

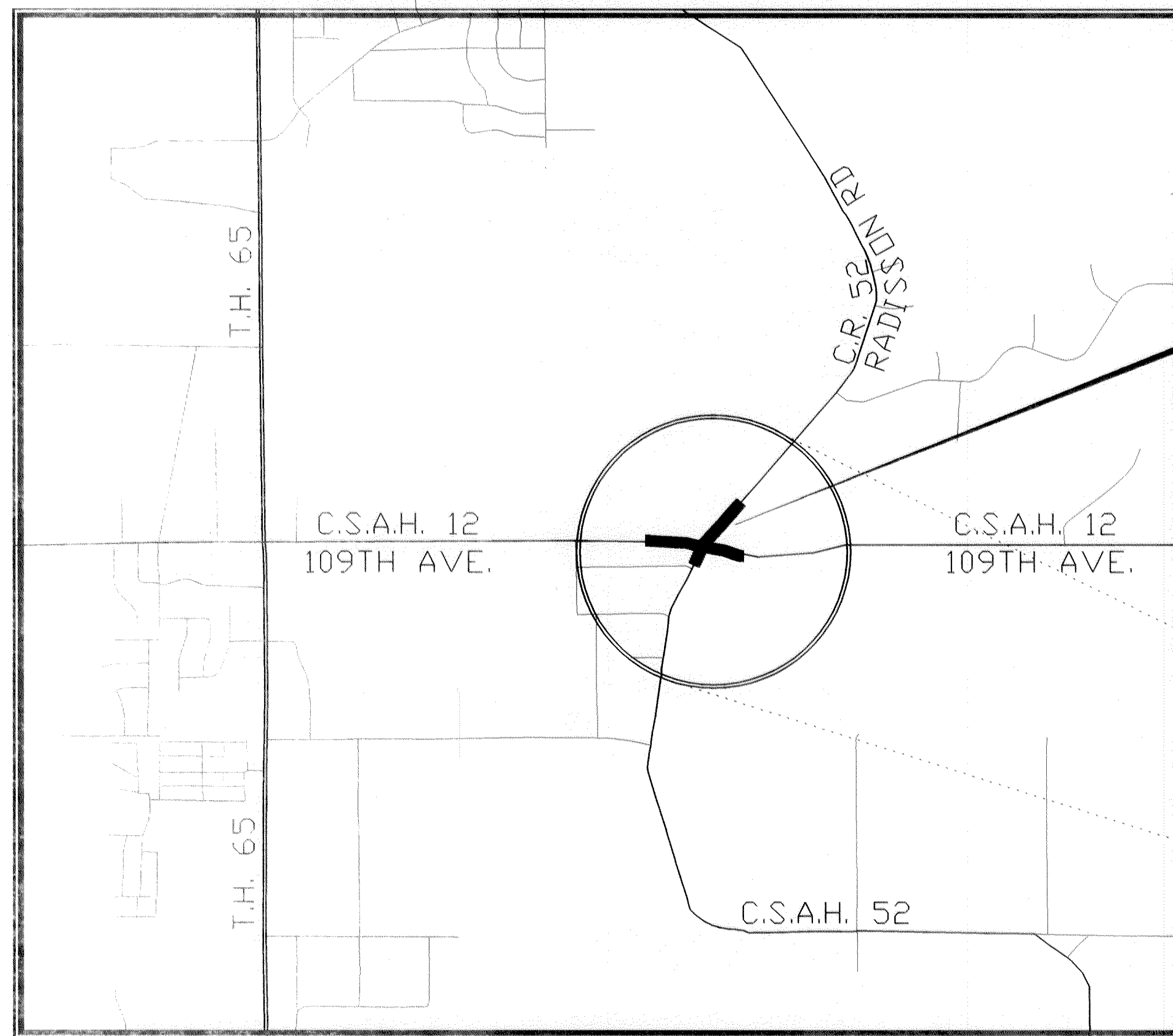
MINNESOTA DEPARTMENT OF TRANSPORTATION

ANOKA COUNTY

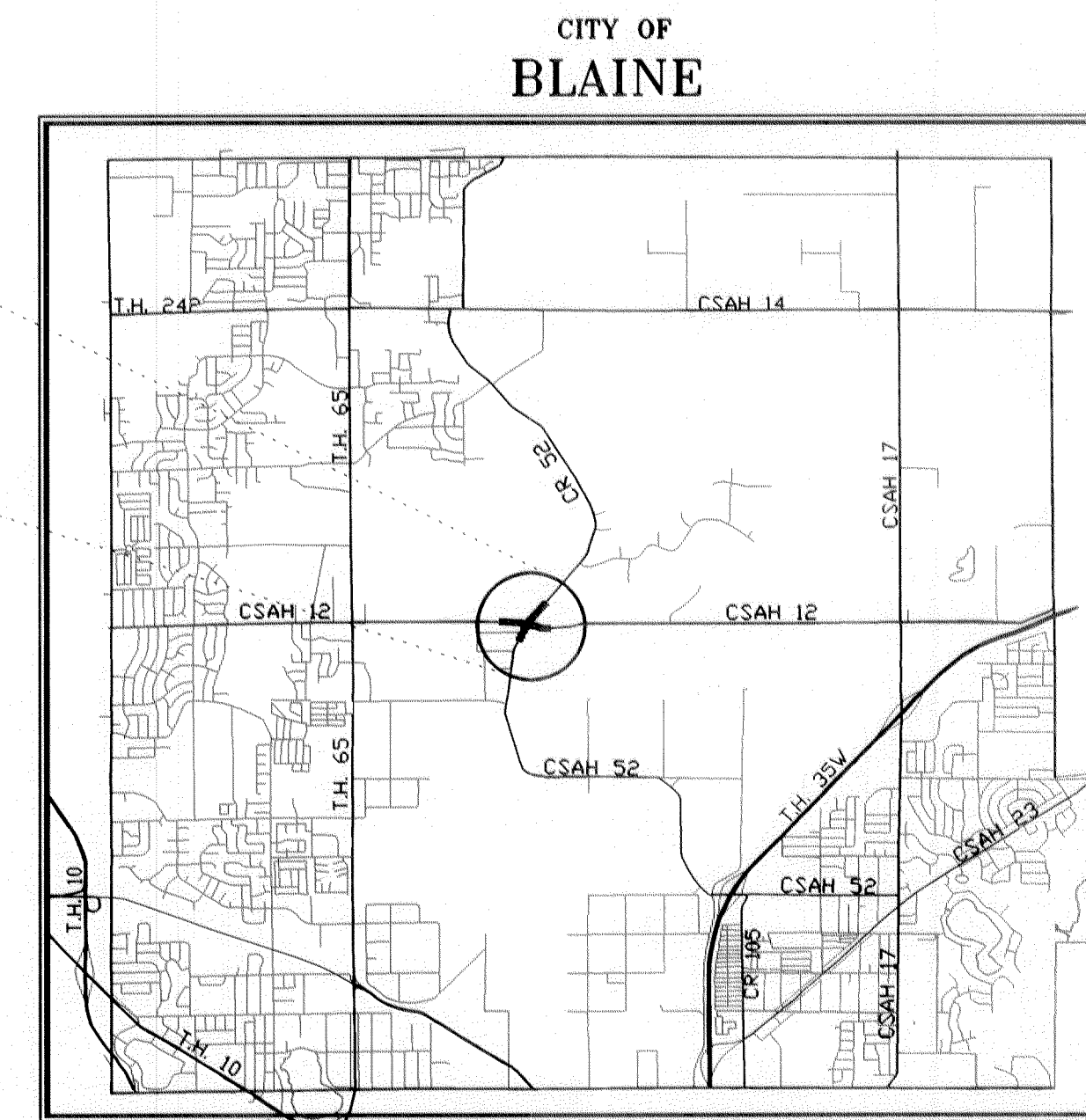
CONSTRUCTION PLAN FOR ROAD WIDENING AND TRAFFIC SIGNAL SYSTEM LOCATED ON INTERSECTION C.S.A.H. 12 AND C.R. 52

WIDENING AND OVERLAY (C.S.A.H. 12)
 COUNTY PROJ. NO. 96-18-12
 GROSS LENGTH 639 FEET 0.121 MILES
 BRIDGES-LENGTH 0 FEET 0 MILES
 EXCEPTIONS-LENGTH 0 FEET 0 MILES
 NET LENGTH 639 FEET 0.121 MILES

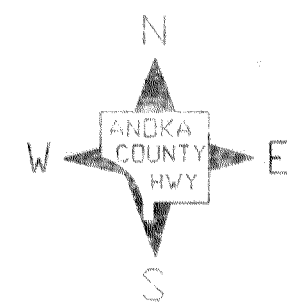
WIDENING (C.R. 52)
 COUNTY PROJ. NO. 96-18-12
 GROSS LENGTH 370 FEET 0.070 MILES
 BRIDGES-LENGTH 0 FEET 0 MILES
 EXCEPTIONS-LENGTH 0 FEET 0 MILES
 NET LENGTH 370 FEET 0.070 MILES



VICINITY MAP
1" = 1000'



INDEX MAP
1" = 5000'



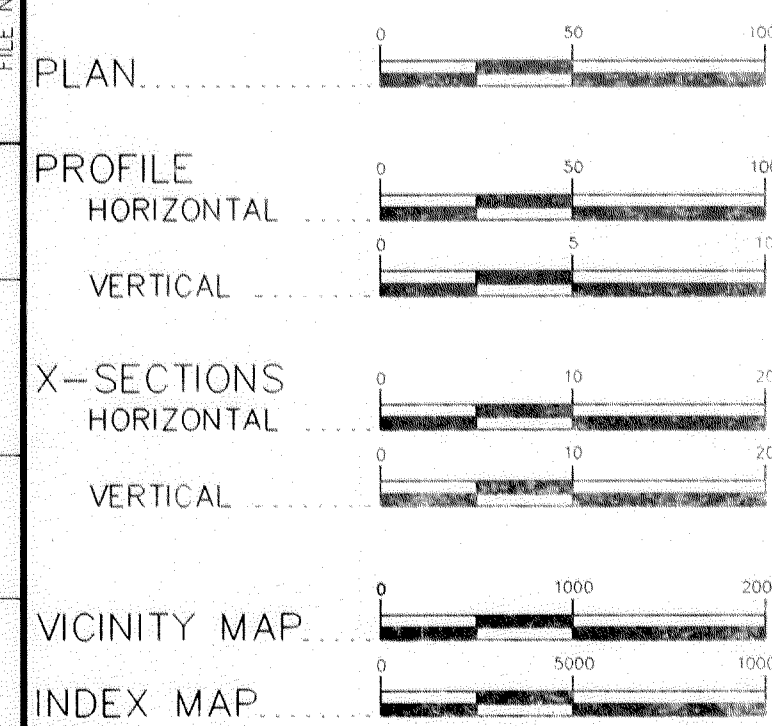
PLAN SYMBOLS

- COUNTY LINE
- TOWNSHIP OR RANGE LINE
- SECTION LINE
- QUARTER LINE
- SIXTEENTH LINE
- RIGHT OF WAY LINE
- SLOPE EASEMENT
- PRESENT RIGHT OF WAY
- PROPERTY LINE
- CORPORATE OR CITY LIMITS
- RETAINING WALL
- RAILROAD
- RAILROAD RIGHT OF WAY
- RIVER OR CREEK
- DRAINAGE DITCH
- CULVERT
- DROP INLET
- GAUD RAIL
- BARBED WIRE FENCE
- WOVEN WIRE FENCE
- CHAIN LINK FENCE
- WOOD FENCE
- STONE WALL OR FENCE
- HEDGE
- LOWLAND
- TIMBER
- ORCHARD
- BRUSH
- NURSERY
- CATTLE GAUD
- OVERPASS (Highway Over)
- UNDERPASS (Highway Under)
- BRIDGE
- BUILDING (One Story Frame)
- F-FRAME C-CONCRETE
- S-STONE T-TILE
- B-BRICK ST-STUCCO
- RAILROAD CROSSING BELL
- RAILROAD CROSSING GATE
- MANHOLE
- CATCH BASIN
- FIRE HYDRANT
- CAST IRON MONUMENT
- IRON PIN
- GRAVEL PIT
- SAND PIT
- BORROW PIT
- ROCK QUARRY
- GEOTECHNICAL BORINGS

UTILITY SYMBOLS

- POWER POLE LINE
- TELEPHONE OR TELEGRAPH POLE LINE
- JOINT TELEPHONE & POWER ON POWER POLES
- ON TELEPHONE POLES
- ANCHOR
- STEEL TOWER
- STREET LIGHT
- PEDESTAL (Cable Terminal)
- GAS MAIN
- WATERMAIN
- 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

SCALES



REVISIONS	DATE	BY

MINN. PROJ. NO.
 MINN. PROJ. NO. LOCAL FUNDS

GOVERNING SPECIFICATIONS

THE 1988 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" AS AMENDED BY THE MAY 2, 1994 SUPPLEMENTAL SPECIFICATIONS SHALL GOVERN.

