

MINNESOTA DEPARTMENT OF TRANSPORTATION

ANOKA COUNTY

CONSTRUCTION PLAN FOR TRAFFIC CONTROL SIGNAL SYSTEM

LOCATED ON CSAH 1 (5TH AVENUE) AT BRISBIN STREET

STATE AID PROJ. NO. 103-020-07

COUNTY PROJ. NO. 92-03-01

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

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

SN 18 20	N/A
R Value	N/A
ADT (1992)	= 11,763
Proj. ADT (2012)	= 19,997
Proj. HCA DT (2012)	= 1,500
Soil Factor	50%
<u>9</u> Ton Design	
Shoulder Width	0
FUNCTIONAL CLASSIFICATION <u>LOW DENSITY ARTERIAL</u>	
NO. OF TRAFFIC LANES	4
NO. OF PARKING LANES	0
Design Speed <u>30</u> MPH	
Based on <u>STOPPING</u> 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. Ashweide

DESIGN SQUAD JOHN M GRAY (SEH)

Recommended for Approval Paul K. Lund 10/7/1992
Anoka County Engineer

Recommended for Approval John A. ... 10/12/1992
CITY OF ANOKA PROJECT ENGINEER

Recommended for Approval Ray ... 11-05-1992
CITY OF ANOKA DIRECTOR OF PUBLICWORKS

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

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

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

PLANS SYMBOLS

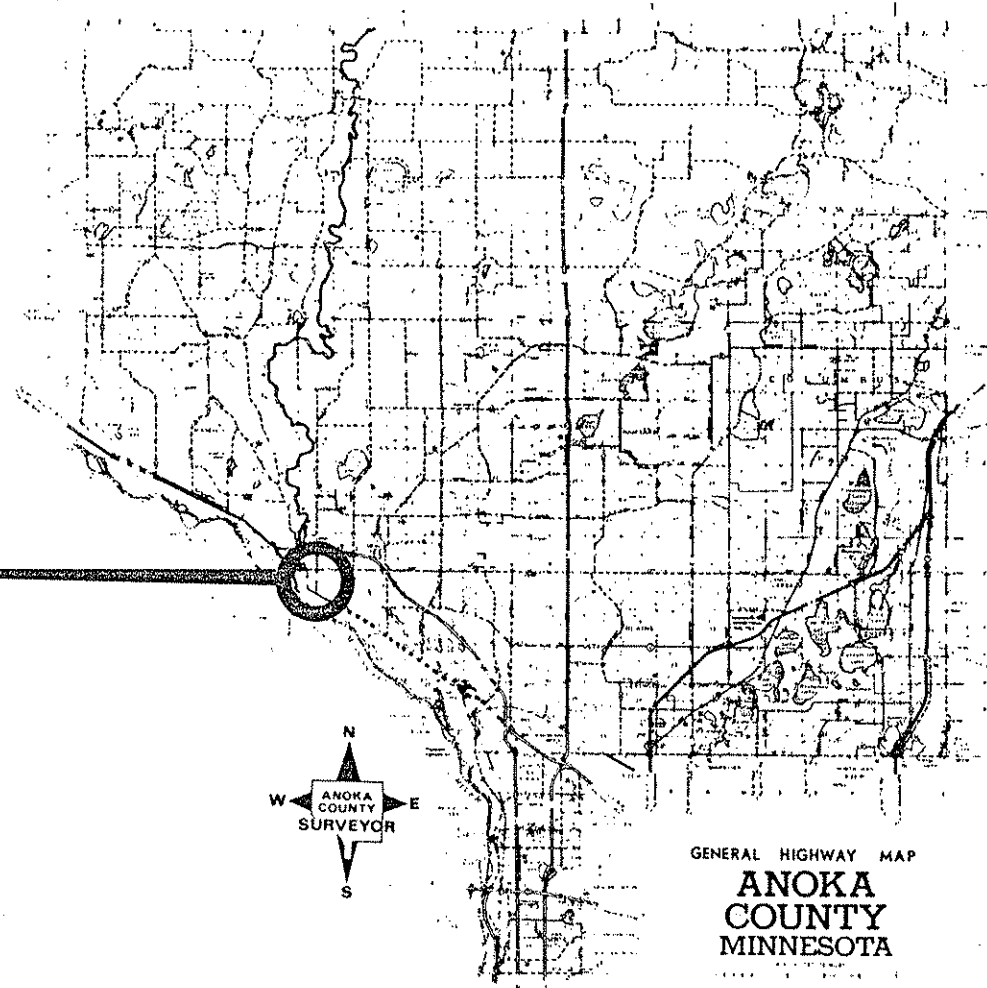
STATE LINE	----
COUNTY LINE	----
TOWNSHIP OR RANGE LINE	----
SECTION LINE	----
QUARTER LINE	----
SIXTEENTH LINE	----
RIGHT OF WAY LINE	----
PRESENT RIGHT OF WAY LINE	----
CONTROL OF ACCESS LINE	----
PROPERTY LINE (EASEMENT LINE)	----
VACATED PLATTED PROPERTY	----
CORPORATE OR CITY LIMITS	----
TRUNK HIGHWAY CENTER LINE	----
RETAINING WALL	----
RAILROAD	----
RAILROAD RIGHT OF WAY LINE	----
RIVER OR CREEK	----
DRY DRY	----
DRAINAGE DITCH	----
DRAIN TILE	----
COLLEKT	----
SEWER INLET	----
GUARD RAIL	----
BARBED WIRE FENCE	----
WOODEN WIRE FENCE	----
CHAIN LINK FENCE	----
RAILROAD SHOW FENCE	----
STONE WALL OR FENCE	----
HEDGE	----
RAILROAD CROSSING SIGN	----
RAILROAD CROSSING BELL	----
ELECTRIC WARNING SIGN	----
CROSSING GATE	----
MISCELLANEOUS	----
SPRING	----
MARSH	----
TIMBER	----
ORCHARD	----
BRUSH	----
NURSERIES	----
CATCH BASIN	----
FIRE HYDRANT	----
CATTLE GUARD	----
OVERPASS (Highway Over)	----
UNDERPASS (Highway Under)	----
BRIDGE	----
BUILDING (One Story Frame)	----
F FRAMES 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	----
SLOPE EASEMENT	----

