

# MINNESOTA DEPARTMENT OF TRANSPORTATION

## ANOKA COUNTY

### CONSTRUCTION PLAN FOR TRAFFIC CONTROL SIGNAL SYSTEM

LOCATED ON **NORTHDALE BOULEVARD (CSAH 11) AT RAVEN STREET**

STATE AID PROJ. NO. 114-020-03

COUNTY PROJ. NO. 92-05-11

#### PLANS SYMBOLS

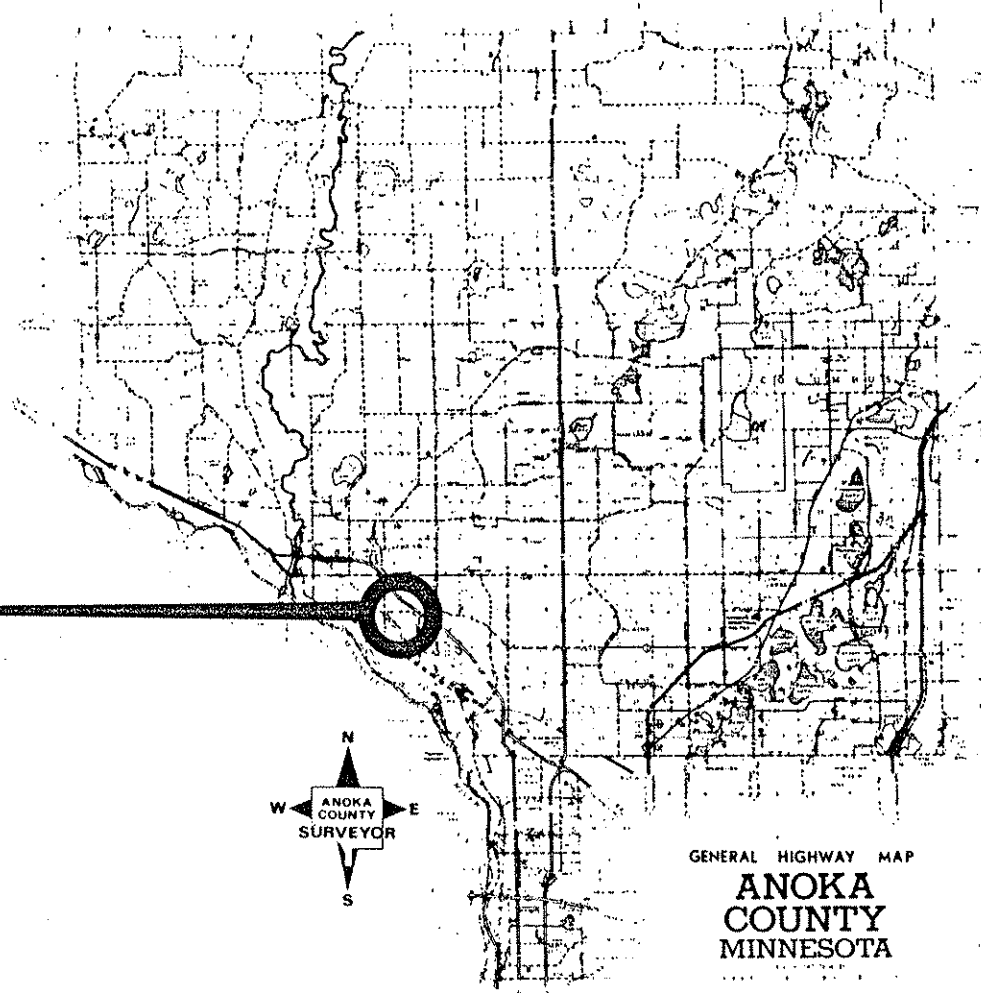
- STATE LINE
- COUNTY LINE
- TOWNSHIP OR RANGE LINE
- SECTION LINE
- QUARTER LINE
- SIXTEENTH LINE
- RIGHT OF WAY LINE
- PRESENT RIGHT OF WAY LINE
- CONTROL OF ACCESS LINE
- PROPERTY LINE (EXCEPT LAND LINES)
- VACATED PLATTED PROPERTY
- COORDINATE OF CITY LIMITS
- \*RUNK HIGHWAY CENTER LINE
- RETAINING WALL
- RAILROAD
- RAILROADS RIGHT OF WAY LINE
- RIVER OR CREEK
- DRY RUN
- DRAINAGE DITCH
- DRAIN TILE
- SEWER
- SEWER INLET
- GUARD RAIL
- BARBED WIRE FENCE
- WOVEN WIRE FENCE
- CHAIN LINK FENCE
- RAILROAD SHOW FENCE
- STONE WALL OR FENCE
- HEDGE
- RAILROAD CROSSING SIGN
- RAILROAD CROSSING BELL
- ELECTRIC WARNING SIGN
- CROSSING GATE
- MEASURE CORNER
- SPRING
- MARSH
- TIMBER
- ORCHARD
- BRUSH
- NURSERIES
- CATCH BASIN
- FIRE HYDRANT
- CATTLE GUARD
- OVERPASS (Highway Over)
- UNDERPASS (Highway Under)
- BRIDGE
- BUILDING (One Story Frame)
- FRAME CONCRETE
- STONE
- BRICK
- STONE
- IRON PIPE OR ROD
- MONUMENT (STONE CONCRETE OR METAL)
- WOODEN HUB
- GRAVEL PIT
- SAND PIT
- BORROW PIT
- ROCK QUARRY
- SLOPE CASEMENT

#### UTILITIES SYMBOLS

- POWER POLE LINE
- TELEPHONE OR TELEGRAPH POLE LINE
- JOINT TELEPHONE AND POWER ON COMMON POLES
- ON TELEPHONE POLES
- ANCHOR
- STEEL TOWER
- STREET LIGHT
- PEDESTAL TELEPHONE CABLE TERMINAL
- CAS MAIN
- WATER MAIN
- CONDUIT
- 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

