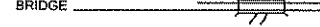
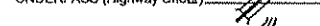
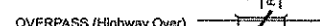
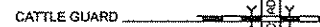


PLAN SYMBOLS

- 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



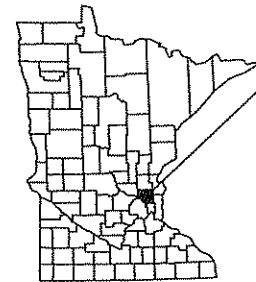
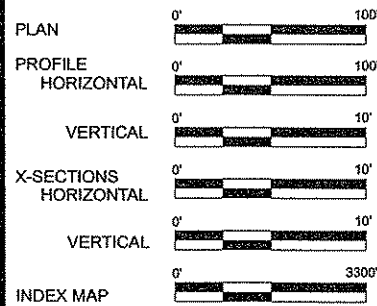
- BUILDING (One Story Frame) [1-8-F]
- F-FRAME C-CONCRETE
- S-STONE T-TILE
- B-BRICK ST-STUCCO

- 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

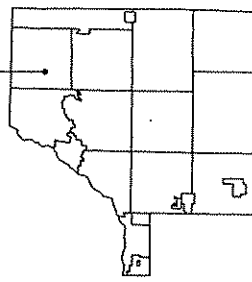
- POWER POLE LINE
- TELEPHONE OR TELEGRAPH POLE LINE
- JOINT TELEPHONE & POWER ON POWER POLES
- ON TELEPHONE POLES
- ANCHOR
- STEEL TOWER
- STREET LIGHT
- PEDESTAL (Cable Terminal)
- GAS MAIN
- WATERMAIN
- TELEPHONE CABLE IN CONDUIT
- ELECTRIC CABLE IN CONDUIT
- TELEPHONE MANHOLE
- ELECTRIC MANHOLE
-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

SCALES



PROJECT LOCATION

CITY OF NOWTHEN
 ANOKA COUNTY
 MN/DOT TRANSPORTATION
 DISTRICT - METRO
 SECTION 21, 22, 23, 25, 27, 28
 TOWNSHIP T 33 NORTH
 RANGE 25 WEST



MINNESOTA DEPARTMENT OF TRANSPORTATION

ANOKA COUNTY

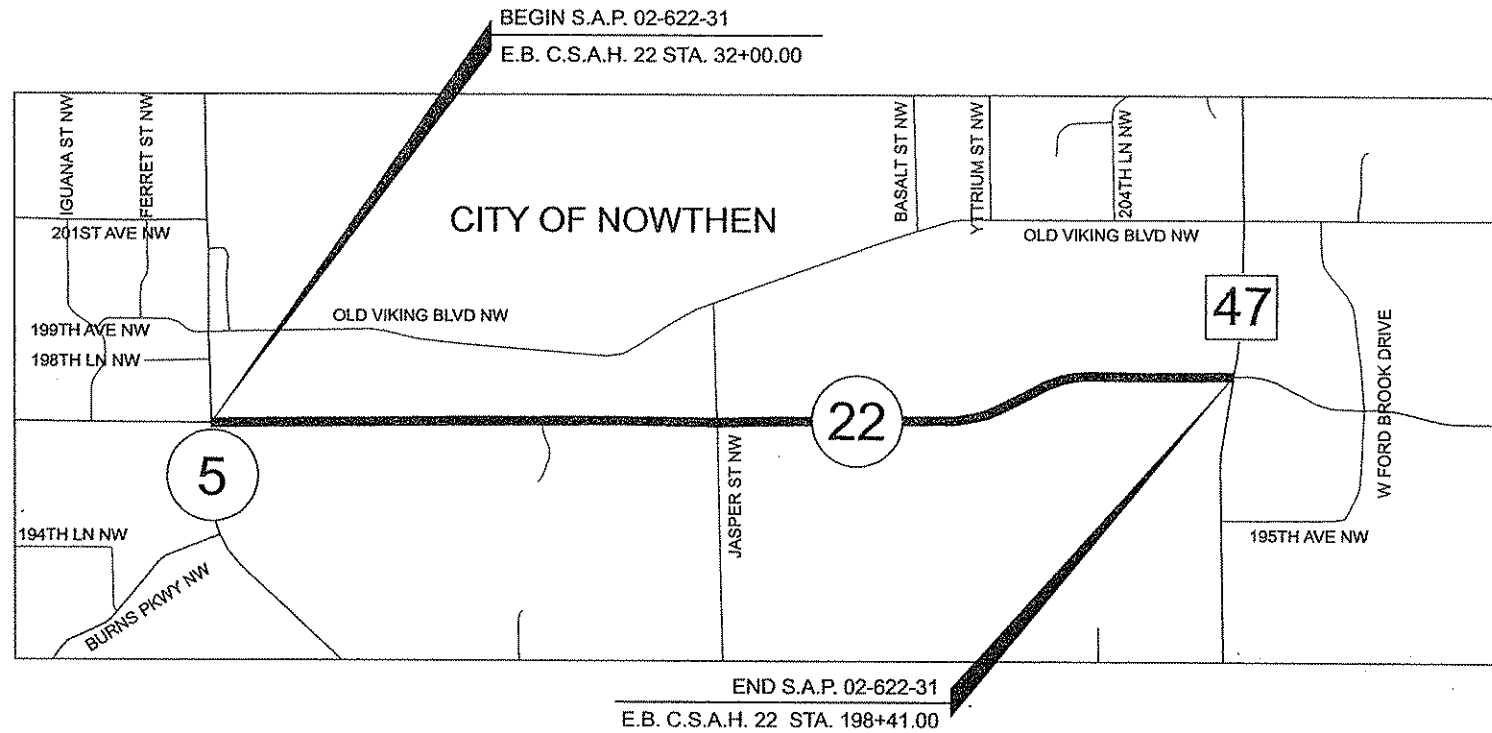
CONSTRUCTION PLAN FOR CONCRETE PAVING, AGGREGATE SHOULDERING, BITUMINOUS MILLING, AND INCIDENTALS

LOCATED ON C.S.A.H. 22 BETWEEN C.S.A.H. 5 AND T.H. 47

STATE AID PROJ. NO. 02-622-31

C.S.A.H. 22

GROSS LENGTH	16,641.00 FEET	3.15 MILES
BRIDGES-LENGTH	68.19 FEET	0.013 MILES
EXCEPTIONS-LENGTH	0.00 FEET	0.000 MILES
NET LENGTH	16,572.81 FEET	3.14 MILES



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" (MN MUTCD), AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS."

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

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	STATEMENT OF ESTIMATED QUANTITIES
3 - 4	MISC. TABULATIONS
5	SOILS & CONSTRUCTION NOTES
6 - 7	TYPICAL SECTION
8 - 32	TRAFFIC CONTROL
33	ALIGNMENT TAB
34 - 48	CONSTRUCTION PLAN
49 - 54	CONCRETE PAVEMENT & GUARDRAIL DETAILS
55 - 62	SUPERELEVATION PLAN

THIS PLAN CONTAINS 62 SHEETS

Approved: *[Signature]* 7/14/10
 ANOKA COUNTY ENGINEER

Approved: *[Signature]* 7/22/10
 CITY OF NOWTHEN

For: *[Signature]* 7/23/10
 DISTRICT STATE AID ENGINEER REVIEWED FOR COMPLIANCE WITH STATE AID RULES POLICY

For: *[Signature]* 7/23/10
 STATE AID ENGINEER-APPROVED FOR STATE AID FUNDING

DESIGN DESIGNATION		FUNCTIONAL CLASSIFICATION	
ESAL 20	904,339	MINOR ARTERIAL	
R VALUE	60	NO. OF TRAFFIC LANES	2
ADT (2010)	6,124	NO. OF PARKING LANES	0
PROJ. ADT (2030)	9,186	DESIGN SPEED	55 MPH
PROJ. HCADT (2030)	597	DESIGN SPEED	MPH
SOIL FACTOR	A-6,100	STOPPING SIGHT DISTANCE BASED ON:	
9	TON DESIGN	HEIGHT OF EYE	3.5'
		HEIGHT OF OBJECT	2.0'
		DESIGN SPEED NOT ACHIEVED AT:	
		STA.	177+70.00 TO STA. 183+00.00 MPH 45

NO	DATE	BY	CHKD	APPR	REVISION
2	7/13/2010	BAV	JEO	CMC	CHANGED PER MN/DOT REVIEW COMMENTS
1	7/12/2010	BAV	JEO	CMC	CHANGED PER MN/DOT REVIEW COMMENTS

NAME: P:\WHITE TOP 22 5-47\PLAN\WHITE TOP_TS.DGN 07/13/2010 3:33:10 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 M. CADENHEAD JR.

SIGNATURE: *[Signature]*

DATE: 7/13/10 LICENSE NO. 0416

DRAWN BY: BAV DATE: _____

DESIGN BY: BAV DATE: _____

CHECKED BY: JEO DATE: _____

ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. **.*.*.*

STATE AID PROJECT NO. 02-622-31

CITY PROJECT NO. **.*.*.*

COUNTY PROJECT NO. **.*.*.*

TITLE SHEET

Sheet 1 of 62 Sheets

TAB / NOTE	ITEM NO.	ITEM DESCRIPTION	UNIT	ANOKA COUNTY SAP 02-622-31 PROJECT QUANTITIES ESTIMATED
	2021.501	MOBILIZATION	LUMP SUM	1
	2031.501	FIELD OFFICE TYPE D	EACH	1
	2102.502	PAVEMENT MARKING REMOVAL	LIN FT	16273
D	2104.501	BITUMINOUS CURB REMOVAL	LIN FT	623
F	2104.501	REMOVE GUARDRAIL	LIN FT	1054
C	2104.503	REMOVE BITUMINOUS DRIVEWAY PAVEMENT	SF	1139
C	2104.513	SAWING BITUMINOUS PAVEMENT	LF	143
	2105.525	TOPSOIL BORROW (LV)	CY	610
2	2112.619	SHOULDER PREPARATION	RD STA	321
C,1	2211.501	AGGREGATE BASE CLASS 5	TON	54
A	2211.503	AGGREGATE BASE (CV) CLASS 5 (P)	CU YD	2759
A	2221.503	AGGREGATE SHOULDERING (CV) CLASS 5	CU YD	446
	2232.501	MILL BITUMINOUS SURFACE 2"	SY	74124
3	2232.604	MILL BITUMINOUS PAVEMENT (SPECIAL)	SY	4503
B	2301.502	CONCRETE PAVEMENT, STANDARD WIDTH 6.0'	SY	51777
B	2301.511	STRUCTURAL CONCRETE	CY	8630
	2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GAL	167
A	2360.501	TYPE SP 12.5 WEARING COURSE MIXTURE (2,B)	TON	4867
C,4	2360.503	TYPE LV 3 WEAR CRS MIX (B) 3" THICK	SY	126
D,5	2535.501	BITUMINOUS CURB	LF	623
	2540.602	MAIL BOX SUPPORT	EACH	39
	2540.602	RELOCATE MAIL BOX	EACH	39
F	2554.501	TRAFFIC BARRIER DESIGN B8338	LIN FT	1054
	2554.521	ANCHORAGE ASSEMBLY	EACH	1
	2554.509	GUIDE POST TYPE B	EACH	1
8	2554.523	END TREATMENT - TANGENT TERMINAL	EACH	3
	2563.601	TRAFFIC CONTROL	LS	1
	2575.502	SEED MIXTURE 250	LB	161
E,6	2582.502	4" SOLID LINE WHITE - EPOXY	LIN FT	37400
E,6	2582.502	4" SOLID LINE YELLOW - EPOXY	LIN FT	6350
E,6	2582.502	4" DOUBLE SOLID LINE YELLOW - EPOXY	LIN FT	9350
E,6	2582.502	4" BROKEN LINE YELLOW - EPOXY	LIN FT	1620
E,7	2582.603	FORMED 4" GROOVE FOR PAINT STRIPE	LIN FT	74800

NOTES:

- 1) FOR GRAVEL ENTRANCES AND STREET APPROACHES
- 2) FOR SHAPING OF BITUMINOUS SHOULDERS, PRIOR TO GRAVEL PLACEMENT
- 3) VARIABLE DEPTH FOR VERTICAL TRANSITIONS AT BEGIN & END PROJECT AND AT BRIDGE ABUTMENTS
- 4) 1.75" AVERAGE CLASS 5 DEPTH CONSIDERED INCIDENTAL TO DRIVEWAY PLACEMENT
- 5) 4" INTEGRAL BITUMINOUS CURB
- 6) CEMENT CONCRETE SURFACES SHALL BE SANDBLASTED CLEAN TO REMOVE ANY SURFACE TREATMENTS AND / OR LAITANCE. THIS SHALL BE CONSIDERED INCIDENTAL TO PAINT ITEMS.
- 7) THE CONTRACTOR HAS THE OPTION OF GRINDING THE CONCRETE OR FORMING A GROOVE DURING THE FINISHING OPERATIONS. SEE PAGE 49 FOR ADDITIONAL DETAILS.
- 8) ET-2000 TERMINAL AND/OR SKT-350 OR EQUIVALENT

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

STANDARD PLATES		
PLATE NO.		DESCRIPTION
8318	C	GUARDRAIL ANCHORAGE PLATE FOR BRIDGES AND BCTS
8338	C	W-BEAM GUARDRAIL & END ANCHORAGES (STEEL POSTS) (4 SHEETS)

BASIS OF QUANTITIES	
DESCRIPTION	RATE
AGGREGATE BASE & SURFACING	1 TON = 0.55 CUBIC YARD (CV)
BITUMINOUS MIXTURE	2.0 TONS PER CUBIC YARD
BITUMINOUS TACK COAT	0.05 GALLONS PER SQUARE YARD
SEED MIXTURE 250	70 LBS/ACRE

INDEX OF TABULATION CHARTS		
TAB.	DESCRIPTION	SHEET NO.
A	BITUMINOUS AND AGGREGATE TABULATION	3
B	CONCRETE ITEMS	3
C	DRIVEWAY REMOVAL AND CONSTRUCTION	4
D	BITUMINOUS CURB	4
E	PERMANENT PAVEMENT MARKINGS	4
F	GUARDRAIL	4

NO	DATE	BY	CHKD	APPR	REVISION
2	7/13/2010	BAV	JEO	CMC	SHEET CHANGED PER MNDOT REVIEW COMMENTS
1	7/12/2010	BAV	JEO	CMC	SHEET CHANGED PER MNDOT REVIEW COMMENTS
NAME: P:\Whitlop 22 5-47\Plan\Whitlop_TAB.dgn					

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: CHARLES M. BADENHEAD JR.
 SIGNATURE: *[Signature]*
 DATE: 7/27/10 LICENSE NO. 40416

DRAWN BY BAV DATE _____
 DESIGN BY BAV DATE _____
 CHECKED BY JEO DATE _____



**ANOKA COUNTY
HIGHWAY DEPT.**


STATE PROJECT NO. **_***_**
 STATE AID PROJECT NO. 02-622-31
 CITY PROJECT NO. **_***_**
 COUNTY PROJECT NO. **_***_**

STATEMENT OF
ESTIMATED QUANTITIES
 Sheet 2 of 62 Sheets

BITUMINOUS AND AGGREGATE TABULATION										A
NOTES	BEG. STA	END STA	LOCATION	LENGTH	WIDTH	BITUMINOUS SURFACE	BITUMINOUS WEARING COURSE SPWEB440B	BITUMINOUS TACK COAT	7' CLASS 5 AGGREGATE SHOULDER BASE	1.5' CLASS 5 AGGREGATE SHOULDER
						SY	TON	GALLON	CU YD	CU YD
	32+00	87+22	LT	5522	7	4295	741	8	475	77
	32+00	61+28	RT	2928	7	2277	393	4	252	41
1	RHINESTONE ST		RT			300	69	15		
	65+78	82+87	RT	1709	7	1329	229	2	147	24
1	JASPER ST		LT			305	70	15		
1	JASPER ST		RT			354	81	18		
	92+65	155+91	LT	6326	7	4920	849	9	544	88
	88+45	151+00	RT	6255	7	4865	839	9	538	87
1	COUNTY ROAD #66		LT			340	78	17		
1	COUNTY ROAD #66		RT			394	91	20		
	160+10	173+45	LT	1335	7	1038	179	2	115	19
	156+90	194+70	RT	3780	7	2940	507	5	325	53
1	W. FORD BROOKE DRIVE		LT			372	86	19		
1	W. FORD BROOKE DRIVE		RT			376	86	19		
	174+66	180+31	LT	565	7	439	76	1	49	8
	174+74	180+31	RT	557	7	433	75	1	48	8
	180+99	198+41	LT	1742	7	1355	234	2	150	24
	180+99	194+70	RT	1371	7	1066	184	2	118	19
PROJECT TOTAL						27400	4867	167	2759	446

1) NOTE: STREET APPROACHES TO BE PAVED IN TWO LIFTS

CONCRETE ITEMS						B	
BEG. STA	END STA	LOCATION	LENGTH	WIDTH	CONCRETE PAVEMENT STANDARD WIDTH 6.0"	STRUCTURAL CONCRETE	
					SY	CU YD	
32+00	64+73	MAINLINE	3273	26	9455	1576	
61+28	64+73	EB RT TURN	345	13	498	83	
64+73	92+68	MAINLINE	2795	26	8074	1346	
82+86	87+26	EB RT TURN	440	11	538	90	
88+30	92+68	WB RT TURN	438	11	535	89	
92+68	160+09	MAINLINE	6741	26	19474	3246	
151+00	155+62	EB RT TURN	462	11	565	94	
157+12	160+09	WB RT TURN	297	11	363	61	
160+09	178+16	MAINLINE	1807	26	5220	870	
169+24	173+50	EB RT TURN	426	11	521	87	
174+67	178+16	WB RT TURN	349	11	427	71	
178+16	180+31	MAINLINE	215	26	621	104	
180+99	198+41	MAINLINE	1742	26	5032	839	
194+70	198+41	WB RT TURN	371	11	453	76	
TOTAL CSAH 22					16573	51777	8630

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. CADENHEAD JR. SIGNATURE: <i>[Signature]</i> DATE: 7/12/10 LICENSE NO. 40414				DRAWN BY: BAV DATE: _____ DESIGN BY: BAV DATE: _____ CHECKED BY: JEO DATE: _____	 ANOKA COUNTY HIGHWAY DEPT.	STATE PROJECT NO. **** STATE AID PROJECT NO. 02-622-31 CITY PROJECT NO. **** COUNTY PROJECT NO. ****	TABULATIONS Sheet 3 of 62 Sheets
NO. 1 DATE: 7/12/2010 BY: BAV CKD: JEO APPR: CMC SHEET CHANGED PER MNDOT REVIEW COMMENTS REVISION: 07/12/2010 2:31:20 PM	NAME: p:\whitetop 22 5-47\plan\Whitetop_TAB.dgn						

DRIVEWAY REMOVAL AND CONSTRUCTION						C
STATION	LOCATION	ADDRESS	BIT SAWCUT (LF)	BIT DRIVEWAY REMOVAL (SF)	3.0" BITUMINOUS ENTRANCE CONSTRUCTION (SY) (B)	GRAVEL ENTRANCE CONSTRUCTION (TON)
33+26	LT	7833	23	184	20	
36+75	LT	7763	20	164	18	
39+19	LT	7723	18	146	16	
51+60	RT	7560				2.0
57+69	LT	FIELD ENT.				1.8
57+74	RT	7460				1.9
74+97	RT	7170				3.2
83+87	RT	7080	30	239	27	
97+38	RT	YARD ENT.				1.6
100+15	RT	6830	16	138	15	
107+44	RT	6700				2.3
110+17	RT	6660				1.5
110+18	LT	6673 / 6633				2.8
127+07	LT	6433				2.9
127+70	RT	6370				1.5
130+55	RT	FIELD ENT.				2.1
133+77	LT	6255				4.3
141+37	RT	6210 / 6190				4.3
143+86	LT	6187 / 6177				3.1
149+19	LT	6167				2.9
150+17	RT	6090 / ???				1.8
185+42	LT	5533				4.0
187+33	RT	FIELD ENT.				2.9
187+90	LT	YARD ENT.				4.0
196+09	RT	FIELD ENT.				2.8
196+76	LT	19740	36	268	30	
TOTAL			143	1139	126	54

PERMANENT PAVEMENT MARKINGS				E
ALIGNMENT	SOLID LINE			BROKEN LINE
	4" WHITE EPOXY (A)	4" YELLOW EPOXY (A)	4" DOUBLE YELLOW EPOXY (A)	4" YELLOW EPOXY (A)
	LF	LF	LF	LF
CSAH 22	37400	6350	9350	8030
TOTAL CSAH 22	37400	6350	9350	8030

NOTES
A EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER IN THE FIELD.
B PAID FOR AS TYPE LV CRS MIX (B) 3" THICK

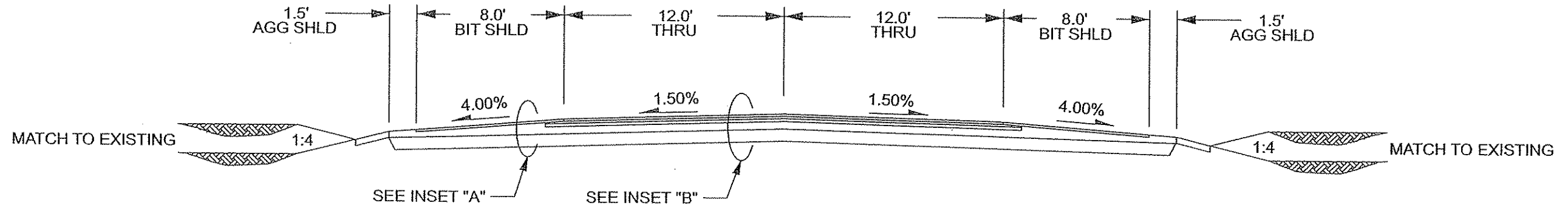
BITUMINOUS CURB				D
BEGIN STATION	END STATION	LOCATION	BITUMINOUS CURB REMOVAL (LF)	BITUMINOUS CURB CONSTRUCTION (LF)
175+88	176+91	RT LEB	103	103
179+84	180+02	RT LEB	18	18
180+10	180+23	RT LEB	13	13
180+27	180+37	LT LWB	10	10
180+93	181+05	RT LEB	12	12
181+07	181+17	LT LWB	10	10
181+12	181+31	RT LEB	19	19
184+58	184+96	LT LWB	38	38
191+39	194+02	LT LWB	263	263
195+26	196+63	LT LWB	137	137
TOTAL			623	623

GUARDRAIL				F
BEGIN STATION	END STATION	LOCATION	REMOVE GUARDRAIL (LF)	INSTALL GUARDRAIL (LF)
177+15	180+24	RT LEB	309	309
180+93	183+20	RT LEB	227	227
178+13	180+38	LT LWB	225	225
181+07	184+00	LT LWB	293	293
TOTAL			1054	1054

(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. CADENHEAD JR. SIGNATURE: <i>Charles M. Cadenhead Jr.</i> DATE: 7/17/10 LICENSE NO. 40414				DRAWN BY: BAV DATE: _____ DESIGN BY: BAV DATE: _____ CHECKED BY: JEO DATE: _____		ANOKA COUNTY HIGHWAY DEPT.		STATE PROJECT NO. **_***_** STATE AID PROJECT NO. 02-622-31 CITY PROJECT NO. **_***_** COUNTY PROJECT NO. **_***_**		TABULATIONS Sheet 4 of 62 Sheets	
NAME: P:\White\top 22 5-47\Plan\White\top_TAB.dgn NO. 2 DATE 7/13/2010 BY BAV JEO CMC SHEET CHANGED PER MNDOT REVIEW COMMENTS NO. 1 DATE 7/12/2010 BY BAV JEO CMC SHEET CHANGED PER MNDOT REVIEW COMMENTS NO. _____ DATE _____ BY CKO APPR _____ REVISION _____ 07/13/2010 3:28:35 PM											

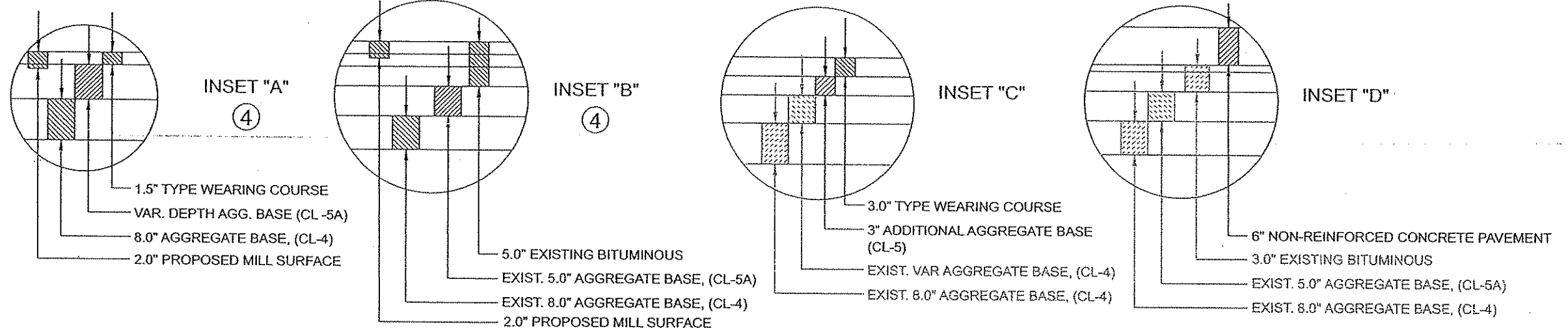
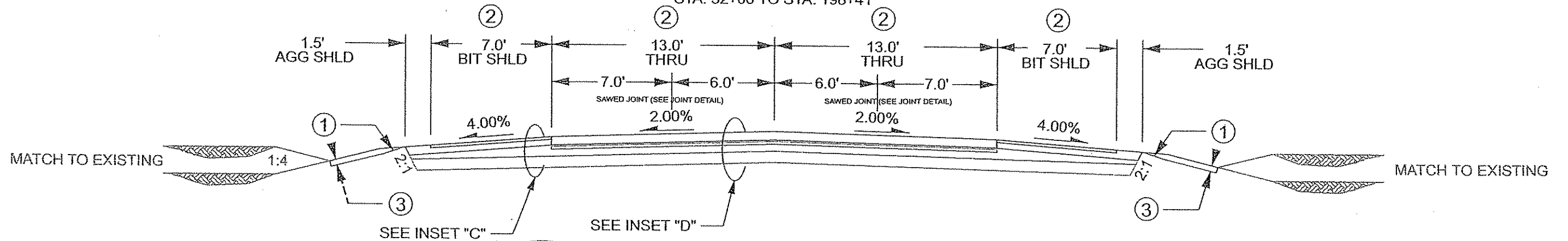
C.S.A.H. 22 (VIKING BLVD.) EXISTING TYPICAL SECTION

STA. 22+28 TO STA. 199+13



C.S.A.H. 22 (VIKING BLVD.) PROPOSED TYPICAL SECTION

STA. 32+00 TO STA. 198+41



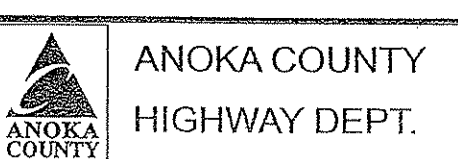
- ① 1 : 4 SLOPE
- ② SEE SUPERELEVATION PLAN SHEETS FOR CROSS SLOPES IN CURVES
- ③ MINIMUM 4.0" TOP SOIL & SEED
- ④ AGGREGATE BASE AND BITUMINOUS DEPTHS ARE APPROXIMATE. DEPTH SHOWN ARE FROM EXISTING PLANS. ACTUAL DEPTHS MAY VARY.

NO	DATE	BY	CKD	APPR	REVISION
1	7/12/2010	BAV	JEO	CMC	SHEET CHANGED PER MN/DOT REVIEW COMMENTS
NAME: pdwhitetop 22 5-47plan\Whitetop_TYP.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.

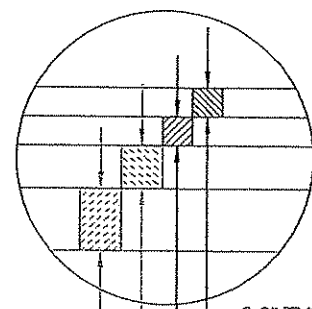
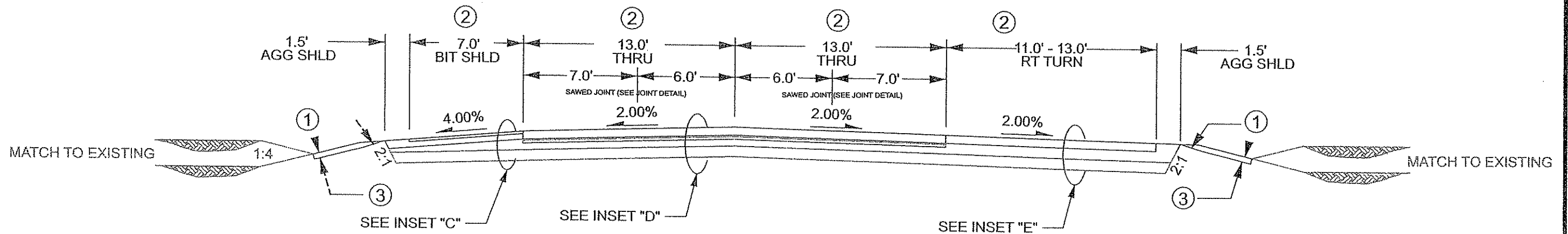
PRINT NAME: CHARLES M. CADENHEAD JR.
 SIGNATURE: *[Signature]*
 DATE: 7/12/10 LICENSE NO. 40415

DRAWN BY: BAV DATE: 2-11-10
 DESIGN BY: BAV DATE: 9-4-09
 CHECKED BY: JEO DATE: 2-12-10



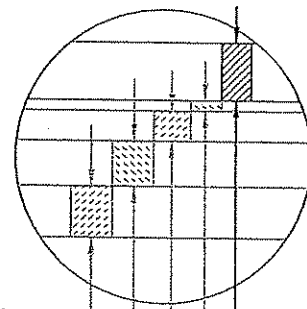
STATE PROJECT NO. **_**_**
 STATE AID PROJECT NO. 02-622-31
 CITY PROJECT NO. **_**_**
 COUNTY PROJECT NO. **_**_**

C.S.A.H. 22 (VIKING BLVD.) PROPOSED TYPICAL RT TURN LANE



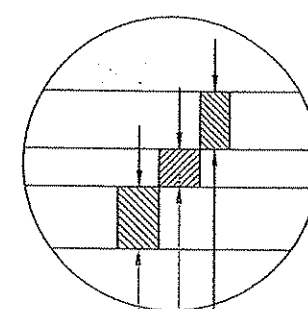
INSET "C"

- 3.0" TYPE WEARING COURSE
- 4" ADDITIONAL AGGREGATE BASE (CL-5)
- VAR AGGREGATE BASE, (CL-4)
- 8.0" AGGREGATE BASE, (CL-4)



INSET "D"

- 6" NON-REINFORCED CONCRETE PAVEMENT
- 1.0" 2331 BINDER COURSE
- 2.0" 2331 BASE COURSE
- 5.0" AGGREGATE BASE, (CL-5A)
- 8.0" AGGREGATE BASE, (CL-4)

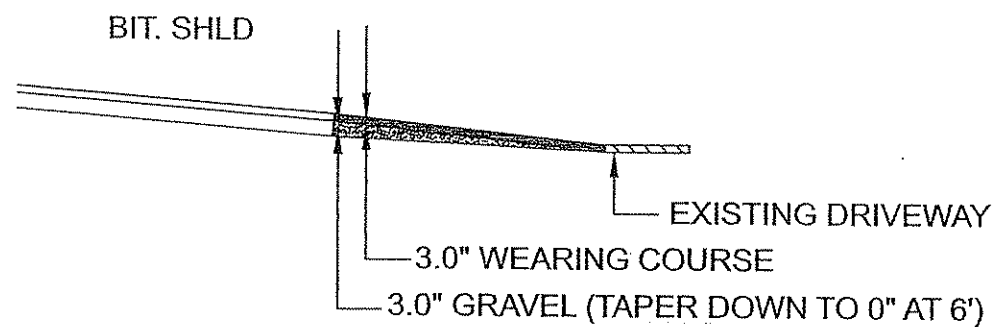


INSET "E"

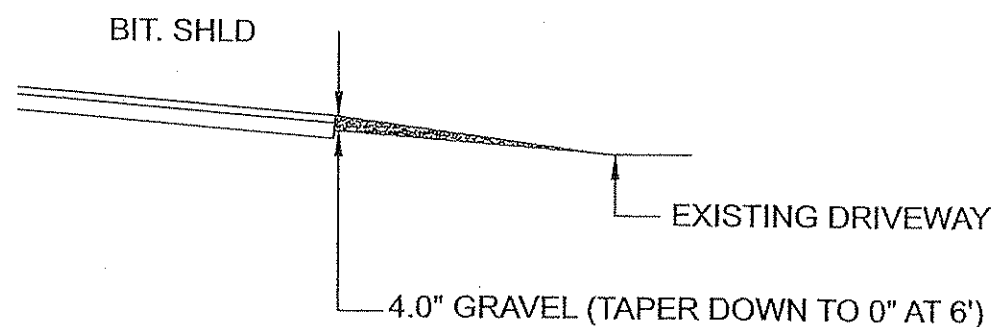
- 6.0" NON-REINFORCED CONCRETE PAVEMENT
- VAR. DEPTH AGG. BASE (CL-5A)
- 8.0" AGGREGATE BASE, (CL-4)

- ① 1 : 4 SLOPE
- ② SEE SUPERELEVATION PLAN SHEETS FOR CROSS SLOPES IN CURVES
- ③ MINIMUM 4.0" TOP SOIL & SEED
- ④ AGGREGATE BASE AND BITUMINOUS DEPTHS ARE APPROXIMATE. DEPTH SHOWN ARE FROM EXISTING PLANS. ACTUAL DEPTHS MAY VARY.

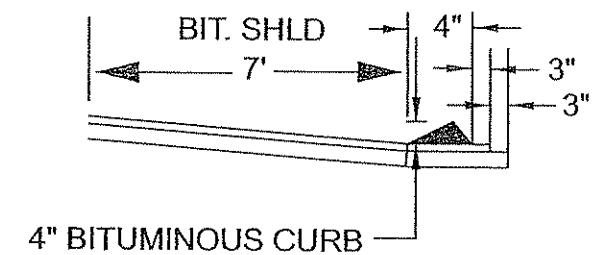
TYPICAL BITUMINOUS DRIVEWAY TRANSITION



TYPICAL GRAVEL DRIVEWAY TRANSITION



INTEGRAL BITUMINOUS CURB DETAIL



NO	DATE	BY	CHKD	APPR	REVISION
1	7/12/2010	BAV	JEO	CMC	SHEET CHANGED PER MNDOT REVIEW COMMENTS
NAME: p:\whitotop 22 5-47\plan\Whitotop_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 J. CADENHEAD JR.
 SIGNATURE: *[Signature]*
 DATE: 7/12/10 LICENSE NO. 40416

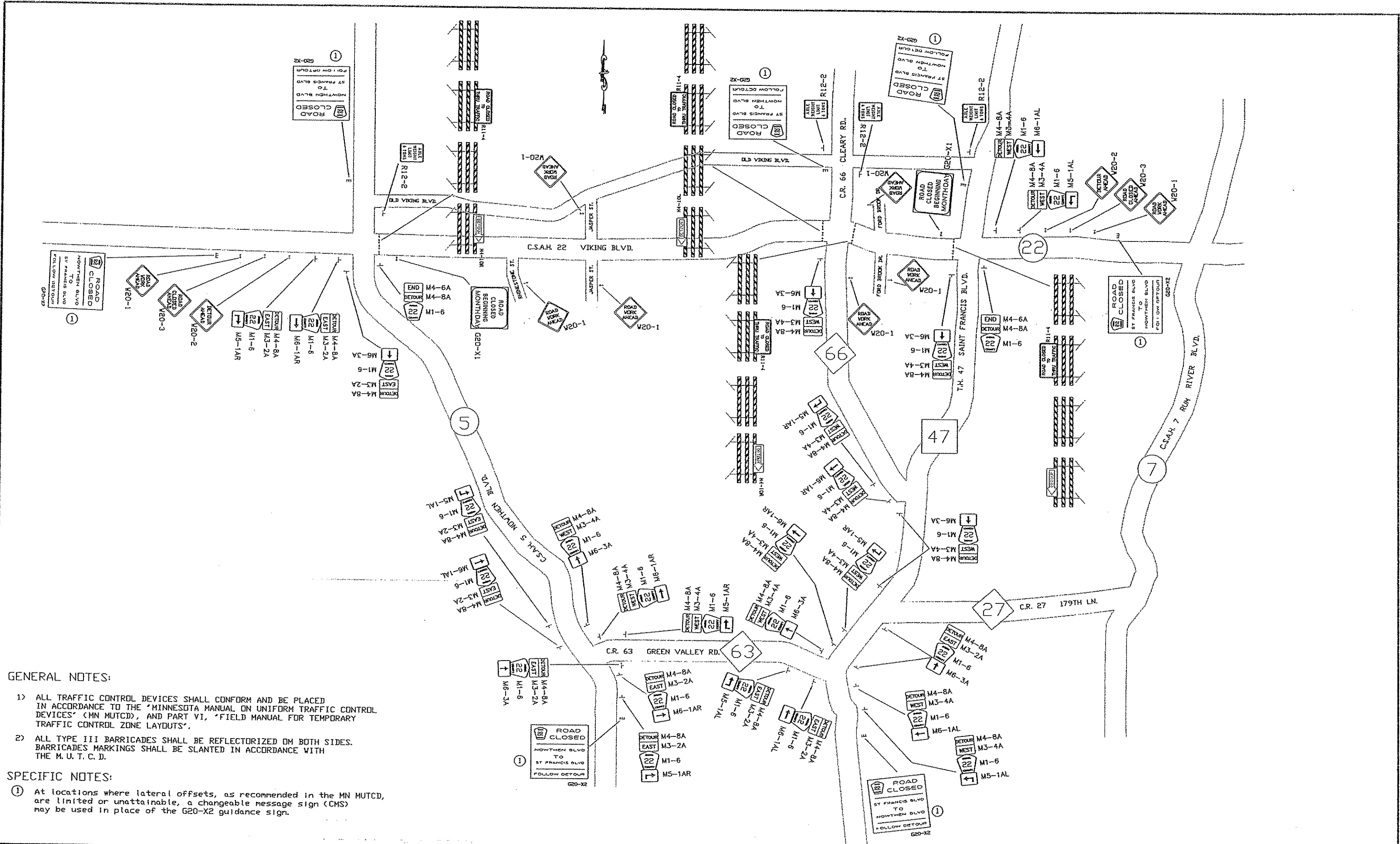
DRAWN BY: BAV DATE: 2-11-10
 DESIGN BY: BAV DATE: 9-4-09
 CHECKED BY: JEO DATE: 2-12-10



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. **_**_**
 STATE AID PROJECT NO. 02-622-31
 CITY PROJECT NO. **_**_**
 COUNTY PROJECT NO. **_**_**

TYPICAL SECTIONS
 Sheet 7 of 62 Sheets



GENERAL NOTES:

- 1) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
- 2) ALL TYPE III BARRICADES SHALL BE REFLECTORIZED ON BOTH SIDES. BARRICADES MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE M. U. T. C. D.

SPECIFIC NOTES:

- ① At locations where lateral offsets, as recommended in the MN MUTCD, are limited or unattainable, a changeable message sign (CMS) may be used in place of the G20-X2 guidance sign.

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. CADENHEAD JR.
 SIGNATURE: *Charles M. Cadenhead Jr.*
 DATE: 7/2/10 REG. NO. 40416

DRAWN BY: S.T. DATE 04/21/10
 DESIGN BY: S.T. DATE 04/21/10
 CHECKED BY: R.B. DATE 04/22/10



**ANOKA COUNTY
 HIGHWAY DEPT.**

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-622-31
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. _____

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-622-31\Baset\TRAFFIC\02-622-31_detour.dwg, 07/01/2010 1:48:07 PM

M. U. T. C. D. CODE	SIZE	INSERT	QUANTITY	M. U. T. C. D. CODE	SIZE	INSERT	QUANTITY	M. U. T. C. D. CODE	SIZE	INSERT	QUANTITY	
W20-1	48' x 48'		8	M4-8	24' x 12'	M6-3A	6	G20-X2	132' x 108'		4	* SIGN TO BE PLACED A MINIMUM OF SEVEN DAYS PRIOR TO ACTUAL CLOSING DATE OF ROAD CLOSURE AND IMPLEMENTATION OF DETOUR SIGNING. USE FOLLOW DETOUR PANEL UPON CLOSURE.
W20-2	48' x 48'		2	M3-4A	24' x 12'	DETOUR WEST	2					
W20-3	48' x 48'		2	M1-6	24' x 24'	M6-1AL	2					
					21' x 15'	M5-1AR	3	G20-X2	132' x 108'		3	* SIGN TO BE PLACED A MINIMUM OF SEVEN DAYS PRIOR TO ACTUAL CLOSING DATE OF ROAD CLOSURE AND IMPLEMENTATION OF DETOUR SIGNING. USE FOLLOW DETOUR PANEL UPON CLOSURE.
						M6-1AR	3					
R11-4	60' x 30'		2	M4-8	24' x 12'	DETOUR EAST	4	G20-X1	72' x 60'		2	* SIGN TO BE PLACED 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.
TYPE III	8 FOOT		2	M3-2A	24' x 12'	M5-1AL	2					
						M6-1AL	2					
						M5-1AR	2					
						M6-1AR	2	R12-2	24' x 30'		4	
R11-4	60' x 30'		2	M4-6A	24' x 12'	END						
TYPE III	8 FOOT		2	M4-8	24' x 12'	DETOUR						
						M6-3A	2					
						M5-1AL	2					
						M6-1AL	2					
M4-10R	48' x 18'		2	M1-6	24' x 24'	M5-1AR	2					
TYPE III	8 FOOT		2			M6-1AR	2					
M4-10L	48' x 18'		2									
TYPE III	8 FOOT		2									
TYPE III	8 FOOT		4									
TYPE III	8 FOOT		4									

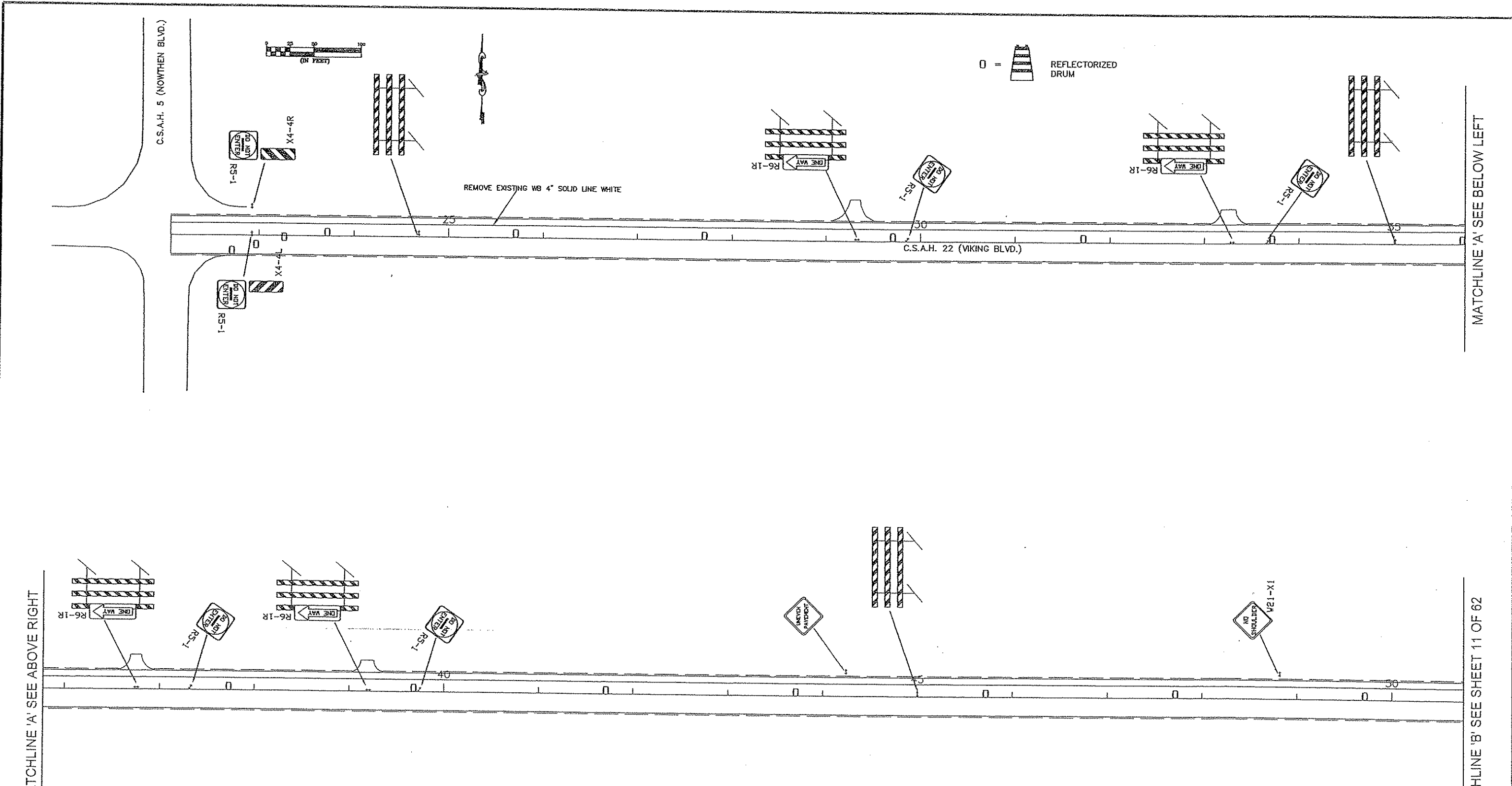
GENERAL NOTES:

- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
- ALL TYPE III BARRICADES SHALL BE REFLECTORIZED ON BOTH SIDES. BARRICADES MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE M. U. T. C. D.

