

CONSTRUCTION OF A REVISED TRAFFIC CONTROL SIGNAL SYSTEM IN THE CITY OF COON RAPIDS ANOKA COUNTY, MINNESOTA

GOVERNING SPECIFICATIONS

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

ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE MUTCD INCLUDING "FIELD MANUAL FOR TEMPORARY CONTROL ZONE LAYOUTS" DATED APRIL 1995.

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	INTERSECTION LAYOUT
3	WIRING DIAGRAMS
4	SIGN DETAILS

EXCAVATION NOTICE SYSTEM

A CALL TO GOPHER STATE ONE (454-0002) IS
REQUIRED A MINIMUM OF 48 HOURS PRIOR TO
PERFORMING ANY EXCAVATION.

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



350 Westwood Lake Office
8441 Wayzata Boulevard
Minneapolis, MN 55426

612-541-4800
FAX 541-1700

INFRASTRUCTURE - ENGINEERS - PLANNERS

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 03/11/98 REG. NO. 18327 ENGR. Ronald B. Bray

DESIGN SQUAD RONALD B. BRAY

APPROVED [Signature] 5/11 1998
CITY OF COON RAPIDS ENGINEER

APPROVED [Signature] 4/28 1998
ANOKA COUNTY ENGINEER

RECOMMENDED FOR APPROVAL _____ 19_____
METRO DIVISION TRANSPORTATION ENGINEER

RECOMMENDED FOR APPROVAL _____ 19_____
METRO TRAFFIC ENGINEER

RECOMMENDED FOR APPROVAL _____ 19_____
STATE PRELETTING ENGINEER

APPROVED _____ 19_____
OFFICE OF LAND MANAGEMENT

APPROVED _____ 19_____
STATE DESIGN ENGINEER

Prepared for:



