

- LED RETROFIT--SYSTEM "S" NOTES:**
- 1) ALL ITEMS OF SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, UNLESS OTHERWISE NOTED ON PLANS.
 - 2) CONTRACTOR SHALL REMOVE THE INPLACE "HAND/WALKING PERSON" LENS FROM EACH INPLACE ONE SECTION PED SIGNAL INDICATION, AND SHALL FURNISH & INSTALL A NEW COUNTDOWN TIMER LED "HAND/WALKING PERSON" LENS IN ITS PLACE.
 - 3) CONTRACTOR SHALL PROTECT AND MAINTAIN EACH INPLACE ONE SECTION PEDESTRIAN SIGNAL HOUSING & VISOR WHEN REMOVING AND REPLACING EACH LENS, AND SHALL REPLACE THE COMPLETE PEDESTRIAN SIGNAL INDICATION UNIT (HOUSING, VISOR, AND LENS) SHOULD ANY DAMAGE BE DONE TO THE UNIT BY CONTRACTOR DURING WORK ON THIS PROJECT (INCIDENTAL).
 - 4) IN LIEU OF THE LENS REPLACEMENT WORK DESCRIBED ABOVE, THE CONTRACTOR ALSO HAS THE OPTION OF REMOVING EACH INPLACE ONE SECTION PEDESTRIAN SIGNAL INDICATION (HOUSING, VISOR AND LENS) AND REPLACING THEM WITH NEW ONE SECTION PEDESTRIAN SIGNAL INDICATIONS (HOUSING, VISOR, AND LED LENSES), AT NO ADDITIONAL COST TO THE PROJECT.
 - 5) CONTRACTOR SHALL BE RESPONSIBLE FOR ANY MODIFICATIONS TO INPLACE POLE MOUNTED BRACKETING ON EACH TRAFFIC SIGNAL POLE TO ACCOMMODATE INSTALLATION OF NEW ONE SECTION PEDESTRIAN SIGNAL INDICATIONS (INCLUDING THE REPLACEMENT OF THE POLE MOUNTED BRACKETING IF NEEDED TO ACCOMMODATE EACH PEDESTRIAN SIGNAL INDICATION INSTALLATION) (INCIDENTAL).