#### PROJECT LOCATION

**NORTHDALE BLVD (CSAH 11)  
 AT RAVEN STREET  
 C.P. 92-05-11**



**SCALES**

PLAN	N.A.
PROFILE	N.A.
INDEX MAP	2.66 MI
GENERAL LAYOUT	20 FEET

ESTIMATED QUANTITIES								
ITEM NO	ITEM	UNIT	S.A.P. 114-020-03		C.P. 92-05-11		TOTALS	
			ESTIMATED QUANTITIES	FINAL QUANTITIES	ESTIMATED QUANTITIES	FINAL QUANTITIES	ESTIMATED QUANTITIES	FINAL QUANTITIES
2565.511	FULL-TRAFFIC-ACTUATED TRAFFIC CONTROL SIGNAL SYSTEM	SIGNAL SYSTEM	0.625		0.375		1	

#### GOVERNING SPECIFICATIONS

THE 1988 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION (AS AMENDED BY THE JANUARY 2, 1991 SUPPLEMENTAL SPECIFICATIONS) SHALL GOVERN.

#### INDEX

1	TITLE SHEET
2-3	INTERSECTION LAYOUT AND FIELD WIRING DIAGRAM
4-5	DETAILS
6	UTILITIES

THIS PLAN CONTAINS 6 SHEETS

#### DESIGN DESIGNATION

§N18 <sub>20</sub>	N/A
R Value	N/A
ADT (1992)	= 13,600
Proj. ADT (2012)	= 23,120
Proj. HCADT (2012)	= 1,734
Soil Factor	50%
9 Ton Design	
Shoulder Width	0
FUNCTIONAL CLASSIFICATION	LOW DENSITY ARTERIAL
NO. OF TRAFFIC LANES	4
NO. OF PARKING LANES	0
Design Speed	35 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 _____

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

DATE 9/18/92 REG. NO. 20943 ENGR. Thomas A. Soloway

DESIGN SQUAD JOHN M GRAY (SEH)

Approved William R. Othman 10/12 1992  
 City of Coon Rapids

Approved Paul K. Lund 10/7 1992  
 Anoka County Engineer

Recommended for Approval Margaret Bieringer 11-16 1992  
 METRO DIVISION ASST. STATE AID ENGINEER

Recommended for Approval Mable Link 11-23 1992  
 STATE AID PLANS AND SPECS ENGINEER

Approved 11/23 1992 Dennis C. Carlson  
 STATE AID ENGINEER

DEPARTMENT OF TRANSPORTATION  
 FEDERAL HIGHWAY ADMINISTRATION  
 APPROVED \_\_\_\_\_  
 DIVISION ADMINISTRATOR DATE

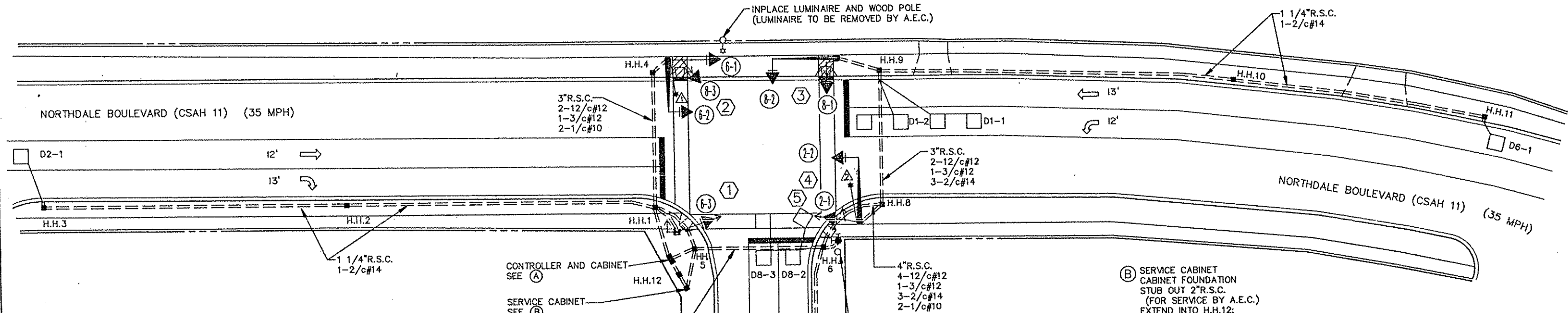
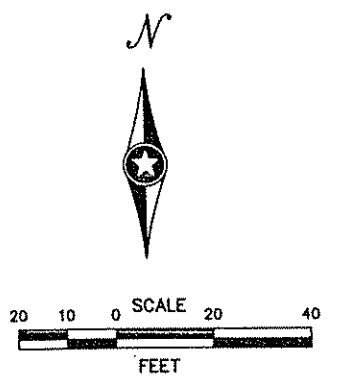
NOTES:

- 1) LOCATION OF CONTROLLER CABINET, SERVICE CABINET, POLE BASES, LOOP DETECTORS AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- 2) EACH SIGNAL FACE SHALL HAVE BACKGROUND SHIELD, EXCEPT FOR SIGNAL FACE (8-3).
- 3) EACH PEDESTRIAN INDICATION SHALL BE 12"x12".
- 4) SEE SPECIAL PROVISIONS AND DETAILS FOR ANOKA COUNTY SERVICE CABINET INFORMATION.
- 5) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
- 6) LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) IN 1" N.M.C. SEE SPECIAL PROVISIONS AND DETAILS.
- 7) EACH HANDHOLE SHALL BE CONCRETE HANDHOLE WITH A TYPE "C" COVER PER Mn/DOT STANDARD PLATE NO.8117F.
- 8) SEE SPECIAL PROVISIONS AND DETAILS REGARDING TYPE "D" SIGN PANELS TO BE FURNISHED AND INSTALLED BY CONTRACTOR (INCIDENTAL TO ITEM NO.2565.511).