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	CONSTRUCTION PLAN
3-8	TRAFFIC SIGNAL PLANS

THIS PLAN CONTAINS 8 SHEETS

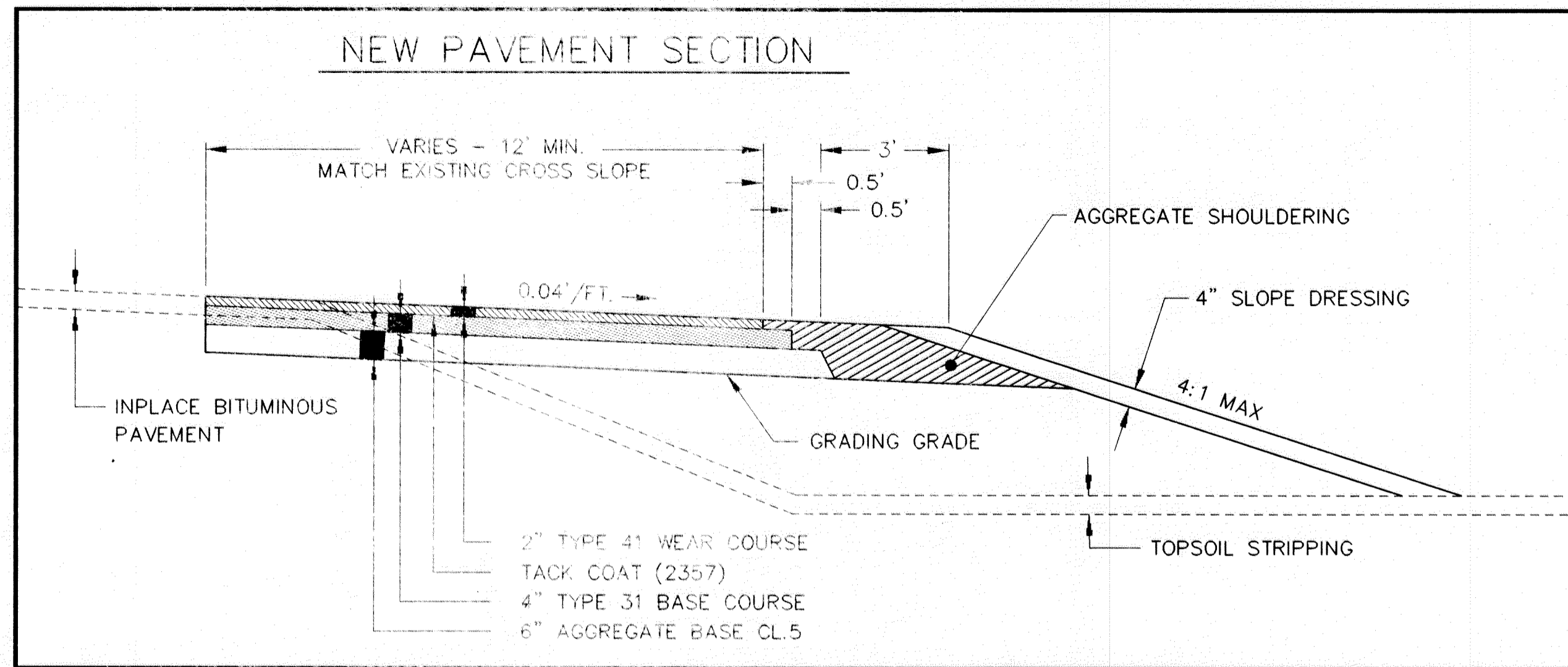
DESIGN DESIGNATION

	CSAH/CR 52	CSAH 12
ADT (1996)=	8,551	7,243
Proj. ADT (2016)=	14,537	12,313
Proj. HCA DT (2016)=	1,090	923

Functional Classification ARTERIAL
 No. of Traffic Lanes 2 No. of Parking Lanes 0
 Design Speed 55 MPH
 Based on Stopping Sight Distance
 Height of eye 3.5' Height of object 0.5'
 Design Speed not achieved at: NA
 STA TO STA MPH
 STA TO STA MPH
 STA TO STA MPH

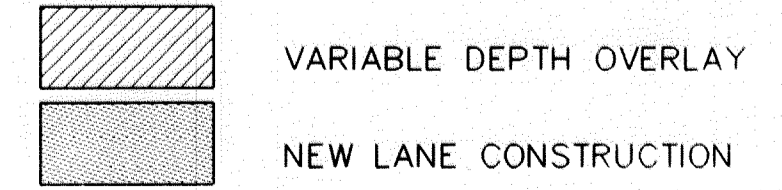
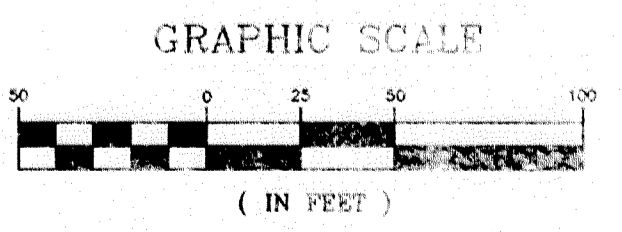
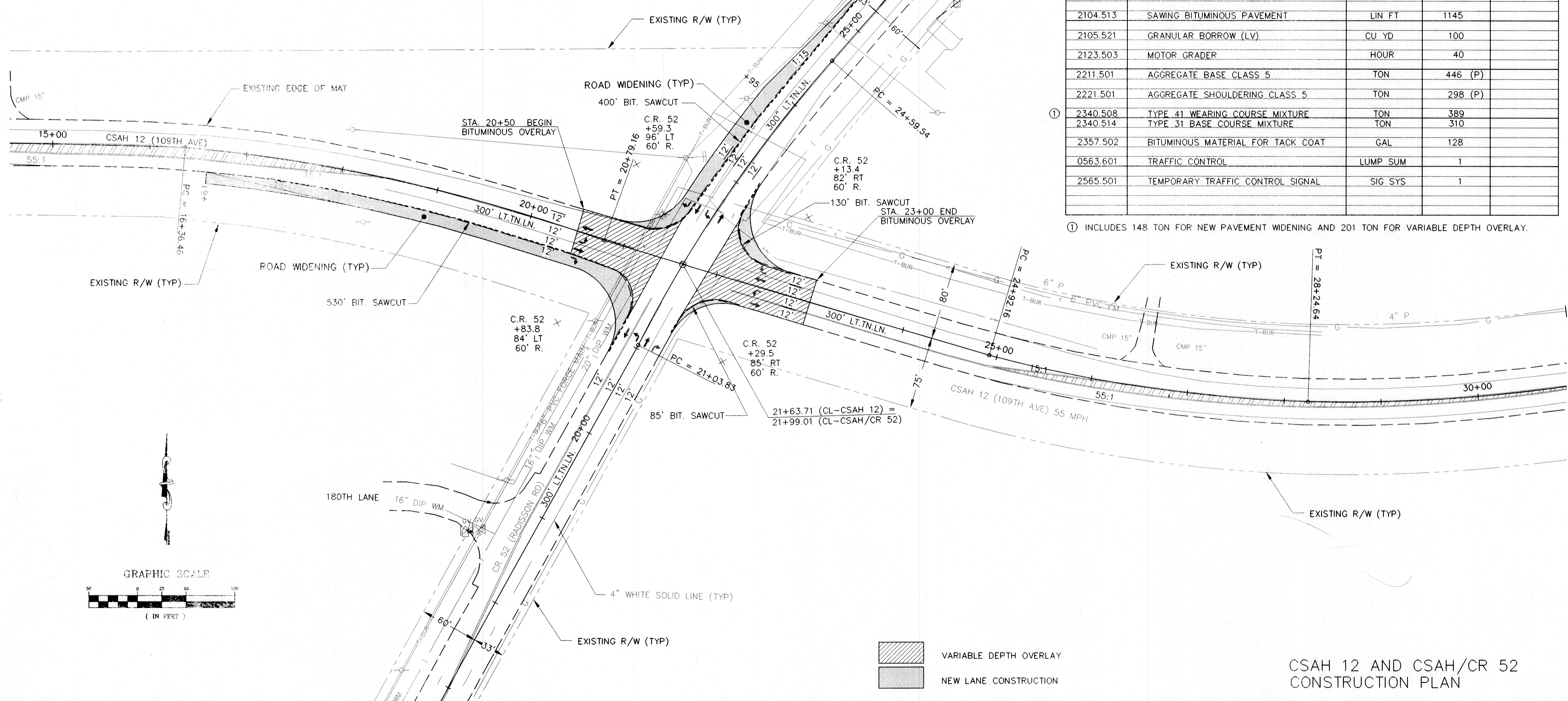
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

DATE 5/14/97 REG. NO. 20235 ENGR. *Charles J. Smith* ASSC. COUNTY ENGINEER
 DESIGN SQUAD M. NAJ
 Recommended For Approval *Mike Bender* TRAFFIC ENGINEER
 Approved June 18, 1997 *Charles J. Smith* ANOKA COUNTY ENGINEER
 Approved June 18, 1997 *Charles J. Smith* CITY OF BLAINE ENGINEER



ITEM NO.	ITEM	UNIT	ANOKA COUNTY	
			C. P. 96-18-12	
			ESTIMATED	FINAL
2021.501	MOBILIZATION	LUMP SUM	1	
2102.502	PAVEMENT MARKING REMOVAL	LIN FT	7200	
2104.513	SAWING BITUMINOUS PAVEMENT	LIN FT	1145	
2105.521	GRANULAR BORROW (LV)	CU YD	100	
2123.503	MOTOR GRADER	HOURL	40	
2211.501	AGGREGATE BASE CLASS 5	TON	446 (P)	
2221.501	AGGREGATE SHOULDERING CLASS 5	TON	298 (P)	
① 2340.508	TYPE 41 WEARING COURSE MIXTURE	TON	389	
2340.514	TYPE 31 BASE COURSE MIXTURE	TON	310	
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GAL	128	
0563.601	TRAFFIC CONTROL	LUMP SUM	1	
2565.501	TEMPORARY TRAFFIC CONTROL SIGNAL	SIG SYS	1	

① INCLUDES 148 TON FOR NEW PAVEMENT WIDENING AND 201 TON FOR VARIABLE DEPTH OVERLAY.