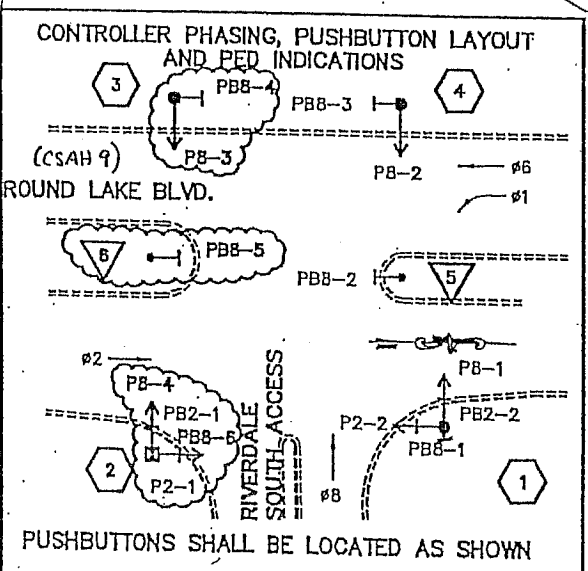
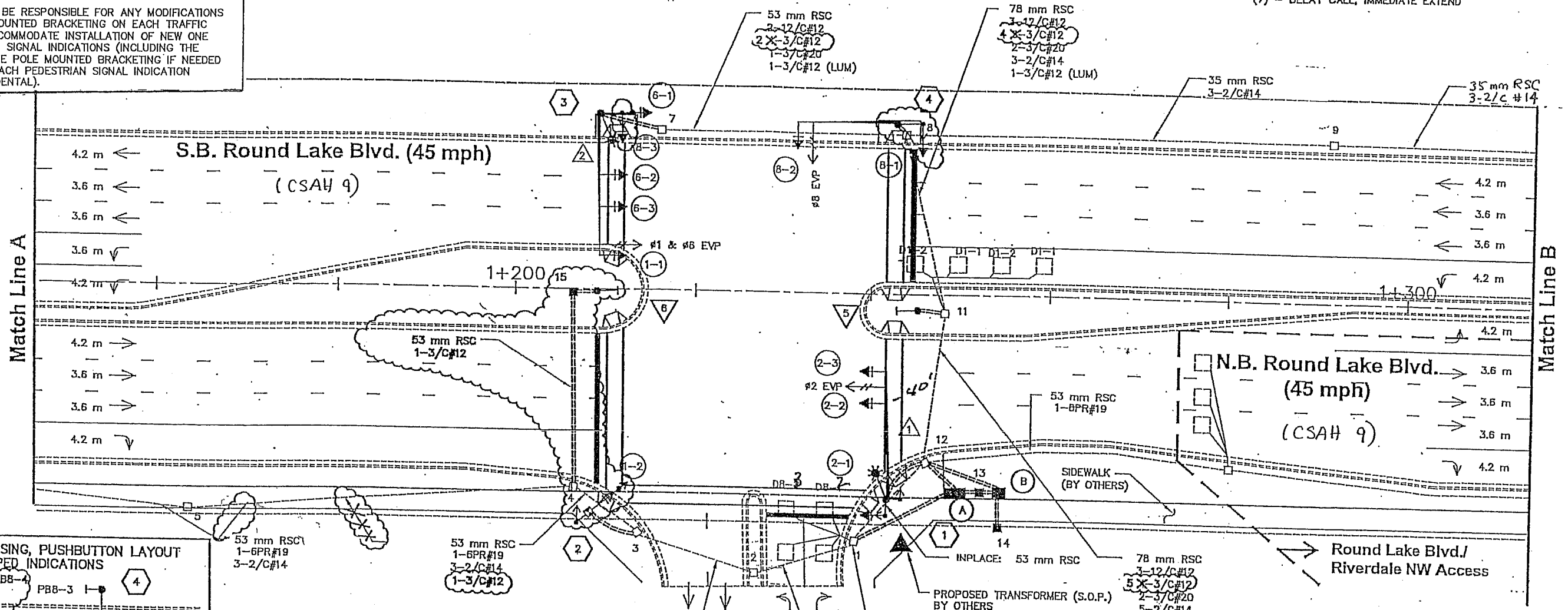
- 6) ANY DAMAGE TO INPLACE TRAFFIC SIGNAL POLES OR VEHICLE SIGNAL HEADS & BRACKETING DUE TO WORK ON THIS PROJECT SHALL BE REPAIRED BY CONTRACTOR TO THE SATISFACTION OF THE ENGINEER, AT NO EXPENSE TO THE CITY.
- 7) IF NEW PEDESTRIAN HOUSINGS AND VISORS ARE USED, THEY SHALL BE FABRICATED USING NEW POLYCARBONATE MATERIALS.
- 8) ALL VEHICULAR SIGNAL INDICATION LENSES ARE LED AND SHALL BE MAINTAINED AND REUSED INPLACE.
- 9) CONTRACTOR SHALL REMOVE ALL INPLACE PEDESTRIAN PUSH BUTTONS (8 TOTAL), R10-4b STICKER SIGNS, AND "MEANING OF WALK" STICKER SIGNS, & SHALL FURNISH & INSTALL NEW SOLID STATE PED PUSH BUTTONS AND R10-3e SIGNS IN THEIR PLACE.
- 10) CONTRACTOR SHALL MAINTAIN OPERATION OF THE SIGNAL SYSTEM AT ALL TIMES, EXCEPT AS OTHERWISE APPROVED BY THE ENGINEER.
- 11) SEE STATEMENT OF ESTIMATED QUANTITIES FOR BID ITEMS FOR WORK AT THIS SIGNAL SYSTEM.

