

# MINNESOTA DEPARTMENT OF TRANSPORTATION ANOKA COUNTY

## CONSTRUCTION PLAN FOR SIGNAL SYSTEM, SIDEWALK AND MEDIAN RECONSTRUCTION, MILL & OVERLAY AND STRIPING

LOCATED ON CSAH 1 BETWEEN 475 FT WEST AND 450 FT EAST OF ROUND LAKE BLVD NW

LOCATED ON ROUND LAKE BLVD NW BETWEEN 525 FT SOUTH AND 350 FT NORTH OF CSAH 1

STATE PROJ. NO. 002-601-046

STATE PROJ. NO. 114-121-010

	CSAH 1	
GROSS LENGTH	925.41 FEET	0.175 MILES
BRIDGES-LENGTH	0.00 FEET	0.000 MILES
EXCEPTIONS-LENGTH	0.00 FEET	0.000 MILES
NET LENGTH	925.41 FEET	0.175 MILES

	ROUND LAKE BLVD NW	
GROSS LENGTH	878.94 FEET	0.166 MILES
BRIDGES-LENGTH	0.00 FEET	0.000 MILES
EXCEPTIONS-LENGTH	105.02 FEET	0.020 MILES
NET LENGTH	773.92 FEET	0.146 MILES

### PLAN SYMBOLS

- COUNTY LINE \_\_\_\_\_
- TOWNSHIP OR RANGE LINE \_\_\_\_\_
- SECTION LINE \_\_\_\_\_
- QUARTER LINE \_\_\_\_\_
- SIXTEENTH LINE \_\_\_\_\_
- RIGHT OF WAY LINE \_\_\_\_\_
- SLOPE EASEMENT \_\_\_\_\_
- EXISTING RIGHT OF WAY \_\_\_\_\_
- PROPERTY LINE \_\_\_\_\_
- CORPORATE OR CITY LIMITS \_\_\_\_\_
- RETAINING WALL \_\_\_\_\_
- RAILROAD \_\_\_\_\_
- RAILROAD RIGHT OF WAY \_\_\_\_\_
- RIVER OR CREEK \_\_\_\_\_
- DRAINAGE DITCH \_\_\_\_\_
- CULVERT \_\_\_\_\_
- DROP INLET \_\_\_\_\_
- GUARD RAIL \_\_\_\_\_
- BARBED WIRE FENCE \_\_\_\_\_
- WOVEN WIRE FENCE \_\_\_\_\_
- CHAIN LINK FENCE \_\_\_\_\_
- WOOD FENCE \_\_\_\_\_
- STONE WALL OR FENCE \_\_\_\_\_
- HEDGE \_\_\_\_\_

- LOWLAND \_\_\_\_\_
- TIMBER \_\_\_\_\_
- ORCHARD \_\_\_\_\_
- BRUSH \_\_\_\_\_
- NURSERY \_\_\_\_\_

- 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 \_\_\_\_\_

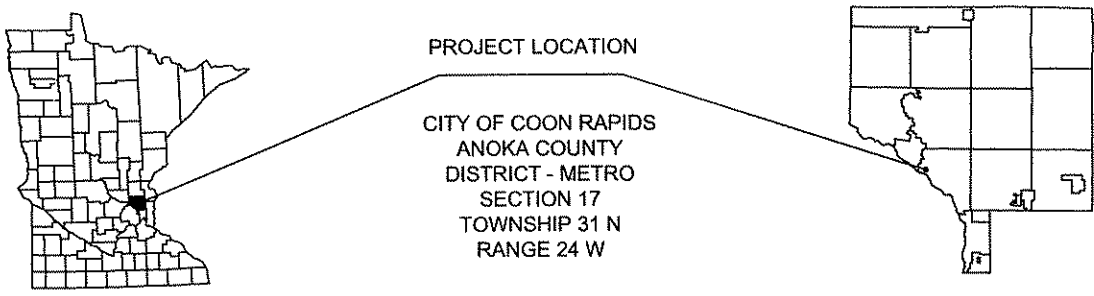
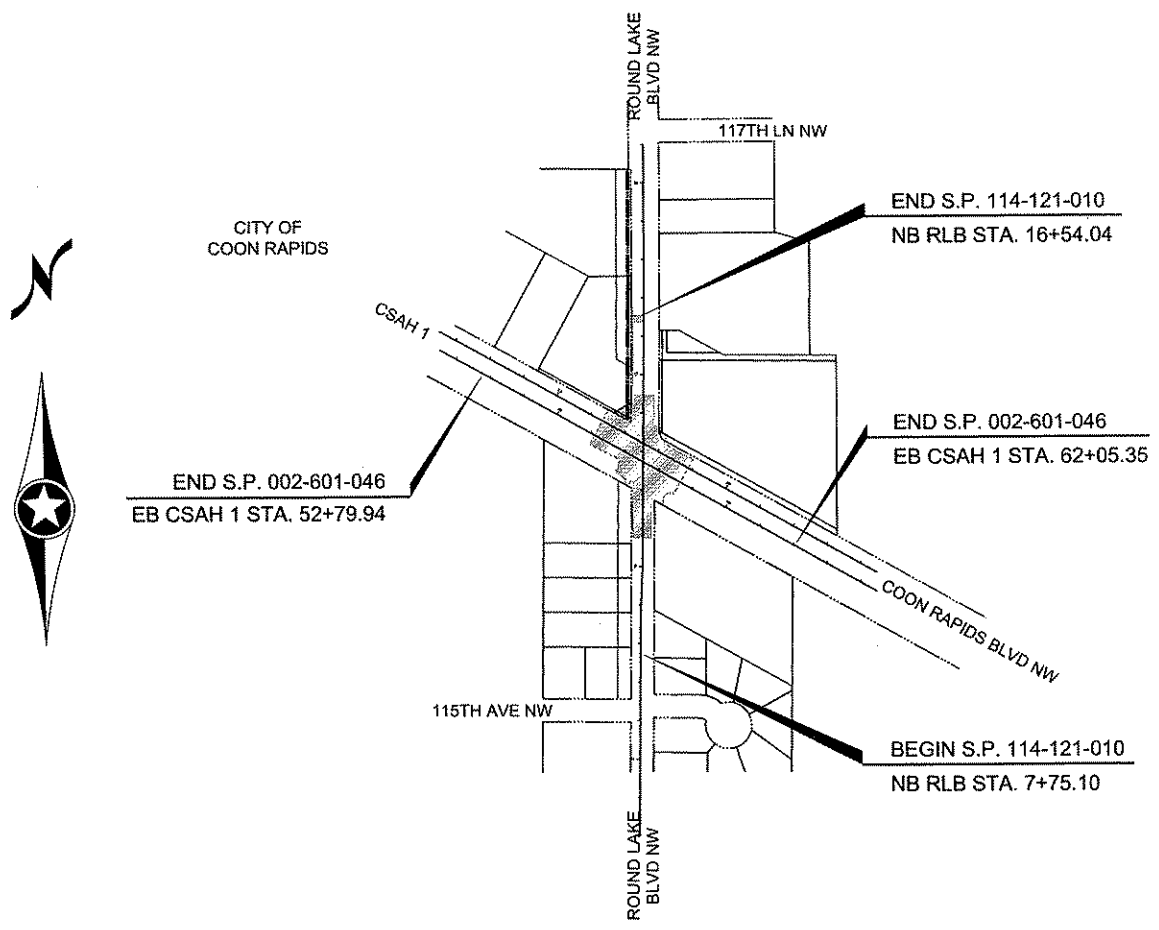
- RAILROAD CROSSING BELL \_\_\_\_\_
- RAILROAD CROSSING GATE \_\_\_\_\_
- MANHOLE \_\_\_\_\_
- CATCH BASIN \_\_\_\_\_
- FIRE HYDRANT \_\_\_\_\_
- CAST IRON MONUMENT \_\_\_\_\_
- IRON PIN \_\_\_\_\_
- GRAVEL PIT \_\_\_\_\_
- SAND PIT \_\_\_\_\_
- BORROW PIT \_\_\_\_\_
- ROCK QUARRY \_\_\_\_\_

### 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 \_\_\_\_\_
- SEWER (Sanitary or Storm) \_\_\_\_\_
- SEWER MANHOLE \_\_\_\_\_

### SCALES

- PLAN \_\_\_\_\_
- PROFILE HORIZONTAL \_\_\_\_\_
- VERTICAL \_\_\_\_\_
- X-SECTIONS HORIZONTAL \_\_\_\_\_
- VERTICAL \_\_\_\_\_
- VICINITY MAP \_\_\_\_\_



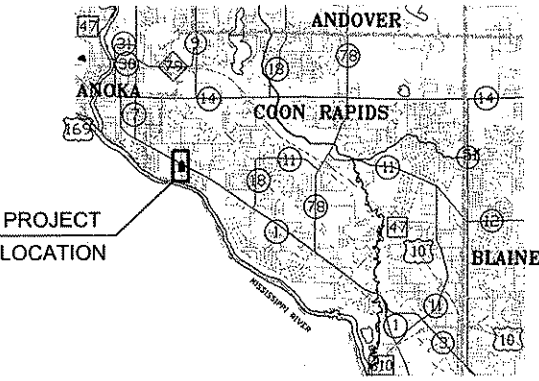
#### DESIGN DESIGNATION

R VALUE	NA
ADT (2013)	NA
PROJ. ADT (2033)	NA
PROJ. HCADT (2033)	NA
SOIL FACTOR	NA
NA	TON DESIGN

**CSAH 1**  
 FUNCTIONAL CLASSIFICATION A MINOR RELIEVER  
 NO. OF TRAFFIC LANES 4 NO. OF PARKING LANES 0  
 DESIGN SPEED 50 MPH

**ROUND LAKE BLVD**  
 FUNCTIONAL CLASSIFICATION LOCAL COLLECTOR  
 NO. OF TRAFFIC LANES 2 NO. OF PARKING LANES 0  
 DESIGN SPEED 30 MPH

STOPPING SIGHT DISTANCE BASED ON:  
 HEIGHT OF EYE 3.5' HEIGHT OF OBJECT 2.0'  
 DESIGN SPEED NOT ACHIEVED AT : NA  
 STA. \_\_\_\_\_ TO STA. \_\_\_\_\_ MPH \_\_\_\_\_




### GOVERNING SPECIFICATIONS

THE 2005 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE INSTALLED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MNMUTCD), AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS."


### INDEX

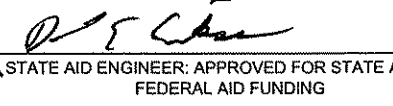
NO.	TITLE SHEET
1	TITLE SHEET
2 - 3	STATEMENT OF ESTIMATED QUANTITIES/STANDARD PLATES/INDEX OF TABULATION
4 - 7	TABULATION CHARTS
8	TYPICAL SECTIONS
9 - 13	PEDESTRIAN CURB RAMP DETAILS
14	TEMPORARY SEDIMENT CONTROL
15 - 21	CONSTRUCTION STAGING & TRAFFIC CONTROL
22 - 23	EXISTING SIGNING & STRIPING PLAN
24	ALIGNMENT TABULATION AND PLAN
25	REMOVAL AND CONSTRUCTION PLAN
26	INTERSECTION DETAILS
27 - 33	PERMANENT SIGNING & STRIPING PLAN, TABS
34 - 48	TRAFFIC SIGNAL PLAN

THIS PLAN CONTAINS 48 SHEETS

APPROVED  4/12/13  
 ANOKA COUNTY ENGINEER DATE


APPROVED  4/17/13  
 CITY OF COON RAPIDS ENGINEER DATE

 5/10/13  
 DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE AND FEDERAL AID RULES/POLICY DATE


 5/10/13  
 STATE AID ENGINEER: APPROVED FOR STATE AND/OR FEDERAL AID FUNDING DATE

NO.	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-601-46\Plan\0260146\_TSH.dgn      04/09/2013      2:17:29 PM

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.  
 PRINT NAME: CURT KOBIARCSIK  
 SIGNATURE:   
 DATE: 4-12-13 LICENSE NO. 24756

DRAWN BY EJM DATE 04-09-13  
 DESIGN BY EJM DATE 03-04-13  
 CHECKED BY CAK DATE 04-09-13

 **ANOKA COUNTY  
HIGHWAY DEPT.**

SP 002-601-046  
 SP 114-121-010

TITLE SHEET  
 Sheet 1 of 48 Sheets

**STATEMENT OF ESTIMATED QUANTITIES**

TAB	NOTE	ITEM NO.	ITEM	UNIT	TOTAL QUANTITY	FEDERAL PARTICIPATING		
						COUNTY OF ANOKA SP 002-601-046	CITY OF COON RAPIDS SP 114-121-010	STORM SEWER SP 002-601-046
		2021.501	MOBILIZATION	LUMP SUM	1	0.54	0.45	0.01
	(1),(2)	2102.501	PAVEMENT MARKING REMOVAL	SQ FT	40	40		
	(2)	2102.502	PAVEMENT MARKING REMOVAL	LIN FT	1580	1580		
A	(3)	2104.501	REMOVE CURB AND GUTTER	LIN FT	492	492		
A	(3)	2104.503	REMOVE BITUMINOUS WALK	SQ FT	602	602		
A	(3)	2104.503	REMOVE CONCRETE SIDEWALK	SQ FT	1046	1046		
A	(3)	2104.503	REMOVE CONCRETE MEDIAN	SQ FT	552	552		
A	(3)	2104.505	REMOVE BITUMINOUS PAVEMENT	SQ YD	292	292		
A	(3)	2104.509	REMOVE CATCH BASIN	EACH	2	2		
B	(3)	2104.509	REMOVE SIGN TYPE C	EACH	8	8		
C	(4)	2104.511	SAWING CONCRETE PAVEMENT	LIN FT	59	59		
C	(5)	2104.513	SAWING BITUMINOUS PAVEMENT	LIN FT	17	17		
C	(5)	2104.513	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LIN FT	676	676		
B		2104.523	SALVAGE SIGN TYPE C	EACH	3	3		
B		2104.523	SALVAGE SIGN TYPE SPECIAL	EACH	2	2		
D		2232.501	MILL BITUMINOUS SURFACE (2.0")	SQ YD	3540	3540		
E		2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	197	197		
E		2360.501	TYPE SP 12.5 WEARING COURSE MIX (3,F)	TON	400	400		
E		2360.505	TYPE SP 12.5 BITUMINOUS MIXTURE FOR PATCHING	TON	63	63		
K		2503.541	12" RC PIPE SEWER DESIGN 3006 CLASS III	LIN FT	16			16
K		2503.541	15" RC PIPE SEWER DESIGN 3006 CLASS III	LIN FT	8			8
K		2503.541	18" RC PIPE SEWER DESIGN 3006 CLASS III	LIN FT	8			8
K		2503.541	21" RC PIPE SEWER DESIGN 3006 CLASS III	LIN FT	8			8
K	(6)	2506.501	CONSTRUCT DRAINAGE STRUCTURE DESIGN G	LIN FT	4.0			4.0
K	(6)	2506.501	CONSTRUCT DRAINAGE STRUCTURE DESIGN 54-4020	LIN FT	5.6			5.6
K		2506.516	CASTING ASSEMBLY	EACH	2			2
F	(7)	2521.501	6" CONCRETE WALK	SQ FT	3610	3610		
F		2531.501	CONCRETE CURB & GUTTER DESIGN B424	LIN FT	326	163	163	
F		2531.501	CONCRETE CURB & GUTTER DESIGN B612	LIN FT	114	114		
F		2531.503	CONCRETE MEDIAN	SQ YD	17	17		
F		2531.618	TRUNCATED DOMES	SQ FT	100	100		
		2563.601	TRAFFIC CONTROL	LUMP SUM	1	0.54	0.45	0.01
G		2564.531	SIGN PANELS TYPE C	SQ FT	20	20		
B		2564.537	INSTALL SIGN TYPE C	EACH	3	3		
B		2564.537	INSTALL SIGN TYPE SPECIAL	EACH	2	2		
H	(9)	2565.511	TRAFFIC CONTROL SIGNAL SYSTEM	SIG SYS	1	0.25	0.75	
H		2565.601	EMERGENCY VEHICLE PREEMPTION SYSTEM	LUMP SUM	1		1	
H		2565.602	SIGNAL SERVICE CABINET	EACH	1	0.50	0.50	
H		2565.603	FIBER OPTIC INTERCONNECT	LIN FT	2600	2600		
H		2565.616	TEMPORARY SIGNAL SYSTEM	SYSTEM	1	1		
I		2573.530	STORM DRAIN INLET PROTECTION	EACH	7	7		
I		2575.501	SEEDING	ACRE	0.15	0.15		
I	(8)	2575.502	SEEDING MIXTURE 250	POUND	11	11		
I		2575.523	EROSION CONTROL BLANKET CATEGORY 00	SQ YD	742	742		
	(2)	2581.501	REMOVABLE PREFORMED PLASTIC MARKING	LIN FT	100	100		
J		2582.501	PAVEMENT MESSAGE (LT ARROW) PREFORMED THERMOPLASTIC	EACH	7	7		
J		2582.501	PAVEMENT MESSAGE (RT ARROW) PREFORMED THERMOPLASTIC	EACH	4	4		
J		2582.501	PAVEMENT MESSAGE (RT-THRU ARROW) PREFORMED THERMOPLASTIC	EACH	3	3		
J		2582.502	24" SOLID LINE WHITE-PREFORMED THERMOPLASTIC	LIN FT	150	150		
J		2582.502	24" SOLID LINE YELLOW-PREFORMED THERMOPLASTIC	LIN FT	67	67		

NOTES:

- (1) REMOVAL OF LT-THRU ARROW (25 SQ FT) AND RT ARROW (15 SQ FT).
- (2) SEE TABULATION ON SHEET 21 OF 48.
- (3) ALL REMOVAL ITEMS SHALL BE DISPOSED OFF-SITE. NO DISPOSAL SHALL BE ALLOWED WITHIN THE ROADWAY RIGHT-OF-WAY OR EASEMENTS.
- (4) SAWING OF CONCRETE CURB & GUTTER, MEDIAN AND WALK.
- (5) PAYMENT FOR SAWING BITUMINOUS WILL ONLY BE PAID WHEN THE CUT IS MADE WITH A SAW. NO PAYMENT SHALL BE MADE FOR CUTS MADE BY A MILLING MACHINE OR RECLAIMER.
- (6) CONNECT TO EXISTING STORM SEWER SHALL BE INCIDENTAL.
- (7) INCLUDES CONCRETE MEDIAN NOSE AND PEDESTRIAN CURB RAMP.
- (8) TOPSOIL REQUIRED SHALL BE INCIDENTAL.
- (9) SIGNAL POLES FURNISHED BY ANOKA COUNTY

1	7/1/13	GMP	HDC	CAK	
NO	DATE	BY	CKD	APPR	REVISION

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.  
 PRINT NAME: CURT KOBLARCSIK  
 SIGNATURE: *Curt Koblarcsik*  
 DATE: 7-1-13 LICENSE NO. 24756

DRAWN BY: EJM DATE: 04-09-13  
 DESIGN BY: EJM DATE: 03-04-13  
 CHECKED BY: CAK DATE: 04-09-13



**ANOKA COUNTY  
HIGHWAY DEPT.**

SP 002-601-046  
 SP 114-121-010

STATEMENT OF  
ESTIMATED QUANTITIES

Sheet 2 of 48 Sheets

STATEMENT OF ESTIMATED QUANTITIES								
TAB	NOTE	ITEM NO.	ITEM	UNIT	TOTAL QUANTITY	FEDERAL PARTICIPATING		
						COUNTY OF ANOKA SP 002-601-046	CITY OF COON RAPIDS SP 114-121-010	STORM SEWER SP 002-601-046
J		2582.502	4" SOLID LINE WHITE-PAINT	LIN FT	3740	3740		
J		2582.502	4" BROKEN LINE WHITE-PAINT	LIN FT	200	200		
J		2582.502	4" SOLID LINE YELLOW-PAINT	LIN FT	1180	1180		
J		2582.502	4" BROKEN LINE YELLOW-PAINT	LIN FT	40	40		
J		2582.502	4" DOUBLE SOLID LINE YELLOW-PAINT	LIN FT	740	740		
J		2582.503	CROSSWALK MARKING-PREFORMED THERMOPLASTIC	SQ FT	900	900		

NOTES:

- (1) REMOVAL OF LT-THRU ARROW (25 SQ FT) AND RT ARROW (15 SQ FT).
- (2) SEE TABULATION ON SHEET 21 OF 48.
- (3) ALL REMOVAL ITEMS SHALL BE DISPOSED OFF-SITE. NO DISPOSAL SHALL BE ALLOWED WITHIN THE ROADWAY RIGHT-OF-WAY OR EASEMENTS.
- (4) SAWING OF CONCRETE CURB & GUTTER, MEDIAN AND WALK.
- (5) PAYMENT FOR SAWING BITUMINOUS WILL ONLY BE PAID WHEN THE CUT IS MADE WITH A SAW. NO PAYMENT SHALL BE MADE FOR CUTS MADE BY A MILLING MACHINE OR RECLAIMER.
- (6) CONNECT TO EXISTING STORM SEWER SHALL BE INCIDENTAL.
- (7) INCLUDES CONCRETE MEDIAN NOSE AND PEDESTRIAN CURB RAMP.
- (8) TOPSOIL REQUIRED SHALL BE INCIDENTAL.

THE FOLLOWING STANDARD PLATES AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION SHALL APPLY.

NO.	STANDARD PLATE TITLE
3000 L	REINFORCED CONCRETE PIPE
3006 G	GASKET JOINT FOR R.C. PIPE
3007 D	SHEAR REINFORCEMENT FOR PRECAST DRAINAGE STRUCTURES
3145 G	CONCRETE PIPE OR PRECAST BOX CULVERT TIES
4006 L	MANHOLE OR CATCH BASIN PRECAST - DESIGNS G & H
4010 H	CONCRETE SHORT CONE & ADJUSTING RING (SECTIONAL CONCRETE)
4011 E	PRECAST CONCRETE BASE
4018 A	MANHOLE OR CATCH BASIN COVER DESIGN D
4020 J	MANHOLE OR CATCH BASIN FOR USE WITH OR WITHOUT TRAFFIC LOADS
4026 A	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
4125 D	CATCH BASIN FRAME CASTING (FOR SQUARE GRATE) - CASTING NO. 806
4132 F	CATCH BASIN FRAME CASTING (FOR SQUARE GRATE) - CASTING NO. 805
4134 A	CURB BOX CASTING FOR CATCH BASIN - CASTING NO. 825
4154 B	CATCH BASIN GRATE CASTING - CASTING NO. 816
4180 J	MANHOLE OR CATCH BASIN STEP
7035 N	CONCRETE WALK AND CURB RETURNS AT ENTRANCES
7038 A	DETECTABLE WARNING SURFACE TRUNCATED DOMES
7100 H	CONCRETE CURB AND GUTTER (DESIGN B & V)
7109 C	MEDIAN NOSE AND ISLAND
7111 J	INSTALLATION OF CATCH BASIN CASTINGS (CONCRETE CURB & GUTTER)
7113 A	CONCRETE APPROACH NOSE DETAIL

NOTE: SEE SHEET 34 FOR TRAFFIC SIGNAL STANDARD PLATES

INDEX OF TABULATIONS		
TAB	SHEET	DESCRIPTION
A	4	REMOVE PAVEMENT & MISCELLANEOUS STRUCTURES
B	23	SIGN TAB
C	4	SAWING CONCRETE & BITUMINOUS
D	4	MILL BITUMINOUS PAVEMENT
E	4	BITUMINOUS QUANTITIES
F	5	CONCRETE WALK, C & G, MEDIAN & TRUNCATED DOMES
G	29	SIGN PANELS TYPE C
H	34	TRAFFIC SIGNAL TABULATION
I	5	TURF ESTABLISHMENT AND EROSION CONTROL
J	27	PERMANENT PAVEMENT MARKING TABULATION
K	5	DRAINAGE TABULATION
L	5	CASTING ASSEMBLIES
M	6	UTILITY CONTACTS
N	6	SANITARY SEWER
O	6	STORM SEWER
P	6	WATERMAIN
Q	7	CENTERPOINT ENERGY
R	7	CENTURYLINK
S	7	COMCAST CABLE COMMUNICATIONS
T	7	XCEL ENERGY
U	6	ZAYO FIBER SOLUTIONS

BASIS OF QUANTITIES		
SPEC NO	DESCRIPTION	RATE
2357	BITUMINOUS MATERIAL FOR TACK COAT	0.05 GALLONS / SQ YD / LIFT
2360	TYPE SP12.5 WEARING COURSE MIXTURE	113 POUNDS / SQ YD / IN
2360	TYPE SP 12.5 BITUMINOUS MIXTURE FOR PATCHING	115 POUNDS / SQ YD / IN
2575	SEEDING MIXTURE 250	70 POUNDS/ACRE

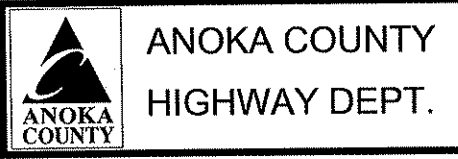
SOILS AND CONSTRUCTION NOTES

1. UNLESS OTHERWISE SPECIFICALLY ALLOWED OR REQUIRED BY THE CONTRACT, BITUMINOUS AND CONCRETE ITEMS DISTURBED BY CONSTRUCTION SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE RECYCLED TO THE EXTENT ALLOWED IN BASE AND SURFACING ITEMS OR DISPOSED OF OUTSIDE THE RIGHT-OF-WAY IN ACCORDANCE WITH SPEC. 2104.3C3.
2. CONTRACTOR SHALL PROVIDE A FULL DEPTH SAWCUT WHERE PLACING NEW PAVEMENT ADJACENT TO INPLACE PAVEMENT TO ENSURE A UNIFORM JOINT. IF NO ITEM FOR THIS WORK IS SPECIFICALLY CALLED OUT FOR, THEN THE WORK SHALL BE INCIDENTAL WITH NO DIRECT COMPENSATION.
3. CONTRACTOR SHALL PROVIDE A UNIFORM BITUMINOUS TACK COAT BETWEEN ALL BITUMINOUS LAYERS AND PRIOR TO PLACING ANY BITUMINOUS MIXTURES ON EXISTING/MILLED PAVEMENT IN ACCORDANCE WITH SPEC. 2357.
4. TOPSOIL SHALL BE DEFINED AS SOILS WHICH MEET MN/DOT SPEC. 3877 AND SHALL BE 4" THICK.
5. AGGREGATE BASE MATERIAL SHALL MEET THE REQUIREMENTS OF MN/DOT SPEC. 3138, CLASS 5.
6. COMPACTION OF AGGREGATE BASE SHOULD BE IN ACCORDANCE WITH MN/DOT "MODIFIED PENETRATION INDEX METHOD".
7. COMPACTION OF ALL ROADWAY BITUMINOUS MIXTURES SHALL BE BY THE "MAXIMUM DENSITY METHOD".

NO	DATE	BY	CKD	APPR	REVISION

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.  
 PRINT NAME: GINA M. PIZZO  
 SIGNATURE: *[Signature]*  
 DATE: 3-27-13 LICENSE NO. 22713

DRAWN BY CGJ DATE 03-06-13  
 DESIGN BY EJM DATE 03-04-13  
 CHECKED BY GMP DATE 03-26-13



SP 002-601-046  
 SP 114-121-010

STATEMENT OF ESTIMATED QUANTITIES/STANDARD PLATES /INDEX OF TABULATIONS  
 Sheet 3 of 48 Sheets

REMOVE PAVEMENT & MISCELLANEOUS STRUCTURES								A
STATION TO STATION	ALIGNMENT	LOCATION	CATCH BASIN	CURB & GUTTER	BITUMINOUS WALK	CONCRETE SIDEWALK	CONCRETE MEDIAN	BITUMINOUS PAVEMENT
			EACH	LIN FT	SQ FT	SQ FT	SQ FT	SQ YD
<b>ROUND LAKE BLVD</b>								
11+67	12+03	RLB		84	221	348		91
12+14	12+32	RLB		55			192	7
13+25	13+68	RLB		54		223		12
12+24	12+72	RLB		59	381	84		18
13+67	13+85	RLB		55			183	7
14+00	14+35	RLB		89		391		110
<b>CSAH 1</b>								
56+39	CSAH 1 WB	LT	1					
56+56	56+84	CSAH 1 EB		49			88	24
58+12	58+43	CSAH 1 EB		47			89	23
58+61	CSAH 1 EB	RT	1					
<b>TOTAL</b>			<b>2</b>	<b>492</b>	<b>602</b>	<b>1046</b>	<b>552</b>	<b>292</b>

SAWING CONCRETE & BITUMINOUS						C
STATION TO STATION	ALIGNMENT	LOCATION	CONCRETE WALK/MEDIAN	BITUMINOUS WALK	BITUMINOUS PAVEMENT	
			LIN FT	LIN FT	LIN FT	
<b>ROUND LAKE BLVD</b>						
11+67	12+03	RLB	9	9	113	
12+11	12+33	RLB			72	
13+25	13+68	RLB	13		62	
12+24	12+72	RLB	8	8	69	
13+67	13+85	RLB			71	
14+00	14+35	RLB	15		121	
<b>CSAH 1</b>						
56+57	56+84	CSAH 1 EB	7		85	
58+12	58+43	CSAH 1 EB	7		83	
<b>TOTAL</b>			<b>59</b>	<b>17</b>	<b>676</b>	

MILL BITUMINOUS PAVEMENT				D
STATION TO STATION	ALIGNMENT	2" MILL		
		SQ YD		
<b>ROUND LAKE BLVD</b>				
11+51	12+59	RLB	513	
13+59	13+91	RLB	610	
<b>CSAH 1</b>				
56+11	58+66	CSAH 1 WB	2417	
<b>TOTAL</b>			<b>3540</b>	

BITUMINOUS QUANTITIES					E
STATION TO STATION	LOCATION	DESCRIPTION	BITUMINOUS MIXTURE FOR PATCHING	TACK COAT	TYPE SP 12.5 WEAR (SPWEB340F)
			TON	GALLON	TON
<b>ROUND LAKE BLVD</b>					
11+67	12+59	NB & SB	OVERLAY	26	58
11+67	12+14	NB	PATCHING	8	2
12+12	12+34	NB ISLAND	PATCHING	13	4
13+24	13+67	NB	PATCHING	4	1
12+24	12+75	SB	PATCHING	5	1
13+64	13+88	SB ISLAND	PATCHING	13	4
13+23	14+46	NB & SB	OVERLAY	31	69
13+86	14+35	SB	PATCHING	8	3
<b>CSAH 1</b>					
56+11	58+66	EB & WB	OVERLAY	121	273
56+49	56+85	MEDIAN	PATCHING	6	2
58+11	58+45	MEDIAN	PATCHING	6	2
<b>TOTAL</b>			<b>63</b>	<b>197</b>	<b>400</b>

- SEE SHEET 3 FOR 'BASIS OF QUANTITIES'.

NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\02-601-46\Plan\0260146\_TAB.dgn 03/22/2013 12:37:20 PM

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.

PRINT NAME: CURT KOBILARCSIK  
 SIGNATURE: *Curt Kobilarsik*  
 DATE: 3-23-13 LICENSE NO. 24756

DRAWN BY: CGJ DATE: 03-08-13  
 DESIGN BY: EJM DATE: 03-04-13  
 CHECKED BY: CAK DATE: 03-21-13

**ANOKA COUNTY**  
**HIGHWAY DEPT.**

SP 002-601-046  
 SP 114-121-010

TABULATION CHARTS  
 Sheet 4 of 48 Sheets

CONCRETE WALK, C & G, MEDIAN & TRUNCATED DOMES							F	
STATION TO STATION	ALIGNMENT	LOCATION	6" CONCRETE WALK (1)	CONCRETE C & G B424	CONCRETE C & G B612	CONCRETE MEDIAN	TRUNCATED DOMES	
			SQ FT	LIN FT	LIN FT	SQ YD	SQ FT	
<b>ROUND LAKE BLVD</b>								
11+62	12+03	RLB	RADIUS RT	905	101		24	
13+25	13+68	RLB	RADIUS RT	651	56		24	
12+15	12+72	RLB	RADIUS LT	1120	61		24	
14+02	14+35	RLB	RADIUS LT	862	108		28	
<b>CSAH 1</b>								
56+49	56+84	CSAH 1 EB	MEDIAN LT	36		52	9	
58+12	58+45	CSAH 1 EB	MEDIAN LT	36		62	8	
<b>TOTAL</b>				<b>3610</b>	<b>326</b>	<b>114</b>	<b>17</b>	<b>100</b>

NOTE:  
(1) AGGREGATE BASE SHALL BE INCIDENTAL.


TURF ESTABLISHMENT AND EROSION CONTROL					I
STATION TO STATION	LOCATION	STORM DRAIN INLET PROTECTION	SEEDING	SEEDING MIXTURE 250	EROSION CONTROL BLANKET CATEGORY 00
		EACH	ACRE	POUND	SQ YD
<b>ROUND LAKE BLVD</b>					
6+83	RLB RT	1			
10+74	11+96	RLB RT		0.02	1
13+66	13+73	RLB RT		0.00	0
6+83	RLB LT	1			
12+15	12+52	RLB LT		0.01	1
14+42	16+54	RLB LT		0.02	1
18+87	RLB LT	1			
<b>CSAH 1</b>					
52+80	53+30	CSAH 1 EB RT		0.01	1
53+85	57+10	CSAH 1 EB RT		0.04	3
58+37	58+66	CSAH 1 EB RT		0.01	1
58+64	CSAH 1 EB RT	1			
58+65	CSAH 1 EB RT	1			
56+35	56+74	CSAH 1 WB LT		0.01	1
56+41	CSAH 1 WB LT	1			
58+07	61+10	CSAH 1 WB LT		0.03	2
58+91	CSAH 1 WB LT	1			
61+50	62+29	CSAH 1 WB LT		0.01	1
<b>TOTAL</b>		<b>7</b>	<b>0.15</b>	<b>11</b>	<b>742</b>

NOTES:  
- SEE SHEET 3 FOR 'BASIS OF QUANTITIES'.

DRAINAGE TABULATION												K						
STRUCTURE NO.		CENTER OF CASTING LOCATION			DRAINAGE STRUCTURE					DOWN-STREAM INLET ELEV.	EX. SLOPE %	FURNISH AND INSTALL				NOTES		
FROM	TO	ALIGN.	STATION	OFFSET	TYPE	DESIGN		CASTING ASSEMBLY	STEPS REQ'D			TOP OF CASTING ELEV.	OUTLET ELEV.	12" RCP CL III	15" RCP CL III		18" RCP CL III	21" RCP CL III
						G	54-4020									LIN FT	LIN FT	LIN FT
11	12X	CSAH 1 WB	56+39.30	-25.00	CB	4.0		B-17		867.54	863.44	860.70	1.00		8			(1)
12X	13	CSAH 1 EB	56+16.28	25.39	EX CB					867.16	860.54	856.28	1.72					(1)
13	16X	CSAH 1 EB	58+60.78	25.00	CB		5.6	B-9	YES	861.98	856.28	853.01	0.80				8	(1)
14X	13	CSAH 1 WB	58+89.52	-25.60	EX CB					862.13	858.73	858.05	1.00	8				(1)
15X	13	CSAH 1 EB	58+63.69	49.16	EX APRON					856.63	856.40	856.40	1.00	8				(1)
<b>TOTAL</b>						<b>4.0</b>	<b>5.6</b>	<b>2</b>						<b>16</b>	<b>8</b>	<b>8</b>	<b>8</b>	

NOTES:  
(1) MATCH EXISTING PIPE'S INVERT ELEVATION AND SLOPE.

CASTING ASSEMBLIES						L
ASSEMBLY	RING OR FRAME CASTING	COVER OR GRATE CASTING	CURB BOX	STANDARD PLATE NO.	QUANTITY	REMARKS
B-9	805			4132	1	CATCH BASIN
		816		4154		
B-17	806			4125	1	CATCH BASIN
		816		4154		
		825		4134		

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. PRINT NAME: GINA M. PIZZO SIGNATURE: <i>[Signature]</i> DATE: 3-27-13 LICENSE NO. 22713					DRAWN BY: CGJ DATE: 03-06-13 DESIGN BY: EJM DATE: 03-04-13 CHECKED BY: GMP DATE: 03-26-13		 <b>ANOKA COUNTY HIGHWAY DEPT.</b>		TABULATION CHARTS Sheet 5 of 48 Sheets	
NO	DATE	BY	CKD	APPR	REVISION	NAME: P:\02-601-46\Plan\0260146_TAB.dgn 03/27/2013 8:06:58 AM				

GENERAL NOTES:

ALL UTILITY WORK SHOWN ON THIS SHEET SHALL BE DONE BY OTHERS UNLESS NOTED.

ALL RELOCATES AND ADJUSTMENTS SUBJECT TO ANOKA COUNTY AND/OR CITY OF COON RAPIDS RIGHT OF WAY POSSESSION.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE GOPHER STATE ONE CALL EXCAVATION NOTICE SYSTEM REQUIRED BY MINNESOTA STATUTE, CHAPTER 216D FOR ALL UNDERGROUND UTILITY LOCATIONS.

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF C/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA".

THE REMARKS COLUMN IS BASED UPON THE BEST INFORMATION AVAILABLE AND MAY NOT REFLECT THE ACTUAL EFFECTS ON THE UTILITES BY CONSTRUCTION. ACTUAL DETERMINATIONS WILL BE MADE IN THE FIELD DURING CONSTRUCTION.

