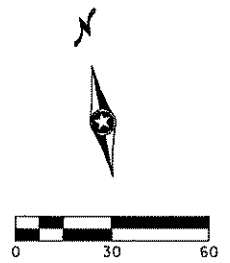
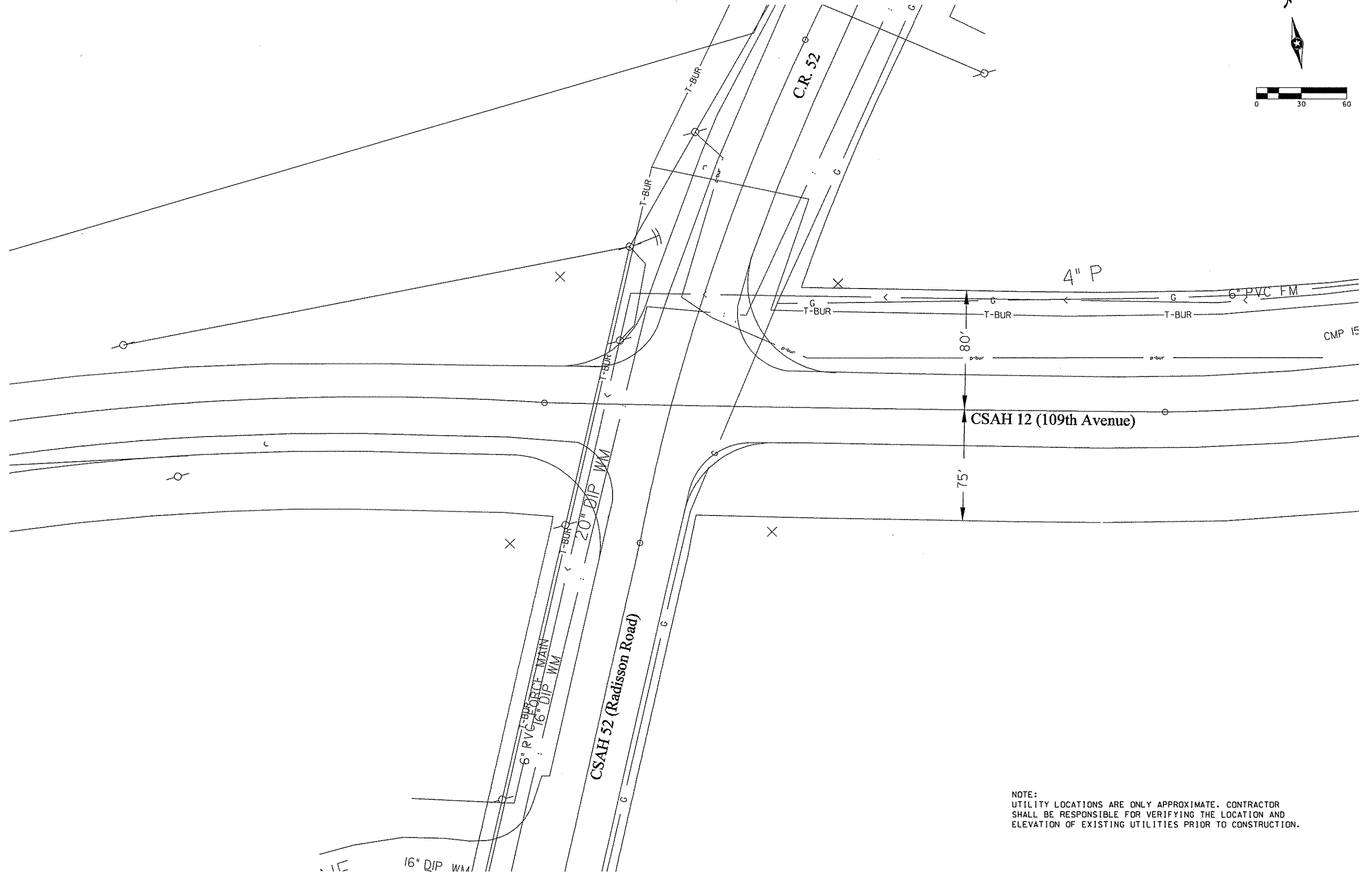


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NOTE:
 UTILITY LOCATIONS ARE ONLY APPROXIMATE. CONTRACTOR
 SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND
 ELEVATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.

| | |
|------------------------|---------------------|
| REVISOR NO. DATE | EXPLANATION |
| AS NOTED | |
| SCALE: PLAN BY: CTR | DESIGN BY: CTR |
| CHECKED BY: RBB | PROJECT NO: 1044.05 |
| RECORD COPY BY: | DATE |

HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT
 WAS PREPARED BY OR UNDER MY DIRECT SUPERVISION AND
 THAT I AM A LICENSED PROFESSIONAL ENGINEER UNDER
 THE LAWS OF THE STATE OF MINNESOTA

Ronald B. Bray
 RONALD B. BRAY, P.E.
 DATE: 3/3/97 REG. NO. 16327

**Radisson Road (CSAH 52 / C.R. 52)
 & 109th Avenue (CSAH 12)
 Blaine, Anoka County, Minnesota**

350 Westwood Lake Office
 8441 Wayzata Boulevard
 Minneapolis, MN 55426
 612-641-4800
 FAX 641-1700
 ENGINEERS - PLANNERS
WSB
 & Associates, Inc.
 INFRASTRUCTURE

| 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' |
| | | | 400' |
| D3-1 | 6' x 6' | 1 | 20' & 50' |
| D3-2 | 6' x 6' | 1 | 5' & 35' |
| D4-1 | 6' x 6' | 3 | 475' |
| D4-2 | 2-6' x 6' | 2 | 5' & 20' |
| D4-3 | 2-6' x 6' | 5 | 5' & 20' |
| 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' |
| D7-1 | 2-6' x 6' | 1 | 20' & 50' |
| D7-2 | 2-6' x 6' | 1 | 5' & 35' |
| D8-1 | 6' x 6' | 3 | 475' |
| D8-2 | 2-6' x 6' | 2 | 5' & 20' |
| D8-3 | 2-6' x 6' | 5 | 5' & 20' |

NOTES:

- SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
- EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.
- HANDHOLES SHALL BE CONCRETE WITH CONCRETE COVERS.
- SEE SPECIAL PROVISIONS FOR CONTRACTORS RESPONSIBILITY FOR LOCATION OF UTILITIES.
- EACH LUMINAIRE SHALL HAVE A PEC & CHECK SWITCH.
- SEE SHEET 5 AND SPECIAL PROVISIONS FOR SERVICE CABINET DETAILS.
- ALL SIGNAL FACES SHALL BE 12" 3 SECTION R-Y-G EXCEPT FACES (1-1) (1-2) (3-1) (3-2) (5-1) (5-2) (7-1) AND (7-2) WHICH SHALL BE 12" 3 SECTION RLTA-YLTA-GLTA.
- ALL RED INDICATIONS SHALL BE LED (SEE SPECIAL PROVISIONS)
- ALL YELLOW & GREEN SIGNAL INDICATIONS SHALL USE GLASS LENSES.
- ALL PEDESTRIAN INDICATIONS SHALL BE 12"x 12" WITH HAND/MAN SYMBOL MESSAGE.