INPLACE POLE MOUNTED BRACKETING:
 POLE 1 - TYPE 30A AT 90°, TYPE 10B AT 180°
 POLE 2 - TYPE 1C
 POLE 3 - TYPE 20B AT 270°
 POLE 4 - TYPE 10B AT 180°

LOOP DETECTORS				
NUMBER	SIZE (m)	LOCATION (m)	FUNCTION	STATUS
D1-1	2-1.7 X 1.7	6.5 & 16	1	INPLACE
D1-2	2-1.7 X 1.7	1.5 & 11	1	INPLACE
D2-1, D2-2, D2-3	1.7 X 1.7	100	1	INPLACE
D6-1, D6-2, D6-3	1.7 X 1.7	97	1	INPLACE
DB-1	2-1.7 X 1.7	37	3	FUTURE
DB-2	2-1.7 X 1.7	0 & 4.2	7	INPLACE
DB-3	2-1.7 X 1.7	0 & 4.2	1	INPLACE

NOTES: LOCATION = DISTANCE FROM STOP BAR TO FRONT OF LOOP DETECTOR

LOOP DETECTOR FUNCTIONS:
 (1) - CALL AND EXTEND
 (3) - EXTEND ONLY
 (7) - DELAY CALL, IMMEDIATE EXTEND



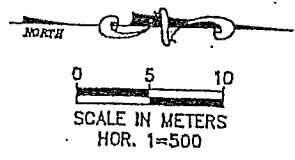
SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 4 PHASE WITH PHASE 1 BEING PROTECTED LEFT TURN PHASE.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.

RECORD PLAN FOR LED PROJECT
 (PLANS CONFIRMED FOR PROJECT WORK ONLY)
 DATE MAY 06-10-10

LED SIGNAL FACES			
SIGNAL FACE	ALL 12"		
	R	Y	G
1-1, 1-2	←	←	←
2-1, 2-2, 2-3	○	○	○
6-1, 6-2, 6-3	○	○	○
8-1, 8-2, 8-3	○	○	○

○ ← = INPLACE LED INDICATION, REUSE INPLACE.



DRAWN BY: JMG	DESIGNER: JMG	CHECKED BY: JMG	DATE: MAY 10 2010
REVISIONS			
NO.	BY	DATE	REVISIONS

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 Date: MAY 18 2009 Name: John M. Gray, PE
 License No. 02467

PHONE: (651) 490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110

COON RAPIDS, MINNESOTA

LED RETROFIT--SYSTEM "S" INTERSECTION LAYOUT

FILE NO. 107418
 DATE
 43

S.P. 114-030-10
 CITY PROJECT NO: 09-18

88

- 1 TYPE PA100 POLE FOUNDATION
TYPE PA100-A-13.7-X9.1
LUMINAIRE ARM AT 350'
(SEE SPECIAL PROVISIONS)
LUMINAIRE 250 WATT H.P.S.
WITH P.E.C. AND CHECK SWITCH
(SEE SPECIAL PROVISIONS)
2 - ONE WAY SIGNALS OVERHEAD (0 m AND 3.3 m FROM END OF MAST ARM)
1 - TYPE 10B POLE MOUNTED AT 180'
1 - TYPE 30A POLE MOUNTED AT 90'
2 - PEDESTRIAN PUSHBUTTONS
ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (#2) (1.2 m FROM END OF MAST ARM)

- 2 PEDESTAL FOUNDATION
PEDESTAL POLE & BASE
TYPE 10 PEDESTAL MOUNTED
2 X - PEDESTRIAN PUSHBUTTON
1 - "DO NOT CROSS" SIGN (RS-3A) FACING POLE NO. 3
1 - TYPE 1D PEDESTAL MOUNTED

- 3 TYPE PA100 POLE FOUNDATION
TYPE PA100-A-15.2-X9.1
LUMINAIRE ARM AT 350'
(SEE SPECIAL PROVISIONS)
LUMINAIRE 250 WATT H.P.S.
WITH P.E.C. AND CHECK SWITCH
(SEE SPECIAL PROVISIONS)
3 - ONE WAY SIGNALS OVERHEAD (0 m, 5.1 m AND 8.7 m FROM END OF MAST ARM)
1 - TYPE 20A POLE MOUNTED AT 270'
1 - "DO NOT CROSS" SIGN (RS-3A) FACING POLE NO. 2
ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (#1 & #6) (1.2 m FROM END OF MAST ARM)
1 - TYPE 20B POLE MOUNTED AT 270'
1 - PEDESTRIAN PUSHBUTTON