UTILITIES 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 TELEPHONE CABLE	----
BURIED ELECTRIC CABLE	----
AERIAL TELEPHONE CABLE	----
SEWER (SANITARY OR STORM)	----
SEWER MANHOLE	----

PROJECT LOCATION

CSAH 1 (5TH AVENUE)
AT BRISBIN STREET
C.P. 92-03-01



ESTIMATED QUANTITIES

ITEM NO	ITEM	UNIT	TOTAL ESTIMATED QUANTITIES	FINAL QUANTITIES
2565.511	FULL-TRAFFIC-ACTUATED TRAFFIC CONTROL SIGNAL SYSTEM	SIGNAL SYSTEM	1	

① 67% STATE-AID ELIGIBLE
33% COUNTY FUND

SCALES

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

STATE AID PROJ. NO. 103-020-07

COUNTY PROJ. NO. 92-03-01

STATE PROJ. NO. _____

SHEET NO. 1 OF 6 SHEETS

NOTES:

- 1) LOCATION OF CONTROLLER CABINET, SERVICE CABINET, 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 8-2.
- 3) EACH PEDESTRIAN INDICATION SHALL BE 12"x12".
- 4) EACH SIGNAL FACE SHALL BE 12"-3 SECTION R-Y-G.
- 5) SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- 6) SEE SPECIAL PROVISIONS AND DETAILS FOR ANOKA COUNTY SERVICE CABINET INFORMATION.
- 7) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
- 8) LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) IN 1"N.M.C. SEE SPECIAL PROVISIONS AND DETAILS.
- 9) EACH HANDHOLE SHALL BE CONCRETE HANDHOLE WITH A TYPE "LD" COVER, EXCEPT THAT HANDHOLES 7,8 AND 11 SHALL HAVE TYPE "C" COVER, PER Mn/DOT STANDARD PLATE NO.8117F.

④ TYPE P80-A-20
P80 POLE FOUNDATION
ONE WAY SIGNAL-OVERHEAD
TYPE 20B-POLE MOUNTED 270'
1-PEDESTRIAN PUSH BUTTON
TYPE "D" SIGN PANEL (78"x18")-OVERHEAD
EXTEND INTO H.H.2:
3"R.S.C.
2-12/c#12
1-3/c#12

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

② TYPE P90-A-25-D40-9 (DAVIT AT 350')
P90 POLE FOUNDATION
ONE WAY SIGNAL-OVERHEAD
TYPE 10C-POLE MOUNTED 270'
2-PEDESTRIAN PUSH BUTTONS
LUMINAIRE-200 WATT H.P.S. WITH PEC AND CHECK SWITCH
TYPE "D" SIGN PANEL (78"x18")-OVERHEAD
EXTEND INTO H.H.6:
3"R.S.C.
2-12/c#12
1-3/c#12
2-1/c#10

③ TYPE 1D
10' PEDESTAL POLE AND BASE
PEDESTAL FOUNDATION
2-PEDESTRIAN PUSH BUTTONS
EXTEND INTO H.H.8:
2"R.S.C.
1-12/c#12
2-3/c#12

