

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	-----
FORTE OR CITY LIMITS	-----
PAVING 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	-----
QUARRY	-----

UTILITY SYMBOLS

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

SCALES

PLAN: 0 10' 50' 100'

PROFILE HORIZONTAL: 0 10' 50' 100'

PROFILE VERTICAL: 0 1' 5' 10'

X-SECTIONS HORIZONTAL: 0 1' 5' 10'

X-SECTIONS VERTICAL: 0 2' 10' 20'

INDEX MAP: 0 0.5mi 1mi

MINNESOTA DEPARTMENT OF TRANSPORTATION

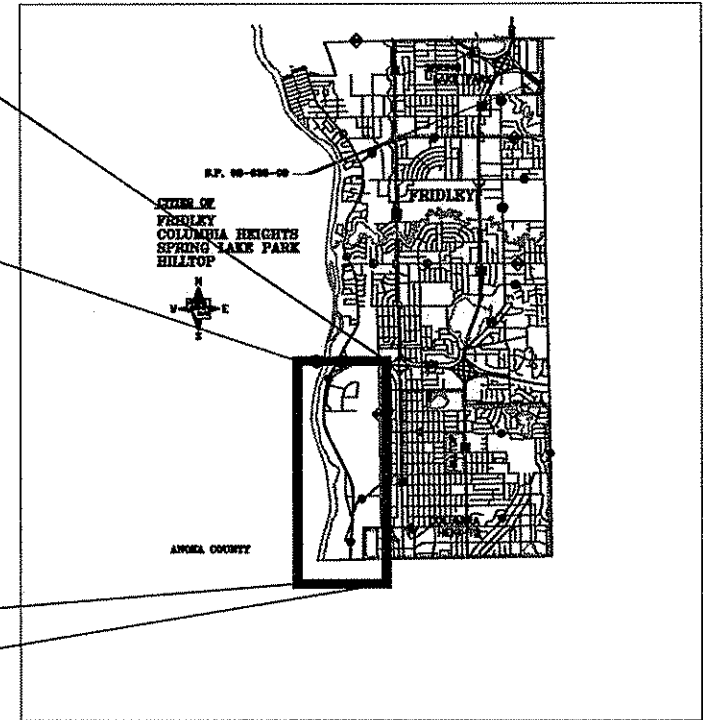
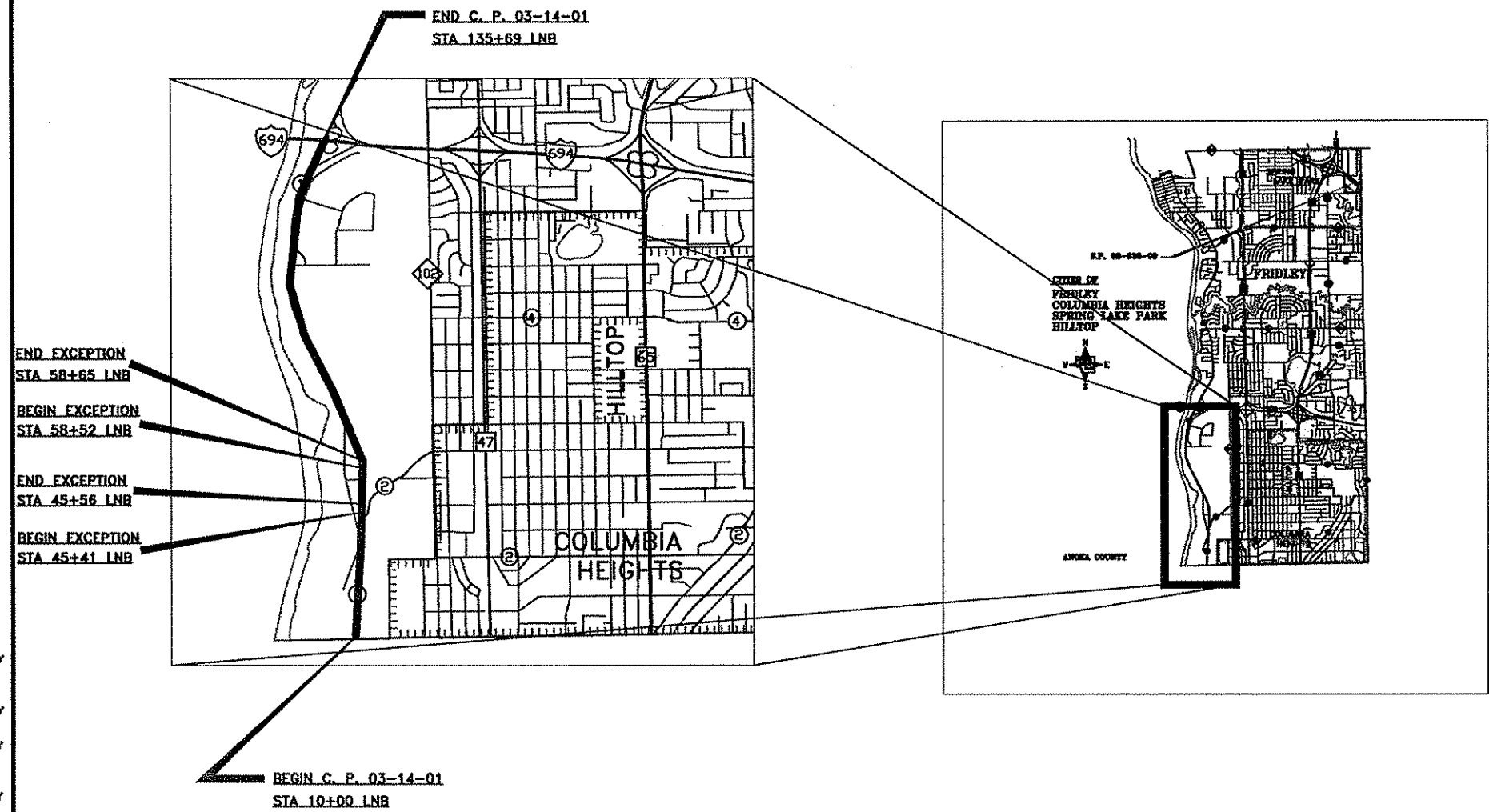
ANOKA COUNTY

CONSTRUCTION PLAN FOR BITUMINOUS MILLING & BITUMINOUS SURFACING

LOCATED ON CSAH 1 FROM SOUTH COUNTY LINE TO I-694
 EXCEPTIONS FROM STA 45+41 TO STA 45+56 & STA 58+52 TO STA 58+65

COUNTY PROJ. NO. 03-14-01
CSAH 1

GROSS LENGTH	12,519.00 FEET	2.371 MILES
BRIDGES-LENGTH	0.00 FEET	0.000 MILES
EXCEPTIONS-LENGTH	28.00 FEET	0.005 MILES
NET LENGTH	12,491.00 FEET	2.366 MILES



MINN. PROJ. NO. _____
 MINN. PROJ. NO. _____

GOVERNING SPECIFICATIONS

THE 2000 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MMUTCD, INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS - JANUARY, 2001."

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	STATEMENT OF ESTIMATED QUANTITIES
3	TABULATION CHARTS
4-5	TYPICAL SECTIONS
6-10	PLAN AND PROFILE SHEETS
11	SIGNAL LOOP DETAIL
12-16	STRIPING PLAN

THIS PLAN CONTAINS 16 SHEETS


DESIGN DESIGNATION

ESAL ₂₀	3,217,985
R VALUE	60
ADT (2001)	24812
Proj. ADT (2022)	37218
Proj. HCADT (2022)	2196
Soil Factor	NA
9 TON DESIGN	


Functional Classification	EXPANDER
No. of Traffic Lanes	4
No. of Parking Lanes	0
Design Speed	45/55 MPH
Based on Stopping Sight Distance	
Height of eye	3.5'
Height of object	0.5'
Design Speed not achieved at:	
STA. TO STA.	MPH
STA. TO STA.	MPH
STA. TO STA.	MPH

Approved 4/29/2003 
 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: MARK DALY
 SIGNATURE: 
 DATE: 4/17/2003 LICENSE NO. 21763