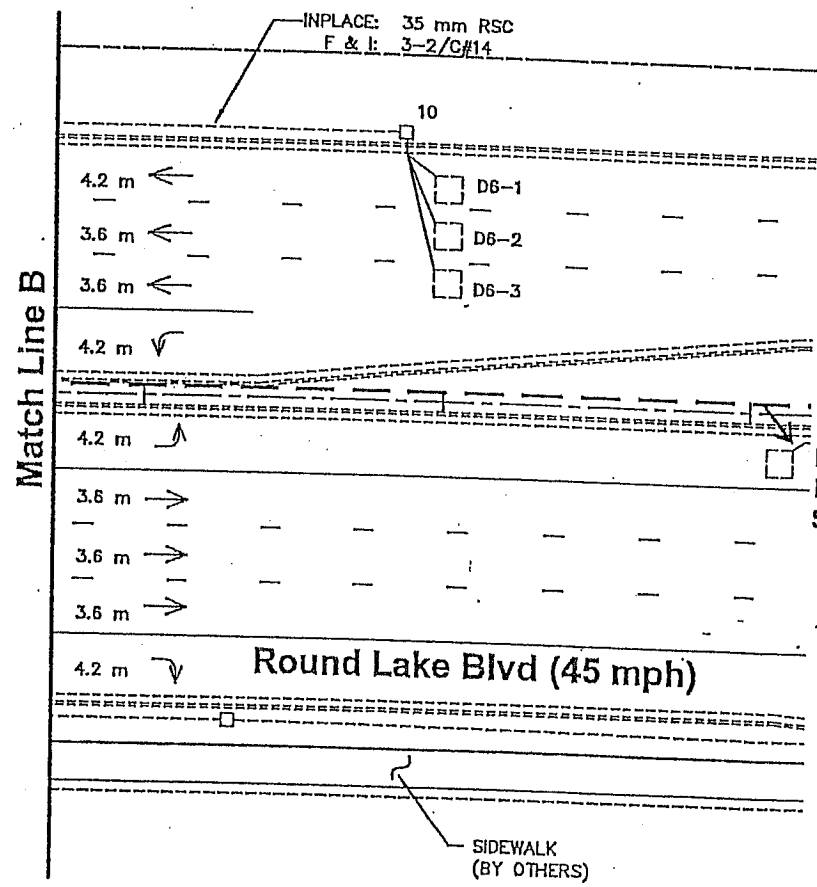
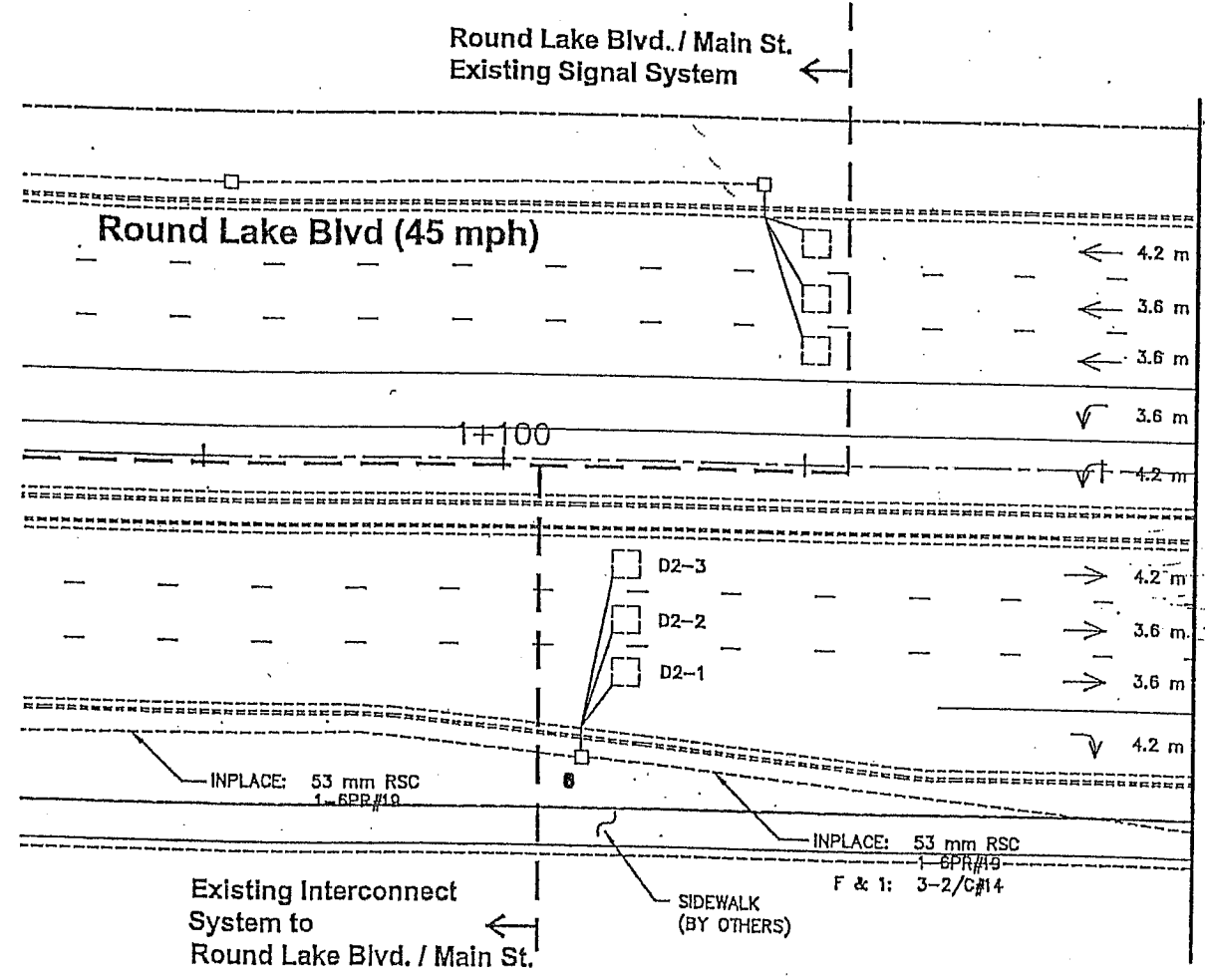
- 4 TYPE PA90 POLE FOUNDATION
TYPE PA90-A-10.7
TYPE PA86 POLE FOUNDATION
TYPE PA86-A-8.1
1 - ONE WAY SIGNAL OVERHEAD (0 m FROM END OF MAST ARM)
1 - TYPE 10B POLE MOUNTED AT 180'
1 - PEDESTRIAN PUSHBUTTON
TYPE D SIGN PANEL OVERHEAD (D-1)
ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (#8) (1.2 m FROM END OF MAST ARM)

