

CONVENTIONAL SYMBOLS

- Section Line _____
- Quarter Line _____
- Sixteenth Line _____
- Property Line _____
- R/W Boundary
- Existing D.O.T. R/W Line _____
- And Other Road R/W's _____
- Railroad R/W _____
- Private Easement _____
- Temporary Easement T. E. _____
- Building Removal Easement B. R. E. _____
- R/W Parcel Number 3 ✓
- Access Control _____
- Access Opening _____
- Cast Iron Monument or 2"x2" D.O.T. Iron Pipe with Aluminum Cap _____
- 3/4" D.O.T. Iron Pin _____
- Other Iron Monument _____
- Concrete or Stone Monument _____
- R/W Boundary Corner _____

UTILITY SYMBOLS

- POWER POLE LINE
- TELEPHONE OR TELEGRAPH POLE LINE
- JOINT TELEPHONE AND POWER ON POWER POLE
- ON TELEPHONE POLES
- ANCHOR
- 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



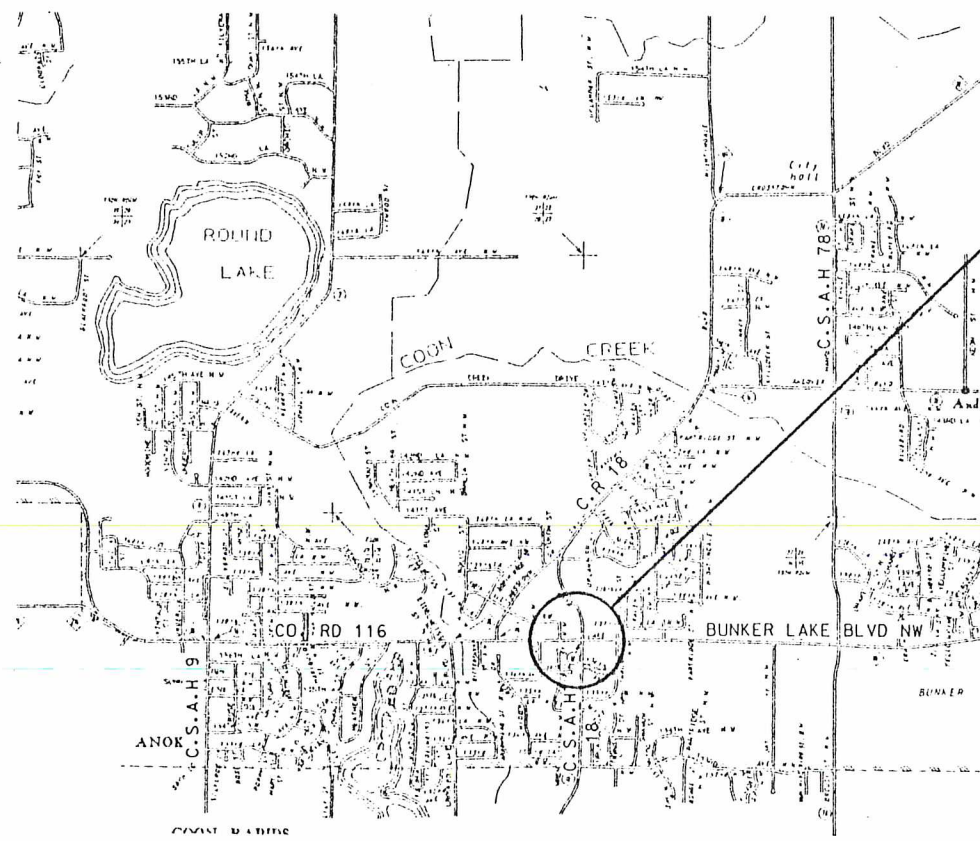
CONSTRUCTION OF FULL TRAFFIC ACTUATED TRAFFIC CONTROL SIGNAL SYSTEM IN THE CITY OF ANDOVER, ANOKA COUNTY, MINNESOTA AT COUNTY ROAD 116 AND C.S.A.H. 18/C.R. 18

SYMBOLS

- EOG CONNECTION
- EVP DETECTOR DIRECTION
- LUMINAIRE NO.
- SIGNAL BASE NO.
- SIGNAL FACE NO.
- SPLICE

INDEX

PAGE	DESCRIPTION
1	TITLE SHEET
2	UTILITY LOCATIONS AND SIGNS AND TEMPORARY SIGNAL DETAILS
3	INTERSECTION LAYOUT
4	WIRING DIAGRAM
5	SERVICE EQUIPMENT PAD AND CONTROLLER PAD DETAILS
6	MISC. DETAILS & STANDARD PLATES



PROJECT LOCATION
S.A.P. 02-618-22
C.P. 93-10-18
M.S.A.P. 198-020-10
COUNTY ROAD 116 &
C.S.A.H. 18/C.R. 18

ANOKA COUNTY
HIGHWAY DEPARTMENT

SPECIFICATIONS

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

Approved Tom Sytko DATE 2/11 94
CITY OF ANDOVER ENGINEER

Approved Paul K. Lund DATE 2/11 94
ANOKA COUNTY ENGINEER

Recommended for Approval Mary L. Buringer DATE 4/5 94
METRO ASSISTANT DIVISION ENGINEER
STATE AID

Recommended for Approval _____ DATE _____ 9____
STATE AID PLANS AND SPECS ENGINEER

Approved Julio Skallman DATE 4/8 94
STATE AID ENGINEER

ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS AND ORDINANCES WILL BE COMPLIED WITH IN THE CONSTRUCTION OF THIS PROJECT.

DESIGN DESIGNATION

CSAH 18 (VERDIN ST)
S.A.P. 02-618-22, M.S.A.P. 198-020-10
C.R. 18
C.P. 93-10-18, CITY PROJECT 93-01

R _____ NA _____ EN18 (20) _____ NA _____
ADT (Current Year) 1994 = 5,433 Design Speed 45 MPH
ADT (Future Year) 2014 = 9,236 Based on NA Sight Distance
DHV (Design Hr. Vol.) = NA Height of eye NA Height of object NA
D (Directional Distr.) = 50/50 % Design Speed not achieved at: NA
T (Heavy Commercial) = NA % Functional Classification Arterial-Low Density
SOIL FACTOR _____ NA _____ No. of Traffic Lanes 2
No. of Parking Lanes 0
Ton Design NA

COUNTY ROAD 116 (BUNKER LAKE BLVD)
C.P. 93-10-18, CITY PROJECT 93-01

R _____ NA _____ EN18 (20) _____ NA _____
ADT (Current Year) 1994 = 9,486 Design Speed 55 MPH
ADT (Future Year) 2014 = 16,126 Based on NA Sight Distance
DHV (Design Hr. Vol.) = NA Height of eye NA Height of object NA
D (Directional Distr.) = 50/50 % Design Speed not achieved at: NA
T (Heavy Commercial) = NA % Functional Classification Arterial-Low Density
SOIL FACTOR _____ NA _____ No. of Traffic Lanes 2
No. of Parking Lanes 0
Ton Design NA

ESTIMATED QUANTITIES

ITEM NO.	UNIT	TOTAL
2565.511	FULL TRAFFIC ACTUATED TRAFFIC CONTROL SIGNAL SYSTEM	SIGNAL SYSTEM 1 *

* - FUNDING SPLIT: 100% C.P. 93-10-18 (ANOKA COUNTY LOCAL FUNDS) (S.A.P.)

