

PLAN SYMBOLS

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

- LOWLAND _____
- TIMBER _____
- ORCHARD _____
- BRUSH _____
- NURSERY _____
- CATTLE GUARD _____
- OVERPASS (Highway Over) _____
- UNDERPASS (Highway Under) _____
- BRIDGE _____
- BUILDING (One Story Frame) _____
- F-FRAME C-CONCRETE _____
- S-STONE T-TILE _____
- B-BRICK ST-STUCCO _____
- RAILROAD CROSSING BELL _____
- RAILROAD CROSSING GATE _____
- MANHOLE _____
- CATCH BASIN _____
- FIRE HYDRANT _____
- CAST IRON MONUMENT _____
- IRON PIN _____
- GRAVEL PIT _____
- SAND PIT _____
- BORROW PIT _____
- ROCK QUARRY _____

UTILITY SYMBOLS

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

SCALES

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

MINNESOTA DEPARTMENT OF TRANSPORTATION ANOKA COUNTY

CONSTRUCTION PLAN FOR 2" BITUMINOUS MILL & OVERLAY

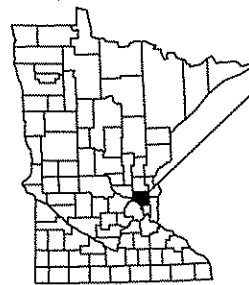
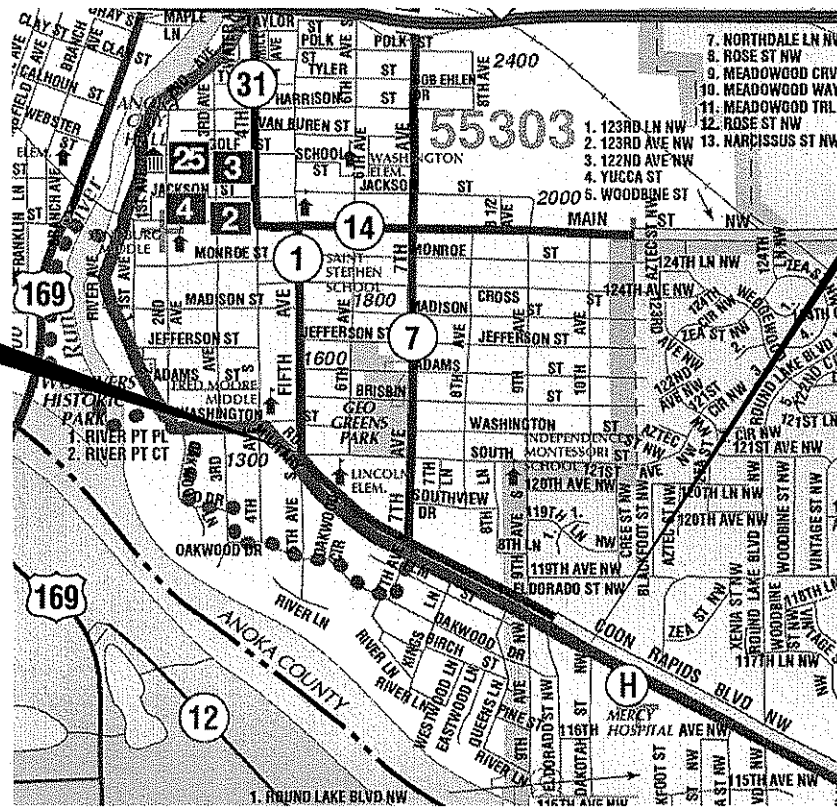
LOCATED ON C.S.A.H 1 BETWEEN 5TH AVE / SOUTH STREET AND DAKOTA STREET

COUTNY PROJ. NO. 10-23-01

GROSS LENGTH	3819 FEET	0.72 MILES
BRIDGES-LENGTH	0.00 FEET	0.000 MILES
EXCEPTIONS-LENGTH	0.00 FEET	0.000 MILES
NET LENGTH	3819 FEET	0.72 MILES

BEGIN COUNTY PROJ. 10-23-01
CSAH 1 STA. 10+16

END COUNTY PROJ. 10-23-01
CSAH 1 STA 48+35



PROJECT LOCATION
CITIES OF ANOKA & COON RAPIDS
ANOKA COUNTY
MN/DOT TRANSPORTATION DISTRICT - METRO
SECTION 7
TOWNSHIP 31 NORTH
RANGE 25 WEST

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

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	STATEMENT OF ESTIMATED QUANTITIES,
3	TYPICAL SECTIONS
4	CATCH BASIN DETAILS
5-6	PLAN PROFILE
7-8	SIGNING & STRIPING PLAN, TAB, & DETAILS
8A-8E	MISCELLANEOUS SIGNAL SHEETS

Approved: *[Signature]*
ANOKA COUNTY ENGINEER

NO	DATE	BY	CHKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: CHARLES CADENHEAD
SIGNATURE: *[Signature]*
DATE: 3/26/10 LICENSE NO. 40416

DRAWN BY: CSO DATE: 3/12/10
DESIGN BY: CSO DATE: 3/12/10
CHECKED BY: JO DATE: _____

**ANOKA COUNTY
HIGHWAY DEPT.**

STATE AID PROJECT NO. _____
STATE PROJECT NO. _____
CITY PROJECT NO. _____
COUNTY PROJECT NO. 10-23-01

TITLE SHEET
Sheet 1 of 8E Sheets

CSAH 1		STATEMENT OF ESTIMATED QUANTITIES			
TAB NO.	ITEM NO.	ITEM	NOTES	UNIT	TOTAL EST. QUANT.
	2021.501	MOBILIZATION		LUMP SUM	1
A	2104.501	REMOVE CONCRETE CURB & GUTTER	7,13	LIN FT	40
A	2104.505	REMOVE BITUMINOUS PAVEMENT	7,13	SQ YD	8
	2232.501	MILL BITUMINOUS SURFACE (2:0")	1,5,9	SQ YD	19859
	2357.501	BITUMINOUS MATERIAL FOR TACK COAT		GALLON	993
	2360.501	TYPE SP 12.5 WEARING COURSE MIX (4,E) (SPWEB440E)		TON	2284
A	2360.609	TYPE LV3 NON-WEAR COURSE MIX FOR CB PATCH (LVNW35030 B)		TON	2
A	2506.503	RECONSTRUCT DRAINAGE STRUCTURE	4,7	LIN FT	8
A	2506.516	CASTING ASSEMBLY	7	EACH	2
A	2506.602	GROUT CATCH BASIN OR MANHOLE	7	EACH	3
A	2531.501	CONCRETE CURB AND GUTTER DESIGN B624	7	LIN FT	40
	2563.601	TRAFFIC CONTROL		LUMP SUM	1
	2563.610	POLICE OFFICER		HOUR	16
	2565.602	LOOP DETECTORS 6' X 6'	10,11	EACH	10
A	2575.604	EROSION CONTROL BLANKET	8	SQ YD	18
	2581.501	REMOVABLE PREFORM PLASTIC MARKINGS WHITE	3	LIN FT	2444
	2581.501	REMOVABLE PREFORM PLASTIC MARKINGS YELLOW	3	LIN FT	1222
	2582.502	4" SOLID LINE WHITE - EPOXY	2	LIN FT	7384
	2582.502	4" BROKEN LINE WHITE-EPOXY	2	LIN FT	1540
	2582.502	4" SOLID DOULBE LINE YELLOW-EPOXY	2	LIN FT	3940
	2582.603	24" YELLOW THERMO-PLASTIC	2	LIN FT	112
	2582.603	24" WHITE THERMO-PLASTIC	2	LIN FT	209
	2582.618	3' X 6' THERMO-PLASTIC ZEBRA CROSSWALK	2	SQ FT	1098

NOTES:

- MILL AREAS TO BE MARKED BY ENGINEER.
- MARKINGS TO BE IN PLACE WITH IN 72 HOURS OF FINAL MAINLINE PAVING.
- TEMP LANE TAPE SKIPS TO BE PLACED ON NEW MAT AT END OF EACH PAVING DAY.
- AGGREGATE BASE CLASS 7B USED FOR COMPACTING AROUND CB'S IS INCIDENTAL TO RECONSTRUCT.
- MAINLINE MILLING INCLUDES DETAIL MILLING AROUND MANHOLES, GATE VALVES, AND ALL STRUCTURES IN BIT. PAVEMENT AREA TO BE MILLED.
- ALL MANHOLES MUST BE LOCATED AND PROTECTED AT ALL TIMES DURING MILLING AND PAVING OPERATIONS. CONTRACTORS RESPONSIBILITY
- SEE CB REPAIR DETAIL.
- SEED, FERTILIZER, TOPSOIL AT ALL CB REPAIRS ARE INCIDENTAL TO EROSION CONTROL BLANKET.
- AT GATE VALVES AND MANHOLES MILL 1 1/2" INCHES TAPER TO 2 INCHES.
- TO BE REPLACED ONLY IF DAMAGED DURING MILLING OPERATION
- LOOP SIZE VARIES 6'X6' OR 6'X20' REPLACE WHAT WAS DAMAGED, ALL SIZES TO BE PAID UNDER 2565.602 LOOP DETECTORS 6'X6'
- DO NOT PASS, PASS WITH CARE, NO CENTER STRIE, STOP HERE ON RED, BUMP / BUMP AHEAD SIGNS TO BE INPLACE DURING MILL / OVERLAY OPERATION
- SAWING OF CONCRETE CURB & GUTTER AND SAWING OF BITUMINOUS PAVEMENT SHALL BE INCIDENTAL TO THE REMOVAL OF EACH ITEM

ITEM NO.	BASIS OF PLANNED QUANTITIES	
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	.05 GAL / SQ YD
2360.501	TYPE SP 12.5 WEARING COURSE MIX (4, E)	(SQ YD * IN. *115 LBS)/2000 = TONS
2360.609	TYPE LV3 NON-WEAR COURSE MIX FOR CB PATCH (LVNW35030 B)	(SQ YD * IN. *115 LBS)/2000 = TONS

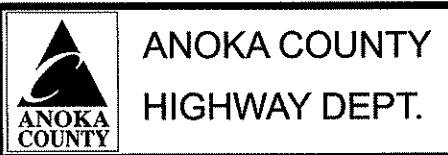
NO	DATE	BY	CKD	APPR	REVISION

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

PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: *Charles Cadenhead*
 DATE: 3/26/10 LICENSE NO. 49416