- 2) TYPE P80-A-20-D40-9 (DAVIT AT 350°)  
P80 POLE FOUNDATION  
ONE WAY SIGNAL-OVERHEAD  
TYPE 20B-POLE MOUNTED 270°  
LUMINAIRE-200 WATT H.P.S. WITH PEC AND CHECK SWITCH  
1-PEDESTRIAN PUSH BUTTON  
TYPE "D" SIGN PANEL (72"x18")-OVERHEAD  
R10-12 SIGN PANEL (24"x30")-ADJACENT TO (6-2)  
EXTEND INTO H.H.4:  
3"R.S.C.  
2-12/c#12  
1-3/c#12  
2-1/c#10

- 3) TYPE P90-A-25  
P90 POLE FOUNDATION  
ONE WAY SIGNAL-OVERHEAD  
TYPE 10B-POLE MOUNTED 0°  
1-PEDESTRIAN PUSH BUTTON  
TYPE "D" SIGN PANEL (108"x18")-OVERHEAD  
EXTEND INTO H.H.9:  
3"R.S.C.  
2-12/c#12  
1-3/c#12

- A) INSTALL CONTROLLER AND CABINET (FURNISHED BY COUNTY)  
CABINET FOUNDATION  
EXTEND INTO H.H.12:  
METERED SIGNAL SERVICE  
1 1/4"R.S.C.  
3-1/c#6  
EXTEND INTO H.H.1:  
4"R.S.C.  
3-12/c#12  
3-3/c#12  
1-2/c#14  
EXTEND INTO H.H.5:  
4"R.S.C.  
4-12/c#12  
2-3/c#12  
6-2/c#14  
STUB OUT 3"R.S.C. AND  
CAP (FOR FUTURE USE)



SIGNAL INDICATIONS							
FACE	PHASE	FLASH	SIGNAL FACES (SIZE IN INCHES)				
			R	Y	G	YLTA	GLTA
2-1	2	R	12	12	12		
2-2	2	R	12	12	12		
6-1	6	R	12	12	12		
6-2	6 & 1	R	12	12	12	12	12
6-3	6 & 1	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		

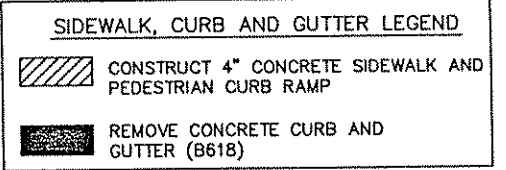
- 1) TYPE 10  
10' PEDESTAL POLE AND BASE  
PEDESTAL FOUNDATION  
2-PEDESTRIAN PUSH BUTTONS  
EXTEND INTO H.H.1:  
2"R.S.C.  
1-12/c#12  
2-3/c#12

- FUNCTIONS:
- 1) CALL AND EXTEND
  - 2) CALL ONLY
  - 3) EXTEND ONLY
  - 4) CALL ONLY DENSITY
  - 5) DELAYED CALL ONLY
  - 6) DELAYED CALL ONLY DENSITY
  - 7) DELAYED CALL-IMMEDIATE EXTEND
  - 8) CARRY OVER (STRETCH)
  - 9) ADVISORY DETECTOR
  - 10) SAMPLING DETECTOR
  - 11) EXTEND PHASE 2 AND 6 DURING PHASE 2 AND 6 GREEN

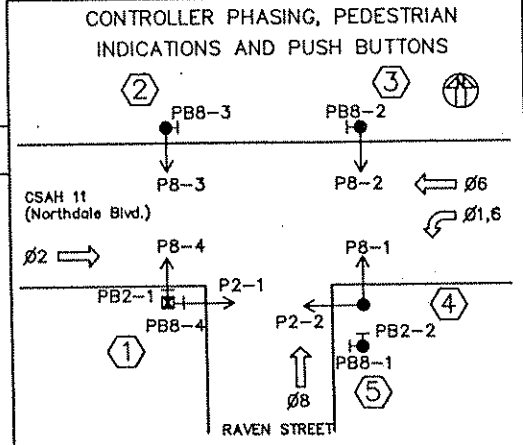
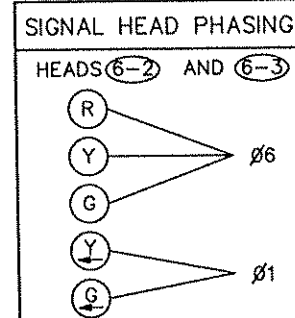
LOOP DETECTORS			
NUMBER	SIZE (FT.)	LOCATION	FUNCTION
D1-1	2-6x6	35'	1
D1-2	2-6x6	5'	1,11
D2-1	6x6	260'	1
D6-1	6x6	260'	1
D8-1	2-6x6	120'	3,8
D8-2	2-6x6	5'	7
D8-3	2-6x6	5'	1

NOTE: LOCATION = DISTANCE FROM STOP BAR TO LOOP DETECTOR.

- B) SERVICE CABINET  
CABINET FOUNDATION  
STUB OUT 2"R.S.C.  
(FOR SERVICE BY A.E.C.)  
EXTEND INTO H.H.12:  
METERED SIGNAL SERVICE  
1 1/4"R.S.C.  
3-1/c#6  
EXTEND INTO H.H.5:  
UNMETERED STREET LIGHT SERVICE  
1 1/4"R.S.C.  
4-1/c#10  
BETWEEN H.H.1 AND H.H.5:  
2"R.S.C.  
2-1/c#10



- 5) PEDESTAL FOUNDATION  
5' PEDESTAL POLE AND BASE  
2-PEDESTRIAN PUSH BUTTONS  
EXTEND INTO H.H.6:  
2"R.S.C.  
1-3/c#12



"ELECTRICAL ENGINEER CERTIFICATION"  
I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the state of Minnesota.  
*Robert A. Ellor*  
Date: 9/18/92 Reg. No. 5859

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the state of Minnesota.  
*Thomas A. Schwab*  
Date: 9/18/92 Reg. No. 20943