SPECIFIC NOTES:

- At locations where lateral offsets, as recommended in the MN MUTCD, are limited or unattainable, a changeable message sign (CMS) may be used in place of the G20-X2 guidance sign.

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. CADENHEAD, JR. SIGNATURE: DATE: 7/2/10 REG. NO. 40415				DRAWN BY: S.T. DATE 04/21/10 DESIGN BY: S.T. DATE 04/21/10 CHECKED BY: R.B. DATE 04/22/10		ANOKA COUNTY HIGHWAY DEPT.		STATE PROJECT NO. _____ STATE AID PROJECT NO. 02-622-31 STATE AID PROJECT NO. _____ COUNTY PROJECT NO. _____		02-622-31 DETOUR Sheet 9 of 62 Sheets	
NO	DATE	BY	CKD	APPR	REVISION						
NAME: P:\02-622-31\Bases\TRAFFIC\02-622-31_detour.dwg, 07/01/2010 1:46:15 PM											



MATCHLINE 'A' SEE ABOVE RIGHT

MATCHLINE 'A' SEE BELOW LEFT

MATCHLINE 'B' SEE SHEET 11 OF 62

NOTES:

- 1) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
- 2) ALL TYPE III BARRICADES SHALL BE REFLECTORIZED ON BOTH SIDES. BARRICADES MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE M. U. T. C. D.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-622-31\Basetrafficstage1_signing.dwg, 07/01/2010 1:43:47 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 M. CADENHEAD JR.
 SIGNATURE: *Charles M. Cadenhead Jr.*
 DATE: 7/2/10 REG. NO. 40416

DRAWN BY: S.T. DATE 05/21/10
 DESIGN BY: S.T. DATE 05/21/10
 CHECKED BY: R.B. DATE 05/24/10



**ANOKA COUNTY
HIGHWAY DEPT.**

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-622-31
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. _____

STAGE I
 CONSTRUCTION STAGING
 AND TRAFFIC CONTROL
 Sheet 10 of 62 Sheets



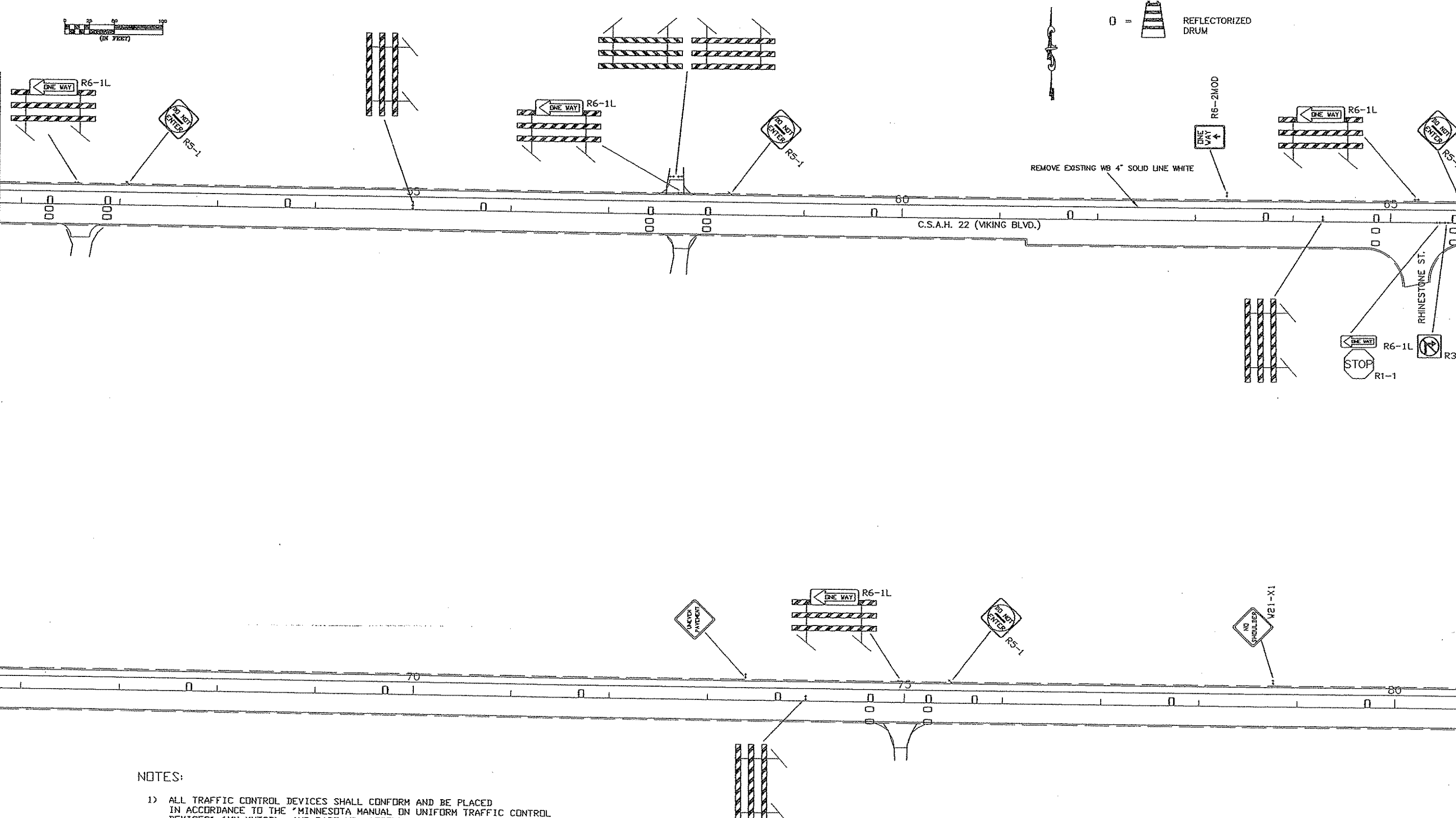
REFLECTORIZED DRUM

MATCHLINE 'B' SEE SHEET 10 OF 62

MATCHLINE 'C' SEE BELOW LEFT

MATCHLINE 'C' SEE ABOVE RIGHT

MATCHLINE 'D' SEE SHEET 12 OF 62



- NOTES:
- 1) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
 - 2) ALL TYPE III BARRICADES SHALL BE REFLECTORIZED ON BOTH SIDES. BARRICADES MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE M. U. T. C. D.

NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\02-622-31\Bases\TRAFFIC\stage1_signing.dwg, 07/01/2010 1:43:51 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 M. CADENHEAD, JR.
 SIGNATURE: *Charles M. Cadenhead, Jr.*
 DATE: 7/2/10 REG. NO. 40416

DRAWN BY: S.T. DATE 05/21/10
 DESIGN BY: S.T. DATE 05/21/10
 CHECKED BY: R.B. DATE 05/24/10

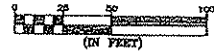


ANOKA COUNTY
HIGHWAY DEPT.

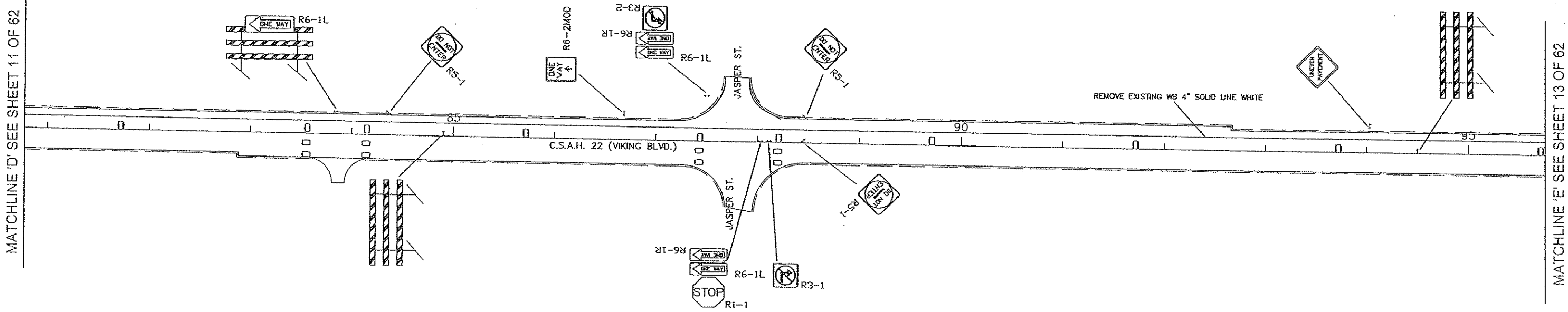
STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-622-31
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. _____

STAGE I
CONSTRUCTION STAGING
AND TRAFFIC CONTROL

Sheet 11 of 62 Sheets



0 =  REFLECTORIZED DRUM



NOTES:

- 1) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
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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 M. RADENHEAD JR.
 SIGNATURE: *Charles M. Radenhead Jr.*
 DATE: 7/2/10 REG. NO. 40416

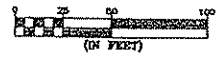
DRAWN BY: S.T. DATE 05/21/10
 DESIGN BY: S.T. DATE 05/21/10
 CHECKED BY: R.B. DATE 05/24/10



ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-622-31
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. _____

STAGE I
 CONSTRUCTION STAGING
 AND TRAFFIC CONTROL
 Sheet 12 of 62 Sheets



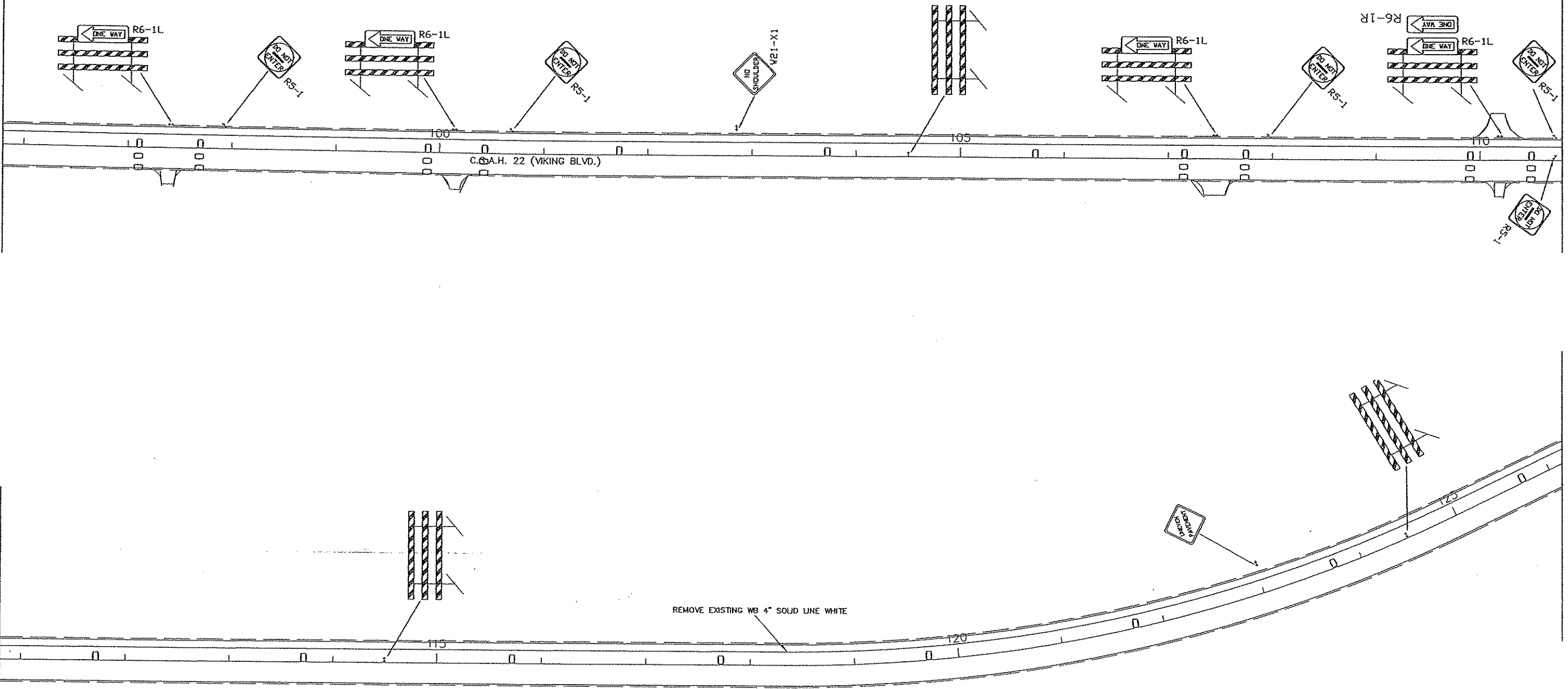
REFLECTORIZED DRUM

MATCHLINE 'E' SEE SHEET 12 OF 62

MATCHLINE 'F' SEE BELOW LEFT

MATCHLINE 'F' SEE ABOVE RIGHT

MATCHLINE 'G' SEE SHEET 14 OF 62



NOTES:

- 1) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
- 2) ALL TYPE III BARRICADES SHALL BE REFLECTORIZED ON BOTH SIDES. BARRICADES MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE M. U. T. C. D.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-622-3118\stage1\TRAFFIC\stage1_signing.dwg, 07/01/2010 1:44:01 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 M. CADENHEAD JR.

SIGNATURE: *Charles M. Cadenhead Jr.*

DATE: 7/2/10

DRAWN BY: S.T. DATE: 05/21/10

DESIGN BY: S.T. DATE: 05/21/10

CHECKED BY: R.B. DATE: 05/24/10



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____

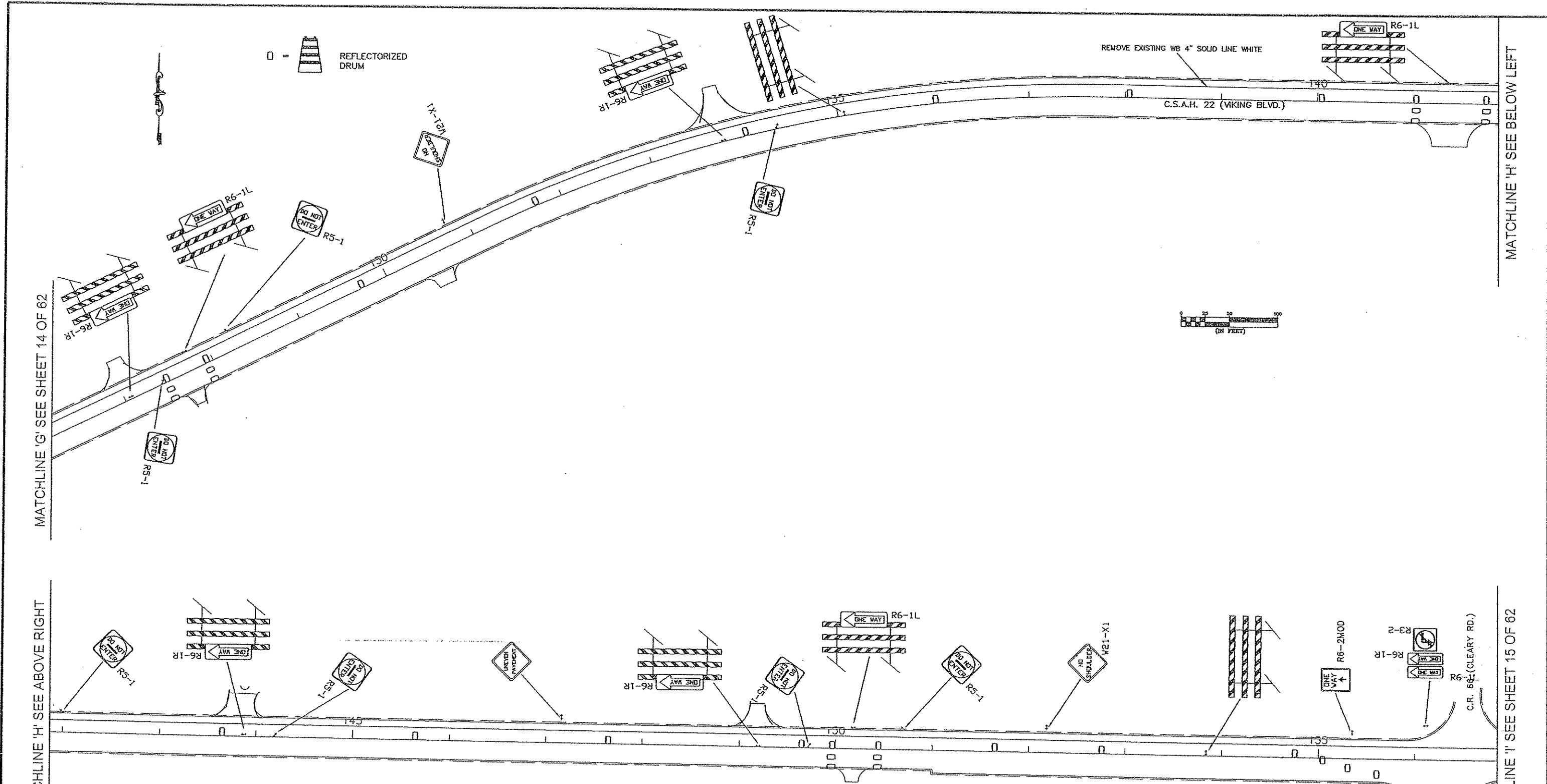
STATE AID PROJECT NO. 02-622-31

STATE AID PROJECT NO. _____

COUNTY PROJECT NO. _____

STAGE I
CONSTRUCTION STAGING
AND TRAFFIC CONTROL

Sheet 13 of 62 Sheets



- NOTES:
- 1) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
 - 2) ALL TYPE III BARRICADES SHALL BE REFLECTORIZED ON BOTH SIDES. BARRICADES MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE M. U. T. C. D.

NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\02-622-31\Basel\TRAFFIC\stage1_signing.dwg, 07/01/2010 1:44:06 PM					

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

PRINT NAME: CHARLES M. CADENHEAD JR.
 SIGNATURE: *Charles M. Cadenhead Jr.*
 DATE: 7/2/10 REG. NO. 40416

DRAWN BY: S.T. DATE 05/21/10
 DESIGN BY: S.T. DATE 05/21/10
 CHECKED BY: R.B. DATE 05/24/10




ANOKA COUNTY
HIGHWAY DEPT.

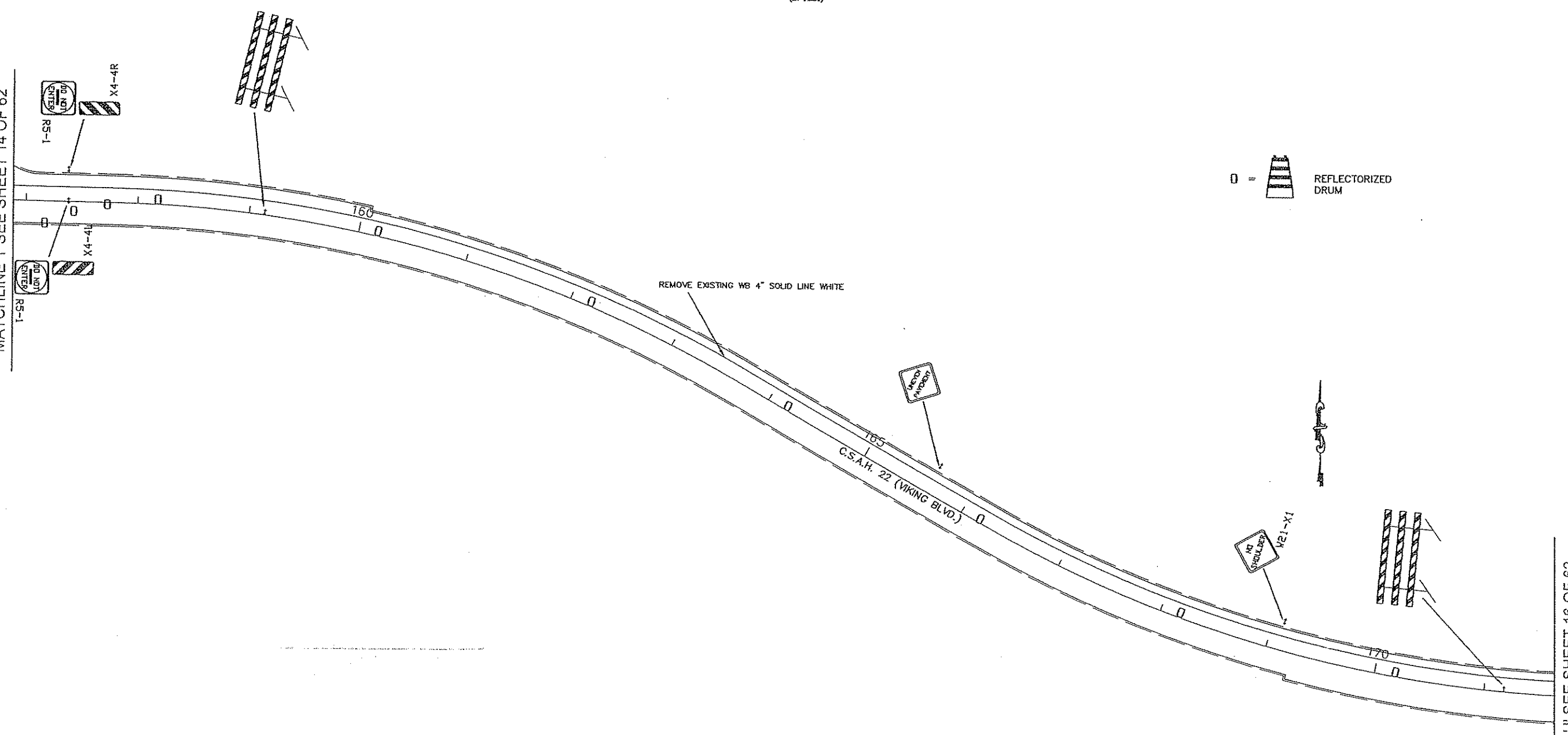
STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-622-31
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. _____

STAGE I
CONSTRUCTION STAGING
AND TRAFFIC CONTROL
Sheet 14 of 62 Sheets



MATCHLINE 'I' SEE SHEET 14 OF 62

0 =  REFLECTORIZED DRUM



MATCHLINE 'J' SEE SHEET 16 OF 62

NOTES:

- 1) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
- 2) ALL TYPE III BARRICADES SHALL BE REFLECTORIZED ON BOTH SIDES. BARRICADES MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE M. U. T. C. D.

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 M. CADENHEAD JR.
 SIGNATURE: *Charles M. Cadenhead Jr.*
 DATE: 7/2/10 REG. NO. 40416

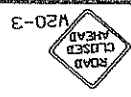
DRAWN BY: S.T. DATE 05/21/10
 DESIGN BY: S.T. DATE 05/21/10
 CHECKED BY: R.B. DATE 05/24/10



**ANOKA COUNTY
HIGHWAY DEPT.**

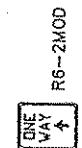
STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-622-31
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. _____

STAGE I
 CONSTRUCTION STAGING
 AND TRAFFIC CONTROL
 Sheet 15 of 62 Sheets

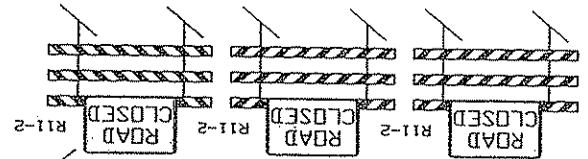


REFLECTORIZED DRUM

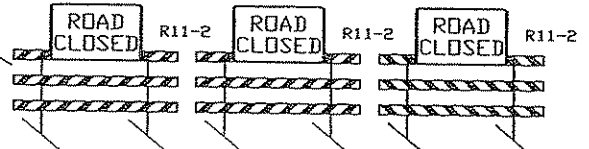
MATCHLINE 'J' SEE SHEET 15 OF 62



FORD BROOK DR.



REMOVE EXISTING WB 4" SOLID LINE WHITE



NOTES:

- 1) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
- 2) ALL TYPE III BARRICADES SHALL BE REFLECTORIZED ON BOTH SIDES. BARRICADES MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE M. U. T. C. D.

MATCHLINE 'K' SEE SHEET 17 OF 62

NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\02-622-31\BaselTRAFFICstage1_signing.dwg, 07/01/2010 1:44:18 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 M. CADENHEAD JR.
 SIGNATURE: *Charles M. Cadenhead Jr.*
 DATE: 7/2/10 REG. NO. 40416

DRAWN BY: S.T. DATE: 05/21/10
 DESIGN BY: S.T. DATE: 05/21/10
 CHECKED BY: R.B. DATE: 05/24/10



ANOKA COUNTY HIGHWAY DEPT.

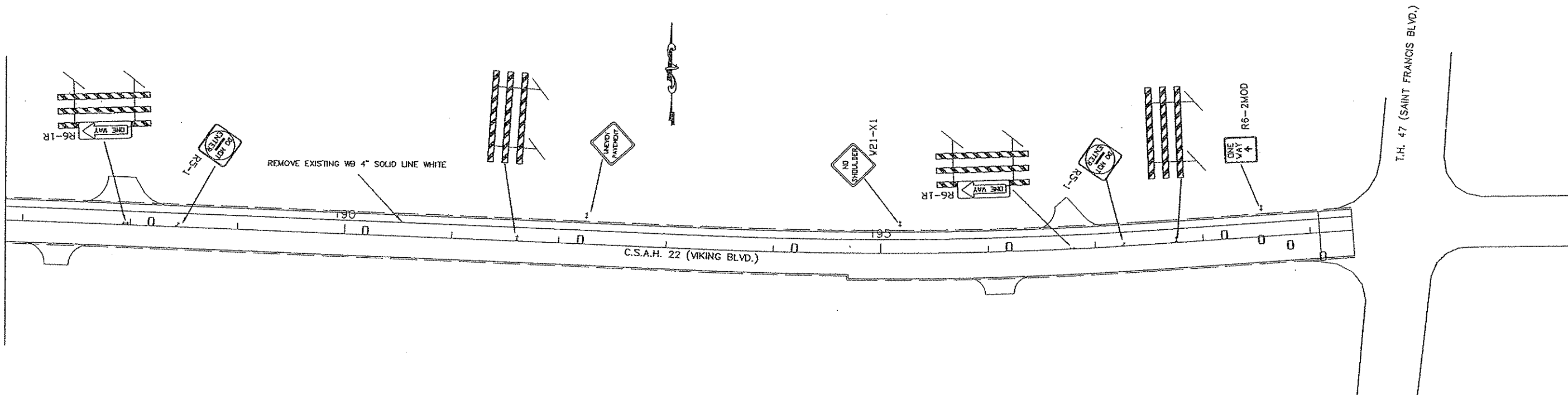
STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-622-31
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. _____

STAGE I
 CONSTRUCTION STAGING
 AND TRAFFIC CONTROL
 Sheet 16 of 62 Sheets



0 = REFLECTORIZED DRUM

MATCHLINE 'K' SEE SHEET 16 OF 62



T.H. 47 (SAINT FRANCIS BLVD.)

NOTES:

- 1) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
- 2) ALL TYPE III BARRICADES SHALL BE REFLECTORIZED ON BOTH SIDES. BARRICADES MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE M. U. T. C. D.

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 M. CADENHEAD JR.
 SIGNATURE: *Charles M. Cadenhead Jr.*
 DATE: 7/2/10 REG. NO. 40446

DRAWN BY: S.T. DATE 05/21/10
 DESIGN BY: S.T. DATE 05/21/10
 CHECKED BY: R.B. DATE 05/24/10

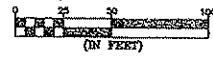


**ANOKA COUNTY
 HIGHWAY DEPT.**

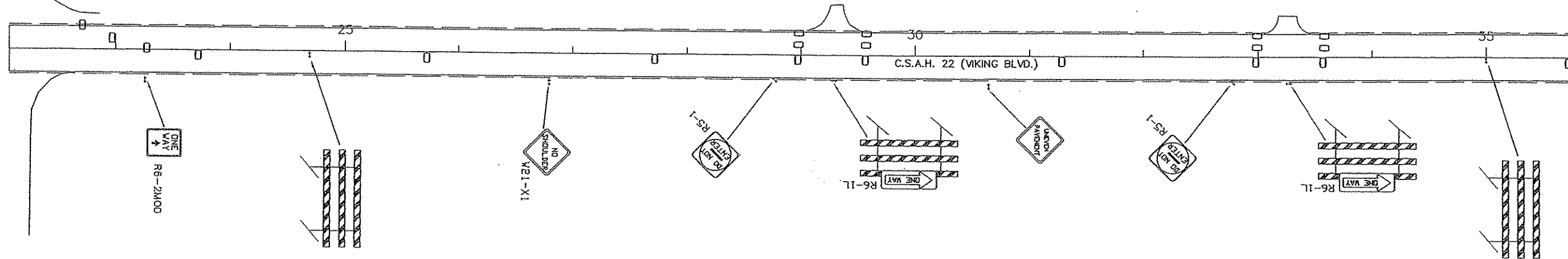
STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-622-31
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. _____

**STAGE I
 CONSTRUCTION STAGING
 AND TRAFFIC CONTROL**
 Sheet 17 of 62 Sheets

C.S.A.H. 5 (NORTHEN BLVD.)



REFLECTORIZED DRUM

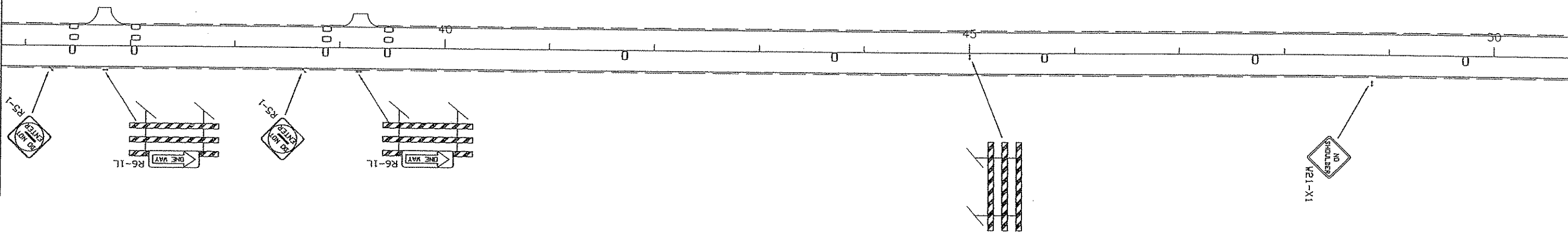


MATCHLINE 'A' SEE BELOW LEFT

NOTES:

- 1) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
- 2) ALL TYPE III BARRICADES SHALL BE REFLECTORIZED ON BOTH SIDES. BARRICADES MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE M. U. T. C. D.

MATCHLINE 'A' SEE ABOVE RIGHT



MATCHLINE 'B' SEE SHEET 19 OF 62

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 M. CADENHEAD JR.
 SIGNATURE: *Charles M. Cadenhead Jr.*
 DATE: 7/2/10 REG. NO. 40416

DRAWN BY: S.T. DATE 05/21/10
 DESIGN BY: S.T. DATE 05/21/10
 CHECKED BY: R.B. DATE 05/24/10



ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-622-31
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. _____

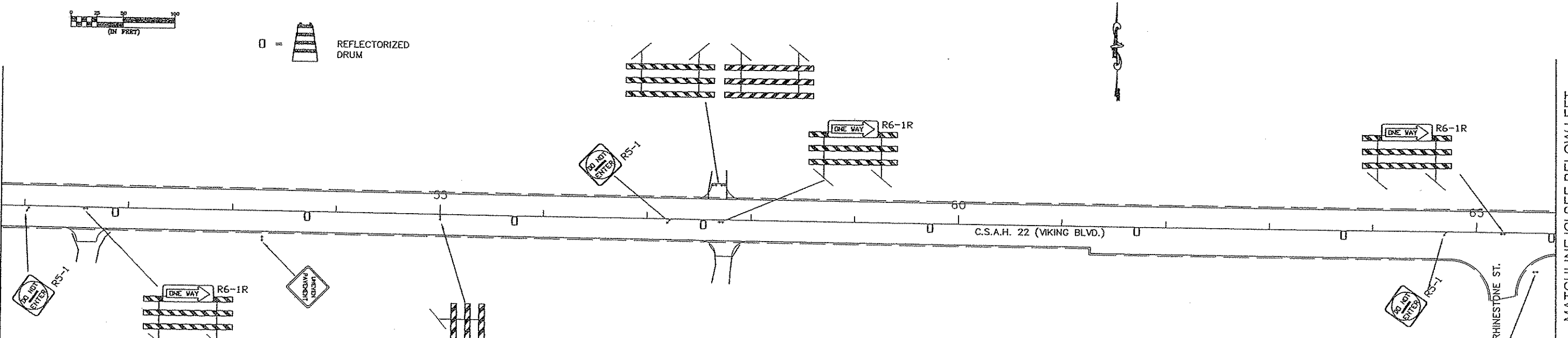
STAGE II
 CONSTRUCTION STAGING
 AND TRAFFIC CONTROL
 Sheet 18 of 62 Sheets



0 = REFLECTORIZED DRUM

MATCHLINE 'B' SEE SHEET 18 OF 62.

MATCHLINE 'C' SEE BELOW LEFT

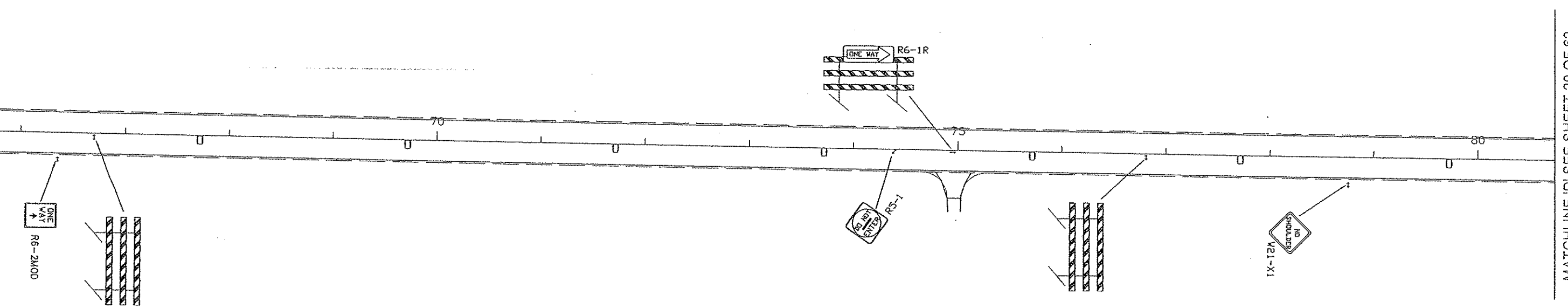


NOTES:

- 1) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
- 2) ALL TYPE III BARRICADES SHALL BE REFLECTORIZED ON BOTH SIDES. BARRICADES MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE M. U. T. C. D.

MATCHLINE 'C' SEE ABOVE RIGHT

MATCHLINE 'D' SEE SHEET 20 OF 62



NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\02-622-3118\stage2\TRAFFIC\stage2_signing.dwg, 07/01/2010 1:44:36 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 M. CADENHEAD JR.
 SIGNATURE: *Charles M. Cadenhead Jr.*
 DATE: 7/2/10 REG. NO. 40416

DRAWN BY: S.T. DATE 05/21/10
 DESIGN BY: S.T. DATE 05/21/10
 CHECKED BY: R.B. DATE 05/24/10



ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-622-31
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. _____

STAGE II
 CONSTRUCTION STAGING
 AND TRAFFIC CONTROL
 Sheet 19 of 62 Sheets



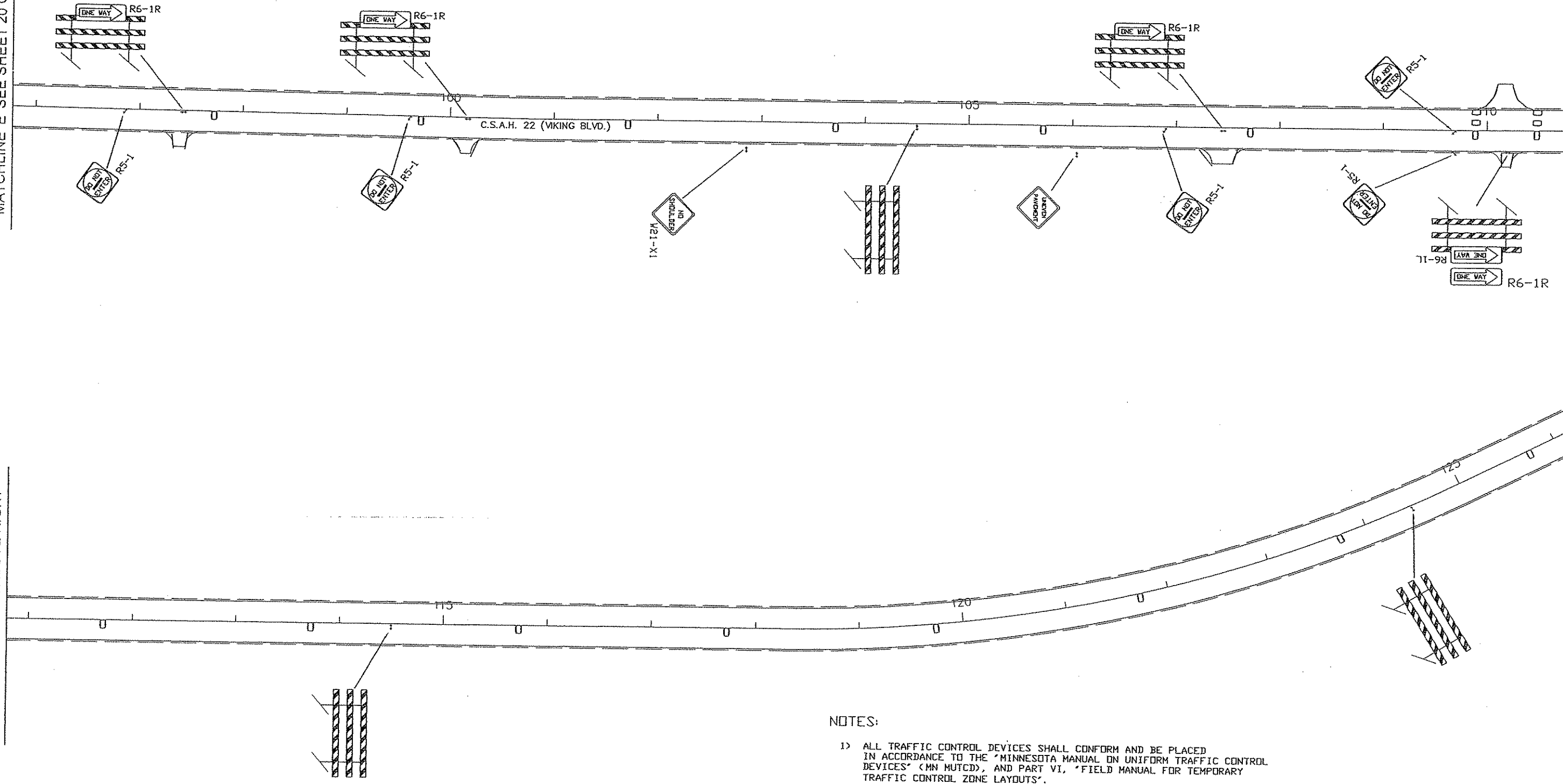
0 = REFLECTORIZED DRUM

MATCHLINE 'E' SEE SHEET 20 OF 62

MATCHLINE 'F' SEE BELOW LEFT

MATCHLINE 'F' SEE ABOVE RIGHT

MATCHLINE 'G' SEE SHEET 22 OF 62



NOTES:

- 1) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE 'MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES' (MN MUTCD), AND PART VI, 'FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS'.
- 2) ALL TYPE III BARRICADES SHALL BE REFLECTORIZED ON BOTH SIDES. BARRICADES MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE M. U. T. C. D.

