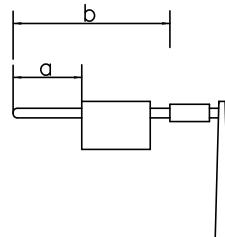


SIGNS FOR TRAFFIC SIGNAL SYSTEMS										
SIGN PANELS - TYPE D (SIGNALS)										
SIGNAL SYSTEM	SIGN PANEL	POLE NO.	a (FT)	b (FT)	SIZE (IN)	MOUNTING BRACKET		AREA/SIGN (SQ. FT.)	NO. REQ.	PANEL LEGEND
						QUANTITY	SPACING (1)			
A	D-1	1	-	16'	60 x 24	3	----	10.00	1	Rice St
A	D-2	2	28'	-	72 x 24	3	----	12.00	1	County B
A	D-3	3	-	16'	60 x 24	3	----	10.00	1	Rice St
A	D-4	5	34'	-	72 x 24	3	----	12.00	1	County B
B	D-5	1	4'	-	48 x 66	2	----	22.00	1	WEST TH 36 with left arrow
B	D-6	1	-	34'	48 x 66	2	----	22.00	1	EAST TH 36 with right arrow
B	D-7	2	16'	-	60 x 24	3	----	10.00	1	Rice St
B	D-8	3	4'	-	48 x 66	2	----	22.00	1	EAST TH 36 with left arrow
B	D-9	3	-	34'	48 x 66	2	----	22.00	1	WEST TH 36 with right arrow
B	D-10	4	8'	-	60 x 24	3	----	10.00	1	Rice St
C	D-11	1	-	28'	108 x 24	4	----	18.00	1	Minnesota Ave
C	D-12	3	8'	-	60 x 24	3	----	10.00	1	Rice St
C	D-13	5	-	28'	108 x 24	4	----	18.00	1	Minnesota Ave
C	D-14	7	16'	-	60 x 24	3	----	10.00	1	Rice St
D	D-15	1	16'	-	60 x 24	3	----	10.00	1	Rice St
D	D-16	3	-	28'	84 x 24	3	----	14.00	1	County B2
D	D-17	5	16'	-	60 x 24	3	----	10.00	1	Rice St
D	D-18	7	-	28'	84 x 24	3	----	14.00	1	County B2
TOTAL QUANTITIES								256.00	18	

(1) = SPACING BETWEEN STIFFENERS SHALL NOT EXCEED 36 INCHES AND SHALL BE UNIFORMLY SPACED. SEE STANDARD SIGNS MANUAL, PAGE 105A (REVISION DATE 7/06/2007) FOR BRACKET SPACING REQUIREMENTS.

SIGNS FOR TRAFFIC SIGNAL SYSTEM										
SIGN PANELS - TYPE C										
SIGNAL SYSTEM	SIGN PANEL	POLE NO.	a (FT)	b (FT)	SIZE (IN)	MOUNTING BRACKET		AREA/SIGN (SQ. FT.)	NO. REQ.	PANEL LEGEND
						QUANTITY	SPACING (1)			
A	R3-4	5	1'	-	24 x 24	2	----	4.00	1	NO U TURN
B	R3-4	1,3	1'	-	24 x 24	2	----	4.00	2	NO U TURN
B	R9-3a	1,2,3,4	-	-	18 x 18	①	----	2.25	4	NO PEDESTRIAN CROSSING
A	R10-12	1,3	1'	-	36 x 48	2	----	12.00	2	LEFT TURN YIELD ON GREEN
C	R10-12	1,5	1'	-	36 x 48	2	----	12.00	2	LEFT TURN YIELD ON GREEN
D	R10-12	3,7	1'	-	36 x 48	2	----	12.00	2	LEFT TURN YIELD ON GREEN
TOTAL QUANTITIES								93.00	13	

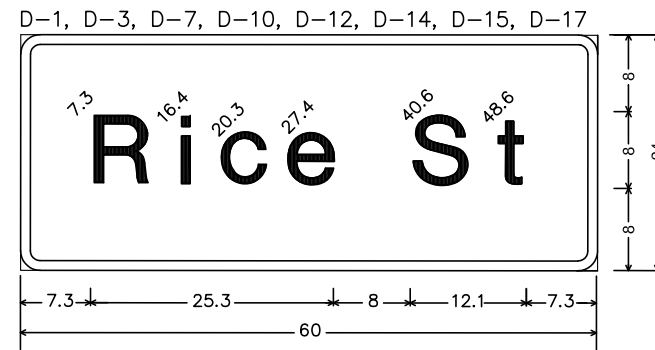
OVERLAYS				
CODE NO.	QUANTITY	SIZE (in.)	LEGEND	SQ.FT. PER OVERLAY
M1-5B	4	24x24	MN. HWY 36	4.00



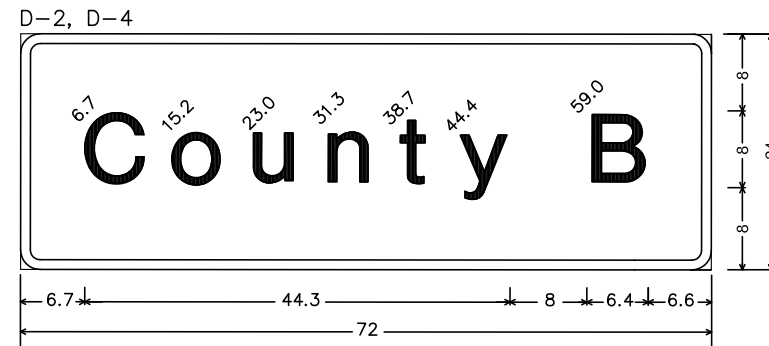
NOTES:

- CORNERS OF STANDARDS SIGN PANELS WITH MARGINS SHALL BE TRIMMED.
- SEE STANDARD SIGNS MANUAL FOR DETAILED DRAWINGS OF TYPE C SIGN PANELS.
- FURNISHING AND INSTALLING TYPE C SIGNS SHALL BE INCLUDED AS PART OF PAY ITEM FOR EACH "TRAFFIC CONTROL SIGNAL SYSTEM" (ITEM NO. 2565), WITH NO DIRECT COMPENSATION BEING MADE THEREFORE.
- FURNISHING AND INSTALLING TYPE D SIGNS SHALL BE MEASURED AND PAID FOR SEPARATELY FROM EACH "TRAFFIC CONTROL SIGNAL SYSTEM". SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- ALL NEW TYPE C AND D SIGN PANELS SHALL BE FABRICATED USING DG3 SHEETING. SEE SPECIAL PROVISIONS.
- ① = FURNISH AND INSTALL SIGN PANEL ON TRAFFIC SIGNAL MAST ARM POLE.
- SEE STANDARD SIGNS MANUAL FOR ARROW AND OVERLAY DETAILS. (ALL ARROWS SHALL BE SOLID FILLED-IN ARROWS).
- EXISTING TYPE D SIGNS CURRENTLY MOUNTED ON TRAFFIC SIGNAL MAST ARMS AT ALL FIVE (5) IN-PLACE SIGNAL SYSTEMS SHALL BE SALVAGED FROM MAST ARMS AND INSTALLED ON POSTS OR BARRICADES FOR USE DURING TEMPORARY SIGNAL SYSTEM OPERATIONS (TO INFORM PUBLIC OF STREET NAMES AT EACH TEMPORARY SIGNAL SYSTEM) (INCLUDED IN PAY ITEM FOR EACH TEMPORARY SIGNAL SYSTEM).

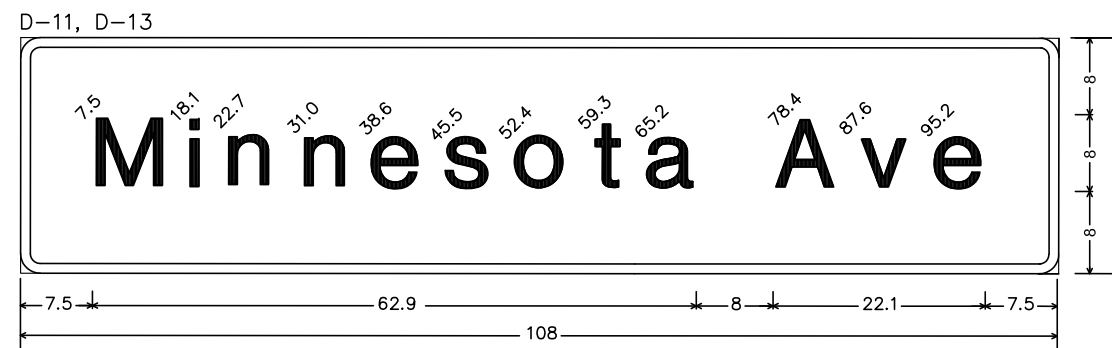
FINAL PLAN
 CONFORMING TO
 CONST. RECORDS
 DATE TJM 5/30/12



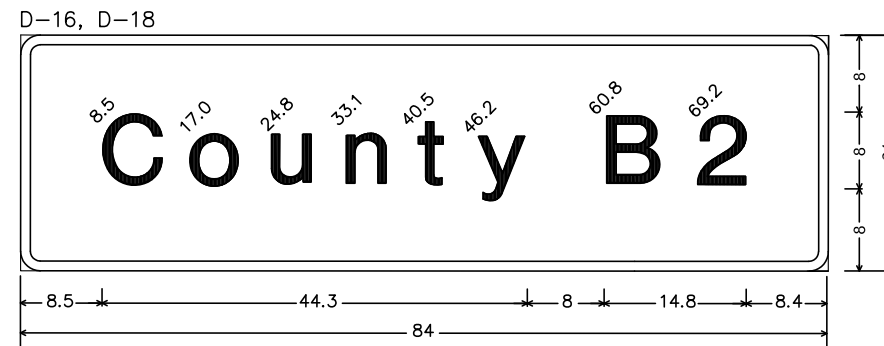
3.0" Radius, 1.0" Border, White on Green
 (Rice St) E Mod.



3.0" Radius, 1.0" Border, White on Green
 (County B) E Mod.



3.0" Radius, 1.0" Border, White on Green
 (Minnesota Ave) E Mod.



3.0" Radius, 1.0" Border, White on Green
 (County B2) E Mod.

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DESIGN TEAM	1	JMG	11/11	RECORD DRAWING
DRAWN BY:	JMG			
DESIGNER:	JMG			
CHECKED BY:	JMG			
	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.
 Certified By: John M. Gray, PE Lic. No. 22457
 Printed Name: John M. Gray, PE Date: 04/27/2010

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

RAMSEY COUNTY, MINNESOTA
TH 36 / RICE STREET (CSAH 49)
SP NO. 62-649-27 CTB, 6212-165 (TH 36)

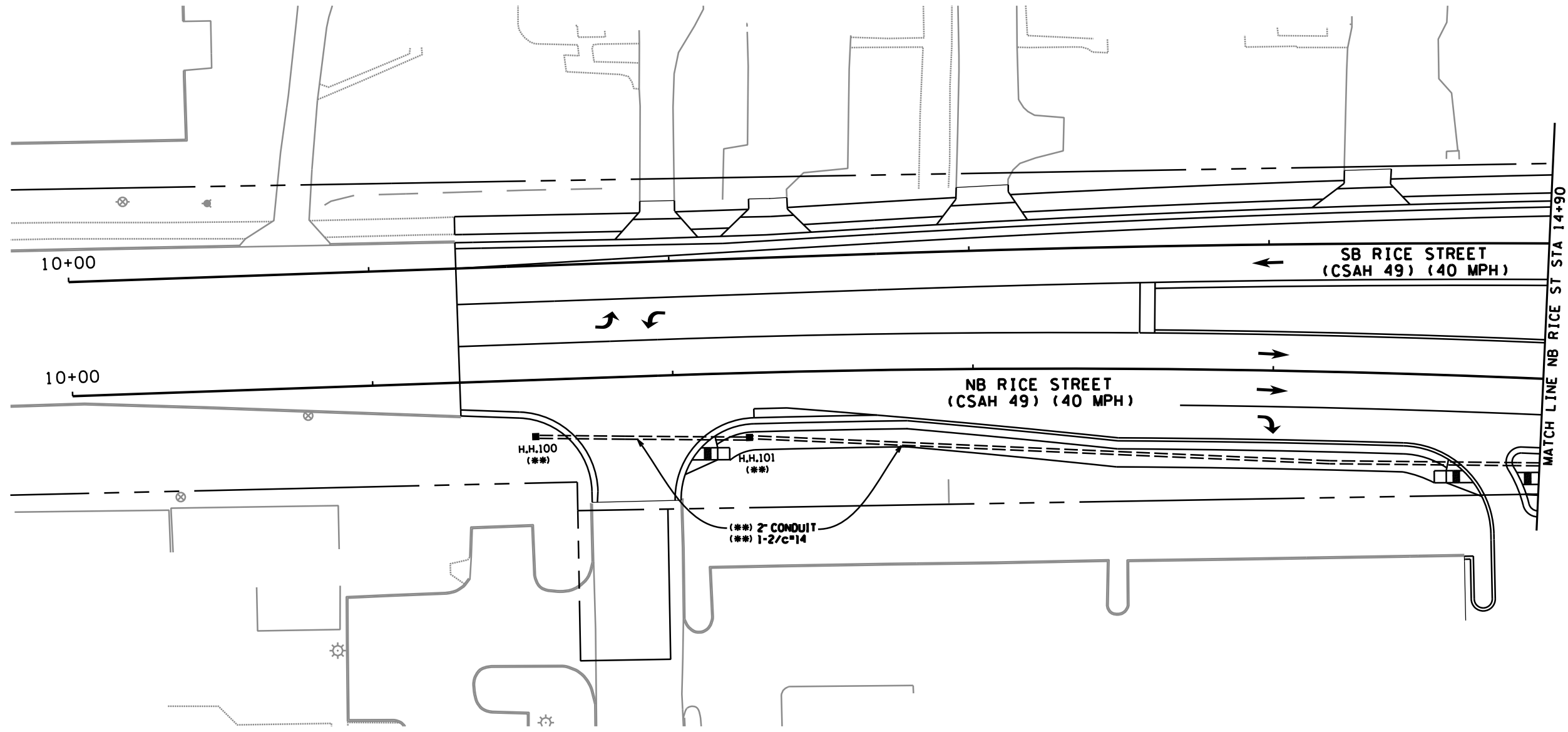
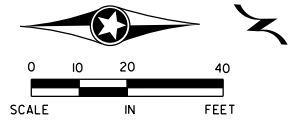
TRAFFIC SIGNAL SYSTEMS "A-D"
TRAFFIC SIGNAL SIGNING
CSAH 49 (RICE STREET) SIGNAL SYSTEMS

FILE NO. RAMSP108790	288
SG8 OF SG52	534

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6/7/2012

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Interconnect_1A



NOTE:
1) ITEMS DENOTED WITH AN (***) ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION "A" PAY ITEM.

FINAL PLAN
CONFORMING TO
CONST. RECORDS
DATE TJM 5/30/12

DESIGN TEAM	1	JMG	11/11	RECORD DRAWING
DRAWN BY:		MTT		
DESIGNER:		JMG		
CHECKED BY:		JMG		
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.
Certified By: JOHN M. GRAY, PE Lic. No. 22457
Printed Name: JOHN M. GRAY, PE Date: 3/3/2010



RAMSEY COUNTY, MINNESOTA
TH 36 / RICE STREET (CSAH 49)
SP NO. 62-649-27 CTB, 6212-165 (TH 36)

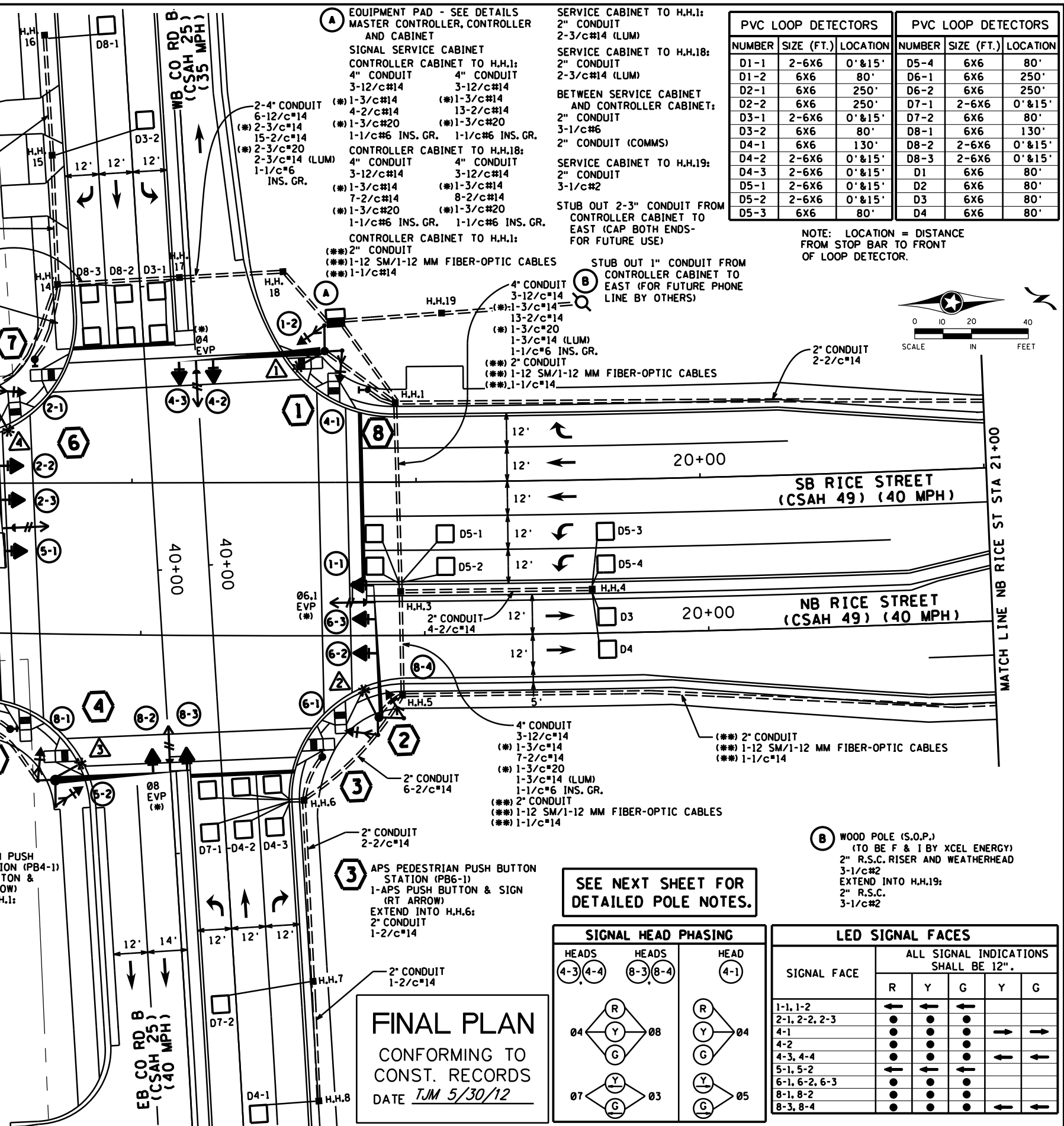
TRAFFIC SIGNAL SYSTEM "A"
INTERSECTION LAYOUT
RICE STREET (CSAH 49)
SOUTH OF COUNTY ROAD B (CSAH 25)