DRAWN BY: SK DATE: 4/1/03
 DESIGN BY: GA DATE: 4/1/03
 CHECKED BY: _____ DATE: _____

 **ANOKA COUNTY**
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. 03-14-01

TITLE SHEET

Sheet 1 of 16 Sheets

A. STATEMENT OF ESTIMATED QUANTITIES					
TAB NO.	ITEM NO.	ITEM	NOTE NO.	UNIT	QTY.
	2013.602	CELLULAR MOBILE TELEPHONE		EACH	3.00
	2021.501	MOBILIZATION		LUMP SUM	1.00
	2021.601	RR PROTECTIVE LIABILITY INSURANCE		LUMP SUM	1.00
	2021.610	RAILROAD PROTECTIVE SERVICES		hour	20.00
	2221.501	AGGREGATE SHOULDERING CLASS-7B	1	TON	1080.00
D	2232.501	MILL BITUMINOUS SURFACE, APPROACH TAPERS		SQ YD	2236.00
E	2232.501	MILL BITUMINOUS SURFACE, ROADWAY		SQ YD	109071.00
	2350.609	TYPE HV 3 WEARING COURSE MIXTURE (E)	2	TON	13448.00
	2350.609	TYPE HV 4 WEARING COURSE MIXTURE, STREET APPR. & ENTRANCES	2	TON	170.00
	2350.609	TYPE LV 4 WEARING COURSE MIXTURE FOR PATCHING	2	TON	200.00
	2357.502	BITUMINOUS MATERIAL FOR TACK COAT		GALLON	8570.00
	2360.604	REFLECTIVE CRACK RELIEF INTERLAYER		SQ YD	61335.00
G	2506.522	ADJUST FRAME RING AND CASTING (WATER M.H.)		EACH	5.00
H	2506.522	ADJUST FRAME RING AND CASTING (SANITARY M.H.)		EACH	2.00
	2563.601	TRAFFIC CONTROL		LUMP SUM	1.00
	2563.602	PORTABLE CHANGEABLE MESSAGE SIGN	3	UNIT DAY	20.00
	2563.604	CONSTRUCTION SIGN SPECIAL, DIAMOND GRADE	4	SQ FT	198.00
	2564.602	PAVEMENT MESSAGE (LT ARROW) POLY PREFORMED		EACH	15.00
	2564.602	PAVEMENT MESSAGE (RT ARROW) POLY PREFORMED		EACH	10.00
	2564.602	PAVEMENT MESSAGE (RR XING) POLY PREFORMED		EACH	8.00
	2564.603	4" SOLID LINE WHITE - PAINT (TEMPORARY)	5	LIN FT	3300.00
	2564.603	4" BROKEN LINE WHITE - PAINT (TEMPORARY)	5	LIN FT	4910.00
	2564.603	4" SOLID LINE WHITE - EPOXY		LIN FT	28925.00
	2564.603	4" BROKEN LINE WHITE - EPOXY		LIN FT	4910.00
	2564.603	4" SOLID LINE YELLOW - EPOXY		LIN FT	22873.00
	2564.603	24" SOLID LINE WHITE - POLY PREFORMED		LIN FT	576.00
	2564.604	ZEBRA CROSSWALK - POLY PREFORMED		SQ FT	2718.00
F	2565.602	LOOP DETECTORS 6' X 6'		EACH	47.00
	2580.501	TEMPORARY LANE MARKING, WHITE TAPE (SOLID & BROKEN LINES)	6	LIN FT	10530.00

B. CONSTRUCTION NOTES	
1	RECYCLED GLASS WILL NOT BE ALLOWED IN CLASS 7B AGGREGATE SHOULDERING.
2	INCLUDES QUANTITY FOR ADDING 1/4" TO THE DESIGN THICKNESS.
3	TO BE USED AS DIRECTED BY THE ENGINEER.
4	2 - 11' X 9' SIGNS, SEE SPECIAL PROVISIONS.
5	TO BE USED FOR LNB & LSB 4" CENTER LINE WHITE SKIPS & 4" SOLID LINE WHITE FOR TURN BAYS @ SIGNALIZED INTERSECTIONS, APPLIED ON MILLED SURFACE.
6	TO BE USED FOR LNB & LSB 4" CENTER LINE WHITE SKIPS & 4" SOLID LINE WHITE FOR TURN BAYS @ SIGNALIZED INTERSECTIONS, APPLIED ON REFLECTIVE CRACK RELIEF INTERLAYER AND WEAR COURSE.

C. BASIS OF PLANNED QUANTITIES	
2350	TYPE HV 3 WEARING COURSE MIXTURE (HVWE36540E) TYPE HV 4 WEARING COURSE MIXTURE, STREET APPR. & ENT. (HVWE46540E) TYPE LV 4 WEARING COURSE MIXTURE FOR PATCHING (LVWE45030C) 110 LBS/SQ YD/INCH
2357	BITUMINOUS MATERIAL FOR TACK COAT 0.05/SQ YD/LIFT APPLIED

NO	DATE	BY	CHKD	APPR	REVISION

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 PRINT NAME: MARK DALY
 SIGNATURE: *MD DALY*
 DATE: 4/17/2003 LICENSE NO. 21763

DRAWN BY: SK DATE: 4/1/03
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ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. 03-14-01

STATEMENT OF
 ESTIMATED QUANTITIES
 Sheet 2 of 16 Sheets

D. MILL BITUMINOUS SURFACE, APPROACH TAPERS					
BEG. STA.	LOC.	LENGTH	WIDTH	AREA	REMARKS
		FT	FT	SQ YDS	
12+20	LT	80.0	10.0	88.9	
17+75	RT	60.0	10.0	66.7	
21+00	RT	64.0	10.0	71.1	
22+80	RT	35.0	10.0	38.9	
23+00	LT	120.0	10.0	133.3	
33+25	RT	50.0	10.0	55.6	
35+80	LT	41.0	10.0	45.6	
35+90	RT	75.0	10.0	83.3	FREE RIGHT, CSAH 2
36+70	LT	72.0	10.0	80.0	
36+85	RT	82.0	10.0	91.1	CSAH 2
49+35	RT	89.0	10.0	98.9	
49+65	LT	175.0	10.0	194.4	
69+00	RT	216.0	10.0	240.0	
75+30	RT	76.0	10.0	84.4	
81+50	RT	143.0	10.0	158.9	
95+00	RT	149.0	10.0	165.6	
106+10	RT	176.0	10.0	195.6	51ST WAY
106+25	LT	120.0	10.0	133.3	
120+00	RT	189.0	10.0	210.0	53RD WAY
		TOTAL SQ YDS =		2235.6	

E. MILL BITUMINOUS, ROADWAY			
ALIGN.	BEG. STA.	END STA.	AREA SQ FT
LNB & LSB	10+00	27+87	133970.0
LNB & LSB	27+87	38+35	92304.0
LNB	38+35	45+40	26853.0
LSB	38+35	46+14	29023.0
LNB	45+56	50+00	18515.0
LSB	46+26	50+80	18854.0
LNB	50+00	58+52	27770.0
LSB	50+80	59+08	28920.0
LNB	58+71	80+06	76670.0
LSB	59+19	80+22	74391.0
LNB	80+06	97+56	71229.0
LSB	80+22	97+96	76495.0
LNB	97+56	126+24	109253.0
LSB	97+96	126+02	113211.0
LNB	126+24	135+68	35875.0
LSB	126+02	135+51	48306.0
		TOTAL SQ FT =	981639.0
		TOTAL SQ YDS =	109071.0

F. PROPOSED LOOP DETECTOR LOCATIONS			
STA	OFFSET (FROM LNB CL)	QTY.	
10+15-10+55	26' RT	4	
14+55	70' - 85' LT	2	
33+85	10' LT - 10' RT	2	
41+30	70' - 80' LT	2	
36+00 - 36+25	25' LT - 15' RT	4	
37+25 - 37+50	55' LT	2	
76+90	10' LT - 10' RT	2	
85+75	70' - 85' LT	2	
101+40	10' LT - 10' RT	2	
105+25-105+70	10' - 25' LT	4	
105+90-106+10	110' - 120' LT	4	
106+20-106+50	40' RT	6	
106+70-107+00	60' LT	4	
110+60	70' - 85' LT	2	
128+15	10' LT - 10' RT	2	
132+45	45' LT	1	
134+95	55' - 70' LT	2	
	TOTAL =	47	

G. ADJUST WATER MANHOLE CASTING		
LNB STATION	LOCATION	NO. OF MH'S
9+95	124' LT	1
10+00	29' RT	1
10+13	35' RT	1
49+50	61' RT	1
49+54	37' RT	1
	TOTAL:	5

H. ADJUST SANITARY MANHOLE CASTING		
LNB STATION	LOCATION	NO. OF MH'S
35+42	96' LT	1
49+92	107' LT	1
	TOTAL:	2

I. ADJUST GAS VALVES		
LNB STATION	LOCATION	NO. OF VALVES
10+41	95' LT	1
25+88	90' LT	1
32+98	26' LT	1
61+23	90' LT	1
81+64	91' LT	1
82+58	92' LT	1
96+05	96' LT	1
101+36	89' LT	1
105+39	94' LT	1
124+20	88' LT	1
	NOTE: TO BE ADJUSTED BY OTHERS	

J. ADJUST ELECTRIC MANHOLE CASTING		
LNB STATION	LOCATION (FROM LNB CL)	NO. OF MH'S
32+98	56' LT	1
35+53	68' LT	1
36+97	24' RT	1
40+92	24' RT	1
	NOTE: TO BE ADJUSTED BY OTHERS	

K. ADJUST GAS MANHOLE CASTING		
LNB STATION	LOCATION	NO. OF MH'S
48+77	93' LT	1
82+65	92' LT	1
	NOTE: TO BE ADJUSTED BY OTHERS	

NO	DATE	BY	CHKD	APPR	REVISION

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 SIGNATURE: *MD DALY*
 DATE: 4/12/2003 LICENSE NO. 21763

