

ANOKA COUNTY HIGHWAY DEPARTMENT

T.H. 288 (7TH AVE.) AT C.R. 79 (NORTH ST.) AND BUCHANAN STREET

CONSTRUCTION PLAN FOR TRAFFIC SIGNAL

PLAN SYMBOLS

- STATE LINE.....
- COUNTY LINE.....
- TOWNSHIP OR RANGE LINE.....
- SECTION LINE.....
- QUARTER LINE.....
- SIXTEENTH LINE.....
- RIGHT-OF-WAY LINE.....
- PRESENT RIGHT-OF-WAY LINE.....
- CONTROL OF ACCESS LINE.....
- PROPERTY LINE (Except Land Lines).....
- VACATED PLATTED PROPERTY.....
- CORPORATE OR CITY LIMITS.....
- TRUNK HIGHWAY CENTER LINE.....
- RETAINING WALL.....
- RAILROAD.....
- RAILROAD RIGHT-OF-WAY LINE.....
- RIVER OR CREEK.....
- DRY RUN.....
- DRAINAGE DITCH.....
- DRAIN TILE.....
- CULVERT.....
- DROP INLET.....
- GUARD RAIL.....
- BARBED WIRE FENCE.....
- WOVEN WIRE FENCE.....
- CHAIN LINK FENCE.....
- RAILROAD SNOW FENCE.....
- STONE WALL OR FENCE.....
- HEDGE.....
- RAILROAD CROSSING SIGN.....
- RAILROAD CROSSING BELL.....
- ELECTRIC WARNING SIGN.....
- CROSSING GATE.....
- MEANDER CORNER.....
- SPRINGS.....
- MARSH.....
- TIMBER ORCHARD.....
- BRUSH.....
- NURSERY.....
- CATCH BASIN.....
- FIRE HYDRANT.....
- 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.....
- IRON PIPE OR ROD.....
- MONUMENT (STONE, CONCRETE, OR METAL).....
- WOODEN HUB.....
- GRAVEL PIT.....
- SAND PIT.....
- BORROW PIT.....
- ROCK QUARRY.....

UTILITY SYMBOLS

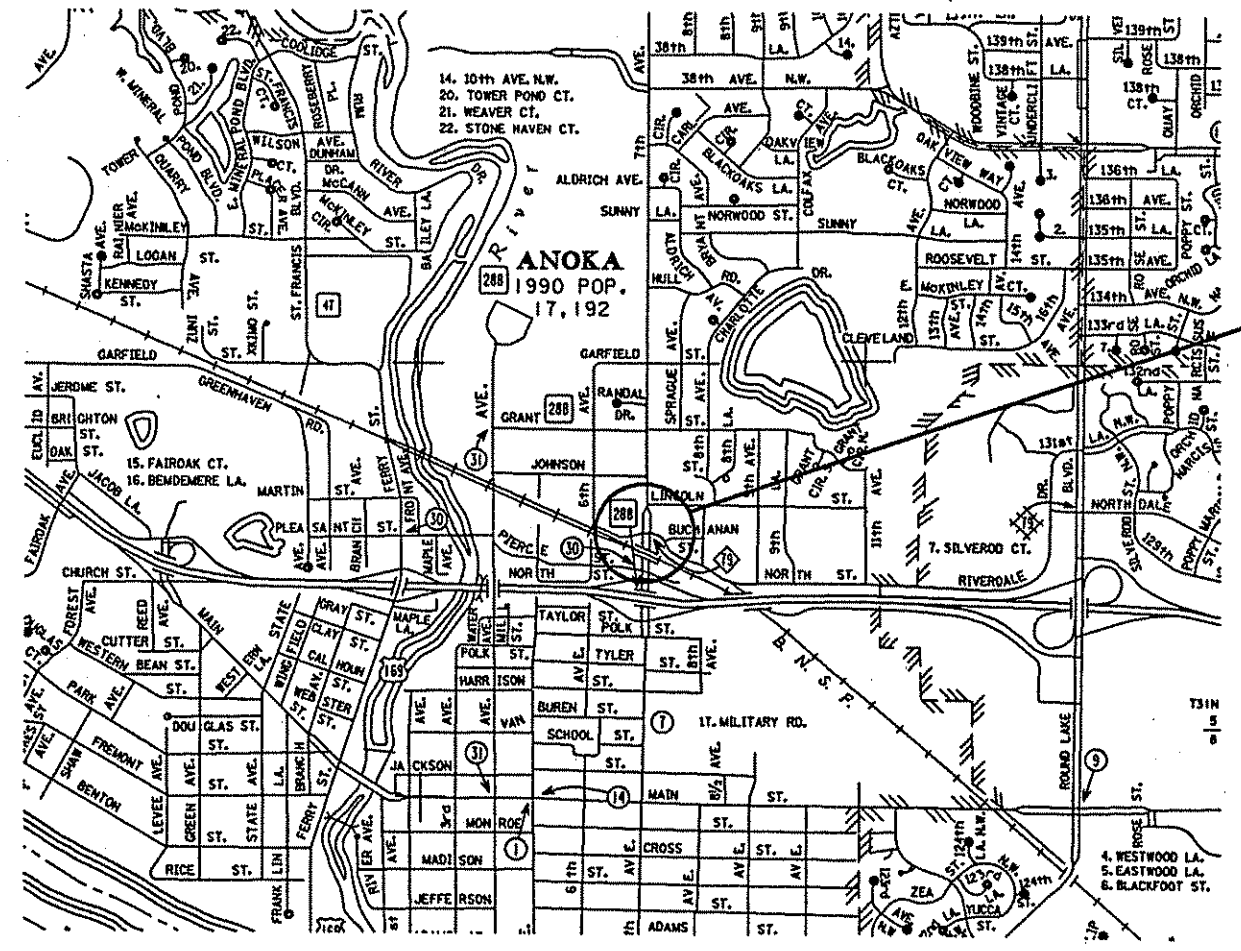
- POWER POLE LINE.....
- TELEPHONE OR TELEGRAPH POLE LINE.....
- JOINT TELEPHONE AND POWER ON POWER POLES ON TELEPHONE POLES.....
- ANCHOR.....
- STEEL TOWER.....
- STREET LIGHT.....
- PEDESTAL (TELEPHONE CABLE TERMINAL).....
- GAS MAIN.....
- WATER MAIN.....
- CONDUIT.....
- TELEPHONE CABLE IN CONDUIT.....
- ELECTRIC CABLE IN CONDUIT.....
- TELEPHONE MANHOLE.....
- ELECTRIC MANHOLE.....
- BURIED COMMUNICATION CABLE.....
- BURIED TELEPHONE CABLE.....
- BURIED ELECTRIC CABLE.....
- AERIAL TELEPHONE CABLE.....
- SEWER (SANITARY).....
- SEWER (STORM).....
- SEWER MANHOLE.....
- HANDHOLE.....
- CATCH BASIN.....

GOVERNING SPECIFICATIONS
THE 1995 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" (METRIC) SHALL GOVERN.

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS, DATED JANUARY, 1998.

SHEET NO.	SHEET DESCRIPTION
1	TITLE SHEET
2	LOOP DETECTOR & MISC. DETAILS
3	CONTROLLER & SERVICE CABINET DETAILS
4	INTERSECTION LAYOUT
5	FIELD WIRING DIAGRAM
6	INTERCONNECT LAYOUT
7	INTERCONNECT LAYOUT
8	INTERSECTION LAYOUT (FOR INFO. ONLY)
9	FIELD WIRING DIAGRAM (FOR INFO. ONLY)
10	INTERSECTION LAYOUT (FOR INFO. ONLY)
11	FIELD WIRING DIAGRAM (FOR INFO. ONLY)
12	MAST ARM SIGN DETAILS
13	EXISTING UTILITY LAYOUT
14	PAVEMENT MARKING LAYOUT

THIS PLAN CONTAINS 14 SHEETS.



PROJECT LOCATION

PLAN SCALE 500
INDEX MAP NO SCALE
ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE

STATEMENT OF ESTIMATED QUANTITIES				
ITEM NO.	ITEM DESCRIPTION	UNIT	EST. QUANTITY	FINAL QUANTITY
2104.503	REMOVE CONCRETE WALK	M ²	5.5	
2521.501	100 mm CONCRETE WALK	M ²	5.5	
2564.602	PAVEMENT MESSAGE (LEFT ARROW) - PAINT	EACH	4	
2564.603	100 mm SOLID LINE WHITE - PAINT	M	58	
2564.603	600 mm SOLID LINE WHITE - PAINT	M	40	
2564.604	ZEBRA CROSSWALK WHITE - PAINT	M ²	80	
2565.511	FULL TRAFFIC ACTUATED TRAFFIC SIGNAL CONTROL SYSTEM	SIG. SYS.	1	
2565.601	TRAFFIC CONTROL INTERCONNECTION	LUMP SUM	1	
2565.601	EMERGENCY VEHICLE PREEMPTION SYSTEM	LUMP SUM	1	

PLAN REVISIONS		
DATE	SHEET NO.	APPROVED BY



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

ENGR. *George M. Stuenkel*
Reg. No. 21849 Date 3/23/01

SRF CONSULTING GROUP, INC.

APPROVED: ANOKA COUNTY

[Signature]
ANOKA COUNTY HIGHWAY ENGINEER

3/21/01
DATE

APPROVED: CITY OF ANOKA

CITY OF ANOKA ENGINEER

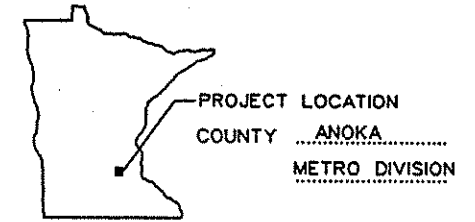
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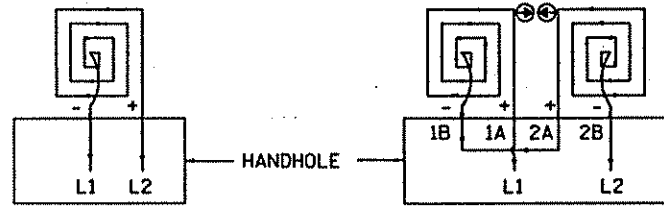
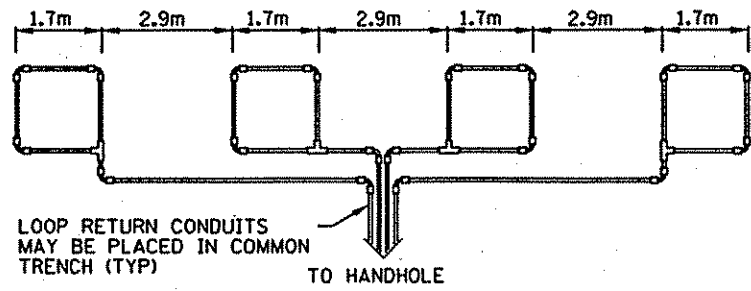
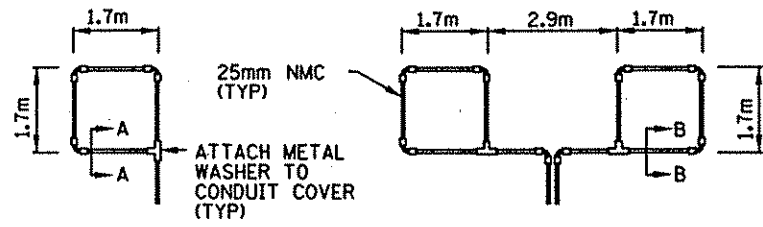
METRO-ASSISTANT DIVISION ENGINEER-STATE AID REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY

DATE

APPROVED FOR STATE AID FUNDING: STATE AID ENGINEER

DATE

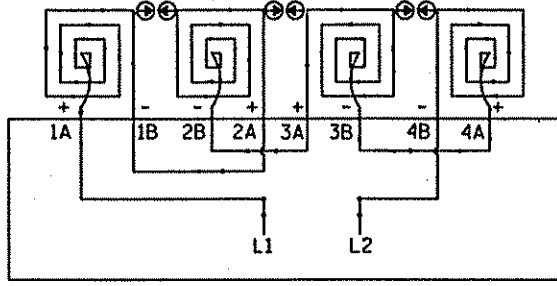




LOOP CONNECTIONS SHALL BE LABELED AND SPLICED IN THE HANDHOLE AS FOLLOWS:

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

LOOP DETECTOR DETAIL 'A'



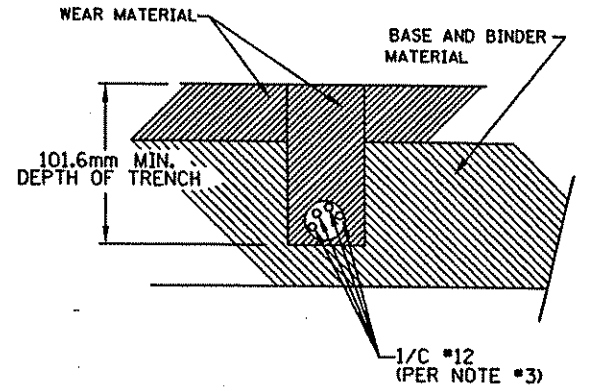
LOOP CONNECTIONS SHALL BE LABELED AND SPLICED IN THE HANDHOLE AS FOLLOWS:

