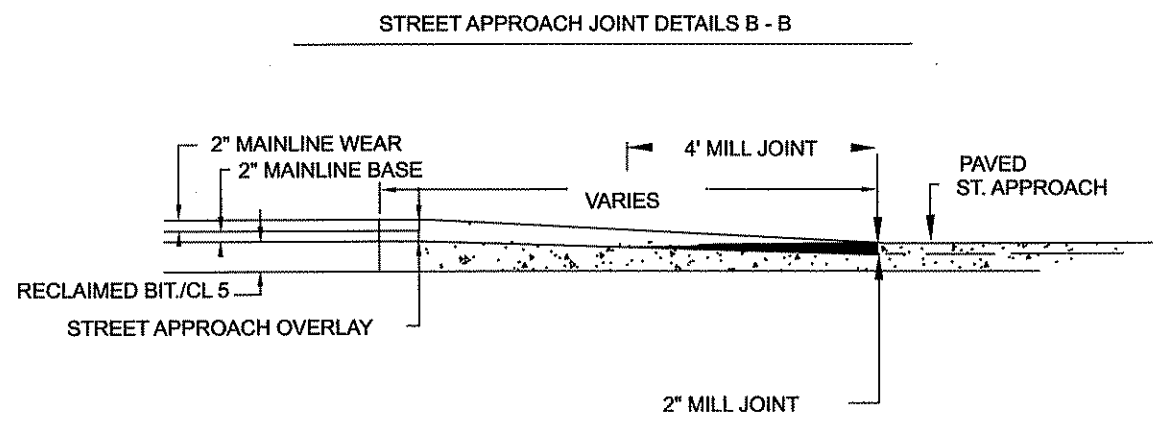
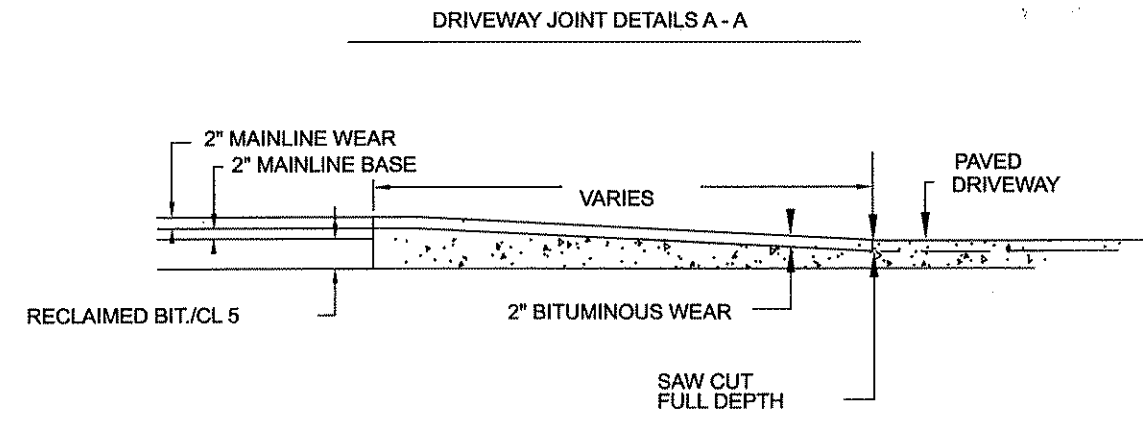


FIGURE B
BITUMINOUS PAVEMENT

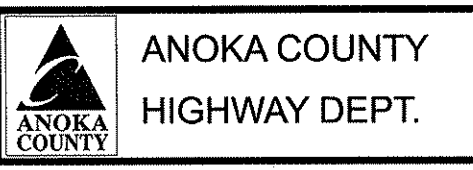
① OPTIONAL DESIGN EXTENDS SAFETY EDGE DEEPER THAN 6" AND WIDER THAN 10.5". SEE SPECAIL PROVISIONS FOR DETAILS.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_21_(CountyLine-CSAH14)\Plan3_Details.dgn 02/27/2012 1:34:24 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: CHARLES GADENHEAD
SIGNATURE: *[Signature]*
DATE: 3/2/12 LICENSE NO. #40416

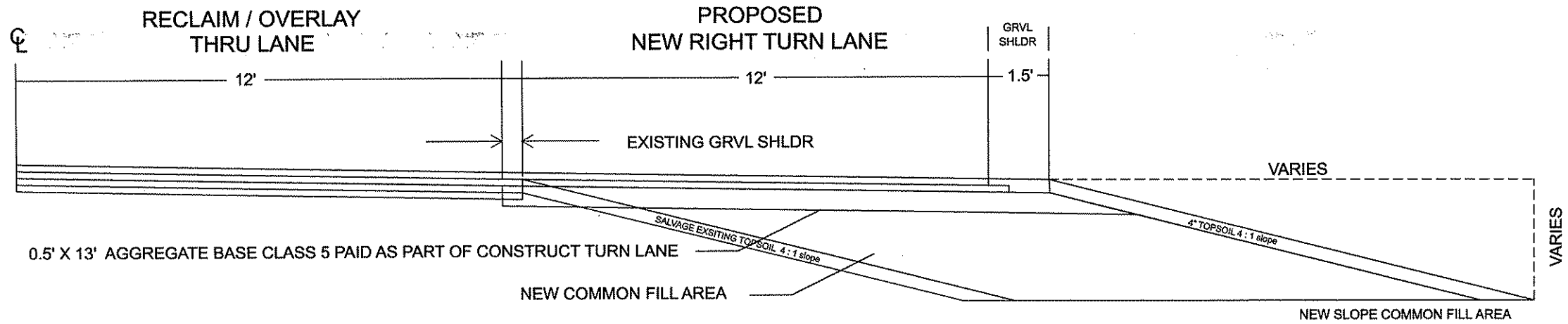
DRAWN BY CSO DATE 1/9/2012
DESIGN BY CSO DATE 1/9/2012
CHECKED BY JO DATE



STATE PROJECT NO. _____
STATE AID PROJECT NO. _____
CITY PROJECT NO. _____
COUNTY PROJECT NO. 12-13-21

MISCELLANEOUS DETAILS
Sheet 4 of 18 Sheets

R.T.L. LOCATIONS
 N.B. 21 @ CSAH 34
 N.B. 21 @ FUTURE PARK ENT (2)



* NOTE: CALC. BASED ON AVERAGE DITCH DEPTH ELEVATION & AVERAGE EXISTING EDGE OF BITUMINOUS ELEVATION

CURVE GRADES		
STATION	% LT OF CL	% RT OF CL
28+00	-1.0%	-4.0%
29+00	5.0%	-6.0%
30+00	5.5%	-6.0%
31+00	6.0%	-6.0%
32+00	2.5%	-6.0%
33+00	-1.5%	-3.0%
34+00	-2.0%	-2.0%

CURVE GRADES		
STATION	% LT OF CL	% RT OF CL
50+00	-2.0%	-2.0%
51+00	-2.0%	0.0%
52+00	-6.0%	2.5%
53+00	-6.0%	2.5%
54+00	-6.0%	3.5%
55+00	-6.0%	3.5%
56+00	-6.0%	3.5%
57+00	-6.0%	3.5%
58+00	-6.0%	3.0%
59+00	-6.0%	2.0%
60+00	-5.0%	2.0%
61+00	-2.5%	0.0%
62+00	-2.0%	-2.0%

RIGHT TURN LANE LOCATION	RIGHT TURN LANES CALCULATIONS										
	STATION	STATION	LENGTH	EXRTA WIDTH	COMMON EX		SELECT GRANULAR		CLASS 5 (CU YD)	SILT FENCE (LIN FT)	EROSION CONTROL BLANKET (SQ YD)
					DEPTH (FT)	VOLUME (CY)	DEPTH (FT)	VOLUME (CY)			
N.B. 21 @ CSAH 34	88+24	93+04	480	12	0.5	213	3.74	797	116	520	640
FUTURE PARK ENT	83+00	88+24	524	12	0.5	233	3.61	840	126	564	699
FUTURE PARK ENT	69+40	74+20	480	12	0.5	160	1.39	298	116	520	640

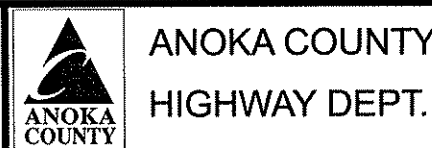
NOTE:
 DOZER, MOTOR GRADER, AND PNEMATIC-TIRED ROLLER ARE INCIDENTAL TO CONSTRUCTING RIGHT TURN LANES AND BY-PASS LANES
 SEEDING, SEED MIXTURE 240 AND FERTILIZER TYPE 3 ARE INCIDENTAL TO EROSION CONTROL BLANKET

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_21_(CountyLine-CSAH14)\Plan3_Details.dgn
 02/27/2012 1:34:32 PM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 LICENSE NO. #40416

DRAWN BY CSO DATE 1/9/2012
 DESIGN BY CSO DATE 1/9/2012
 CHECKED BY JO DATE

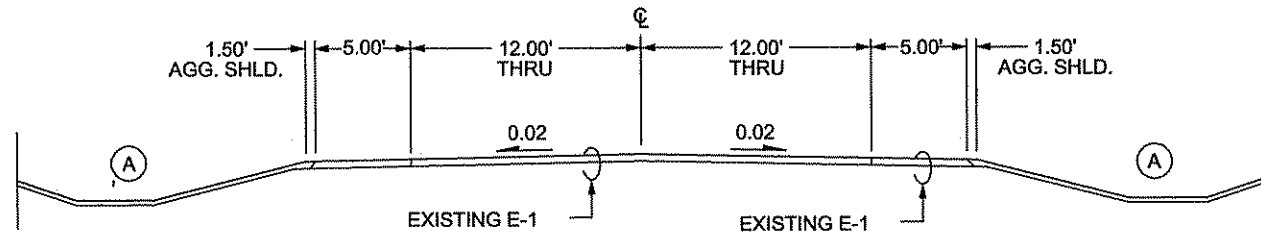


STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 12-13-21

MISCELLANEOUS DETAILS
 Sheet 5 of 18 Sheets

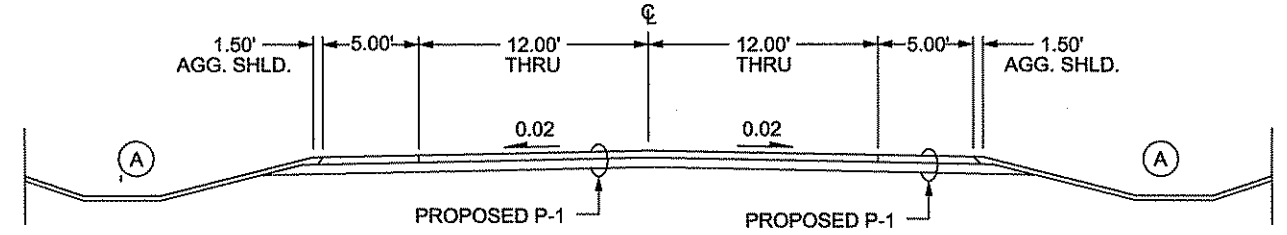
C.S.A.H. 21

EXISTING SECTION
STA. 11+34.00 - STA. 26+00.00



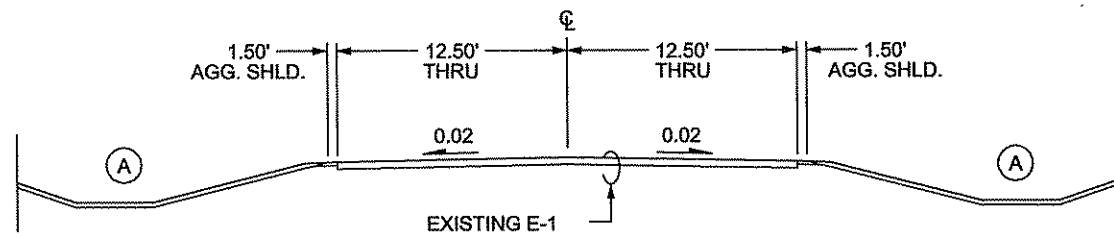
C.S.A.H. 21

PROPOSED SECTION
STA. 11+34.00 - STA. 21+87.00



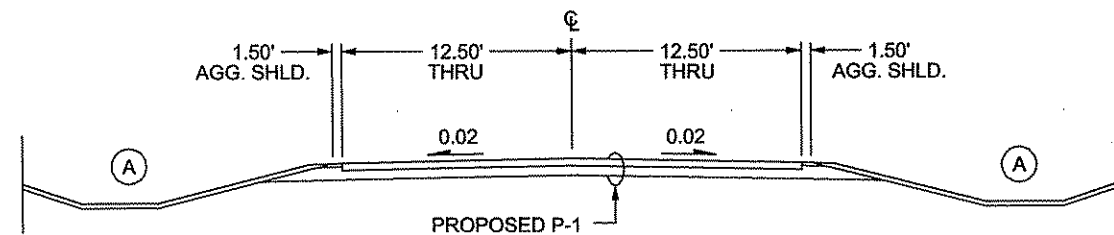
C.S.A.H. 21

EXISTING SECTION
STA. 26+00.00 - STA. 99+00.00

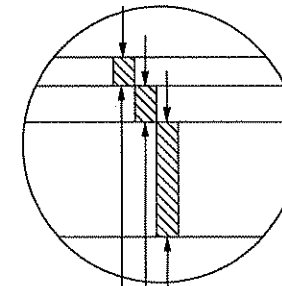


C.S.A.H. 21

PROPOSED SECTION
STA. 28+00.00 - STA. 99+0.00

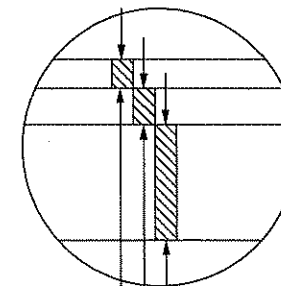


DESIGN "P-1" MAINLINE
PAVEMENT DESIGN



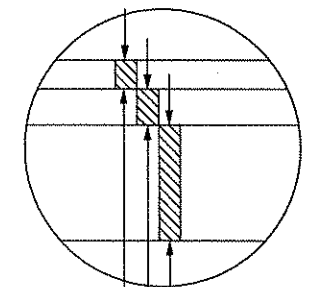
2" BITUMINOUS WEAR (SPWEB440E)
2.0" BITUMINOUS NON-WEAR (SPNWB430B)
RECLAIM AGGREGATE BASE, CLASS 5

EXISTING "E-1" MAINLINE
PAVEMENT



3-5" BITUMINOUS
3" AGGREGATE BASE
BITUMINOUS SAND

DESIGN "P-2" MAINLINE
PAVEMENT DESIGN



2" BITUMINOUS WEAR (SPWEB440E)
2.0" BITUMINOUS NON-WEAR (SPNWB430B)
6" AGGREGATE BASE, CLASS 5
(INCLUDED IN BID PRICE FOR CONSTRUCT TURN LANE)

NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\12-01-00\CSAH_21 (CountyLine-CSAH14)\Plan4_TS.dgn					
02/27/2012 1:35:12 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: CHARLES CADENHEAD
SIGNATURE: *[Signature]*
DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY: CSO DATE: 1/9/2012
DESIGN BY: CSO DATE: 1/9/2012
CHECKED BY: JO DATE:

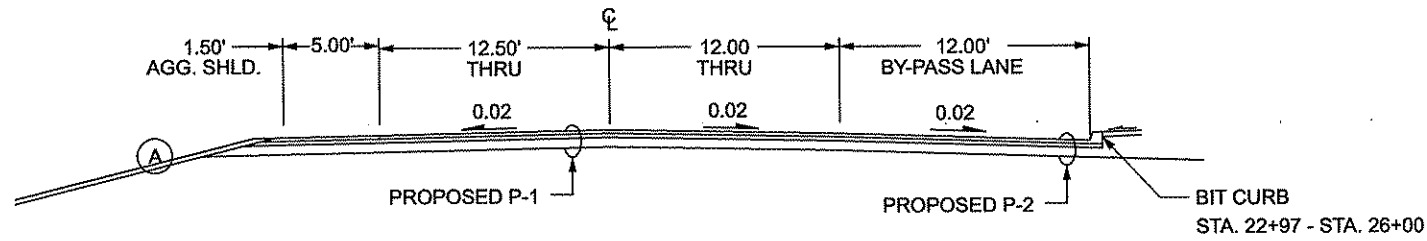


ANOKA COUNTY
HIGHWAY DEPT.

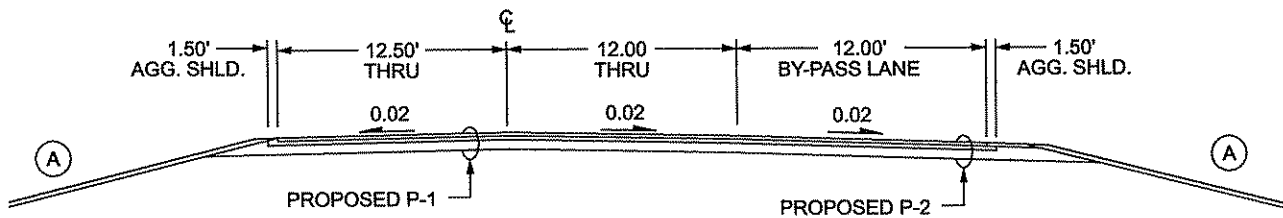
STATE PROJECT NO. _____
STATE AID PROJECT NO. _____
CITY PROJECT NO. _____
COUNTY PROJECT NO. 12-13-21

TYPICAL SECTIONS
Sheet 6 of 18 Sheets

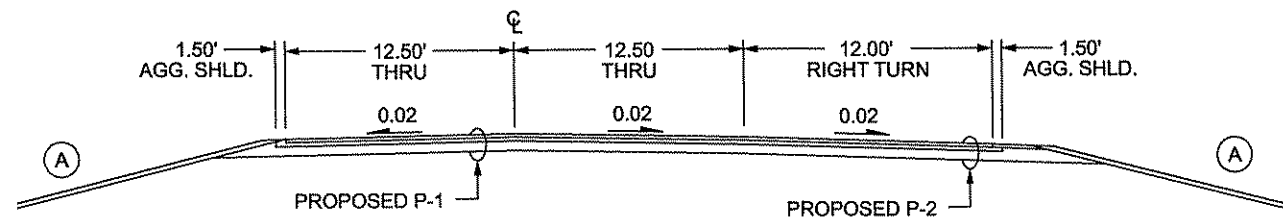
C.S.A.H. 21
PROPOSED BY-PASS LANE W/ BIT CURB
N.B. @ STA. 21+87 - STA. 26+00



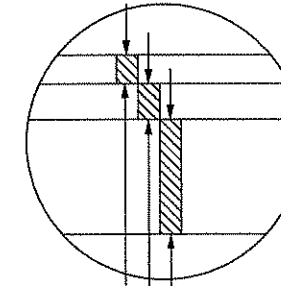
C.S.A.H. 21
PROPOSED BY-PASS LANE W/O BIT CURB
N.B. @ STA. 26+00 - STA. 28+07



C.S.A.H. 21
PROPOSED RIGHT TURN LANE
N.B. @ STA. 69+40 - STA. 74+20
N.B. @ STA. 83+00 - STA. 88+24
N.B. @ STA. 88+24 - STA. 93+04

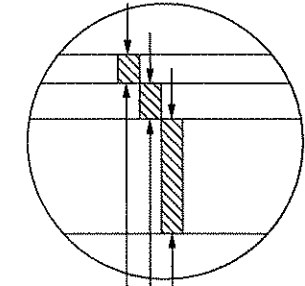


DESIGN "P-1" MAINLINE PAVEMENT DESIGN



2" BITUMINOUS WEAR (SPWEB440E)
 2.0" BITUMINOUS NON-WEAR (SPNWB430B)
 RECLAIM AGGREGATE BASE, CLASS 5

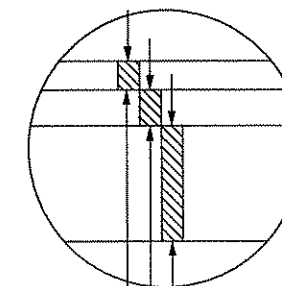
DESIGN "P-2" MAINLINE PAVEMENT DESIGN



2" BITUMINOUS WEAR (SPWEB440E)
 2.0" BITUMINOUS NON-WEAR (SPNWB430B)
 6" AGGREGATE BASE, CLASS 5

(INCLUDED IN BID PRICE FOR CONSTRUCT TURN LANE)

EXISTING "E-1" MAINLINE PAVEMENT



3-5" BITUMINOUS
 3" AGGREGATE BASE
 BITUMINOUS SAND

SPECIFIC NOTES:

- (A) DITCH SLOPES VARY 1:1 - 6:1
- DITCH DEPTH VARIES 1.0' - 5.0'
- DITCH WIDTH VARIES 0.0' - 10.0'

GENERAL NOTES:

- ALL CROSS SLOPES ARE EXPRESSED IN FT / FT

NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_21_County\Line-CSAH14\Plan4_TS.dgn
 02/27/2012 1:35:15 PM

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

PRINT NAME: CHARLES CAPENHEAD
 SIGNATURE: *[Signature]*
 DATE: 2/27/12 LICENSE NO. 40416

DRAWN BY: CSO DATE: 1/9/2012
 DESIGN BY: CSO DATE: 1/9/2012
 CHECKED BY: JO DATE: _____

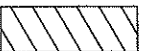
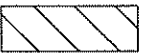
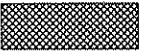
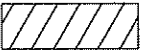

ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 12-13-21

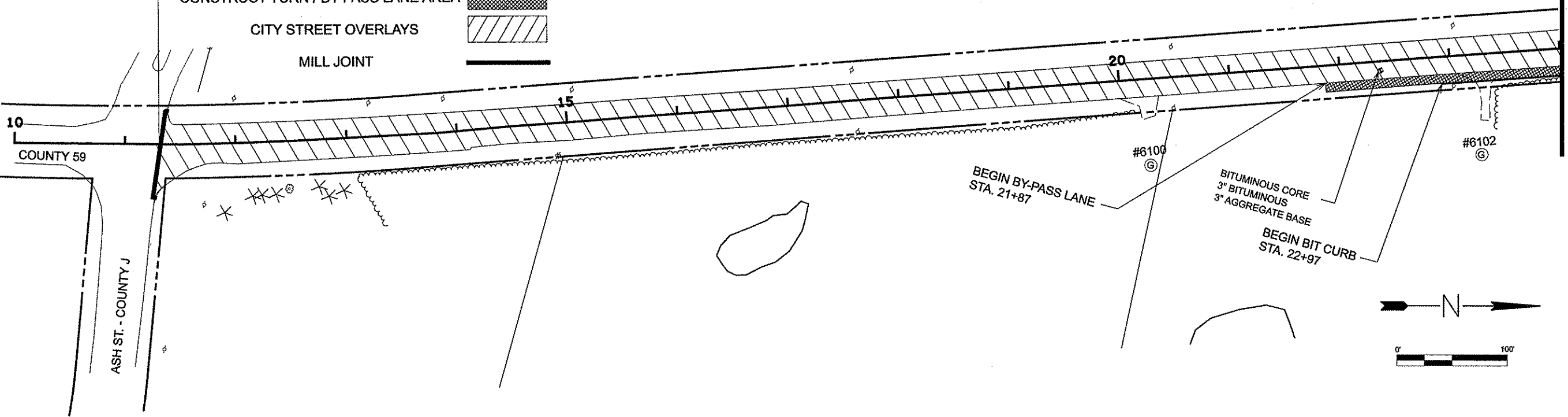
TYPICAL SECTIONS

Sheet 7 of 18 Sheets

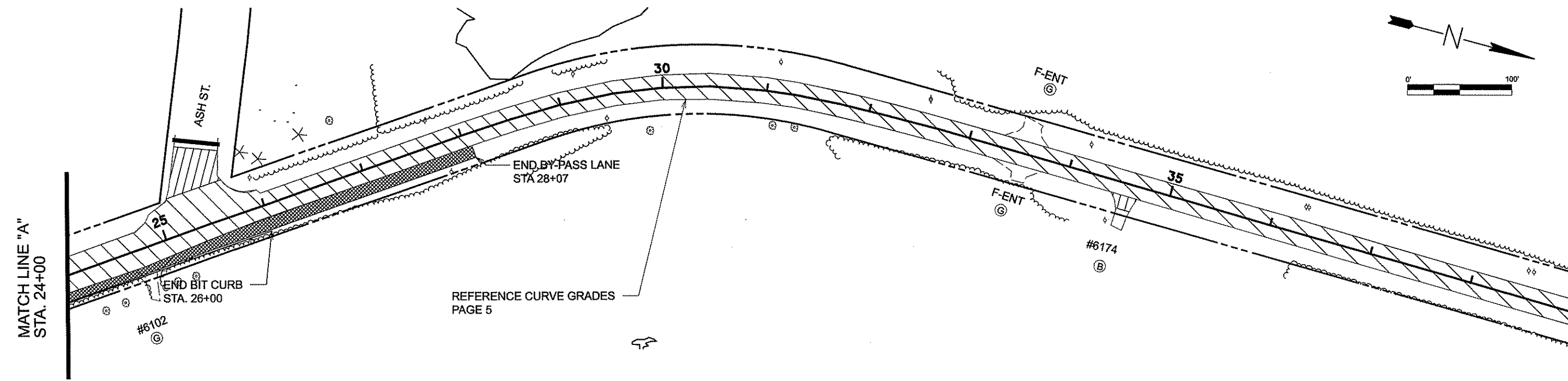
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STA. 11+34

- DRIVEWAY BIT REMOVAL 
- RECLAIM & OVERLAY AREA 
- CONSTRUCT TURN / BY-PASS LANE AREA 
- CITY STREET OVERLAYS 
- MILL JOINT 

- CONCRETE DRIVEWAY ©
- BITUMINOUS DRIVEWAY Ⓟ
- GRAVEL DRIVEWAY Ⓞ



MATCH LINE "A"
STA. 24+00



MATCH LINE "A"
STA. 24+00

MATCH LINE "B"
STA. 39+00

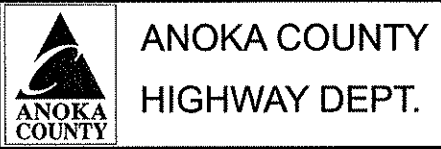
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PAGE 5

1 OF 4

NO	DATE	BY	CHKD	APPR	REVISION
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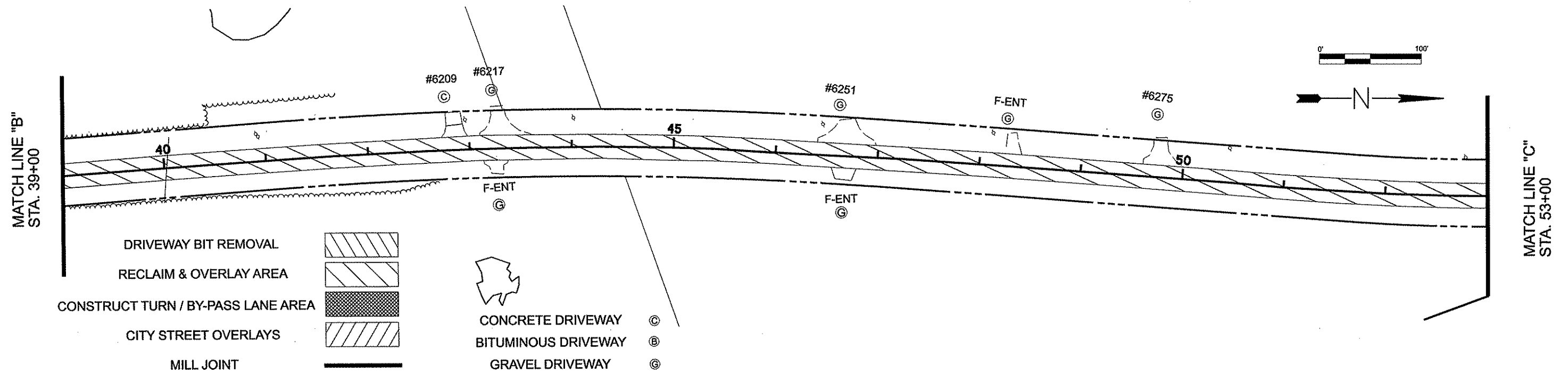
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: *[Date]* LICENSE NO. 49416

DRAWN BY: CSO DATE: 1/9/2012
 DESIGN BY: CSO DATE: 1/9/2012
 CHECKED BY: JO DATE: *[Date]*



STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 12-13-21

CONSTRUCTION PLAN
 STA 11+34.00 TO 39+00.00
 Sheet 8 of 18 Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_21_(CountyLine-CSAH14)\Plan6_Plan.dgn
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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: CHARLES CABENHEAD
 SIGNATURE: *[Signature]*
 DATE: 2/27/12 LICENSE NO. 40416

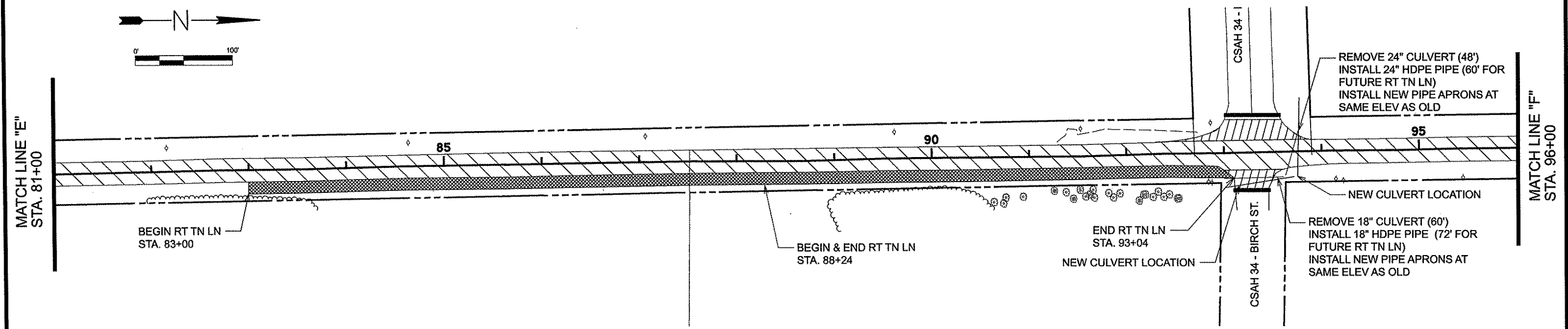
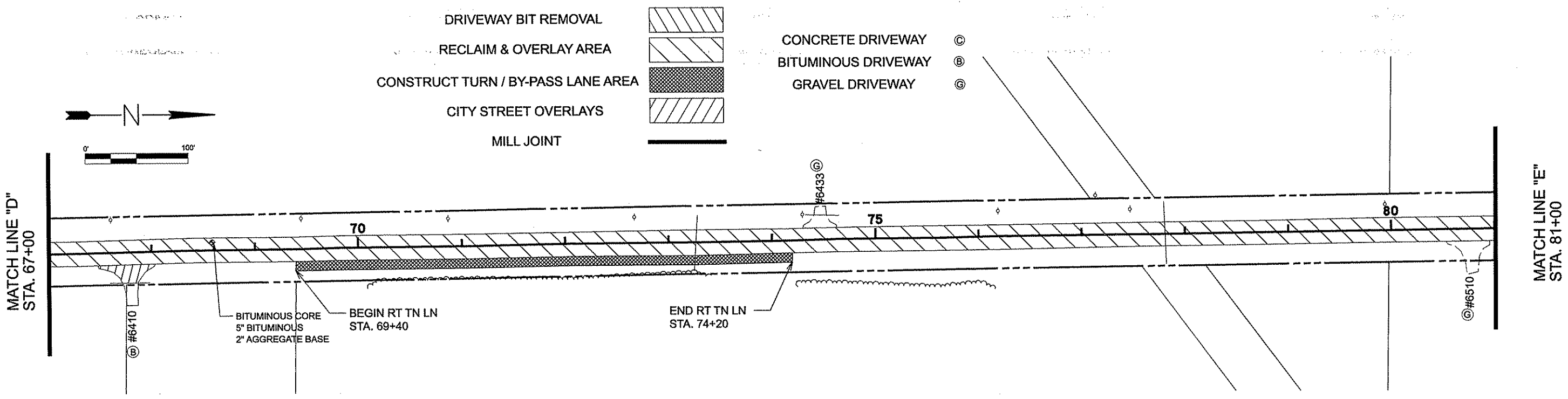
DRAWN BY CSO DATE 1/9/2012
 DESIGN BY CSO DATE 1/9/2012
 CHECKED BY JO DATE



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 12-13-21

CONSTRUCTION PLAN
 STA 39+00.00 TO 67+00.00
 Sheet 9 of 18 Sheets



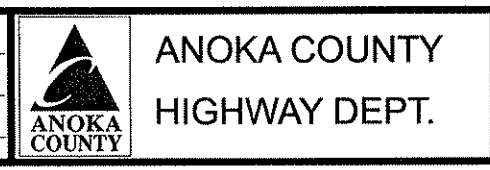
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I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *Charles Cadenhead*
 DATE: 3/2/12 LICENSE NO. 40416

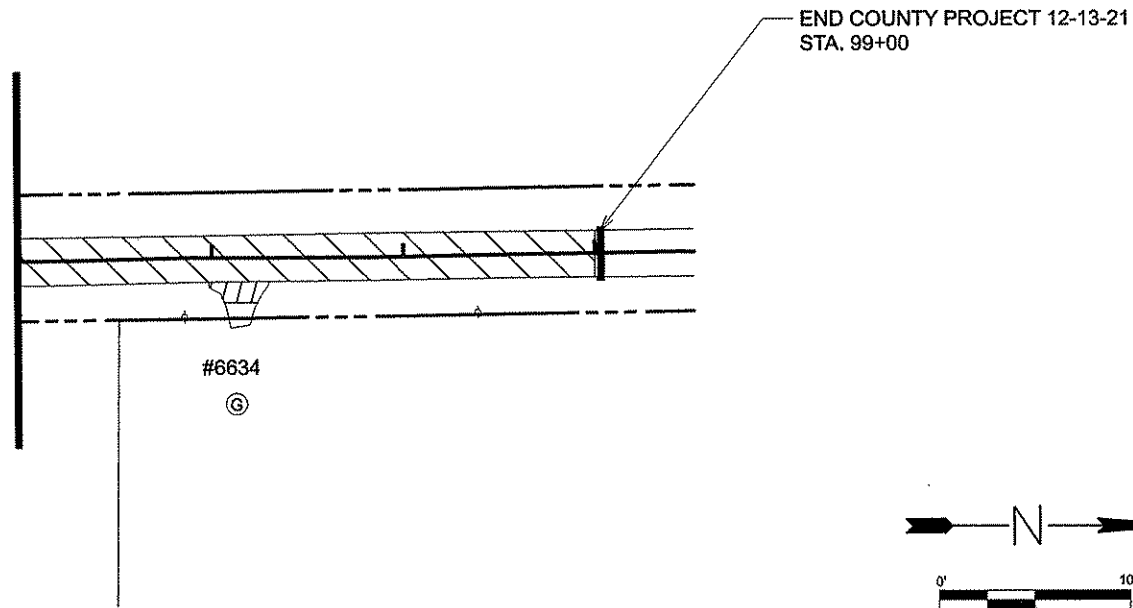
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 DESIGN BY CSO DATE 1/9/2012
 CHECKED BY JO DATE



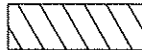
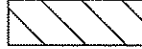

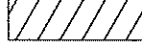

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 12-13-21

CONSTRUCTION PLAN
 STA 67+00.00 TO 96+00.00
 Sheet 10 of 18 Sheets

MATCH LINE "F"
STA. 96+00



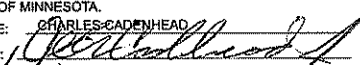
- CONCRETE DRIVEWAY ©
- BITUMINOUS DRIVEWAY Ⓑ
- GRAVEL DRIVEWAY Ⓒ

- DRIVEWAY BIT REMOVAL 
- RECLAIM & OVERLAY AREA 
- CONSTRUCT TURN / BY-PASS LANE AREA 
- CITY STREET OVERLAYS 
- MILL JOINT 

NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_21_(CountyLine-CSAH14)\Plan5_Plan.dgn 02/27/2012 1:50:29 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: CHARLES CADENHEAD
 SIGNATURE: 
 DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY CSO DATE 1/9/2012
 DESIGN BY CSO DATE 1/9/2012
 CHECKED BY JO DATE



**ANOKA COUNTY
HIGHWAY DEPT.**

STATE PROJECT NO. _____
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 COUNTY PROJECT NO. 12-13-21

CONSTRUCTION PLAN
 STA 96+00.00 TO 99+00.00
 Sheet 11 of 18 Sheets

PERMANENT PAVEMENT MARKING PLAN
NOTES AND GUIDELINES

GENERAL INFORMATION:

THE ENGINEER'S INVOLVEMENT IN THE APPLICATION OF THE MATERIAL SHALL BE LIMITED TO FIELD CONSULTATION AND INSPECTION. ANOKA COUNTY HIGHWAY DEPARTMENT WILL PLACE NECESSARY "SPOTTING" AT APPROPRIATE POINTS TO PROVIDE HORIZONTAL CONTROL FOR STRIPING AND TO DETERMINE NECESSARY STARTING AND CUTOFF POINTS, LONGITUDINAL JOINTS, PAVEMENT EDGES AND EXISTING MARKINGS MAY SERVE AS HORIZONTAL CONTROL WHEN SO DIRECTED.