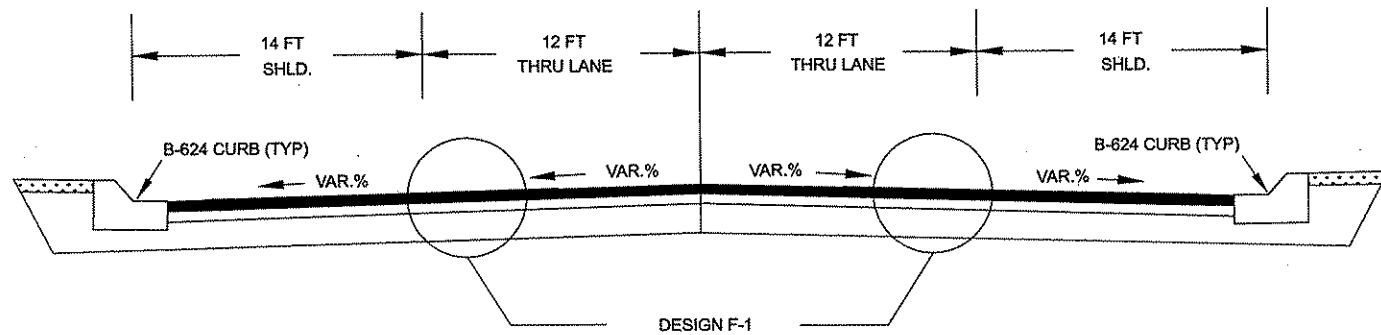
DRAWN BY: CSO DATE: 2/19/2010
 DESIGN BY: CSO DATE: 2/19/2010
 CHECKED BY: JO DATE:



STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 10-23-01

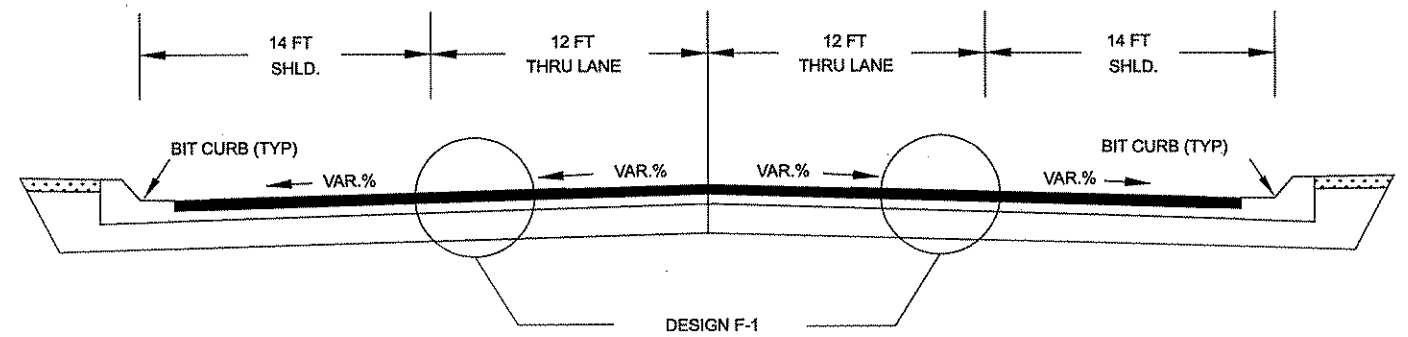
TYPICAL SECTION

STA. 10+16 - STA. 42+00

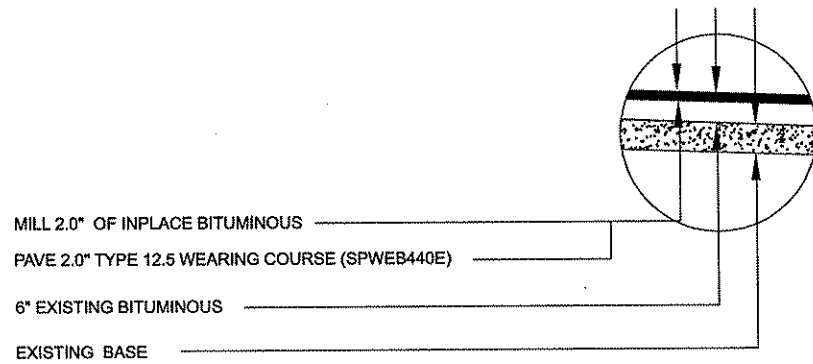


TYPICAL SECTION

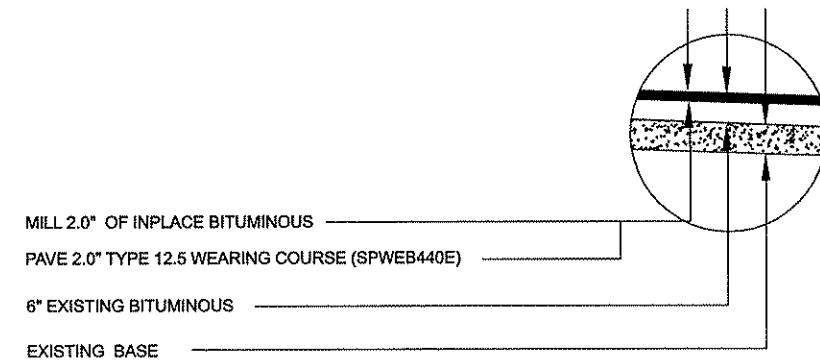
STA. 42+00 - STA. 48+35



DESIGN F-1



DESIGN F-1



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\10-01-00\CSAH_1_(5th-CoonRapidsCL)\Plan\3 typical.dgn 3/2/2010 10:06:27 AM

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

PRINT NAME: CHARLES CADENHEAD

SIGNATURE: *Charles Cadenhead*

DATE: 3/26/10 LICENSE NO. 40418

DRAWN BY CSO DATE 2/19/2010

DESIGN BY CSO DATE 2/19/2010

CHECKED BY JO DATE



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____

STATE AID PROJECT NO. _____

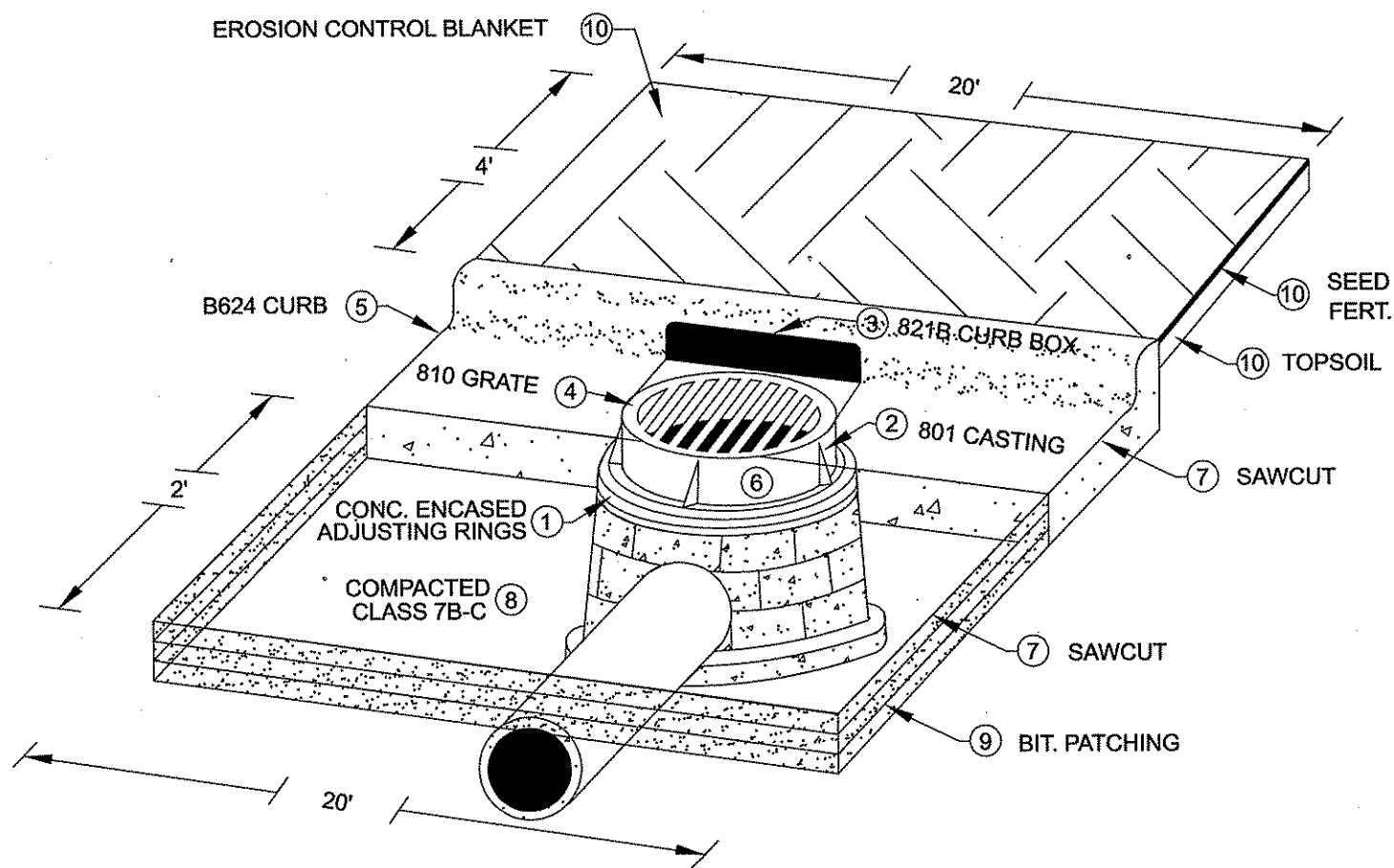
CITY PROJECT NO. _____

COUNTY PROJECT NO. 10-23-01

TYPICALS

Sheet 3 of 8 Sheets

C.B. REPAIR DETAIL



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

- ① CONCRETE ENCASED CONCRETE ADJUSTING RINGS STANDARD PLATE 4026A
- ② RING AND FRAME CASTING 801 STANDARD PLATE 4126F
- ③ CURB BOX 821B STANDARD PLATE 4161F
- ④ GRATE CASTING 810 STANDARD PLATE 4149C
- ⑤ CONCRETE CURB AND GUTTER DESIGN B STANDARD PLATE 7100G
- ⑥ INSTALLATION OF CATCH BASIN CASTINGS STANDARD PLATE 7111J
- ⑦ SAWCUT BIT./CONCRETE BUS PADS/CONCRETE CURB FULL DEPTH.
- ⑧ ADD AND COMPACT CL-7B-C AROUND REPAIRED STRUCTURE.
- ⑨ REMOVE VAR. DEPTH BITUMINOUS 3"-7" / PATCH 2-LIFTS OF BITUMINOUS.
- ⑩ REPLACE DISPLACED TOPSOIL- SEED, FERT. AND COVER WITH EROS. BLANKET. SEED, FERT. AND TOPSOIL INCIDENTAL TO BLANKET.