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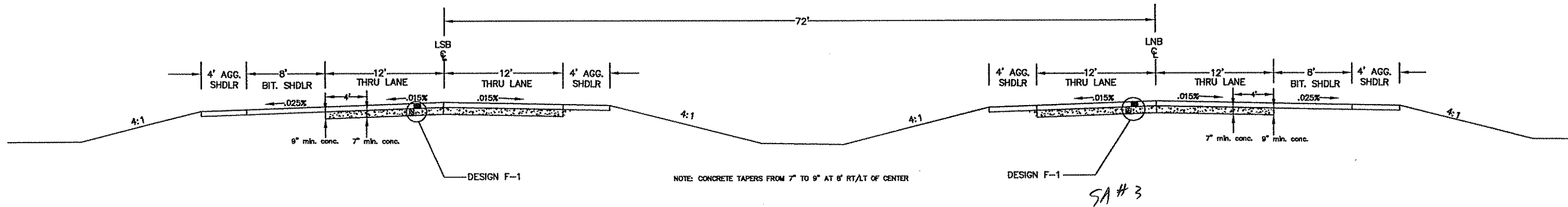
ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
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 COUNTY PROJECT NO. 03-14-01

TABULATION CHARTS

Sheet 3 of 16 Sheets

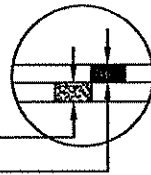
EAST RIVER ROAD (CSAH 1)
STA 10+00 - STA 125+00 (EXISTING)



DESIGN F-1

(CSAH 1) EXISTING CONDITIONS

7-9" INPLACE CONCRETE PAVEMENT
2" INPLACE BITUMINOUS PAVEMENT

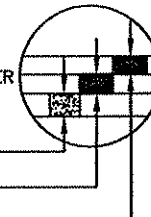


DESIGN F-2

(CSAH 1) 2" MILL & 2" OVERLAY WITH A 1" REFLECTIVE CRACK RELIEF INTERLAYER

2" Mill
C 1500 4 Seat
2" MV 3
1.5" HV 3 NW
1.5" HV 3 NE

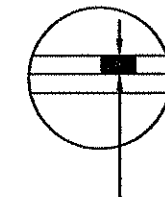
7-9" INPLACE CONCRETE PAVEMENT
1" REFLECTIVE CRACK RELIEF INTERLAYER PLACED OVER CONCRETE
2" HV 3 WEARING COURSE MIXTURE (HVWE36540E) (2" MILL & OVERLAY)



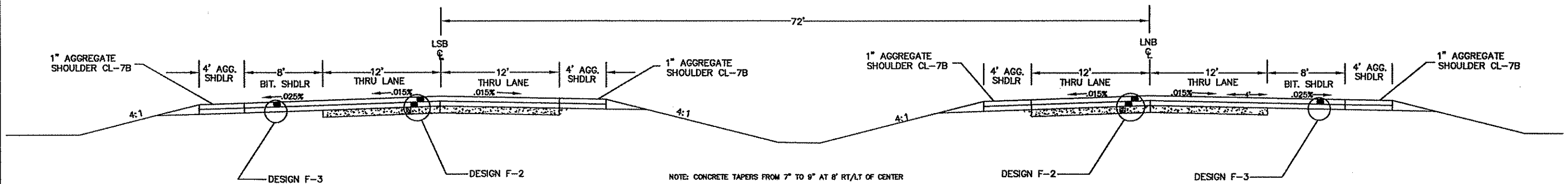
DESIGN F-3

(CSAH 1) 1" MILL & 2" OVERLAY ON BIT. SHOULDER

2" M 3 NW
2" M 3 WE
2" HV 3 WEARING COURSE MIXTURE (HVWE36540E) (1" MILL & 2" OVERLAY)



EAST RIVER ROAD (CSAH 1)
STA 10+00 - STA 125+00 (PROPOSED)



NO	DATE	BY	CKD	APPR	REVISION

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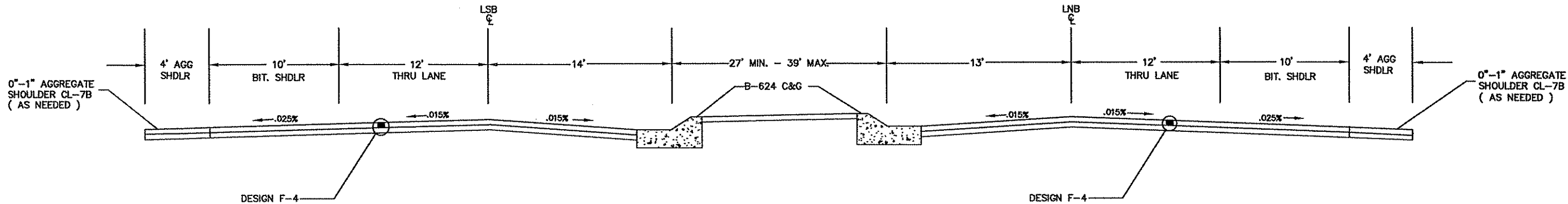
ANOKA COUNTY
HIGHWAY DEPT.

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COUNTY PROJECT NO. 03-14-01

TYPICAL SECTIONS
Sheet 4 of 16 Sheets

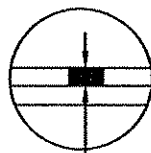
EAST RIVER ROAD (CSAH 1)

STA 125+00 - 129+37



DESIGN F-4

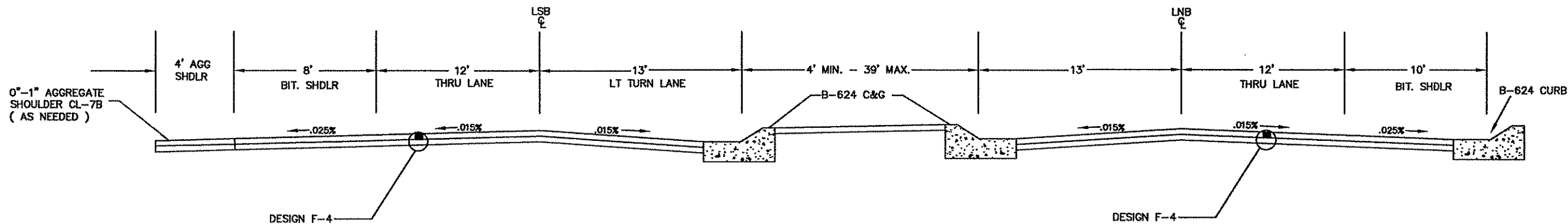
(CSAH 1) PROPOSED CONSTRUCTION



MILL 2" OF INPLACE BITUMINOUS
PAVE 2" HV 3 WEARING COURSE MIXTURE (HVWE36540E)

EAST RIVER ROAD (CSAH 1)

STA 129+37 - 135+19.07



NO	DATE	BY	CKD	APPR	REVISION

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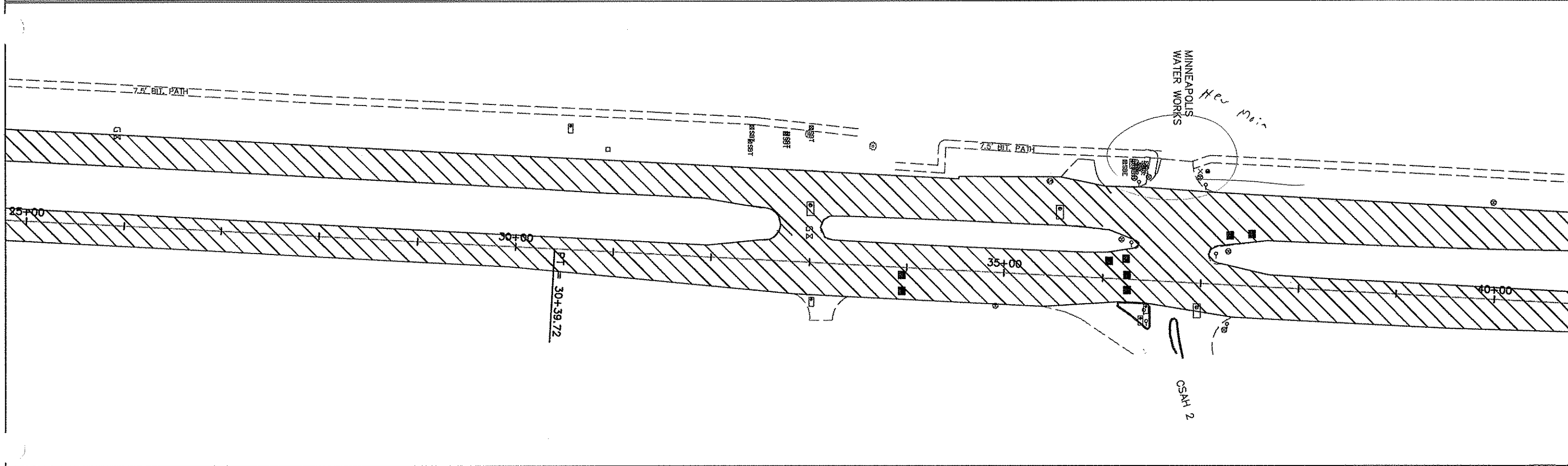
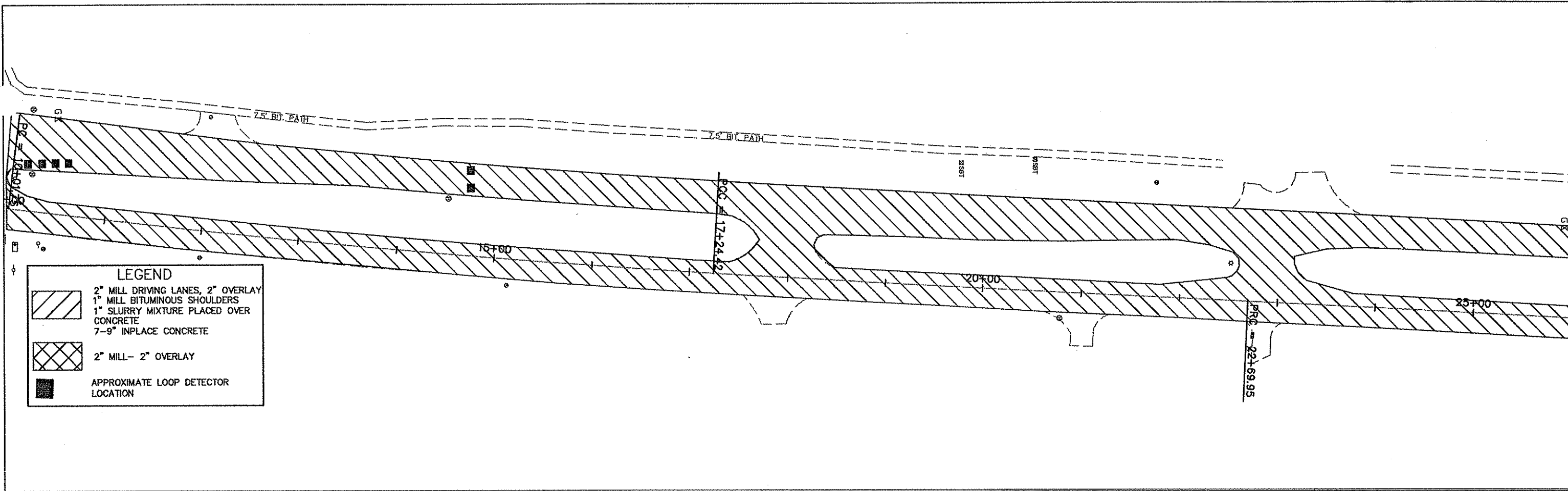