EDGE LINES AND LANE LINES ARE TO BE BROKEN ONLY AT INTERSECTIONS WITH PUBLIC ROADS AND AT PRIVATE ENTRANCES IF THEY ARE CONTROLLED BY A YIELD SIGN, STOP SIGN OR TRAFFIC SIGNAL. THE BREAK POINT IS TO BE AT THE START OF THE RADIUS FOR THE INTERSECTION OR AT MARKED STOP LINES OR CROSSWALKS.

A TOLERANCE OF 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.

EPOXY:

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 EPOXY PAVEMENT MARKINGS.

THE EPOXY MARKING APPLICATION SHALL IMMEDIATELY FOLLOW THE PAVEMENT CLEANING. GLASS BEANS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE EPOXY RESIN LINE TO PROVIDE AN IMMEDIATE NO-TRACK SYSTEM.

AN EPOLY RESIN LINE 4" WIDE AND 15 MILL THICKNESS (WET), REQUIRES AN APPLICATION RATE OF ONE (1) GALLON OF COMPONENTS FOR 320 FEET OF LINE. GLASS BEADS SHALL BE APPLIED AT A POUND PER GALLON RATE SUFFICIENT TO ACHIEVE AN ACCEPTABLE NO-TRACK SYSTEM.

OPERATIONS SHALL BE CONDUCTED ONLY WHEN THE ROAD PAVEMENT SURFACE TEMPERATURES ARE 50 DEGREES FAHRENHEIT OR GREATER.

PERMANENT PAVEMENT MARKINGS SHALL NOT BE PLACED OVER TEMPORARY TAPE MARKINGS.

PREFORMED THERMOPLASTIC:

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

PAINT:

AT THE TIME OF APPLYING THE MARKING MATERIAL, THE APPLICATION AREA SHALL BE FREE OF CONTAMINATION. THE CONTRACTOR SHALL CLEAN THE ROADWAY SURFACE PRIOR TO THE LINE APPLICAITON IN A MANNER AND TO THE EXTENT REQUIRED BY THE ENGINEER.

GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE PAINT LINE.

EXCEPT WHEN USED AS A TEMPORARY MARKING, PAVEMENT MARKINGS SHALL ONLY BE APPLIED IN SEASONABLE WEATHER WHEN AIR TEMPERATURE IS 50 DEGREES FARHENHEIT OR HIGHER AND SHALL NOT BE APPLIED WHEN THE WIND OR OTHER CONDITIONS CAUSE A FILD OR DUST TO BE DEPOSITED ON THE PAVEMENT SURFACE AFTER CLEANING AND BEFORE THE MARKING MATERIAL CAN BE APPLIED.

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

SYMBOLS & MATERIALS LEGEND

■ CROSSWALK BLOCK WHITE PREFORMED THERMOPLASTIC

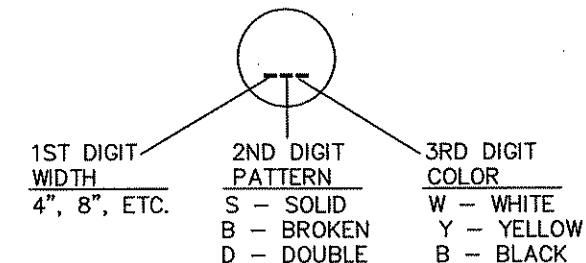
↩ PAVEMENT MESSAGE (LEFT ARROW) PREFORMED THERMOPLASTIC

STRIPING KEY

○ CIRCLE - EPOXY □ SQUARE PREFORMED THERMOPLASTIC

△ TRIANGLE - PAINT

⬠ PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING



EXAMPLE: (4SW) = 4" SOLID LINE WHITE - EPOXY

PERMANENT PAVEMENT MARKING QUANTITIES

Item	Quantity	Units
4" Double Solid Line Yellow - Epoxy	1977	Lin Ft
4" Solid Line Yellow - Epoxy	6541	Lin Ft
4" Broken Yellow Line - Epoxy (10 ft stripe / 40 ft gap)	1310	Lin Ft
4" Solid Line White - Epoxy	18027	Lin Ft

NO	DATE	BY	CKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 LICENSE NO. 40418

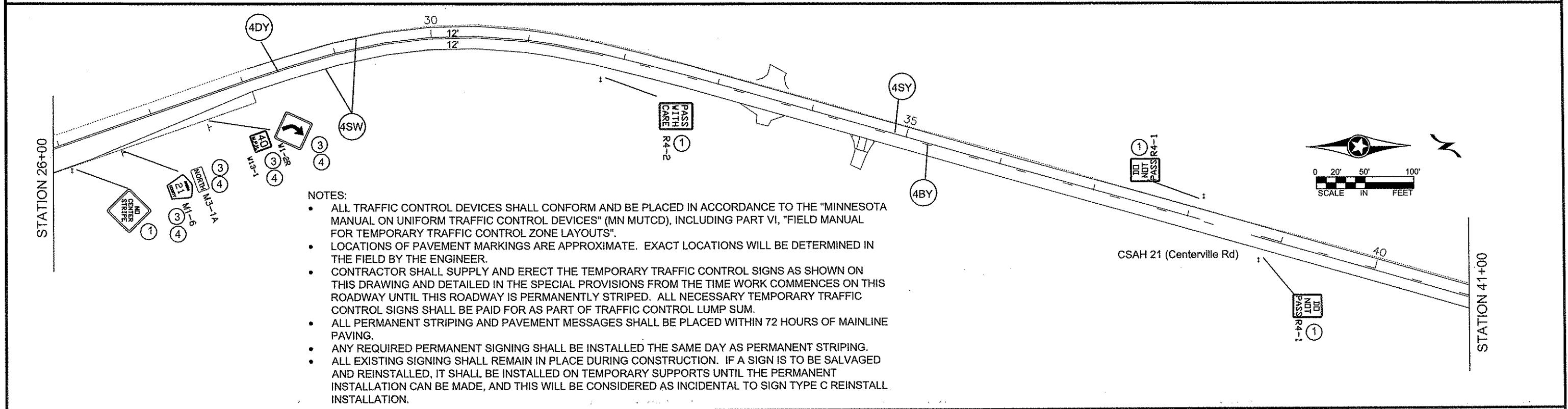
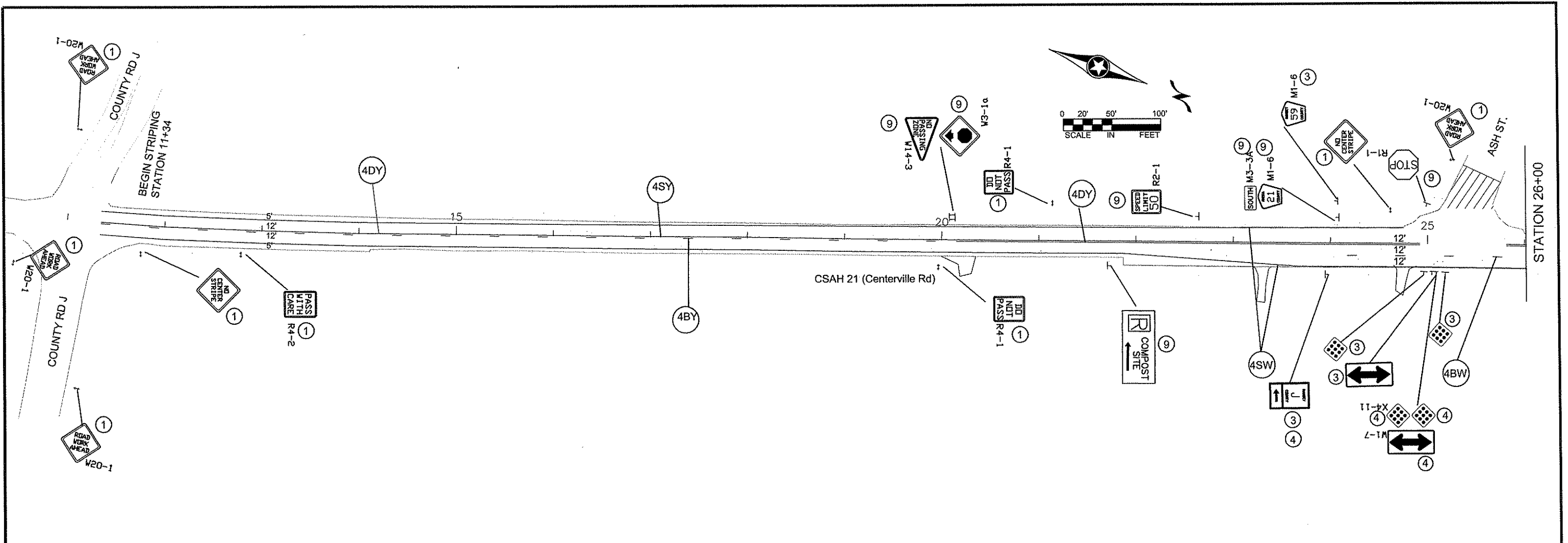
DRAWN BY: MTH DATE: 1/26/12
 DESIGN BY: MTH DATE: 1/26/12
 CHECKED BY: JR DATE: 2/14/12



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. 12-13-21

PERMANENT MARKING
TABULATION
 Sheet 12 of 18 Sheets



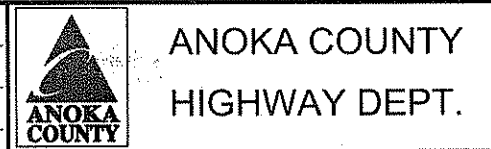
- NOTES:
- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
 - LOCATIONS OF PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
 - CONTRACTOR SHALL SUPPLY AND ERECT THE TEMPORARY TRAFFIC CONTROL SIGNS AS SHOWN ON THIS DRAWING AND DETAILED IN THE SPECIAL PROVISIONS FROM THE TIME WORK COMMENCES ON THIS ROADWAY UNTIL THIS ROADWAY IS PERMANENTLY STRIPED. ALL NECESSARY TEMPORARY TRAFFIC CONTROL SIGNS SHALL BE PAID FOR AS PART OF TRAFFIC CONTROL LUMP SUM.
 - ALL PERMANENT STRIPING AND PAVEMENT MESSAGES SHALL BE PLACED WITHIN 72 HOURS OF MAINLINE PAVING.
 - ANY REQUIRED PERMANENT SIGNING SHALL BE INSTALLED THE SAME DAY AS PERMANENT STRIPING.
 - ALL EXISTING SIGNING SHALL REMAIN IN PLACE DURING CONSTRUCTION. IF A SIGN IS TO BE SALVAGED AND REINSTALLED, IT SHALL BE INSTALLED ON TEMPORARY SUPPORTS UNTIL THE PERMANENT INSTALLATION CAN BE MADE, AND THIS WILL BE CONSIDERED AS INCIDENTAL TO SIGN TYPE C REINSTALL INSTALLATION.

NO	DATE	BY	CKD	APPR	REVISION

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PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *Charles Cadenhead*
 DATE: 3/2/12 REG. NO. 46416

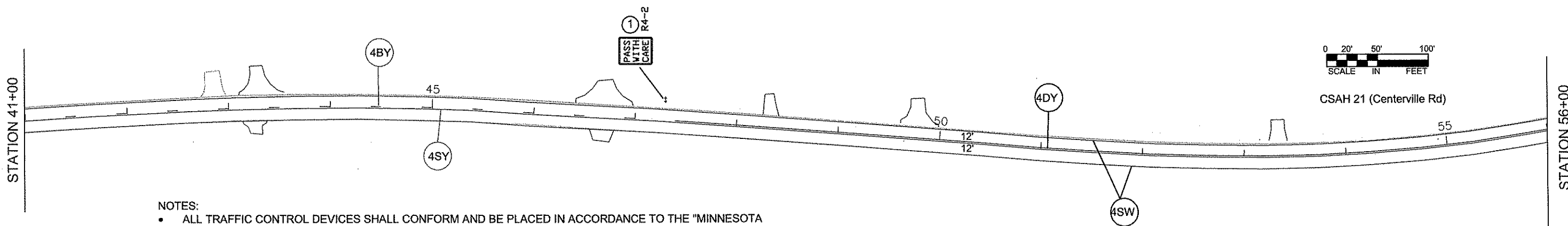
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 DESIGN BY: MTH DATE 1/17/2012
 CHECKED BY: JR DATE 2/14/2012



STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. 12-13-21

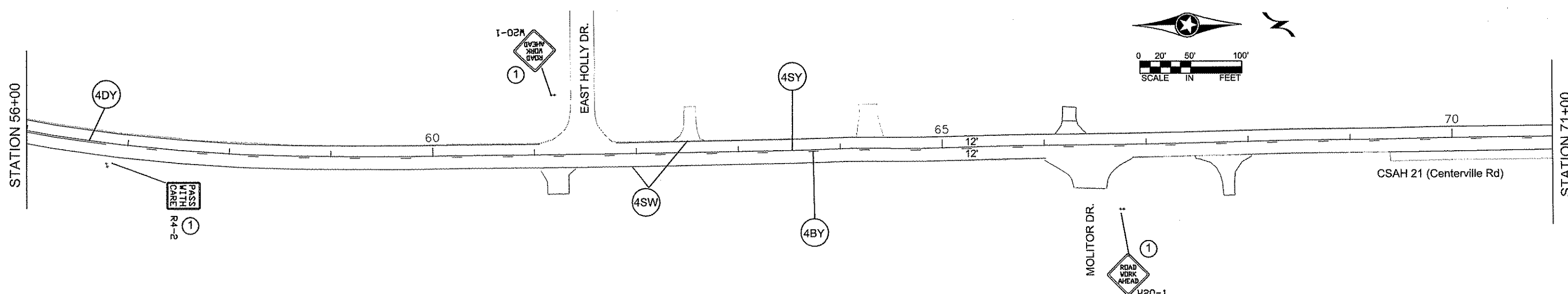
CSAH 21 (CENTERVILLE RD)
 TEMPORARY SIGNING
 PERMANENT STRIPING
 AND PAVEMENT MESSAGES

Sheet 13 of 18 Sheets



NOTES:

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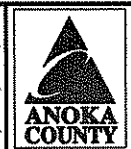


NO	DATE	BY	CKD	APPR	REVISION

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PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 REG. NO. 40416

DRAWN BY: MTH DATE: 1/17/2012
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**ANOKA COUNTY
 HIGHWAY DEPT.**

STATE PROJECT NO. _____
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 COUNTY PROJECT NO. 12-13-21

CSAH 21 (CENTERVILLE RD)
 TEMPORARY SIGNING
 PERMANENT STRIPING
 AND PAVEMENT MESSAGES

Sheet 14 of 18 Sheets

SALVAGE & RE-INSTALL PERMANENT SIGNS						
STATION		SALVAGE	SALVAGE	INSTALL	INSTALL	SIGN NUMBER
		SIGN TYPE C	SIGN TYPE D	SIGN TYPE C	SIGN TYPE D	
		EACH	EACH	EACH	EACH	
24+00	Rt	1		1		Cty J
24+10	Lt					M1-6
24+10	Lt	1		1		M3-3a
24+10	Lt	1				M1-6
24+90	Lt					R1-1
25+00	Rt	1				W1-7
25+00	Rt	1		1		X4-2
25+00	Rt	1				X4-2
26+60	Rt					M1-6
26+60	Rt	1		1		M3-1a
27+50	Rt					W1-2R
27+50	Rt	1		1		W13-1
84+30	Rt	1		1		W3-1a
89+70	Rt					M1-6
89+70	Rt	1		1		M2-1a
92+90	Rt					R1-1
92+90	Rt	1		1		R1-4
92+90	Rt					X4-13
92+90	Rt					M1-6
92+90	Rt	1		1		M6-4a
TOTAL		12	0	9	0	

F & I PERMANENT SIGNS								
M.U.T.C.D. CODE	SIZE	PANEL AREA	INSERT	QUANTITY	No. POST	MOUNTING HEIGHT TO Pavement (ft.)	TOTAL AREA	
		FT. ²					FT. ²	
R1-1	36" X 36"	9.00		1	2	7.00	9.00	
R1-4	18" X 6"	0.75		1		7.00	0.75	
x4-13	8" x 12"			1		6.00		
R3-X1	30" X 30"	6.25		1	1	7.00	6.25	
W3-1a	36" X 36"	9.00		1	2	7.00	9.00	
TOTAL PANEL AREA							25.00	

TEMPORARY TRAFFIC CONTROL SIGNS							
M.U.T.C.D. CODE	SIZE	PANEL AREA	INSERT	QUANTITY	No. POST	MOUNTING HEIGHT TO Pavement (ft.)	TOTAL AREA
		FT. ²					FT. ²
W8-12	48" x 48"	16.00		6		7.0'	
R4-1	24" x 30"	5.00		7		7.0'	
R4-2	24" x 30"	5.00		6		7.0'	
W8-1A	48" x 48"	16.00				AS NEEDED	
W8-1A	48" x 48"	16.00				AS NEEDED	
W8-8	48" x 48"	16.00				AS NEEDED	
W8-11	48" x 48"	16.00				AS NEEDED	
W8-11	48" x 48"	16.00				AS NEEDED (ESTIMATED 9)	

NOTES:

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SEE SPECIAL PROVISIONS

- ① TEMPORARY TRAFFIC CONTROL SIGN
- ② F & I PERMANENT SIGN
- ③ SALVAGE PERMANENT SIGN
- ④ RE-INSTALL PERMANENT SIGN
- ⑤ INPLACE - RETAIN

NO	DATE	BY	CKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: CHARLES CADENHEAD
 SIGNATURE:
 DATE: 7/2/12 REG. NO. 40416

DRAWN BY: MTH DATE 1/17/2012
 DESIGN BY: MTH DATE 1/17/2012
 CHECKED BY: JR DATE 2/14/2012

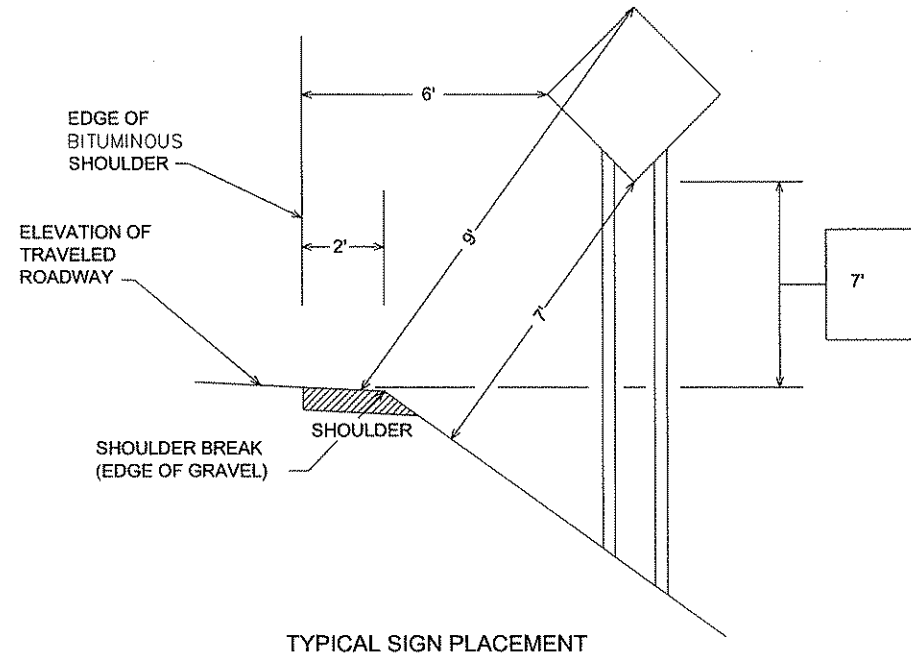


ANOKA COUNTY
 HIGHWAY DEPT.

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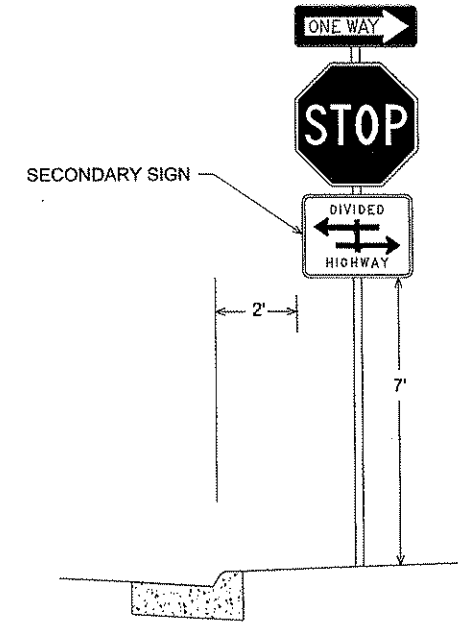
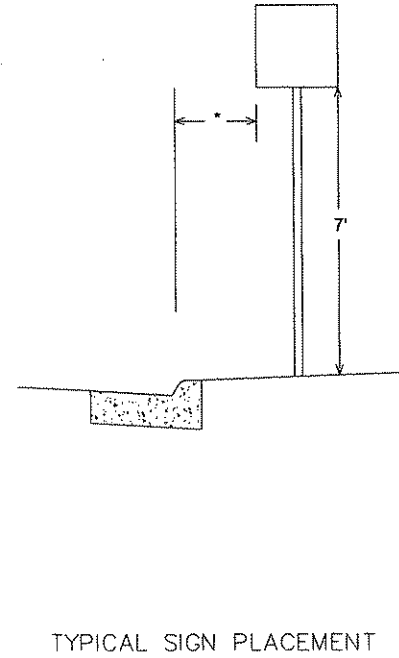
CSAH 21 (CENTERVILLE RD)
 TEMPORARY SIGNING
 PERMANENT STRIPING
 AND PAVEMENT MESSAGES
 Sheet 16 of 18 Sheets

RURAL



URBAN

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



NOTE:

- ALL DIMENSIONS ARE MINIMUMS
- MAINTAIN 2' CLEAR FROM SIGNS TO BITUMINOUS TRAIL

NO	DATE	BY	CKD	APPR	REVISION

NAME: T:\Traffic\Dwg\CSAH 18 (Crosstown Blvd)\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: CHARLES CAPENHEAD

SIGNATURE: *Charles Capenhead*

DATE: 7/2/11 LICENSE NO. 40416

DRAWN BY: MTH DATE: 1-21-11

DESIGN BY: #ZZB DATE: 8-13-08

CHECKED BY: JR DATE: 1-21-11



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____

STATE PROJECT NO. _____

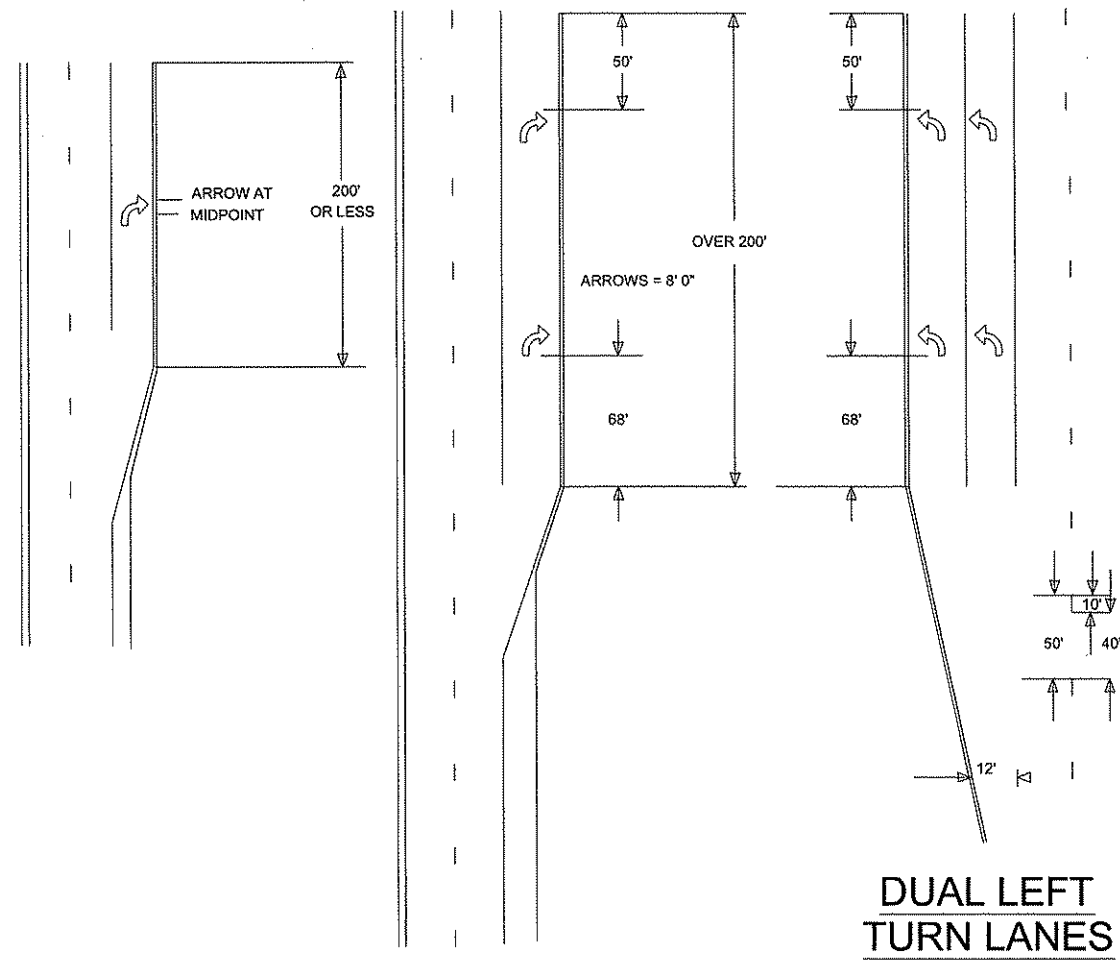
STATE PROJECT NO. _____

COUNTY PROJECT NO. 12-13-21

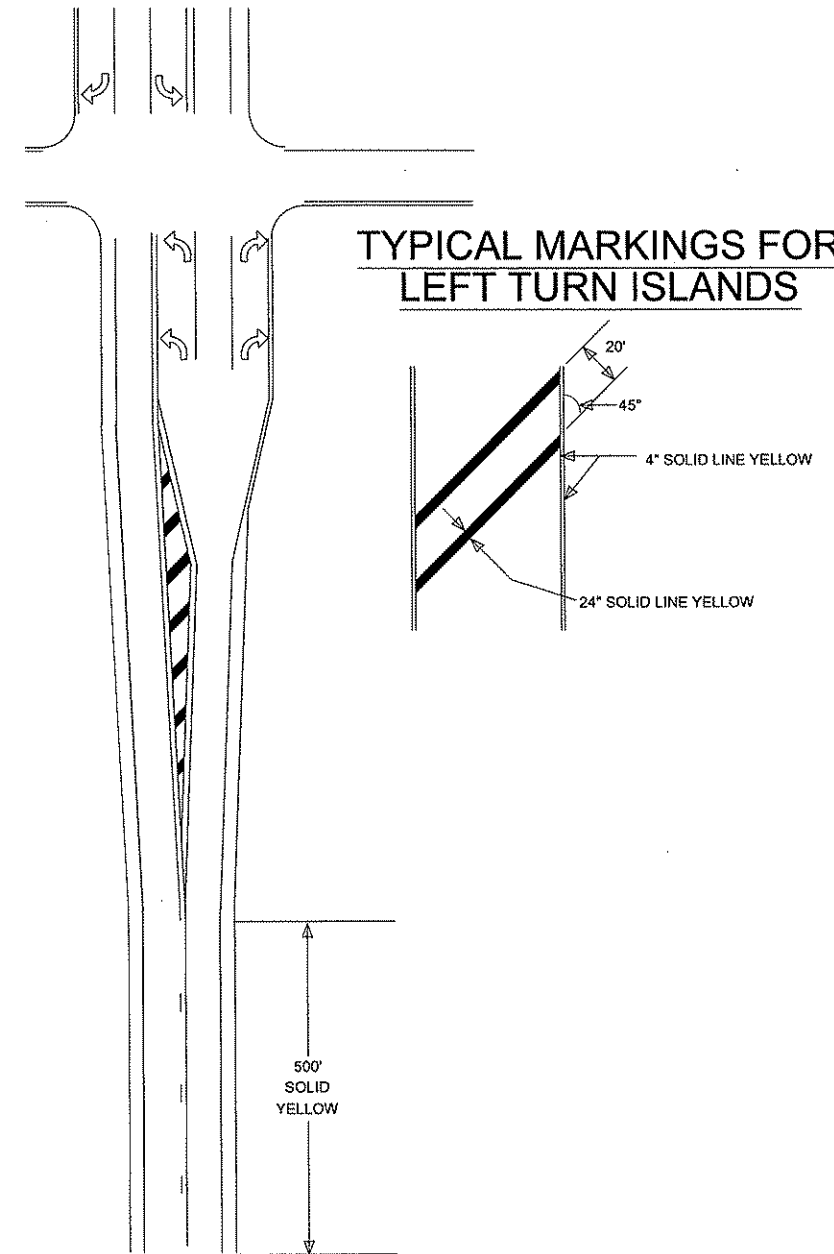
SIGNING & STRIPING DETAILS

Sheet 17 of 18 Sheets

**TYPICAL MESSAGE PLACEMENT
FOR TURN LANES**



**TYPICAL MARKINGS FOR
LEFT TURN ISLANDS**



NO	DATE	BY	CKD	APPR	REVISION

NAME: T:\Traffic\Dwg\CSAH 20 (Constance Blvd)\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: CHARLES CADENHEAD

SIGNATURE: *[Signature]*

DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY MTH DATE 1-21-11

DESIGN BY MTH DATE 1-21-11

CHECKED BY JR DATE 1-21-11



**ANOKA COUNTY
HIGHWAY DEPT.**

STATE PROJECT NO. _____

STATE PROJECT NO. _____

STATE PROJECT NO. _____

COUNTY PROJECT NO. 12-13-21

SIGNING & STRIPING DETAILS

Sheet 18 of 18 Sheets

STATEMENT OF ESTIMATED QUANTITIES

ITEM NO.	ITEM	TAB	NOTE NO.	UNIT	TOTAL EST. QUANT.
2011.601	CONSTRUCTION SURVEY			LUMP SUM	1
2021.501	MOBILIZATION			LUMP SUM	1
2104.503	REMOVE CONCRETE DRIVEWAY PAVEMENT	A	1,20	SQ YD	60
2104.505	REMOVE BITUMINOUS PAVEMENT	B	1,20	SQ YD	2267
2104.511	SAWING CONCRETE PAVEMENT (FULL DEPTH)	C	1	LIN FT	94
2104.513	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	D	1	LIN FT	934
2104.523	SALVAGE SIGN TYPE C			EACH	21
2105.525	TOPSOIL BORROW (LV)		19	CU YD	53
2105.602	CONSTRUCT TURN LANE		12	EACH	13
2105.602	CONSTRUCT BYPASS LANE		12	EACH	4
2123.503	MOTOR GRADER			HOUR	20
2130.501	WATER			MGAL	224
2211.501	AGGREGATE BASE CLASS 5	E	3	TON	3921
2221.501	AGGREGATE SHOULDERING CLASS 5	F	4,7	TON	863
2232.501	MILL BITUMINOUS SURFACE (2")	G	1	SQ YD	368
2331.604	BITUMINOUS PAVEMENT RECLAMATION		2	SQ YD	62247
2357.502	BITUMINOUS MATERIAL FOR TACK COAT			GALLON	3097
2360.501	TYPE SP 12.5 WEARING COURSE MIX (4,B)	H	7,13,20	TON	261
2360.501	TYPE SP 12.5 WEARING COURSE MIX (4, E)	I	15,18	TON	12813
2360.502	TYPE SP 12.5 NON-WEARING COURSE MIX (4, B)	J	16	TON	3079
2501.511	18" CS PIPE CULVERT			LIN FT	16
2501.515	18" CS PIPE APRON			EACH	2
2501.602	15" SAFETY APRON			EACH	2
2503.603	15" HDPE PIPE SEWER		1	LIN FT	30
2511.501	RANDOM RIPRAP CLASS II		21	CU YD	10
2531.507	6" CONCRETE DRIVEWAY PAVEMENT	K	14,20	SQ YD	60
2535.501	BITUMINOUS CURB (MODIFIED)		17,18	LIN FT	370
2540.602	INSTALL MAIL BOX SUPPORT		8	EACH	72
2563.601	TRAFFIC CONTROL		5,6,9	LUMP SUM	1
2564.536	INSTALL SIGN PANEL TYPE C			EACH	1
2564.550	DELINEATOR, TYPE X4-4			EACH	4
2564.550	DELINEATOR, TYPE X4-13			EACH	4
2564.602	F&I SIGN PANEL TYPE C		11	SQ FT	230.5
2573.508	BITUMINOUS LINED FLUME		21	SQ YD	16
2573.602	CULVERT END PROTECTION		1,10	EACH	5
2581.501	REMOVABLE PREFORMED PLASTIC MARKING		5	LIN FT	1457
2582.502	4" SOLID LINE WHITE - EPOXY		7	LIN FT	38117
2582.502	4" BROKEN LINE WHITE-EPOXY		7	LIN FT	160
2582.502	4" SOLID LINE YELLOW - EPOXY		7	LIN FT	6754
2582.502	4" BROKEN LINE YELLOW-EPOXY		7	LIN FT	2970
2582.502	4" DOUBLE SOLID LINE YELLOW - EPOXY		7	LIN FT	3059

NOTES:

- 1 LOCATION TO BE DETERMINED BY ENGINEER.
- 2 ITEM INCLUDES THE REMOVAL OF BITUMINOUS CURB.
- 3 LEVELING 8' SHOULDERS UP TO MAINLINE BASE COURSE , PRIOR TO PAVING WEAR COURSE.
- 4 SHOULDERING CLASS 5 FOR FINISHED 1.5' GRVL. SHLDR. AND GRAVEL ENTRANCES.
- 5 CL YELLOW SKIPS TO BE APPLIED AS SOON AS POSSIBLE ON EACH LIFT (MUST BE APPLIED BEFORE CONTRACTOR LEAVES FOR THE DAY).
- 6 ROAD WORK AHEAD, DO NOT PASS, PASS WITH CARE, NO CENTER STRIPE AND BUMP/BUMP AHEAD SIGNS - TO BE INPLACE DURING RECLAIM / PAVING OPERATIONS.
- 7 SHALL BE INSTALLED WITHIN 72 HOURS OF COMPLTION OF MAINLINE WEAR COURSE PAVING
- 8 MAILBOXES TO BE INSTALLED AT THE EXISTING MAILBOX LOCATION. MAILBOX MATERIALS INCIDENTAL TO INSTALLATION.
- 9 ALL TRAFFIC CONTROL METHODS SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- 10 INSTALL 1 PER CULVERT INSIDE RTL / BYPASS WIDENING AREAS - AT THE HIGH INVERT.
- 11 FURNISH AND INSTALL SIGN PANEL TYPE C , MOUNTING POSTS ARE INCIDENTAL TO ITEM.
- 12 INCLUDES TIME AND MATERIALS TO CONSTRUCT. - COMMON EX., SELECT GRANULAR, AGG. BASE CL-5, TOPSOIL, MOTOR GRADER HRS, DOZER HRS , PNEUMATIC TIRED ROLLER HRS, SILT FENCE, EROSION CONTROL BLANKET TYPE 3, SEEDING, SEED TYPE 250 AND FERT. TYPE 3. EST. CALCS AND QTYS FOR THESE ITEMS CAN BE FOUND ON PAGE 3, CALCULATIONS FOR RIGHT TURN & BYPASS LANES. NOTE - BITUMINOUS BASE AND WEAR FOR RTL / BYPASS IS INCLUDED IN MAIN SEQ.
- 13 STREET APPROACHES AND DRIVEWAY WEAR. (4,B)
- 14 6" CONCRETE FOR DRIVEWAYS, SEE TABS.
- 15 MAINLINE WEAR COURSE (2" 4,E) TOP WEARING SURFACE & INCLUDES SAFETY EDGE CONSTRUCTION. SEE DETAILS AND SPECIAL PROVISIONS.
- 16 MAINLINE BASE COURSE (2" 4,B) PLACED ON RECLAIMED SURFACE.
- 17 SHALL BE INSTALLED WITH SAME OPERATION AS MAINLINE BITUMINOUS WEAR COURSE
- 18 BITUMINOUS TONS TO CREATE BIT CURB SHALL BE PAID UNDER 2360.501 WEARING COURSE MIX (4,E)
- 19 ITEM FOR BACK FILLING BITUMINOUS CURB & SLOPE IMPROVEMENT AS DIRECTIED BY THE ENGINEER.
- 20 CONTRACTORS RESPONSIBILITY TO CONTACT OWNER 48 HOURS BEFORE STARTING OPERATION.
- 21 INSTALL AT END OF BITUMINOUS CURB (MODIFIED).