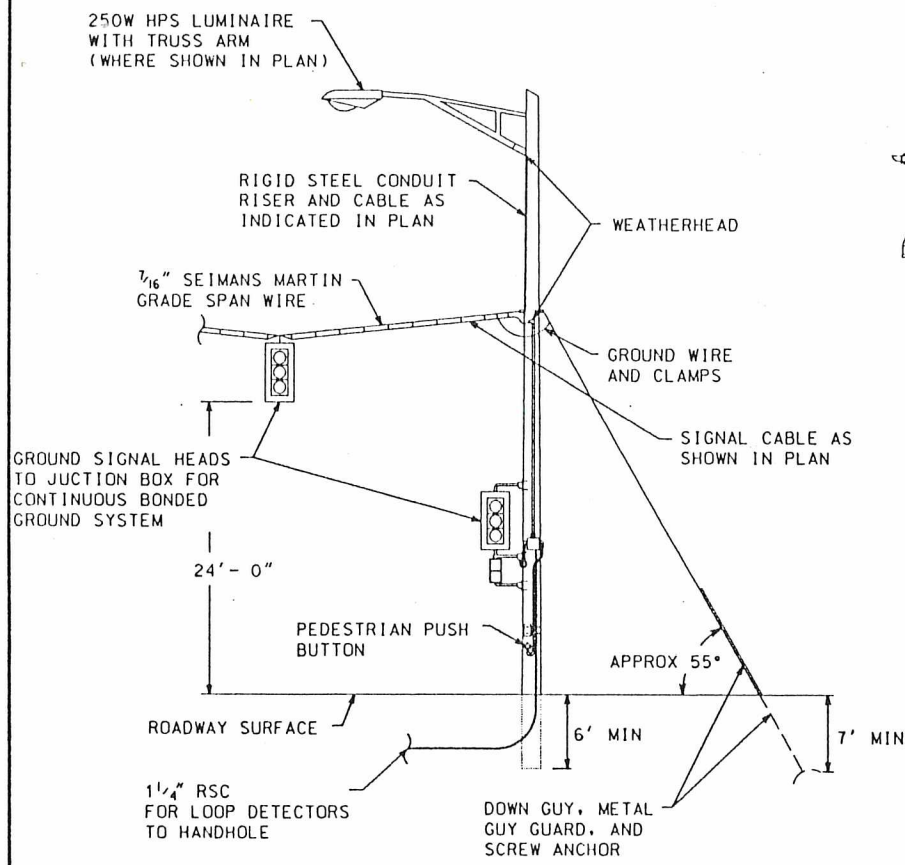
M.S.A.P. 198-020-10
S.A.P. 02-618-22
C.P. 93-10-18

REVISION NO. DATE
 AS NOTED
 PLAN BY: C.P.
 CHECKED BY: (COMM.)
 RBB 511403
 RECORD COPY BY: DATE
 01/20/94
 RONALD B. BRAY
 1837

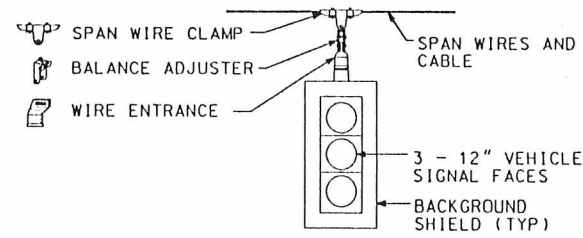
TITLE SHEET
 CR 116 (BUNKER LAKE BLVD NW)
 AND C.S.A.H. 18 / CR 18
 C.P. 93-10-18
 ANDOVER, MINNESOTA

Orr Schelen
 Schelen
 Mayerson &
 Associates, Inc.
 Engineers - Architects - Planners - Surveyors
 300 Park Place Center # 5725 W. Lake Boulevard
 Minneapolis, MN 55416-1226 • 612-946-5772

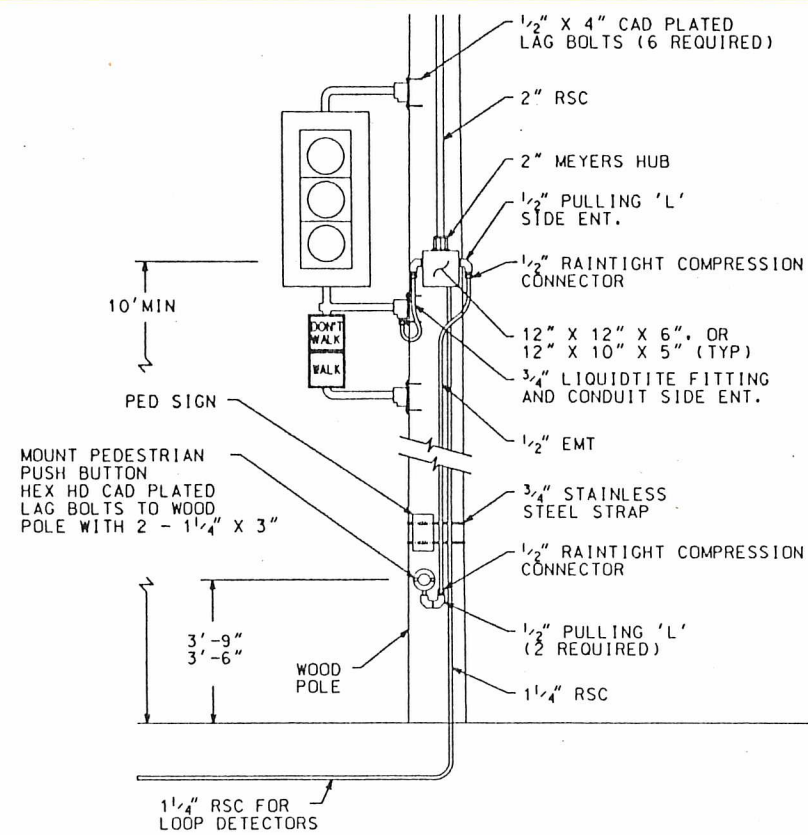
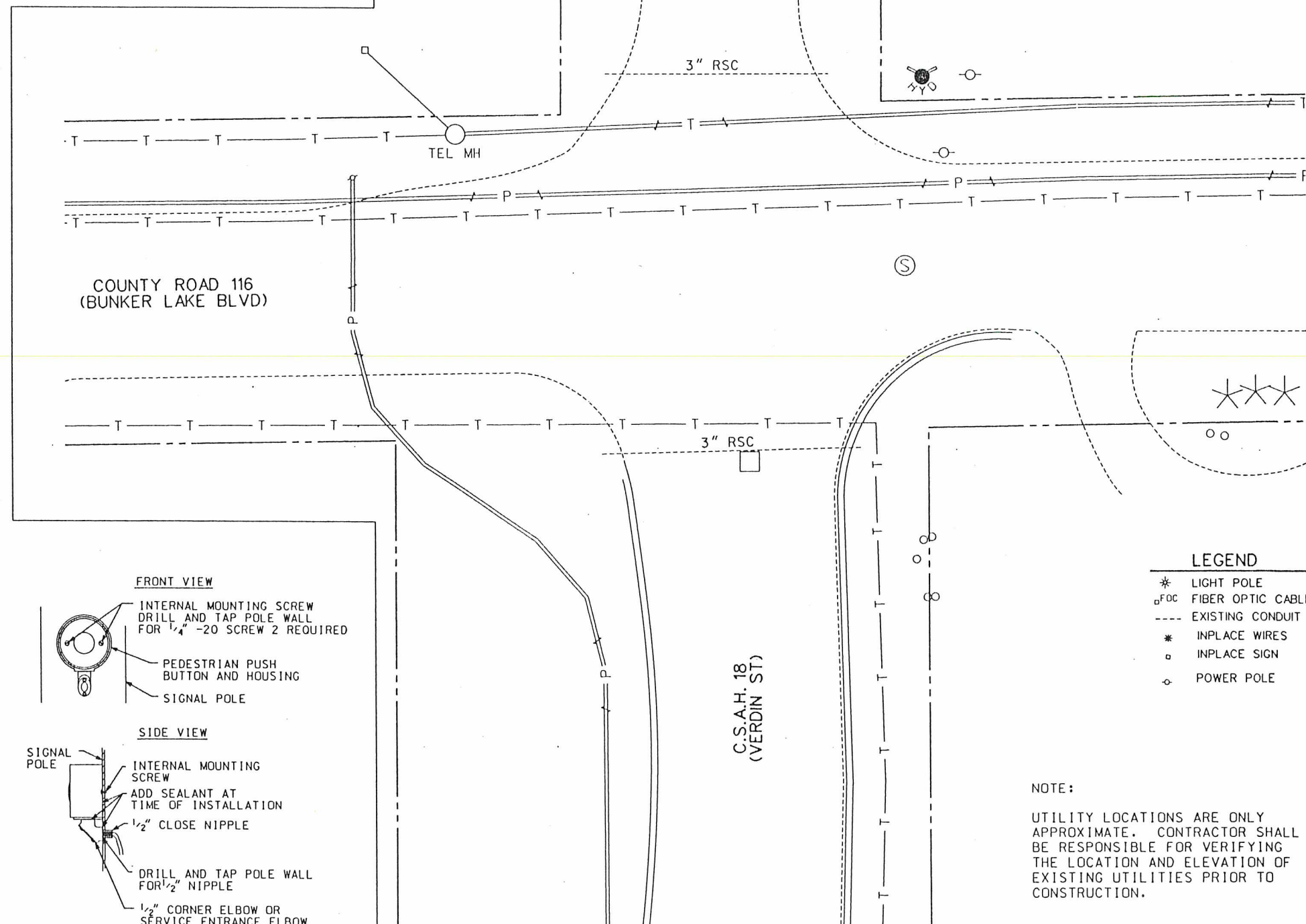
PLAN NO
 1