- A INSTALL CONTROLLER AND CABINET (FURNISHED BY ANOKA COUNTY)
CABINET FOUNDATION
EXTEND INTO HH 12: 103 mm RSC
5-12/C#12
2-3/C#12
3-3/C#20
5-2/C#14
53 mm RSC
* 1-6PR#19
EXTEND INTO HH 1: 103 mm RSC
1-12/C#12
3-3/C#12
6-2/C#14
* 53 mm RSC
* REINSTALL: 1-6PR#19
EXTEND INTO HH 13: METERED SIGNAL SERVICE
35 mm RSC
3-1/C#6

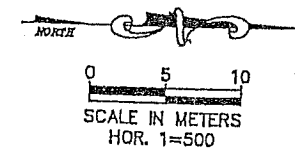
- 6 PUSHBUTTON FOUNDATION
PEDESTRIAN PEDESTAL
PEDESTRIAN PUSHBUTTON
EXTEND INTO HH 15:
35 mm RSC
1-3/C#12

- 5 PUSHBUTTON FOUNDATION
PEDESTRIAN PEDESTAL
PEDESTRIAN PUSHBUTTON
EXTEND INTO HH 11:
35 mm RSC
1-3/C#12

- B SERVICE CABINET
CABINET FOUNDATION
EXTEND INTO HH 13: METERED SIGNAL SERVICE
35 mm RSC
3-1/C#6
EXTEND INTO HH 12: UNMETERED STREET LIGHT SERVICE
35 mm RSC
2-3/C#12 (LUM)
EXTEND INTO HH 14: 53 mm RSC
(FOR POWER BY CONNEXUS)
STUB OUT 53 mm RSC FROM HH 14 TO SOUTH



* DENOTES ITEM INCLUDED WITH INTERCONNECT.