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 M. CADENHEAD JR.
 SIGNATURE: *Charles M. Cadenhead Jr.*
 DATE: 7/2/10 REC. NO. 40416

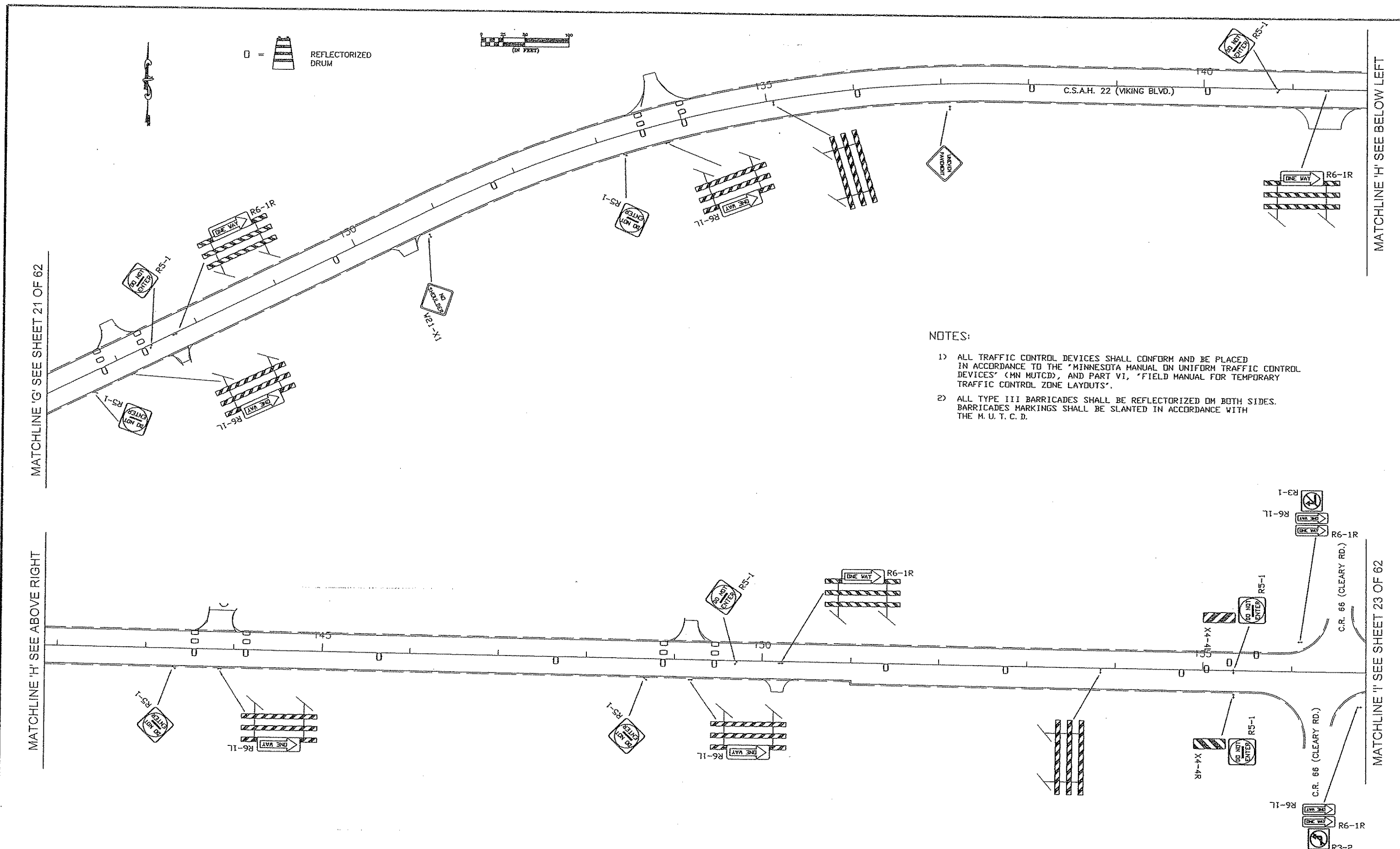
DRAWN BY S.I. DATE 05/21/10
 DESIGN BY S.T. DATE 05/21/10
 CHECKED BY R.B. DATE 05/24/10



ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-622-31
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. _____

STAGE II
 CONSTRUCTION STAGING
 AND TRAFFIC CONTROL
 Sheet 21 of 62 Sheets



□ = REFLECTORIZED DRUM

0 25 50 100
(IN FEET)

C.S.A.H. 22 (Viking Blvd.)

NOTES:

- 1) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
- 2) ALL TYPE III BARRICADES SHALL BE REFLECTORIZED ON BOTH SIDES. BARRICADES MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE M. U. T. C. D.

MATCHLINE 'G' SEE SHEET 21 OF 62

MATCHLINE 'H' SEE ABOVE RIGHT

MATCHLINE 'I' SEE BELOW LEFT

MATCHLINE 'I' SEE SHEET 23 OF 62

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 M. CADENHEAD JR.
 SIGNATURE: *Charles M. Cadenhead Jr.*
 DATE: 7/2/10 REG. NO. 40418

DRAWN BY: S.T. DATE 05/21/10
 DESIGN BY: S.T. DATE 05/21/10
 CHECKED BY: R.B. DATE 05/24/10



ANOKA COUNTY
HIGHWAY DEPT.

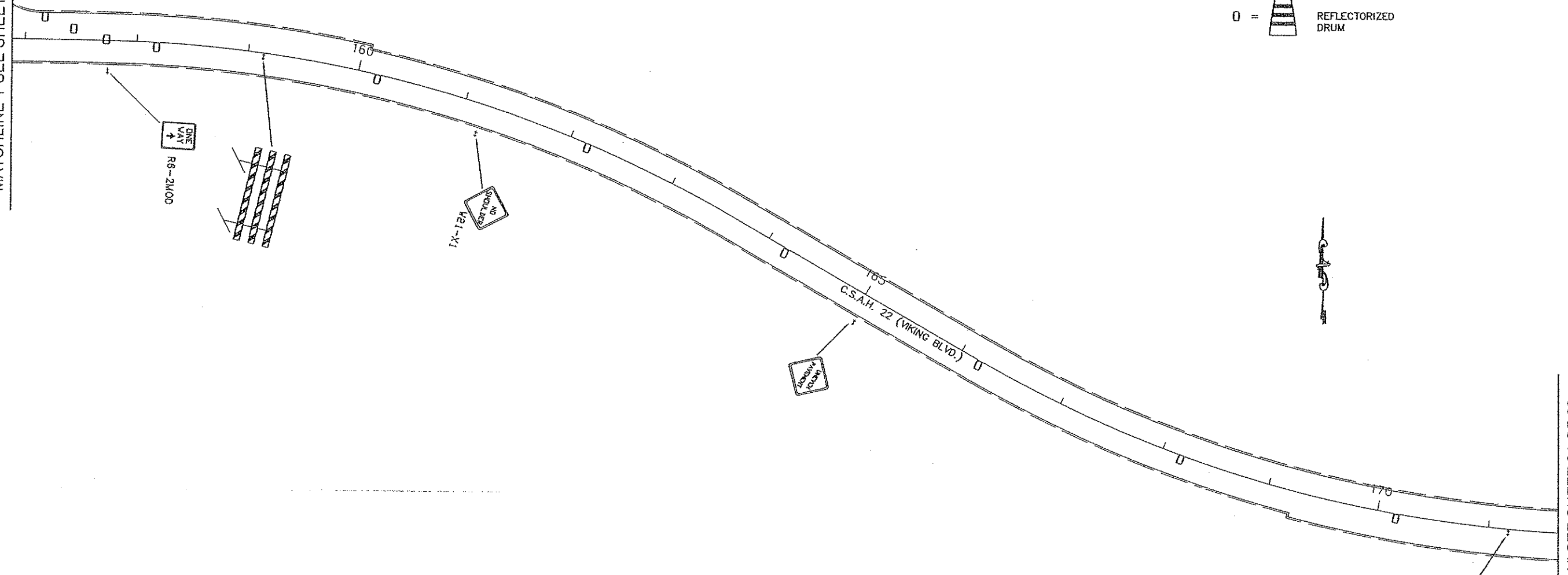
STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-622-31
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. _____

STAGE II
CONSTRUCTION STAGING
AND TRAFFIC CONTROL
Sheet 22 of 62 Sheets



MATCHLINE 'I' SEE SHEET 22 OF 62

0 =  REFLECTORIZED DRUM



MATCHLINE 'J' SEE SHEET 24 OF 62

NOTES:

- 1) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
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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 M. CADENHEAD JR.
 SIGNATURE: *Charles M. Cadenhead Jr.*
 DATE: 11/2/10 REG. NO. 40476

DRAWN BY: S.T. DATE 05/21/10
 DESIGN BY: S.T. DATE 05/21/10
 CHECKED BY: R.B. DATE 05/24/10



**ANOKA COUNTY
 HIGHWAY DEPT.**

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-622-31
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. _____

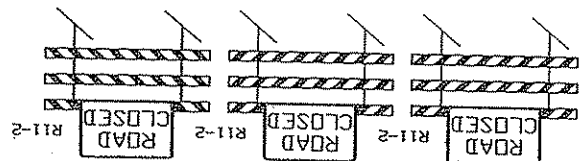
STAGE II
 CONSTRUCTION STAGING
 AND TRAFFIC CONTROL
 Sheet 23 of 62 Sheets



REFLECTORIZED DRUM

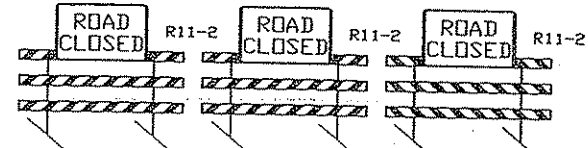
MATCHLINE 'J' SEE SHEET 23 OF 62

FORD BROOK DR.

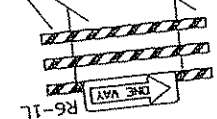
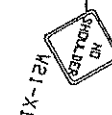


C.S.A.H. 22 (VIKING BLVD.)

FORD BROOK DR.



ONE WAY



MATCHLINE 'K' SEE SHEET 25 OF 62

NOTES:

- 1) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE 'MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES' (MN MUTCD), AND PART VI, 'FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS'.
2) ALL TYPE III BARRICADES SHALL BE REFLECTORIZED ON BOTH SIDES. BARRICADES MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE M. U. T. C. D.



Table with columns for NO, DATE, BY, CKD, APPR, REVISION. Includes project name: P:\02-622-31\Base\TRAFFIC\stage2_signing.dwg, 07/01/2010 1:45:06 PM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT-NAME: CHARLES M. CADENHEAD JR.
SIGNATURE: [Signature]
DATE: 7/2/10 REG. NO. 40476

DRAWN BY S.T. DATE 05/21/10
DESIGN BY S.T. DATE 05/21/10
CHECKED BY R.B. DATE 05/24/10



ANOKA COUNTY HIGHWAY DEPT.

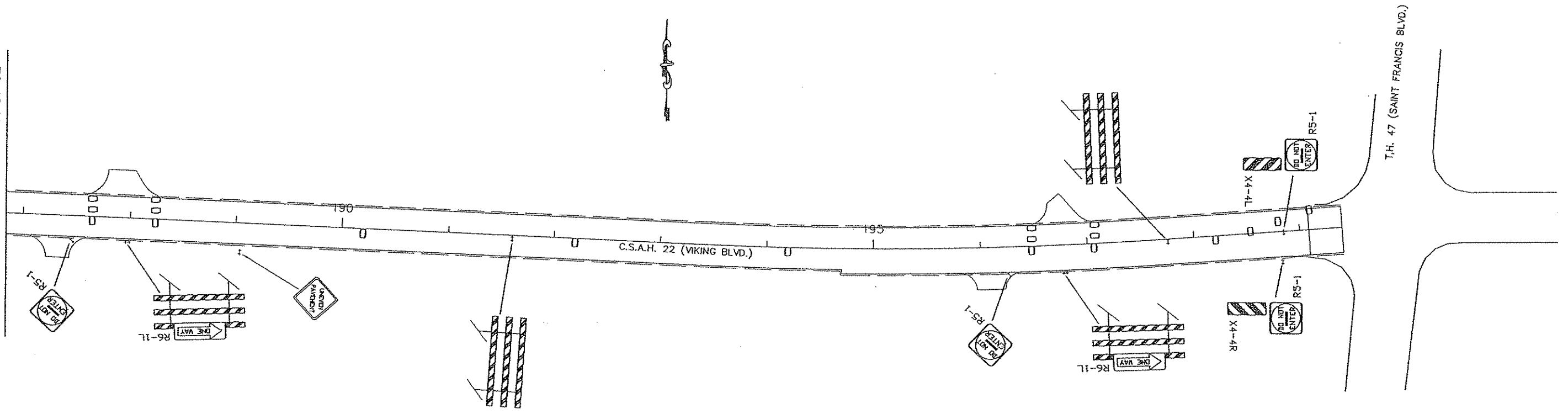
STATE PROJECT NO.
STATE AID PROJECT NO. 02-622-31
STATE AID PROJECT NO.
COUNTY PROJECT NO.

STAGE II CONSTRUCTION STAGING AND TRAFFIC CONTROL
Sheet 24 of 62 Sheets



0 = REFLECTORIZED DRUM

MATCHLINE 'K' SEE SHEET 24 OF 62



NOTES:

- 1) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE 'MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES' (MN MUTCD), AND PART VI, 'FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS'.
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NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\02-622-31\Basc\TRAFFIC\stage2_signing.dwg, 07/01/2010 1:45:11 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 M. CADENHEAD, JR.
 SIGNATURE: *Charles M. Cadenhead, Jr.*
 DATE: 7/2/10 REG. NO. 40416

DRAWN BY: S.T. DATE 05/21/10
 DESIGN BY: S.T. DATE 05/21/10
 CHECKED BY: R.B. DATE 05/24/10



**ANOKA COUNTY
HIGHWAY DEPT.**

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-622-31
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. _____

STAGE II
 CONSTRUCTION STAGING
 AND TRAFFIC CONTROL
 Sheet 25 of 62 Sheets

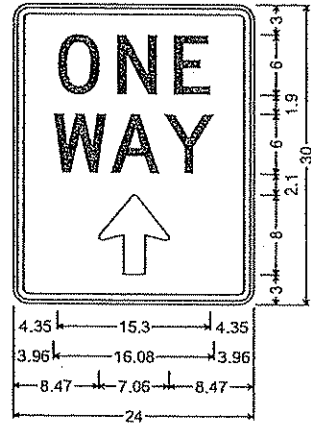
M. U. T. C. D. CODE	SIZE	INSERT	QTY. STG. 1	QTY. STG. 2
R1-1	48" x 48"	STOP	2	1
R3-1	24" x 24"		3	2
R3-2	24" x 24"		2	3
R5-1	30" x 30"	DO NOT ENTER	30	30
R6-1R	36" x 12" 48" x 18"		4 1	5 1
R6-1L	36" x 12"		5	4
R6-2 MOD	24" x 30"		5	5
W20-3	48" x 48"	ROAD CLOSED AHEAD	2	2
W21-XI	48" x 48"	NO SHOULDER	7	7
W8-X3 MOD	48" x 48"	UNEVEN PAVEMENT	7	7
X4-4L	12" x 36"		2	2
X4-4R	12" x 36"		2	2

M. U. T. C. D. CODE	SIZE	INSERT	QTY. STG. 1	QTY. STG. 2
R6-1R	48" x 18"		11	11
TYPE III	8 FOOT			
R6-1L	48" x 18"		12	12
TYPE III	8 FOOT			
R11-2	48" x 30"	ROAD CLOSED	2	2
TYPE III	8 FOOT			
R11-2	48" x 30"	ROAD CLOSED	4	4
TYPE III	8 FOOT			
TYPE III	8 FOOT		1	1
TYPE III	8 FOOT		19	19
REFLECTORIZED REBOUNDABLE DRUM			167	164

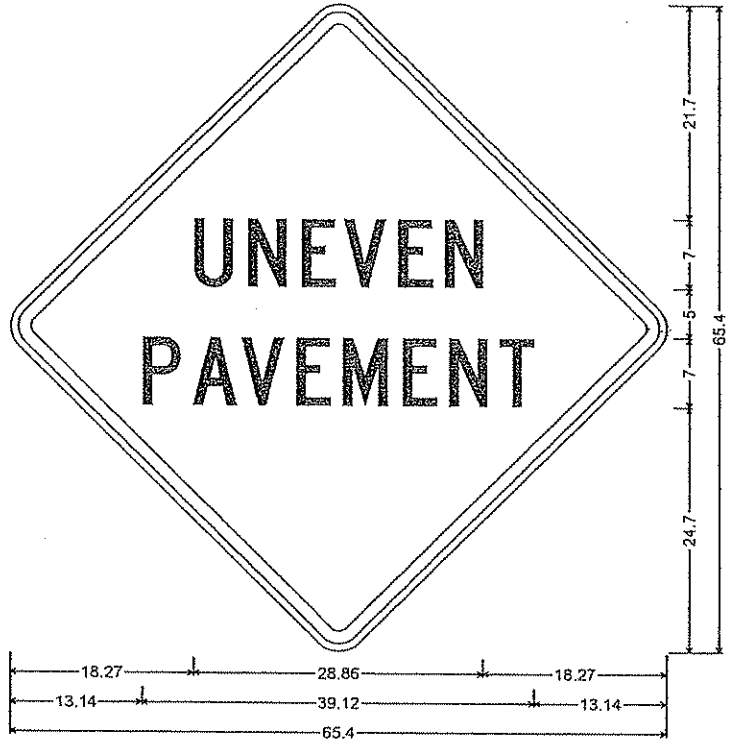
NOTES:

- 1) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
- 2) ALL TYPE III BARRICADES SHALL BE REFLECTORIZED ON BOTH SIDES. BARRICADES MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE M. U. T. C. D.

CUSTOM SIGN DETAILS



R6-2_MOD;
 1.50" Radius, 0.63" Border, 0.38" Indent, Black on White;
 [ONE] D specified length;
 [WAY] D;
 Arrow Custom - 8.00" 90°;



W8-X3_MOD;
 48.00" across sides 3.00" Radius, 1.25" Border, 0.75" Indent, Black on Orange;
 [UNEVEN] C; [PAVEMENT] C;

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-622-3118\Baset\TRAFFIC\STGQTY.dwg, 07/01/2010 1:45:39 PM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT-NAME: CHARLES M. CADENHEAD JR.
 SIGNATURE: *Charles M. Cadenhead Jr.*
 DATE: 7/2/10 REG. NO. 40416

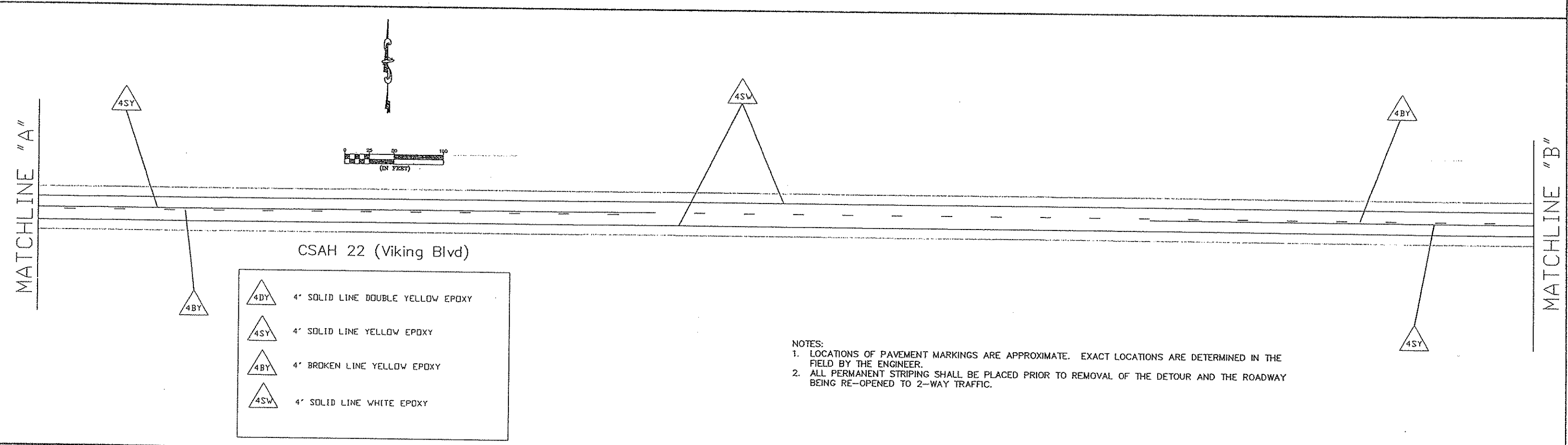
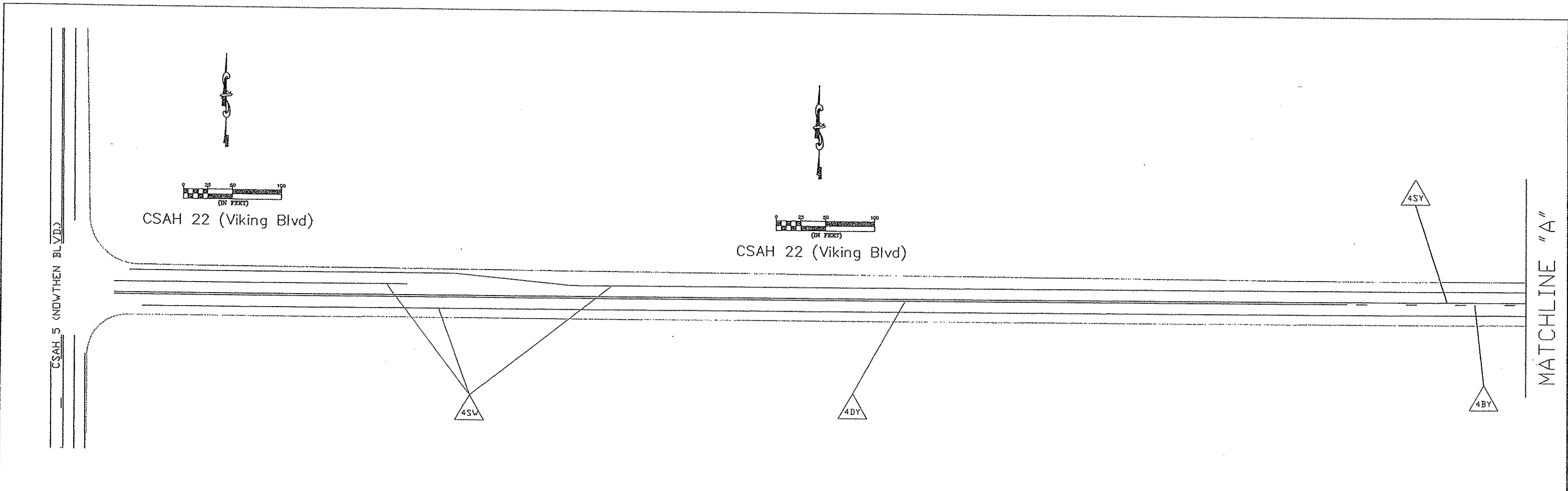
DRAWN BY: ST DATE 06/10/10
 DESIGN BY: ST DATE 06/10/10
 CHECKED BY: RB DATE 06/11/10



ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-622-31
 STATE AID PROJECT NO. _____
 STATE PROJECT NO. _____

STAGING
 SIGN QUANTITIES
 Sheet 26 of 62 Sheets



NO	DATE	BY	CKD	APPR	REVISION
NAME: T:\Traffic\dwg\CSAH 22 (Viking Blvd)\from west county line to east county line.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 M. CADENHEAD JR.
 SIGNATURE: *Charles M. Cadenhead Jr.*
 DATE: 7/2/10 LICENSE NO. 40416

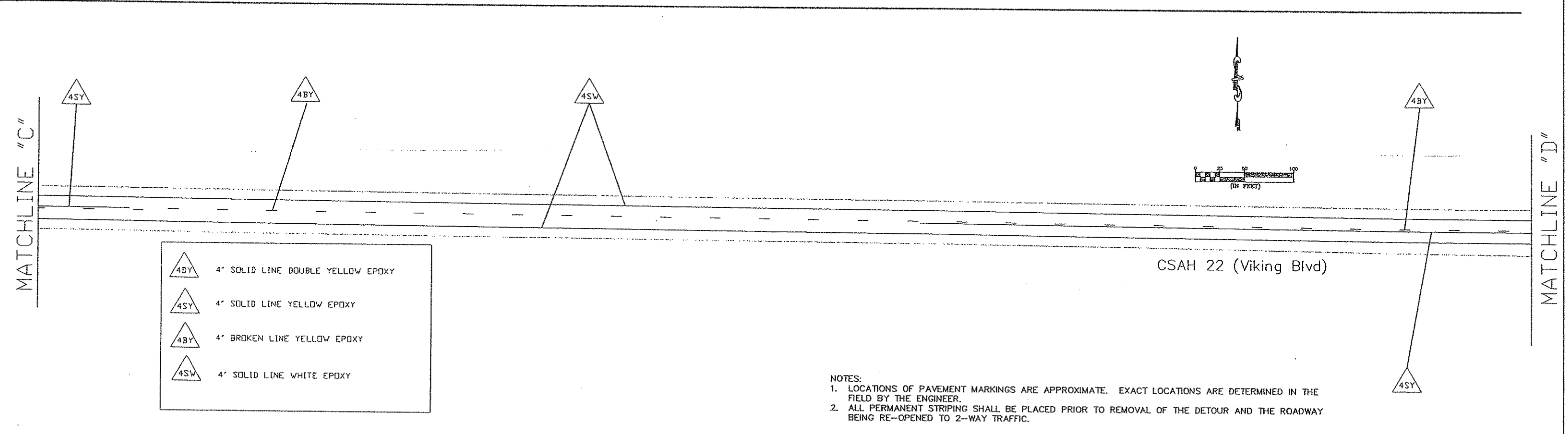
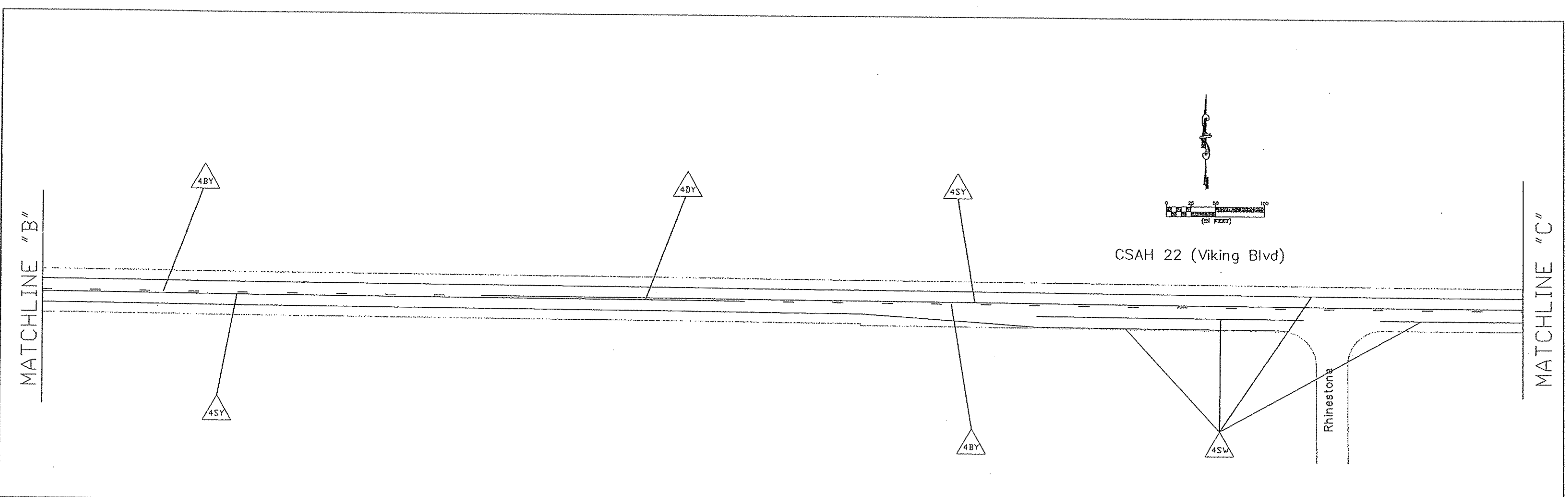
DRAWN BY: MTH DATE: 02/15/10
 DESIGN BY: MTH DATE: 02/15/10
 CHECKED BY: R.B. DATE: 02/17/10



ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-622-31
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. _____

CSAH 22 (Viking Blvd)
 PERMANENT STRIPING
 Sheet 27 of 62 Sheets



	4' SOLID LINE DOUBLE YELLOW EPOXY
	4' SOLID LINE YELLOW EPOXY
	4' BROKEN LINE YELLOW EPOXY
	4' SOLID LINE WHITE EPOXY

- NOTES:
1. LOCATIONS OF PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS ARE DETERMINED IN THE FIELD BY THE ENGINEER.
 2. ALL PERMANENT STRIPING SHALL BE PLACED PRIOR TO REMOVAL OF THE DETOUR AND THE ROADWAY BEING RE-OPENED TO 2-WAY TRAFFIC.

NO	DATE	BY	CKD	APPR	REVISION

NAME: T:\Traffic\dwg\CSAH 22 (Viking Blvd)\from west county line to east county line.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 M. CADENHEAD, JR.

SIGNATURE: *Charles M. Cadenhead, Jr.*

DATE: 7/2/10 LICENSE NO. 40416

DRAWN BY: MTH DATE: 02/15/10

DESIGN BY: MTH DATE: 02/15/10

CHECKED BY: R.B. DATE: 02/17/10



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____

STATE AID PROJECT NO. 02-622-31

STATE AID PROJECT NO. _____

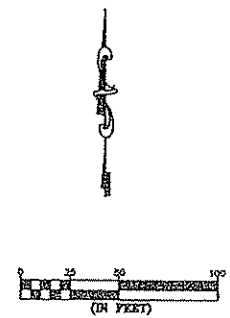
COUNTY PROJECT NO. _____

CSAH 22 (Viking Blvd)
PERMANENT STRIPING

Sheet 28 of 52 Sheets

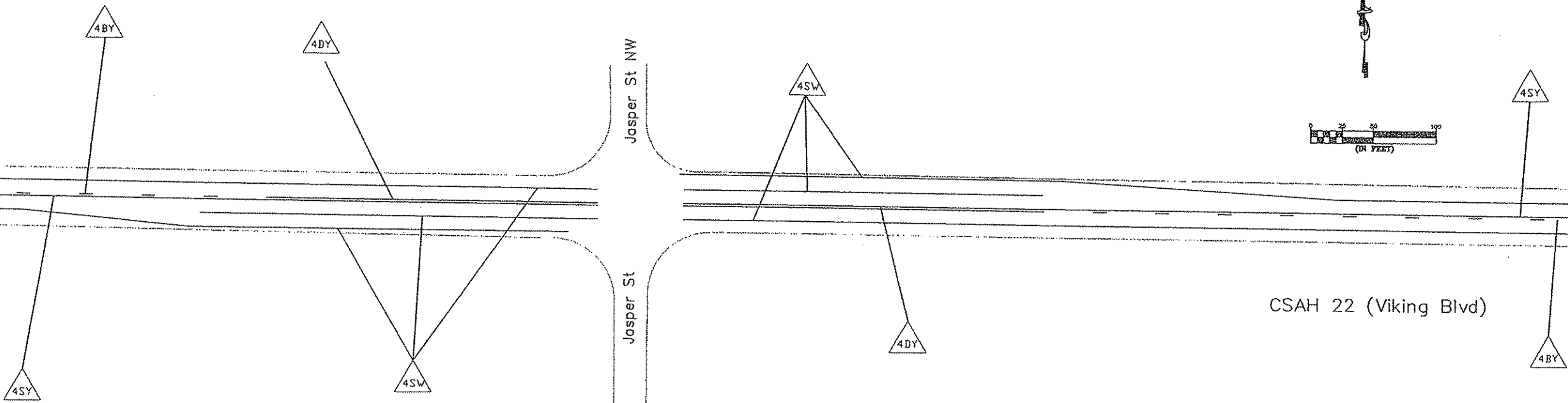
MATCHLINE "D"

MATCHLINE "E"



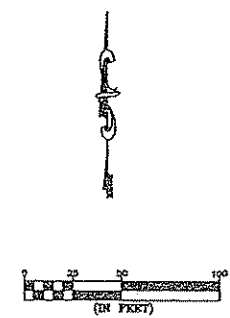
Jasper St NW
Jasper St

CSAH 22 (Viking Blvd)

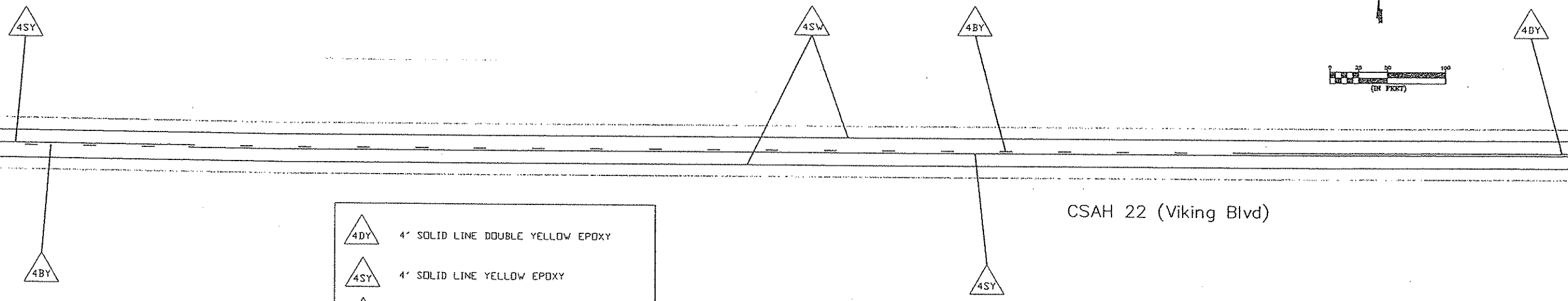


MATCHLINE "E"

MATCHLINE "F"



CSAH 22 (Viking Blvd)



	4' SOLID LINE DOUBLE YELLOW EPOXY
	4' SOLID LINE YELLOW EPOXY
	4' BROKEN LINE YELLOW EPOXY
	4' SOLID LINE WHITE EPOXY

- NOTES:
1. LOCATIONS OF PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS ARE DETERMINED IN THE FIELD BY THE ENGINEER.
 2. ALL PERMANENT STRIPING SHALL BE PLACED PRIOR TO REMOVAL OF THE DETOUR AND THE ROADWAY BEING RE-OPENED TO 2-WAY TRAFFIC.

NO	DATE	BY	CKD	APPR	REVISION

NAME: T:\Traffic\dwg\CSAH 22 (Viking Blvd)\From west county line to east county line.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 M. CADENHEAD JR.
 SIGNATURE: *Charles M. Cadenhead Jr.*
 DATE: 7/2/10 LICENSE NO. 40415

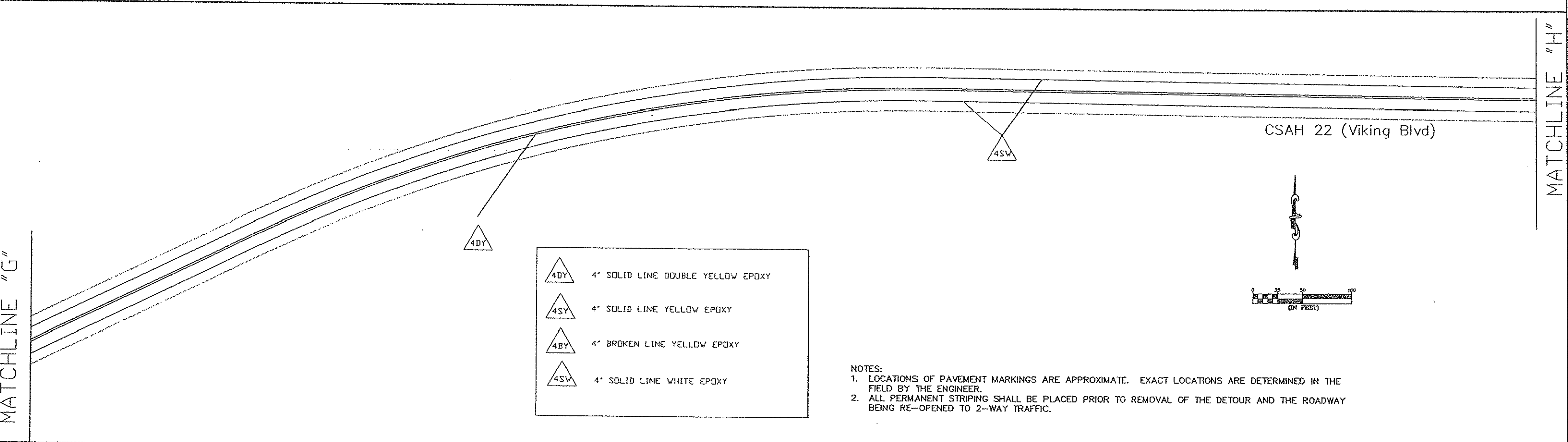
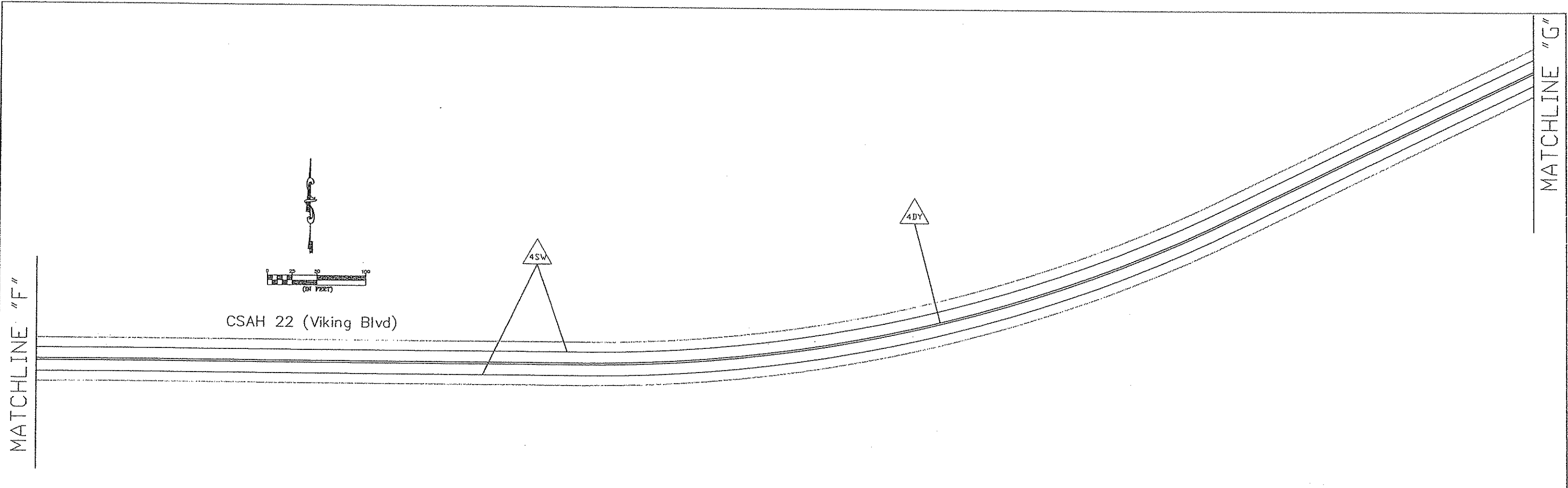
DRAWN BY: MTH DATE: 02/15/10
 DESIGN BY: MTH DATE: 02/15/10
 CHECKED BY: R.B. DATE: 02/17/10



ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-622-31
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. _____

CSAH 22 (Viking Blvd)
 PERMANENT STRIPING
 Sheet 29 of 62 Sheets



	4' SOLID LINE DOUBLE YELLOW EPOXY
	4' SOLID LINE YELLOW EPOXY
	4' BROKEN LINE YELLOW EPOXY
	4' SOLID LINE WHITE EPOXY

NOTES:
 1. LOCATIONS OF PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS ARE DETERMINED IN THE FIELD BY THE ENGINEER.
 2. ALL PERMANENT STRIPING SHALL BE PLACED PRIOR TO REMOVAL OF THE DETOUR AND THE ROADWAY BEING RE-OPENED TO 2-WAY TRAFFIC.