A. STRUCTURE REPAIRS											ACTION	
STRUCTURE	STATION	LOC.		REMOVE BIT. PAVEMENT	REPLACE BIT. PAVEMENT	EROSION CONT. BLANKET	REMOVE C&G	REPLACE B624 C&G	CASTING	GROUT		RECONSTRUCT DRAINAGE STRUCTURE
				SY	TON	SY	LF	LF	EA	EA	FT	
100		MH-STORM								1		GROUT
101		MH-SAN										GOOD CONDITION
102		C.B.								1		GROUT
103		C.B.								1		GROUT
104		C.B.								1		GROUT
105		C.B.		4	1	9	20	20	1		4.0	RECONST
106		MH-SAN										GOOD CONDITION
107		MH-STORM		4	1	9	20	20	1		4.0	RECONST
108		DRAIN-WELL										DO NOT TOUCH
109		DRAIN-WELL										DO NOT TOUCH
110		DRAIN-WELL										DO NOT TOUCH
111		DRAIN-WELL										DO NOT TOUCH
TOTALS				8	2	18	40	40	2	3	8	

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

- 1 ALL CASTING HIEGHTS ARE TO BE DETERMINED IN THE FIELD.
- 2 CONCRETE ENCASED CONCRETE ADJUSTING RINGS STANDARD PLATE 4026A

NOTE: NOT TO SCALE

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\10-01-00\CSAH_1_(5th-CoonRapidsCL)\Plan\4 cb detail.dgn 3/2/2010 11:07:01 AM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: CHARLES CADENHEAD
SIGNATURE: *Charles Cadenhead*
DATE: 3/26/10 LICENSE NO. 40416

DRAWN BY: CSO DATE: 3/1/10
DESIGN BY: CSO DATE: 3/1/10
CHECKED BY: JO DATE: _____

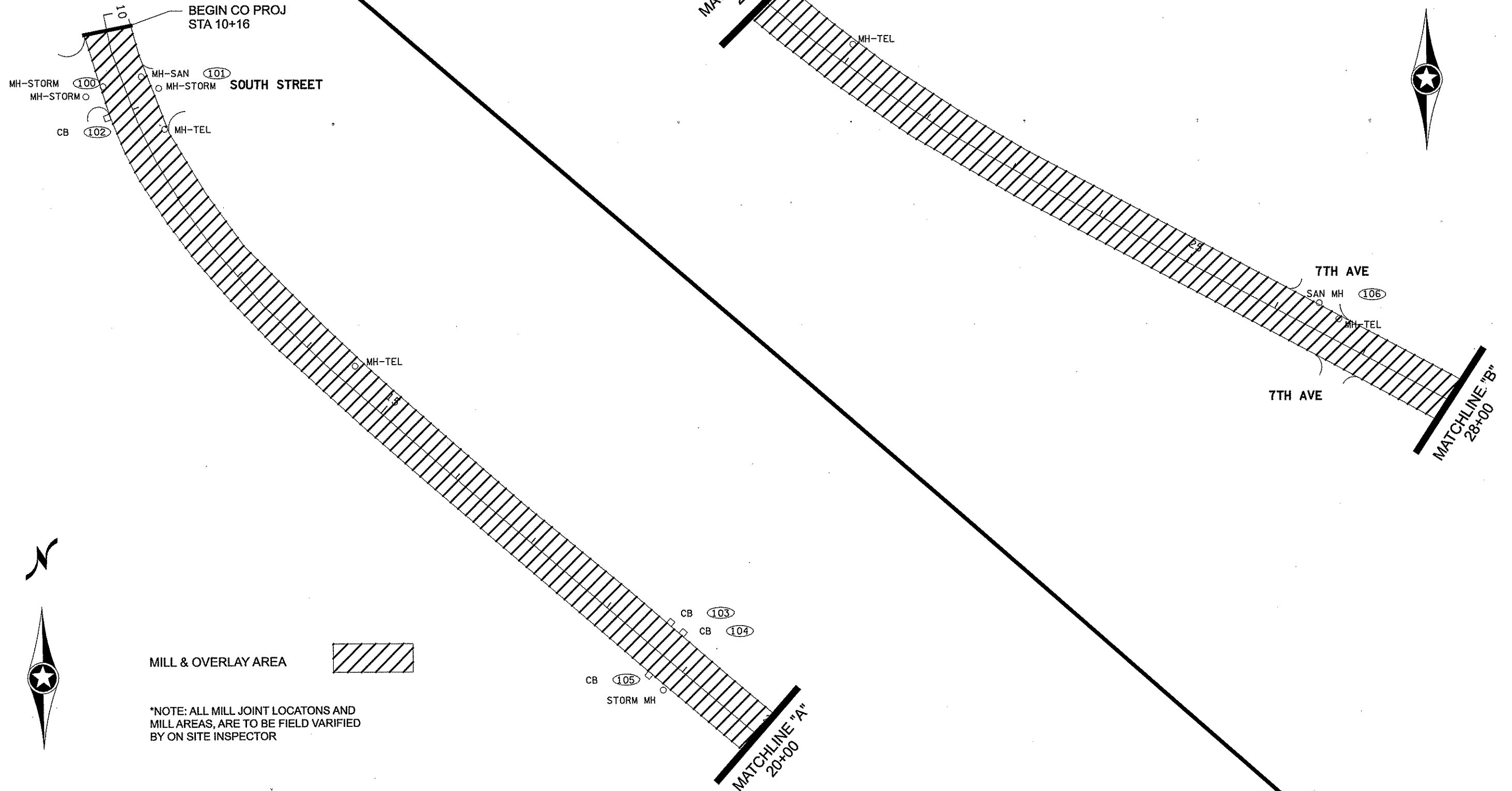


**ANOKA COUNTY
HIGHWAY DEPT.**

STATE PROJECT NO. _____
STATE AID PROJECT NO. _____
CITY PROJECT NO. _____
COUNTY PROJECT NO. 10-23-01

DETAILS
Sheet 4 of 8 Sheets

TRAFFIC SIGNAL LOOP DETECTOR AREAS
AT THE INTERSECTIONS OF CSAH 1 AND SOUTH
STREET, CSAH 1 AND 7TH AVE



MILL & OVERLAY AREA



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

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\10-01-00\CSAH_1_(6th-CoonRapidsCL)\Plan\5-6plan sheet.dgn 3/2/2010 1:21:55 PM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: CHARLES CADENHEAD
SIGNATURE: *Charles Cadenhead*
DATE: 3/26/10 LICENSE NO. 40416

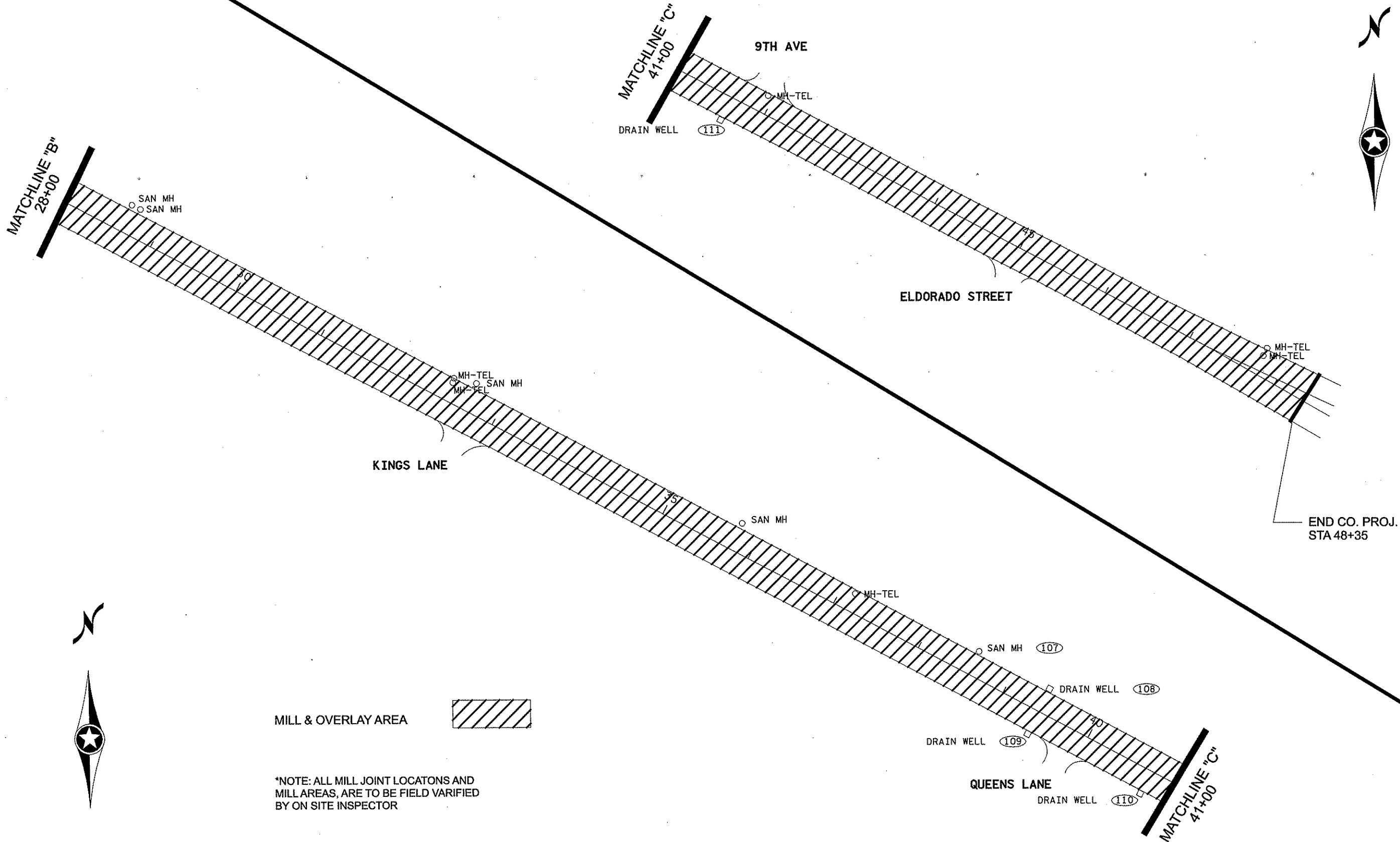
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DESIGN BY: CSO DATE: 3/1/2010
CHECKED BY: J.O. DATE: _____



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
STATE AID PROJECT NO. _____
CITY PROJECT NO. _____
COUNTY PROJECT NO. 10-23-01