FILE NO. **290**
RAMSP08790
SG10
OF SG52 **534**

6/12/10 PM
6/7/2012
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SignalSystem A

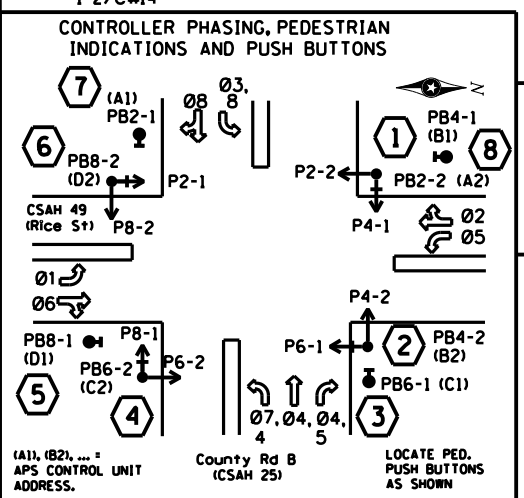
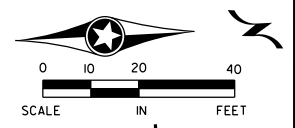
- NOTES:**
- 1) THE EXACT LOCATION OF POLES, LOOP DETECTORS, EQUIPMENT PAD AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
 - 2) SEE SPECIAL PROVISIONS FOR INFORMATION REGARDING PEDESTRIAN INDICATIONS, GALVANIZED POLES, AND ACCESSIBLE PEDESTRIAN SIGNALS (APS).
 - 3) EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.
 - 4) ALL VEHICLE AND PEDESTRIAN SIGNAL INDICATIONS SHALL BE LED.
 - 5) ALL LOOP DETECTORS SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR IN NON-METALLIC CONDUIT. SEE SPECIAL PROVISIONS AND DETAILS.
 - 6) A 3/4 INCH HALF COUPLING, 3/4 INCH PIPE NIPPLE AND CONDUIT OUTLET BODY FOR EVP EQUIPMENT SHALL BE FURNISHED AND INSTALLED 6 FEET FROM THE END OF THE MAST ARM ON EACH POLE.
 - 7) THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE CONNECTION OF POWER FOR THE NEW PERMANENT SIGNAL SYSTEM.
 - 8) THIS PLAN SPECIFIES CONDUIT SIZES, TYPES, & GENERAL LOCATIONS. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD. CONDUITS UNDER EXISTING ROADWAYS WILL REQUIRE BORING.
 - 9) ALL NEW CONDUIT SHALL BE PVC SCHEDULE 80 OR HDPE SCHEDULE 80 (EXCEPT AS OTHERWISE NOTED) AND CARRY 1/c#6 GREEN INSULATED GROUNDING CONDUCTOR AS SHOWN IN PLANS.
 - 10) CONTRACTOR SHALL COORDINATE ALL SIGNAL INSTALLATION WORK WITH ROAD WORK TO BE COMPLETED BY OTHERS AS PART OF THE ENTIRE PROJECT. SEE SPECIAL PROVISIONS.
 - 11) ITEMS DENOTED WITH AN (*) ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM "A" PAY ITEM.
 - 12) ITEMS DENOTED WITH AN (**) ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION "A" PAY ITEM.
 - 13) CONTRACTOR SHALL REMOVE THE EXISTING SIGNAL SYSTEM. SEE SPECIAL PROVISIONS FOR FURTHER INFORMATION (INCLUDED IN THE TRAFFIC CONTROL SIGNAL SYSTEM "A" PAY ITEM).
 - 14) SEE DETAILS FOR POLE MOUNTED SIGNALS, APS, EQUIPMENT PAD LAYOUT, NMC LOOP DETECTORS, AND TRAFFIC SIGNAL SIGNING.

- 15) CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING, INSTALLING, AND MAKING OPERATIONAL THE TRAFFIC SIGNAL CONTROLLER CABINET. SEE SPECIAL PROVISIONS.
- 16) CONTRACTOR SHALL VERIFY GROUNDWATER LEVELS WHEN INSTALLING POLE FOUNDATIONS AND SHALL DE-WATER AS NECESSARY DURING FOUNDATION INSTALLATION (INCIDENTAL).
- 17) ALL VEHICLE AND PEDESTRIAN SIGNAL INDICATIONS SHALL BE FABRICATED WITH BLACK POLYCARBONATE MATERIALS (INCLUDING BACKGROUND SHIELDS AND VISORS). SEE SPECIAL PROVISIONS.
- 18) SEE SPECIAL PROVISIONS FOR FURTHER INFORMATION REGARDING SALVAGING AND REINSTALLATION OF "RED LIGHT RUNNING" LIGHTS AND EQUIPMENT ONTO NEW POLES 2 AND 6.



PVC LOOP DETECTORS			PVC LOOP DETECTORS		
NUMBER	SIZE (FT.)	LOCATION	NUMBER	SIZE (FT.)	LOCATION
D1-1	2-6X6	0' & 15'	D5-4	6X6	80'
D1-2	6X6	80'	D6-1	6X6	250'
D2-1	6X6	250'	D6-2	6X6	250'
D2-2	6X6	250'	D7-1	2-6X6	0' & 15'
D3-1	2-6X6	0' & 15'	D7-2	6X6	80'
D3-2	6X6	80'	D8-1	6X6	130'
D4-1	6X6	130'	D8-2	2-6X6	0' & 15'
D4-2	2-6X6	0' & 15'	D8-3	2-6X6	0' & 15'
D4-3	2-6X6	0' & 15'	D1	6X6	80'
D5-1	2-6X6	0' & 15'	D2	6X6	80'
D5-2	2-6X6	0' & 15'	D3	6X6	80'
D5-3	6X6	80'	D4	6X6	80'

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



Ramsey County Intersection ID # = TRF 631
Meter Address = 2136 Rice Street

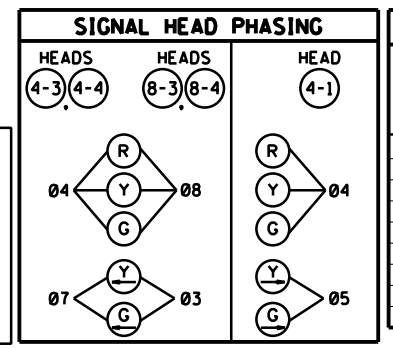
SIGNING:

- F & I OVERHEAD TYPE "D" SIGNS ON MAST ARMS 1, 2, 4, AND 6 (SEPARATE PAY ITEM).
- PEDESTRIAN PUSH BUTTON SIGNS ARE INCLUDED AS PART OF APS PUSH BUTTON INSTALLATIONS.
- ALL SIGNING SHALL BE INCIDENTAL WORK UNLESS SPECIFIC PAY ITEM IS INDICATED.

SIGNAL SYSTEM OPERATIONS:

- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 8 PHASE, WITH PHASES 1 AND 5 BEING PROTECTED LEFT TURN PHASES, PHASES 3 AND 7 BEING PROTECTED/PERMISSIVE LEFT TURN PHASES, AND PHASE 5 ALSO BEING PROTECTED/PERMISSIVE RIGHT TURN PHASE FOR WESTBOUND TRAFFIC.
- PHASES 2 AND 6 SHALL BE LOCK DETECTION.
- PHASES 1, 3, 4, 5, 7 AND 8 SHALL BE NON-LOCK DETECTION.
- VEHICLE PHASES 2 AND 6 SHALL OPERATE ON RECALL.

SEE NEXT SHEET FOR DETAILED POLE NOTES.



LED SIGNAL FACES

ALL SIGNAL INDICATIONS SHALL BE 12".

SIGNAL FACE	ALL SIGNAL INDICATIONS SHALL BE 12".				
	R	Y	G	Y	G
1-1, 1-2	←	←	←		
2-1, 2-2, 2-3	•	•	•	→	→
4-1	•	•	•		
4-2	•	•	•		
4-3, 4-4	•	•	•	←	←
5-1, 5-2	←	←	←		
6-1, 6-2, 6-3	•	•	•		
8-1, 8-2	•	•	•		
8-3, 8-4	•	•	•	←	←

FINAL PLAN
CONFORMING TO
CONST. RECORDS
DATE JUN 5/30/12

DESIGN TEAM	1	JMG	11/11	RECORD DRAWING
DRAWN BY:	MTT			
DESIGNER:	JMG			
CHECKED BY:	JMG			
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.
Certified By: JOHN M. GRAY, PE Lic. No. 22457
Printed Name: JOHN M. GRAY, PE Date: 3/3/2010



RAMSEY COUNTY, MINNESOTA
TH 36 / RICE STREET (CSAH 49)
SP NO. 62-649-27 CTB, 6212-165 (TH 36)

TRAFFIC SIGNAL SYSTEM "A"
INTERSECTION LAYOUT
RICE STREET (CSAH 49)
AT COUNTY ROAD B (CSAH 25)

FILE NO. **291**
RAMSP108790
SG11
OF SC52

1 PA100 POLE FOUNDATION
 TYPE PA100-A-50-X30-4
 LUMINAIRE-250 W HPS AT 0 DEG. (SHOEBOX)
 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
 1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 11'
 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG & 180 DEG.
 2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED
 AT 90 DEG. & 180 DEG.
 1-APS PUSH BUTTON & SIGN (LT ARROW) (PB2-2)
 R10-12 SIGN PANEL-ADJACENT TO 4-3
 1-TYPE D SIGN PANEL-OVERHEAD (D-1)
 (*) ONE WAY EVP DETECTOR AND LIGHT (Ø4)
 EXTEND INTO H.H.1:
 3" CONDUIT
 3-12/c#14
 (*) 1-3/c#14
 1-2/c#14
 (*) 1-3/c#20
 1-3/c#14 (LUM)
 2-1/c#6 INS. GR.

2 PA100 POLE FOUNDATION
 TYPE PA100-A-45-X30-4
 LUMINAIRE-250 W HPS AT 0 DEG. (SHOEBOX)
 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
 2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 11' AND 23'
 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG & 180 DEG.
 2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED
 AT 90 DEG. & 180 DEG.
 1-APS PUSH BUTTON & SIGN (LT ARROW) (PB4-2)
 1-TYPE D SIGN PANEL-OVERHEAD (D-2)
 (*) ONE WAY EVP DETECTOR AND LIGHT (Ø6,1)
 "RED LIGHT RUNNING" ENFORCEMENT LIGHT, GLOBE, AND MOUNTING
 HARDWARE - INPLACE (SALVAGE FROM INPLACE SIGNAL SYSTEM
 AND INSTALL ON 90° SIDE OF POLE-FACING SB TRAFFIC)-
 PROVIDE ALL ADDITIONAL MATERIALS NEEDED TO MOUNT
 ENFORCEMENT LIGHT EQUIPMENT AND MAKE OPERATIONAL.
 EXTEND INTO H.H.5:
 3" CONDUIT
 3-12/c#14
 (*) 1-3/c#14
 1-2/c#14
 (*) 1-3/c#20
 1-3/c#14 (LUM)
 1-1/c#6 INS. GR.

4 PA100 POLE FOUNDATION
 TYPE PA100-A-45-X30-4
 LUMINAIRE-250 W HPS AT 0 DEG. (SHOEBOX)
 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
 1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 11'
 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG & 180 DEG.
 2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED
 AT 90 DEG & 180 DEG.
 1-APS PUSH BUTTON & SIGN (LT ARROW) (PB6-2)
 R10-12 SIGN PANEL-ADJACENT TO 8-3
 1-TYPE D SIGN PANEL-OVERHEAD (D-3)
 (*) ONE WAY EVP DETECTOR AND LIGHT (Ø8)
 EXTEND INTO H.H.9:
 3" CONDUIT
 3-12/c#14
 (*) 1-3/c#14
 1-2/c#14
 (*) 1-3/c#20
 1-3/c#14 (LUM)
 1-1/c#6 INS. GR.

6 PA100 POLE FOUNDATION
 TYPE PA100-A-50-X30-4
 LUMINAIRE-250 W HPS AT 0 DEG. (SHOEBOX)
 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
 2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 17' AND 29'
 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG & 180 DEG.
 2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED
 AT 90 DEG & 180 DEG.
 1-APS PUSH BUTTON & SIGN (LT ARROW) (PB8-2)
 R3-4 SIGN PANEL-ADJACENT TO 5-1
 1-TYPE D SIGN PANEL-OVERHEAD (D-4)
 (*) ONE WAY EVP DETECTOR AND LIGHT (Ø2,5)
 "RED LIGHT RUNNING" ENFORCEMENT LIGHT, GLOBE, AND MOUNTING
 HARDWARE-INPLACE (SALVAGE FROM INPLACE SIGNAL SYSTEM
 AND INSTALL ON 90° SIDE OF POLE-FACING NB TRAFFIC)-
 PROVIDE ALL ADDITIONAL MATERIALS NEEDED TO MOUNT
 ENFORCEMENT LIGHT EQUIPMENT AND MAKE OPERATIONAL.
 EXTEND INTO H.H.13:
 3" CONDUIT
 3-12/c#14
 (*) 1-3/c#14
 1-2/c#14
 (*) 1-3/c#20
 1-3/c#14 (LUM)
 2-1/c#6 INS. GR.

FINAL PLAN
 CONFORMING TO
 CONST. RECORDS
 DATE TJM 5/30/12

Ramsey County Intersection ID # = TRF 631
 Meter Address = 2136 Rice Street

DESIGN TEAM	1	JMG	11/11	RECORD DRAWING
DRAWN BY: <u>MTT</u>				
DESIGNER: <u>JMG</u>				
CHECKED BY: <u>JMG</u>				
	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.
 Certified By: _____ Lic. No. 22457
 Licensed Professional Engineer
 Printed Name: JOHN M. GRAY, PE Date: 3/3/2010



RAMSEY COUNTY, MINNESOTA
TH 36 / RICE STREET (CSAH 49)
 SP NO. 62-649-27 CTB, 6212-165 (TH 36)

TRAFFIC SIGNAL SYSTEM "A"
INTERSECTION LAYOUT
 RICE STREET (CSAH 49)
 AT COUNTY ROAD B (CSAH 25)