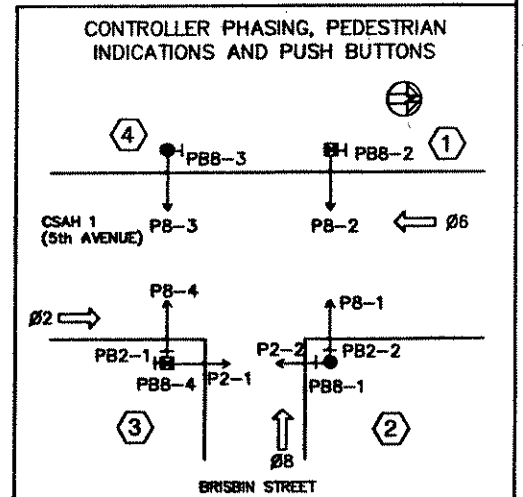
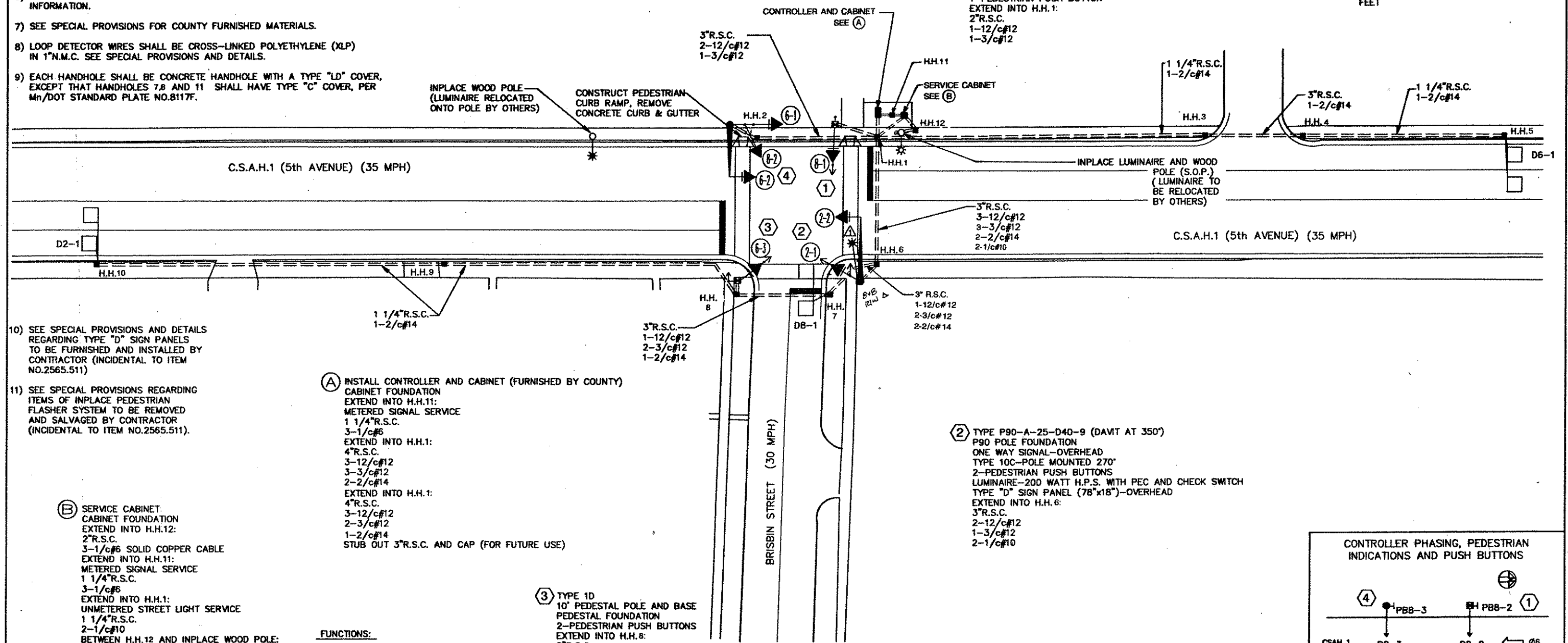
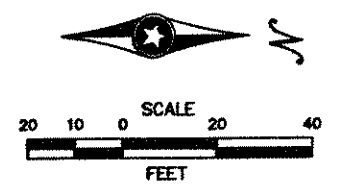
Ⓐ INSTALL CONTROLLER AND CABINET (FURNISHED BY COUNTY)
CABINET FOUNDATION
EXTEND INTO H.H.11:
METERED SIGNAL SERVICE
1 1/4"R.S.C.
3-1/c#6
EXTEND INTO H.H.1:
4"R.S.C.
3-12/c#12
3-3/c#12
2-2/c#14
EXTEND INTO H.H.1:
4"R.S.C.
3-12/c#12
2-3/c#12
1-2/c#14
STUB OUT 3"R.S.C. AND CAP (FOR FUTURE USE)

Ⓑ SERVICE CABINET
CABINET FOUNDATION
EXTEND INTO H.H.12:
2"R.S.C.
3-1/c#6 SOLID COPPER CABLE
EXTEND INTO H.H.11:
METERED SIGNAL SERVICE
1 1/4"R.S.C.
3-1/c#6
EXTEND INTO H.H.1:
UNMETERED STREET LIGHT SERVICE
1 1/4"R.S.C.
2-1/c#10
BETWEEN H.H.12 AND INPLACE WOOD POLE:
2"R.S.C. RISER AND WEATHERHEAD
3-1/c#6 SOLID COPPER CABLE

- 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) SPECIAL DETECTOR

LOOP DETECTORS			
NUMBER	SIZE (FT.)	LOCATION	FUNCTION
D2-1	2-6x6	260'	1
D6-1	2-6x6	260'	1
D8-1	2-6x6	5'	7

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



NO.	BY	DATE	REVISIONS
1	JMG	11/92	REVISED CONTROLLER/SERVICE CABINET LOCATION

"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 Q. Ellis
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. Schweitzer
Date: 9/18/92 Reg. No. 20943