BASIS OF PLANNED QUANTITIES

2105.602	CONSTRUCT TURN LANE	SEE PLAN DETAILS PAGE 3 FOR CALCS
2105.602	CONSTRUCT BY-PASS LANE	SEE PLAN DETAILS PAGE 3 FOR CALCS
2105.609	TOPSOIL BORROW	CU YDS * 1.8 = TONS
2123.503	MOTOR GRADER	20HR +/- PER MI. OF JOB & 2HR PER RTL / BYPASS
2211.501	AGGREGATE BASE CLASS 5	CU YDS * 1.8 = TONS
2221.501	AGGREGATE SHOULDERING CLASS 5	CU YDS * 1.8 = TONS
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	.05 GAL / SQ YD
2360.501	TYPE SP 12.5 WEARING COURSE MIX (4,E)	115 LBS/SQYD/IN THICKNESS
2360.501	TYPE SP 12.5 NON-WEARING COURSE MIX (4, B)	115 LBS/SQYD/IN THICKNESS
2581.501	REMOVABLE PREFORMED PLASTIC MARKING	2' AT 50' INTERVALS

NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_62 (CSAH23-CSAH18)\Plan2 SEQ.dgn 03/01/2012 10:34:19 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: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 2/2/12 LICENSE NO. 40416

DRAWN BY SRK DATE 1/20/2012
 DESIGN BY SRK DATE 1/20/2012
 CHECKED BY JO DATE

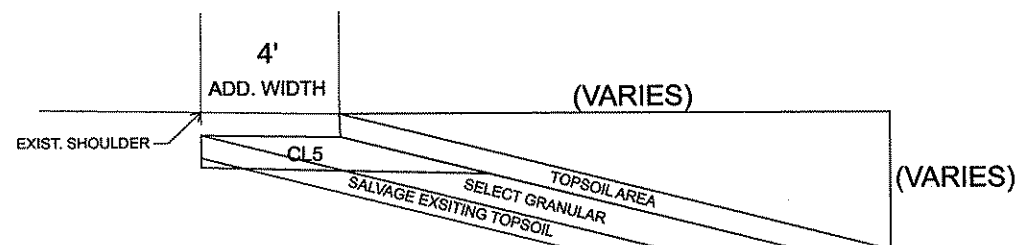


**ANOKA COUNTY
HIGHWAY DEPT.**

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 12-15-62

STATEMENT OF
ESTIMATED QUANTITIES

**NEW RTL / BYPASS WIDENING
4' WIDENING CALC.**

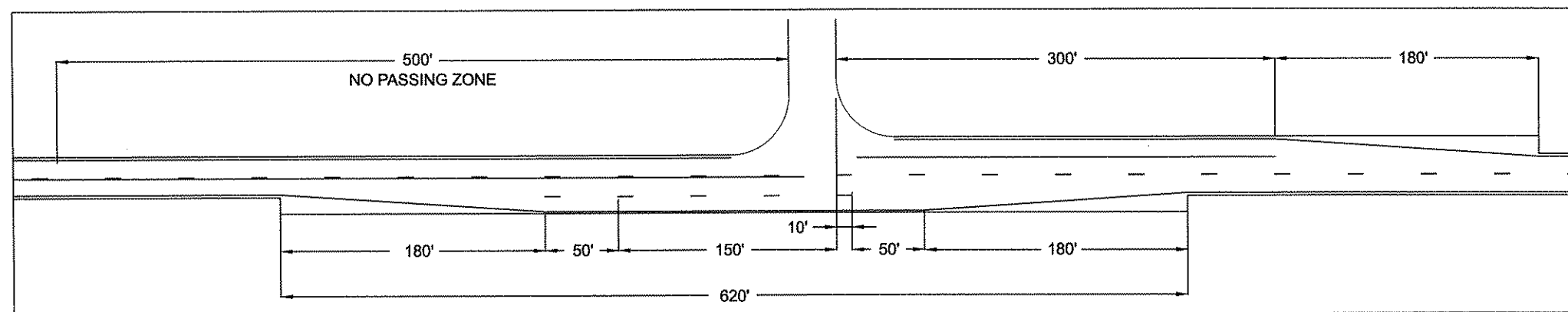


* NOTE CALC. BASED ON DIFFERENCE BETWEEN FINISHED EDGE MAT AND EXISTING DITCH BOTTOM.

RTL / BYPASS LOCATIONS

STREET	DIR.	BYPASS / RTL	ADD. WIDTH NEEDED	LENGTH	FIN. EDGE MAT ELEV.	EXIST DITCH BTTM ELEV.	COM EX (CU YDS)	SELECT GRANULAR (CU YDS)	CLASS 5 (TONS)	TOPSOIL (CU YDS)	SILT FENCE (LIN FT)	EROSION CONTROL BLANKET (SQ YDS)	
CSAH 23	SB	RTL	4.0	100.0	903.56	901.58	9.7	29.3	7.4	9.7	160.0	88.0	
155TH AVE	SB	RTL	4.0	480.0	908.93	907.00	45.3	137.2	64.0	45.3	540.0	411.7	
CAMP THREE RD	NB	RTL	4.0	480.0	911.03	909.13	46.9	142.2	64.0	46.9	540.0	426.7	
CAMP THREE RD	SB	RTL	4.0	480.0	912.26	910.62	38.5	116.6	64.0	38.5	540.0	349.9	
159TH AVE	NB	BYPASS	4.0	620.0	908.28	907.24	31.5	95.5	83.0	31.5	680.0	289.3	
159TH AVE	SB	RTL	4.0	480.0	907.37	904.25	75.1	221.9	64.0	75.1	540.0	665.6	
CORNELL ST	NB	BYPASS	4.0	620.0	907.23	906.14	33.0	100.1	83.0	33.0	680.0	300.4	
CORNELL ST	SB	RTL	4.0	480.0	906.67	902.17	105.6	320.0	64.0	105.6	540.0	960.0	
NOTRE DAME ST	SB	RTL	4.0	480.0	907.90	906.23	39.2	118.8	64.0	39.2	540.0	356.3	
HOWARD LAKE DR	NB	RTL	4.0	480.0	907.49	905.21	53.5	162.1	64.0	53.5	540.0	486.4	
167TH LANE	SB	RTL	4.0	480.0	906.22	903.27	69.2	209.8	64.0	69.2	540.0	629.3	
168TH AVE	NB	RTL	4.0	480.0	907.24	905.80	33.8	102.4	64.0	33.8	540.0	307.2	
170TH AVE	NB	RTL	4.0	480.0	912.02	909.79	52.3	158.6	64.0	52.3	540.0	475.7	
170TH AVE	SB	BYPASS	4.0	620.0	911.95	909.48	74.9	226.9	83.0	74.9	680.0	680.6	
172ND AVE	NB	RTL	4.0	480.0	907.88	905.87	47.2	142.9	64.0	47.2	540.0	428.8	
172ND AVE	SB	BYPASS	4.0	620.0	907.38	904.01	102.1	309.5	83.0	102.1	680.0	928.6	
CSAH 18	NB	RTL	4.0	480.0	909.10	907.12	46.5	140.8	64.0	46.5	540.0	422.4	
EST. TOTALS								904	2735	1107	904	9360	8207

RTL / BYPASS LAYOUT



NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_62_(CSAH23-CSAH18)\Plan3 CALCULATIONS FOR RIGHT TURN & BYPASS LANES.dgn 12:37:08 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: CHARLES CABENIBAD

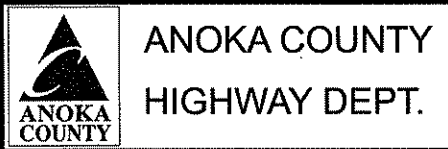
SIGNATURE: *[Signature]*

DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY: SRK DATE: 1/20/2012

DESIGN BY: SRK DATE: 1/20/2012

CHECKED BY: JO DATE: _____



STATE PROJECT NO. _____

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CITY PROJECT NO. _____

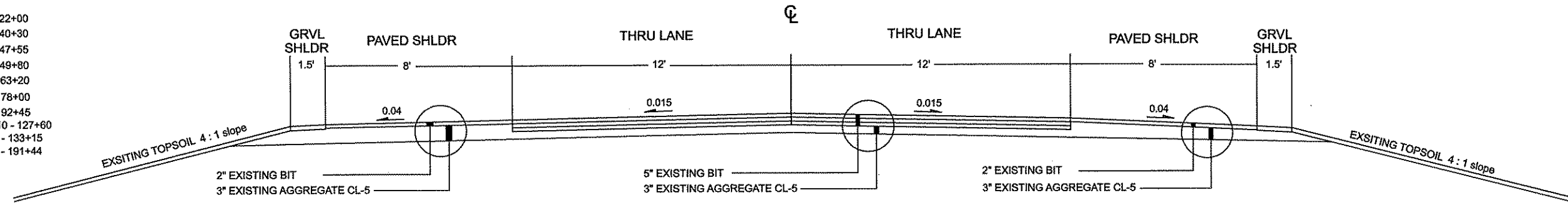
COUNTY PROJECT NO. 12-15-62

CALCULATIONS FOR RIGHT TURN & BYPASS LANES

Sheet 3 of 27 Sheets

EXISTING TYPICAL
10+00 - 192+10

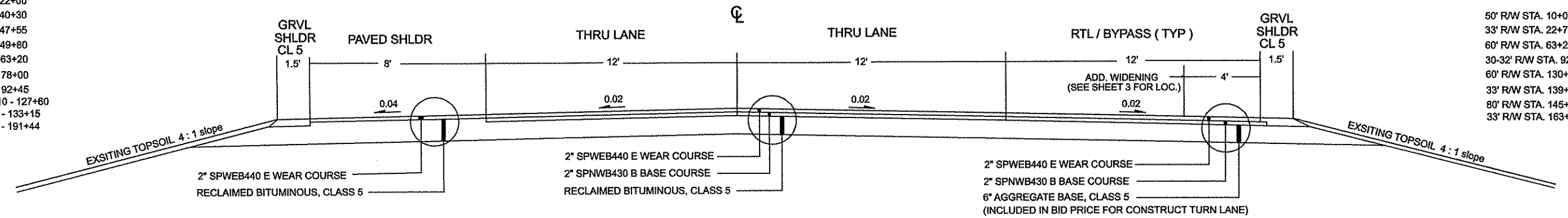
50' R/W STA. 10+00 - 22+00
33' R/W STA. 22+75 - 40+30
60' R/W STA. 40+30 - 47+55
33' R/W STA. 47+55 - 49+80
60' R/W STA. 49+80 - 63+20
50' R/W STA. 63+20 - 78+00
60' R/W STA. 78+00 - 92+45
33-35' R/W STA. 93+10 - 127+60
50' R/W STA. 127+60 - 133+15
33' R/W STA. 133+15 - 191+44



50' R/W STA. 10+00 - 22+00
33' R/W STA. 22+75 - 63+20
60' R/W STA. 63+20 - 92+00
30-32' R/W STA. 92+00 - 129+00
60' R/W STA. 130+00 - 139+00
33' R/W STA. 139+00 - 145+20
80' R/W STA. 145+20 - 162+70
33' R/W STA. 163+30 - 191+44

PROPOSED TYPICAL
10+00 - 101+05

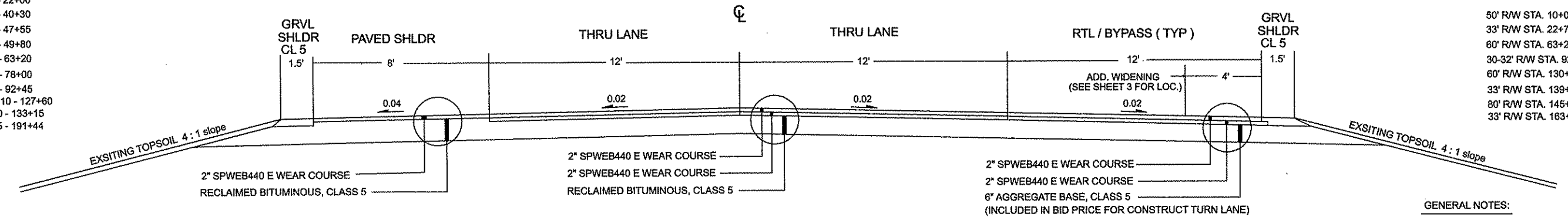
50' R/W STA. 10+00 - 22+00
33' R/W STA. 22+75 - 40+30
60' R/W STA. 40+30 - 47+55
33' R/W STA. 47+55 - 49+80
60' R/W STA. 49+80 - 63+20
50' R/W STA. 63+20 - 78+00
60' R/W STA. 78+00 - 92+45
33-35' R/W STA. 93+10 - 127+60
50' R/W STA. 127+60 - 133+15
33' R/W STA. 133+15 - 191+44



50' R/W STA. 10+00 - 22+00
33' R/W STA. 22+75 - 63+20
60' R/W STA. 63+20 - 92+00
30-32' R/W STA. 92+00 - 129+00
60' R/W STA. 130+00 - 139+00
33' R/W STA. 139+00 - 145+20
80' R/W STA. 145+20 - 162+70
33' R/W STA. 163+30 - 191+44

PROPOSED TYPICAL
101+05 - 192+10

50' R/W STA. 10+00 - 22+00
33' R/W STA. 22+75 - 40+30
60' R/W STA. 40+30 - 47+55
33' R/W STA. 47+55 - 49+80
60' R/W STA. 49+80 - 63+20
50' R/W STA. 63+20 - 78+00
60' R/W STA. 78+00 - 92+45
33-35' R/W STA. 93+10 - 127+60
50' R/W STA. 127+60 - 133+15
33' R/W STA. 133+15 - 191+44



50' R/W STA. 10+00 - 22+00
33' R/W STA. 22+75 - 63+20
60' R/W STA. 63+20 - 92+00
30-32' R/W STA. 92+00 - 129+00
60' R/W STA. 130+00 - 139+00
33' R/W STA. 139+00 - 145+20
80' R/W STA. 145+20 - 162+70
33' R/W STA. 163+30 - 191+44

GENERAL NOTES:

- ALL CROSS SLOPES ARE APPROXIMATE
- UNLESS OTHERWISE SPECIFIED, THE CLASS 5 CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE OF THE MAINLINE.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_62_(CSAH23-CSAH18)\Plant4 typicals.dgn 02/27/2012 12:51:22 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: CHARLES CADENHEAD
SIGNATURE: *[Signature]*
DATE: 2/2/12 LICENSE NO. 40416

DRAWN BY: SRK DATE: 1/20/2012
DESIGN BY: SRK DATE: 1/20/2012
CHECKED BY: JO DATE:



ANOKA COUNTY
HIGHWAY DEPT.

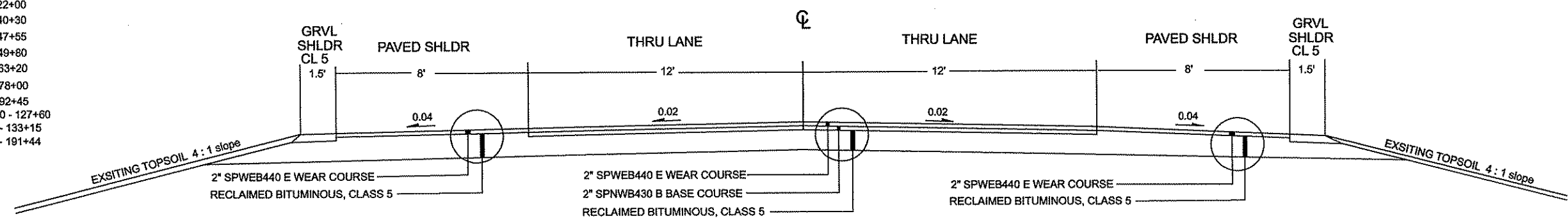
STATE PROJECT NO.
STATE AID PROJECT NO.
CITY PROJECT NO.
COUNTY PROJECT NO. 12-15-62

TYPICAL SECTIONS
Sheet 4 of 27 Sheets

PROPOSED TYPICAL
10+00 - 192+10

50' R/W STA. 10+00 - 22+00
33' R/W STA. 22+75 - 40+30
60' R/W STA. 40+30 - 47+55
33' R/W STA. 47+55 - 49+80
60' R/W STA. 49+80 - 63+20
50' R/W STA. 63+20 - 78+00
60' R/W STA. 78+00 - 92+45
33-35' R/W STA. 93+10 - 127+60
50' R/W STA. 127+60 - 133+15
33' R/W STA. 133+15 - 191+44

50' R/W STA. 10+00 - 22+00
33' R/W STA. 22+75 - 63+20
60' R/W STA. 63+20 - 92+00
30-32' R/W STA. 92+00 - 129+00
60' R/W STA. 130+00 - 139+00
33' R/W STA. 139+00 - 145+20
80' R/W STA. 145+20 - 162+70
33' R/W STA. 163+30 - 191+44



GENERAL NOTES:
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- UNLESS OTHERWISE SPECIFIED, THE CLASS 5 CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE OF THE MAINLINE.

NO	DATE	BY	CHKD	APPR	REVISION

NAME: PA12-01-00\CSAH_62_(CSAH23-CSAH18)\Plan4 typicals.dgn 02/27/2012 12:51:58 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: CHARLES CADENHEAD
SIGNATURE: *[Signature]*
DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY SRK DATE 1/20/2012
DESIGN BY SRK DATE 1/20/2012
CHECKED BY JO DATE



STATE PROJECT NO. _____
STATE AID PROJECT NO. _____
CITY PROJECT NO. _____
COUNTY PROJECT NO. 12-15-62

TYPICAL SECTIONS
Sheet 5 of 27 Sheets

A REMOVE CONCRETE DRIVEWAY PAVEMENT	
LOCATION	SQ YDS
16271 RT	24.0
16912 LT	9.0
17059 RT	6.0
17360 LT	9.0
17384 LT	6.0
17387 RT	6.0
TOTAL SQ YDS	60.0

C SAW CONCRETE PAVEMENT (FULL DEPTH)	
LOCATION	LIN FT
16271 RT	15
16912 LT	18
17059 RT	12
17360 LT	20
17384 LT	17
17387 RT	12
TOTAL LIN FT	94.00

E AGGREGATE BASE CLASS 5							
MAINLINE	STATION	STATION	LENGTH	WIDTH	2" DEPTH	CU YDS	TONS
LNB	10+00	192+10	18210.0	9.5	0.17	1089.2	1960.6
LSB	10+00	192+10	18210.0	9.5	0.17	1089.2	1960.6
						SUB TOTAL	3921.2

B REMOVE BITUMINOUS PAVEMENT	
LOCATION	SQ YDS
155TH AVE	85
CAMP THREE RD E	144
CAMP THREE RD W	67
HSE 15741	23
159TH AVE	197
HSE 15935	20
HSE 16079	32
CORNELL ST	94
HSE 16113	26
HSE 16138	31
HEIDELBERG ST	72
HSE 16225	26
HSE 16251	30
HSE 16228	20
HSE 16301	16
NOTRE DAME ST	166
CITY OF COLUMBUS (S ENT)	57
CITY OF COLUMBUS (MIDDLE ENT)	86
LAMPREY PASS ENT	41
165TH AVE	98
HSE 16554	17
HSE 16577	10
HSE 16610	17
HOWARD LAKE DR	105
HSE 16913	14
HSE 16929	8
170TH AVE	81
HSE 17010	39
HSE 17021	22
HSE 17039	10
HSE 17054	14
HSE 17129	27
172ND AVE	76
HSE 17204	20
HSE 17318	13
HSE 17318A	15
HSE 17345	51
HSE 17402	23
HSE 17418	9
HSE 17418A	23
HSE 17439	11
HSE 17451	7
TOTAL SQ YDS	2267

D SAW BITUMINOUS PAVEMENT (FULL DEPTH)	
LOCATION	LIN FT
155TH AVE	24
CAMP THREE RD E	26
CAMP THREE RD W	27
HSE 15741	12
159TH AVE	29
HSE 15935	12
HSE 16079	20
CORNELL ST	23
HSE 16113	12
HSE 16138	17
HEIDELBERG ST	33
HSE 16225	23
HSE 16251	16
HSE 16228	21
HSE 16301	15
NOTRE DAME ST	31
CITY OF COLUMBUS (S ENT)	31
CITY OF COLUMBUS (MIDDLE ENT)	33
LAMPREY PASS ENT	9
165TH AVE	31
HSE 16554	12
HSE 16577	11
HSE 16610	12
HOWARD LAKE DR	32
HSE 16913	15
HSE 16929	11
170TH AVE	23
HSE 17010	19
HSE 17021	17
HSE 17039	11
HSE 17054	20
HSE 17129	14
172ND AVE	23
HSE 17204	16
HSE 17318	17
HSE 17318A	20
HSE 17345	13
HSE 17402	12
HSE 17418	14
HSE 17418A	13
HSE 17439	16
HSE 17451	13
TOTAL SQ YDS	799

INDEX OF TABULATION CHARTS		
TAB.	DESCRIPTION	SHEET NO.
A	REMOVE CONCRETE DRIVEWAY PAVEMENT	6
B	REMOVE BITUMINOUS PAVEMENT	6
C	SAW CONCRETE PAVEMENT (FULL DEPTH)	6
D	SAW BITUMINOUS PAVEMENT (FULL DEPTH)	6
E	AGGREGATE BASE CLASS 5	6
F	AGGREGATE SHOULDERING CLASS 5	7
G	MILL BITUMINOUS SURFACE 2" (JOINTS)	7
H	TYPE SP 12.5 WEARING COURSE MIX (4 , B)	7
I	TYPE SP 12.5 WEARING COURSE MIX (4 , E)	8
J	TYPE SP 12.5 NON-WEARING COURSE MIX (4 , B)	8
K	6" CONCRETE PAVEMENT	8

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_62 (CSAH23-CSAH18)\Plan\4A TABS.dgn 02/27/2012 12:58:40 PM

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

PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 2/27/12 LICENSE NO. 40416

DRAWN BY: SRK DATE: 1/20/2012
 DESIGN BY: SRK DATE: 1/20/2012
 CHECKED BY: JO DATE: _____



**ANOKA COUNTY
HIGHWAY DEPT.**

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 12-15-62

CONSTRUCTION TABS
 Sheet 6 of 27 Sheets

F AGGREGATE SHOULDERING CLASS 5 (INC GRVL ENT.)							
MAINLINE	STATION	STATION	LENGTH	WIDTH	2" DEPTH	CU YDS	
LNB	10+00	192+10	18210.0	1.5	0.17	172.0	
LSB	10+00	192+10	18210.0	1.5	0.17	172.0	
						SUB TOTAL CU YDS	344.0
SUBTRACT ST. OPENINGS							
			OPENING	SHLDR W.	2" DEPTH	CU YDS	
155TH AVE			100.0	1.5	0.17	0.9	
CAMP THREE RD (E SIDE)			100.0	1.5	0.17	0.9	
CAMP THREE RD (W SIDE)			100.0	1.5	0.17	0.9	
159TH AVE			100.0	1.5	0.17	0.9	
CORNELL ST			100.0	1.5	0.17	0.9	
HEIDELBERG ST			100.0	1.5	0.17	0.9	
NOTRE DAME ST			100.0	1.5	0.17	0.9	
165TH AVE			100.0	1.5	0.17	0.9	
HOWARD LAKE DR			100.0	1.5	0.17	0.9	
167TH LANE			100.0	1.5	0.17	0.9	
168TH AVE			100.0	1.5	0.17	0.9	
170TH AVE			100.0	1.5	0.17	0.9	
172ND AVE			100.0	1.5	0.17	0.9	
						ST OPENINGS	12.3
						SHLDR CU YDS	344.0
						SUBTRACT ST. OPENINGS	12.3
						CU YDS	331.7
						GRVL FACT.	X
						SUBTOTAL TONS	597.0
GRAVEL ENT.							
	LOC						TONS
16010	LT						7.0
16028	LT						7.0
16032	LT						7.0
16013	RT						7.0
16013A	RT						7.0
16059	RT						7.0
16091	RT						7.0
16112	LT						7.0
16122	LT						7.0
16122A	LT						7.0
16139	RT						7.0
16142	LT						7.0
16303	RT						7.0
CITY OF COLUMBUS	RT						7.0
16498	LT						7.0
16529	RT						7.0
16534	LT						7.0
16623	RT						7.0
16630	LT						7.0
16658	LT						7.0
16746	LT						7.0
16746A	LT						7.0
16827	RT						7.0
16827A	RT						7.0
16926	LT						7.0
17108	LT						7.0
17108A	LT						7.0
17115	RT						7.0
17203	RT						7.0
17220	LT						7.0
17217	RT						7.0
17340	LT						7.0
17356	LT						7.0
17405	RT						7.0
17402A	LT						7.0
17425	RT						7.0
						TOTAL TONS	849.0

G MILL BITUMINOUS SURFACE 2" (JOINTS)				
CSAH 5	STA	LENGTH	WIDTH	SQ YDS
MAINLINE	10+00	48.00	10.0	53.3
MAINLINE	192+10	138.00	10.0	153.3
BIT STREETS		LENGTH	WIDTH	SQ YDS
155TH AVE		25.00	4.0	11.1
CAMP THREE RD (E SIDE)		26.00	4.0	11.6
CAMP THREE RD (W SIDE)		27.00	4.0	12.0
159TH AVE		30.00	4.0	13.3
CORNELL ST		24.00	4.0	10.7
HEIDELBERG ST		33.00	4.0	14.7
NOTRE DAME ST		31.00	4.0	13.8
165TH AVE		31.00	4.0	13.8
HOWARD LAKE DR		29.00	4.0	12.9
167TH LANE		35.00	4.0	15.6
168TH AVE		27.00	4.0	12.0
170TH AVE		23.00	4.0	10.2
172ND AVE		22.00	4.0	9.8
TOTAL SQ YDS				368.0

H TYPE SP 12.5 WEARING COURSE MIX (4 , B)		
STREETS / BIT ENTRANCES	SQ YDS	
155TH AVE	85.0	
CAMP THREE RD E	144.0	
CAMP THREE RD W	67.0	
HSE 15741	23.0	
159TH AVE	197.0	
HSE 15935	20.0	
HSE 16079	32.0	
CORNELL ST	94.0	
HSE 16113	26.0	
HSE 16138	31.0	
HEIDELBERG ST	72.0	
HSE 16225	28.0	
HSE 16251	30.0	
HSE 16228	20.0	
HSE 16301	16.0	
NOTRE DAME ST	166.0	
CITY OF COLUMBUS (S ENT)	57.0	
CITY OF COLUMBUS (MIDDLE ENT)	86.0	
LAMPREY PASS ENT	41.0	
165TH AVE	98.0	
HSE 16554	17.0	
HSE 16577	10.0	
HSE 16610	17.0	
HOWARD LAKE DR	105.0	
HSE 16913	14.0	
HSE 16929	8.0	
170TH AVE	81.0	
HSE 17010	39.0	
HSE 17021	22.0	
HSE 17039	10.0	
HSE 17054	14.0	
HSE 17129	27.0	
172ND AVE	76.0	
HSE 17418	9.0	
HSE 17418A	23.0	
HSE 17439	11.0	
HSE 17451	7.0	
SQ YDS		1821.0
TOTAL TONS		209

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_62 (CSAH23-CSAH18)\Plan\4A TABS.dgn 02/27/2012 12:57:00 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: CHARLES CADENHEAD

SIGNATURE: *[Signature]*

DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY SRK DATE 1/20/2012

DESIGN BY SRK DATE 1/20/2012

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ANOKA COUNTY
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STATE PROJECT NO. _____

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CITY PROJECT NO. _____

COUNTY PROJECT NO. 12-15-62

CONSTRUCTION TABS

Sheet 7 of 27 Sheets

I TYPE SP12.5 WEARING COURSE MIX (4 , E)				
MAINLINE (TOP LIFT)		LENGTH	WIDTH	SQ YDS
LNB / LSB		18210.0	24.0	48560.0
RTL/BYPASS (TOP LIFT)		LENGTH	WIDTH	SQ YDS
CSAH 23	SB RTL	100.0	12.0	133.3
155TH AVE	SB RTL	480.0	12.0	640.0
CAMP THREE RD	NB RTL	480.0	12.0	640.0
CAMP THREE RD	SB RTL	480.0	12.0	640.0
159TH AVE	NB BYPASS	620.0	12.0	826.7
159TH AVE	SB RTL	480.0	12.0	640.0
CORNELL ST	NB BYPASS	620.0	12.0	826.7
CORNELL ST	SB RTL	480.0	12.0	640.0
NOTRE DAME ST	SB RTL	480.0	12.0	640.0
HOWARD LAKE DR	NB RTL	480.0	12.0	640.0
167TH LANE	SB RTL	480.0	12.0	640.0
168TH AVE	NB RTL	480.0	12.0	640.0
170TH AVE	NB RTL	480.0	12.0	640.0
170TH AVE	SB BYPASS	620.0	12.0	826.7
172ND AVE	NB RTL	480.0	12.0	640.0
172ND AVE	SB BYPASS	620.0	12.0	826.7
CSAH 18	NB RTL	480.0	12.0	640.0
LNB (4120' OF RTL & BYPASS AREAS)		14090.0	8.0	12524.4
LSB (4220' OF RTL & BYPASS AREAS)		13990.0	8.0	12435.6
TOTAL SQ YDS				84640.0
TOTAL TONS				9734

J TYPE SP 12.5 NON-WEARING COURSE MIX (4 , B)	
MAINLINE	SQ.YDS.
LNB / LSB	50583.3
BIT STREET APPROACHES	
155TH AVE	85.0
CAMP THREE RD E	144.0
CAMP THREE RD W	67.0
HSE 15741	23.0
159TH AVE	197.0
HSE 15935	20.0
HSE 16079	32.0
CORNELL ST	94.0
HSE 16113	26.0
HSE 16138	31.0
HEIDELBERG ST	72.0
HSE 16225	26.0
HSE 16251	30.0
HSE 16228	20.0
HSE 16301	16.0
NOTRE DAME ST	166.0
CITY OF COLUMBUS (S ENT)	57.0
CITY OF COLUMBUS (MIDDLE ENT)	86.0
LAMPREYPASS ENT	41.0
165TH AVE	98.0
HSE 16554	17.0
HSE 16711	29.0
HSE 16735	33.0
168TH AVE	97.0
HSE 16913	14.0
HSE 16929	8.0
170TH AVE	81.0
HSE 17010	39.0
HSE 17021	22.0
HSE 17039	10.0
HSE 17318A	15.0
HSE 17345	51.0
HSE 17402	23.0
HSE 17418	9.0
HSE 17418A	23.0
HSE 17439	11.0
HSE 17451	7.0
SQ YDS	52403
TOTAL TONS	6026

K 6" CONCRETE DRIVEWAY PAVEMENT	
16271 RT	24.0
16912 LT	9.0
17059 RT	6.0
17360 LT	9.0
17384 LT	6.0
17387 RT	6.0
TOTAL SQ YDS	60.0

NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_62_CSAH23-CSAH18\Plan4A TABS.dgn 02/27/2012 12:57:24 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: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY SRK DATE 1/20/2012
 DESIGN BY SRK DATE 1/20/2012
 CHECKED BY JO DATE

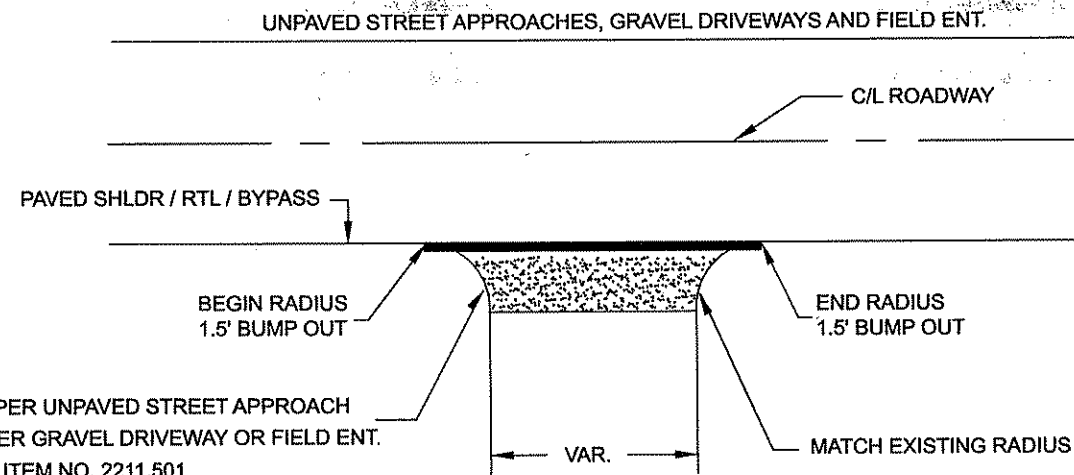


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STATE PROJECT NO. _____
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 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 12-15-62

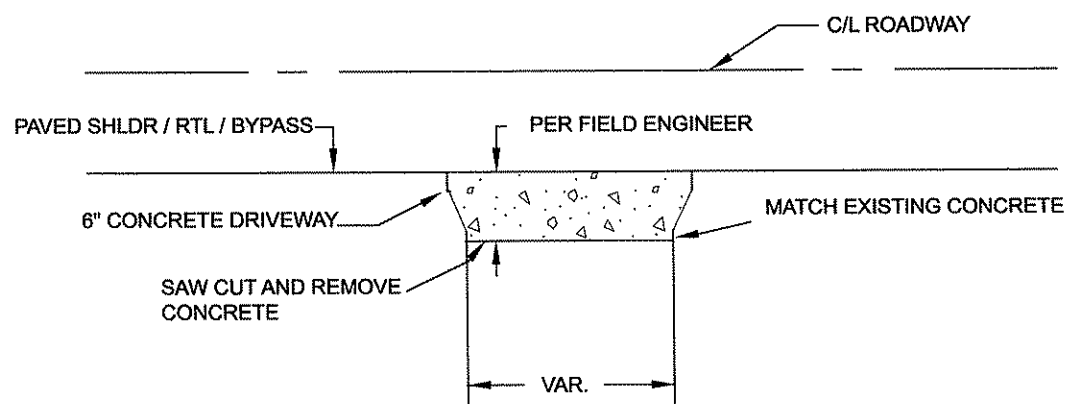
CONSTRUCTION TABS

Sheet 8 of 27 Sheets

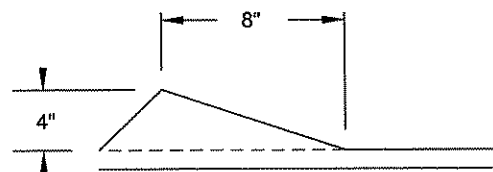


10 TON CL 5 PER UNPAVED STREET APPROACH
 7 TON CL 5 PER GRAVEL DRIVEWAY OR FIELD ENT.
 PAID FOR AS ITEM NO. 2211.501
 AGGREGATE BASE CL 5 (TON)