SHEET TITLE
STA 10+16 TO 28+00
Sheet 5 of 8 Sheets

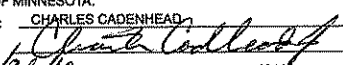


MILL & OVERLAY AREA 


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

NO	DATE	BY	CKD	APPR	REVISION

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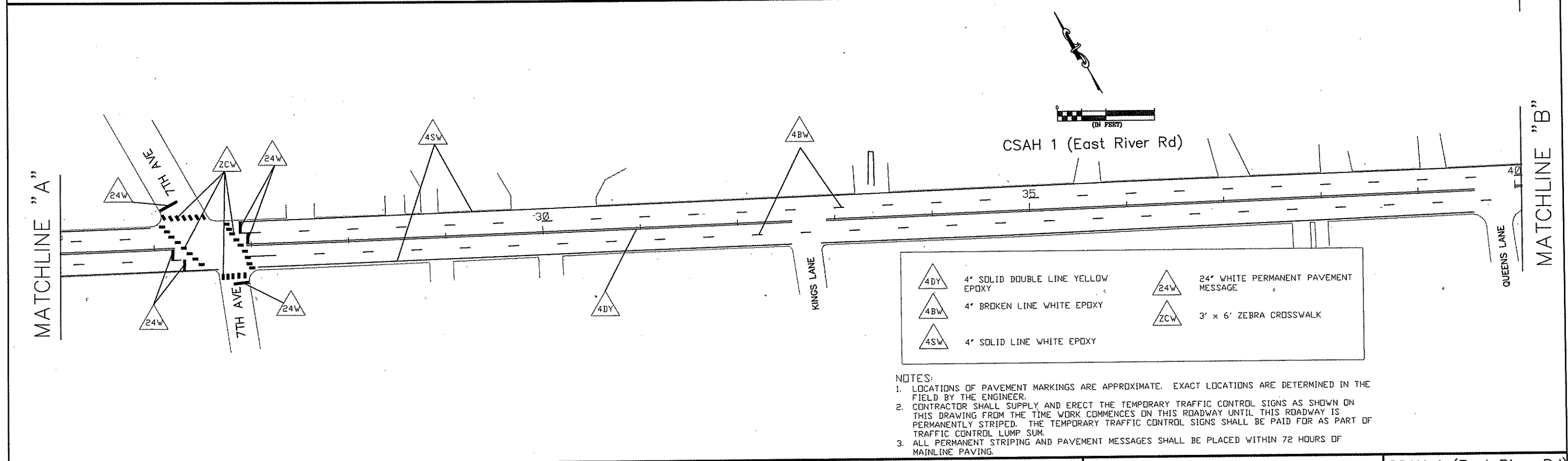
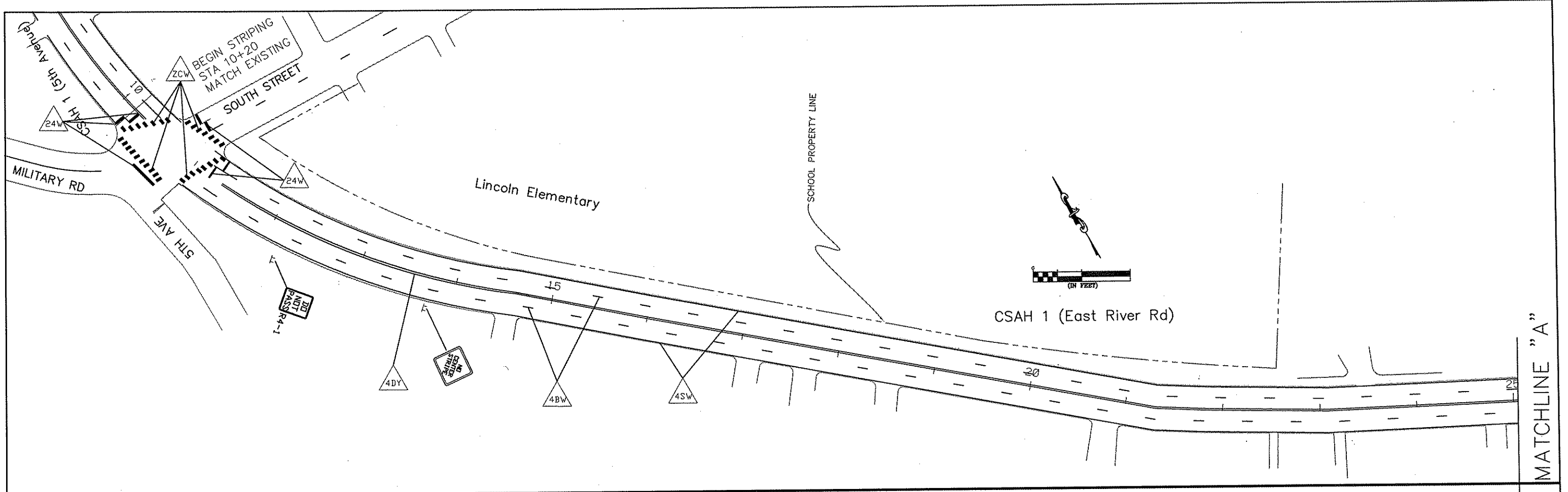
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: CHARLES CADENHEAD
 SIGNATURE: 
 DATE: 3/26/10 LICENSE NO. 40416

DRAWN BY CSO DATE 3/1/2010
 DESIGN BY CSO DATE 3/1/2010
 CHECKED BY JO DATE

 ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 10-23-01

SHEET TITLE
 STA 28+00 TO 48+35
 Sheet 6 of 8 Sheets



	4" SOLID DOUBLE LINE YELLOW EPOXY		24" WHITE PERMANENT PAVEMENT MESSAGE
	4" BROKEN LINE WHITE EPOXY		3' x 6' ZEBRA CROSSWALK
	4" SOLID LINE WHITE EPOXY		

- NOTES:
1. LOCATIONS OF PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS ARE DETERMINED IN THE FIELD BY THE ENGINEER.
 2. CONTRACTOR SHALL SUPPLY AND ERECT THE TEMPORARY TRAFFIC CONTROL SIGNS AS SHOWN ON THIS DRAWING FROM THE TIME WORK COMMENCES ON THIS ROADWAY UNTIL THIS ROADWAY IS PERMANENTLY STRIPED. THE TEMPORARY TRAFFIC CONTROL SIGNS SHALL BE PAID FOR AS PART OF TRAFFIC CONTROL LUMP SUM.
 3. ALL PERMANENT STRIPING AND PAVEMENT MESSAGES SHALL BE PLACED WITHIN 72 HOURS OF MAINLINE PAVING.

NO	DATE	BY	CKD	APPR	REVISION

NAME: H:\Traffic\Overlays\2006\CSAH 1\Signing and Striping CSAH 1.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 Gadenberg*

SIGNATURE: *Charles Gadenberg*

DATE: *3/26/10* LICENSE NO. *40416*

DRAWN BY: MTH DATE: 2/24/10

DESIGN BY: _____ DATE: _____

CHECKED BY: _____ DATE: _____

ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____

STATE AID PROJECT NO. _____

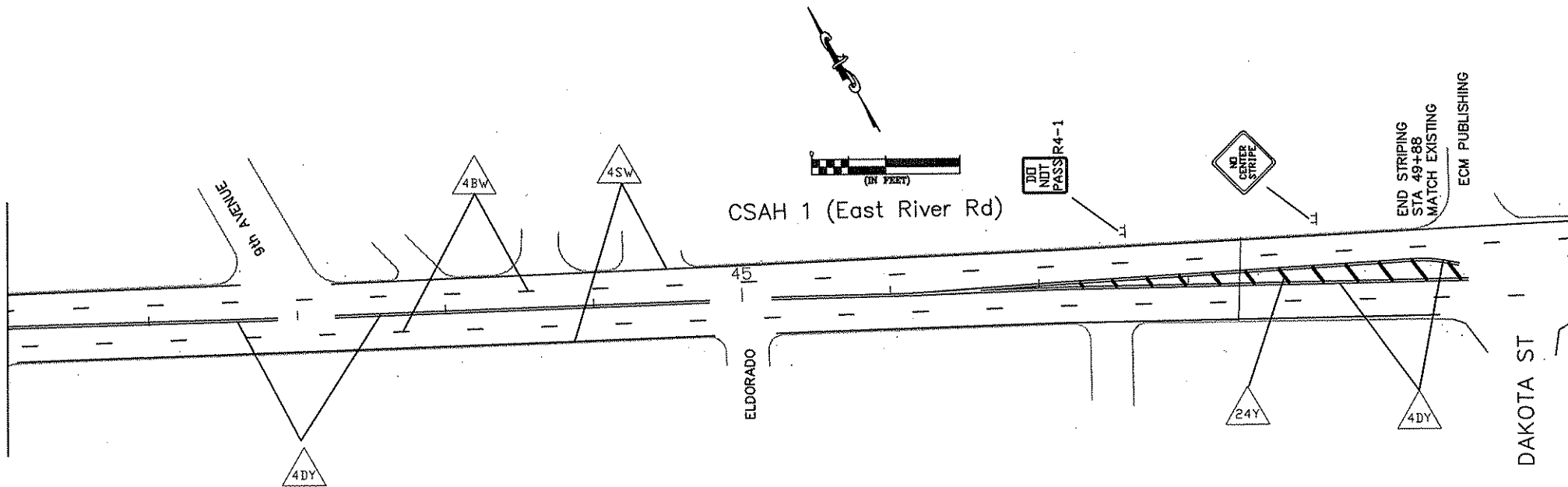
CITY PROJECT NO. _____

COUNTY PROJECT NO. 10-23-01

CSAH 1 (East River Rd)
TEMPORARY SIGNING
PERMANENT STRIPING
AND PAVEMENT MESSAGES

Sheet 7 of 8 Sheets

MATCHLINE "B"



	4" SOLID DOUBLE LINE YELLOW EPOXY
	24' YELLOW PERMANENT PAVEMENT MESSAGE
	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. CONTRACTOR SHALL SUPPLY AND ERECT THE TEMPORARY TRAFFIC CONTROL SIGNS AS SHOWN ON THIS DRAWING FROM THE TIME WORK COMMENCES ON THIS ROADWAY UNTIL THIS ROADWAY IS PERMANENTLY STRIPED. THE TEMPORARY TRAFFIC CONTROL SIGNS SHALL BE PAID FOR AS PART OF TRAFFIC CONTROL LUMP SUM.
 3. ALL PERMANENT STRIPING AND PAVEMENT MESSAGES SHALL BE PLACED WITHIN 72 HOURS OF MAINLINE PAVING.

SIGN PANELS TYPE C						
M. U. T. C. D. CODE	SIZE	PANEL AREA FT. ²	INSERT	QUANTITY		MOUNTING HEIGHT (to pavement) FT.
				No.	POST	
W8-12	48" x 48"	16.00		2	2	7.0'
R4-1	24" x 30"	5.00		2	1	7.0'
R4-2	24" x 30"	5.00		0	1	7.0'

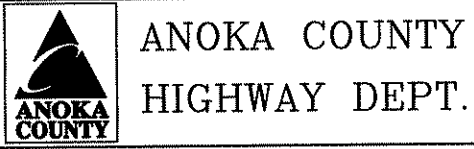
GENERAL NOTES:
 1.) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".