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

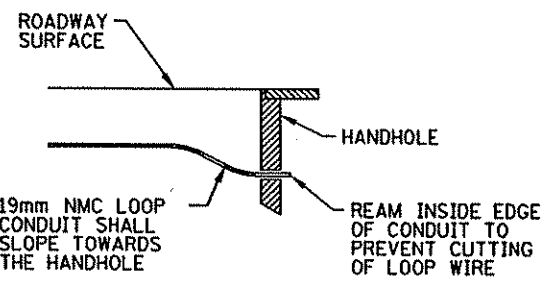
SPLICE CONTROL CABLE TO L1 & L2 IN HANDHOLE. ALL CONDUCTORS SHALL BE TAGGED IN HANDHOLE (1A, 1B, ECT)

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

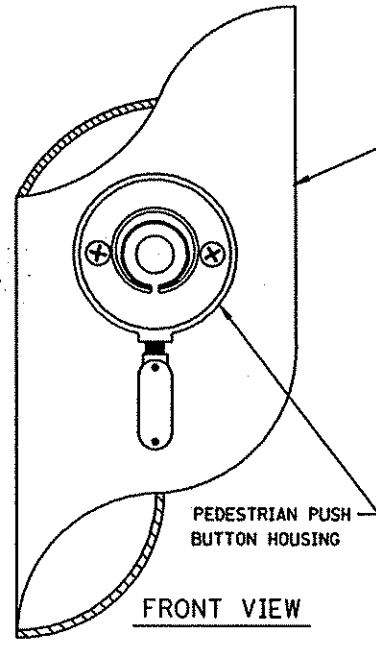
STANDARD PLATES	
THE FOLLOWING PLATES APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT	
PLATE NO.	DESCRIPTION
M8110D	TRAFFIC SIGNAL BRACKETING
M8114A	P.V.C. HANDHOLE / PULLBOX
M8115D	PEDESTRIAN PUSHBUTTON INSTALLATION
M8119C	GROUND MOUNTED CABINET FOUNDATION
M8120K	POLE FOUNDATION (PA85)
M8121D	TRANSFORMER BASE & POLE BASE PLATE
M8123D	POLE & MAST ARM
M8124E	MAST ARM SIGNAL HEAD MOUNTS
M8126F	POLE FOUNDATION (PA 90 AND PA 100)



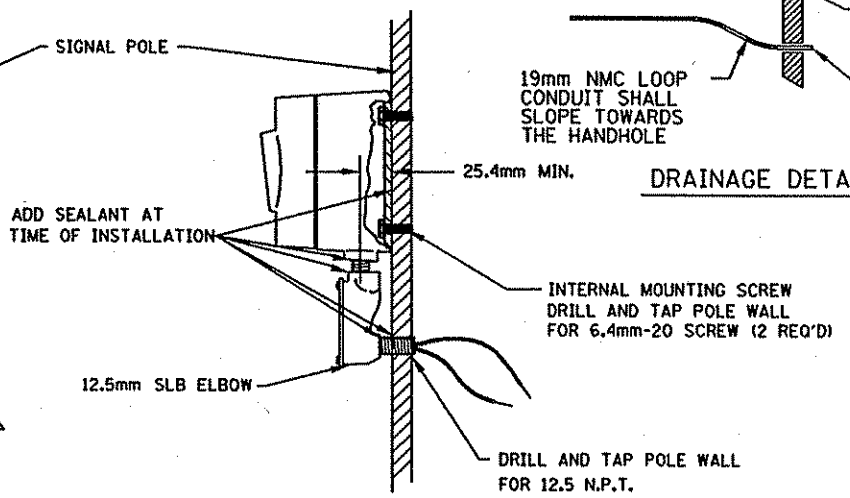
DETAIL FOR LOOP INSTALLATION IN EXISTING ROADWAY



DRAINAGE DETAIL



FRONT VIEW



SIDE VIEW

MAST ARM POLE PEDESTRIAN PUSH BUTTON DETAIL

LOOP DETECTOR WIRING

- ALL CORNERS SHALL BE 90 DEGREE CONDUIT BENDS.
- CONNECT WIRES IN HANDHOLES USING SPLICE KIT METHOD DESCRIBED IN THE SPECIAL PROVISIONS.
- LOOP DETECTOR WIRES SHALL BE #12 AWG CROSSED LINKED POLYETHYLENE (XLPE). SEE SPECIAL PROVISIONS.
- LOOP LEAD IN WIRES SHALL BE TWISTED A MIN. OF (5) TURNS PER FOOT THROUGH THE CONDUIT TO THE HANDHOLE.
- NMC DESIGNATES NON-METALLIC CONDUIT (SPEC. 3803)
- LOOPS 1.7m x 1.7m SHALL HAVE (4) TURNS.

LEGEND OF SYMBOLS

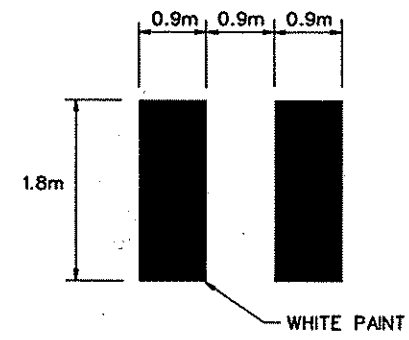
CONTROLLER AND SERVICE EQUIP. NO's	⊙
SIGNAL BASE NO.	⊙
SIGNAL FACE NO.	⊙
LUMINAIRE NO.	⊙
CONTROLLER AND CABINET	□
CONTROLLER AND CABINET - IN PLACE	□
HANDHOLE	□
HANDHOLE - IN PLACE	□
RIGID STEEL CONDUIT (RSC)	—
RIGID STEEL CONDUIT (RSC) - IN PLACE	—
SIGNAL FACE WITH BACKGROUND SHIELD	→
SIGNAL FACE W/O 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	—
EVP	←

ABBREVIATIONS

3-(1EG) SIGNAL HEAD PHASE '3' - NO. '1'	P2-(1EG) PEDESTRIAN INDICATION PHASE '2'-NO.'1'
BR. GR. BARE GROUND	PB PUSH BUTTON
CH. SW. CHECK SWITCH	PB2-(1EG) PUSH BUTTON PHASE '2'-NO. '1'
CLR CLEAR	PEC PHOTOELECTRIC CELL
D2-(1EG) 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	TDW TELEPHONE DROP WIRE
HPS HIGH PRESSURE SODIUM	WLK WALK
JB JUNCTION BOX	YEL YELLOW
LUM LUMINAIRE	YLTA YELLOW LEFT TURN ARROW
NEU NEUTRAL	YRTA YELLOW RIGHT TURN ARROW
NMC NONMETALLIC CONDUIT	YTHA YELLOW THRU ARROW

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



CROSSWALK MARKING DETAIL

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 PLOT SCALE: 1:1
 PLOT DATE/TIME: 03/23/2001 07:43:03

NO	DATE	BY	CHKD	APPR	REVISION

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. Stuenkel
 Date: 3/23/01 Reg. No. 21829

STATE AID PROJECT NO.	
CO. PROJECT NO.	96-77-79

DRAWN BY	DATE
M. BRESSLER	3-99
DESIGNED BY	
A. POTTER	3-99
CHECKED BY	
G. STUENKEL	3-99
COMM. NO.	
0983216	

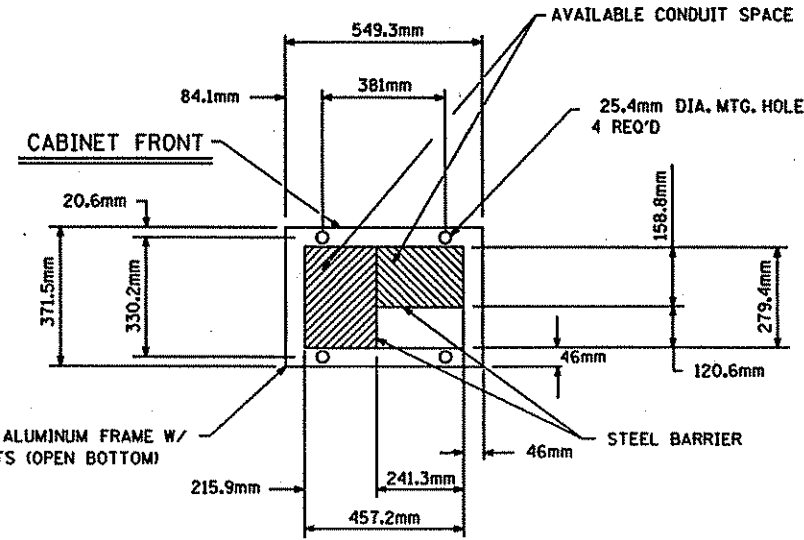
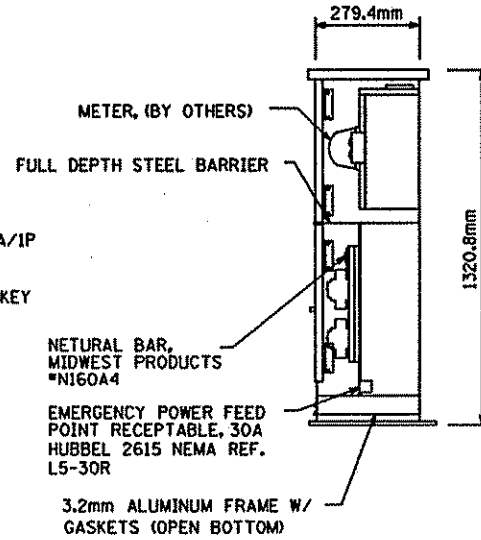
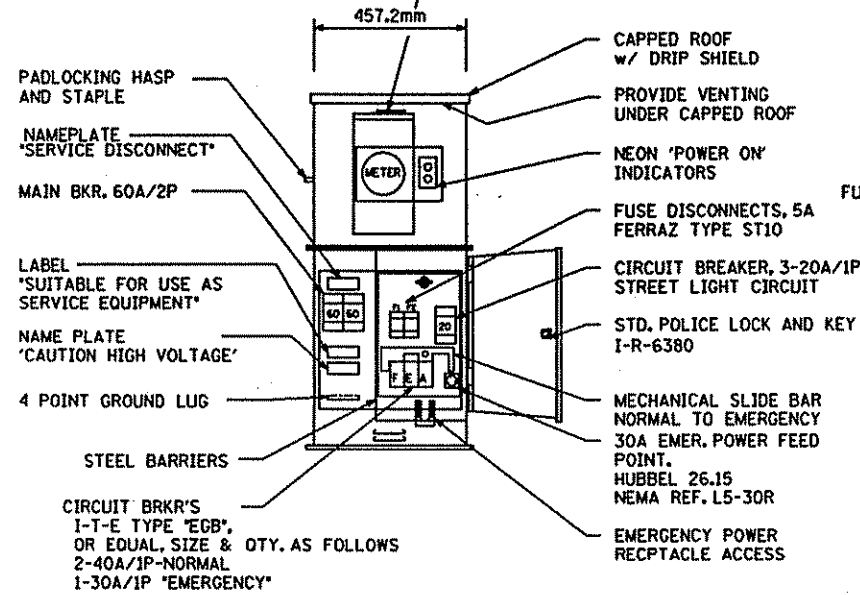
ANOKA COUNTY
 LOOP DETECTOR AND MISCELLANEOUS DETAILS
 T.H. 288 (7TH AVE.) AT COUNTY ROAD 79
 (NORTH STREET) AND BUCHANAN STREET

SHEET
 2
 OF
 14

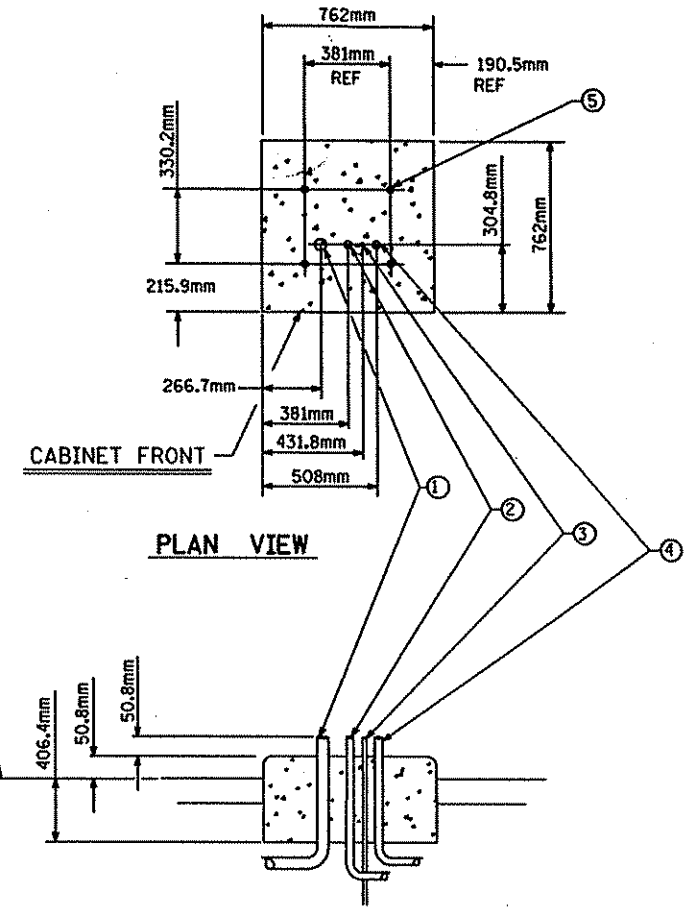
CONSTRUCTION NOTES

ENCLOSURE SHALL BE FABRICATED FROM #12 GA. ALL WELDED COLD ROLLED STEEL FOR OUTDOOR WEATHER PROOF SERVICE. DOORS TO BE GASKETED, ALL HINGES, PINS AND LOCKS TO BE OF NON CORRODING CONSTRUCTION. CABINET TO BE PRIMED INSIDE AND OUT WITH RUST INHIBITTING PRIMER. FINISH PER MN/DOT #3527 ENCLOSURE SHALL BE 'UL' APPROVED

METER SOCKET, 5-TERMINAL w/POSTIVE BY-PASS MECHANISM MILBANK CAT. No. U-2272-RL.