Anoka County
Highway Department
1440 Bunker Lakes Blvd
Andover, Minnesota 55304

PLAN SYMBOLS

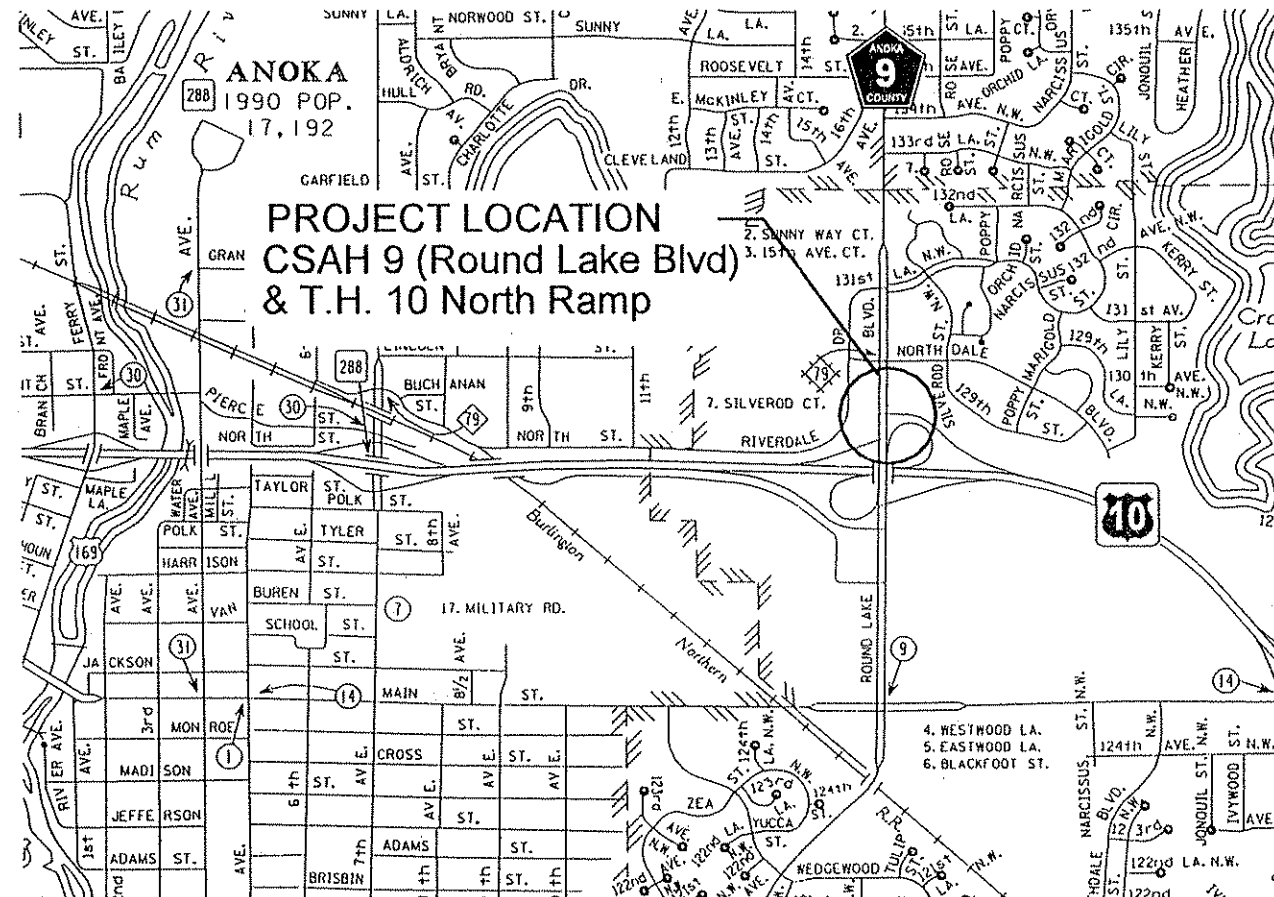
STATE LINE	----
COUNTY LINE	-----
TOWNSHIP OR RANGE LINE	-----
SECTION LINE	-----
QUARTER LINE	-----
SIXTEENTH LINE	-----
RIGHT-OF-WAY LINE	-----
SLOPE EASEMENT	-----
PRESENT RIGHT-OF-WAY	-----
CONTROL OF ACCESS LINE	-----
PROPERTY LINES (EXCEPT LAND LINES)	-----
VACATED PLATTED PROPERTY	-----
CORPORATE OR CITY LIMITS	-----
TRUNK HIGHWAY CENTER LINE	-----
RETAINING WALL	-----
RAILROAD	-----
RAILROAD RIGHT-OF-WAY	-----
RIVER OR CREEK	-----
DRY RUN	-----
DRAINAGE DITCH	-----
DRAIN TILE	-----
CULVERT	-----
DROP INLET	-----
GUARD RAIL	-----
BARBED WIRE FENCE	-----
WOVEN WIRE FENCE	-----
CHAIN LINK FENCE	-----
RAILROAD SNOW FENCE	-----
STONE WALL OR FENCE	-----
HEDGE	-----
RAILROAD CROSSING SIGN	-----
RAILROAD CROSSING BELL	-----
ELECTRIC WARNING SIGN	-----
CROSSING GATE	-----
MEANDER CORNER	-----
SPRINGS	-----
MARSH	-----
TIMBER	-----
DRCHARD	-----
BRUSH	-----
NURSERY	-----
CATCH BASIN	-----
FIRE HYDRANT	-----
CATTLE GUARD	-----
OVERPASS (HIGHWAY OVER)	-----
UNDERPASS (HIGHWAY UNDER)	-----
BRIDGE	-----
BUILDING (ONE STORY FRAME)	-----
F - FRAME C - CONCRETE	-----
S - STONE T - TILE	-----
B - BRICK ST - STUCCO	-----
IRON ROD OR PIPE	-----
MONUMENT (STONE, CONCRETE, OR METAL)	-----
WOODEN HUB	-----
GRAVEL PIT	-----
SAND PIT	-----
BORROW PIT	-----
ROCK QUARRY	-----