NO	DATE	BY	CKD	APPR	REVISION

NAME: H:\Traffic\Overlays\2006\CSAH 1\Signing and Striping CSAH 1.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 Kadence
 SIGNATURE: *Charles Kadence*
 DATE: 3/20/10 LICENSE NO. 40916

DRAWN BY: MTH DATE: 2/24/10
 DESIGN BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____



STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 10-23-01

CSAH 1 (East River Rd)
 TEMPORARY SIGNING
 PERMANENT STRIPING
 AND PAVEMENT MESSAGES
 Sheet 8 of 8E Sheets

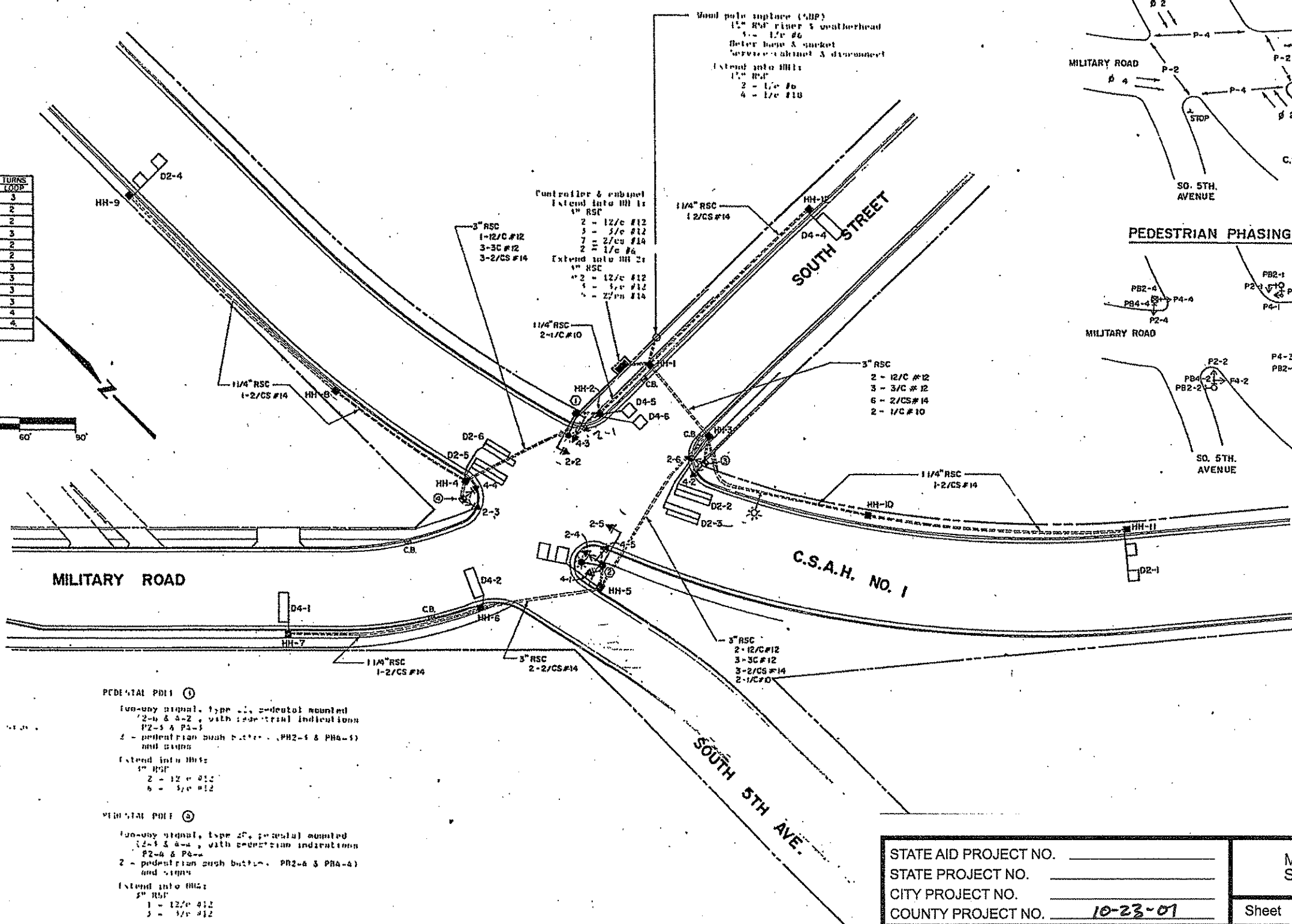
SIGNAL INDICATIONS

FACE	PHASE	FLASH	INDICATION				SIZE
			R	Y	G	DW	
2-1	2	R	12	12	12		
2-2	2	R	12	12	12		
2-3	2	R	12	12	12		
2-4	2	R	12	12	12		
2-5	2	R	12	12	12		
2-6	2	R	12	12	12		
4-1	4	R	12	12	12		
4-2	4	R	12	12	12		
4-3	4	R	12	12	12		
4-4	4	R	12	12	12		
4-5	4	R	12	12	12		
P2-1	2	OFF			12	12	
P2-2	2	OFF			12	12	
P2-3	2	OFF			12	12	
P2-4	2	OFF			12	12	
P4-1	4	OFF			12	12	
P4-2	4	OFF			12	12	
P4-3	4	OFF			12	12	
P4-4	4	OFF			12	12	

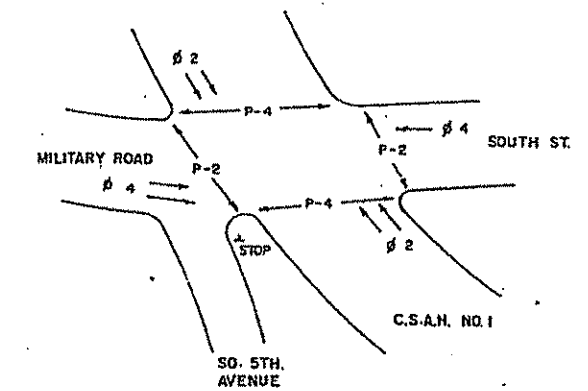
LOOP DETECTORS

NUMBER	SIZE	FUNCTION	DIST. FROM STOPLINE	LOOP DETAIL	TURNS LOOP
D2-1	2-6x6	CALL & EXTEND	250	B	3
D2-2	6x20	CALL ONLY	-0-	C	2
D2-3	6x20	CALL ONLY	5	D	2
D2-4	2-6x6	CALL & EXTEND	250	B	3
D2-5	6x20	CALL ONLY	-0-	C	2
D2-6	6x20	CALL ONLY	5	D	2
D4-1	16x6	CALL & EXTEND	150	A	3
D4-2	16x6	DELAY CALL	40	A	3
D4-3	2-6x6	DELAY CALL	-0-	B	3
D4-4	16x6	CALL & EXTEND	150	A	3
D4-5	6x6	DELAY CALL	5	A	4
D4-6	6x6	CALL	-0-	A	4

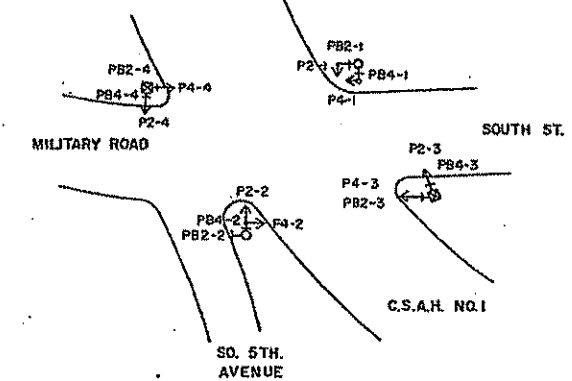
1 MEASURED FROM FRONT EDGE OF DETECTOR
2 DELAY DETECTOR



CONTROLLER PHASING



PEDESTRIAN PHASING



BA-1 ARR PDI 1
Type A-20-B10-1
Two-way signal, overhead - 20' 2-2
1 - overhead signal, type 10-B, pole mounted
2 - overhead signal, type 12-1 & 4-1, with pedestrian
indications, P-1 & P4-1
2 - pedestrian push buttons, PB 2-1 & PB 4-1, and signs
250 H high in the medium 'SP' luminaires
mounted 350
Extend into Mts:
1 - 12' #12
2 - 3' #12
3 - 1' #12

PEDESTAL PDI 1
Two-way signal, type 21, pedestal mounted
(2-1 & 4-2, with pedestrian indications
P2-1 & P4-1
2 - pedestrian push buttons, PB2-1 & PB4-1
and signs
Extend into Mts:
1 - 12' #12
2 - 3' #12
3 - 1' #12

BA-1 ARR PDI 1
Type A-20-B10-1
Two-way signal, overhead - 20' 2-2
1 - overhead signal, type 10-B, pole mounted
2 - overhead signal, type 12-1 & 4-1, with pedestrian
indications, P-1 & P4-1
2 - pedestrian push buttons, PB 2-1 & PB 4-1, and signs
250 H high in the medium 'SP' luminaires
mounted 350
Extend into Mts:
1 - 12' #12
2 - 3' #12
3 - 1' #12

PEDESTAL PDI 2
Two-way signal, type 21, pedestal mounted
(2-1 & 4-2, with pedestrian indications
P2-1 & P4-1
2 - pedestrian push buttons, PB2-1 & PB4-1
and signs
Extend into Mts:
1 - 12' #12
2 - 3' #12
3 - 1' #12

STATE AID PROJECT NO. _____	MISCELLANEOUS SIGNAL SHEETS
STATE PROJECT NO. _____	
CITY PROJECT NO. _____	
COUNTY PROJECT NO. <u>10-23-01</u>	Sheet <u>BA</u> of <u>BE</u> Sheets

NOTE: THIS PLAN SHEET IS BEING PROVIDED FOR INFORMATIONAL PURPOSES ONLY



TOLZ KING ENGINEERS ARCHITECTS



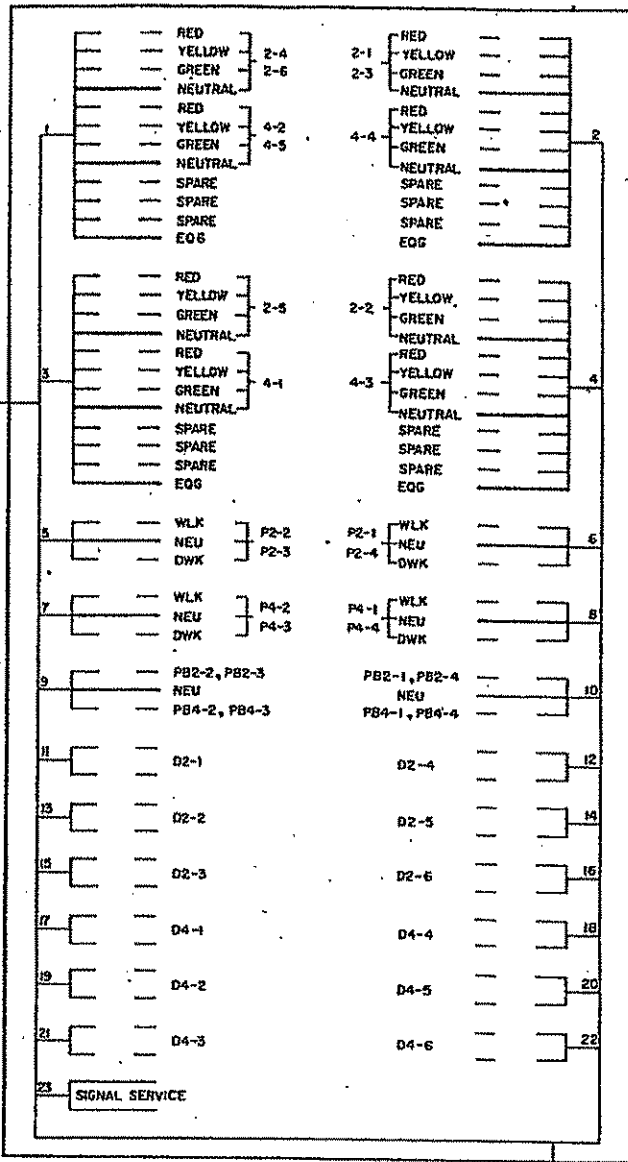
1982 M.S.A. IMPROVEMENTS CITY OF ANOKA, MN