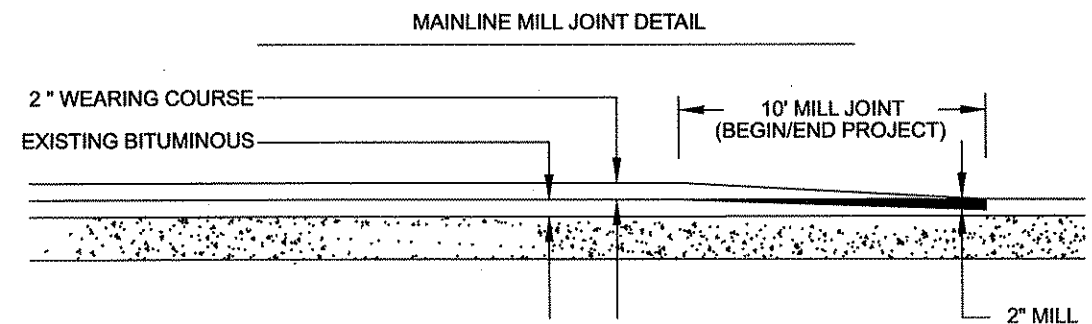
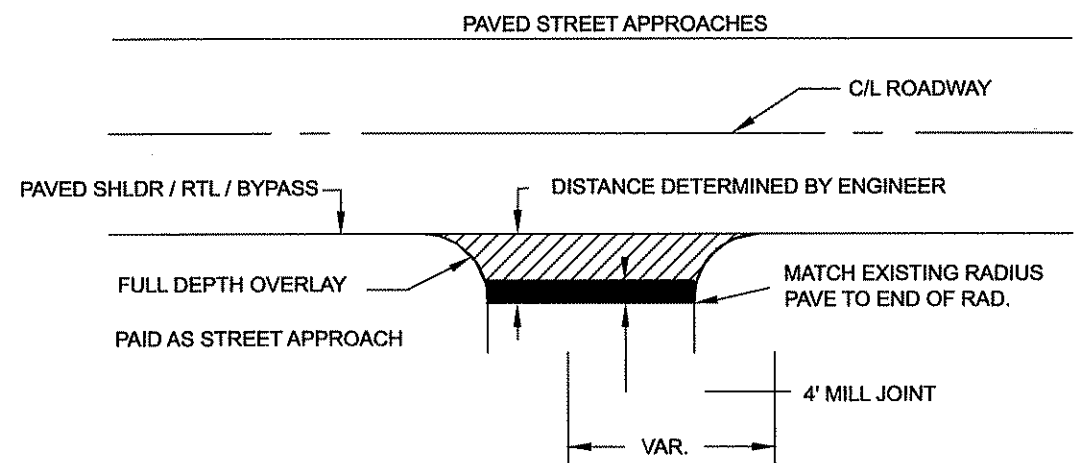
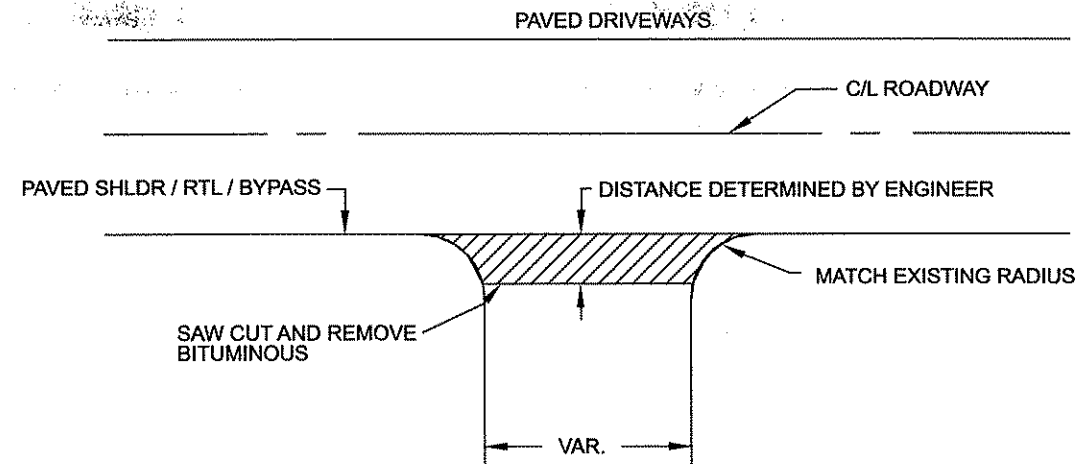
CONCRETE DRIVEWAYS



BITUMINOUS CURB
 LNB STA 112+15 - 115+85
 (PLACED DURING THE PAVING OF MAIN LINE WEAR COURSE)



EXISTING BITUMINOUS CURB (LIP) TO BE RECLAIMED WITH SHOULDER
 PROPOSED BITUMINOUS CURB (LIP) TO BE PAID UNDER ITEM NO. 2535.501



NOTE: DRIVEWAYS TO BE PAVED IN SEPERATE OPERATION OTHER THAN MAINLINE WEAR.
 PAID AS STREET APPROACH WEAR

NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\12-01-00\CSAH_82_(CSAH23-CSAH18)\Plan3A_Details.dgn					

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/27/12 LICENSE NO. # 40416

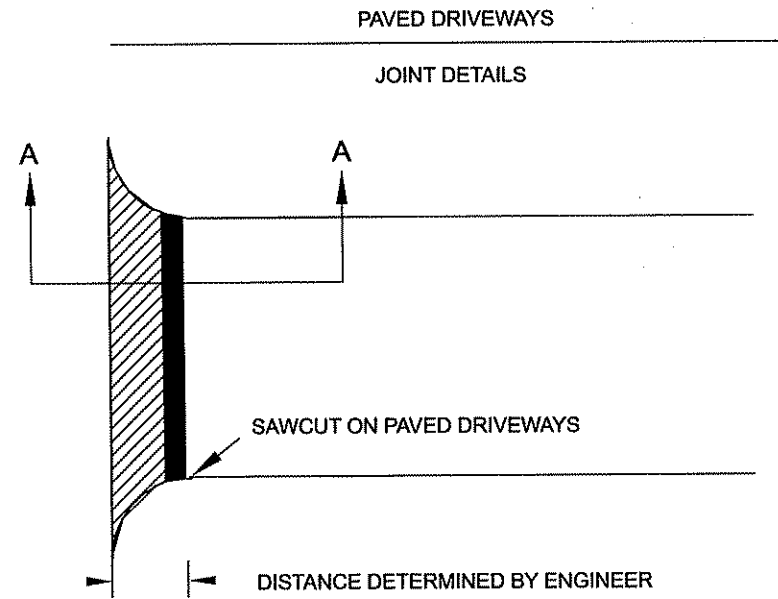
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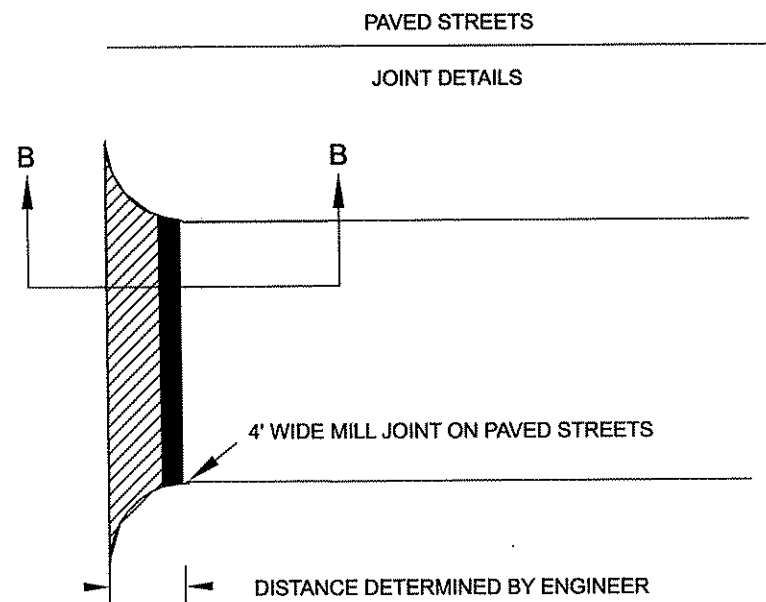
ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
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 COUNTY PROJECT NO. 12-15-62

MISCELLANEOUS DETAILS
 Sheet 9 of 27 Sheets



DRIVEWAYS TO BE PAVED IN SEPERATE OPERATION OTHER THAN MAINLINE WEAR.
PAID AS DRIVEWAY/STREET APPROACH WEAR



OVERLAY EXISTING STEET APPROACH, DO NOT RECLAIM
STREETS TO BE PAVED IN SEPERATE OPERATION OTHER THAN MAINLINE WEAR.
PAID AS DRIVEWAY/STREET APPROACH WEAR

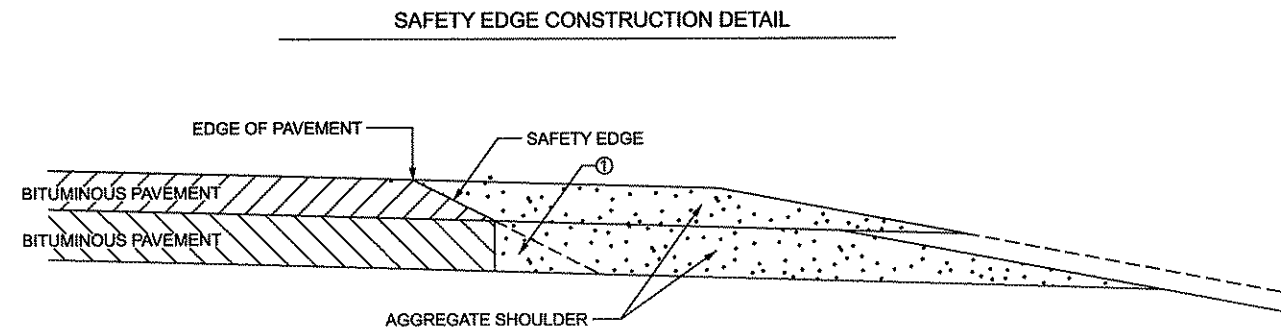
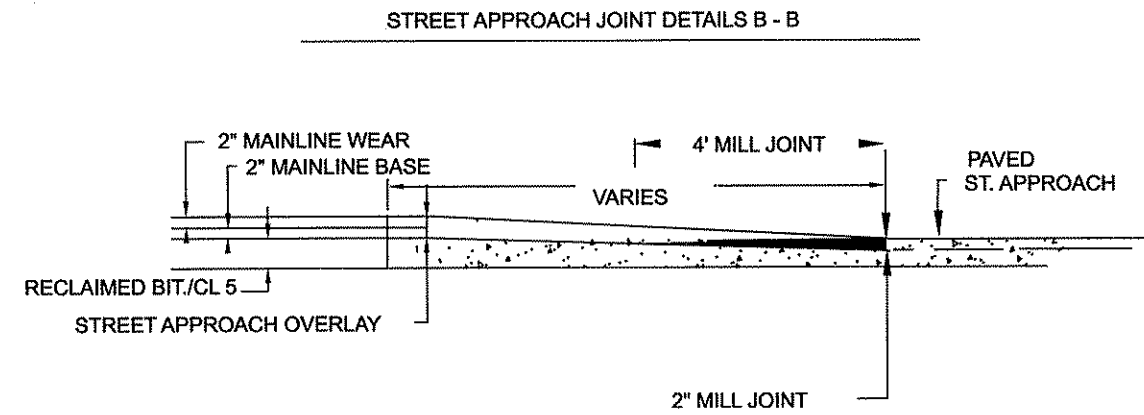
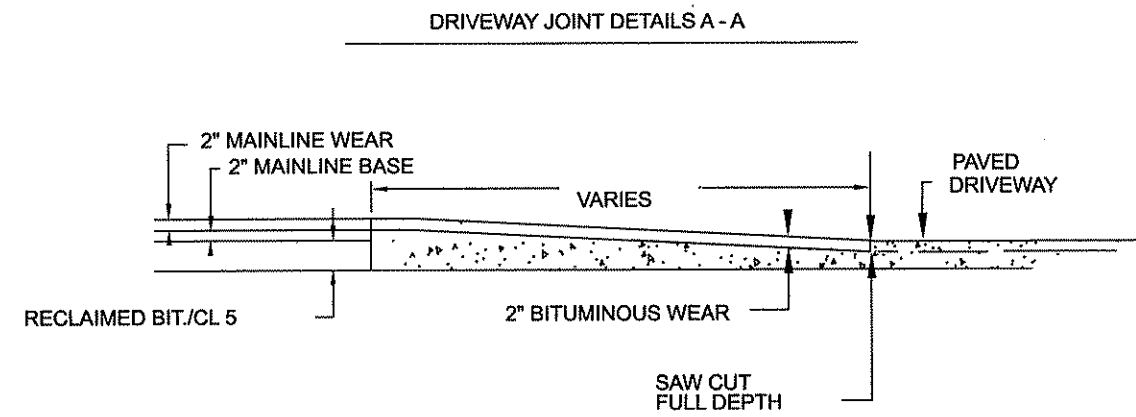


FIGURE B
BITUMINOUS PAVEMENT

① OPTIONAL DESIGN EXTENDS SAFETY EDGE DEEPER
THAN 6" AND WIDER THAN 10.5". SEE SPECIAL PROVISIONS.

NO	DATE	BY	CRD	APPR	REVISION

NAME: P:\12-01-00\CSAH_62_(CSAH23-CSAH18)\Plan3A_Details.dgn 02/27/2012 1:14:14 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: CHARLES CADENHEAD
SIGNATURE: *[Signature]*
DATE: 3/2/12 LICENSE NO. #40416

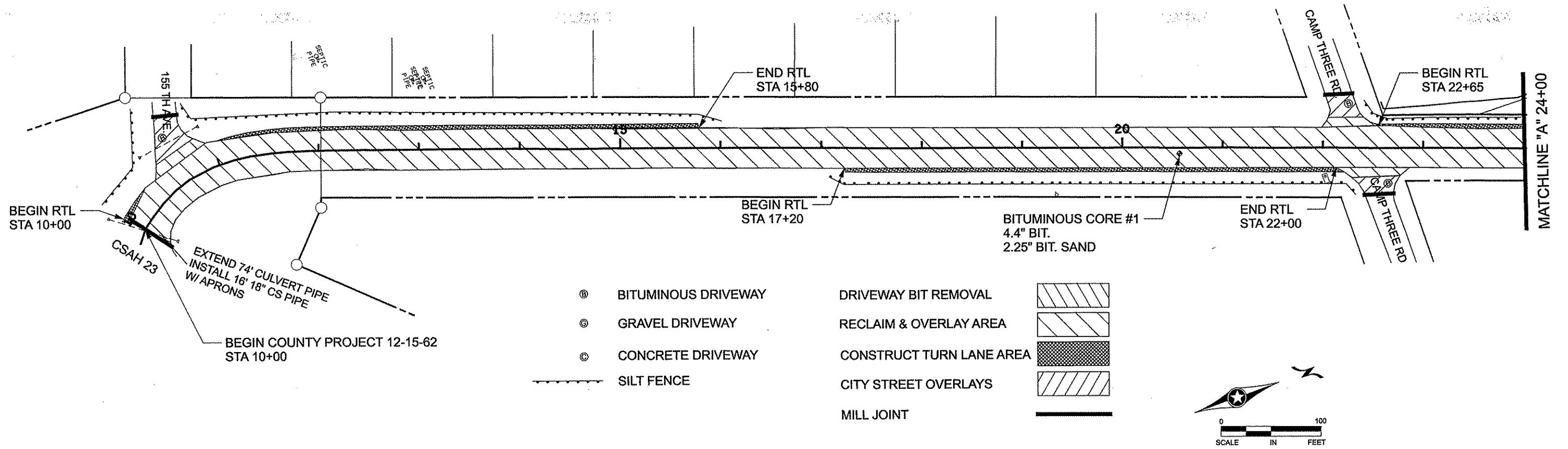
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DESIGN BY SRK DATE 1/20/2012
CHECKED BY JO DATE



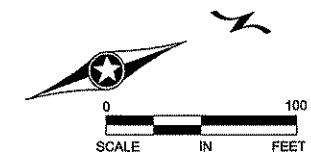
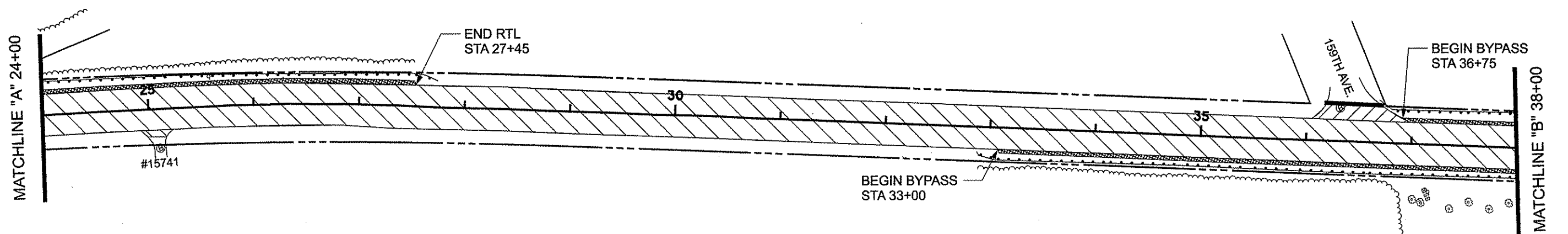
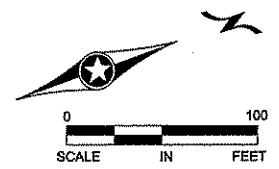
ANOKA COUNTY
HIGHWAY DEPT.

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COUNTY PROJECT NO. 12-15-62

MISCELLANEOUS DETAILS
Sheet 10 of 27 Sheets



- ⊗ BITUMINOUS DRIVEWAY
- ⊙ GRAVEL DRIVEWAY
- ⊙ CONCRETE DRIVEWAY
- SILT FENCE
- DRIVEWAY BIT REMOVAL
- RECLAIM & OVERLAY AREA
- CONSTRUCT TURN LANE AREA
- CITY STREET OVERLAYS
- MILL JOINT



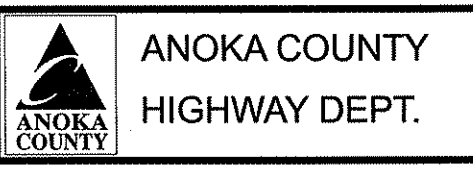
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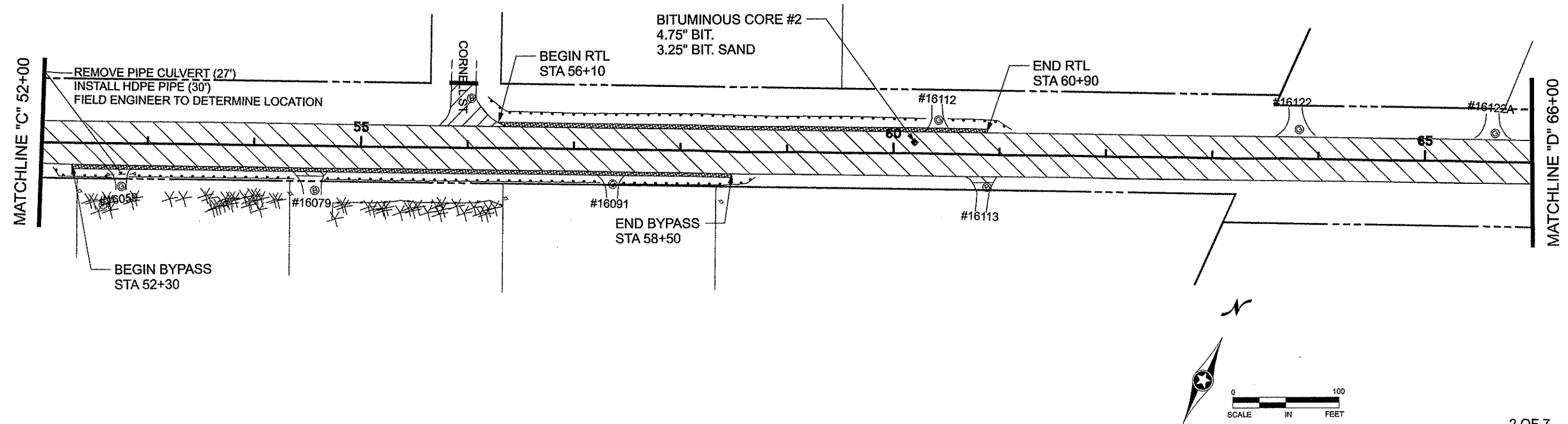
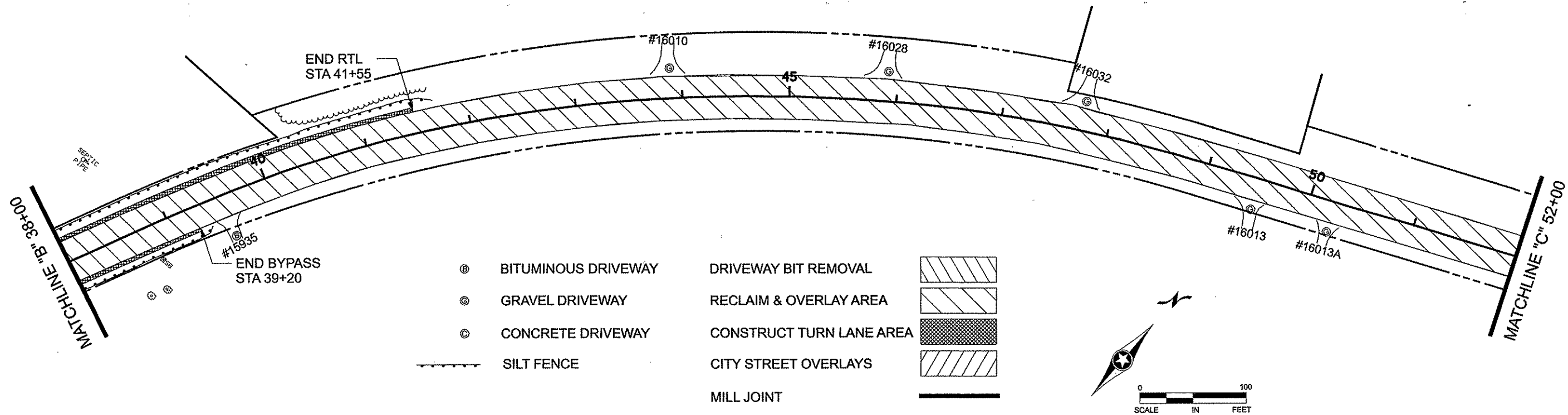
PRINT NAME: CHARLES CADENHEAD
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CONSTRUCTION PLAN
 STA 10+00 TO 38+00
 Sheet 11 of 27 Sheets



NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_62_(CSAH23-CSAH18)\Planview plan sheet 2.dgn
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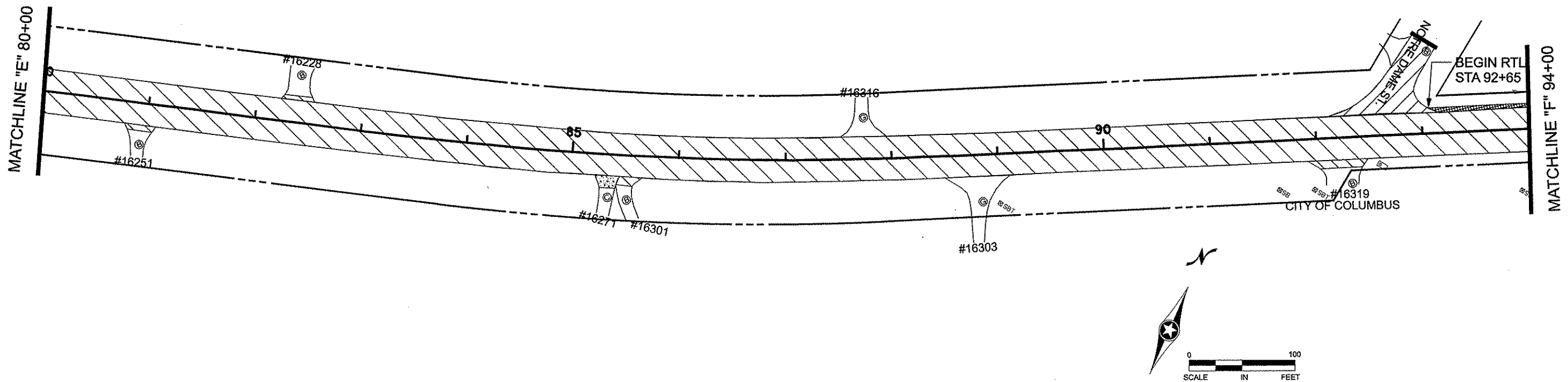
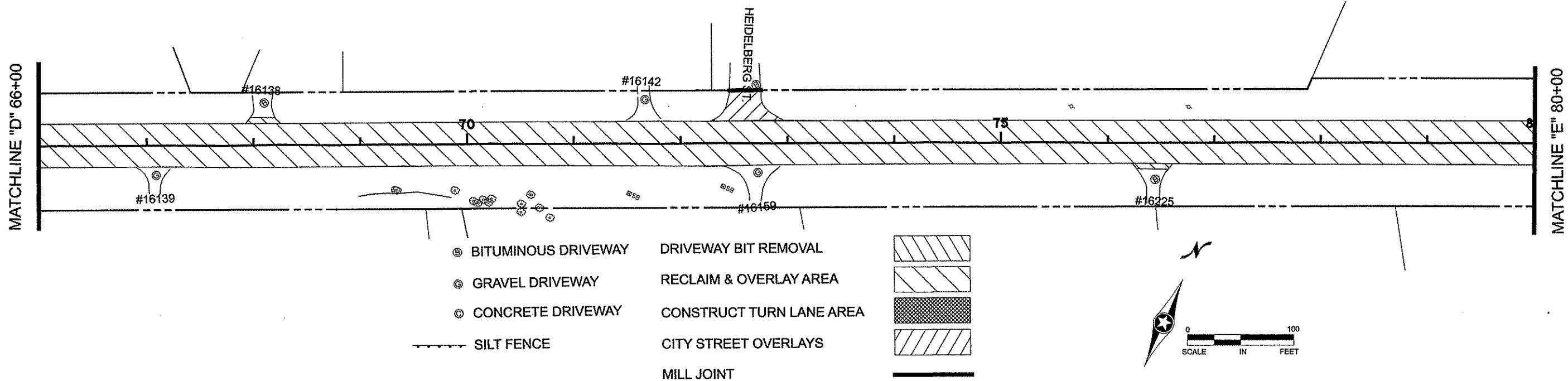
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 SIGNATURE: *[Signature]*
 DATE: 2/27/12 LICENSE NO. 40416

DRAWN BY: SRK DATE: 1/20/2012
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ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 12-15-62

CONSTRUCTION PLAN
 STA 38+00 TO 66+00
 Sheet 12 of 27 Sheets



NO	DATE	BY	CKD	APPR	REVISION
NAME: P:112-01-00\CSAH_62_(CSAH23-CSAH18)\Plan\new plan sheet 3.dgn					
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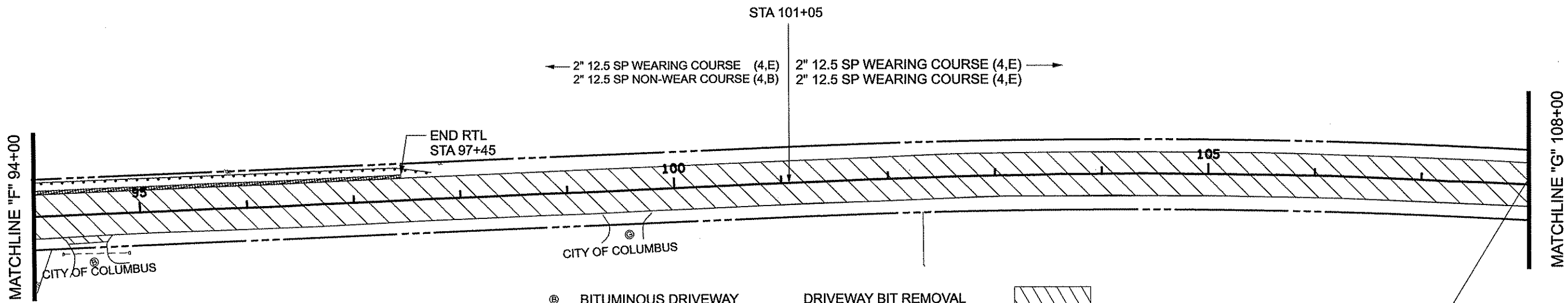
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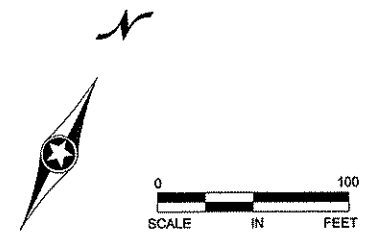
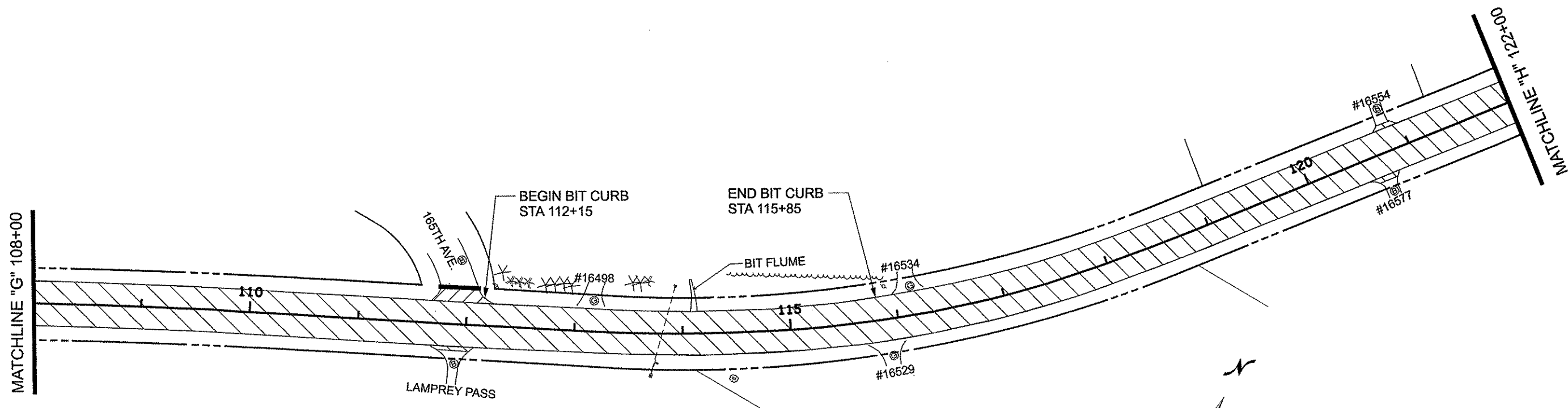
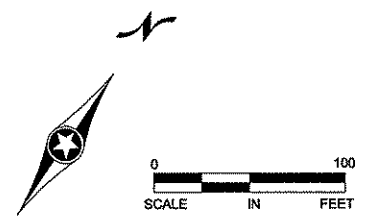
ANOKA COUNTY
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 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 12-15-62

CONSTRUCTION PLAN
 STA 66+00 TO 94+00
 Sheet 13 of 27 Sheets



- ⊙ BITUMINOUS DRIVEWAY
- ⊙ GRAVEL DRIVEWAY
- ⊙ CONCRETE DRIVEWAY
- SILT FENCE
- DRIVEWAY BIT REMOVAL
- RECLAIM & OVERLAY AREA
- CONSTRUCT TURN LANE AREA
- CITY STREET OVERLAYS
- MILL JOINT



NO	DATE	BY	CHKD	APPR	REVISION
NAME: P:\12-01-00\CSAH_62_(CSAH23-CSAH18)\Plan\new plan sheet 4.dgn					
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PRINT NAME: CHARLES CADENHEAD

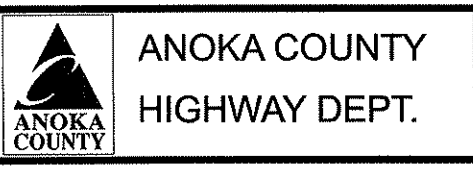
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DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY: SRK DATE: 1/20/2012

DESIGN BY: SRK DATE: 1/20/2012

CHECKED BY: JO DATE: _____



STATE PROJECT NO. _____

STATE AID PROJECT NO. _____

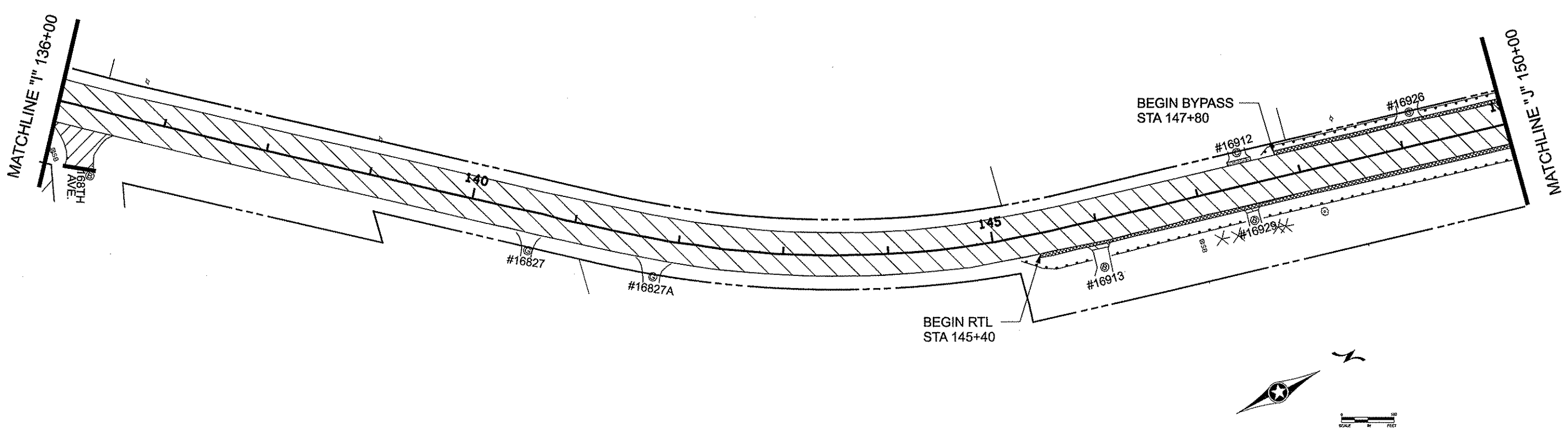
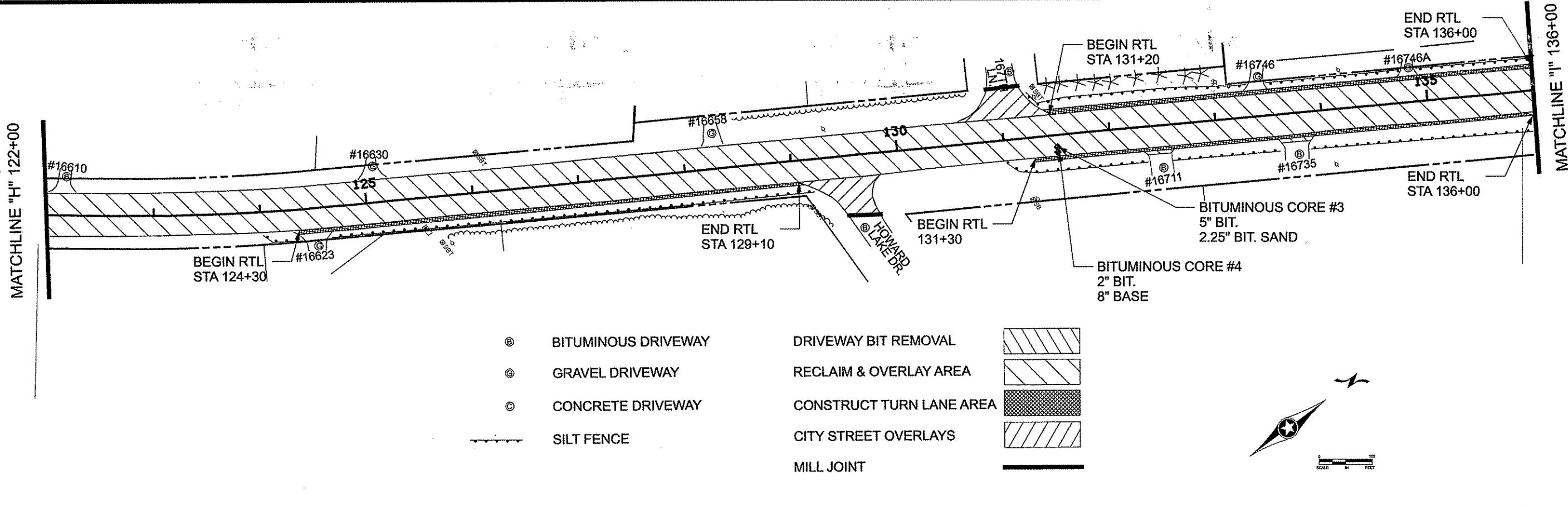
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COUNTY PROJECT NO. 12-15-62

CONSTRUCTION PLAN

STA 94+00 TO 122+00

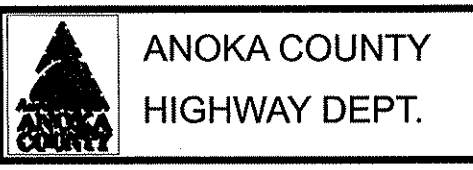
Sheet 14 of 27 Sheets



NO	DATE	BY	CKD	APPR	REVISION
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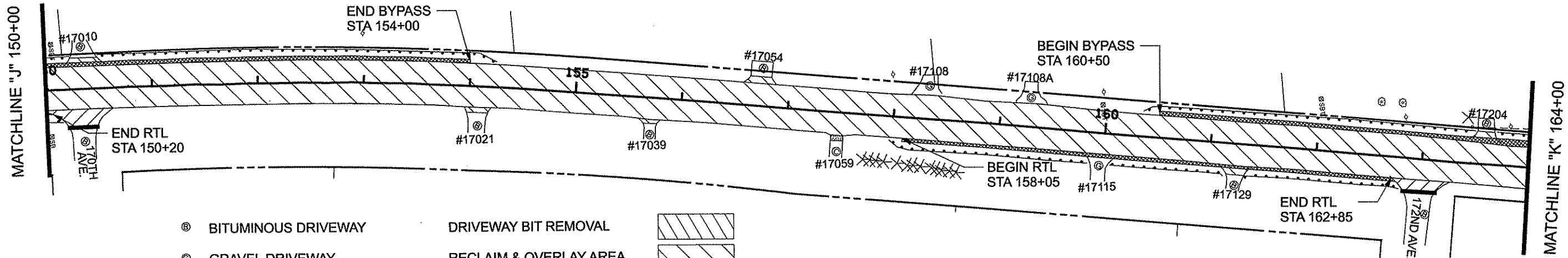
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: CHARLES CADESHHEAD
 SIGNATURE: *[Signature]*
 DATE: 2/27/12 LICENSE NO. 40416