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	-----

SCALES

INDEX MAP	
PLAN	



DESIGN DESIGNATION - CSAH 9 (Round Lake Blvd)

ADT (CURRENT YEAR)	96	=	24,000	DESIGN SPEED	45	mph
ADT (FUTURE YEAR)	2016	=	28,000	BASED ON	N/A	SIGHT DISTANCE
DHV (DESIGN HR. VOL.)		=	N/A	HT OF EYE	N/A	ft
D (DIRECTIONAL DISTR.)		=	50/50 %	HT OF OBJECT	N/A	ft
T (HEAVY COMMERCIAL)		=	N/A %	DESIGN SPEED NOT ACHIEVED AT:		
FUNCTIONAL CLASSIFICATION		=	ARTERIAL	STA. _____	TO STA. _____	mph
NO. OF TRAFFIC LANES		=	3	STA. _____	TO STA. _____	mph
NO. OF PARKING LANES		=	1			

DESIGN DESIGNATION - T.H. 10 North Ramp

ADT (CURRENT YEAR)	96	=	8800	DESIGN SPEED	40	mph
ADT (FUTURE YEAR)	2016	=	15,000	BASED ON	N/A	SIGHT DISTANCE
DHV (DESIGN HR. VOL.)		=	N/A	HT OF EYE	N/A	ft
D (DIRECTIONAL DISTR.)		=	50/50 %	HT OF OBJECT	N/A	ft
T (HEAVY COMMERCIAL)		=	N/A %	DESIGN SPEED NOT ACHIEVED AT:		
FUNCTIONAL CLASSIFICATION		=	ARTERIAL	STA. _____	TO STA. _____	mph
NO. OF TRAFFIC LANES		=	3	STA. _____	TO STA. _____	mph
NO. OF PARKING LANES		=	1			

ESTIMATED QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	TOTAL
2565.604	REVISED TRAFFIC CONTROL SIGNAL SYSTEM	SYSTEM	1

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	PAB5 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