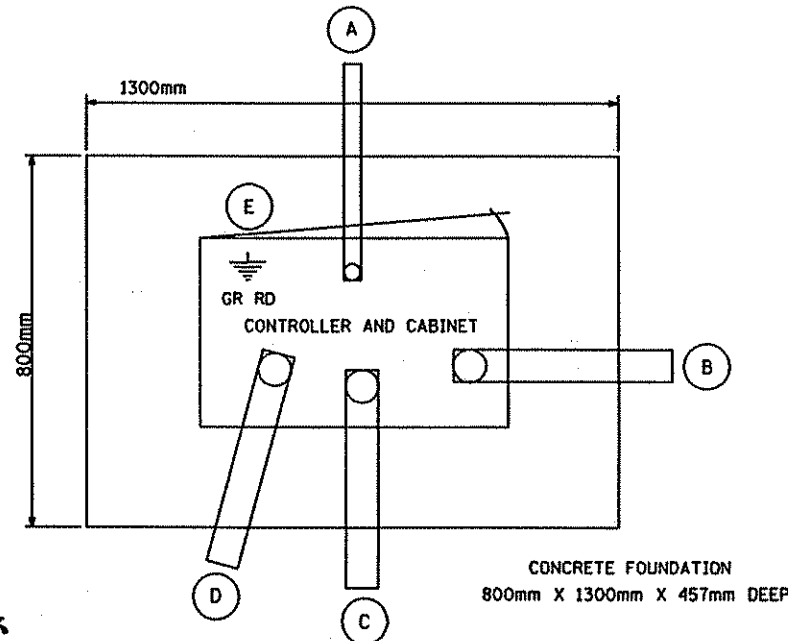
SERVICE CABINET FOUNDATION



- ① 35mm RSC FROM S.O.P. (FOR POWER CABLE)
- ② 35mm RSC TO H.H. (FOR SERVICE CONNECTION)
- ③ 15.9mm DIA x 3.0m GROUNDING ROD
- ④ 35mm RSC FROM HH (STREET LIGHTING CONDUCTORS)
- ⑤ ANCHOR BOLT LOCATIONS (4 REQUIRED)

SIGNAL SERVICE CABINET

- Ⓐ 35mm RSC FOR SERVICE CONNECTION FROM H.H.
- Ⓑ 103mm RSC WITH SIGNAL CONDUCTORS
- Ⓒ 78mm RSC STUBOUT, THREAD AND CAP BOTH ENDS
- Ⓓ 103mm RSC WITH SIGNAL CONDUCTORS
- Ⓔ 15.9mm DIA X 4.6m GROUND ROD



CONTROLLER CABINET PAD LAYOUT (TYP.)

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NO	DATE	BY	CHKD	APPR	REVISION



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: 3/23/01 Reg. No. 21849

STATE AID PROJECT NO.
 CO. PROJECT NO. 96-77-79

DRAWN BY M. BRESSLER DATE 3-99
 DESIGNED BY A. POTTER DATE 3-99
 CHECKED BY G. STUEMPFIG DATE 3-99
 COMM. NO. 0983216



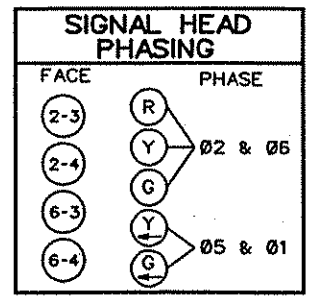
ANOKA COUNTY
 CONTROLLER AND SERVICE CABINET DETAILS
 T.H. 288 (7TH AVE.) AT COUNTY ROAD 79
 (NORTH STREET) AND BUCHANAN STREET

SHEET 3 OF 14

SIGNAL INDICATION CHART

ALL SIGNAL INDICATIONS SHALL BE 300 mm
ALL CIRCULAR & ARROW INDICATIONS SHALL BE LED

SIGNAL FACE	R	Y	G	RLTA	YLTA	GLTA
2-1,2-2	●	●	●			
2-3,2-4	●	●	●	←	←	
4-1,4-2,4-3	●	●	●			
6-1,6-2	●	●	●			
6-3,6-4	●	●	●	←	←	
8-1,8-2,8-3	●	●	●			



(A) CONTROLLER FOUNDATION - SEE DETAIL CONTROLLER & CABINET
 EXTEND 103 mm RSC INTO HH-1 WITH:
 6 - 12/C *12, 4 - 3/C *12, 10 - 2/C *14,
 2 - 3/C *20 AND 1 - 6pr *19
 EXTEND 103 mm RSC INTO HH-12 WITH:
 6 - 12/C *12, 4 - 3/C *12, 4 - 2/C *14,
 2 - 3/C *20 AND 1 - 6pr *19
 EXTEND 35 mm RSC INTO HH-13 WITH:
 3 - 1/C *6
 1 - 78 mm RSC STUB OUT OF CABINET
 (THREAD AND CAP BOTH ENDS)

(2) PAB5 POLE FOUNDATION
 TYPE PAB5-A-7.6 m
 1 - ONE WAY SIGNAL (OVERHEAD)
 TYPE 10B POLE MOUNTED AT 90°
 TYPE 10B POLE MOUNTED AT 180°
 ONE WAY EVP DETECTOR AND LIGHT
 (1.8 m FROM END OF MAST ARM), 21 mm HUB
 2 - PEDESTRIAN PUSHBUTTONS
 EXTEND 78 mm RSC INTO HH-2 WITH:
 3 - 12/C *12, 2 - 3/C *12
 AND 1 - 3/C *20

LOOP DETECTOR CHART

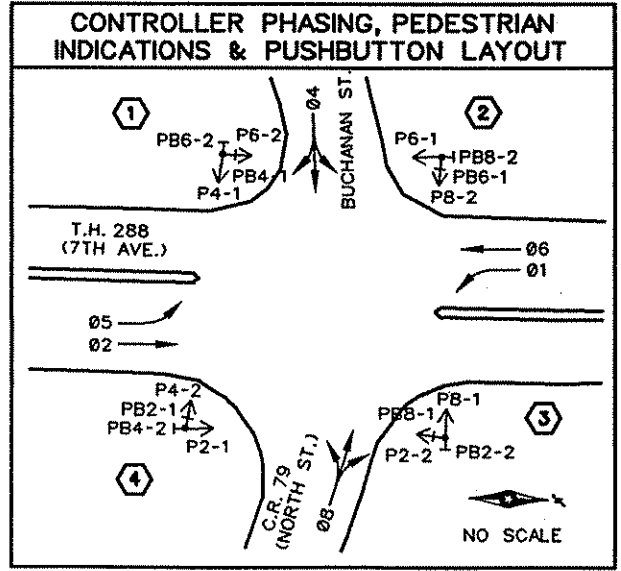
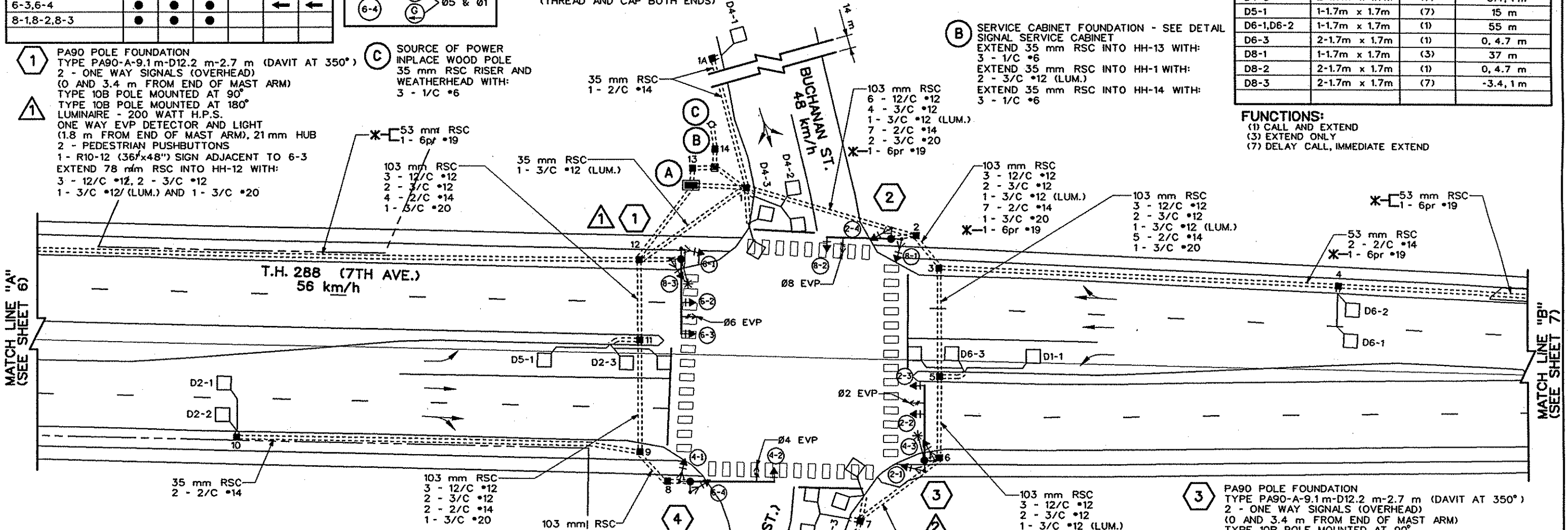
DESIGNATION	SIZE	FUNCTION	DISTANCE FROM STOP LINE
D1-1	1-1.7m x 1.7m	(7)	15 m
D2-1,D2-2	1-1.7m x 1.7m	(1)	55 m
D2-3	2-1.7m x 1.7m	(1)	0, 4.7 m
D4-1	1-1.7m x 1.7m	(3)	37 m
D4-2	2-1.7m x 1.7m	(1)	0, 4.7 m
D4-3	2-1.7m x 1.7m	(7)	-3.4, 1 m
D5-1	1-1.7m x 1.7m	(7)	15 m
D6-1,D6-2	1-1.7m x 1.7m	(1)	55 m
D6-3	2-1.7m x 1.7m	(1)	0, 4.7 m
D8-1	1-1.7m x 1.7m	(3)	37 m
D8-2	2-1.7m x 1.7m	(1)	0, 4.7 m
D8-3	2-1.7m x 1.7m	(7)	-3.4, 1 m

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

(1) PA90 POLE FOUNDATION
 TYPE PA90-A-9.1m-D12.2 m-2.7 m (DAVIT AT 350°)
 2 - ONE WAY SIGNALS (OVERHEAD)
 (0 AND 3.4 m FROM END OF MAST ARM)
 TYPE 10B POLE MOUNTED AT 90°
 TYPE 10B POLE MOUNTED AT 180°
 LUMINAIRE - 200 WATT H.P.S.
 ONE WAY EVP DETECTOR AND LIGHT
 (1.8 m FROM END OF MAST ARM), 21 mm HUB
 2 - PEDESTRIAN PUSHBUTTONS
 1 - R10-12 (36"x48") SIGN ADJACENT TO 6-3
 EXTEND 78 mm RSC INTO HH-12 WITH:
 3 - 12/C *12, 2 - 3/C *12
 1 - 3/C *12 (LUM.) AND 1 - 3/C *20

(C) SOURCE OF POWER
 INPLACE WOOD POLE
 35 mm RSC RISER AND
 WEATHERHEAD WITH:
 3 - 1/C *6

(B) SERVICE CABINET FOUNDATION - SEE DETAIL SIGNAL SERVICE CABINET
 EXTEND 35 mm RSC INTO HH-13 WITH:
 3 - 1/C *6
 EXTEND 35 mm RSC INTO HH-1 WITH:
 2 - 3/C *12 (LUM.)
 EXTEND 35 mm RSC INTO HH-14 WITH:
 3 - 1/C *6



(4) PA90 POLE FOUNDATION
 TYPE PA90-A-10.7 m
 1 - ONE WAY SIGNAL (OVERHEAD)
 TYPE 10B POLE MOUNTED AT 90°
 TYPE 10B POLE MOUNTED AT 180°
 ONE WAY EVP DETECTOR AND LIGHT
 (1.8 m FROM END OF MAST ARM), 21 mm HUB
 2 - PEDESTRIAN PUSHBUTTONS
 EXTEND 78 mm RSC INTO HH-8 WITH:
 3 - 12/C *12, 2 - 3/C *12
 AND 1 - 3/C *20

SIGNAL OPERATION NOTES

- NORMAL OPERATION IS 6 PHASE
- FLASH MODE SHALL BE ALL RED
- 01 & 05 SHALL BE PROTECTED/PERMISSIVE LEFT TURNS
- 02 & 06 SHALL BE ON VEHICLE RECALL

- 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 AND WALKING PERSON INDICATIONS SHALL USE LED UNITS (SEE SPECIAL PROVISIONS).
 - 4) EXACT LOCATION OF HANDHOLES, POLES, LOOP DETECTORS, AND CABINET SHALL BE DETERMINED BY TRAFFIC OFFICE PERSONNEL.
 - 5) ALL LOOP DETECTORS SHALL BE INSTALLED IN NMC CONDUIT (SEE DETAIL SHEET).
 - 6) ALL SIGNAL INDICATIONS (RED, YELLOW AND GREEN CIRCULAR AND ARROW INDICATIONS) SHALL USE LED UNITS (SEE SPECIAL PROVISIONS).
 - 8) HANDHOLES SHALL BE PVC TYPE WITH METAL FRAMES AND COVERS.
 - 9) * - PAID FOR UNDER INTERCONNECT PAY ITEM.