C:\WORK STUFF\33889\SIGNALS\ROUND LAKE\RLB502.DWG

REV. NO.	BY	DATE	REVISIONS DESCRIPTION
1	RJG	5/20/89	ADDENDUM NO. 1
2	RJG	5/16/89	CHANGE ORDER NO. 1

DESIGN FILE: 338890300101	XREF DRAWINGS
DRAWN BY: JAS	DESIGN BY: JRN
CHKD. BY:	DWG. NAME:
RLB-ESUM RLBMHVEC RLBMHETO RLB-EUT	



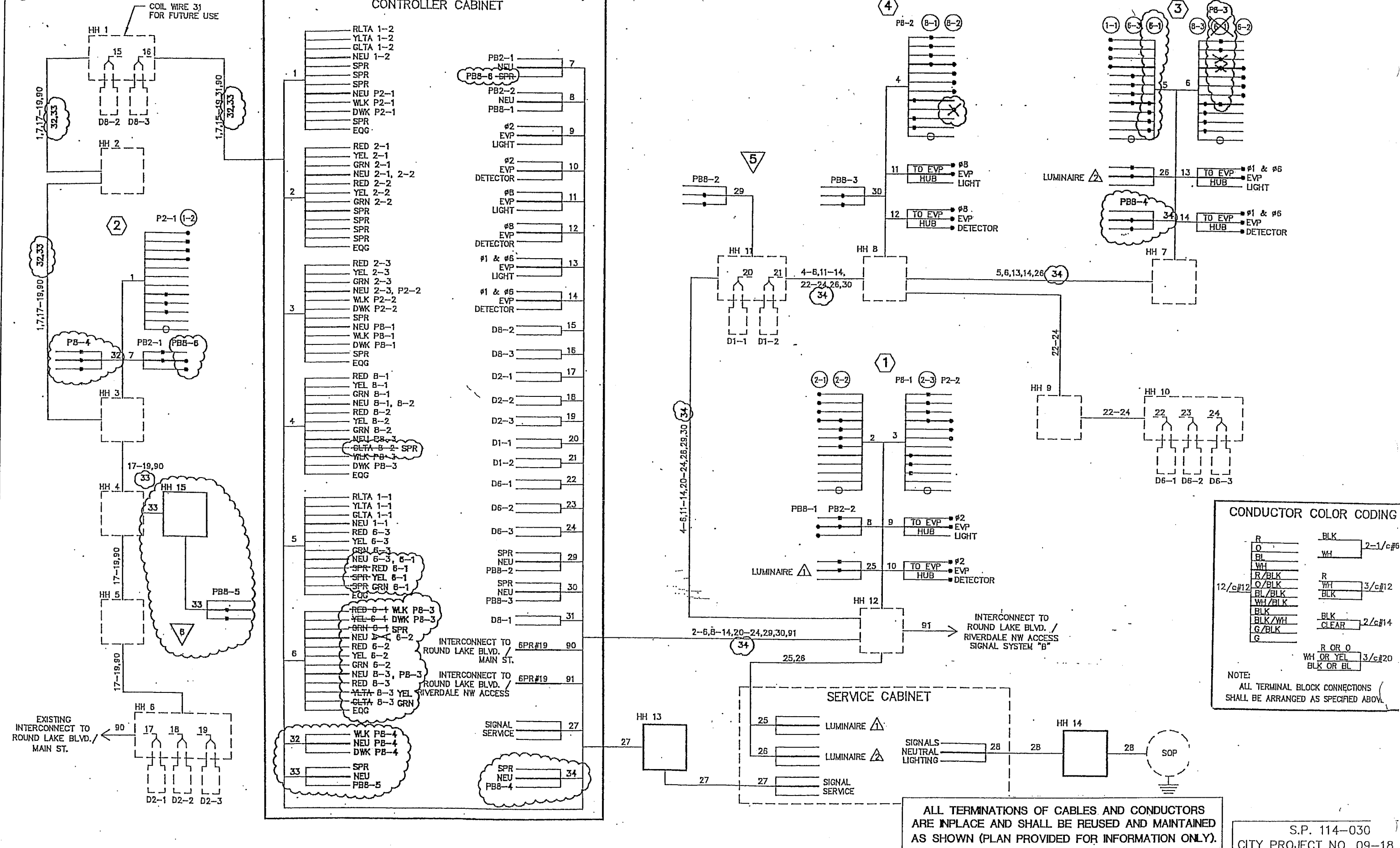
THRESHER SQUARE
700 THIRD STREET SOUTH
MINNEAPOLIS, MN 55415
(612)370-0700 (TEL)