NO	DATE	BY	CKD	APPR	REVISION
NAME: T:\Traffic\dwg\CSAH 22 (Viking Blvd)\from west county line to east county line.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 M. CADENHEAD JR.
 SIGNATURE: *Charles M. Cadenhead Jr.*
 DATE: 7/2/10 LICENSE NO. 40416

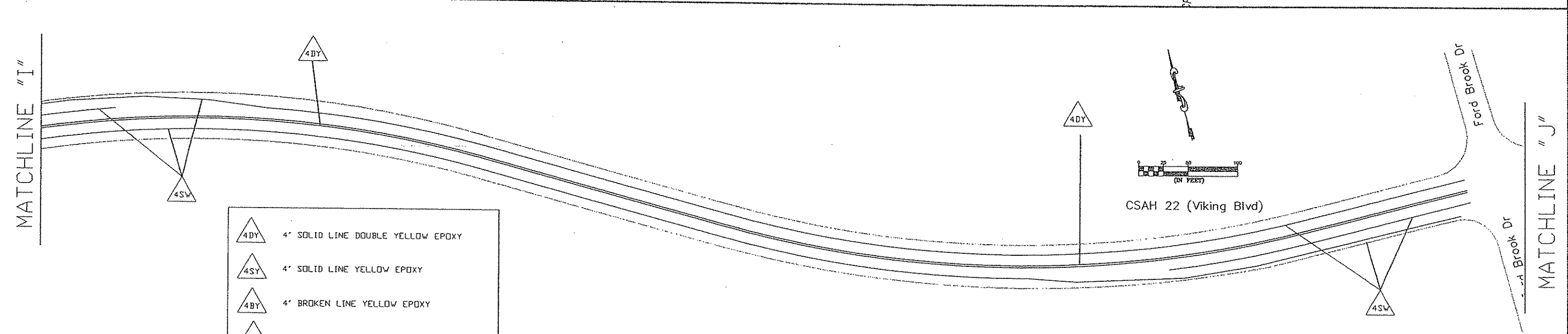
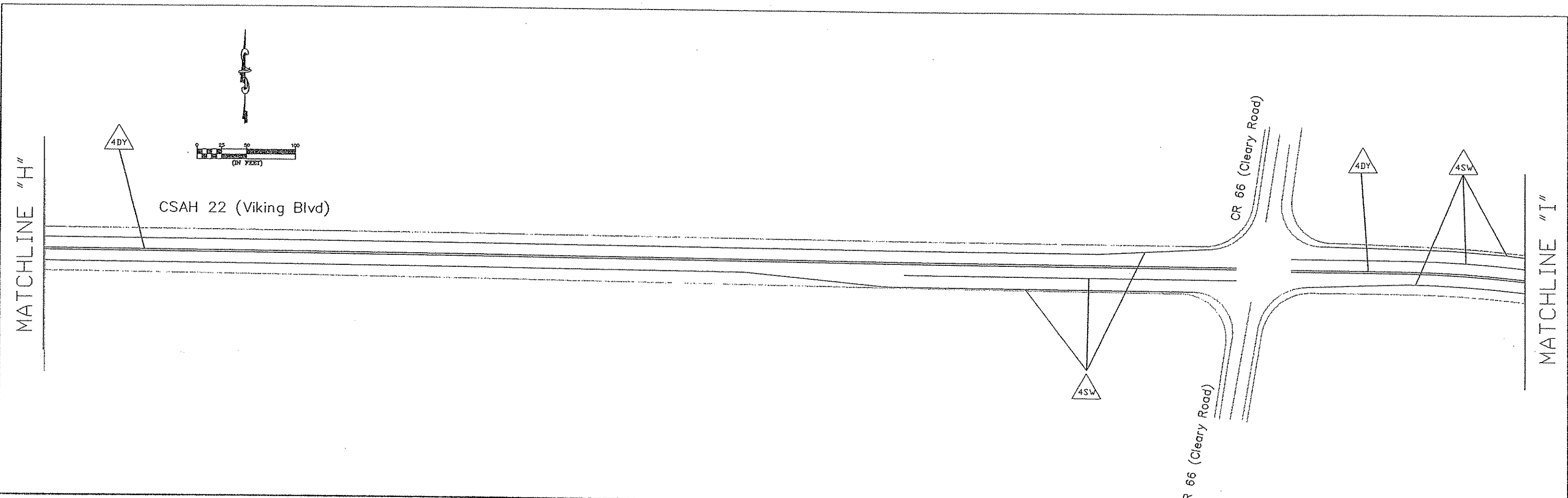
DRAWN BY: MTH DATE: 02/15/10
 DESIGN BY: MTH DATE: 02/15/10
 CHECKED BY: R.B. DATE: 02/17/10



ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-622-31
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. _____

CSAH 22 (Viking Blvd)
 PERMANENT STRIPING
 Sheet 30 of 62 Sheets



	4' SOLID LINE DOUBLE YELLOW EPOXY
	4' SOLID LINE YELLOW EPOXY
	4' BROKEN LINE YELLOW EPOXY
	4' SOLID LINE WHITE EPOXY

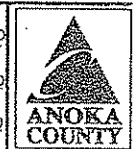
NOTES:
 1. LOCATIONS OF PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS ARE DETERMINED IN THE FIELD BY THE ENGINEER.
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NO	DATE	BY	CKD	APPR	REVISION

NAME: T:\Traffic\dwg\CSAH 22 (Viking Blvd)\from west county line to east county line.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 M. CADENHEAD JR.
 SIGNATURE: *Charles M. Cadenhead Jr.*
 DATE: 7/2/10 LICENSE NO. 40416

DRAWN BY: MTH DATE 02/15/10
 DESIGN BY: MTH DATE 02/15/10
 CHECKED BY: R.B. DATE 02/17/10



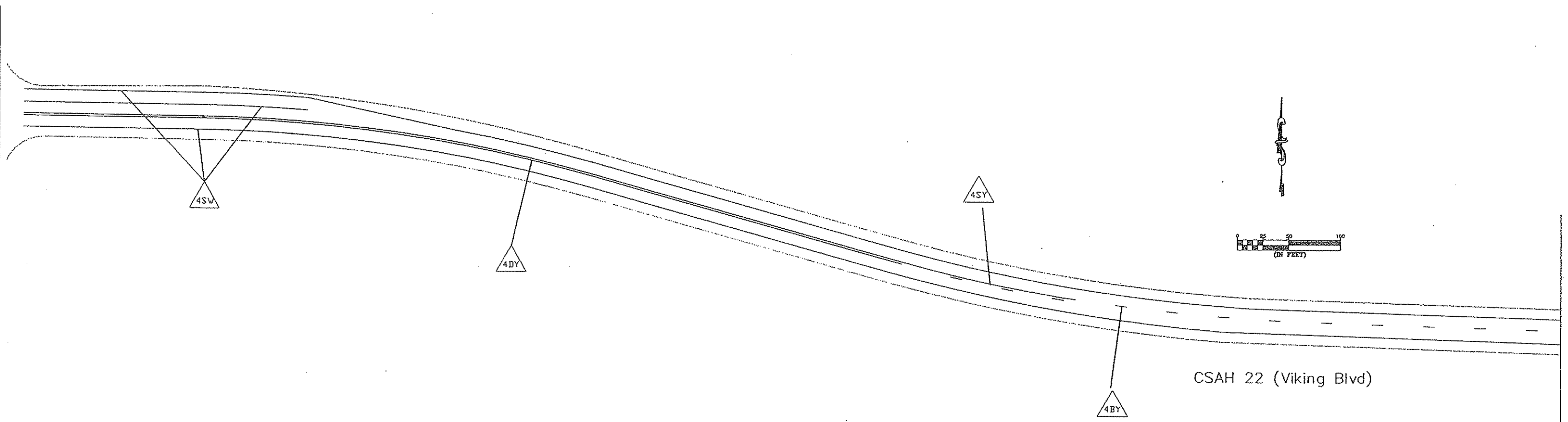
ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-622-31
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. _____

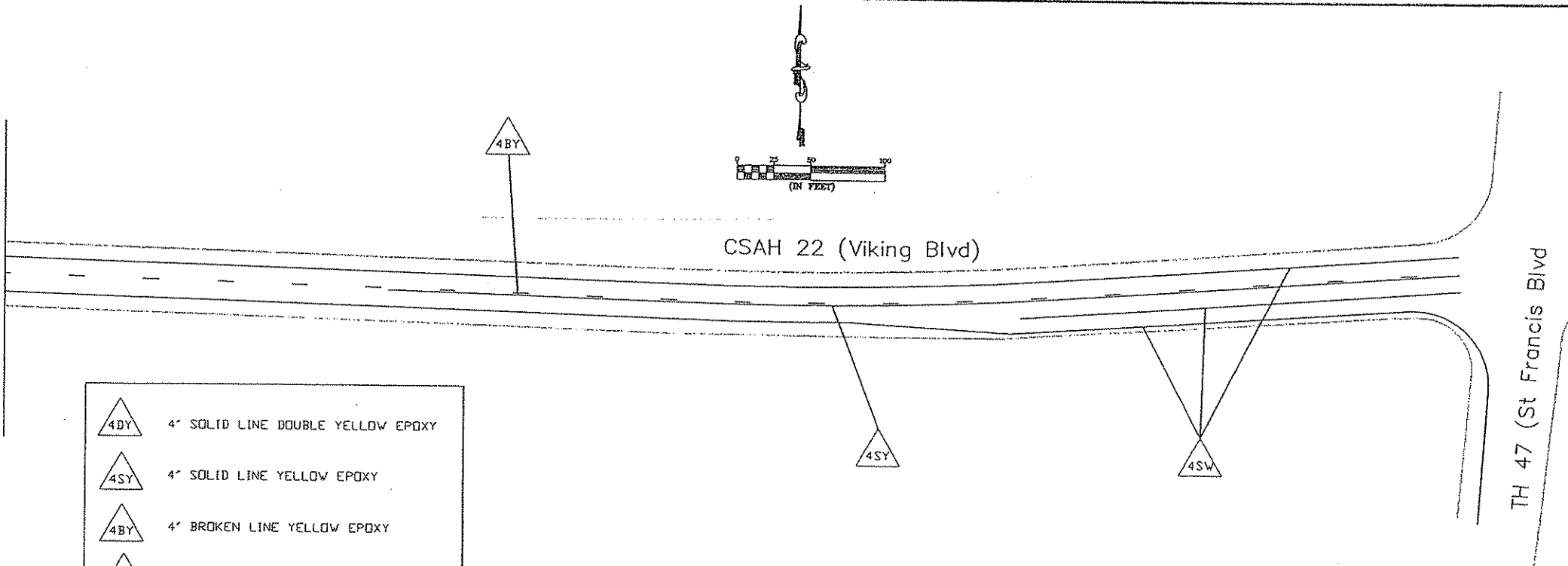
CSAH 22 (Viking Blvd)
 PERMANENT STRIPING
 Sheet 31 of 62 Sheets

MATCHLINE "J"

MATCHLINE "K"



MATCHLINE "K"



TH 47 (St Francis Blvd)

	4' SOLID LINE DOUBLE YELLOW EPOXY
	4' SOLID LINE YELLOW EPOXY
	4' BROKEN LINE YELLOW EPOXY
	4' SOLID LINE WHITE EPOXY

NOTES:
 1. LOCATIONS OF PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS ARE DETERMINED IN THE FIELD BY THE ENGINEER.
 2. ALL PERMANENT STRIPING SHALL BE PLACED PRIOR TO REMOVAL OF THE DETOUR AND THE ROADWAY BEING RE-OPENED TO 2-WAY TRAFFIC.

NO	DATE	BY	CKD	APPR	REVISION
NAME: T:\Traffic\dwg\CSAH 22 (Viking Blvd)\from west county line to east county line.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 M. CADENHEAD JR.
 SIGNATURE: *Charles M. Cadenhead Jr.*
 DATE: 7/2/10 LICENSE NO. 40416

DRAWN BY: MTH DATE: 02/15/10
 DESIGN BY: MTH DATE: 02/15/10
 CHECKED BY: R.B. DATE: 02/17/10



ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-622-31
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. _____

CSAH 22 (Viking Blvd)
 PERMANENT STRIPING
 Sheet 32 of 52 Sheets

ALIGNMENT TABULATION

POINT NUMBER	POINT	ALIGNMENT	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
☉ C.S.A.H. 22 <CL>										
20000	POT	22+06.270						447,634.8113	206,788.5068	
20001	POT	48+25.082						450,253.6157	206,794.7660	
20002	POT	74+58.000						452,886.4576	206,774.6768	
20003	POT	100+83.820						455,512.1627	206,750.1816	
	PC	118+39.515						457,267.8567	206,752.3237	N 89° 55' 48.34" E
CL-2-1	PI	121+74.291	26° 18' 35.62" LT	4° 00' 00.05"	1,432.390'	334.776'	657.745'	457,602.6325	206,752.7322	PI
	CC							457,266.1091	208,184.7127	
	PT	124+97.260						457,902.5477	206,901.4796	N 63° 37' 12.72" E
	PC	131+00.205						458,442.7066	207,169.3795	N 63° 37' 12.72" E
CL-2-2	PI	134+43.914	26° 59' 11.74" RT	4° 00' 00.05"	1,432.390'	343.709'	674.663'	458,750.6249	207,322.0962	PI
	CC							459,079.1452	205,886.1465	
	PT	137+74.868						459,094.3148	207,318.4562	S 89° 23' 35.53" E
20004	POT	154+50.495						460,769.8478	207,300.7106	
	PC	157+76.554						461,095.8915	207,297.5496	S 89° 26' 40.30" E
CL-2-3	PI	160+76.554	29° 20' 29.00" RT	4° 59' 59.93"	1,145.920'	300.000'	586.830'	461,395.8776	207,294.6412	PI
	CC							461,084.7822	206,151.6835	
	PT	163+63.384						461,655.9549	207,145.1091	S 60° 06' 11.30" E
	PC	166+20.394						461,878.7630	207,017.0049	S 60° 06' 11.30" E
CL-2-4	PI	169+20.396	29° 20' 29.64" LT	4° 59' 59.93"	1,145.920'	300.002'	586.834'	462,138.8420	206,867.4719	PI
	CC							462,449.9357	208,010.4306	
	PT	172+07.227						462,438.8299	206,864.5644	S 89° 26' 40.94" E
	PC	176+15.668						462,847.2515	206,860.6059	S 89° 26' 40.94" E
CL-2-5	PI	177+91.799	14° 01' 12.48" RT	4° 00' 00.05"	1,432.390'	176.131'	350.502'	463,023.3741	206,858.8990	PI
	CC							462,833.3694	205,428.2832	
	PT	179+66.170						463,193.8366	206,814.5749	S 75° 25' 28.46" E
	PC	183+52.489						463,567.7227	206,717.3560	S 75° 25' 28.46" E
CL-2-6	PI	185+11.622	12° 40' 43.20" LT	4° 00' 00.05"	1,432.390'	159.133'	316.966'	463,721.7341	206,677.3096	PI
	CC							463,928.1899	208,103.6477	
	PT	186+69.455						463,880.7797	206,672.0425	S 88° 06' 11.66" E
	PC	193+46.762						464,557.7153	206,649.6246	S 88° 06' 11.66" E
CL-2-7	PI	195+50.557	6° 06' 29.00" LT	1° 30' 00.00"	3,819.720'	203.795'	407.204'	464,761.3986	206,642.8792	PI
	CC							464,684.1430	210,467.2517	
	PT	197+53.966						464,964.6434	206,657.8449	N 85° 47' 19.34" E
20005	POT	199+39.701						465,149.8776	206,671.4843	

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. CADENHEAR JR.
 SIGNATURE: *[Signature]*
 DATE: 7/2/10 LICENSE NO. 40416

DRAWN BY: BAV DATE: _____
 DESIGN BY: BAV DATE: _____
 CHECKED BY: JEO DATE: _____



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. **_**_*_*_
 STATE AID PROJECT NO. 02-622-31
 CITY PROJECT NO. **_**_*_*_
 COUNTY PROJECT NO. **_**_*_*_

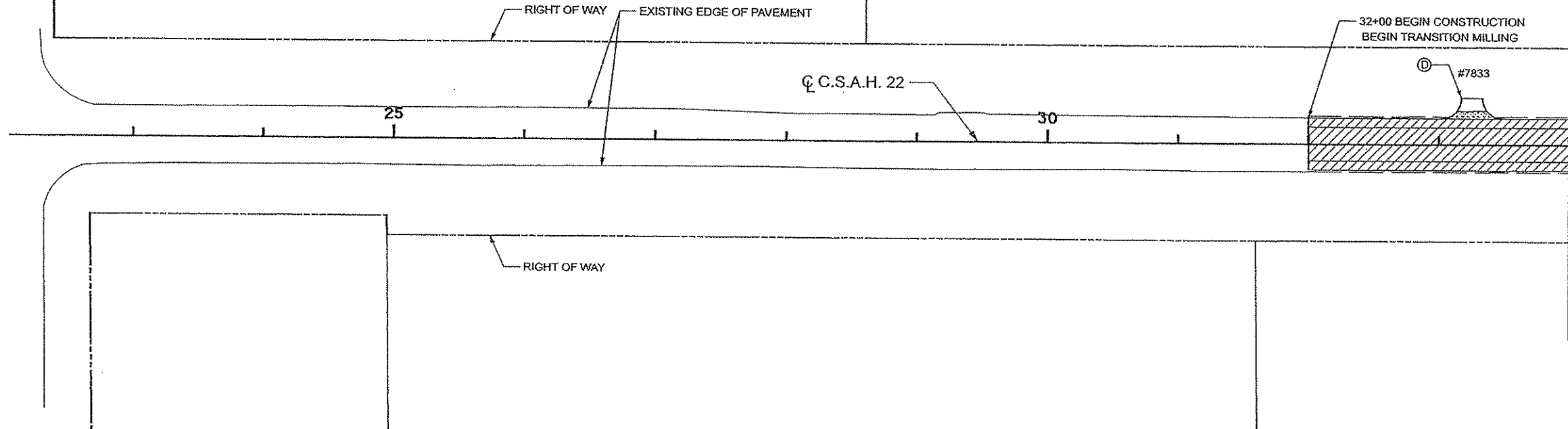
ALIGNMENT TAB

Sheet 33 of 62 Sheets

NO	DATE	BY	CKD	APPR	REVISION

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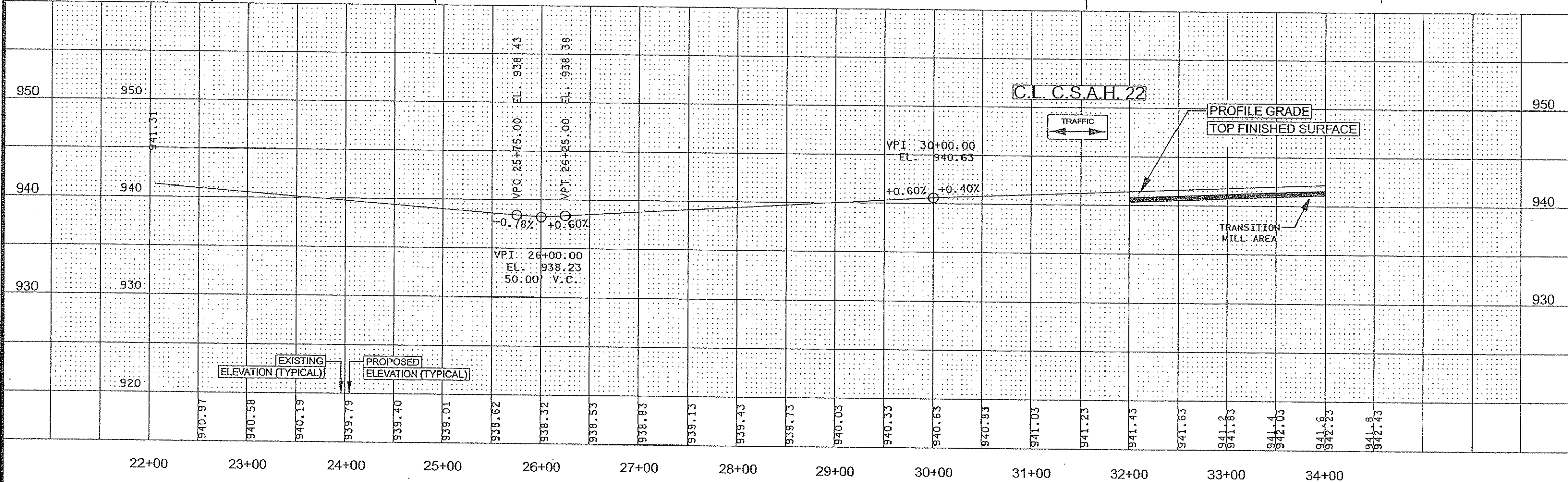
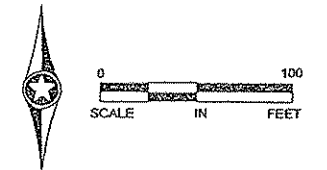
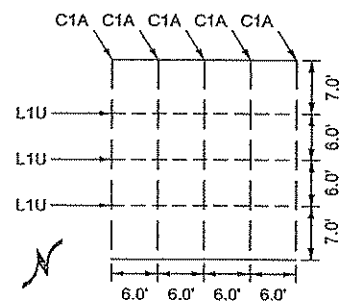
C.S.A.H. 5 (NOWTHEN BLVD.)



CONSTRUCTION NOTES:

- (A) 1.5' AGGREGATE SHOULDER
- (B) 7.0' BITUMINOUS SHOULDER
- (C) CONCRETE MAINLINE
- (D) BITUMINOUS DRIVEWAY SEE DETAIL SHEET
- (E) GRAVEL DRIVEWAY
- (F) FIELD ENTRANCE
- (G) BITUMINOUS CURB

TYPICAL SAWING DETAIL



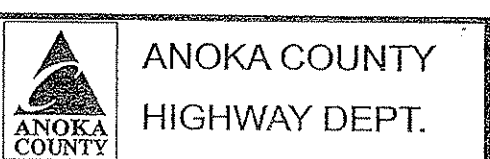
NO	DATE	BY	CHKD	APPR	REVISION

NAME: p:\white\top 22 5-47\plan\White\top_PP1.dgn 3:49:07 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 M. CADENHEAD JR.
SIGNATURE: *[Signature]*
DATE: 7/2/10 LICENSE NO. 40416

DRAWN BY: BAV DATE: 03-17-08
DESIGN BY: BAV DATE: 03-18-08
CHECKED BY: JEO DATE: 03-19-08

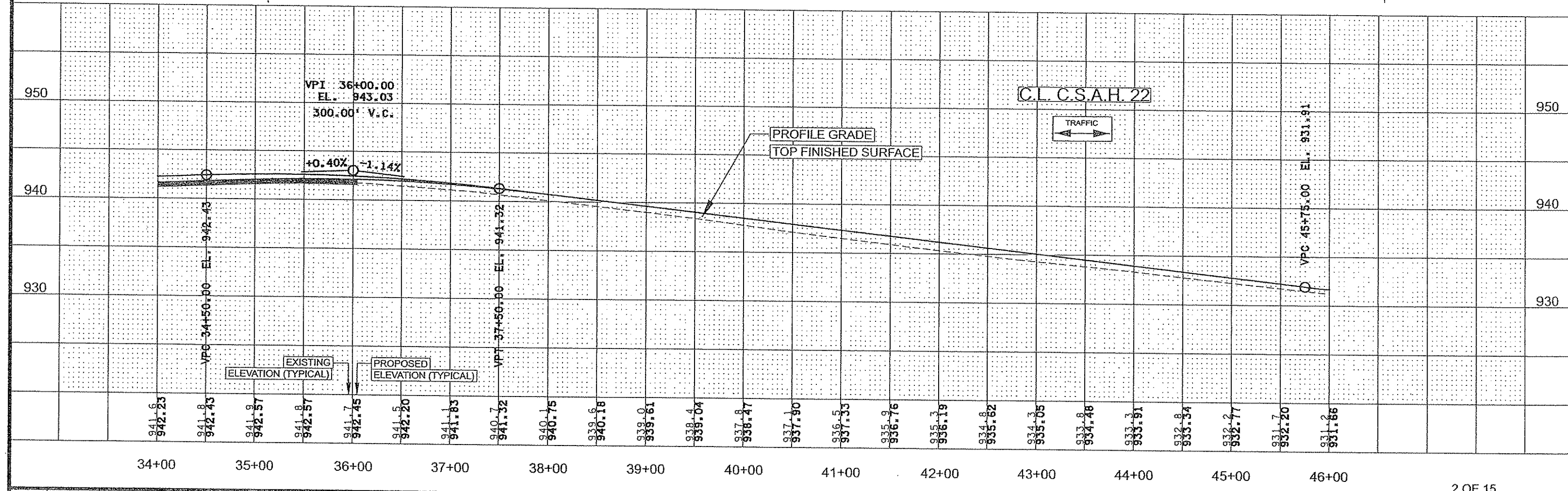
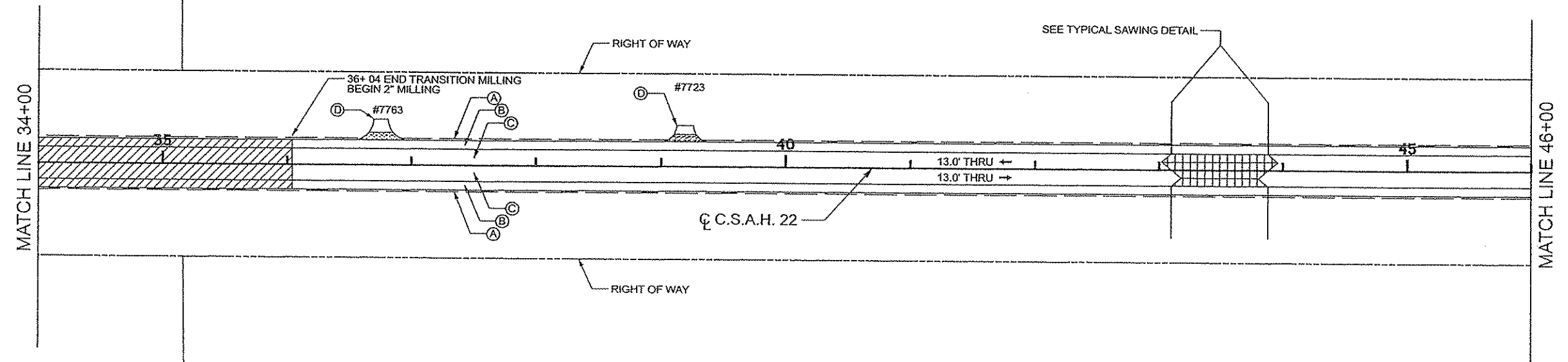
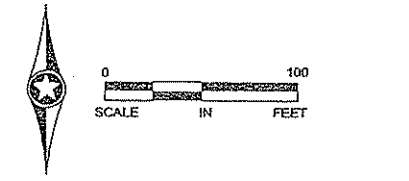
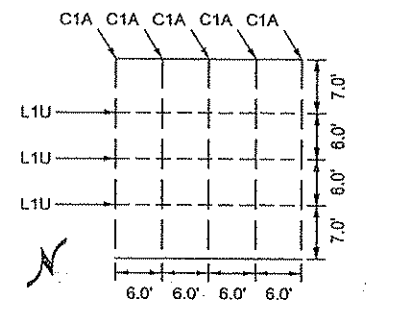


STATE PROJECT NO. **_**_**
STATE AID PROJECT NO. 02-622-31
CITY PROJECT NO. **_**_**
COUNTY PROJECT NO. **_**_**

CONSTRUCTION
PLAN AND PROFILE
STA 32+00.00 TO 34+00.00
Sheet 34 of 62 Sheets

- CONSTRUCTION NOTES:**
- (A) 1.5' AGGREGATE SHOULDER
 - (B) 7.0' BITUMINOUS SHOULDER
 - (C) CONCRETE MAINLINE
 - (D) BITUMINOUS DRIVEWAY SEE DETAIL SHEET
 - (E) GRAVEL DRIVEWAY
 - (F) FIELD ENTRANCE
 - (G) BITUMINOUS CURB

TYPICAL SAWING DETAIL

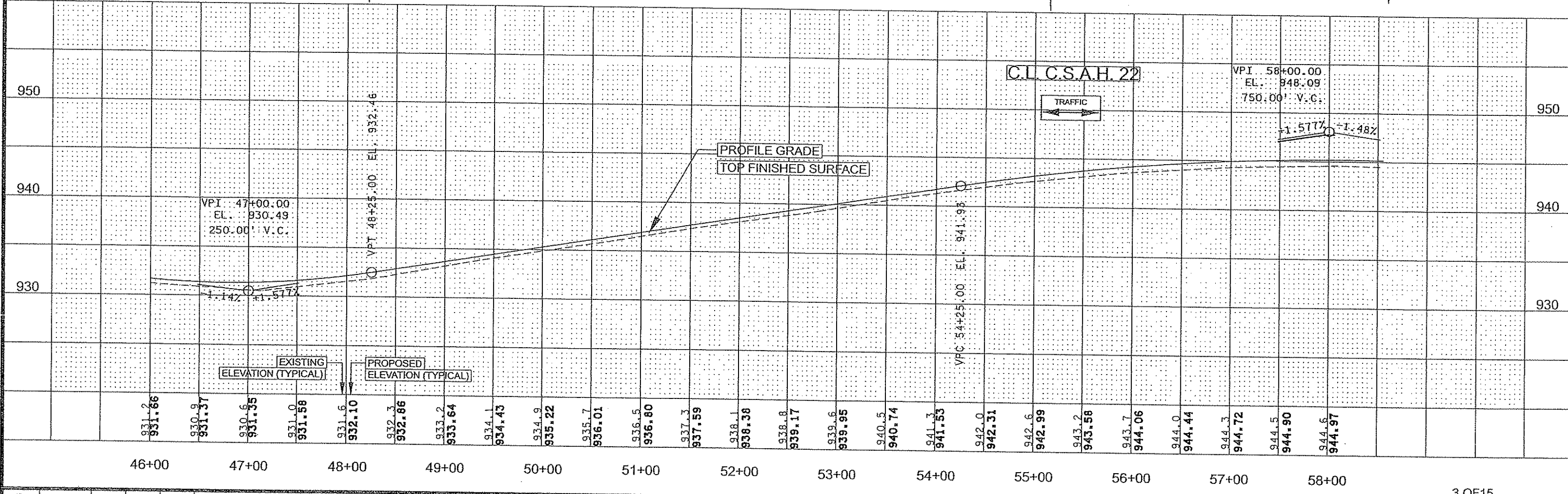
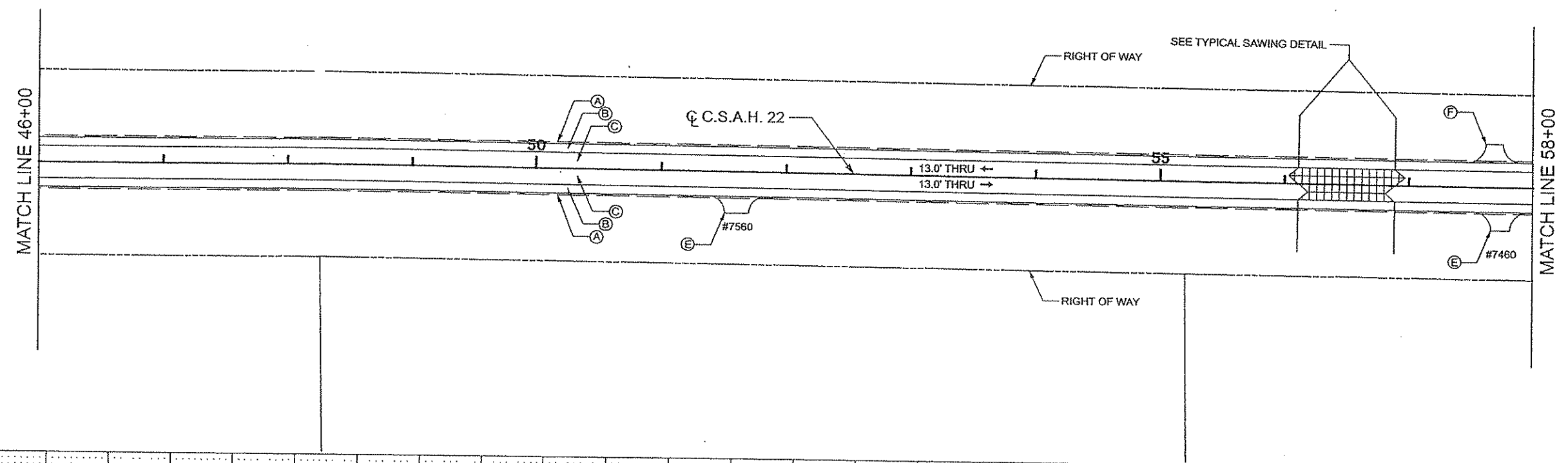
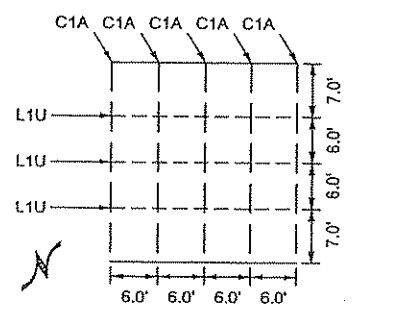


2 OF 15		<p>ANOKA COUNTY HIGHWAY DEPT.</p>		STATE PROJECT NO. ****-**-**** STATE AID PROJECT NO. 02-622-31 CITY PROJECT NO. ****-**-**** COUNTY PROJECT NO. ****-**-****		CONSTRUCTION PLAN AND PROFILE STA 34+00.00 TO 46+00.00 Sheet 35 of 62 Sheets	
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR 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. CADENHEAD, JR. SIGNATURE: <i>[Signature]</i> DATE: 7/2/10 LICENSE NO. 40415		DRAWN BY: BAV DATE: 03-17-08 DESIGN BY: BAV DATE: 03-18-08 CHECKED BY: JEO DATE: 03-19-08		NO. DATE BY CKO APPR REVISION NAME: p:\wh\laptop 22 5-47\plan\White\top_PP2.dgn 07/01/2010 3:49:10 PM			

CONSTRUCTION NOTES:

- (A) 1.5' AGGREGATE SHOULDER
- (B) 7.0' BITUMINOUS SHOULDER
- (C) CONCRETE MAINLINE
- (D) BITUMINOUS DRIVEWAY SEE DETAIL SHEET
- (E) GRAVEL DRIVEWAY
- (F) FIELD ENTRANCE
- (G) BITUMINOUS CURB

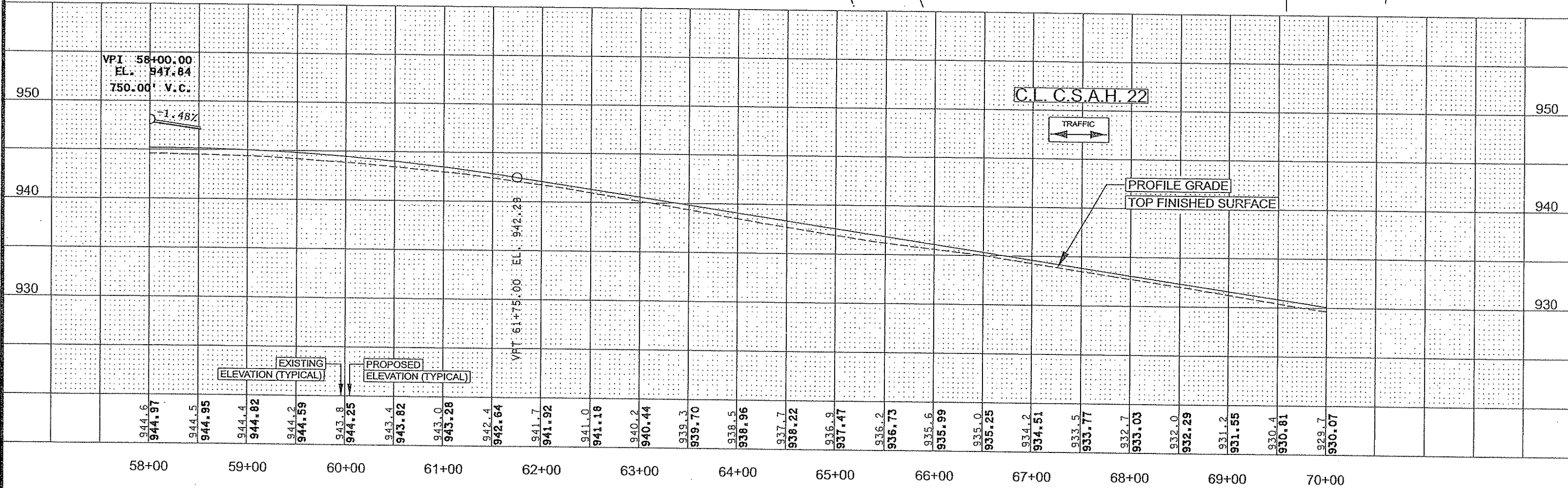
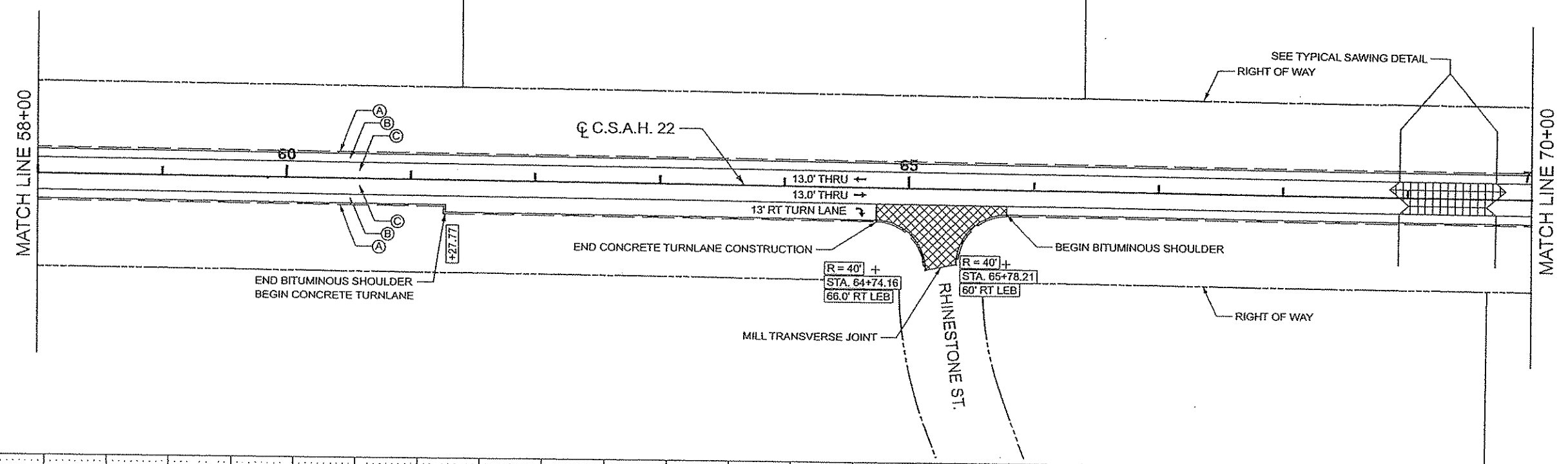
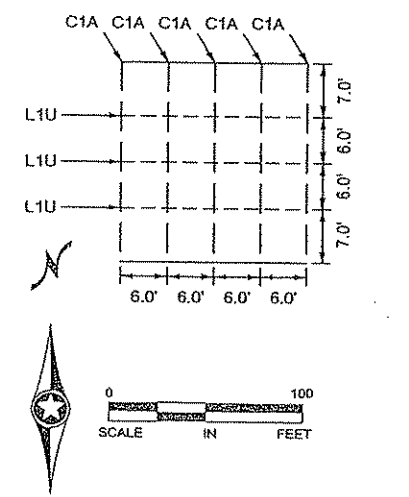
TYPICAL SAWING DETAIL



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. CADENHEAD JR. SIGNATURE: <i>[Signature]</i> DATE: 7/2/10 LICENSE NO. 40418				DRAWN BY: BAV DATE: 03-17-08 DESIGN BY: BAV DATE: 03-18-08 CHECKED BY: JEO DATE: 03-19-08	ANOKA COUNTY HIGHWAY DEPT.	STATE PROJECT NO. **** STATE AID PROJECT NO. 02-622-31 CITY PROJECT NO. **** COUNTY PROJECT NO. ****	CONSTRUCTION PLAN AND PROFILE STA 46+00.00 TO 58+00.00 Sheet 36 of 62 Sheets
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- CONSTRUCTION NOTES:**
- (A) 1.5' AGGREGATE SHOULDER
 - (B) 7.0' BITUMINOUS SHOULDER
 - (C) CONCRETE MAINLINE
 - (D) BITUMINOUS DRIVEWAY SEE DETAIL SHEET
 - (E) GRAVEL DRIVEWAY
 - (F) FIELD ENTRANCE
 - (G) BITUMINOUS CURB

TYPICAL SAWING DETAIL



4 OF 15

NO. DATE BY CKD APPR NAME: p:\whitlop 22 5-47\plan\Whitlop_PP4.dgn	REVISION 07/01/2010 3:49:16 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 M. CADENHEAD, JR. SIGNATURE: <i>[Signature]</i> DATE: 7/2/10 LICENSE NO. 40416	DRAWN BY: BAV DATE: 03-17-08 DESIGN BY: BAV DATE: 03-18-08 CHECKED BY: JEO DATE: 03-19-08
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**ANOKA COUNTY
HIGHWAY DEPT.**

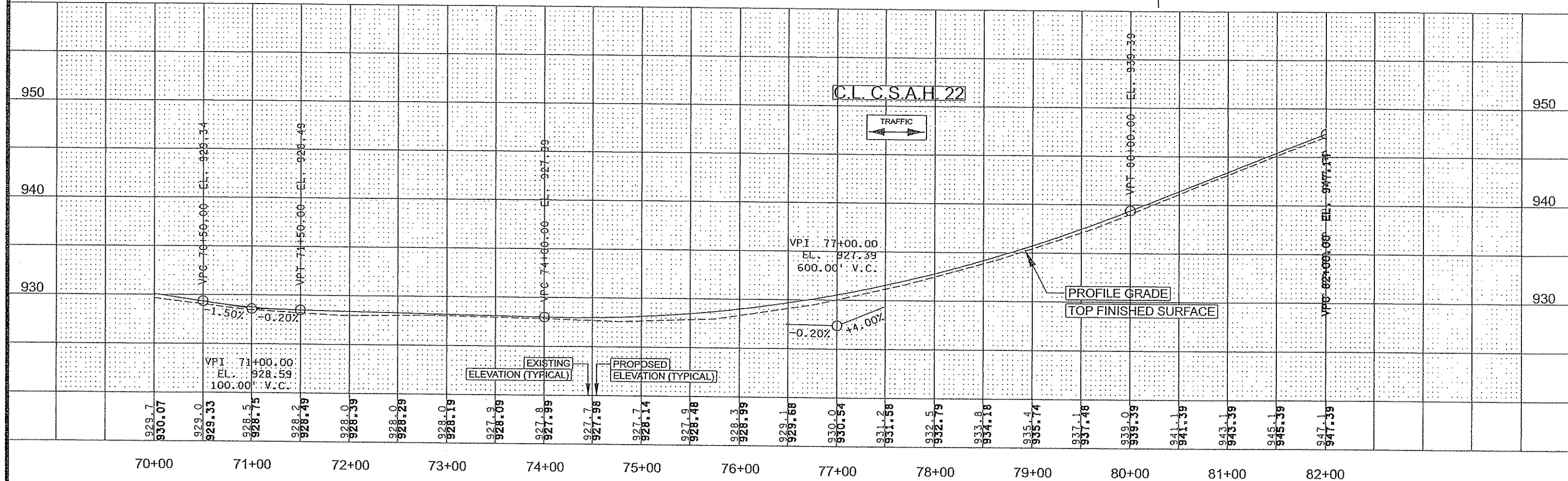
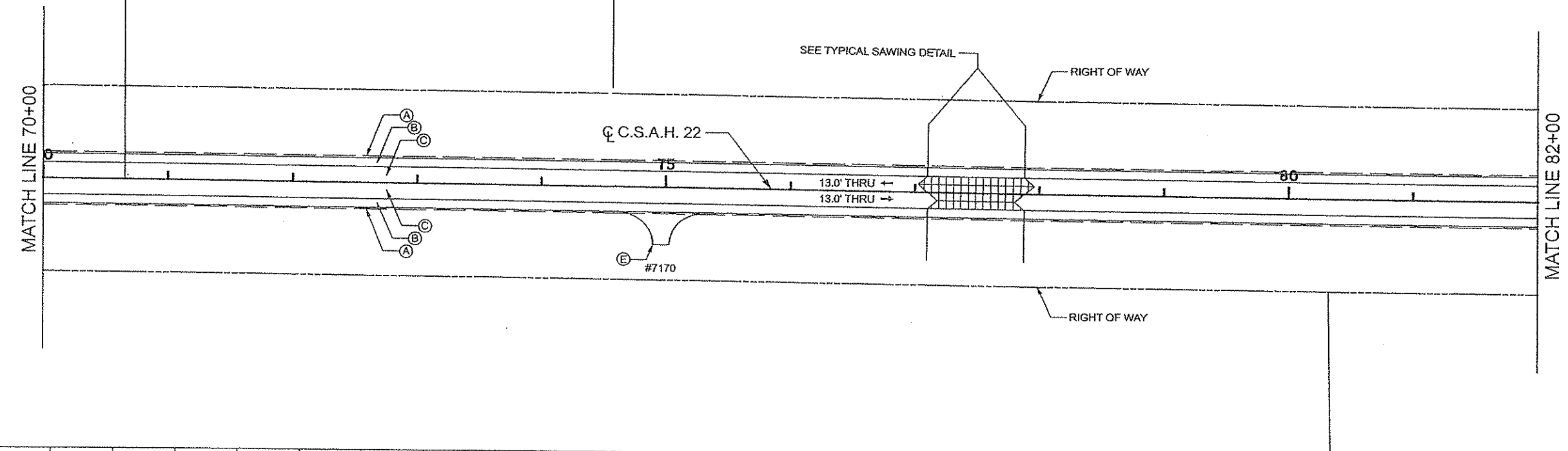
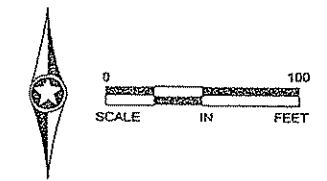
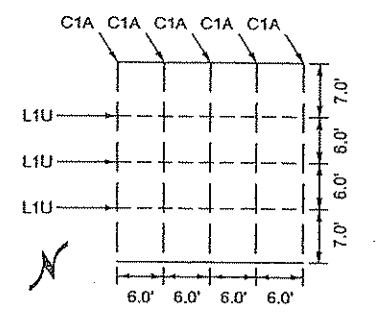
STATE PROJECT NO. **_**_**
 STATE AID PROJECT NO. 02-622-31
 CITY PROJECT NO. **_**_**
 COUNTY PROJECT NO. **_**_**

**CONSTRUCTION
PLAN AND PROFILE**
 STA 46+00.00 TO 70+00.00
 Sheet 37 of 62 Sheets

CONSTRUCTION NOTES:

- (A) 1.5' AGGREGATE SHOULDER
- (B) 7.0' BITUMINOUS SHOULDER
- (C) CONCRETE MAINLINE
- (D) BITUMINOUS DRIVEWAY SEE DETAIL SHEET
- (E) GRAVEL DRIVEWAY
- (F) FIELD ENTRANCE
- (G) BITUMINOUS CURB

TYPICAL SAWING DETAIL



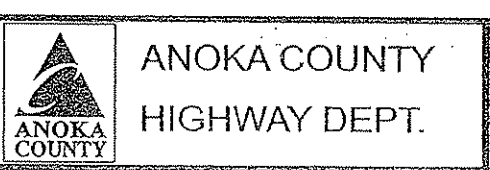
NO	DATE	BY	CHKD	APPR	REVISION

NAME: p:\white\top 22 5-47\plan\White\top_PP5.dgn
07/01/2010 3:49:19 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 M. CADENHEAD JR.
SIGNATURE: *[Signature]*
DATE: 7/2/10 LICENSE NO. 40416