- INSTALL 45' WOOD POLE
2-DOWN GUYS, GUARDS AND ANCHORS
TYPE 10B WOOD POLE MOUNTED AT 0°
TYPE 10B WOOD POLE MOUNTED AT 270°
T40-12 LUMINAIRE 250W HPS W/ PEC
METAL JUCTION BOX
3" RCS RISER AND WEATHERHEAD ABOVE JUCTION BOX
1-12/C#12
2-3/C#12
4-5/C#12
1-3/C#12 (LUM)
5-2/C#14
4" RSC BELOW JUCTION BOX TO HH 1
2-12/C#12
4-3/C#12
4-5/C#12
1-3/C#12 (LUM)
5-2/C#14
1 1/4" RSC ABOVE SPANWIRE
1-3/C#12 (LUM)
7/16" SPAN WIRE
2-5/C#12
7/16" SPAN WIRE
1-5/C#12

- INSTALL 45' WOOD POLE
2-DOWN GUYS, GUARDS AND ANCHORS
TYPE 10B WOOD POLE MOUNTED AT 0°
TYPE 10B WOOD POLE MOUNTED AT 270°
METAL JUCTION BOX
3" RCS RISER AND WEATHERHEAD ABOVE JUCTION BOX
1-12/C#12
2-3/C#12
4-5/C#12
1-3/C#12 (LUM)
3-2/C#14
4" RSC BELOW JUCTION BOX TO HH 13
2-12/C#12
4-3/C#12
4-5/C#12
1-3/C#12 (LUM)
3-2/C#14
7/16" SPAN WIRE
1-12/C#12
2-3/C#12
4-5/C#12
1-3/C#12 (LUM)
3-2/C#14
7/16" SPAN WIRE
2-5/C#12
7/16" SPAN WIRE
1-3/C#12 (LUM)
3-2/C#14

- INSTALL 45' WOOD POLE
2-DOWN GUYS, GUARDS AND ANCHORS
TYPE 10B WOOD POLE MOUNTED AT 0°
TYPE 10B WOOD POLE MOUNTED AT 270°
T40-12 LUMINAIRE 250 HPS W/ PEC
METAL JUCTION BOX
3" RCS RISER AND WEATHERHEAD ABOVE JUCTION BOX
1-12/C#12
2-3/C#12
4-2/C#14
1 1/4" RSC BELOW JUCTION BOX TO HH9
3-2/C#14
1 1/4" RSC ABOVE SPANWIRE
1-3/C#12 (LUM)

- (A) CONTROLLER AND CABINET**
CABINET TO HH 1
4" RSC
2-12/C#12
4-3/C#12
4-5/C#12
8-2/C#14
CABINET TO HH 17
4" RSC
2-12/C#12
4-3/C#12
4-5/C#12
8-2/C#14
CABINET TO HH 18
1 1/4" RSC
3-1/C#6

- (B) SERVICE CABINET FOUNDATION**
SERVICE CABINET TO POLE
STUBOUT 2" RSC
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)

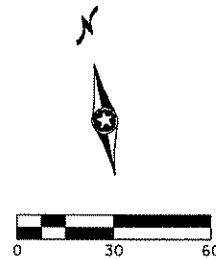
S.O.P. INPLACE WOOD POLE
POLE TO SERVICE CABINET
BY ANOKA ELECTRIC

ELECTRICAL ENGINEER CERTIFICATION

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 ELECTRICAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

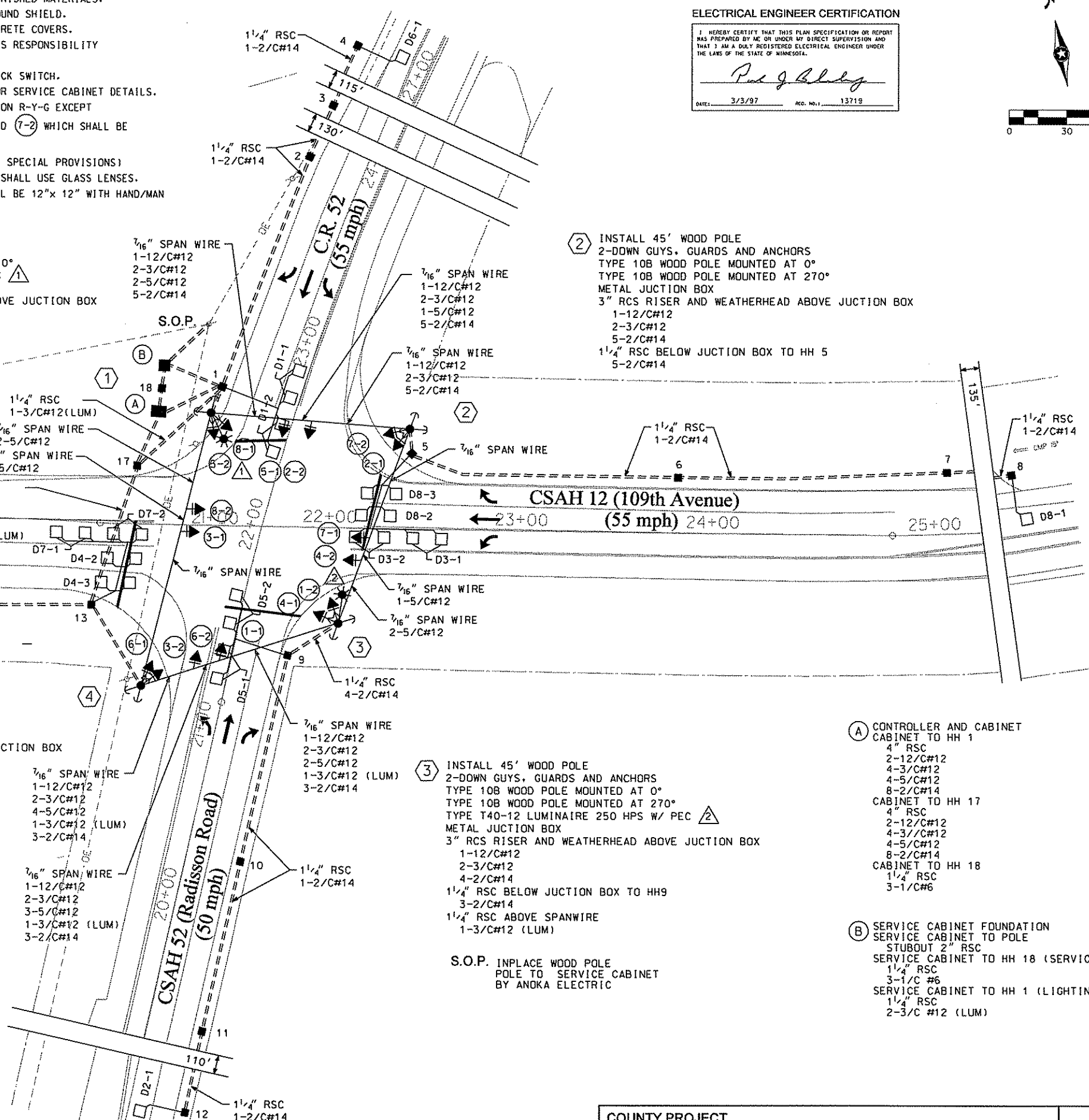
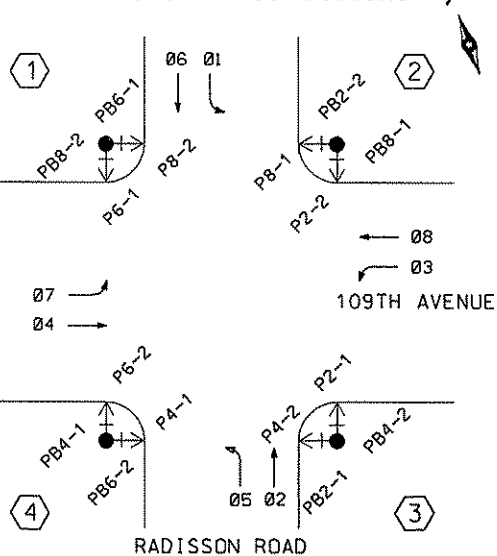
Ronald B. Gray