ZAYO FIBER SOLUTIONS							U	
STATION		LOCATION				INPLACE ITEM	REMARKS	
BEGIN	END							
CSAH 1								
54+15	64+72	70	RT	EB	70	RT	OVERHEAD	LEAVE
59+40		63	RT	EB			HANDHOLE	LEAVE
59+40		63	RT	EB	83	LT	BURIED	LEAVE
57+91	58+00	36	LT	WB	41	LT	BURIED	RELOCATE
58+00	59+64	41	LT	WB	40	LT	BURIED	LEAVE

UTILITY CONTACTS	M
<p>GOPHER STATE ONE CALL FIELD UTILITY LOCATE REQUEST http://www.gopherstateonecall.org TEL: 651-454-0002 OR TEL: 1-800-252-1166</p> <p>CENTURYLINK 425 MONROE ST ANOKA, MN 55303 CONTACT: BRUCE HOLLOWAY TEL: 763-712-5020</p> <p>CENTERPOINT ENERGY 700 WEST LINDEN AVE PO BOX 1165 MINNEAPOLIS, MN 55440-1165 CONTACT: STEVE GUHANICK TEL: 763-427-3456</p> <p>COMCAST CABLE 2611 FAIRVIEW AVE ROSEVILLE, MN 55113 CONTACT: DOUG ZAHN TEL: 651-493-5316</p> <p>XCEL ENERGY 5363 260TH LN N WYOMING, MN 55096 CONTACT: ROBERT TORRES TEL: 763-493-1671</p> <p>CITY OF COON RAPIDS 11155 ROBINSON DRIVE COON RAPIDS, MN 55433 CONTACT: BOB MOBERG TEL: 763-433-9826</p> <p>ZAYO FIBER SOLUTIONS 2300 BERKSHIRE LN N, SUITE 4 PLYMOUTH, MN 55441 CONTACT: JACK JELINEK TEL: 715-245-0491</p>	

SANITARY SEWER						N
STATION	LOCATION			INPLACE ITEM	REMARKS	
ROUND LAKE BLVD						
8+01	1	LT	RLB	MANHOLE	LEAVE	
9+64	36	RT	RLB	MANHOLE	LEAVE	
11+02	34	RT	RLB	MANHOLE	LEAVE	
11+04	5	LT	RLB	MANHOLE	LEAVE	

STORM SEWER						O
STATION	LOCATION			INPLACE ITEM	REMARKS	
CSAH 1 EB						
56+16	25	RT	EB	CATCH BASIN	LEAVE	
58+61	26	RT	EB	CATCH BASIN	REMOVE	
CSAH 1 WB						
56+39	26	LT	WB	CATCH BASIN	REMOVE	
58+89	26	LT	WB	CATCH BASIN	LEAVE	

WATERMAIN						P
STATION	LOCATION			INPLACE ITEM	REMARKS	
ROUND LAKE BLVD						
11+68	33	LT	RLB	GATE VALVE	LEAVE	
11+73	35	LT	RLB	HYDRANT	LEAVE	
12+04	19	RT	RLB	MANHOLE	LEAVE	
12+07	8	RT	RLB	GATE VALVE	LEAVE	
12+15	13	LT	RLB	GATE VALVE	LEAVE	
12+31	13	RT	RLB	MANHOLE	LEAVE	
15+68	35	RT	RLB	HYDRANT	LEAVE	
16+22	14	RT	RLB	GATE VALVE	LEAVE	
CSAH 1						
54+59	57	RT	EB	GATE VALVE	LEAVE	
54+60	55	RT	EB	GATE VALVE	LEAVE	

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-601-46\Plan\0260146\_TAB.dgn 03/27/2013 8:20:34 AM

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.

PRINT NAME: GINA M. PIZZO

SIGNATURE: *[Signature]*

DATE: 3-27-13 LICENSE NO. 22713

DRAWN BY: CGJ DATE: 03-08-13

DESIGN BY: EJM DATE: 03-04-13

CHECKED BY: GMP DATE: 03-26-13



ANOKA COUNTY  
HIGHWAY DEPT.

SP 002-601-046

SP 114-121-010

TABULATION CHARTS

Sheet 6 of 48 Sheets



CENTERPOINT ENERGY								Q
STATION		LOCATION				INPLACE ITEM	REMARKS	
BEGIN	END							
ROUND LAKE BLVD								
6+50	11+63	25	RT	NB	26	RT	12" ST	LEAVE
11+63		26	RT	RLB	71	RT	12" ST	LEAVE
11+63	12+70	71	RT	RLB	130	RT	12" ST	LEAVE
12+70	13+20	130	RT	RLB	40	RT	12" ST	LEAVE
13+20	16+50	40	RT	RLB	37	RT	12" ST	RELOCATE
16+50		37	RT	RLB	29	LT	12" ST	LEAVE
13+28	15+00	39	RT	RLB	39	RT	4" TR	RELOCATE
6+50	12+46	27	LT	RLB	332	LT	2" ST	LEAVE
CSAH 1								
55+00	57+40	30	RT	EB	30	RT	2" ST	LEAVE
55+00	58+00	9	LT	WB	9	LT	4" ST	LEAVE
58+00	58+30	9	LT	WB	35	LT	4" ST	LEAVE
55+00	56+40	27	LT	EW	27	LT	4" ST	LEAVE
56+40	59+00	27	LT	WB	4	LT	4" ST	LEAVE

CENTURYLINK								R
STATION		LOCATION				INPLACE ITEM	REMARKS	
BEGIN	END							
RLB NB								
7+66		36	RT	NB			SPLICE BOX	LEAVE
7+66	11+44	36	RT	NB	26	RT	BURIED	LEAVE
11+44		26	RT	NB			SPLICE BOX	LEAVE
11+44	13+18	30	RT	NB	50	RT	BURIED	LEAVE
13+18		50	RT	NB			MANHOLE	LEAVE
13+18	14+50	50	RT	NB	36	RT	BURIED	RELOCATE
11+44	11+83	26	RT	RLB	30	RT	BURIED	LEAVE
11+83	11+35	30	RT	RLB	121	RT	BURIED	LEAVE
11+83	13+18	182	RT	RLB	45	RT	BURIED	LEAVE
CSAH 1								
54+63	64+64	13	LT	WB	25	LT	BURIED	LEAVE
55+08	59+30	33	LT	WB	32	LT	OVERHEAD	RELOCATE

COMCAST CABLE								S
STATION		LOCATION				INPLACE ITEM	REMARKS	
BEGIN	END							
CSAH 1								
54+15	64+72	72	RT	EB	71	RT	OVERHEAD	LEAVE

XCEL ENERGY								T
STATION		OFFSET				INPLACE ITEM	REMARKS	
BEGIN	END							
ROUND LAKE BLVD								
6+50	19+79	29	LT	RLB	32	LT	OVERHEAD	LEAVE
6+50	12+50	26	LT	RLB	32	LT	BURIED	LEAVE
8+83		30	LT	RLB			POWER POLE	LEAVE
11+01		34	LT	RLB			POWER POLE	LEAVE
12+50	13+28	32	LT	RLB	180	LT	BURIED	LEAVE
13+28	14+27	180	LT	RLB	126	LT	BURIED	LEAVE
14+27	13+81	126	LT	RLB	41	LT	BURIED	LEAVE
13+81	20+22	41	LT	RLB	37	LT	BURIED	LEAVE
15+12		34	LT	RLB			POWER POLE	LEAVE
17+83		34	LT	RLB			POWER POLE	LEAVE
CSAH 1								
53+77	64+48	70	RT	EB	69	RT	OVERHEAD	LEAVE
56+49		67	RT	EB			POWER POLE	LEAVE
59+40		68	RT	EB			POWER POLE	LEAVE

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NO	DATE	BY	CKD	APPR	REVISION

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.

PRINT NAME: CURT KOBIARCSIK

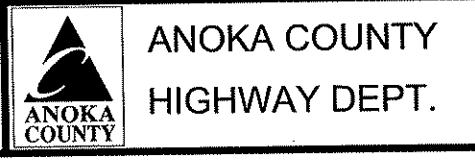
SIGNATURE: *Curt Kobilarcsik*

DATE: 3-22-13 LICENSE NO. 24756

DRAWN BY CGJ DATE 03-06-13

DESIGN BY EJM DATE 03-04-13

CHECKED BY CAK DATE 03-21-13



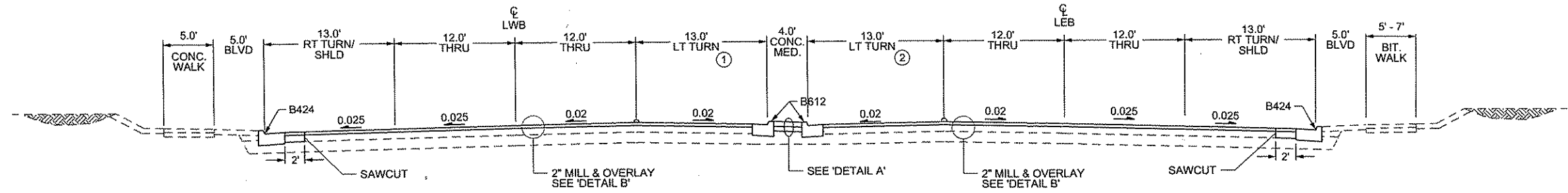
SP 002-601-046

SP 114-121-010

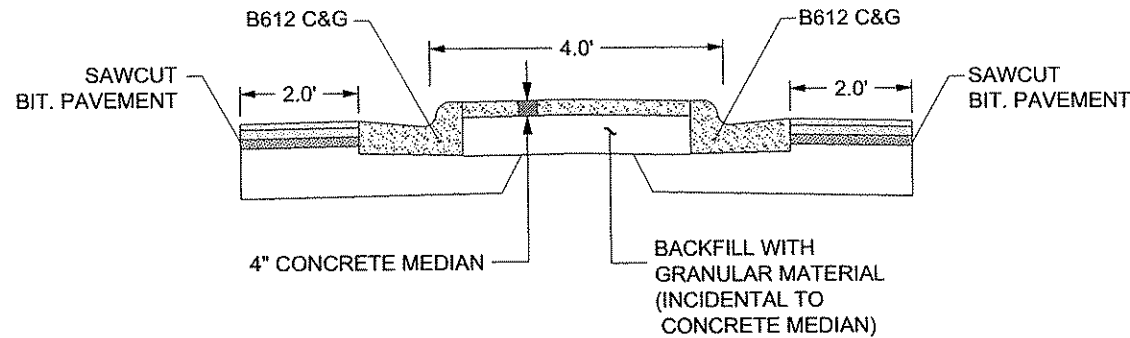
TABULATION CHARTS

Sheet 7 of 48 Sheets

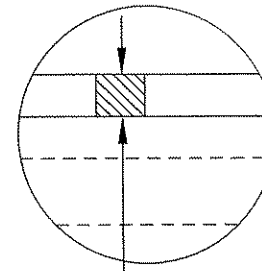
**CSAH 1 ( COON RAPIDS BLVD NW )**  
( LEB STA. 56+11 - STA. 58+61 )



**DETAIL A**  
**CONCRETE MEDIAN**  
( LEB STA. 56+49 - STA. 56+83 )  
( LEB STA. 58+12 - STA. 58+45 )



**DETAIL B**



2" TYPE SP 12.5 WEARING COURSE  
MIXTURE (3,F) SPWEB340F

**NOTES**

- ① FROM CSAH 1 LEB STA. 58+12.
  - ② TO CSAH 1 LEB STA. 56+83.
  - ③ SEE CHART FOR TURN LANE LOCATIONS.
  - ④ MILL & OVERLAY ROUND LAKE BLVD FROM STA. 11+51.39 TO 14+45.33.
- ALL CROSS SLOPES EXPRESSED IN FT./FT.

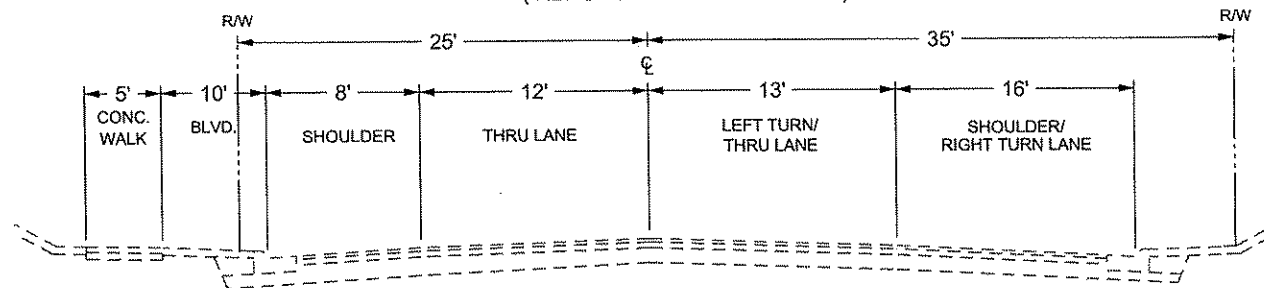
**TURN LANE LOCATIONS**

ALIGN	STA. TO STA. *	LOCATION	DESCRIPTION	STRIPED TAPER
RLB	9+95 12+09	RT.	RIGHT TURN LANE	
RLB	11+15 12+15	LT.	LEFT TURN LANE	1:10

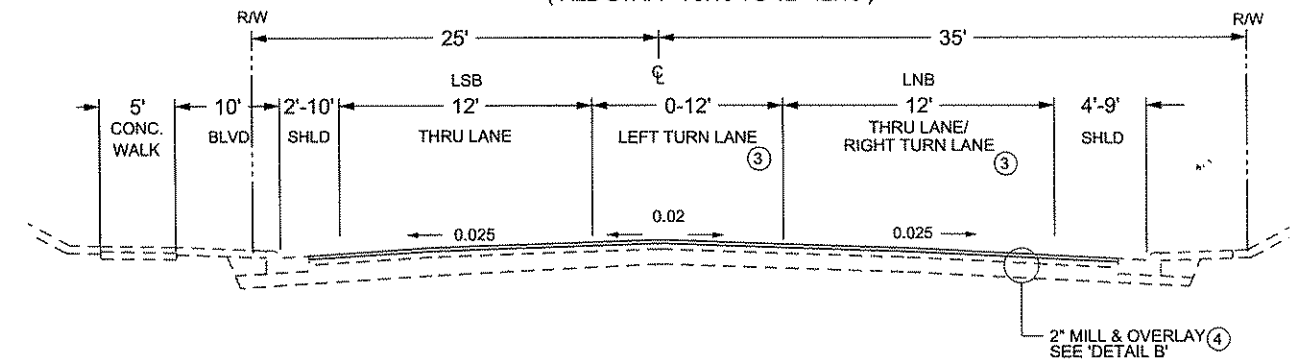
\* STATION RANGE DOES NOT INCLUDE TAPER SECTION.

**ROUND LAKE BLVD NW**

**EXISTING TYPICAL SECTION**  
( RLB STA. 7+75.10 TO 12+42.10 )



**PROPOSED TYPICAL SECTION**  
( RLB STA. 7+75.10 TO 12+42.10 )



NOT TO SCALE

1 OF 1

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-601-46\Plan\0260146\_TYP.dgn      04/09/2013      2:50:57 PM

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.  
 PRINT NAME: CURT KOBILARCSIK  
 SIGNATURE: *Curt Kobilarsik*  
 DATE: 4-12-13      LICENSE NO. 24756

DRAWN BY: EJM      DATE: 04-09-13  
 DESIGN BY: EJM      DATE: 03-04-13  
 CHECKED BY: CAK      DATE: 04-09-13



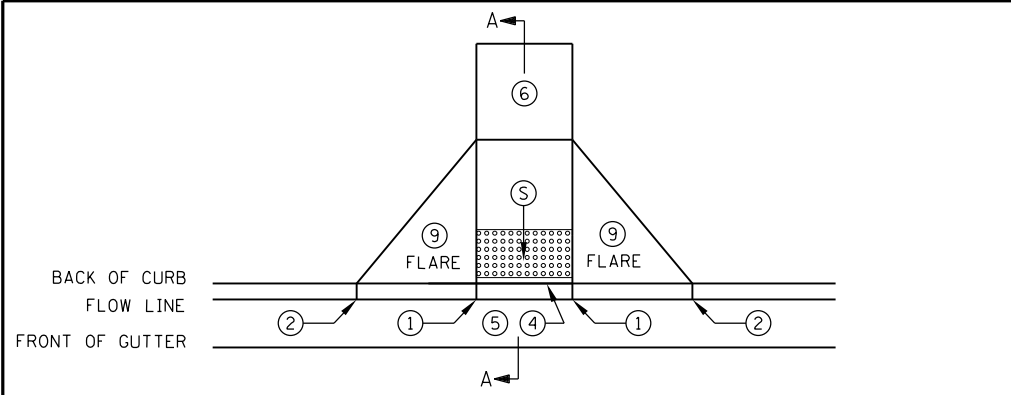
**ANOKA COUNTY**  
**HIGHWAY DEPT.**

SP 002-601-046  
SP 114-121-010

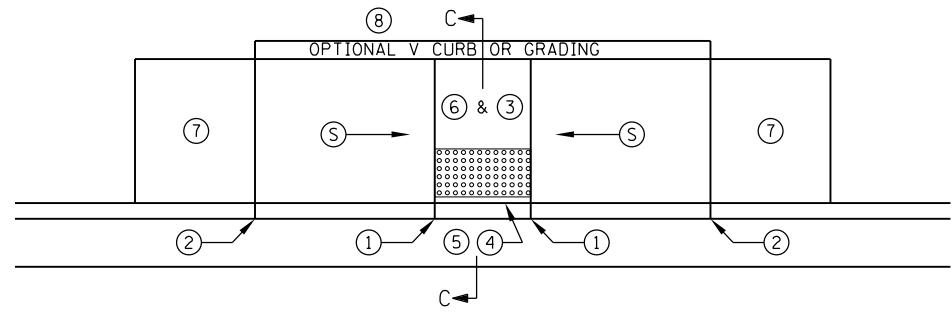
TYPICAL SECTIONS  
Sheet 8 of 48 Sheets



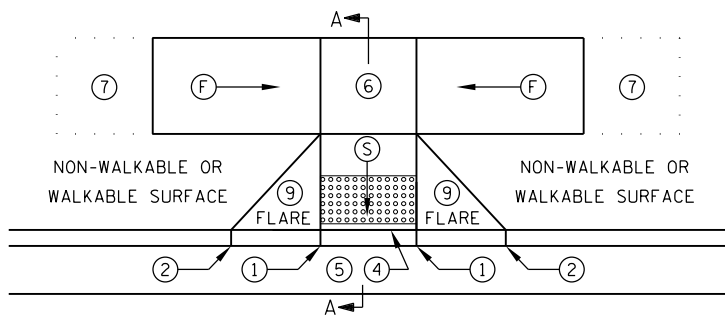
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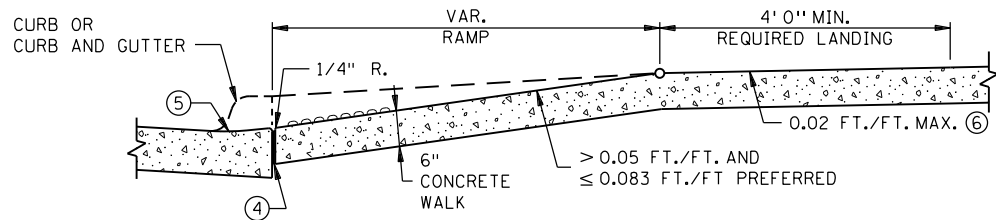
PERPENDICULAR



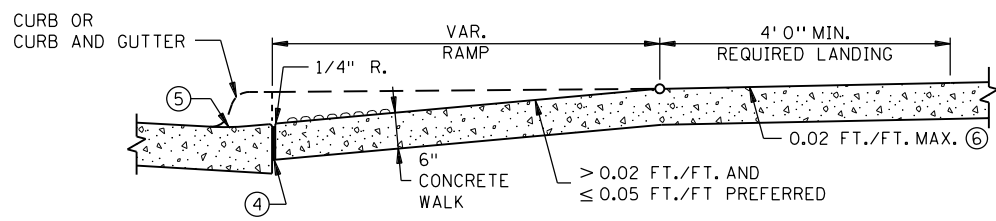
PARALLEL



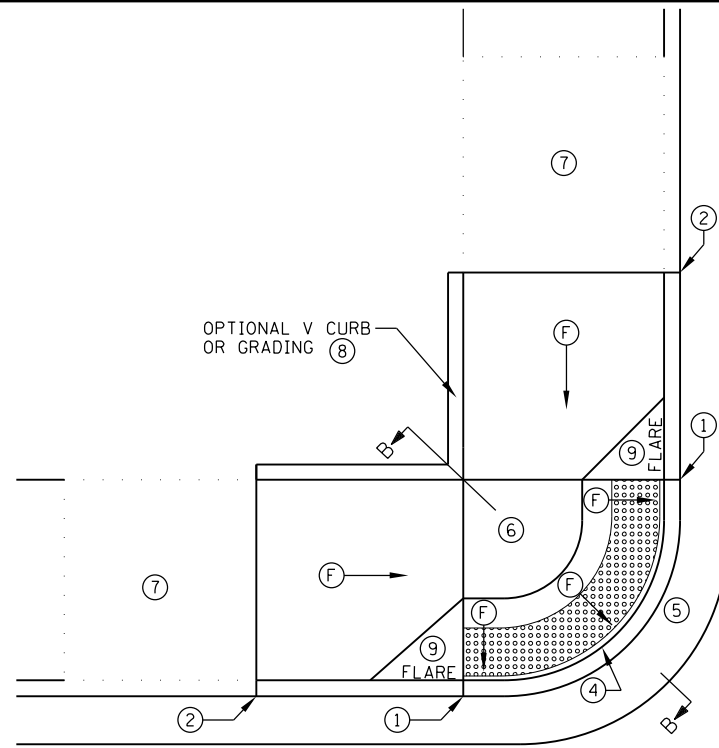
TIERED PERPENDICULAR



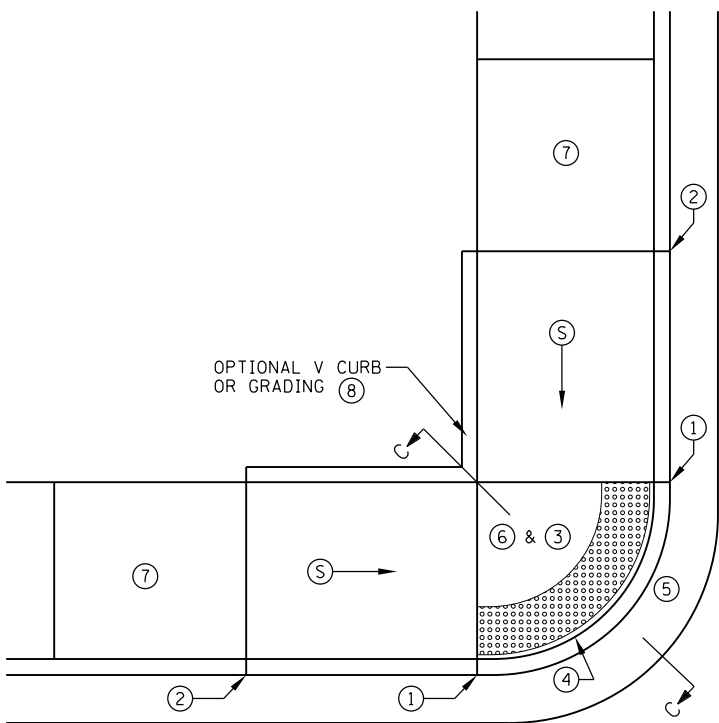
SECTION A-A  
PERPENDICULAR/TIERED/DIAGONAL



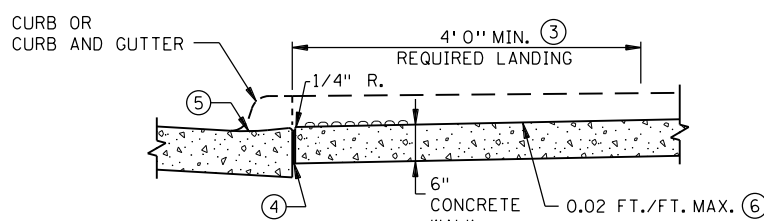
SECTION B-B  
FAN



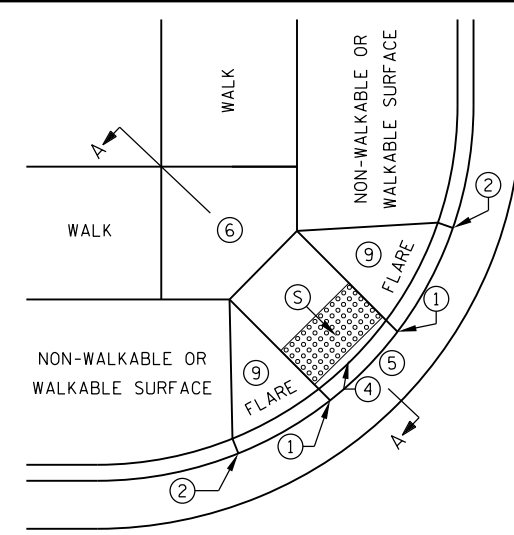
FAN



DEPRESSED CORNER



SECTION C-C  
PARALLEL/DEPRESSED CORNER



DIAGONAL 10

NOTES:

LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE.

INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE.

SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30" OF VERTICAL RISE WHEN THE LONGITUDINAL SLOPE IS GREATER THAN 5.0%.

CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS.

ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL.

TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, LANDINGS MAY BE CAST SEPARATELY. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 5 WHEN LANDINGS ARE CAST SEPARATELY.

ALL SLOPES ARE ABSOLUTE, RATHER THAN RELATIVE TO SIDEWALK/ROADWAY GRADES.

TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MINIMUM OF 24" IN THE PATH OF TRAVEL. SHARED USE PATHS SHALL HAVE DETECTABLE WARNING ACROSS THE ENTIRE WIDTH OF PATH WHEN THE PATH CROSSES A ROAD.

SEE STANDARD PLATE 7038 AND SHEET 4 OF 5 FOR ADDITIONAL DETAILS ON DETECTABLE WARNING.

- 1 0" CURB HEIGHT.
- 2 FULL CURB HEIGHT.
- 3 DETECTABLE WARNINGS MAY BE PART OF 4' X 4' LANDING AREA IF IT IS NOT FEASIBLE TO CONSTRUCT THE LANDING OUTSIDE OF THE DETECTABLE WARNING AREA.
- 4 1/2" PREFORMED JOINT FILLER MATERIAL AASHTO M 213. JOINT FILLER SHALL BE PLACED FLUSH WITH THE BACK OF CURB AND ADJACENT SIDEWALK. JOINT SHALL BE FREE OF DEBRIS. RECTANGULAR DETECTABLE WARNINGS SHALL BE SETBACK 3" FROM THE BACK OF CURB. RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB.
- 5 SEE PEDESTRIAN ACCESS ROUTE CURB AND GUTTER DETAIL FOR INFORMATION ON CONSTRUCTING CURB AND GUTTER AT CURB OPENINGS. SEE SHEET NO. 3 OF 5.
- 6 4' BY 4' MIN. LANDING WITH MAX. 2.0% SLOPE IN ALL DIRECTIONS.
- 7 IF LONGITUDINAL SLOPE IS GREATER THAN 5.0%, 4' X 4' MIN. LANDING WITH MAX 2.0% SLOPE IN ALL DIRECTIONS REQUIRED.
- 8 V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. SEE SHEET 5 OF 5.
- 9 SEE SHEET 4 OF 5, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS.
- 10 DIAGONAL RAMPS SHOULD ONLY BE USED AFTER ALL OTHER CURB RAMP TYPES HAVE BEEN EVALUATED AND DEEMED IMPRACTICAL.

LEGEND

THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.

- S INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%
- F INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%

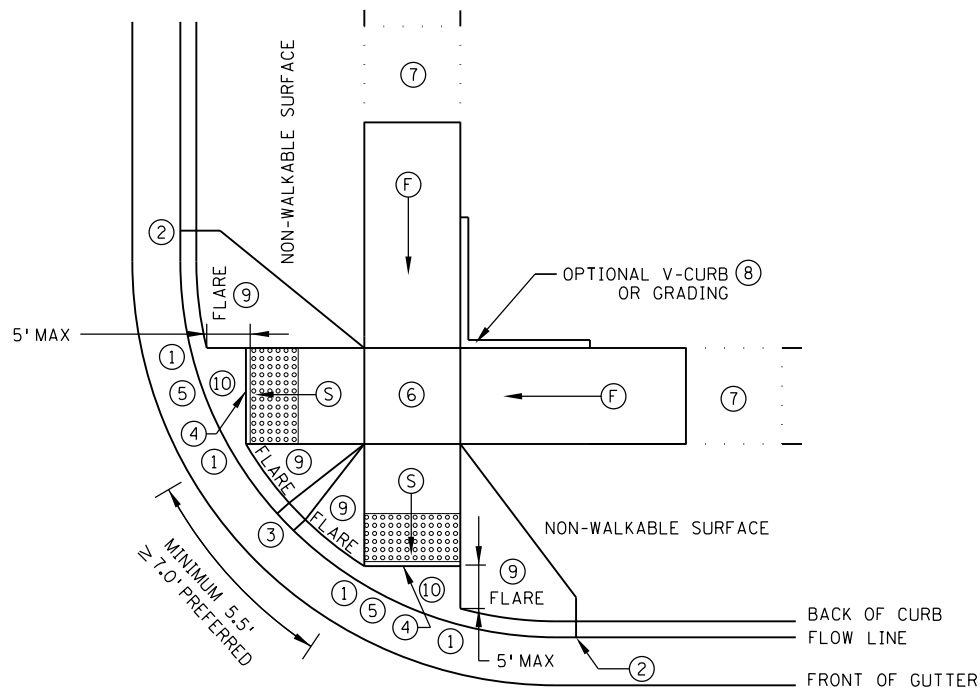
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STANDARD PLAN SHEET NO.  
5-297.250 (1 OF 5)  
STANDARD APPROVED:  
APRIL 10, 2013  
S.P. 002-601-046 S.P. 114-121-010

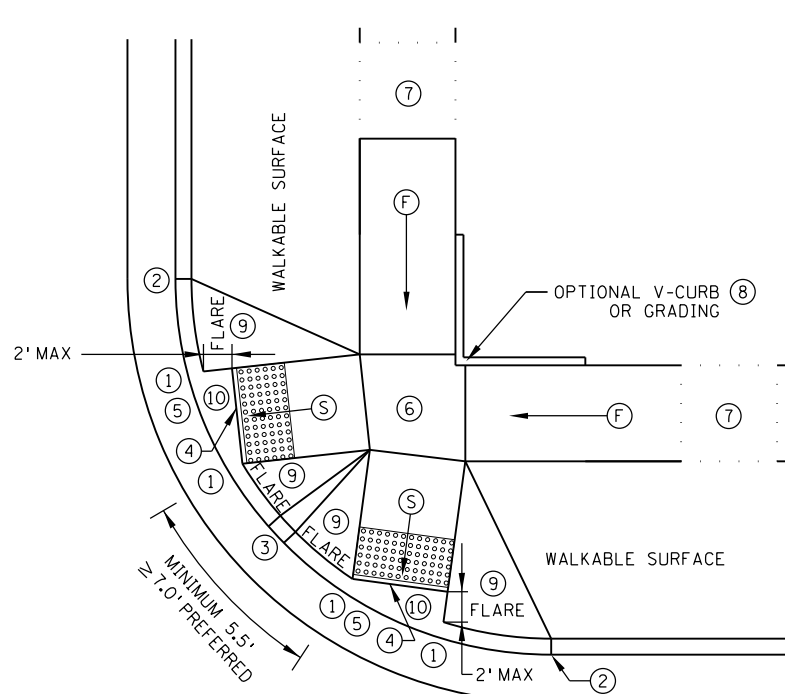
PEDESTRIAN CURB RAMP DETAILS

PLOTTED/REVISED:  
\$\$\$\$@DATE@\$\$\$\$

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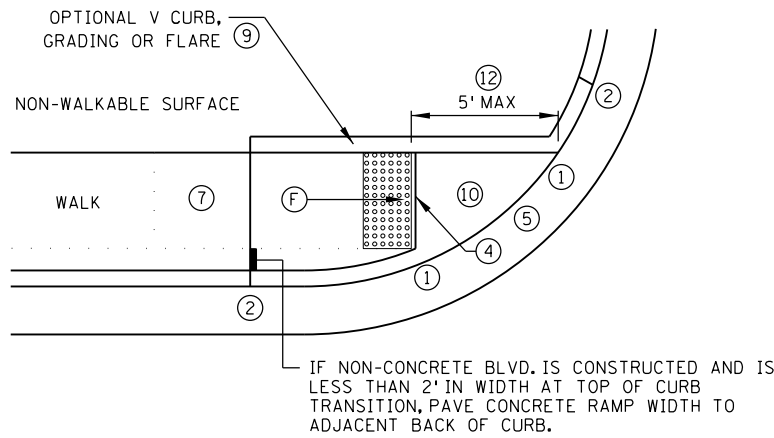


ADJACENT TO NON-WALKABLE SURFACE

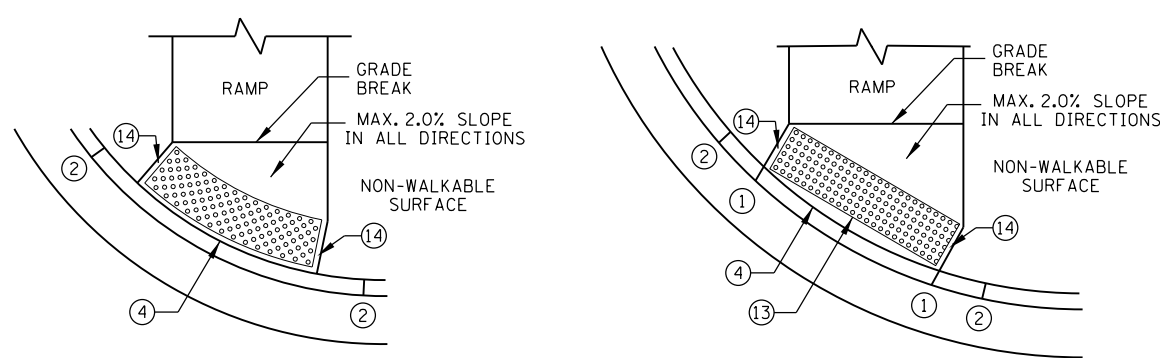


ADJACENT TO WALKABLE SURFACE

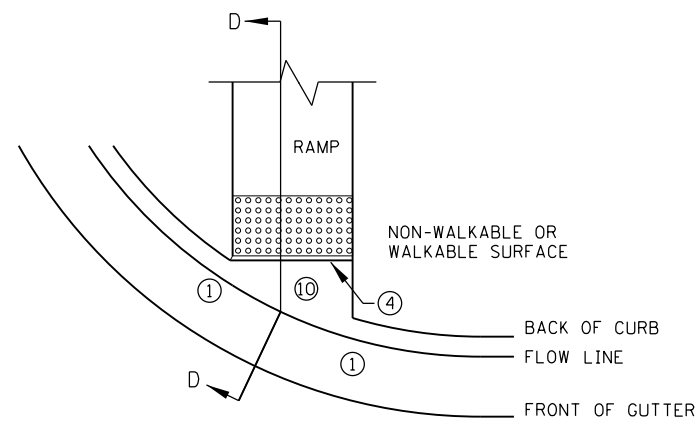
COMBINED DIRECTIONAL ⑮



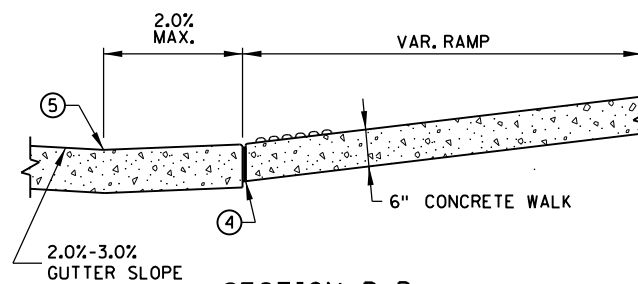
ONE-WAY DIRECTIONAL



DETECTABLE WARNING PLACEMENT WHEN SETBACK CRITERIA IS EXCEEDED



CURB FOR DIRECTIONAL RAMPS ⑪



SECTION D-D

NOTES:

- LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE.
- INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE.
- SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30" OF VERTICAL RISE WHEN THE LONGITUDINAL SLOPE IS GREATER THAN 5.0%.
- CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS.
- ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL.
- TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, LANDINGS MAY BE CAST SEPARATELY, FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 5 WHEN LANDINGS ARE CAST SEPARATELY.
- ALL SLOPES ARE ABSOLUTE, RATHER THAN RELATIVE TO SIDEWALK/ROADWAY GRADES.
- TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.
- 4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MINIMUM OF 24" IN THE PATH OF TRAVEL. SHARED USE PATHS SHALL HAVE DETECTABLE WARNING ACROSS THE ENTIRE WIDTH OF PATH WHEN THE PATH CROSSES A ROAD.
- SEE STANDARD PLATE 7038 AND SHEET 4 OF 5 FOR ADDITIONAL DETAILS ON DETECTABLE WARNING.

- ① 0" CURB HEIGHT.
- ② FULL CURB HEIGHT.
- ③ 3" MINIMUM CURB HEIGHT, 4" PREFERRED.
- ④ 1/2" PREFORMED JOINT FILLER MATERIAL AASHTO M 213. JOINT FILLER SHALL BE PLACED FLUSH WITH THE BACK OF CURB AND ADJACENT SIDEWALK. JOINT SHALL BE FREE OF DEBRIS. RECTANGULAR DETECTABLE WARNINGS SHALL BE SETBACK 3" FROM THE BACK OF CURB. RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MIN. TO 6" MAX. FROM THE BACK OF CURB.
- ⑤ SEE PEDESTRIAN ACCESS ROUTE CURB AND GUTTER DETAIL FOR INFORMATION ON CONSTRUCTING CURB AND GUTTER AT CURB OPENINGS. SEE SHEET NO. 3 OF 5.
- ⑥ 4' BY 4' MIN. LANDING WITH MAX. 2.0% SLOPE IN ALL DIRECTIONS.
- ⑦ IF LONGITUDINAL SLOPE IS GREATER THAN 5.0%, 4' X 4' MIN. LANDING WITH MAX 2.0% SLOPE IN ALL DIRECTIONS REQUIRED.
- ⑧ V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS.
- ⑨ SEE SHEET 4 OF 5, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS.
- ⑩ MAX. 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK AND DRAIN TO FLOW LINE. SHALL BE CONSTRUCTED INTEGRAL WITH CURB AND GUTTER.
- ⑪ TO BE USED FOR ALL DIRECTIONAL RAMPS.
- ⑫ PLACE DOMES AT THE BACK OF CURB WHEN ALLOWABLE SETBACK CRITERIA IS EXCEEDED.
- ⑬ RECTANGULAR DETECTABLE WARNINGS MAY BE SETBACK 9" FROM THE BACK OF CURB WITH CORNERS SET 3" FROM BACK OF CURB. IF 9" SETBACK IS EXCEEDED USE RADIAL DETECTABLE WARNINGS.
- ⑭ WHEN NO CONCRETE FLARES ARE PROPOSED, THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE BACK OF CURB. MAINTAIN 3" BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.
- ⑮ FRONT EDGE OF DETECTABLE WARNING SHALL BE SET BACK 2' MAXIMUM WHEN ADJACENT TO WALKABLE SURFACE, AND 5' MAXIMUM WHEN ADJACENT TO NON-WALKABLE SURFACE WITH ONE CORNER SET 3" FROM BACK OF CURB. WHETHER A SURFACE IS WALKABLE OR NOT SHALL BE DETERMINED BY THE ENGINEER

LEGEND

THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.