* - APPLIES TO THIS PROJECT

COUNTY PROJECT
NO. 96-17-09

S.P. 0215-53 (T.H. 10=062)
TITLE SHEET

SHEET NO. 1 OF 4 SHEETS

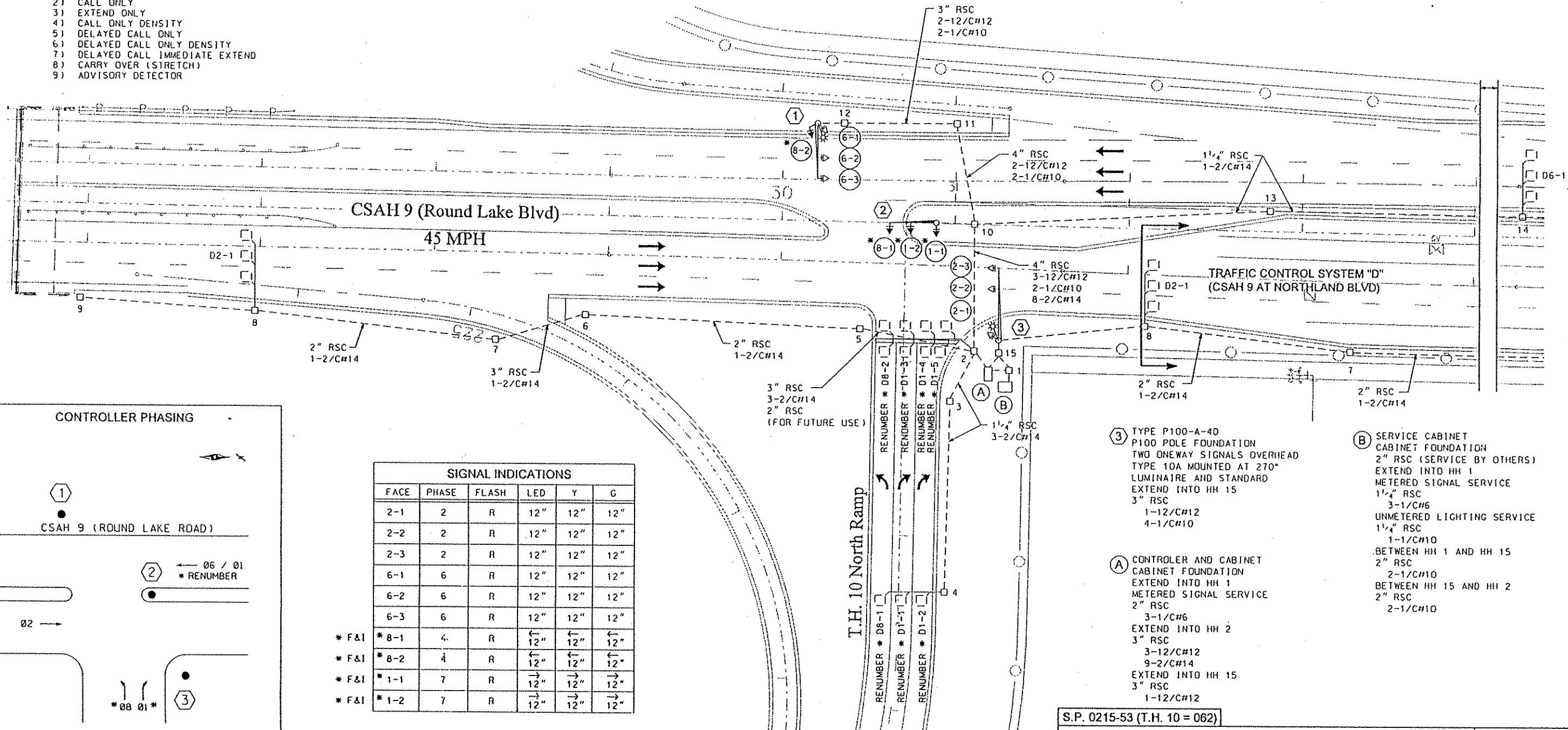
LOOP DETECTORS				
NUMBER	SIZE	FUNCTION	LOCATION	
D2-1	3-6' x 6'	1	330'	
* RENUMBER * RENUMBER	D8-1 D8-2	6' x 6' 6' x 6'	3.8 1	220' STOP BAR
D6-1	3-6' x 6'	1	330'	
* RENUMBER * RENUMBER * RENUMBER * RENUMBER * RENUMBER	D1-1 D1-2 D1-3 D1-4 D1-5	6' x 6' 6' x 6' 2-6' x 6' 2-6' x 6' 2-6' x 6'	3.8 3.8 1 1 1	220' 220' STOP BAR STOP BAR STOP BAR

- NOTES:
- * 1) SEE SPECIAL PROVISIONS FOR CONTRACTORS RESPONSIBILITY FOR LOCATION OF UTILITIES.
 - * 2) ALL SIGNAL FACES SHALL HAVE BACKGROUND SHIELDS.
 - * 3) DIRECTIONAL SIGNS (TYPE D) TO BE INSTALLED ON MAST ARM POLE 2 SHALL BE CONSIDERED INCIDENTAL.
 - * 4) SIGNAL FACES SHALL BE SALVAGED TO ANOKA COUNTY FROM POLE 2.
 - * 5) NEW SIGNAL FACES (8-1) AND (8-2) SHALL BE 12" 3 SECTION RLTA, YLTA, GLTA. NEW SIGNAL FACES (1-1) AND (1-2) SHALL BE 12" 3 SECTION RRTA, YRTA, GRTA.
 - * 6) CONTRACTOR SHALL PAINT ALL COMPONENTS OF THE SIGNAL SYSTEM, SEE SPECIAL PROVISIONS.
 - * 7) 01 SHALL OVERLAP WITH 08
 - * 8) ALL NEW RED SIGNAL INDICATIONS SHALL BE LED (SEE SPECIAL PROVISIONS).
 - * 9) ALL EXISTING RED SIGNAL INDICATIONS SHALL BE REPLACED WITH NEW RED LED SIGNAL INDICATIONS. EXISTING RED INDICATIONS SHALL BE SALVAGED TO ANOKA COUNTY.