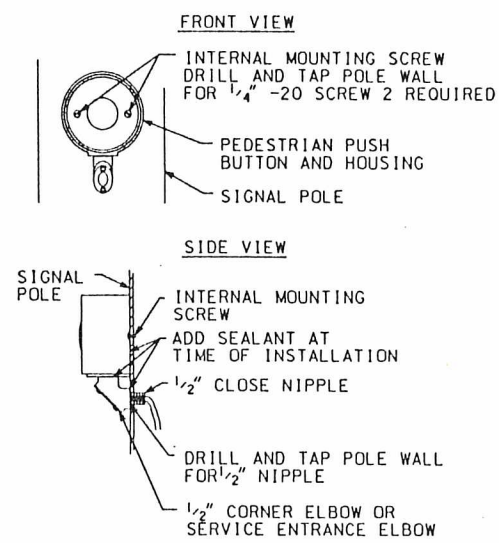
TEMPORARY POLE DETAIL



SPAN WIRE MOUNTING DETAIL



PEDESTRIAN BUTTON WIRING DETAIL



PEDESTRIAN PUSH BUTTON DETAIL

- LEGEND**
- * LIGHT POLE
 - o FOC FIBER OPTIC CABLE
 - EXISTING CONDUIT
 - * INPLACE WIRES
 - o INPLACE SIGN
 - o POWER POLE

NOTE:
UTILITY LOCATIONS ARE ONLY APPROXIMATE. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND ELEVATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.

<p>ENGINEER'S CERTIFICATE: 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.</p> <p><i>Ronald B. Bray</i> RONALD B. BRAY DATE: 01/20/94 REG. NO. 18327</p>	
SCALE:	AS NOTED
PLAN BY:	DESIGN BY:
CHK.:	CTR.:
CHECKED BY:	COM. NO.:
RECORD COPY BY:	DATE:
<p>SIGNING AND UTILITIES SHEET CR 116 (BUNKER LAKE BLVD NW) AND C.S.A.H. 18 / CR 18 C.P. 98-10-18 ANDOVER, MINNESOTA</p>	
<p>Ort Schelen CSM Mayeron & Associates, Inc. Engineers & Architects • Planners • Surveyors 900 Park Place Center • 5755 Vestala Boulevard Minneapolis, MN 55416-1228 • 612-596-5776</p>	
MS.A.P. 198-020-10	PLAN NO. 2
S.A.P. 02-618-22	
C.P. 93-10-18	

LOOP DETECTORS			
NUMBER	SIZE	FUNCTION	LOCATION
D1-1	2-6' X 6'	1	20' 50'
D1-2	2-6' X 6'	1	5' 35'
D2-1	6' X 6'	1	400'
D2-2	6' X 6'	1	400'
D3-1	2-6' X 6'	1	20' 50'
D3-2	2-6' X 6'	1	5' 35'
D4-1	6' X 6'	3/8	250'
D4-2	2-6' X 6'	1	5'
D4-3	2-6' X 6'	7	5'
D5-1	2-6' X 6'	1	20' 50'
D5-2	2-6' X 6'	1	5' 35'
D6-1	6' X 6'	1	475'
D6-2	6' X 6'	1	475'
D7-1	2-6' X 6'	1	20' 50'
D7-2	2-6' X 6'	1	5' 35'
D8-1	6' X 6'	3/8	300'
D8-2	2-6' X 6'	1	5'
D8-3	2-6' X 6'	7	5'

NOTES:

- SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
- EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.
- EACH LUMINAIRE SHALL HAVE A PEC AND CHECK SWITCH.
- SEE SHEET NO. 5 AND SPECIAL PROVISIONS FOR SERVICE CABINET DETAILS.
- SEE SPECIAL PROVISIONS FOR HANDHOLE TYPE.
- SEE SPECIAL PROVISIONS FOR CONTRACTORS RESPONSIBILITY FOR LOCATION OF UTILITIES.
- ALL PEDESTRIAN INDICATIONS SHALL BE 12" X 12".
- ALL SIGNAL FACES SHALL BE 12 INCH 3 SECTION R-Y-G, EXCEPT FACES (1-1) (1-2) (5-1) (5-2) WHICH SHALL BE 12 INCH 3 SECTION RLTA-YLTA-GLTA AND FACES (4-3) (4-4) (8-3) (8-4) WHICH SHALL BE 12 INCH 5 SECTION R-Y-G-YLTA-GLTA.
- ALL VEHICLE SIGNAL INDICATIONS SHALL USE GLASS LENSES.
- PED RAMPS AND SIDEWALKS SHALL BE CONSTRUCTED IN ALL QUADRANTS, AS SHOWN ON THE PLAN, AND SHALL BE CONSIDERED INCIDENTAL TO THE SIGNAL SYSTEM CONSTRUCTION.