DATE: 3/3/97 REG. NO.: 13719



- CALL AND EXTEND.
- CALL ONLY
- EXTEND ONLY
- CALL ONLY DENS
- DELAY CALL ONLY
- DELAY CALL ONLY DENSITY
- DELAY CALL IMMEDIATE EXTEND
- CARRY OVER
- ADVISORY

CONTROLLER PHASING PEDESTRIAN INDICATIONS AND PUSH BUTTONS

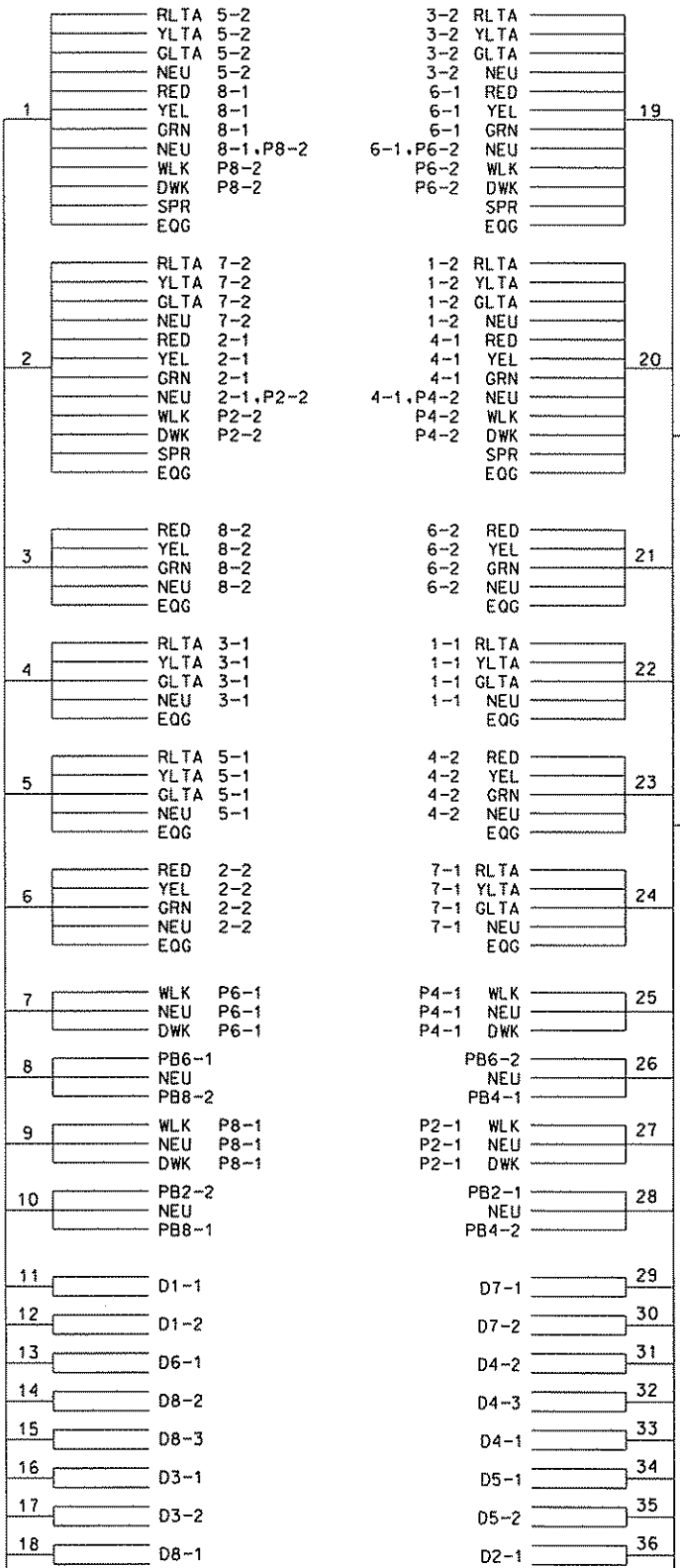


REVISION NO. DATE
AS NOTED
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CORRECTED BY: RBB RECORD COPY BY: DATE: 10/4-05

Radisson Road (CSAH 52 / C.R. 52) & 109th Avenue (CSAH 12) Blaine, Anoka County, Minnesota

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912-561-4800
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INFRASTRUCTURE