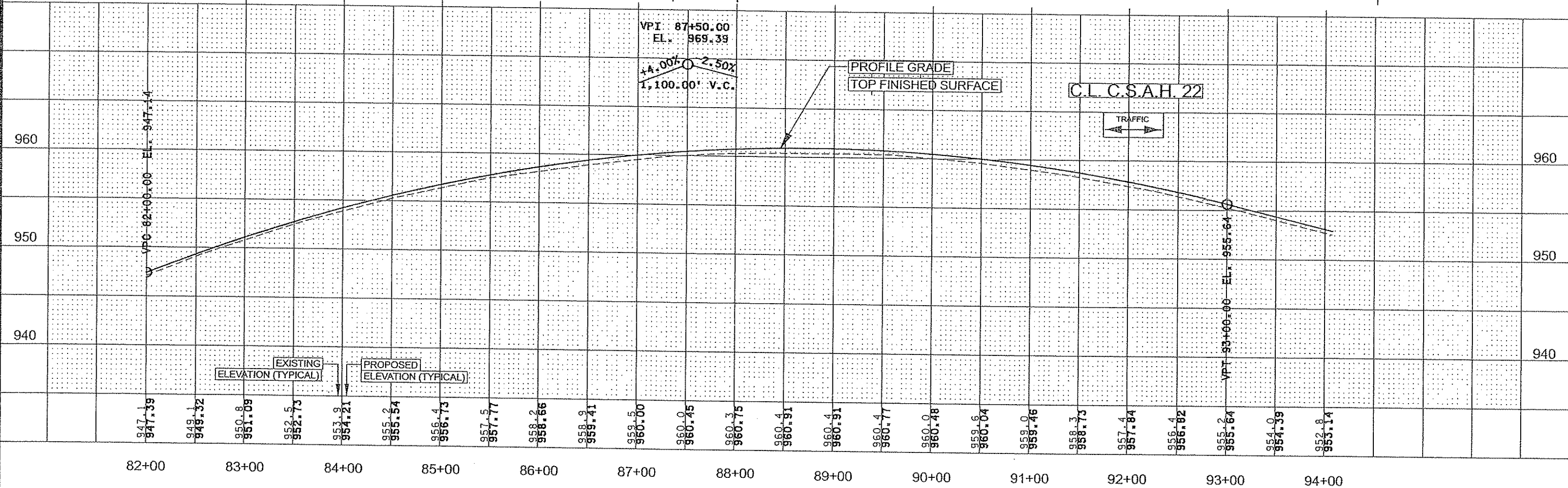
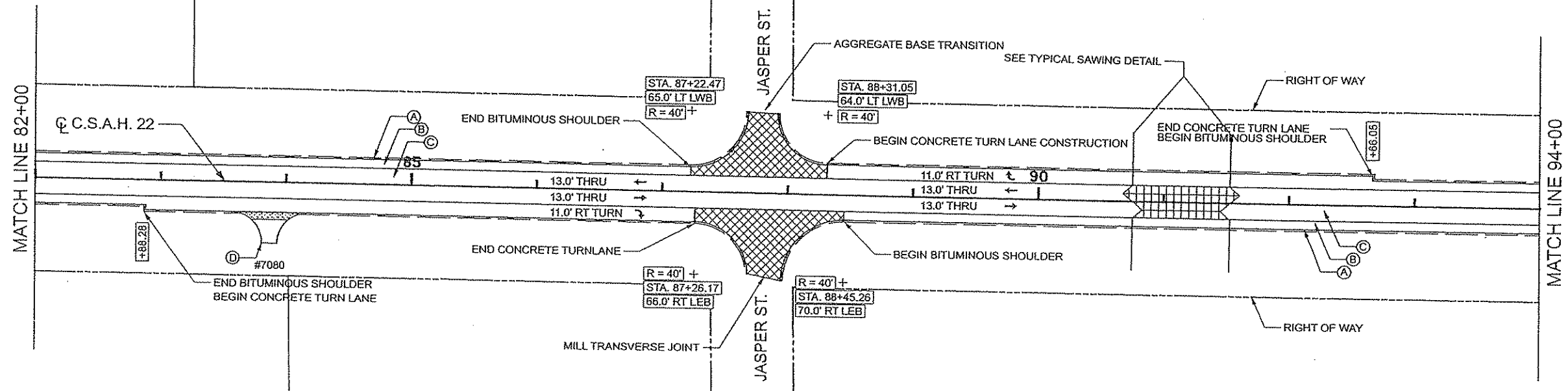
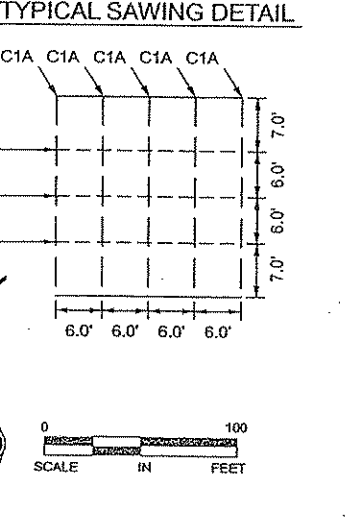
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DESIGN BY: BAV DATE: 03-18-08
CHECKED BY: JEO DATE: 03-19-08



STATE PROJECT NO. **_**_*_*_*_*
STATE AID PROJECT NO. 02-622-31
CITY PROJECT NO. **_**_*_*_*_*
COUNTY PROJECT NO. **_**_*_*_*_*

CONSTRUCTION PLAN AND PROFILE
STA 70+00.00 TO 82+00.00
Sheet 38 of 62 Sheets

- CONSTRUCTION NOTES:**
- (A) 1.5' AGGREGATE SHOULDER
 - (B) 7.0' BITUMINOUS SHOULDER
 - (C) CONCRETE MAINLINE
 - (D) BITUMINOUS DRIVEWAY SEE DETAIL SHEET
 - (E) GRAVEL DRIVEWAY
 - (F) FIELD ENTRANCE
 - (G) BITUMINOUS CURB

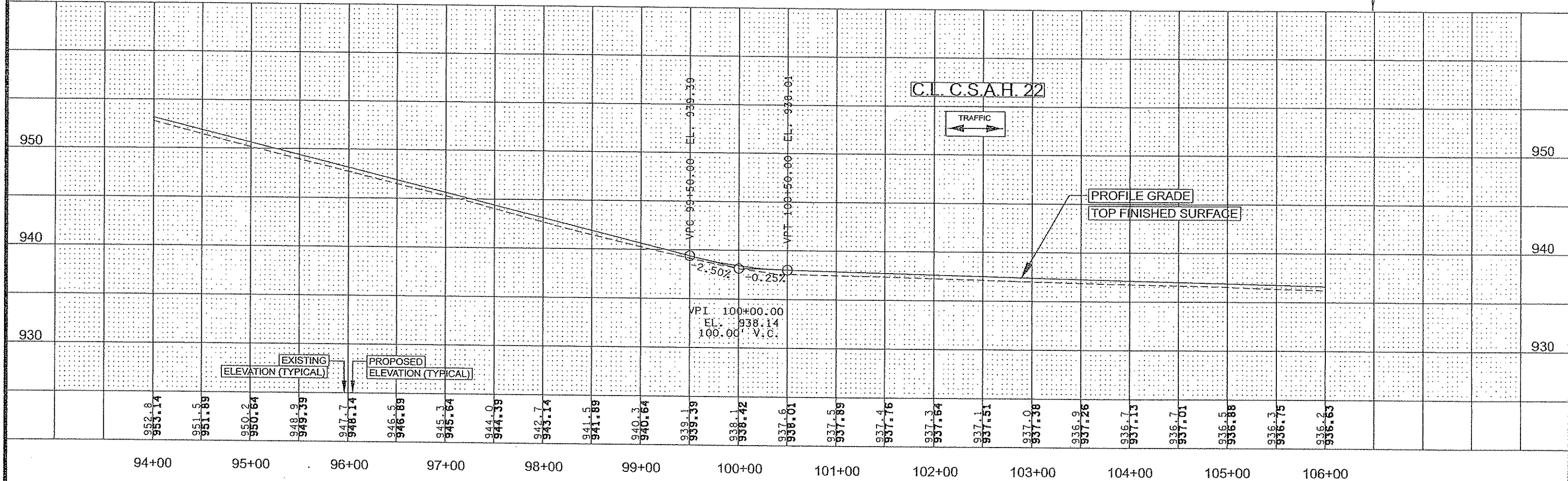
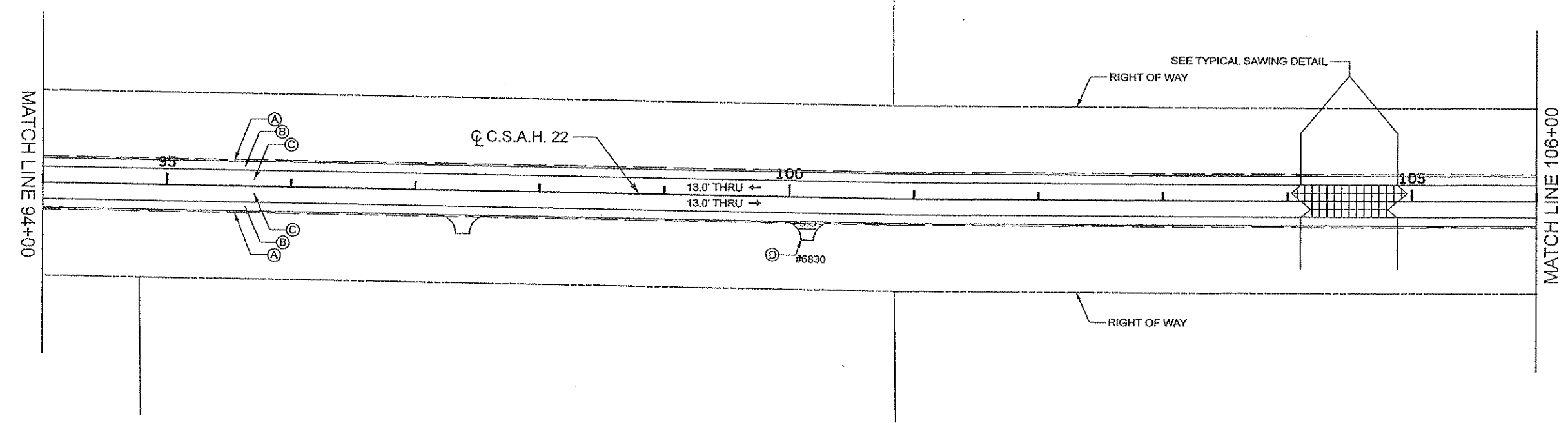
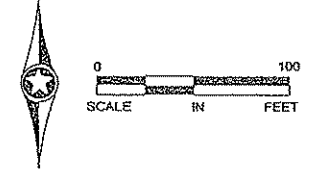
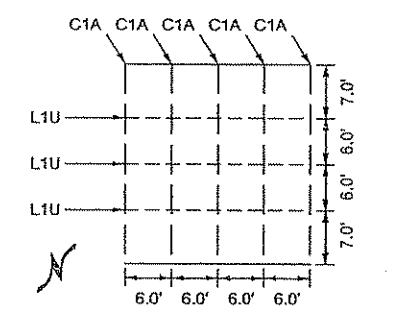


I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINT NAME: CHARLES M. CADENHEAD, JR. SIGNATURE: <i>[Signature]</i> DATE: 7/10 LICENSE NO. 40418					DRAWN BY: BAV DATE: 02-17-08 DESIGN BY: BAV DATE: 03-18-08 CHECKED BY: JEO DATE: 03-19-08	<p>ANOKA COUNTY HIGHWAY DEPT.</p>	STATE PROJECT NO. ** *** ** STATE AID PROJECT NO. 02-622-31 CITY PROJECT NO. ** *** ** COUNTY PROJECT NO. ** *** **	<p>CONSTRUCTION PLAN AND PROFILE</p> STA 82+00.00 TO 94+00.00 Sheet 39 of 62 Sheets
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CONSTRUCTION NOTES:

- (A) 1.5' AGGREGATE SHOULDER
- (B) 7.0' BITUMINOUS SHOULDER
- (C) CONCRETE MAINLINE
- (D) BITUMINOUS DRIVEWAY SEE DETAIL SHEET
- (E) GRAVEL DRIVEWAY
- (F) FIELD ENTRANCE
- (G) BITUMINOUS CURB

TYPICAL SAWING DETAIL



NO	DATE	BY	CKD	APPR	REVISION

NAME: p:\white\top 22 5-47\plan\white\top_PP7.dgn
07/01/2010 3:49:28 PM

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

PRINT NAME: CHARLES M. CADENHEAD JR.
SIGNATURE: *[Signature]*
DATE: 4/2/10 LICENSE NO. 40416

DRAWN BY: BAV DATE: 03-17-08
DESIGN BY: BAV DATE: 03-18-08
CHECKED BY: JEO DATE: 03-19-08

ANOKA COUNTY
HIGHWAY DEPT.

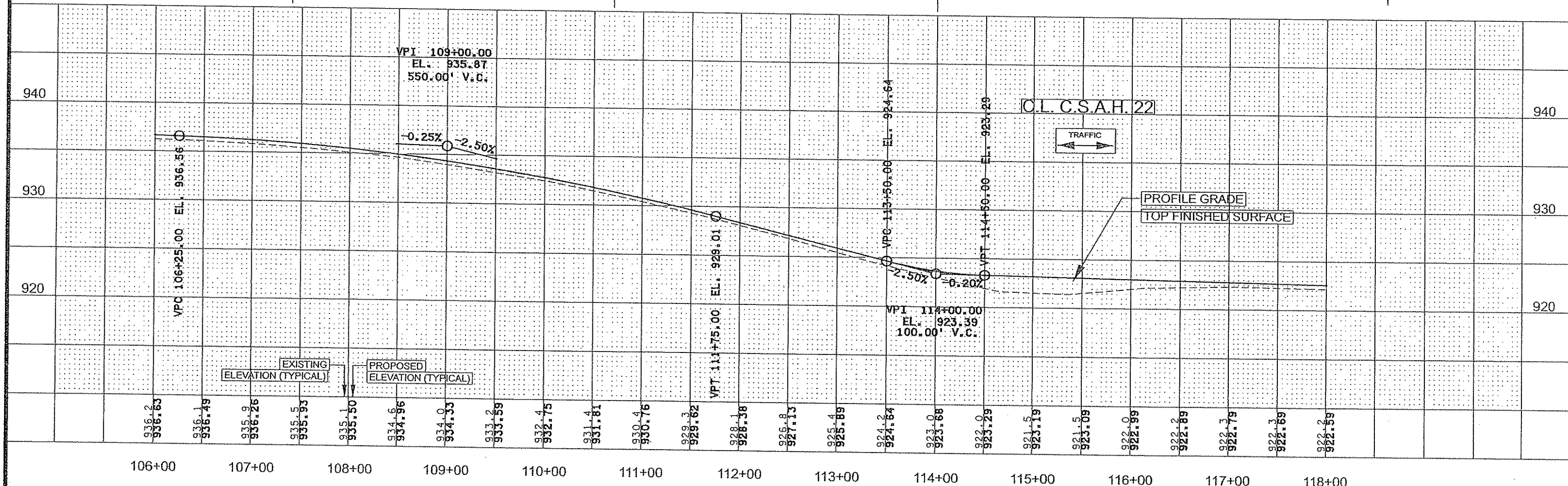
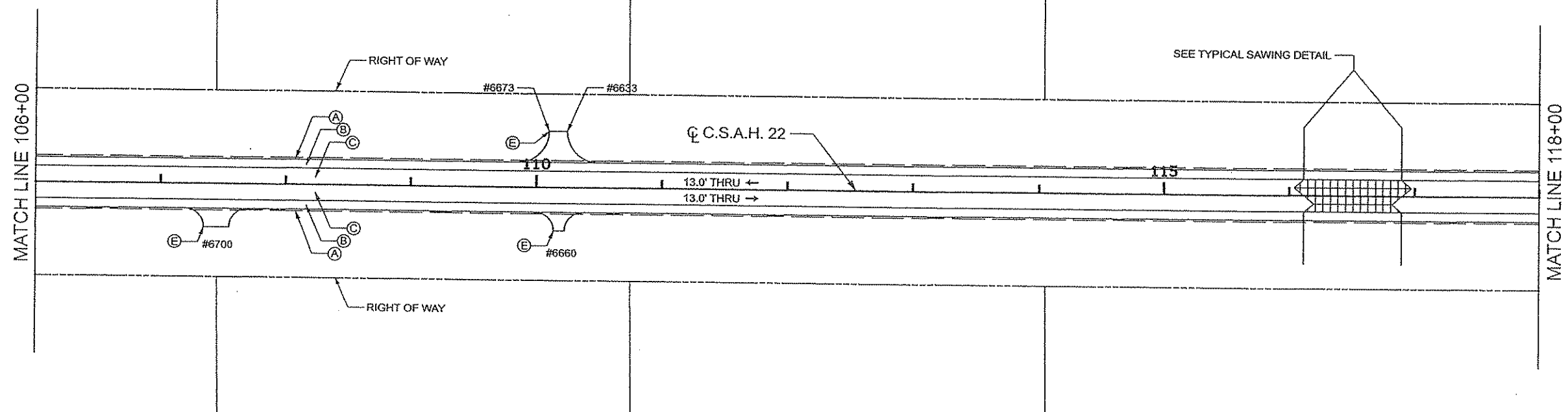
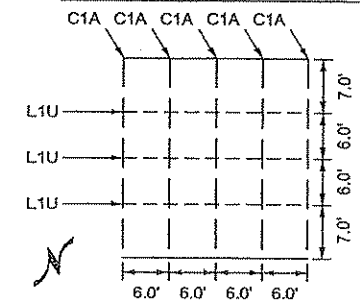
STATE PROJECT NO. **_**_**
STATE AID PROJECT NO. 02-622-31
CITY PROJECT NO. **_**_**
COUNTY PROJECT NO. **_**_**

CONSTRUCTION PLAN AND PROFILE
STA 94+00.00 TO 106+00.00
Sheet 40 of 62 Sheets

CONSTRUCTION NOTES:

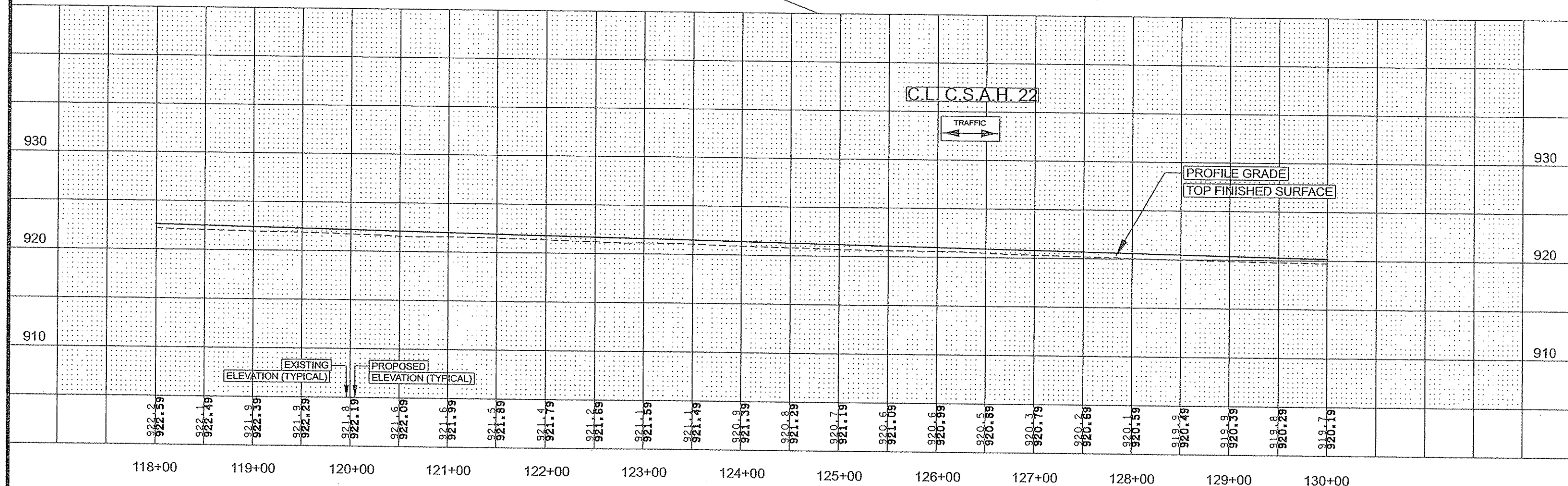
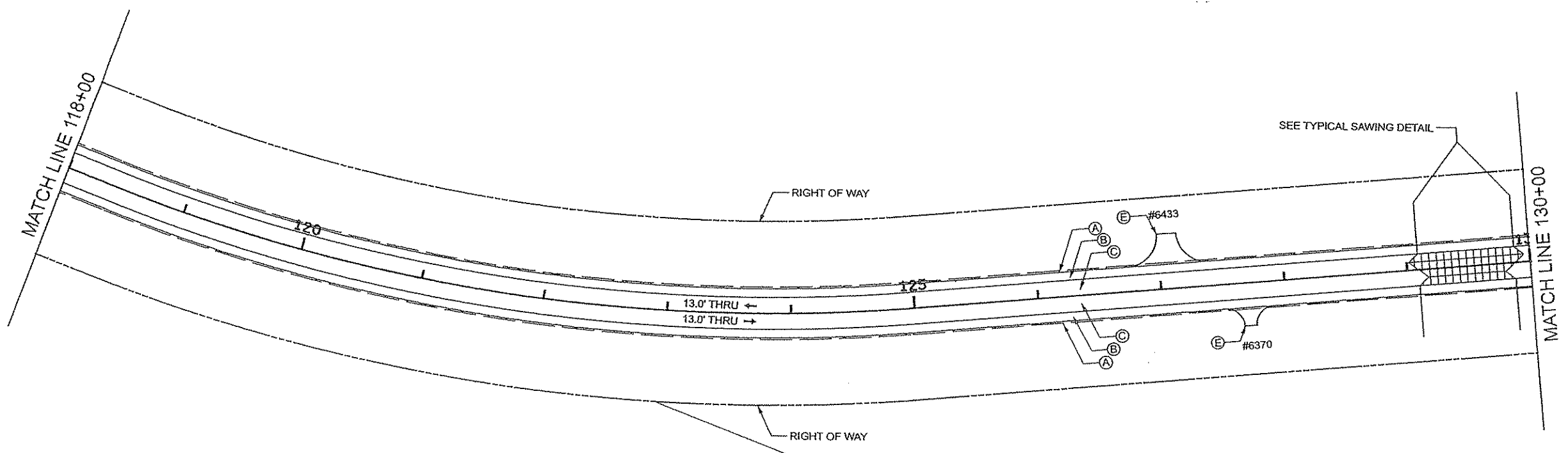
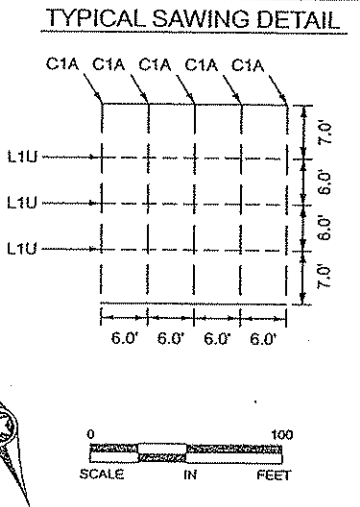
- (A) 1.5' AGGREGATE SHOULDER
- (B) 7.0' BITUMINOUS SHOULDER
- (C) CONCRETE MAINLINE
- (D) BITUMINOUS DRIVEWAY SEE DETAIL SHEET
- (E) GRAVEL DRIVEWAY
- (F) FIELD ENTRANCE
- (G) BITUMINOUS CURB

TYPICAL SAWING DETAIL

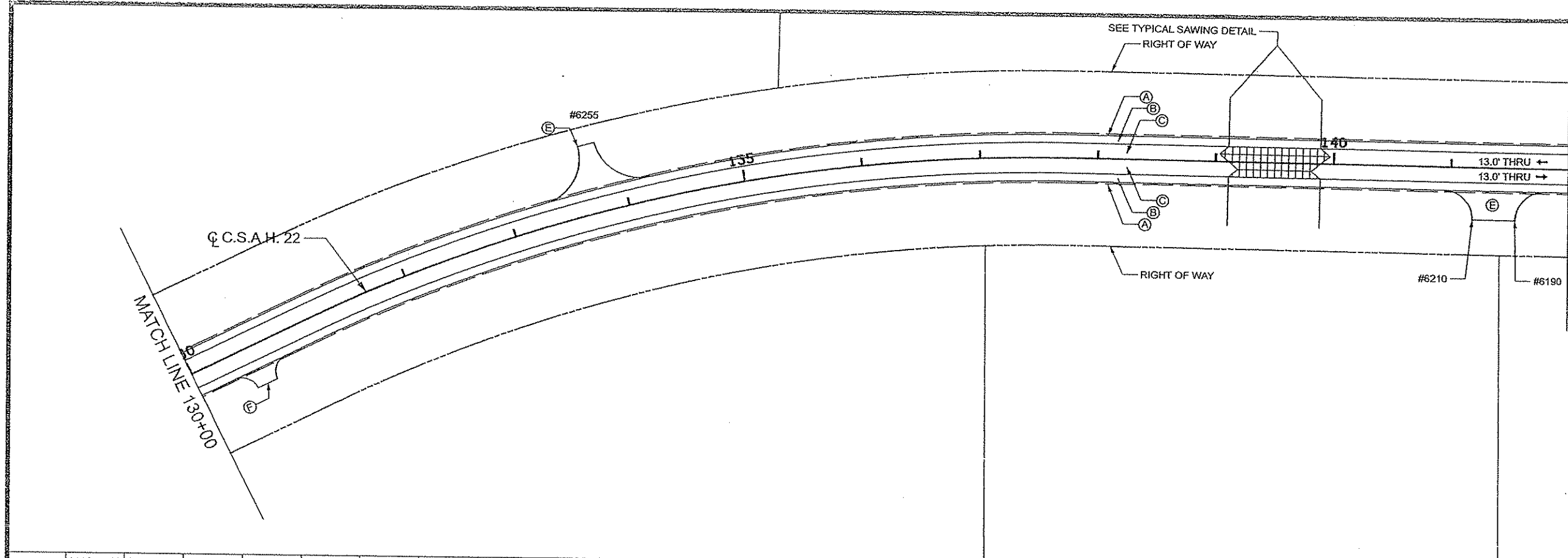


8 OF 15				STATE PROJECT NO. <u> **_**_** </u> STATE AID PROJECT NO. <u> 02-622-31 </u> CITY PROJECT NO. <u> **_**_** </u> COUNTY PROJECT NO. <u> **_**_** </u>		CONSTRUCTION PLAN AND PROFILE STA <u>106+00.00</u> TO <u>118+00.00</u> Sheet <u>41</u> of <u>62</u> Sheets	
I HEREBY CERTIFY THAT THIS PLAN 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: <u>CHARLES M. CADENHEAD JR.</u> SIGNATURE: DATE: <u>7/2/10</u> LICENSE NO. <u>40415</u>		DRAWN BY <u>BAV</u> DATE <u>03-17-08</u> DESIGN BY <u>BAV</u> DATE <u>03-18-08</u> CHECKED BY <u>JEO</u> DATE <u>03-19-08</u>		ANOKA COUNTY HIGHWAY DEPT.			
NO	DATE	BY	CKD	APPR	REVISION		
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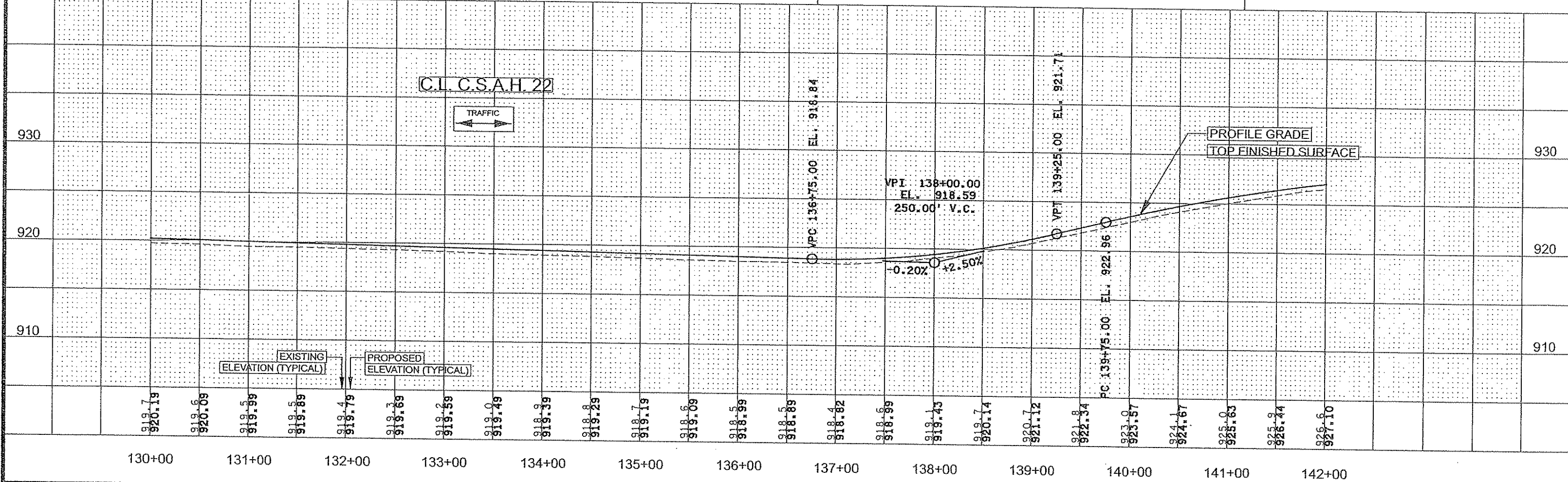
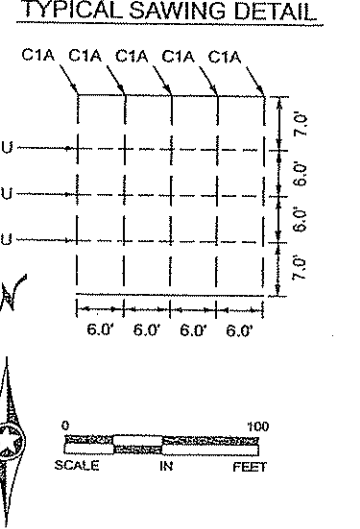
- CONSTRUCTION NOTES:**
- (A) 1.5' AGGREGATE SHOULDER
 - (B) 7.0' BITUMINOUS SHOULDER
 - (C) CONCRETE MAINLINE
 - (D) BITUMINOUS DRIVEWAY SEE DETAIL SHEET
 - (E) GRAVEL DRIVEWAY
 - (F) FIELD ENTRANCE
 - (G) BITUMINOUS CURB



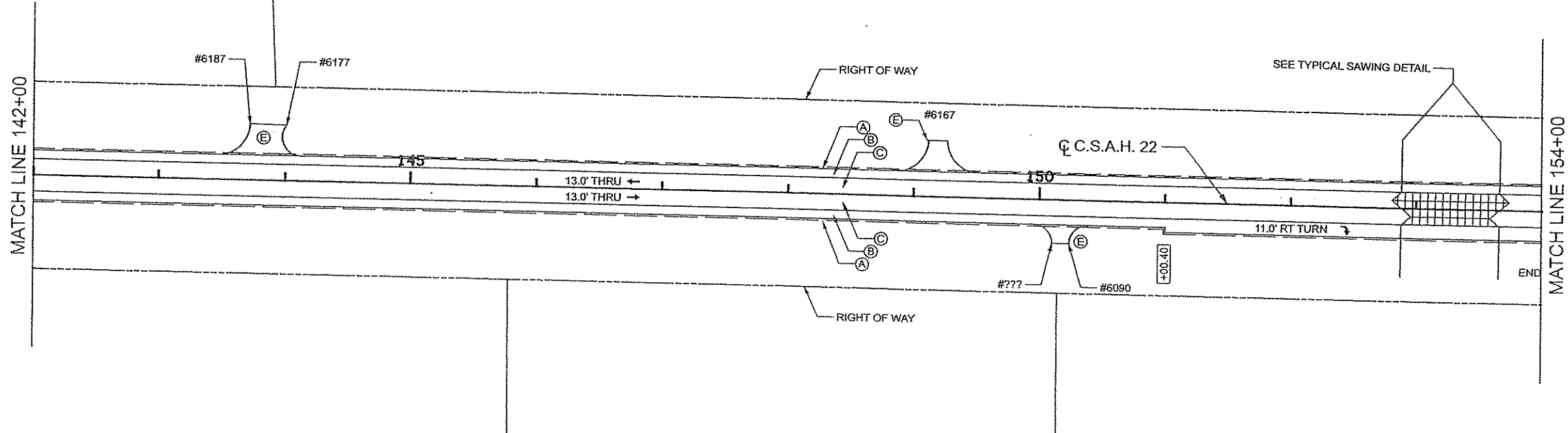
NO. DATE BY CKD APPR REVISION NAME: p:\whitop\22 5-47\plan\Whitop_PP9.dgn 07/01/2010 3:49:32 PM				I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINT NAME: CHARLES M. CADENHEAD, JR. SIGNATURE: <i>[Signature]</i> DATE: 7/2/10 LICENSE NO. 40416		DRAWN BY: BAV DATE: 03-17-08 DESIGN BY: BAV DATE: 03-18-08 CHECKED BY: JEO DATE: 03-19-08		ANOKA COUNTY HIGHWAY DEPT.		STATE PROJECT NO. **_**_** STATE AID PROJECT NO. 02-622-31 CITY PROJECT NO. **_**_** COUNTY PROJECT NO. **_**_**		CONSTRUCTION PLAN AND PROFILE STA 118+00.00 TO 130+00.00 Sheet 42 of 62 Sheets	
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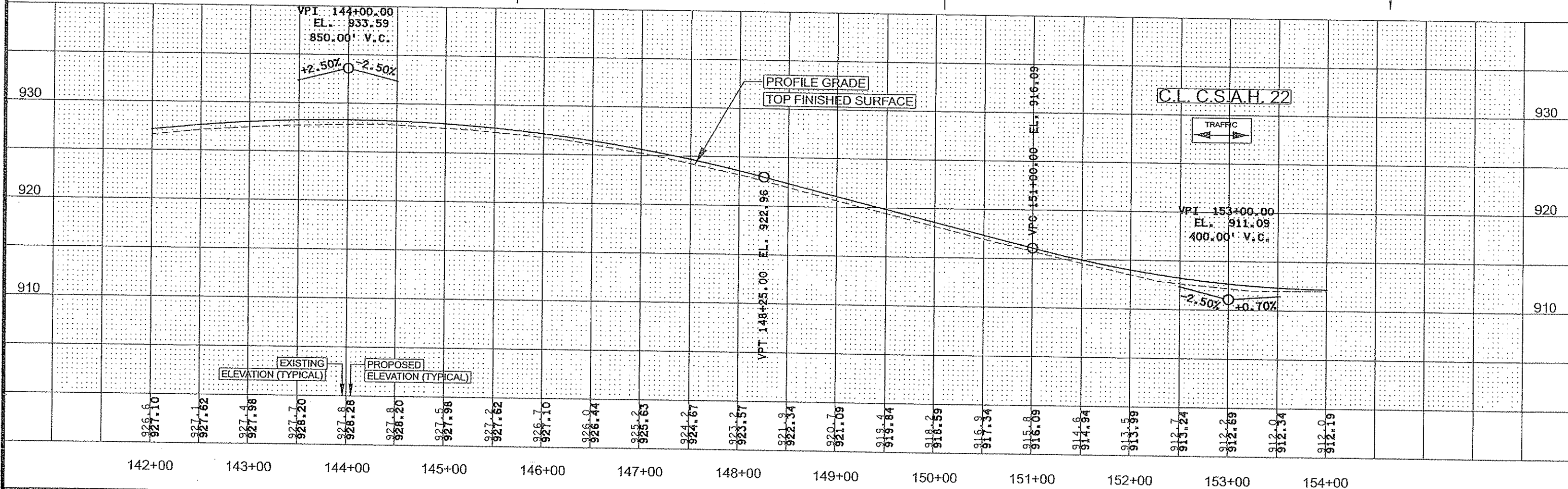
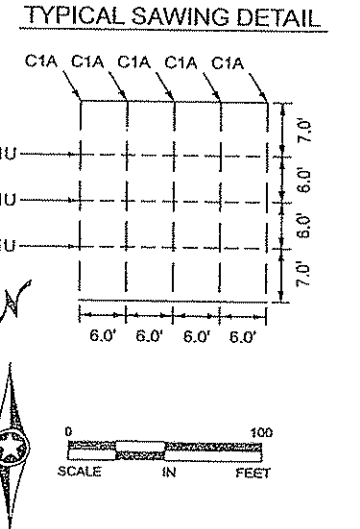
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NO	DATE	BY	CKD	APFR	REVISION							10 OF 15	
					07/01/2010								



- CONSTRUCTION NOTES:**
- (A) 1.5' AGGREGATE SHOULDER
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 - (F) FIELD ENTRANCE
 - (G) BITUMINOUS CURB



NO	DATE	BY	CKD	APPR	REVISION

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ANOKA COUNTY
HIGHWAY DEPT.

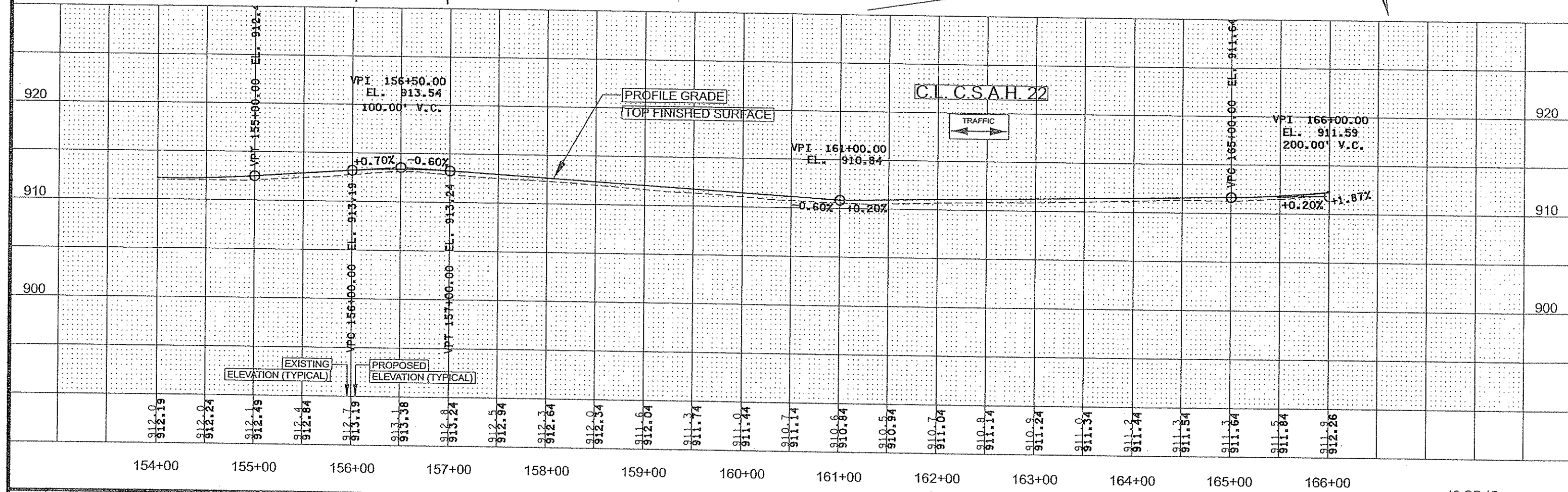
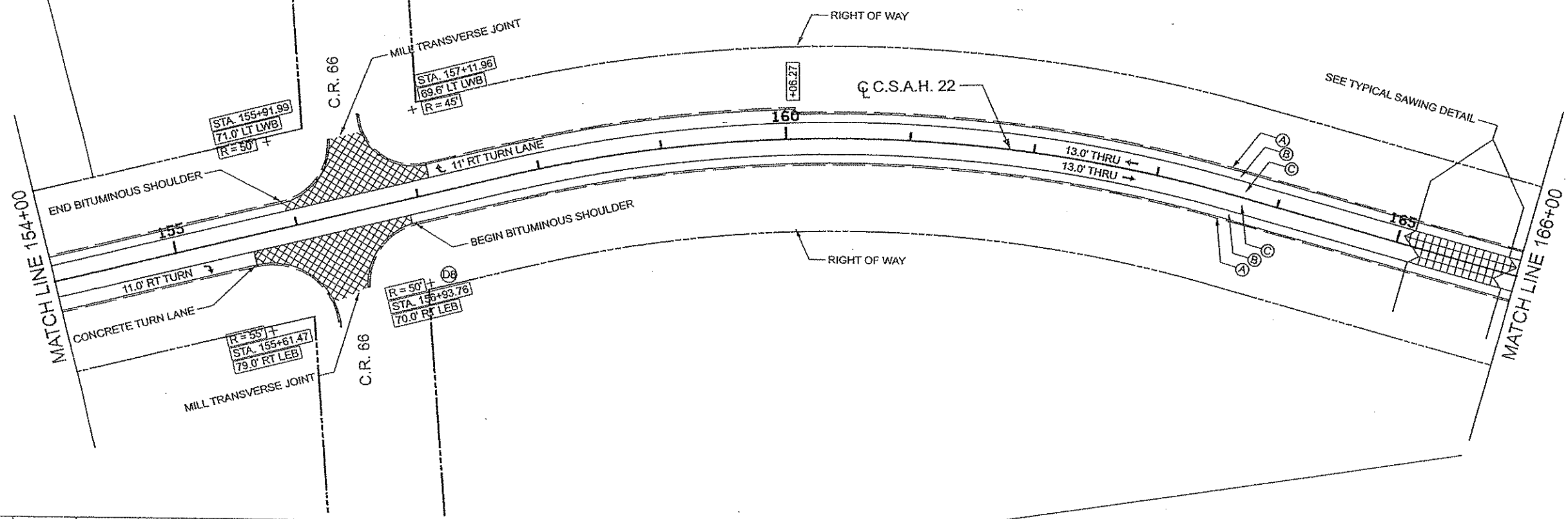
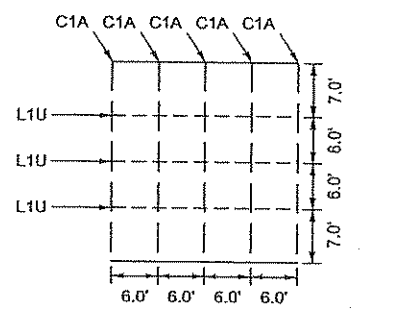
STATE PROJECT NO. **_**_**
STATE AID PROJECT NO. 02-622-31
CITY PROJECT NO. **_**_**
COUNTY PROJECT NO. **_**_**

CONSTRUCTION PLAN AND PROFILE
STA 142+00.00 TO 154+00.00
Sheet 44 of 62 Sheets

CONSTRUCTION NOTES:

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- (B) 7.0' BITUMINOUS SHOULDER
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- (D) BITUMINOUS DRIVEWAY SEE DETAIL SHEET
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- (F) FIELD ENTRANCE
- (G) BITUMINOUS CURB

TYPICAL SAWING DETAIL



NO	DATE	BY	CKD	APPR	REVISION

NAME: p:\whitop\22 5-47\plan\Whitop_PP12.dgn
DATE: 07/01/2010 3:49:42 PM

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CHECKED BY: JEO DATE: 03-19-08