- INSTALL 45' WOOD POLE
2-DOWN GUYS, GUARDS AND ANCHORS
2-TYPE 10B WOOD POLE MOUNTED AT 0° AND 270°
LUMINAIRE AND MAST ARM (250W HPS)
2-PEDESTRIAN PUSH BUTTONS AND SIGNS
METAL JUNCTION BOX
3" RSC RISER BELOW JUNCTION BOX TO HH 14
3-12/C #12
5-3/C #12
1-3/C #12 (LUM)
3" RSC RISER AND WEATHER HEAD ABOVE JUNCTION BOX
2-12/C #12
2-3/C #12
1-3/C #12 (LUM)

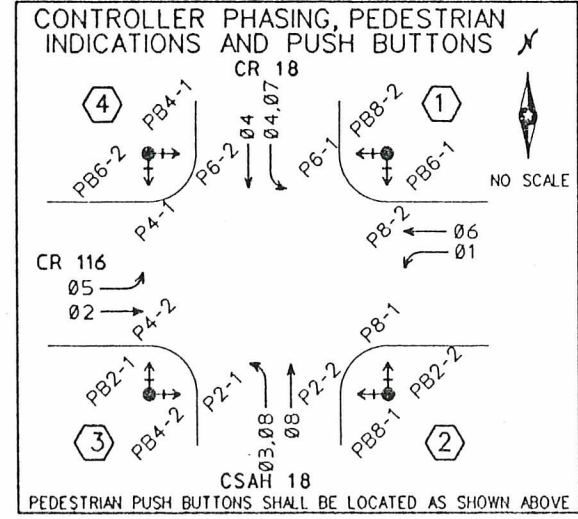
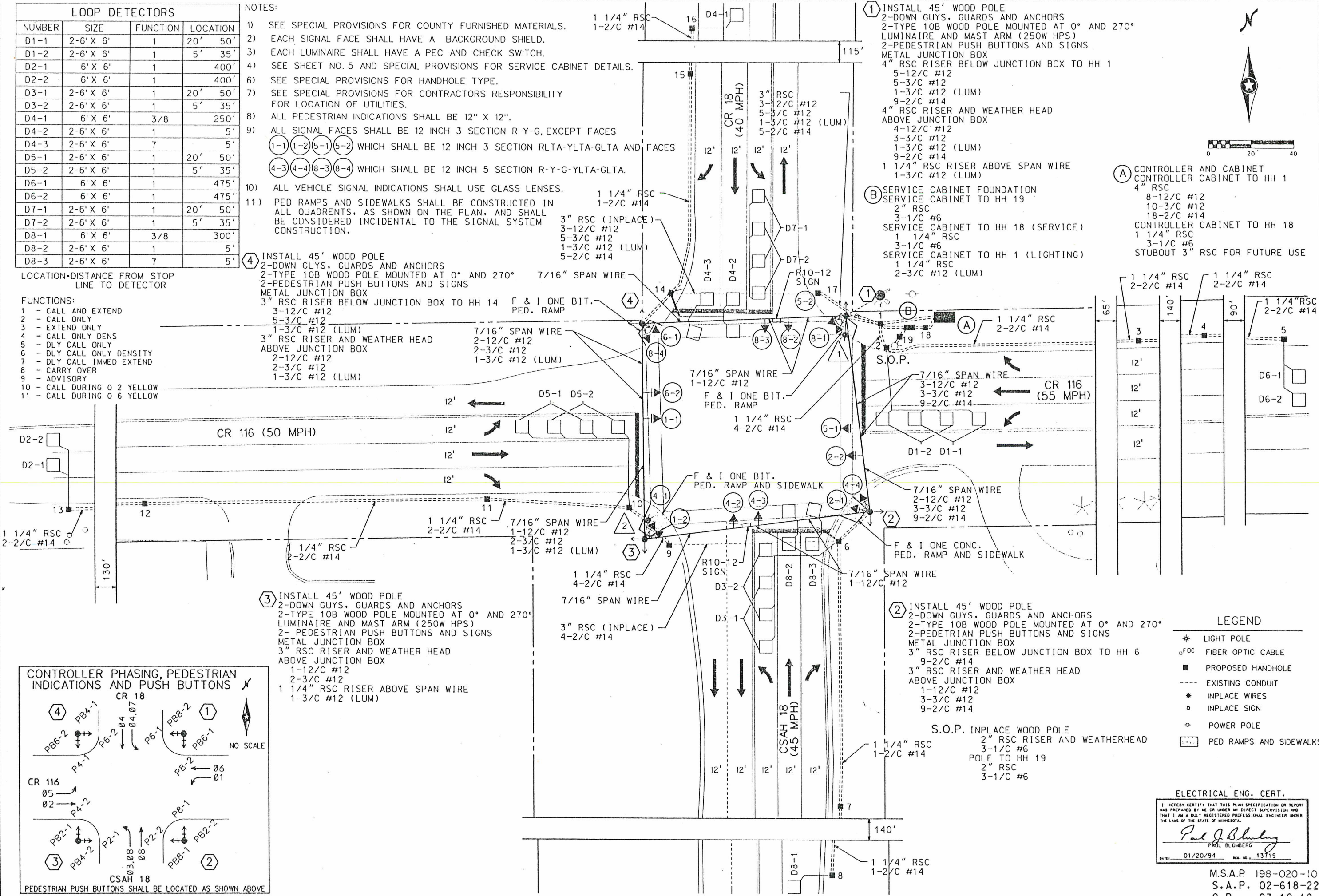
- INSTALL 45' WOOD POLE
2-DOWN GUYS, GUARDS AND ANCHORS
2-TYPE 10B WOOD POLE MOUNTED AT 0° AND 270°
LUMINAIRE AND MAST ARM (250W HPS)
2-PEDESTRIAN PUSH BUTTONS AND SIGNS
METAL JUNCTION BOX
3" RSC RISER AND WEATHER HEAD ABOVE JUNCTION BOX
1-12/C #12
2-3/C #12
1 1/4" RSC RISER ABOVE SPAN WIRE
1-3/C #12 (LUM)