DRAWN BY SRK DATE 1/20/2012
 DESIGN BY SRK DATE 1/20/2012
 CHECKED BY JO DATE

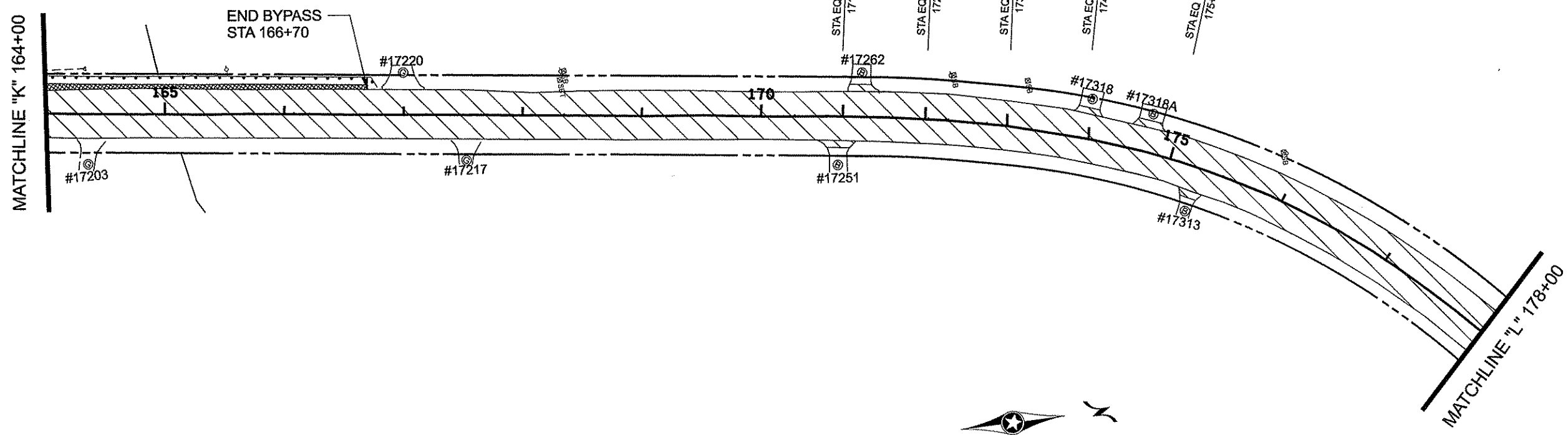


STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 12-15-62

CONSTRUCTION PLAN
 STA 122+00 TO 150+00
 Sheet 15 of 27 Sheets

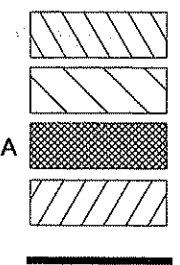


- ⊙ BITUMINOUS DRIVEWAY
- ⊙ GRAVEL DRIVEWAY
- ⊙ CONCRETE DRIVEWAY
- SILT FENCE
- DRIVEWAY BIT REMOVAL
- RECLAIM & OVERLAY AREA
- CONSTRUCT TURN LANE AREA
- CITY STREET OVERLAYS
- MILL JOINT

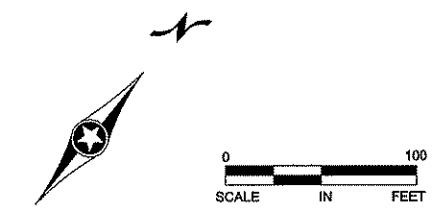
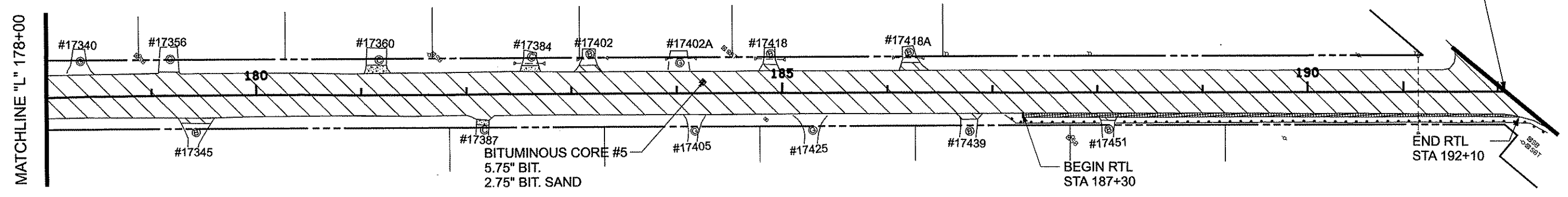


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NO	DATE	BY	CKD	APPR	REVISION											

- Ⓟ BITUMINOUS DRIVEWAY
- Ⓞ GRAVEL DRIVEWAY
- Ⓞ CONCRETE DRIVEWAY
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- DRIVEWAY BIT REMOVAL
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END COUNTY PROJECT 12-15-62
STA 192+10



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_62_(CSAH23-CSAH18)\Plan\new plan sheet 7.dgn 02/27/2012 2:37:38 PM

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STATE PROJECT NO. _____

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CITY PROJECT NO. _____

COUNTY PROJECT NO. 12-15-62

CONSTRUCTION PLAN

STA 178+00 TO 192+10

Sheet 17 of 27 Sheets

PERMANENT PAVEMENT MARKING PLAN
NOTES AND GUIDELINES

GENERAL INFORMATION:

THE ENGINEER'S INVOLVEMENT IN THE APPLICATION OF THE MATERIAL SHALL BE LIMITED TO FIELD CONSULTATION AND INSPECTION. ANOKA COUNTY HIGHWAY DEPARTMENT WILL PLACE NECESSARY "SPOTTING" AT APPROPRIATE POINTS TO PROVIDE HORIZONTAL CONTROL FOR STRIPING AND TO DETERMINE NECESSARY STARTING AND CUTOFF POINTS, LONGITUDINAL JOINTS, PAVEMENT EDGES AND EXISTING MARKINGS MAY SERVE AS HORIZONTAL CONTROL WHEN SO DIRECTED.

EDGE LINES AND LANE LINES ARE TO BE BROKEN ONLY AT INTERSECTIONS WITH PUBLIC ROADS AND AT PRIVATE ENTRANCES IF THEY ARE CONTROLLED BY A YIELD SIGN, STOP SIGN OR TRAFFIC SIGNAL. THE BREAK POINT IS TO BE AT THE START OF THE RADIUS FOR THE INTERSECTION OR AT MARKED STOP LINES OR CROSSWALKS.

A TOLERANCE OF 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.

EPOXY:

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 EPOXY PAVEMENT MARKINGS.

THE EPOXY MARKING APPLICATION SHALL IMMEDIATELY FOLLOW THE PAVEMENT CLEANING. GLASS BEANS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE EPOXY RESIN LINE TO PROVIDE AN IMMEDIATE NO-TRACK SYSTEM.

AN EPOLY RESIN LINE 4" WIDE AND 15 MILL THICKNESS (WET), REQUIRES AN APPLICATION RATE OF ONE (1) GALLON OF COMPONENTS FOR 320 FEET OF LINE. GLASS BEADS SHALL BE APPLIED AT A POUND PER GALLON RATE SUFFICIENT TO ACHIEVE AN ACCEPTABLE NO-TRACK SYSTEM.

OPERATIONS SHALL BE CONDUCTED ONLY WHEN THE ROAD PAVEMENT SURFACE TEMPERATURES ARE 50 DEGREES FAHRENHEIT OR GREATER.

PERMANENT PAVEMENT MARKINGS SHALL NOT BE PLACED OVER TEMPORARY TAPE MARKINGS.

PREFORMED THERMOPLASTIC:

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

PAINT:

AT THE TIME OF APPLYING THE MARKING MATERIAL, THE APPLICATION AREA SHALL BE FREE OF CONTAMINATION. THE CONTRACTOR SHALL CLEAN THE ROADWAY SURFACE PRIOR TO THE LINE APPLICATION IN A MANNER AND TO THE EXTENT REQUIRED BY THE ENGINEER.

GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE PAINT LINE.

EXCEPT WHEN USED AS A TEMPORARY MARKING, PAVEMENT MARKINGS SHALL ONLY BE APPLIED IN SEASONABLE WEATHER WHEN AIR TEMPERATURE IS 50 DEGREES FARHENHEIT OR HIGHER AND SHALL NOT BE APPLIED WHEN THE WIND OR OTHER CONDITIONS CAUSE A FILD OR DUST TO BE DEPOSITED ON THE PAVEMENT SURFACE AFTER CLEANING AND BEFORE THE MARKING MATERIAL CAN BE APPLIED.

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

PAVEMENT MARKING QUANTITIES		
Item	Quantity	Units
4" Double Solid Line Yellow - Epoxy	3059	Lin Ft
4" Solid Linen Yellow - Epoxy	6754	Lin Ft
4" Broken Line Yellow - Epoxy (10 ft stripe / 40 ft gap)	2970	Lin Ft
4" Solid Line White - Epoxy	38117	Lin Ft
4" Broken Line White - Epoxy (10 ft stripe / 40 ft gap)	160	Lin Ft

SYMBOLS & MATERIALS LEGEND

■ CROSSWALK BLOCK WHITE PREFORMED THERMOPLASTIC

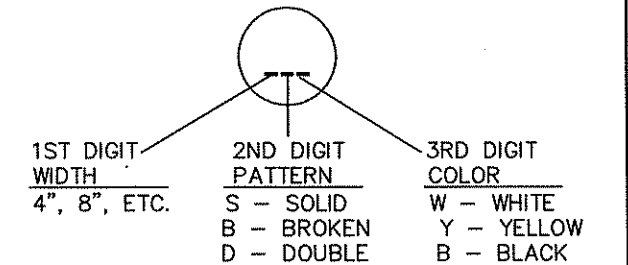
↩ PAVEMENT MESSAGE (LEFT ARROW) PREFORMED THERMOPLASTIC

STRIPING KEY

○ CIRCLE - EPOXY □ SQUARE PREFORMED THERMOPLASTIC

△ TRIANGLE - PAINT

⬠ PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING



EXAMPLE: (4SW) = 4" SOLID LINE WHITE - EPOXY

NO	DATE	BY	CHKD	APPR	REVISION

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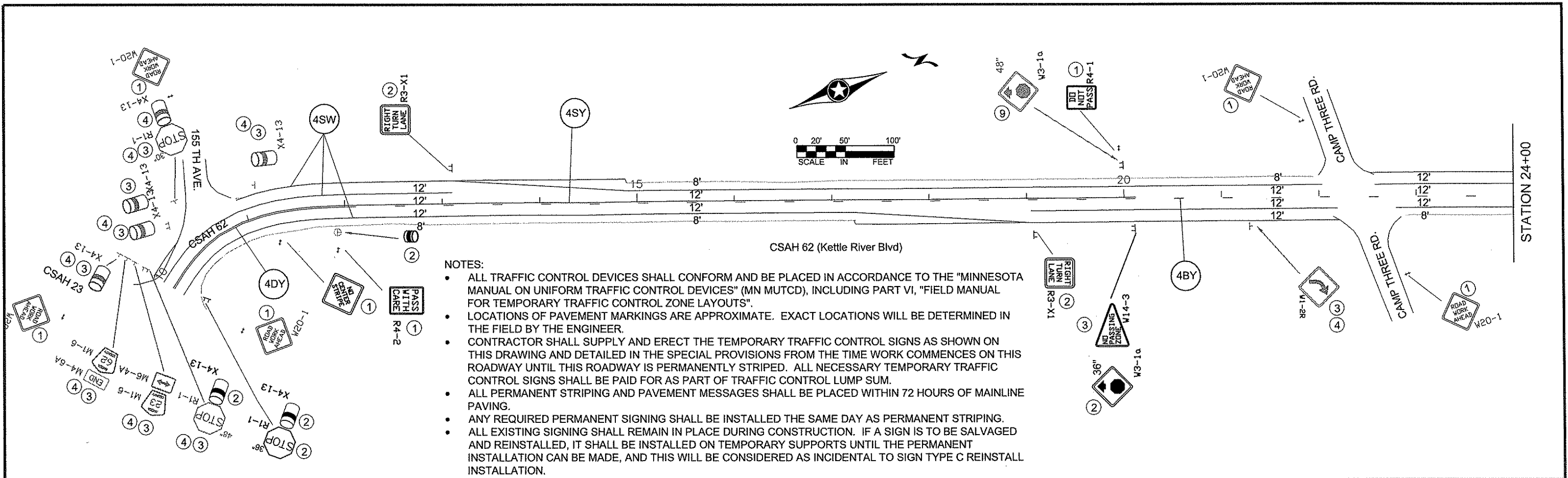
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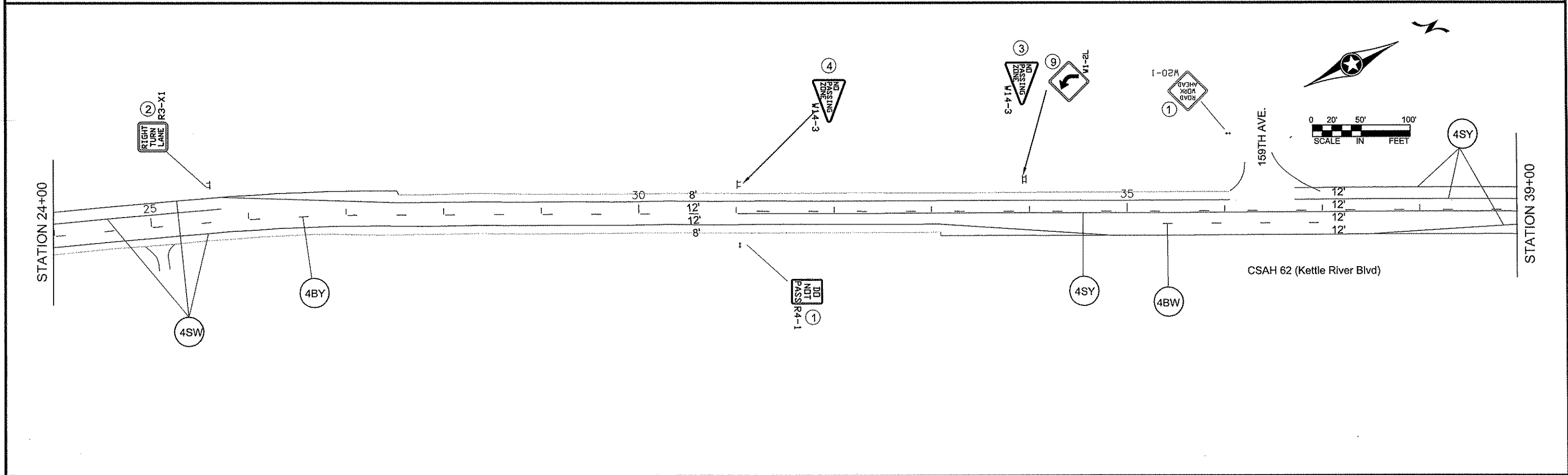
ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
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 COUNTY PROJECT NO. 12-15-62

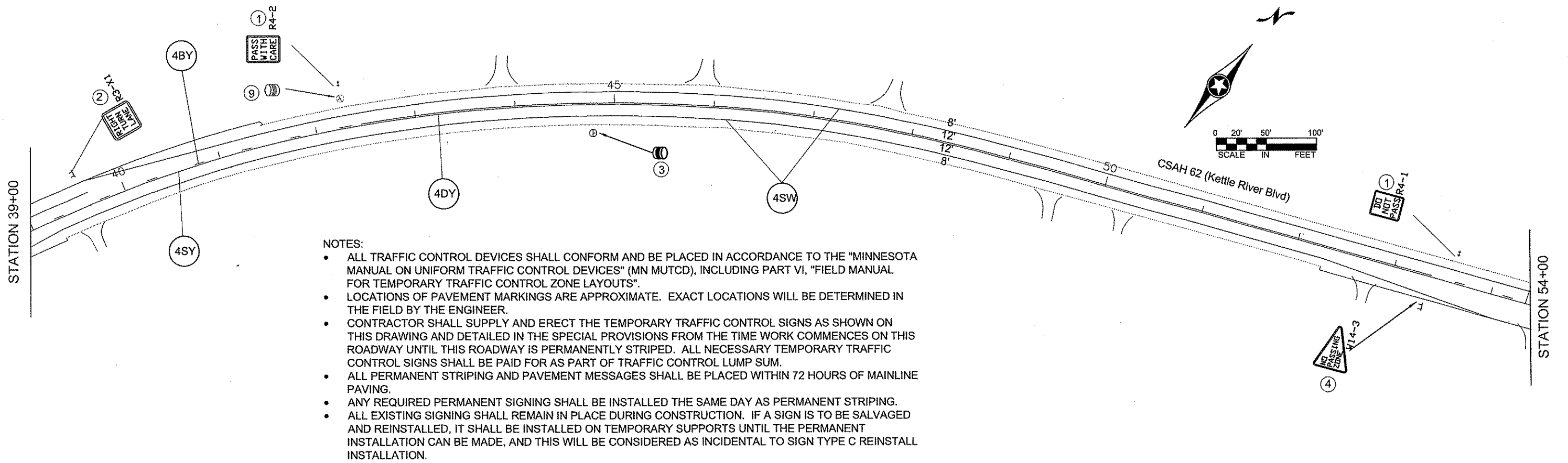
PERMANENT MARKING
TABULATION
 Sheet 18 of 27 Sheets



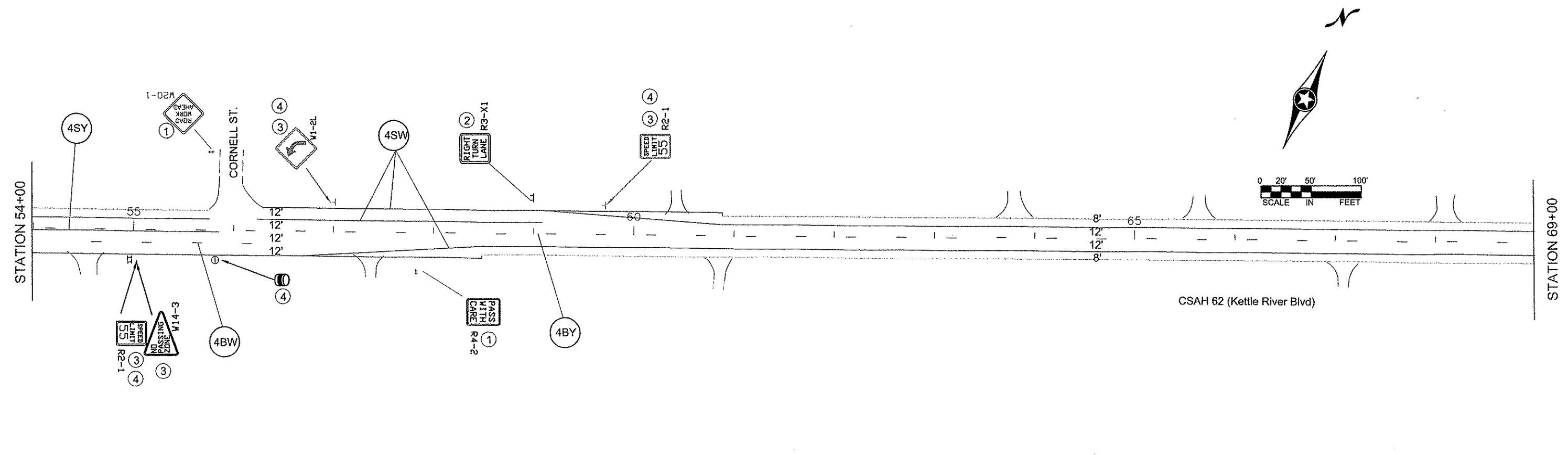
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NO	DATE	BY	CKD	APPR	REVISION	NAME: P:\12-01-00\CSAH 62\Base\TRAFFIC\12-15-62_Signing and Striping.dwg				



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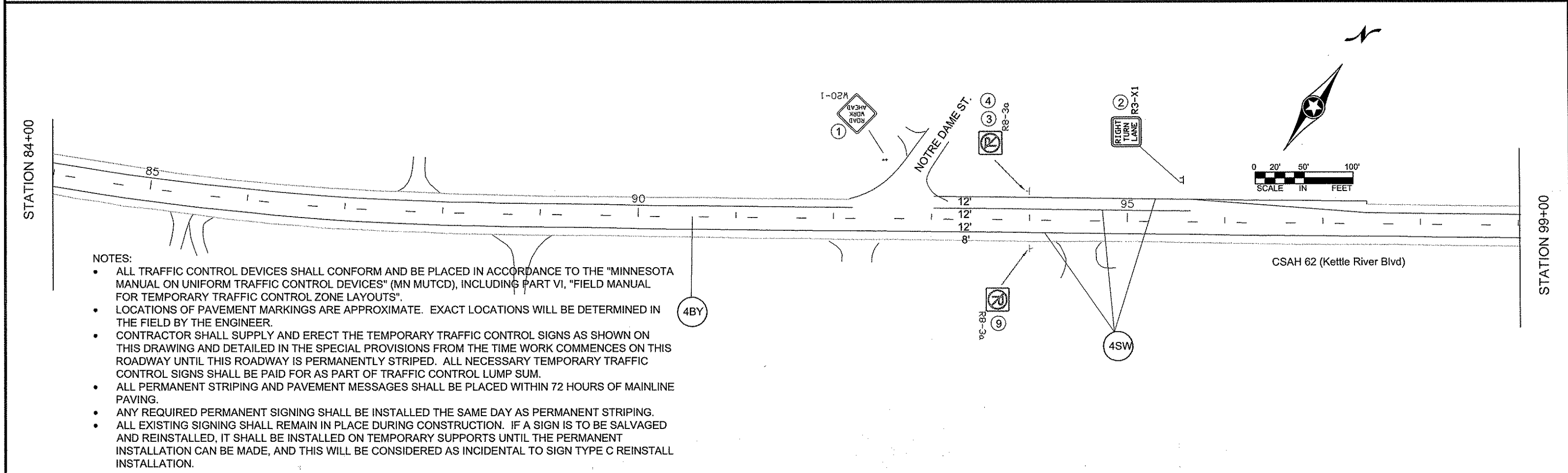
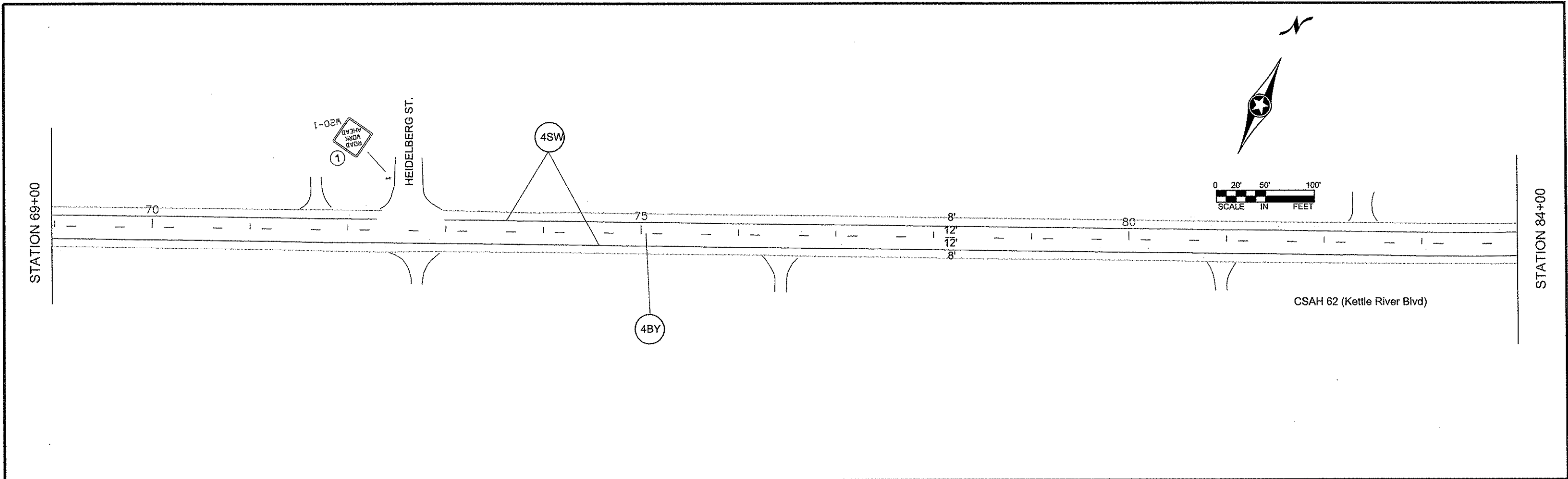


ANOKA COUNTY
 HIGHWAY DEPT.

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CSAH 62 (KETTLE RIVER BLVD)
 TEMPORARY SIGNING
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Sheet 20 of 27 Sheets



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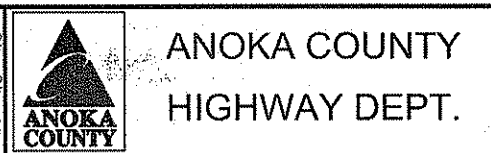
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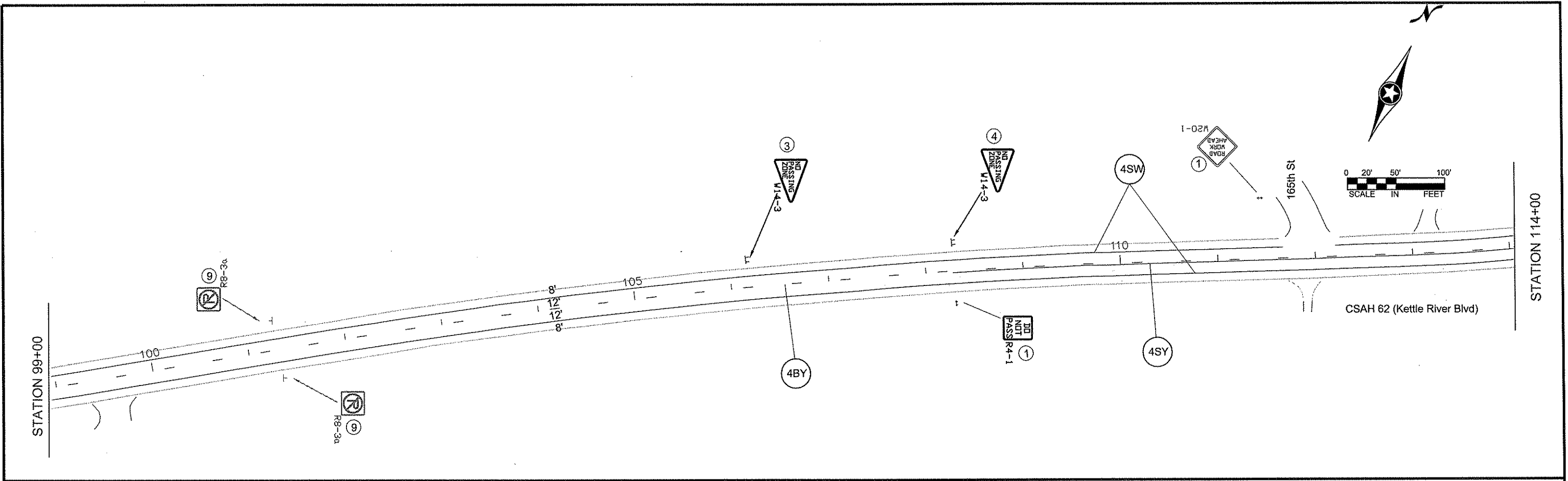
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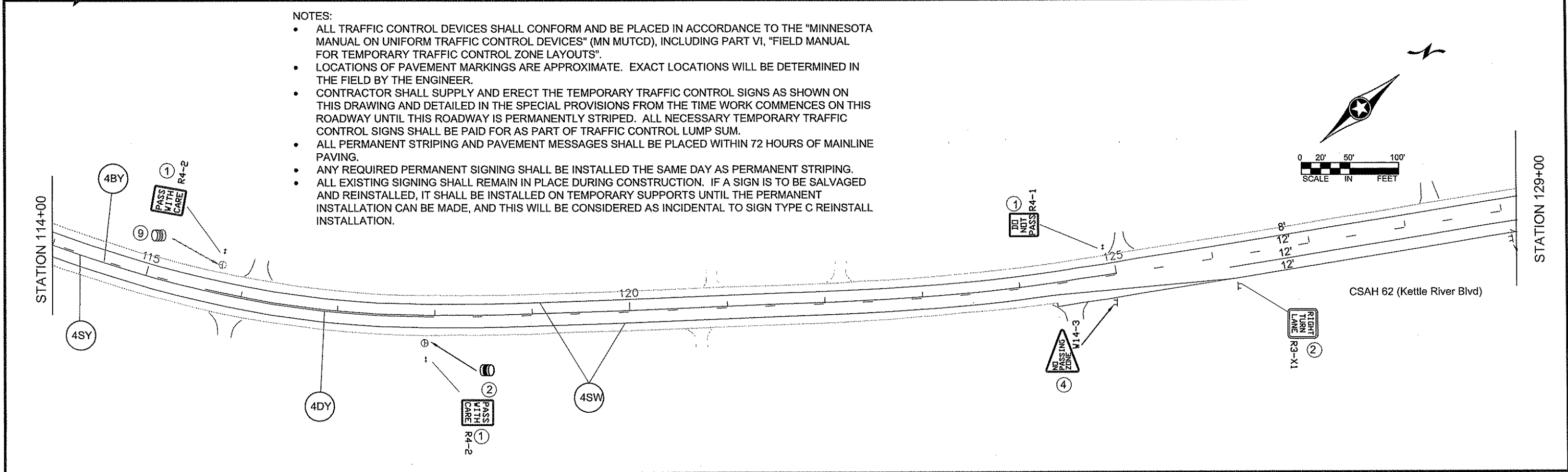
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CSAH 62 (KETTLE RIVER BLVD)
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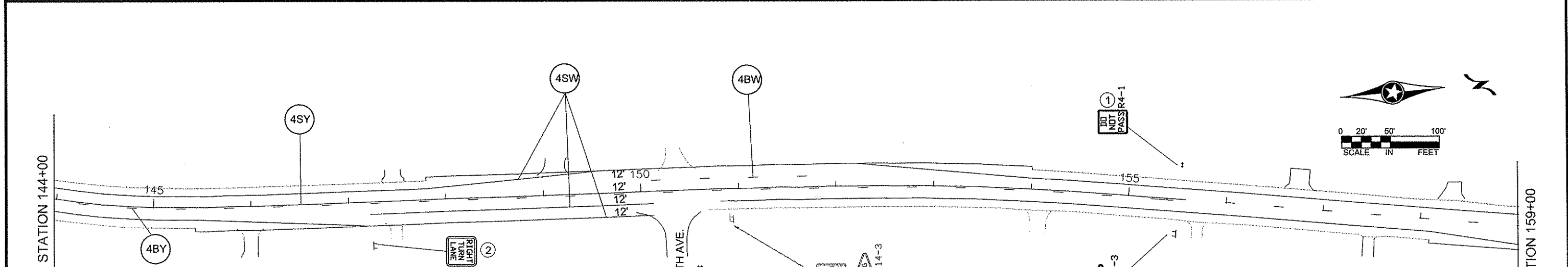
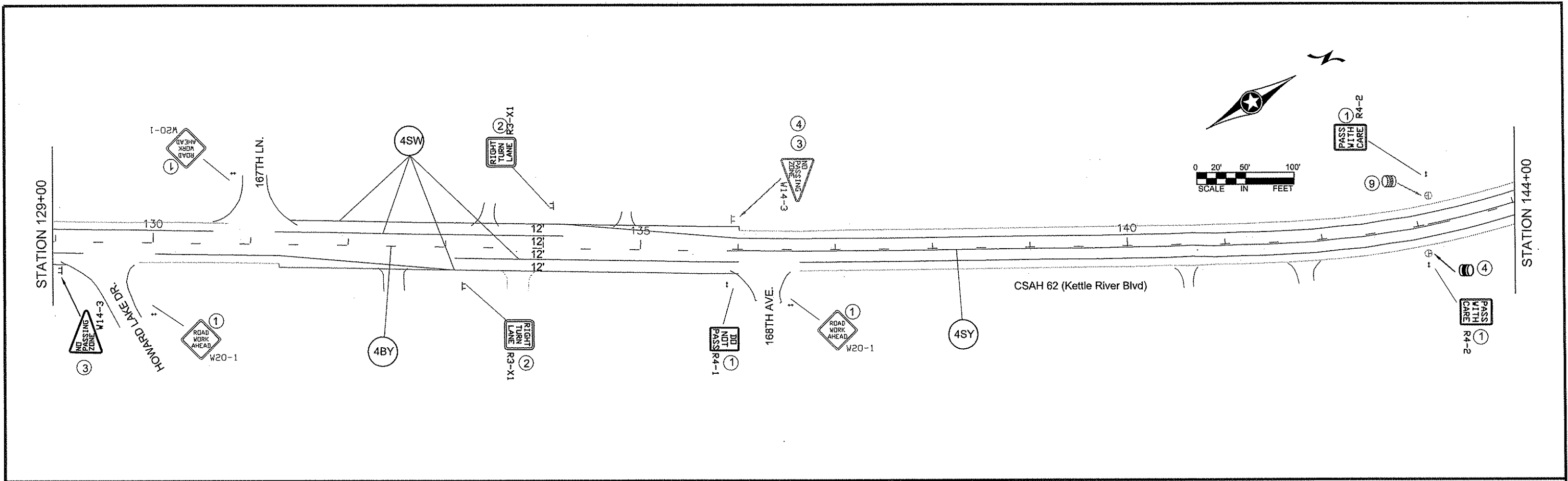
Sheet 21 of 27 Sheets



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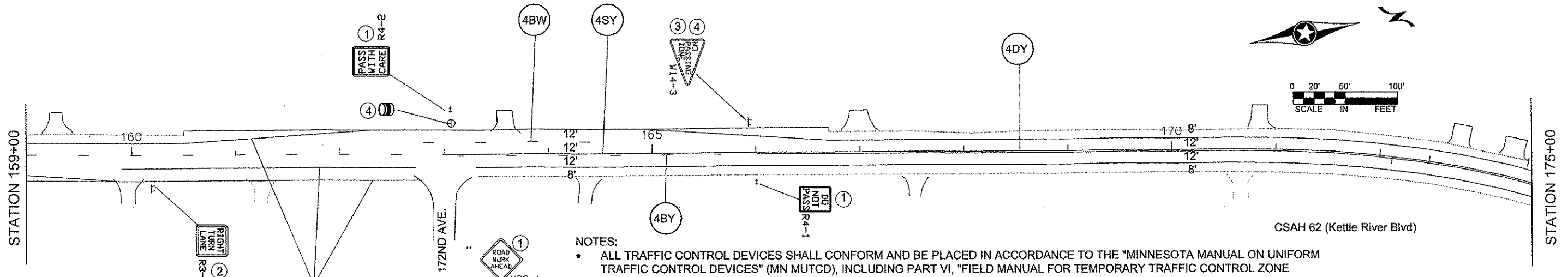


**ANOKA COUNTY
HIGHWAY DEPT.**

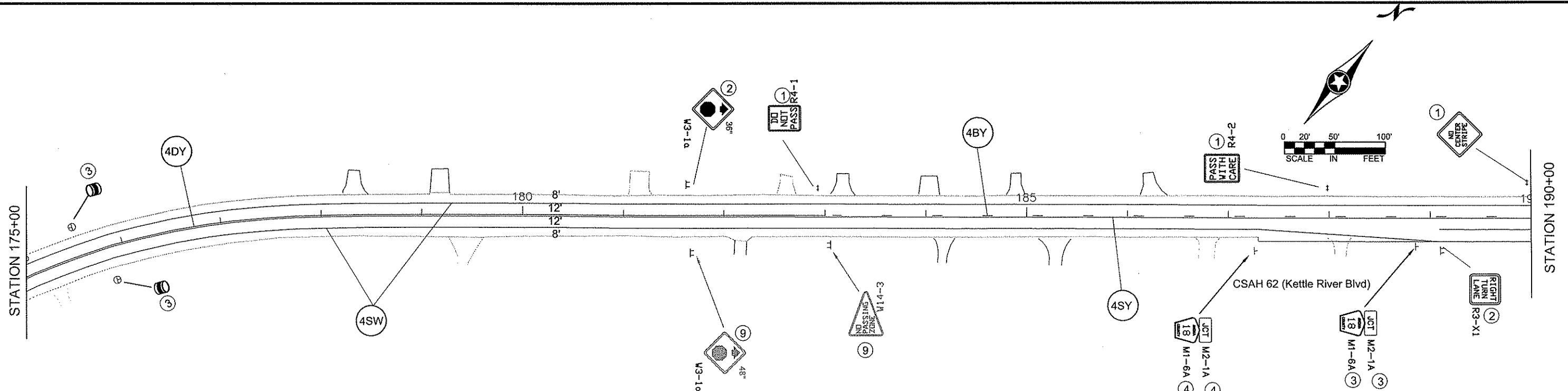
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CSAH 62 (KETTLE RIVER BLVD)
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 PERMANENT STRIPING
 AND PAVEMENT MESSAGES

Sheet 23 of 27 Sheets



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 - CONTRACTOR SHALL SUPPLY AND ERECT THE TEMPORARY TRAFFIC CONTROL SIGNS AS SHOWN ON THIS DRAWING AND DETAILED IN THE SPECIAL PROVISIONS FROM THE TIME WORK COMMENCES ON THIS ROADWAY UNTIL THIS ROADWAY IS PERMANENTLY STRIPED. ALL NECESSARY TEMPORARY TRAFFIC CONTROL SIGNS SHALL BE PAID FOR AS PART OF TRAFFIC CONTROL LUMP SUM.
 - ALL PERMANENT STRIPING AND PAVEMENT MESSAGES SHALL BE PLACED WITHIN 72 HOURS OF MAINLINE PAVING.
 - ANY REQUIRED PERMANENT SIGNING SHALL BE INSTALLED THE SAME DAY AS PERMANENT STRIPING.
 - ALL EXISTING SIGNING SHALL REMAIN IN PLACE DURING CONSTRUCTION. IF A SIGN IS TO BE SALVAGED AND REINSTALLED, IT SHALL BE INSTALLED ON TEMPORARY SUPPORTS UNTIL THE PERMANENT INSTALLATION CAN BE MADE, AND THIS WILL BE CONSIDERED AS INCIDENTAL TO SIGN TYPE C REINSTALL INSTALLATION.