**ANOKA COUNTY
HIGHWAY DEPT.**

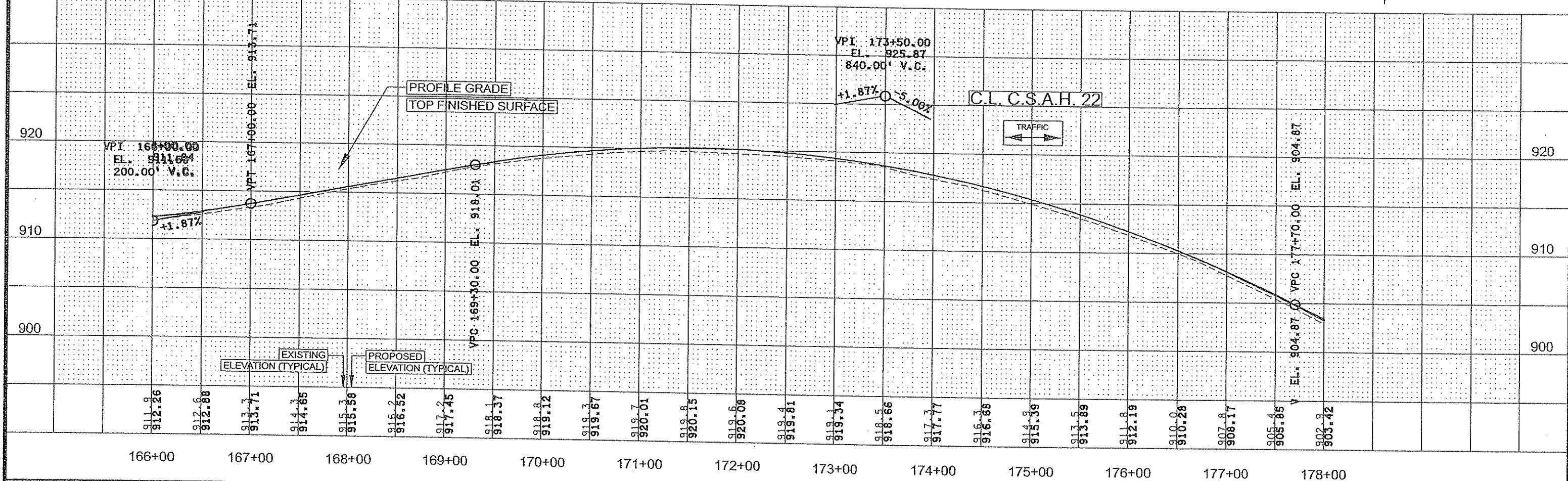
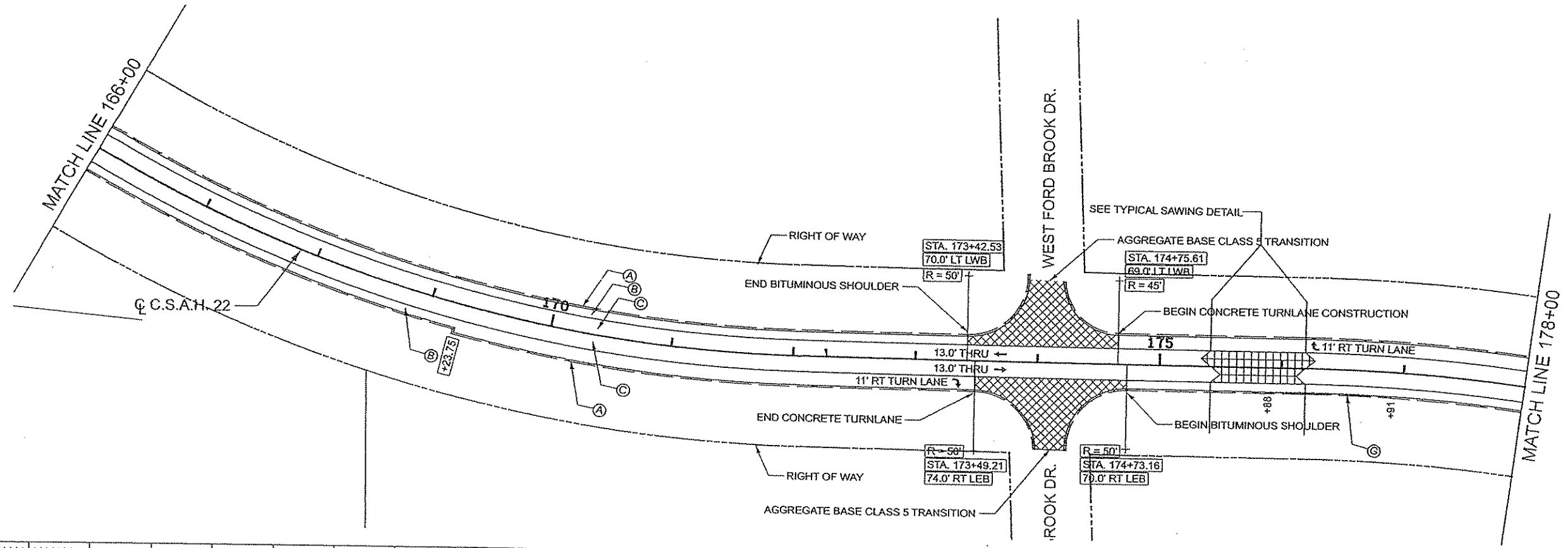
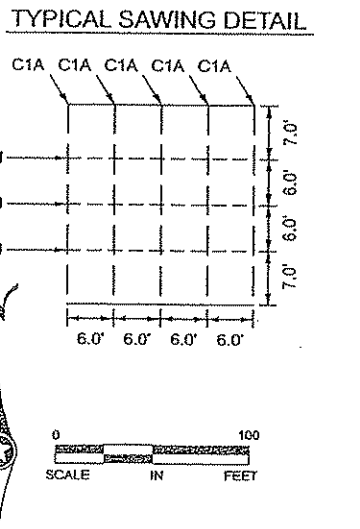
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STATE AID PROJECT NO. 02-622-31
CITY PROJECT NO. ** ** **
COUNTY PROJECT NO. ** ** **

12 OF 15

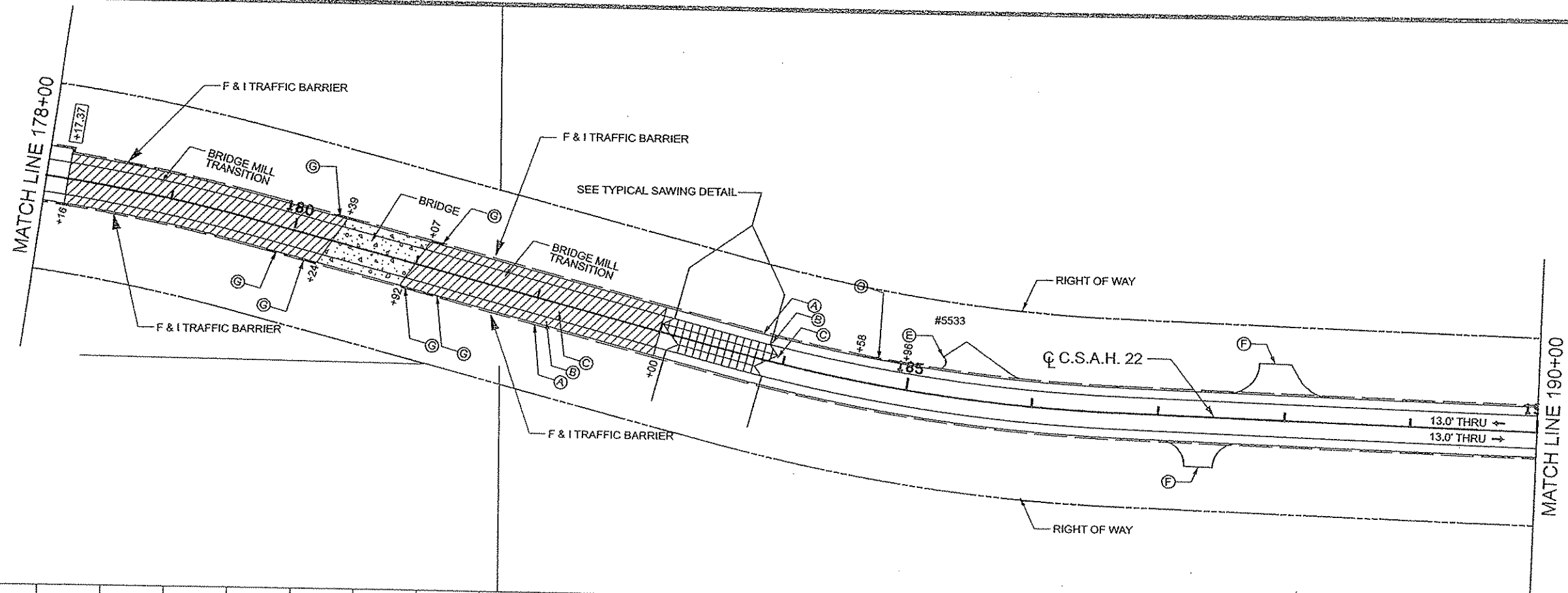
**CONSTRUCTION
PLAN AND PROFILE**
STA 154+00.00 TO 166+00.00

Sheet 45 of 62 Sheets

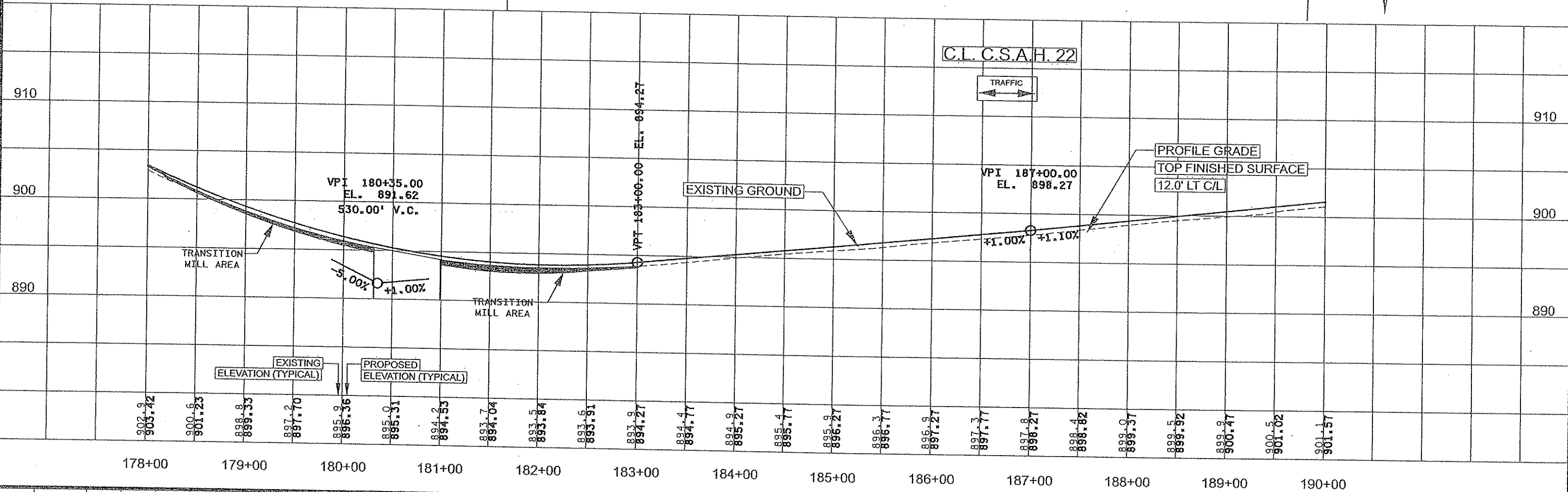
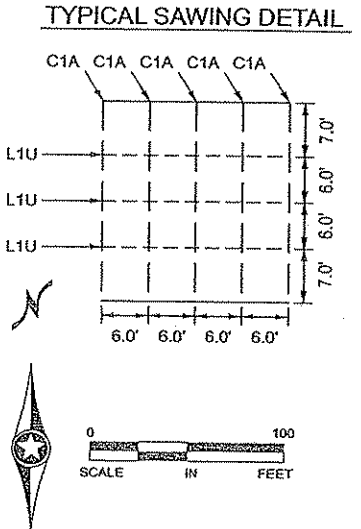
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 - (G) BITUMINOUS CURB



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NO	DATE	BY	CKD	APPR	REVISION				
					07/01/2010				

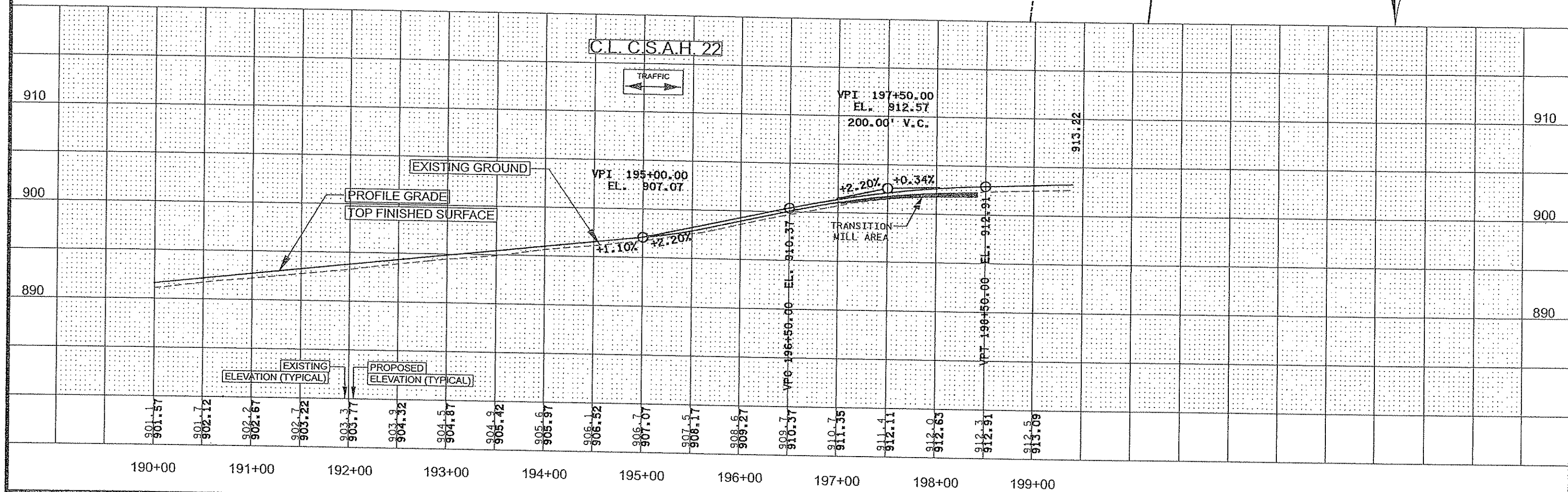
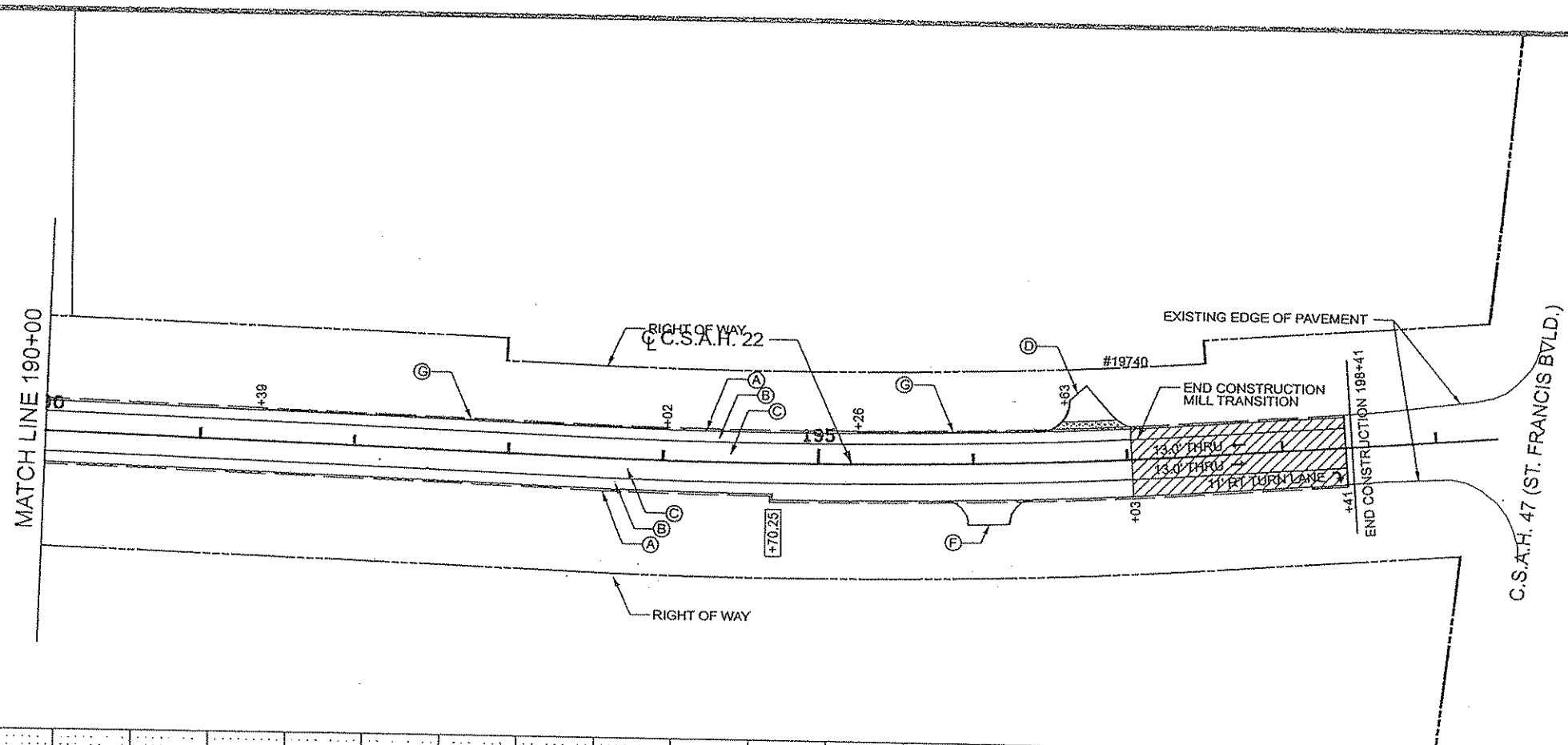
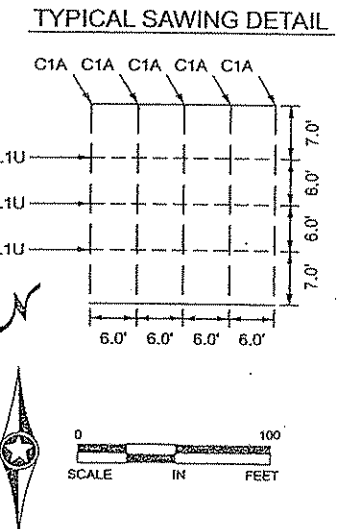


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PRINT NAME: CHARLES M. CADENHEAD JR.					DESIGN BY: BAV DATE: 03-18-08		STATE AID PROJECT NO. 02-622-31	
SIGNATURE: <i>Charles M. Cadenhead Jr.</i>					CHECKED BY: JEO DATE: 03-19-08		CITY PROJECT NO. ****	
DATE: 7/2/10 LICENSE NO. 40416							COUNTY PROJECT NO. ****	

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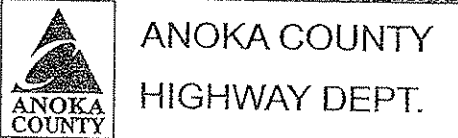
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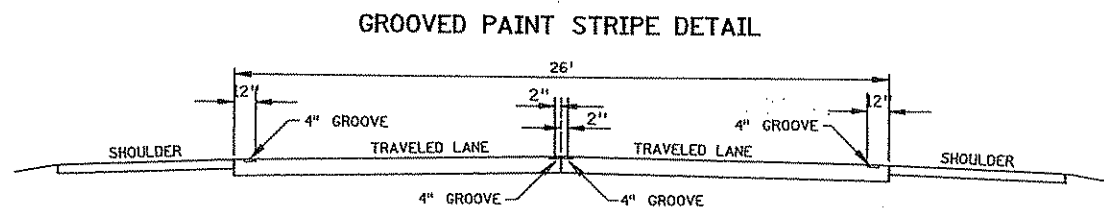
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PRINT NAME: CHARLES M. CADENHEAD, JR.
SIGNATURE: *[Signature]*
DATE: 7/2/10 LICENSE NO. 40418

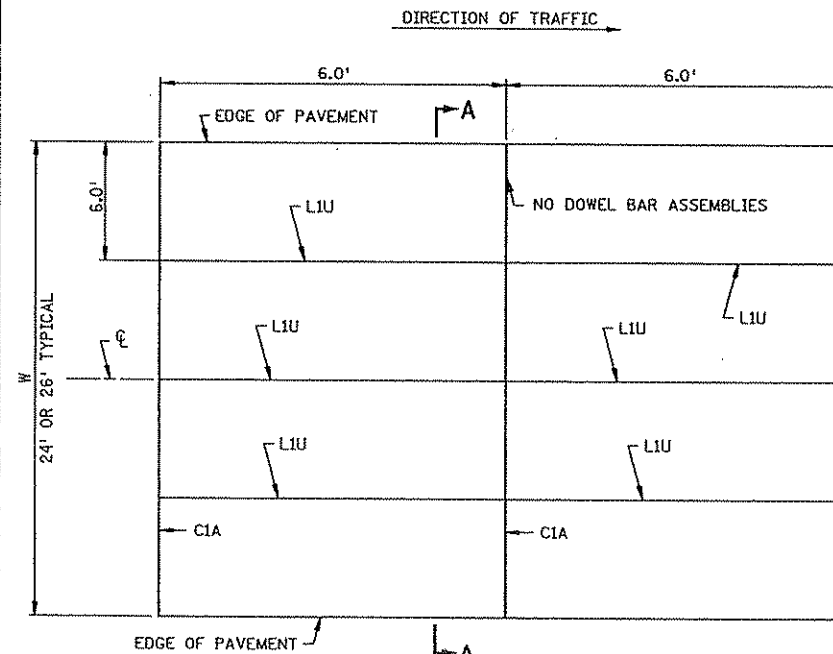
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DESIGN BY: BAV DATE: 03-18-08
CHECKED BY: JEG DATE: 03-19-08



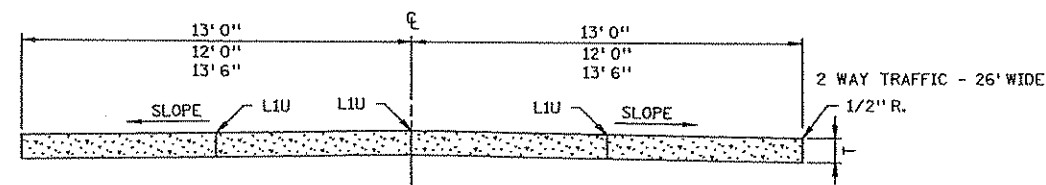
STATE PROJECT NO. **_**_**
STATE AID PROJECT NO. 02-622-31
CITY PROJECT NO. **_**_**
COUNTY PROJECT NO. **_**_**



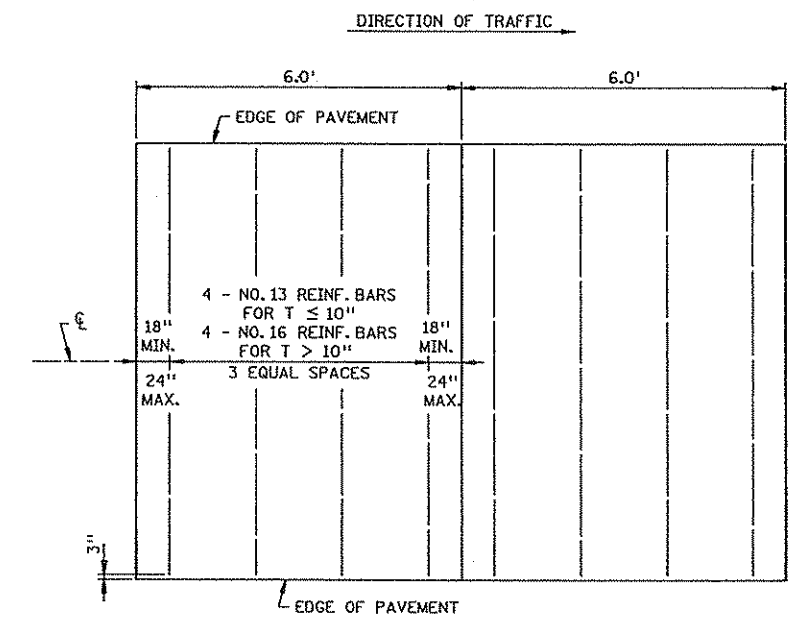
- 1) GROOVED PAINT AREA SHALL BE A MINIMUM OF 0.10 INCH TO A MAXIMUM OF 0.20 INCH IN DEPTH.
- 2) CONTRACTOR HAS THE OPTION OF GRINDING THE CONCRETE SURFACE OR FORMING A GROOVE IN THE FINISHING OPERATIONS.
- 3) THE CONTRACTOR SHALL BE REQUIRED TO HALT OPERATIONS AND MAKE ADJUSTMENTS WHEN THE GROOVE DEPTH MEASURES GREATER THAN THE MAXIMUM TOLERANCE OF 0.20 INCH.
- 4) IF CONTRACTOR CHOOSES TO USE A GROOVED FORM, AREAS OUTSIDE OF THE GROOVE TOLERANCE SHALL BE GROUND TO AN ACCEPTABLE DEPTH. DEPTH MEASUREMENT OF GROOVES FOR ACCEPTANCE SHALL BE MADE AFTER THE CONCRETE PAVEMENT HAS CURED.
- 5) THE CONTRACTOR SHALL ELIMINATE CONCRETE EDGELINE GROOVES AT INTERSECTIONS AS DIRECTED BY THE ENGINEER IN THE FIELD.
- 6) CENTERLINE GROOVES WILL BE SEPARATED, ONE ON EACH SIDE OF CENTERLINE.



MAINLINE PAVEMENT
UNDOWELED



SECTION A-A



SUPPLEMENTAL PANEL REINFORCEMENT

GENERAL NOTES:

- ALL REBARS ARE IN METRIC DESIGNATIONS
- SEE TYPICAL SECTIONS AND PLAN SHEETS FOR CROSS SLOPES AND PAVEMENT THICKNESS, T.
- WHEN RIGID PAVEMENT ADJOINS FLEXIBLE PAVEMENT, BRIDGE APPROACHES, R.R. CROSSINGS OR OTHER TYPES OF FREE ENDS, THE FOLLOWING MODIFICATIONS SHALL BE MADE: THE FIRST OR LAST 10 JOINTS SHALL BE DOWELED CONTRACTION JOINTS, C4E-D.
- DOWEL BAR ASSEMBLIES, WHEN REQUIRED, SHALL BE SIMILAR TO THOSE SHOWN ON STANDARD PLATE 1103.
- ALL REINFORCING BARS SHALL BE EPOXY COATED IN ACCORDANCE WITH SPEC. 3301 AND SHALL MEET THE REQUIREMENTS OF GRADE 60 FOR AASHTO M-31 OR M-53. FOR ADDITIONAL REINFORCEMENT OVER CULVERTS, SEE STANDARD PLATE 1070.
- TIE BARS:
USE NO. 13 BARS 2' 6" LONG, AT 2' 6" SPACING. FOR T ≤ 10" USE NO. 16 BARS 3' 0" LONG AT 2' 6" SPACING FOR T > 10".
- SUPPLEMENTAL PANEL REINFORCEMENT:
PLACE IN PANELS WHERE PAVEMENT WIDTH EXCEEDS 15.0' WITHOUT A LONGITUDINAL JOINT, AND IN THE MIDDLE LANE(S) WHERE TIED PAVEMENT WIDTH EXCEEDS 4 LANES. USE NO. 13 BARS FOR PAVEMENT THICKNESS 10" OR LESS. USE NO. 16 BARS FOR PAVEMENT THICKNESS GREATER THAN 10".
PLACEMENT DEPTH SHALL BE PLANNED T/2 ± 1".
NO MORE THAN TWO LANES SHALL BE PAVED AT THE SAME TIME.

NO	DATE	BY	CHKD	APPR	REVISION
1	7/13/2010	BAV	JEO	CMC	PLAN SHEET CHANGED PER MN/DOT COMMENTS.
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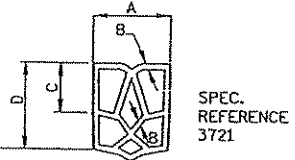
ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. **_**_**
 STATE AID PROJECT NO. 02-622-31
 CITY PROJECT NO. **_**_**
 COUNTY PROJECT NO. **_**_**

CONCRETE DETAIL
 Sheet 49 of 62 Sheets

PLOTTED/REVISED: \$\$\$@DATE@\$\$\$

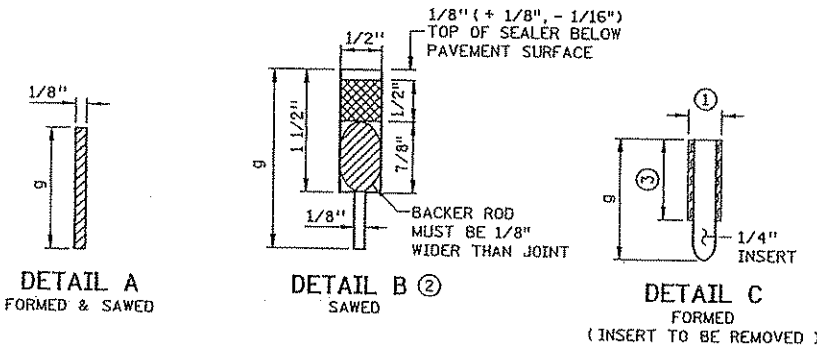
REQUIRED DIMENSIONS	
JOINT TYPE	TRANSVERSE
NOMINAL SEALER SIZE	1 1/16"
A	0.69" + 0.13" - 0.05"
B	0.08" ± 0.02"
C	0.25" MIN.
D	0.63" MIN.



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

CONTRACTION JOINT SEALER
PREFORMED ELASTIC TYPE

NOTES:
"A" DIMENSION SHALL APPLY AT ANY POINT THROUGHOUT "C" DEPTH. IN ITS FINAL POSITION, THE TOP CORNERS OF THE PREFORMED JOINT SEALER SHALL BE PLACED NOT LESS THAN 1/8 IN., NOR MORE THAN 5/16 IN. BELOW THE PAVEMENT SURFACE.
SHARP INTERNAL CORNERS WILL NOT BE PERMITTED. ALL CORNERS SHALL BE PROVIDED WITH SUITABLE FILLET. CURRENTLY APPROVED CONFIGURATIONS ARE ON FILE IN THE MATERIALS ENGINEERING SECTION, MINNESOTA DEPARTMENT OF TRANSPORTATION.



CONTRACTION JOINT CLASS DESIGNATION, DETAIL & SEALER SPEC. TABLE

CLASS DESIGNATION		JOINT DETAIL	JOINT SEALER SPEC.
WITHOUT DOWELS	WITH DOWELS		
C1A	C1A-D	A	UNSEALED
C2A	C2A-D	A	3725
C2B	C2B-D	B	3725
C2X	C2X-D	B OR C	3725
C30	C30-D	D	3721
C3X	C3X-D	C OR D	3721
C4E	C4E-D	E	3722

DOWEL BAR DIAMETER TABLE

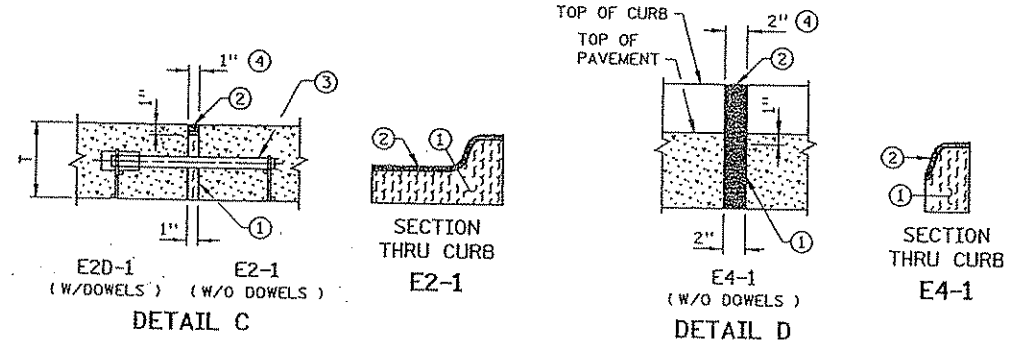
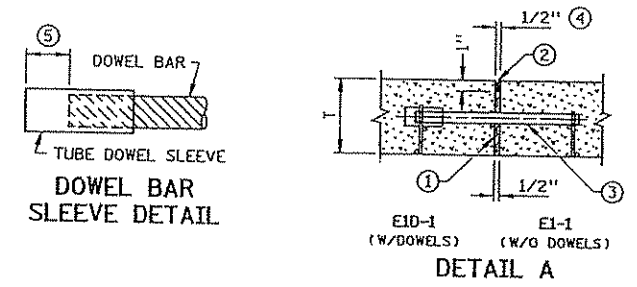
PAVEMENT THICKNESS T	DOWEL BAR DIAMETER
6" - 6 1/2"	1"
7" - 10"	1 1/4"
10 1/2" - 14"	1 1/2"

LEGEND
C = CONTRACTION JOINT
NO. = SEALANT TYPE
1 = UNSEALED
2 = 3725
3 = 3721
4 = 3722
LETTER = DETAIL
X = MORE THAN 1 DETAIL
-D = DOWEL BARS

NOTES:
① DESIGN C3X OR C3X-D - PRIOR TO INSTALLING PREFORMED JOINT SEALER IN THE FORMED JOINT (DETAIL C), THE JOINT SHALL BE WIDENED TO A NOMINAL WIDTH OF 3/8" BY SAWING ALONG THE FULL LENGTH OF THE FORMED JOINT.
DESIGN C2X OR C2X-D - PRIOR TO SEALING FORMED JOINT (DETAIL C) WITH HOT POUR SEALER THE JOINT SHALL BE WIDENED TO A NOMINAL WIDTH OF 1/2". SAW ALONG THE FULL LENGTH OF THE FORMED JOINT TO DEPTH OF 3/4" (+ 1/8", - 1/16"). THE SEALER SHALL BE FILLED TO THE SAME DEPTH AS SHOWN IN DETAIL B.
② DESIGN C2B OR C2B-D - PRIOR TO SEALING JOINT (DETAIL B) WITH HOT POUR JOINT SEALER, A 5/8" DIA. CLOSED CELL BACKER ROD SHALL BE PLACED SUCH THAT THE TOP OF THE BACKER ROD IS 5/8" BELOW THE SURFACE OF THE PAVEMENT.
③ WHEN USING PREFORMED JOINT SEALER, THE DEPTH SHALL BE 1/4" MORE THAN THE PREFORMED SEALER, WHEN COMPRESSED, TO FIT THE JOINT DESIGN WIDTH.
④ THE JOINT FACES SHALL BE CLEANED AND DRIED BY SANDBLASTING AND AIR BLASTING. PRIOR TO SEALING THE JOINT, A 1/2" DIA. CLOSED CELL BACKER ROD SHALL BE PLACED SUCH THAT THE TOP OF THE BACKER ROD IS 1/2" BELOW THE SURFACE OF THE PAVEMENT. NON SELF-LEVELING SILICONE SHALL BE TOOLED INTO THE JOINT MAINTAINING A SEALANT BEAD THICKNESS OF 1/4".

GENERAL NOTES:
SEE STANDARD PLATE 1103, DOWEL BAR ASSEMBLY. SEE STANDARD PLATE 1150, CONSTRUCTION OF HEADER JOINTS. SEE STANDARD PLANS 5-297.217 AND 5-297.219, CONCRETE MAINLINE/RAMP PAVEMENT.
SEE PAVING LAYOUTS IN THE PLANS FOR JOINT CLASS DESIGNATION TO BE USED AND SPECIAL REINFORCEMENT REQUIRED.
FOR UNBONDED OVERLAYS, THE JOINT DEPTH "g" SHALL BE T/3.
FOR CONCRETE PAVEMENT, THE JOINT DEPTH "g" SHALL BE T/4.

CONTRACTION JOINTS
DESIGN C



EXPANSION JOINTS

CLASS DESIGNATION		JOINT DETAIL	JOINT SEALER SPEC.
WITH DOWELS	WITHOUT DOWELS		
E1D-1	E1-1	A	3723
E2D-1	E2-1	C	3723
	E4-1	D	3723
E4D-1		E	3723
	E8S-1	⑥	3725

LEGEND
E = EXPANSION JOINT
NO. = JOINT REFERENCE
D = DOWEL BARS
S = CONCRETE SILL
-1 = HOT POURED SEAL
EXAMPLE
E1D-1
HOT POURED SEAL
DOWEL BARS
JOINT REFERENCE
EXPANSION JOINT

NOTES:
① PREFORMED JOINT FILLER MATERIAL, SPEC. 3702.
② JOINT SEALER SPEC. 3723. TOP OF SEALER, FLUSH TO 1/8" BELOW TOP OF PAVEMENT SURFACE. MAKE TOP OF SEALER FOR CURB SECTION E JOINTS FLUSH WITH SURFACE ± 1/8".
③ DOWEL BAR ASSEMBLY, SEE STANDARD PLATE 1103.
④ THE FIRST NUMBER IN THE JOINT DESIGNATION IS EQUAL TO HALF OF THE JOINT NUMBER IN 1/2" INTERVALS (I.E. E1 = 1/2", E2 = 1", E4 = 2", AND E8 = 4").
⑤ SPACE FROM END OF DOWEL BAR TO END OF SLEEVE TO BE EQUAL TO EXPANSION JOINT WIDTH.
⑥ SEE STANDARD PLAN 5-297.223 FOR E8S JOINT DETAIL.

EXPANSION JOINTS
DESIGN E

STANDARD SHEET NO. 5-297.221 (1 OF 2) TITLE: PAVEMENT JOINTS
STANDARD APPROVED: JUNE 6, 2005
CONTRACTION (DESIGN C) AND EXPANSION (DESIGN E)
STATE PROJ. NO. (TH) SHEET NO. OF SHEETS

DISTRICT: \$\$\$@DISTRICT@\$\$\$
USER NAME: \$\$\$@USER@\$\$\$
PATH & FILENAME: \$\$\$@PATH@\$\$\$
FILE NAME: \$\$\$@FILE@\$\$\$

NO	DATE	BY	CHKD	APPR	REVISION

NAME: p:\whitotop 22 5-47\plan\Whitotop_DET.dgn
07/01/2010 3:49:55 PM

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CITY PROJECT NO. ****
COUNTY PROJECT NO. ****

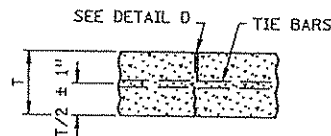
CONCRETE DETAIL
Sheet 50 of 62 Sheets

LONGITUDINAL JOINT CLASS DESIGNATION, DETAIL & SEALER SPECIFICATION TABLE

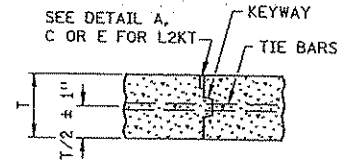
CLASS DESIGNATION				JOINT DETAIL	JOINT SEALER SPECIFICATION
WITHOUT TIE BARS	WITH TIE BARS	WITH KEYWAY & TIE BARS	BUTTED		
L1H	L1TH			B	3723
		L2KTH		D OR E	3723
		L2KTS		C	3722
			L3H	D OR E	3723
			L3S	C	3722
L4S				F	3722

LEGEND
 L = LONGITUDINAL JOINT
 NO. = JOINT REFERENCE
 K = KEYWAY
 T = TIE BARS
 U = UNSEALED
 H = HOT POUR (SEALANT)
 S = SILICONE (SEALANT)

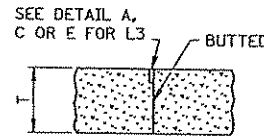
JOINT REFERENCE NUMBERS
 1 = SAWED TO A DEPTH OF T/3
 2 = KEYED CONSTRUCTION JOINT
 3 = BUTTED CONSTRUCTION JOINT
 4 = SAWED TO A DEPTH OF T/2



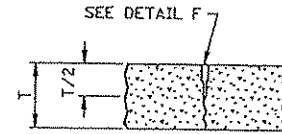
L1 & L1T



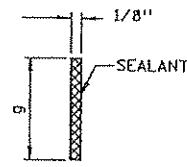
L2KT



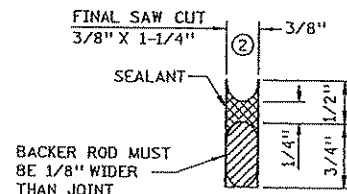
L3



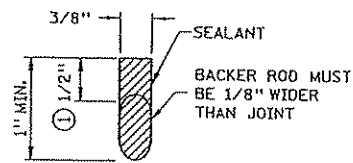
L4



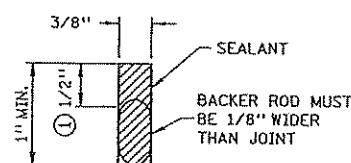
DETAIL B
(SAWED & SEALED WITH SPEC. 3723)



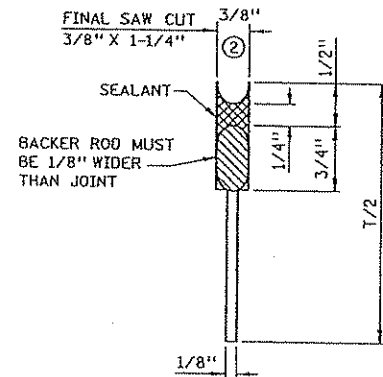
DETAIL C
(SAWED AND SEALED WITH SPEC. 3722)



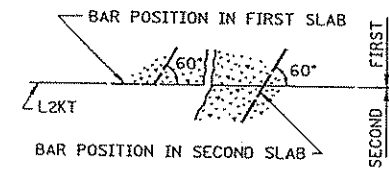
DETAIL D
(FORMED & SEALED WITH SPEC. 3723)



DETAIL E
(SAWED & SEALED WITH SPEC. 3723)



DETAIL F
(SAWED AND SEALED WITH SPEC. 3722)



TIE BAR BENDING DETAIL

LONGITUDINAL JOINT NOTES:

ALL REBARS ARE IN METRIC DESIGNATIONS

THE TIE BAR SPACING FOR ALL L2KT JOINTS SHALL BE 2' - 6" CENTER TO CENTER AND BENT 60° AS SHOWN, EXCEPT WHEN NOTED OTHERWISE IN THE PLANS.

TIE BARS IN THE L2KT JOINTS SHALL BE THE SAME SIZE AND LENGTH AS USED FOR THE L1T JOINTS, WHEN TYING PAVEMENT TO PAVEMENT. TIE BARS IN THE L2KT JOINTS SHALL BE NO. 13 X 2' - 6", WHEN TYING CURB & GUTTER TO PAVEMENT.

ALL TIE BARS SHALL MEET THE REQUIREMENTS OF GRADE 60 FOR AASHTO M-31 OR M-53.

NORMALLY, TIED PAVEMENT WIDTHS SHALL NOT EXCEED FOUR LANES, EXCEPT BRIDGE APPROACH PANELS AND PAVEMENT TAPERS.

JOINT WIDTH TOLERANCE IS + 1/16 IN. TO - 1/32 IN.

FOR CONCRETE PAVEMENT THE JOINT DEPTH "D" SHALL BE T/3 INCHES.

SPEC. 3723 SEALER - TOP OF SEALER FLUSH TO - 3/16 IN. BELOW TOP OF PAVEMENT SURFACE.

- ① THE JOINT FACES SHALL BE CLEANED AND DRIED BY SANDBLASTING AND AIR BLASTING. PRIOR TO SEALING THE JOINT, A CLOSED CELL BACKER ROD CAPABLE OF WITHSTANDING SEALANT TEMPERATURES OF 400 DEGREES F, WITH A DIAMETER 1/8 IN. LARGER THAN THE JOINT OPENING, MAY BE PLACED 1/2 IN. BELOW THE TOP OF THE PAVEMENT.
- ② THE JOINT FACES SHALL BE CLEANED AND DRIED BY SANDBLASTING AND AIR BLASTING. PRIOR TO SEALING THE JOINT, A 1/2 IN. DIAMETER CLOSED CELL BACKER ROD SHALL BE PLACED SUCH THAT THE TOP OF THE BACKER ROD IS 1/2 IN. BELOW THE SURFACE OF THE PAVEMENT. NON-SELF-LEVELING SILICONE SHALL BE TOOLED INTO THE JOINT MAINTAINING A SEALANT BEAD THICKNESS OF 1/4 IN.