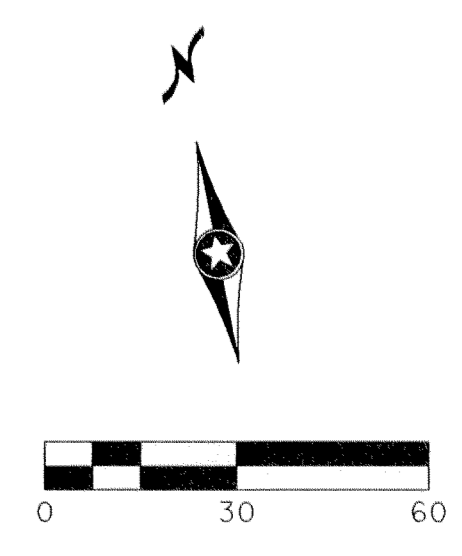
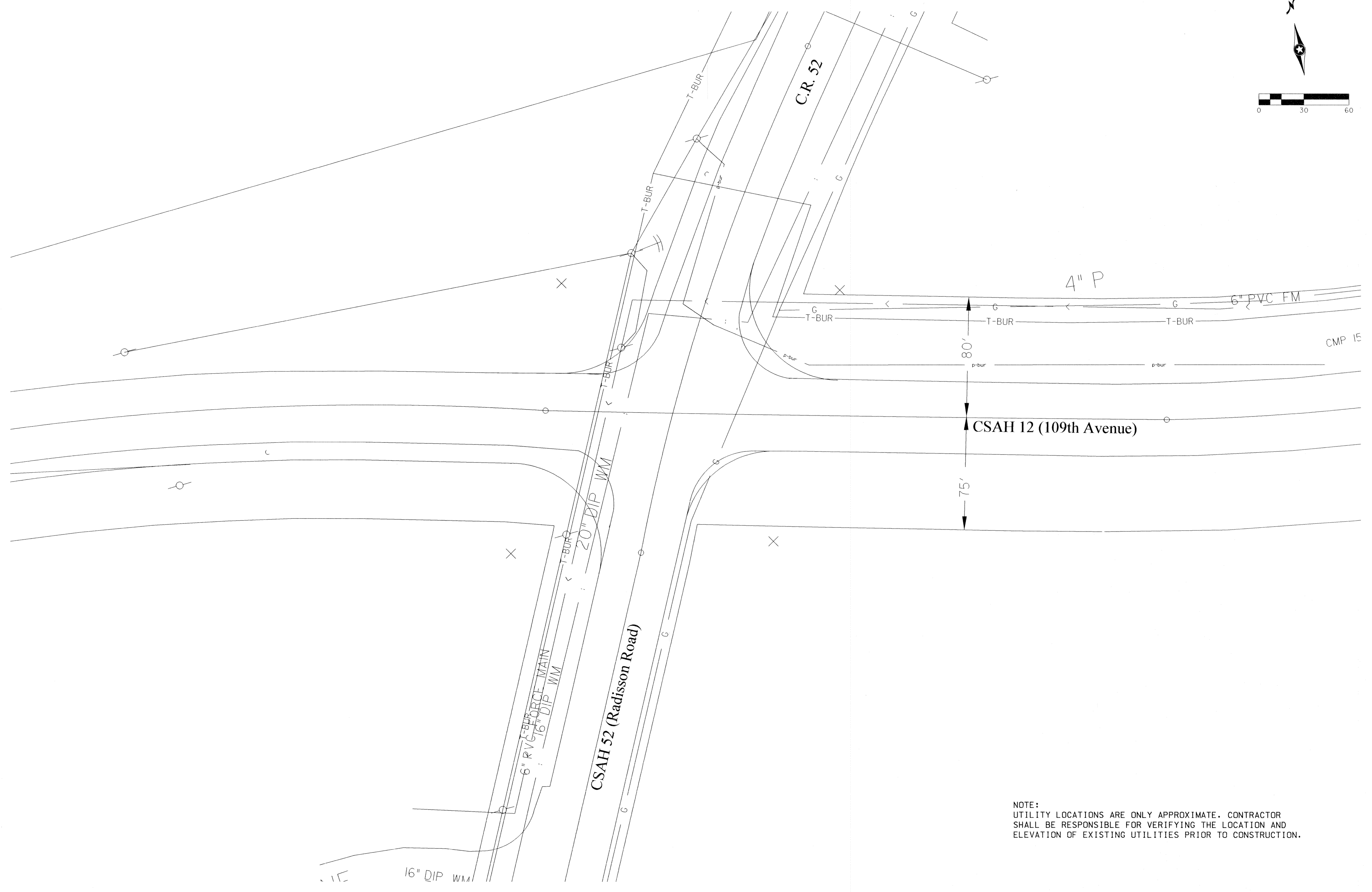


CSAH 12 AND CSAH/CR 52
CONSTRUCTION PLAN

REVISIONS	DATE	BY

FILE NAME: S:\SDSKPROJ\961812\WORK\961812.DWG MN (05-02-97)

F:\044_00\044_05\cccd\044util.dgn



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

WSB
 & Associates, Inc.
 INFRASTRUCTURE - ENGINEERS - PLANNERS

350 Westwood Lake Office
 8441 Wayzata Boulevard
 Minneapolis, MN 55426
 612-541-4800
 FAX 541-1700

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

WHERE SHOWN THAT THIS PLAN OPERATES UNDER THE PROVISIONS OF THE REPORT THAT I AM A FULLY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA
Ronald B. Bray
 RONALD B. BRAY, P.E.
 DATE: 3/2/97 REG. NO.: 13327

SCALE:	AS NOTED	EXPLANATION
PLAN BY:	DESIGN BY:	
CHEKED BY:	RBB	
PROJECT NO:	1044_05	
RECORD COPY BY:		
DATE:		

REVISION NO.	DATE	EXPLANATION

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'

- 1) CALL AND EXTEND.
- 2) CALL ONLY
- 3) EXTEND ONLY
- 4) CALL ONLY DENS
- 5) DELAY CALL ONLY
- 6) DELAY CALL ONLY DENSITY
- 7) DELAY CALL IMMEDIATE EXTEND
- 8) CARRY OVER
- 9) ADVISORY

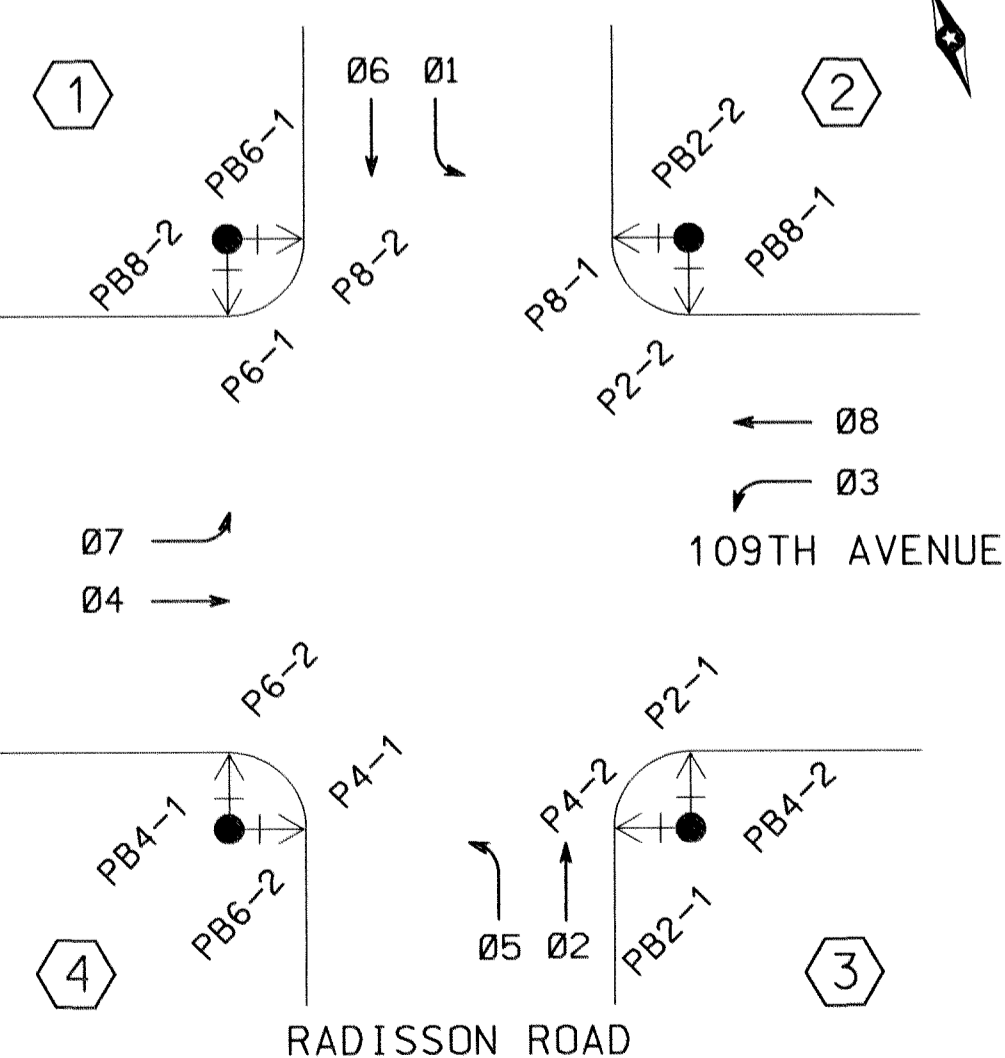
NOTES:

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

- 1) 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)

- 4) 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
2-3/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
3-5/C#12
1-3/C#12 (LUM)
3-2/C#14