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NO	DATE	BY	CHKD	APPR	REVISION

NAME: 3216.LA DATE: Mar. 22, 2001

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. Stuenkelig
 Date: 3/23/01 Reg. No. 21849

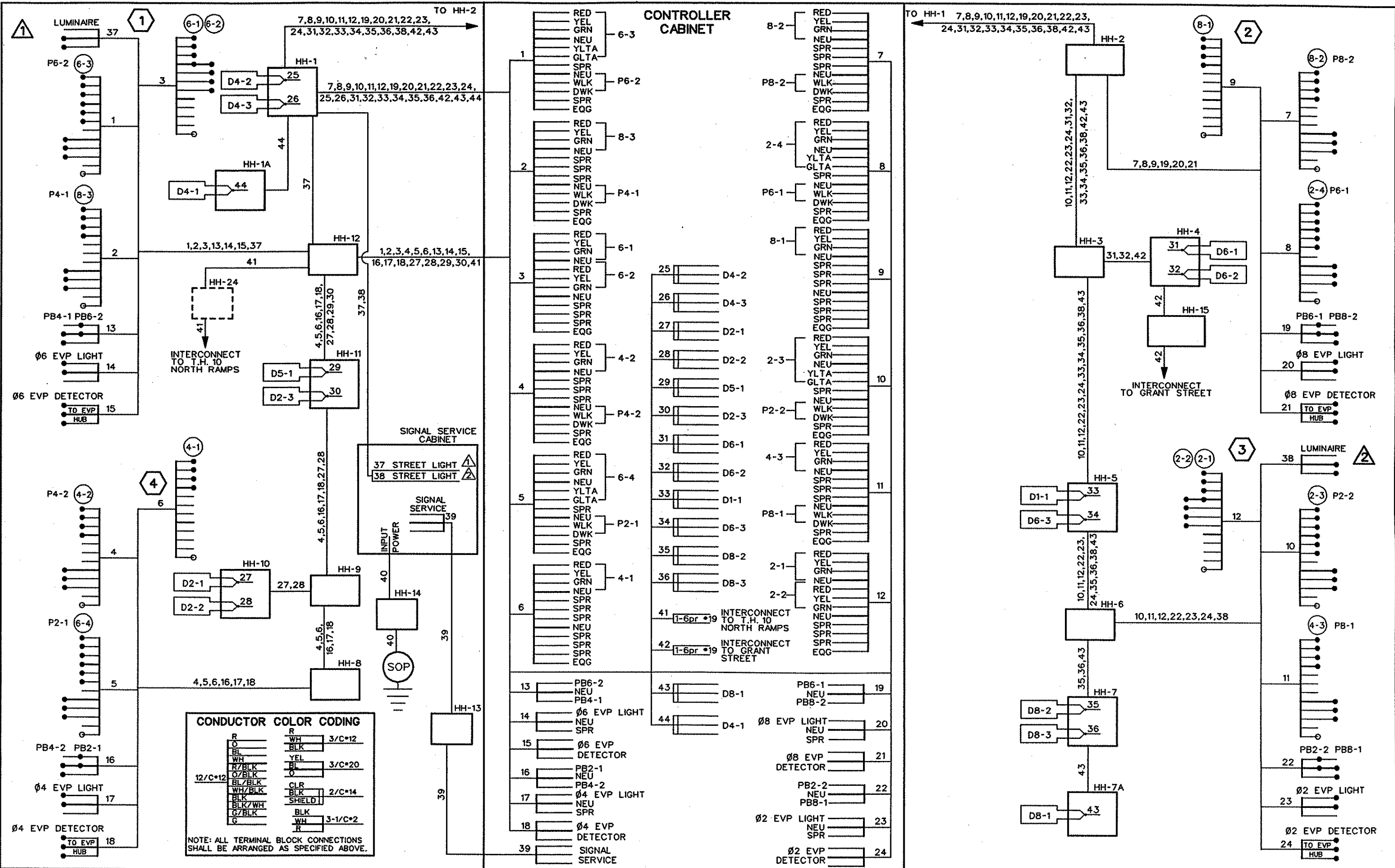
STATE AID PROJECT NO.
 CO. PROJECT NO. 96-77-79

DRAWN BY M. BRESSLER DATE 3-99
 DESIGNED BY A. POTTER 3-99
 CHECKED BY G. STUEMPFIG 3-99
 COMM. NO. 0983216



ANOKA COUNTY
 INTERSECTION LAYOUT
 T.H. 288 (7TH AVE.) AT COUNTY ROAD 79
 (NORTH STREET) AND BUCHANAN STREET

SHEET 4 OF 14



DESIGN FILE: D:\S\3216\3216\3216.wpd
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 PLOTTER: MS-HP6000
 PLOT SCALE: 1:1
 PLOT DATE/TIME: 03/21/2001 14:30:13

NO	DATE	BY	CHKD	APPR	REVISION



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. Stuenkel
 Date: 3/23/01 Reg. No. 21849

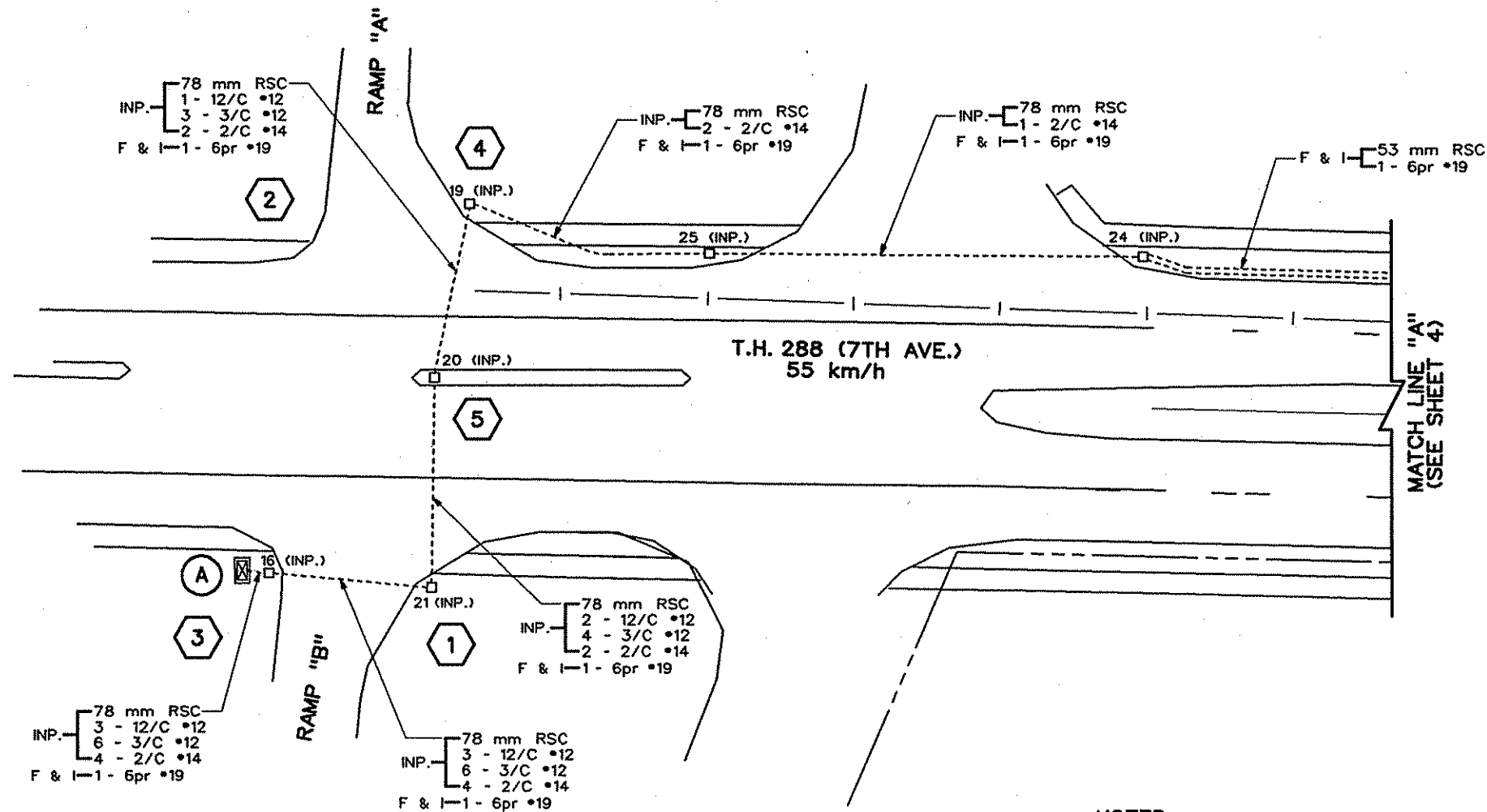
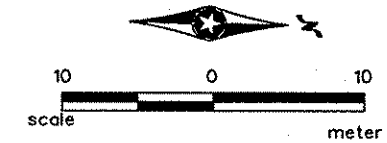
STATE AID PROJECT NO.
 CO. PROJECT NO. 96-77-79

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 DESIGNED BY A.POTTER 3-99
 CHECKED BY G.STUEMPF 3-99
 COMM. NO. 0983216



ANOKA COUNTY
 FIELD WIRING DIAGRAM
 T.H. 288 (7TH AVE.) AT COUNTY ROAD 79
 (NORTH STREET) AND BUCHANAN STREET

SHEET 5 OF 14



(A) INP. CONTROLLER & CABINET

- NOTES:**
- 1) ALL F & I ITEMS ON THIS SHEET TO BE PAID FOR UNDER INTERCONNECT PAY ITEM.
 - 2) ALL UTILITIES SHOWN ARE APPROXIMATE AND SHALL BE VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION.