ANOKA COUNTY, MINNESOTA  
CITY OF COON RAPIDS

TRAFFIC SIGNAL SYSTEM  
INTERSECTION LAYOUT  
NORTHDALE BOULEVARD (CSAH 11) AT RAVEN STREET

FILE NO.  
92219  
DATE  
9/18/92

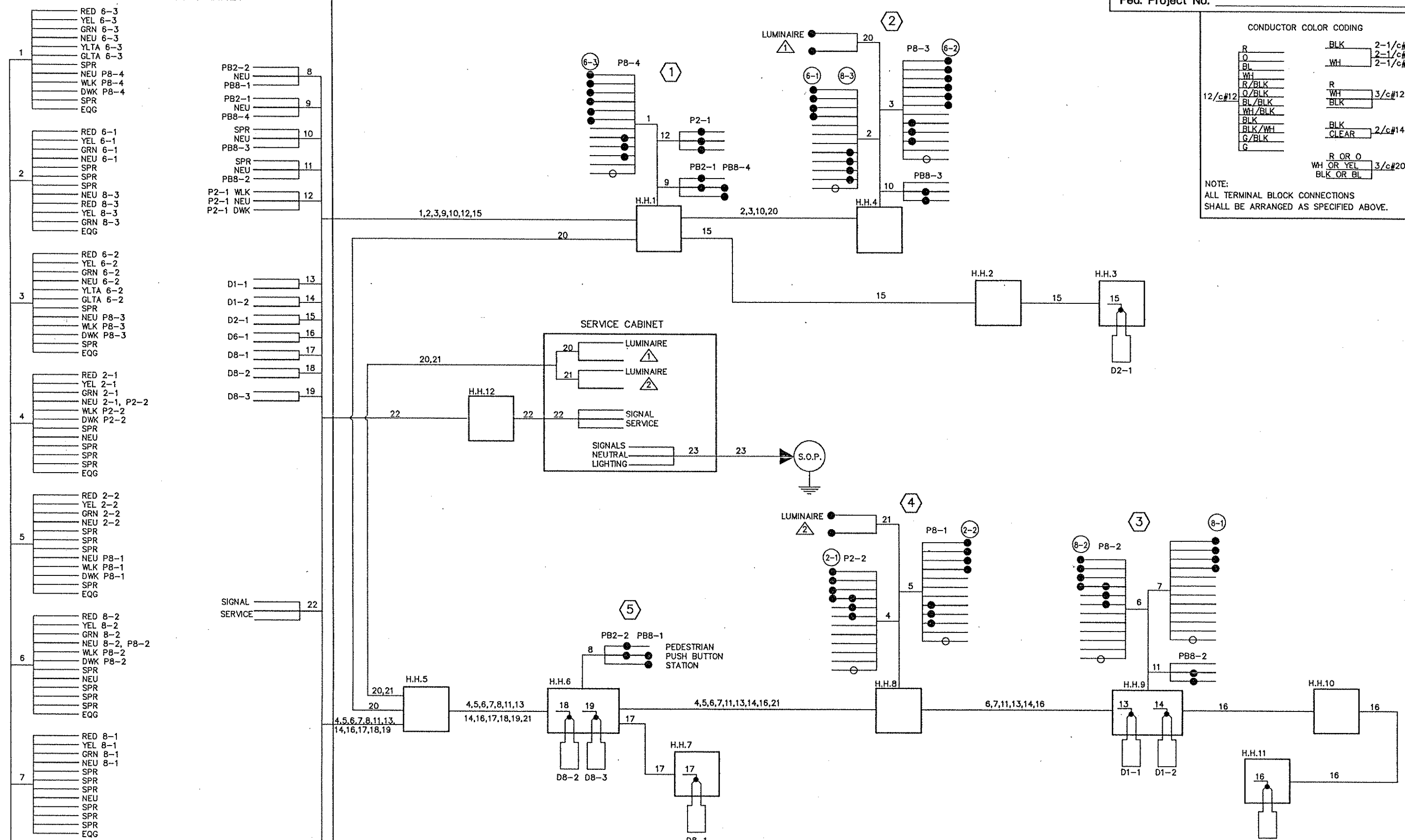
CONTROLLER CABINET

Fed. Project No. \_\_\_\_\_

CONDUCTOR COLOR CODING

R	BLK	2-1/c#2
O	WH	2-1/c#6
BL	WH	2-1/c#10
WH		
R/BLK	R	
O/BLK	WH	3/c#12
BL/BLK	BLK	
WH/BLK		
BLK	BLK	2/c#14
BLK/WH	CLEAR	
G/BLK		
G		
	R OR O	
	WH OR YEL	3/c#20
	BLK OR BL	

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



BASE RELAY NO.

NO	BY	DATE	REVISIONS

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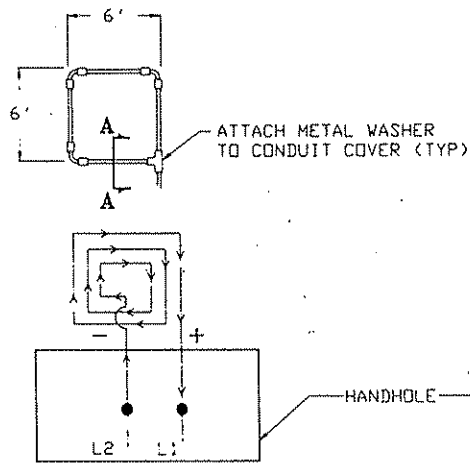
ANOKA COUNTY, MINNESOTA  
CITY OF COON RAPIDS