CONTROLLER PHASING PEDESTRIAN INDICATIONS AND PUSH BUTTONS

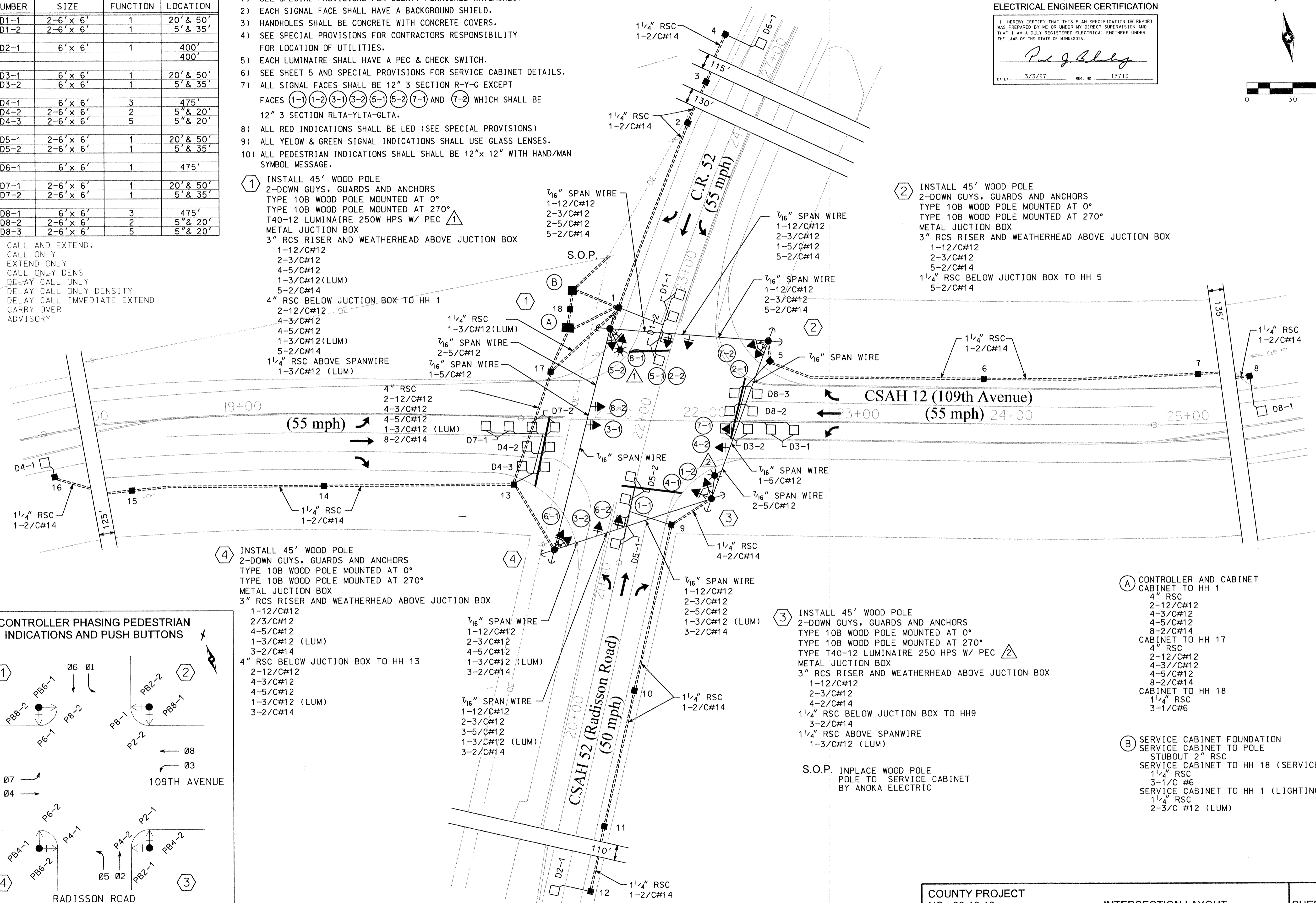
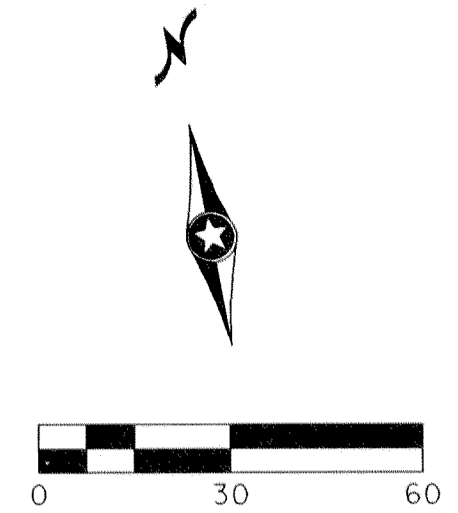


ELECTRICAL ENGINEER CERTIFICATION

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.

Paul J. Blumley

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



- 2) 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
5-2/C#14
1 1/4" RSC BELOW JUCTION BOX TO HH 5
5-2/C#14

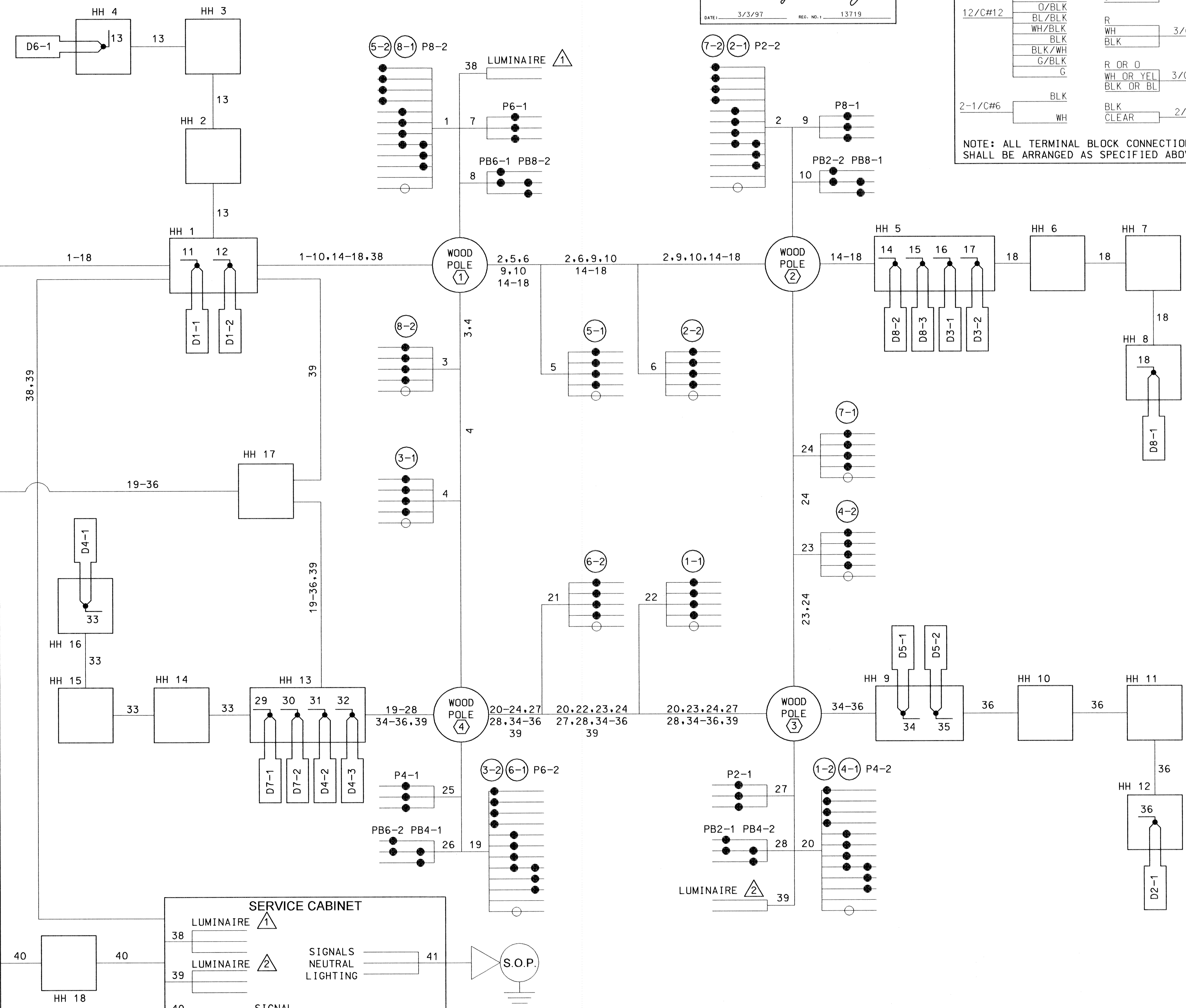
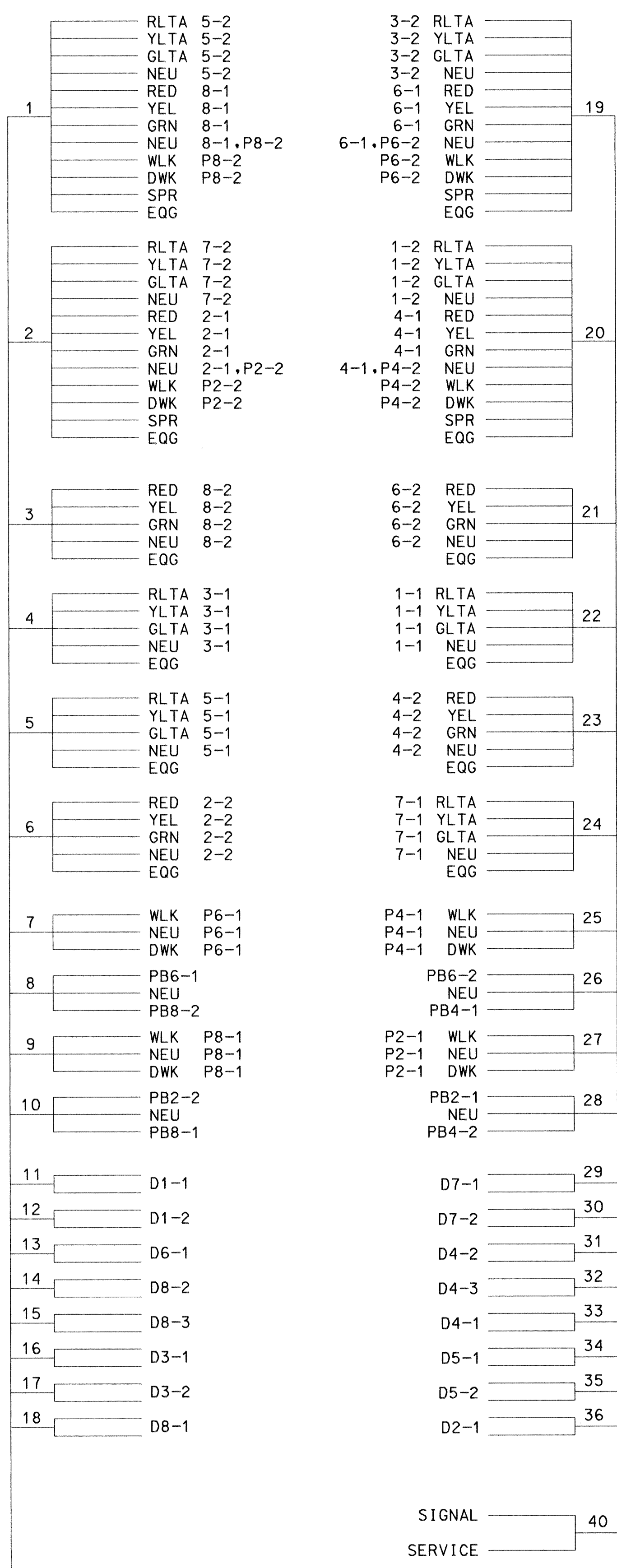
- 3) INSTALL 45' WOOD POLE
2-DOWN GUYS, GUARDS AND ANCHORS
TYPE 10B WOOD POLE MOUNTED AT 0°
TYPE 10B WOOD POLE MOUNTED AT 270°
T40-12 LUMINAIRE 250 WPS W/ PEC
METAL JUCTION BOX
3" RCS RISER AND WEATHERHEAD ABOVE JUCTION BOX
1-12/C#12
2-3/C#12
4-2/C#14
1 1/4" RSC BELOW JUCTION BOX TO HH9
3-2/C#14
1 1/4"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

f:\1044.00\1044.05\Lead\1044.dgn

CONTROLLER CABINET



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Paul J. Blodgett
 DATE: 3/3/97 REG. NO.: 13719