CONTROLLER CABINET



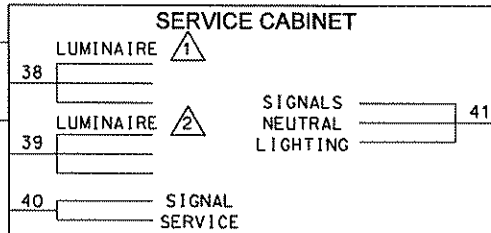
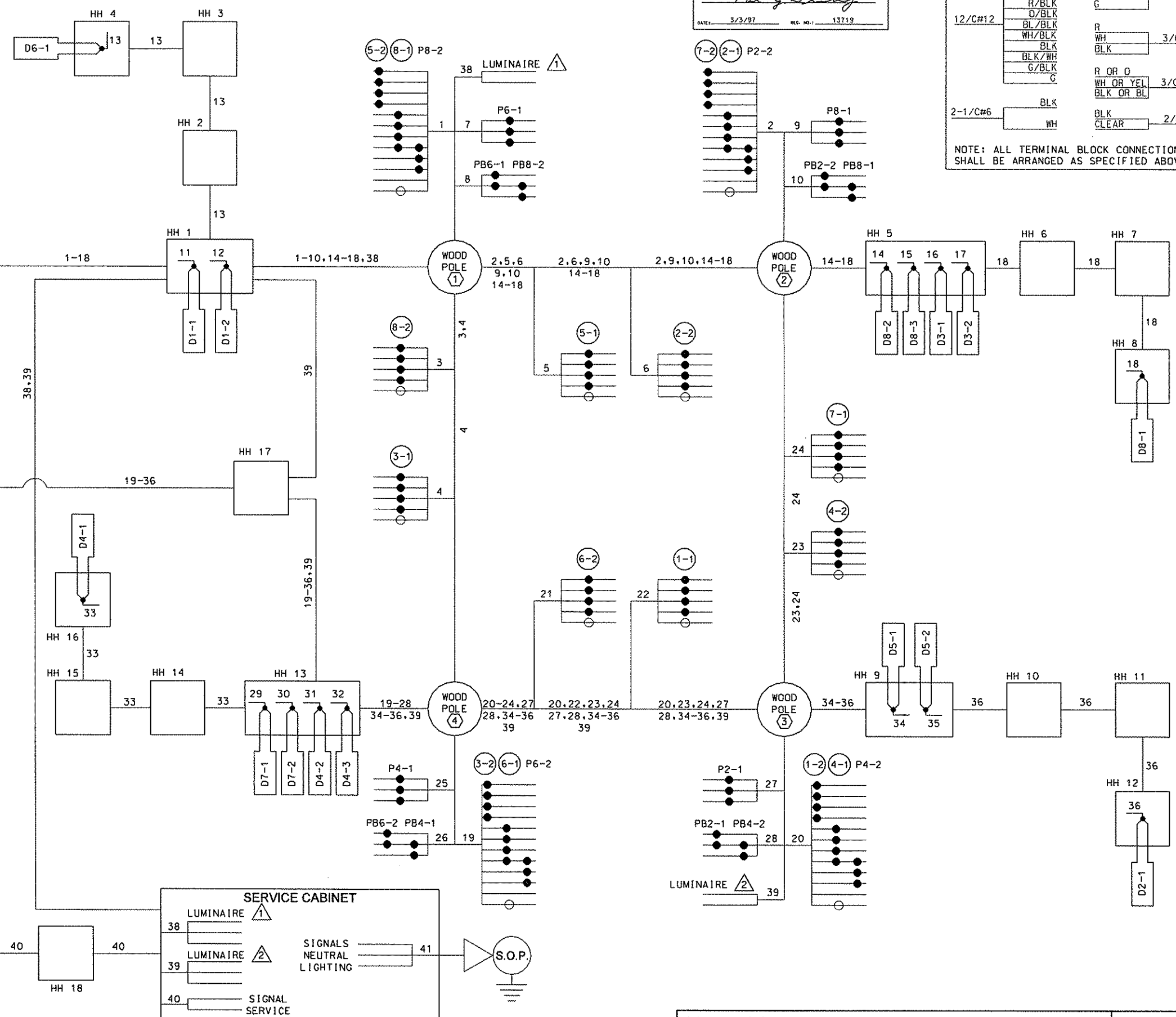
SIGNAL SERVICE 40

ELECTRICAL ENGINEER CERTIFICATION
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Paul J. Kelly
 DATE: 3/3/97 REG. NO.: 13719

CONDUCTOR COLOR CODING

| | | |
|--------|-----------|--------|
| R | R | |
| O | BL | 5/C#12 |
| BL | WH | |
| WH | C | |
| R/BLK | R | |
| O/BLK | WH | 3/C#12 |
| WH/BLK | BLK | |
| BLK | R OR O | |
| BLK/WH | WH OR YEL | 3/C#20 |
| G/BLK | BLK OR BL | |
| C | BLK | |
| | CLEAR | 2/C#14 |

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



COUNTY PROJECT NO. 96-18-12

WIRING DIAGRAM

SHEET 5 OF 8 SHEETS

REVISIONS

| NO. | DATE | DESCRIPTION |
|-----|------|-------------|
| | | |

AS NOTED

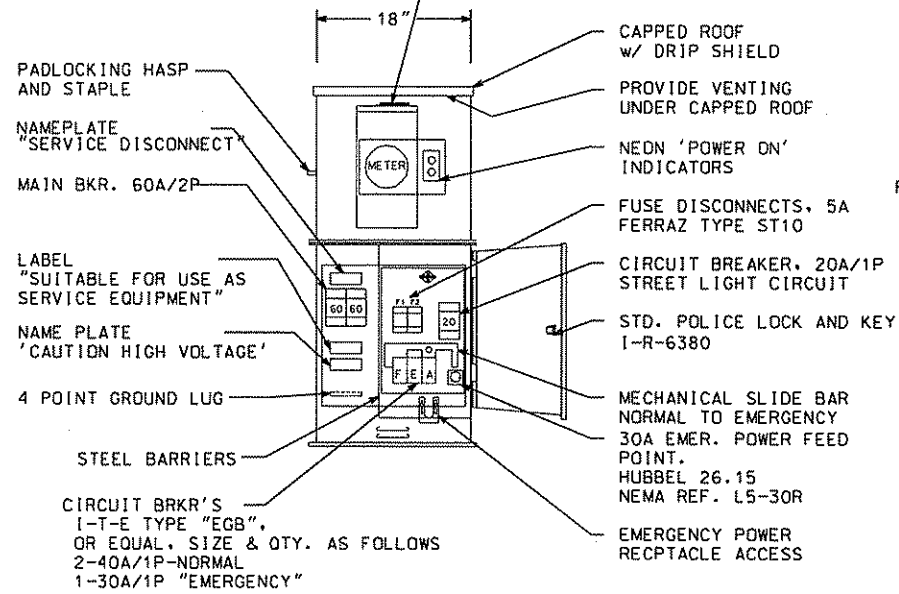
DESIGNED BY: CTR
 CHECKED BY: RBB
 PROJECT NO: 1044-05
 DATE: 3/2/97

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 Minneapolis, MN 55426
 912-641-4800
 FAX 641-1700
WSB & Associates, Inc.
 INFRASTRUCTURE - ENGINEERS - PLANNERS