TRAFFIC SIGNAL SYSTEM  
FIELD WIRING DIAGRAM  
NORTHDALE BLVD.(CSAH 11) AT RAVEN STREET

FILE NO. 92219  
DATE 9/18/92

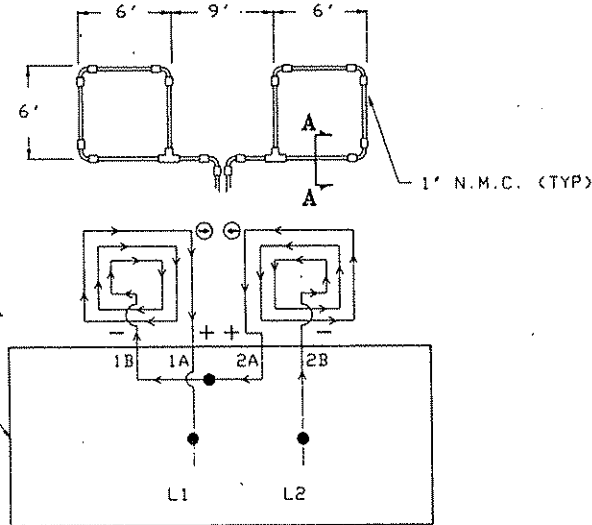
**LOOP DETECTOR DETAIL 'A'**

PLAN VIEW (NOT TO SCALE)  
(LOOP PHASING FOR SINGLE CONNECTION)



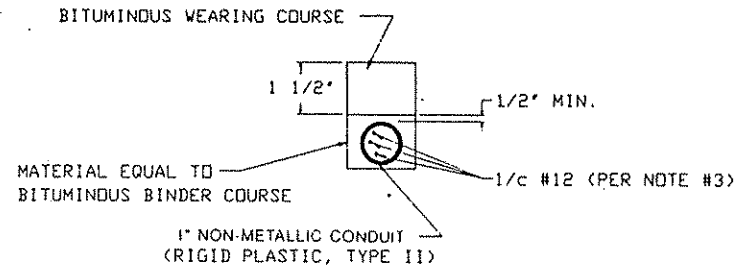
**LOOP DETECTOR DETAIL 'B'**

PLAN VIEW (NOT TO SCALE)  
(LOOP PHASING FOR SERIES CONNECTION)

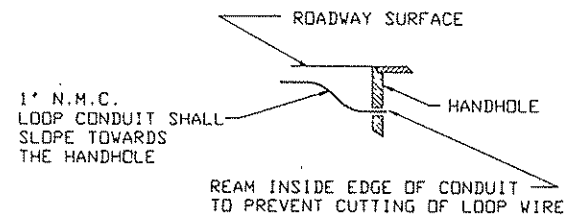


LOOP CONNECTIONS SHALL BE LABELED AND SPLICED IN THE HANDHOLE AS FOLLOWS:  
L1 TO 1A, 1B TO 2A, AND 2B TO L2.

**CROSS SECTION A-A**



**DRAINAGE DETAIL**



**LOOP DETECTOR WIRING**

**NOTES:**

- 1) ALL CORNERS SHALL BE 90° CONDUIT BENDS
- 2) CONNECT WIRES IN HANDHOLES USING SPLICE KIT METHOD DESCRIBED IN THE SPECIAL PROVISIONS.
- 3) LOOP DETECTOR WIRES SHALL BE # 12 AWG CROSSED LINKED POLYETHYLENE (XLP). SEE SPECIAL PROVISIONS.
- 4) LOOP LEAD IN WIRES SHALL BE TWISTED A MIN. OF (5) TURNS PER FOOT THROUGH THE CONDUIT TO THE HANDHOLE.
- 5) N.M.C. DESIGNATES NON-METALLIC CONDUIT (SPEC. 3803)
- 6) LOOPS 6'x6' THRU 6'x 10' SHALL HAVE (4) TURNS.
- 7) LOOPS 6' x 10' THRU 6' x 14' SHALL HAVE (3) TURNS.
- 8) LOOPS 6' x 15' AND LARGER SHALL HAVE (2) TURNS.
- 9) A CLOSED CELL FOAM BACKER ROD SHALL BE FURNISHED AND INSTALLED WITH THE LAST TURN OF WIRE IN THE 1" N.M.C. LOOP ASSEMBLY.

THESE STANDARD PLATES, AS APPROVED BY THE FHWA, SHALL APPLY:

PLATE NO.	DESCRIPTION
* 8110 C	TRAFFIC SIGNAL BRACKETING - POLE MOUNTED
* 8111 B	TRAFFIC SIGNAL BRACKETING - PEDESTAL MOUNTED
* 8112 C	PEDESTAL FOUNDATION
* 8113 C	MAGNETIC VEHICLE DETECTOR INSTALLATION
* 8115 C	PEDESTRIAN PUSH BUTTON INSTALLATION
* 8117 F	PRECAST CONCRETE HAND HOLE
* 8118 C	SERVICE EQUIPMENT AND POLE
* 8119 C	GROUND MOUNTED CABINET FOUNDATION
* 8120 H	P-80 AND P-90 POLE FOUNDATION
* 8121 B	TRANSFORMER BASE WITH POLE BASE PLATE
* 8122 C	PEDESTAL AND PEDESTAL BASE
* 8123 B	POLE AND MAST ARM
* 8124 D	SIGNAL HEAD MOUNTS
* 8126 C	P-100 POLE FOUNDATION
* 8130 D	SAW CUT LOOP DETECTORS
* 0005 A	SPECIFICATION REFERENCE TO STANDARD PLATES
* 3124 B	METAL APRON CONNECTION
* 3221 C	CORRUGATED STEEL PIPE COUPLING BAND
* 7035 J	CONCRETE WALK AND CURB RETURNS AT ENTRANCES
* 7109 F	CONCRETE CURB AND GUTTERS
* 7036 D	PEDESTRIAN CURB RAMP

\* APPLIES TO THIS PROJECT

**ABBREVIATIONS  
EQUIPMENT AND INDICATIONS**

- RED - RED
- YEL - YELLOW
- GRN - GREEN
- VLK - WALK
- NEU - NEUTRAL
- DWK - DON'T WALK
- LUM - LUMINAIRE
- DNL - DOWNLIGHT
- H.H. - HANDHOLE
- EGG - EQUIPMENT GROUND
- R.S.C. - RIGID STEEL CONDUIT
- GLTA - GREEN LEFT TURN ARROW
- YRTA - YELLOW RIGHT TURN ARROW
- D2-1(eg) - DETECTOR-PHASE '2'
- GR.R - GROUND ROD
- SER. - SERVICE
- P2 - 2 PEDESTRIAN INDICATIONS
- 2-1(eg) - SIGNAL HEADS-PHASE '2'
- SPR. - SPARE CONNECTORS
- N.M.C. - NON METALLIC CONDUIT
- E.V.P. - EMERGENCY VEHICLE PRE-EMPTION
- J.B. - JUNCTION BOX
- W.P. - WOOD POLE
- P.E.C. - PHOTOELECTRIC CELL