INTERSECTION LAYOUT

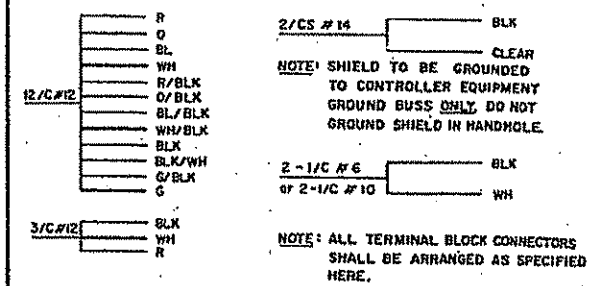
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7023

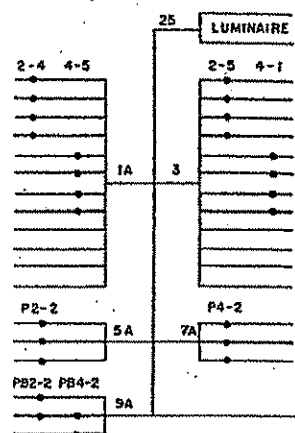
CONTROLLER CABINET



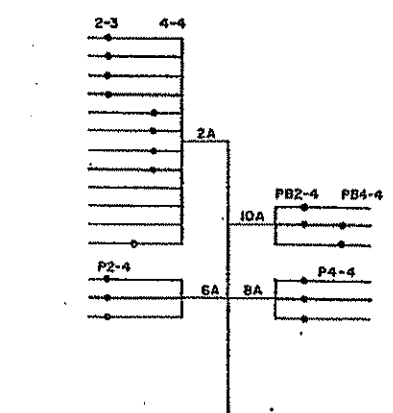
TYPICAL CONDUCTOR COLOR CODING



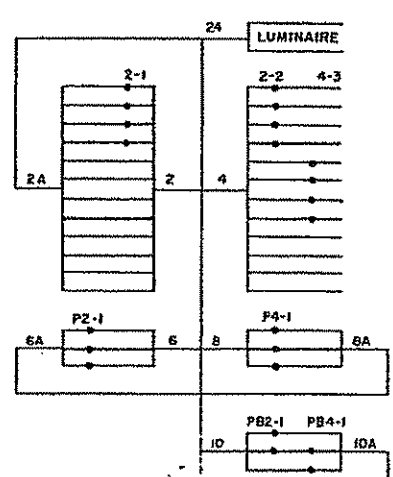
MAST ARM POLE ②



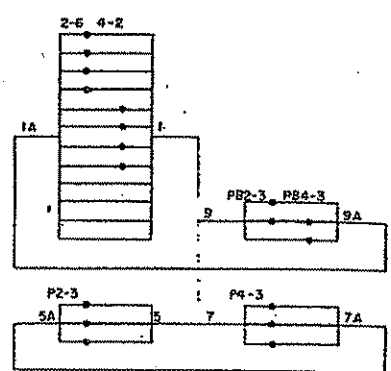
PEDISTAL POLE ④



MAST ARM POLE ①



PEDISTAL POLE ③



DATE: _____
 DESIGNED BY: _____
 CHECKED BY: _____
 DRAWN BY: _____
 APPROVED BY: _____

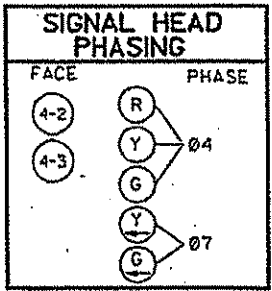
STATE AID PROJECT NO. _____	MISCELLANEOUS SIGNAL SHEETS
STATE PROJECT NO. _____	
CITY PROJECT NO. _____	
COUNTY PROJECT NO. <u>10-23-01</u>	
Sheet <u>BR</u> of <u>BE</u> Sheets	

NOTE: THIS PLAN SHEET IS BEING PROVIDED FOR INFORMATIONAL PURPOSES ONLY

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.
[Signature] Date: 11/11/01 No. 97432

7022

LOOP DETECTOR CHART			DISTANCE TO STOP BAR
DESIGNATION	SIZE/FT.	FUNCTION	
D6-1	1-1.7mX1.7m	(1)	55m
D6-2	1-1.7mX1.7m	(1)	55m
D7-1	1-1.7mX3.6m	(7)	15m
D8-1	1-1.7mX1.7m	(3), (8)	37m
D8-2	2-1.7mX1.7m	(7)	~1m, 3.6m
D2-1	1-1.7mX1.7m	(1)	55m
D2-2	1-1.7mX1.7m	(1)	55m
D4-1	1-1.7mX1.7m	(3), (8)	55m
D4-2	2-1.7mX1.7m	(7)	~.7m, 3.9m
D4-3	2-1.7mX1.7m	(1)	~.7m, 3.9m



3 PA85 FOUNDATION
 TYPE PA85-A-6.0m-D9m-3m (DAVIT AT 350")
 1- ONE WAY SIGNAL (OVERHEAD)
 0m FROM END OF MAST ARM
 TYPE 10B POLE MOUNTED AT 180°
 TYPE 10B POLE MOUNTED AT 270°
 LUMINAIRE - 200 WATT H.P.S. WITH P.E.C. AND TEST SWITCH
 ONEWAY EVP DETECTOR AND LIGHT
 (0.2 m FROM END OF MAST ARM), 19 mm HUB
 2 - PEDESTRIAN PUSHBUTTONS
 EXTEND 78 mm RSC INTO HH-7 WITH:
 2 - 12/C #12, 2 - 3/C #12,
 1 - 3/C #12 (LUM.), 1 - 3/C #20,
 AND 1 - NYLON ROPE

4 PEDESTAL FOUNDATION
 3m PEDESTAL AND BASE
 TYPE 2C
 ONEWAY EVP DETECTOR AND LIGHT
 2 - PEDESTRIAN PUSHBUTTONS
 EXTEND 78 mm RSC INTO HH-11 WITH:
 1 - 12/C #12, 3 - 3/C #12,
 1 - 3/C #20,
 AND 1 - NYLON ROPE

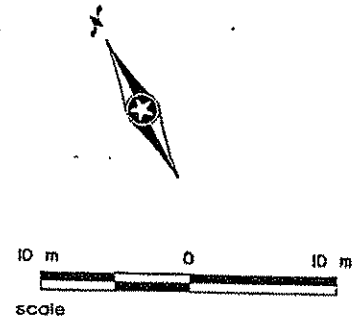
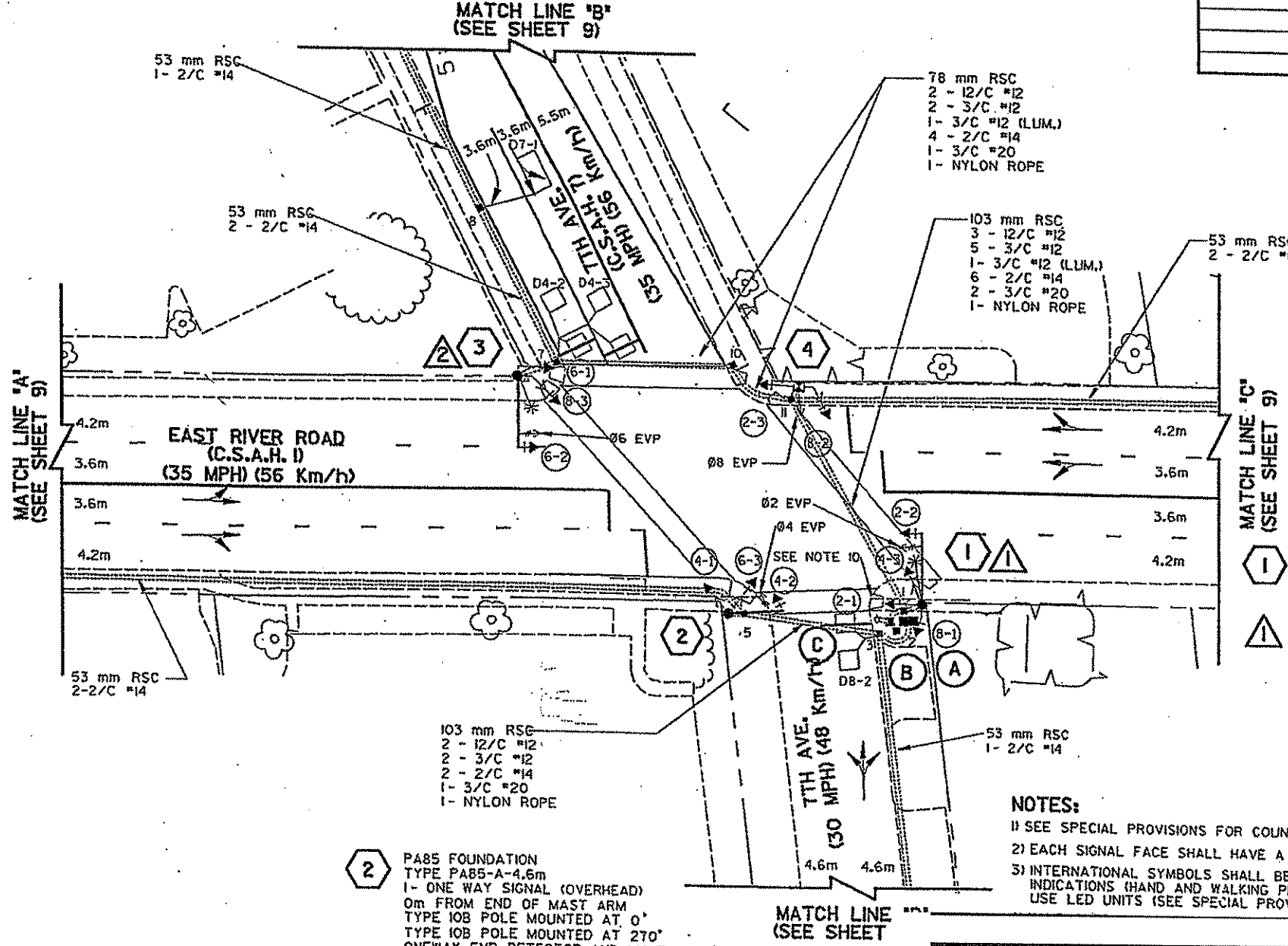
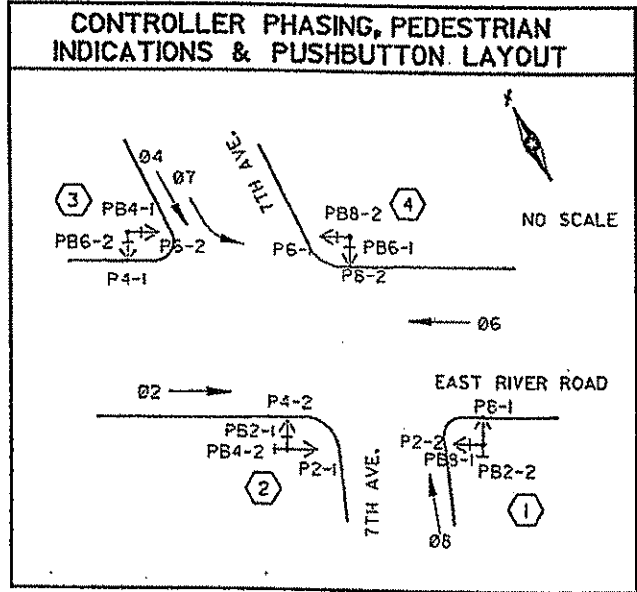
SIGNAL INDICATION CHART						
ALL SIGNAL INDICATIONS SHALL BE 300 mm ALL RED CIRCULAR INDICATIONS SHALL BE L.E.D.						
SIGNAL FACE	R	Y	G	RLTA	YLTA	GLTA
2-1.2-2.2-3	●	●	●			
4-1	●	●	●			
4-2.4-3	●	●	●	←	←	
6-1.6-2.6-3	●	●	●			
8-1.8-2.8-3	●	●	●			