Radisson Road (CSAH 52 / C.R. 52)
 & 109th Avenue (CSAH 12)
 Blaine, Anoka County, Minnesota

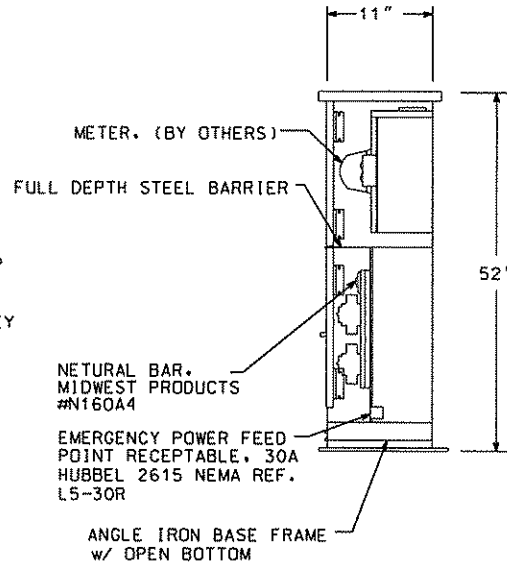
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N.S.P. METER SOCKET, 5-TERMINAL
w/POSTIVE BY-PASS MECHANISM
MILBANK CAT. NO. U-2272-RL.

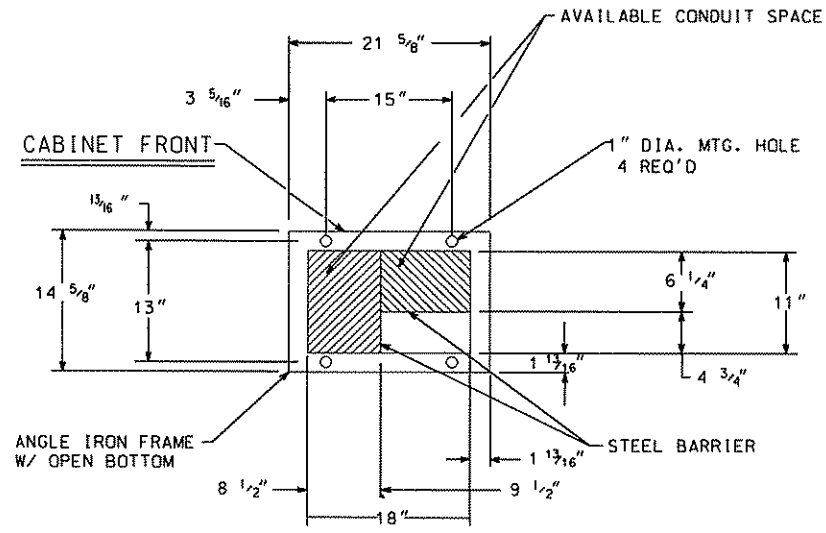


FRONT ELEV

SIGNAL SERVICE CABINET

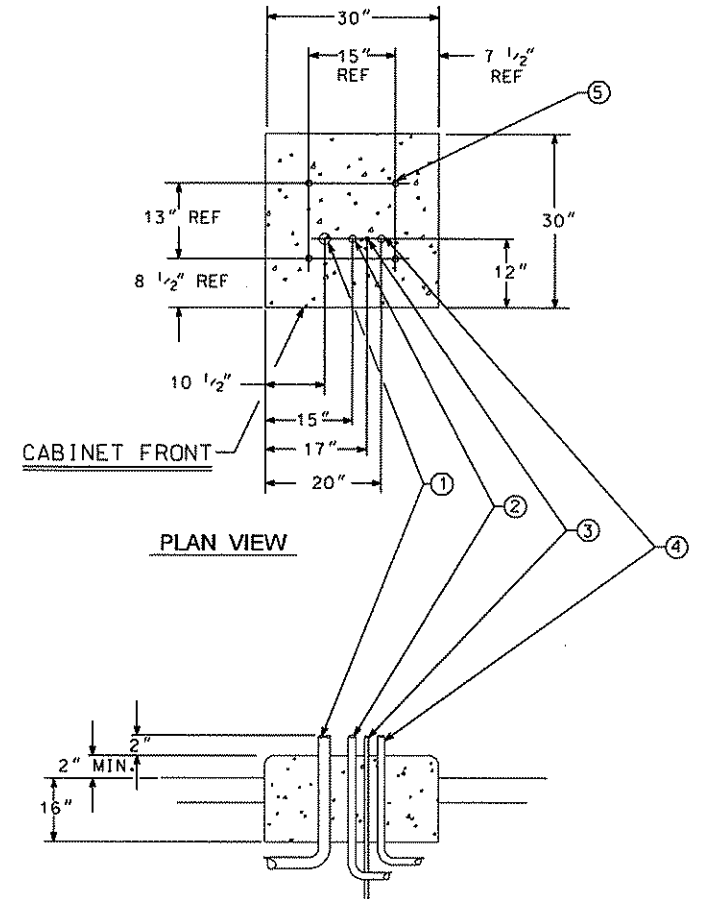


RIGHT SIDE ELEV



BASE VIEW

SERVICE CABINET FOUNDATION



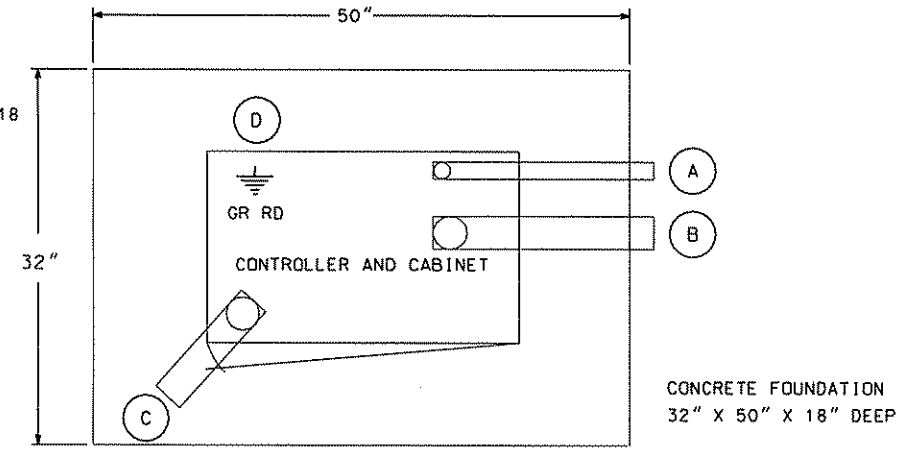
ELEV. VIEW

- ① 2" RSC FROM SOURCE OF POWER
- 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)