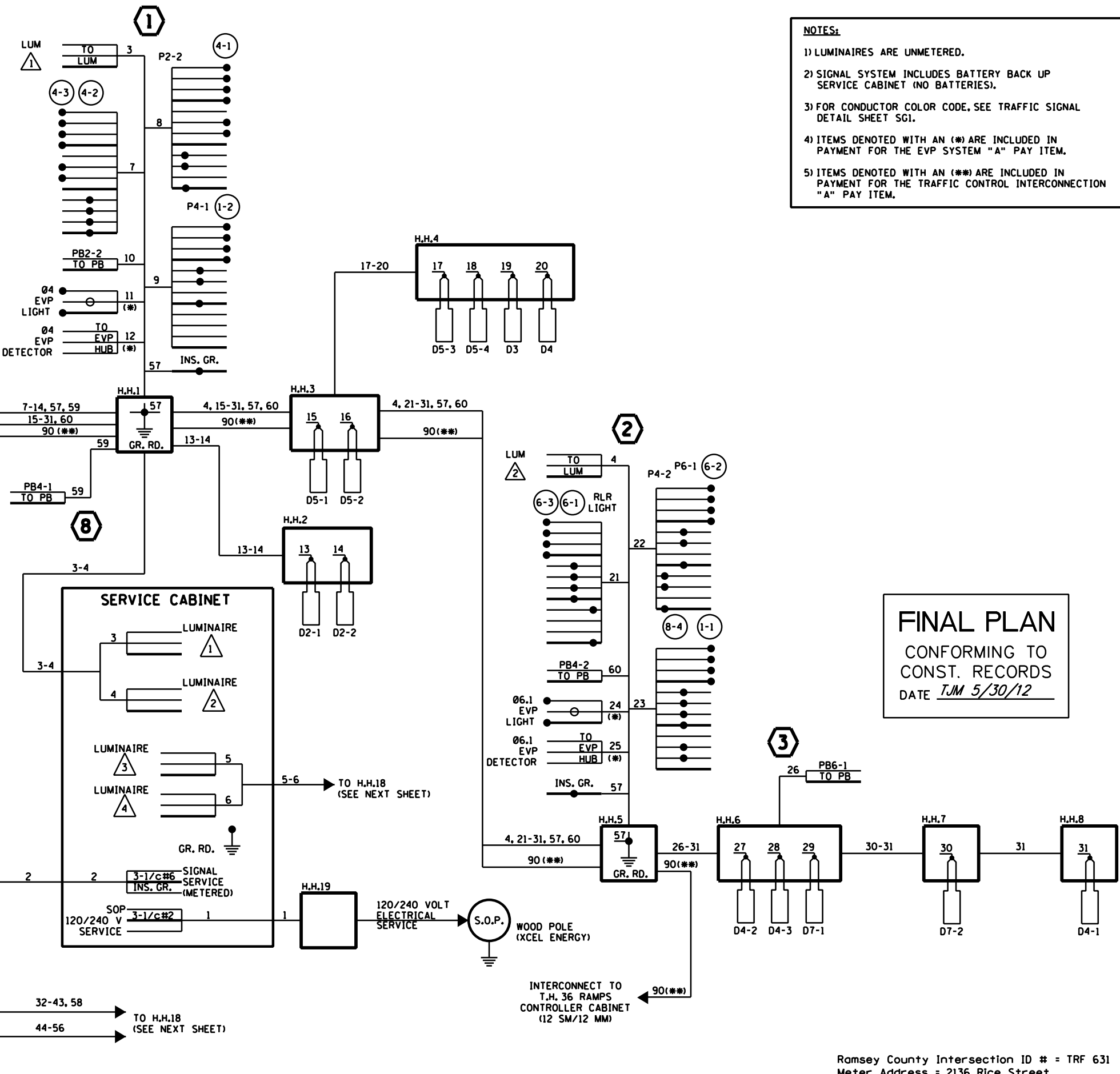
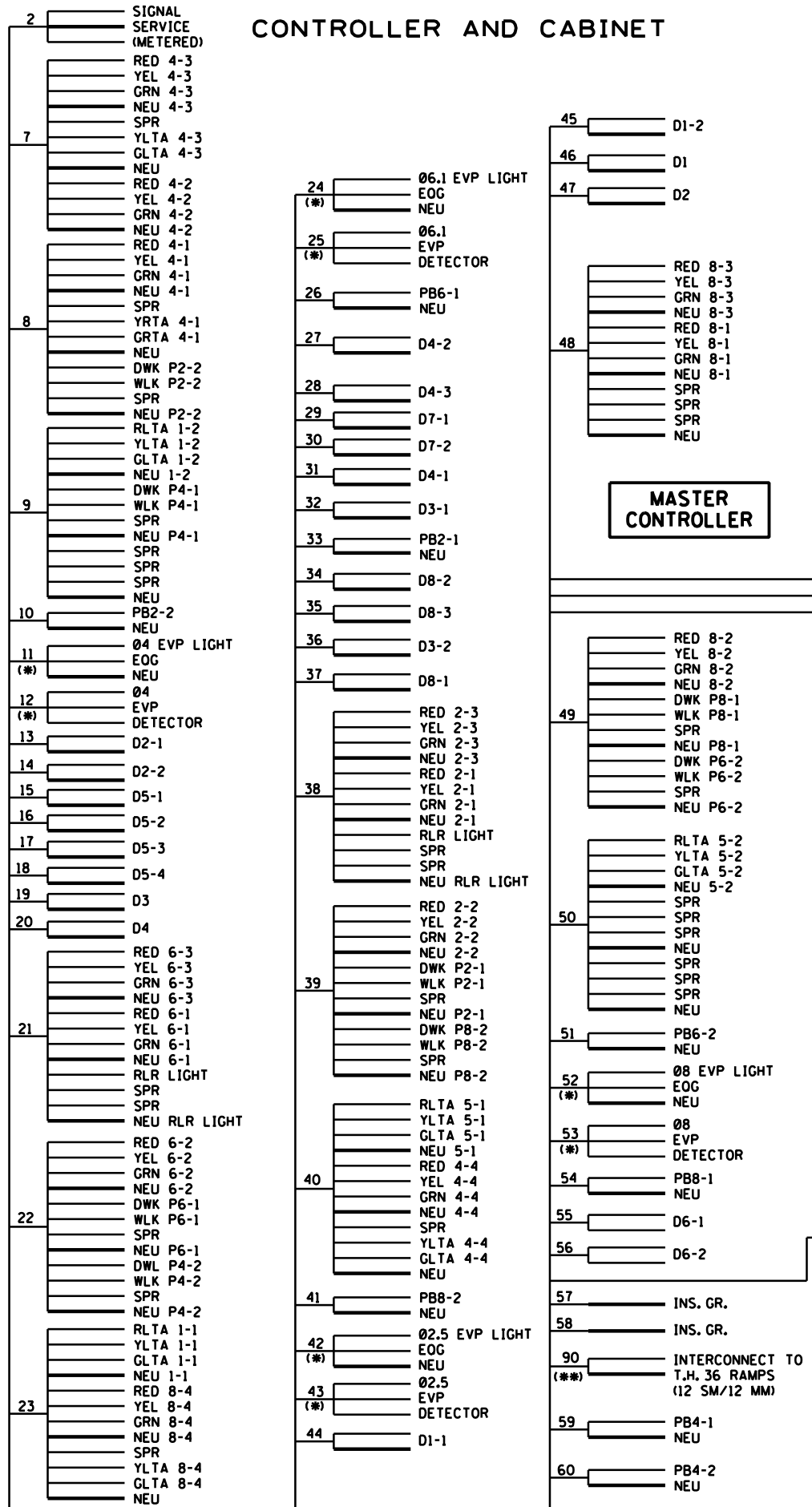
FILE NO. RAMSP108790	292
SG12 OF 652	534

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CONTROLLER AND CABINET



- NOTES:**
- 1) LUMINAIRES ARE UNMETERED.
 - 2) SIGNAL SYSTEM INCLUDES BATTERY BACK UP SERVICE CABINET (NO BATTERIES).
 - 3) FOR CONDUCTOR COLOR CODE, SEE TRAFFIC SIGNAL DETAIL SHEET SGI.
 - 4) ITEMS DENOTED WITH AN (*) ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM "A" PAY ITEM.
 - 5) ITEMS DENOTED WITH AN (**) ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION "A" PAY ITEM.

FINAL PLAN
 CONFORMING TO
 CONST. RECORDS
 DATE TJM 5/30/12

Ramsey County Intersection ID # = TRF 631
 Meter Address = 2136 Rice Street

DESIGN TEAM	1	JMG	11/11	RECORD DRAWING
DRAWN BY:	MTT			
DESIGNER:	JMG			
CHECKED BY:	JMG			
NO.	BY	DATE	REVISIONS	

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 Printed Name: JOHN M. GRAY, PE Date: 3/3/2010



RAMSEY COUNTY, MINNESOTA
TH 36 / RICE STREET (CSAH 49)
 SP NO. 62-649-27 CTB, 6212-165 (TH 36)

TRAFFIC SIGNAL SYSTEM "A"
FIELD WIRING DIAGRAM
 RICE STREET (CSAH 49)
 AT COUNTY ROAD B (CSAH 25)

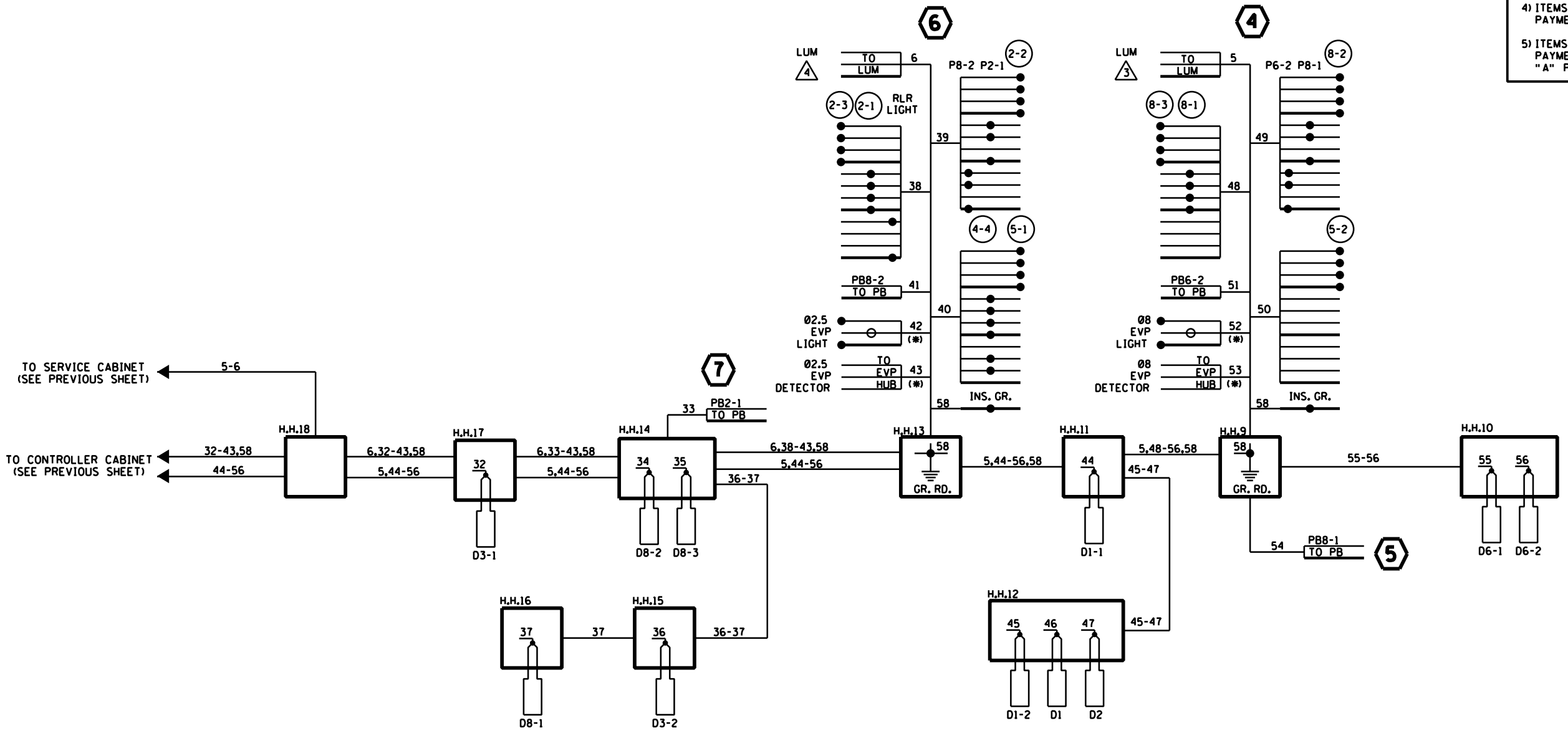
FILE NO. **293**
 RAMSP108790
 SGI3
 OF SCS2
534

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6/7/2012

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SignalA_WD_2

- NOTES:**
- 1) LUMINAIRES ARE UNMETERED.
 - 2) SIGNAL SYSTEM INCLUDES BATTERY BACK UP SERVICE CABINET (NO BATTERIES).
 - 3) FOR CONDUCTOR COLOR CODE, SEE TRAFFIC SIGNAL DETAIL SHEET SGI.
 - 4) ITEMS DENOTED WITH AN (*) ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM "A" PAY ITEM.
 - 5) ITEMS DENOTED WITH AN (**) ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION "A" PAY ITEM.



FINAL PLAN
 CONFORMING TO
 CONST. RECORDS
 DATE TJM 5/30/12

Ramsey County Intersection ID # = TRF 631
 Meter Address = 2136 Rice Street

DESIGN TEAM	1	JMG	11/11	RECORD DRAWING
DRAWN BY:	MTT			
DESIGNER:	JMG			
CHECKED BY:	JMG			
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.
 Certified By: JOHN M. GRAY, PE Lic. No. 22457
 Licensed Professional Engineer
 Printed Name: JOHN M. GRAY, PE Date: 3/3/2010



RAMSEY COUNTY, MINNESOTA
TH 36 / RICE STREET (CSAH 49)
 SP NO. 62-649-27 CTB, 6212-165 (TH 36)

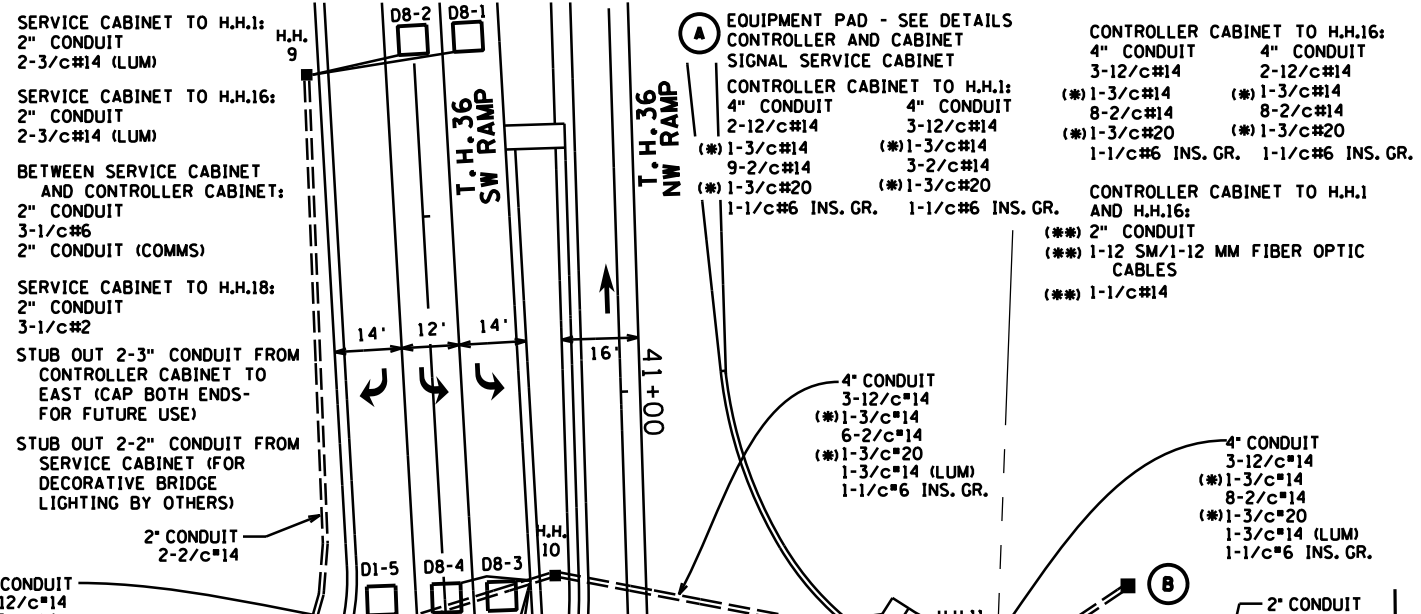
TRAFFIC SIGNAL SYSTEM "A"
FIELD WIRING DIAGRAM
 RICE STREET (CSAH 49)
 AT COUNTY ROAD B (CSAH 25)

FILE NO. RAMSP108790	294
SG14 OF SC52	534

6/13/02 PM
6/7/2012
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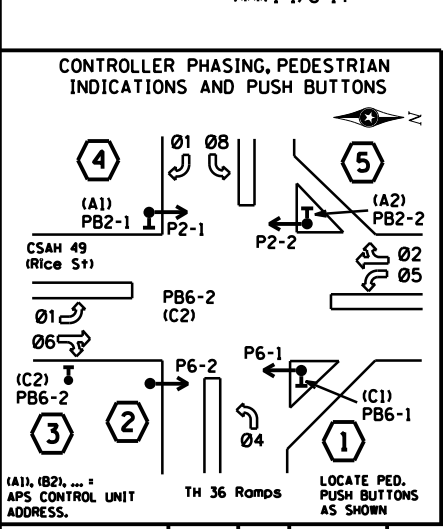
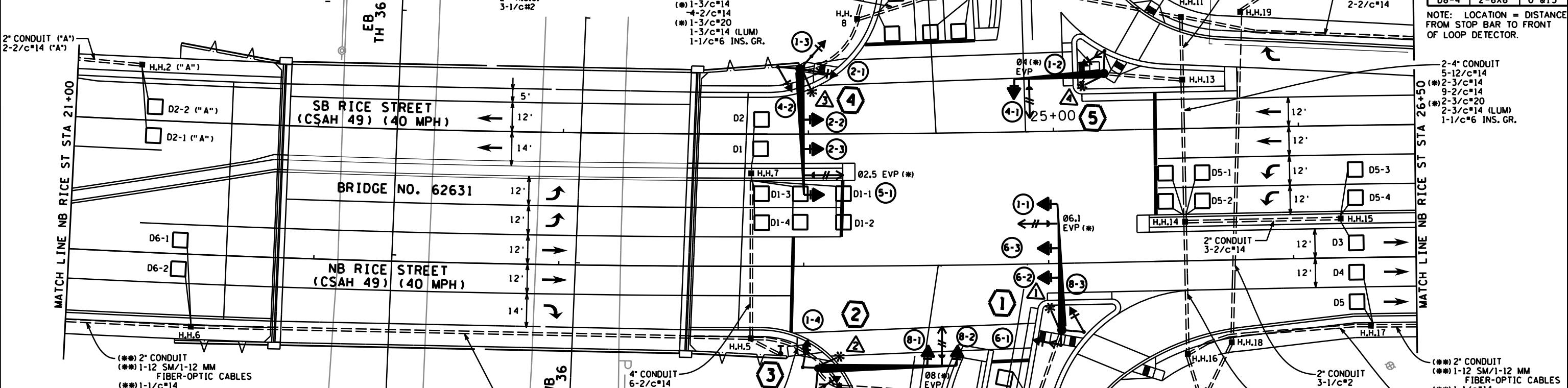
- NOTES:**
- THE EXACT LOCATION OF POLES, LOOP DETECTORS, EQUIPMENT PAD AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
 - SEE SPECIAL PROVISIONS FOR INFORMATION REGARDING PEDESTRIAN INDICATIONS, GALVANIZED POLES, AND ACCESSIBLE PEDESTRIAN SIGNALS (APS).
 - EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.
 - ALL VEHICLE AND PEDESTRIAN SIGNAL INDICATIONS SHALL BE LED.
 - ALL LOOP DETECTORS SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR IN NON-METALLIC CONDUIT. SEE SPECIAL PROVISIONS AND DETAILS.
 - A 3/4 INCH HALF COUPLING, 3/4 INCH PIPE NIPPLE AND CONDUIT OUTLET BODY FOR EVP EQUIPMENT SHALL BE FURNISHED AND INSTALLED 6 FEET FROM THE END OF THE MAST ARM ON EACH POLE.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE CONNECTION OF POWER FOR THE NEW PERMANENT SIGNAL SYSTEM.
 - THIS PLAN SPECIFIES CONDUIT SIZES, TYPES, & GENERAL LOCATIONS. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD. CONDUITS UNDER EXISTING ROADWAYS WILL REQUIRE BORING.
 - ALL NEW CONDUIT SHALL BE PVC SCHEDULE 80 OR HDPE SCHEDULE 80 (EXCEPT AS OTHERWISE NOTED) AND CARRY 1/c#6 GREEN INSULATED GROUNDING CONDUCTOR AS SHOWN IN PLANS.
 - CONTRACTOR SHALL COORDINATE ALL SIGNAL INSTALLATION WORK WITH ROAD WORK TO BE COMPLETED BY OTHERS AS PART OF THE ENTIRE PROJECT. SEE SPECIAL PROVISIONS.