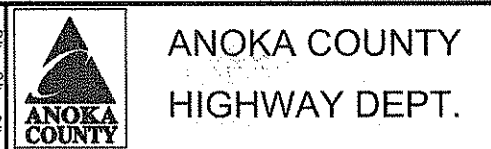
NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH 62\Base\TRAFFIC\12-15-62_Signing and Striping.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: CHARLES GADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 7/2/12 REG. NO. 40416

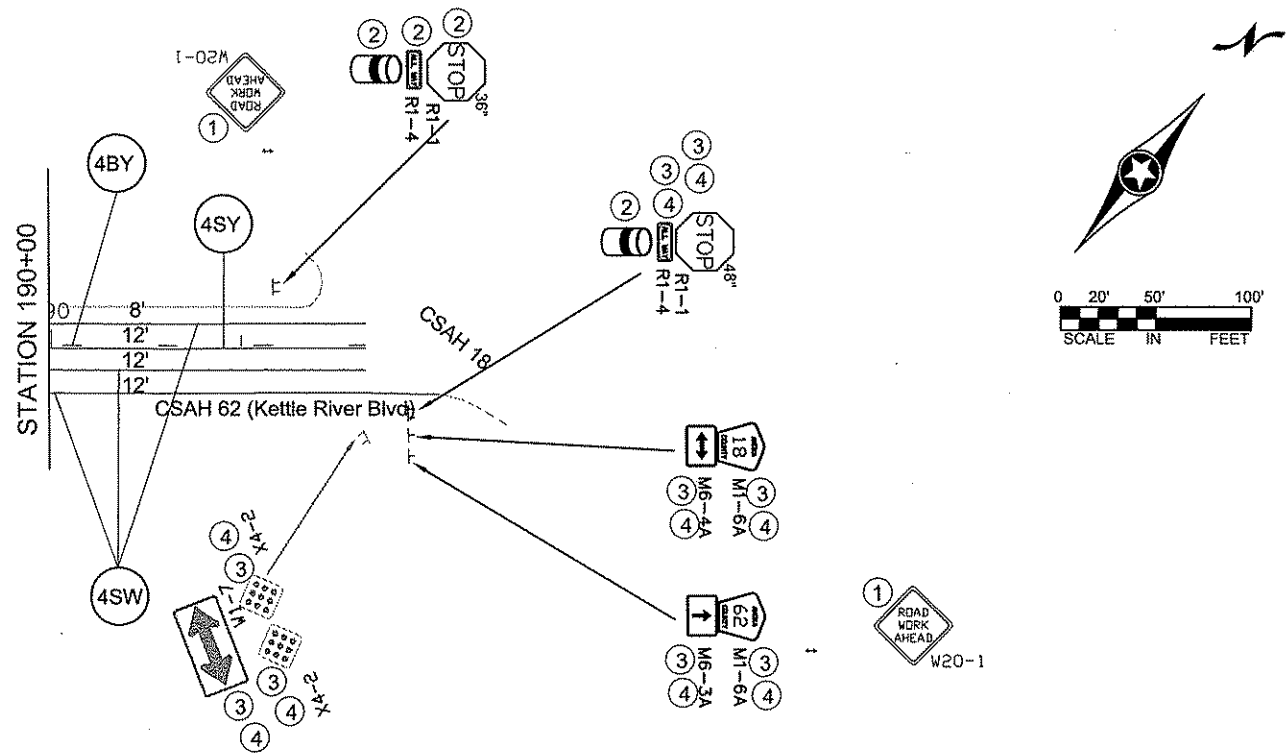
DRAWN BY: MTH DATE 1/18/2012
 DESIGN BY: MTH DATE 1/18/2012
 CHECKED BY: JR DATE 2/14/2012



STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. 12-15-62

CSAH 62 (KETTLE RIVER BLVD)
 TEMPORARY SIGNING
 PERMANENT STRIPING
 AND PAVEMENT MESSAGES

Sheet 24 of 27 Sheets



NOTES:

- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
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NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH 62\Base\TRAFFIC\12-15-62_Signing and Striping.dwg

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PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 REG. NO. 40418

DRAWN BY: MTH DATE 1/18/2012
 DESIGN BY: MTH DATE 1/18/2012
 CHECKED BY: JR DATE 2/14/2012


















ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. 12-15-62

CSAH 62 (KETTLE RIVER BLVD)
 TEMPORARY SIGNING
 PERMANENT STRIPING
 AND PAVEMENT MESSAGES

Sheet 25 of 27 Sheets

TEMPORARY TRAFFIC CONTROL SIGNS						
M.U.T.C.D. CODE	SIZE	PANEL AREA FT. ²	INSERT	QUANTITY	No. POST	MOUNTING HEIGHT (TO POINT EDGE) FT.
W8-12	48" x 48"	16.00		2		7.0
R4-1	24" x 30"	5.00	 R4-1	9		7.0
R4-2	24" x 30"	5.00	 R4-2	9		7.0
W8-1A	48" x 48"	16.00	 W8-1A	AS NEEDED		
W8-1A	48" x 48"	16.00	 W8-1A	AS NEEDED		
W8-8	48" x 48"	16.00	 W8-8	AS NEEDED		
W8-11	48" x 48"	16.00	 W8-11	AS NEEDED		
W8-11	48" x 48"	16.00	 W20-1	AS NEEDED (ESTIMATED 17)		

PERMANENT TRAFFIC CONTROL SIGNS						
M.U.T.C.D. CODE	SIZE	PANEL AREA FT. ²	INSERT	QUANTITY	MOUNTING HEIGHT (TO POINT EDGE) FT.	TOTAL AREA FT. ²
R1-1	36" x 36"	9.00	 R1-1	2	7.00	18.00
R1-4	18" x 6"	0.75	 R1-4	1		0.75
X4-13	8" x 12"			4	6.00	
R3-X1	30" x 30"	6.25	 R3-X1	12	7.00	75.0
W3-1	36" x 36"	9.00	 W3-1a	2	7.00	18.00
W14-3	48" x 36"	6.00	 W14-3	0	7.00	0.00
X4-13	4" x 4"			2	4.00	
TOTAL PANEL AREA						111.75

- SEE SPECIAL PROVISIONS
- ① TEMPORARY TRAFFIC CONTROL SIGN
 - ② F & I PERMANENT SIGN
 - ③ SALVAGE PERMANENT SIGN
 - ④ RE-INSTALL PERMANENT SIGN
 - ⑨ INPLACE - RETAIN

NOTES:

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STATION		SALVAGE SIGN TYPE C	INSTALL SIGN TYPE C	SIGN NUMBER
		EACH	EACH	
10+00	Rt	1	1	R1-1
10+00	Rt	1	1	M1-6 / M4-6a
10+00	Rt	1	1	M4-6a / M1-6
10+00	Rt	1	1	X4-13
10+30	Rt	1	1	X4-13
10+50	Rt	1	1	R1-1 / x4-13
11+00	Rt	1	1	X4-13
21+30	Lt	1	1	W1-2R
31+00	Lt		1	W14-3
34+00	Lt	1		W14-3
44+80	Rt	1		Terminal post
53+33	Rt		1	W14-3
55+00	Rt		1	R2-1
55+00	Rt	1		W14-3
56+00	Rt		1	Terminal post
57+00	Lt	1	1	W1-2L
59+70	Lt	1	1	R2-1
94+00	Lt	1	1	R8-3a
106+20	Lt	1		W14-3
108+20	Lt		1	W14-3
125+00	Rt		1	W14-3
129+00	Rt	1		W14-3
136+00	Lt	1	1	W14-3
143+00	Rt		1	Terminal post
151+00	Rt	1		W14-3
151+00	Rt			R2-1
155+50	Rt		1	W14-3
163+00	Lt		1	Terminal post
166+00	Lt	1	1	W14-3
175+50	Lt	1		Terminal post
175+80	Rt	1		Terminal post
187+20	Rt		1	M2-1a / M1-6a
188+80	Rt	1		M2-1a / M1-6a
191+50	Rt	1	1	W1-7 / x4-2 / x4-2
192+00	Rt	1	1	M1-6a M6-3a
192+00	Rt	1	1	M1-6a M6-4a
192+00	Rt	1	1	R1-1 / R1-4
TOTAL		26	27	

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH 62\Base\TRAFFIC\12-15-62_Signing and Striping.dwg

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PRINT NAME: CHARLES CADENHEAD

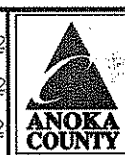
SIGNATURE: 

DATE: 2/2/12 REG. NO. 40416

DRAWN BY: MTH DATE 1/18/2012

DESIGN BY: MTH DATE 1/18/2012

CHECKED BY: JR DATE 2/14/2012



**ANOKA COUNTY
HIGHWAY DEPT.**

STATE PROJECT NO. _____

STATE AID PROJECT NO. _____

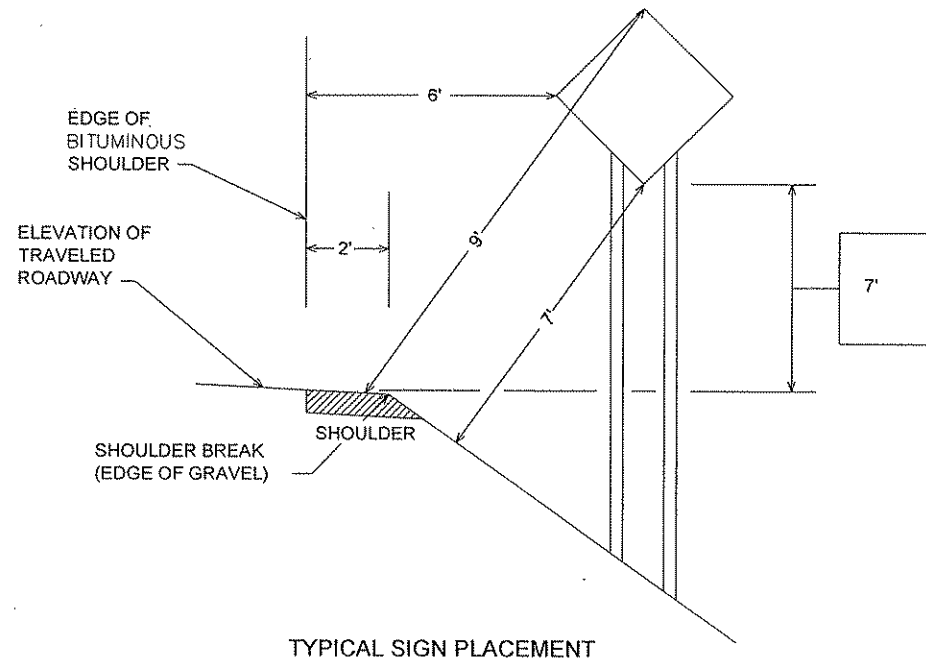
STATE AID PROJECT NO. _____

COUNTY PROJECT NO. 12-15-62

CSAH 62 (KETTLE RIVER BLVD)
TEMPORARY SIGNING
PERMANENT STRIPING
AND PAVEMENT MESSAGES

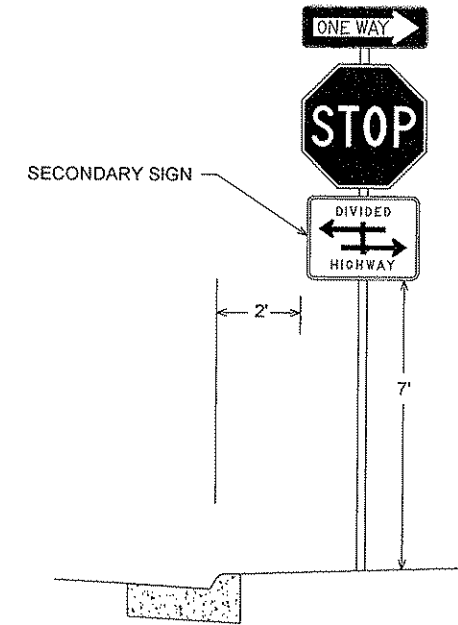
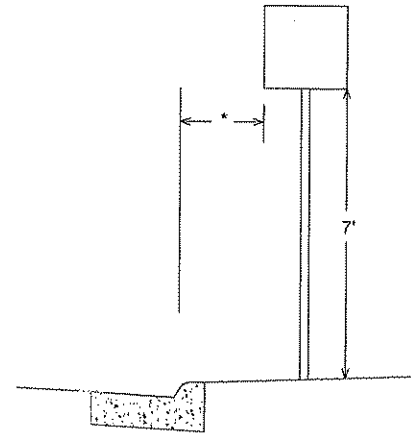
Sheet 26 of 27 Sheets

RURAL



URBAN

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



- NOTE:
- ALL DIMENSIONS ARE MINIMUMS
 - MAINTAIN 2' CLEAR FROM SIGNS TO BITUMINOUS TRAIL

NO	DATE	BY	CKD	APPR	REVISION

NAME: T:\Traffic\Dwg\CR 53 (Sunset Ave)\Sign&Stripe_Details.dwg

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PRINT NAME: CHARLES CADENHEAD

SIGNATURE: *[Signature]*

DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY MTH DATE 1-21-11

DESIGN BY MTH DATE 1-21-11

CHECKED BY JR DATE 1-21-11



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____

STATE PROJECT NO. _____

STATE PROJECT NO. _____

COUNTY PROJECT NO. 12-15-62

SIGNING & STRIPING DETAILS

Sheet 27 of 27 Sheets

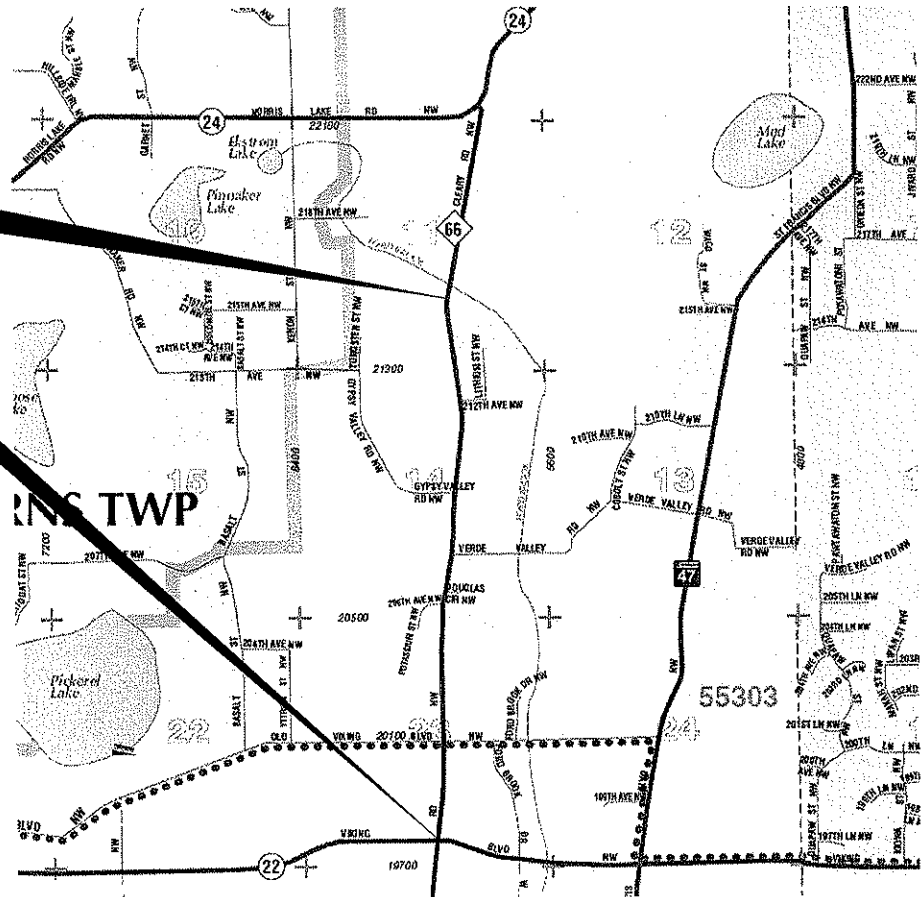
MINNESOTA DEPARTMENT OF TRANSPORTATION

ANOKA COUNTY

CONSTRUCTION PLAN FOR RECLAIM BITUMINOUS SURFACING & OVERLAY
 LOCATED ON C.R. 66 BETWEEN C.S.A.H 22 (VIKING BLVD) AND 2000' NORTH OF 212TH STREET

COUNTY PROJ. NO. 12-16-66
C.R. 66

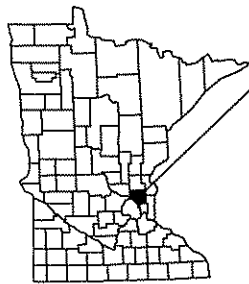
GROSS LENGTH	11240 FEET	2.13 MILES
BRIDGES-LENGTH	0.00 FEET	0.000 MILES
EXCEPTIONS-LENGTH	0.00 FEET	0.000 MILES
NET LENGTH	11240 FEET	2.13 MILES



CITY OF
NOWTHEN

END COUNTY PROJECT 12-16-66
 C.R. 66 STA. 122+40

BEGIN COUNTY PROJECT 12-16-66
 C.R. 66 STA. 10+00



PROJECT LOCATION
 CITY OF NOWTHEN
 ANOKA COUNTY
 MN/DOT TRANSPORTATION DISTRICT - METRO
 SECTION 23 & 14
 TOWNSHIP 33 NORTH
 RANGE 25 WEST

PLAN SYMBOLS

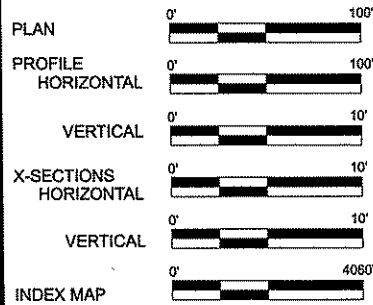
- COUNTY LINE
- TOWNSHIP OR RANGE LINE
- SECTION LINE
- QUARTER LINE
- SIXTEENTH LINE
- RIGHT OF WAY LINE
- SLOPE EASEMENT
- EXISTING RIGHT OF WAY
- PROPERTY LINE
- CORPORATE OR CITY LIMITS
- RETAINING WALL
- RAILROAD
- RAILROAD RIGHT OF WAY
- RIVER OR CREEK
- DRAINAGE DITCH
- CULVERT
- DROP INLET
- 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 Terminal)
- GAS MAIN
- WATERMAIN
- TELEPHONE CABLE IN CONDUIT
- ELECTRIC CABLE IN CONDUIT
- TELEPHONE MANHOLE
- ELECTRIC MANHOLE
- BURIED TELEPHONE CABLE
- BURIED ELECTRIC CABLE
- SEWER (Sanitary or Storm)
- SEWER MANHOLE

SCALES



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 PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS."

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	STATEMENT OF ESTIMATED QUANTITIES,
3-5	MISCELLANEOUS DETAILS
6	TYPICAL SECTIONS
7-10	CONSTRUCTION PLAN
11	PERMANENT MARKING TABULATION
12-16	TEMPORARY SIGNING, PERMANENT STRIPPING, PAVEMENT MESSAGES
17	SIGNING & STRIPING PLAN, TAB, & DETAILS

THIS PLAN CONTAINS 17 SHEETS
 DESIGN DESIGNATION

ESAL 20	000
R VALUE	000
ADT (2011) =	000
Proj. ADT (2031) =	000
Proj. HCADT (2031) =	000
Soil Factor	NA
10 TON DESIGN	

Functional Classification MAJOR COLLECTOR
 No. of Traffic Lanes 2 No. of Parking Lanes 0
 Design Speed 55 MPH
 Based on Stopping Sight Distance N/A
 Height of eye 3.5' Height of object 2.0'
 Design Speed not achieved at:
 STA. _____ TO STA. _____ MPH _____

Approved: 3/4/12
 ANOKA COUNTY ENGINEER

NO.	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CR_66_CSAH22-So(NorrisLake)\Plan1_Title.dgn
 02/27/2012 10:33:17 AM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: CHARLES CADENHEAD
 SIGNATURE:
 DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY CSO DATE 1/3/2012
 DESIGN BY CSO DATE 1/3/2012
 CHECKED BY JO DATE _____



**ANOKA COUNTY
 HIGHWAY DEPT.**

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 12-16-66

TITLE SHEET
 Sheet 1 of 17 Sheets

STATEMENT OF ESTIMATED QUANTITIES

ITEM NO.	ITEM	NOTES	UNIT	TOTAL EST. QUANT.
2011.601	CONSTRUCTION SURVEY		LUMP SUM	1
2021.501	MOBILIZATION		LUMP SUM	1
2101.502	CLEARING		TREE	1
2101.507	GRUBBING		TREE	1
2104.501	REMOVE PIPE CULVERTS	15	LIN FT	241
2104.503	REMOVE CONCRETE DRIVEWAY PAVEMENT	11	SQ FT	335
2104.503	REMOVE BITUMINOUS DRIVEWAY PAVEMENT	11	SQ FT	3759
2104.511	SAWING CONCRETE PAVEMENT (FULL DEPTH)		LIN FT	10
2104.513	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)		LIN FT	313
2104.523	SALVAGE SIGN TYPE C		EACH	4
2105.525	TOPSOIL BORROW (LV)	5	CU YD	107
2105.602	CONSTRUCT TURN LANE	12	EACH	4
2123.503	MOTOR GRADER	13	HOUR	10
2130.501	WATER	14	M-GAL	112
2211.501	AGGREGATE BASE CLASS 5	10.9	TON	180
2221.501	AGGREGATE SHOULDERING CLASS 5	9	TON	700
2232.501	MILL BITUMINOUS SURFACE (2.0")		SQ YD	50
2331.604	BITUMINOUS PAVEMENT RECLIMATION	2	SQ YD	30517
2357.502	BITUMINOUS MATERIAL FOR TACK COAT		GAL	1499
2360.501	TYPE SP 12.5 WEARING COURSE MIX (4,B)	1,11.9	TON	131
2360.501	TYPE SP 12.5 WEARING COURSE MIXTURE(4,B)	7,18	TON	7914
2501.515	18" CS PIPE APRON		EACH	6
2503.603	18" HDPE PIPE SEWER		LIN FT	192
2511.501	RANDOM RIPRAP CLASS II	16	CU YD	10
2531.507	6" CONCRETE DRIVEWAY PAVEMENT	11	SQ YD	37
2535.501	BITUMINOUS CURB (MODIFIED)	6.7	LIN FT	740
2540.602	INSTALL MAIL BOX SUPPORTS		EACH	13
2563.601	TRAFFIC CONTROL	3.4	LUMP SUM	1
2564.533	FURNISH SIGN PANNEL TYPE C		SQ FT	47.93
2564.536	INSTALL SIGN PANEL TYPE C		EACH	2
2564.550	DELINEATOR TYPE X4-13		EACH	1
2573.508	BITUMINOUS LINED FLUME	16	SQ YD	16
2575.523	EROSION CONTROL BLANKET, CATEGORY 3	5, 17	SQ YD	28
2575.571	RAPID STABILIZATION METHOD 3	5	M-GAL	6
2581.501	REMOVABLE PREFORMED PLASTIC MARKING	8	LIN FT	900
2582.502	4" SOLID LINE WHITE-EPOXY	9	LIN FT	23010
2582.502	4" SOLID LINE YELLOW - EPOXY	9	LIN FT	6350
2582.502	4" BROKEN YELLOW LINE-EPOXY	9	LIN FT	1730
2582.502	4" DOUBLE SOLID LINE YELLOW-EPOXY	9	LIN FT	2535

NOTES:

- 1 USED FOR PAVING DRIVEWAYS AND STREET APPROACHES
- 2 ITEM INCLUDES THE REMOVAL OF BITUMINOUS CURB
- 3 ALL TRAFFIC CONTROL DEVICES AND METHODS SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL
- 4 ROAD WORK AHEAD, DO NOT PASS, PASS WITH CARE, NO CENTERLINE STRIPE, BUMP AND BUMP AHEAD SIGNS TO BE INPLACE AT THE START OF RECLAIM AND OVERLAY OPERATIONS
- 5 ITEM FOR BACK FILLING BITUMINOUS CURB & SLOPE IMPROVEMENT AS DIRECTED BY THE ENGINEER.
- 6 SHALL BE INSTALLED WITH SAME OPERATION AS MAINLINE BITUMINOUS WEAR COURSE
- 7 BITUMINOUS TONS TO CREATE BIT CURB SHALL BE PAID UNDER 2360.501 WEARING COURSE MIX (4,E)
- 8 SHALL BE PLACED AFTER EACH DAYS PAVING OPERATION
- 9 SHALL BE INSTALLED WITHIN 72 HOURS OF COMPLETION OF MAINLINE WEAR COURSE PAVING
- 10 ITEM SHALL BE USED FOR GRAVEL DRIVEWAYS AND STREET APPROACHES, ALSO BASE AGGREGATE FOR BIT DRIVEWAYS
- 11 CONTRACTORS RESPONSIBILITY TO CONTACT OWNER 48 HOURS BEFORE STARTING OPERATION
- 12 INCLUDES TIME AND MATERIAL TO CONSTRUCT ITEM. COMMON EXCAVATION, SELECT GRANULAR, AGGREGATE BASE CLASS 5, SILT FENCE, EROSION CONTROL BLANKET CATEGORY 3 & DOZER / MOTOR GRADER TIME TO CONSTRUCT TURN LANE (NOTE - BITUMINOUS BASE AND WEAR COURSE IS NOT INCLUDED IN THIS ITEM)
- 13 INCLUDES TIME TO REMOVE EXCESS RECLAIMED MATERIAL AT BEGINNING AND END OF RECLAIM AREAS TO MATCH EXISTING BITUMINOUS HEIGHT
- 14 DUST CONTROL, AS DIRECTED BY THE FIELD ENGINEER
- 15 INCLUDES APRON IN LENGTH
- 16 INSTALL AT END OF BITUMINOUS CURB (MODIFIED)
- 17 SHALL BE INSTALLED AT APRON ENDS
- 18 INCLUDES SAFETY EDGE CONSTRUCTION

BASIS OF PLANNED QUANTITIES

ITEM NO.	DESCRIPTION	UNIT
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	.05 GAL / SQ YD
2360.501	TYPE SP 12.5 WEARING COURSE MIX (4, E)	115/SQ.YD./IN THICKNESS
2211.501	AGGREGATE BASE CLASS 5	CU YDS * 1.8 = TONS
2221.501	AGGREGATE SHOULDERING CLASS 5	CU YDS * 1.8 = TONS
2581.501	REMOVABLE PREFORMED PLASTIC MARKING	2' AT 50' INTERVALS FOR SKIPS

NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\112-01-00\CR_66_(CSAH22-SoiNorrisLake)\Plant2_SEQ.dgn 02/27/2012 10:38:33 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: CHARLES CADENHEAD

SIGNATURE: *[Signature]*

DATE: 2/2/12 LICENSE NO. 40416

DRAWN BY: CSO DATE: 1/3/2012

DESIGN BY: CSO DATE: 1/3/2012

CHECKED BY: JO DATE: _____



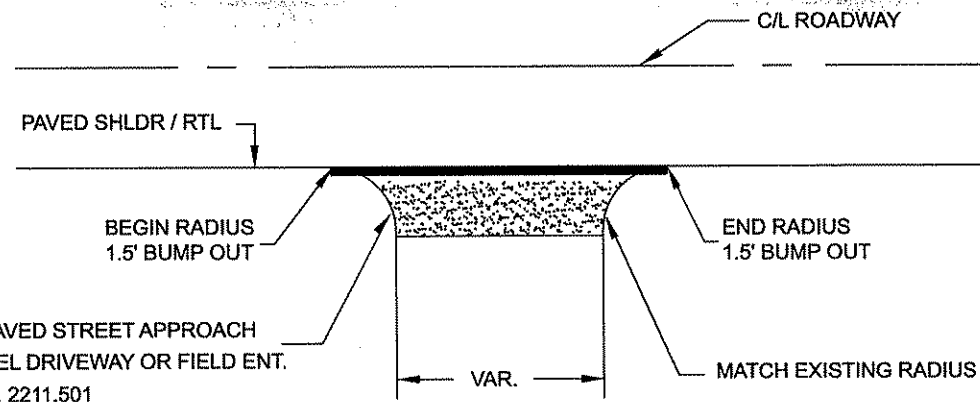
ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
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 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 12-16-66

STATEMENT OF ESTIMATED QUANTITIES

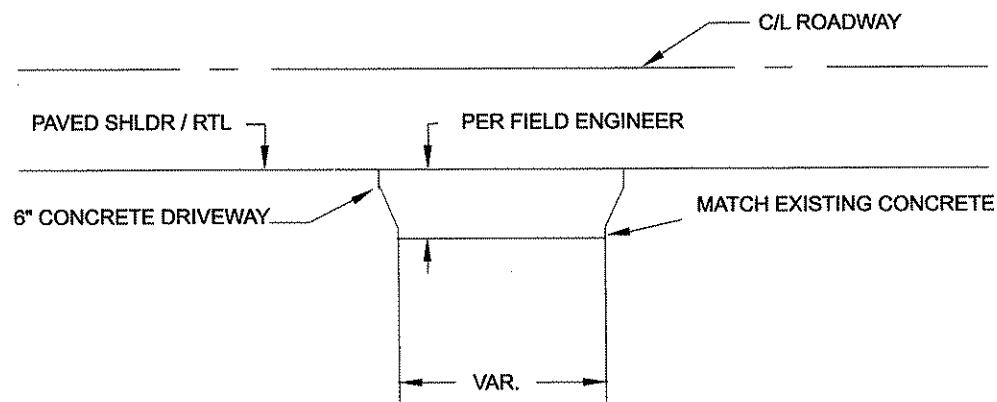
Sheet 2 of 17 Sheets

UNPAVED STREET APPROACHES, GRAVEL DRIVEWAYS AND FIELD ENT.