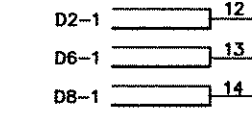
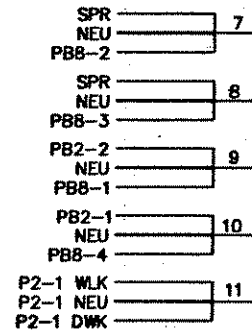
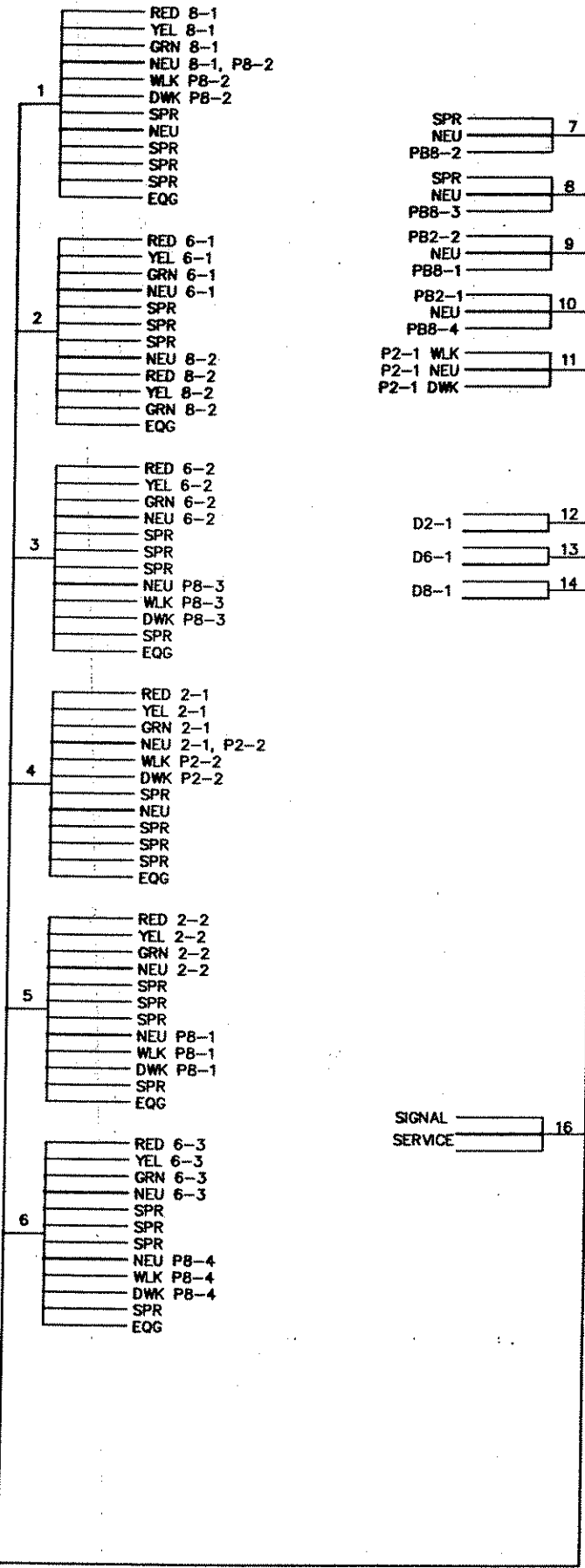
ANOKA COUNTY, MINNESOTA
CITY OF ANOKA

TRAFFIC SIGNAL SYSTEM
INTERSECTION LAYOUT
C.S.A.H.1 (5th AVENUE) AT BRISBIN STREET

FILE NO. 92219
DATE 9/18/92

BASE OVERLAY/DWG. NO.