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 STATE OF MINN. STATUTES SECTION 320.03

ROUND LAKE BOULEVARD IMPROVEMENT PROJECT
SIGNAL SYSTEM "A"

CITY PROJECT 99-18 SHEET NO. 21
COUNTY PROJECT

88



CONTROLLER CABINET

- 1 RLTA 1-2
- YLTA 1-2
- GLTA 1-2
- NEU 1-2
- SPR
- SPR
- SPR
- NEU P2-1
- WLK P2-1
- DWK P2-1
- SPR
- EQG
- 2 RED 2-1
- YEL 2-1
- GRN 2-1
- NEU 2-1, 2-2
- RED 2-2
- YEL 2-2
- GRN 2-2
- SPR
- SPR
- SPR
- EQG
- 3 RED 2-3
- YEL 2-3
- GRN 2-3
- NEU 2-3, P2-2
- WLK P2-2
- DWK P2-2
- SPR
- NEU PB-1
- WLK PB-1
- DWK PB-1
- SPR
- EQG
- 4 RED B-1
- YEL B-1
- GRN B-1
- NEU B-1, B-2
- RED B-2
- YEL B-2
- GRN B-2
- NEU B-2, 3
- GLTA B-2 SPR
- WLK PB-3
- DWK PB-3
- EQG
- 5 RLTA 1-1
- YLTA 1-1
- GLTA 1-1
- NEU 1-1
- RED 6-3
- YEL 6-3
- GRN 6-3
- NEU 6-3, 6-1
- SPR RED 6-1
- SPR YEL 6-1
- SPR GRN 6-1
- EQG
- 6 RED 6-1 WLK PB-3
- RED 6-2 YEL 6-1 DWK PB-3
- GRN 6-1 SPR
- NEU 6-2, 6-2
- RED 6-2
- YEL 6-2
- GRN 6-2
- NEU B-3, PB-3
- RED B-3
- YLTA B-3 YEL
- GLTA B-3 GRN
- EQG
- 7 WLK PB-4
- NEU PB-4
- DWK PB-4
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CONDUCTOR COLOR CODING

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

ALL TERMINATIONS OF CABLES AND CONDUCTORS ARE IN PLACE AND SHALL BE REUSED AND MAINTAINED AS SHOWN (PLAN PROVIDED FOR INFORMATION ONLY).

S.P. 114-030
CITY PROJECT NO. 09-18

DRAWN BY: JMG				
DESIGNER: JMG				
CHECKED BY: JMG				
DESIGN TEAM	NO.	BY	DATE	REVISIONS

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

JMG
Name: John M. Gray, PE
Lic. No. 22457
Date: May 18, 2009

SEH
PHONE: (651) 490-2000
3535 VAONAS CENTER DR.
ST. PAUL, MN 55110

COON RAPIDS, MINNESOTA

LED RETROFIT-SYSTEM 'S'
FIELD WIRING DIAGRAM
CSAH 9 AT RIVERDALE SW ACCESS

FILE NO. 107418
DATE 05/18/2009
44
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