ANOKA COUNTY
HIGHWAY DEPT.

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TYPICAL SECTIONS

Sheet 5 of 16 Sheets



NO	DATE	BY	CKD	APPR	REVISION

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PRINT NAME: **MARK DALY**

SIGNATURE: *M. Daly*

DATE: **4/17/2003** LICENSE NO. 21783

DRAWN BY: **SK** DATE: **4/1/03**

DESIGN BY: **GA** DATE: **4/1/03**

CHECKED BY: _____ DATE: _____

ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____

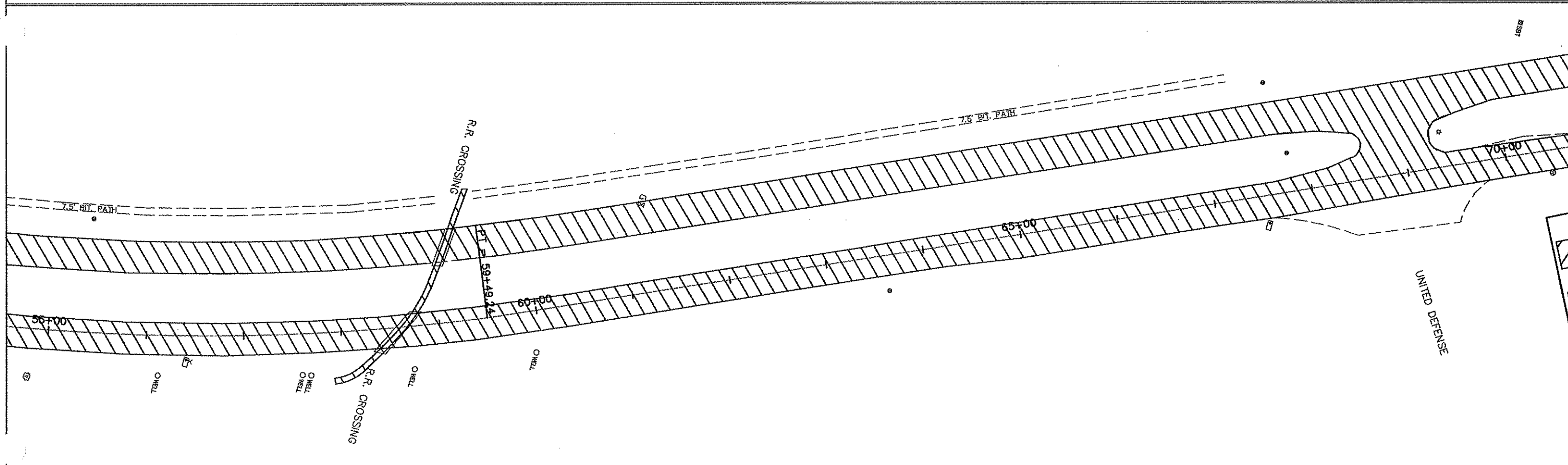
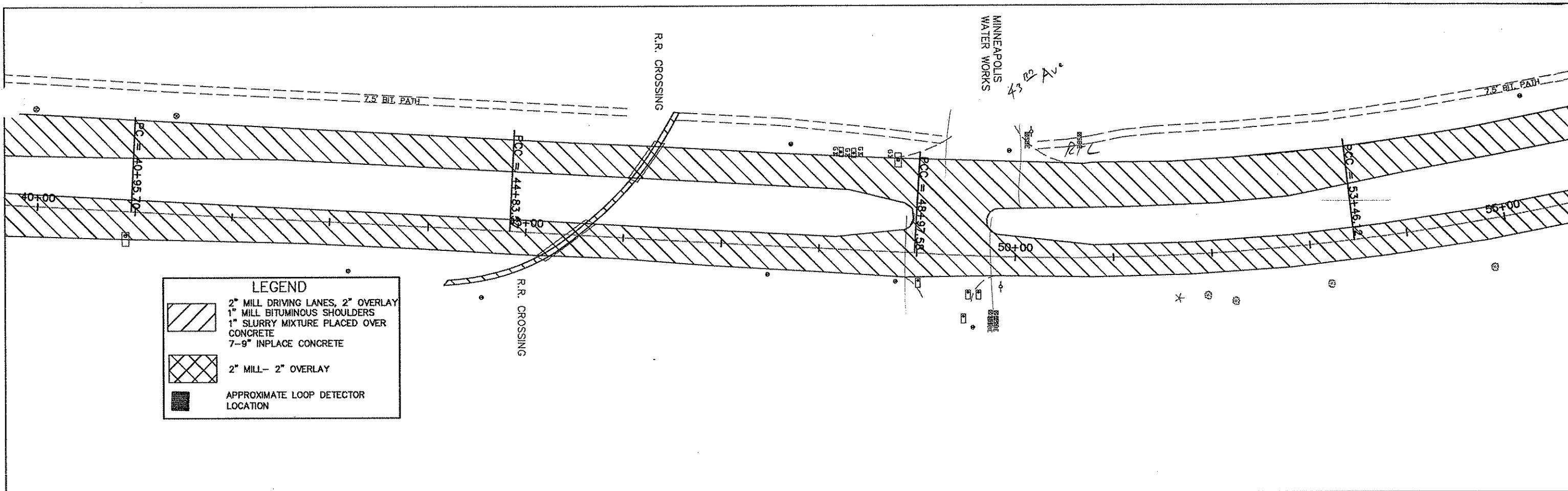
STATE AID PROJECT NO. _____