FUNCTIONS:
 (1) CALL AND EXTEND
 (3) EXTEND ONLY
 (7) DELAY CALL, IMMEDIATE EXTEND
 (8) STRETCH

A CONTROLLER CABINET PAD - SEE DETAIL CONTROLLER & CABINET
 EXTEND 103 mm RSC INTO HH-1 WITH:
 5 - 12/C #12, 8 - 3/C #12,
 6 - 2/C #14, 3 - 3/C #20,
 AND 1 - NYLON ROPE
 EXTEND 35 mm RSC INTO HH-2 WITH:
 3 - 1/C #6 AND 1 - 1/C #6 BR.GR.
 EXTEND 103 mm RSC INTO HH-3 WITH:
 2 - 12/C #12, 2 - 3/C #12,
 4 - 2/C #14, 1 - 3/C #20,
 AND 1 - NYLON ROPE
 1 - 78 mm RSC STUB OUT OF CABINET (THREAD AND CAP BOTH ENDS)

B SERVICE CABINET FOUNDATION - SEE DETAIL SIGNAL SERVICE CABINET
 EXTEND 35 mm RSC INTO HH-2 WITH:
 3 - 1/C #6 AND 1 - 1/C #6 BR.GR.
 EXTEND 35 mm RSC INTO HH-1 WITH:
 2 - 3/C #12 (LUM.)

C SOURCE OF POWER
 ANOKA MUN. ELECTRIC
 WOOD POWER POLE (INP.)
 EXTEND 35 mm RSC INTO SERVICE CABINET WITH:
 3 - 1/C #6



1 PA85 FOUNDATION
 TYPE PA85-A-6.0m-D9m-3m (DAVIT AT 350")
 1- ONE WAY SIGNAL (OVERHEAD)
 0m FROM END OF MAST ARM
 TYPE 10A POLE MOUNTED AT 0°
 TYPE 10A POLE MOUNTED AT 180°
 TYPE 10B POLE MOUNTED AT 270°
 LUMINAIRE - 200 WATT H.P.S. WITH P.E.C. AND TEST SWITCH
 ONEWAY EVP DETECTOR AND LIGHT
 (0.2 m FROM END OF MAST ARM), 19 mm HUB
 2 - PEDESTRIAN PUSHBUTTONS
 EXTEND 78 mm RSC INTO HH-1 WITH:
 2 - 12/C #12, 3 - 3/C #12,
 1 - 3/C #12 (LUM.), 1 - 3/C #20,
 AND 1 - NYLON ROPE

2 PA85 FOUNDATION
 TYPE PA85-A-4.6m
 1- ONE WAY SIGNAL (OVERHEAD)
 0m FROM END OF MAST ARM
 TYPE 10B POLE MOUNTED AT 0°
 TYPE 10B POLE MOUNTED AT 270°
 ONEWAY EVP DETECTOR AND LIGHT
 (0.6 m FROM END OF MAST ARM), 19 mm HUB
 2 - PEDESTRIAN PUSHBUTTONS
 SIGN (R10-12) MOUNTED WITH RIGHT EDGE OF SIGN .45 m FROM END OF MAST ARM
 EXTEND 78 mm RSC INTO HH-5 WITH:
 2 - 12/C #12, 2 - 3/C #12,
 1 - 3/C #20,
 AND 1 - NYLON ROPE

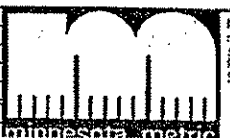
NOTES:
 1) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
 2) EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD
 3) INTERNATIONAL SYMBOLS SHALL BE USED FOR ALL PEDESTRIAN INDICATIONS (HAND AND WALKING PERSON). THE HAND INDICATION SHALL USE LED UNITS (SEE SPECIAL PROVISIONS).

SIGNAL OPERATION NOTES
 - NORMAL OPERATION IS 3 PHASE
 - FLASH MODE SHALL BE ALL RED
 - SOUTHBOUND APPROACH SHALL HAVE PROTECTED/PERMISSIVE LEFT TURNS
 - Ø2 & Ø6 SHALL BE ON VEHICLE RECALL

STATE AID PROJECT NO. _____	MISCELLANEOUS SIGNAL SHEETS Sheet BC of BE Sheets
STATE PROJECT NO. _____	
CITY PROJECT NO. _____	
COUNTY PROJECT NO. 10-23-01	

10) CONTRACTOR SHALL REMOVE EXISTING CURB & GUTTER AND SHALL INSTALL NEW PEDESTRIAN RAMP ACCORD TO PLAN SHEET 10-23-01
 NOTE: THIS PLAN SHEET IS BEING PROVIDED FOR INFORMATIONAL PURPOSES ONLY

NO	DATE	BY	CHKD	APPROV	REVISION
1	2/23/99	RWS	OME	LGMS	REVISIONS PER ANOKA COUNTY COMMENTS



I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.
 George W. Strempfler
 2/23/99

COUNTY PROJECT NO. _____
 S.A.P. 02-601-38
 CITY PROJECT NO. _____
 DATE 5-98
 DESIGNED BY S. ZAGER 5-98
 CHECKED BY G. STUEMPFLER 5-98
 COMM. NO. _____

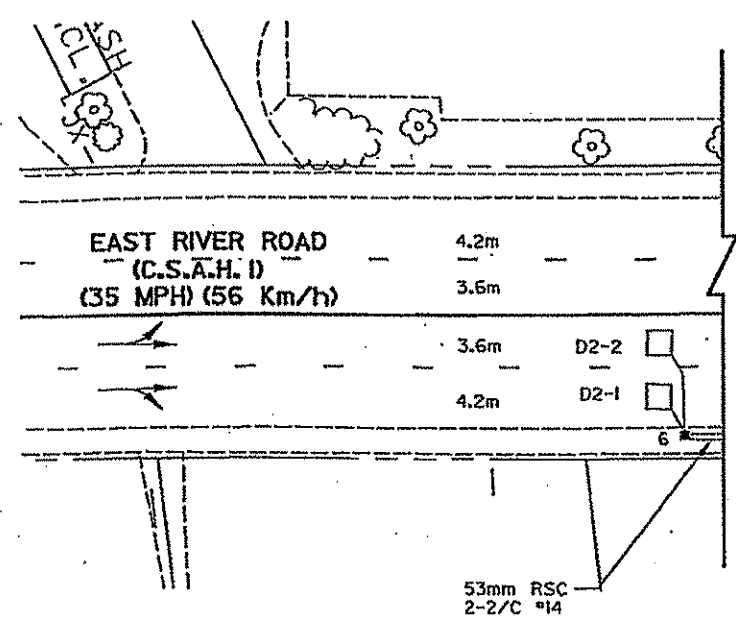
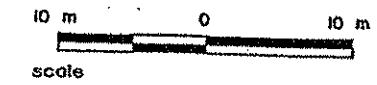