- INSTALL 45' WOOD POLE
2-DOWN GUYS, GUARDS AND ANCHORS
2-TYPE 10B WOOD POLE MOUNTED AT 0° AND 270°
LUMINAIRE AND MAST ARM (250W HPS)
2-PEDESTRIAN PUSH BUTTONS AND SIGNS
METAL JUNCTION BOX
4" RSC RISER BELOW JUNCTION BOX TO HH 1
5-12/C #12
5-3/C #12
1-3/C #12 (LUM)
9-2/C #14
4" RSC RISER AND WEATHER HEAD ABOVE JUNCTION BOX
4-12/C #12
3-3/C #12
1-3/C #12 (LUM)
9-2/C #14
1 1/4" RSC RISER ABOVE SPAN WIRE
1-3/C #12 (LUM)
- SERVICE CABINET FOUNDATION
SERVICE CABINET TO HH 19
2" RSC
3-1/C #6
SERVICE CABINET TO HH 18 (SERVICE)
1 1/4" RSC
3-1/C #6
SERVICE CABINET TO HH 1 (LIGHTING)
1 1/4" RSC
2-3/C #12 (LUM)

- CONTROLLER AND CABINET
CONTROLLER CABINET TO HH 1
4" RSC
8-12/C #12
10-3/C #12
18-2/C #14
CONTROLLER CABINET TO HH 18
1 1/4" RSC
3-1/C #6
STUBOUT 3" RSC FOR FUTURE USE

LOCATION-DISTANCE FROM STOP LINE TO DETECTOR

- FUNCTIONS:
- CALL AND EXTEND
 - CALL ONLY
 - EXTEND ONLY
 - CALL ONLY DENS
 - DLY CALL ONLY
 - DLY CALL ONLY DENSITY
 - DLY CALL IMMED EXTEND
 - CARRY OVER
 - ADVISORY
 - CALL DURING 0 2 YELLOW
 - CALL DURING 0 6 YELLOW



LEGEND

- * LIGHT POLE
- FOC FIBER OPTIC CABLE
- PROPOSED HANDHOLE
- EXISTING CONDUIT
- * INPLACE WIRES
- INPLACE SIGN
- ◇ POWER POLE
- PED RAMPS AND SIDEWALKS

ELECTRICAL ENG. CERT.
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.
Paul J. Blumberg
PAUL BLUMBERG
DATE: 01/20/94 REG. NO.: 13719

M.S.A.P. 198-020-10
S.A.P. 02-618-22
C.P. 93-10-18

INTERSECTION LAYOUT
CR 116 (BUNKER LAKE BLVD NW)
AND C.S.A.H. 18 / CR 18
C.P. 93-10-18
ANDOVER, MINNESOTA

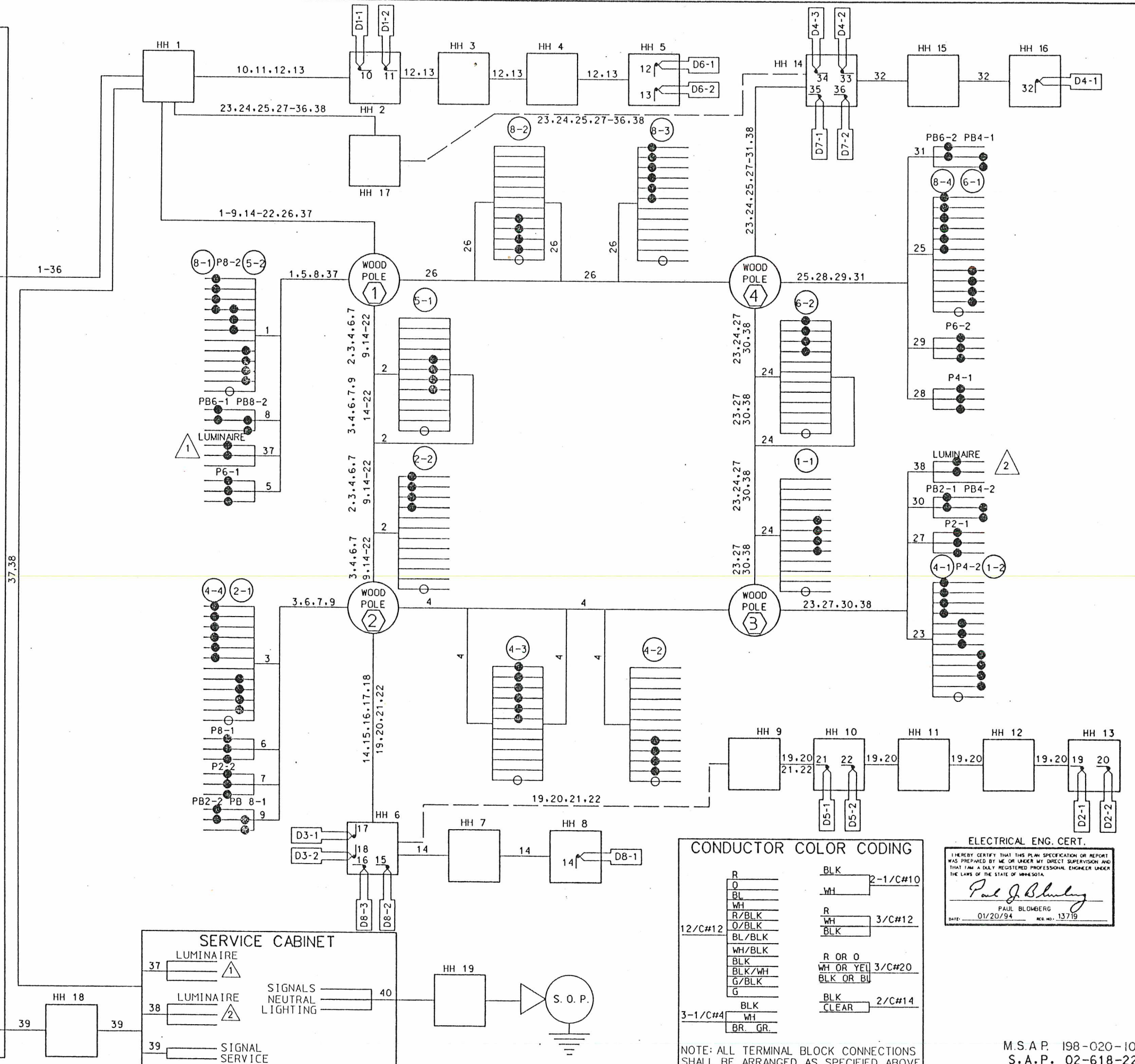
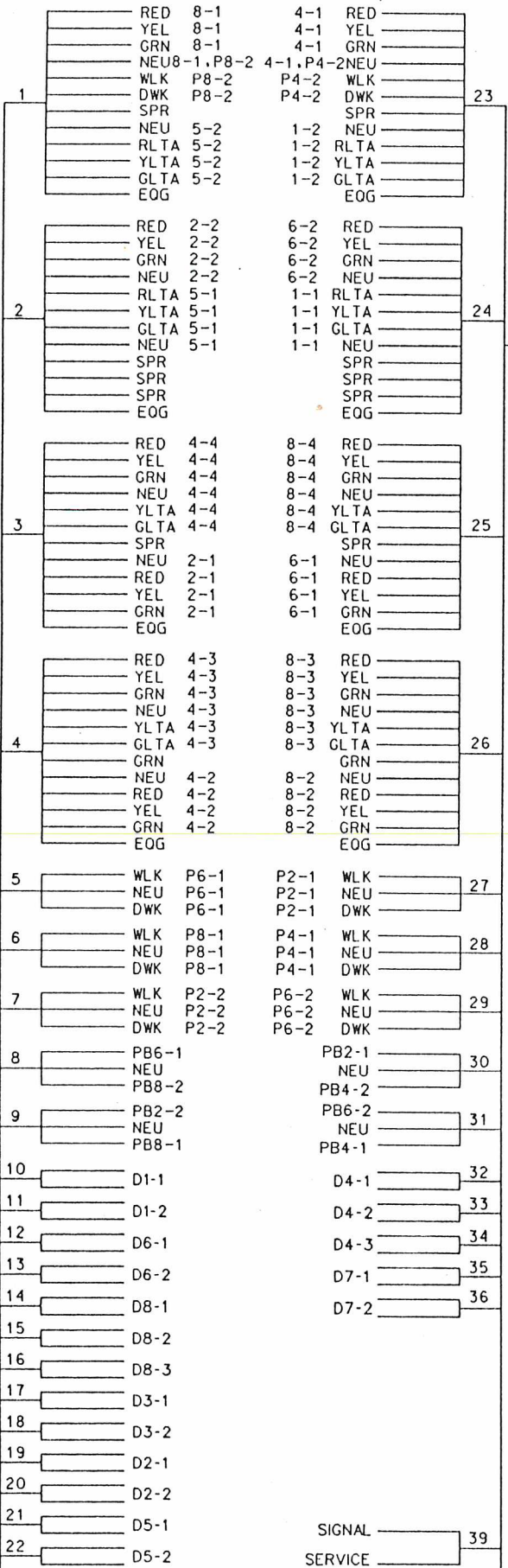
Ort Schelen & Maverton Associates, Inc.
Engineers & Architects • Planners & Surveyors
300 Park Place Center • 5775 Wazata Boulevard
Minneapolis, MN 55416-1228 • 612-996-5775