Ⓢ INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.

ⓕ INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.

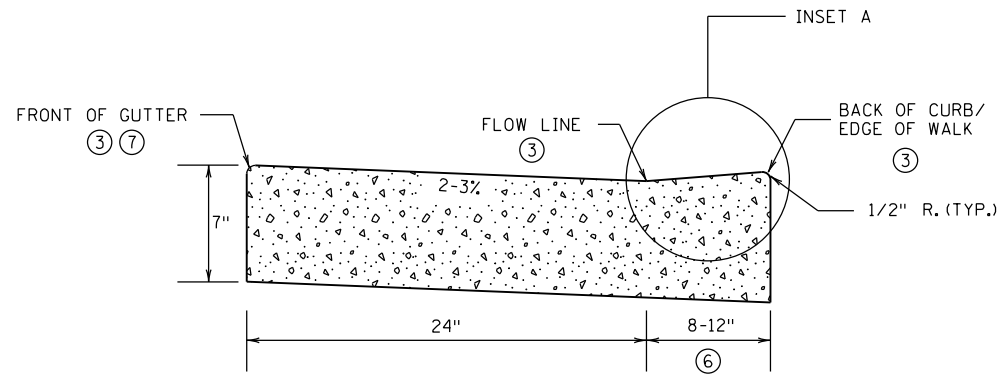
STANDARD PLAN SHEET NO.  
5-297.250 (2 OF 5)

STANDARD APPROVED:  
APRIL 10, 2013

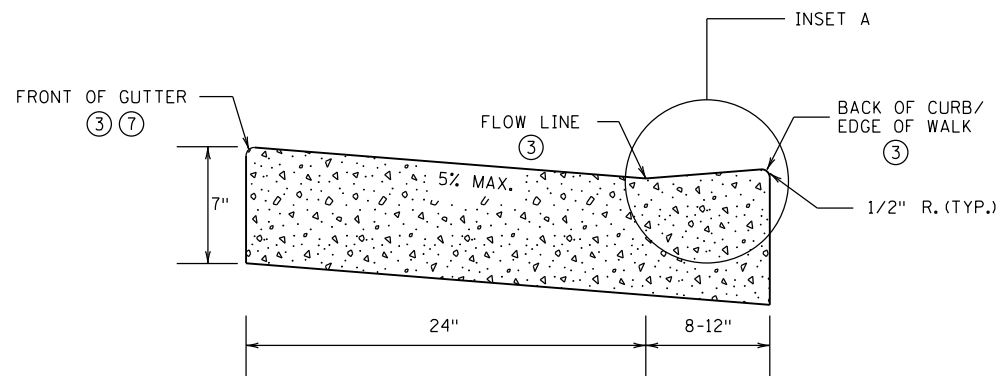
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PEDESTRIAN CURB RAMP DETAILS

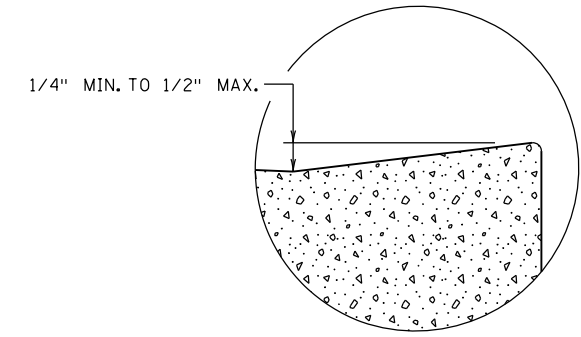
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NON PERPENDICULAR ①

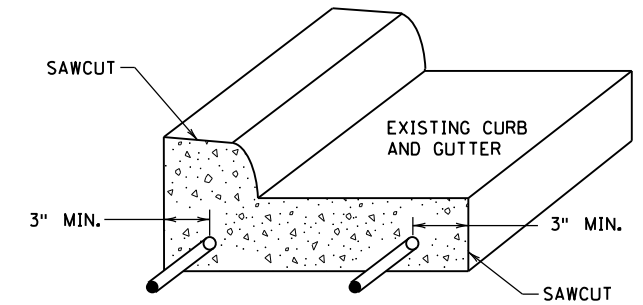
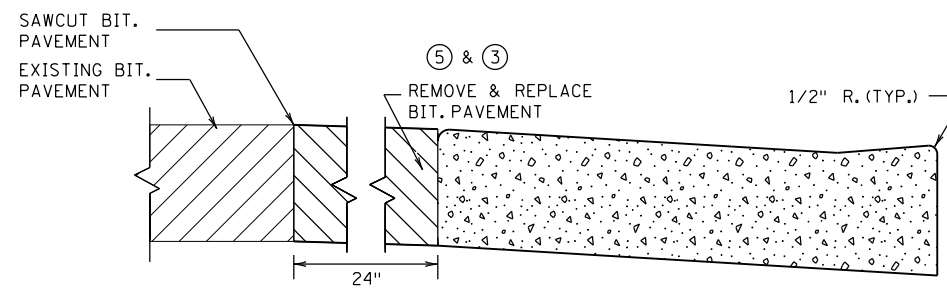
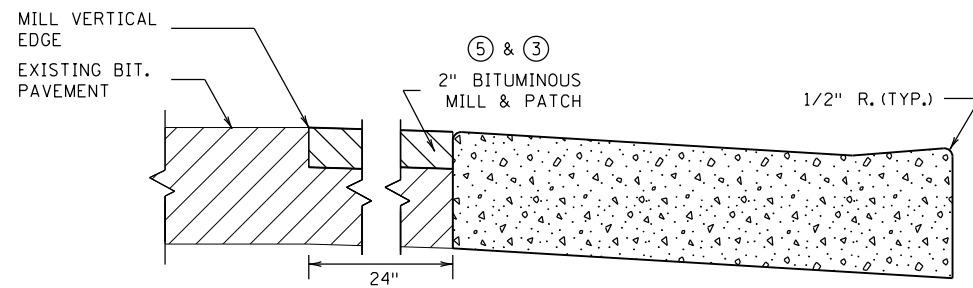


PERPENDICULAR ②

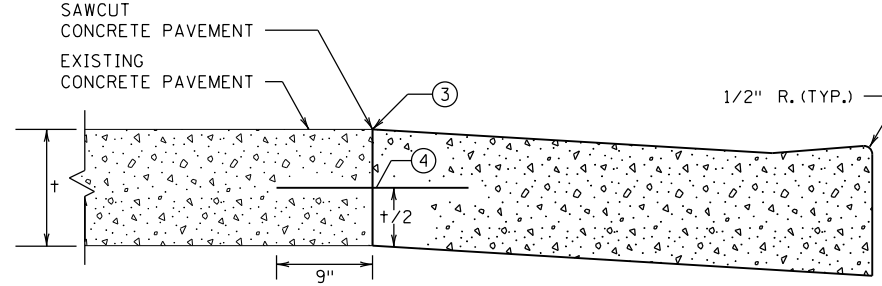
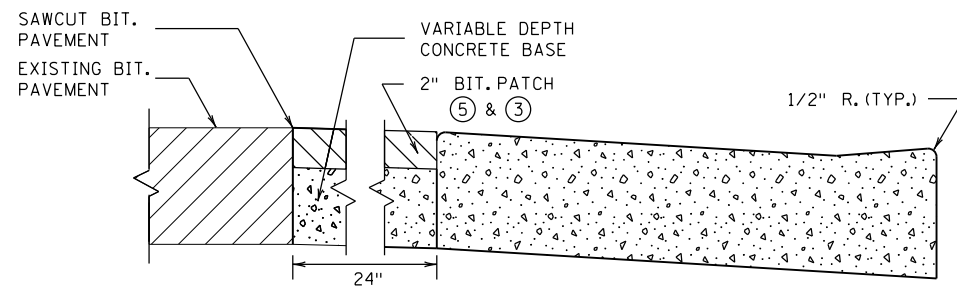


INSET A

PEDESTRIAN ACCESS ROUTE  
 CURB & GUTTER DETAIL



CURB AND GUTTER  
 REINFORCEMENT ⑧  
 FOR USE ON CURB RAMP RETROFITS



PAVEMENT TREATMENT OPTIONS  
 IN FRONT OF CURB & GUTTER  
 FOR USE ON CURB RAMP RETROFITS

NOTES:

- POSITIVE FLOW LINE DRAINAGE SHALL BE MAINTAINED THROUGH THE PEDESTRIAN ACCESS ROUTE (PAR) AT A 2% MAXIMUM.
- NO PONDING SHALL BE PRESENT IN THE PAR.
- ANY VERTICAL LIP THAT OCCURS AT THE FLOW LINE SHALL NOT BE GREATER THAN 1/4 INCH.
- ① FOR USE AT CURB CUTS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED NON PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: FANS, DEPRESSED CORNERS, & ONE WAY AND COMBINED DIRECTIONALS.
- ② FOR USE AT CURB CUTS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: PERPENDICULAR, TIERED PERPENDICULAR, PARALLEL, AND DIAGONAL RAMPS.
- ③ THERE SHALL BE NO VERTICAL DISCONTINUITIES GREATER THAN 1/4\".
- ④ DRILL AND GROUT NO. 4 EPOXY-COATED 18\" LONG TIE BARS AT 30\" CENTER TO CENTER INTO EXISTING CONCRETE PAVEMENT.
- ⑤ ELEVATION CHANGE TAKES PLACE FROM THE EXISTING TO NEW FRONT OF GUTTER. PATCH IS USED TO MATCH THE NEW GUTTER FACE INTO THE EXISTING ROADWAY.
- ⑥ VARIABLE WIDTH FOR DIRECTIONAL CURB APPLICATIONS.
- ⑦ TOP FRONT OF GUTTER SHALL BE CONSTRUCTED FLUSH WITH PROPOSED ADJACENT PAVEMENT ELEVATION. PAR GUTTER SHALL NOT BE OVERLAID.
- ⑧ WHERE PLAN SPECIFIES, DRILL AND GROUT 2 - NO. 4 X 12\" LONG REINFORCEMENT BARS (EPOXY COATED).

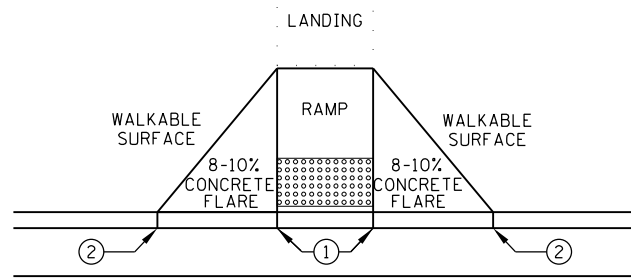
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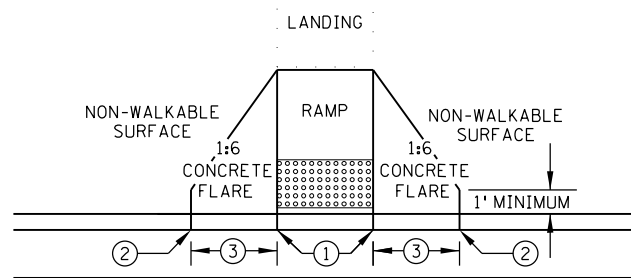
STANDARD PLAN SHEET NO. 5-297.250 (3 OF 5)
STANDARD APPROVED: APRIL 10, 2013
S.P. 002-601-046 S.P. 114-121-010

PEDESTRIAN CURB RAMP DETAILS

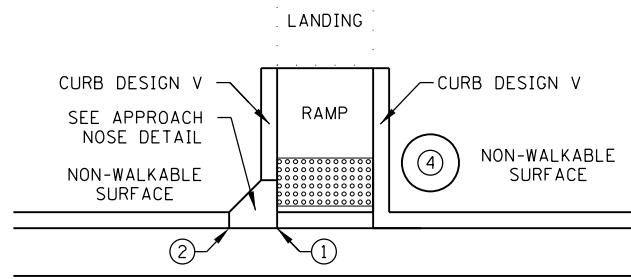
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PAVED FLARES  
ADJACENT TO WALKABLE SURFACE

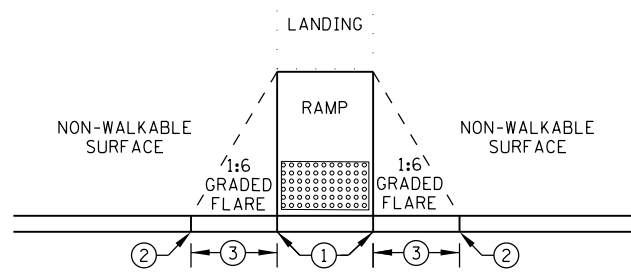


PAVED FLARES  
ADJACENT TO NON-WALKABLE SURFACE



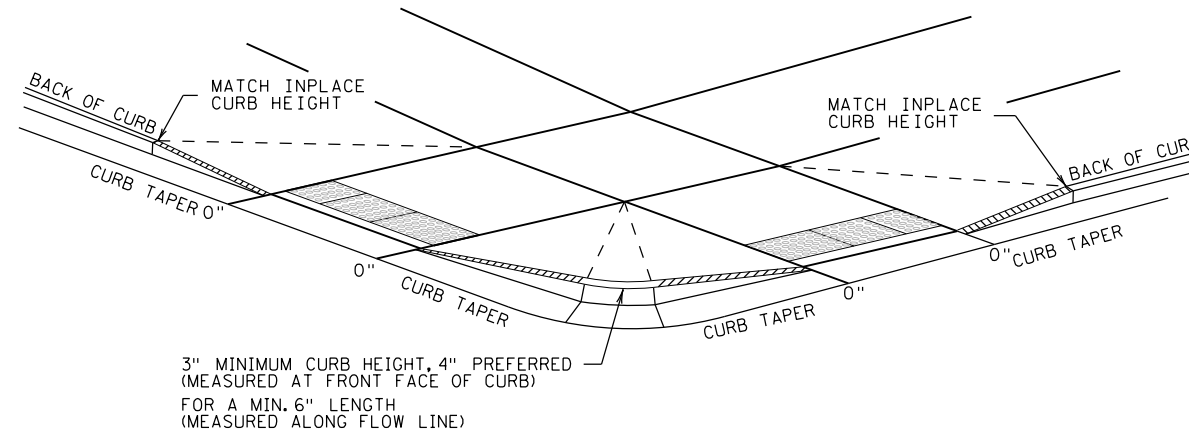
DIRECTION OF TRAFFIC

RETURNED CURB

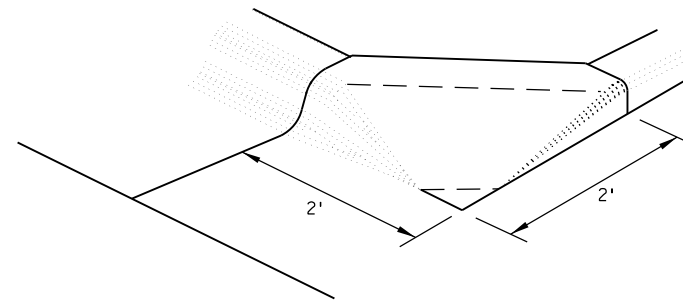


GRADED FLARES

TYPICAL SIDE TREATMENT OPTIONS ⑤

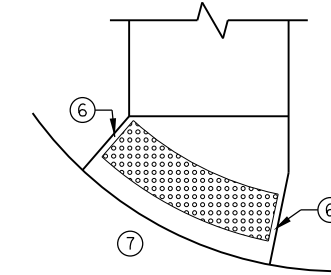


DETECTABLE EDGE WITH  
CURB AND GUTTER ⑧

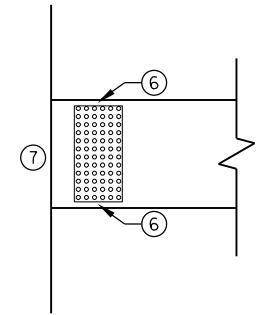


SECTION A-A

APPROACH NOSE DETAIL  
FOR DOWNSTREAM SIDE OF TRAFFIC



RADIAL DETECTABLE WARNING



RECTANGULAR DETECTABLE WARNING

DETECTABLE EDGE WITHOUT CURB AND GUTTER

NOTES:

SEE STANDARD PLATE 7038 AND THIS SHEET FOR ADDITIONAL DETAILS ON DETECTABLE WARNING. WHETHER A SURFACE IS WALKABLE OR NOT SHALL BE DETERMINED BY THE ENGINEER. CONCRETE FLARE LENGTHS ADJACENT TO NON-WALKABLE SURFACES SHOULD BE LESS THAN 8' LONG MEASURED ALONG THE RAMPS FROM THE BACK OF CURB.

- ① 0" CURB HEIGHT.
- ② FULL CURB HEIGHT.
- ③ 2' - 3' FLARE.
- ④ IMMOVABLE OBJECT OR OBSTRUCTION.
- ⑤ SIDE TREATMENTS ARE APPLICABLE TO ALL RAMP TYPES AND SHOULD BE IMPLEMENTED AS NEEDED ON ALL RAMPS AS FIELD CONDITIONS DICTATE. THE ENGINEER SHALL DETERMINE THE RAMP SIDE TREATMENTS BASED ON MAINTENANCE OF BOTH ROADWAY AND SIDEWALK, ADJACENT PROPERTY CONSIDERATIONS, AND MITIGATING CONSTRUCTION IMPACTS.
- ⑥ WHEN NO CONCRETE FLARES ARE PROPOSED, THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE EDGE OF ROADWAY. MAINTAIN 3" BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.
- ⑦ IF NO CURB AND GUTTER IS PLACED IN RURAL SECTIONS, DETECTABLE WARNINGS SHALL BE PLACED 1' FROM THE EDGE OF ROADWAY TO PROVIDE VISUAL CONTRAST.
- ⑧ ALL CONSTRUCTED CURBS MUST HAVE A CONTINUOUS DETECTABLE EDGE FOR THE VISUALLY IMPAIRED. THIS DETECTABLE EDGE REQUIRES DETECTABLE WARNINGS WHEREVER THERE IS ZERO-INCH HIGH CURB. CURB TAPERS ARE CONSIDERED A DETECTABLE EDGE WHEN THE TAPER STARTS WITHIN 3" OF THE EDGE OF THE DETECTABLE WARNINGS AND UNIFORMLY RISES TO A 3-INCH MINIMUM CURB HEIGHT. ANY CURB NOT PART OF A CURB TAPER AND LESS THAN 3 INCHES IN HEIGHT IS NOT CONSIDERED A DETECTABLE EDGE AND THEREFORE IS NOT COMPLIANT WITH ACCESSIBILITY STANDARDS.

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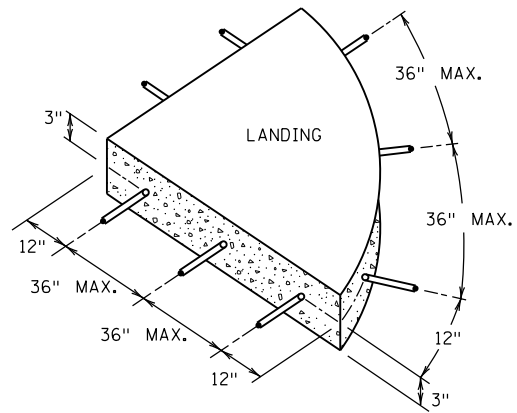
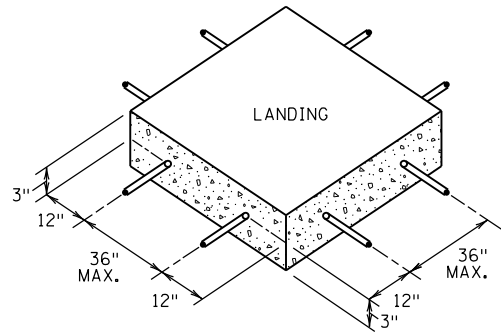
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STANDARD APPROVED:  
APRIL 10, 2013

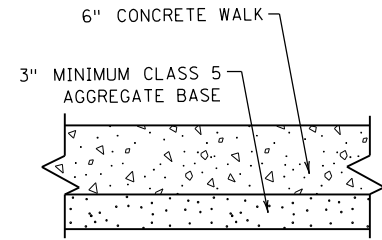
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PEDESTRIAN CURB RAMP DETAILS

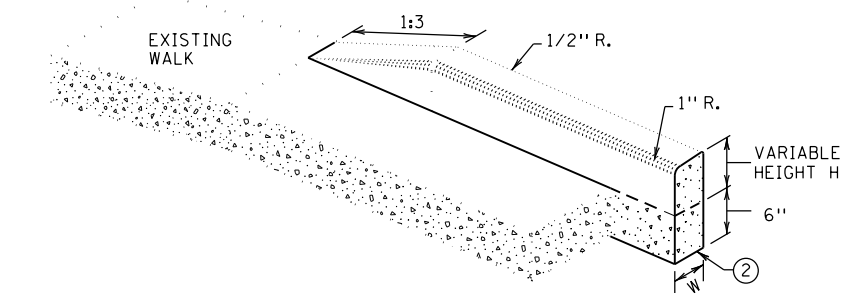
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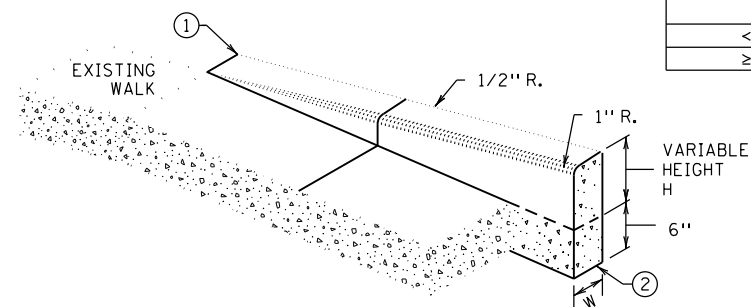
SIDEWALK REINFORCEMENT ⑤ ⑥



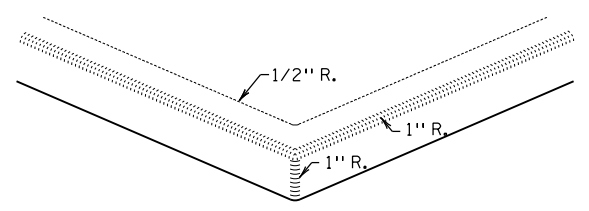
TYPICAL SIDEWALK SECTION WITHIN INTERSECTION CORNER



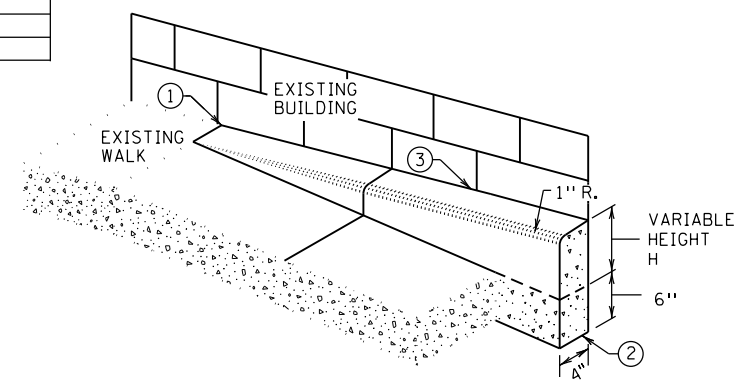
V CURB ADJACENT TO LANDSCAPE CURB WITHIN SIDEWALK LIMITS



V CURB ADJACENT TO LANDSCAPE CURB OUTSIDE SIDEWALK LIMITS

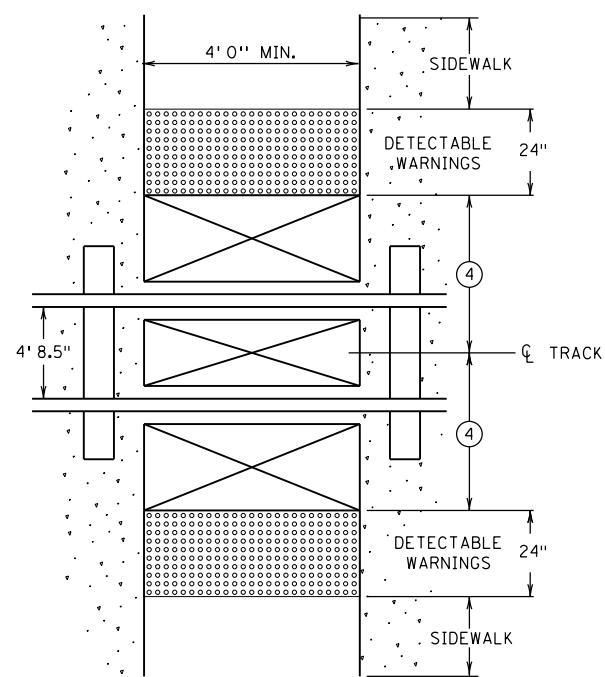


V CURB INTERSECTION

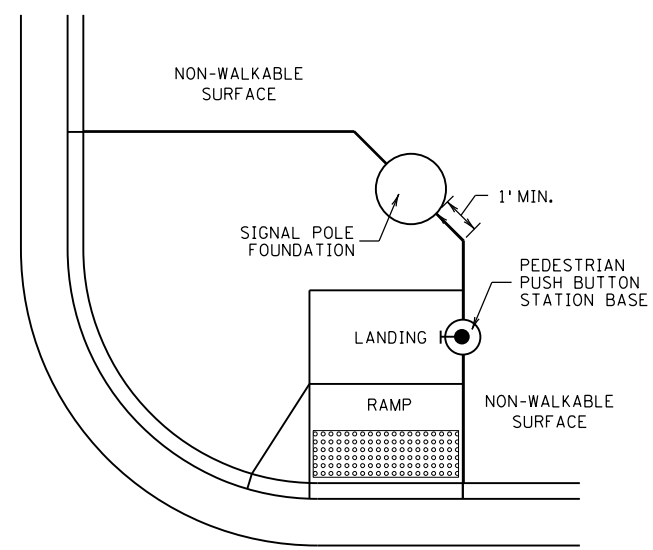


V CURB ADJACENT TO BUILDING OR BARRIER

CONCRETE CURB DESIGN V	
CURB HEIGHT H	CURB WIDTH W
< 6"	4"
≥ 6"	6"



RAILROAD CROSSING PLAN VIEW



CONCRETE WALK EDGES ADJACENT TO CONCRETE STRUCTURES

**NOTES:**

- ALL V CURB CONTRACTION JOINTS SHALL MATCH CONCRETE WALK JOINTS.
- WHERE RIGHT-OF-WAY ALLOWS, USE OF V CURB SHOULD BE MINIMIZED. GRADING ADJACENT TURF OR SLOPING ADJACENT PAVEMENT IS PREFERRED.
- V CURB SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS.
- V CURB NEXT TO BUILDING SHALL BE A 4" WIDTH AND SHALL MATCH PREVIOUS TOP OF SIDEWALK ELEVATIONS.
- ① END TAPERS AT TRANSITION SECTION SHALL MATCH INPLACE SIDEWALK GRADES.
- ② ALL V CURB SHALL MATCH BOTTOM OF ADJACENT WALK.
- ③ EDGE BETWEEN NEW V CURB AND INPLACE STRUCTURE SHALL BE SEALED AND BOND BREAKER SHALL BE USED BETWEEN EXISTING STRUCTURE AND PLACED V-CURB.
- ④ EDGE OF DETECTABLE WARNING SURFACES SHALL BE PLACED 15' MAXIMUM FROM THE CENTERLINE OF THE TRACK. WHEN PEDESTRIAN GATES ARE PROVIDED, DETECTABLE WARNING SURFACES SHALL BE PLACED ON THE SIDE OF THE GATES OPPOSITE THE RAIL, 17" - 19" FROM THE APPROACHING SIDE OF THE GATE ARM.
- ⑤ WHEN PLAN SPECIFIES, DRILL AND GROUT NO. 4 12" LONG REINFORCEMENT BARS AT 36" MAX. CENTER TO CENTER (EPOXY COATED).
- ⑥ TO ENSURE RAMP AND LANDINGS ARE PROPERLY CONSTRUCTED, LANDINGS MAY BE CAST SEPARATELY. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON THIS SHEET WHEN LANDINGS ARE CAST SEPARATELY.

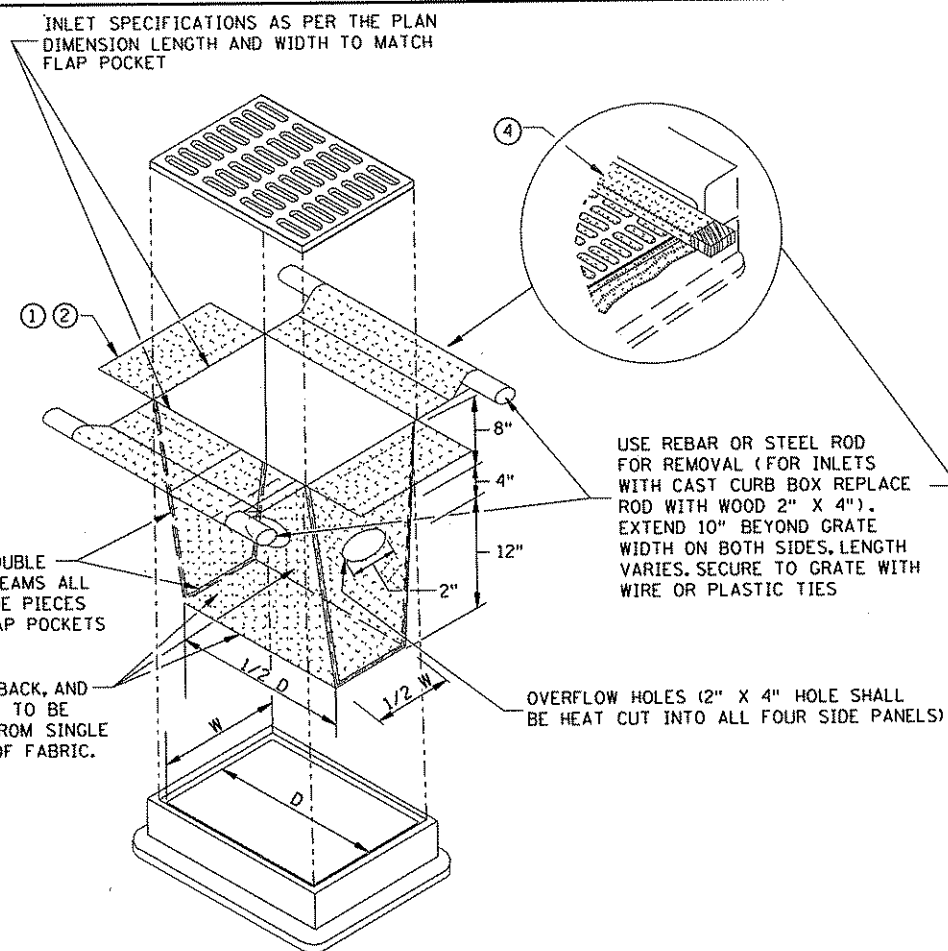
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STANDARD PLAN SHEET NO.  
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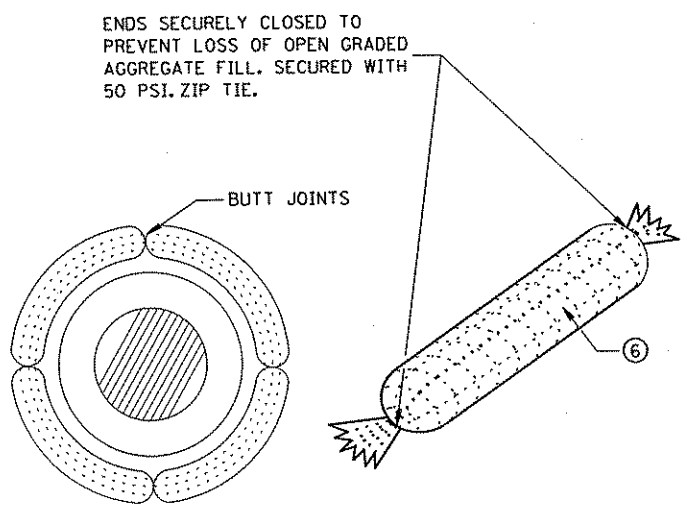
**PEDESTRIAN CURB RAMP DETAILS**

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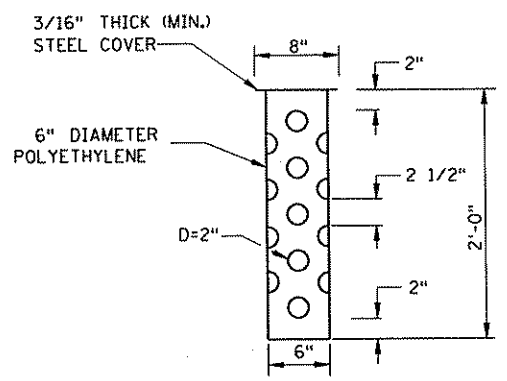
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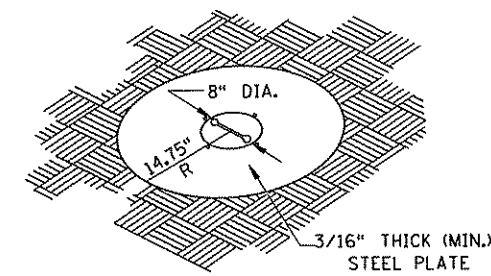
**FILTER BAG INSERT ③**  
 (CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX)



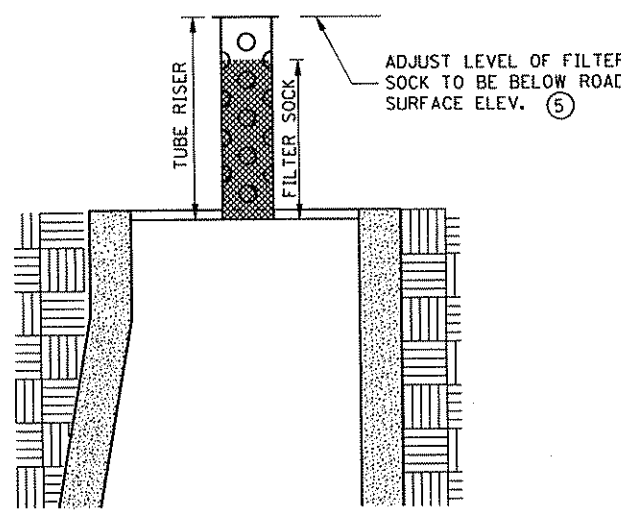
**ROCK LOG/COMPOST LOG**



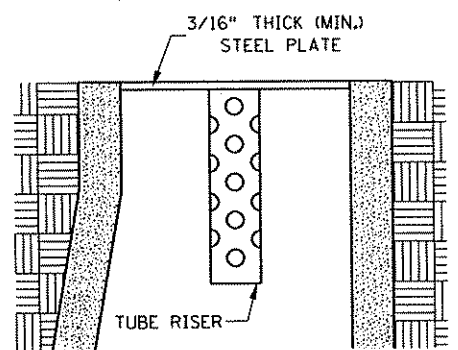
**TUBE RISER**



**PERSPECTIVE VIEW**

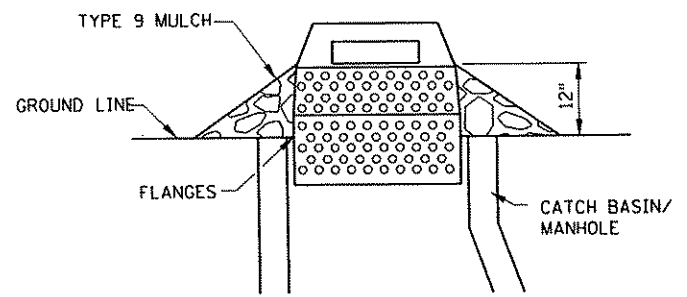


**SECTION (UP POSITION)**



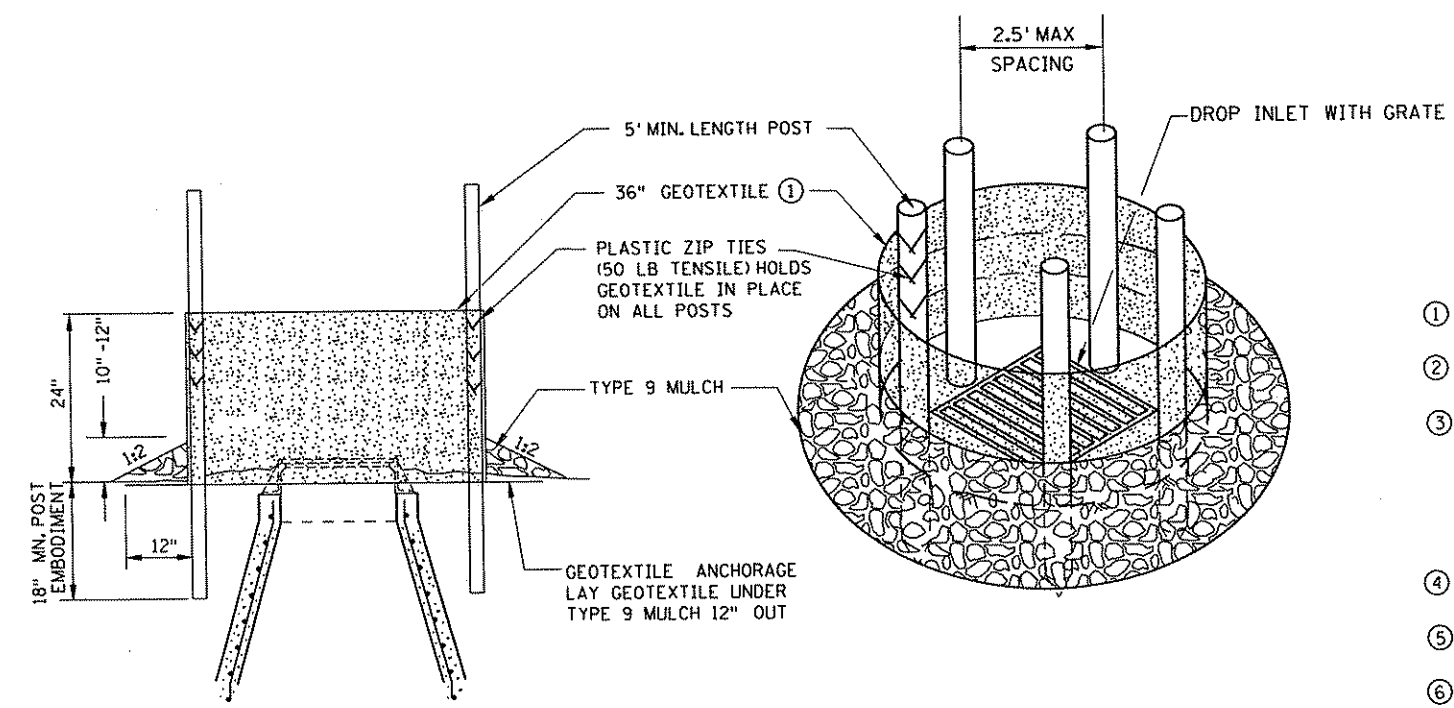
**SECTION (DOWN POSITION)**

**POP-UP HEAD**



**SEDIMENT CONTROL INLET HAT**

NOTE:  
 THE SEDIMENT CONTROL BARRIER SHALL BE A METAL OR PLASTIC/POLYETHYLENE RISER SIZED TO FIT INSIDE THE CATCH BASIN/MANHOLE; HAVE PERFORATIONS TO ALLOW FOR WATER INFILTRATION; HAVE AN OVERFLOW OPENING, FLANGES AND A LID/COVER.