CONTROLLER CABINET

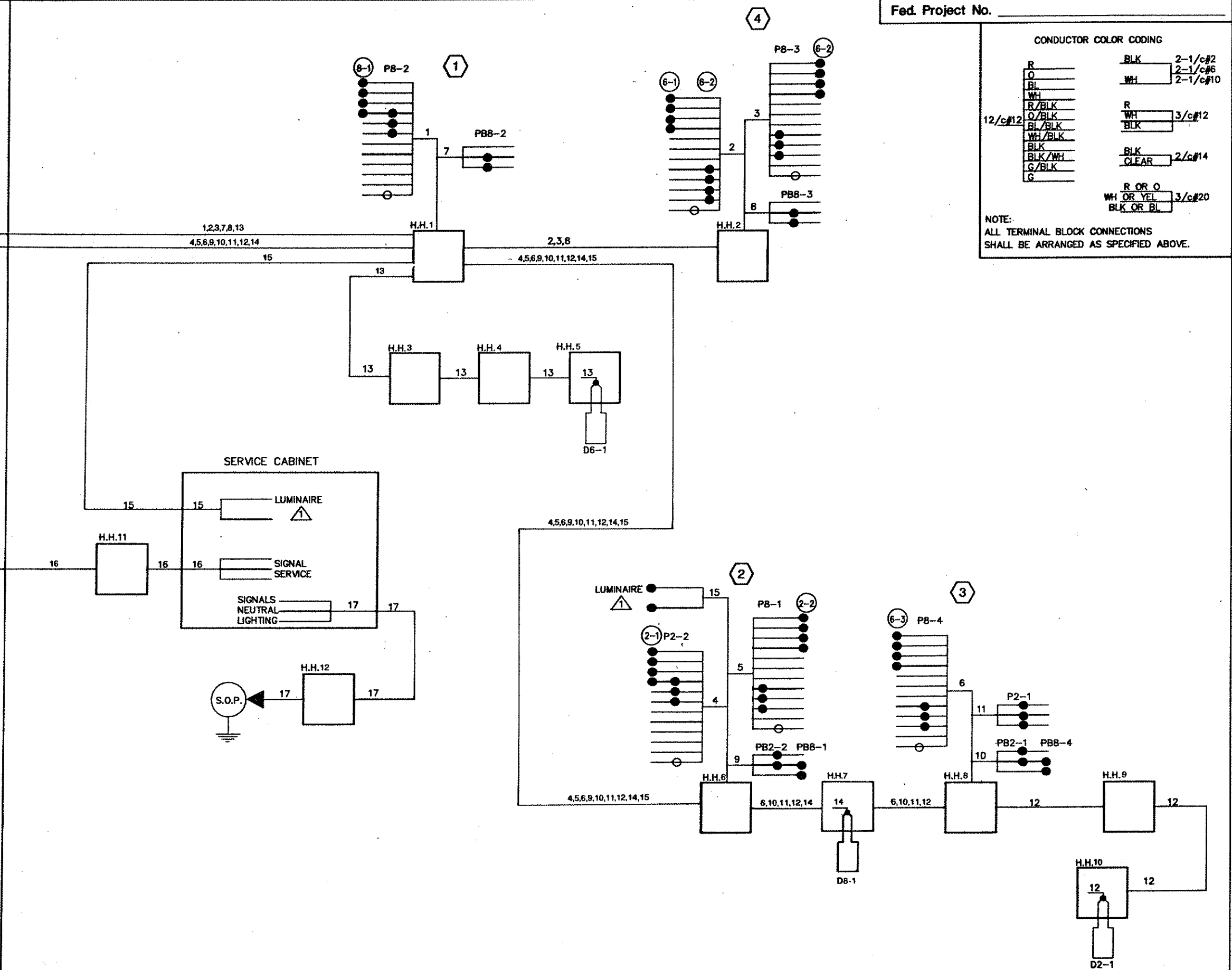


Fed. Project No. _____

CONDUCTOR COLOR CODING

R	BLK	2-1/c#2
O	WH	2-1/c#6
BL	WH	2-1/c#10
WH	R	
R/BLK	WH	3/c#12
O/BLK	BLK	
BL/BLK	BLK	
WH/BLK	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.



NO.	BY	DATE	REVISIONS
1	JMG	11/82	REVISED CONTROLLER/SERVICE CABINET LOCATION

"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. Schreiner
Date: 9/18/92 Reg. No. 20943



ANOKA COUNTY, MINNESOTA
CITY OF ANOKA

TRAFFIC SIGNAL SYSTEM
FIELD WIRING DIAGRAM
C.S.A.H.1 (5th AVENUE) AT BRISBIN STREET

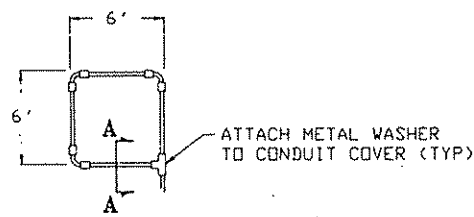
FILE NO. 92219
DATE 9/18/92

S.A.P. 103-020-07 SP. _____ C.P. 92-03-01

Sheet No. 3 of 6 Sheets

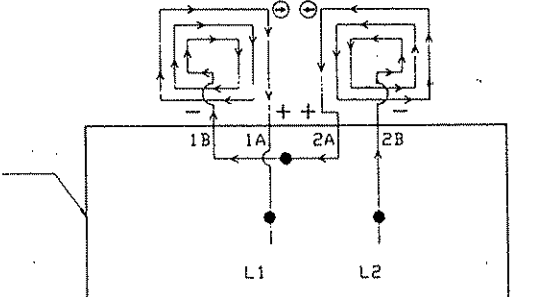
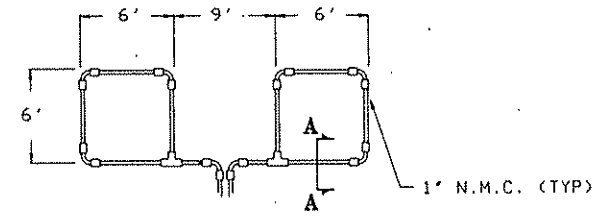
LOOP DETECTOR DETAIL 'A'