- 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

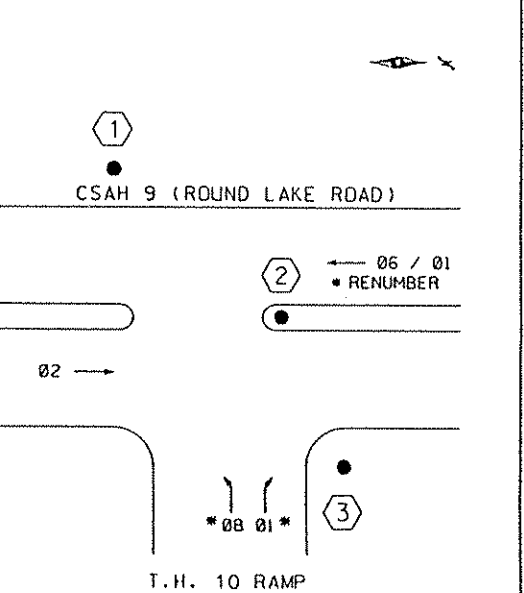
- ① TYPE P100-A-35 P100 POLE FOUNDATION TWO ONEWAY SIGNALS OVERHEAD * F&I TYPE 10A MOUNTED AT 90° TYPE 10A MOUNTED AT 270° LUMINAIRE AND STANDARD EXTEND INTO HH 2 3" RSC 2-12/C#12 2-1/C#10

- ② TYPE P90-A-20 P90 POLE FOUNDATION * SALVAGE A-20 MAST ARM * INSTALL A-25 MAST ARM * SALVAGE ONEWAY SIGNAL OVERHEAD * F&I TWO ONEWAY SIGNALS OVERHEAD * F&I TYPE 10A MOUNTED AT 270° LUMINAIRE AND STANDARD EXTEND INTO HH 10 3" RSC 1-12/C#12



SIGNAL INDICATIONS					
FACE	PHASE	FLASH	LED	Y	G
2-1	2	R	12"	12"	12"
2-2	2	R	12"	12"	12"
2-3	2	R	12"	12"	12"
6-1	6	R	12"	12"	12"
6-2	6	R	12"	12"	12"
6-3	6	R	12"	12"	12"
* F&I	* 8-1	4	R	12"	12"
* F&I	* 8-2	4	R	12"	12"
* F&I	* 1-1	7	R	12"	12"
* F&I	* 1-2	7	R	12"	12"

CONTROLLER PHASING

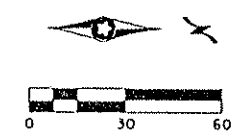


- ③ TYPE P100-A-40 P100 POLE FOUNDATION TWO ONEWAY SIGNALS OVERHEAD TYPE 10A MOUNTED AT 270° LUMINAIRE AND STANDARD EXTEND INTO HH 15 3" RSC 1-12/C#12 4-1/C#10
- A) CONTROLLER AND CABINET CABINET FOUNDATION EXTEND INTO HH 1 METERED SIGNAL SERVICE 2" RSC 3-1/C#6 EXTEND INTO HH 2 3" RSC 3-12/C#12 9-2/C#14 EXTEND INTO HH 15 3" RSC 1-12/C#12
- B) SERVICE CABINET CABINET FOUNDATION 2" RSC (SERVICE BY OTHERS) EXTEND INTO HH 1 METERED SIGNAL SERVICE 1 1/4" RSC 3-1/C#6 UNMETERED LIGHTING SERVICE 1 1/4" RSC 1-1/C#10 BETWEEN HH 1 AND HH 15 2" RSC 2-1/C#10 BETWEEN HH 15 AND HH 2 2" RSC 2-1/C#10

S.P. 0215-53 (T.H. 10 = 062)

COUNTY PROJECT NO. 96-17-09 REVISED SIGNAL SYSTEM INTERSECTION LAYOUT

* INDICATES CHANGES TO THE SIGNAL SYSTEM.