- ITEMS DENOTED WITH AN (*) ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM "B" PAY ITEM.
- ITEMS DENOTED WITH AN (**) ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION "A" PAY ITEM.
- CONTRACTOR SHALL REMOVE TWO (2) EXISTING SIGNAL SYSTEMS (ONE EACH AT THE TH 36 RAMPS). SEE SPECIAL PROVISIONS FOR FURTHER INFORMATION. (INCLUDED IN THE TRAFFIC CONTROL SIGNAL SYSTEM "B" PAY ITEM).
- SEE DETAILS FOR POLE MOUNTED SIGNALS, APS, EQUIPMENT PAD LAYOUT, NMC LOOP DETECTORS, AND TRAFFIC SIGNAL SIGNING.
- CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING, INSTALLING AND MAKING OPERATIONAL THE TRAFFIC SIGNAL CONTROLLER CABINET. SEE SPECIAL PROVISIONS.
- CONTRACTOR SHALL VERIFY GROUNDWATER LEVELS WHEN INSTALLING POLE FOUNDATIONS AND SHALL DE-WATER AS NECESSARY DURING FOUNDATION INSTALLATION (INCIDENTAL).
- ALL VEHICLE AND PEDESTRIAN SIGNAL INDICATIONS SHALL BE FABRICATED WITH BLACK POLYCARBONATE MATERIALS (INCLUDING BACKGROUND SHIELDS AND VISORS). SEE SPECIAL PROVISIONS.
- CONDUIT ACROSS BRIDGE 62631 SHALL BE MEASURED AND PAID FOR SEPARATELY. SEE BRIDGE PLANS AND STATEMENT OF ESTIMATED QUANTITIES.



PVC LOOP DETECTORS		
NUMBER	SIZE (FT.)	LOCATION
D1-1	6X6	0'
D1-2	6X6	0'
D1-3	2-6X6	10' & 30'
D1-4	2-6X6	10' & 30'
D1-5	2-6X6	0' & 15'
D2-1	6X6	250'
D2-2	6X6	250'
D4-1	6X6	130'
D4-2	2-6X6	0' & 15'
D5-1	2-6X6	0' & 15'
D5-2	2-6X6	0' & 15'
D5-3	6X6	80'
D5-4	6X6	80'
D6-1	6X6	250'
D6-2	6X6	250'
D1	6X6	30'
D2	6X6	30'
D3	6X6	80'
D4	6X6	80'
D5	6X6	80'
D8-1	6X6	130'
D8-2	6X6	130'
D8-3	2-6X6	0' & 15'
D8-4	2-6X6	0' & 15'

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



Mn/DOT SYSTEM ID # = 39223
Ramsey County Intersection ID # = TRF 395
Meter Address = 2244 Rice Street

SIGNING:

- F & I OVERHEAD TYPE "D" SIGNS ON MAST ARMS 1, 2, 4 AND 5 (SEPARATE PAY ITEM).
- PEDESTRIAN PUSH BUTTON SIGNS ARE INCLUDED AS PART OF APS PUSH BUTTON INSTALLATIONS.
- ALL SIGNING SHALL BE INCIDENTAL WORK UNLESS SPECIFIC PAY ITEM IS INDICATED.

SIGNAL SYSTEM OPERATIONS:

- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 6 PHASE, WITH 1, 4, 5 AND 8 BEING PROTECTED LEFT TURN PHASES, AND PHASE 1 ALSO BEING A PROTECTED RIGHT TURN PHASE FOR EASTBOUND TRAFFIC.
- PHASES 2 AND 6 SHALL BE LOCK DETECTION.
- PHASES 1, 4, 5, AND 8 SHALL BE NON-LOCK DETECTION.
- VEHICLE PHASES 2 AND 6 SHALL OPERATE ON RECALL.
- PHASES 1 AND 5 SHALL BE LEAD-LAG PROTECTED LEFT TURN PHASES.

SEE NEXT SHEET FOR DETAILED POLE NOTES.

FINAL PLAN
CONFORMING TO
CONST. RECORDS
DATE TJM 5/30/12

LED SIGNAL FACES					
SIGNAL FACE	ALL SIGNAL INDICATIONS SHALL BE 12"				
	R	Y	G	Y	G
1-1, 1-2	←	←	←		
1-3, 1-4	←	←	←		
2-1, 2-2, 2-3	←	←	←		
4-1, 4-2	←	←	←		
5-1, 5-2	←	←	←		
6-1, 6-2, 6-3	←	←	←		
8-1, 8-2, 8-3	←	←	←		

DESIGN TEAM	1	JMG	11/11	RECORD DRAWING
DRAWN BY:	MTT			
DESIGNER:	JMG			
CHECKED BY:	JMG			
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.
Certified By: JOHN M. GRAY, PE Lic. No. 22457
Printed Name: JOHN M. GRAY, PE Date: 3/3/2010



RAMSEY COUNTY, MINNESOTA
TH 36 / RICE STREET (CSAH 49)
SP NO. 62-649-27 CTB, 6212-165 (TH 36)

TRAFFIC SIGNAL SYSTEM "B"
INTERSECTION LAYOUT
T.H. 36 AT RICE STREET (CSAH 49) RAMPS

FILE NO.	295
RAMSP108790	
SG15	534
OF SG52	

6/13/03 PM

6/7/2012

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Interconnect 1 Revised

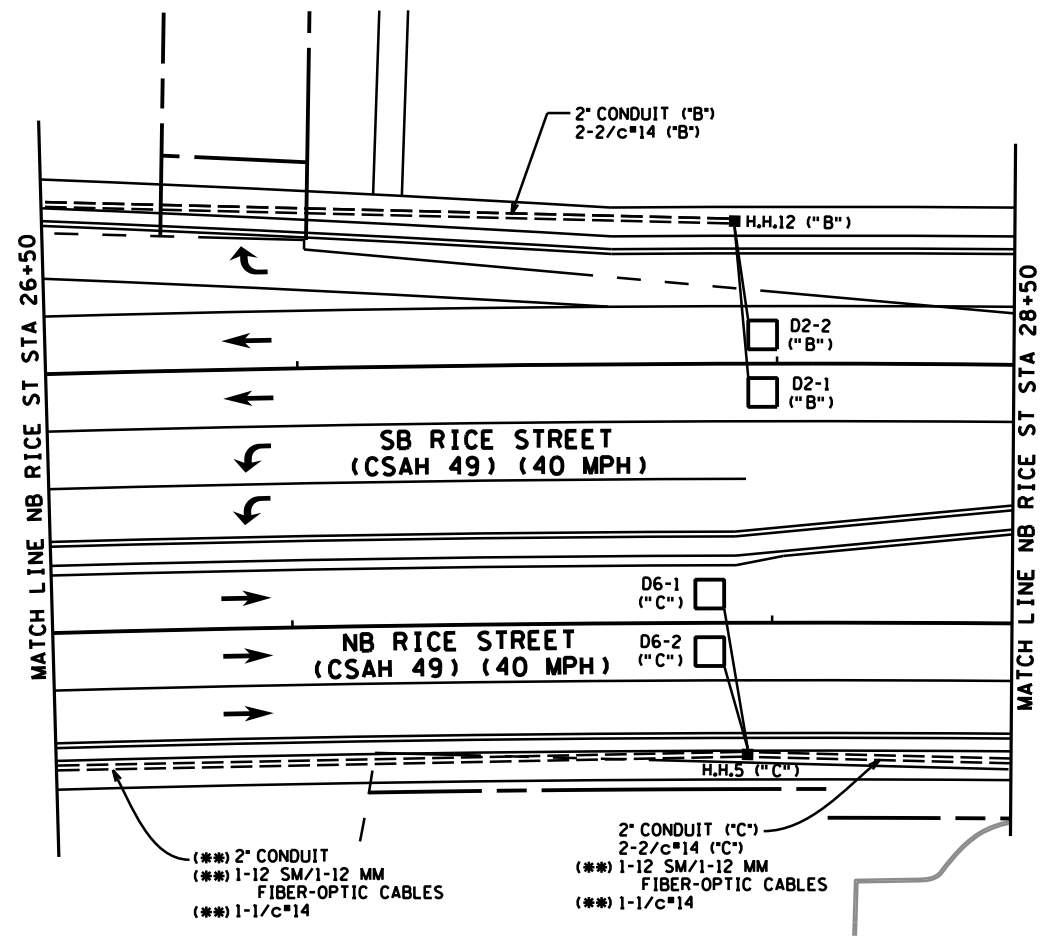
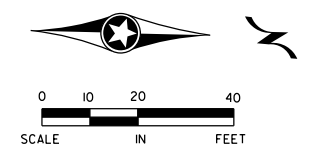
- ① PA100 POLE FOUNDATION
TYPE PA100-A-50-X30-4
LUMINAIRE-250 W HPS AT 0 DEG. (SHOEBOX)
("B")
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 17' AND 29'
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG. & 180 DEG.
1-ANGLE MOUNT C.D. PED INDICATION-POLE MOUNTED AT 180 DEG.
1-APS PUSH BUTTON & SIGN (LT ARROW) (PB6-1)
1-R9-3a SIGN PANEL-FACING POLE 4
R3-4 SIGN PANEL-ADJACENT TO 1-1
2-TYPE D SIGN PANELS-OVERHEAD (D-5, D-6)
(*) ONE WAY EVP DETECTOR AND LIGHT (Ø6,1)
EXTEND INTO H.H.3:
3" CONDUIT
3-12/c#14
(*) 1-3/c#14
1-2/c#14
(*) 1-3/c#20
1-3/c#14 (LUM)
2-1/c#6 INS. GR.

- ② PA100 POLE FOUNDATION
TYPE PA100-A-55-X30-4
LUMINAIRE-250 W HPS AT 0 DEG. (SHOEBOX)
("B")
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 11'
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG. & 180 DEG.
1-ANGLE MOUNT C.D. PED INDICATION-POLE MOUNTED AT 90 DEG.
1-R9-3a SIGN PANEL-FACING POLE 3
1-TYPE D SIGN PANEL-OVERHEAD (D-7)
(*) ONE WAY EVP DETECTOR AND LIGHT (Ø8)
EXTEND INTO H.H.4:
3" CONDUIT
2-12/c#14
(*) 1-3/c#14
(*) 1-3/c#20
1-3/c#14 (LUM)
1-1/c#6 INS. GR.

- ③ APS PEDESTRIAN PUSH BUTTON STATION (PB6-2)
1-APS PUSH BUTTON & SIGN (LT ARROW)
EXTEND INTO H.H.5:
2" CONDUIT
1-2/c#14

- ④ PA100 POLE FOUNDATION
TYPE PA100-A-50-X30-4
LUMINAIRE-250 W HPS AT 0 DEG. (SHOEBOX)
("B")
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 17' AND 29'
3-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG., 180 DEG., & 270 DEG.
1-ANGLE MOUNT C.D. PED INDICATION-POLE MOUNTED AT 270 DEG.
1-APS PUSH BUTTON & SIGN (RT ARROW) (PB2-1)
1-R9-3a SIGN PANEL-FACING POLE 2
R3-4 SIGN PANEL-ADJACENT TO 5-1
2-TYPE D SIGN PANELS-OVERHEAD (D-8, D-9)
(*) ONE WAY EVP DETECTOR AND LIGHT (Ø2,5)
EXTEND INTO H.H.8:
3" CONDUIT
3-12/c#14
(*) 1-3/c#14
1-2/c#14
(*) 1-3/c#20
1-3/c#14 (LUM)
1-1/c#6 INS. GR.

- ⑤ PA100 POLE FOUNDATION
TYPE PA100-A-35-X30-4
LUMINAIRE-250 W HPS AT 0 DEG. (SHOEBOX)
("B")
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
1-ANGLE MOUNT SIGNAL-POLE MOUNTED 90 DEG.
1-ANGLE MOUNT C.D. PED INDICATION-POLE MOUNTED AT 90 DEG.
1-APS PUSH BUTTON & SIGN (RT ARROW) (PB2-2)
1-R9-3a SIGN PANEL-FACING POLE 1
1-TYPE D SIGN PANEL-OVERHEAD (D-10)
(*) ONE WAY EVP DETECTOR AND LIGHT (Ø4)
EXTEND INTO H.H.13:
3" CONDUIT
2-12/c#14
(*) 1-3/c#14
1-2/c#14
(*) 1-3/c#20
1-3/c#14 (LUM)
2-1/c#6 INS. GR.



- ① PA100 POLE FOUNDATION
TYPE PA100-A-45-X30-4
LUMINAIRE-250 W HPS AT 0 DEG. (SHOEBOX)
("C")
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 11' AND 23'
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG. & 180 DEG.
2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED AT 90 DEG. & 180 DEG.
1-APS PUSH BUTTON & SIGN (LT ARROW) (PB4-2)
R10-12 SIGN PANEL-ADJACENT TO 6-4
1-TYPE D SIGN PANEL-OVERHEAD (D-11)
(*) ONE WAY EVP DETECTOR AND LIGHT (Ø6)
EXTEND INTO H.H.16:
3" CONDUIT
3-12/c#14
(*) 1-3/c#14
1-2/c#14
(*) 1-3/c#20
1-3/c#14 (LUM)
2-1/c#6 INS. GR.

- ③ PA100 POLE FOUNDATION
TYPE PA100-A-40-X30-4
LUMINAIRE-250 W HPS AT 0 DEG. (SHOEBOX)
("C")
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG. & 180 DEG.
2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED AT 90 DEG. & 180 DEG.
1-APS PUSH BUTTON SIGN (RT ARROW) (PB3-1)
1-TYPE D SIGN PANEL-OVERHEAD (D-12)
(*) ONE WAY EVP DETECTOR AND LIGHT (Ø3)
EXTEND INTO H.H.3:
3" CONDUIT
2-12/c#14
(*) 1-3/c#14
1-2/c#14
(*) 1-3/c#20
1-3/c#14 (LUM)
2-1/c#6 INS. GR.

- ⑤ PA100 POLE FOUNDATION
TYPE PA100-A-55-X30-4
LUMINAIRE-250 W HPS AT 0 DEG. (SHOEBOX)
("C")
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 13' AND 25'
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG. & 180 DEG.
2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED AT 90 DEG. & 180 DEG.
1-APS PUSH BUTTON & SIGN (LT ARROW) (PB3-2)
R10-12 SIGN PANEL-ADJACENT TO 2-4
1-TYPE D SIGN PANEL-OVERHEAD (D-13)
(*) ONE WAY EVP DETECTOR AND LIGHT (Ø2)
EXTEND INTO H.H.8:
3" CONDUIT
3-12/c#14
(*) 1-3/c#14
1-2/c#14
(*) 1-3/c#20
1-3/c#14 (LUM)
1-1/c#6 INS. GR.

- ⑦ PA100 POLE FOUNDATION
TYPE PA100-A-35-X30-4
LUMINAIRE-250 W HPS AT 0 DEG. (SHOEBOX)
("C")
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 11'
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG. & 180 DEG.
2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED AT 90 DEG. & 180 DEG.
1-APS PUSH BUTTON & SIGN (LT ARROW) (PB2-2)
1-TYPE D SIGN PANEL-OVERHEAD (D-14)
(*) ONE WAY EVP DETECTOR AND LIGHT (Ø4)
EXTEND INTO H.H.11:
3" CONDUIT
3-12/c#14
(*) 1-3/c#14
1-2/c#14
(*) 1-3/c#20
1-3/c#14 (LUM)
1-1/c#6 INS. GR.