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

- Ⓐ 1 1/4" R.S.C. FOR SERVICE CONNECTION TO HH 18
- Ⓑ 4" R.S.C. TO HH 1
- Ⓒ 4" R.S.C. TO HH 17
- Ⓓ 5/8" DIA X 15' GROUND ROD



CONTROLLER CABINET PAD LAYOUT

NO SCALE

SEE INTERSECTION LAYOUT FOR CONDUIT & CABLE INFORMATION

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Paul J. Blum

DATE: 3/3/97 REG. NO.: 13719

| | |
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| RECORD COPY BY: | |
| DATE: 3/3/97 | REG. NO.: 16327 |

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& 109th Avenue (CSAH 12)
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ENGINEERS - PLANNERS



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ABBREVIATIONS

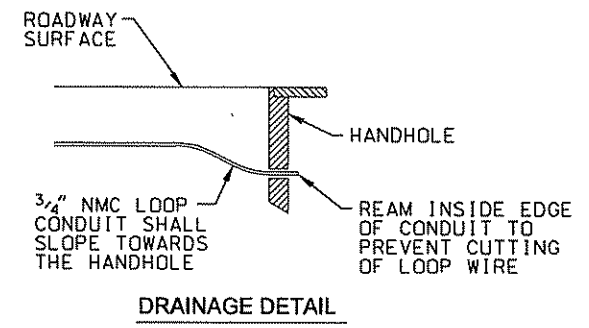
| | |
|---|---|
| 3-1(EG) SIGNAL HEAD PHASE "3" - NO. "1" | P1-(EG) PEDESTRIAN INDICATION PHASE "2"-NO. "1" |
| BR. GR. BARE GROUND | PB PUSH BUTTON |
| CH. SW. CHECK SWITCH | PB-2(EG) PUSH BUTTON PHASE "2"-NO. "1" |
| CLR CLEAR | PEC PHOTOELECTRIC CELL |
| D2-1(EG) DETECTOR PHASE "2" - NO. "1" | PED PEDESTRIAN |
| DWK DON'T WALK | R RED |
| EOG 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 |

LEGEND OF SYMBOLS

| | |
|---|-------|
| CONTROLLER AND SERVICE EQUIP. NO'S | (A) |
| SIGNAL BASE NO. | (1) |
| SIGNAL FACE NO. | (M) |
| LUMINAIRE NO. | (L) |
| CONTROLLER AND CABINET | (C) |
| CONTROLLER AND CABINET - IN PLACE | (C) |
| HANDHOLE | (H) |
| HANDHOLE - IN PLACE | (H) |
| RIGID STEEL CONDUIT (RSC) | (RSC) |
| RIGID STEEL CONDUIT (RSC) - IN PLACE | (RSC) |
| SIGNAL FACE WITH BACKGROUND SHIELD | (S) |
| SIGNAL FACE W/O BACKGROUND SHIELD | (S) |
| SIGNAL FACE - IN PLACE | (S) |
| PEDESTRIAN INDICATORS | (P) |
| PEDESTRIAN INDICATORS - IN PLACE | (P) |
| PEDESTRIAN PUSH BUTTONS ON PEDESTAL OR POLE | (P) |
| PEDESTRIAN PUSH BUTTON STATION | (P) |
| TRAFFIC SIGNAL PEDESTAL | (T) |
| TRAFFIC SIGNAL PEDESTAL - IN PLACE | (T) |
| TRAFFIC SIGNAL POLE AND MAST ARM | (T) |
| TRAFFIC SIGNAL POLE AND MAST ARM - IN PLACE | (T) |
| STREET LIGHT POLE AND LUMINAIRE | (S) |
| STREET LIGHT POLE AND LUMINAIRE - IN PLACE | (S) |
| MAST ARM AND LUMINAIRE | (M) |
| MAST ARM AND LUMINAIRE - IN PLACE | (M) |
| WOOD POLE | (W) |
| WOOD POLE - IN PLACE | (W) |
| SOURCE OF POWER | (S) |
| RAILROAD SIGNAL - IN PLACE | (R) |
| RIGHT OF WAY LINE | (R) |
| CENTERLINE | (C) |
| EDGE OF ROADWAY | (E) |
| SHOULDERLINE | (S) |
| CURB LINE | (C) |
| STOP BAR | (S) |