REVISION NO. _____ EXPLANATION _____
SCALE: AS NOTED DESIGN BY: _____
PLAN BY: _____ CTR _____
CHECKED BY: _____ [COMM. NO.]: 511403
RBB _____ DATE _____
RECORD COPY BY: _____ DATE _____

DATE: 01/20/94

PLAN NO. 3

CONTROLLER CABINET



WIRING DIAGRAM
CR 116 (BUNKER LAKE BLVD NW)
AND C.S.A.H. 18 / CR 18
C.P. 98-10-18
ANDOVER, MINNESOTA

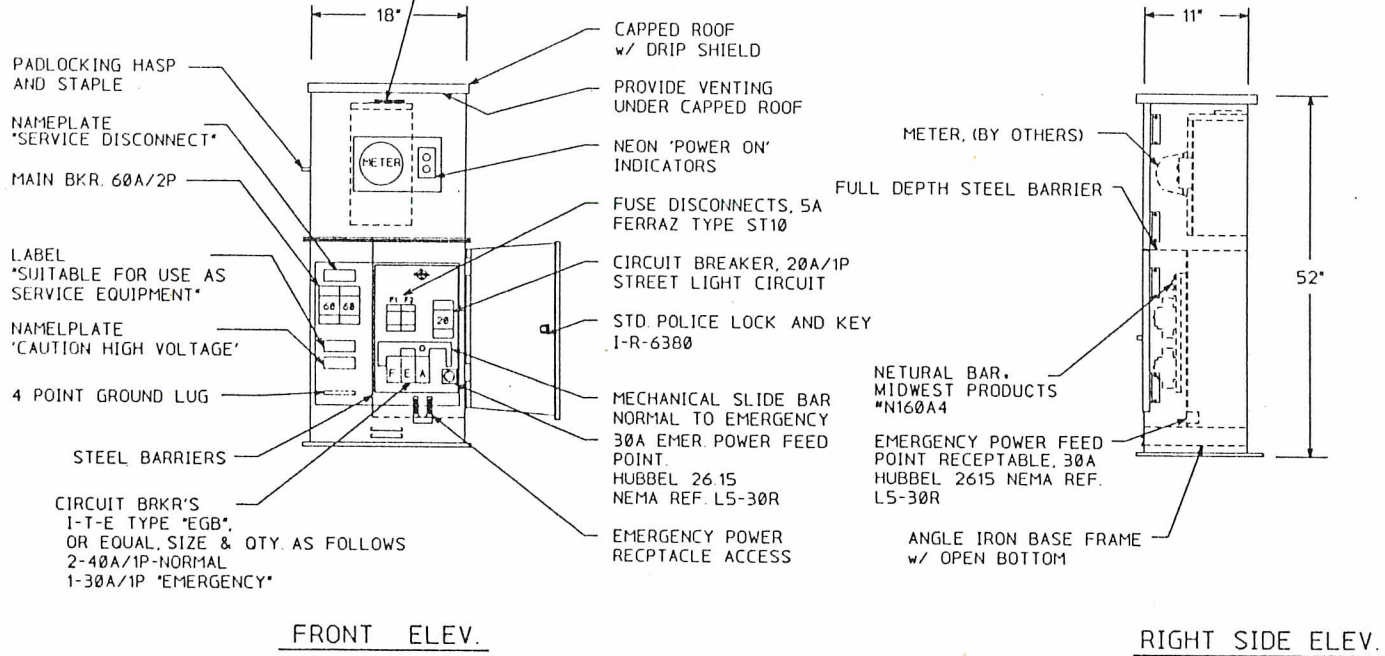
CSM
 Schelen & Mayeron & Associates, Inc.
 Engineers - Architects - Planners - Surveyors
 300 Park Place Center - 5775 Beverly Boulevard
 Minneapolis, MN 55415-1228 - 612-596-5770

REVISION NO. _____ DATE _____
 SCALE: AS NOTED
 PLAN BY: _____ DESIGN BY: _____
 CTR. _____ CHECKED BY: COMM. NO. 511403
 RBB _____ RECORD COPY BY: _____ DATE 01/20/94