CONDUCTOR COLOR CODING

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

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

350 Westwood Lake Office
 8441 Wiyazata Boulevard
 Minneapolis, MN 55425
 612-541-4800
 FAX 541-1700

WSB & Associates, Inc.
 INFRASTRUCTURE - ENGINEERS - PLANNERS

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

DATE: 3/3/97 REG. NO.: 13327

REVISION NO. DATE

AS NOTED

SCALE: AS NOTED

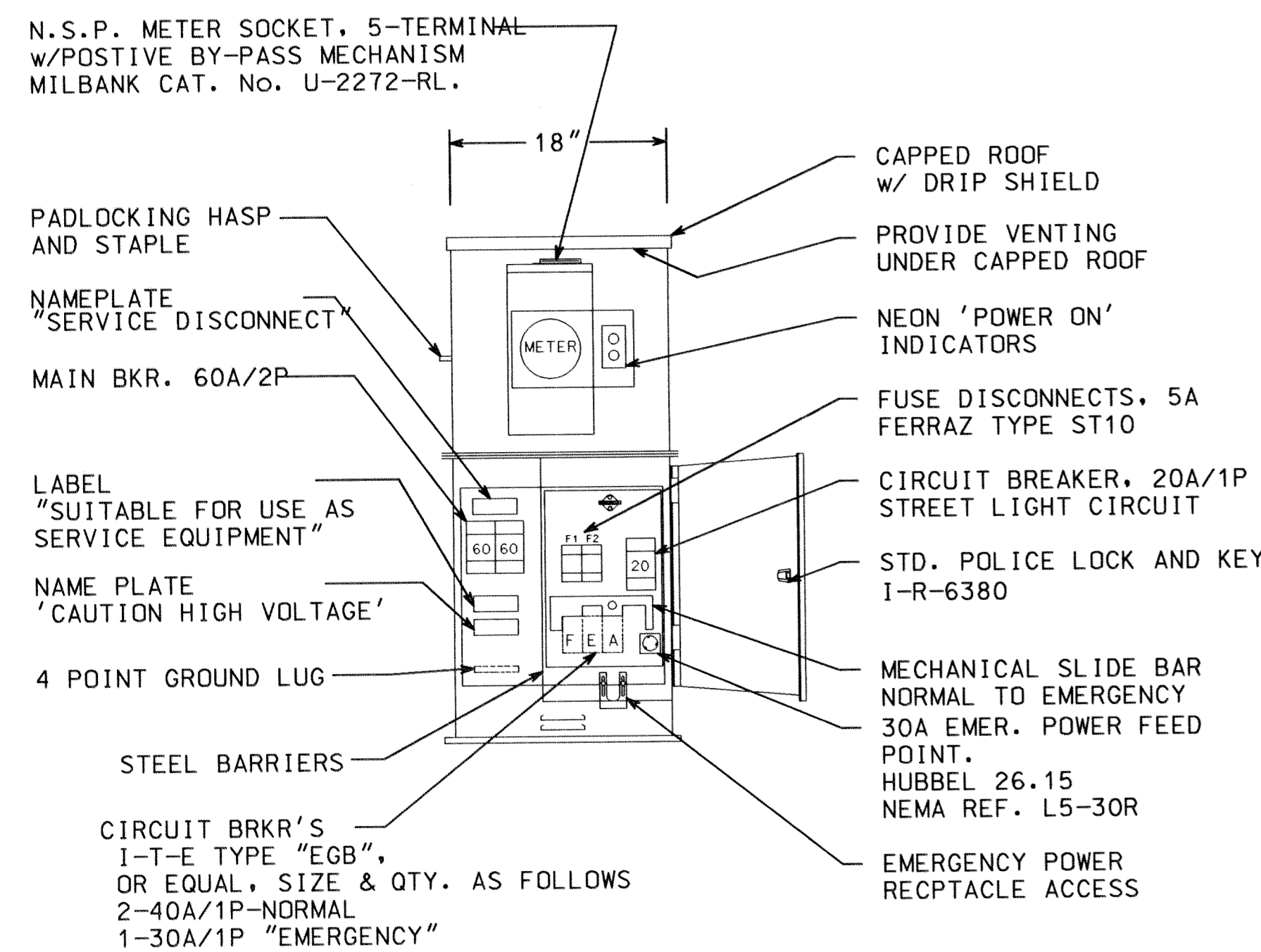
PLAN BY: CHW

CHECKED BY: RBH

DESIGN BY: CTR

PROJECT NO: 1044.05

RECORD COPY BY: DATE

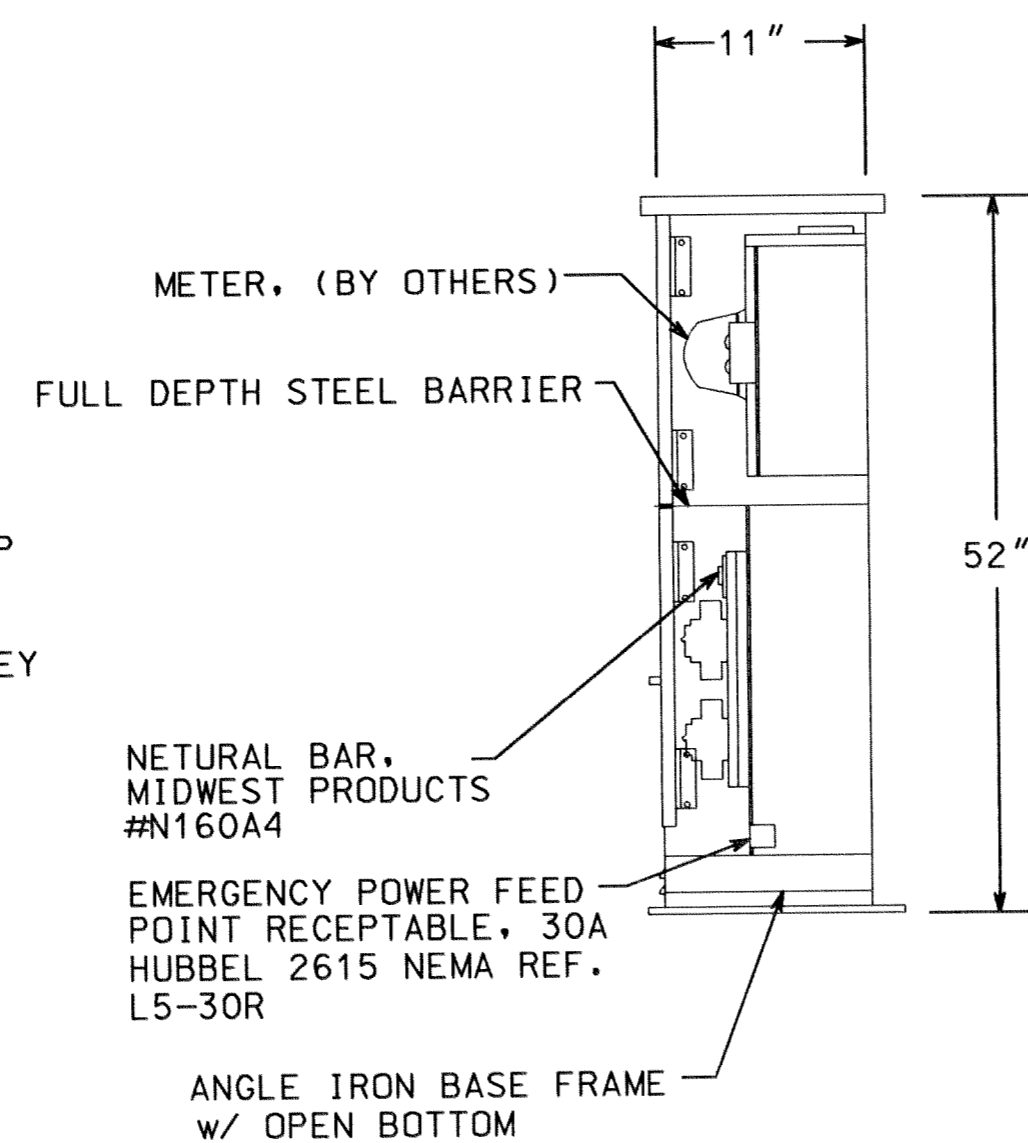


FRONT ELEV

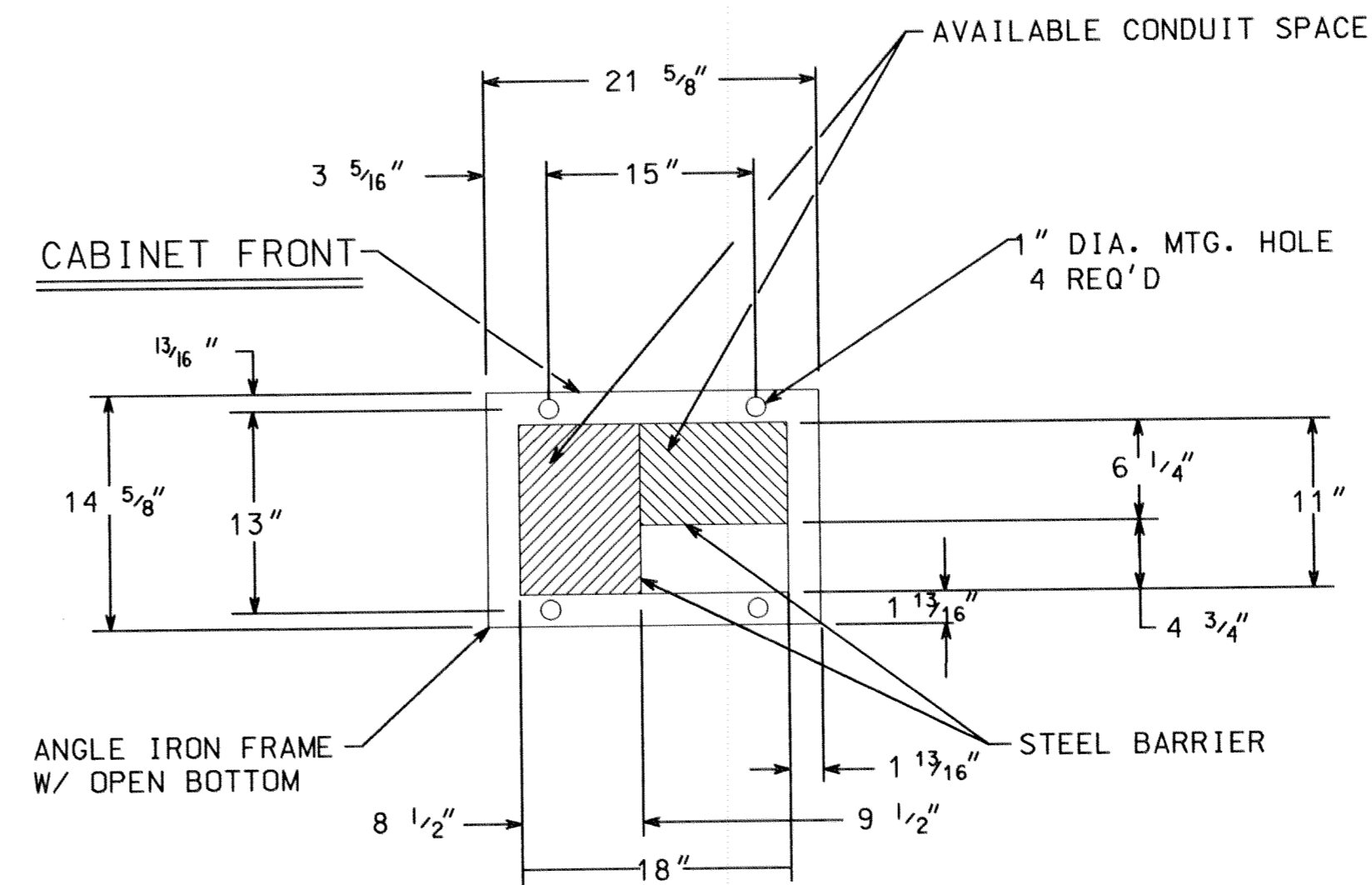
CONSTRUCTION NOTES

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

SIGNAL SERVICE CABINET

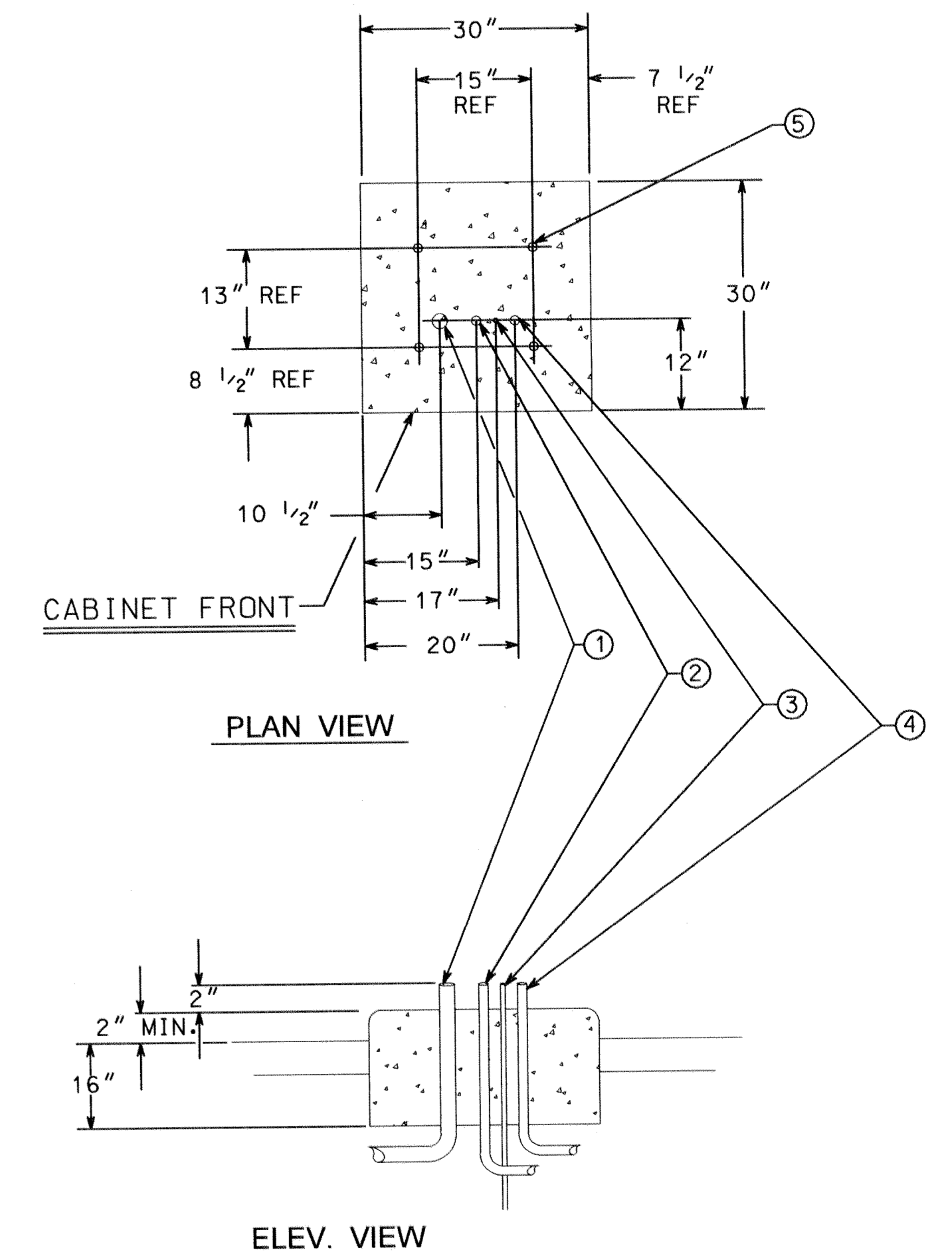


RIGHT SIDE ELEV



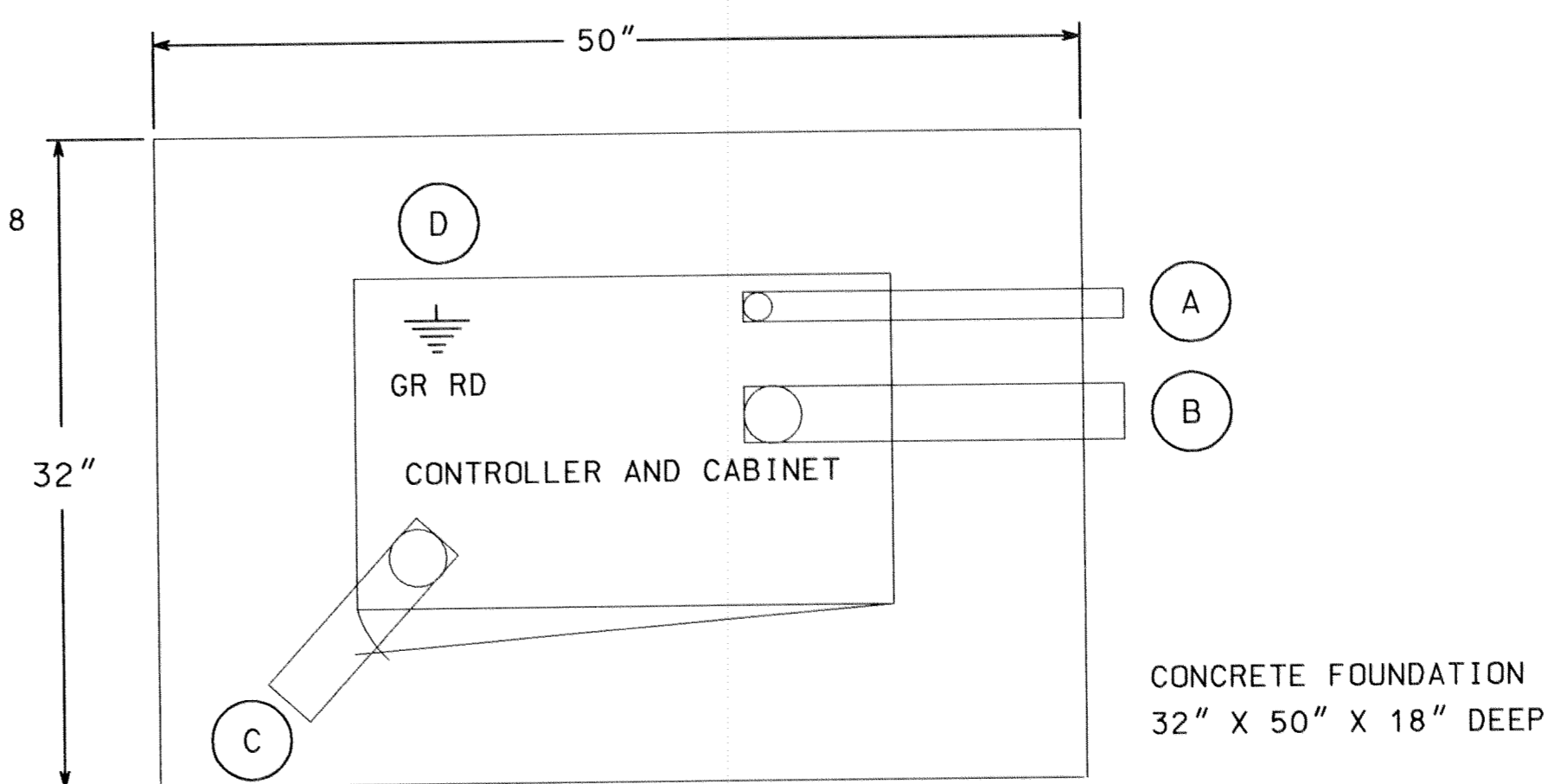
BASE VIEW

SERVICE CABINET FOUNDATION



- 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)

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



CONTROLLER CABINET PAD LAYOUT