DESIGN FILE: D:\S1\01016\3216\3216_11D
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 PLOT DWT/PLT: 03/21/2001 14:30:48

NO	DATE	BY	CHKD	APPR	REVISION

NAME: 3216.RLB DATE: Mar. 21, 2001



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 J. Stuempfig
 Date: 3/23/01 Reg. No. 21629

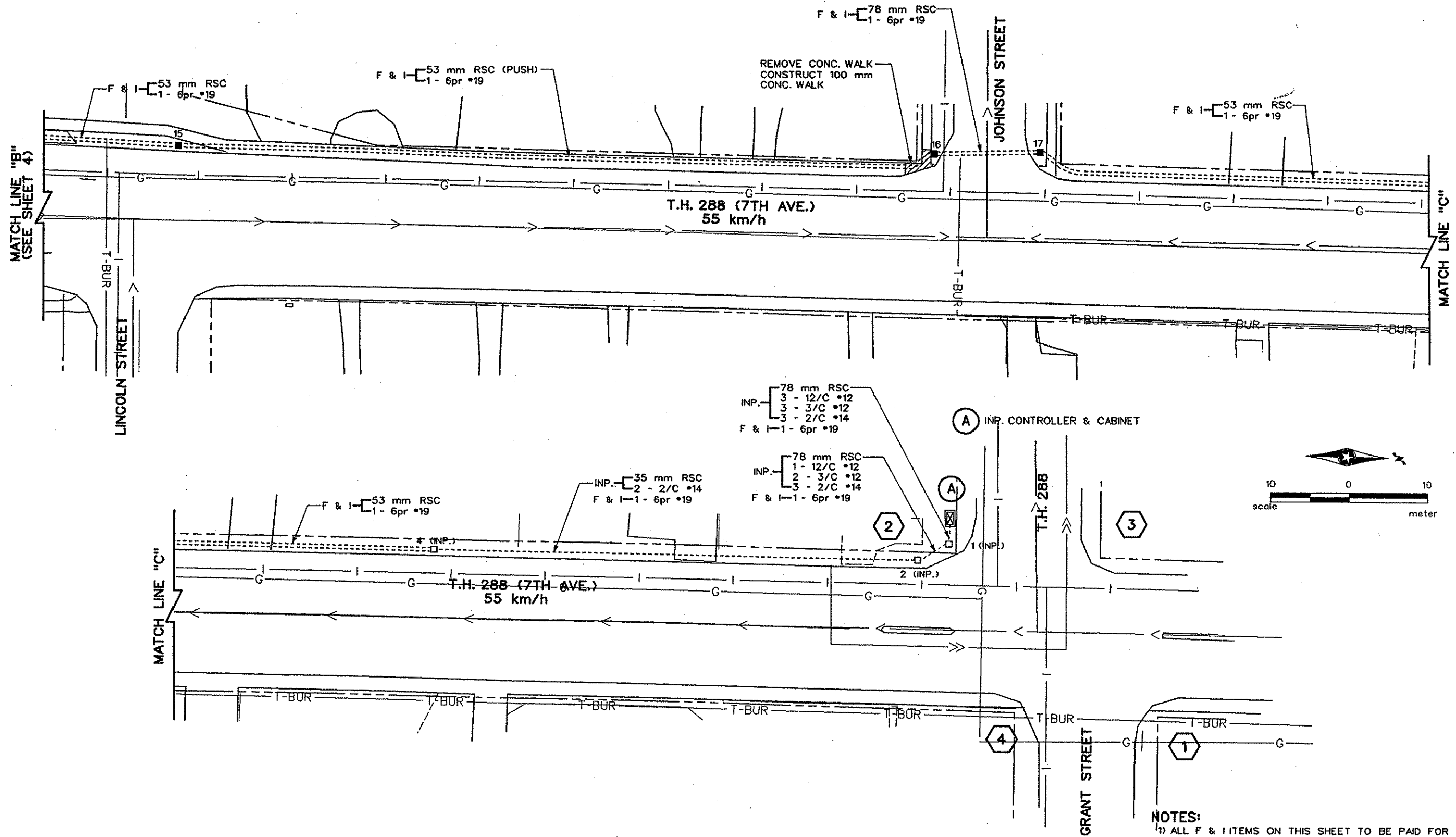
STATE AID PROJECT NO.
 CO. PROJECT NO. 96-77-79

DRAWN BY M. BRESSLER DATE 3-99
 DESIGNED BY A. POTTER 3-99
 CHECKED BY G. STUEMPFIG 3-99
 COMM. NO. 0983216



ANOKA COUNTY
 INTERCONNECT LAYOUT
 T.H. 288 (7TH AVE.) AT COUNTY ROAD 79
 (NORTH STREET) AND BUCHANAN STREET

SHEET 6 OF 14



NOTES:
 1) ALL F & I ITEMS ON THIS SHEET TO BE PAID FOR UNDER INTERCONNECT PAY ITEM.
 2) ALL UTILITIES SHOWN ARE APPROXIMATE AND SHALL BE VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION.

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 PLOT DATE/TIME: 03/21/2001 14:31:50

NO.	DATE	BY	CKD	APPR	REVISION



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George M. Stuenkel
 Date: 3/23/01 Reg. No. 21849

STATE AID PROJECT NO.
 CO. PROJECT NO. 96-77-79

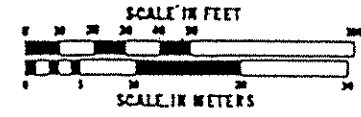
DRAWN BY M. BRESSLER DATE 3-99
 DESIGNED BY A. POTTER 3-99
 CHECKED BY G. STUENKEL 3-99
 COMM. NO. 0983216



ANOKA COUNTY
 INTERCONNECT LAYOUT
 T.H. 288 (7TH AVE.) AT COUNTY ROAD 79
 (NORTH STREET) AND BUCHANAN STREET

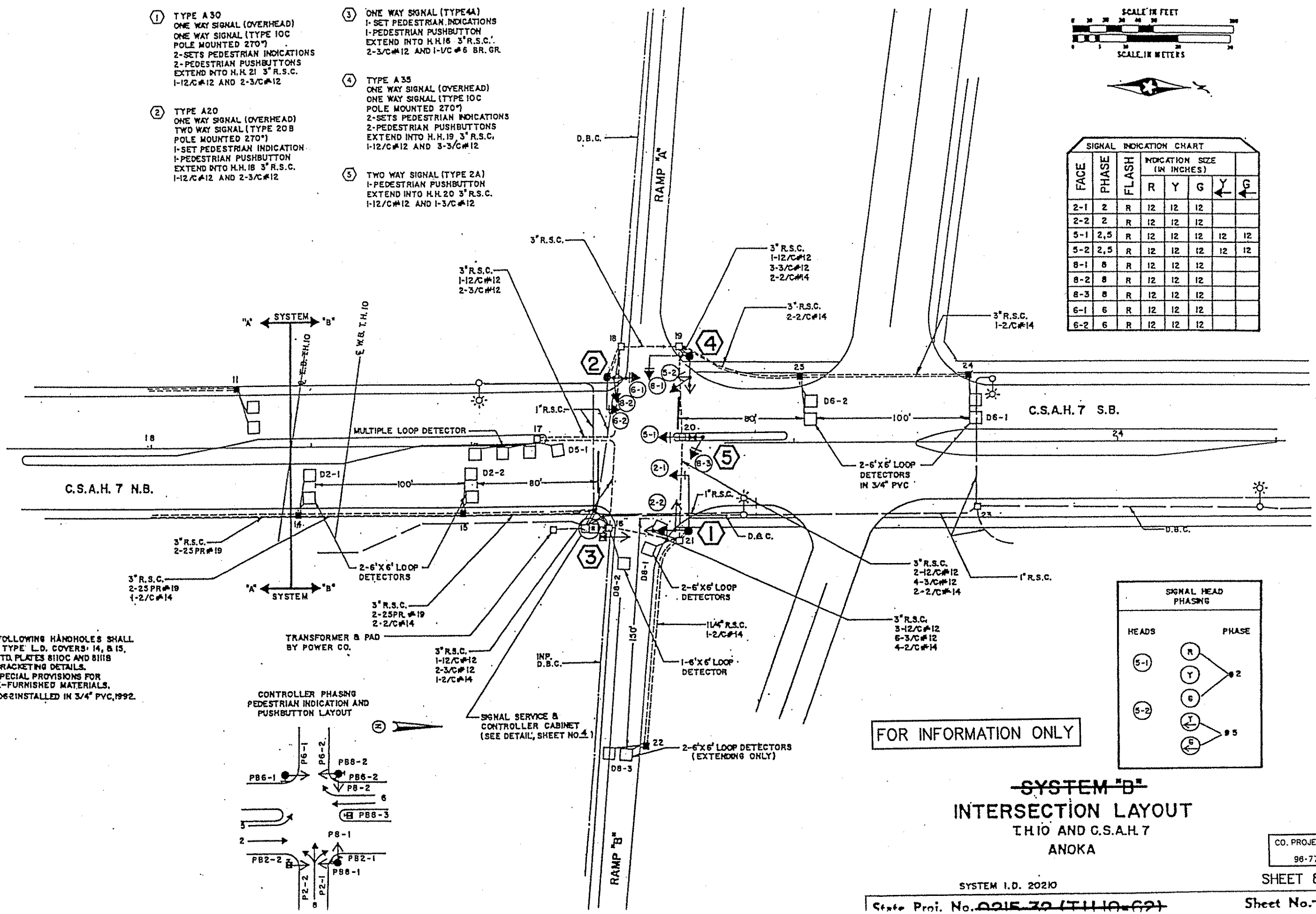
SHEET 7 OF 14

- ① TYPE A30
ONE WAY SIGNAL (OVERHEAD)
ONE WAY SIGNAL (TYPE 10C
POLE MOUNTED 270")
2-SETS PEDESTRIAN INDICATIONS
2-PEDESTRIAN PUSHBUTTONS
EXTEND INTO H.H. 21 3" R.S.C.
1-12/C#12 AND 2-3/C#12
- ② TYPE A20
ONE WAY SIGNAL (OVERHEAD)
TWO WAY SIGNAL (TYPE 20B
POLE MOUNTED 270")
1-SET PEDESTRIAN INDICATION
1-PEDESTRIAN PUSHBUTTON
EXTEND INTO H.H. 18 3" R.S.C.
1-12/C#12 AND 2-3/C#12
- ③ ONE WAY SIGNAL (TYPE 4A)
1-SET PEDESTRIAN INDICATIONS
1-PEDESTRIAN PUSHBUTTON
EXTEND INTO H.H. 16 3" R.S.C.
2-3/C#12 AND 1-1/C#6 BR. GR.
- ④ TYPE A35
ONE WAY SIGNAL (OVERHEAD)
ONE WAY SIGNAL (TYPE 10C
POLE MOUNTED 270")
2-SETS PEDESTRIAN INDICATIONS
2-PEDESTRIAN PUSHBUTTONS
EXTEND INTO H.H. 19 3" R.S.C.
1-12/C#12 AND 3-3/C#12
- ⑤ TWO WAY SIGNAL (TYPE 2A)
1-PEDESTRIAN PUSHBUTTON
EXTEND INTO H.H. 20 3" R.S.C.
1-12/C#12 AND 1-3/C#12

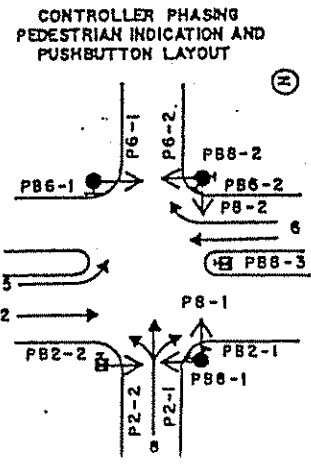


SIGNAL INDICATION CHART

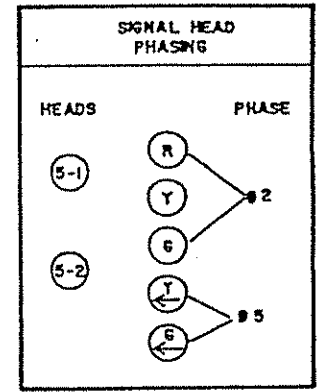
FACE	PHASE	FLASH	INDICATION SIZE (IN INCHES)				
			R	Y	G	←	→
2-1	2	R	12	12	12		
2-2	2	R	12	12	12		
5-1	2,5	R	12	12	12	12	12
5-2	2,5	R	12	12	12	12	12
8-1	8	R	12	12	12		
8-2	8	R	12	12	12		
8-3	8	R	12	12	12		
6-1	6	R	12	12	12		
6-2	6	R	12	12	12		



NOTE: 1. THE FOLLOWING HANDHOLES SHALL HAVE TYPE L.D. COVERS: 14, & 15.
2. SEE STD. PLATES 810C AND 811B FOR BRACKETING DETAILS.
3. SEE SPECIAL PROVISIONS FOR STATE-FURNISHED MATERIALS.
4. D6-1, D6-2 INSTALLED IN 3/4" PVC, 1992.