STATE AID PROJECT NO. _____

COUNTY PROJECT NO. **03-14-01**

PLAN SHEET
STA 10+00 TO 40+00

Sheet **6** of **16** Sheets



NO	DATE	BY	CKD	APPR	REVISION

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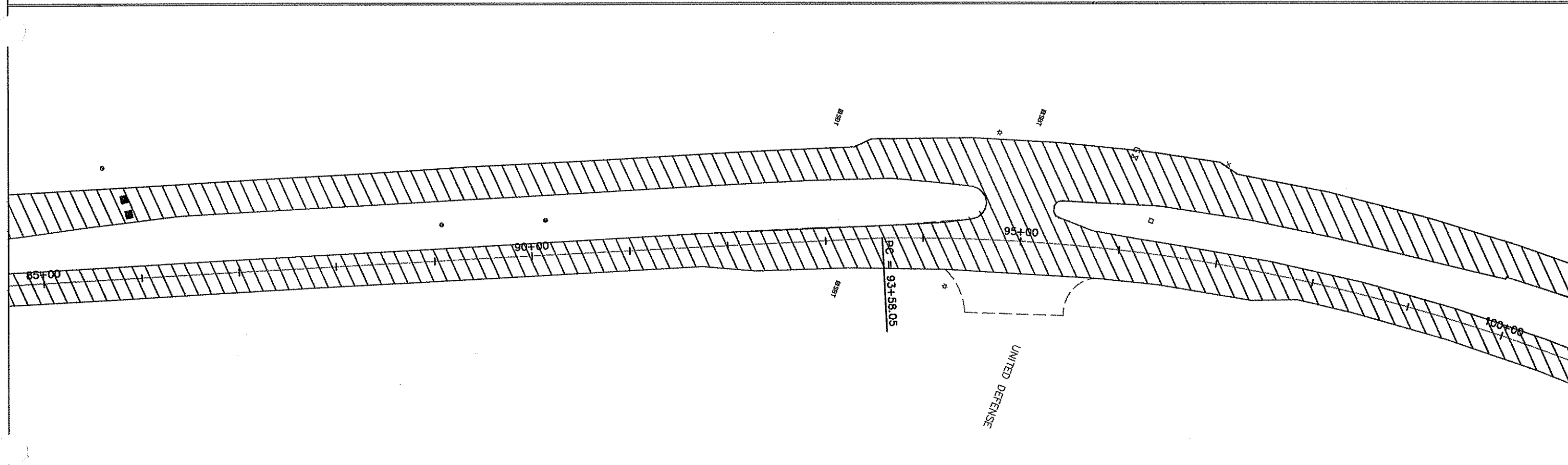
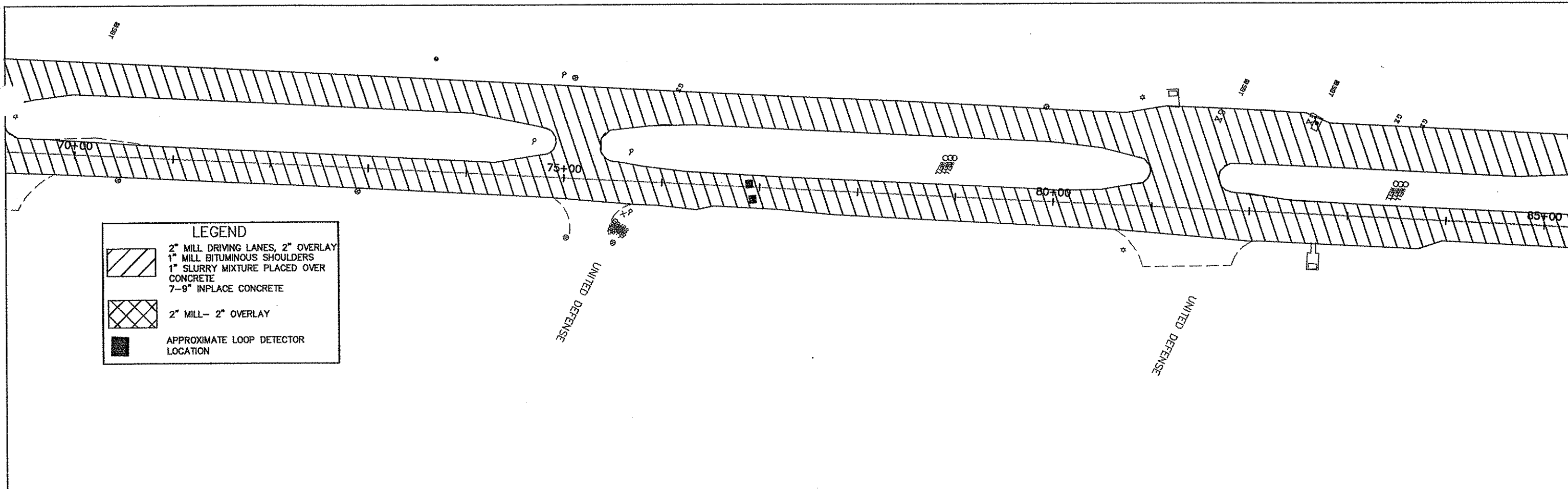
PRINT NAME: MARK DAY
 SIGNATURE: [Signature]
 DATE: 4/17/2003 LICENSE NO. 21783

DRAWN BY: SK DATE: 4/1/03
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 CHECKED BY: _____ DATE: _____

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 COUNTY PROJECT NO. 03-14-01

PLAN SHEET
 STA 40+00 TO 70+00
 Sheet 7 of 16 Sheets



NO	DATE	BY	CHKD	APPR	REVISION

NAME: S:\SDSK\PROJ\000000\000000\026000.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: MARK DABY

SIGNATURE: MR DABY

DATE: 4/17/2003 LICENSE NO. 21763

DRAWN BY SK DATE 4/1/03

DESIGN BY SK DATE 4/1/03

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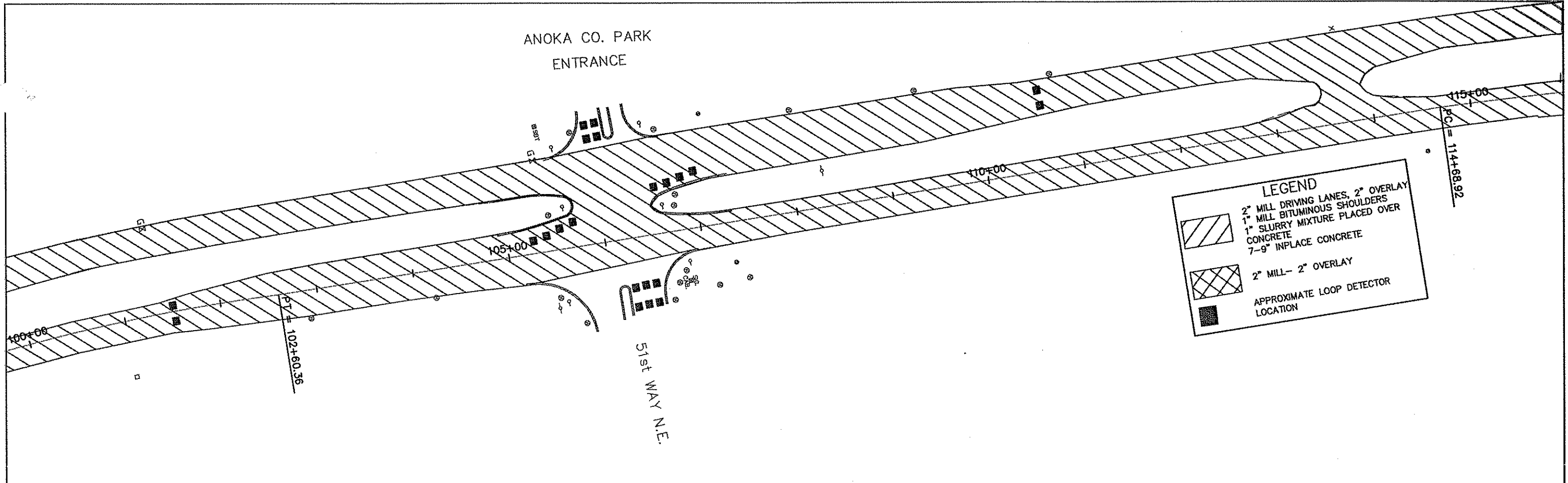
STATE AID PROJECT NO. _____

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PLAN SHEET
STA 70+00 TO 100+00

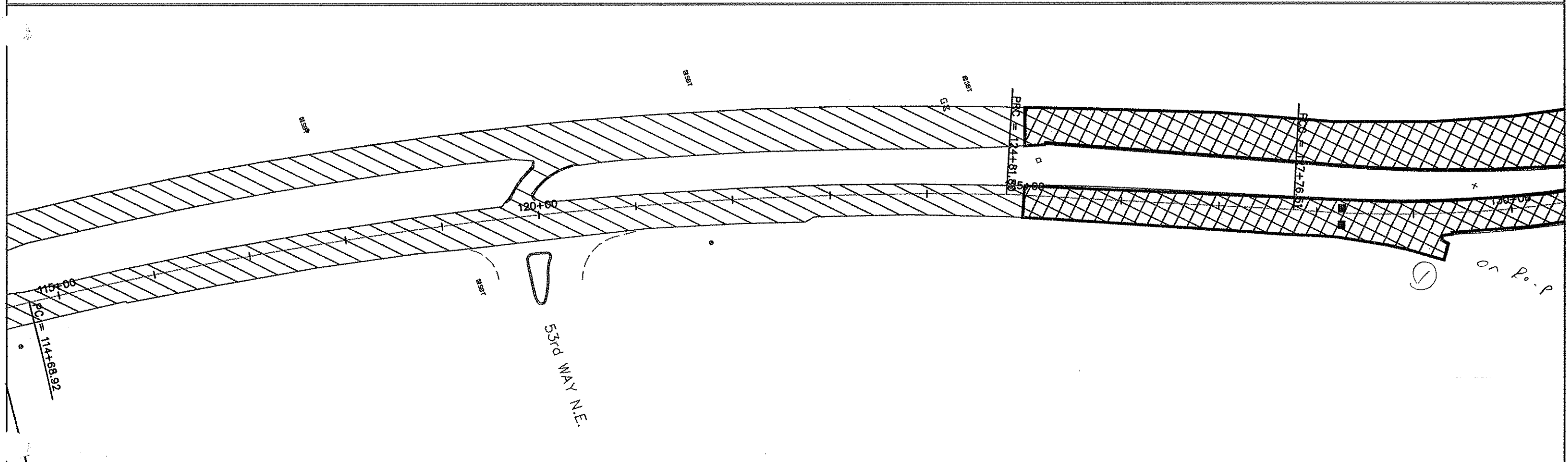
Sheet 8 of 16 Sheets

ANOKA CO. PARK
ENTRANCE



LEGEND

-  2" MILL DRIVING LANES, 2" OVERLAY
1" MILL BITUMINOUS SHOULDERS
1" SLURRY MIXTURE PLACED OVER
CONCRETE
7-9" INPLACE CONCRETE
-  2" MILL- 2" OVERLAY
-  APPROXIMATE LOOP DETECTOR
LOCATION