GENERAL NOTES:

SEE STANDARD PLATE 1103, DOWEL BAR ASSEMBLY. SEE STANDARD PLATE 1141, PAVEMENT KEYWAY. SEE STANDARD PLANS 5-297.217 AND 5-297.219 FOR CONCRETE MAINLINE AND RAMP PAVEMENT.

SEE PAVING LAYOUTS IN THE PLANS FOR JOINT CLASS DESIGNATIONS TO BE USED & SPECIAL REINFORCEMENT REQUIRED.

PLOTTED/REVISED: *****DATE*****

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 USER NAME: \$\$\$USER\$NAME\$\$\$
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FILE NAME: @FILENAME@

STANDARD SHEET NO. 5-297.221 (2 OF 2)	TITLE PAVEMENT JOINTS LONGITUDINAL (DESIGN L)
STANDARD APPROVED: JUNE 6, 2005	
STATE PROJ. NO. _____ (TH) _____	SHEET NO. OF SHEETS

NO	DATE	BY	CKD	APPR	REVISION

NAME: p:\whitlop\22 5-47\plan\Whitlop_DET.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 M. CADENHEAD JR.
 SIGNATURE: *[Signature]*
 DATE: 7/2/10 LICENSE NO. 40416

DRAWN BY: BAW DATE: _____
 DESIGN BY: BAW DATE: _____
 CHECKED BY: JEO DATE: _____



ANOKA COUNTY
 HIGHWAY DEPT.

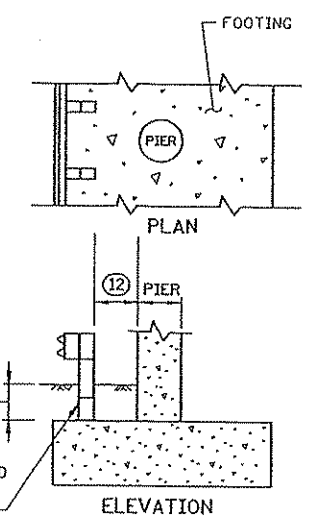
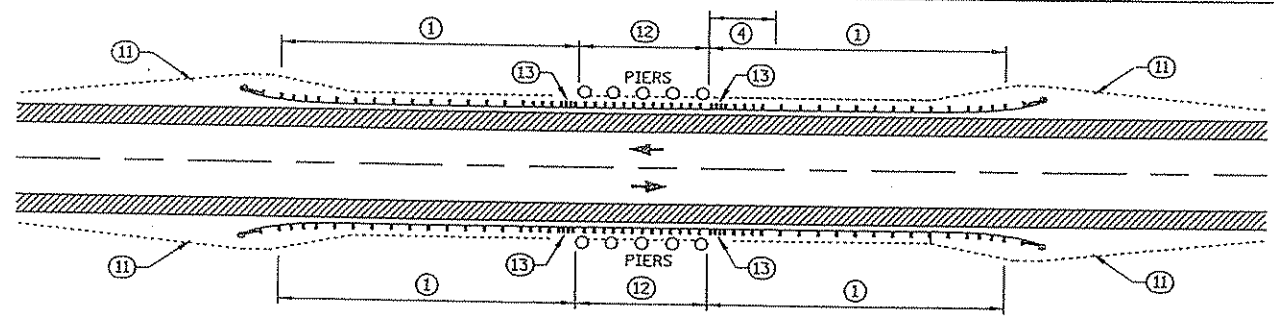
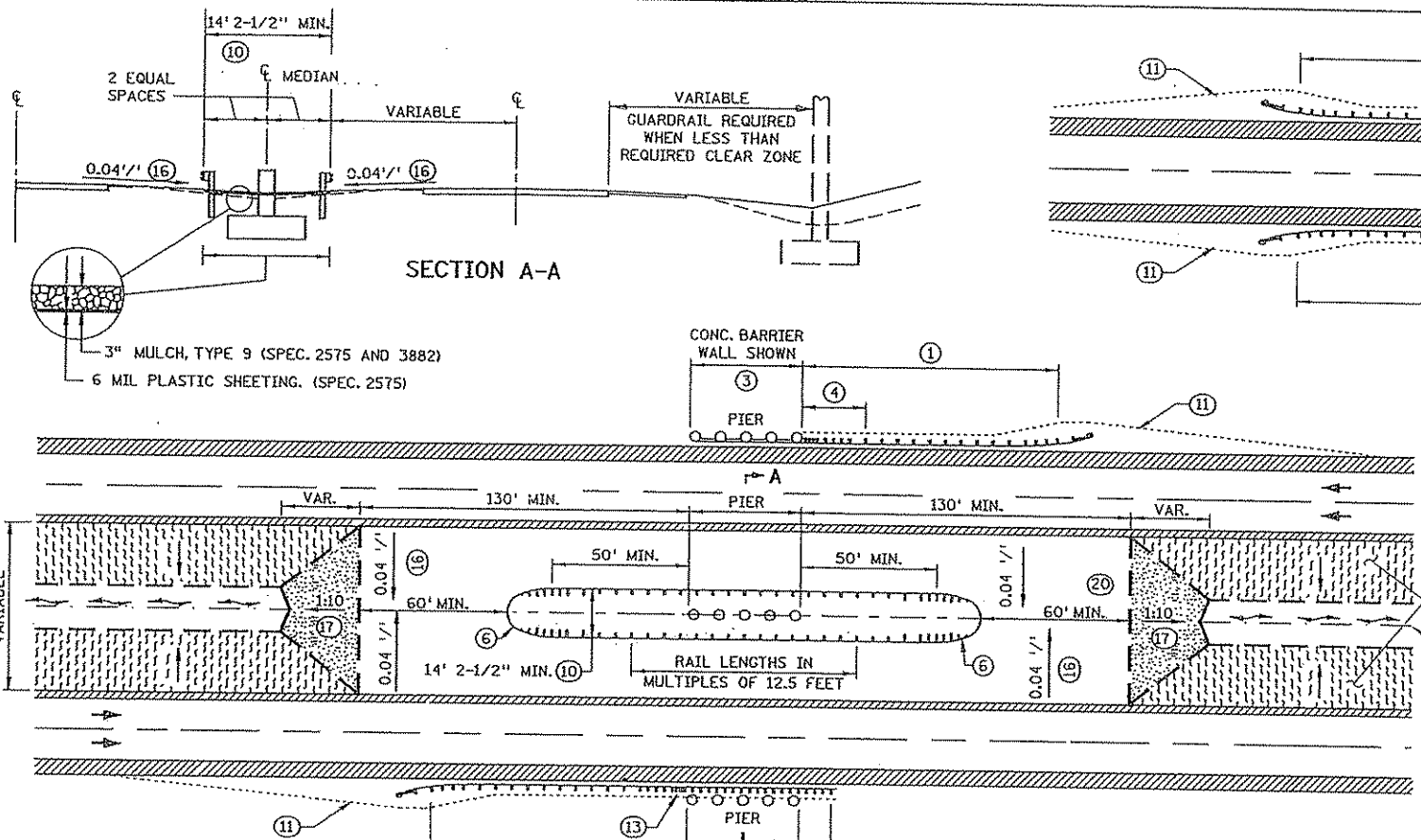
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 STATE AID PROJECT NO. 02-622-31
 CITY PROJECT NO. ****-**-**
 COUNTY PROJECT NO. ****-**-**

CONCRETE DETAIL
 Sheet 51 of 62 Sheets

PLOTTED/REVISED:
\$\$\$\$DATE\$\$\$\$

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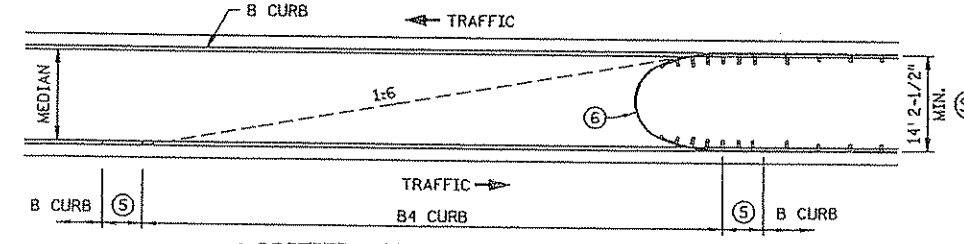
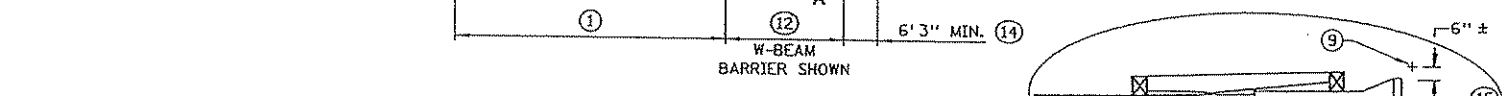
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ESTIMATED DESIGN DEFLECTION TABLE FOR DESIGN B W-BEAM GUARDRAIL

6' 3" POST SPACING	3' 0"
6' 3" POST SPACING WITH DOUBLE NESTED RAIL	2' 8"
MODIFIED 3' 1-1/2" POST SPACING	2' 3"
MODIFIED POST SPACING WITH DOUBLE NESTED RAIL	2' 0"

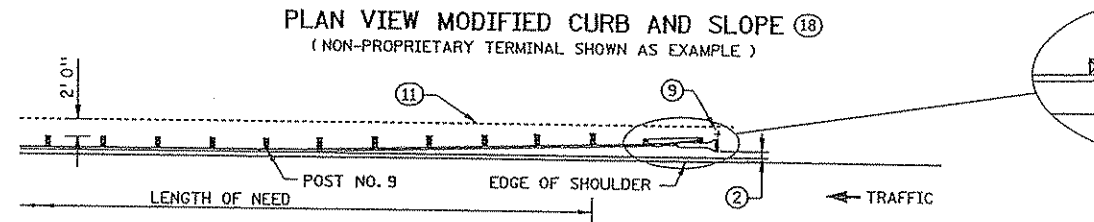
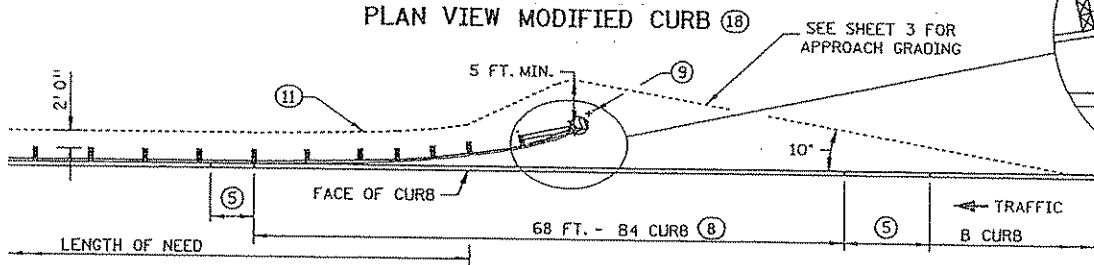
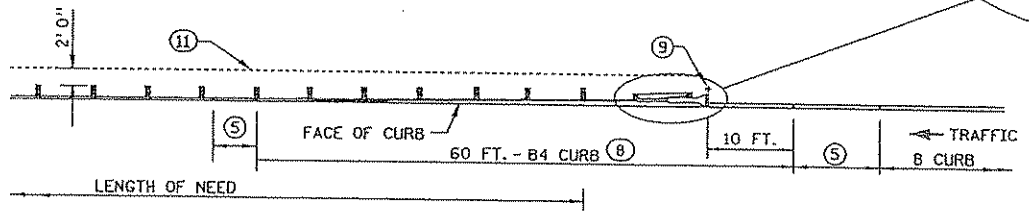
POST SEAT SEE STANDARD PLATE 8316 IF REQUIRED



MODIFIED CURB AT RAISED MEDIAN

NOTES:

- ALL GUARDRAIL POSTS SHALL BE 6 FT. 3 IN. CENTER TO CENTER (DESIGN B), EXCEPT WHERE NOTED.
- THE LATEST APPROVED VERSION OF STANDARD PLATES SHOWN OR AS INDICATED IN THE PLANS SHALL APPLY.
- ① FOR REQUIRED LENGTH OF INSTALLATION SEE ROAD DESIGN MANUAL CHAPTER 10.
- ② THE LAST 50 FT. OF TANGENT TERMINALS MAY BE FLARED AT 1:50 TAPER.
- ③ CONC. BARRIER WALL BETWEEN PIER COLUMNS MAY BE USED, STD. PLAN 5-297.610. SEE SHEET NO. ___ FOR WALL DETAILS. CONNECT GUARDRAIL TO BARRIER WALL ANCHORAGE PLATE, SEE SHEET NO. ___ FOR DETAILS.
- ④ AN APPROVED TRANSITION MUST BE USED.
- ⑤ 10 FT. CURB TRANSITION, USE IF ADJACENT CURB IS GREATER THAN 4 INCHES.
- ⑥ THREE BEAM BULLNOSE. SEE SHEET NO. ___ FOR DETAILS.
- ⑦ IF EMBEDMENT IS GREATER THAN 3 FT. 0 IN. OR IF EMBEDMENT IS 2 FT. 6 IN. TO 3 FT. 0 IN. AND ADJACENT POSTS ARE EMBEDDED 3 FT. 0 IN. OR MORE, POST SEAT IS NOT REQUIRED.
- ⑧ FOR CURB 6 IN. OR HIGHER, MILL TO 3 IN. HEIGHT.
- ⑨ SNOWPLOW MARKER (X4-5) WITH A 2 LB./FT. DELINEATOR POST 8 FT. LONG (SPEC. 3401) DRIVEN INTO THE GROUND. EXTEND 3 FT. ABOVE TERMINAL. THE MARKER IS INCIDENTAL FOR WHICH NO DIRECT PAYMENT WILL BE MADE.
- ⑩ MEASUREMENT IS FROM BACK OF RAIL TO BACK OF RAIL.
- ⑪ 1:10 OR FLATTER SLOPE P.L.
- ⑫ SEE ESTIMATED DESIGN DEFLECTION TABLE FOR DESIGN B W-BEAM GUARDRAIL.
- ⑬ WHEN CLOSE POST SPACING OR DOUBLE NESTED RAIL IS USED, THIS POST SPACING SHOULD EXTEND A MINIMUM OF 12 FT. IN THE DIRECTION OF APPROACHING TRAFFIC.
- ⑭ THE ANCHOR ASSEMBLY MUST BE LOCATED DOWNSTREAM OF THE HAZARD.
- ⑮ MARK THE APPROACH END OF PLATE BEAM GUARDRAIL INSTALLATIONS WITH A STRIPED OBJECT MARKER SIZED TO FIT THE END TERMINAL, HAVING ALTERNATING BLACK AND REFLECTIVE YELLOW (WIDE ANGLE PRISMATIC RETROREFLECTIVE SHEETING) STRIPES SLOPED DOWNWARD AT A 45 DEGREE ANGLE TOWARD THE SIDE ON WHICH TRAFFIC PASSES. FOR FLAT END TREATMENTS THE OBJECT MARKER SHALL FIT INSIDE THE RECESSED AREA. FOR ROUNDED END TREATMENTS THE OBJECT MARKER SHALL WRAP AROUND THE CIRCULAR END AND BE MOUNTED SO THE TOP OF THE OBJECT MARKER LINES UP WITH THE TOP OF THE END TREATMENT.
- ⑯ 0.04 FT./FT. CROSS SLOPE TYPICAL. 0.10 FT./FT. CROSS SLOPE MAXIMUM.
- ⑰ 1:10 SLOPE OR FLATTER.
- ⑱ USE ONLY FOR RETROFITS WITH SITE RESTRICTIONS. FOR RETROFITS WITHOUT SITE RESTRICTIONS AND NEW CONSTRUCTION, SEE SHEET 3.
- ⑲ MEDIAN GRADING DETAIL SHOWN APPLIES TO THREE-BEAM BULLNOSE ONLY.
- ⑳ DRAINAGE DETAILS SHOWN ON GRADING PLAN.



STANDARD SHEET NO. 5-297.601 (1 OF 3)
STANDARD APPROVED: AUGUST 17, 2005

GUARDRAIL INSTALLATIONS AT MEDIANS AND END TREATMENTS

STATE PROJ. NO. (TH) SHEET NO. OF SHEETS

NO	DATE	BY	CKD	APPR	REVISION
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DATE: 07/01/2010 3:49:57 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 M. CADENHEAD JR.
SIGNATURE: *[Signature]*
DATE: 7/2/10 LICENSE NO. 40416

DRAWN BY: BAV DATE: _____
DESIGN BY: BAV DATE: _____
CHECKED BY: JEO DATE: _____

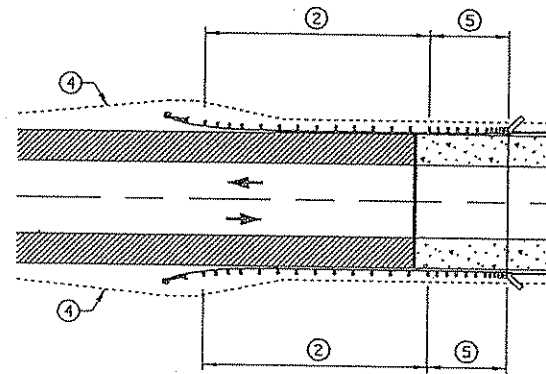


**ANOKA COUNTY
HIGHWAY DEPT.**

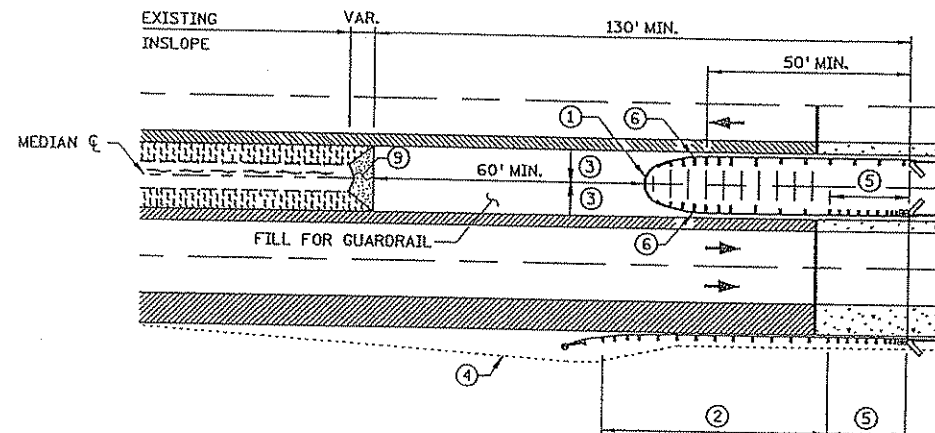
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STATE AID PROJECT NO. 02-622-31
CITY PROJECT NO. **_**_**
COUNTY PROJECT NO. **_**_**

GUARDRAIL DETAILS
Sheet 52 of 62 Sheets

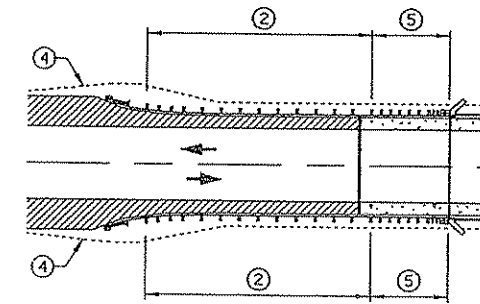
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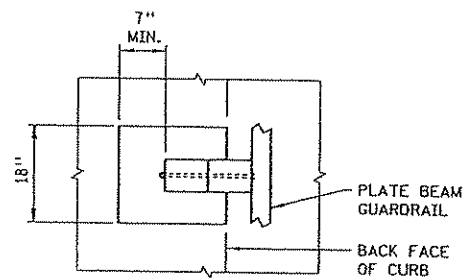
TWO - WAY BRIDGE
 WITH FULL SHOULDERS



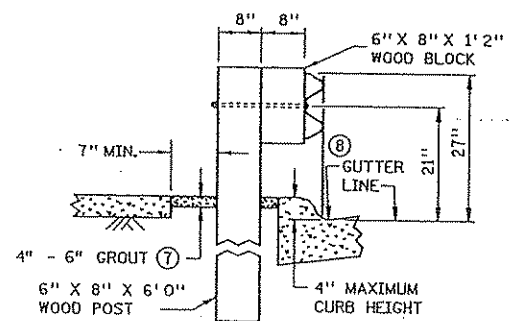
ONE - WAY BRIDGE
 WITH FULL RIGHT SHOULDER
 (FOR 14' 2-1/2" THRIE BEAM BULLNOSE)



TWO - WAY BRIDGE
 WITHOUT FULL SHOULDERS

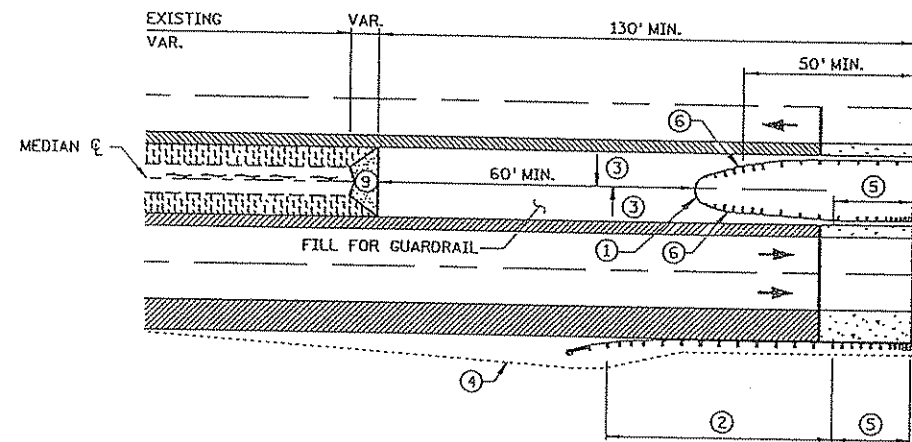


PLAN VIEW



ELEVATION

TYPICAL SECTION AT POST
 SET IN CONCRETE



ONE - WAY BRIDGE
 WITH FULL RIGHT SHOULDER
 (FOR MEDIANS WIDER THAN 14' 2-1/2" THRIE BEAM BULLNOSE)

NOTES:

- ALL GUARDRAIL POSTS SHALL BE 6 FT. 3 IN. CENTER TO CENTER (DESIGN B), EXCEPT WHERE NOTED.
- THE LATEST APPROVED VERSION OF STANDARD PLATES SHOWN OR AS INDICATED IN THE PLANS SHALL APPLY.
- ① THRIE BEAM BULLNOSE, SEE SHEET NO. ___ FOR DETAILS.
- ② FOR THE REQUIRED LENGTH SEE ROAD DESIGN MANUAL CHAPTER 10.
- ③ 0.04 FT./FT. CROSS SLOPE TYPICAL, 0.10 FT./FT. CROSS SLOPE MAXIMUM.
- ④ 1:10 OR FLATTER SLOPE P.I.. APPROACH GRADING VARIES WITH TERMINAL TYPE.
- ⑤ PLATE BEAM GUARDRAIL ATTACHMENTS TO FIXED OBJECTS REQUIRE AN APPROVED TRANSITION SECTION.
- ⑥ FOR MEDIANS WIDER THAN THE 14 FT. 2-1/2 IN., BEFORE TAPERING THE APPROACH SIDE TAPER THE OPPOSING SIDE AS SHOWN ON THE BULLNOSE DESIGN DETAIL. APPROACH TAPER SHOULD NOT EXCEED 1:25 IF THE BARRIER IS WITHIN THE SHY LINE OR 1:15 IF IT IS OUTSIDE.
- ⑦ TWO-SACK GROUT MIX (BY VOLUME: 1 PART CEMENT, 14 PARTS SAND, 5 PARTS WATER).
- ⑧ PLACE FRONT FACE OF W-BEAM DIRECTLY ABOVE FRONT FACE OF CURB.
- ⑨ 1:10 SLOPE OR FLATTER.

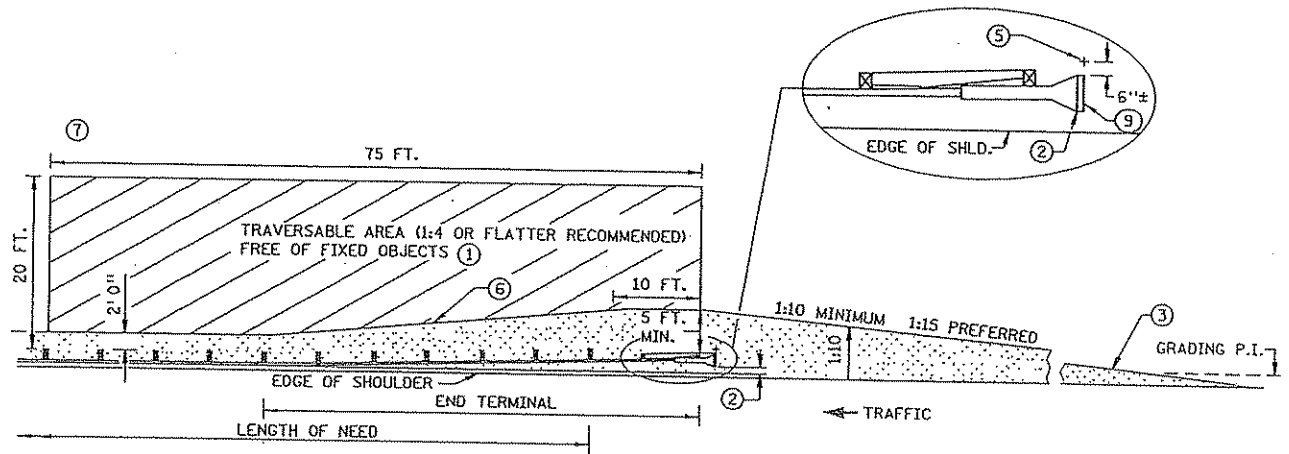
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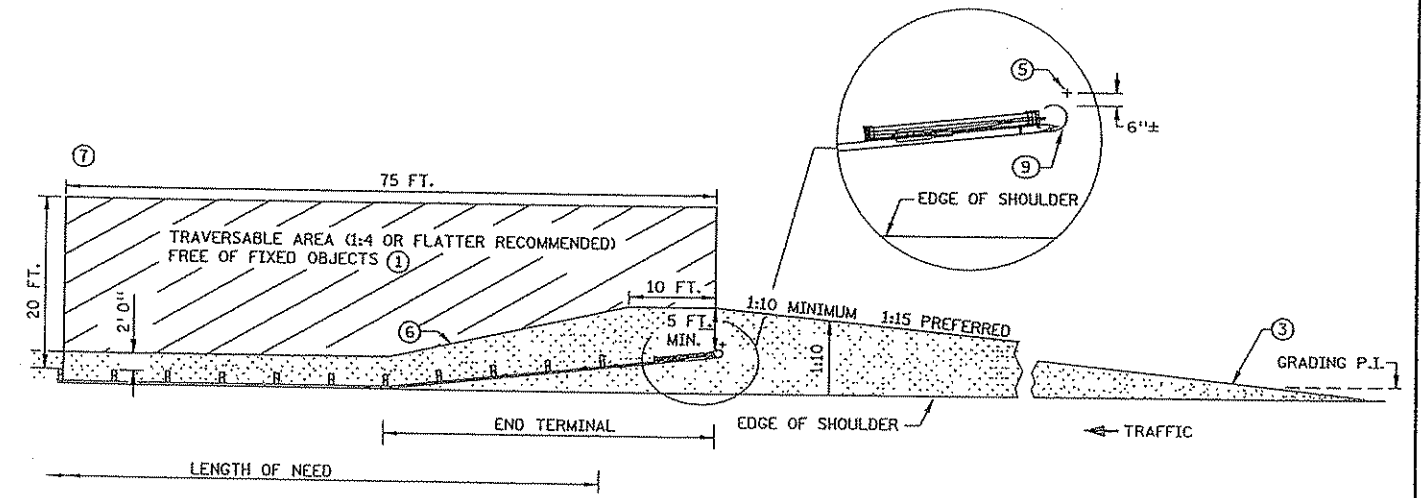
STANDARD SHEET NO. 5-297.601 (2 OF 3)	TITLE: GUARDRAIL INSTALLATIONS AT MEDIANS AND END TREATMENTS
STANDARD APPROVED: AUGUST 17, 2005	
STATE PROJ. NO.	(TH) SHEET NO. OF SHEETS

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. CADENHEAD JR. SIGNATURE: <i>[Signature]</i> DATE: 7/2/10 LICENSE NO. 40416					DRAWN BY: BAV DATE: _____ DESIGN BY: BAV DATE: _____ CHECKED BY: JEO DATE: _____		STATE PROJECT NO. ***_***_** STATE AID PROJECT NO. 02-622-31 CITY PROJECT NO. ***_***_** COUNTY PROJECT NO. ***_***_**	GUARDRAIL DETAILS Sheet 53 of 62 Sheets
NO DATE BY CKD APPR REVISION NAME: p:\white\top 22 5-47\plan\White\top_DET.dgn 07/01/2010 3:49:58 PM								

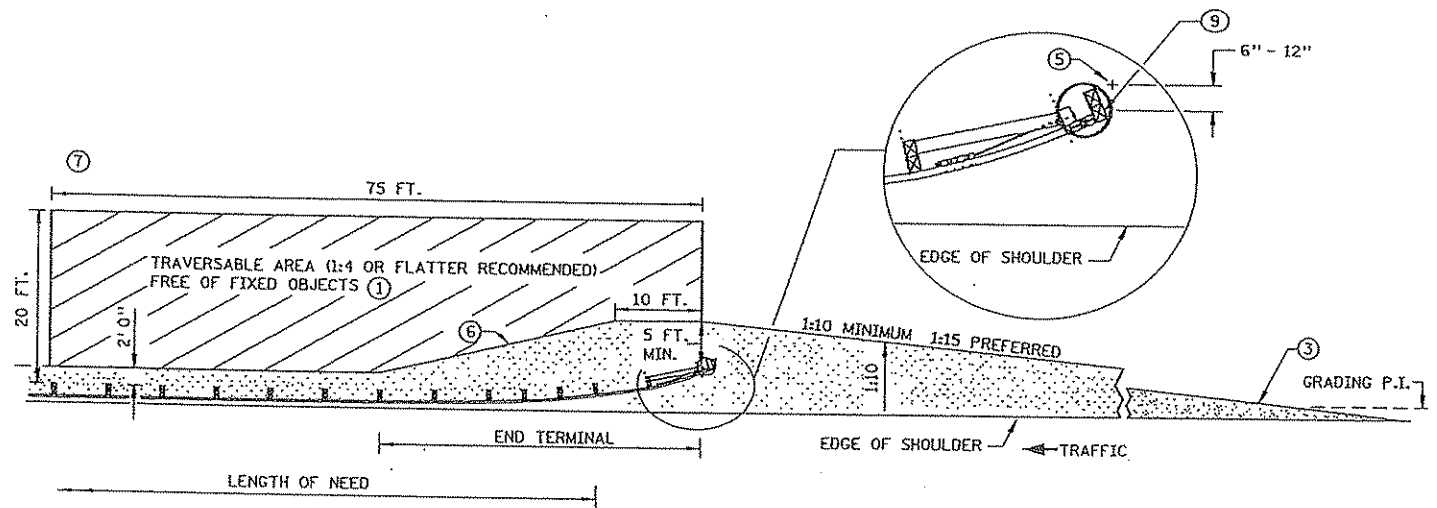
PLOTTED/REVISED:
 \$\$\$@DATE\$\$\$



PLAN VIEW
 (PROPRIETARY TANGENT TERMINAL SHOWN AS EXAMPLE)



PLAN VIEW ⑧
 (PROPRIETARY FLARED TERMINAL SHOWN AS EXAMPLE)



PLAN VIEW ④ ⑧
 (ELT)

NOTES:

- ALL CROSS SLOPES ARE IN FOOT/FOOT UNLESS OTHERWISE NOTED.
- ALL GUARDRAIL POSTS SHALL BE 6 FT. 3 IN. CENTER TO CENTER (DESIGN B), EXCEPT WHERE NOTED.
- CHANGES TO SUBJECTS COVERED BY THIS SHEET INDICATED IN THE PLANS OR ON PLATES WITH MORE RECENT APPROVAL DATES SHALL APPLY.
- GRADING AND DRAINAGE HARDWARE ARE NOT INCIDENTAL TO GUARDRAIL INSTALLATION.
- ① SLOPES BETWEEN 1:3 AND 1:4 PERMITTED WHEN 1:4 OR FLATTER IS NOT POSSIBLE. FOR SLOPES STEEPER THAN 1:3 THE AREA IMMEDIATELY BEHIND AND BEYOND THE END TERMINAL SHOULD, AT LEAST, BE SIMILAR IN CROSS SECTION TO THE UNSHIELDED ROADSIDE AREA UPSTREAM OF THE END TERMINAL.
- ② THE LAST 50 FT. OF TANGENT TERMINALS CAN BE FLARED AT 1:50 TAPER.
- ③ WHEN GRADING PLATFORMS ARE BUILT, THEY MUST BE SMOOTHLY TRANSITIONED TO EXISTING SIDE SLOPE SO THE ENTIRE ROADSIDE APPROACH TO THE BARRIER REMAINS TRAVERSABLE, AS WELL AS THE AREA IMMEDIATELY BEHIND IT.

- ④ SEE STANDARD PLATE 8329.
- ⑤ SNOWPLOW MARKER (X4-5) WITH A 2 LB./FT. DELINEATOR POST 8 FT. LONG (SPEC. 340J) DRIVEN INTO THE GROUND. EXTEND 3 FT. ABOVE TERMINAL. THE MARKER IS INCIDENTAL FOR WHICH NO DIRECT PAYMENT WILL BE MADE. MARK BOTH THE BEGINNING AND END OF PLATE BEAM GUARDRAIL INSTALLATION.
- ⑥ 1:10 OR FLATTER SLOPE P.I..
- ⑦ GRADUALLY BLEND SLOPE FROM TRAVERSABLE AREA TO STEEP EXISTING SLOPE (WHEN SLOPE IS STEEPER THAN 1:6).
- ⑧ IF THE TERRAIN BEYOND THE TERMINAL END AND IMMEDIATELY BEHIND THE BARRIER IS NOT SAFELY TRAVERSABLE, A TANGENT (ENERGY- ABSORBING) TERMINAL SHALL BE USED.

- ⑨ MARK THE APPROACH END OF PLATE BEAM GUARDRAIL INSTALLATIONS WITH A STRIPED OBJECT MARKER SIZED TO FIT THE END TERMINAL, HAVING ALTERNATING BLACK AND REFLECTIVE YELLOW (WIDE ANGLE PRISMATIC RETROREFLECTIVE SHEETING). STRIPES SHALL SLOPE DOWNWARD AT A 45 DEGREE ANGLE TOWARD THE SIDE ON WHICH TRAFFIC PASSES. FOR FLAT END TREATMENTS THE OBJECT MARKER SHALL FIT INSIDE THE RECESSED AREA. FOR ROUNDED END TREATMENTS THE OBJECT MARKER SHALL WRAP AROUND THE CIRCULAR END AND BE MOUNTED SO THE TOP OF THE OBJECT MARKER LINES UP WITH THE TOP OF THE END TREATMENT.

DISTRICT #: \$\$\$DISTRICT\$\$\$
 USER NAME: \$\$\$USER\$\$\$
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STANDARD SHEET NO. 5-297.601 (3 OF 3)	TITLE: GUARDRAIL INSTALLATIONS AT MEDIANS & END TREATMENTS (FOR NEW CONSTRUCTION AND RETROFITS WITHOUT SITE RESTRICTIONS)
STANDARD APPROVED: AUGUST 17, 2005	
STATE PROJ. NO. _____	(TH _____) SHEET NO. _____ OF _____ SHEETS

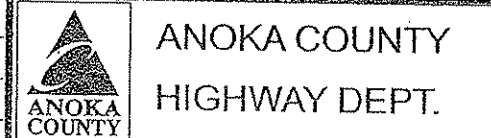
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I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.


PRINT NAME: CHARLES M. CADENHEAD JR.
 SIGNATURE: *[Signature]*
 DATE: 7/2/10 LICENSE NO. 40416

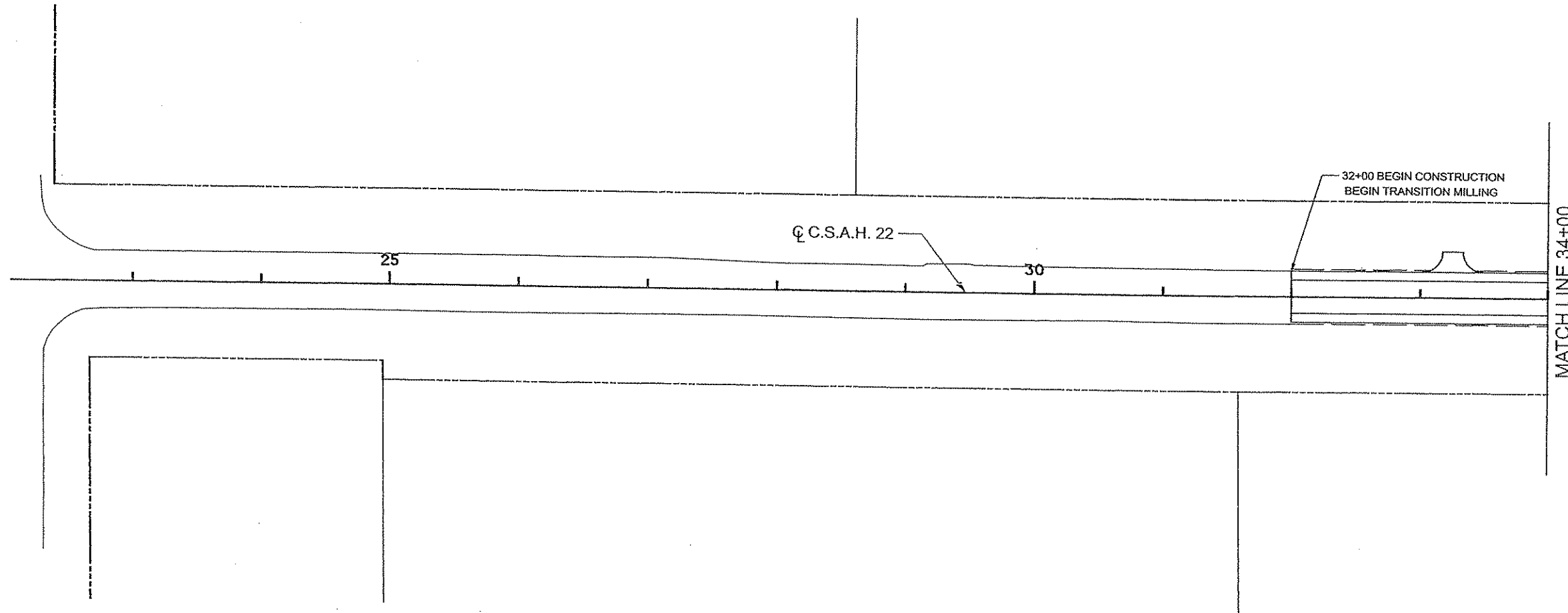
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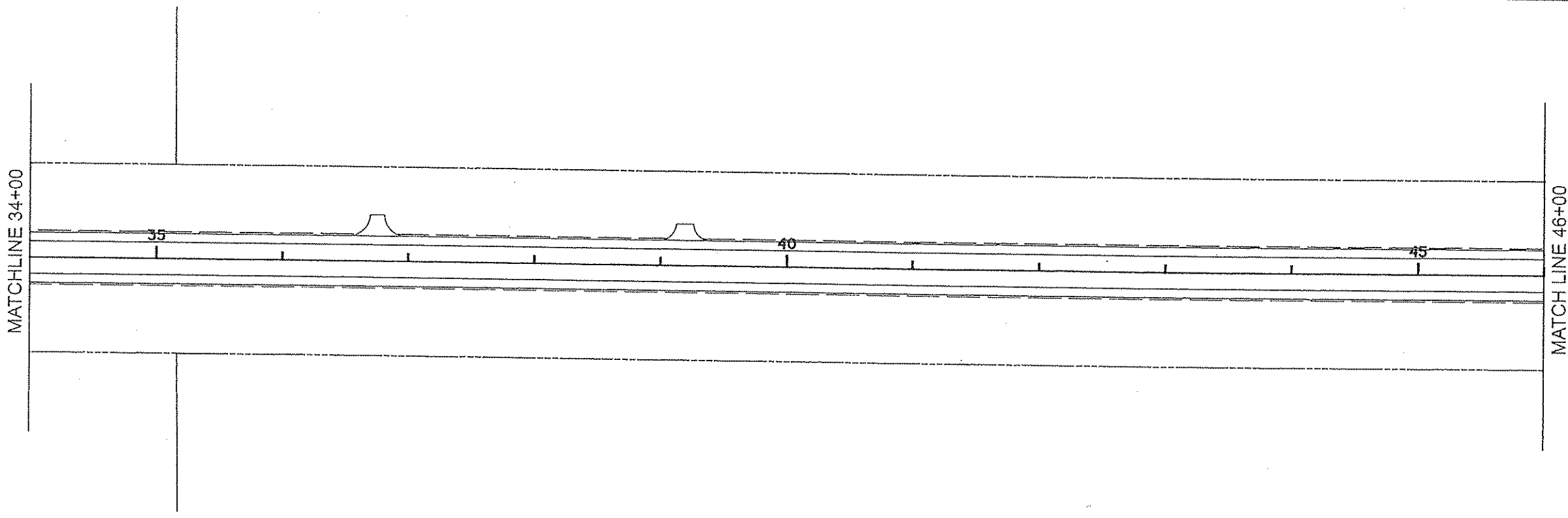
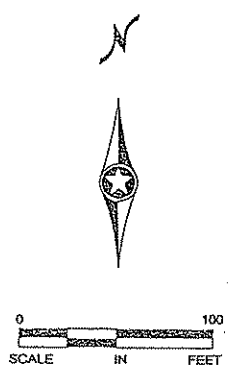
STATE PROJECT NO. _____ **_**_**
 STATE AID PROJECT NO. 02-622-31
 CITY PROJECT NO. _____ **_**_**
 COUNTY PROJECT NO. _____ **_**_**

GUARDRAIL DETAILS
 Sheet 54 of 62 Sheets

CONSTRUCTION NOTES:
 SUPERELEVATION
 ALL STATIONING BASED ON PROPOSED CENTERLINE FOR E.B. C.S.A.H. 22



MATCH LINE 34+00



MATCHLINE 34+00

MATCH LINE 46+00

NO	DATE	BY	CHKD	APPR	REVISION
1	7/12/2010	BAV	JEO	CMC	SUPERELEVATION PLAN CHANGED PER MN/DOT REVIEW COMMENTS

NAME: p:\white\top 22 S-47\plan\White\top_SE1.dgn 07/12/2010 2:31:28 PM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: CHARLES M. CABENHEAD JR.
 SIGNATURE: *[Signature]*
 DATE: 7/12/10 LICENSE NO. 40415

DRAWN BY: BAV DATE: _____
 DESIGN BY: BAV DATE: _____
 CHECKED BY: JEO DATE: _____




ANOKA COUNTY
HIGHWAY DEPT.