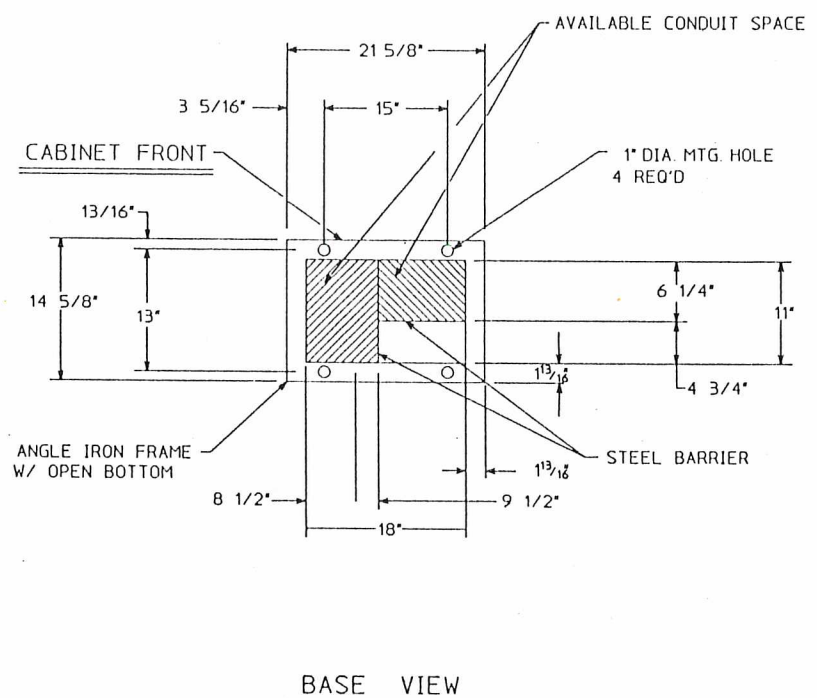
EXPLANATION _____

PLAN NO. 4

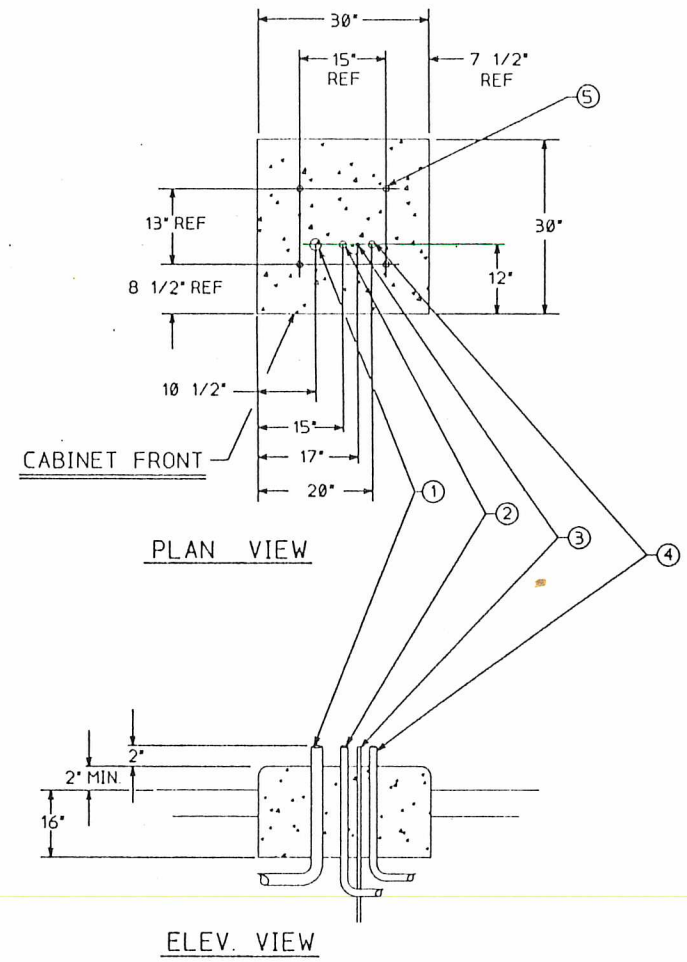
N.S.P. METER SOCKET, 5-TERMINAL
w/POSTIVE BY-PASS MECHANISM
MILBANK CAT. No. U-2272-RL.



SIGNAL SERVICE CABINET



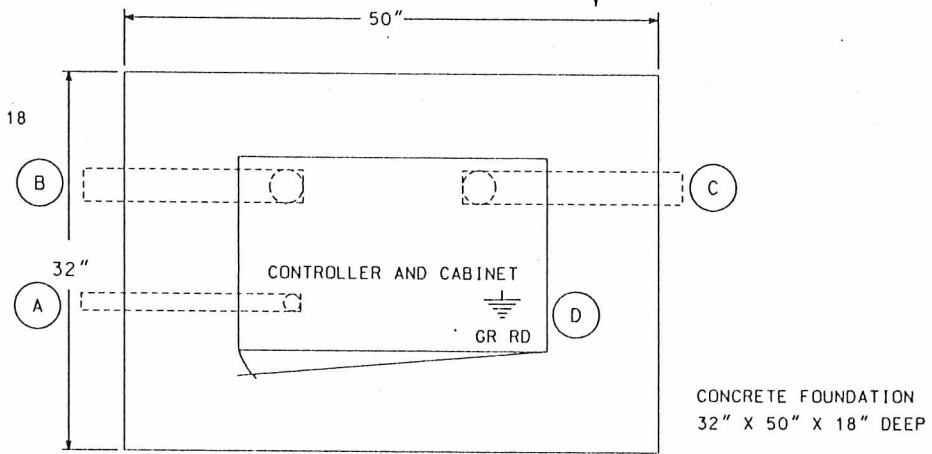
SERVICE CABINET FOUNDATION



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

- (A) 1 1/4" R.S.C. FOR SERVICE CONNECTION TO HH 18
- (B) 4" R.S.C. TO HH 1
- (C) 3" R.S.C. STUBOUT, THREAD & CAP BOTH ENDS. (FOR FUTURE INTERCONNECT).
- (D) 5/8" DIA X 15' GROUND ROD



SEE INTERSECTION LAYOUT FOR CONDUIT & CABLE INFORMATION

- ① 2" RSC FROM SOURCE OF POWER (VIA HANDHOLE 19)
- ② 1 1/4" RSC TO CONTROLLER CABINET (VIA HANDHOLE 18)
- ③ GROUNDING ROD
- ④ 1 1/4" RSC TO HANDHOLE 1 (STREET LIGHTING)
- ⑤ ANCHOR BOLT LOCATIONS (4 REQUIRED)

ELECTRICAL ENG. CERT.

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.

Paul J. Blomberg
PAUL BLOMBERG
DATE: 01/20/94 REG. NO.: 13719

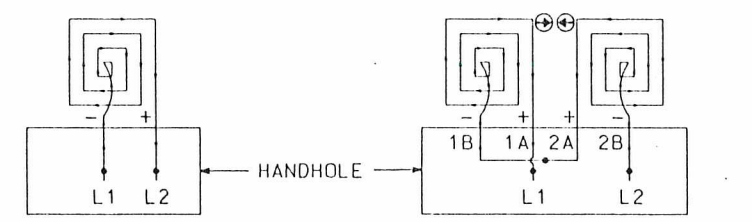
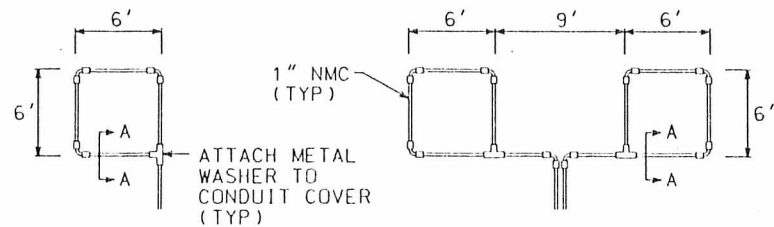
REVISION NO.	EXPLANATION
SCALE: AS NOTED	DESIGN BY: CTR
PLAN BY: CTR	CHECKED BY: COM. NO. 511403
CHECKED BY: RBB	RECORD COPY BY: DATE
DATE: 01/20/94	REG. NO. 18327

CSM
Ort Schelen & Mayeron & Associates, Inc.
Engineers & Architects - Planners - Surveyors
300 Park Place Center - 5775 Wavaria Boulevard
Minneapolis, MN 55416-1228 - 612-596-5776