**SILT FENCE RING AND ROCK FILTER BERM**  
 USE WHERE INLET DRAINS IN AN AREA WITH SLOPES AT 1:3 OR LESS

**NOTES:**

- SEE SPECS. 2573, 3137, 3886 & 3891.
- MANUFACTURED ALTERNATIVES LISTED ON Mn/DOT'S APPROVED PRODUCTS LIST MAY BE SUBSTITUTED.
- ① ALL GEOTEXTILE USED FOR INLET PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886.
- ② FINISHED SIZE, INCLUDING POCKETS WHERE REQUIRED SHALL EXTEND A MINIMUM OF 10 INCHES AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
- ③ INSTALLATION NOTES:  
 DO NOT INSTALL FILTER BAG INSERT IN INLETS SHALLOWER THAN 30 INCHES, MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE. THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE OF 3 INCHES BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES. WHERE NECESSARY THE CONTRACTOR SHALL CLINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3 INCH SIDE CLEARANCE.
- ④ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2 INCH X 4 INCH OR USE A ROCK SOCK OR SAND BAGS IN PLACE OF THE FLAP POCKETS.
- ⑤ SOCK HEIGHT MUST NOT BE SO HIGH AS TO SLOW DOWN WATER FILTRATION TO CAUSE FLOODING OF THE ROADWAY.
- ⑥ GEOTEXTILE SOCK BETWEEN 4-10 FEET LONG AND 4-6 INCH DIAMETER. SEAM TO BE JOINED BY TWO ROWS OF STITCHING WITH A PLASTIC MESH BACKING OR PROVIDE A HEAT BONDED SEAM (OR APPROVED EQUIVALENT). FILL ROCK LOG WITH OPEN GRADED AGGREGATE CONSISTING OF SOUND DURABLE PARTICLES OF COARSE AGGREGATE CONFORMING TO SPEC. 3137 TABLE 3137-1; CA-3 GRADATION.

STANDARD SHEET NO. 297,405 (4 OF 4)	TITLE:
STANDARD APPROVED: SEPTEMBER 27, 2006	

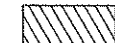

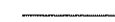

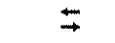

**TEMPORARY SEDIMENT CONTROL**  
**STORM DRAIN INLET PROTECTION**

S.P. 002-601-046 S.P. 114-121-010

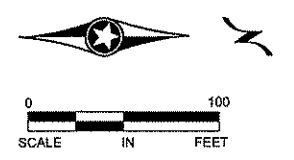
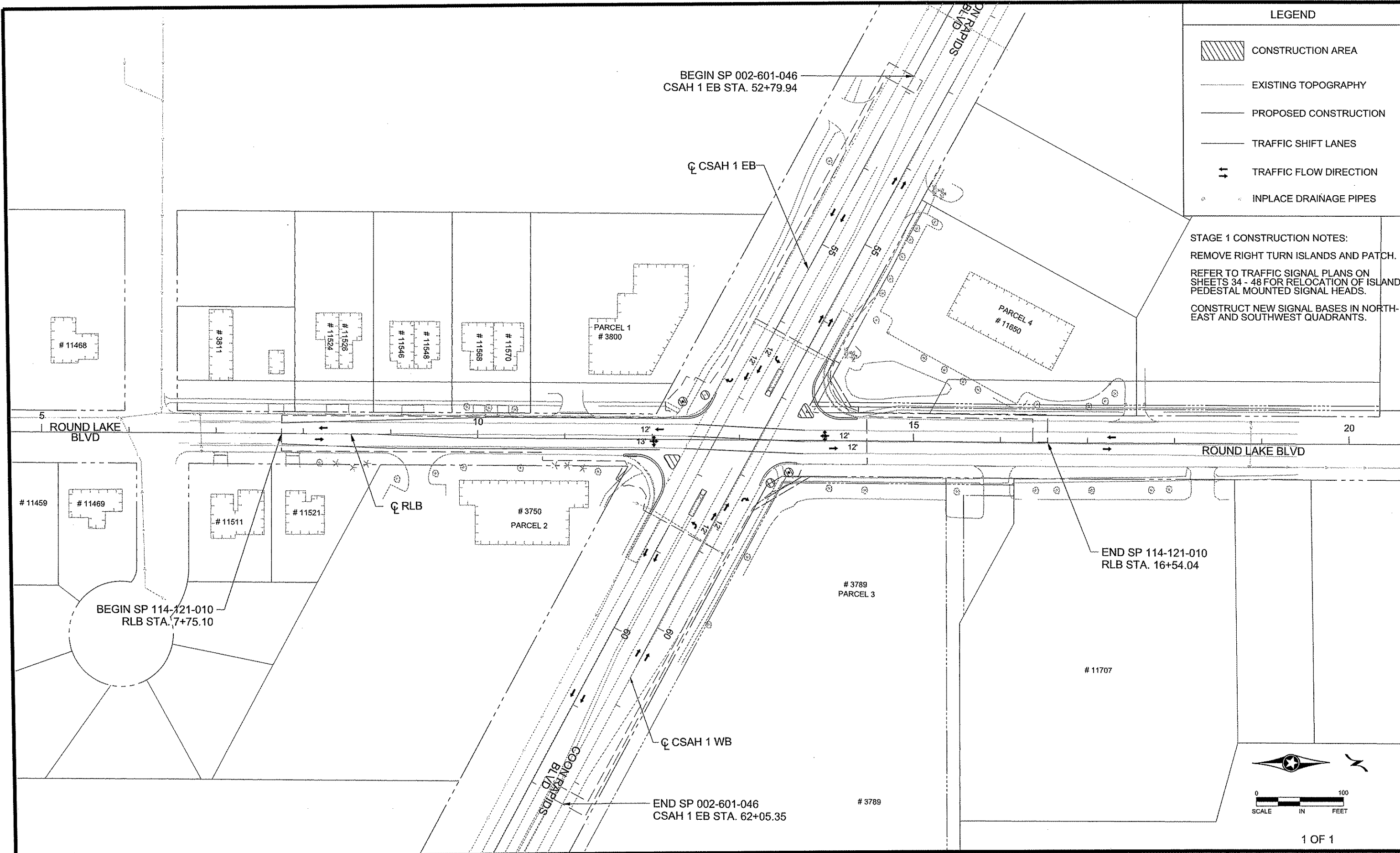
SHEET NO. 14 OF 48 SHEETS



LEGEND

-  CONSTRUCTION AREA
-  EXISTING TOPOGRAPHY
-  PROPOSED CONSTRUCTION
-  TRAFFIC SHIFT LANES
-  TRAFFIC FLOW DIRECTION
-  INPLACE DRAINAGE PIPES

STAGE 1 CONSTRUCTION NOTES:  
 REMOVE RIGHT TURN ISLANDS AND PATCH.  
 REFER TO TRAFFIC SIGNAL PLANS ON SHEETS 34 - 48 FOR RELOCATION OF ISLAND PEDESTAL MOUNTED SIGNAL HEADS.  
 CONSTRUCT NEW SIGNAL BASES IN NORTH-EAST AND SOUTHWEST QUADRANTS.



1 OF 1

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-601-46\Plan\0260146\_STG\_P1.dgn      04/09/2013      2:08:48 PM

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.

PRINT NAME: CURT KOBILARCSIK  
 SIGNATURE: *Curt Kobilarsik*  
 DATE: 4-12-13      LICENSE NO. 24756

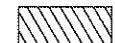
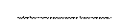


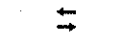

DRAWN BY: EJM      DATE: 04-09-13  
 DESIGN BY: EJM      DATE: 03-04-13  
 CHECKED BY: CAK      DATE: 04-09-13



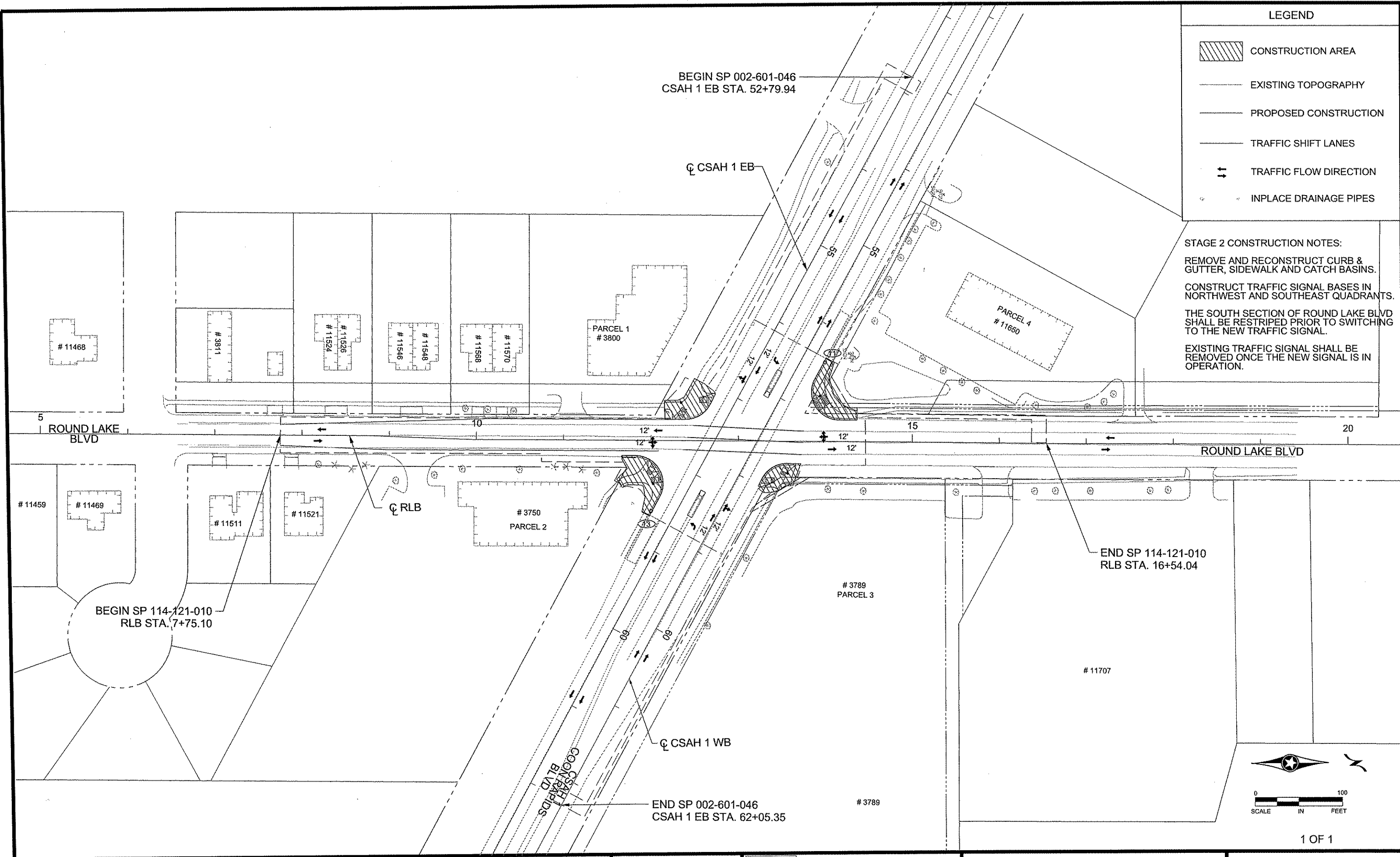
SP 002-601-046  
 SP 114-121-010

CONSTRUCTION STAGE 1 PLAN  
 Sheet 15 of 48 Sheets

LEGEND

-  CONSTRUCTION AREA
-  EXISTING TOPOGRAPHY
-  PROPOSED CONSTRUCTION
-  TRAFFIC SHIFT LANES
-  TRAFFIC FLOW DIRECTION
-  INPLACE DRAINAGE PIPES

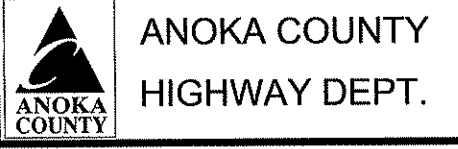
STAGE 2 CONSTRUCTION NOTES:  
 REMOVE AND RECONSTRUCT CURB & GUTTER, SIDEWALK AND CATCH BASINS.  
 CONSTRUCT TRAFFIC SIGNAL BASES IN NORTHWEST AND SOUTHEAST QUADRANTS.  
 THE SOUTH SECTION OF ROUND LAKE BLVD SHALL BE RESTRIPEDED PRIOR TO SWITCHING TO THE NEW TRAFFIC SIGNAL.  
 EXISTING TRAFFIC SIGNAL SHALL BE REMOVED ONCE THE NEW SIGNAL IS IN OPERATION.



NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\02-601-46\Plan\0260146_STG_P2.dgn					

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.  
 PRINT NAME: CURT KOBILARCSIK  
 SIGNATURE: *Curt Kobilarsik*  
 DATE: 4-12-13 LICENSE NO. 24756

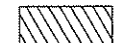
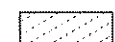


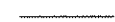
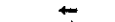
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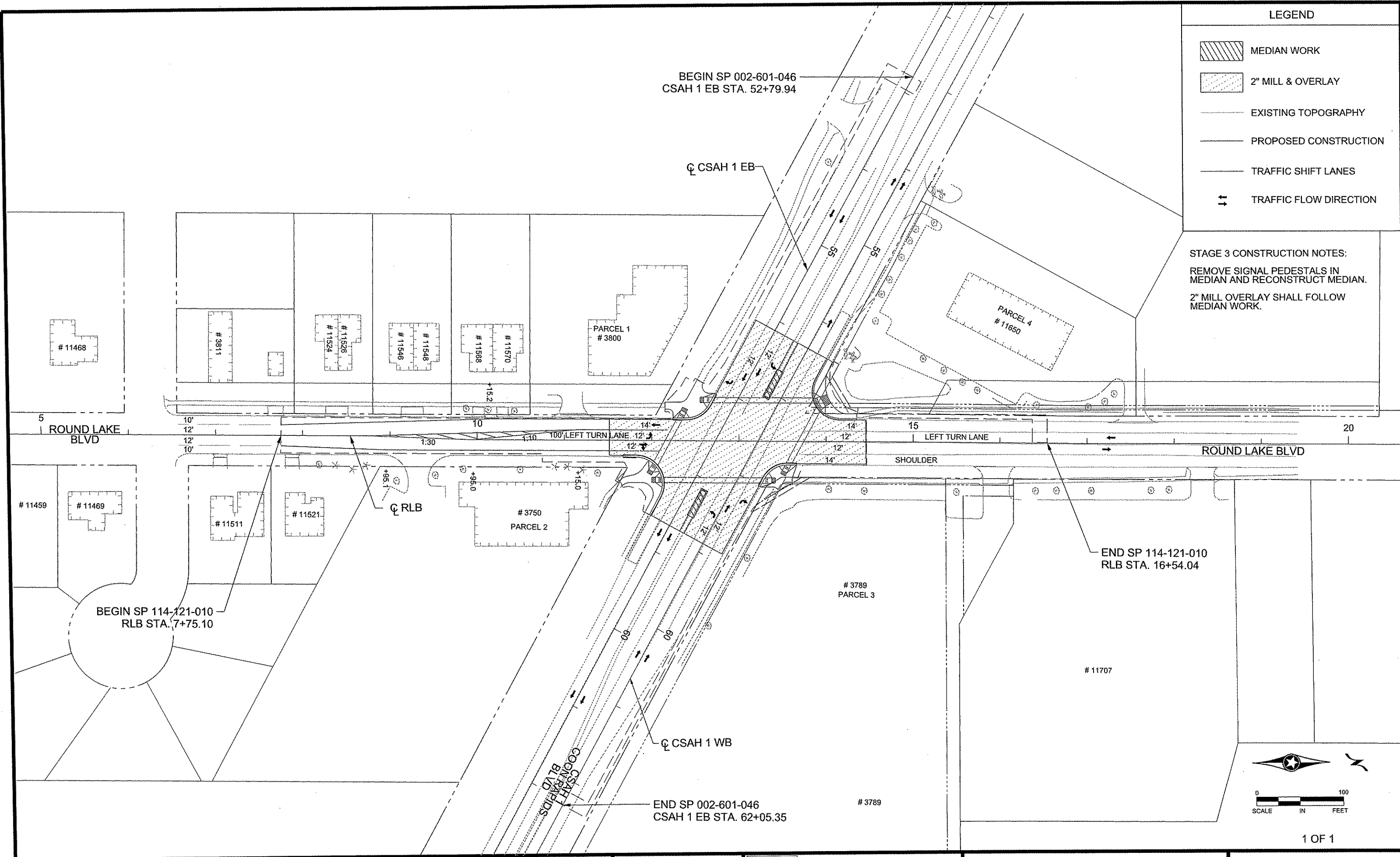
SP 002-601-046  
 SP 114-121-010

CONSTRUCTION STAGE 2 PLAN  
 Sheet 16 of 48 Sheets

LEGEND

-  MEDIAN WORK
-  2" MILL & OVERLAY
-  EXISTING TOPOGRAPHY
-  PROPOSED CONSTRUCTION
-  TRAFFIC SHIFT LANES
-  TRAFFIC FLOW DIRECTION

STAGE 3 CONSTRUCTION NOTES:  
 REMOVE SIGNAL PEDESTALS IN  
 MEDIAN AND RECONSTRUCT MEDIAN.  
 2" MILL OVERLAY SHALL FOLLOW  
 MEDIAN WORK.

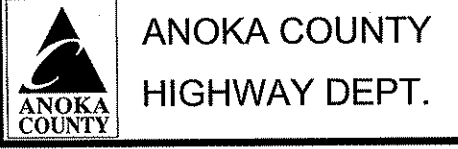


NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-601-46\Plan\0260146\_STG\_P3.dgn 04/09/2013 2:08:51 PM

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.  
 PRINT NAME: CURT KOBILARCSIK  
 SIGNATURE: *Curt Kobilarsik*  
 DATE: 4-12-13 LICENSE NO. 24756

DRAWN BY: EJM DATE: 04-09-13  
 DESIGN BY: EJM DATE: 03-04-13  
 CHECKED BY: GAK DATE: 04-09-13



SP 002-601-046  
 SP 114-121-010

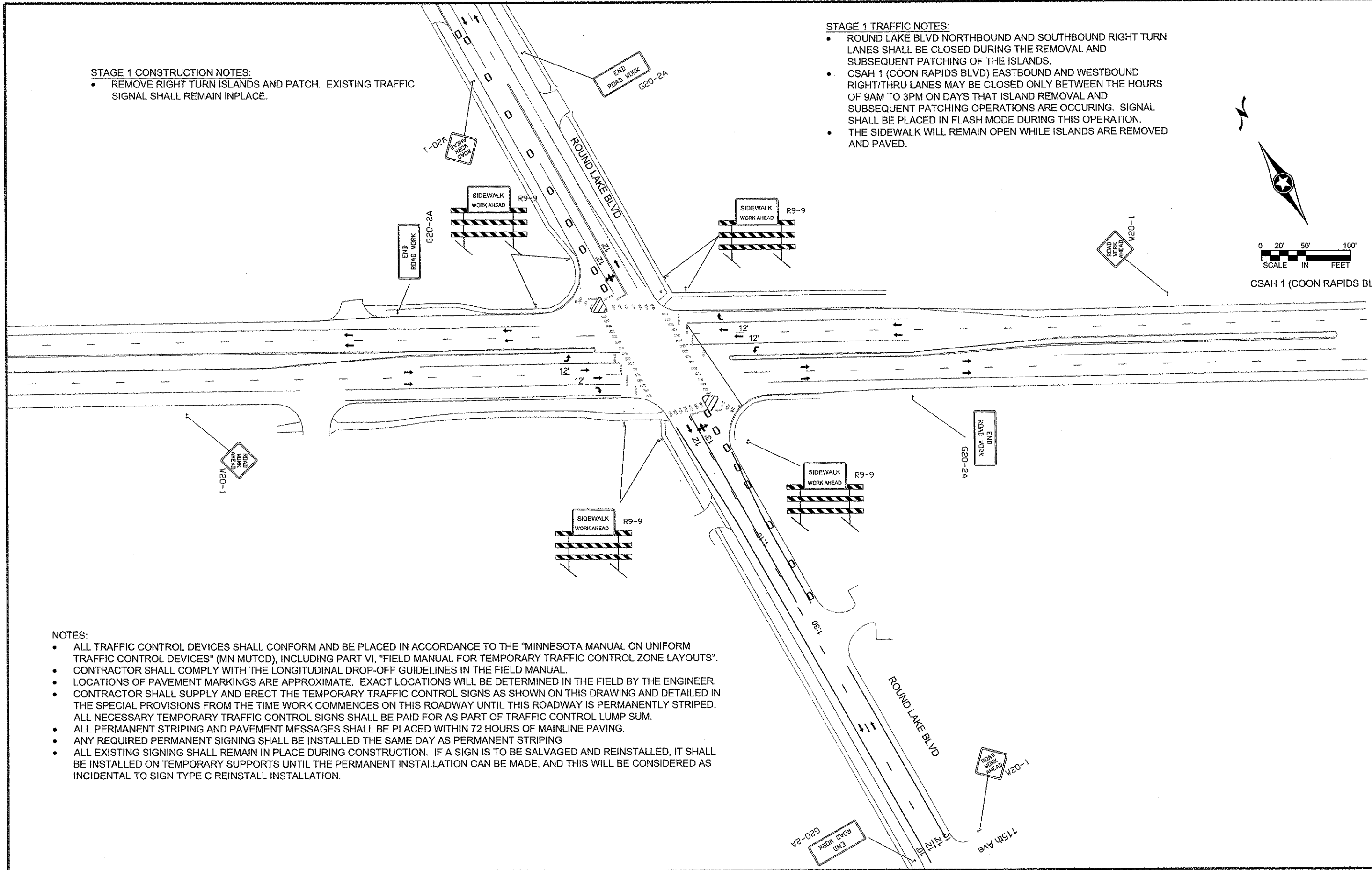
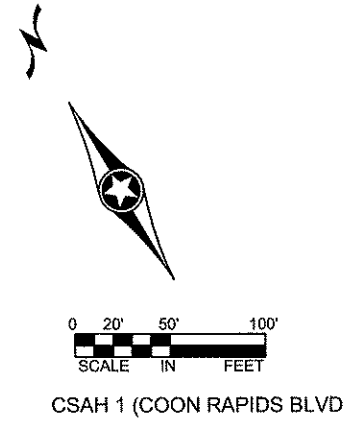
CONSTRUCTION STAGE 3 PLAN  
 Sheet 17 of 48 Sheets

**STAGE 1 CONSTRUCTION NOTES:**

- REMOVE RIGHT TURN ISLANDS AND PATCH. EXISTING TRAFFIC SIGNAL SHALL REMAIN IN PLACE.

**STAGE 1 TRAFFIC NOTES:**

- ROUND LAKE BLVD NORTHBOUND AND SOUTHBOUND RIGHT TURN LANES SHALL BE CLOSED DURING THE REMOVAL AND SUBSEQUENT PATCHING OF THE ISLANDS.
- CSAH 1 (COON RAPIDS BLVD) EASTBOUND AND WESTBOUND RIGHT/THRU LANES MAY BE CLOSED ONLY BETWEEN THE HOURS OF 9AM TO 3PM ON DAYS THAT ISLAND REMOVAL AND SUBSEQUENT PATCHING OPERATIONS ARE OCCURING. SIGNAL SHALL BE PLACED IN FLASH MODE DURING THIS OPERATION.
- THE SIDEWALK WILL REMAIN OPEN WHILE ISLANDS ARE REMOVED AND PAVED.



**NOTES:**

- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
- CONTRACTOR SHALL COMPLY WITH THE LONGITUDINAL DROP-OFF GUIDELINES IN THE FIELD MANUAL.
- LOCATIONS OF PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- CONTRACTOR SHALL SUPPLY AND ERECT THE TEMPORARY TRAFFIC CONTROL SIGNS AS SHOWN ON THIS DRAWING AND DETAILED IN THE SPECIAL PROVISIONS FROM THE TIME WORK COMMENCES ON THIS ROADWAY UNTIL THIS ROADWAY IS PERMANENTLY STRIPED. ALL NECESSARY TEMPORARY TRAFFIC CONTROL SIGNS SHALL BE PAID FOR AS PART OF TRAFFIC CONTROL LUMP SUM.
- ALL PERMANENT STRIPING AND PAVEMENT MESSAGES SHALL BE PLACED WITHIN 72 HOURS OF MAINLINE PAVING.
- ANY REQUIRED PERMANENT SIGNING SHALL BE INSTALLED THE SAME DAY AS PERMANENT STRIPING
- ALL EXISTING SIGNING SHALL REMAIN IN PLACE DURING CONSTRUCTION. IF A SIGN IS TO BE SALVAGED AND REINSTALLED, IT SHALL BE INSTALLED ON TEMPORARY SUPPORTS UNTIL THE PERMANENT INSTALLATION CAN BE MADE, AND THIS WILL BE CONSIDERED AS INCIDENTAL TO SIGN TYPE C REINSTALL INSTALLATION.

NO	DATE	BY	CKD	APPR	REVISION

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.

PRINT NAME: CURT A KOBIARCSIK  
 SIGNATURE: *Curt Kobiarsik*  
 DATE: 4-12-13 REG. NO. 24756

DRAWN BY: MTH DATE 03/08/13  
 DESIGN BY: MTH DATE 03/08/13  
 CHECKED BY: JR DATE 02/xx/13



**ANOKA COUNTY  
HIGHWAY DEPT.**

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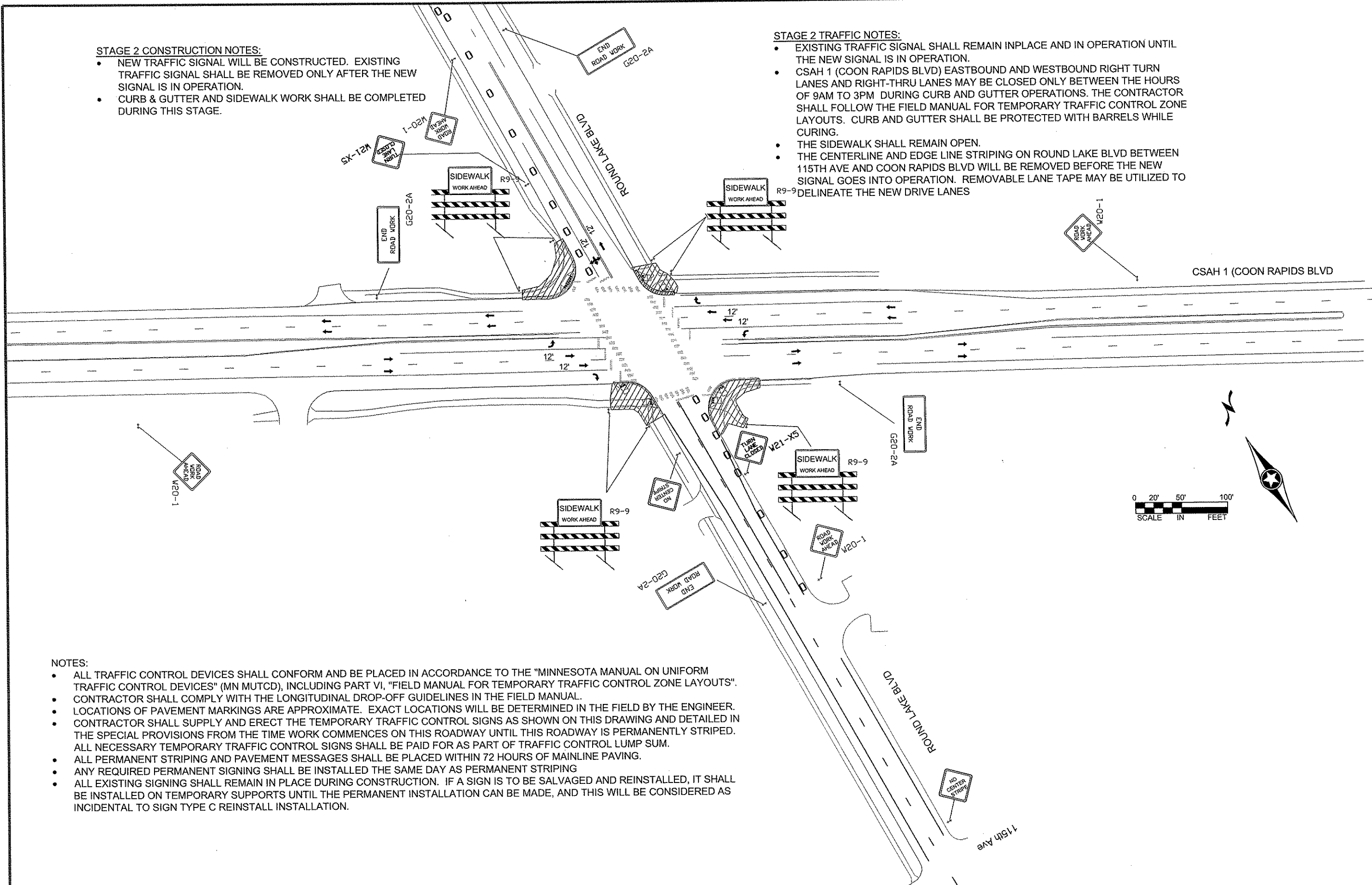
TRAFFIC CONTROL  
 STAGE 1 LAYOUT  
 Sheet 18 of 48 Sheets

**STAGE 2 CONSTRUCTION NOTES:**

- NEW TRAFFIC SIGNAL WILL BE CONSTRUCTED. EXISTING TRAFFIC SIGNAL SHALL BE REMOVED ONLY AFTER THE NEW SIGNAL IS IN OPERATION.
- CURB & GUTTER AND SIDEWALK WORK SHALL BE COMPLETED DURING THIS STAGE.

**STAGE 2 TRAFFIC NOTES:**

- EXISTING TRAFFIC SIGNAL SHALL REMAIN INPLACE AND IN OPERATION UNTIL THE NEW SIGNAL IS IN OPERATION.
- CSAH 1 (COON RAPIDS BLVD) EASTBOUND AND WESTBOUND RIGHT TURN LANES AND RIGHT-THRU LANES MAY BE CLOSED ONLY BETWEEN THE HOURS OF 9AM TO 3PM DURING CURB AND GUTTER OPERATIONS. THE CONTRACTOR SHALL FOLLOW THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS. CURB AND GUTTER SHALL BE PROTECTED WITH BARRELS WHILE CURING.
- THE SIDEWALK SHALL REMAIN OPEN.
- THE CENTERLINE AND EDGE LINE STRIPING ON ROUND LAKE BLVD BETWEEN 115TH AVE AND COON RAPIDS BLVD WILL BE REMOVED BEFORE THE NEW SIGNAL GOES INTO OPERATION. REMOVABLE LANE TAPE MAY BE UTILIZED TO DELINEATE THE NEW DRIVE LANES



**NOTES:**

- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
- CONTRACTOR SHALL COMPLY WITH THE LONGITUDINAL DROP-OFF GUIDELINES IN THE FIELD MANUAL.
- LOCATIONS OF PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- CONTRACTOR SHALL SUPPLY AND ERECT THE TEMPORARY TRAFFIC CONTROL SIGNS AS SHOWN ON THIS DRAWING AND DETAILED IN THE SPECIAL PROVISIONS FROM THE TIME WORK COMMENCES ON THIS ROADWAY UNTIL THIS ROADWAY IS PERMANENTLY STRIPED. ALL NECESSARY TEMPORARY TRAFFIC CONTROL SIGNS SHALL BE PAID FOR AS PART OF TRAFFIC CONTROL LUMP SUM.
- ALL PERMANENT STRIPING AND PAVEMENT MESSAGES SHALL BE PLACED WITHIN 72 HOURS OF MAINLINE PAVING.
- ANY REQUIRED PERMANENT SIGNING SHALL BE INSTALLED THE SAME DAY AS PERMANENT STRIPING
- ALL EXISTING SIGNING SHALL REMAIN IN PLACE DURING CONSTRUCTION. IF A SIGN IS TO BE SALVAGED AND REINSTALLED, IT SHALL BE INSTALLED ON TEMPORARY SUPPORTS UNTIL THE PERMANENT INSTALLATION CAN BE MADE, AND THIS WILL BE CONSIDERED AS INCIDENTAL TO SIGN TYPE C REINSTALL INSTALLATION.

NO	DATE	BY	CKD	APPR	REVISION

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.  
 PRINT NAME: CURT A KOBILARCSIK  
 SIGNATURE: *Curt Kobilarcsik*  
 DATE: 4-12-13 REG. NO. 24756

DRAWN BY: MTH DATE 03/08/13  
 DESIGN BY: MTH DATE 03/08/13  
 CHECKED BY: JR DATE 02/xx/13



**ANOKA COUNTY  
HIGHWAY DEPT.**

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 SP 114-121-010

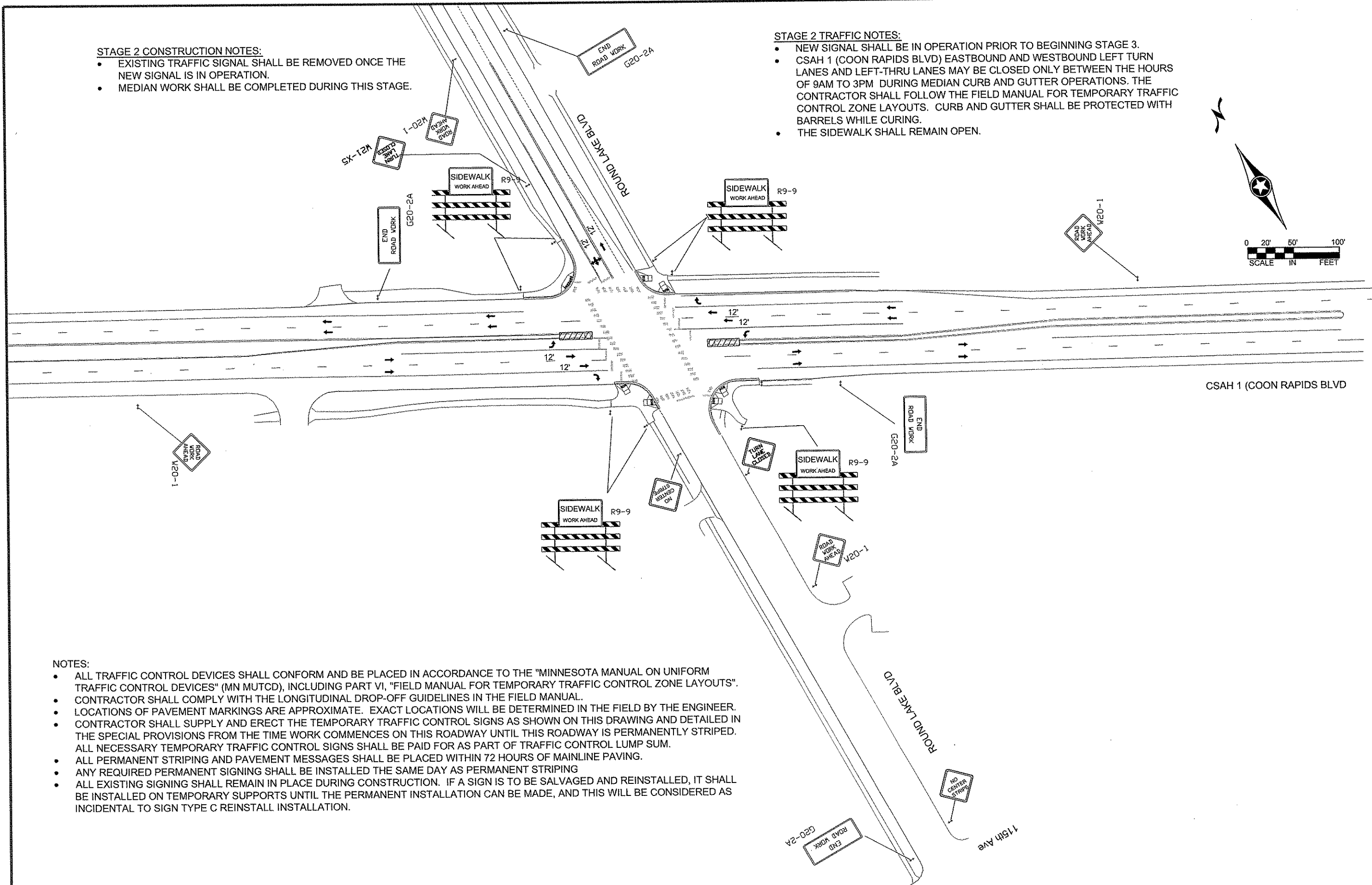
TRAFFIC CONTROL  
 STAGE 2 LAYOUT  
 Sheet 19 of 48 Sheets

**STAGE 2 CONSTRUCTION NOTES:**

- EXISTING TRAFFIC SIGNAL SHALL BE REMOVED ONCE THE NEW SIGNAL IS IN OPERATION.
- MEDIAN WORK SHALL BE COMPLETED DURING THIS STAGE.