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



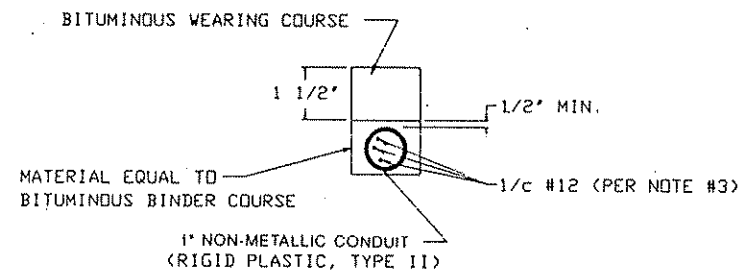
LOOP DETECTOR DETAIL 'B'

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

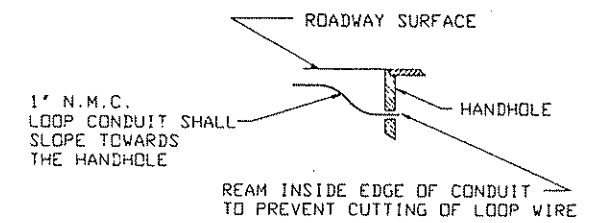


LOOP CONNECTIONS SHALL BE LABELED AND SPLICED IN THE HANDHOLE AS FOLLOWS:
L1 TO 1A, 1B TO 2A, AND 2B TO L2.

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

STANDARD PLATES

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
7100 F	CONCRETE CURB AND GUTTERS
* 7036 D	PEDESTRIAN CURB RAMP

* APPLIES TO THIS PROJECT

ABBREVIATIONS
EQUIPMENT AND INDICATIONS

- RED - RED
- YEL - YELLOW
- GRN - GREEN
- WLK - WALK
- NEU - NEUTRAL
- DYK - 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
- V.P. - WOOD POLE
- P.E.C. - PHOTOELECTRIC CELL

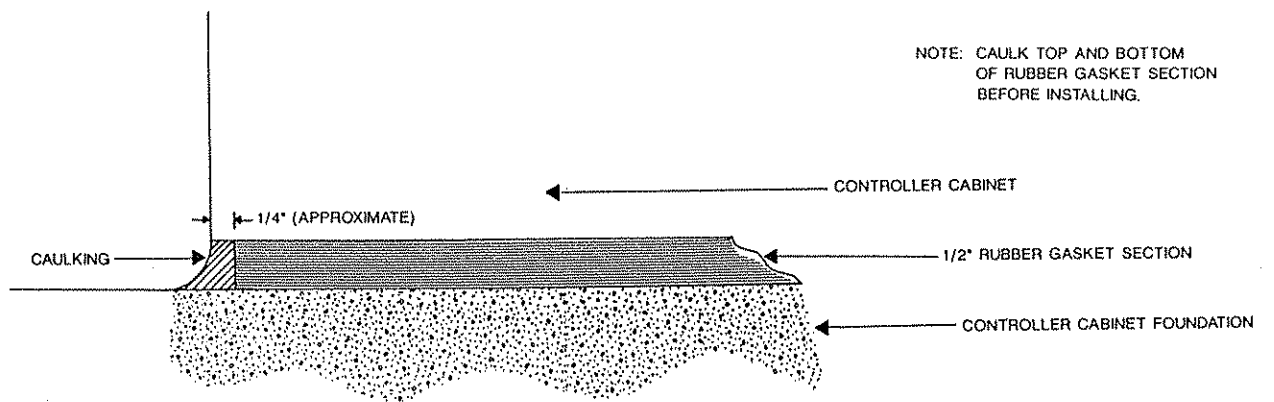
LEGEND OF SYMBOLS

- 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 _____
- SHOULDERLINE _____
- 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"
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. Schwandt
Date: 9/18/92 Reg. No. 20943



ANOKA COUNTY, MINNESOTA
CITY OF ANOKA

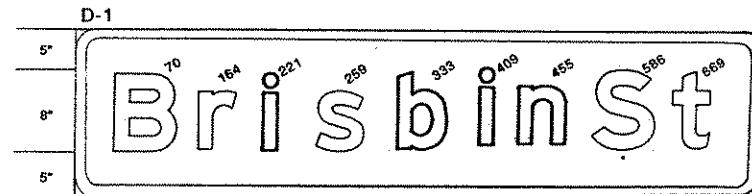
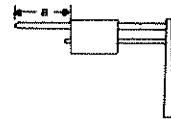
TRAFFIC SIGNAL SYSTEM
DETAILS
C.S.A.H.1 (5th AVENUE) AT BRISBIN STREET

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	78" x 18"	2	2	54"	9.75	2 4	10' 8'