SERVICE EQUIP. AND CONTROLLER PAD
CR 116 (BUNKER LAKE BLVD NW)
AND C.S.A.H. 18 / CR 18
C.P. 98-10-18
ANDOVER, MINNESOTA

M.S.A.P. 198-020-10
S.A.P. 02-618-22
C.P. 93-10-18

PLAN NO
5

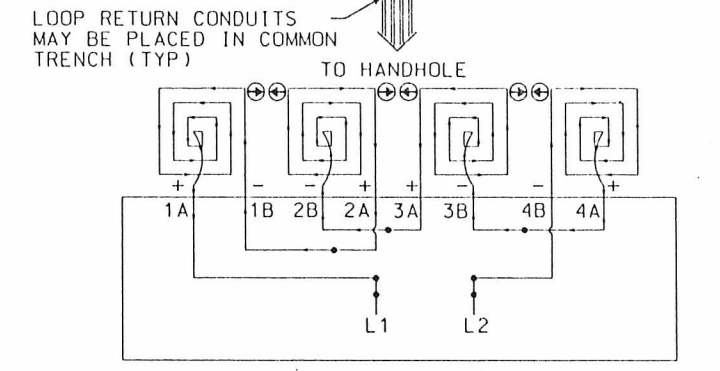
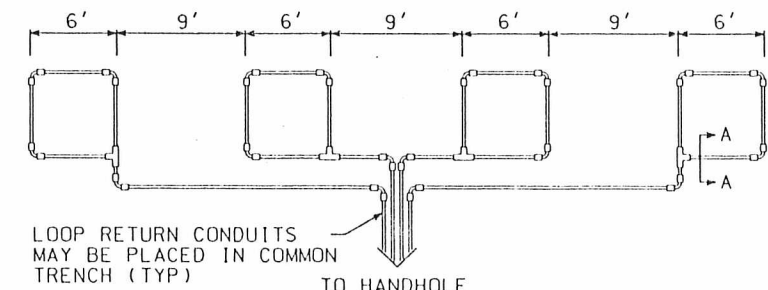


LOOP CONNECTIONS SHALL BE LABELED AND SPLICED IN THE HANDHOLE AS FOLLOWS:

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

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

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

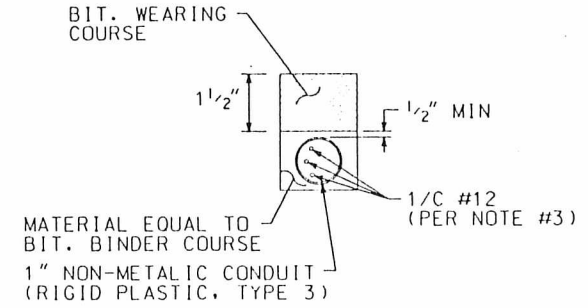


LOOP CONNECTIONS SHALL BE LABELED AND SPLICED IN THE HANDHOLE AS FOLLOWS:

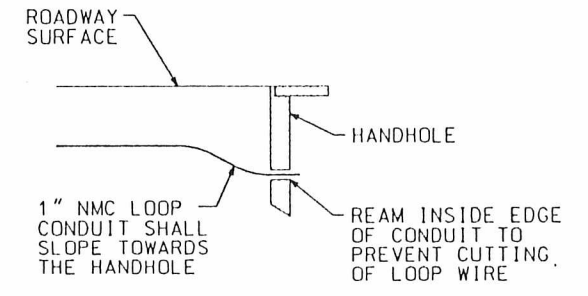
- L1 TO 1A
- 1B TO 2A
- 2B TO 3A
- 3B TO 4A
- 4B TO L2

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)



SECTION A-A



DRAINAGE DETAIL

LOOP DETECTOR WIRING

- 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) 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.

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 HANDHOLE
* 8118 C	SERVICE EQUIPMENT AND POLE
* 8119 C	GROUND MOUNTED CABINET FOUNDATION
8120 J	PA85 AND PA90 POLE FOUNDATION
8121 C	TRANSFORMER BASE AND POLE BASE PLATE
8122 C	PEDESTAL AND PEDESTAL BASE
8123 C	POLE AND MAST ARM
* 8124 D	MAST ARM SIGNAL HEAD MOUNTS
8126 E	PA100 POLE FOUNDATION
* 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

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	—

ABBREVIATIONS

3-1(EG)	SIGNAL HEAD PHASE "3" - NO. "1"	O	ORANGE
BL	BLUE	O/BLK	ORANGE WITH BLACK TRACER
BL/BLK	BLUE WITH BLACK TRACER	P1-(EG)	PEDESTRIAN INDICATION PHASE "2"-NO. "1"
BLK	BLACK	PB	PUSH BUTTON
BLK/WH	BLACK WITH WHITE TRACER	PB-2(EG)	PUSH BUTTON PHASE "2"-NO. "1"
BR. GR.	BARE GROUND	PEC	PHOTOELECTRIC CELL
CH. SW.	CHECK SWITCH	PED	PEDESTRIAN
CLR	CLEAR	R	RED
D2-1(EG)	DETECTOR PHASE "2" - NO. "1"	R&S	REMOVE AND SALVAGE
DWK	DON'T WALK	R/BLK	RED WITH BLACK TRACER
EOG	EQUIPMENT GROUND	RLTA	RED LEFT TURN ARROW
EVP	EMERGENCY VEHICLE PRE-EMPTION	RRTA	RED RIGHT TURN ARROW
F&I	FURNISH AND INSTALL	RSC	RIGID STEEL CONDUIT
FL	FLASH/FLASHING	SOP	SOURCE OF POWER
G	GREEN	SPR	SPARE
G/BLK	GREEN WITH BLACK TRACER	ST. LHT.	STREET LIGHT
GLTA	GREEN LEFT TURN ARROW	STA	STATION
GRN	GREEN	SW	SWITCH
GR. R.	GROUND ROD	SWD	SWITCHED
GRTA	GREEN RIGHT TURN ARROW	TDW	TELEPHONE DROP WIRE
GTHA	GREEN THRU ARROW	WH	WHITE
HH	HANDHOLE	WH/BLK	WHITE WITH BLACK TRACER
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

ORT Schelen Mayron & Associates, Inc. Engineers & Architects Planners & Surveyors 500 Park Place Center 5775 Wavvato Boulevard Minneapolis, MN 55414-1228 612-996-5775

MISC. DETAILS CR 116 (BUNKER LAKE BLVD NW AND C.S.A.H. 18 / CR 18 C.P. 98-10-18 ANDOVER, MINNESOTA

REVISION NO. DATE AS NOTED PLAN BY: DESIGN BY: CTR. CHECKED BY: COMM. NO. 511403 RECORD CORN. BY: DATE 01/20/84

I HEREBY CERTIFY THAT THIS PLAN SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND TO THE BEST OF MY KNOWLEDGE AND BELIEF IT COMES WITHIN THE SCOPE OF MY LICENSE AND THE LAWS OF THE STATE OF MINNESOTA.

Ronald B. Mayron

M.S.A.P. 198-020-10
 S.A.P. 02-618-22
 C.P. 93-10-18

PLAN NO. 6