CONDUCTOR COLOR CODE

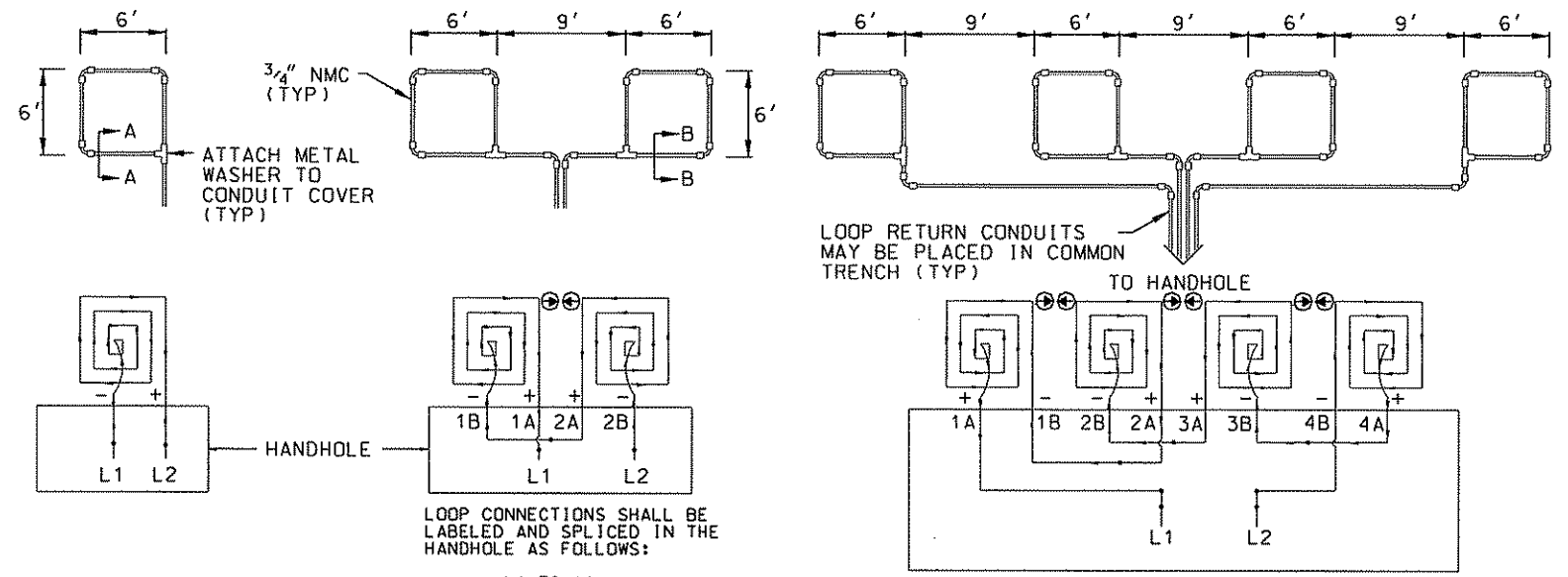
| | |
|--------|--------------------------|
| R | RED |
| O | ORANGE |
| BL | BLUE |
| WH | WHITE |
| R/BLK | RED WITH BLACK TRACER |
| O/BLK | ORANGE WITH BLACK TRACER |
| BL/BLK | BLUE WITH BLACK TRACER |
| WH/BLK | WHITE WITH BLACK TRACER |
| BLK | BLACK |
| BLK/WH | BLACK WITH WHITE TRACER |
| G/BLK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



STANDARD PLATES
THESE STANDARD PLATES AS APPROVED BY 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 HANDHOLE |
| 8118 C | SERVICE EQUIPMENT AND POLE |
| 8119 C | GROUND MOUNTED CABINET FOUNDATION |
| 8120 J | PA85 AND PA90 POLE FOUNDATION |
| 8121 C | TRANSFORMER BASE WITH POLE BASE |
| 8122 C | PEDESTAL AND PEDESTAL BASE |
| 8123 C | POLE AND MAST ARM |
| * 8124 D | 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

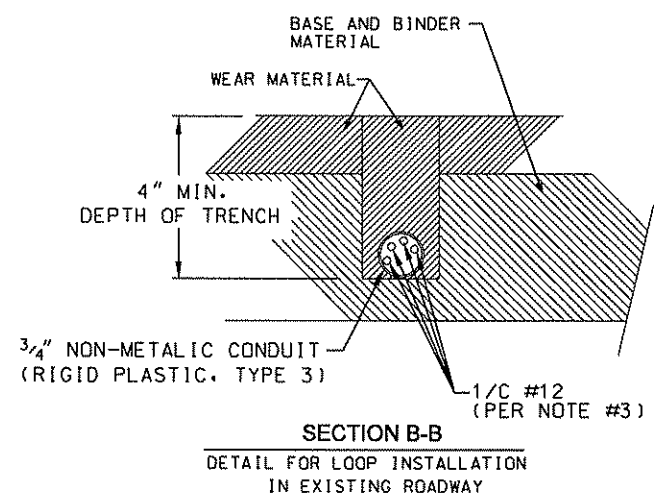
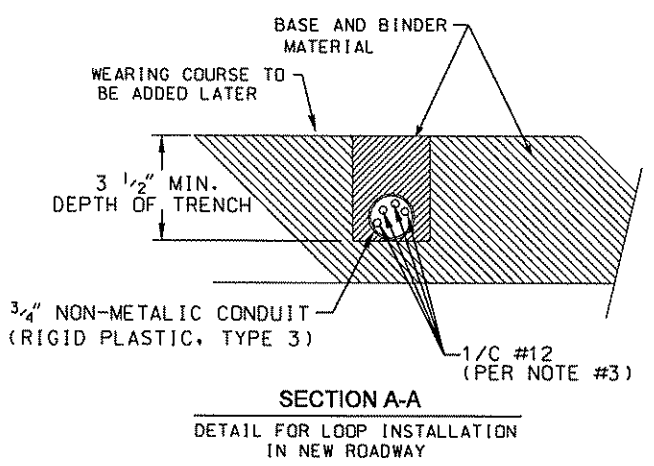


LOOP DETECTOR DETAIL 'A'
(LOOP PHASING FOR SINGLE CONNECTION)

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

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

- 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.



| | | |
|---------------------|---------|-------------|
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| CHECKED BY: RBB | 10/4.05 | |
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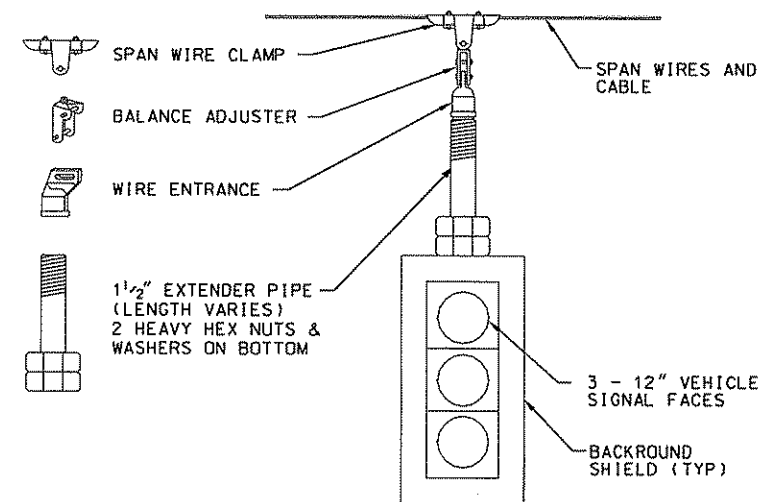
Radisson Road (CSAH 52 / C.R. 52) & 109th Avenue (CSAH 12) Blaine, Anoka County, Minnesota