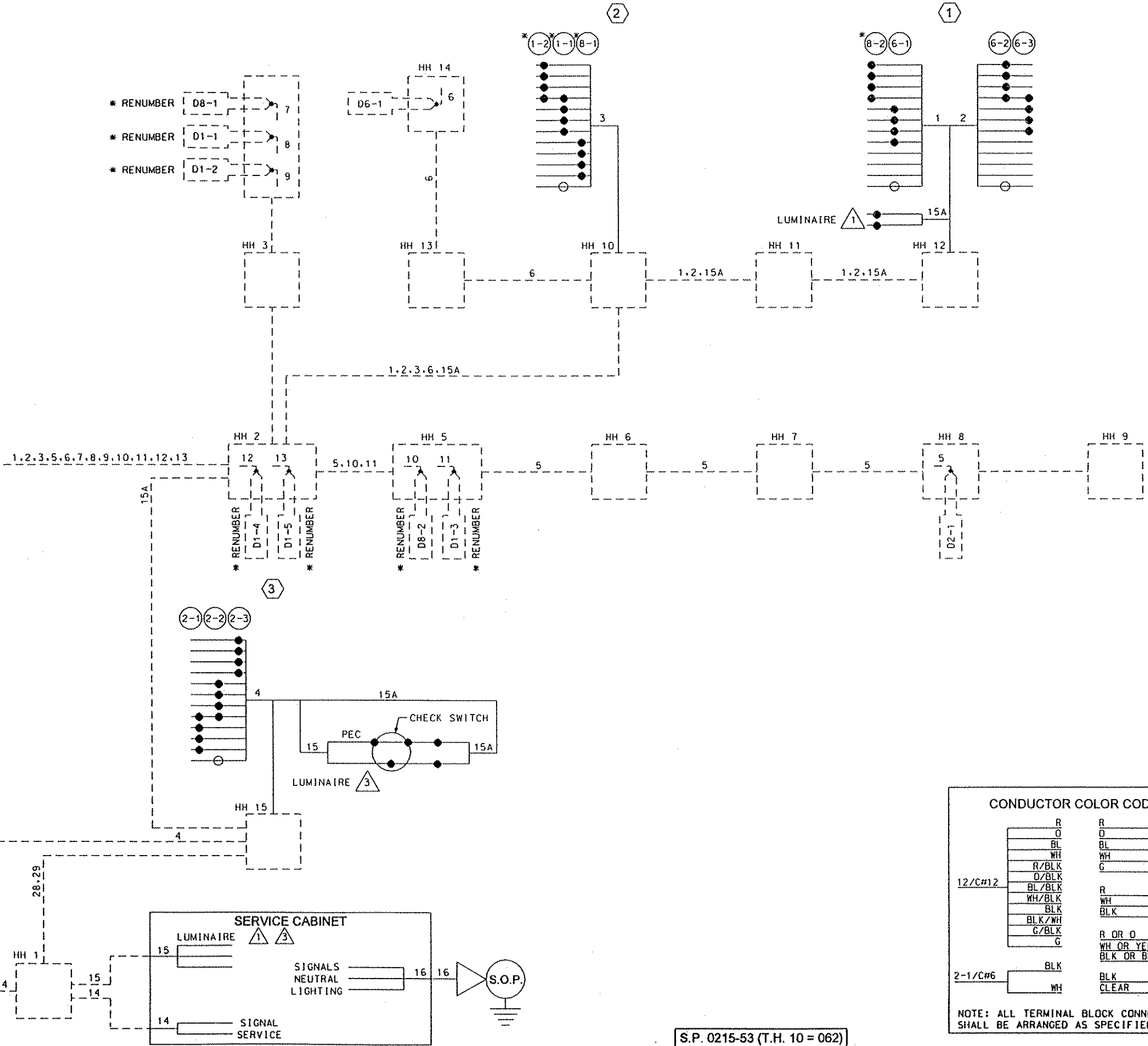
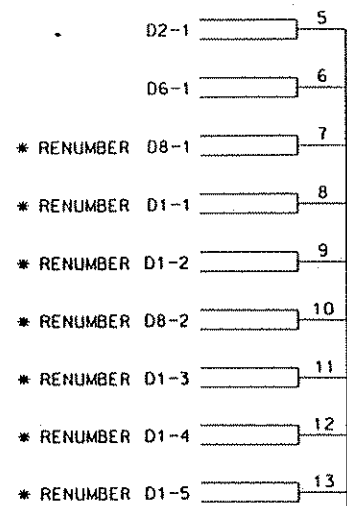