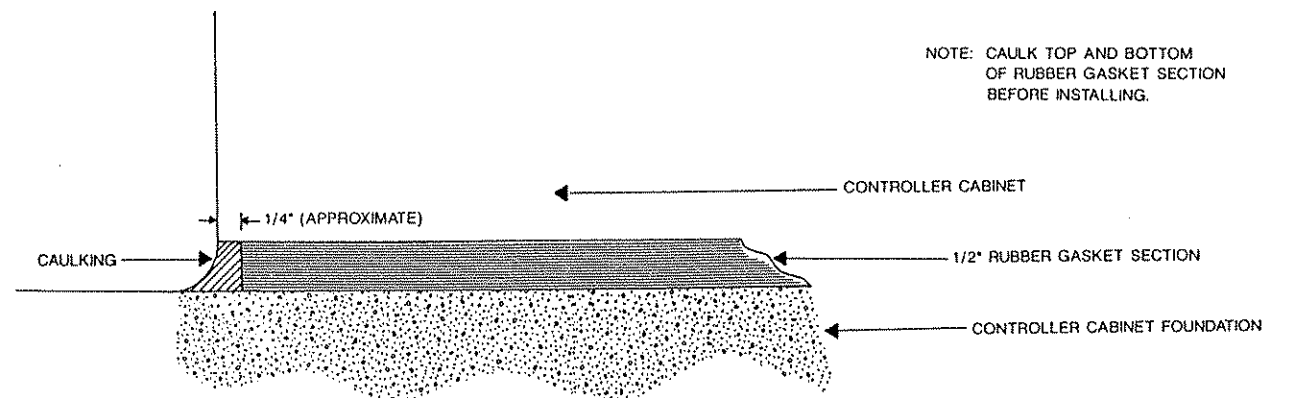
**LEGEND OF SYMBOLS**

- CONTROLLER AND SERVICE EQPT NOS. \_\_\_\_\_
- SIGNAL BASE NO. \_\_\_\_\_
- SIGNAL FACE NO. \_\_\_\_\_
- LUMINAIRE NO. \_\_\_\_\_
- CONTROLLER AND CABINET \_\_\_\_\_
- CONTROLLER AND CABINET IN PLACE \_\_\_\_\_
- HANDHOLE \_\_\_\_\_
- HANDHOLE IN PLACE \_\_\_\_\_
- RIGID STEEL CONDUIT (R.S.C.) \_\_\_\_\_
- RIGID STEEL CONDUIT (R.S.C.) IN PLACE \_\_\_\_\_
- SIGNAL FACE WITH BACKGROUND SHIELD \_\_\_\_\_
- SIGNAL FACE W/D BACKGROUND SHIELD \_\_\_\_\_
- SIGNAL FACE IN PLACE \_\_\_\_\_
- PEDESTRIAN INDICATORS \_\_\_\_\_
- PEDESTRIAN INDICATORS IN PLACE \_\_\_\_\_
- PEDESTRIAN PUSH BUTTONS ON PEDESTAL OR POLE \_\_\_\_\_
- PEDESTRIAN PUSH BUTTON STATION \_\_\_\_\_
- TRAFFIC SIGNAL PEDESTAL \_\_\_\_\_
- TRAFFIC SIGNAL PEDESTAL IN PLACE \_\_\_\_\_
- 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 IN PLACE \_\_\_\_\_
- WOOD POLE \_\_\_\_\_
- WOOD POLE IN PLACE \_\_\_\_\_
- SOURCE OF POWER \_\_\_\_\_
- RAILROAD SIGNAL IN PLACE \_\_\_\_\_
- RIGHT OF WAY LINE \_\_\_\_\_
- CENTERLINE \_\_\_\_\_
- EDGE OF ROADWAY \_\_\_\_\_
- SHOULDER LINE \_\_\_\_\_
- CURB LINE \_\_\_\_\_
- STOP BAR \_\_\_\_\_

**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

**CONTROLLER CABINET CAULKING DETAIL**



"ELECTRICAL ENGINEER CERTIFICATION"  
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*Thomas A. Schwedt*  
Date: 9/18/92 Reg. No. 20943



**ANOKA COUNTY, MINNESOTA**  
CITY OF COON RAPIDS

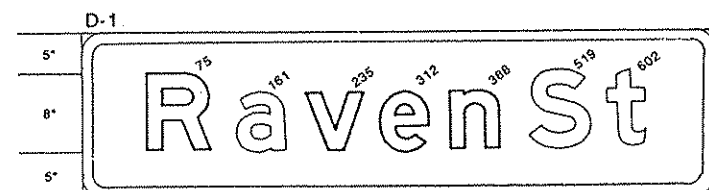
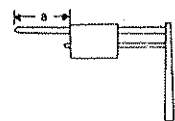
**TRAFFIC SIGNAL SYSTEM  
DETAILS**  
NORTHDALE BLVD (CSAH 11) AT RAVEN STREET

FILE NO.  
92219  
DATE  
9/18/92

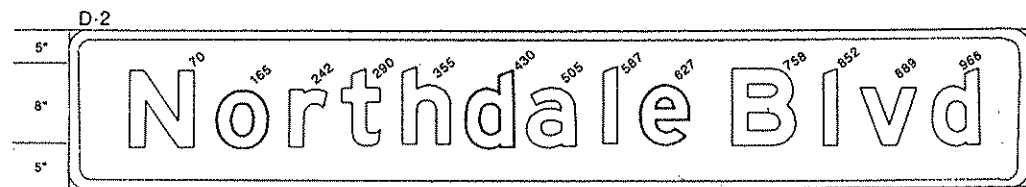
### SIGN DETAILS

#### TYPE "D" SIGNS

SIGN PANEL	SIZE	NO. REQ.	NO. POSTS PER SIGN	POST SPACING	SQ.FT. PER SIGN	POLE NO.	a
D-1	72" x 18"	2	2	42"	9.00	2 4	8' 10'
D-2	108" x 18"	1	3	45"	13.50	3	10'



72" x 18", 3"R. 1.0"B.  
LINE 1 56.7: 8'-6" E MOD.