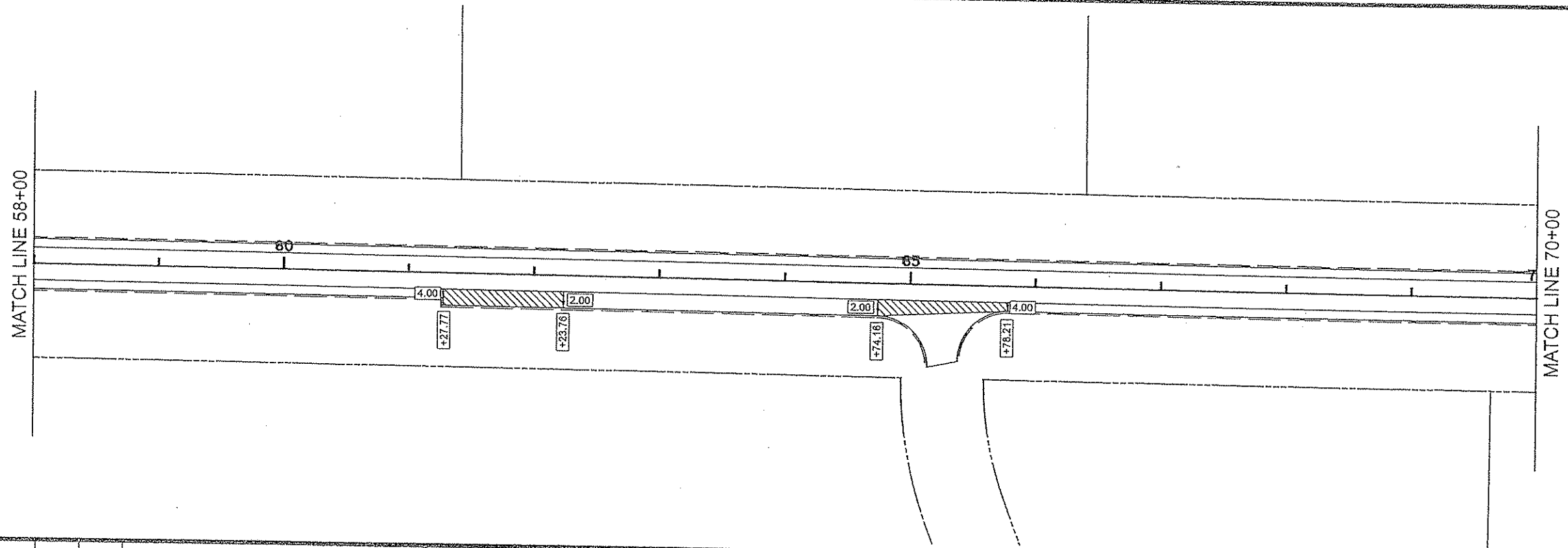
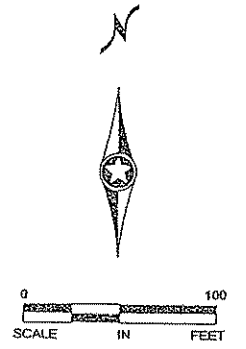
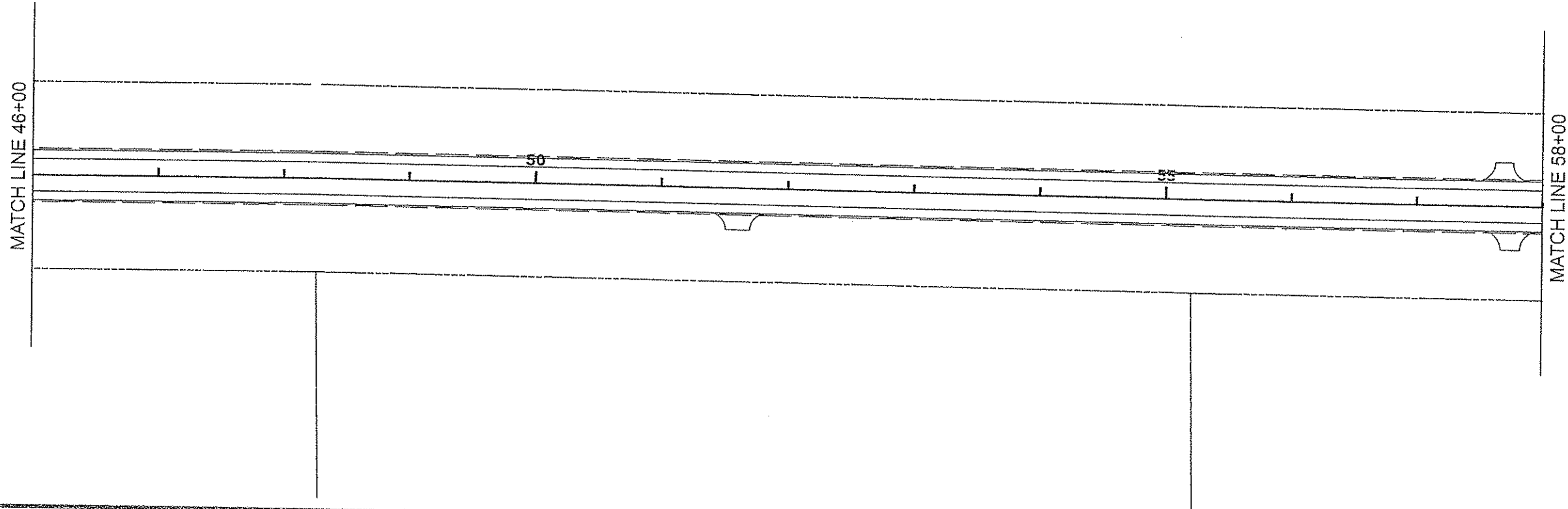
STATE PROJECT NO. **.*.*.*.*
 STATE AID PROJECT NO. 02-622-31
 CITY PROJECT NO. **.*.*.*.*
 COUNTY PROJECT NO. **.*.*.*.*

SUPERELEVATION PLAN
 STA 32+00.00 TO 46+00.00
 Sheet 55 of 62 Sheets

CONSTRUCTION NOTES:

 SUPERELEVATION

ALL STATIONING BASED ON PROPOSED CENTERLINE FOR E.B. C.S.A.H. 22



2 OF 8

NO	DATE	BY	CHKD	APPR	REVISION
1	7/12/2010	BAV	JEO	CMC	SUPERELEVATION PLAN CHANGED PER MNDOT REVIEW COMMENTS
NAME: p:\whitlop\22 5-47\plan\Whitlop_SE2.dgn					
					07/12/2010
					2:31:31 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 M. CADENHEAD JR.
 SIGNATURE: *Charles M. Cadenhead Jr.*
 DATE: 7/12/10 LICENSE NO. 40418

DRAWN BY: BAV DATE: _____
 DESIGN BY: BAV DATE: _____
 CHECKED BY: JEO DATE: _____




**ANOKA COUNTY
HIGHWAY DEPT.**

STATE PROJECT NO. ****-****
 STATE AID PROJECT NO. 02-622-31
 CITY PROJECT NO. ****-****
 COUNTY PROJECT NO. ****-****

SUPERELEVATION PLAN

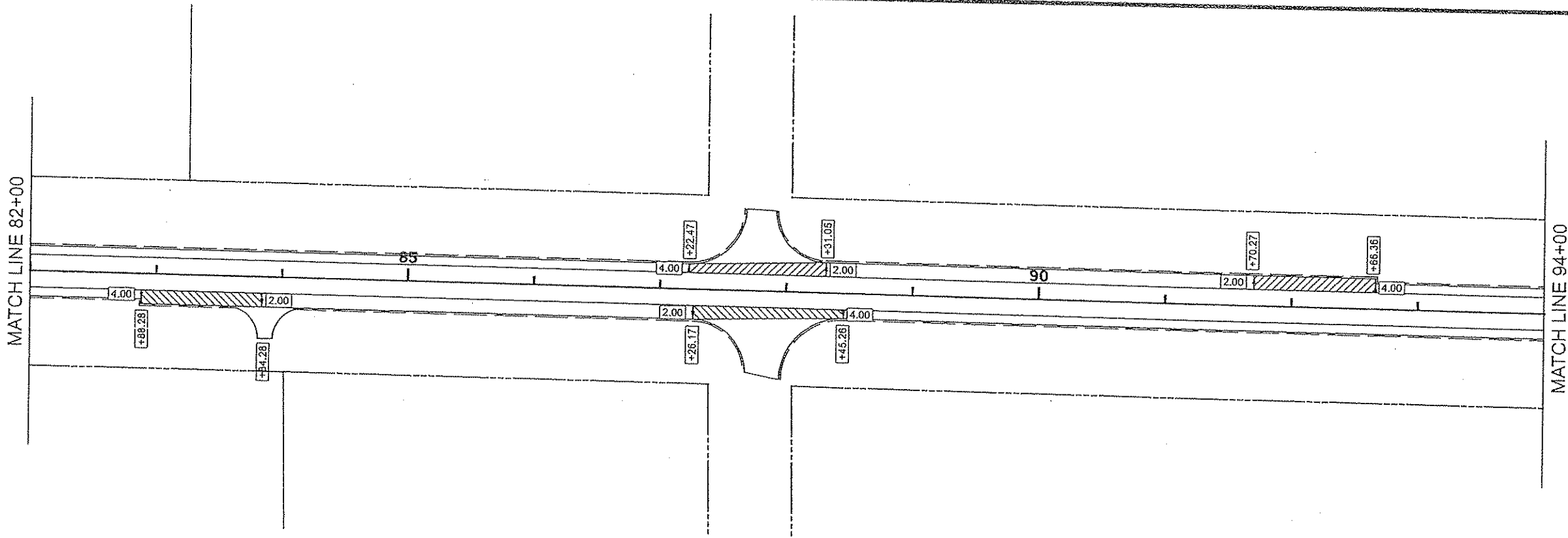
STA 46+00.00 TO 70+00.00

Sheet 56 of 62 Sheets

CONSTRUCTION NOTES:
 SUPERELEVATION
 ALL STATIONING BASED ON PROPOSED CENTERLINE FOR E.B. C.S.A.H. 22

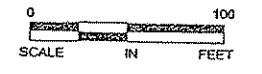
MATCH LINE 70+00

MATCH LINE 82+00



MATCH LINE 82+00

MATCH LINE 94+00



NO	DATE	BY	CHKD	APPR	REVISION
1	7/12/2010	BAV	JEO	CMC	SUPERELEVATION PLAN CHANGED PER MNDOT REVIEW COMMENTS
NAME: p:\whitlop 22 5-47\lani\Whitlop_SE3.dgn					
REVISION DATE: 07/12/2010 2:31:33 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 M. CADENHEAD JR.
 SIGNATURE: *[Signature]*
 DATE: 7/12/10 LICENSE NO. 40416

DRAWN BY: BAV DATE: _____
 DESIGN BY: BAV DATE: _____
 CHECKED BY: JEO DATE: _____




**ANOKA COUNTY
 HIGHWAY DEPT.**

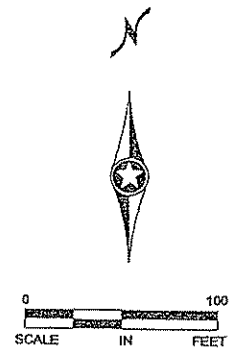
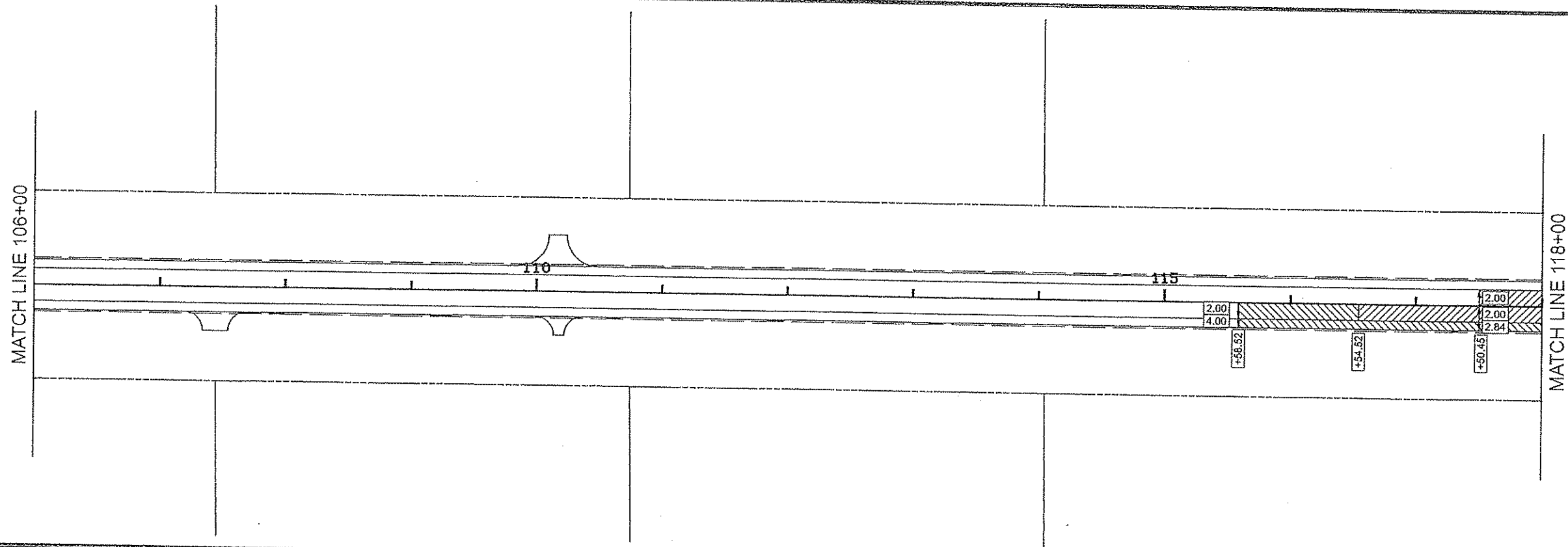
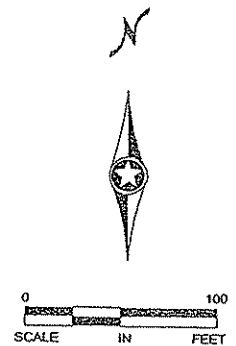
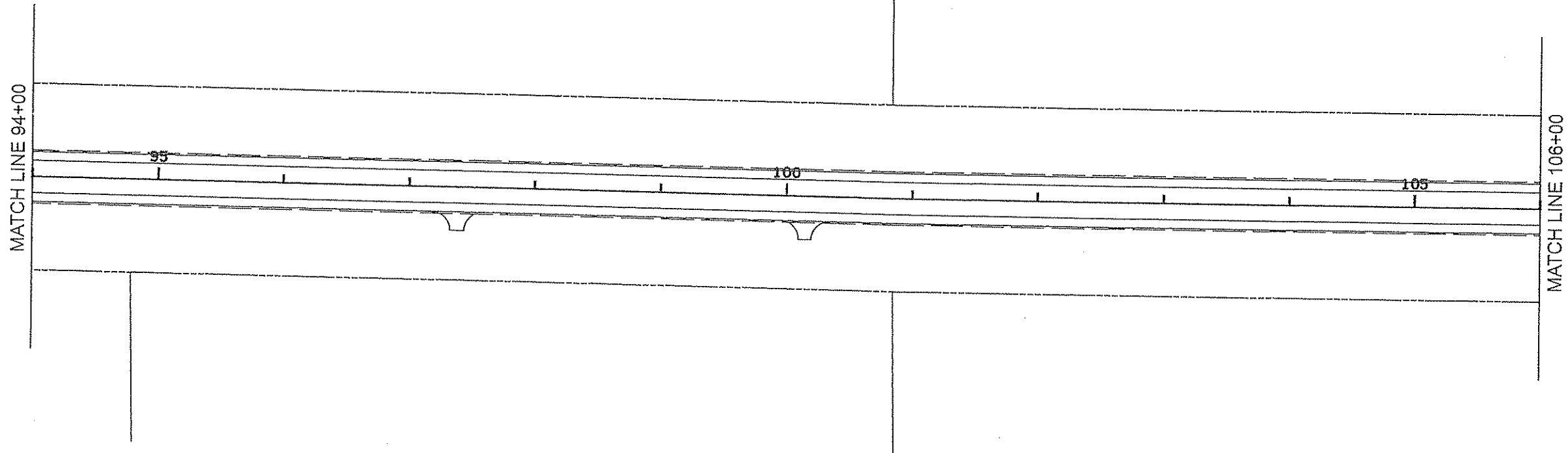
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 STATE AID PROJECT NO. 02-622-31
 CITY PROJECT NO. **_**_*_*_
 COUNTY PROJECT NO. **_**_*_*_

SUPERELEVATION PLAN
 STA 70+00.00 TO 94+00.00
 Sheet 57 of 62 Sheets

CONSTRUCTION NOTES:

 SUPERELEVATION

ALL STATIONING BASED ON PROPOSED CENTERLINE FOR E.B. C.S.A.H. 22



4 OF 8

NO	DATE	BY	CKD	APPR	REVISION
1	7/12/2010	BAV	JEO	CMC	SUPERELEVATION PLAN CHANGED PER MN/DOT REVIEW COMMENTS
NAME: p:\whit\top 22 5-47\plan\Whit\top_SE4.dgn					
07/12/2010 2:31:36 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 M. CADENHEAD JR.
 SIGNATURE: *Charles M. Cadenhead Jr.*
 DATE: 7/12/10 LICENSE NO. 49416

DRAWN BY: BAV DATE: _____
 DESIGN BY: BAV DATE: _____
 CHECKED BY: JEO DATE: _____




**ANOKA COUNTY
HIGHWAY DEPT.**

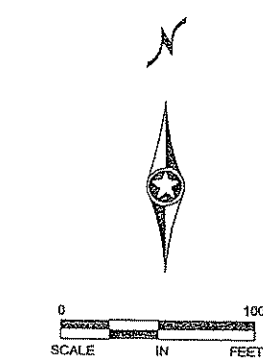
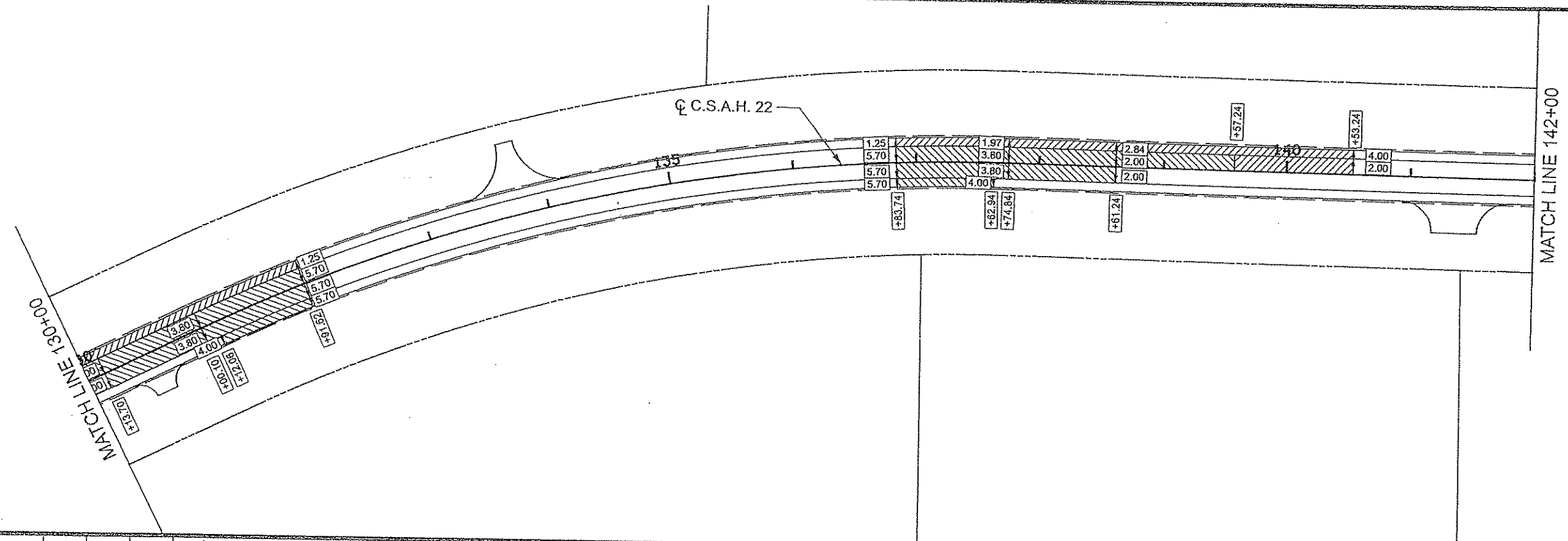
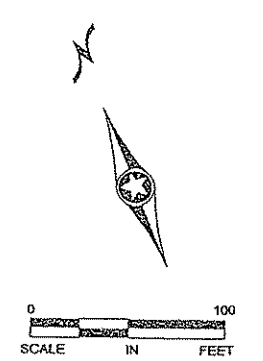
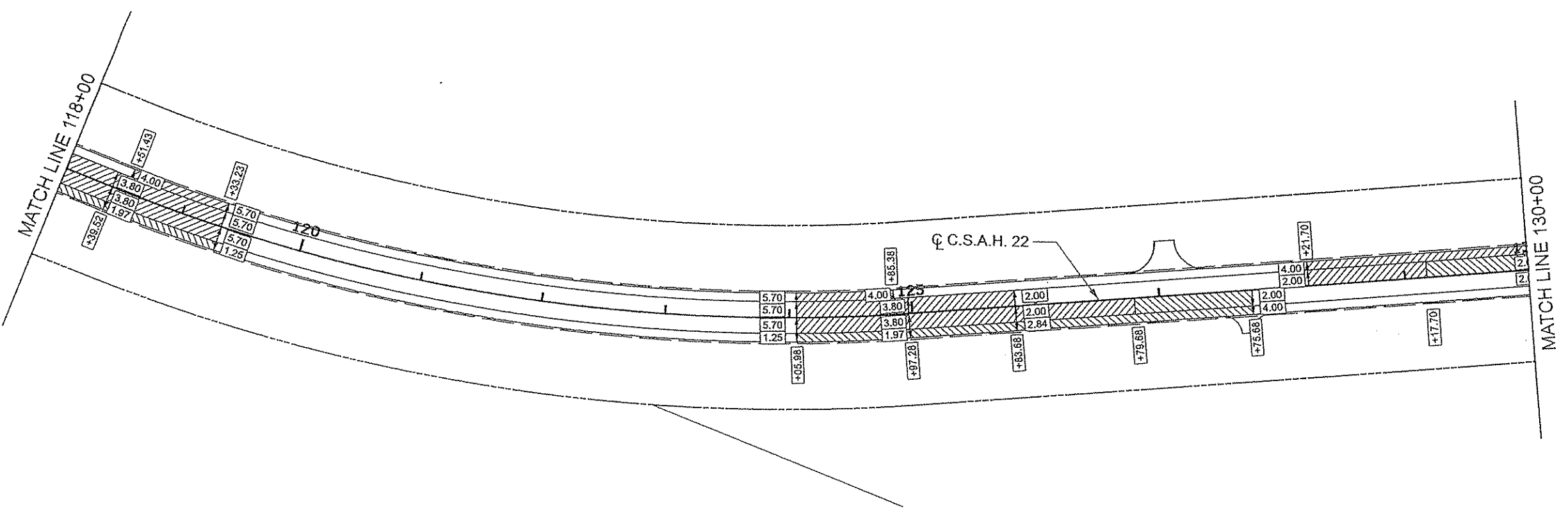
STATE PROJECT NO. **_**_*_*_*
 STATE AID PROJECT NO. 02-622-31
 CITY PROJECT NO. **_**_*_*_*
 COUNTY PROJECT NO. **_**_*_*_*

SUPERELEVATION PLAN
 STA 94+00.00 TO 118+00.00
 Sheet 58 of 62 Sheets

CONSTRUCTION NOTES:

 SUPERELEVATION

ALL STATIONING BASED ON PROPOSED CENTERLINE FOR E.B. C.S.A.H. 22



NO	DATE	BY	CKD	APPR	REVISION
1	7/12/2010	BAV	JEO	CMC	SUPERELEVATION PLAN CHANGED PER MN/DOT REVIEW COMMENTS

NAME: p1whitelop 22 5-47planWhitelop_SE5.dgn
07/12/2010 2:31:38 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 M. CADENHEAD JR.
SIGNATURE: *Charles M. Cadenhead Jr.*
DATE: 7/12/10 LICENSE NO. 40416

DRAWN BY: BAV DATE: _____
DESIGN BY: BAV DATE: _____
CHECKED BY: JEO DATE: _____



**ANOKA COUNTY
HIGHWAY DEPT.**


STATE PROJECT NO. **_**_**
STATE AID PROJECT NO. 02-622-31
CITY PROJECT NO. **_**_**
COUNTY PROJECT NO. **_**_**

SUPERELEVATION PLAN

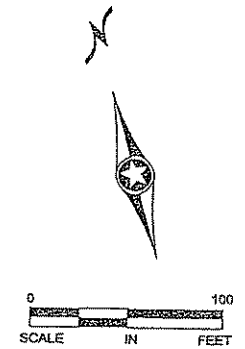
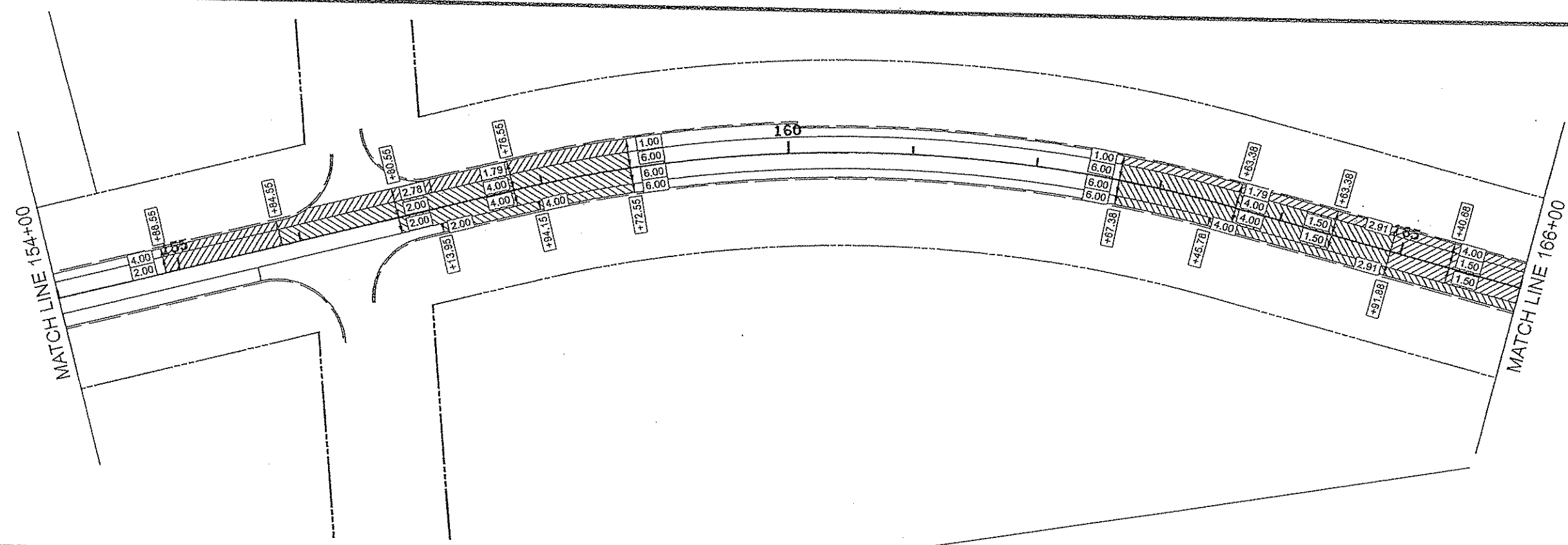
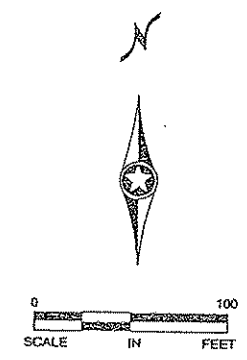
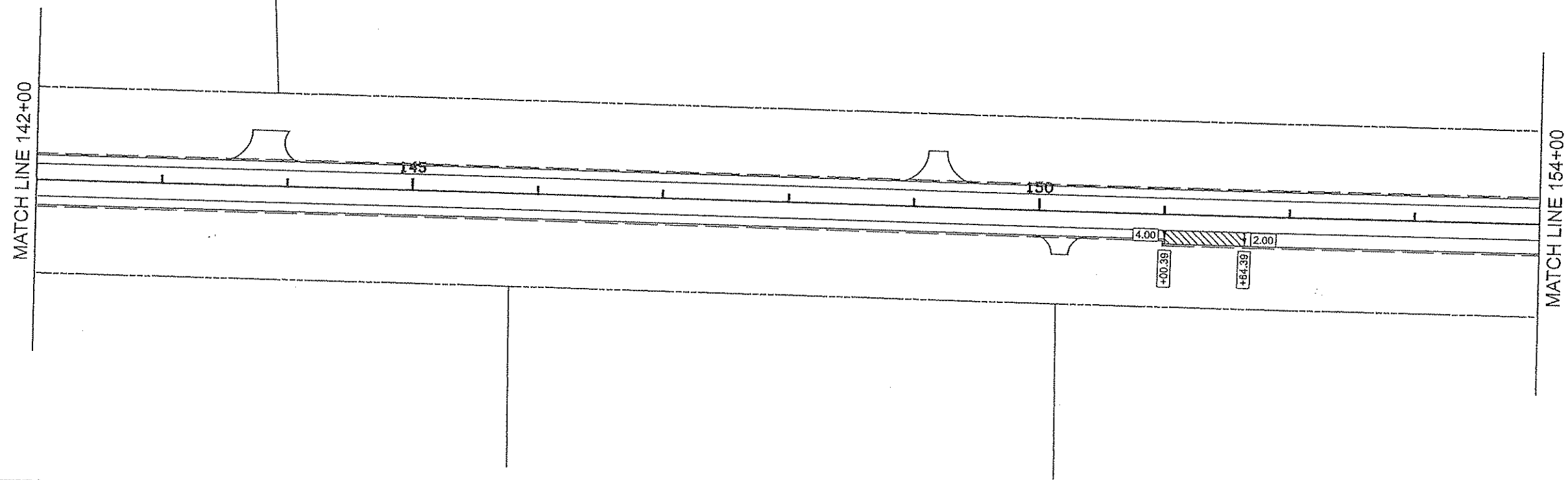
STA 118+00.00 TO 142+00.00

Sheet 59 of 62 Sheets

CONSTRUCTION NOTES:

 SUPERELEVATION

ALL STATIONING BASED ON PROPOSED CENTERLINE FOR E.B. C.S.A.H. 22



NO	DATE	BY	CKD	APPR	REVISION
1	7/12/2010	BAV	JEO	CMC	SUPERELEVATION PLAN CHANGED PER MN/DOT REVIEW COMMENTS
NAME: p:\white\top 22 5-47\plan\White\top_SE6.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 M. CADENHEAD, JR.
 SIGNATURE: *[Signature]*
 DATE: 7/12/10 LICENSE NO. 40475

DRAWN BY: BAV DATE: _____
 DESIGN BY: BAV DATE: _____
 CHECKED BY: JEO DATE: _____




ANOKA COUNTY
HIGHWAY DEPT.

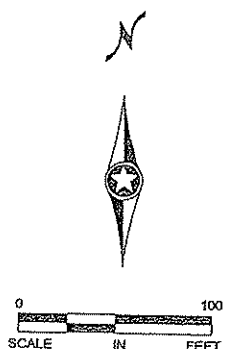
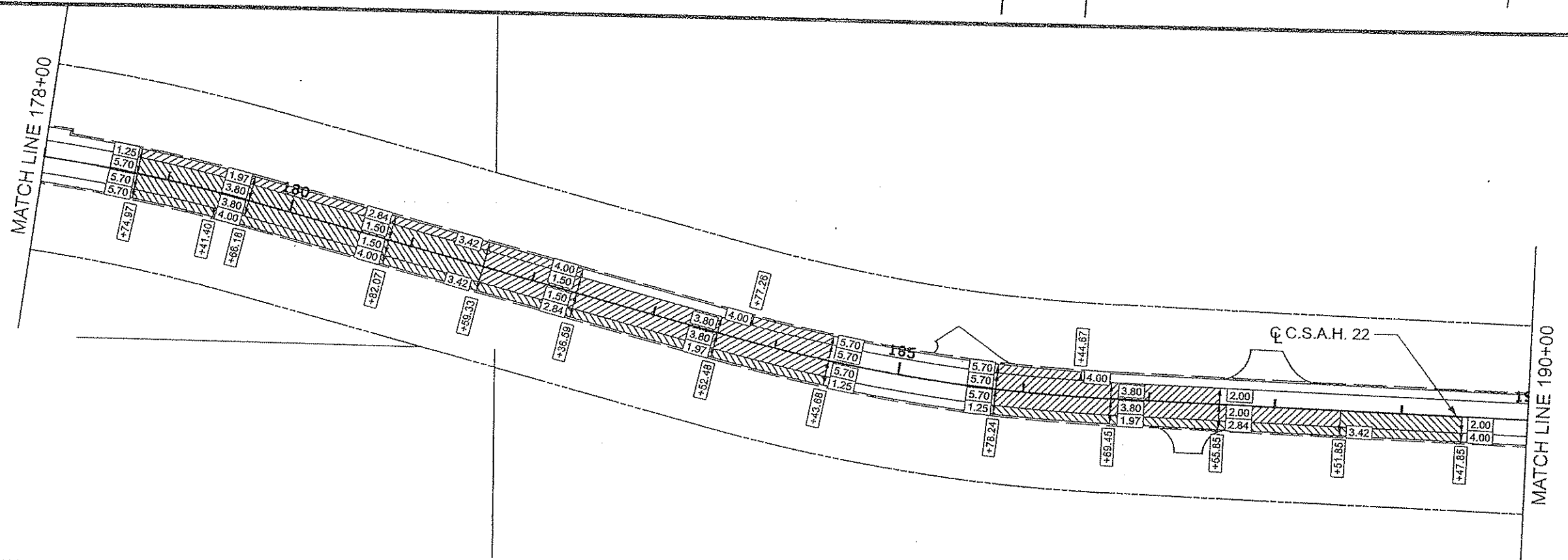
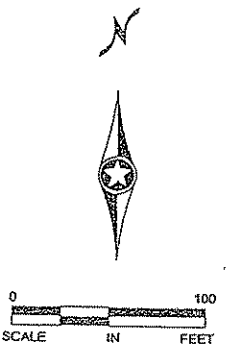
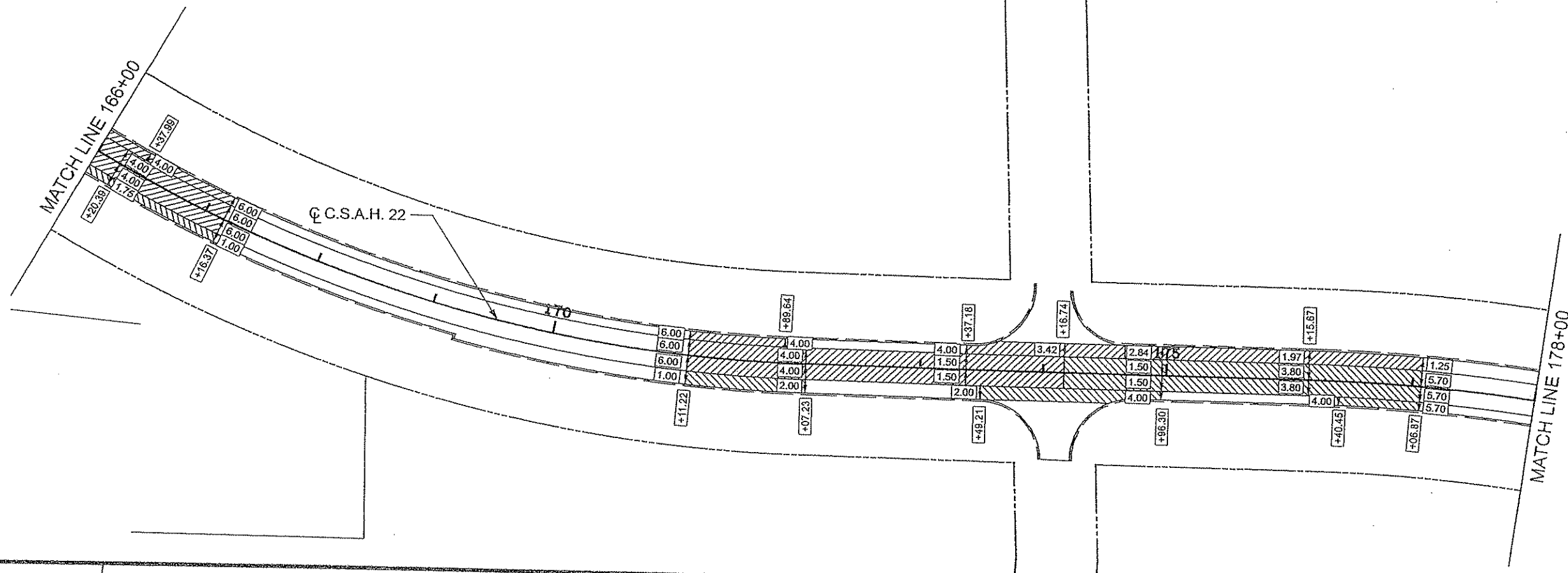
STATE PROJECT NO. **_**_*_*
 STATE AID PROJECT NO. 02-622-31
 CITY PROJECT NO. **_**_*_*
 COUNTY PROJECT NO. **_**_*_*

SUPERELEVATION PLAN
 STA 142+00.00 TO 166+00.00
 Sheet 60 of 62 Sheets

CONSTRUCTION NOTES:

 SUPERELEVATION

ALL STATIONING BASED ON PROPOSED CENTERLINE FOR E.B. C.S.A.H. 22



NO	DATE	BY	CKD	APPR	REVISION
1	7/12/2010	BAV	JEO	CMC	SUPERELEVATION PLAN CHANGED PER MN/DOT REVIEW COMMENTS

NAME: p:\whitop\22 5-47\plan\Whitop_SE7.dgn
07/12/2010 2:31:44 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 M. CADENHEAD JR.
SIGNATURE: *Charles M. Cadenhead Jr.*
DATE: 7/12/10 LICENSE NO. 40416

DRAWN BY: BAV DATE: _____
DESIGN BY: BAV DATE: _____
CHECKED BY: JEO DATE: _____




**ANOKA COUNTY
HIGHWAY DEPT.**

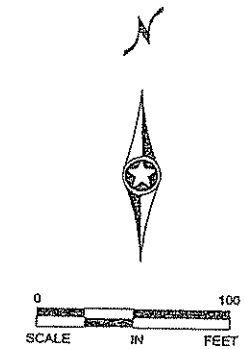
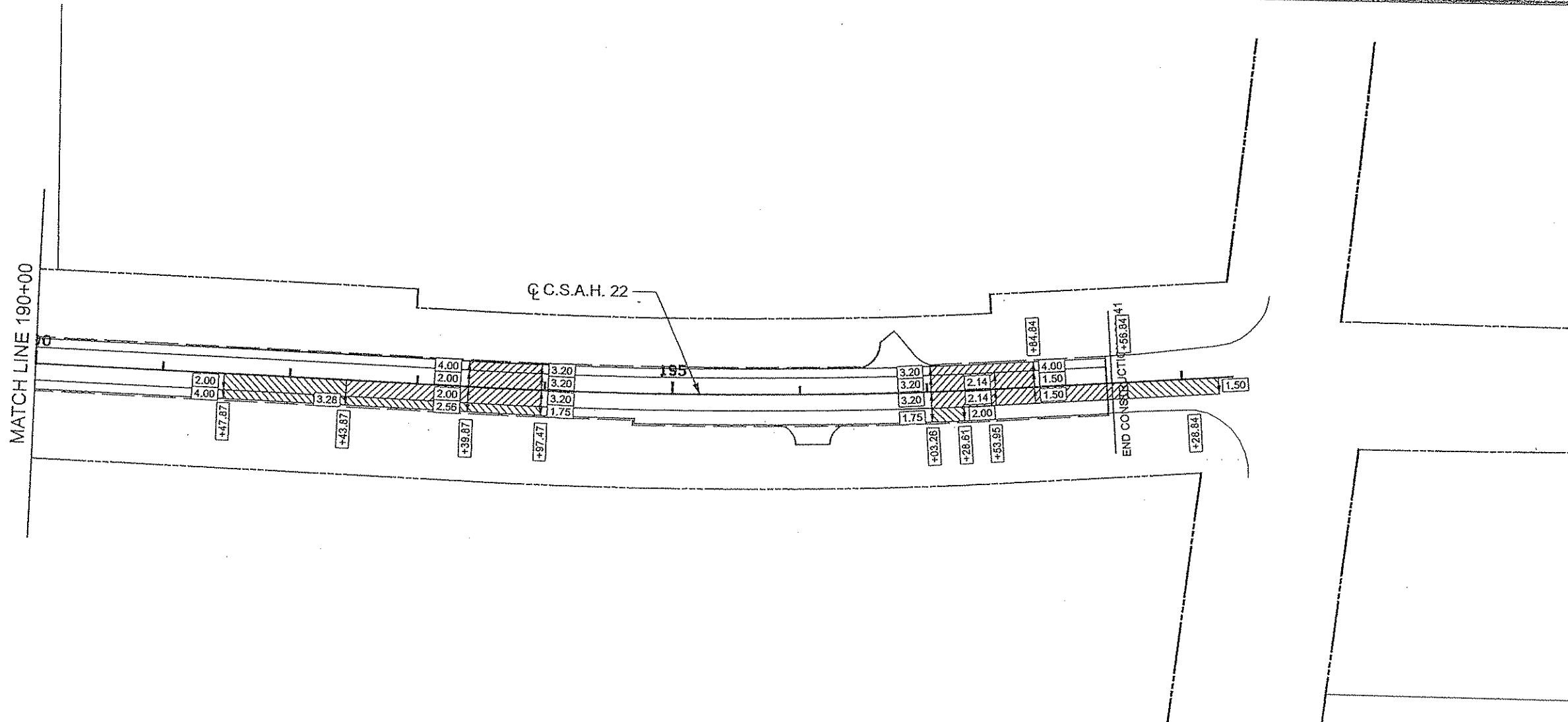
STATE PROJECT NO. **_**_**
STATE AID PROJECT NO. 02-622-31
CITY PROJECT NO. **_**_**
COUNTY PROJECT NO. **_**_**

SUPERELEVATION PLAN
STA 166+00.00 TO 190+00.00
Sheet 61 of 62 Sheets

CONSTRUCTION NOTES:

 SUPERELEVATION

ALL STATIONING BASED ON PROPOSED CENTERLINE FOR E.B. C.S.A.H. 22



8 OF 8

NO	DATE	BY	CKD	APPR	REVISION
1	7/12/2010	BAV	JEO	CMC	SUPERELEVATION PLAN CHANGED PER MNDOT REVIEW COMMENTS
NAME: p:\white\op 22 5-47\plan\White\op_SE8.dgn					
DATE: 07/12/2010 2:31:46 PM					

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

PRINT NAME: CHARLES M. CADENHEAD JR.
 SIGNATURE: *[Signature]*
 DATE: 7/12/10 LICENSE NO. 40416

DRAWN BY BAV DATE _____
 DESIGN BY BAV DATE _____
 CHECKED BY JEO DATE _____



**ANOKA COUNTY
 HIGHWAY DEPT.**

STATE PROJECT NO. ****_*_*
 STATE AID PROJECT NO. 02-622-31
 CITY PROJECT NO. ****_*_*
 COUNTY PROJECT NO. ****_*_*

SUPERELEVATION PLAN

STA 190+00.00 TO 198+41.00

Sheet 62 of 62 Sheets