NO SCALE

SEE INTERSECTION LAYOUT FOR CONDUIT & CABLE INFORMATION

ELECTRICAL ENGINEER CERTIFICATION

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Ronald B. Bray
DATE: 3/3/97 REG. NO.: 13719

REVISION NO.	DATE	EXPLANATION
AS NOTED		

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
612-541-4800
FAX 541-1700



ABBREVIATIONS

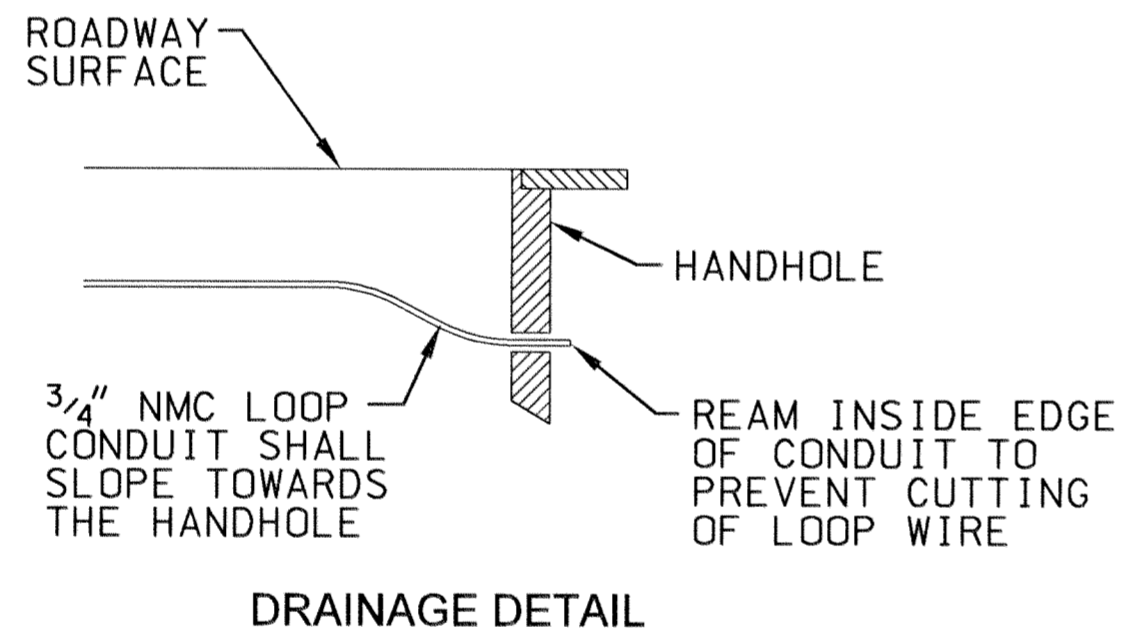
3-1(EG) SIGNAL HEAD PHASE "3" - NO. "1"	P1-(EG) PEDESTRIAN INDICATION PHASE "2"-NO. "1"
BR. GR. BARE GROUND	PB PUSH BUTTON
CH. SW. CHECK SWITCH	PB-2(EG) PUSH BUTTON PHASE "2"-NO. "1"
CLR CLEAR	PEC PHOTOELECTRIC CELL
D2-1(EG) DETECTOR PHASE "2" - NO. "1"	PED PEDESTRIAN
DWK DON'T WALK	R RED
EQG EQUIPMENT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

LEGEND OF SYMBOLS

CONTROLLER AND SERVICE EQUIP. NO's	(A)
SIGNAL BASE NO.	(1)
SIGNAL FACE NO.	(1-1)
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 - INPLACE	(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	(S)
MAST ARM AND LUMINAIRE - INPLACE	(S)
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