FINAL PLAN
CONFORMING TO
CONST. RECORDS
DATE TJM 5/30/12

DESIGN TEAM	5	JMG	4/5/2011
DRAWN BY:	MTT	JMG	11/11
DESIGNER:	JMG		
CHECKED BY:	JMG		
	NO.	BY	DATE

REVISED POLE 5 -SYSTEM "C"
RECORD DRAWING
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.
Certified By: JOHN M. GRAY, PE Lic. No. 22457
Printed Name: JOHN M. GRAY, PE Date: 3/3/2010



RAMSEY COUNTY, MINNESOTA
TH 36 / RICE STREET (CSAH 49)
SP NO. 62-649-27 CTB, 6212-165 (TH 36)

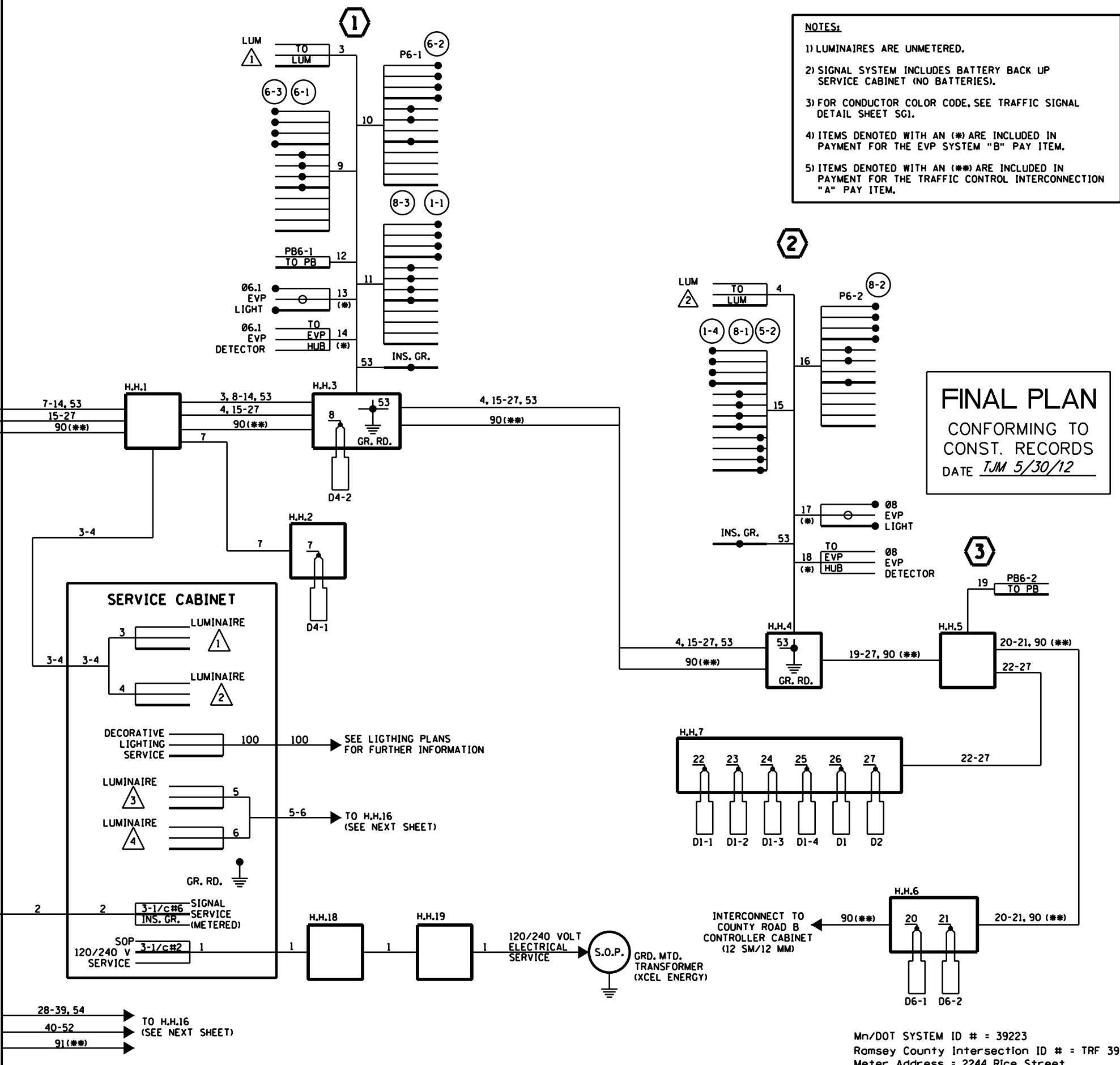
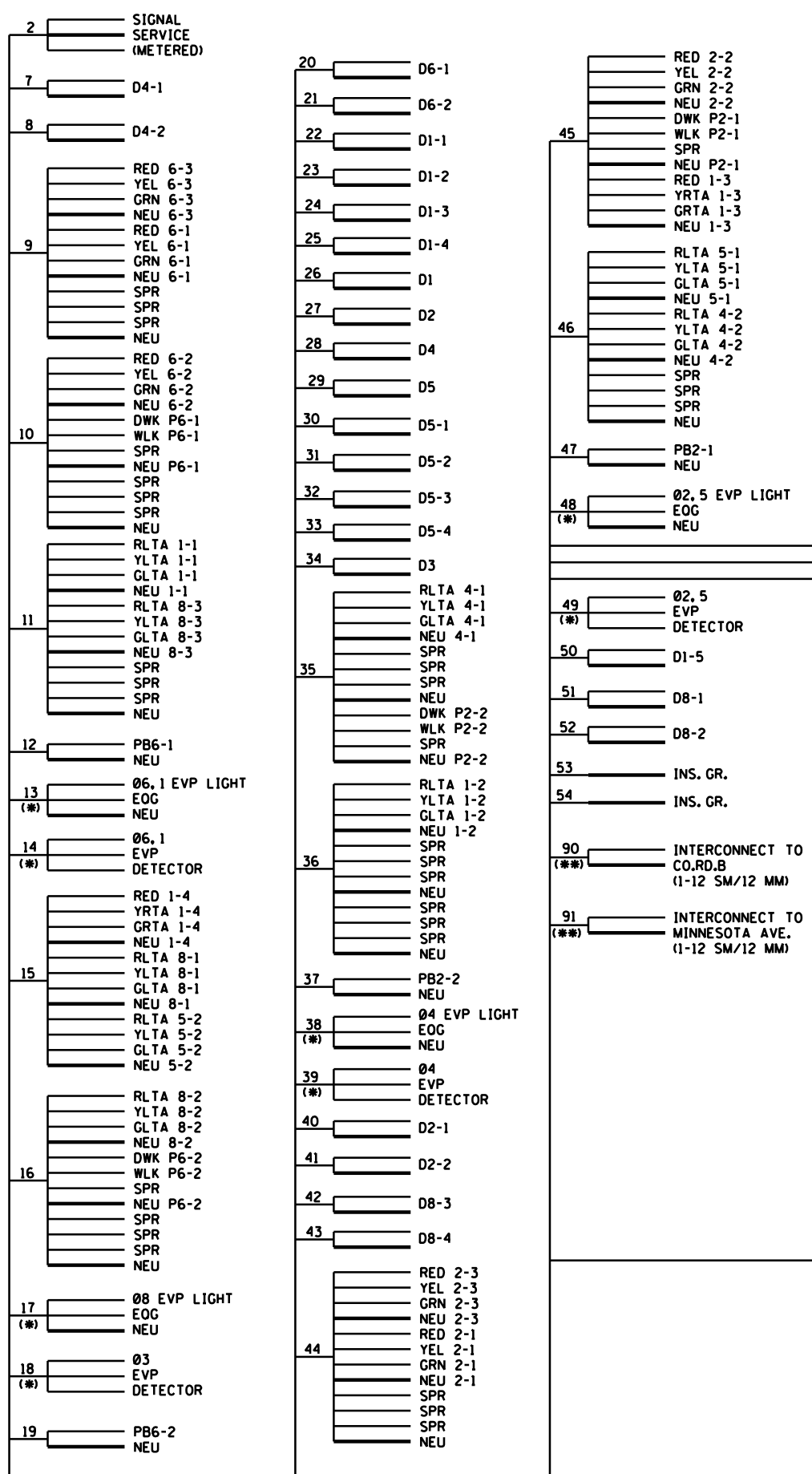
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INTERSECTION LAYOUT	RAMSP108790	
RICE STREET (CSAH 49)	SG16A	534
BETWEEN T.H.36 AND MINNESOTA AVENUE	OF SC52	

CONTROLLER AND CABINET

6/13/05 PM

6/7/2012

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SignalB WD 1



NOTES:

- 1) LUMINAIRES ARE UNMETERED.
- 2) SIGNAL SYSTEM INCLUDES BATTERY BACK UP SERVICE CABINET (NO BATTERIES).
- 3) FOR CONDUCTOR COLOR CODE, SEE TRAFFIC SIGNAL DETAIL SHEET SGI.
- 4) ITEMS DENOTED WITH AN (*) ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM "B" PAY ITEM.
- 5) ITEMS DENOTED WITH AN (**) ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION "A" PAY ITEM.

FINAL PLAN
CONFORMING TO
CONST. RECORDS
DATE TJM 5/30/12

DESIGN TEAM	1	JMG	11/11	RECORD DRAWING
DRAWN BY:	MTT			
DESIGNER:	JMG			
CHECKED BY:	JMG			
NO.	BY	DATE	REVISIONS	

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RAMSEY COUNTY, MINNESOTA
TH 36 / RICE STREET (CSAH 49)
SP NO. 62-649-27 CTB, 6212-165 (TH 36)

TRAFFIC SIGNAL SYSTEM "B"
FIELD WIRING DIAGRAM
T.H. 36 AT RICE STREET (CSAH 49) RAMPS

FILE NO. **297**
RAMSP108790
SG17
OF SC52
534

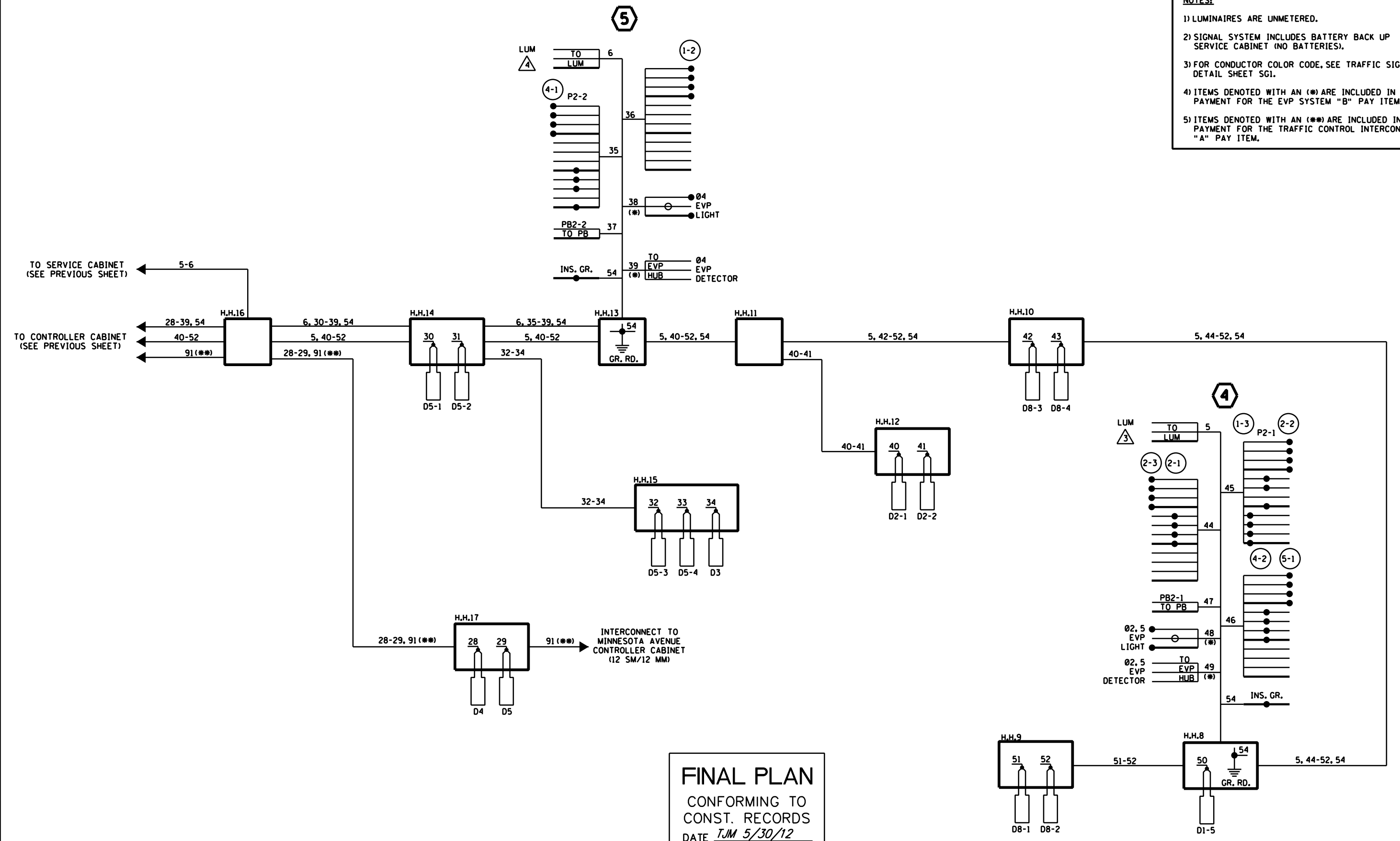
Mn/DOT SYSTEM ID # = 39223
Ramsey County Intersection ID # = TRF 395
Meter Address = 2244 Rice Street

6/13/06 PM

6/7/2012

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SignalB WD 2 mtr.cn

- NOTES:**
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FINAL PLAN
 CONFORMING TO
 CONST. RECORDS
 DATE TJM 5/30/12

Mn/DOT SYSTEM ID # = 39223
 Ramsey County Intersection ID # = TRF 395
 Meter Address = 2244 Rice Street

DESIGN TEAM	1	JMG	11/11	RECORD DRAWING
DRAWN BY:	MTT			
DESIGNER:	JMG			
CHECKED BY:	JMG			
NO.	BY	DATE	REVISIONS	

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RAMSEY COUNTY, MINNESOTA
TH 36 / RICE STREET (CSAH 49)
 SP NO. 62-649-27 CTB, 6212-165 (TH 36)

TRAFFIC SIGNAL SYSTEM "B"
FIELD WIRING DIAGRAM
 T.H. 36 AT RICE STREET (CSAH 49) RAMPS

FILE NO. **298**
 RAMSP108790
 SG18
 OF 652
534

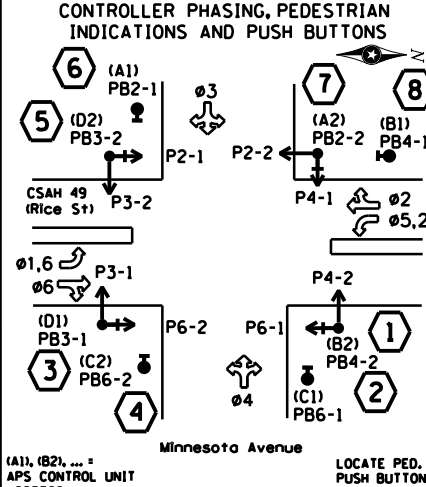
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6/7/2012
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SignalSystem - C- Revised
mtr:cn

- NOTES:**
- THE EXACT LOCATION OF POLES, LOOP DETECTORS, EQUIPMENT PAD AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
 - SEE SPECIAL PROVISIONS FOR INFORMATION REGARDING PEDESTRIAN INDICATIONS, GALVANIZED POLES, AND ACCESSIBLE PEDESTRIAN SIGNALS (APS).
 - EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.
 - ALL VEHICLE AND PEDESTRIAN SIGNAL INDICATIONS SHALL BE LED.
 - ALL LOOP DETECTORS SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR IN NON-METALLIC CONDUIT. SEE SPECIAL PROVISIONS AND DETAILS.
 - A 3/4 INCH HALF COUPLING, 3/4 INCH PIPE NIPPLE AND CONDUIT OUTLET BODY FOR EVP EQUIPMENT SHALL BE FURNISHED AND INSTALLED 6 FEET FROM THE END OF THE MAST ARM ON EACH POLE.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE CONNECTION OF POWER FOR THE NEW PERMANENT SIGNAL SYSTEM.
 - THIS PLAN SPECIFIES CONDUIT SIZES, TYPES, & GENERAL LOCATIONS. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD. CONDUITS UNDER EXISTING ROADWAYS WILL REQUIRE BORING.
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- ITEMS DENOTED WITH AN (*) ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM "C" PAY ITEM.
- ITEMS DENOTED WITH AN (**) ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION "A" PAY ITEM.
- CONTRACTOR SHALL REMOVE THE EXISTING SIGNAL SYSTEM. SEE SPECIAL PROVISIONS FOR FURTHER INFORMATION (INCLUDED IN THE TRAFFIC CONTROL SIGNAL SYSTEM "C" PAY ITEM).
- SEE DETAILS FOR POLE MOUNTED SIGNALS, APS, EQUIPMENT PAD LAYOUT, NMC LOOP DETECTORS, AND TRAFFIC SIGNAL SIGNING.
- CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING, INSTALLING AND MAKING OPERATIONAL THE TRAFFIC SIGNAL CONTROLLER CABINET. SEE SPECIAL PROVISIONS.
- CONTRACTOR SHALL VERIFY GROUNDWATER LEVELS WHEN INSTALLING POLE FOUNDATIONS AND SHALL DE-WATER AS NECESSARY DURING FOUNDATION INSTALLATION (INCIDENTAL).
- ALL VEHICLE AND PEDESTRIAN SIGNAL INDICATIONS SHALL BE FABRICATED WITH BLACK POLYCARBONATE MATERIALS (INCLUDING BACKGROUND SHIELDS AND VISORS). SEE SPECIAL PROVISIONS.

6 APS PEDESTRIAN PUSH BUTTON STATION (PB2-1)
1-APS PUSH BUTTON & SIGN (RT ARROW)
EXTEND INTO H.H.9;
2" CONDUIT
1-2/c#14

4 APS PEDESTRIAN PUSH BUTTON STATION (PB6-2)
1-APS PUSH BUTTON & SIGN (LT ARROW)
EXTEND INTO H.H.3;
2" CONDUIT
1-2/c#14



Ramsey County Intersection ID # = TRF 636
Meter Address = 2290 Rice Street

SIGNING:

- F & I OVERHEAD TYPE "D" SIGNS ON MAST ARMS 1, 3, 5, AND 7 (SEPARATE PAY ITEM).
- PEDESTRIAN PUSH BUTTON SIGNS ARE INCLUDED AS PART OF APS PUSH BUTTON INSTALLATIONS.
- ALL SIGNING SHALL BE INCIDENTAL WORK UNLESS SPECIFIC PAY ITEM IS INDICATED.