FOR INFORMATION ONLY



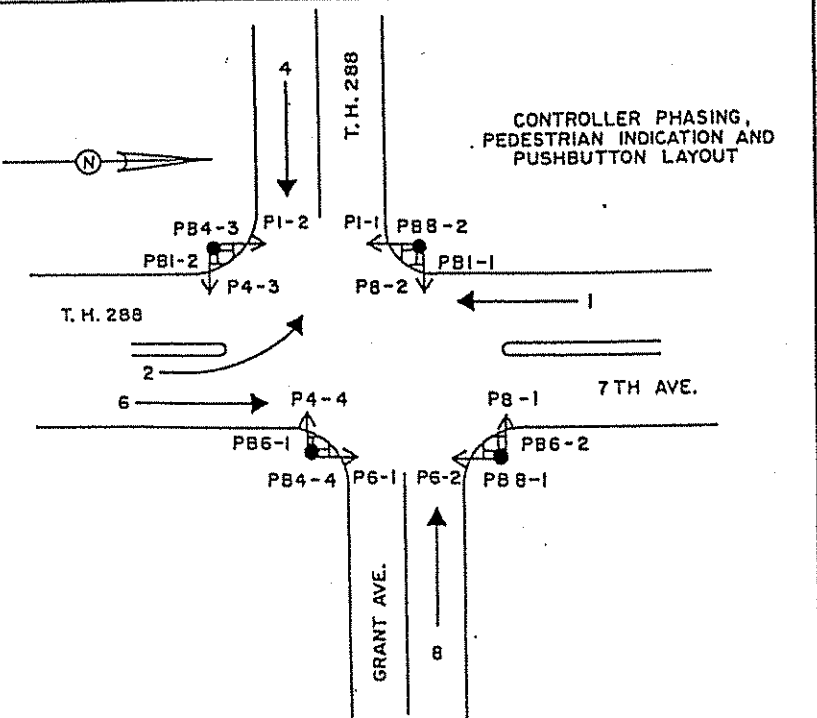
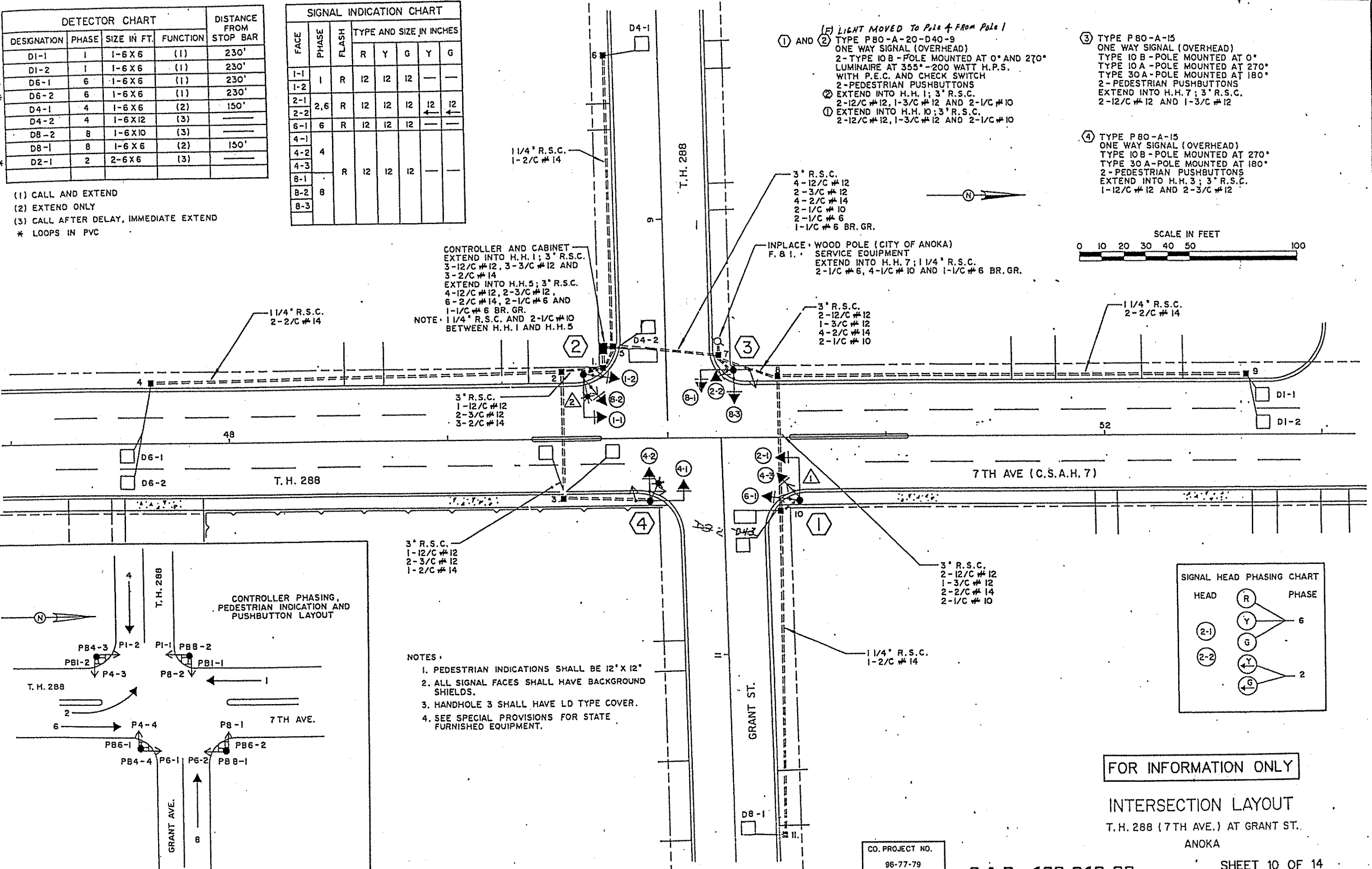
SYSTEM "B"
INTERSECTION LAYOUT
TH10 AND C.S.A.H. 7
ANOKA

CO. PROJECT NO.
96-77-79

DETECTOR CHART				DISTANCE FROM STOP BAR
DESIGNATION	PHASE	SIZE IN FT.	FUNCTION	
DI-1	1	1-6 X 6	(1)	230'
DI-2	1	1-6 X 6	(1)	230'
* D6-1	6	1-6 X 6	(1)	230'
* D6-2	6	1-6 X 6	(1)	230'
D4-1	4	1-6 X 6	(2)	150'
D4-2	4	1-6 X 12	(3)	
D8-2	8	1-6 X 10	(3)	
D8-1	8	1-6 X 6	(2)	150'
* D2-1	2	2-6 X 6	(3)	

SIGNAL INDICATION CHART							
FACE	PHASE	FLASH	TYPE AND SIZE IN INCHES				
			R	Y	G	Y	G
1-1	1	R	12	12	12	—	—
1-2							
2-1	2,6	R	12	12	12	12	12
2-2							
6-1	6	R	12	12	12	—	—
4-1							
4-2	4						
4-3							
8-1		R	12	12	12	—	—
8-2	8						
8-3							

- (1) CALL AND EXTEND
- (2) EXTEND ONLY
- (3) CALL AFTER DELAY, IMMEDIATE EXTEND
- * LOOPS IN PVC



- NOTES:
1. PEDESTRIAN INDICATIONS SHALL BE 12" X 12"
 2. ALL SIGNAL FACES SHALL HAVE BACKGROUND SHIELDS.
 3. HANDHOLE 3 SHALL HAVE LD TYPE COVER.
 4. SEE SPECIAL PROVISIONS FOR STATE FURNISHED EQUIPMENT.

- (1) AND (2) LIGHT MOVED TO Pole 4 From Pole 1
- (1) TYPE P80-A-20-D40-9 ONE WAY SIGNAL (OVERHEAD)
- (2) TYPE 10 B - POLE MOUNTED AT 0° AND 270° LUMINAIRE AT 355"-200 WATT H.P.S. WITH P.E.C. AND CHECK SWITCH
- 2-PEDESTRIAN PUSHBUTTONS
- EXTEND INTO H.H. 1; 3" R.S.C.
- 2-12/C #12, 1-3/C #12 AND 2-1/C #10
- EXTEND INTO H.H. 10; 3" R.S.C.
- 2-12/C #12, 1-3/C #12 AND 2-1/C #10

- (3) TYPE P80-A-15 ONE WAY SIGNAL (OVERHEAD)
- TYPE 10 B - POLE MOUNTED AT 0°
- TYPE 10 A - POLE MOUNTED AT 270°
- TYPE 30 A - POLE MOUNTED AT 180°
- 2-PEDESTRIAN PUSHBUTTONS
- EXTEND INTO H.H. 7; 3" R.S.C.
- 2-12/C #12 AND 1-3/C #12

- (4) TYPE P80-A-15 ONE WAY SIGNAL (OVERHEAD)
- TYPE 10 B - POLE MOUNTED AT 270°
- TYPE 30 A - POLE MOUNTED AT 180°
- 2-PEDESTRIAN PUSHBUTTONS
- EXTEND INTO H.H. 3; 3" R.S.C.
- 1-12/C #12 AND 2-3/C #12