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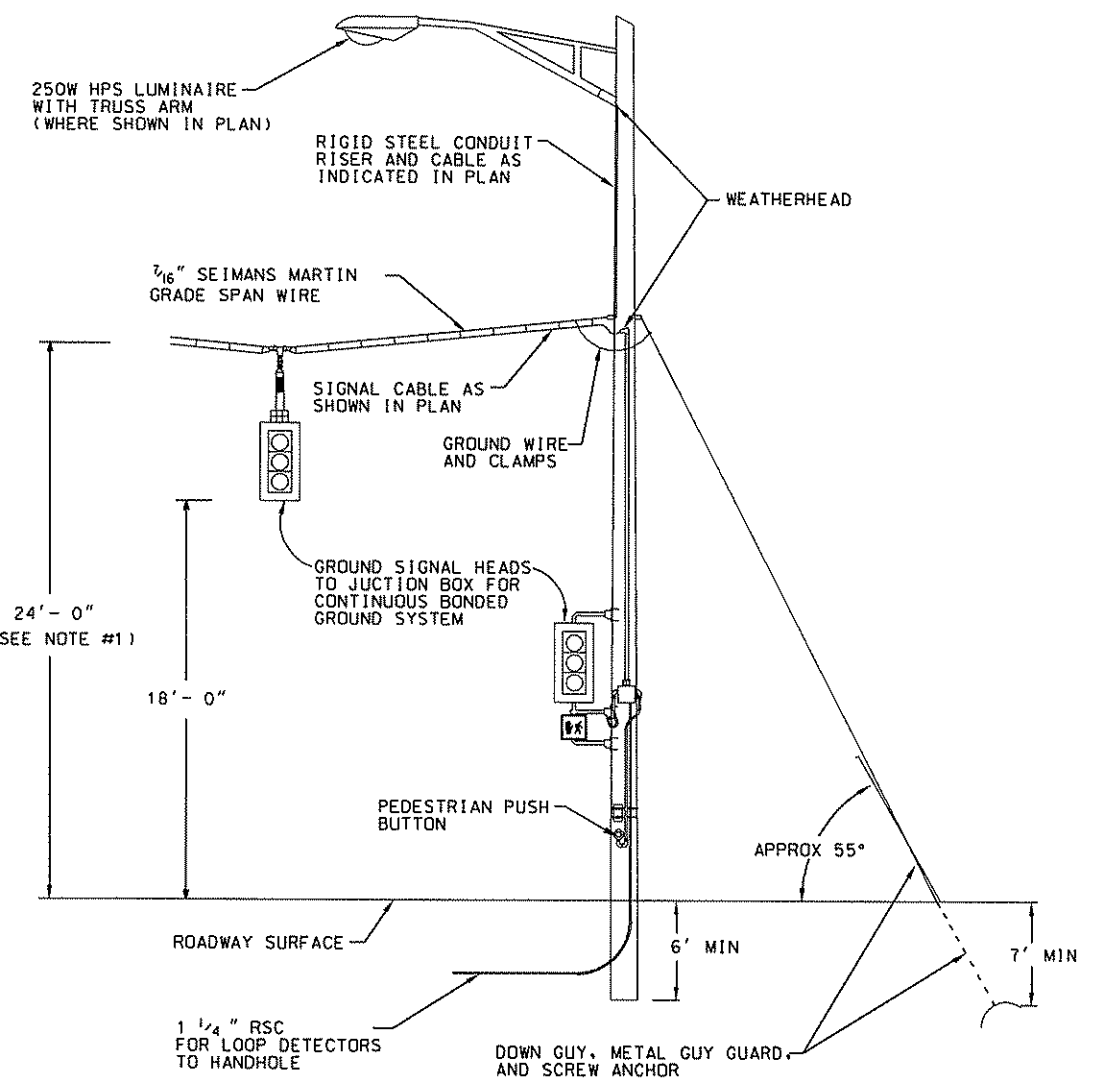


INFRASTRUCTURE - ENGINEERS - PLANNERS

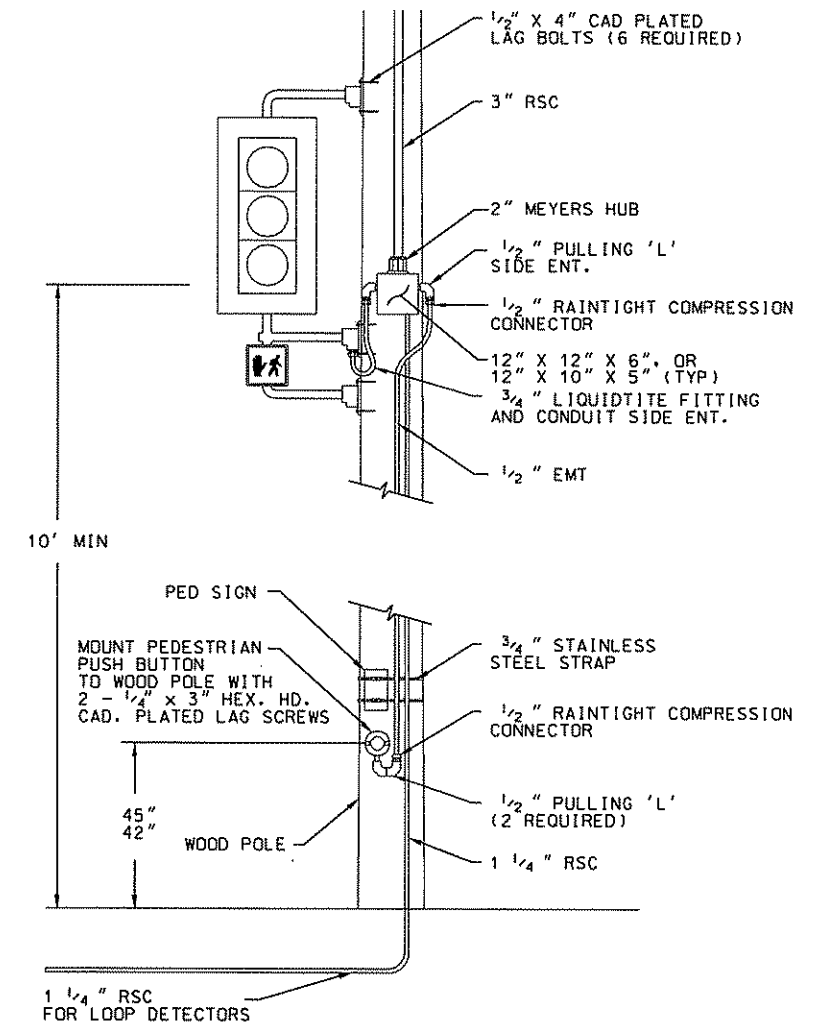
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SPAN WIRE MOUNTING DETAIL



TEMPORARY POLE DETAIL



NOTES:
 1) 24' CLEARANCE IS REQUIRED ON ALL MOVING ROUTES.

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Ronald B. Bray
 RONALD B. BRAY, P.E.
 DATE: 3/23/97 REG. NO. 18327

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