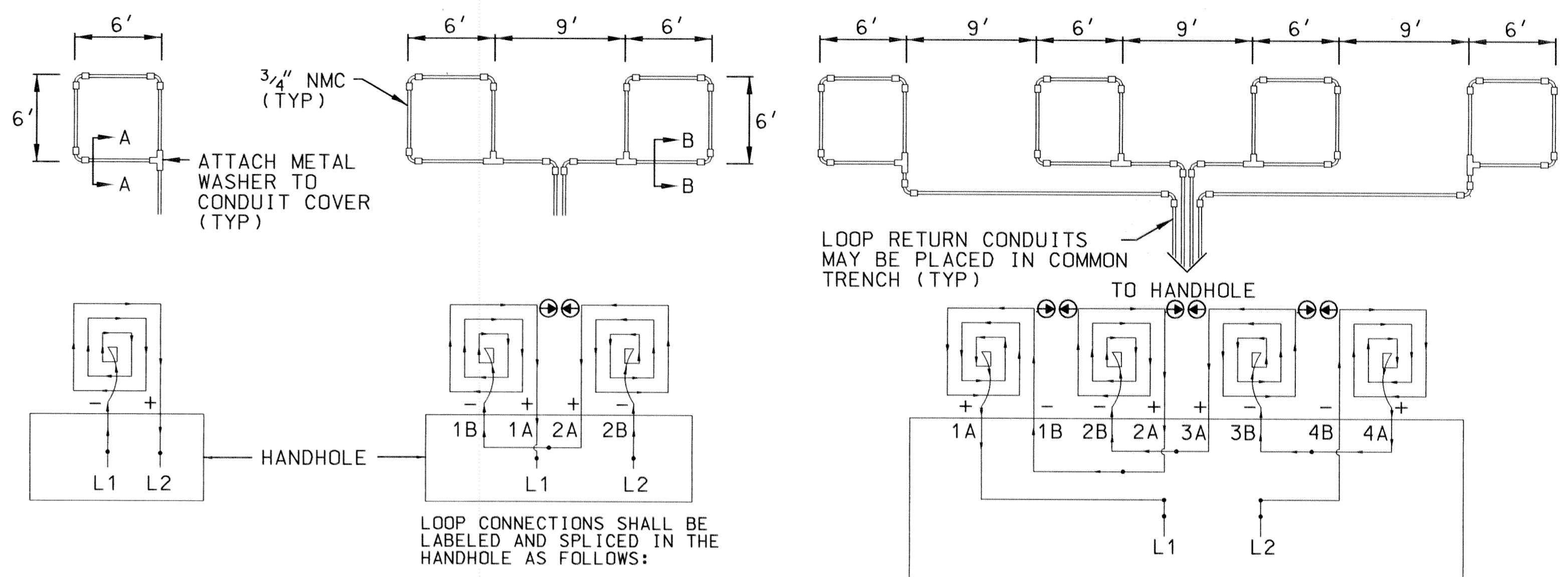
R	RED
O	ORANGE
BL	BLUE
WH	WHITE
R/BLK	RED WITH BLACK TRACER
O/BLK	ORANGE WITH BLACK TRACER
BL/BLK	BLUE WITH BLACK TRACER
WH/BLK	WHITE WITH BLACK TRACER
BLK	BLACK
BLK/WH	BLACK WITH WHITE TRACER
G/BLK	GREEN WITH BLACK TRACER
G	GREEN



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

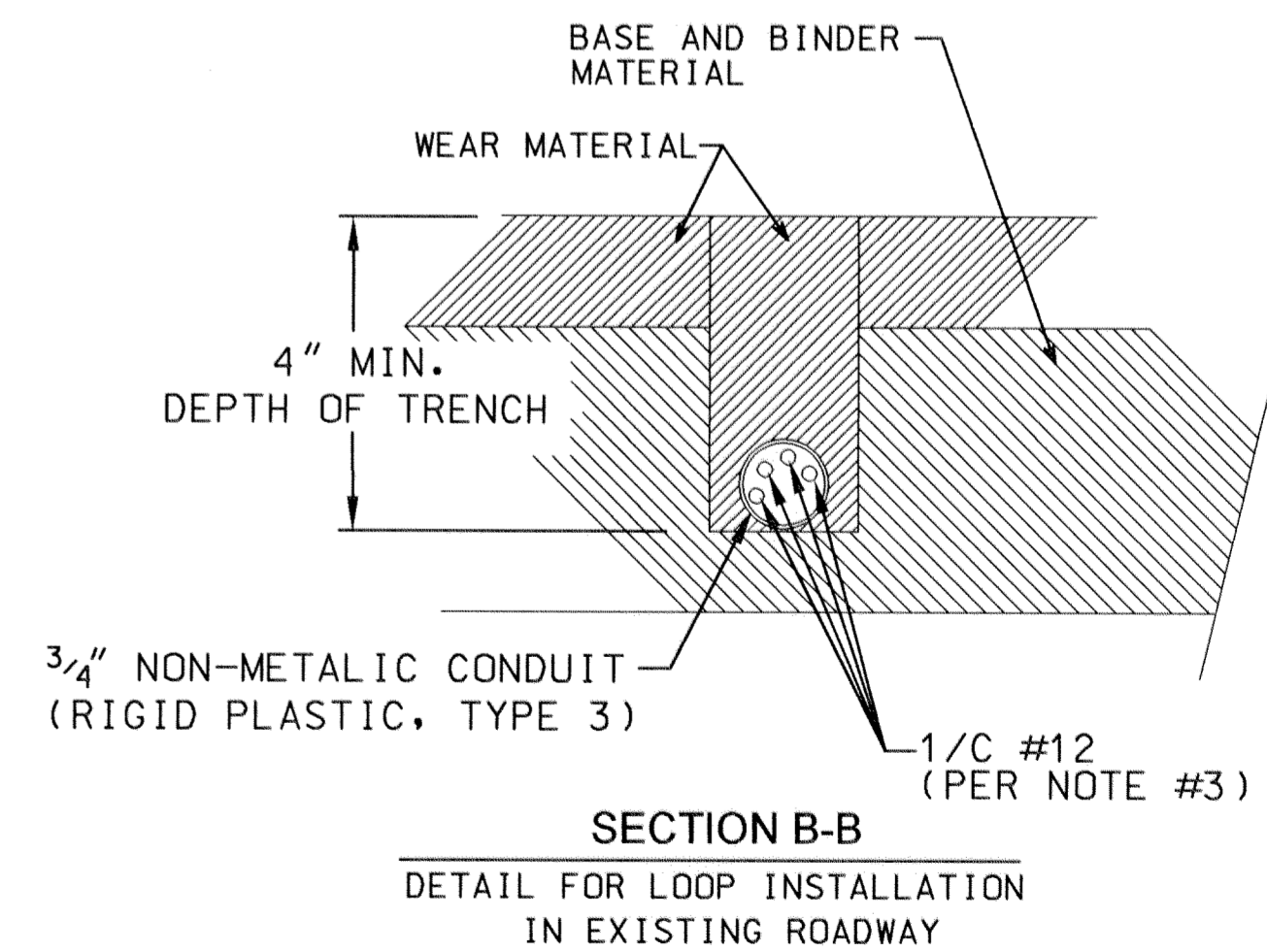
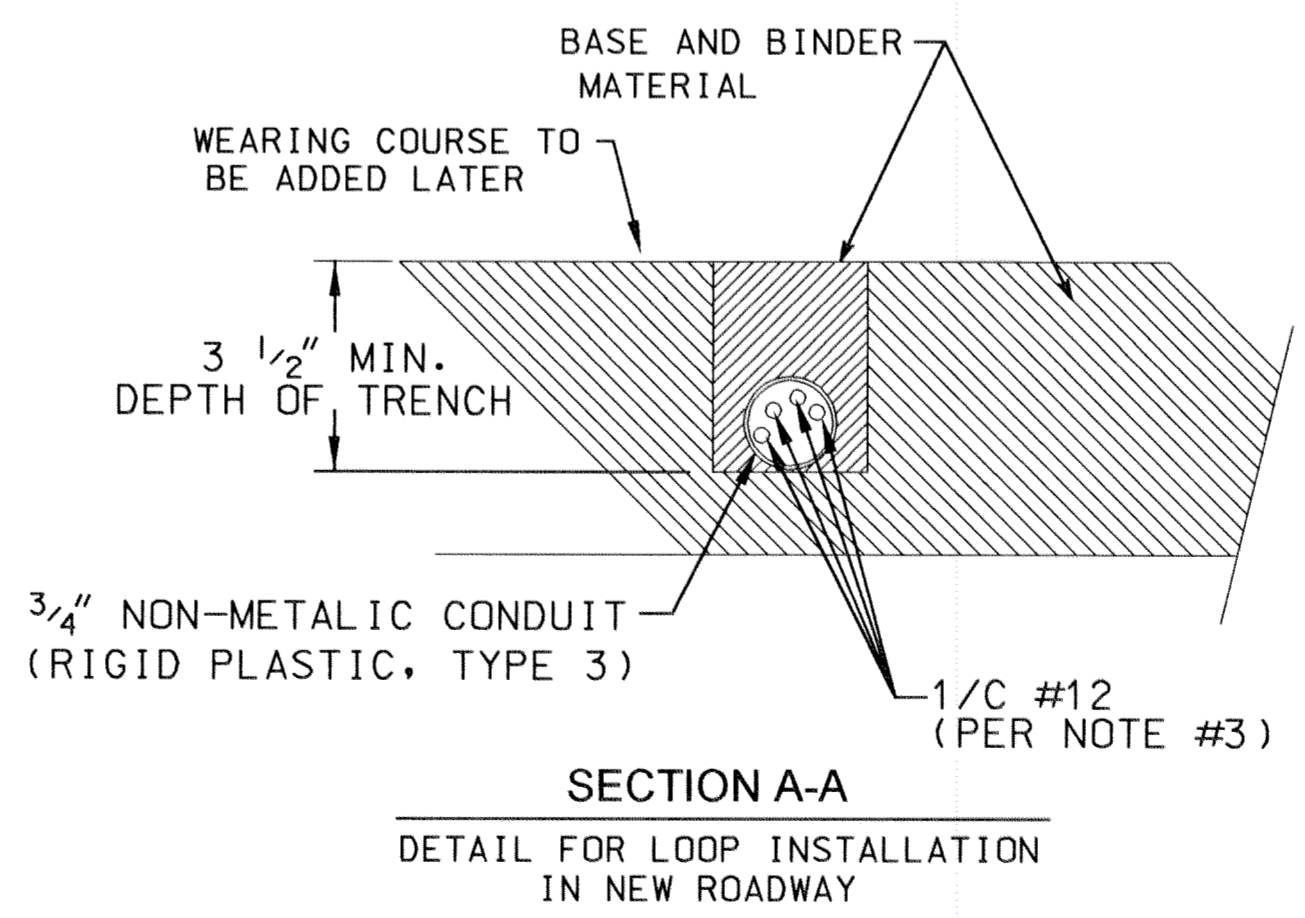
- L1 TO 1A
- 1B TO 2A
- 2B TO 3A
- 3B TO 4A
- 4B TO L2