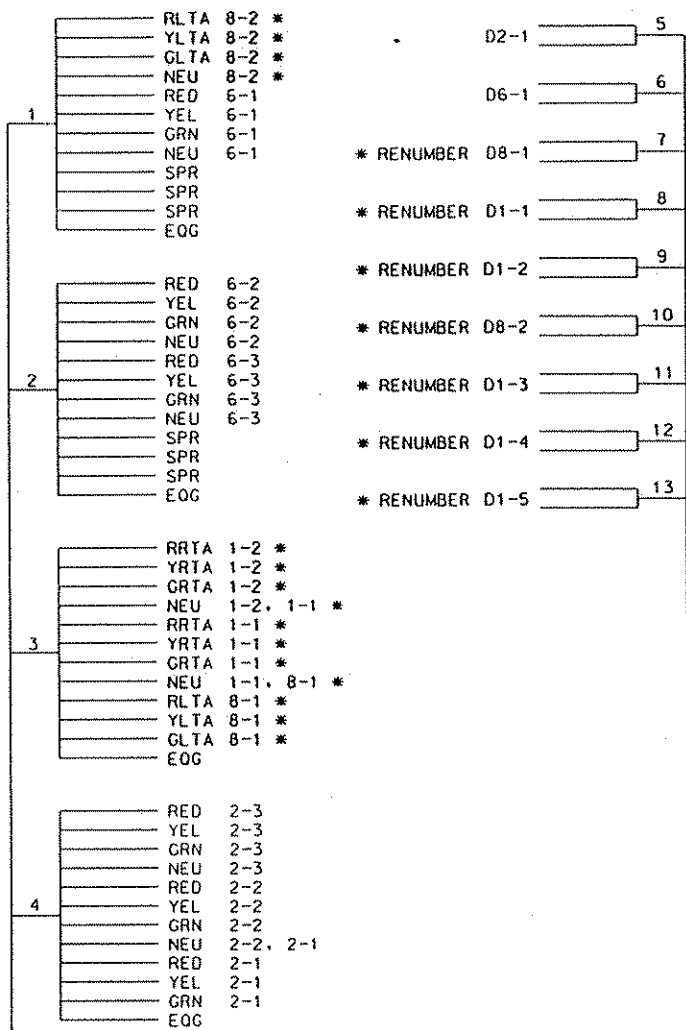