NO	DATE	BY	CHKD	APPR	REVISION

NAME: S:\SDSKPROJ\000000\000000\028000.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: MARK DALY
SIGNATURE: MZADA
DATE: 4/17/2003 LICENSE NO. 21783

DRAWN BY: SK DATE: 4/1/03
DESIGN BY: GA DATE: 4/1/03
CHECKED BY: _____ DATE: _____









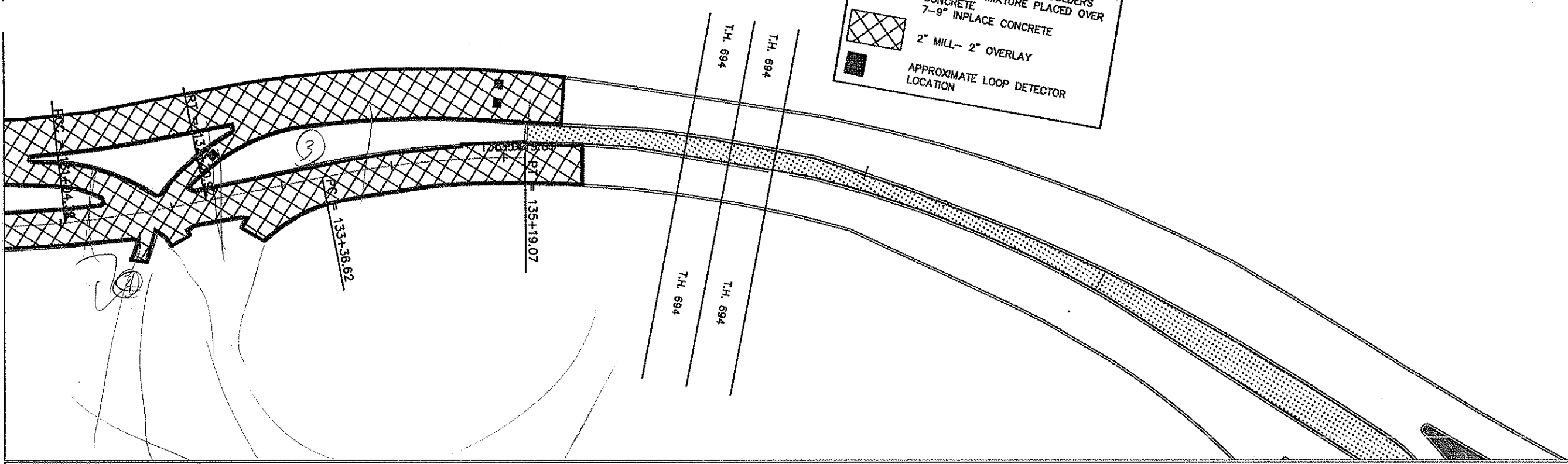
**ANOKA COUNTY
HIGHWAY DEPT.**

STATE PROJECT NO. _____
STATE AID PROJECT NO. _____
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. 03-14-01

PLAN SHEET
STA 100+00 TO 130+00
Sheet 9 of 16 Sheets

LEGEND

-  2" MILL DRIVING LANES, 2" OVERLAY
-  1" MILL BITUMINOUS SHOULDERS
-  1" SLURRY MIXTURE PLACED OVER CONCRETE
-  7-9" INPLACE CONCRETE
-  2" MILL- 2" OVERLAY
-  APPROXIMATE LOOP DETECTOR LOCATION



- ① Close S or R-o-P
send to H. O-r-P
- ② Close SB off ramp Y
send to NB Y
- ③ Close NB Y
send to SB Y

tacked on #3 before #2
open. CSO - did not
fr. public on tack.

NO	DATE	BY	CHKD	APPR	REVISION

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PRINT NAME: MARK DALY

SIGNATURE: MD DALY

DATE: 4/17/2002 LICENSE NO. 21763

DRAWN BY: SK DATE: 4/1/03

DESIGN BY: GA DATE: 4/1/03

CHECKED BY: _____ DATE: _____

ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____

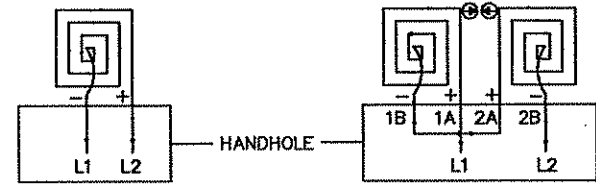
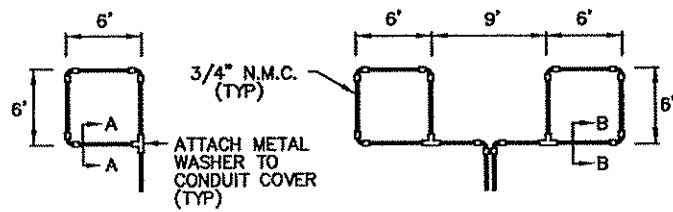
STATE AID PROJECT NO. _____

STATE AID PROJECT NO. _____

COUNTY PROJECT NO. 03-14-01

PLAN SHEET
STA 130+00 TO 135+70.57

Sheet 10 of 16 Sheets

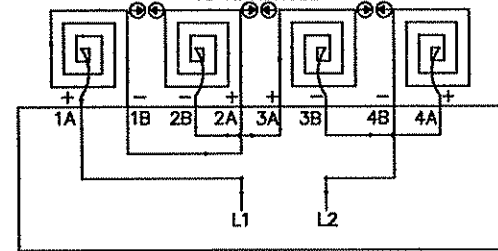
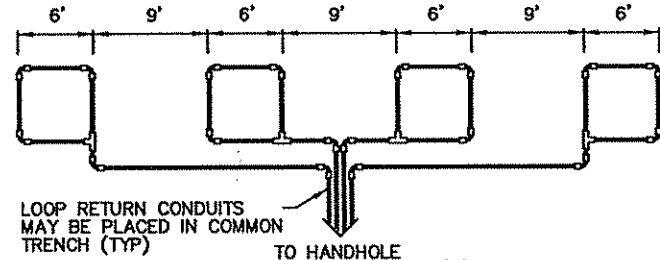


LOOP DETECTOR
DETAIL 'A'
(LOOP PHASING FOR
SINGLE CONNECTION)

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

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

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

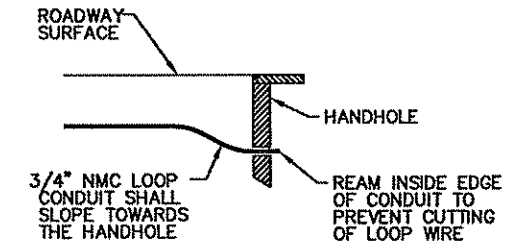
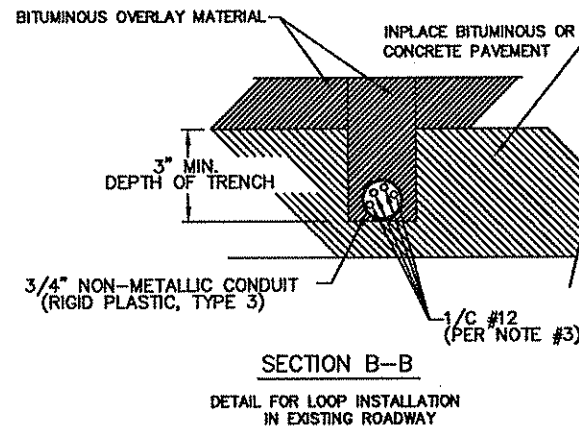
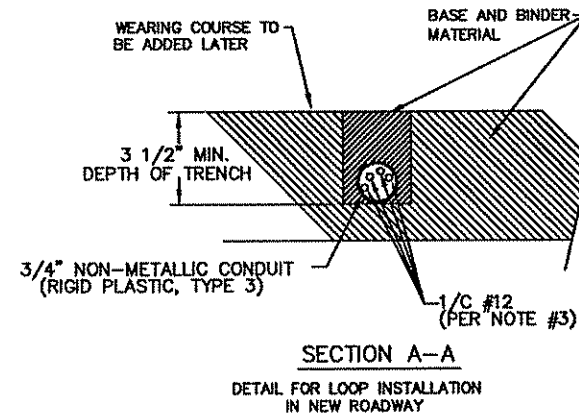


LOOP CONNECTIONS SHALL BE LABELED AND SPLICED
IN THE HANDHOLE AS FOLLOWS:

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

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

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



DRAINAGE DETAIL

LOOP DETECTOR WIRING

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

STANDARD PLATES	
THESE STANDARD PLATES AS APPROVED BY FHWA SHALL APPLY:	
PLATE NO.	DESCRIPTION
7035 I	CONCRETE WALK AND CURB RETURNS AT ENTRANCES
7036 E	PEDESTRIAN CURB RAMP
7100 G	CONCRETE CURB AND GUTTER (DESIGN B)
8110 D	TRAFFIC SIGNAL BRACKETING - POLE MOUNTED
8111 C	TRAFFIC SIGNAL BRACKETING - PEDESTAL MOUNTED
8112 C	PEDESTAL FOUNDATION
8114 A	PVC HANDHOLE/PULLBOX
8115 D	PEDESTRIAN PUSH BUTTON INSTALLATION
8118 C	SERVICE EQUIPMENT AND POLE-TRAFFIC CONTROL SIGNALS
8119 C	GROUND MOUNTED CABINET FOUNDATION
8120 K	PAB5 POLE FOUNDATION
8121 D	TRANSFORMER BASE AND POLE BASE PLATE
8122 C	PEDESTAL AND PEDESTAL BASE
8123 E	POLE AND MAST ARM
8124 E	MAST ARM SIGNAL HEAD MOUNTS
8126 F	PA90 AND PA100 POLE FOUNDATION