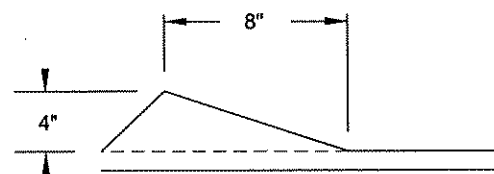
10 TON CL 5 PER UNPAVED STREET APPROACH
 5 TON CL 5 PER GRAVEL DRIVEWAY OR FIELD ENT.
 PAID FOR AS ITEM NO. 2211.501
 AGGREGATE BASE CL 5 (TON)

CONCRETE DRIVEWAYS



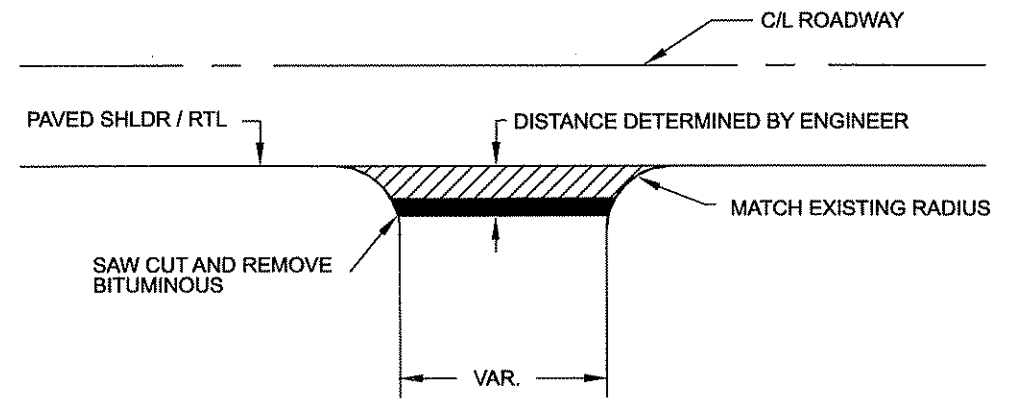
BITUMINOUS CURB

(PLACED DURING THE PAVING OF MAIN LINE WEAR COURSE)

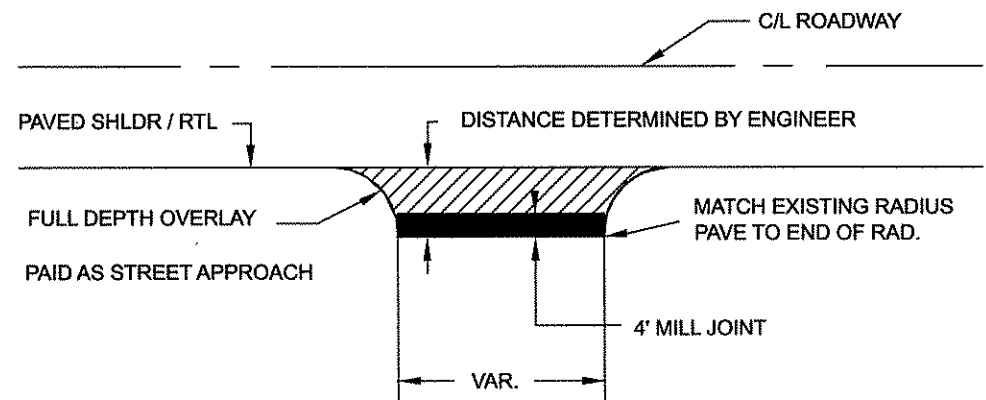


EXISTING BITUMINOUS CURB (LIP) TO BE RECLAIMED WITH SHOULDER
 PROPOSED BITUMINOUS CURB (LIP) TO BE PAID UNDER ITEM NO. 2535.501

PAVED DR. WAYS



PAVED STREET APPROACHES



DRIVEWAYS TO BE PAVED IN SEPERATE OPERATION OTHER THAN MAINLINE WEAR.
 PAID AS STREET APPROACH WEAR

NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\12-01-00\CR_66 (CSAH22-SoftNorrisLake)\Plant3_Details.dgn 02/27/2012 10:41:15 AM

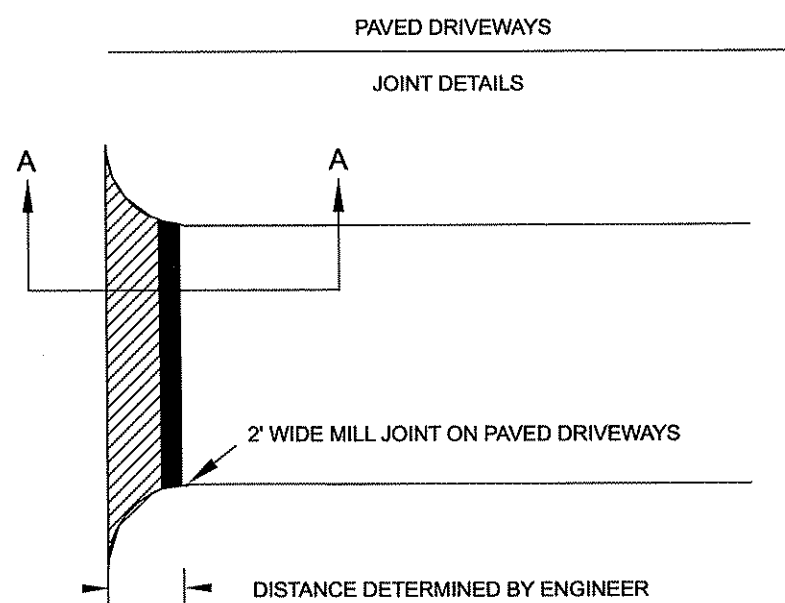
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 2/27/12 LICENSE NO. #40416

DRAWN BY CSO DATE 12/20/2011
 DESIGN BY CSO DATE 12/20/2011
 CHECKED BY JO DATE

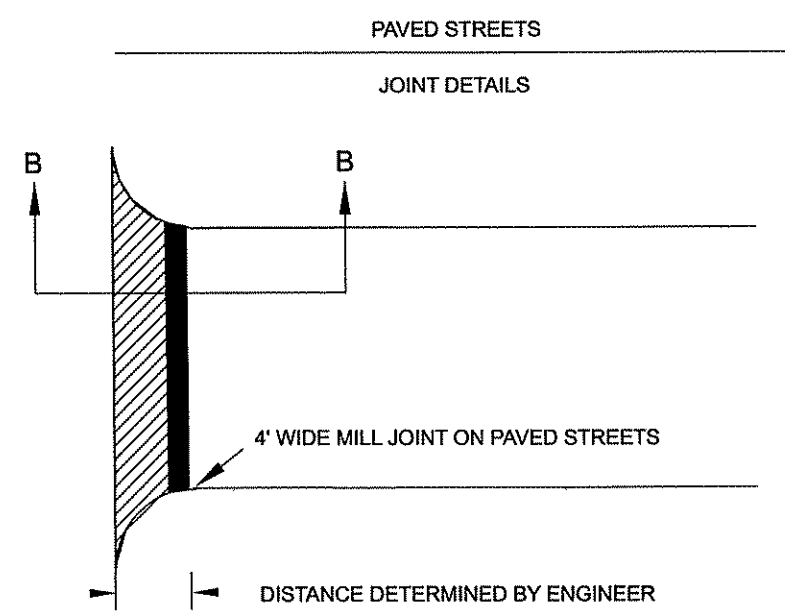


ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 12-16-66



DRIVEWAYS TO BE PAVED IN SEPERATE OPERATION OTHER THAN MAINLINE WEAR.
PAID AS DRIVEWAY/STREET APPROACH WEAR



OVERLAY EXISTING STEET APPROACH, DO NOT RECLAIM
STREETS TO BE PAVED IN SEPERATE OPERATION OTHER THAN MAINLINE WEAR.
PAID AS DRIVEWAY/STREET APPROACH WEAR

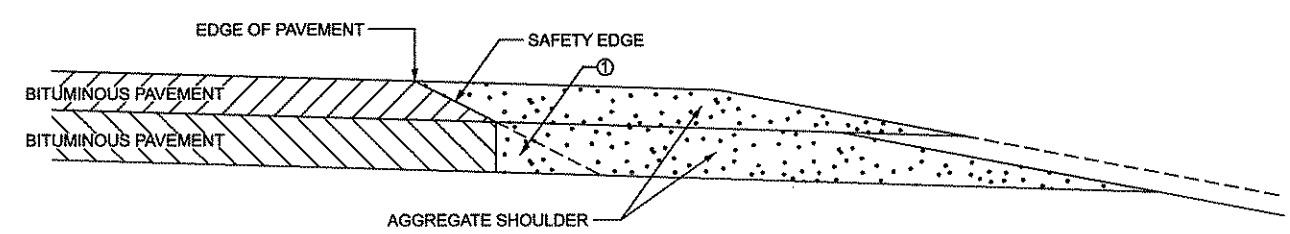
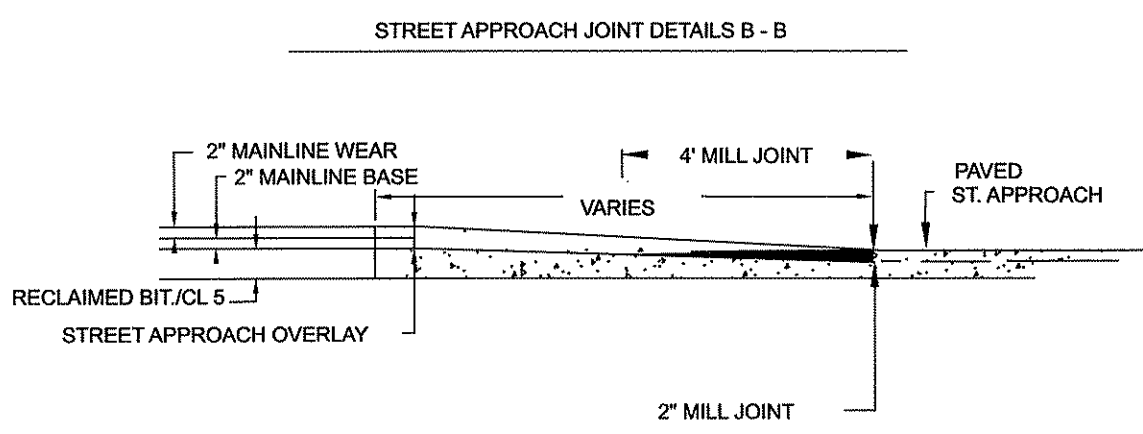
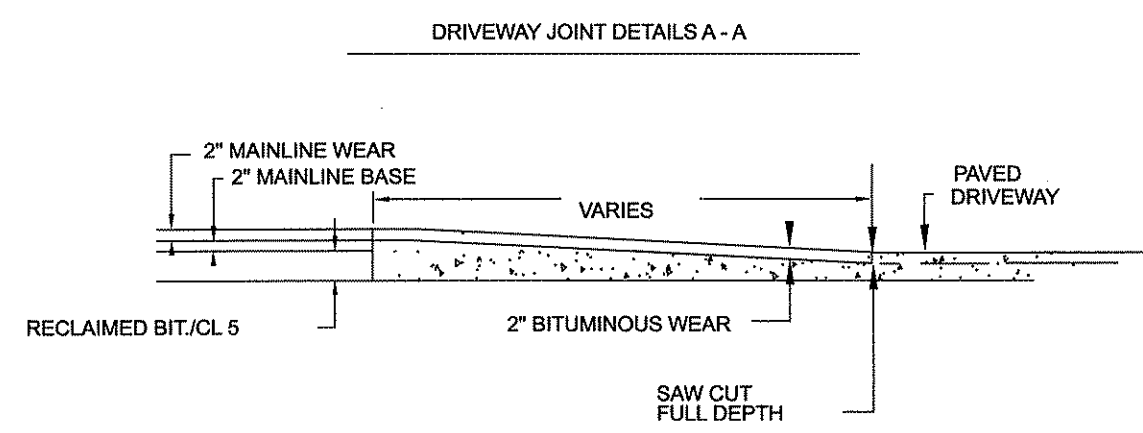


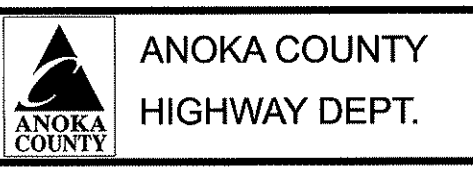
FIGURE B
BITUMINOUS PAVEMENT

① OPTIONAL DESIGN EXTENDS SAFETY EDGE DEEPER THAN 6" AND WIDER THAN 10.5". SEE SPECIAL PROVISIONS FOR DETAILS.

NO	DATE	BY	CHKD	APPR	REVISION
NAME: P:\12-01-00\CR_66_(CSAH22-So\NorrisLake)\Plan3_Details.dgn					
DATE: 02/27/2012 10:41:20 AM					

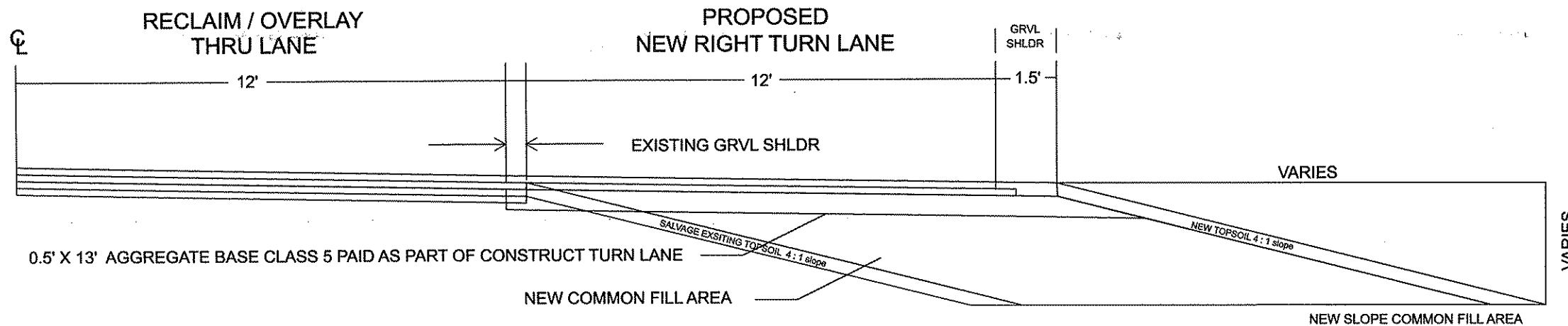
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: CHARLES CADENHEAD
SIGNATURE: *[Signature]*
DATE: 3/2/12 LICENSE NO. #40416

DRAWN BY CSO DATE 12/20/2011
DESIGN BY CSO DATE 12/20/2011
CHECKED BY JO DATE



STATE PROJECT NO. _____
STATE AID PROJECT NO. _____
CITY PROJECT NO. _____
COUNTY PROJECT NO. 12-16-66

R.T.L. LOCATIONS
 S.B. 66 @ CSAH 22
 N.B. 66 @ OLD VIKING BLVD
 S.B. 66 @ 206TH
 S.B. 66 @ GYPSY



* NOTE: CALC. BASED ON AVERAGE DITCH DEPTH ELEVATION & AVERAGE EXISTING EDGE OF BITUMINOUS ELEVATION

RIGHT TURN LANE LOCATIONS	EXISTING AVG EDGE OF BIT ELEV	EXISTING AVG DITCH ELEV	LANE LENGTH	LANE WIDTH	ESTIMATED SELECT GRANULAR FILL (CU YD)	ESTIMATED EXCESS (CU YD)	TURF EST. EROSION CONTROL BLANKET TYPE III (SQ YD)	AGGREGATE BASE CLASS 5 (CU YD)
SB 66 @ CSAH 22	911.79	908.84	480.00	12	524	0	640	107
NB 66 @ OLD VIKING	916.27	915.72	480.00	12	11	0	107	107
SB 66 @ 206TH	931.64	929.35	480.00	12	382	0	533	107
SB 66 @ GYPSY	925.70	923.03	480	12	462	0	587	107
TOTALS					1379	0		427

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CR_66_CSAH22-Soi(NorrisLake)\Plant3_Details.dgn 02/27/2012 10:41:24 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: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 LICENSE NO. #48416

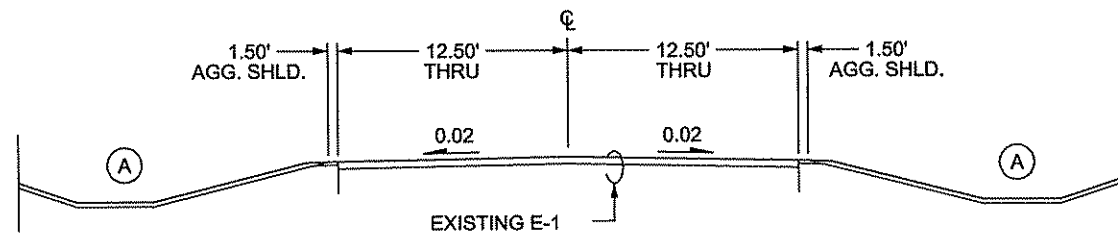
DRAWN BY: CSO DATE: 12/20/2011
 DESIGN BY: CSO DATE: 12/20/2011
 CHECKED BY: JO DATE:



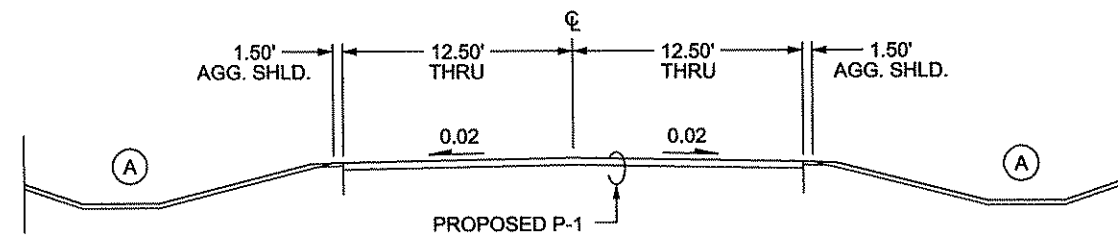
STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 12-16-66

MISCELLANEOUS DETAILS
 Sheet 5 of 17 Sheets

C.R 66
EXISTING SECTION
 STA. 10+00.00 - STA. 122+40.00

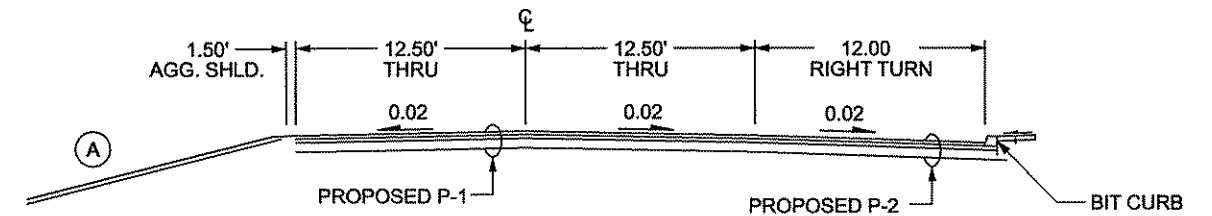


C.R 66
PROPOSED SECTION
 STA. 10+00.00 - STA. 122+40.00
 EXCEPT TURN LANE AREAS



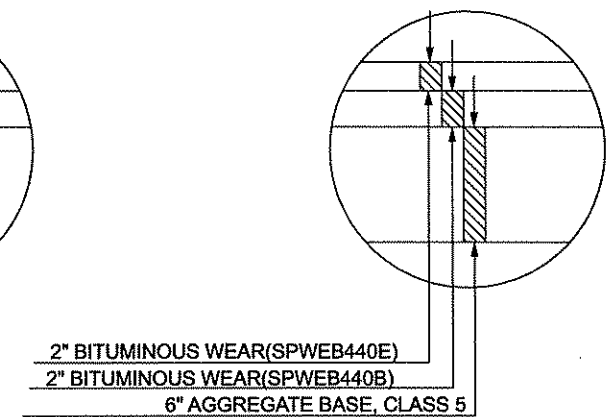
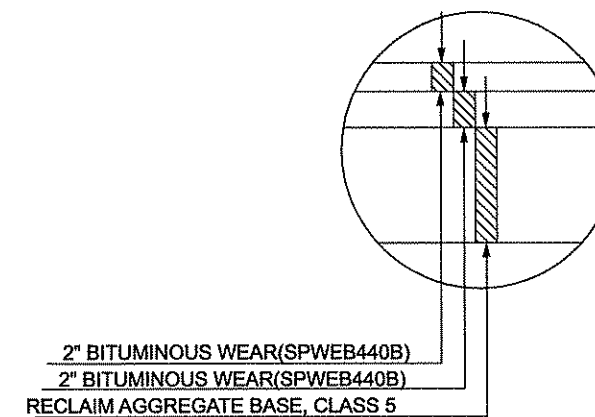
C.R. 66
PROPOSED RIGHT TURN LANE
WITH BIT CURB

STA. 10+75 - STA. 14+00 LT
 STA. 25+35 - STA. 29+50 RT



DESIGN "P-1" MAINLINE
PAVEMENT DESIGN

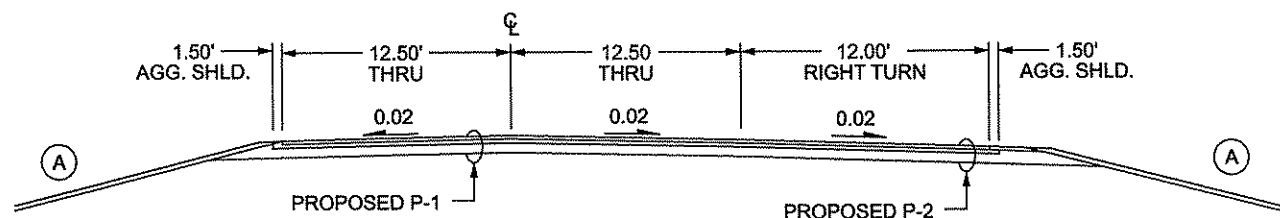
DESIGN "P-2" MAINLINE
PAVEMENT DESIGN



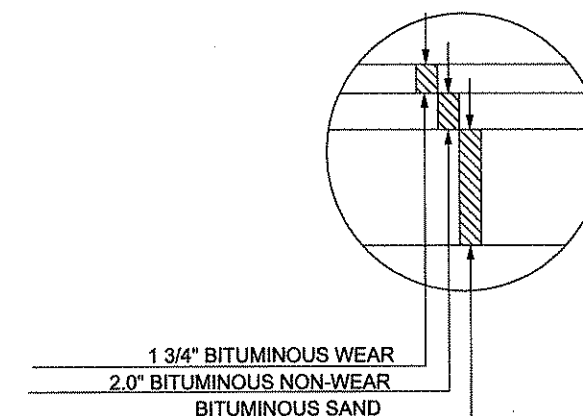
(INCLUDED IN BID PRICE FOR CONSTRUCT TURN LANE)

C.R. 66
PROPOSED RIGHT TURN LANE

S.B. @ 206TH
 S.B. @ GYPSY



EXISTING "E-1" MAINLINE
PAVEMENT



SPECIFIC NOTES:

- (A) DITCH SLOPES VARY 1:1 - 6:1
- DITCH DEPTH VARIES 2.0' - 8.0'
- DITCH WIDTH VARIES 0.0' - 10.0'

GENERAL NOTES:

- ALL CROSS SLOPES ARE EXPRESSED IN FT / FT
- UNLESS OTHERWISE SPECIFIED, THE GRADING GRADE CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE OF THE MAINLINE.

NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\12-01-00\CR_66_CSAH22-SoilNormisLake\Plan\4_TS.dgn					

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 LICENSE NO. 40416

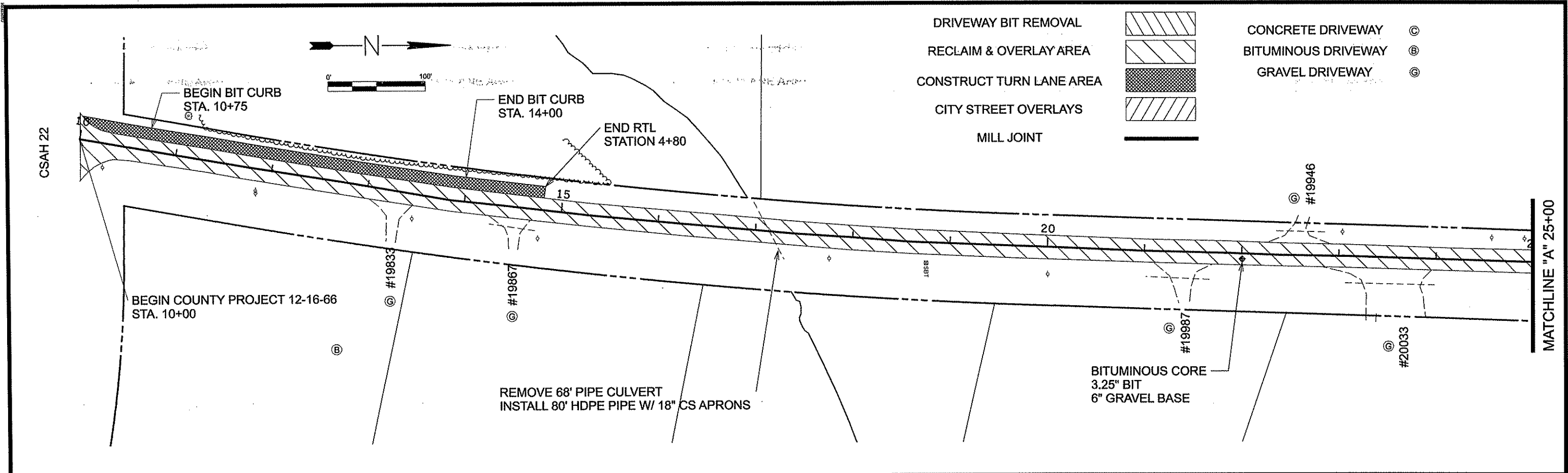
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 DESIGN BY: CSO DATE: 12/20/2011
 CHECKED BY: JO DATE: _____



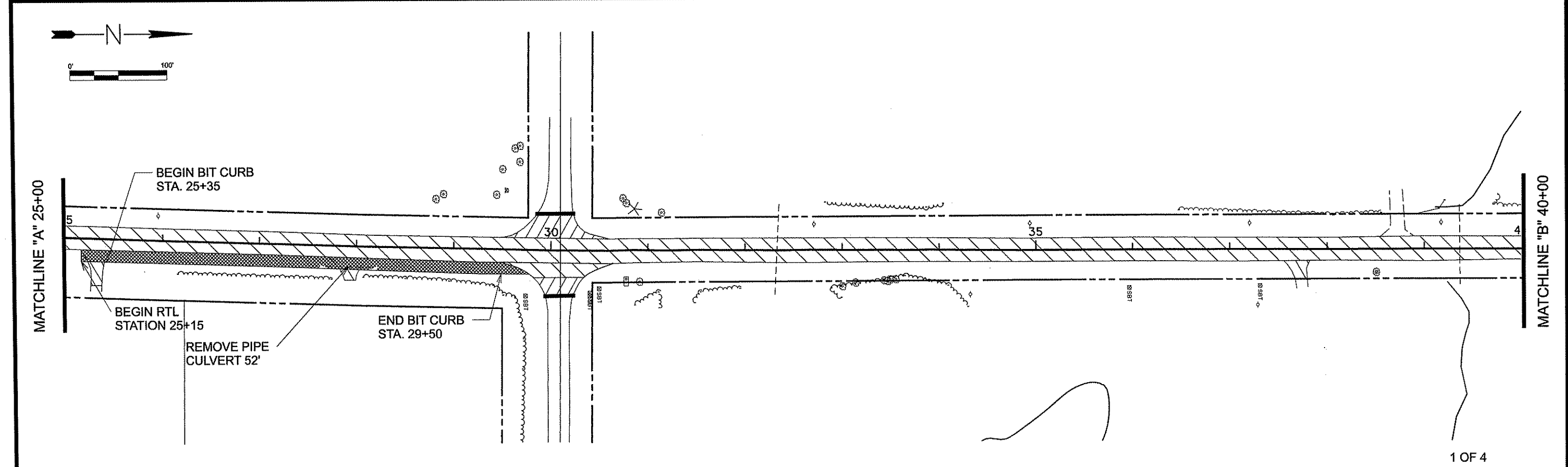
STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 12-16-66

TYPICAL SECTIONS

Sheet 6 of 17 Sheets



- DRIVEWAY BIT REMOVAL
- RECLAIM & OVERLAY AREA
- CONSTRUCT TURN LANE AREA
- CITY STREET OVERLAYS
- MILL JOINT
- CONCRETE DRIVEWAY
- BITUMINOUS DRIVEWAY
- GRAVEL DRIVEWAY



1 OF 4

NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\12-01-00\CR_66_CSAH22-SoftNorrisLake\Plan5_PLAN.dgn					

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

PRINT NAME: CHARLES CAPENHEAD

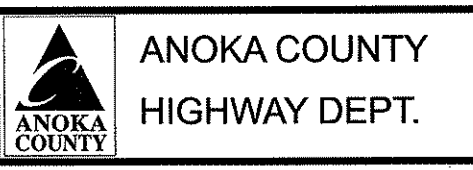
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DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY: CSO DATE: 12/20/2011

DESIGN BY: CSO DATE: 12/20/2011

CHECKED BY: JO DATE: _____



STATE PROJECT NO. _____

STATE AID PROJECT NO. _____

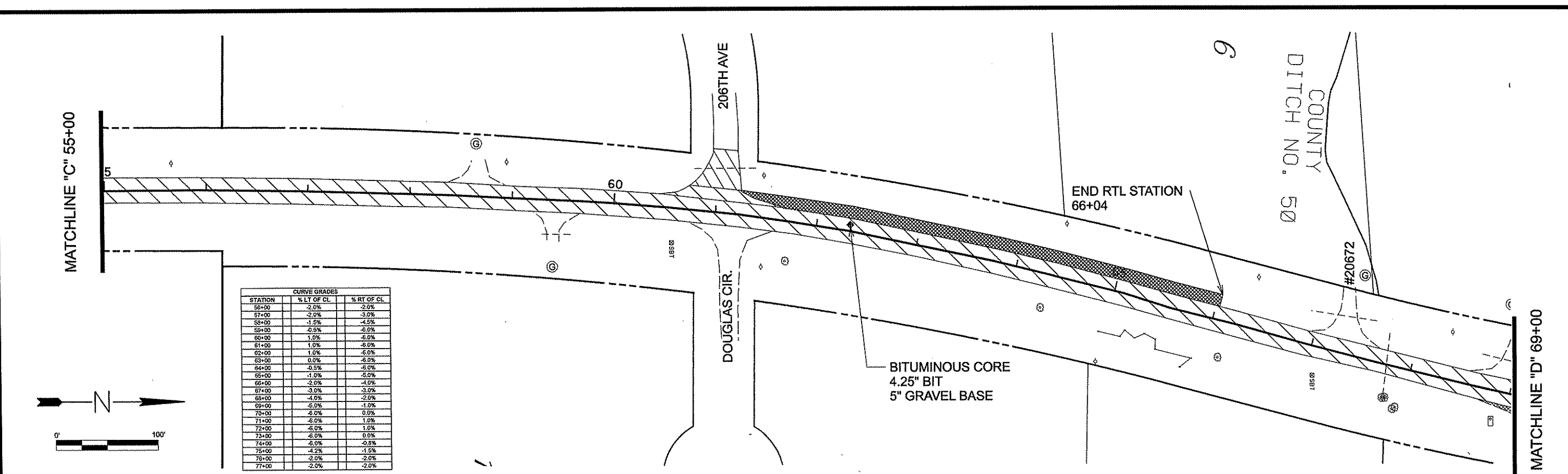
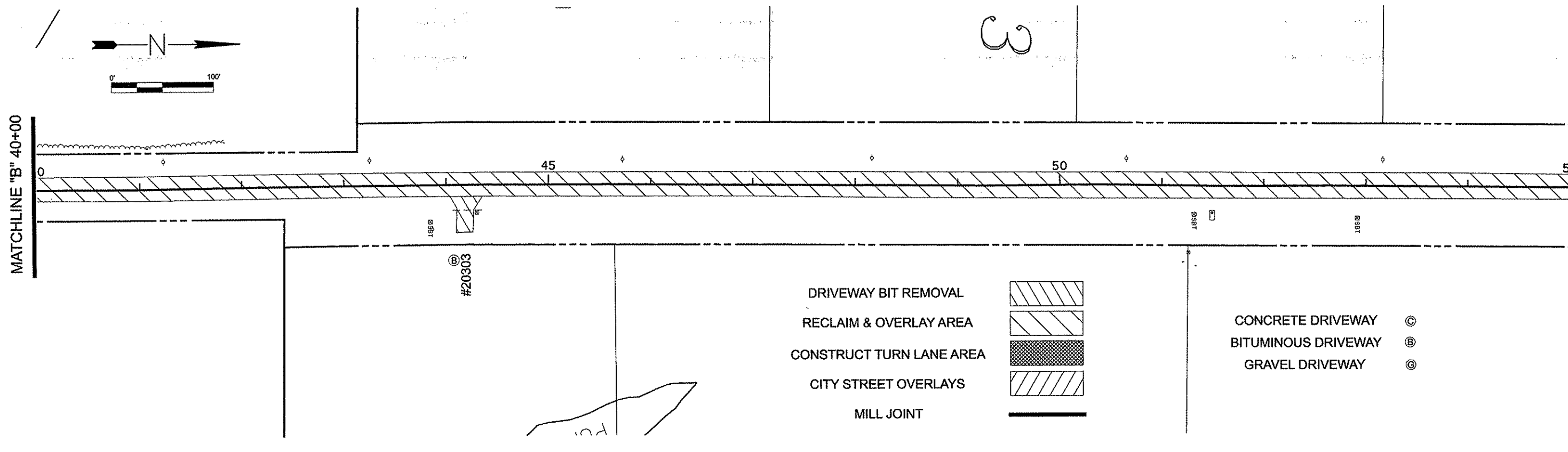
CITY PROJECT NO. _____

COUNTY PROJECT NO. 12-16-66

CONSTRUCTION PLAN

STA 10+00 TO 40+00

Sheet 7 of 17 Sheets



STATION	V. LT OF CL	% RT OF CL
56+00	-2.0%	-2.0%
57+00	-2.0%	-3.0%
58+00	-1.5%	-4.5%
59+00	-0.5%	-6.0%
60+00	1.0%	-6.0%
61+00	1.0%	-6.0%
62+00	1.0%	-6.0%
63+00	0.0%	-6.0%
64+00	-0.5%	-6.0%
65+00	-1.0%	-6.0%
66+00	-2.0%	-4.0%
67+00	-3.0%	-3.0%
68+00	-4.0%	-2.0%
69+00	-6.0%	-1.0%
70+00	-6.0%	0.0%
71+00	-6.0%	1.0%
72+00	-6.0%	1.0%
73+00	-6.0%	0.0%
74+00	-6.0%	-0.8%
75+00	-4.2%	-1.5%
76+00	-2.0%	-2.0%
77+00	-2.0%	-2.0%

NO.	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CR_06_CSAH22-So\NorrisLake\Plan5_PLAN.dgn
 02/27/2012 10:54:53 AM

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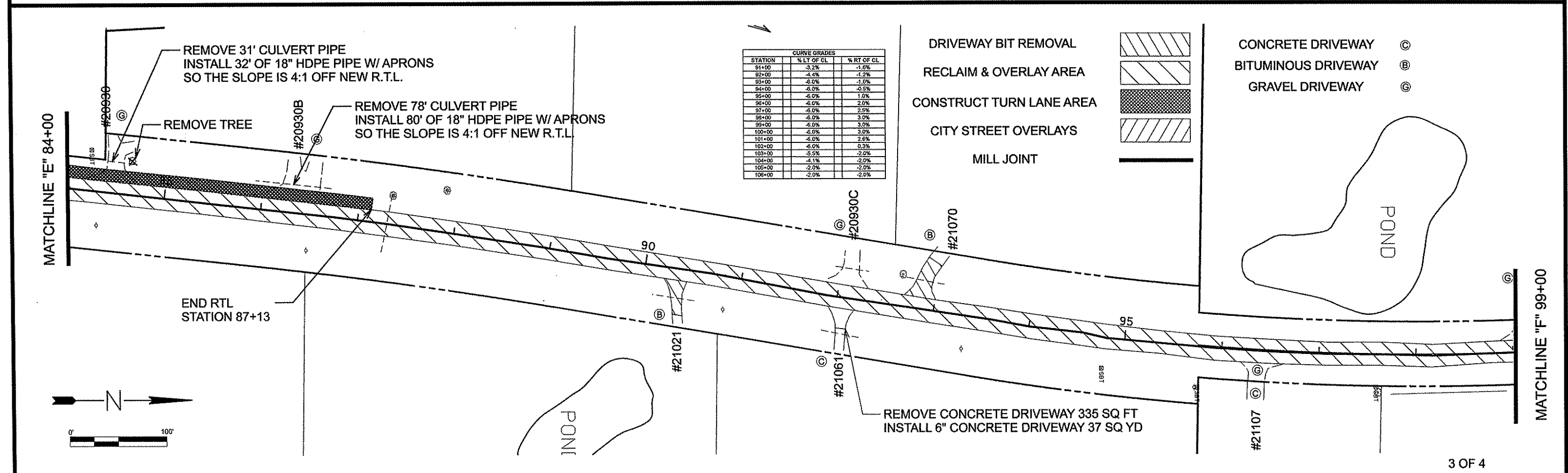
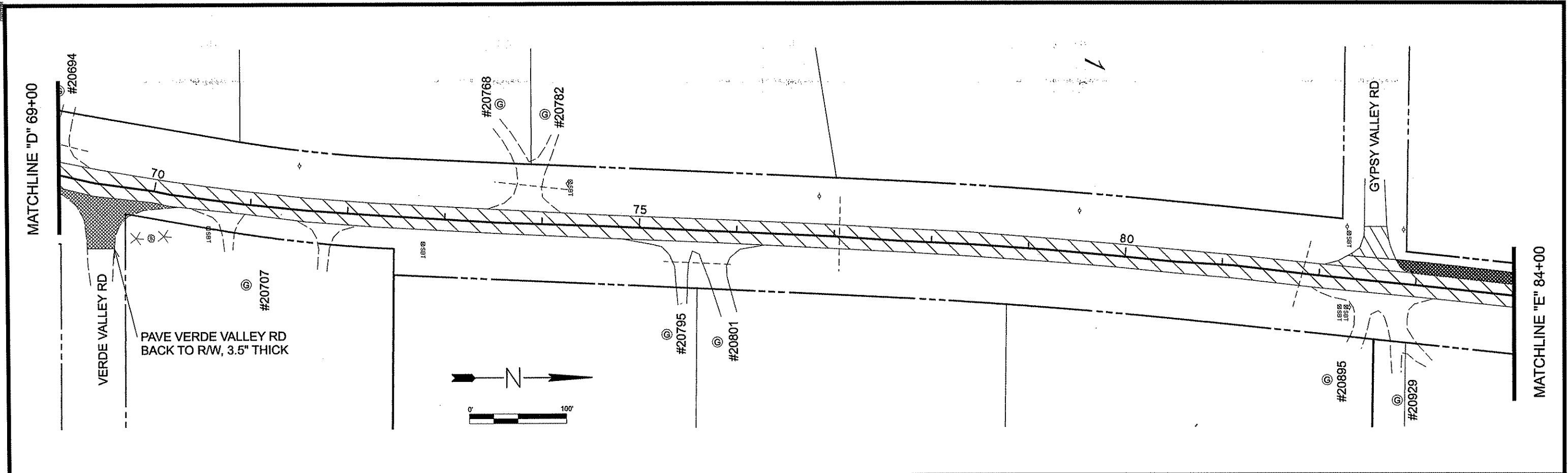
PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY: CSO DATE: 12/20/2011
 DESIGN BY: CSO DATE: 12/20/2011
 CHECKED BY: JO DATE: _____

ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 12-16-66

CONSTRUCTION PLAN
 STA 40+00 TO 69+00
 Sheet 8 of 17 Sheets



STATION	% LT OF CL	% RT OF CL
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93+00	-5.0%	-1.0%
94+00	-5.0%	-0.5%
95+00	-6.0%	1.0%
96+00	-6.0%	2.0%
97+00	-6.0%	2.5%
98+00	-6.0%	3.0%
99+00	-6.0%	3.0%
100+00	-6.0%	3.0%
101+00	-6.0%	2.6%
102+00	-6.0%	0.3%
103+00	-5.5%	-2.0%
104+00	-4.1%	-2.0%
105+00	-2.0%	-2.0%
106+00	-2.0%	-2.0%

- DRIVEWAY BIT REMOVAL
- RECLAIM & OVERLAY AREA
- CONSTRUCT TURN LANE AREA
- CITY STREET OVERLAYS
- MILL JOINT

- CONCRETE DRIVEWAY (C)
- BITUMINOUS DRIVEWAY (B)
- GRAVEL DRIVEWAY (G)