REVISIONS: 3/11/98
 EXPLANATION: MDDC: CCM-ETIS
 SCALE: AS NOTED
 DESIGN BY: CTR
 CHECKED BY: RBB
 DATE: 03/11/98
 PROJECT NO: 1044.06
 RECORD COPY #1

CSAH 9 (Round Lake Blvd) & T.H. 10 North Ramp
 Coon Rapids, Anoka County, Minnesota

350 Westwood Lake Office
 8441 Wayzata Boulevard
 Minneapolis, MN 55426
 612-541-4000
 FAX 612-541-1700
 WSB & ASSOCIATES, INC.
 INFRASTRUCTURE ENGINEERS - PLANNERS

CONTROLLER CABINET



CONDUCTOR COLOR CODING

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

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

* INDICATES CHANGES TO THE SIGNAL SYSTEM.

S.P. 0215-53 (T.H. 10 = 062)

COUNTY PROJECT NO. 96-17-09

REVISED SIGNAL SYSTEM WIRING DIAGRAM

SHEET 3 OF 4 SHEETS

REVISION NO. 3/11/98
 AS NOTED
 SCALE
 DRAWN BY
 CHECKED BY
 PROJECT NO. 1044.06
 DATE
 RECORD COPY BY
 EXPLANATION
 M-DIST COMMENTS

CSAH 9 (Round Lake Blvd) & T.H. 10 North Ramp
 Coon Rapids, Anoka County, Minnesota

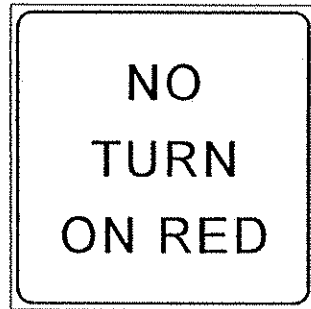
350 Westwood Lake Office
 8441 Waziyata Boulevard
 Minneapolis, MN 55426
 612-641-4800
 FAX 612-641-1700
WSB
 & ASSOCIATES, INC.
 INFRASTRUCTURE ENGINEERS - PLANNERS

I:\1044_00\1044_06\cod\1044_wir.e.dgn



114" X 18", 3"R, 1.0"B
 Line 1 106.84 = 8" - 6" E MOD

D-1



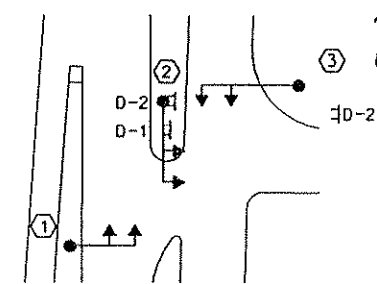
24" X 24"
 R10-11b D-2

TYPE D SIGNS						
SIGN PANEL	SIZE	NO. REQUIRED	NO. POSTS PER SIGN	POST SPACING	SQ FT PER SIGN	LOCATION
D-1	114 x 18	1	3	30"	14.25	2' FROM POLE ON MAST ARM
D-2	24 x 24	1	BANDING	---	4.00	MOUNTED ON POLE 2 AS DIRECTED BY THE ENGINEER
D-2	24 x 24	1	2	10"	4.00	GROUND MOUNTED AS DIRECTED BY THE ENGINEER

① ALL DISTANCES MEASURED FROM THE POLE LEFT TO THE LEFT EDGE OF SIGN ALONG THE MAST ARM

GENERAL NOTES

- COLOR - WHITE LEGEND AND BORDER ON GREEN BACKGROUND, FULLY REFLECTORIZED.
- CORNERS EXTENDING BEYOND THE BORDER SHALL NOT BE TRIMMED.
- SEE STANDARD SIGNS MANUAL FOR ARROW AND OVERLAY DETAILS.
- FOR STRUCTURAL DETAILS, TYPE D SIGNS, SEE STANDARD SIGNS MANUAL, PAGE 105A & B.
- FOR TYPE D STRINGER AND PANEL - JOINT DETAIL, SEE STANDARD SIGNS MANUAL.



SIGN PANEL LAYOUT

REVISION NO.	DATE	EXPLANATION
3/11/98		MOD. COMMENTS
AS NOTED	DESIGN BY	PROJECT NO.
SCALE	CHK	104.06
PLAN BY	PROJECT NO.	DATE
CHECKED BY	RBB	104.06
RECORD COPY BY		DATE

CSAH 9 (Round Lake Blvd)
 & T.H. 10 North Ramp
 Coon Rapids, Anoka County, Minnesota

350 Westwood Lake Office
 8411 Wayzata Boulevard
 Minneapolis, MN 55426
 612-641-4800
 FAX 641-1700
 ENGINEERS - PLANNERS

WSB
 & Associates, Inc.
 INFRASTRUCTURE

S.P. 0215-53 (T.H. 10 = 062)

COUNTY PROJECT NO. 96-17-09 REVISED SIGNAL SYSTEM SIGN DETAILS

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