* - APPLIES TO THIS PROJECT

CONDUCTOR COLOR CODE

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

LEGEND OF SYMBOLS

CONTROLLER AND SERVICE EQUIP. NO's	⊙
SIGNAL BASE NO.	⊙
SIGNAL FACE NO.	⊙
LUMINAIRE NO.	⊙
CONTROLLER AND CABINET	⊙
CONTROLLER AND CABINET - IN PLACE	⊙
HANDHOLE	⊙
HANDHOLE - IN PLACE	⊙
RIGID STEEL CONDUIT (RSC)	—
RIGID STEEL CONDUIT (RSC) - IN PLACE	—
SIGNAL FACE WITH BACKGROUND SHIELD	→
SIGNAL FACE W/O BACKGROUND SHIELD	→
SIGNAL FACE - IN PLACE	→
PEDESTRIAN INDICATORS	→
PEDESTRIAN INDICATORS - IN PLACE	→
PEDESTRIAN PUSH BUTTONS ON PEDESTAL OR POLE	⊙
PEDESTRIAN PUSH BUTTON STATION	⊙
TRAFFIC SIGNAL PEDESTAL	⊙
TRAFFIC SIGNAL PEDESTAL - INPLACE	⊙
TRAFFIC SIGNAL POLE AND MAST ARM	⊙
TRAFFIC SIGNAL POLE AND MAST ARM - IN PLACE	⊙
STREET LIGHT POLE AND LUMINAIRE	⊙
STREET LIGHT POLE AND LUMINAIRE - IN PLACE	⊙
MAST ARM AND LUMINAIRE	⊙
MAST ARM AND LUMINAIRE - INPLACE	⊙
WOOD POLE	⊙
WOOD POLE - IN PLACE	⊙
SOURCE OF POWER	⊙
RAILROAD SIGNAL - IN PLACE	⊙
RIGHT OF WAY LINE	—
CENTERLINE	—
EDGE OF ROADWAY	—
SHOULDERLINE	—
CURB LINE	—
STOP BAR	—
EMERGENCY VEHICLE PREEMPTION DETECTOR	→

ABBREVIATIONS

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

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: MARK DALY
SIGNATURE: *MD ADG*
DATE: 4/1/03 LICENSE NO. 21763

DRAWN BY: JF DATE: 4/1/03
DESIGN BY: GA DATE: 4/1/03
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ANOKA COUNTY
HIGHWAY DEPT.

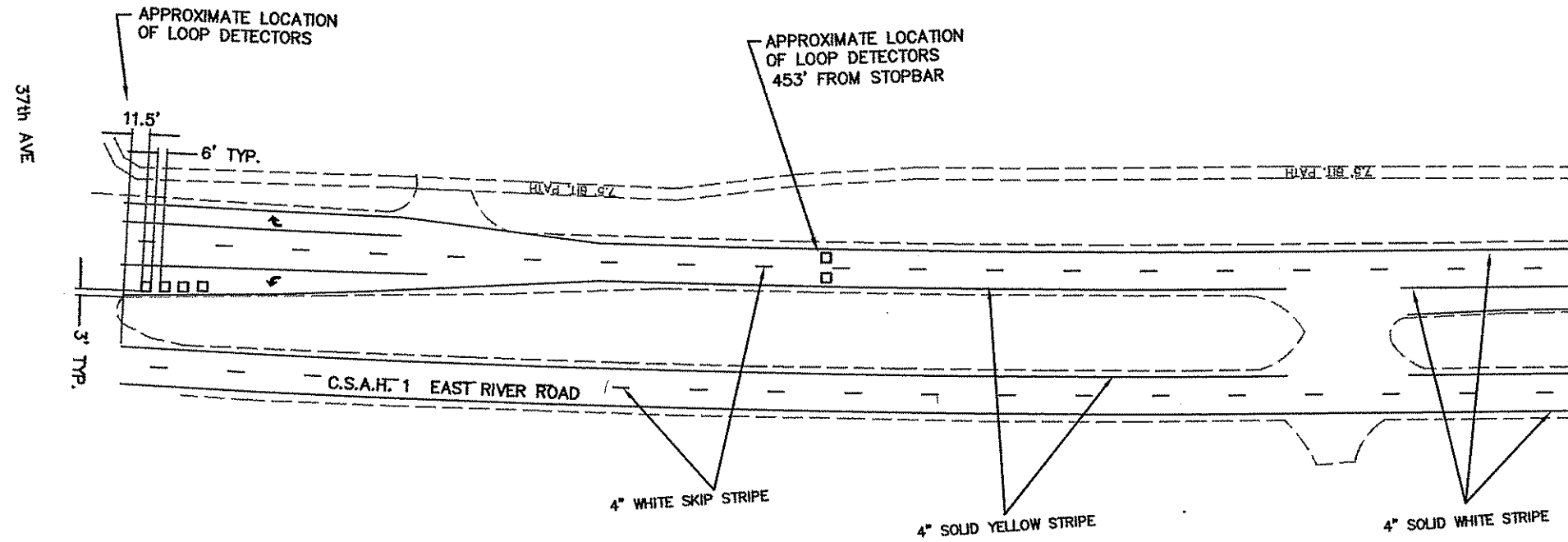
STATE PROJECT NO. _____
STATE AID PROJECT NO. _____
CITY PROJECT NO. _____
COUNTY PROJECT NO. 03-14-01

SIGNAL LOOP
DETAILS & STANDARD PLATES

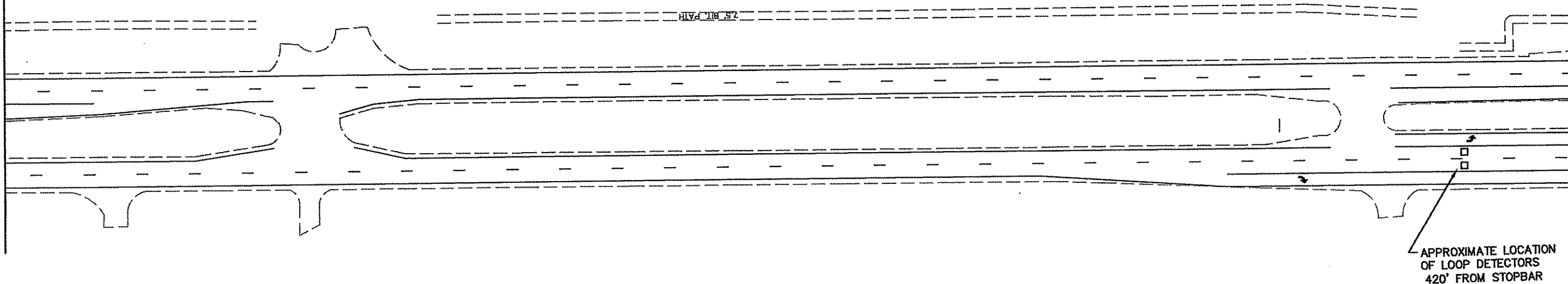
Sheet 11 of 16 Sheets

NO	DATE	BY	CHKD	APPR	REVISION

MATCHLINE 'A' SEE ABOVE RIGHT



MATCHLINE 'A' SEE BELOW LEFT



MATCHLINE 'B' SEE SHEET 13 OF 16

C.S.A.H. 1 EAST RIVER ROAD
FROM INTERSTATE 694 TO SOUTH COUNTY LINE

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: MARK DALY
 SIGNATURE: *MD*
 DATE: 4/17/03 LICENSE NO. 21763