3 OF 4

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CR_66 (CSAH22-SoftNorrisLake)\Plan\5_PLAN.dgn
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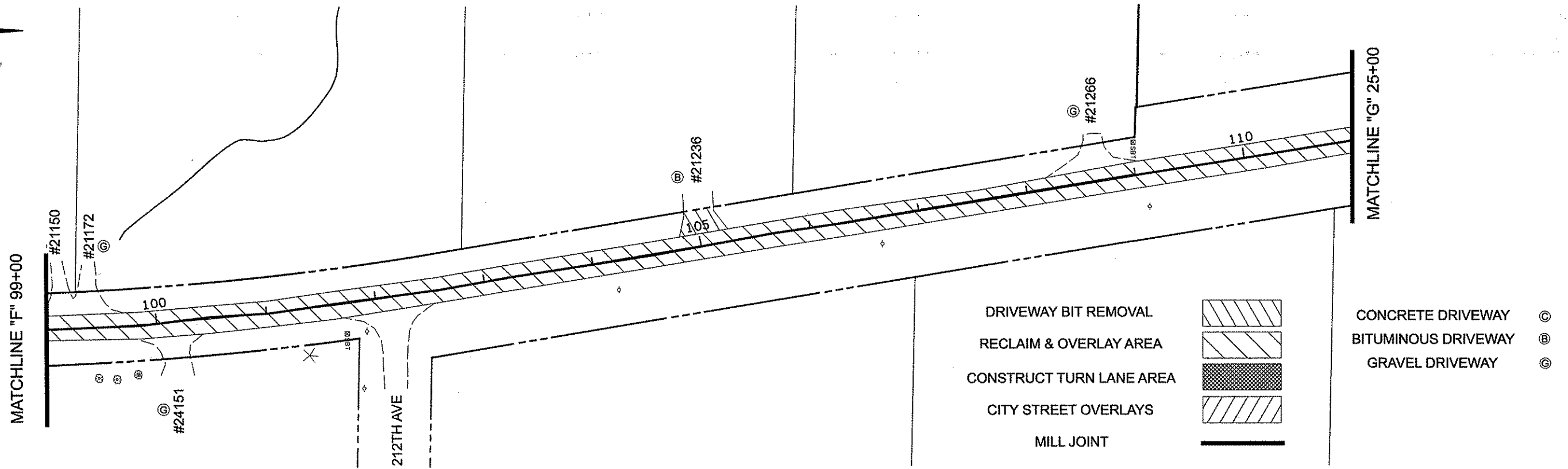
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: CHARLES CADEWHEAD
 SIGNATURE: *[Signature]*
 DATE: 2/2/12 LICENSE NO. 40416

DRAWN BY: CSO DATE: 12/20/2011
 DESIGN BY: CSO DATE: 12/20/2011
 CHECKED BY: JO DATE: _____

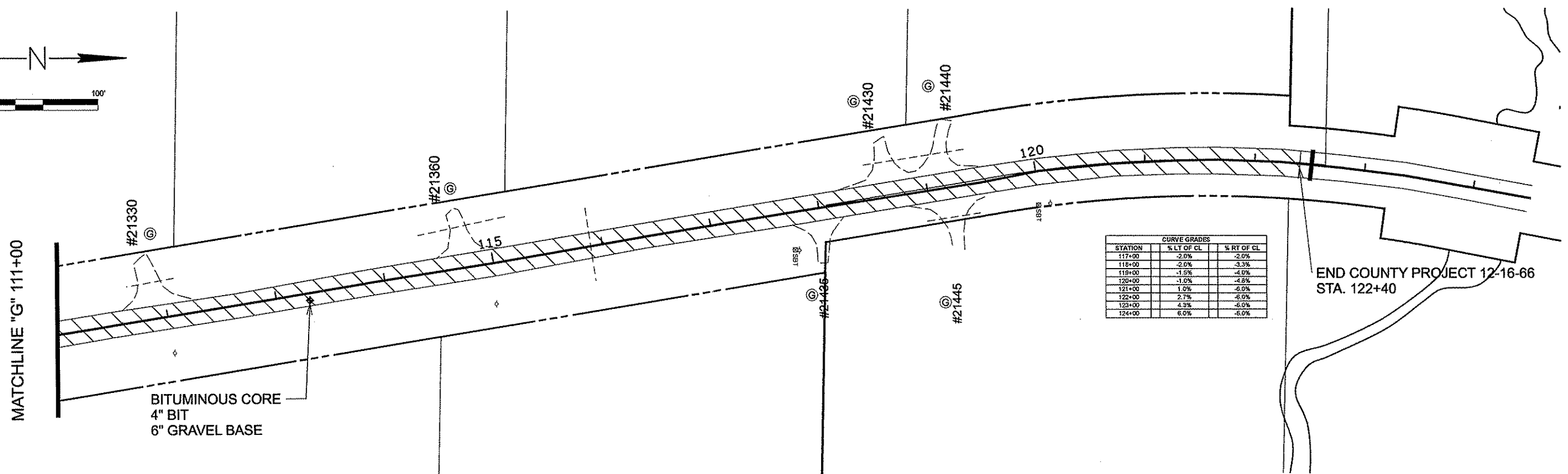
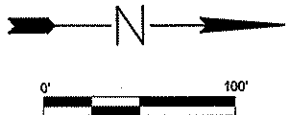
ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 12-16-66

CONSTRUCTION PLAN
 STA 69+00 TO 99+00
 Sheet 9 of 17 Sheets



- DRIVEWAY BIT REMOVAL
- RECLAIM & OVERLAY AREA
- CONSTRUCT TURN LANE AREA
- CITY STREET OVERLAYS
- MILL JOINT
- CONCRETE DRIVEWAY
- BITUMINOUS DRIVEWAY
- GRAVEL DRIVEWAY



CURVE GRADES		
STATION	% LT OF CL	% RT OF CL
117+00	-2.0%	-2.0%
118+00	-2.0%	-3.3%
119+00	-1.5%	-4.0%
120+00	-1.0%	-4.8%
121+00	1.0%	-6.0%
122+00	2.7%	-6.0%
123+00	4.3%	-6.0%
124+00	6.0%	-6.0%

END COUNTY PROJECT 12-16-66
STA. 122+40

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CR_06_(CSAH22-SoftNorrisLake)\Plan5_PLAN.dgn 02/27/2012 10:54:56 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: CHARLES CADENHEAD
 SIGNATURE:
 DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY CSO DATE 12/20/2011
 DESIGN BY CSO DATE 12/20/2011
 CHECKED BY JO DATE

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 12-16-66

CONSTRUCTION PLAN
 STA 99+00 TO 122+40
 Sheet 10 of 17 Sheets

PERMANENT PAVEMENT MARKING PLAN
NOTES AND GUIDELINES

GENERAL INFORMATION:

THE ENGINEER'S INVOLVEMENT IN THE APPLICATION OF THE MATERIAL SHALL BE LIMITED TO FIELD CONSULTATION AND INSPECTION. ANOKA COUNTY HIGHWAY DEPARTMENT WILL PLACE NECESSARY "SPOTTING" AT APPROPRIATE POINTS TO PROVIDE HORIZONTAL CONTROL FOR STRIPING AND TO DETERMINE NECESSARY STARTING AND CUTOFF POINTS, LONGITUDINAL JOINTS, PAVEMENT EDGES AND EXISTING MARKINGS MAY SERVE AS HORIZONTAL CONTROL WHEN SO DIRECTED.

EDGE LINES AND LANE LINES ARE TO BE BROKEN ONLY AT INTERSECTIONS WITH PUBLIC ROADS AND AT PRIVATE ENTRANCES IF THEY ARE CONTROLLED BY A YIELD SIGN, STOP SIGN OR TRAFFIC SIGNAL. THE BREAK POINT IS TO BE AT THE START OF THE RADIUS FOR THE INTERSECTION OR AT MARKED STOP LINES OR CROSSWALKS.

A TOLERANCE OF 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.

EPOXY:

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 EPOXY PAVEMENT MARKINGS.

THE EPOXY MARKING APPLICATION SHALL IMMEDIATELY FOLLOW THE PAVEMENT CLEANING. GLASS BEANS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE EPOXY RESIN LINE TO PROVIDE AN IMMEDIATE NO-TRACK SYSTEM.

AN EPOXY RESIN LINE 4" WIDE AND 15 MILL THICKNESS (WET), REQUIRES AN APPLICATION RATE OF ONE (1) GALLON OF COMPONENTS FOR 320 FEET OF LINE. GLASS BEADS SHALL BE APPLIED AT A POUND PER GALLON RATE SUFFICIENT TO ACHIEVE AN ACCEPTABLE NO-TRACK SYSTEM.

OPERATIONS SHALL BE CONDUCTED ONLY WHEN THE ROAD PAVEMENT SURFACE TEMPERATURES ARE 50 DEGREES FAHRENHEIT OR GREATER.

PERMANENT PAVEMENT MARKINGS SHALL NOT BE PLACED OVER TEMPORARY TAPE MARKINGS.

PREFORMED THERMOPLASTIC:

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

PAINT:

AT THE TIME OF APPLYING THE MARKING MATERIAL, THE APPLICATION AREA SHALL BE FREE OF CONTAMINATION. THE CONTRACTOR SHALL CLEAN THE ROADWAY SURFACE PRIOR TO THE LINE APPLICATION IN A MANNER AND TO THE EXTENT REQUIRED BY THE ENGINEER.

GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE PAINT LINE.

EXCEPT WHEN USED AS A TEMPORARY MARKING, PAVEMENT MARKINGS SHALL ONLY BE APPLIED IN SEASONABLE WEATHER WHEN AIR TEMPERATURE IS 50 DEGREES FARHENHEIT OR HIGHER AND SHALL NOT BE APPLIED WHEN THE WIND OR OTHER CONDITIONS CAUSE A FILD OR DUST TO BE DEPOSITED ON THE PAVEMENT SURFACE AFTER CLEANING AND BEFORE THE MARKING MATERIAL CAN BE APPLIED.

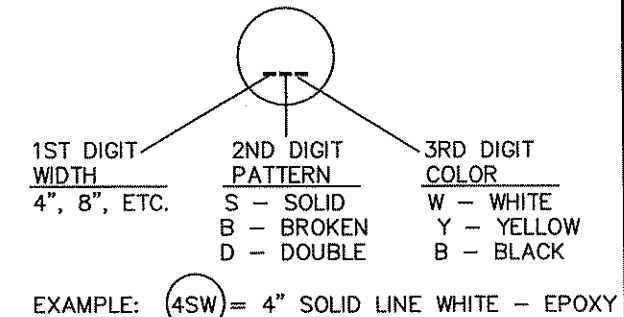
THE FILLING OF TANKS, POURING OF MATERIALS OR CLEANING OF EQUIPMENT SHALL NOT BE PERFORMED ON UNPROTECTED PAVEMENT SURFACES UNLESS ADEQUATE PROVISIONS ARE MADE TO PREVENT SPILLAGE OF MATERIAL.

SYMBOLS & MATERIALS LEGEND

- CROSSWALK BLOCK WHITE PREFORMED THERMOPLASTIC
- ← PAVEMENT MESSAGE (LEFT ARROW) PREFORMED THERMOPLASTIC

STRIPING KEY

- CIRCLE - EPOXY
- SQUARE PREFORMED THERMOPLASTIC
- △ TRIANGLE - PAINT
- ⬠ PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING



PAVEMENT MARKING QUANTITIES

Item	Quantity	Units
4" Double Solid Line Yellow - Epoxy	2535	Lin Ft
4" Solid Line Yellow - Epoxy	6350	Lin Ft
4" Broken Yellow Line - Epoxy (10 ft stripe / 40 ft gap)	1730	Lin Ft
4" Solid Line White - Epoxy	23010	Lin Ft

NO	DATE	BY	CKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 3/9/12 LICENSE NO. 40416

DRAWN BY: ST DATE 02/03/2012
 DESIGN BY: ST DATE 02/03/2012
 CHECKED BY: JR DATE 02/09/2012



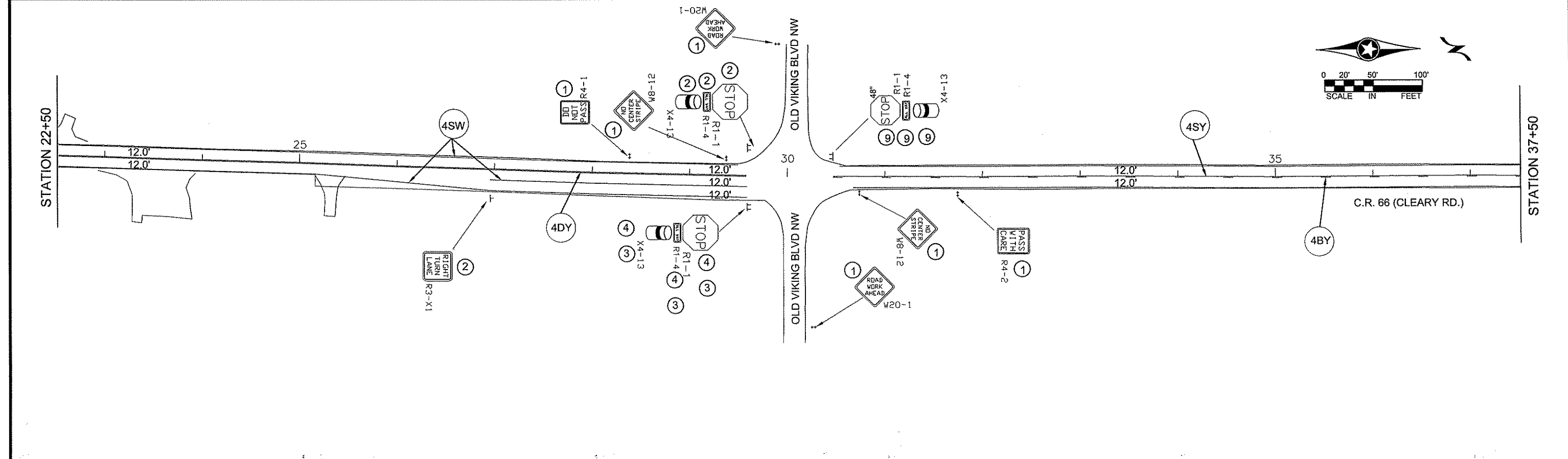
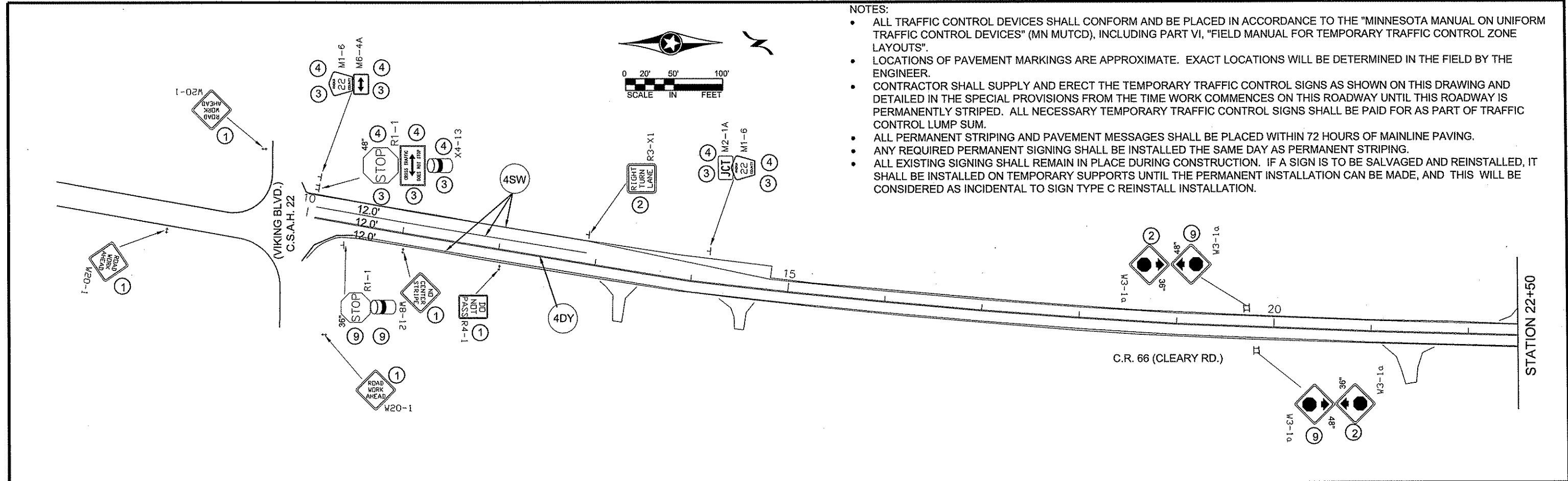
ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. 12-16-66

PERMANENT MARKING
TABULATION

NOTES:

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NO	DATE	BY	CKD	APPR	REVISION

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 PRINT NAME: CHARLES CAPENHEAD
 SIGNATURE: *Charles Capenhead*
 DATE: 3/2/12 REG. NO. 40416

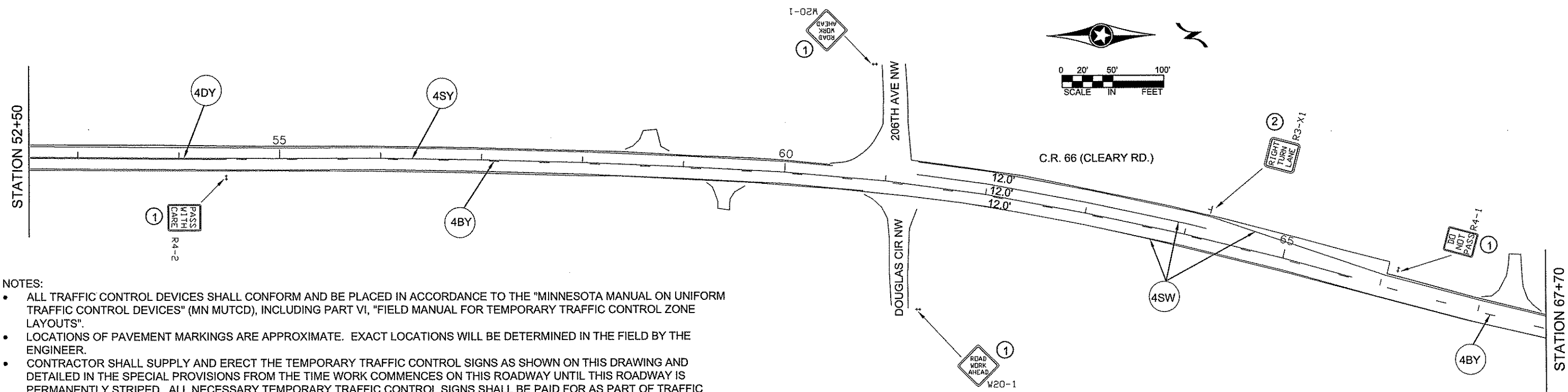
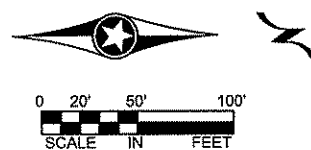
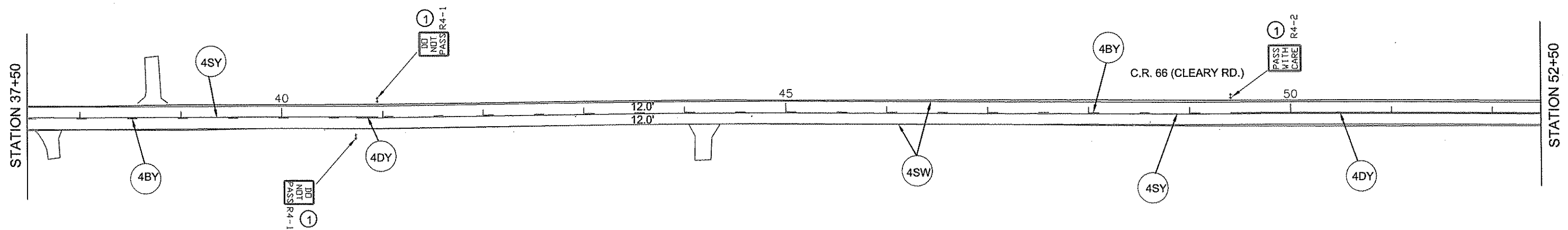
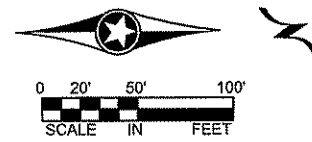
DRAWN BY: S.T. DATE 02/03/12
 DESIGN BY: S.T. DATE 02/03/12
 CHECKED BY: J.R. DATE 02/14/12



ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. 12-16-66

CR 66 (CLEARY RD)
 TEMPORARY SIGNING
 PERMANENT STRIPING
 AND PAVEMENT MESSAGES
 Sheet 12 of 17 Sheets



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PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 12/12 REG. NO. 40416

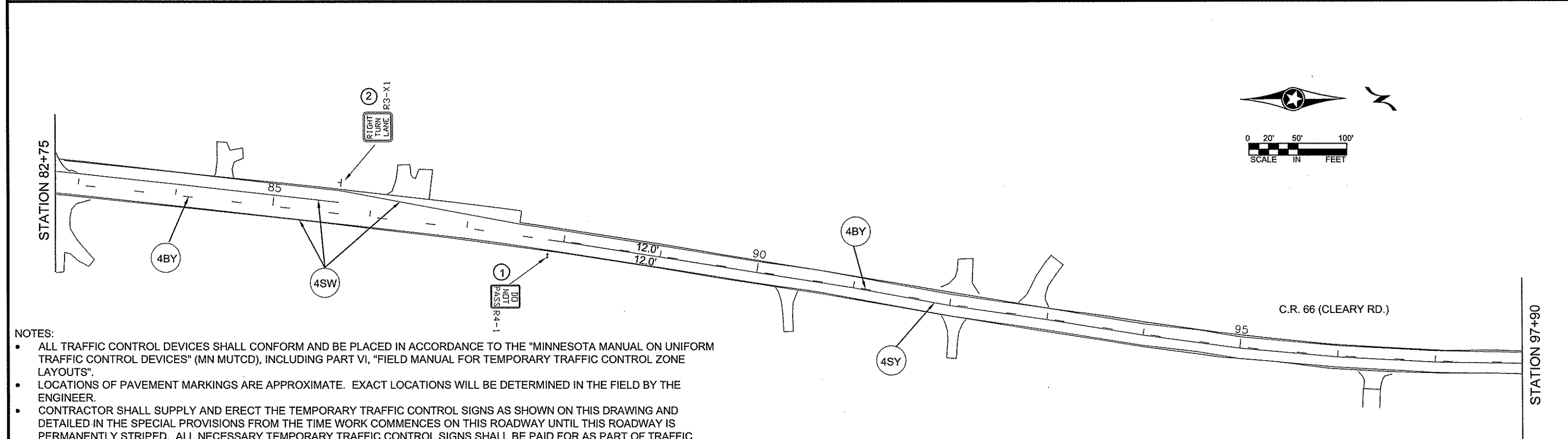
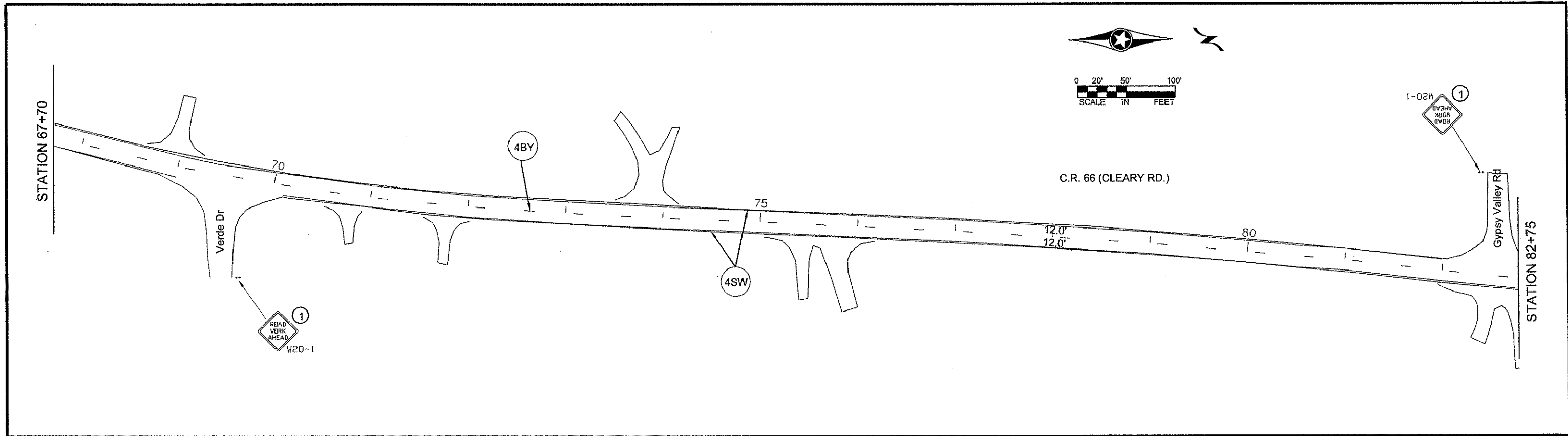
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 DESIGN BY: S.T. DATE: 02/03/12
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CR 66 (CLEARY RD)
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Sheet 13 of 17 Sheets



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PRINT NAME: CHARLES BADENHEAD

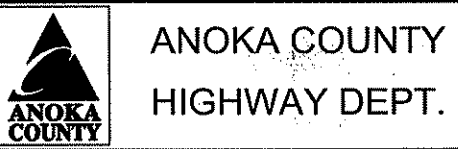
SIGNATURE: *Charles Badenhead*

DATE: 7/12 REG. NO. 40416

DRAWN BY S.T. DATE 02/03/12

DESIGN BY S.T. DATE 02/03/12

CHECKED BY J.R. DATE 02/14/12



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____

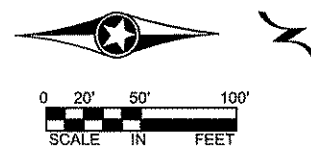
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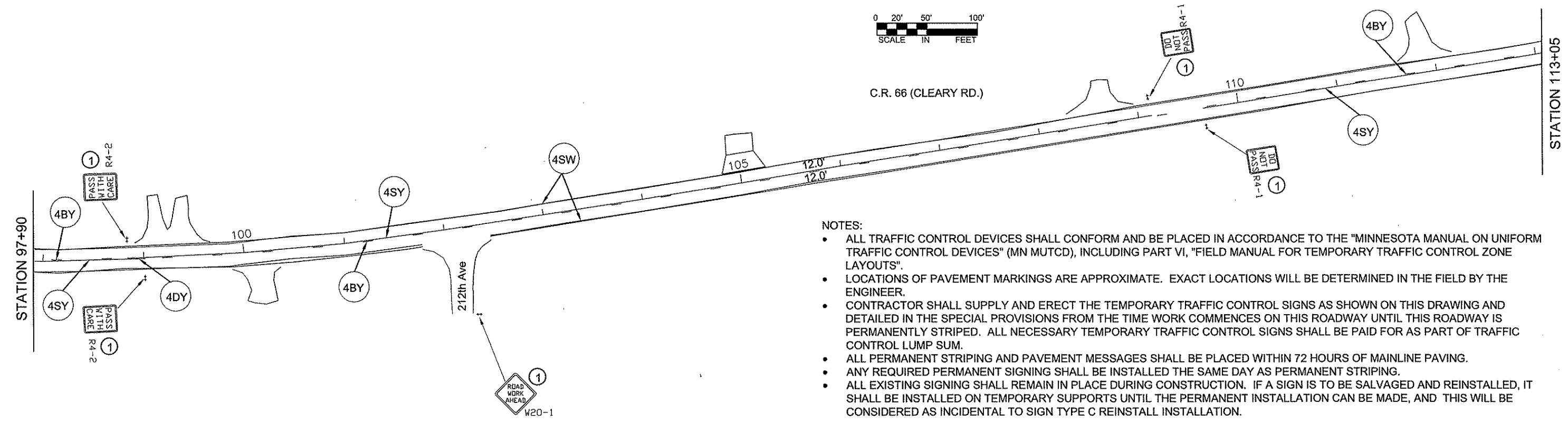
COUNTY PROJECT NO. 12-16-66

CR 66 (CLEARY RD)
TEMPORARY SIGNING
PERMANENT STRIPING
AND PAVEMENT MESSAGES

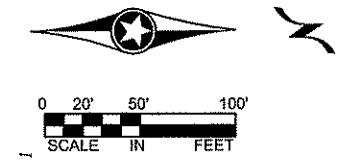
Sheet 14 of 17 Sheets



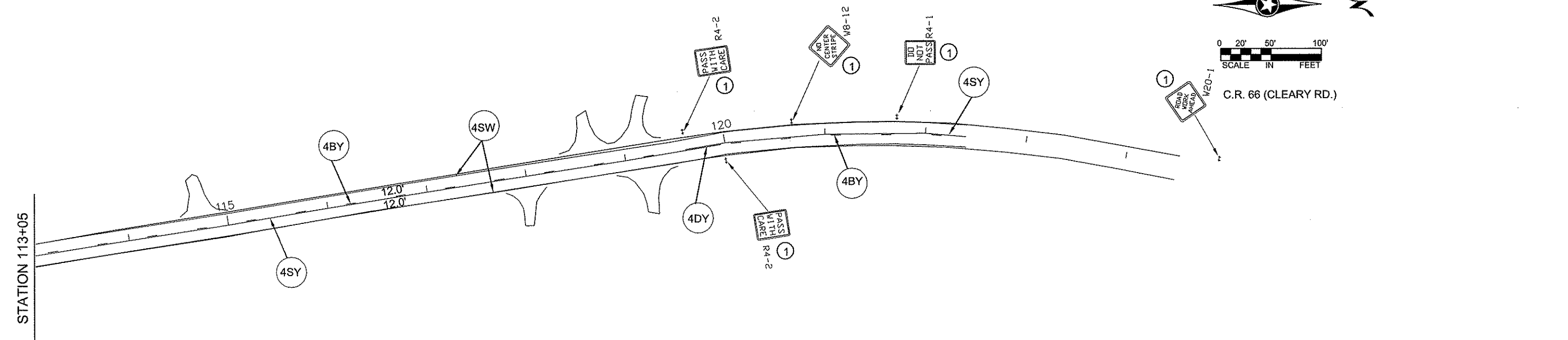
C.R. 66 (CLEARY RD.)



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C.R. 66 (CLEARY RD.)



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 PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *[Signature]*
 DATE: 2/2/12 REG. NO. 40416

DRAWN BY: S.T. DATE 02/03/12
 DESIGN BY: S.T. DATE 02/03/12
 CHECKED BY: J.R. DATE 02/14/12



ANOKA COUNTY
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CR 66 (CLEARY RD)
 TEMPORARY SIGNING
 PERMANENT STRIPING
 AND PAVEMENT MESSAGES
 Sheet 15 of 17 Sheets

TEMPORARY TRAFFIC CONTROL SIGNS				
M.U.T.C.D. CODE	SIZE	PANEL AREA FT. ²	INSERT	QUANTITY
W8-12	48" x 48"	16.00		2
R4-1	24" x 30"	5.00		9
R4-2	24" x 30"	5.00		7
W8-1A	48" x 48"	16.00		AS NEEDED
W8-1A	48" x 48"	16.00		AS NEEDED
W8-8	48" x 48"	16.00		AS NEEDED
W8-11	48" x 48"	16.00		AS NEEDED
W20-1	48" x 48"	16.00		AS NEEDED (ESTIMATED 11)

F & I PERMANENT SIGNS							
M.U.T.C.D. CODE	SIZE	PANEL AREA FT. ²	INSERT	No. GROUND POST MOUNT INSTALL		MOUNTING HEIGHT FT.	TOTAL AREA FT. ²
				No.	POST		
R1-1	36" x 36"	9.00		1	2	7.0'	9.00
R1-4	18" x 6"	0.75		1			0.75
DELINEATOR X4-13	8" DIA x 12"			1		4.0'	
R3-X1	30" x 30"	6.25		4	1	7.0'	25.00
W3-1a	36" x 36"	9.00		2	2	7.0'	18.00
TOTAL PANEL AREA							52.75

- SEE SPECIAL PROVISIONS
- ① TEMPORARY TRAFFIC CONTROL SIGN
 - ② F & I PERMANENT SIGN
 - ③ SALVAGE PERMANENT SIGN
 - ④ RE-INSTALL PERMANENT SIGN
 - ⑨ INPLACE - RETAIN

SALVAGE & RE-INSTALL PERMANENT SIGNS				
STATION		SALVAGE	INSTALL	SIGN NUMBER
		SIGN TYPE C EACH	SIGN TYPE C EACH	
10+15	Lt			R1-1
10+15	Lt	1	1	R1-X2
10+15	Lt			X4-13
10+15	Lt	1	1	M4-6a
10+15	Lt			M1-6
14+15	Lt	1	1	M2-1a
14+15	Lt			M1-6
29+60	Rt			R1-1
29+60	Rt	1	1	R1-4
29+60	Rt			X4-13
TOTAL		4	4	

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PRINT NAME: CHARLES CADENHEAD

SIGNATURE:

DATE: 3/2/12 REG. NO. 40416

DRAWN BY: S.T. DATE: 02/03/12

DESIGN BY: S.T. DATE: 02/03/12

CHECKED BY: J.R. DATE: 02/14/12



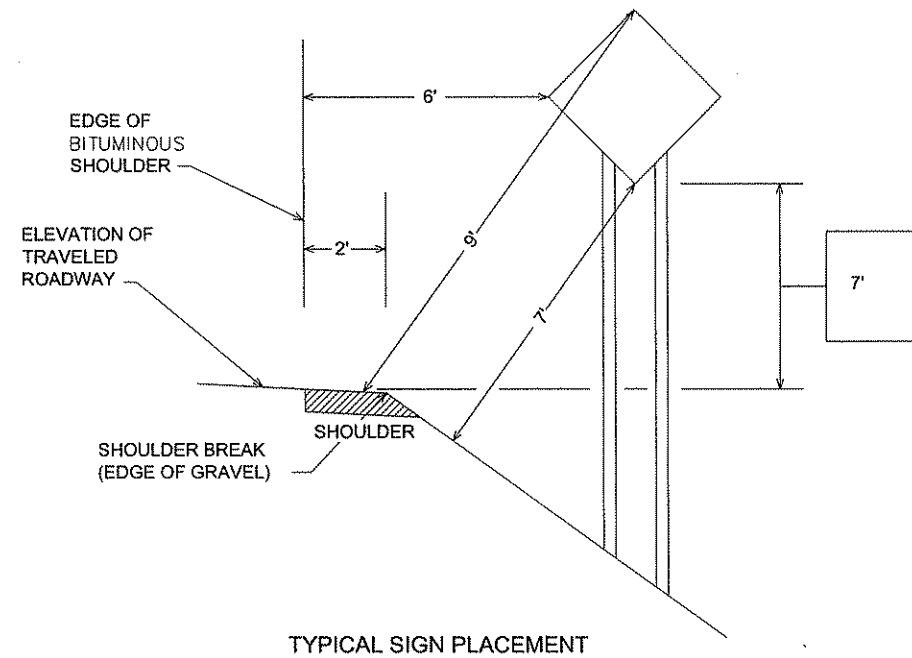
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CR 66 (CLEARY RD)
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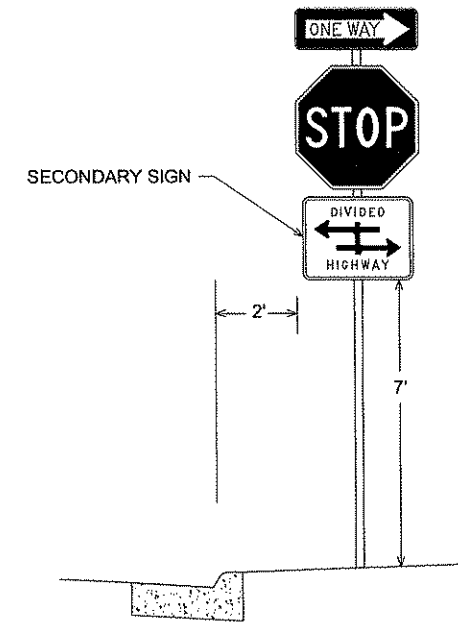
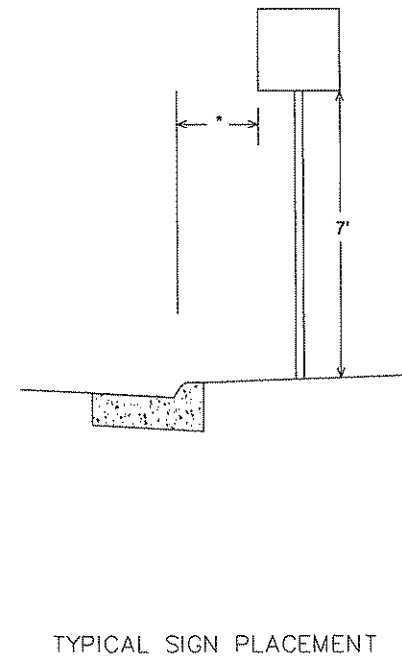
Sheet 16 of 17 Sheets

RURAL



URBAN

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



NOTE:

- ALL DIMENSIONS ARE MINIMUMS
- MAINTAIN 2' CLEAR FROM SIGNS TO BITUMINOUS TRAIL

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SIGNING & STRIPING DETAILS
 Sheet 17 of 17 Sheets