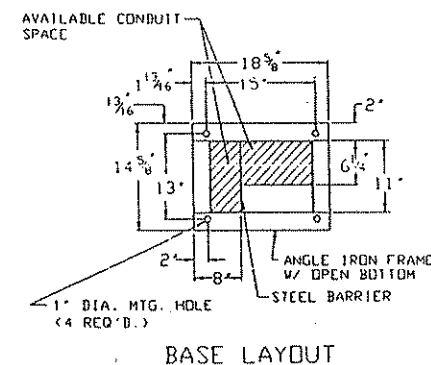
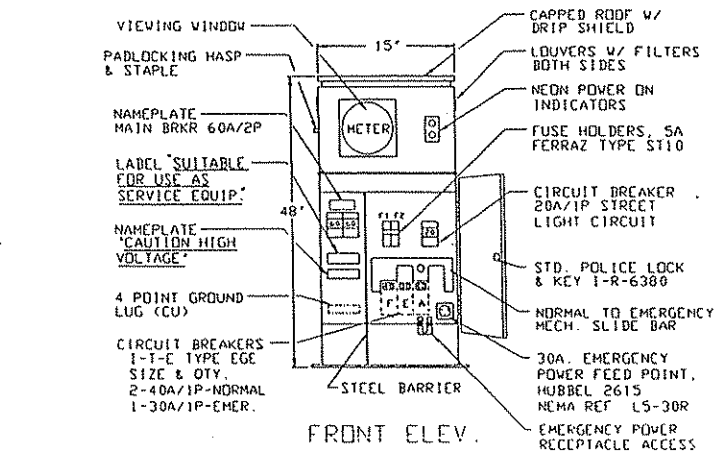
108" x 18", 3"R. 1.0"B.  
LINE 1 94.7: 8'-6" E MOD.

NOTES:

- COLOR- WHITE LEGEND AND BORDER ON GREEN BACKGROUND, FULLY REFLECTORIZED.
- CORNERS EXTENDING BEYOND THE BORDER SHALL NOT BE TRIMMED.
- FOR STRUCTURAL DETAILS, TYPE D SIGNS, SEE STANDARD SIGNS MANUAL, PAGE 105A AND B.
- FOR TYPE D STRINGER AND PANEL-JOINT DETAIL, SEE STANDARD MANUAL.
- SIGN PANELS TO BE FURNISHED AND INSTALLED INCIDENTAL TO ITEM NO. 2565.511.

### SIGNAL SERVICE CABINET DETAIL

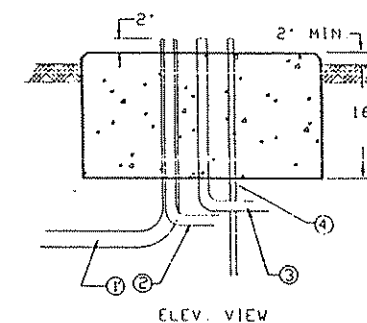
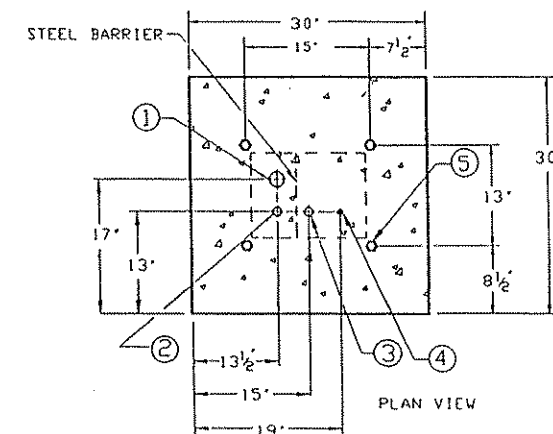
#### SIGNAL SERVICE CABINET



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

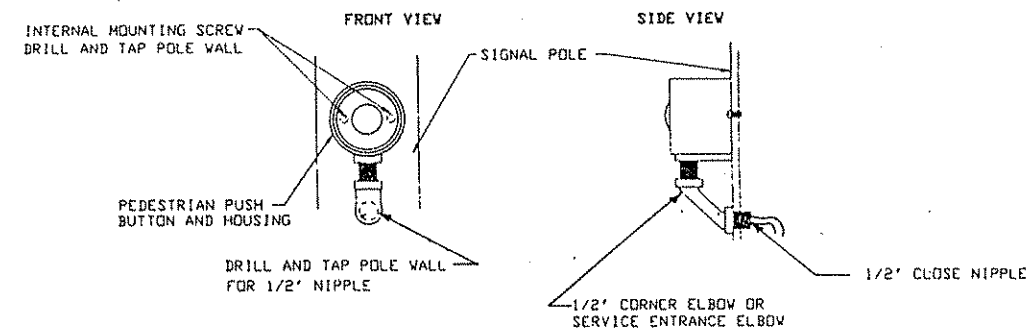
NO SCALE

#### SERVICE CABINET FOUNDATION



- LEGEND
- 2" RSC FROM SOURCE OF POWER. (VIA HANDHOLE)
  - 1 1/4" RSC TO HANDHOLE. (STREET LIGHTING)
  - 1 1/4" RSC TO CONTROLLER CABINET (VIA HANDHOLE) SEE PLANS FOR SPECIFIC ROUTING.
  - GROUNDING ROD
  - ANCHOR BOLTS (4)