**STAGE 2 TRAFFIC NOTES:**

- NEW SIGNAL SHALL BE IN OPERATION PRIOR TO BEGINNING STAGE 3.
- CSAH 1 (COON RAPIDS BLVD) EASTBOUND AND WESTBOUND LEFT TURN LANES AND LEFT-THRU LANES MAY BE CLOSED ONLY BETWEEN THE HOURS OF 9AM TO 3PM DURING MEDIAN CURB AND GUTTER OPERATIONS. THE CONTRACTOR SHALL FOLLOW THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS. CURB AND GUTTER SHALL BE PROTECTED WITH BARRELS WHILE CURING.
- THE SIDEWALK SHALL REMAIN OPEN.



**NOTES:**

- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
- CONTRACTOR SHALL COMPLY WITH THE LONGITUDINAL DROP-OFF GUIDELINES IN THE FIELD MANUAL.
- LOCATIONS OF PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- CONTRACTOR SHALL SUPPLY AND ERECT THE TEMPORARY TRAFFIC CONTROL SIGNS AS SHOWN ON THIS DRAWING AND DETAILED IN THE SPECIAL PROVISIONS FROM THE TIME WORK COMMENCES ON THIS ROADWAY UNTIL THIS ROADWAY IS PERMANENTLY STRIPED. ALL NECESSARY TEMPORARY TRAFFIC CONTROL SIGNS SHALL BE PAID FOR AS PART OF TRAFFIC CONTROL LUMP SUM.
- ALL PERMANENT STRIPING AND PAVEMENT MESSAGES SHALL BE PLACED WITHIN 72 HOURS OF MAINLINE PAVING.
- ANY REQUIRED PERMANENT SIGNING SHALL BE INSTALLED THE SAME DAY AS PERMANENT STRIPING
- ALL EXISTING SIGNING SHALL REMAIN IN PLACE DURING CONSTRUCTION. IF A SIGN IS TO BE SALVAGED AND REINSTALLED, IT SHALL BE INSTALLED ON TEMPORARY SUPPORTS UNTIL THE PERMANENT INSTALLATION CAN BE MADE, AND THIS WILL BE CONSIDERED AS INCIDENTAL TO SIGN TYPE C REINSTALL INSTALLATION.

NO	DATE	BY	CKD	APPR	REVISION

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 SIGNATURE: *Curt Kobilarsik*  
 DATE: 4-12-13 REG. NO. 24756

DRAWN BY: MTH DATE 03/08/13  
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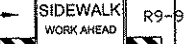
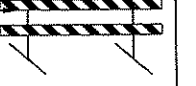

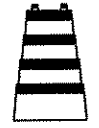


**ANOKA COUNTY  
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SP 002-601-046  
 SP 114-121-010

TRAFFIC CONTROL  
 STAGE 3 LAYOUT  
 Sheet 20 of 48 Sheets




M.U.T.C.D. CODE	SIZE	INSERT	QTY. STG. 1	QTY. STG. 2	QTY. STG. 3
W20-1	48" x 48"		4	4	4
W20-1	48" x 48"		0	2	2
W21-X5	48" x 48"	 W21-X5	2	2	2
R9-9	30" x 18"	 R9-9	7	7	7
TYPE II	8 FOOT		7	7	7
G20-2A	48" x 24"	 G20-2A	4	4	4
REFLECTORIZED REBOUNDABLE DRUM			XX	18	18

TEMPORARY PAVEMENT MARKING TABULATION		
ITEM	UNIT	TOTAL QUANTITY
PAVEMENT MARKING REMOVAL	LIN FT	1580.0
PAVEMENT MESSAGE REMOVAL	SQ FT	40
REMOVABLE PREFORMED PLASTIC MARKING	LIN FT	100

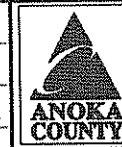
NOTES:

- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.
- ALL TYPE III BARRICADES SHALL BE REFLECTORIZED ON BOTH SIDES. BARRICADE MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE M.U.T.C.D.

NO	DATE	BY	CKD	APPR	REVISION

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.  
 PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE:   
 DATE: 3-21-13 REG. NO. 24756

DRAWN BY: MTH DATE 2/14/13  
 DESIGN BY: MTH DATE 2/14/13  
 CHECKED BY: RB DATE 2/XX/13



ANOKA COUNTY  
 HIGHWAY DEPT.

S.P. 002-601-046  
 S.P. 114-120-010

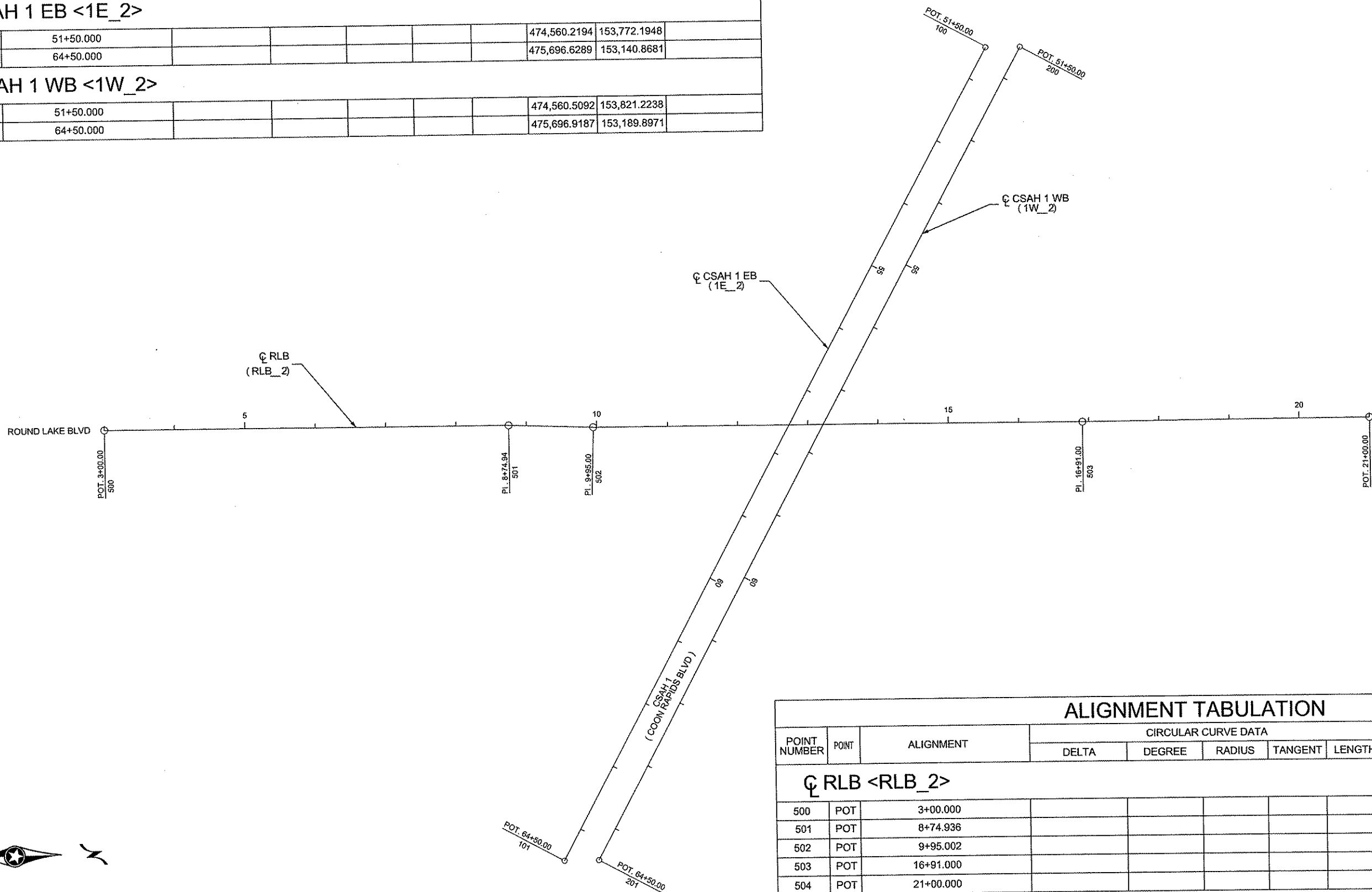
STAGING  
 SIGN QUANTITIES





# ALIGNMENT TABULATION

POINT NUMBER	POINT	ALIGNMENT	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	E	N	
<b>☉ CSAH 1 EB &lt;1E_2&gt;</b>										
100.	POT	51+50.000						474,560.2194	153,772.1948	
101	POT	64+50.000						475,696.6289	153,140.8681	
<b>☉ CSAH 1 WB &lt;1W_2&gt;</b>										
200	POT	51+50.000						474,560.5092	153,821.2238	
201	POT	64+50.000						475,696.9187	153,189.8971	



ALIGNMENT TABULATION										
POINT NUMBER	POINT	ALIGNMENT	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	E	N	
<b>☉ RLB &lt;RLB_2&gt;</b>										
500	POT	3+00.000						475,072.0195	152,505.5381	
501	POT	8+74.936						475,080.0036	153,080.4185	
502	POT	9+95.002						475,085.6697	153,200.3514	
503	POT	16+91.000						475,095.3349	153,896.2816	
504	POT	21+00.000						475,097.4696	154,305.2762	

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-601-46\Plan\0260146\_AL\_P1.dgn      03/22/2013      12:37:24 PM

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.

PRINT NAME: CURT KOBIJARCSIK

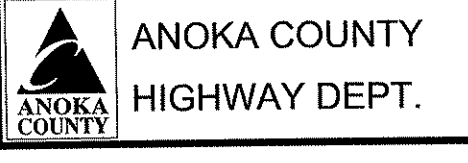
SIGNATURE: *Curt Kobjarcsik*

DATE: 3-22-13      LICENSE NO. 24756

DRAWN BY: CGJ      DATE: 03-06-13

DESIGN BY: EJM      DATE: 03-04-13

CHECKED BY: CAK      DATE: 03-21-13

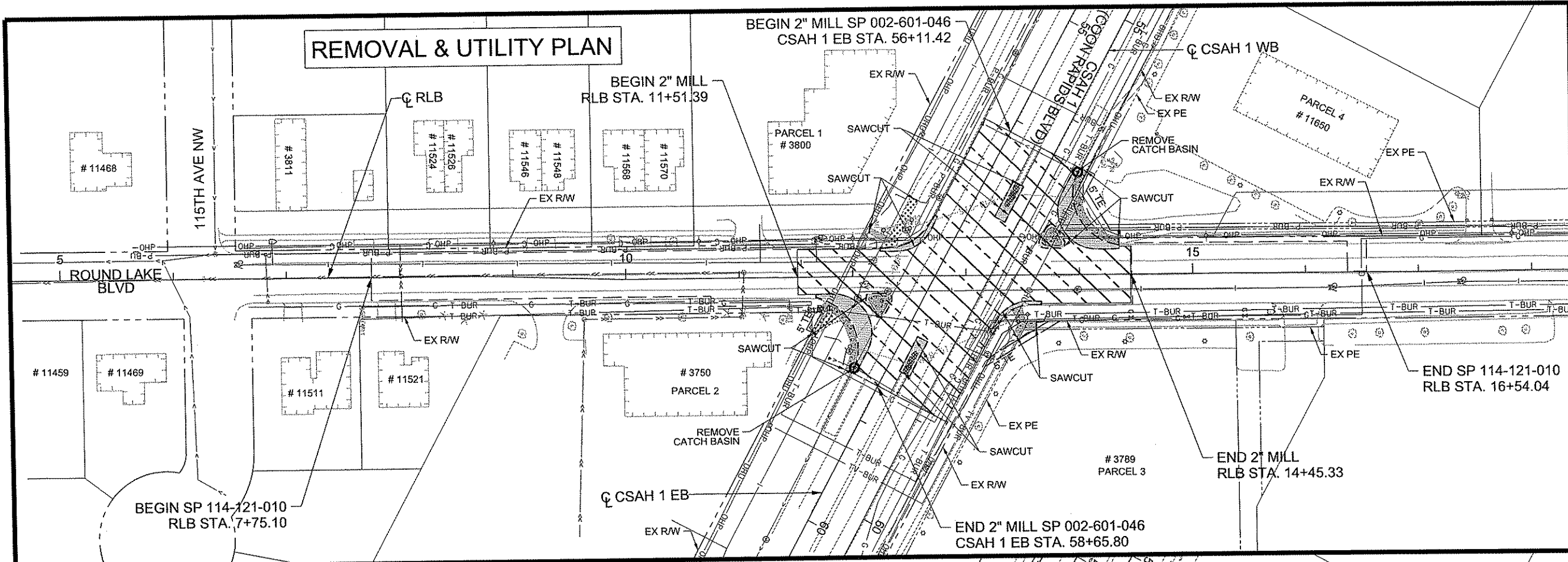


SP 002-601-046

SP 114-121-010

ALIGNMENT PLAN  
AND TABULATION

Sheet 24 of 48 Sheets



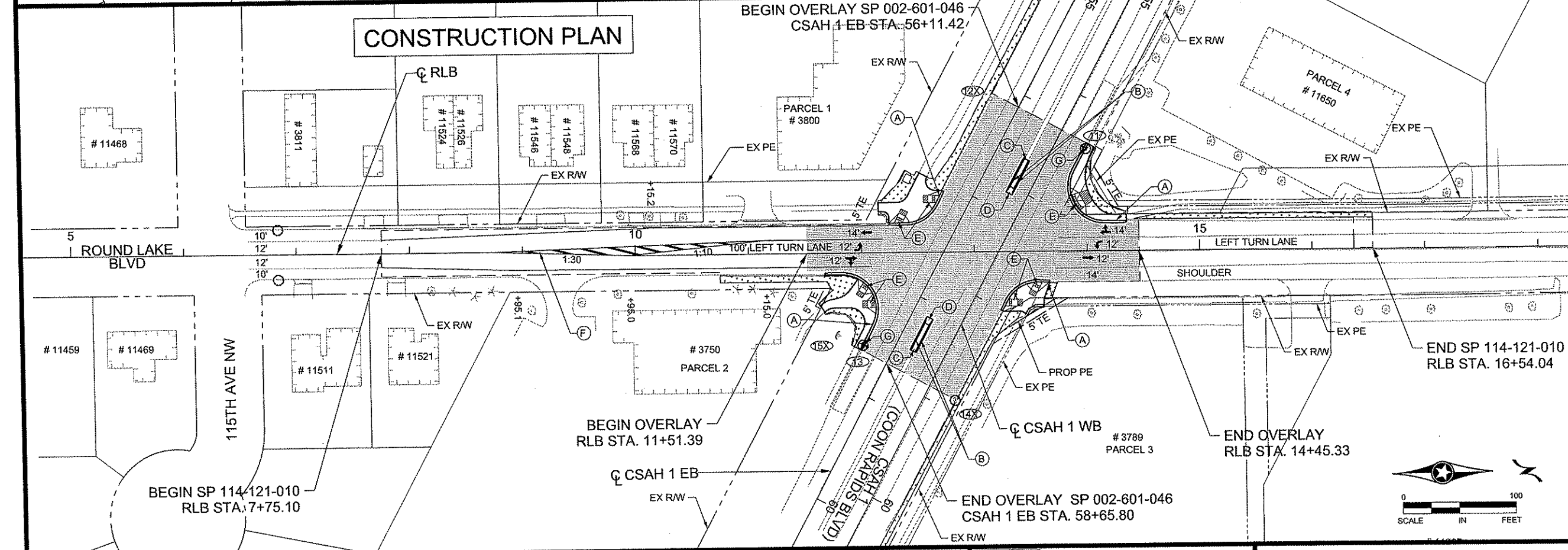
**LEGEND**

- REMOVE CONCRETE WALK
- REMOVE BITUMINOUS PAVEMENT
- REMOVE CONCRETE MEDIAN
- REMOVE BITUMINOUS WALK
- MILL 2" BITUMINOUS PAVEMENT
- REMOVE CURB AND GUTTER
- SAWING BITUMINOUS/CONCRETE
- CONSTRUCTION LIMITS

**REMOVAL NOTES**

REFER TO TRAFFIC SIGNAL PLANS FOR TRAFFIC SIGNAL REMOVALS.

ALL PRIVATE UTILITIES TO BE RELOCATED BY OTHERS AS REQUIRED. SEE IN PLACE UTILITY TABULATION FOR MORE INFORMATION.



**LEGEND**

- (A) B424 CURB AND GUTTER
- (B) B612 CURB AND GUTTER
- (C) CONCRETE MEDIAN
- (D) CONCRETE NOSE PAID FOR AS 6" CONCRETE WALK
- (E) PEDESTRIAN CURB RAMP AND TRUNCATED DOME
- (F) PAINTED MEDIAN
- (G) MATCH EXISTING PIPE'S INVERT ELEVATION AND SLOPE
- CONSTRUCTION LIMITS
- (#) PROPOSED CATCH BASIN
- (##) EXISTING DRAINAGE STRUCTURE
- (O) STORM DRAIN INLET PROTECTION
- (.) SEEDING MIX 250 AND BLANKET CATEGORY 0
- (■) OVERLAY BITUMINOUS PAVEMENT

**CONSTRUCTION NOTES**

TRANSITION B424 CURB & GUTTER TO MATCH EXISTING B618 CURB & GUTTER.

SEE TAB K ON SHEET 5 FOR DRAINAGE STRUCTURE DETAILS.

SEE SHEET 26 FOR INTERSECTION DETAILS.

TURF RESTORATION ALONG CSAH 1 SHALL EXTEND FROM EB STATION 52+80 TO 57+10 AND FROM WB STATION 58+07 TO 62+29, FOR FIBER OPTIC INTERCONNECT INSTALLATION SHOWN ON SHEETS 43-44.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:102-601-46Plan0260146\_RM\_FL.dgn 04/09/2013 2:08:53 PM

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.

PRINT NAME: CURT KOBILARCSEK

SIGNATURE: *Curt Kobilarcsek*

DATE: 4-12-13 LICENSE NO. 24756

DRAWN BY: EJM DATE: 04-09-13

DESIGN BY: EJM DATE: 03-04-13

CHECKED BY: CAK DATE: 04-09-13

**ANOKA COUNTY**  
HIGHWAY DEPT.

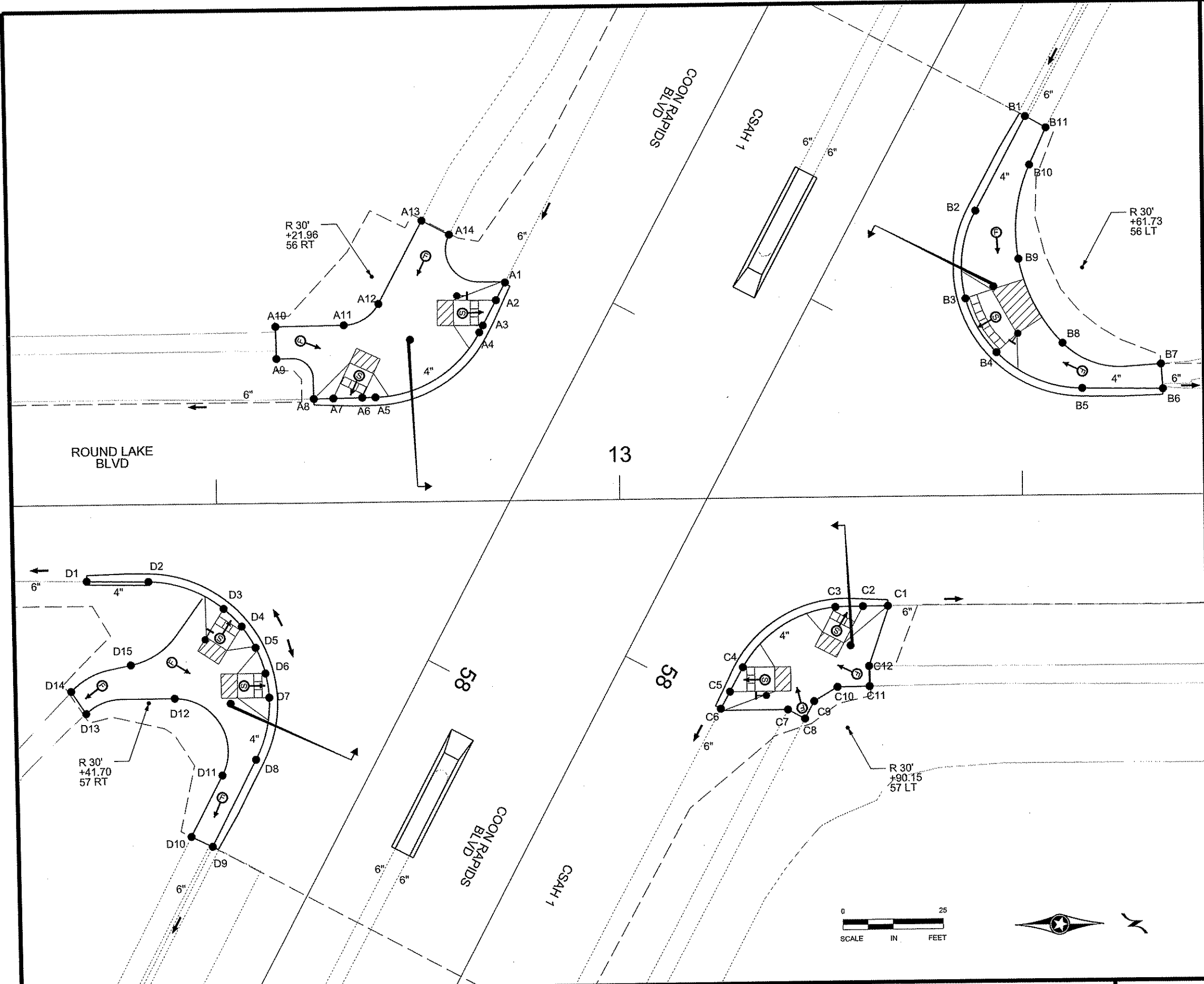
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SP 114-121-010

**REMOVAL AND CONSTRUCTION PLAN**

STA 7+75.10 TO 16+54.04

SHEET 25 OF 48 SHEETS



**LEGEND**

- PROPOSED SIGNAL POLE
- PEDESTRIAN PUSH BUTTON STATION
- CONTROL POINTS ON C&G ALONG THE FLOW LINE/  
CONTROL POINTS ON THE BACK OF SIDEWALK
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONSTRUCT CONCRETE CURB & GUTTER
- CURB HEIGHT
- LANDING AREA - 4' X 4' MIN. DIMENSIONS  
AND MAX 2.0% SLOPE IN ALL DIRECTIONS
- INDICATES PEDESTRIAN RAMP - SLOPE SHALL  
BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM  
IN THE DIRECTION SHOWN AND CROSS SLOPE  
SHALL NOT EXCEED 2.0%
- INDICATES PEDESTRIAN RAMP - SLOPE SHALL  
BE GREATER THAN 2.0% AND LESS THAN 5.0%  
IN THE DIRECTION SHOWN AND CROSS SLOPE  
SHALL NOT EXCEED 2.0%
- DRAINAGE FLOW ARROW

POINT	ALIGNMENT	STATION	OFFSET	ELEVATION	SLOPE %	
A1	CSAH 1 EB	57+07.92	26	864.63		
A2	CSAH 1 EB	57+12.86	26	864.54	A1 - A2	1.9%
A3	CSAH 1 EB	57+19.95	26	864.39	A2 - A3	2.1%
A4	CSAH 1 EB	57+21.89	26	864.36	A3 - A4	1.5%
A5	CSAH 1 EB	57+48.18	41	863.26	A4 - A5	3.4%
A6	CSAH 1 EB	57+49.77	44	863.19	A5 - A6	2.1%
A7	CSAH 1 EB	57+53.24	51	863.05	A6 - A7	2.0%
A8	CSAH 1 EB	57+55.59	55	862.95	A7 - A8	2.1%
A9	CSAH 1 EB	57+61.09	68	863.56		
A10	CSAH 1 EB	57+44.09	71	863.73		
A11	CSAH 1 EB	57+35.87	57	864.07		
A12	CSAH 1 EB	57+27.21	51	864.36		
A13	CSAH 1 EB	57+03.86	51	864.93		
A14	CSAH 1 EB	57+03.81	44	865.06		
B1	CSAH 1 WB	56+34.98	26	867.59		
B2	CSAH 1 WB	56+61.58	26	867.29	B1 - B2	1.1%
B3	CSAH 1 WB	56+82.06	34	867.05	B2 - B3	1.1%
B4	CSAH 1 WB	56+90.32	47	866.89	B3 - B4	1.1%
B5	CSAH 1 WB	56+88.32	70	866.64	B4 - B5	1.1%
B6	CSAH 1 WB	56+79.05	88	866.53	B5 - B6	0.6%
B7	CSAH 1 WB	56+73.80	84	867.20		
B8	CSAH 1 WB	56+88.32	70	867.27		
B9	CSAH 1 WB	56+79.05	88	867.63		
B10	CSAH 1 WB	56+73.80	84	868.00		
B11	CSAH 1 WB	56+35.10	32	868.29		
C1	CSAH 1 WB	57+58.73	52	864.80		
C2	CSAH 1 WB	57+61.70	47	864.71	C1 - C2	1.4%
C3	CSAH 1 WB	57+65.07	41	864.62	C2 - C3	1.3%
C4	CSAH 1 WB	57+89.00	27	864.23	C3 - C4	1.4%
C5	CSAH 1 WB	57+95.86	27	864.14	C4 - C5	1.3%
C6	CSAH 1 WB	58+00.64	27	864.07	C5 - C6	1.5%
C7	CSAH 1 WB	57+93.06	42	865.30		
C8	CSAH 1 WB	57+93.09	47	865.43		
C9	CSAH 1 WB	57+88.21	47	865.52		
C10	CSAH 1 WB	57+82.37	50	865.64		
C11	CSAH 1 WB	57+78.49	57	865.71		
C12	CSAH 1 WB	57+74.13	55	865.61		
D1	CSAH 1 EB	58+22.10	84	862.31		
D2	CSAH 1 EB	58+15.05	70	862.41	D1 - D2	-0.7%
D3	CSAH 1 EB	58+12.28	51	862.53	D2 - D3	-0.6%
D4	CSAH 1 EB	58+14.11	45	862.57	D3 - D4	-0.6%
D5	CSAH 1 EB	58+17.15	39	862.61	D4 - D5	-0.6%
D6	CSAH 1 EB	58+21.67	34	862.52	D5 - D6	1.3%
D7	CSAH 1 EB	58+26.57	31	862.44	D6 - D7	1.3%
D8	CSAH 1 EB	58+41.71	27	862.15	D7 - D8	1.8%
D9	CSAH 1 EB	58+65.81	26	861.93	D8 - D9	0.9%
D10	CSAH 1 EB	58+66.09	32	862.58		
D11	CSAH 1 EB	58+49.04	32	862.78		
D12	CSAH 1 EB	58+37.68	51	863.10		
D13	CSAH 1 EB	58+51.30	69	862.45		
D14	CSAH 1 EB	58+48.17	75	862.50		
D15	CSAH 1 EB	58+35.44	65	863.15		



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-601-46\Plan\0260146\_INT.dgn

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PRINT NAME: CURT KOBIARCSIK

SIGNATURE: *Curt Koblarcsik*

DATE: 4-12-13 LICENSE NO. 24756

DRAWN BY: EJM DATE: 04-09-13

DESIGN BY: EJM DATE: 03-04-13

CHECKED BY: CAK DATE: 04-09-13

**ANOKA COUNTY**  
HIGHWAY DEPT.

SP 002-601-046

SP 114-121-010

INTERSECTION DETAILS

Sheet 26 of 48 Sheets



**PERMANENT & TEMPORARY PAVEMENT MARKING PLAN**  
NOTES AND GUIDELINES

**GENERAL INFORMATION:**

THE ENGINEER'S INVOLVEMENT IN THE APPLICATION OF THE MATERIAL SHALL BE LIMITED TO FIELD CONSULTATION AND INSPECTION. ANOKA COUNTY HIGHWAY DEPARTMENT WILL PLACE NECESSARY "SPOTTING" AT APPROPRIATE POINTS TO PROVIDE HORIZONTAL CONTROL FOR STRIPING AND TO DETERMINE NECESSARY STARTING AND CUTOFF POINTS, LONGITUDINAL JOINTS, PAVEMENT EDGES AND EXISTING MARKINGS MAY SERVE AS HORIZONTAL CONTROL WHEN SO DIRECTED.

EDGE LINES AND LANE LINES ARE TO BE BROKEN ONLY AT INTERSECTIONS WITH PUBLIC ROADS AND AT PRIVATE ENTRANCES IF THEY ARE CONTROLLED BY A YIELD SIGN, STOP SIGN OR TRAFFIC SIGNAL. THE BREAK POINT IS TO BE AT THE START OF THE RADIUS FOR THE INTERSECTION OR AT MARKED STOP LINES OR CROSSWALKS.

A TOLERANCE OF 1/4 INCH UNDER OR 1/4 INCH OVER THE SPECIFIED WIDTH WILL BE ALLOWED FOR STRIPING PROVIDED THE VARIATION IS GRADUAL AND DOES NOT DETRACT FROM THE GENERAL APPEARANCE. BROKEN LINE SEGMENTS MAY VARY UP TO ONE-HALF FOOT FROM THE SPECIFIED LENGTHS PROVIDED THE OVER AND UNDER VARIATIONS ARE REASONABLY COMPENSATORY. ALIGNMENT DEVIATIONS FROM THE CONTROL GUIDE SHALL NOT EXCEED 1 INCH. MATERIAL SHALL NOT BE APPLIED OVER LONGITUDINAL JOINTS, ESTABLISHMENT OF APPLICATION TOLERANCES SHALL NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY TO COMPLY AS CLOSELY AS PRACTICABLE WITH THE PLANNED DIMENSIONS.

**EPOXY:**

THE ROAD SURFACE SHALL BE CLEANED AT THE DIRECTION OF THE ENGINEER JUST PRIOR TO APPLICATION. PAVEMENT CLEANING SHALL CONSIST OF AT LEAST BRUSHING WITH A ROTARY BROOM (NON-METALLIC) OR AS RECOMMENDED BY THE MATERIAL MANUFACTURER AND ACCEPTABLE TO THE ENGINEER. NEW PORTLAND CEMENT CONCRETE SURFACES SHALL BE SANDBLAST CLEANED TO REMOVE ANY SURFACE TREATMENT AND/OR LAITANCE ON LOW SPEED (SPEED LIMIT 35 MPH OR LESS) URBAN PORTLAND CEMENT CONCRETE ROADWAYS. SANDBLAST CLEANING SHALL BE USED FOR ALL EPOXY PAVEMENT MARKINGS.

THE EPOXY MARKING APPLICATION SHALL IMMEDIATELY FOLLOW THE PAVEMENT CLEANING. GLASS BEANS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE EPOXY RESIN LINE TO PROVIDE AN IMMEDIATE NO-TRACK SYSTEM.

AN EPOLY RESIN LINE 4" WIDE AND 15 MILL THICKNESS (WET), REQUIRES AN APPLICATION RATE OF ONE (1) GALLON OF COMPONENTS FOR 320 FEET OF LINE. GLASS BEADS SHALL BE APPLIED AT A POUND PER GALLON RATE SUFFICIENT TO ACHIEVE AN ACCEPTABLE NO-TRACK SYSTEM.

OPERATIONS SHALL BE CONDUCTED ONLY WHEN THE ROAD PAVEMENT SURFACE TEMPERATURES ARE 50 DEGREES FAHRENHEIT OR GREATER.

PERMANENT PAVEMENT MARKINGS SHALL NOT BE PLACED OVER TEMPORARY TAPE MARKINGS.

**PREFORMED THERMOPLASTIC:**

THE PREFORMED THERMOPLASTIC MARKINGS SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS ON CLEAN AND DRY SURFACES. SEE SPECIAL PROVISIONS FOR PREFORMED THERMOPLASTIC MARKING SPECIFICATIONS.

**PAINT:**

AT THE TIME OF APPLYING THE MARKING MATERIAL, THE APPLICATION AREA SHALL BE FREE OF CONTAMINATION. THE CONTRACTOR SHALL CLEAN THE ROADWAY SURFACE PRIOR TO THE LINE APPLICATION IN A MANNER AND TO THE EXTENT REQUIRED BY THE ENGINEER.

GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE PAINT LINE.

EXCEPT WHEN USED AS A TEMPORARY MARKING, PAVEMENT MARKINGS SHALL ONLY BE APPLIED IN SEASONABLE WEATHER WHEN AIR TEMPERATURE IS 50 DEGREES FARHENHEIT OR HIGHER AND SHALL NOT BE APPLIED WHEN THE WIND OR OTHER CONDITIONS CAUSE A FILD OR DUST TO BE DEPOSITED ON THE PAVEMENT SURFACE AFTER CLEANING AND BEFORE THE MARKING MATERIAL CAN BE APPLIED.

THE FILLING OF TANKS, POURING OF MATERIALS OR CLEANING OF EQUIPMENT SHALL NOT BE PERFORMED ON UNPROTECTED PAVEMENT SURFACES UNLESS ADEQUATE PROVISIONS ARE MADE TO PREVENT SPILLAGE OF MATERIAL.

J PERMANENT PAVEMENT MARKING TABULATION		
ITEM	UNIT	TOTAL QUANTITY
PAVEMENT MESSAGE (RT ARROW) PREFORMED THERMOPLASTIC	EACH	4
PAVEMENT MESSAGE (LT ARROW) PREFORMED THERMOPLASTIC	EACH	7
PAVEMENT MESSAGE (RT-THRU ARROW) PREFORMED THERMOPLASTIC	EACH	3
24" SOLID LINE YELLOW - PREFORMED THERMOPLASTIC	LIN FT	67
24" SOLID LINE WHITE - PREFORMED THERMOPLASTIC	LIN FT	150
3' x 6' CROSSWALK MARKING - PREFORMED THERMOPLASTIC	SQ FT	900
4" SOLID LINE WHITE - PAINT	LIN FT	3740
4" BROKEN LINE WHITE - PAINT (10' STRIPE, 40' SKIP)	LIN FT	200
4" SOLID LINE YELLOW - PAINT	LIN FT	1180
4" BROKEN LINE YELLOW - PAINT (10' STRIPE, 40' SKIP)	LIN FT	40
4" DOUBLE SOLID LINE YELLOW - PAINT	LIN FT	740

**SYMBOLS & MATERIALS LEGEND**

■ CROSSWALK BLOCK WHITE PREFORMED THERMOPLASTIC

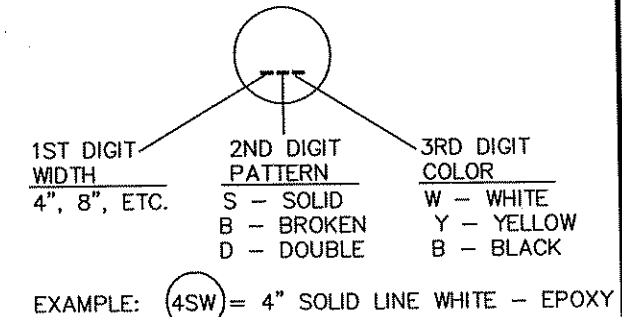
↶ PAVEMENT MESSAGE (LEFT ARROW) PREFORMED THERMOPLASTIC

**STRIPING KEY**

○ CIRCLE - EPOXY      □ SQUARE PREFORMED THERMOPLASTIC

△ TRIANGLE - PAINT      □ RxR PREFORMED THERMOPLASTIC

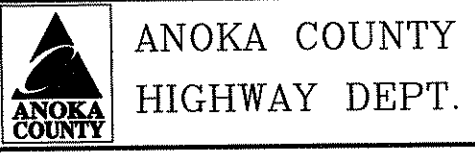
⬠ PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING



NO	DATE	BY	CKD	APPR	REVISION

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.  
 PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt Kobilarsik*  
 DATE: 3-21-13 LICENSE NO. 24756

DRAWN BY: MTH DATE 01/11/2013  
 DESIGN BY: MTH DATE 01/11/2013  
 CHECKED BY: JR DATE 03/13/2013



S.P. 002-601-046  
 S.P. 114-121-010

PERMANENT & TEMPORARY MARKING TABULATION  
 Sheet 27 of 48 Sheets



G		SIGN PANELS TYPE C				
SIGN DESIGNATION	SIGN SIZE	SIZE AREA (FT <sup>2</sup> )	Total Installations	Total Area (ft <sup>2</sup> )	Posts per Installation	Notes
R3-30AD	36" x 30"	7.5	1	7.5	2	
R4-7	24" X 30"	5	2	10	1	
x4-3	18" x 18"	2.25	1	2.25		A
Project Totals			4	19.75		

NOTES: This table illustrates quantities for F&I new type "C" signs only.