SIGNAL SYSTEM OPERATIONS:

- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 6 PHASE, WITH PHASES 1 AND 5 BEING PROTECTED/PERMISSIVE LEFT TURN PHASES, AND PHASES 3 AND 4 BEING SPLIT PHASES.
- PHASES 2 AND 6 SHALL BE LOCK DETECTION.
- PHASES 1, 3, 4, AND 5 SHALL BE NON-LOCK DETECTION.
- VEHICLE PHASES 2 AND 6 SHALL OPERATE ON RECALL.

DESIGN TEAM	5	JMG	4/5/2011	REVISED GEOMETRICS AND SIGNALS ON NW, SW QUADRANTS
DRAWN BY:	6	JMG	11/11	RECORD DRAWING
DESIGNER:				
CHECKED BY:				
	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.

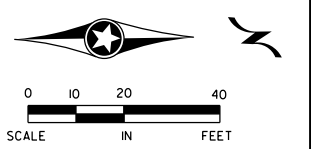
Certified By: John M. Gray, PE Lic. No. 22457
Printed Name: JOHN M. GRAY, PE Date: 3/3/2010



RAMSEY COUNTY, MINNESOTA
TH 36 / RICE STREET (CSAH 49)
SP NO. 62-649-27 CTB, 6212-165 (TH 36)

TRAFFIC SIGNAL SYSTEM "C"
INTERSECTION LAYOUT
RICE STREET (CSAH 49)
AT MINNESOTA AVENUE

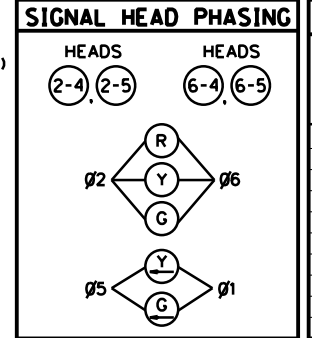
FILE NO. **299A**
RAMSP108790
SG19A
OF SC52
534



PVC LOOP DETECTORS		
NUMBER	SIZE (FT.)	LOCATION
D1-1	2-6X6	0' & 15'
D1-2	6X6	80'
D2-1	6X6	250'
D2-2	6X6	250'
D3-1	6X6	130'
D3-2	6X6	130'
D3-3	2-6X6	0' & 15'
D3-4	2-6X6	0' & 15'
D4-1	6X6	130'
D4-2	6X6	130'
D4-3	2-6X6	0' & 15'
D4-4	2-6X6	0' & 15'
D4-5	2-6X6	0' & 15'
D5-1	2-6X6	0' & 15'
D5-2	6X6	80'
D6-1	6X6	250'
D6-2	6X6	250'
D1	6X6	80'
D2	6X6	80'
D3	6X6	80'
D4	6X6	80'

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

FINAL PLAN
CONFORMING TO
CONST. RECORDS
DATE TJM 5/30/12



SIGNAL FACE	ALL SIGNAL INDICATIONS SHALL BE 12"				
	R	Y	G	Y	G
2-1, 2-2, 2-3	●	●	●		
2-4, 2-5	●	●	●	←	←
3-1	●	●	●		
3-2	●	●	●		
3-3	●	●	●	←	←
4-1	●	●	●		
4-2	●	●	●		
4-3, 4-4	●	●	●	←	←
6-1, 6-2, 6-3	●	●	●		
6-4, 6-5	●	●	●	←	←

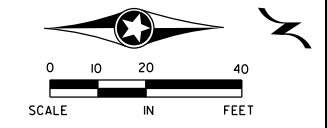
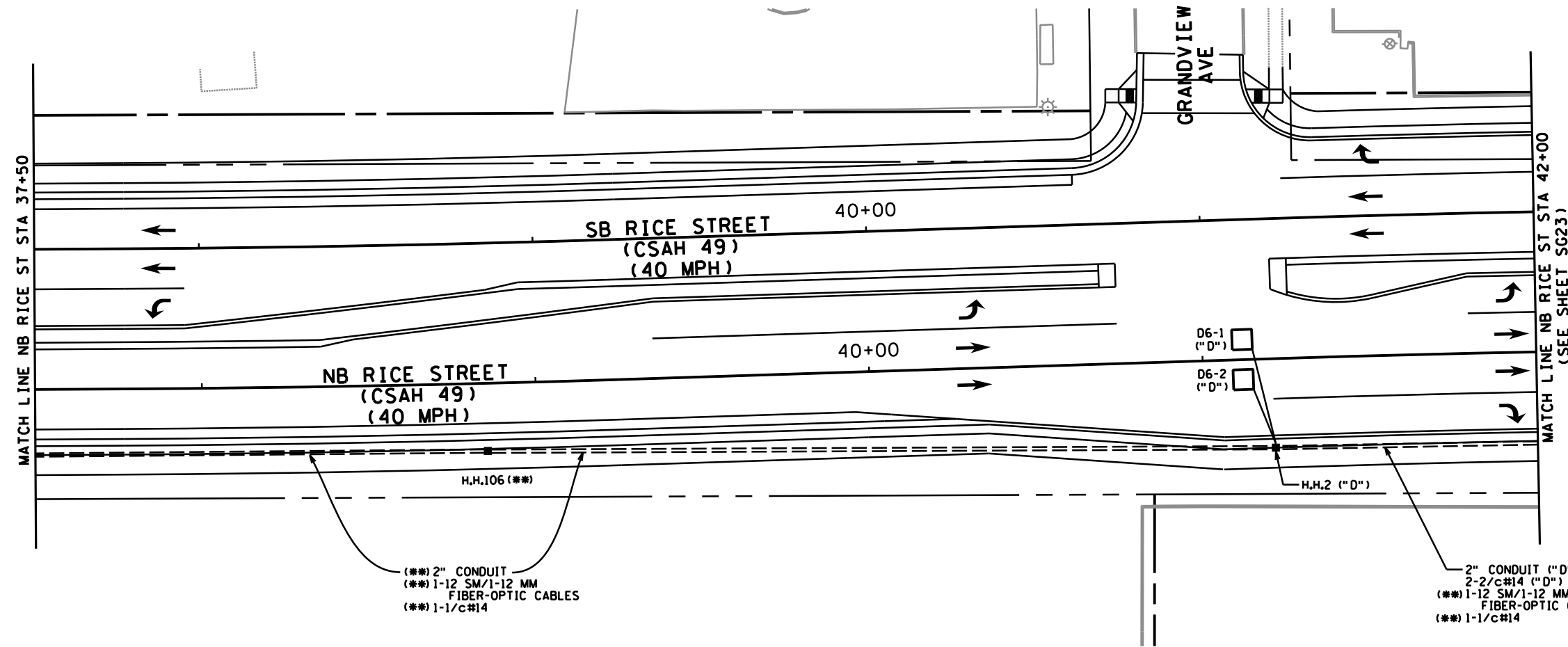
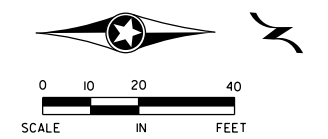
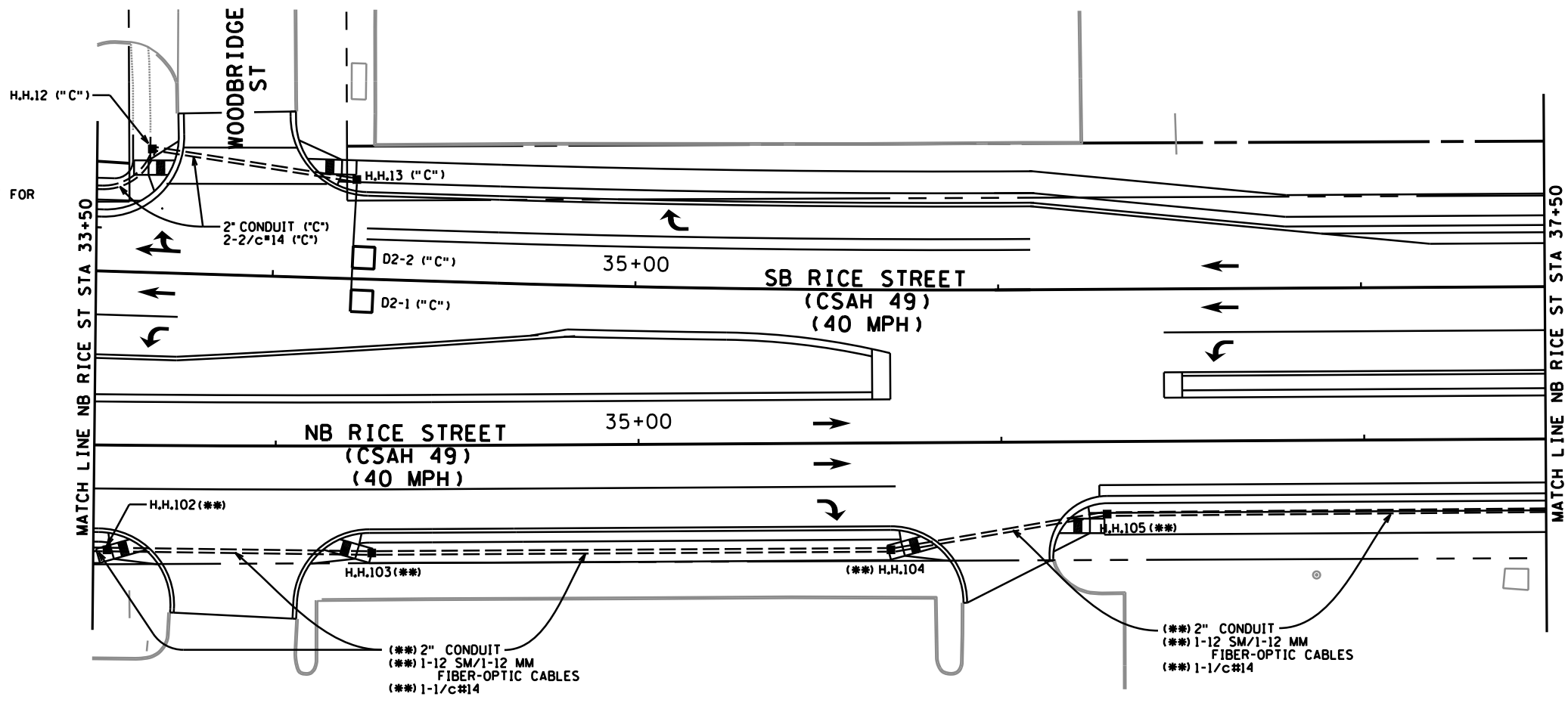
SEE SHEET SG16 FOR DETAILED POLE NOTES.

6/13/16 PM

6/7/2012

S:\PT\RAMSP\108790\SignalAs-Builts\Workspace\Projects\36 & Rice St\dgn\plansheets\ramsp108790_s0.dgn
Interconnect_2

NOTE:
1) ITEMS DENOTED WITH AN (***) ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION "A" PAY ITEM.



FINAL PLAN
 CONFORMING TO
 CONST. RECORDS
 DATE TJM 5/30/12

DESIGN TEAM	1	JMG	11/11	RECORD DRAWING
DRAWN BY:	MTT			
DESIGNER:	JMG			
CHECKED BY:	JMG			
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.
 Certified By: John M. Gray, PE Lic. No. 22457
 Printed Name: JOHN M. GRAY, PE Date: 3/3/2010



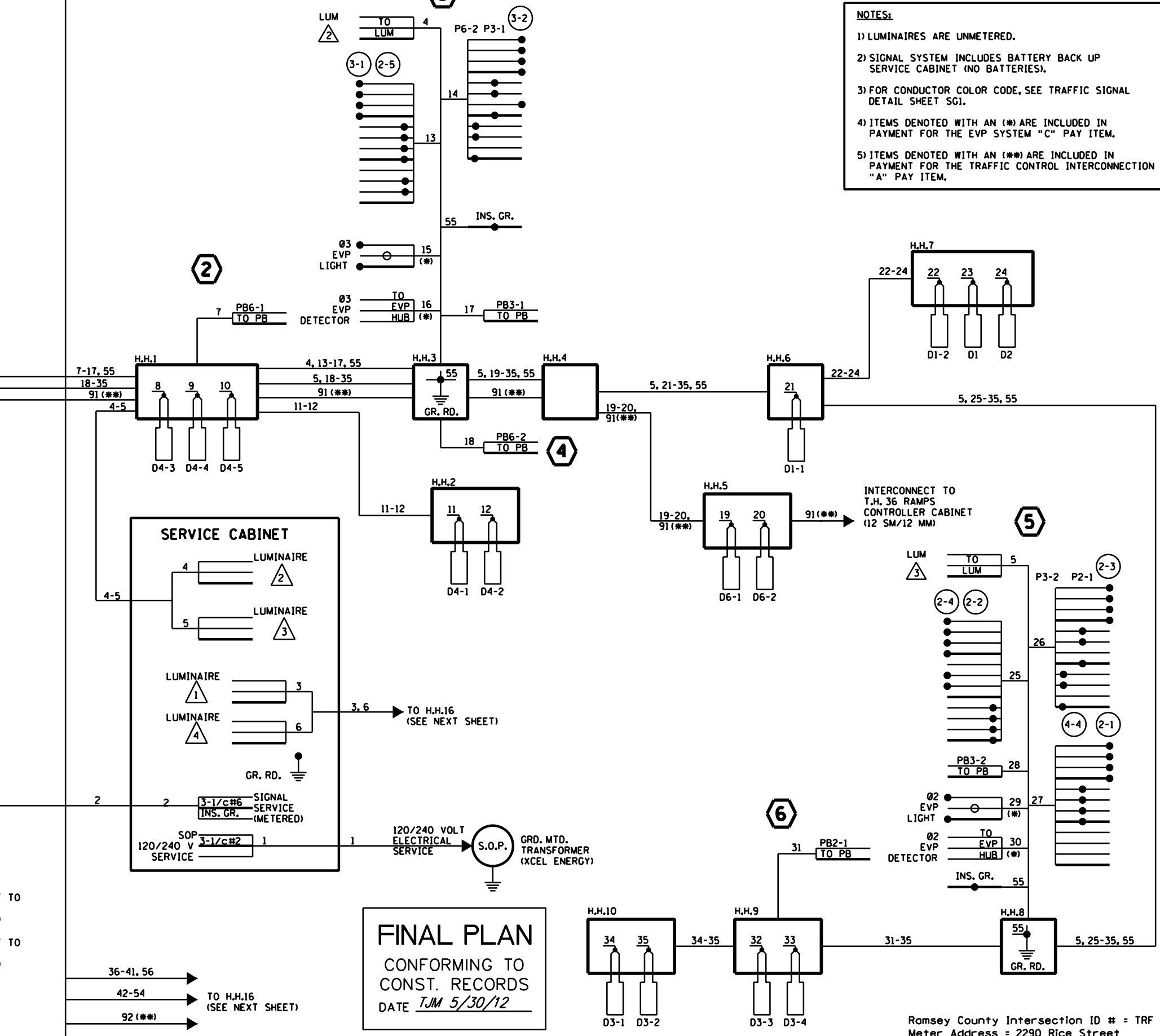
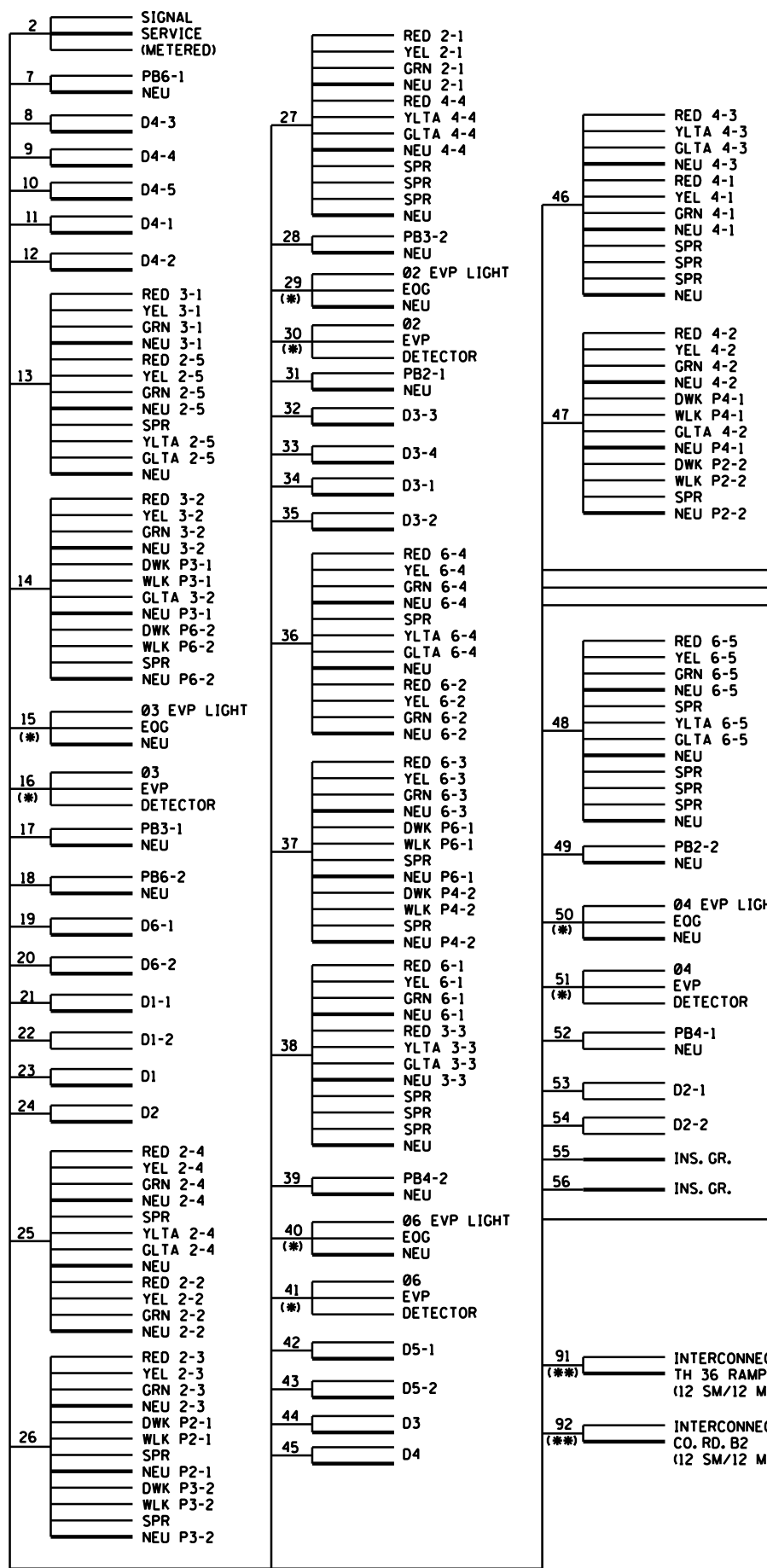
RAMSEY COUNTY, MINNESOTA
TH 36 / RICE STREET (CSAH 49)
 SP NO. 62-649-27 CTB, 6212-165 (TH 36)

TRAFFIC SIGNAL SYSTEMS "C-D"
INTERSECTION LAYOUT
 RICE STREET (CSAH 49)
 BETWEEN MINNESOTA AVENUE AND COUNTY ROAD B2

FILE NO.
 RAMSP108790
SG20
 OF SG52

300
534

CONTROLLER AND CABINET



NOTES:

- 1) LUMINAIRES ARE UNMETERED.
- 2) SIGNAL SYSTEM INCLUDES BATTERY BACK UP SERVICE CABINET (NO BATTERIES).
- 3) FOR CONDUCTOR COLOR CODE, SEE TRAFFIC SIGNAL DETAIL SHEET SGI.
- 4) ITEMS DENOTED WITH AN (*) ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM "C" PAY ITEM.
- 5) ITEMS DENOTED WITH AN (***) ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION "A" PAY ITEM.