#### PEDESTRIAN PUSH BUTTON DETAIL



"ELECTRICAL ENGINEER CERTIFICATION"

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

*Robert A. Eller*  
Date: 9/18/92 Reg. No. 5859

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

*Thomas A. Schwede*  
Date: 9/18/92 Reg. No. 20943



ANOKA COUNTY, MINNESOTA  
CITY OF COON RAPIDS

TRAFFIC SIGNAL SYSTEM  
DETAILS  
NORTHDALE BLVD (CSAH 11) AT RAVEN STREET

FILE NO.  
92219  
DATE  
9/18/92

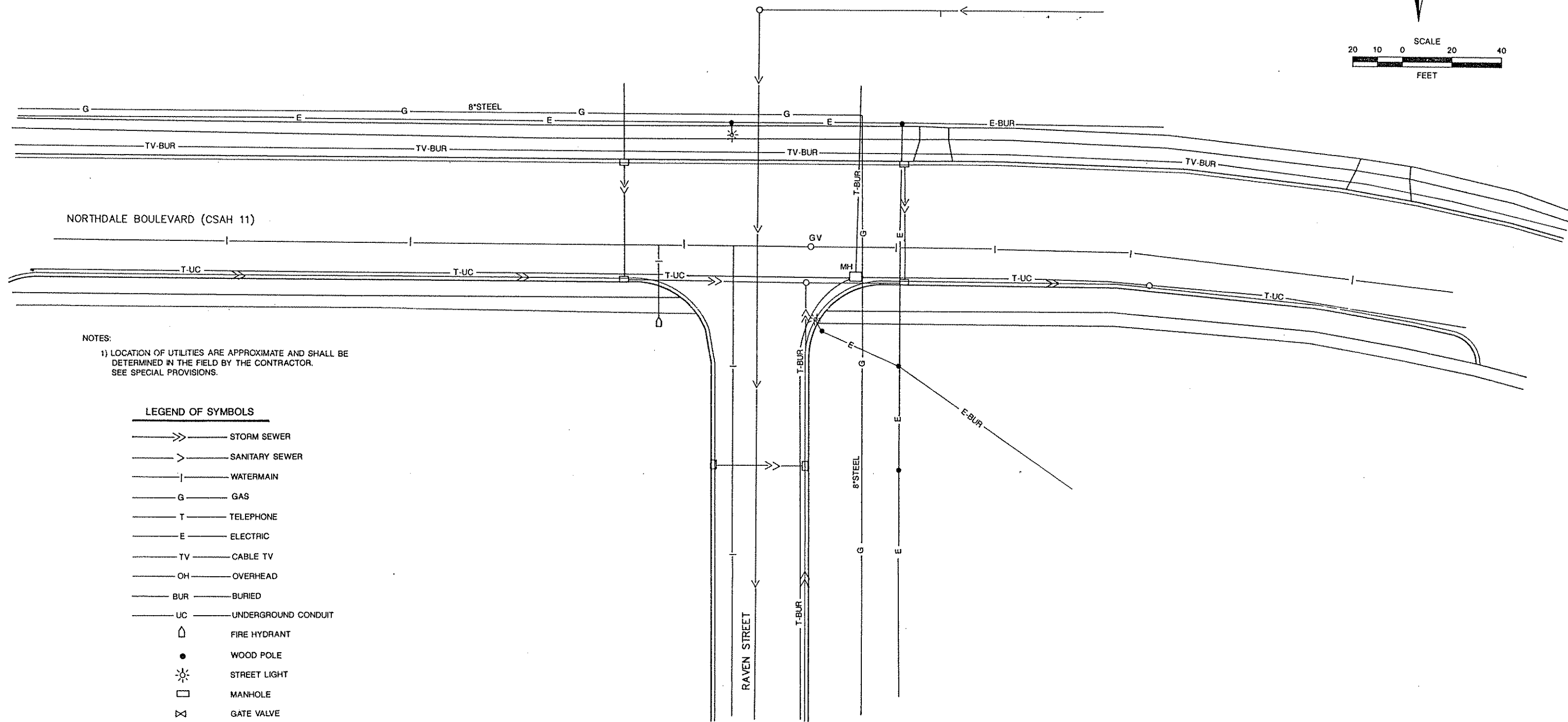
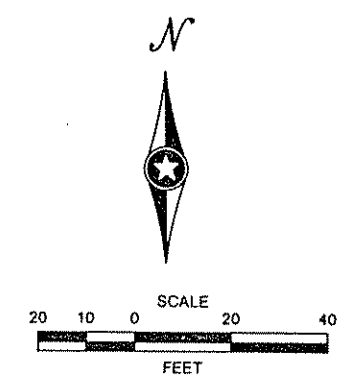
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S.P.

C.P. 92-05-11

Sheet No. 5 of 6 Sheets

NO. BY DATE REVISIONS



NOTES:  
 1) LOCATION OF UTILITIES ARE APPROXIMATE AND SHALL BE DETERMINED IN THE FIELD BY THE CONTRACTOR. SEE SPECIAL PROVISIONS.

- LEGEND OF SYMBOLS**
- >>— STORM SEWER
  - >— SANITARY SEWER
  - |— WATERMAIN
  - G— GAS
  - T— TELEPHONE
  - E— ELECTRIC
  - TV— CABLE TV
  - OH— OVERHEAD
  - BUR— BURIED
  - UC— UNDERGROUND CONDUIT
  - ⬆ FIRE HYDRANT
  - WOOD POLE
  - ☀ STREET LIGHT
  - MANHOLE
  - ⊗ GATE VALVE

NO.	BY	DATE	REVISIONS

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*Thomas A. Schwede*  
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ANOKA COUNTY, MINNESOTA  
 CITY OF COON RAPIDS

TRAFFIC SIGNAL SYSTEM  
 UTILITIES  
 NORTHDALE BOULEVARD (CSAH 11) AT RAVEN STREET

FILE NO.  
 92219  
 DATE  
 9/18/92