A Sign mounted below R4-7 Sign Post Assembly

NO	DATE	BY	CKD	APPR	REVISION

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.  
 PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt A. Kobilarsik*  
 DATE: 3-21-13 REG. NO. 24756

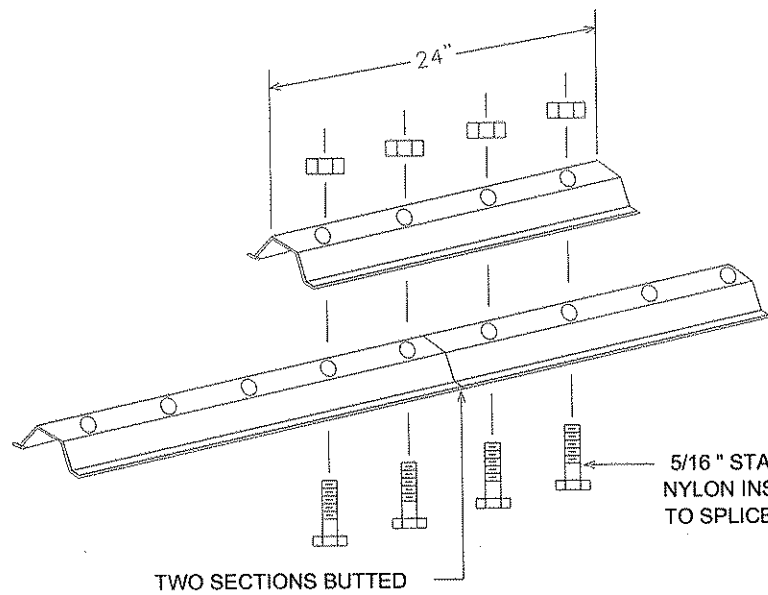
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 CHECKED BY: JR DATE 03/13/13



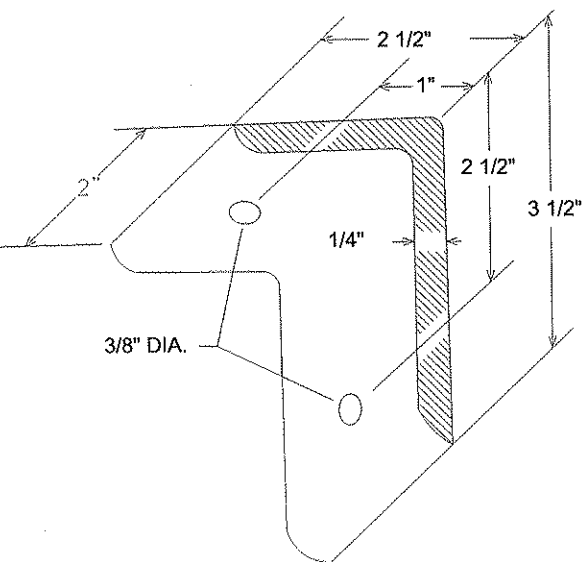
ANOKA COUNTY  
 HIGHWAY DEPT.

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 S.P. 114-121-010

PERMANENT SIGNING  
 QUANTITY TAB  
 Sheet 29 of 48 Sheets

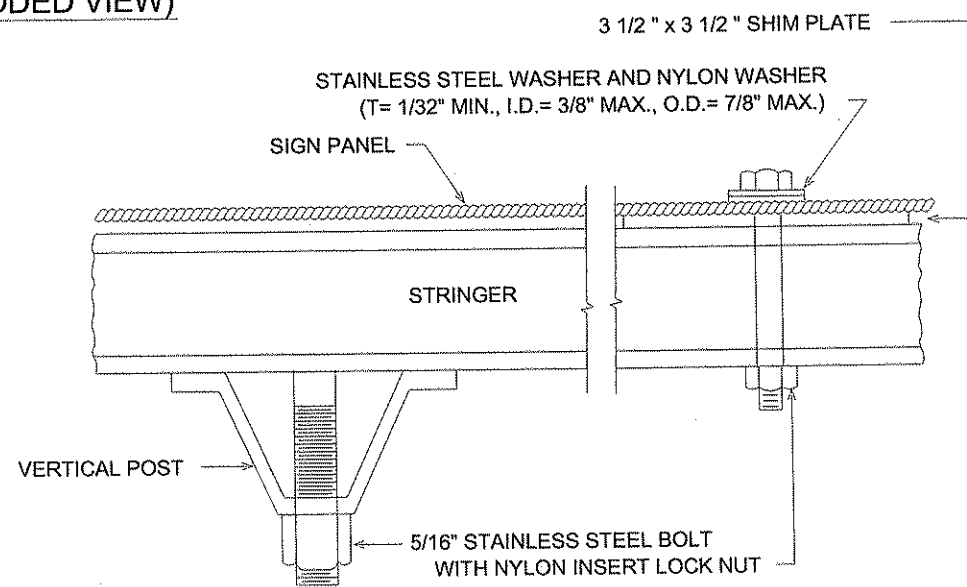


**LATERAL BRACE OR STRINGER  
SPLICE DETAIL (EXPLODED VIEW)**

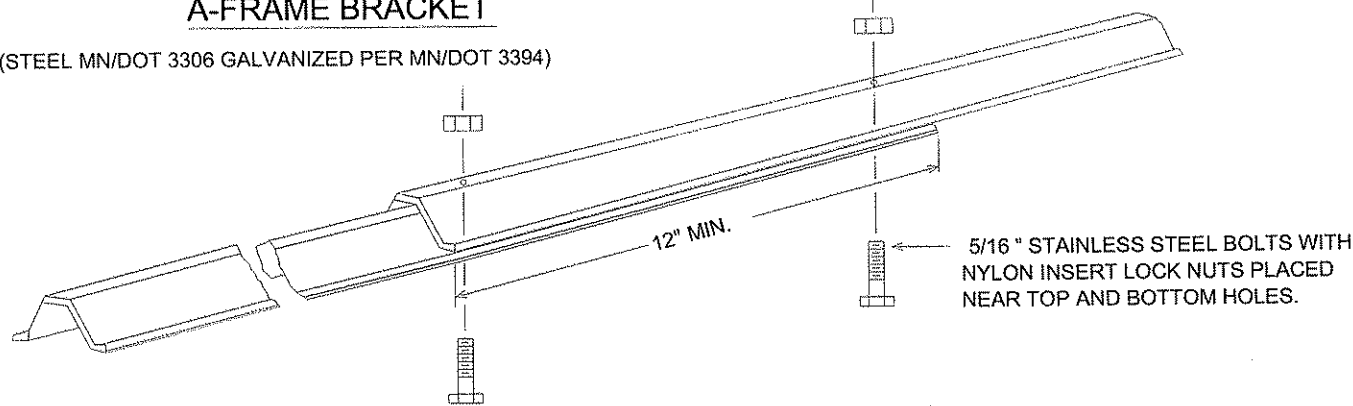


**A-FRAME BRACKET**

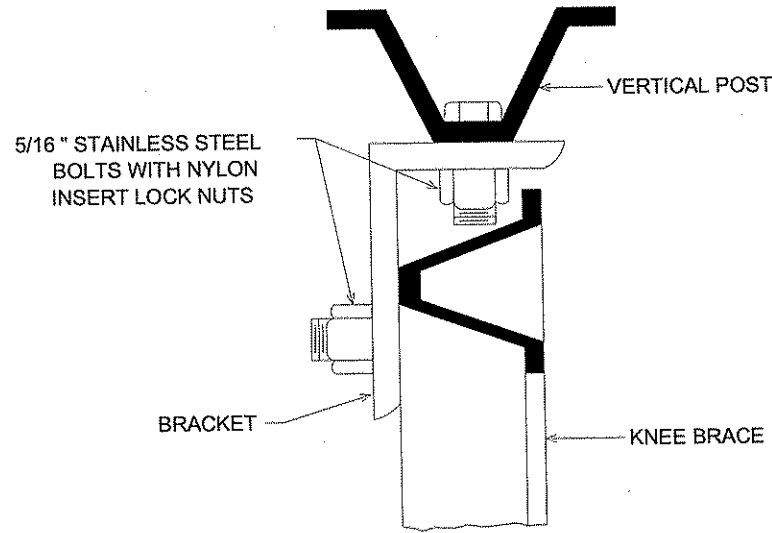
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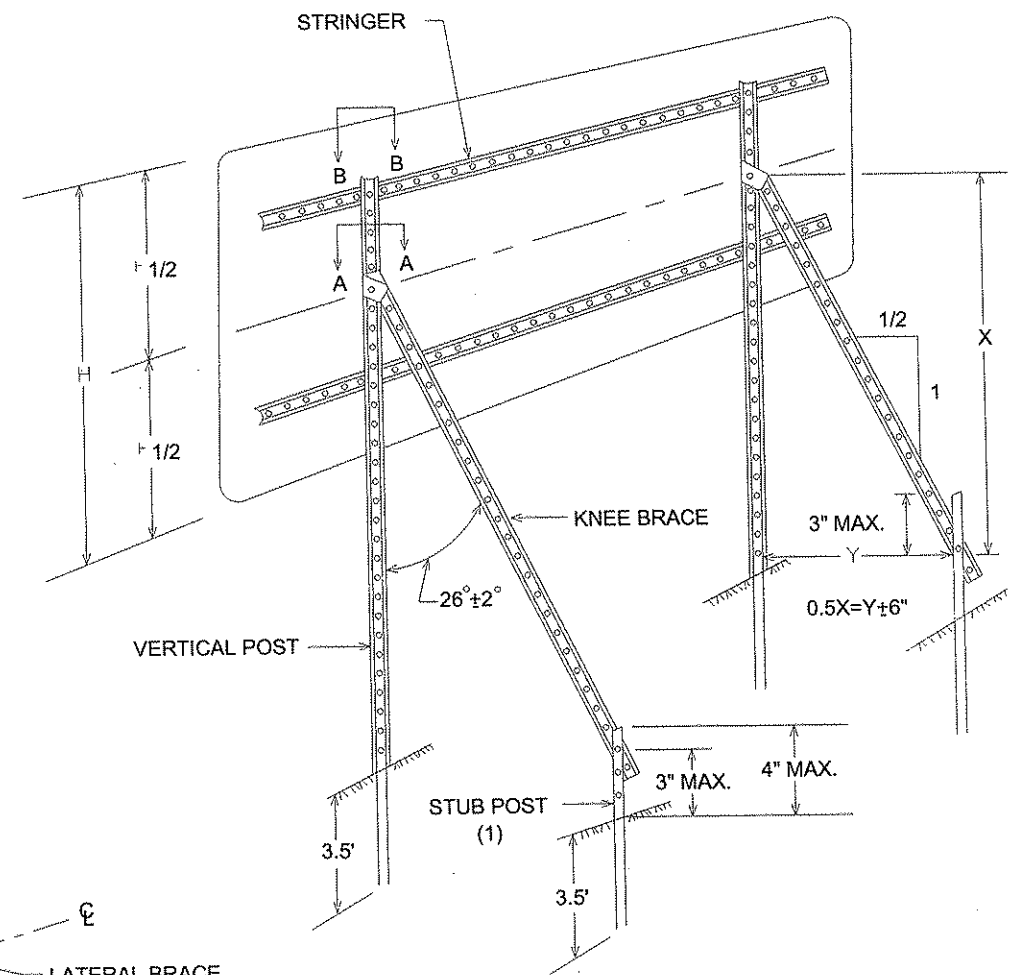
**SECTION B-B**



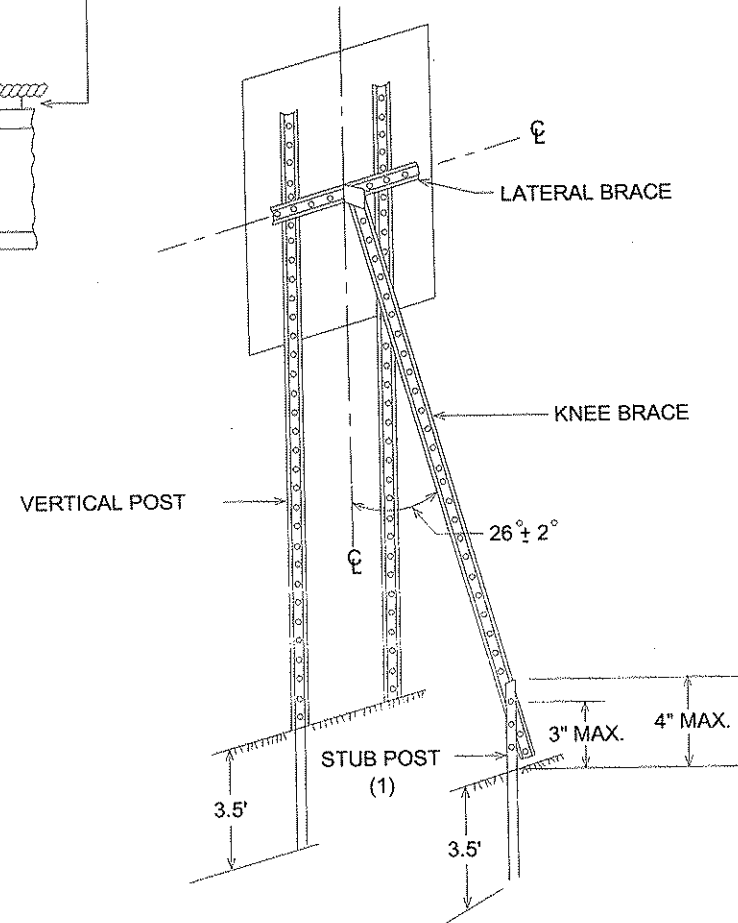
**KNEE BRACE SPLICE**



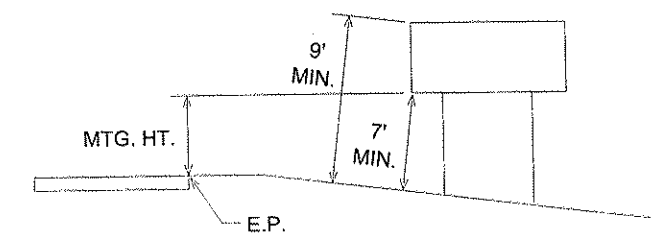
**SECTION A-A**



**TYPICAL "A-FRAME" INSTALLATION  
TYPE "D" SIGNS**



**TYPICAL "A-FRAME" INSTALLATION  
TYPE "C" SIGNS**



**TYPICAL MOUNTING**

(1) OFFSET STUB POST 1' TOWARD ROADWAY  
RELATIVE TO VERTICAL POST.

**TYPE C & D SIGN  
STRUCTURAL DETAILS**

NO	DATE	BY	CHKD	APPR	REVISION

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.  
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 CHECKED BY: RB DATE: 01-11-13

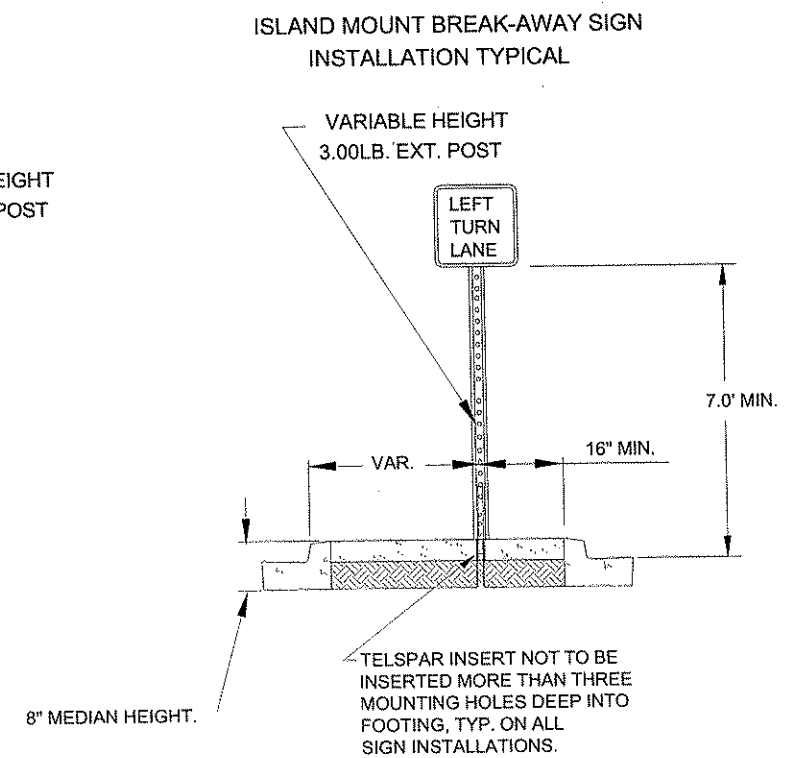
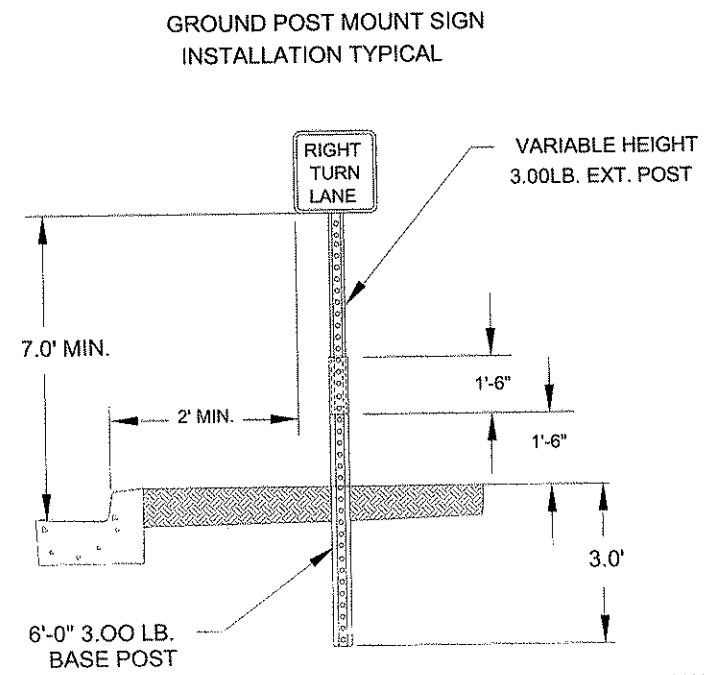
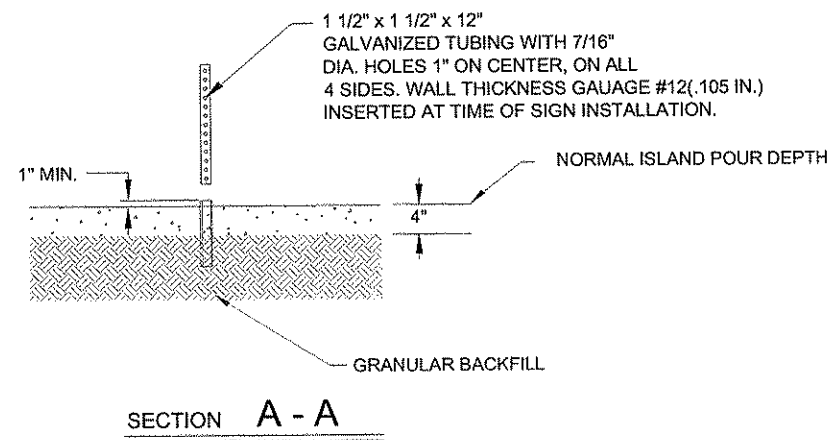
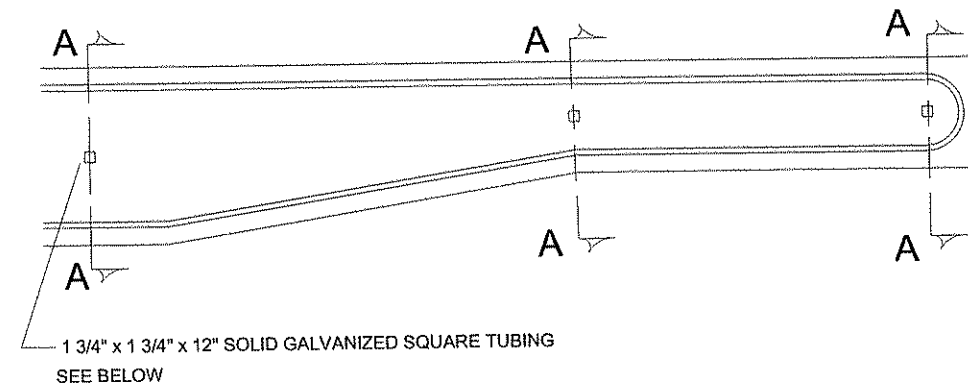


**ANOKA COUNTY  
HIGHWAY DEPT.**

S.P. 002-601-046  
 S.P. 114-121-010

SIGNING & STRIPING DETAILS

Sheet 30 of 48 Sheets



NO	DATE	BY	CHKD	APPR	REVISION

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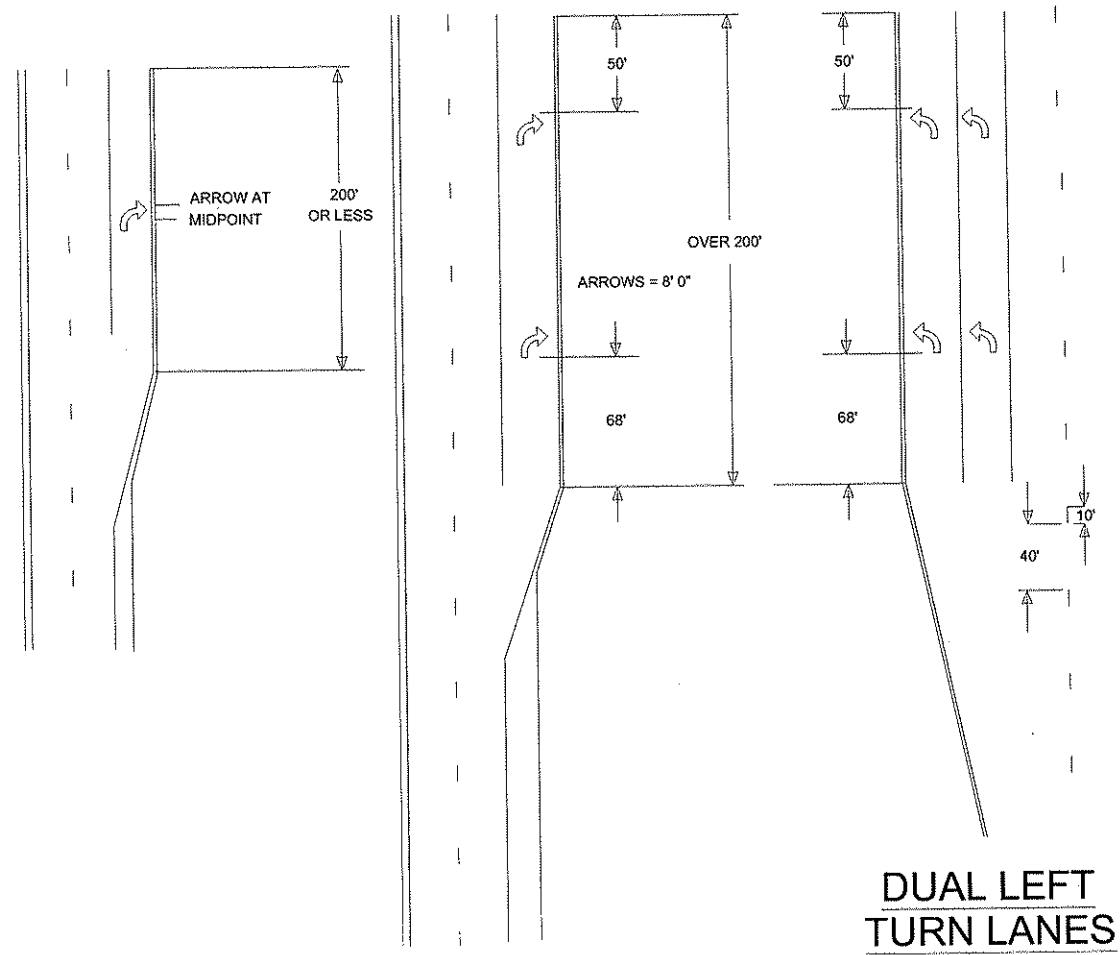
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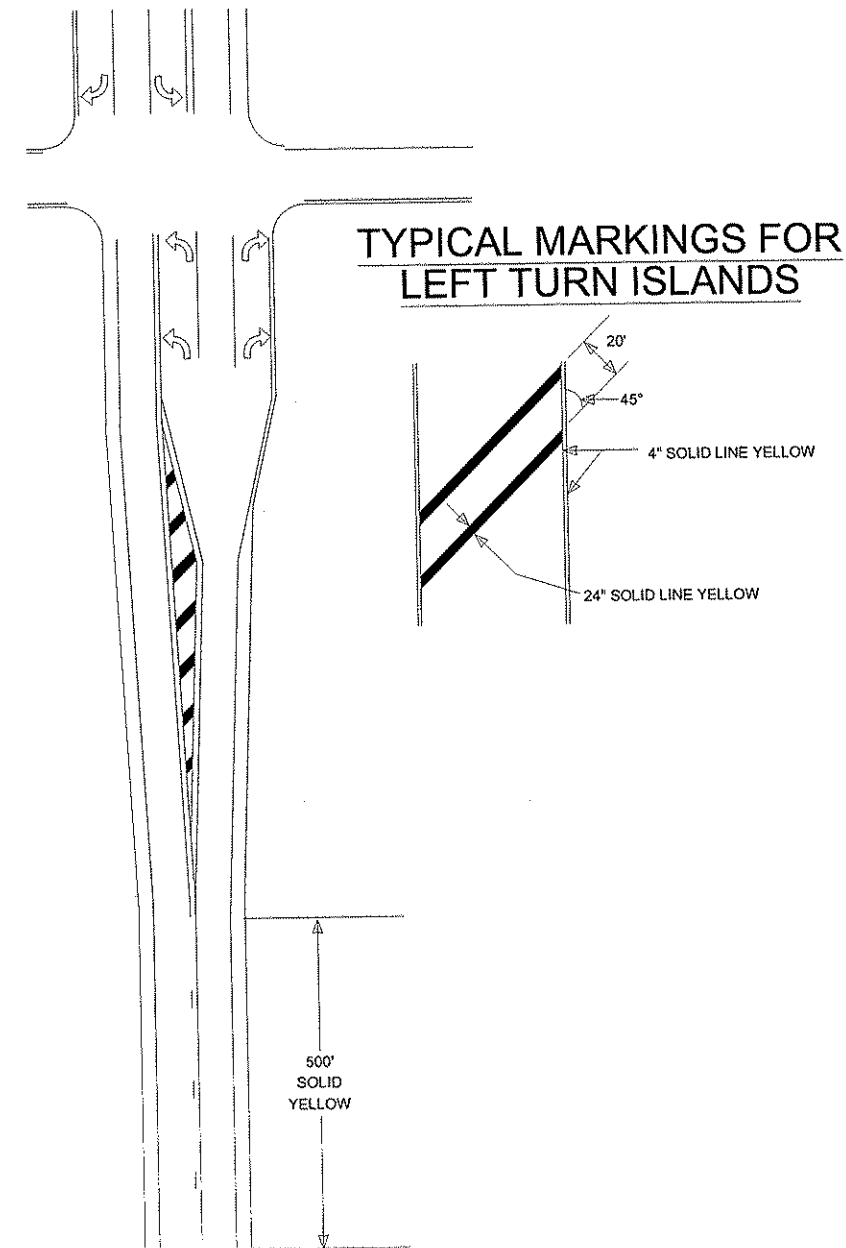
ANOKA COUNTY  
HIGHWAY DEPT.

S.P. 002-601-046  
S.P. 114-121-010

**TYPICAL MESSAGE PLACEMENT  
FOR TURN LANES**



**TYPICAL MARKINGS FOR  
LEFT TURN ISLANDS**



NO	DATE	BY	CHKD	APPR	REVISION

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**ANOKA COUNTY  
HIGHWAY DEPT.**

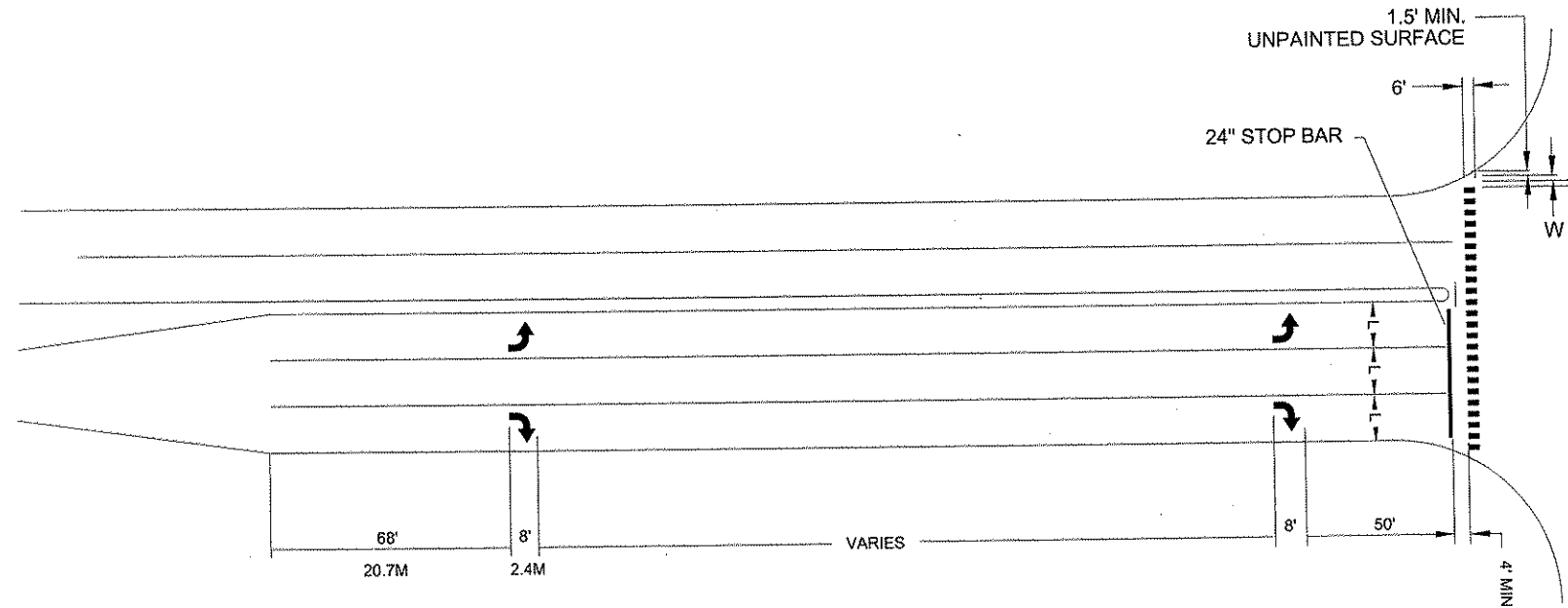
S.P. 002-601-046  
S.P. 114-121-010

SIGNING & STRIPING DETAILS

Sheet 32 of 48 Sheets



# MARKINGS FOR PEDESTRIAN CROSSWALKS



(L)	(W)	(S)
WIDTH OF INSIDE LANE	WIDTH OF PAINTED AREAS	WIDTH OF SPACE
9'	2.0'	2.5'
10'	2.5'	2.5'
11'	2.5'	3.0'
12'	3.0'	3.0'
13'	3.0'	3.5'

### NOTES: CROSSWALKS:

- 1.) PAINTED AREAS ARE TO BE CENTERED ON CENTER AND LANE LINES, EVEN IF INTERSECTION IS NOT ALIGNED.
- 2.) LOCATION OF ZEBRA CROSSWALKS AND STOP BARS, SIGNAL LOOPS AND PED RAMP ARE APPROXIMATE. FINAL LOCATIONS ARE TO BE DETERMINED AND FIELD VERIFIED DURING CONSTRUCTION BY THE FIELD ENGR.
- 3.) ZEBRA CROSSWALKS ARE TO BE PARALLEL TO THE DRIVING LANE OR LANES. EVEN IF THE STREET IS ON AN ANGLE TO THE INTERSECTION.
- 4.) A MIN. OF 1.5' (450mm) CLEAR DISTANCE MUST BE LEFT ADJACENT TO THE CURB. IF LAST PAINTED AREA FALLS INTO THIS AREA, IT MUST BE OMITTED.
- 5.) ON TWO LANE STREETS, USE SPACING SHOWN FOR AN 11' (3.3mm) INSIDE LANE.

# NOTES & GUIDELINES

## GENERAL INFORMATION:

THE ENGINEER'S INVOLVEMENT IN THE APPLICATION OF THE MATERIAL SHALL BE LIMITED TO FIELD CONSULTATION AND INSPECTION. THE CONTRACTOR WILL PLACE NECESSARY "SPOTTING" AT APPROPRIATE POINTS TO PROVIDE HORIZONTAL CONTROL FOR STRIPING AND TO DETERMINE NECESSARY STARTING AND CUTOFF POINTS. LONGITUDINAL JOINTS, PAVEMENT EDGES AND EXISTING MARKINGS MAY SERVE AS HORIZONTAL CONTROL WHEN SO DIRECTED.

EDGE LINES AND LANE LINES ARE TO BE BROKEN ONLY AT INTERSECTIONS WITH PUBLIC ROADS AND AT PRIVATE ENTRANCES IF THEY ARE CONTROLLED BY A YIELD SIGN, STOP SIGN OR TRAFFIC SIGNAL. THE BREAK POINT IS TO BE AT THE START OF THE RADIUS FOR THE INTERSECTION OR AT MARKED STOP LINES OR CROSSWALKS.

A TOLERANCE OF 1/4 INCH UNDER OR 1/4 INCH OVER THE SPECIFIED WIDTH WILL BE ALLOWED FOR STRIPING PROVIDED THE VARIATION IS GRADUAL AND DOES NOT DETRACT FROM THE GENERAL APPEARANCE. BROKEN LINE SEGMENTS MAY VARY UP TO ONE-HALF FOOT FROM THE SPECIFIED LENGTHS PROVIDED THE OVER AND UNDER VARIATIONS ARE REASONABLY COMPENSATORY. ALIGNMENT DEVIATIONS FROM THE CONTROL GUIDE SHALL NOT EXCEED 1 INCH. MATERIAL SHALL NOT BE APPLIED OVER LONGITUDINAL JOINTS. ESTABLISHMENT OF APPLICATION TOLERANCES SHALL NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY TO COMPLY AS CLOSELY AS PRACTICABLE WITH THE PLANNED DIMENSIONS.

## EPOXY:

THE ROAD SURFACE SHALL BE CLEANED AT THE DIRECTION OF THE ENGINEER JUST PRIOR TO APPLICATION. PAVEMENT CLEANING SHALL CONSIST OF AT LEAST BRUSHING WITH A ROTARY BROOM (NON-METALLIC) OR AS RECOMMENDED BY THE MATERIAL MANUFACTURER AND ACCEPTABLE TO THE ENGINEER. NEW PORTLAND CEMENT CONCRETE SURFACES SHALL BE SANDBLAST CLEANED TO REMOVE ANY SURFACE TREATMENTS AND/OR LAITANCE. ON LOW SPEED (SPEED LIMIT 35 OR LESS) URBAN PORTLAND CEMENT CONCRETE ROADWAYS, SANDBLAST CLEANING SHALL BE USED FOR ALL EPOXY PAVEMENT MARKINGS.

THE EPOXY MARKING APPLICATION SHALL IMMEDIATELY FOLLOW THE PAVEMENT CLEANING. GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE EPOXY RESIN LINE TO PROVIDE AN IMMEDIATE NO-TRACK SYSTEM.

AN EPOXY RESIN LINE 4" WIDE AND 15 MILL THICKNESS (WET), REQUIRES AN APPLICATION RATE OF ONE (1) GALLON OF COMPONENTS FOR 320 FEET OF LINE. GLASS BEADS SHALL BE APPLIED AT A POUND PER GALLON RATE SUFFICIENT TO ACHIEVE AN ACCEPTABLE NO-TRACK SYSTEM.

OPERATIONS SHALL BE CONDUCTED ONLY WHEN THE ROAD PAVEMENT SURFACE TEMPERATURES ARE 50 DEGREES F° OR GREATER.

PERMANENT PAVEMENT MARKINGS SHALL NOT BE PLACED OVER TEMPORARY TAPE MARKINGS.

## PAINT:

AT THE TIME OF APPLYING THE MARKING MATERIAL, THE APPLICATION AREA SHALL BE FREE OF CONTAMINATION. THE CONTRACTOR SHALL CLEAN THE ROADWAY SURFACE PRIOR TO THE LINE APPLICATION IN A MANNER AND TO THE EXTENT REQUIRED BY THE ENGINEER.

GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE PAINT LINE.

EXCEPT WHEN USED AS A TEMPORARY MARKING, PAVEMENT MARKINGS SHALL ONLY BE APPLIED IN SEASONABLE WEATHER WHEN AIR TEMPERATURE IS 50°F OR HIGHER AND SHALL NOT BE APPLIED WHEN THE WIND OR OTHER CONDITIONS CAUSE A FILM OF DUST TO BE DEPOSITED ON THE PAVEMENT SURFACE AFTER CLEANING AND BEFORE THE MARKING MATERIAL CAN BE APPLIED.

THE FILLING OF TANKS, POURING OF MATERIALS OR CLEANING OF EQUIPMENT SHALL NOT BE PERFORMED ON UNPROTECTED PAVEMENT SURFACES UNLESS ADEQUATE PROVISIONS ARE MADE TO PREVENT SPILLAGE OF MATERIAL.

NO	DATE	BY	CKD	APPR	REVISION

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.

PRINT NAME: CURT A KOBIARCSIK

SIGNATURE: *Curt Kobilarcsik*

DATE: 3-21-13 LICENSE NO. 24756

DRAWN BY MTH DATE 01-11-13

DESIGN BY MTH DATE 01-11-13

CHECKED BY RB DATE 01-11-13

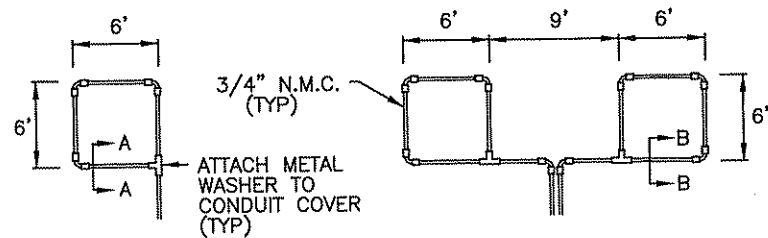


ANOKA COUNTY  
HIGHWAY DEPT.