SIGNAL HEAD PHASING CHART		
HEAD	R	PHASE
(2-1)	Y	6
	G	
(2-2)	Y	
	G	2
	Y	

FOR INFORMATION ONLY

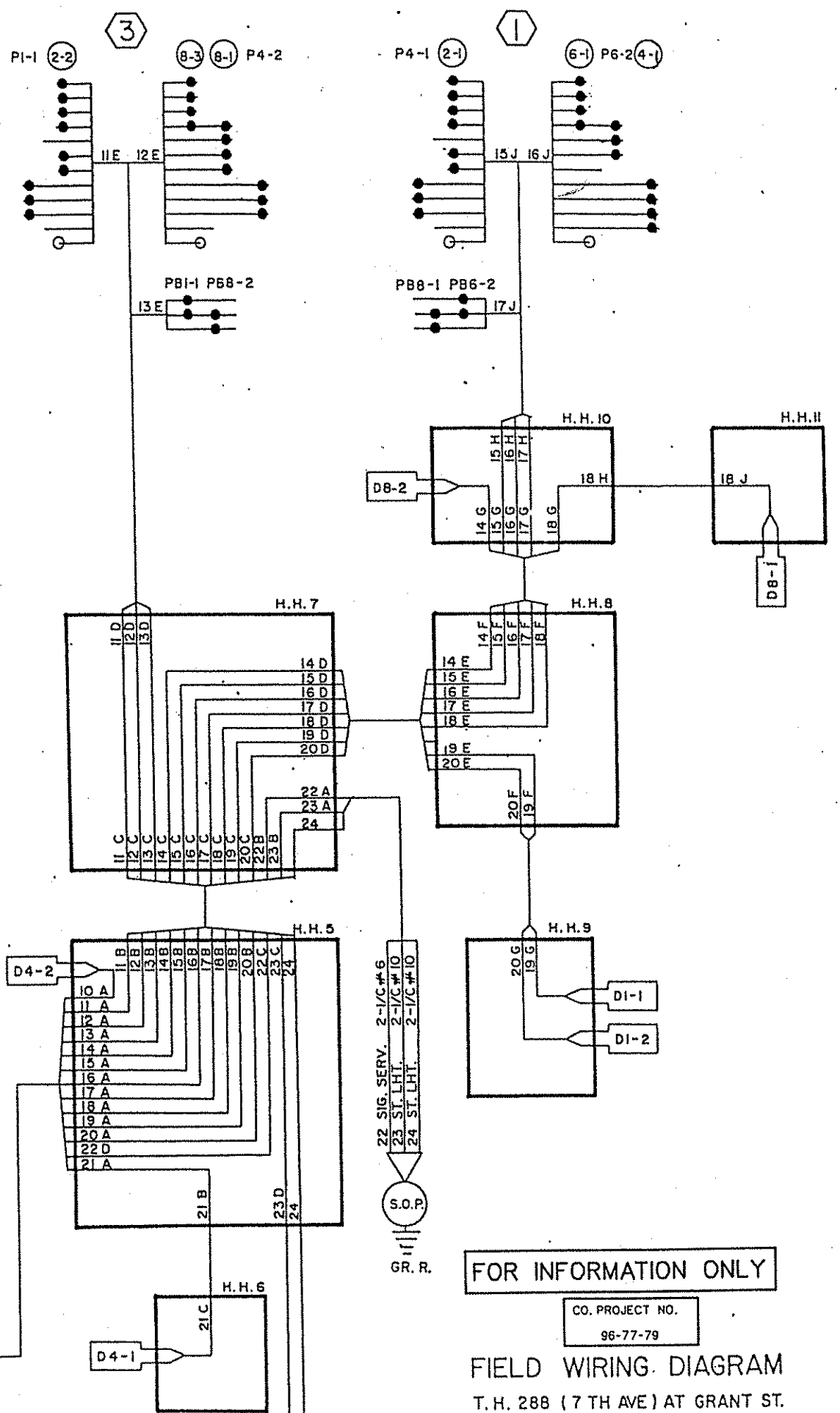
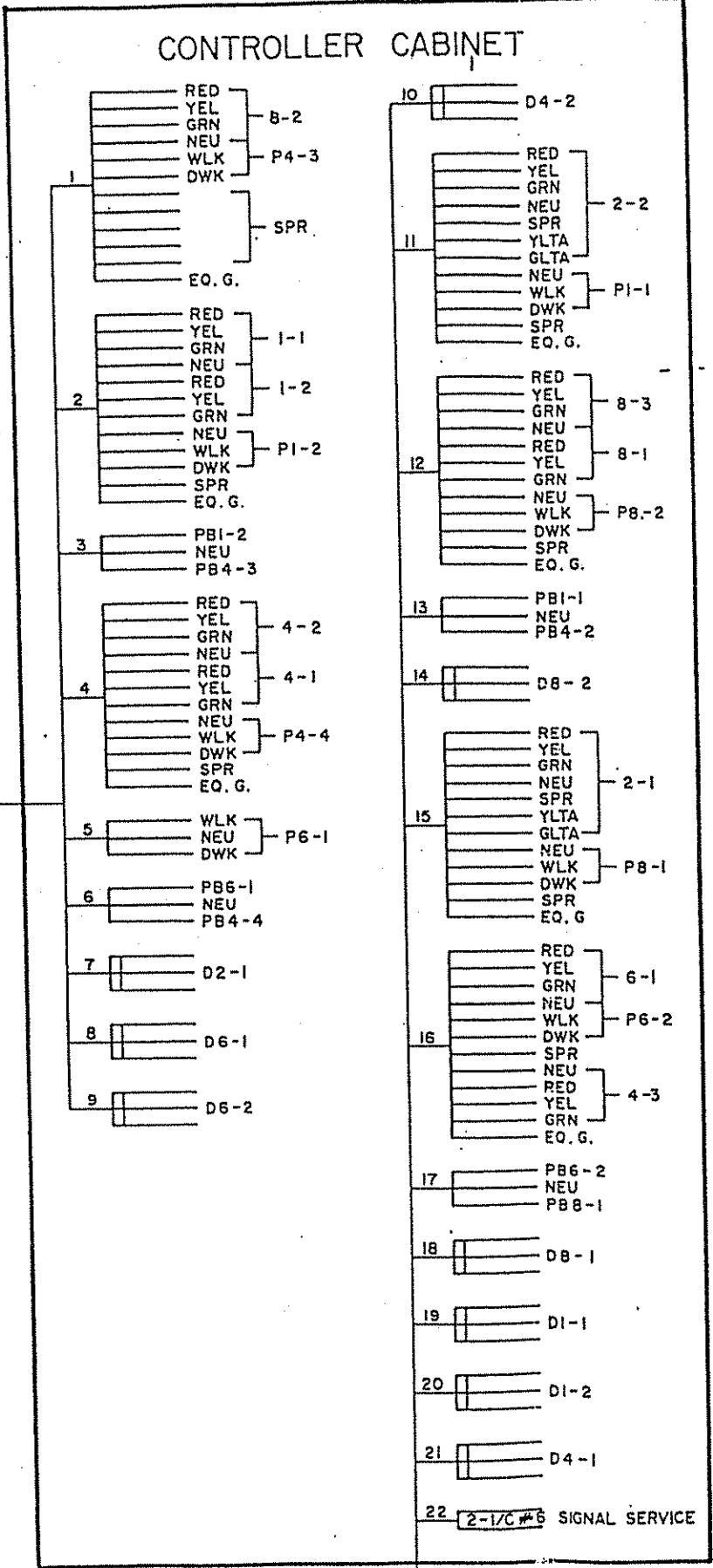
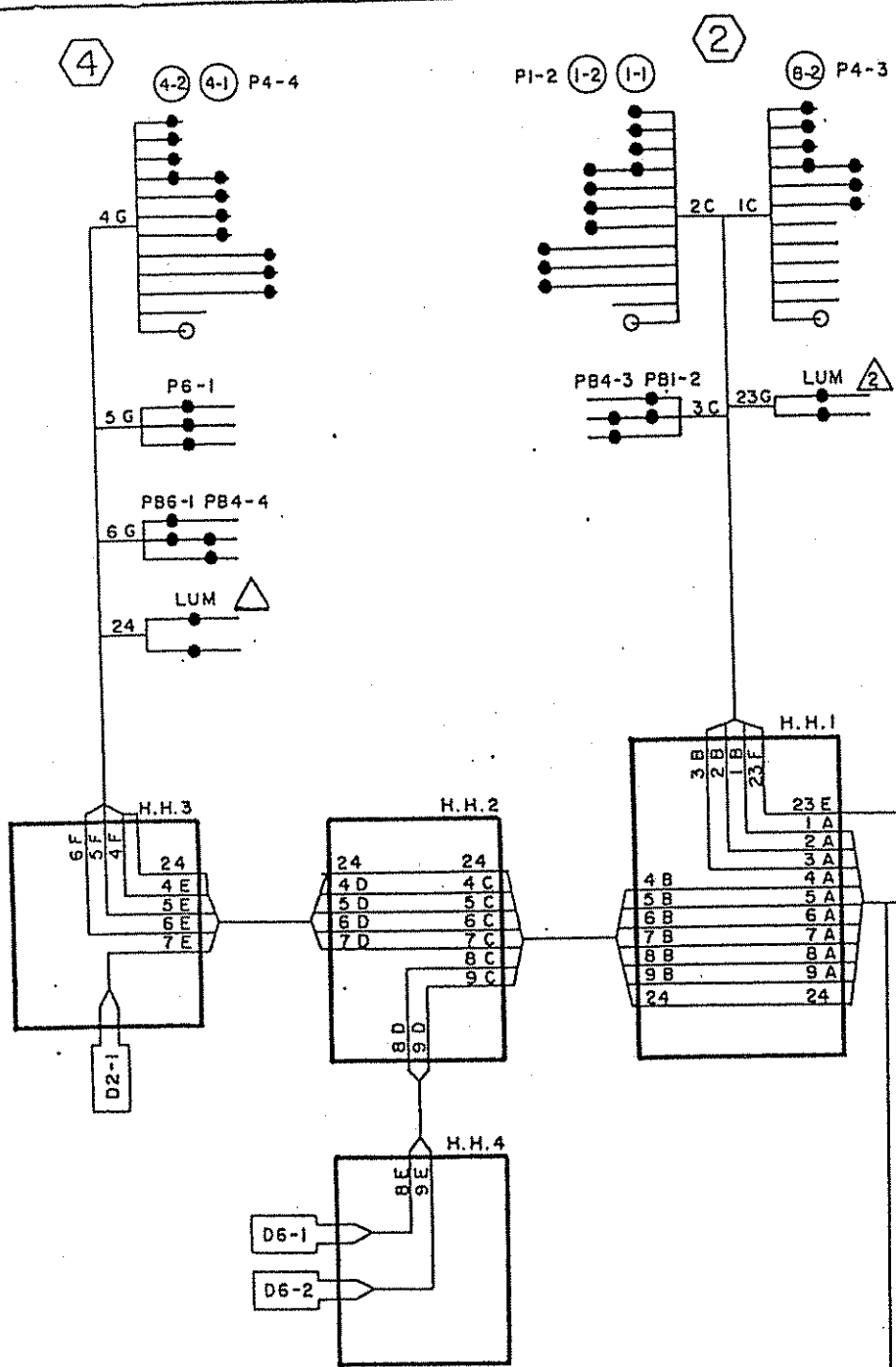
INTERSECTION LAYOUT

T.H. 288 (7TH AVE.) AT GRANT ST.
ANOKA

CO. PROJECT NO.
96-77-79

~~S.A.P. 188-018-08~~

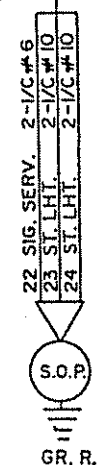
SHEET 10 OF 14



TYPICAL CONDUCTOR COLOR CODE

R	3/C #12	BLK
O		WH
BL		R
WH		CLR
R/BLK	2/C #14	BLK
O/BLK		BR. GR.
BL/BLK		
WH/BLK	2-1/C #6	BLK
BLK		WH
BLK/WH		
G/BLK	2-1/C #10	R
G		WH

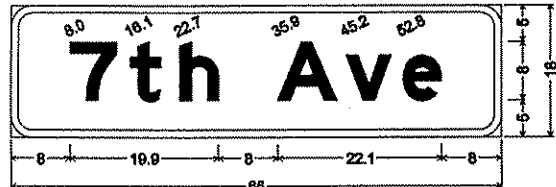
ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE.



FOR INFORMATION ONLY

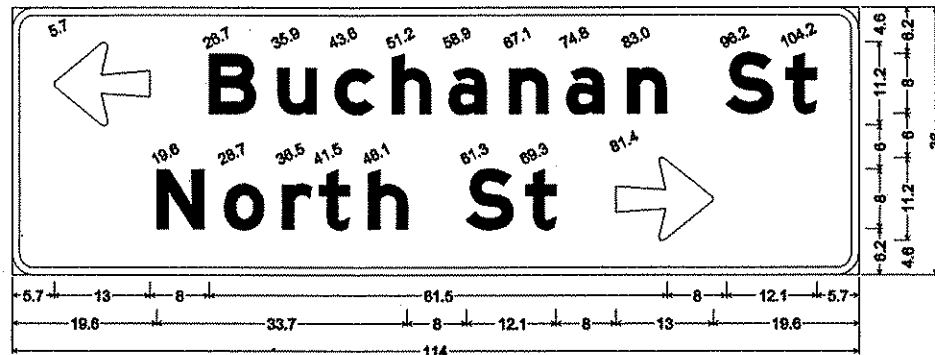
CO. PROJECT NO.
96-77-79

FIELD WIRING DIAGRAM
T.H. 288 (7 TH AVE) AT GRANT ST.

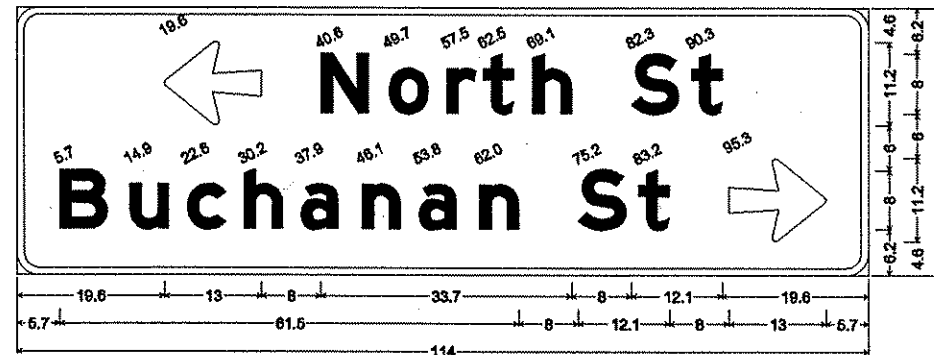


D-1; 3.0" Radius, 1.0" Border, White on Green;
[7th Ave] E Mod;

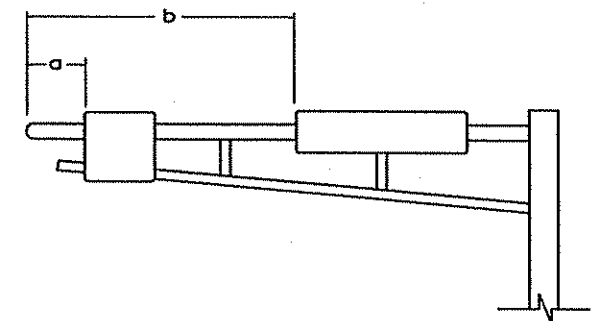
TYPE "D" SIGNS								
SIGN PANEL	SIZE	NUMBER REQUIRED	BRACKETS PER SIGN	BRACKET SPACING	SQUARE FT. PER SIGN	a	b	POLE NUMBER
D-1	66" x 18"	2	2	36"	8.25		11.5', 16.5'	②④
D-2	114" x 36"	1	3	36"	28.5		15.5'	③
D-3	114" x 36"	1	3	36"	28.5		15.5'	①



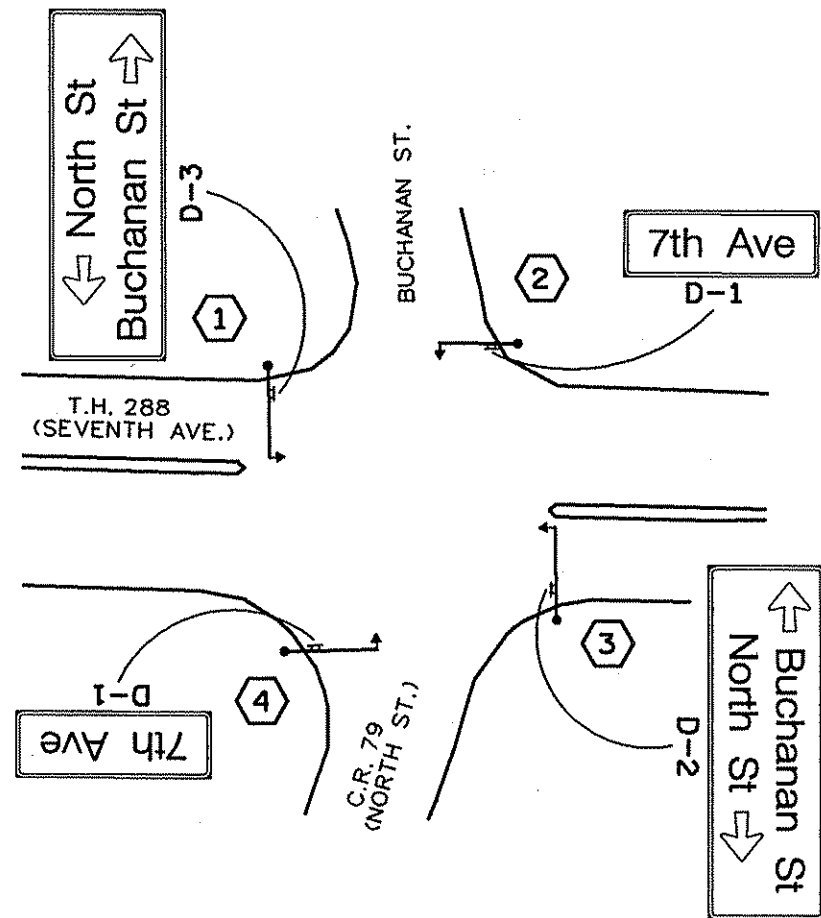
D-2; 3.0" Radius, 1.0" Border, White on Green;
Arrow 5 - 13.0° 180°; [Buchanan St] E Mod; [North St] E Mod; Arrow 5 - 13.0° 0°;



D-3; 3.0" Radius, 1.0" Border, White on Green;
Arrow 5 - 13.0° 180°; [North St] E Mod; [Buchanan St] E Mod; Arrow 5 - 13.0° 0°;



MAST ARM SIGN DIMENSIONING DETAIL



T.H. 288 (7TH AVE.) AT COUNTY ROAD 79
(NORTH STREET) AND BUCHANAN STREET
SIGN LAYOUT

NOTES:

- COLOR - HIGH INTENSITY WHITE LEGEND AND BORDER ON HIGH INTENSITY GREEN BACKGROUND, FULLY REFLECTORIZED.
- CORNERS EXTENDING BEYOND THE BORDER SHALL NOT BE TRIMMED.
- BORDERS SHALL BE AS SHOWN ON PLANS.
- FOR STRUCTURAL DETAILS, TYPE "D" SIGNS, SEE STANDARD SIGNS MANUAL, PAGE 105B.
- FOR TYPE "D" STRINGER AND PANEL - JOINT DETAIL, SEE STANDARD SIGNS MANUAL, PAGE 105.
- LETTERING STYLE SHALL BE HIGHWAY GOTHIC CONFORMING TO MN/DOT STANDARDS.