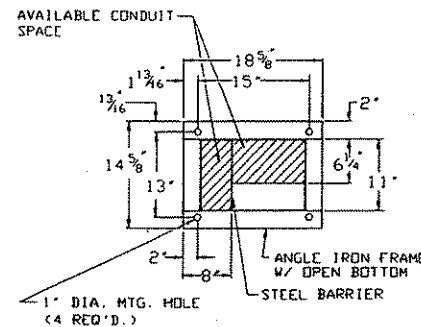
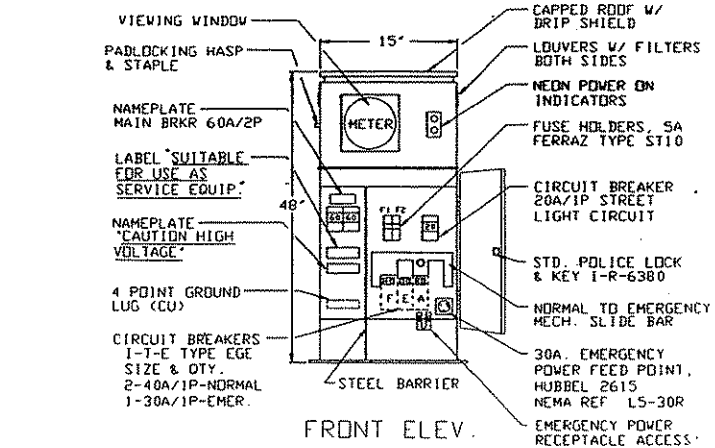
D-1
78" x 18", 3"R. 1.0"B.
LINE 1 63.9: 8'-6" E MOD.

NOTES:

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

SIGNAL SERVICE CABINET DETAIL

SIGNAL SERVICE CABINET

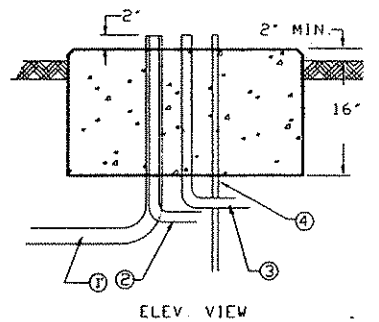
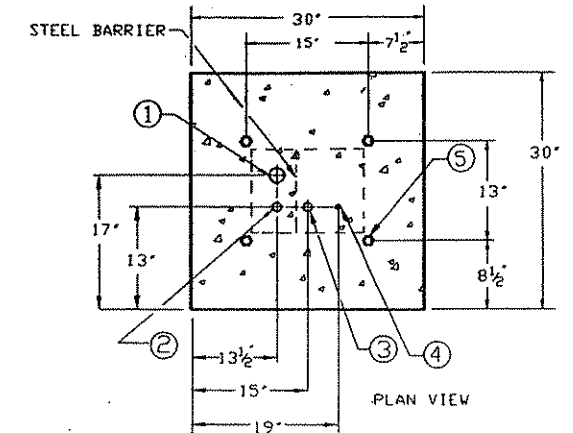


BASE LAYOUT

NO SCALE

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 NONE CORRODING CONSTRUCTION. CABINET TO BE PRIMED INSIDE AND OUT WITH RUST INHIBITTING PRIMER. FINISH PER MN/DOT #3527.

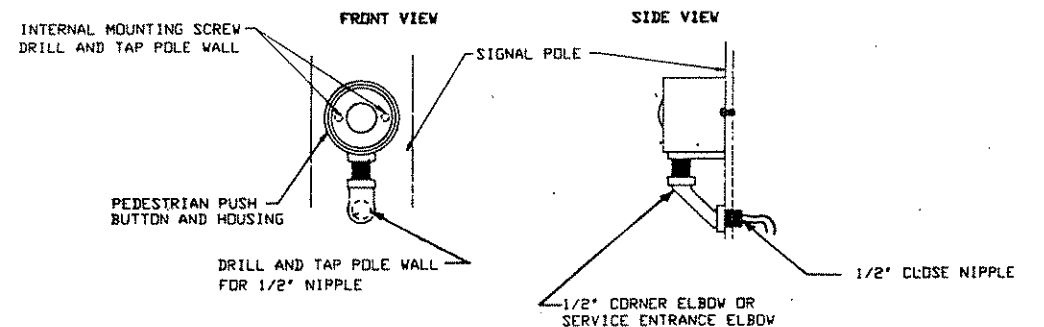
SERVICE CABINET FOUNDATION



LEGEND

- ① 2" RSC FROM SOURCE OF POWER, (VIA HANDHOLE)
- ② 1 1/4" RSC TO HANDHOLE, (STREET LIGHTING)
- ③ 1 1/4" RSC TO CONTROLLER CABINET, (VIA HANDHOLE) SEE PLANS FOR SPECIFIC ROUTING.
- ④ GROUNDING ROD
- ⑤ ANCHOR BOLTS. (4)

PEDESTRIAN PUSH BUTTON DETAIL



NO.	BY	DATE	REVISIONS
1	JMG	11/92	REVISED CONTROLLER/SERVICE CABINET LOCATION

"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 L. Ellis
Date: 9/18/92 Reg. No. 5859

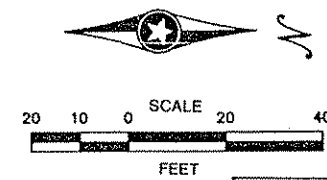
I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the state of Minnesota.
Thomas A. Schwartz
Date: 9/18/92 Reg. No. 20943