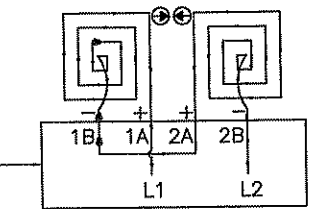
S.P. 002-601-046  
S.P. 114-121-010

SIGNING & STRIPING DETAILS

Sheet 33 of 48 Sheets



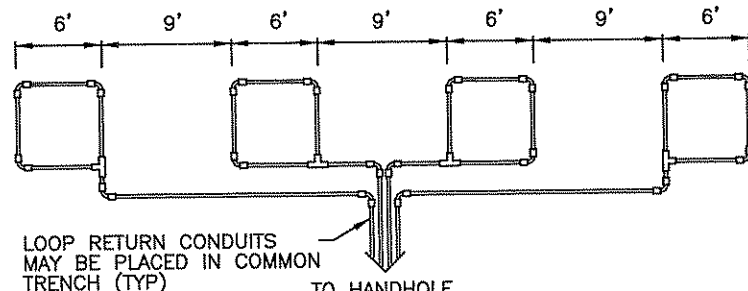
**LOOP DETECTOR  
DETAIL 'A'**  
(LOOP PHASING FOR  
SINGLE CONNECTION)



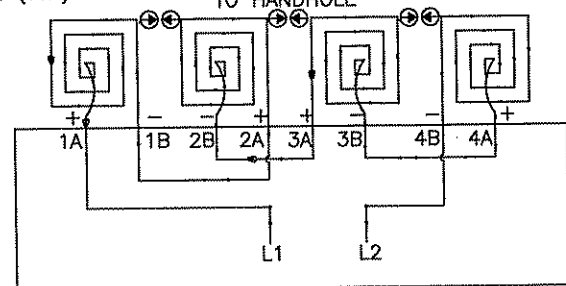
LOOP CONNECTIONS SHALL BE  
LABELED AND SPLICED IN THE  
HANDHOLE AS FOLLOWS:

L1 TO 1A  
1B TO 2A  
2B TO L2

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



LOOP RETURN CONDUITS  
MAY BE PLACED IN COMMON  
TRENCH (TYP)

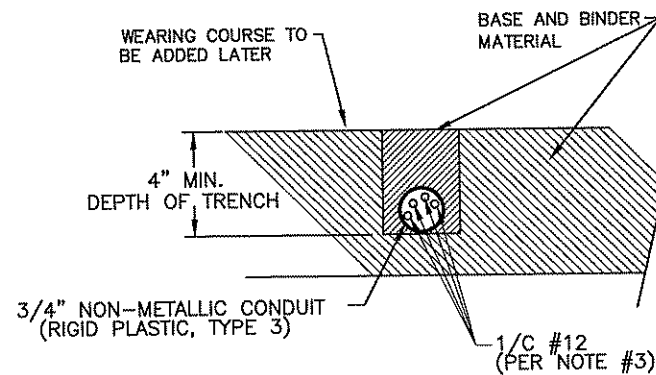


LOOP CONNECTIONS SHALL BE LABELED AND SPLICED  
IN THE HANDHOLE AS FOLLOWS:

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

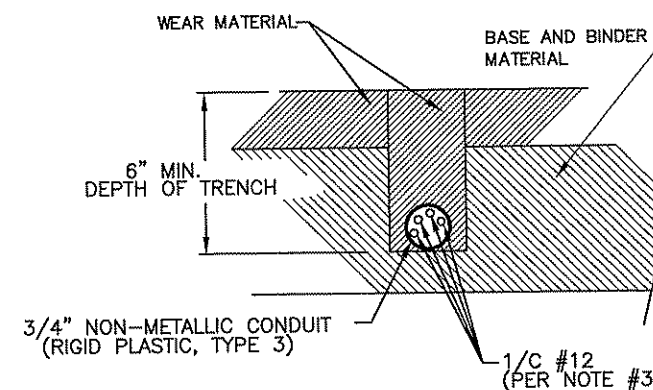
SPLICE CONTROL CABLE TO L1 & L2 IN HANDHOLE.  
ALL CONDUCTORS SHALL BE TAGGED IN HANDHOLE  
(1A, 1B, ECT)

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



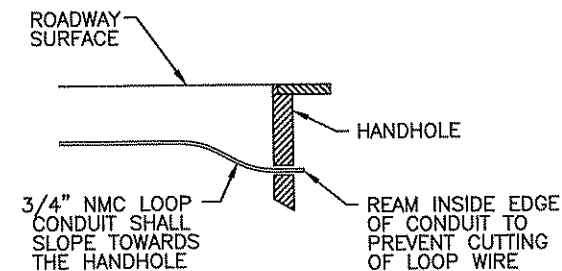
**SECTION A-A**

DETAIL FOR LOOP INSTALLATION  
IN NEW ROADWAY



**SECTION B-B**

DETAIL FOR LOOP INSTALLATION  
IN EXISTING ROADWAY



**DRAINAGE DETAIL**

**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.

**LEGEND OF SYMBOLS**

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

**ABBREVIATIONS**

3-1(EG)	SIGNAL HEAD PHASE "3" - NO "1"	P2-1(EG)	PED INDICATION PHASE "2" - NO. "1"
BR. GR.	BARE GROUND	PB	PUSH BUTTON
CH. SW.	CHECK SWITCH	PB2-1(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	S&R	SALVAGE AND REINSTALL
HPS	HIGH PRESSURE SODIUM	TDW	TELEPHONE DROP WIRE
JB	JUNCTION BOX	WLK	WALK
LUM	LUMINAIRE	YEL	YELLOW
NEU	NEUTRAL	YLTA	YELLOW LEFT TURN ARROW
NMC	NONMETALLIC CONDUIT	YRTA	YELLOW RIGHT TURN ARROW
		YTHA	YELLOW THRU ARROW

**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

TRAFFIC SIGNAL TABULATION			
ITEM NO	ITEM	UNIT	TOTAL ESTIMATED QUANTITY
2565	TRAFFIC CONTROL SIGNAL SYSTEM	SIG. SYS.	1
2565	EMERGENCY VEHICLE PREEMPTION SYSTEM	LUMP SUM	1
2565	SIGNAL SERVICE CABINET	EACH	1
(1) 2565	FIBER OPTIC INTERCONNECT	LIN FT	2,600
2565	TEMPORARY SIGNAL SYSTEM	SYSTEM	1

(1) DENOTES THAT A SEPARATE PAY ITEM HAS BEEN INCLUDED FOR FULL REPLACEMENT OF THE EXISTING 6 Pr#19 INTERCONNECT CABLE TO PHEASANT RIDGE DRIVE SIGNAL SYSTEM. SHOULD EXISTING 6 Pr#19 CABLE BE FOUND TO BE EITHER IN POOR CONDITION OR NOT LONG ENOUGH TO REACH NEW CONTROLLER CABINET LOCATION AT ROUND LAKE BLVD, THEN THE CONTRACTOR SHALL REMOVE THE EXISTING 6 Pr#19 CABLE AND SHALL FURNISH AND INSTALL A NEW 6 SM/6 MM FIBER-OPTIC CABLE IN ITS PLACE. SEE SPECIAL PROVISIONS.

TRAFFIC SIGNAL STANDARD PLATES	
THESE TRAFFIC SIGNAL STANDARD PLATES AS APPROVED BY FHWA SHALL APPLY:	
PLATE NO.	DESCRIPTION
* 8000 I	STANDARD BARRICADES
* 8110 E	TRAFFIC SIGNAL BRACKETING (POLE MOUNTED)
* 8111 E	TRAFFIC SIGNAL BRACKETING (PEDESTAL MOUNTED) (3 SHEETS)
* 8112 G	PEDESTAL FOUNDATION (TRAFFIC CONTROL SIGNALS)
* 8114 A	PVC HANDHOLE/PULLBOX (NO VEHICLE LOAD) (2 SHEETS)
* 8118 D	SERVICE EQUIPMENT & POLE-TRAFFIC CONTROL SIGNALS
* 8119 C	GROUND MOUNTED CABINET FOUNDATION
* 8121 G	TRANSFORMER BASE & POLE BASE PLATE (2 SHEETS)
* 8122 F	PEDESTAL & PEDESTAL BASE (FOR TRAFFIC CONTROL SIGNALS SUPPORT)
* 8123 G	POLE & MAST ARM-LUMINAIRES & TRAFFIC LIGHTS ASSEMBLY (2 SHEETS)
* 8126 K	POLE FOUNDATION (PA90 & PA100)

\* - APPLIES TO THIS PROJECT

DRAWN BY: JMG  
DESIGNER: JMG  
CHECKED BY: JMG

NO.	BY	DATE	REVISIONS

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.  
*John M. Gray*  
Name: John M. Gray, PE  
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Date: March 29, 2013

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ANOKA COUNTY,  
MINNESOTA  
CITY OF COON RAPIDS

TRAFFIC SIGNAL SYSTEM  
DETAILS AND STANDARD PLATES  
CSAH 1 AT ROUND LAKE BOULEVARD

FILE NO.  
ANOKC 122916  
SIGNAL SHEET  
1 OF 15

S.P. 002-601-046  
S.P. 114-121-010

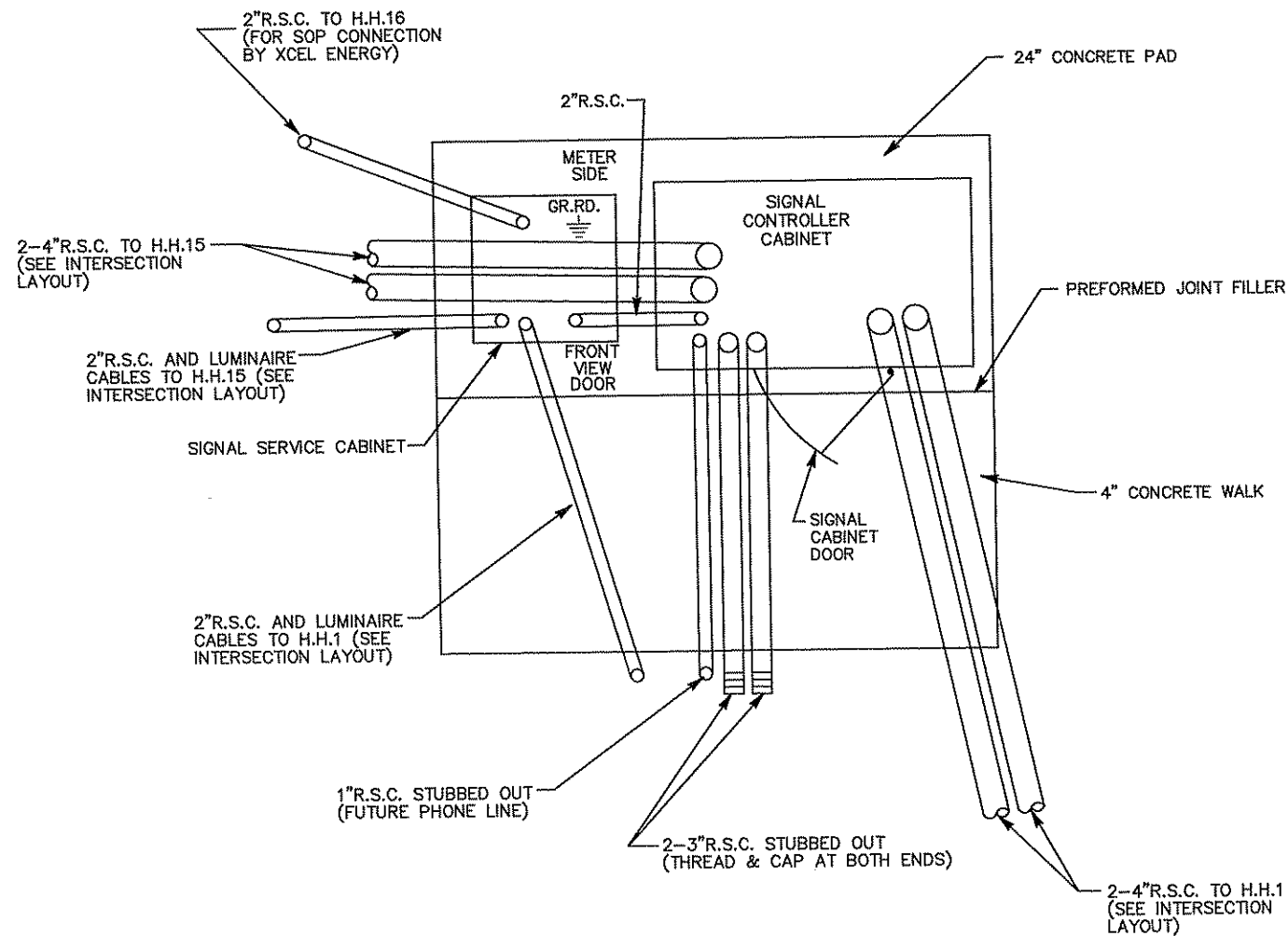
34  
48

# TYPICAL PAD WITH CONTROLLER CABINET AND SERVICE CABINET

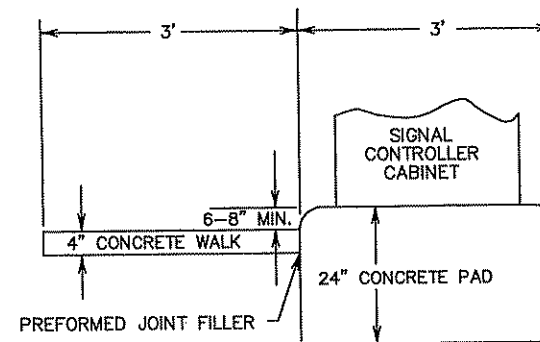
SEE INTERSECTION LAYOUT FOR CABLE INFORMATION (NOT TO SCALE)

## PLAN VIEW

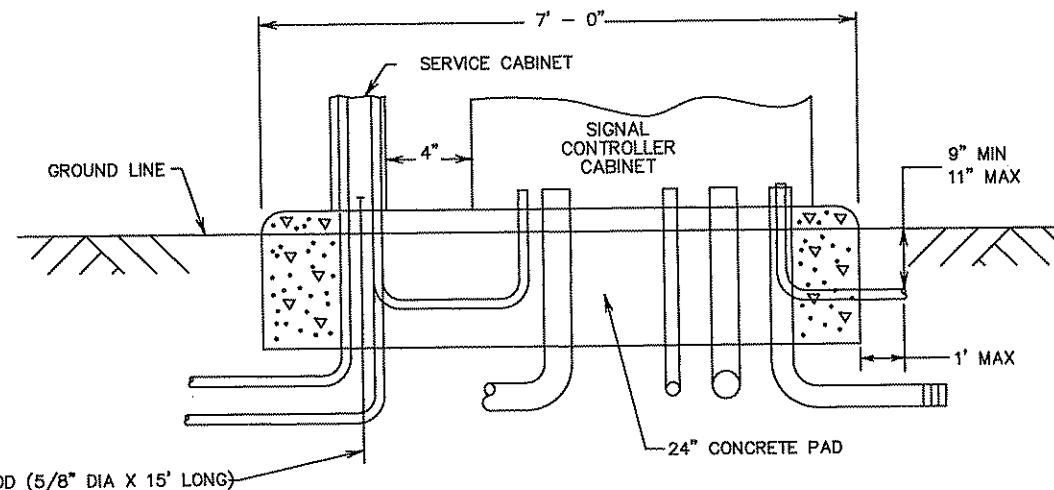
CSAH 1 (COON RAPIDS BLVD NW)  
AT ROUND LAKE BOULEVARD NW



## SIDE VIEW



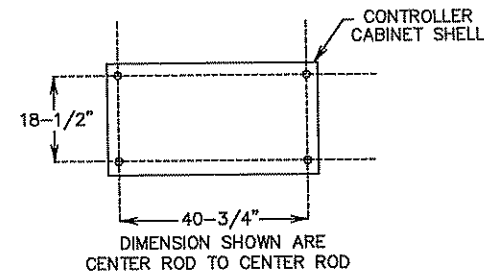
## FRONT VIEW



### NOTES:

1. THE ANCHOR RODS, NUTS AND WASHERS FOR THE COUNTY FURNISHED CONTROLLER AND CABINET SHALL BE FURNISHED BY THE COUNTY AND INSTALLED BY THE CONTRACTOR.
2. THE UPPER PART OF THE NEW EQUIPMENT PAD SHALL BE BEVELLED OR CHAMFERED IN A NEAT MANNER AS DIRECTED BY THE ENGINEER.
3. THE TOP OF THE CONDUITS SHALL BE THREADED AND CAPPED AFTER INSTALLATION (UNTIL CABLES ARE INSTALLED).
4. CONDUIT SHALL PROJECT A MINIMUM OF 2" ABOVE THE CONCRETE AND SHALL BE LOCATED INSIDE THE CABINET WHERE DIRECTED BY THE ENGINEER, BUT SHALL NOT INTERFERE WITH THE CABINET FUNCTIONS (SUPPORTING MEMBERS, ETC.).
5. CONCRETE MIX 3A32 OR EQUAL SHALL BE USED FOR THE EQUIPMENT PAD AND SIDEWALK.
6. CONDUITS WITH BOTH ENDS TERMINATING WITHIN THE PAD SHALL NOT BE INSTALLED BELOW THE CONCRETE.
7. THE EXACT LOCATION OF CONDUITS WITHIN THE PAD SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.
8. ANCHOR RODS SHALL PROJECT A MINIMUM OF 3" ABOVE THE CONCRETE BUT SHALL NOT INTERFERE WITH THE CABINET FUNCTIONS (SUPPORTING MEMBERS, ETC.).
9. CONTRACTOR SHALL PROVIDE MINIMUM 4-INCH CLEARANCE BETWEEN CONTROLLER AND SERVICE CABINETS ON THE EQUIPMENT PAD FOUNDATION AS SHOWN.

### CONTROLLER CABINET TYPE "P" & "R" BOLT PATTERN



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.  
Date: March 29, 2013 Name: John M. Gray, PE Lic. No. 22457

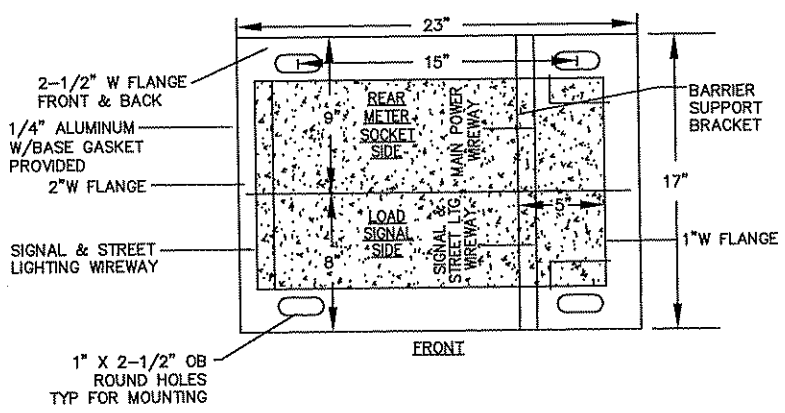
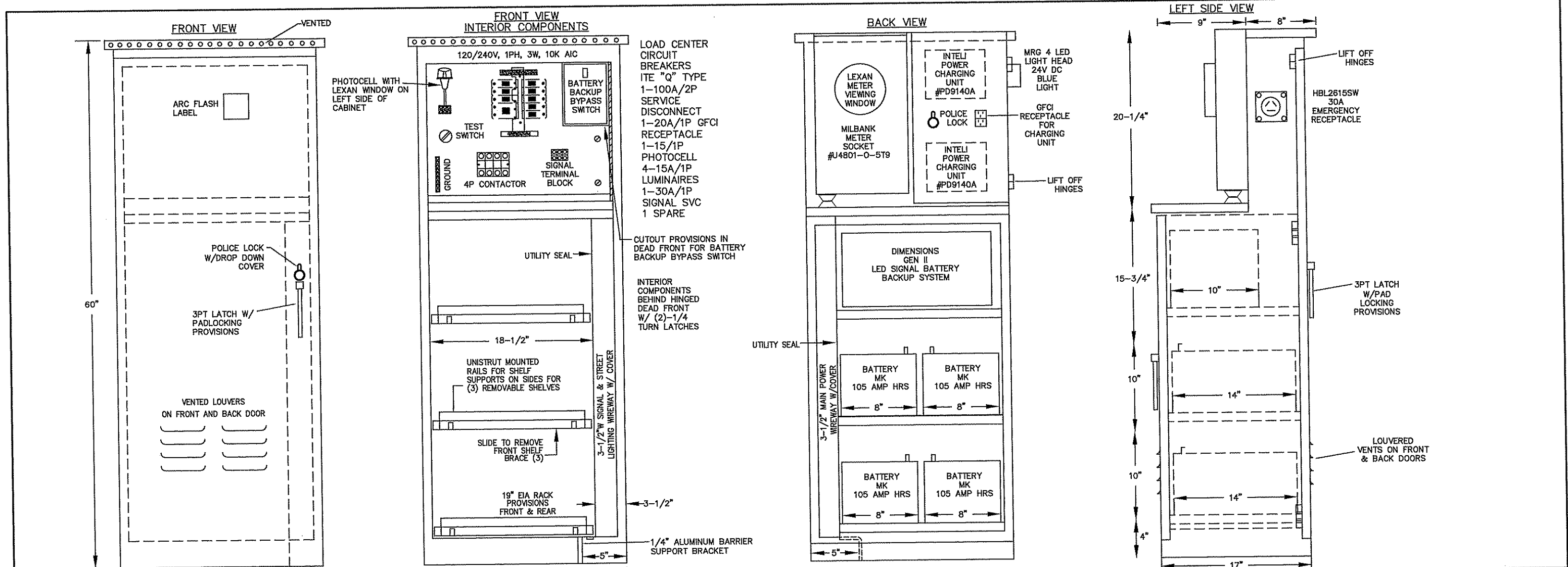
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ANOKA COUNTY,  
MINNESOTA  
CITY OF COON RAPIDS

TRAFFIC SIGNAL SYSTEM  
EQUIPMENT PAD FOUNDATION  
CSAH 1 AT ROUND LAKE BOULEVARD

FILE NO. ANOKC 122916  
SIGNAL SHEET 2 OF 15  
35  
48

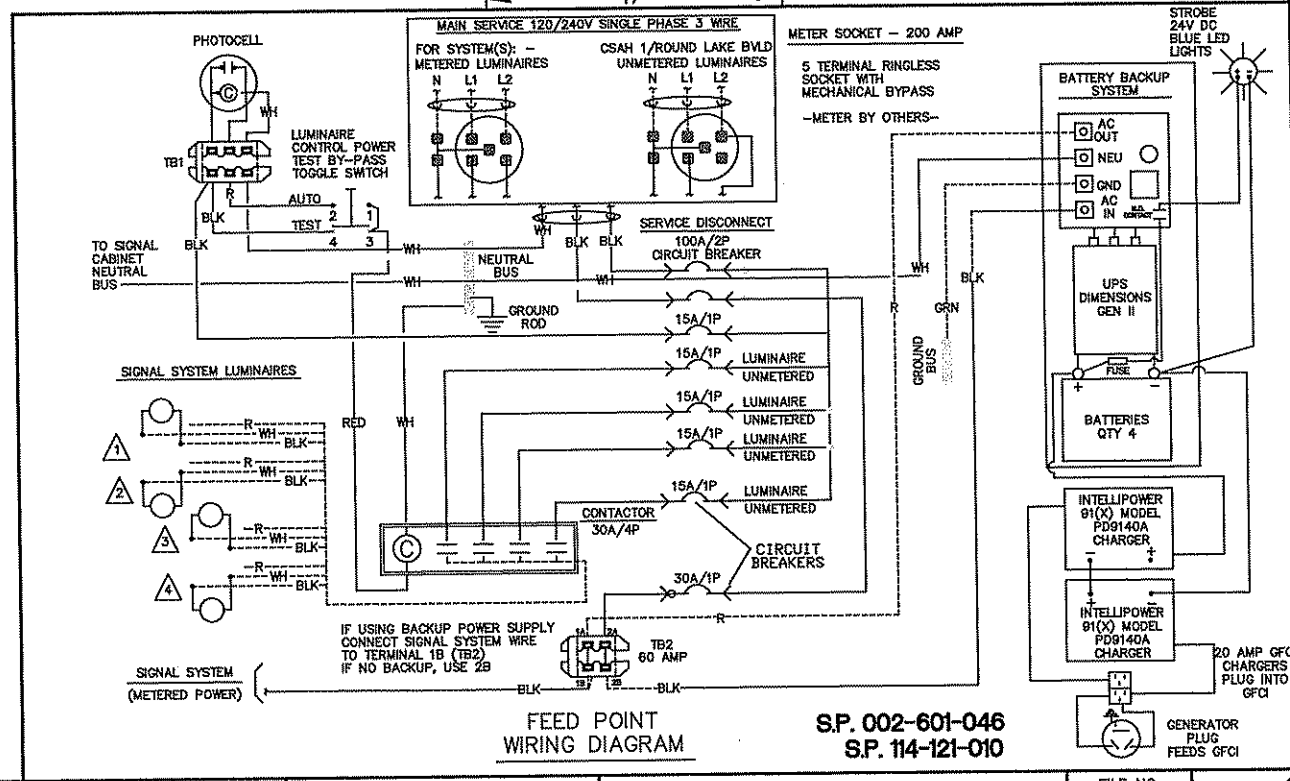
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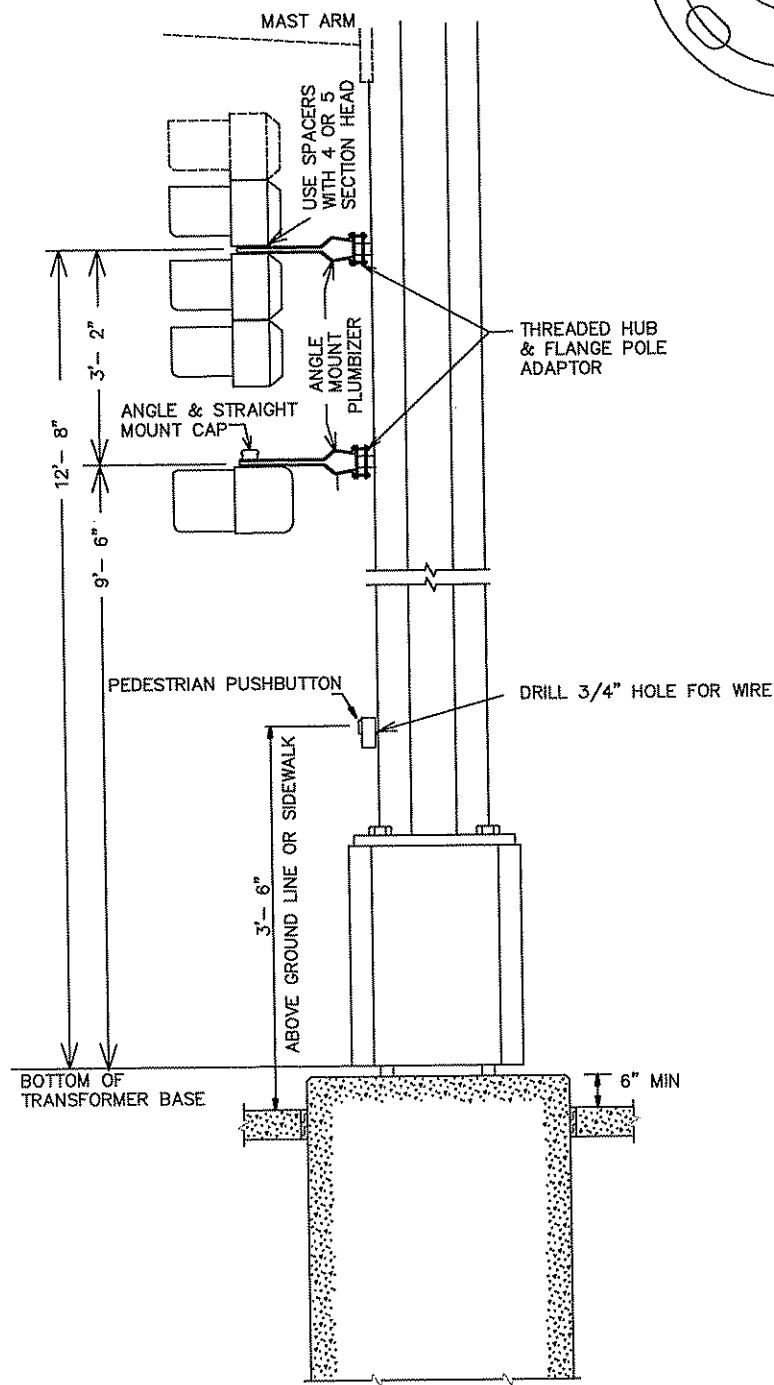


**CABINET CONSTRUCTION**

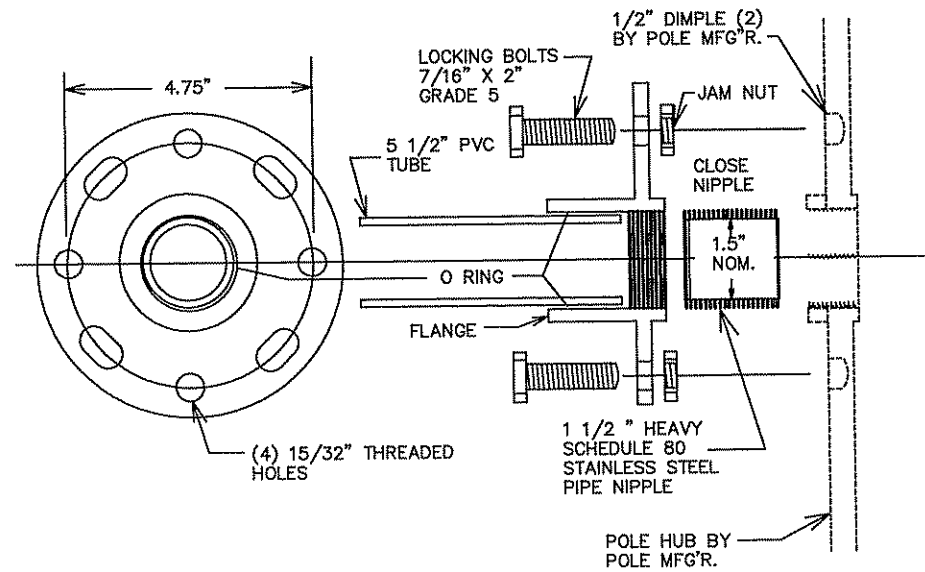
- NEMA 3R
- 1/8" ALUMINUM 5052-H32
- ANODIZED 30 MINUTE CLEAR
- NEOPRENE GASKETED DOORS
- NON-CORRODING HARDWARE
- ETL LISTED IN ACCORDANCE W/UL508A

SEE SPECIAL PROVISIONS AND STATEMENT OF ESTIMATED QUANTITIES REGARDING SEPARATE PAY ITEM FOR FURNISHING & INSTALLING NEW BATTERY BACK-UP SIGNAL SERVICE CABINET.

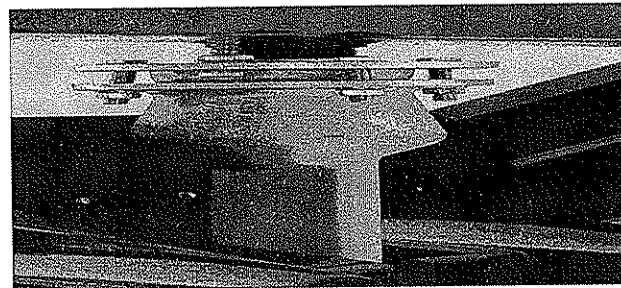




TYPICAL SIGNAL POLE MOUNTING  
NOT TO SCALE

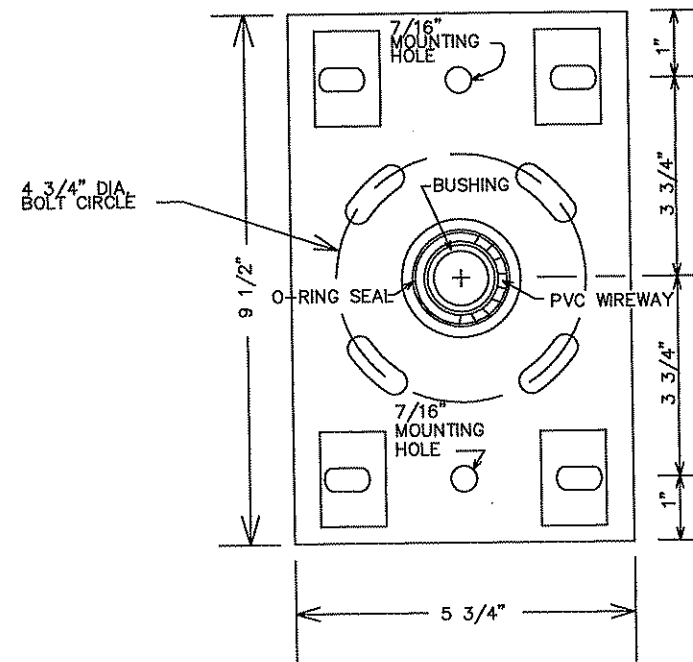


THREADED HUB AND FLANGE POLE ADAPTOR

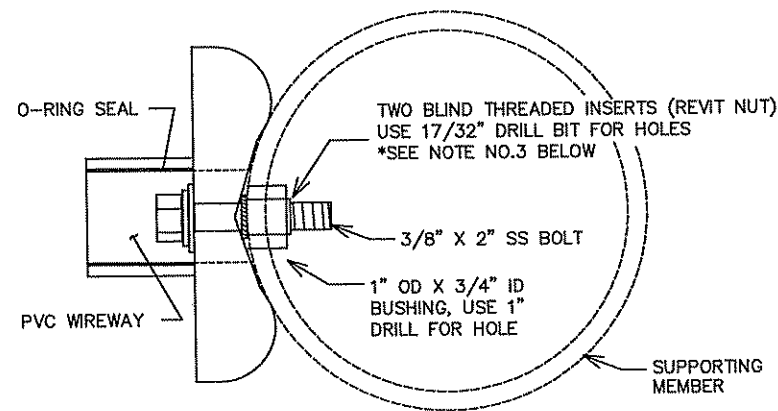


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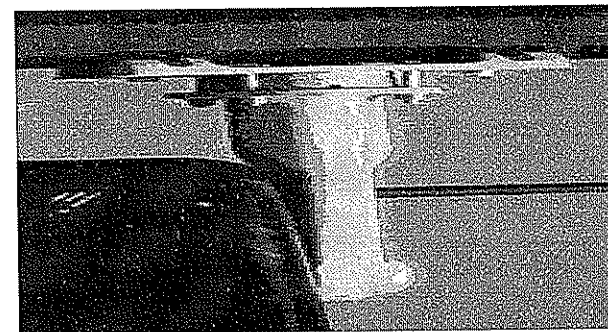
1. ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.
2. USE SIGNAL HEAD MOUNTED SPACERS FOR 4 & 5 SECTION POLY HEADS.
3. SEE STANDARD PLATE NUMBER 8123 FOR ADDITIONAL SIGNAL POLE DETAILS.



BOLT ON HUB & FLANGE

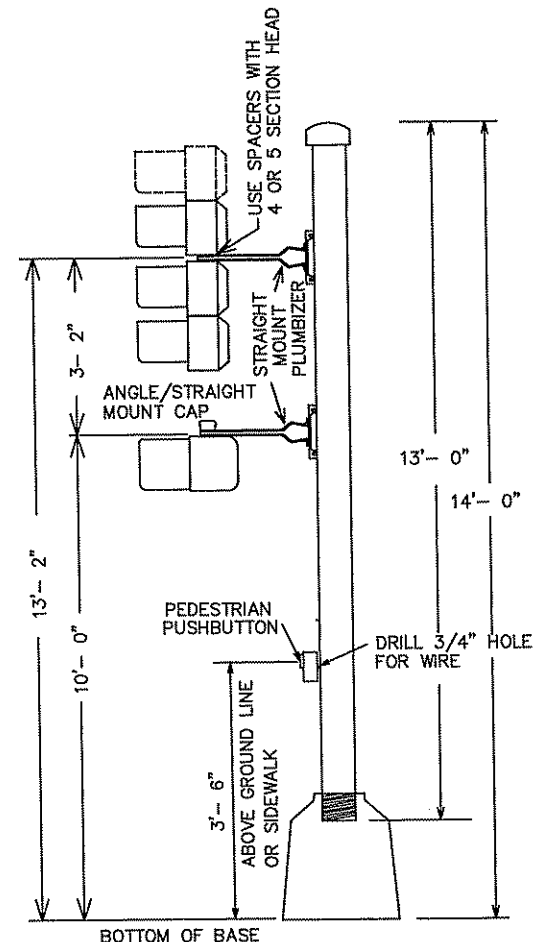
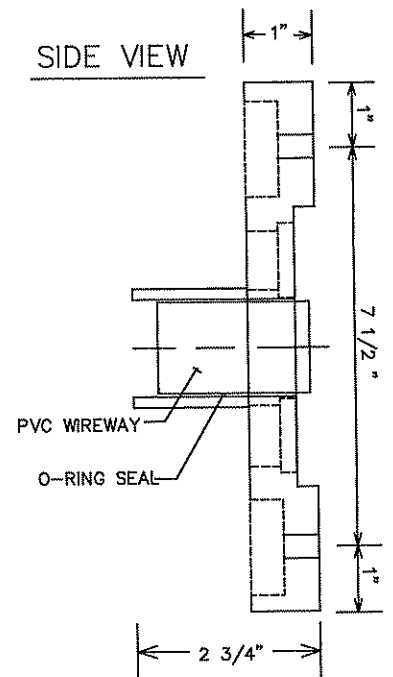


TOP VIEW



NOTE:

1. ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.
2. USE SIGNAL HEAD MOUNTED SPACERS FOR 4 & 5 SECTION POLY HEADS.
3. BLIND THREADED INSERTS (RIVET NUT) MUST BE INSTALLED USING MANUFACTURERS SPECIFIC INSTALLATION TOOL NO OTHER METHOD OF INSTALLATION IS ACCEPTABLE.
4. SEE STANDARD PLATE NUMBER 8122 FOR ADDITIONAL PEDESTAL POLE DETAILS.