DRAWN BY: DM DATE: 03/07/03
 DESIGN BY: DATE: _____
 CHECKED BY: DATE: _____



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. 03-14-01

PERMANENT STRIPING
 Sheet 12 of 16 Sheets

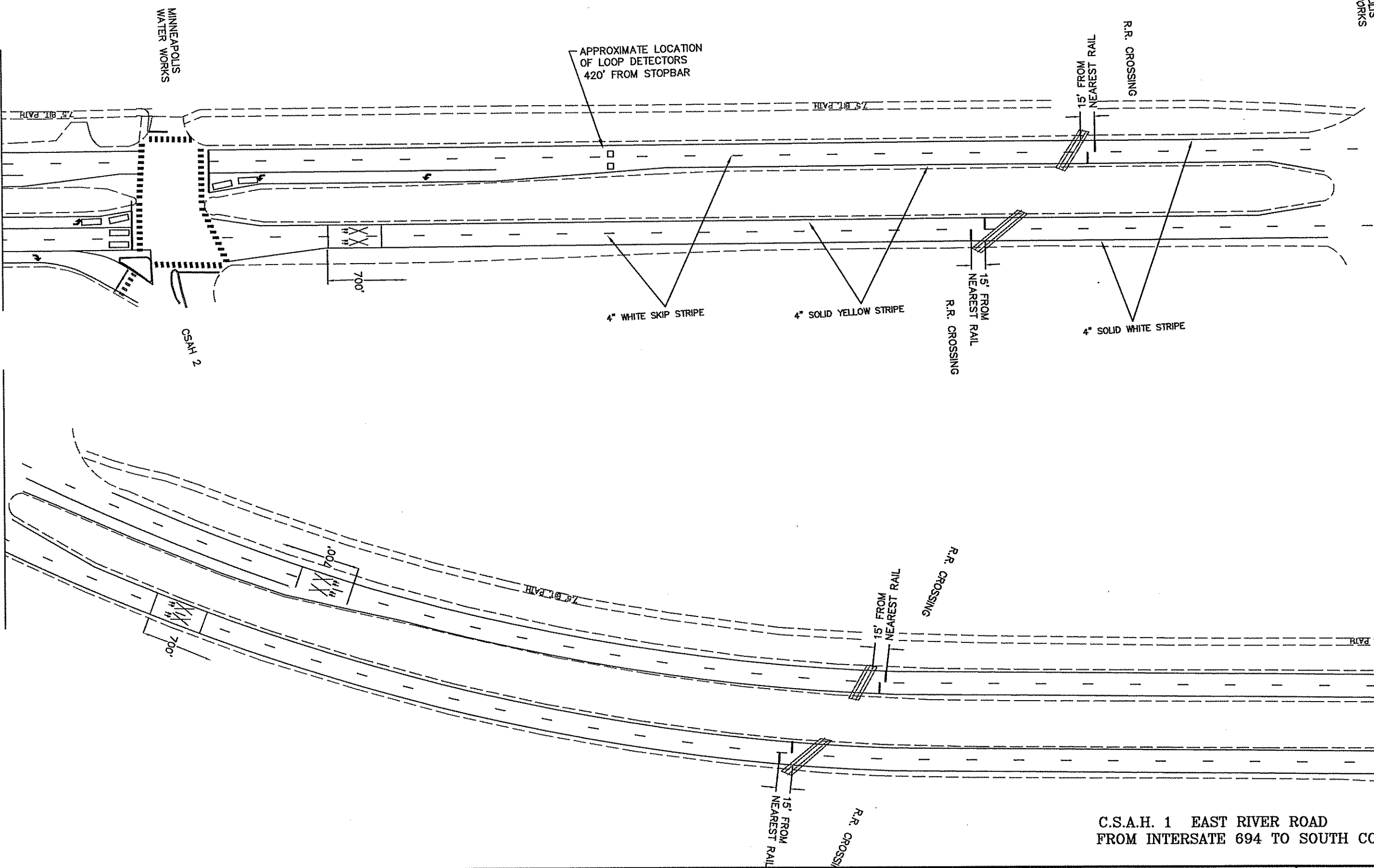
MINNEAPOLIS
WATER WORKS

MATCHLINE 'B' SEE SHEET 12 of 16

MATCHLINE 'C' SEE ABOVE RIGHT

MATCHLINE 'C' SEE BELOW LEFT

MATCHLINE 'D' SEE SHEET 14 of 16



C.S.A.H. 1 EAST RIVER ROAD
FROM INTERSTATE 694 TO SOUTH COUNTY LINE

NO	DATE	BY	CHKD	APPR	REVISION

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PRINT NAME: MARK DALY
 SIGNATURE: *Mark Daly*
 DATE: 4/17/2003 LICENSE NO. 21763

DRAWN BY: DM DATE: 03/07/03
 DESIGN BY: DATE:
 CHECKED BY: DATE:
 ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. 03-14-01

PERMANENT STRIPING
 Sheet 13 of 16 Sheets

MATCHLINE 'D' SEE SHEET 13 of 16

MATCHLINE 'E' SEE BELOW LEFT

MATCHLINE 'E' SEE ABOVE RIGHT

MATCHLINE 'F' SEE SHEET 15 of 16

4" WHITE SKIP STRIPE

4" SOLID YELLOW STRIPE

4" SOLID WHITE STRIPE

APPROXIMATE LOCATION OF LOOP DETECTORS 400' FROM STOPBAR

APPROXIMATE LOCATION OF LOOP DETECTORS 330' FROM STOPBAR

UNITED DEFENSE

UNITED DEFENSE

UNITED DEFENSE

UNITED DEFENSE

C.S.A.H. 1 EAST RIVER ROAD FROM INTERSTATE 694 TO SOUTH COUNTY LINE

NO	DATE	BY	CKD	APPR	REVISION

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ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. _____

STATE AID PROJECT NO. _____

STATE AID PROJECT NO. _____

COUNTY PROJECT NO. 03-14-01

PERMANENT STRIPING

Sheet 14 of 16 Sheets

MATCHLINE 'F' SEE SHEET 14 of 16

UNITED DEFENSE

4" SOLID YELLOW STRIPE

4" SOLID WHITE STRIPE

4" WHITE SKIP STRIPE

APPROXIMATE LOCATION OF LOOP DETECTORS 400' FROM STOPBAR

51st WAY N.E.

MATCHLINE 'G' SEE BELOW LEFT

MATCHLINE 'G' SEE ABOVE RIGHT

APPROXIMATE LOCATION OF LOOP DETECTORS 400' FROM STOPBAR

53rd WAY N.E.

MATCHLINE 'H' SEE SHEET 16 of 16

C.S.A.H. 1 EAST RIVER ROAD FROM INTERSTATE 694 TO SOUTH COUNTY LINE

NO	DATE	BY	CKD	APPR	REVISION

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ANOKA COUNTY
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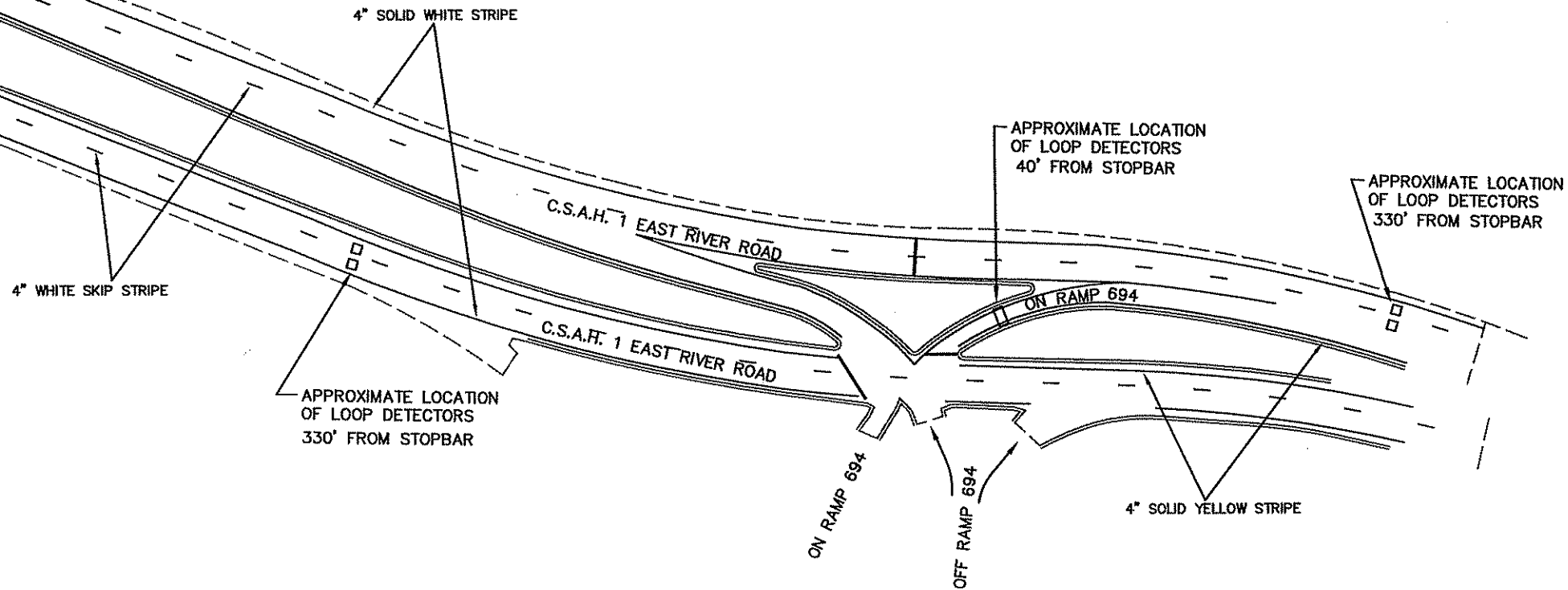
STATE AID PROJECT NO. _____

COUNTY PROJECT NO. 03-14-01

PERMANENT STRIPING

Sheet 15 of 16 Sheets

MATCHLINE 'H' SEE SHEET 15 of 16



C.S.A.H. 1 EAST RIVER ROAD
FROM INTERSTATE 694 TO SOUTH COUNTY LINE

NO	DATE	BY	CKD	APPR	REVISION

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 PRINT NAME: MARK DALY
 SIGNATURE: [Signature]
 DATE: 4/17/2003 LICENSE NO. 21763

DRAWN BY: DM DATE: 03/07/03
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ANOKA COUNTY
HIGHWAY DEPT.

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 STATE AID PROJECT NO. _____
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PERMANENT STRIPING
 Sheet 16 of 16 Sheets