FINAL PLAN
 CONFORMING TO
 CONST. RECORDS
 DATE TJM 5/30/12

Ramsey County Intersection ID # = TRF 636
 Meter Address = 2290 Rice Street

6/13/17 PM
 6/7/2012
 S:\PTV\Ramsey\108790_SignalAs-Built\Worksheets\Projects\36 & Rice St\dgn\plansheets\ramsp108790_sow.dgn
 Signal_C_WD_1

DESIGN TEAM	1	JMG	11/11	RECORD DRAWING
DRAWN BY:	MTT			
DESIGNER:	JMG			
CHECKED BY:	JMG			
NO.	BY	DATE	REVISIONS	

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 Certified By: JOHN M. GRAY, PE Lic. No. 22457
 Printed Name: JOHN M. GRAY, PE Date: 3/3/2010



RAMSEY COUNTY, MINNESOTA
TH 36 / RICE STREET (CSAH 49)
 SP NO. 62-649-27 CTB, 6212-165 (TH 36)

TRAFFIC SIGNAL SYSTEM "C"
FIELD WIRING DIAGRAM
 RICE STREET (CSAH 49)
 AT MINNESOTA AVENUE

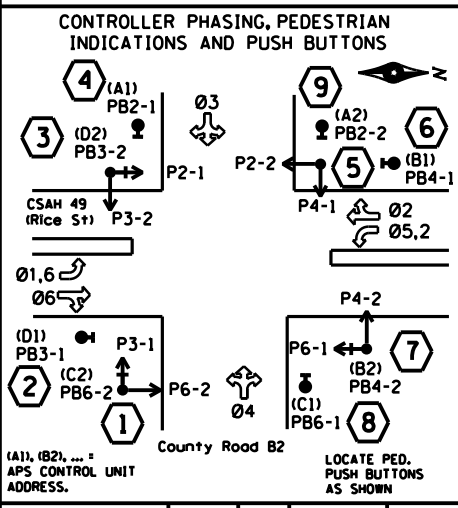
FILE NO. **301**
 RAMSP108790
SG21
 OF SC52
534

6/13/10 PM
 6/7/2012
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 mtr.cn

- NOTES:**
- THE EXACT LOCATION OF POLES, LOOP DETECTORS, EQUIPMENT PAD AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
 - SEE SPECIAL PROVISIONS FOR INFORMATION REGARDING PEDESTRIAN INDICATIONS, GALVANIZED POLES, AND ACCESSIBLE PEDESTRIAN SIGNALS (APS).
 - EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.
 - ALL VEHICLE AND PEDESTRIAN SIGNAL INDICATIONS SHALL BE LED.
 - ALL LOOP DETECTORS SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR IN NON-METALLIC CONDUIT. SEE SPECIAL PROVISIONS AND DETAILS.
 - A 3/4 INCH HALF COUPLING, 3/4 INCH PIPE NIPPLE AND CONDUIT OUTLET BODY FOR EVP EQUIPMENT SHALL BE FURNISHED AND INSTALLED 6 FEET FROM THE END OF THE MAST ARM ON EACH POLE.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE CONNECTION OF POWER FOR THE NEW PERMANENT SIGNAL SYSTEM.
 - THIS PLAN SPECIFIES CONDUIT SIZES, TYPES, & GENERAL LOCATIONS. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD. CONDUITS UNDER EXISTING ROADWAYS WILL REQUIRE BORING.
 - ALL NEW CONDUIT SHALL BE PVC SCHEDULE 80 OR HDPE SCHEDULE 80 (EXCEPT AS OTHERWISE NOTED) AND CARRY 1/c#6 GREEN INSULATED GROUNDING CONDUCTOR AS SHOWN IN PLANS.
 - CONTRACTOR SHALL COORDINATE ALL SIGNAL INSTALLATION WORK WITH ROAD WORK TO BE COMPLETED BY OTHERS AS PART OF THE ENTIRE PROJECT. SEE SPECIAL PROVISIONS.
 - ITEMS DENOTED WITH AN (*) ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM "D" PAY ITEM.
 - ITEMS DENOTED WITH AN (**) ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION "A" PAY ITEM.
 - CONTRACTOR SHALL REMOVE THE EXISTING SIGNAL SYSTEM. SEE SPECIAL PROVISIONS FOR FURTHER INFORMATION (INCLUDED IN THE TRAFFIC CONTROL SIGNAL SYSTEM "D" PAY ITEM).
 - SEE DETAILS FOR POLE MOUNTED SIGNALS, APS, EQUIPMENT PAD LAYOUT, NMC LOOP DETECTORS, AND TRAFFIC SIGNAL SIGNING.

- CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING, INSTALLING AND MAKING OPERATIONAL THE TRAFFIC SIGNAL CONTROLLER CABINET SEE SPECIAL PROVISIONS.
- CONTRACTOR SHALL VERIFY GROUNDWATER LEVELS WHEN INSTALLING POLE FOUNDATIONS AND SHALL DE-WATER AS NECESSARY DURING FOUNDATION INSTALLATION (INCIDENTAL).
- ALL VEHICLE AND PEDESTRIAN SIGNAL INDICATIONS SHALL BE FABRICATED WITH BLACK POLYCARBONATE MATERIALS (INCLUDING BACKGROUND SHIELDS AND VISORS). SEE SPECIAL PROVISIONS.

- INPLACE WOOD POLE (TO BE RELOCATED BY XCEL ENERGY) 2" R.S.C. RISER AND WEATHERHEAD 3-1/c#2 EXTEND INTO SERVICE CABINET; 2" R.S.C. 3-1/c#2
- CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING, INSTALLING AND MAKING OPERATIONAL THE TRAFFIC SIGNAL CONTROLLER CABINET SEE SPECIAL PROVISIONS.
- CONTRACTOR SHALL VERIFY GROUNDWATER LEVELS WHEN INSTALLING POLE FOUNDATIONS AND SHALL DE-WATER AS NECESSARY DURING FOUNDATION INSTALLATION (INCIDENTAL).
- ALL VEHICLE AND PEDESTRIAN SIGNAL INDICATIONS SHALL BE FABRICATED WITH BLACK POLYCARBONATE MATERIALS (INCLUDING BACKGROUND SHIELDS AND VISORS). SEE SPECIAL PROVISIONS.



Ramsey County Intersection ID # = TRF 632
 Meter Address = 2400 RICE STREET

SIGNING:

- F & I OVERHEAD TYPE "D" SIGNS ON MAST ARMS 1, 3, 5 AND 7 (SEPARATE PAY ITEM).
- PEDESTRIAN PUSH BUTTON SIGNS ARE INCLUDED AS PART OF APS PUSH BUTTON INSTALLATIONS.
- ALL SIGNING SHALL BE INCIDENTAL WORK UNLESS SPECIFIC PAY ITEM IS INDICATED.

SIGNAL SYSTEM OPERATIONS:

- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 6 PHASE, WITH PHASES 1 AND 5 BEING PROTECTED/PERMISSIVE LEFT TURN PHASES, AND PHASES 3 AND 4 BEING SPLIT PHASES.
- PHASES 2 AND 6 SHALL BE LOCK DETECTION.
- PHASES 1, 3, 4, AND 5 SHALL BE NON-LOCK DETECTION.
- VEHICLE PHASES 2 AND 6 SHALL OPERATE ON RECALL.

DESIGN TEAM	1	JMG	11/11	RECORD DRAWING
DRAWN BY:	MTT			
DESIGNER:	JMG			
CHECKED BY:	JMG			
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.

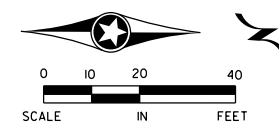
Certified By: JOHN M. GRAY, PE Lic. No. 22457
 Printed Name: JOHN M. GRAY, PE Date: 3/3/2010



RAMSEY COUNTY, MINNESOTA
TH 36 / RICE STREET (CSAH 49)
 SP NO. 62-649-27 CTB, 6212-165 (TH 36)

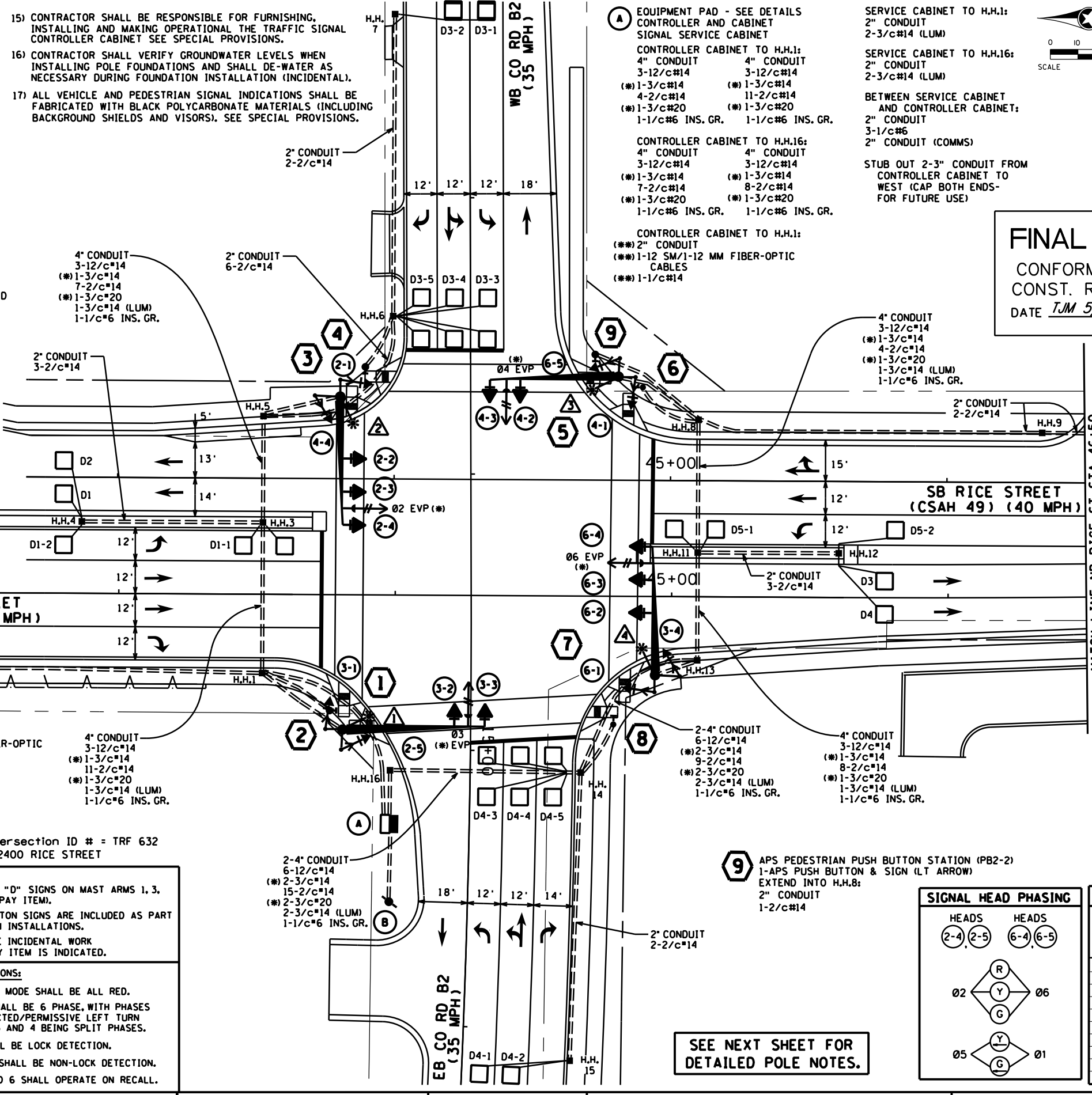
TRAFFIC SIGNAL SYSTEM "D"
INTERSECTION LAYOUT
 RICE STREET (CSAH 49)
 AT COUNTY ROAD B2

FILE NO. **303**
 RAMSP108790
 SG23
 OF SG52



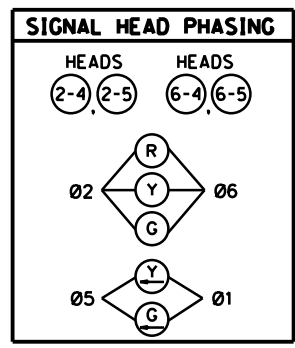
PVC LOOP DETECTORS		
NUMBER	SIZE (FT.)	LOCATION
D1-1	2-6X6	0' & 15'
D1-2	6X6	80'
D2-1	6X6	250'
D2-2	6X6	250'
D3-1	6X6	130'
D3-2	6X6	130'
D3-3	2-6X6	0' & 15'
D3-4	2-6X6	0' & 15'
D3-5	2-6X6	0' & 15'
D4-1	6X6	130'
D4-2	6X6	130'
D4-3	2-6X6	0' & 15'
D4-4	2-6X6	0' & 15'
D4-5	2-6X6	0' & 15'
D5-1	2-6X6	0' & 15'
D5-2	6X6	80'
D6-1	6X6	250'
D6-2	6X6	250'
D1	6X6	80'
D2	6X6	80'
D3	6X6	80'
D4	6X6	80'

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



FINAL PLAN
 CONFORMING TO
 CONST. RECORDS
 DATE JUN 5/30/12

SEE NEXT SHEET FOR
 DETAILED POLE NOTES.

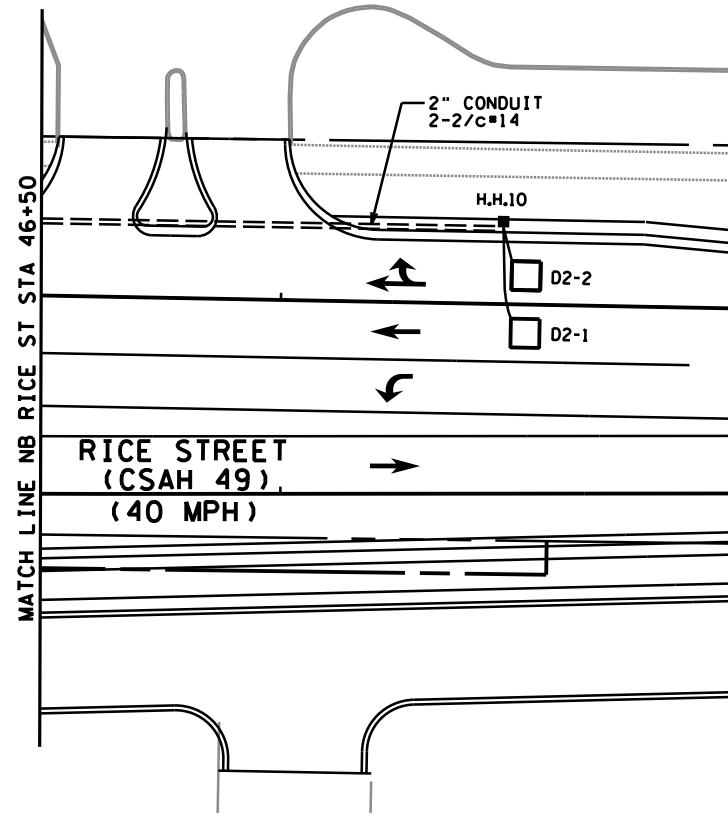
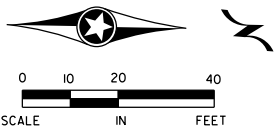


LED SIGNAL FACES

SIGNAL FACE	ALL SIGNAL INDICATIONS SHALL BE 12".				
	R	Y	G	Y	G
2-1, 2-2, 2-3	●	●	●		
2-4, 2-5	●	●	●	←	←
3-1	●	●	●		
3-2	●	●	●	←	←
3-3, 3-4	●	●	●	←	←
4-1	●	●	●		
4-2	●	●	●	←	←
4-3, 4-4	●	●	●	←	←
6-1, 6-2, 6-3	●	●	●		
6-4, 6-5	●	●	●	←	←

6/13/12 PM

6/7/2012



- 1** PA100 POLE FOUNDATION
TYPE PA100-A-50-X30-4
LUMINAIRE-250 W HPS AT 0 DEG. (SHOEBOX)
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 11'
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG & 180 DEG.
2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED AT 90 DEG & 180 DEG.
1-APS PUSH BUTTON & SIGN (LT ARROW) (PB6-2)
1-TYPE D SIGN PANEL-OVERHEAD (D-15)
(*ONE WAY EVP DETECTOR AND LIGHT (Ø3)
EXTEND INTO H.H.1:
3" CONDUIT
3-12/c#14
(*1-3/c#14
1-2/c#14
(*1-3/c#20
1-3/c#14 (LUM)
2-1/c#6 INS. GR.