ANDOKA COUNTY
 INTERSECTION LAYOUT
 C.S.A.H. 1 SIGNAL RECONSTRUCTION

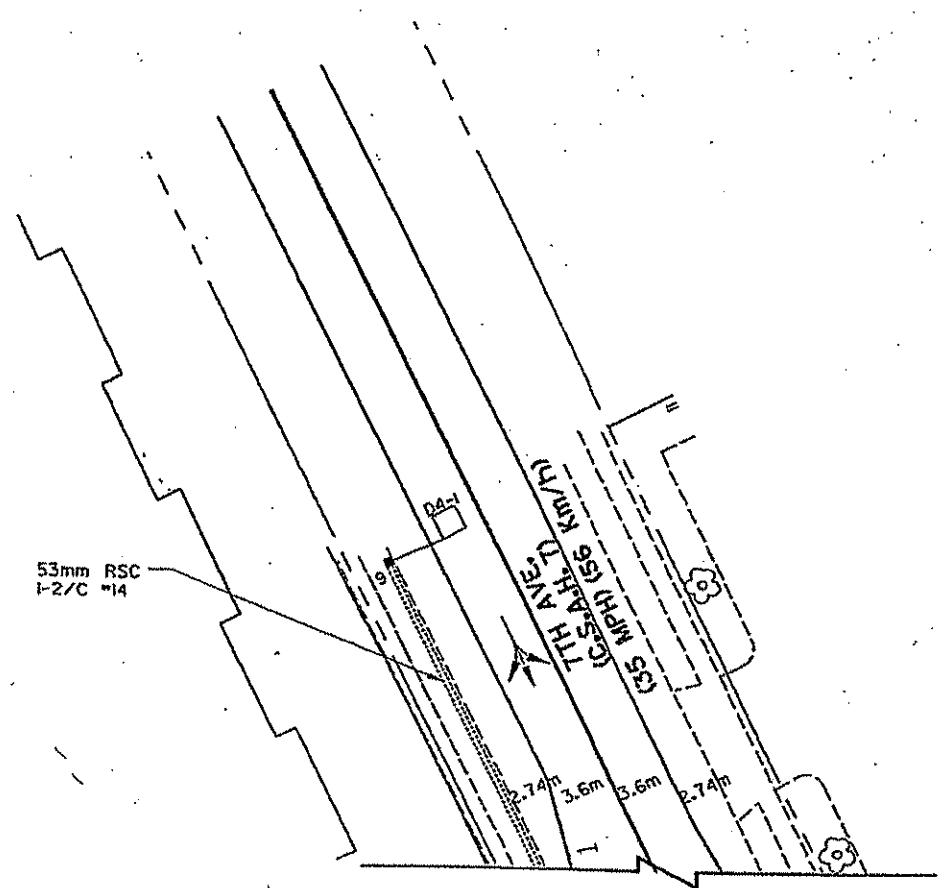
SHEET 8 OF 14

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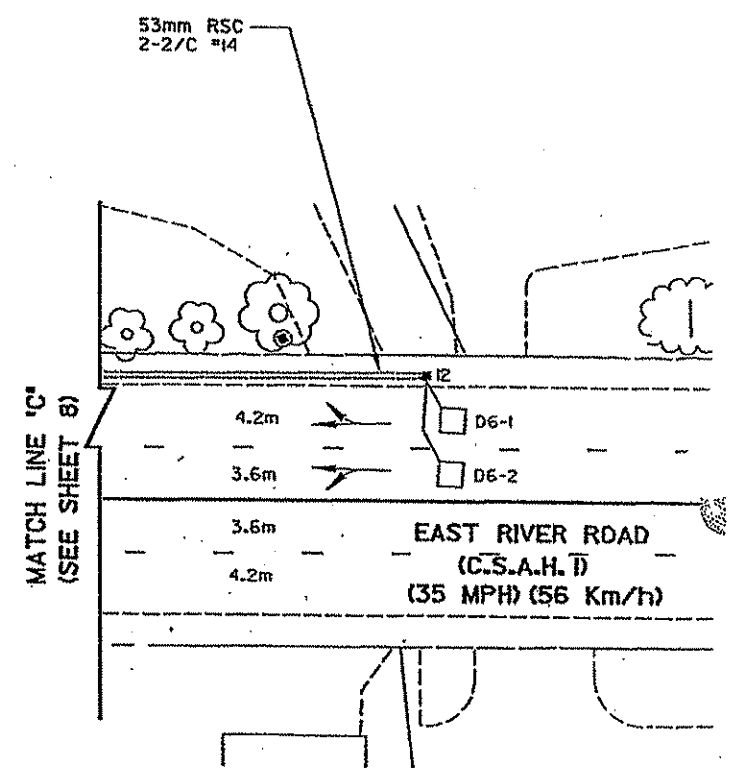
7022



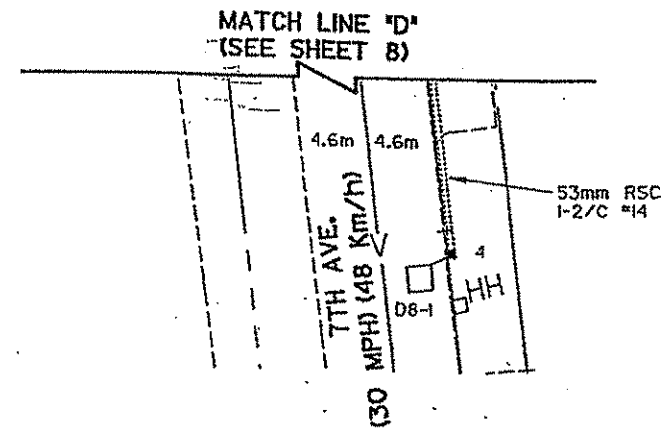
MATCH LINE "A"
(SEE SHEET 8)



MATCH LINE "B"
(SEE SHEET 8)



MATCH LINE "C"
(SEE SHEET 8)



MATCH LINE "D"
(SEE SHEET 8)

STATE AID PROJECT NO. _____	MISCELLANEOUS SIGNAL SHEETS
STATE PROJECT NO. _____	
CITY PROJECT NO. _____	
COUNTY PROJECT NO. <u>10-23-01</u>	
Sheet <u>8D</u> of <u>8E</u> Sheets	

DESIGN FILE: P:\1415\000\2500\418-586.dwg
 PLOT FILE: P:\1415\000\2500\418-586.dwg
 PLOT DATE: 02/24/99 09:25:24

NO	DATE	BY	CHK	APPR	REVISION
1	2/23/99	RWS	GMS	GMS	REVISIONS PER ANOKA COUNTY COMMENTS



I hereby certify that this plan specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.

George M. Stuempfig
Date 2/24/99 Reg. No. 21849

COUNTY PROJECT NO. _____
S.A.P. 02-501-38
CITY PROJECT NO. _____
S.A.P. 103-103-01

DRAWN BY
P. ZAGER
DATE 5-98

DESIGNED BY
P. ZAGER
DATE 5-98

CHECKED BY
G. STUEMPFIG
DATE 5-98

COMM. NO.
0972586



NOTE: THIS PLAN SHEET IS BEING PROVIDED FOR INFORMATIONAL PURPOSES ONLY

ANOKA COUNTY

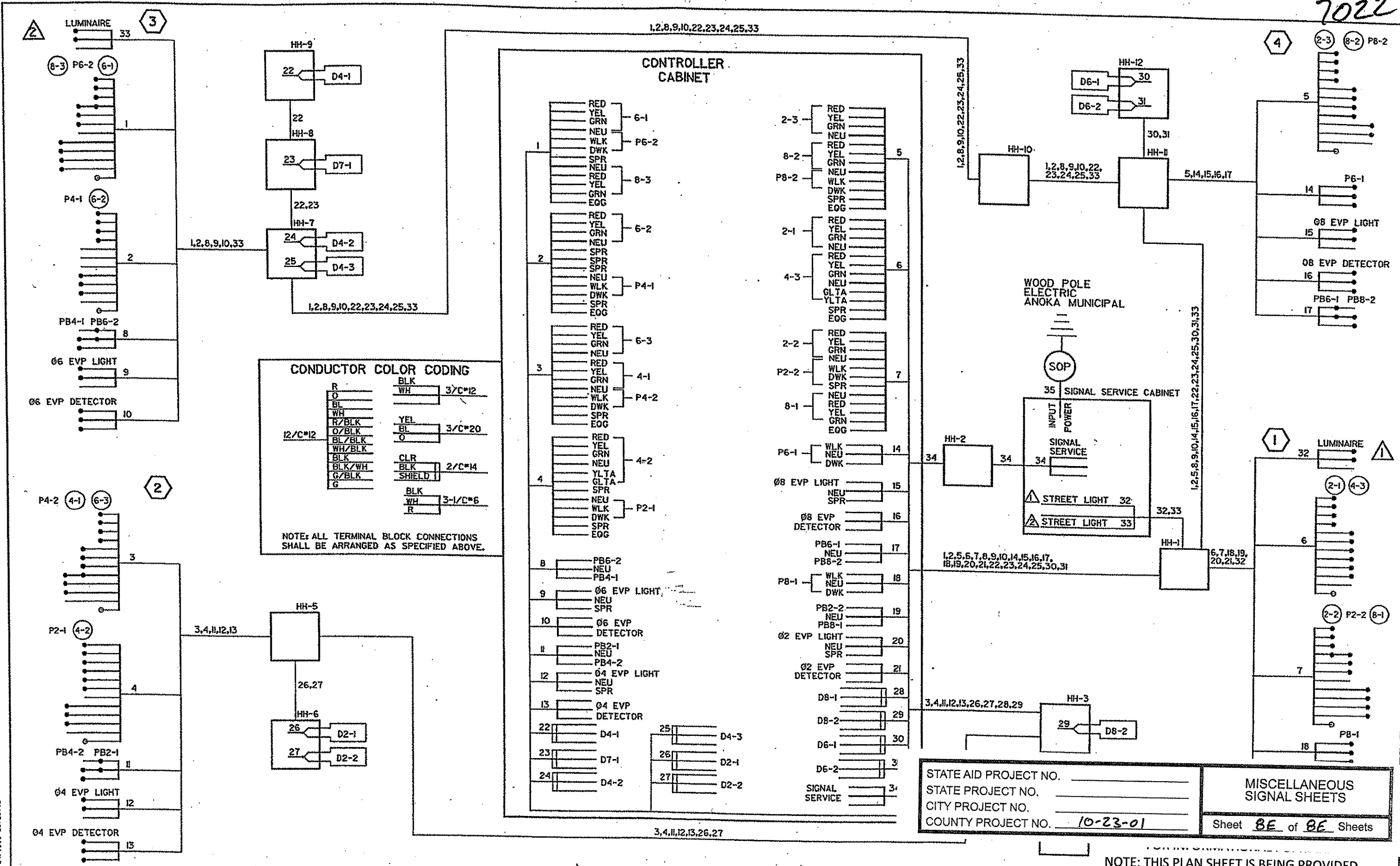
MATCHLINE SHEET

C.S.A.H. 1 SIGNAL RECONSTRUCTION

C.S.A.H. 1 AT C.S.A.H. 7 / 7TH AVENUE

SHEET 9 OF 14

7022



CONDUCTOR COLOR CODING

R	BLK	3/C*12
O	WH	3/C*12
BL	YEL	3/C*20
WH	BL	3/C*20
R/BLK	CLR	2/C*14
O/BLK	BLK	2/C*14
BL/BLK	SHIELD	
WH/BLK		
BLK		
BLK/WH		
G/BLK		
G		
	BLK	3-1/C*6
	WH	3-1/C*6
	R	3-1/C*6

NOTE: ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE.

STATE AID PROJECT NO. _____
 STATE PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 10-23-01

MISCELLANEOUS SIGNAL SHEETS
 Sheet BE of BE Sheets

I:\FILES\11\11000\2586\wdt-p86.dgn
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 JIC: NS-AR-4MV-AR001
 DATE/TIME: 02/24/1999 09:28:13

NO.	DATE	BY	REVISIONS PER ANOKA COUNTY COMMENTS
1	2/23/99	RNS	GMS

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.

[Signature]

COUNTY PROJECT NO. _____
 S.A.P. 02-601-35
 CITY PROJECT NO. _____



NOTE: THIS PLAN SHEET IS BEING PROVIDED FOR INFORMATIONAL PURPOSES ONLY

ANOKA COUNTY
 WIRING DIAGRAM
 SHEET 10