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

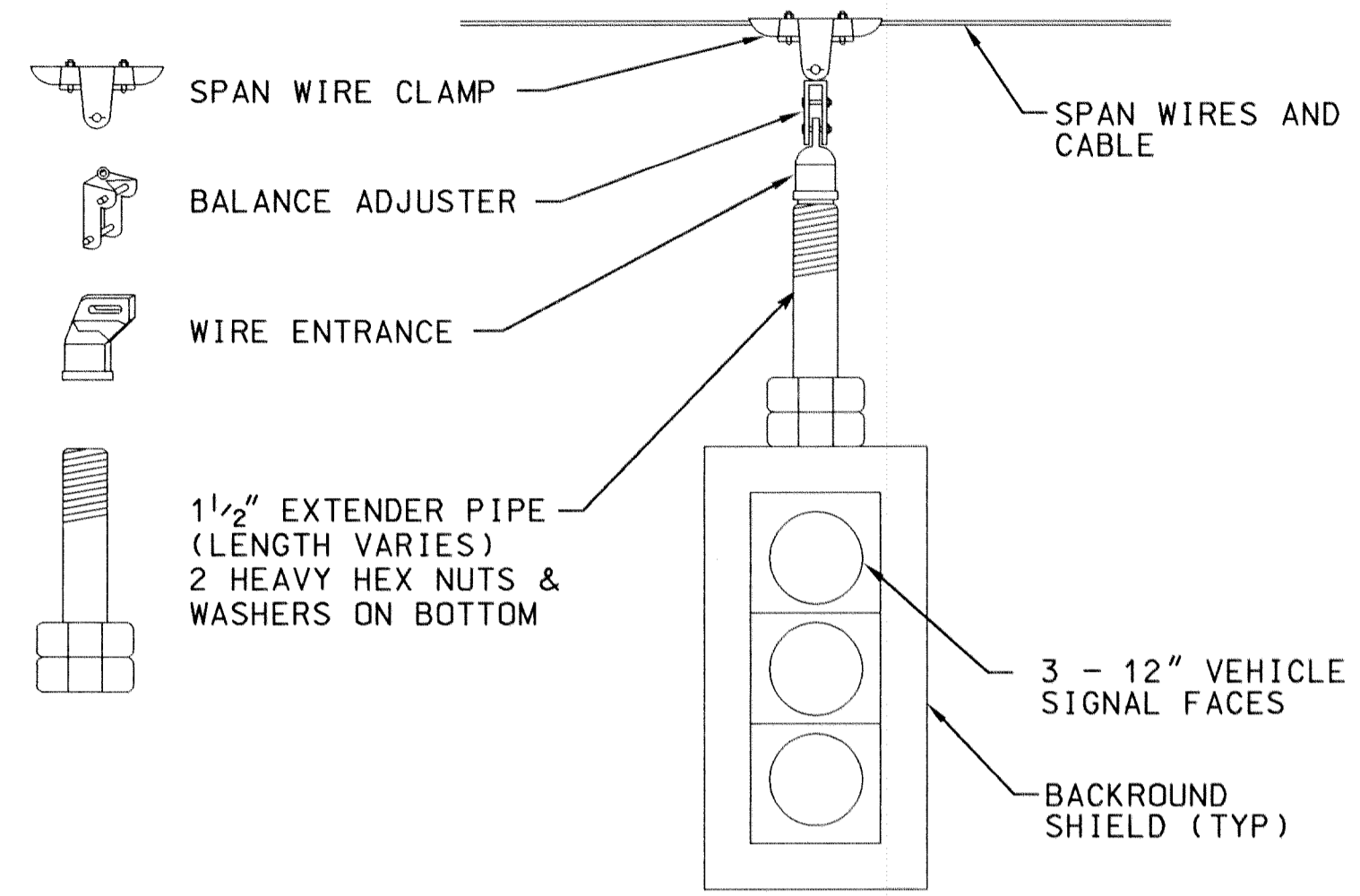
LOOP DETECTOR DETAIL 'C'
(LOOP PHASING FOR SERIES CONNECTION)

LOOP DETECTOR WIRING

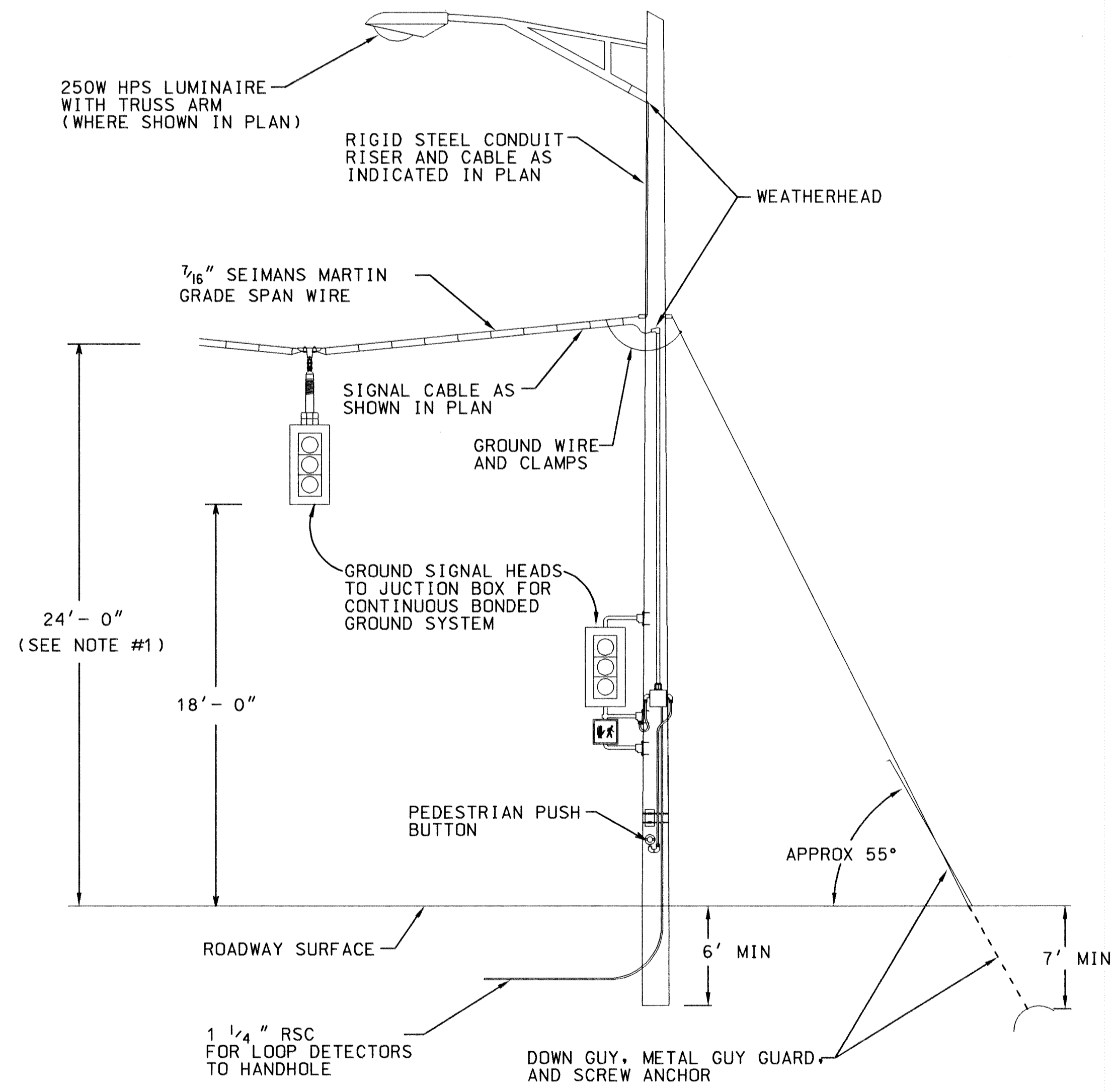
- 1) ALL CORNERS SHALL BE 90° CONDUIT BENDS.
- 2) CONNECT WIRES IN HANDHOLES USING SPLICE KIT METHOD DESCRIBED IN THE SPECIAL PROVISIONS.
- 3) LOOP DETECTOR WIRES SHALL BE #12 AWG CROSSED LINKED POLYETHYLENE (XLP). SEE SPECIAL PROVISIONS.
- 4) LOOP LEAD IN WIRES SHALL BE TWISTED A MIN. OF (5) TURNS PER 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.



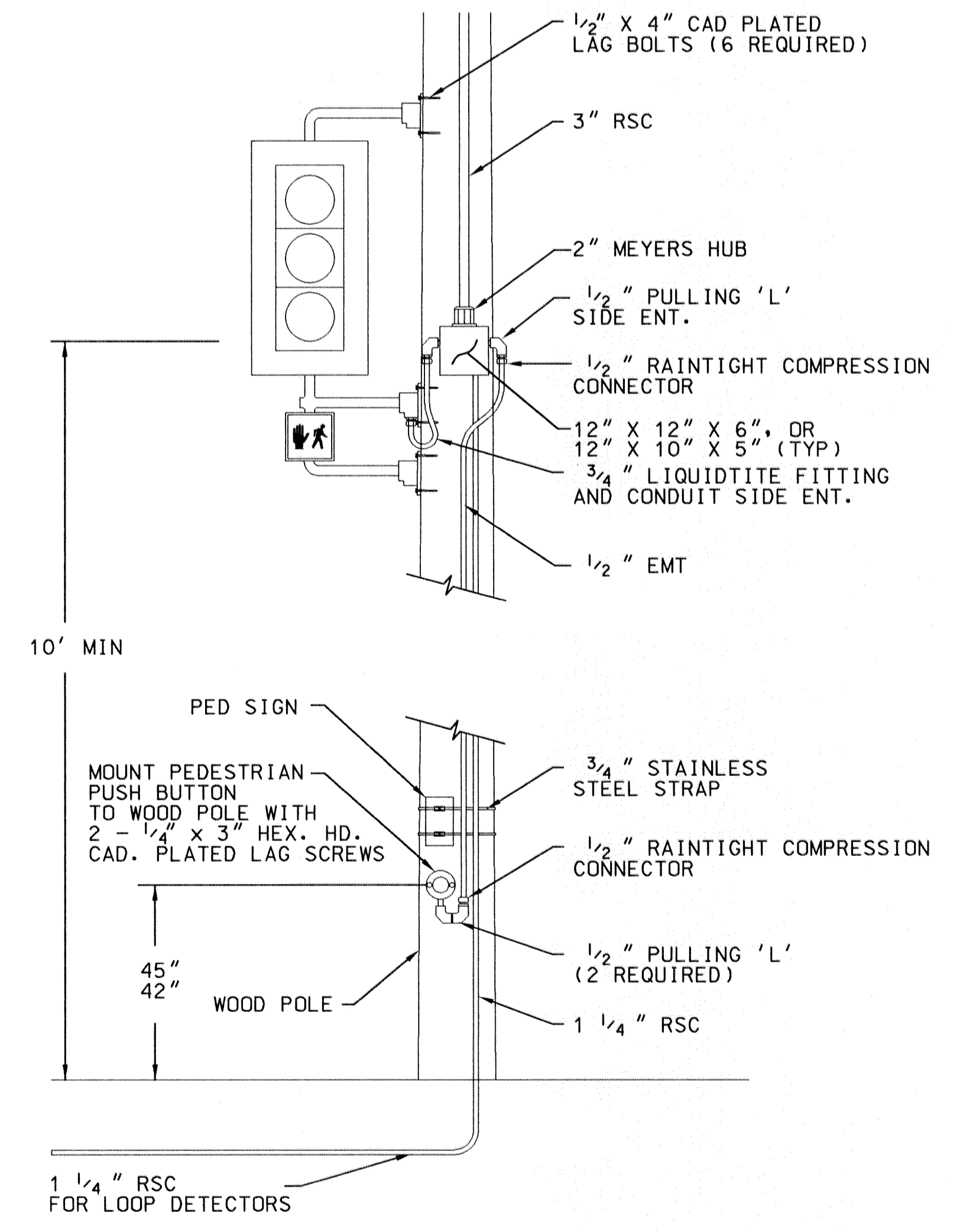
EXPLANATION
 REVISION NO. DATE
 AS NOTED
 SCALE: PLAN BY: DESIGN BY: CTR: PROJECT NO.: 1044.05
 CHECKED BY: RBK: RECORD COPY BY: DATE: 3/23/97
 REG. NO.: 13327
Ronald B. Bray
 RONALD B. BRAY, P.E.
 DATE: 3/23/97
Radisson Road (CSAH 52 / C.R. 52) & 109th Avenue (CSAH 12) Blaine, Anoka County, Minnesota
 350 Westwood Lake Office
 8411 Wayzata Boulevard
 Minneapolis, MN 55426
 612-541-4800
 FAX 541-1700
WSB & Associates, Inc.
 INFRASTRUCTURE - ENGINEERS - PLANNERS



SPAN WIRE MOUNTING DETAIL



TEMPORARY POLE DETAIL



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

REVISION NO.	DATE	EXPLANATION

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

Ronald B. Bray
 RONALD B. BRAY, P.E.
 DATE: 3/27/97 REC. NO.: 03227

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

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