SEH
ENGINEERS ARCHITECTS PLANNERS
S.A.P. 103-020-07

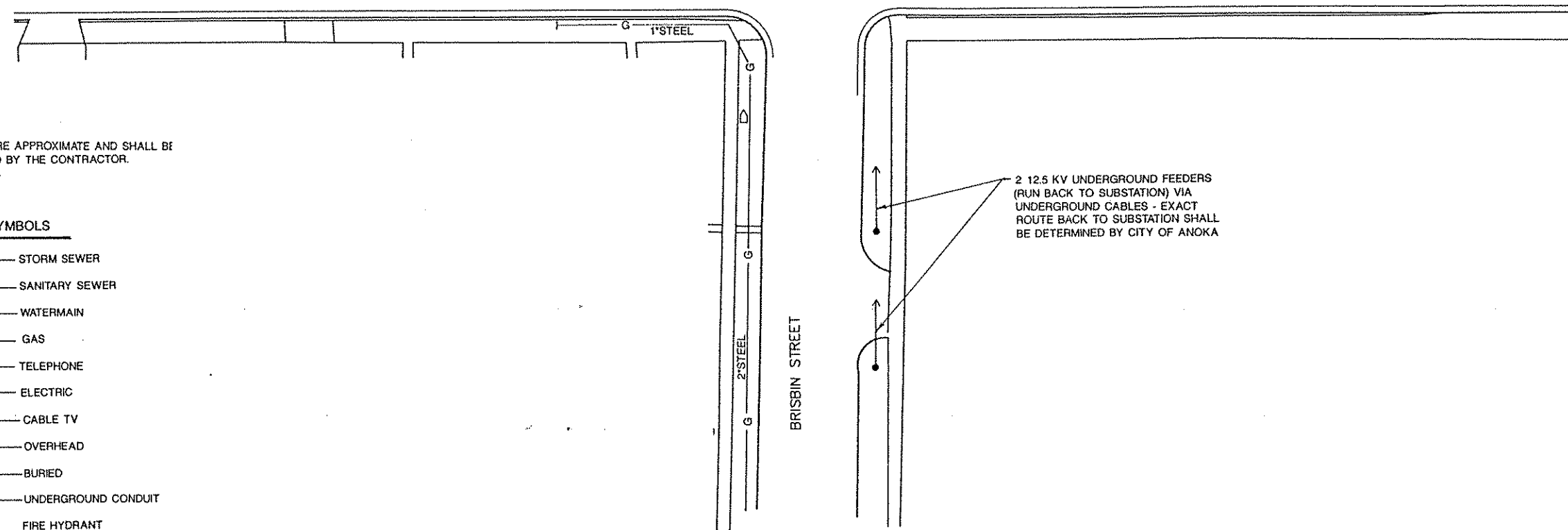
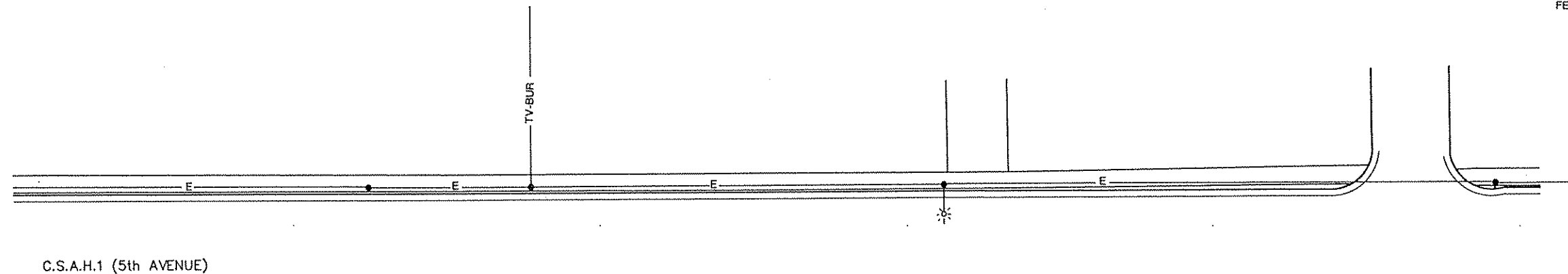
ANOKA COUNTY, MINNESOTA
CITY OF ANOKA
SP. _____ C.P. 92-03-01

TRAFFIC SIGNAL SYSTEM
DETAILS
C.S.A.H.1 (5th AVENUE) AT BRISBIN STREET
Sheet No. 5 of 6 Sheets

FILE NO. 82219
DATE 9/18/92



GOOD RICH
SUBSTATION



2 12.5 KV UNDERGROUND FEEDERS
(RUN BACK TO SUBSTATION) VIA
UNDERGROUND CABLES - EXACT
ROUTE BACK TO SUBSTATION SHALL
BE DETERMINED BY CITY OF ANOKA

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

"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 D. 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. Schwandt
Date: 9/18/92 Reg. No. 20943



ANOKA COUNTY, MINNESOTA
CITY OF ANOKA

TRAFFIC SIGNAL SYSTEM
UTILITIES
C.S.A.H.1 (5th AVENUE) AT BRISBIN STREET

FILE NO.
92219
DATE
9/18/92