THIS PLAN CONTAINS ENGLISH DIMENSIONS.

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PRE FILE: P:\S\proj\3216\3216-1.dwg
PLOTTER: MS-HP8000
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PLOT DATE/TIME: 03/21/2001 14:32:42

NO	DATE	BY	CHKD	APPR	REVISION



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George M. Stuemfieg
Date: 3/23/01 Reg. No. 21849

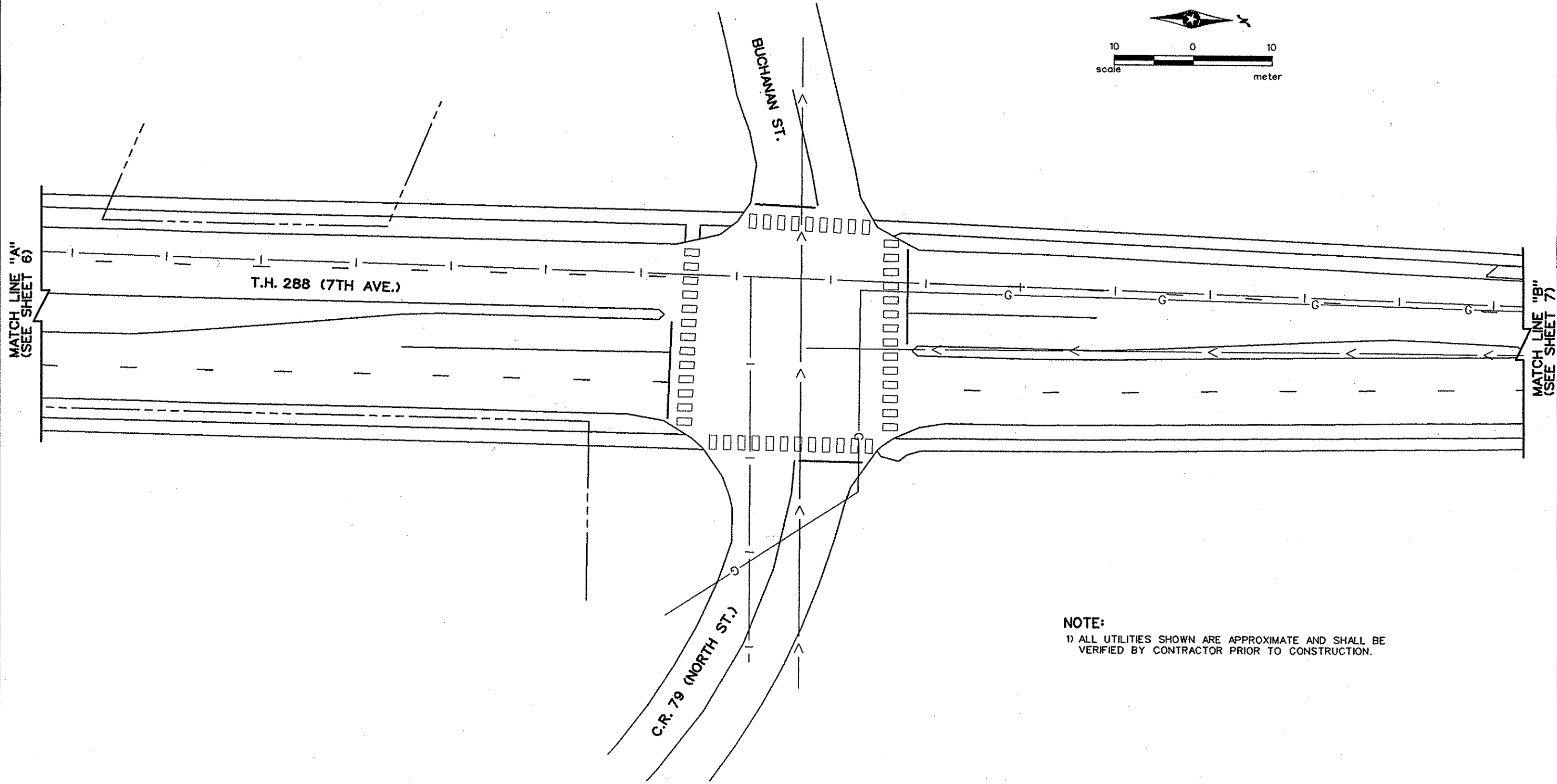
STATE AID PROJECT NO.
CO. PROJECT NO. 96-77-79

DRAWN BY M. BRESSLER DATE 3-99
DESIGNED BY A. POTTER 3-99
CHECKED BY G. STUEMPFIEG 3-99
COMM. NO. 0983216



ANOKA COUNTY
MAST ARM SIGN DETAILS
T.H. 288 (7TH AVE.) AT COUNTY ROAD 79
(NORTH STREET) AND BUCHANAN STREET

SHEET 12 OF 14



NOTE:
 1) ALL UTILITIES SHOWN ARE APPROXIMATE AND SHALL BE VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION.

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NO	DATE	BY	CKD	APPR	REVISION



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George M. Stuemffig
 Date 3/23/01 Reg. No. 21849

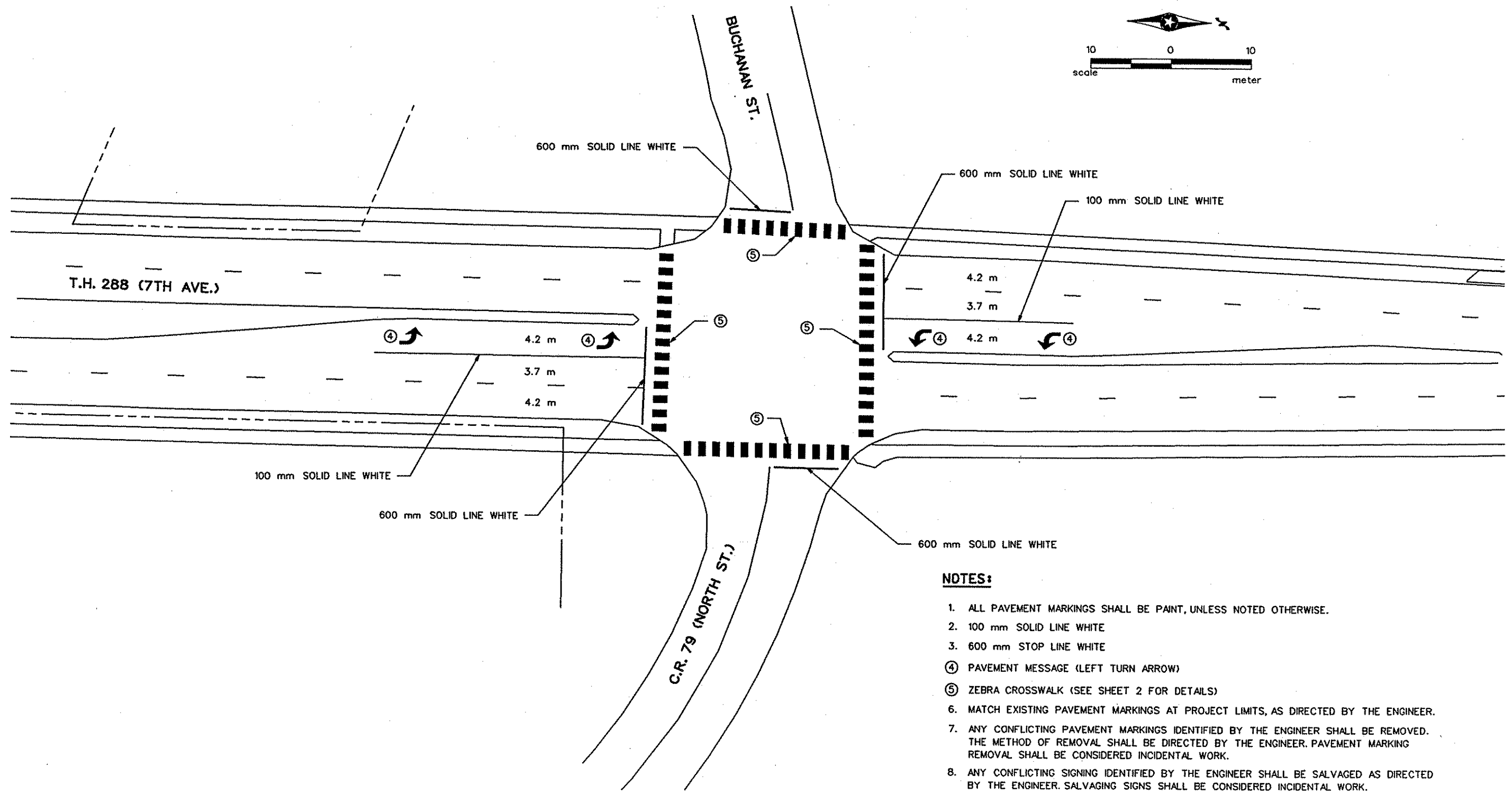
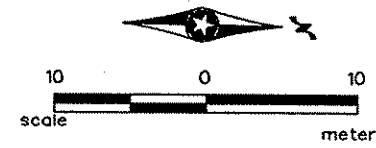
STATE AID PROJECT NO.
 CO. PROJECT NO. 96-77-79

DRAWN BY M. BRESSLER DATE 3-99
 DESIGNED BY A. POTTER 3-99
 CHECKED BY G. STUEMPFIG 3-99
 COMM. NO. 0983216



ANOKA COUNTY
 EXISTING UTILITY LAYOUT
 T.H. 288 (7TH AVE.) AT COUNTY ROAD 79 (NORTH STREET) AND BUCHANAN STREET

SHEET 13 OF 14



NOTES:

1. ALL PAVEMENT MARKINGS SHALL BE PAINT, UNLESS NOTED OTHERWISE.
2. 100 mm SOLID LINE WHITE
3. 600 mm STOP LINE WHITE
- ④ PAVEMENT MESSAGE (LEFT TURN ARROW)
- ⑤ ZEBRA CROSSWALK (SEE SHEET 2 FOR DETAILS)
6. MATCH EXISTING PAVEMENT MARKINGS AT PROJECT LIMITS, AS DIRECTED BY THE ENGINEER.
7. ANY CONFLICTING PAVEMENT MARKINGS IDENTIFIED BY THE ENGINEER SHALL BE REMOVED. THE METHOD OF REMOVAL SHALL BE DIRECTED BY THE ENGINEER. PAVEMENT MARKING REMOVAL SHALL BE CONSIDERED INCIDENTAL WORK.
8. ANY CONFLICTING SIGNING IDENTIFIED BY THE ENGINEER SHALL BE SALVAGED AS DIRECTED BY THE ENGINEER. SALVAGING SIGNS SHALL BE CONSIDERED INCIDENTAL WORK.

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 PLOTTER: MS-HP8000Z
 PLOT SCALE: 505.052200
 PLOT DATE/TIME: 03/23/2001 08:22:12

NO	DATE	BY	CKD	APPR	REVISION



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George M. Stuemplig
 Date: 3/23/01 Reg. No. 21849

STATE AID PROJECT NO.
 CO. PROJECT NO. 96-77-79

DRAWN BY M. BRESSLER DATE 3-99
 DESIGNED BY A. POTTER 3-99
 CHECKED BY G. STUEMPFIG 3-99
 COMM. NO. 0983216



ANOKA COUNTY
 PAVEMENT MARKING LAYOUT
 T.H. 288 (7TH AVE.) AT COUNTY ROAD 79
 (NORTH STREET) AND BUCHANAN STREET

SHEET 14 OF 14