- 5** PA100 POLE FOUNDATION
TYPE PA100-A-45-X30-4
LUMINAIRE-250 W HPS AT 0 DEG. (SHOEBOX)
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 11'
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG & 180 DEG.
2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED AT 90 DEG & 180 DEG.
1-TYPE D SIGN PANEL-OVERHEAD (D-17)
(*ONE WAY EVP DETECTOR AND LIGHT (Ø4)
EXTEND INTO H.H.8:
3" CONDUIT
3-12/c#14
(*1-3/c#14
(*1-3/c#20
1-3/c#14 (LUM)
1-1/c#6 INS. GR.

- 3** PA100 POLE FOUNDATION
TYPE PA100-A-45-X30-4
LUMINAIRE-250 W HPS AT 0 DEG. (SHOEBOX)
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 11' AND 23'
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG & 180 DEG.
2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED AT 90 DEG & 180 DEG.
1-APS PUSH BUTTON & SIGN (LT ARROW) (PB3-2)
RIO-12 SIGN PANEL-ADJACENT TO 2-4
1-TYPE D SIGN PANEL-OVERHEAD (D-16)
(*ONE WAY EVP DETECTOR AND LIGHT (Ø2)
EXTEND INTO H.H.5:
3" CONDUIT
3-12/c#14
(*1-3/c#14
1-2/c#14
(*1-3/c#20
1-3/c#14 (LUM)
1-1/c#6 INS. GR.

- 7** PA100 POLE FOUNDATION
TYPE PA100-A-45-X30-4
LUMINAIRE-250 W HPS AT 0 DEG. (SHOEBOX)
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 11' AND 23'
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG & 180 DEG.
2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED AT 90 DEG & 180 DEG.
1-APS PUSH BUTTON & SIGN (LT ARROW) (PB4-2)
RIO-12 SIGN PANEL-ADJACENT TO 6-4
1-TYPE D SIGN PANEL-OVERHEAD (D-18)
(*ONE WAY EVP DETECTOR AND LIGHT (Ø6)
EXTEND INTO H.H.13:
3" CONDUIT
3-12/c#14
(*1-3/c#14
1-2/c#14
(*1-3/c#20
1-3/c#14 (LUM)
2-1/c#6 INS. GR.

FINAL PLAN
CONFORMING TO
CONST. RECORDS
DATE TJM 5/30/12

Ramsey County Intersection ID # = TRF 632
Meter Address = 2400 RICE STREET

S:\PT\Ramsey\108790\SignalAs-Builds\Workspace\Projects\36 & Rice St\dgn\plansheets\ramsp108790_s.dgn mtr on Interconnect_3

DESIGN TEAM	1	JMG	11/11	RECORD DRAWING
DRAWN BY:	MTT			
DESIGNER:	JMG			
CHECKED BY:	JMG			
	NO.	BY	DATE	REVISIONS

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Printed Name: JOHN M. GRAY, PE Date: 3/3/2010

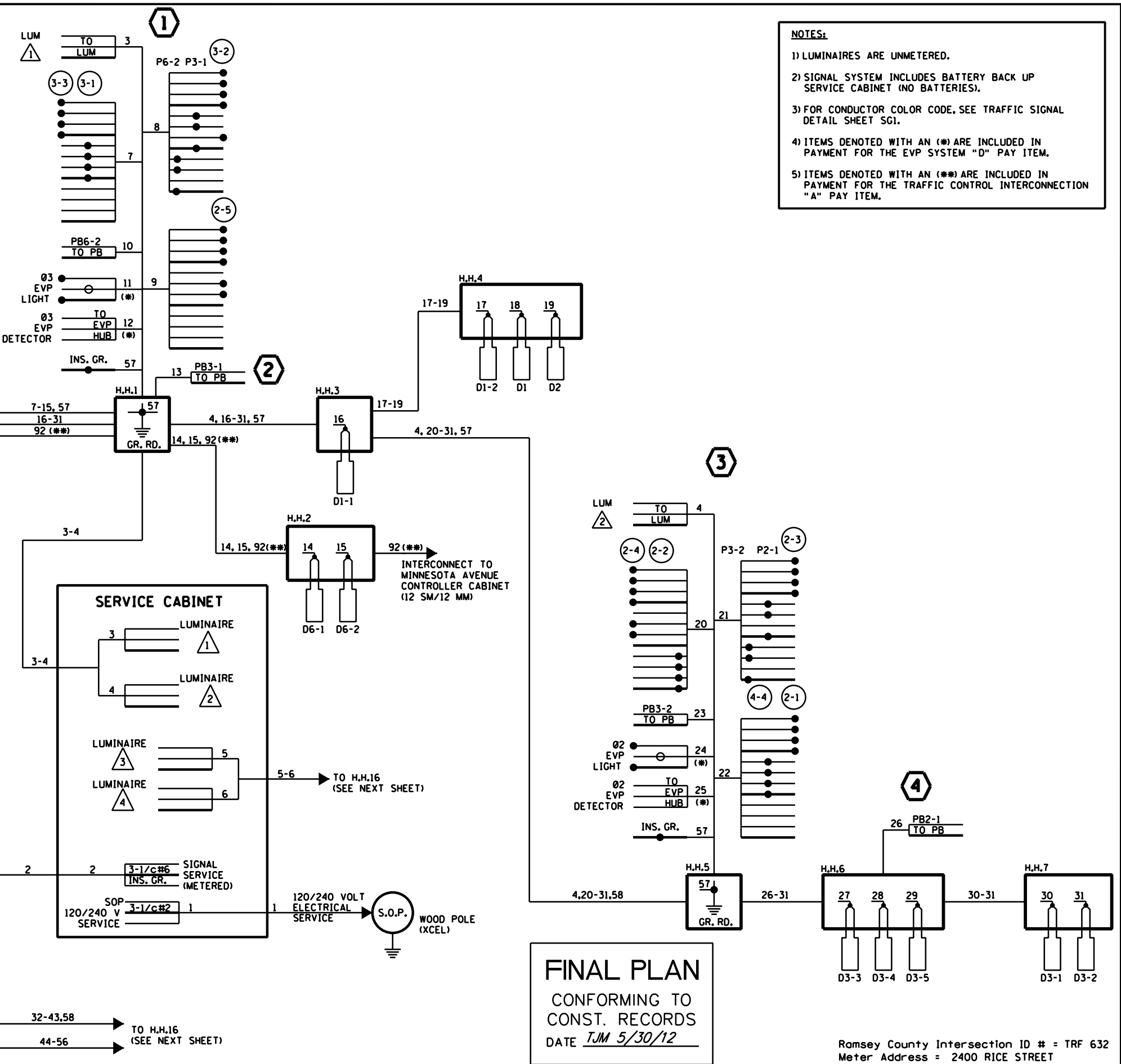
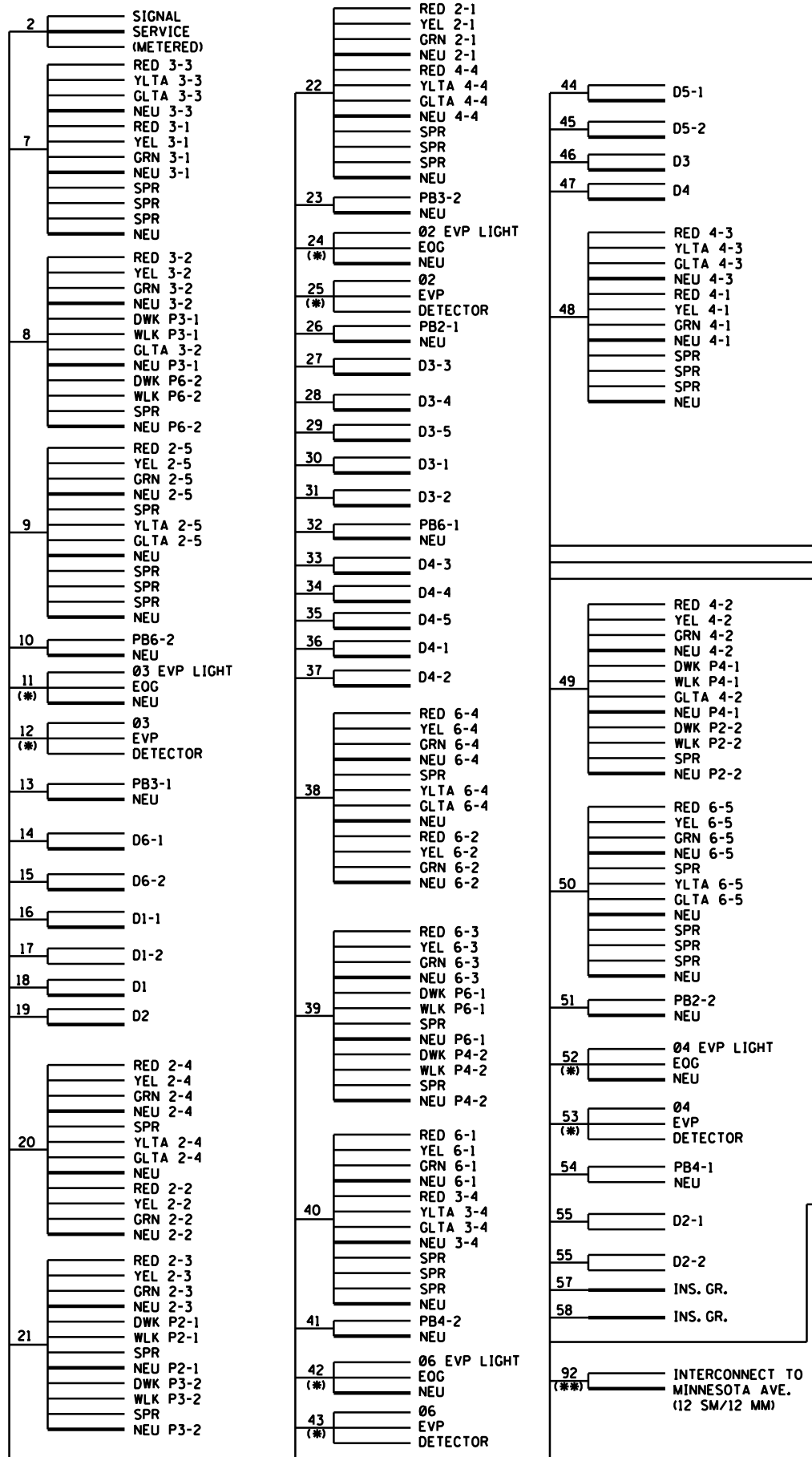


RAMSEY COUNTY, MINNESOTA
TH 36 / RICE STREET (CSAH 49)
SP NO. 62-649-27 CTB, 6212-165 (TH 36)

TRAFFIC SIGNAL SYSTEM "D"
INTERSECTION LAYOUT
RICE STREET (CSAH 49)
AT COUNTY ROAD B2

FILE NO.	304
RAMSP108790	
SG24	534
OF SG52	

CONTROLLER AND CABINET



6/13/14 7 PM
 6/7/2012
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 mtr.on

DESIGN TEAM	1	JMG	11/11	RECORD DRAWING
DRAWN BY:	MTT			
DESIGNER:	JMG			
CHECKED BY:	JMG			
NO.	BY	DATE	REVISIONS	

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RAMSEY COUNTY, MINNESOTA
TH 36 / RICE STREET (CSAH 49)
 SP NO. 62-649-27 CTB, 6212-165 (TH 36)

TRAFFIC SIGNAL SYSTEM "D"
FIELD WIRING DIAGRAM
 RICE STREET (CSAH 49)
 AT COUNTY ROAD B2

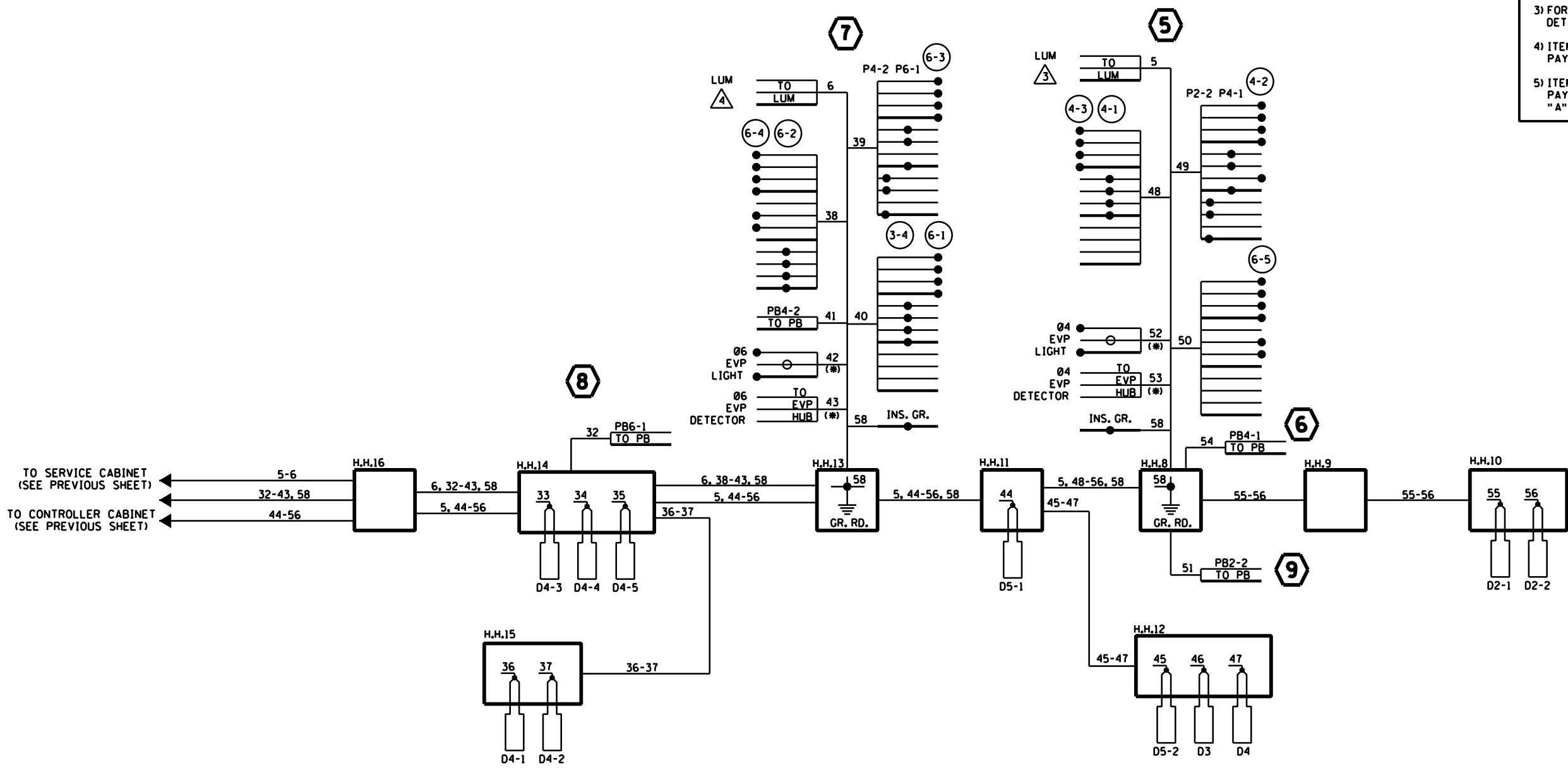
FILE NO. **305**
 RAMSP108790
SG25
 OF SG52
534

6/13/12 4:48 PM

6/7/2012

S:\PT\Ramsp\108790\SignalAs-Builts\Workspace\Projects\36 & Rice St\dgn\plansheets\ramsp108790_sow.dgn
Signal ID: WD_2

- NOTES:**
- 1) LUMINAIRES ARE UNMETERED.
 - 2) SIGNAL SYSTEM INCLUDES BATTERY BACK UP SERVICE CABINET (NO BATTERIES).
 - 3) FOR CONDUCTOR COLOR CODE, SEE TRAFFIC SIGNAL DETAIL SHEET SG1.
 - 4) ITEMS DENOTED WITH AN (*) ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM "D" PAY ITEM.
 - 5) ITEMS DENOTED WITH AN (**) ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION "A" PAY ITEM.



FINAL PLAN
 CONFORMING TO
 CONST. RECORDS
 DATE TJM 5/30/12

Ramsey County Intersection ID # = TRF 632
 Meter Address = 2400 RICE STREET

DESIGN TEAM	NO.	BY	DATE	REVISIONS
1	JMG	11/11		RECORD DRAWING
DRAWN BY: <u>MTT</u>				
DESIGNER: <u>JMG</u>				
CHECKED BY: <u>JMG</u>				

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RAMSEY COUNTY, MINNESOTA
TH 36 / RICE STREET (CSAH 49)
 SP NO. 62-649-27 CTB, 6212-165 (TH 36)

TRAFFIC SIGNAL SYSTEM "D"
FIELD WIRING DIAGRAM
 RICE STREET (CSAH 49)
 AT COUNTY ROAD B2

FILE NO. RAMSP108790	306
SG26 OF SG52	534