TYPICAL PEDESTAL MOUNTING  
NOT TO SCALE

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.  
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CITY OF COON RAPIDS

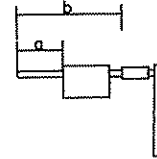
TRAFFIC SIGNAL SYSTEM  
ONE-WAY POLE MOUNT DETAILS  
CSAH 1 AT ROUND LAKE BOULEVARD

FILE NO.  
ANOKC 122916  
SIGNAL SHEET  
4 OF 15

37  
48

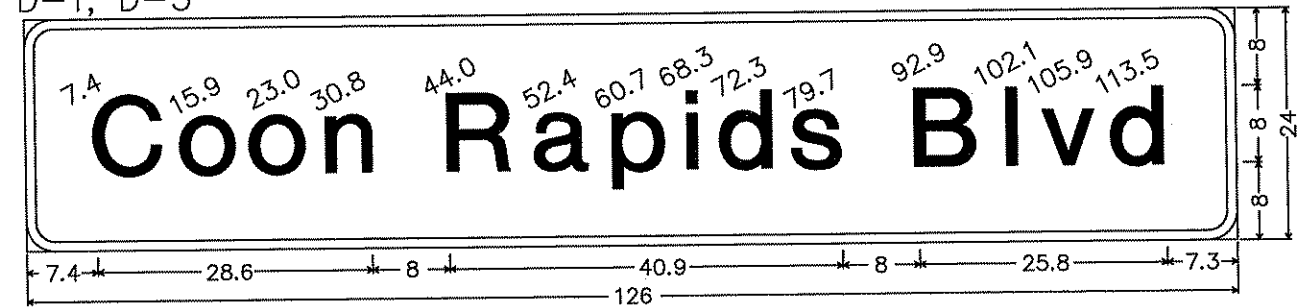
S.P. 002-601-046  
S.P. 114-121-010

MAST ARM MOUNTED SIGNS							
SIGN PANELS - TYPE D (FURNISH AND INSTALL)							
SIGN PANEL	SIZE (inches)	NO. REQ.	BRACKETS PER SIGN	BRACKET SPACING (**)	AREA (sq. ft.) PER SIGN	POLE NO.	a
D-1	126x24	1	5	-	21.00	1	20'
D-2	120x24	1	4	-	20.00	3	28'
D-3	126x24	1	5	-	21.00	5	20'
D-4	120x24	1	4	-	20.00	7	28'
TOTALS		4			82.00		



(\*\*)= SPACING BETWEEN STIFFENERS SHALL NOT EXCEED 36 INCHES AND SHALL BE UNIFORMLY SPACED. SEE SPECIAL PROVISIONS AND STANDARD SIGNS MANUAL, PAGE 105A (REVISION DATE: 7/06/07) FOR BRACKET SPACING REQUIREMENTS.

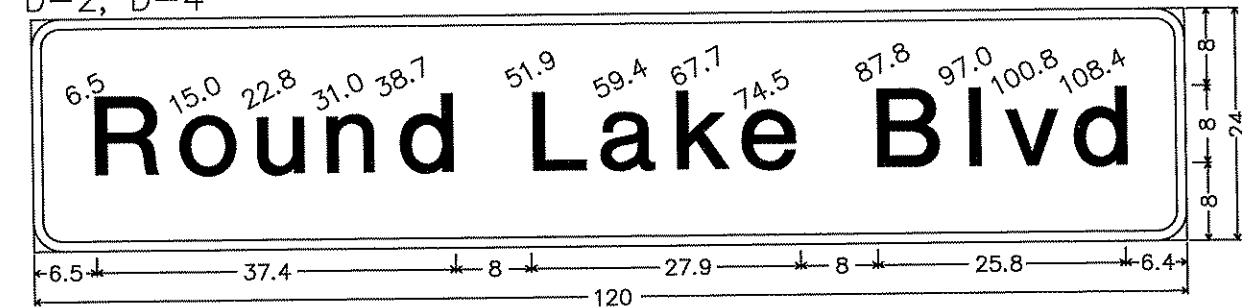
D-1, D-3



3.0" Radius, 1.0" Border, White on Green;  
[Coon Rapids Blvd] E Mod;

SIGNAL SYSTEM MOUNTED SIGNS								
SIGN PANELS - TYPE C (FURNISH AND INSTALL)								
SIGN PANEL	SIZE (in.)	NO. REQ.	NO. POSTS PER SIGN	POST SPACING (in.)	SQ. FT. PER SIGN	POLE NO.	a	PANEL LEGEND
R6-1L	36x12	2	①	-	3.00	3, 7	-	ONE WAY (LEFT)
R10-X12	36x42	4	2	-	10.50	1,3,5,7	1'	LEFT TURN YIELD ON FLASHING YELLOW ARROW
TOTALS		6			48.00			

D-2, D-4

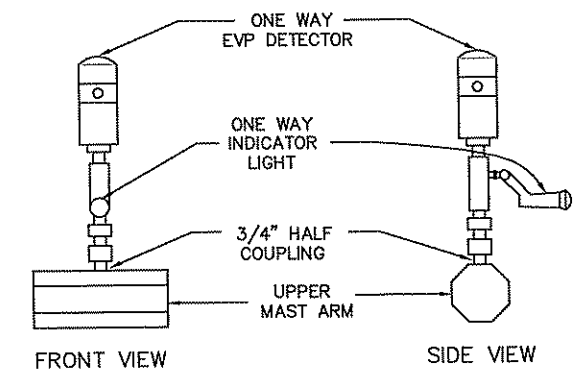


3.0" Radius, 1.0" Border, White on Green;  
[Round Lake Blvd] E Mod;

GENERAL SIGNING NOTES:

- COLOR FOR ALL TYPE D SIGNS SHOWN SHALL BE WHITE LEGEND AND BORDER ON GREEN BACKGROUND, FULLY REFLECTORIZED.
- CORNERS EXTENDING BEYOND THE BORDER SHALL NOT BE TRIMMED.
- FOR STRUCTURAL DETAILS OF MAST ARM MOUNTED SIGNS, SEE STANDARD SIGNS MANUAL, PAGE 105A (REVISION DATE: 7/06/07), AND SPECIAL PROVISIONS.
- SEE STANDARD SIGNS MANUAL FOR DETAILED DRAWINGS OF TYPE C SIGN PANELS.
- FURNISHING AND INSTALLING TYPE C AND D SIGNS AS SHOWN SHALL BE INCLUDED UNDER ITEM NO. 2565 (TRAFFIC CONTROL SIGNAL SYSTEM). SEE SPECIAL PROVISIONS.
- ALL NEW TYPE C AND D SIGN PANELS SHOWN SHALL BE FABRICATED USING DG3 SHEETING. SEE SPECIAL PROVISIONS.
- ①= MOUNT SIGN PANEL ON TRAFFIC SIGNAL MAST ARM POLE.

EVP DETECTOR AND LIGHT MOUNTING DETAIL ON MAST ARM



S.P. 002-601-046  
S.P. 114-121-010

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.

Date: March 28, 2013  
Name: John M. Gray, PE  
Lic. No. 22457

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

ANOKA COUNTY,  
MINNESOTA  
CITY OF COON RAPIDS

TRAFFIC SIGNAL SYSTEM  
SIGNING AND MISCELLANEOUS DETAILS  
CSAH 1 AT ROUND LAKE BOULEVARD

FILE NO.  
ANOKC 122916  
SIGNAL SHEET  
5 OF 15

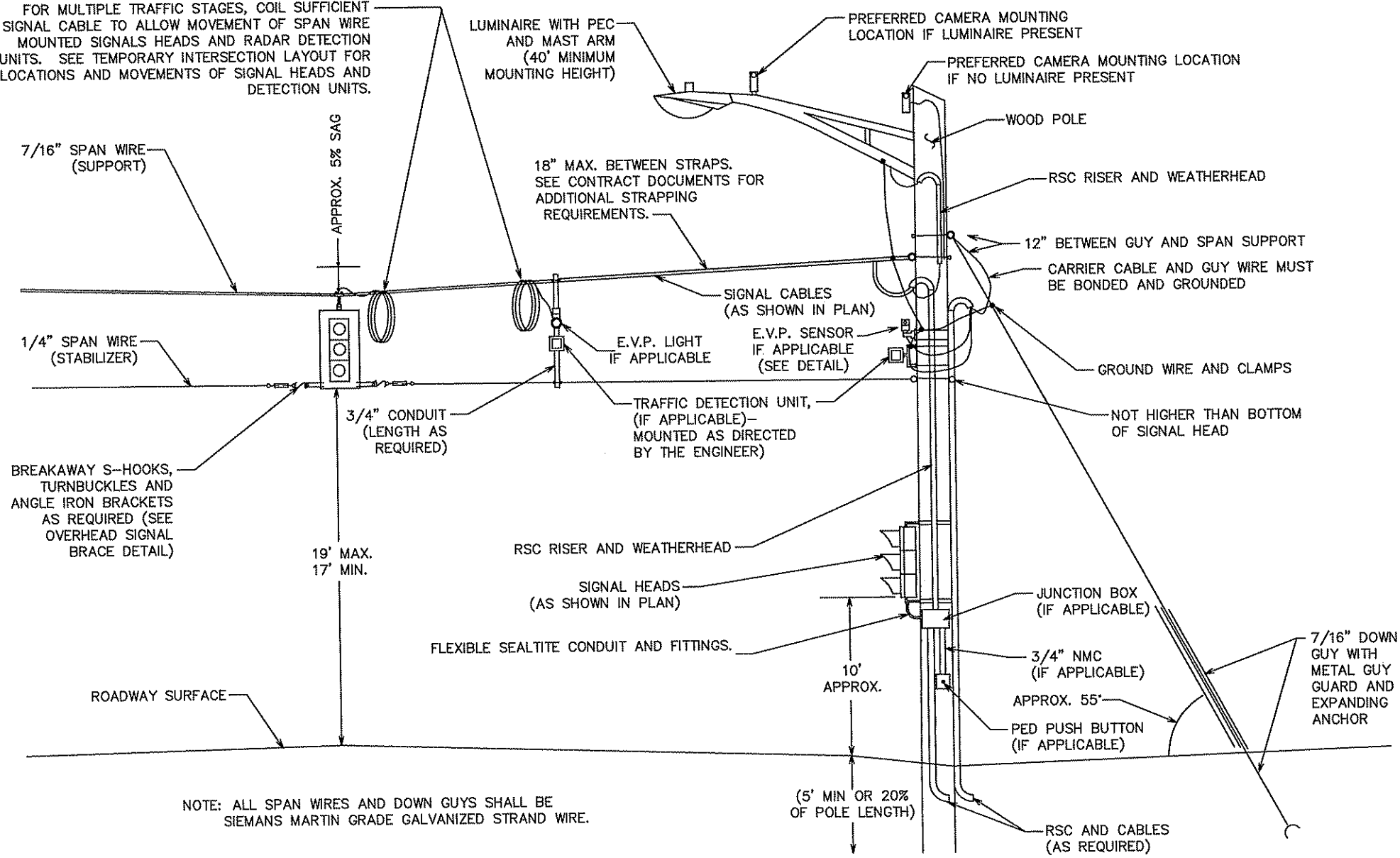
38  
48



### TYPICAL WOOD POLE AND SPAN WIRE MOUNTED TRAFFIC SIGNALS

(NOT TO SCALE)

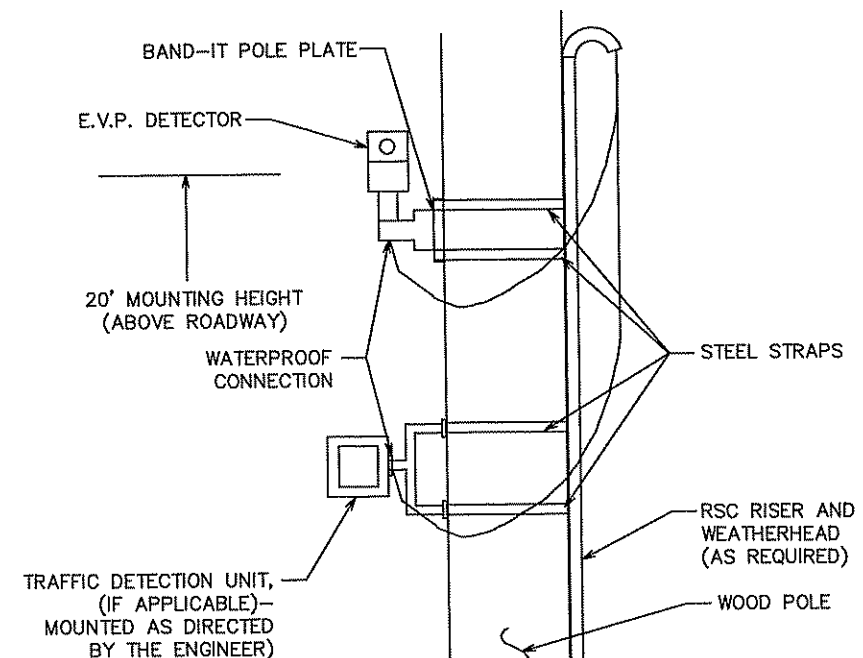
FOR MULTIPLE TRAFFIC STAGES, COIL SUFFICIENT SIGNAL CABLE TO ALLOW MOVEMENT OF SPAN WIRE MOUNTED SIGNALS HEADS AND RADAR DETECTION UNITS. SEE TEMPORARY INTERSECTION LAYOUT FOR LOCATIONS AND MOVEMENTS OF SIGNAL HEADS AND DETECTION UNITS.



NOTE: ALL SPAN WIRES AND DOWN GUYS SHALL BE SIEMANS MARTIN GRADE GALVANIZED STRAND WIRE.

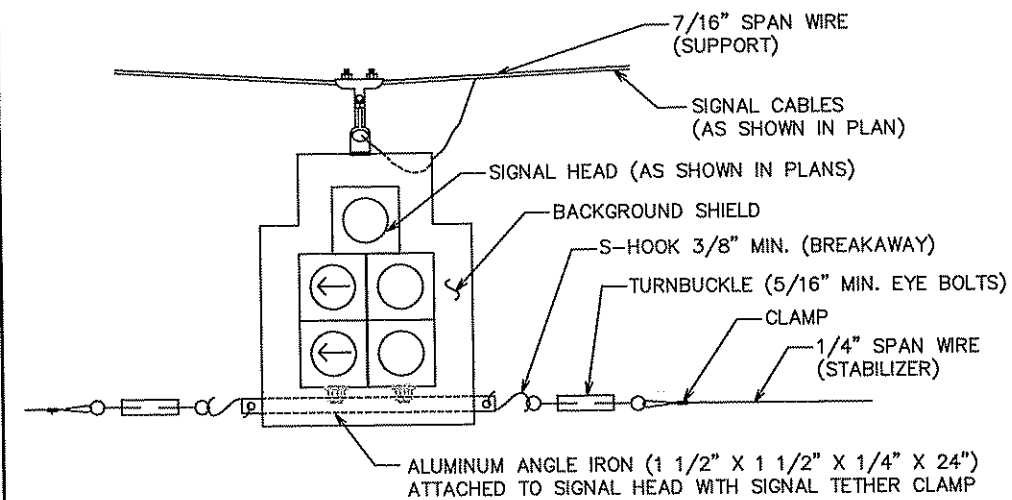
### E.V.P. OR TRAFFIC DETECTOR WOOD POLE MOUNT

(NOT TO SCALE)



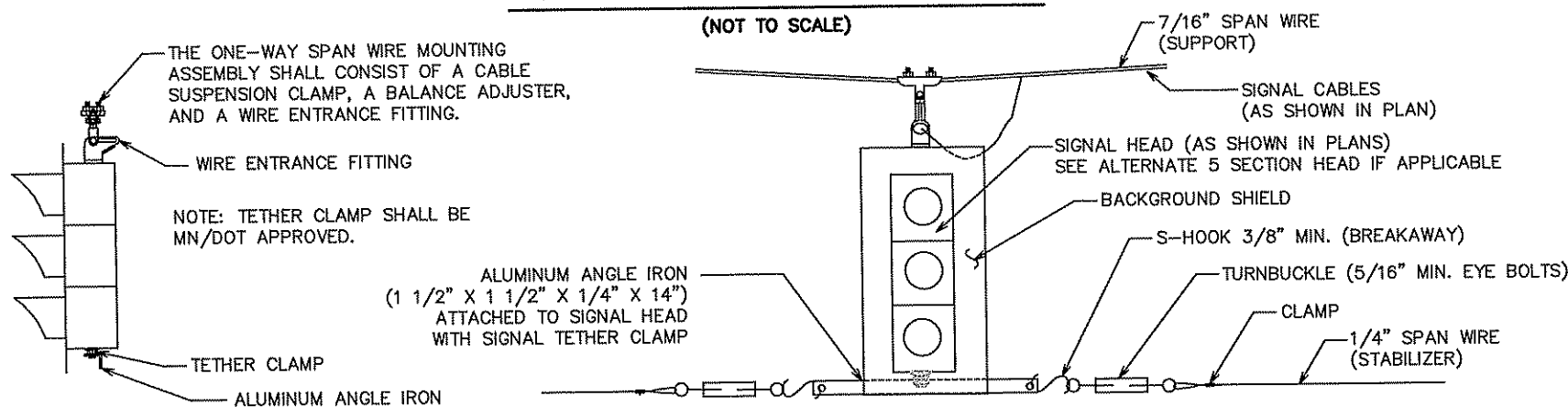
### 5 SECTION HEAD OVERHEAD SIGNAL BRACE DETAIL

(NOT TO SCALE)



### OVERHEAD SIGNAL BRACE DETAIL

(NOT TO SCALE)



DRAWN BY: JMG  
 DESIGNER: JMG  
 CHECKED BY: JMG

DESIGN TEAM	NO.	BY	DATE	REVISIONS

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ANOKA COUNTY,  
 MINNESOTA  
 CITY OF COON RAPIDS

TEMPORARY SIGNAL PROVISIONS  
 WOOD POLE AND SPAN WIRE DETAILS  
 CSAH 1 AT ROUND LAKE BOULEVARD

FILE NO.  
 ANOKC 122916  
 SIGNAL SHEET  
 6 OF 15

39  
 48

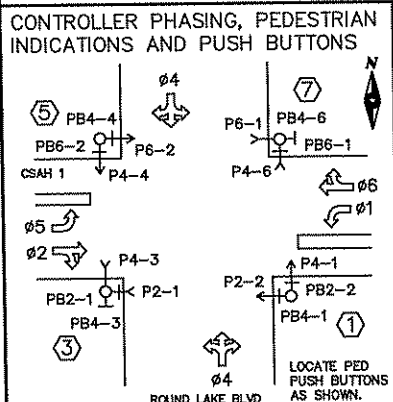
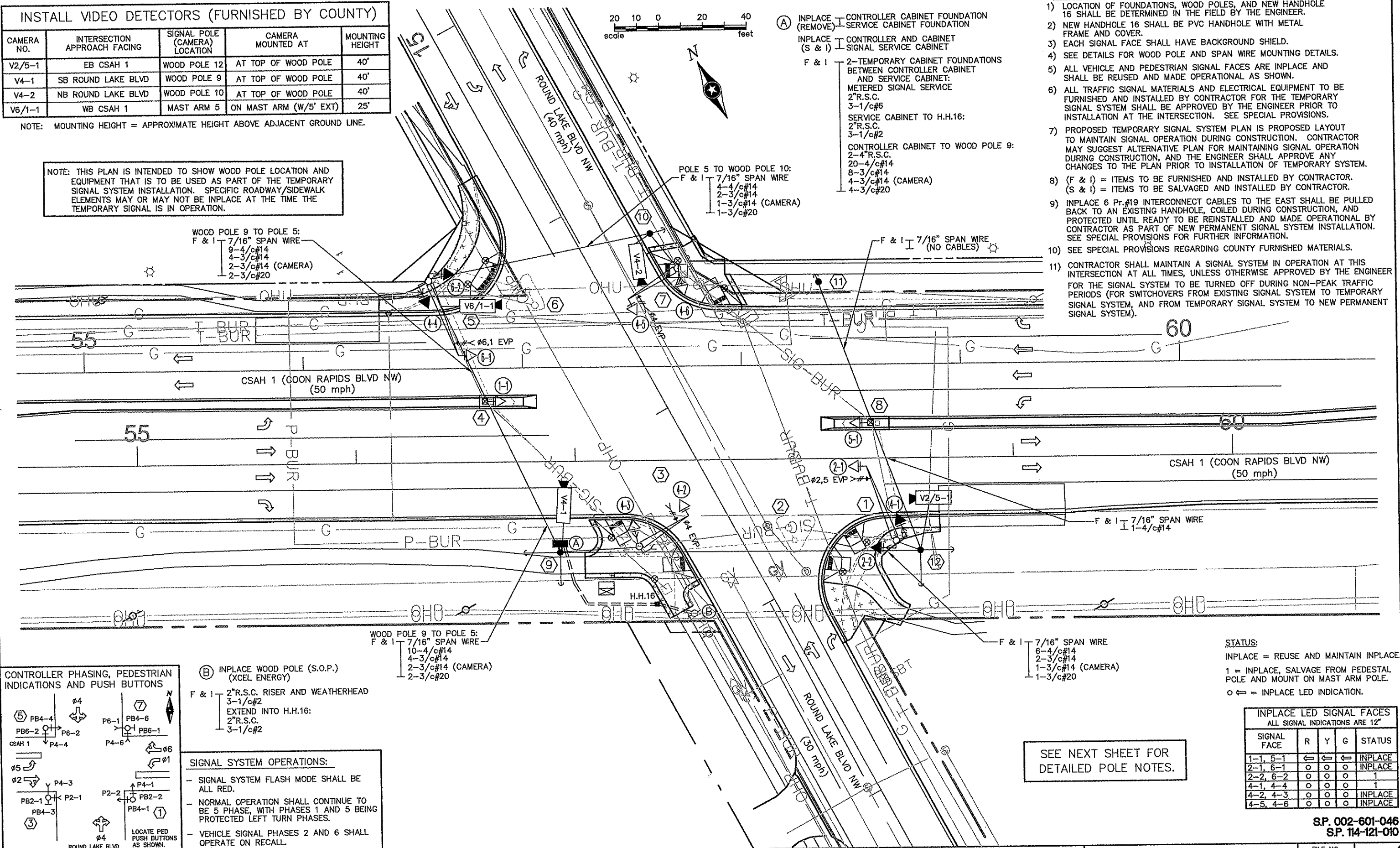
S.P. 002-601-046  
 S.P. 114-121-010

**INSTALL VIDEO DETECTORS (FURNISHED BY COUNTY)**

CAMERA NO.	INTERSECTION APPROACH FACING	SIGNAL POLE (CAMERA) LOCATION	CAMERA MOUNTED AT	MOUNTING HEIGHT
V2/5-1	EB CSAH 1	WOOD POLE 12	AT TOP OF WOOD POLE	40'
V4-1	SB ROUND LAKE BLVD	WOOD POLE 9	AT TOP OF WOOD POLE	40'
V4-2	NB ROUND LAKE BLVD	WOOD POLE 10	AT TOP OF WOOD POLE	40'
V6/1-1	WB CSAH 1	MAST ARM 5	ON MAST ARM (W/5' EXT)	25'

NOTE: MOUNTING HEIGHT = APPROXIMATE HEIGHT ABOVE ADJACENT GROUND LINE.

NOTE: THIS PLAN IS INTENDED TO SHOW WOOD POLE LOCATION AND EQUIPMENT THAT IS TO BE USED AS PART OF THE TEMPORARY SIGNAL SYSTEM INSTALLATION. SPECIFIC ROADWAY/SIDEWALK ELEMENTS MAY OR MAY NOT BE INPLACE AT THE TIME THE TEMPORARY SIGNAL IS IN OPERATION.



(B) INPLACE WOOD POLE (S.O.P.) (XCEL ENERGY)  
 F & I 2" R.S.C. RISER AND WEATHERHEAD  
 3-1/c#2  
 EXTEND INTO H.H.16:  
 2" R.S.C.  
 3-1/c#2

**SIGNAL SYSTEM OPERATIONS:**

- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL CONTINUE TO BE 5 PHASE, WITH PHASES 1 AND 5 BEING PROTECTED LEFT TURN PHASES.
- VEHICLE SIGNAL PHASES 2 AND 6 SHALL OPERATE ON RECALL.

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.  
 Name: John M. Gray, PE  
 Llc. No. 22457  
 Date: March 29, 2015

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

**ANOKA COUNTY, MINNESOTA**  
 CITY OF COON RAPIDS

**TEMPORARY SIGNAL PROVISIONS**  
 INTERSECTION LAYOUT  
 CSAH 1 AT ROUND LAKE BOULEVARD

FILE NO. ANOKC 122916  
 SIGNAL SHEET 7 OF 15  
**40**  
**48**

- NOTES:**
- 1) LOCATION OF FOUNDATIONS, WOOD POLES, AND NEW HANDHOLE 16 SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
  - 2) NEW HANDHOLE 16 SHALL BE PVC HANDHOLE WITH METAL FRAME AND COVER.
  - 3) EACH SIGNAL FACE SHALL HAVE BACKGROUND SHIELD.
  - 4) SEE DETAILS FOR WOOD POLE AND SPAN WIRE MOUNTING DETAILS.
  - 5) ALL VEHICLE AND PEDESTRIAN SIGNAL FACES ARE INPLACE AND SHALL BE REUSED AND MADE OPERATIONAL AS SHOWN.
  - 6) ALL TRAFFIC SIGNAL MATERIALS AND ELECTRICAL EQUIPMENT TO BE FURNISHED AND INSTALLED BY CONTRACTOR FOR THE TEMPORARY SIGNAL SYSTEM SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION AT THE INTERSECTION. SEE SPECIAL PROVISIONS.
  - 7) PROPOSED TEMPORARY SIGNAL SYSTEM PLAN IS PROPOSED LAYOUT TO MAINTAIN SIGNAL OPERATION DURING CONSTRUCTION. CONTRACTOR MAY SUGGEST ALTERNATIVE PLAN FOR MAINTAINING SIGNAL OPERATION DURING CONSTRUCTION, AND THE ENGINEER SHALL APPROVE ANY CHANGES TO THE PLAN PRIOR TO INSTALLATION OF TEMPORARY SYSTEM.
  - 8) (F & I) = ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR. (S & I) = ITEMS TO BE SALVAGED AND INSTALLED BY CONTRACTOR.
  - 9) INPLACE 6 Pr.#19 INTERCONNECT CABLES TO THE EAST SHALL BE PULLED BACK TO AN EXISTING HANDHOLE, COILED DURING CONSTRUCTION, AND PROTECTED UNTIL READY TO BE REINSTALLED AND MADE OPERATIONAL BY CONTRACTOR AS PART OF NEW PERMANENT SIGNAL SYSTEM INSTALLATION. SEE SPECIAL PROVISIONS FOR FURTHER INFORMATION.
  - 10) SEE SPECIAL PROVISIONS REGARDING COUNTY FURNISHED MATERIALS.
  - 11) CONTRACTOR SHALL MAINTAIN A SIGNAL SYSTEM IN OPERATION AT THIS INTERSECTION AT ALL TIMES, UNLESS OTHERWISE APPROVED BY THE ENGINEER FOR THE SIGNAL SYSTEM TO BE TURNED OFF DURING NON-PEAK TRAFFIC PERIODS (FOR SWITCHOVERS FROM EXISTING SIGNAL SYSTEM TO TEMPORARY SIGNAL SYSTEM, AND FROM TEMPORARY SIGNAL SYSTEM TO NEW PERMANENT SIGNAL SYSTEM).

- (A) INPLACE (REMOVE) CONTROLLER CABINET FOUNDATION SERVICE CABINET FOUNDATION  
 INPLACE (S & I) CONTROLLER AND CABINET SIGNAL SERVICE CABINET  
 F & I 2-TEMPORARY CABINET FOUNDATIONS BETWEEN CONTROLLER CABINET AND SERVICE CABINET:  
 METERED SIGNAL SERVICE  
 2" R.S.C.  
 3-1/c#6  
 SERVICE CABINET TO H.H.16:  
 2" R.S.C.  
 3-1/c#2  
 CONTROLLER CABINET TO WOOD POLE 9:  
 2-4" R.S.C.  
 20-4/c#14  
 8-3/c#14  
 4-3/c#14 (CAMERA)  
 4-3/c#20

POLE 5 TO WOOD POLE 10:  
 F & I 7/16" SPAN WIRE  
 4-4/c#14  
 2-3/c#14  
 1-3/c#14 (CAMERA)  
 1-3/c#20

WOOD POLE 9 TO POLE 5:  
 F & I 7/16" SPAN WIRE  
 9-4/c#14  
 4-3/c#14  
 2-3/c#14 (CAMERA)  
 2-3/c#20

WOOD POLE 9 TO POLE 5:  
 F & I 7/16" SPAN WIRE  
 10-4/c#14  
 4-3/c#14  
 2-3/c#14 (CAMERA)  
 2-3/c#20

F & I 7/16" SPAN WIRE  
 6-4/c#14  
 2-3/c#14  
 1-3/c#14 (CAMERA)  
 1-3/c#20

**STATUS:**  
 INPLACE = REUSE AND MAINTAIN INPLACE  
 1 = INPLACE, SALVAGE FROM PEDESTAL POLE AND MOUNT ON MAST ARM POLE.  
 ◯ ⇄ = INPLACE LED INDICATION.

INPLACE LED SIGNAL FACES ALL SIGNAL INDICATIONS ARE 12"				
SIGNAL FACE	R	Y	G	STATUS
1-1, 5-1	⇄	⇄	⇄	INPLACE
2-1, 6-1	○	○	○	INPLACE
2-2, 6-2	○	○	○	1
4-1, 4-4	○	○	○	1
4-2, 4-3	○	○	○	INPLACE
4-5, 4-6	○	○	○	INPLACE

SEE NEXT SHEET FOR DETAILED POLE NOTES.

① INPLACE (MAINTAIN INPLACE) A100 POLE FOUNDATION TYPE A100-A-35 ONE WAY SIGNAL-OVERHEAD (2-1) TYPE D SIGN PANEL-OVERHEAD ONE WAY EVP DETECTOR AND LIGHT (Ø2,5)

INPLACE (S & I) 2-ONE WAY SIGNALS-POLE MOUNTED (FROM PEDESTAL POLE 2) (2-2, 4-1) 2-SETS PEDESTRIAN INDICATIONS-POLE MOUNTED (FROM PEDESTAL POLE 2) (P2-2, P4-1) 2-PEDESTRIAN PUSH BUTTONS (FROM PEDESTAL POLE 2) (PB2-2, PB4-1)

F & I 2-TYPE 10B BRACKETING-POLE MOUNTED 90° AND 180° POLE MOUNTED HUBS AT 90° AND 180° (SHOULD THESE HUBS NOT EXIST ON EXISTING POLE) 2-PEDESTRIAN INSTRUCTION SIGNS (R10-3e) 7/16" SPAN WIRE TO WOOD POLE 13: 5-4/c#14 2-3/c#14 1-3/c#20

② INPLACE (REMOVE) PEDESTAL FOUNDATION PEDESTAL POLE AND BASE TYPE 2C BRACKETING 2-PEDESTRIAN INSTRUCTION SIGNS

INPLACE (S & I) 2-ONE WAY SIGNALS (RELOCATE TO MAST ARM POLE 1) (2-2, 4-1) 2-SETS PEDESTRIAN INDICATIONS (RELOCATE TO MAST ARM POLE 1) (P2-2, P4-1) 2-PEDESTRIAN PUSH BUTTONS (RELOCATE TO MAST ARM POLE 1) (PB2-2, PB4-1)

③ INPLACE (MAINTAIN INPLACE) A100 POLE FOUNDATION TYPE A100-A-25 ONE WAY SIGNAL-OVERHEAD (4-2) TYPE 30A-POLE MOUNTED 90° (P2-1) TYPE 10B-POLE MOUNTED 180° (4-3, P4-3) 2-PEDESTRIAN PUSH BUTTONS & SIGNS ONE WAY EVP DETECTOR AND LIGHT (Ø4)

F & I 7/16" SPAN WIRE TO WOOD POLE 9: 4-4/c#14 2-3/c#14 1-3/c#20

④ INPLACE (MAINTAIN INPLACE) PEDESTAL FOUNDATION PEDESTAL POLE AND BASE TYPE 1A (1-1) R4-7 SIGN PANEL-POLE MOUNTED

F & I 7/16" SPAN WIRE DROP FROM OVERHEAD WIRE TO TOP OF PEDESTAL POLE: 1-4/c#14

⑤ INPLACE (MAINTAIN INPLACE) A100 POLE FOUNDATION TYPE A100-A-35 ONE WAY SIGNAL-OVERHEAD (6-1) TYPE D SIGN PANEL-OVERHEAD ONE WAY EVP DETECTOR AND LIGHT (Ø6,1)

INSTALL (FURNISHED BY COUNTY) 1-VIDEO DETECTOR CAMERA-MAST ARM MOUNTED (FACING WB TRAFFIC) (V6/1-1)

INPLACE (S & I) 2-ONE WAY SIGNALS-POLE MOUNTED (FROM PEDESTAL POLE 6) (6-2, 4-4) 2-SETS PEDESTRIAN INDICATIONS-POLE MOUNTED (FROM PEDESTAL POLE 6) (P6-2, P4-4) 2-PEDESTRIAN PUSH BUTTONS (FROM PEDESTAL POLE 6) (PB6-2, PB4-4)

F & I 2-TYPE 10B BRACKETING-POLE MOUNTED 90° AND 180° POLE MOUNTED HUBS AT 90° AND 180° (SHOULD THESE HUBS NOT EXIST ON EXISTING POLE) 2-PEDESTRIAN INSTRUCTION SIGNS (R10-3e) MOUNTING HARDWARE/5' EXTENSION FOR MAST ARM MOUNTING OF VIDEO DETECTOR CAMERA EXTEND TO TOP OF MAST ARM POLE: 5-4/c#14 2-3/c#14 1-3/c#20 1-3/c#14 (CAMERA)

⑥ INPLACE (REMOVE) PEDESTAL FOUNDATION PEDESTAL POLE AND BASE TYPE 2C BRACKETING 2-PEDESTRIAN INSTRUCTION SIGNS

INPLACE (S & I) 2-ONE WAY SIGNALS (RELOCATE TO MAST ARM POLE 5) (6-2, 4-4) 2-SETS PEDESTRIAN INDICATIONS (RELOCATE TO MAST ARM POLE 5) (P6-2, P4-4) 2-PEDESTRIAN PUSH BUTTONS (RELOCATE TO MAST ARM POLE 5) (PB6-2, PB4-4)

⑦ INPLACE (MAINTAIN INPLACE) A100 POLE FOUNDATION TYPE A100-A-25 ONE WAY SIGNAL-OVERHEAD (4-5) TYPE 30A-POLE MOUNTED 90° (P6-1) TYPE 10B-POLE MOUNTED 180° (4-6, P4-6) 2-PEDESTRIAN PUSH BUTTONS & SIGNS ONE WAY EVP DETECTOR AND LIGHT (Ø4)

F & I 7/16" SPAN WIRE TO WOOD POLE 11: 4-4/c#14 2-3/c#14 1-3/c#20

⑧ INPLACE (MAINTAIN INPLACE) PEDESTAL FOUNDATION PEDESTAL POLE AND BASE TYPE 1A (5-1) R4-7 SIGN PANEL-POLE MOUNTED

F & I 7/16" SPAN WIRE DROP FROM OVERHEAD WIRE TO TOP OF PEDESTAL POLE: 1-4/c#14

⑨ INSTALL (FURNISHED BY COUNTY) 1-VIDEO DETECTOR CAMERA-WOOD POLE MOUNTED (FACING SB TRAFFIC) (V4-1)

F & I 50' WOOD POLE-CLASS 2 2-DOWN GUYS, GUARDS, AND EXPANDING ANCHORS MOUNTING HARDWARE FOR WOOD POLE MOUNTING OF VIDEO DETECTOR CAMERA 1-3/c#14 (CAMERA) 7/16" SPAN WIRE TO MAST ARM POLE 3 (SEE POLE 3 NOTES FOR CABLES) EXTEND FROM WOOD POLE TO CABINET PAD: 2-4"R.S.C. RISERS AND WEATHERHEADS 20-4/c#14 8-3/c#14 4-3/c#14 (CAMERA) 4-3/c#20

⑩ INSTALL (FURNISHED BY COUNTY) 1-VIDEO DETECTOR CAMERA-WOOD POLE MOUNTED (FACING NB TRAFFIC) (V4-2)

F & I 50' WOOD POLE-CLASS 2 1-SIDEWALK GUY, GUARD, AND EXPANDING ANCHOR MOUNTING HARDWARE FOR WOOD POLE MOUNTING OF VIDEO DETECTOR CAMERA 1-3/c#14 (CAMERA) 7/16" SPAN WIRE TO MAST ARM POLE 7 (SEE POLE 7 NOTES FOR CABLES)

⑪ F & I 50' WOOD POLE-CLASS 2 1-SIDEWALK GUY, GUARD, AND EXPANDING ANCHOR

⑫ INSTALL (FURNISHED BY COUNTY) 1-VIDEO DETECTOR CAMERA-WOOD POLE MOUNTED (FACING EB TRAFFIC) (V2/5-1)

F & I 50' WOOD POLE-CLASS 2 2-DOWN GUYS, GUARDS, AND EXPANDING ANCHORS MOUNTING HARDWARE FOR WOOD POLE MOUNTING OF VIDEO DETECTOR CAMERA 1-3/c#14 (CAMERA) 7/16" SPAN WIRE TO MAST ARM POLE 1 (SEE POLE 1 NOTES FOR CABLES)

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

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*John M. Gray*  
 Name: John M. Gray, PE  
 Date: March 29, 2013  
 Lic. No. 22457



ANOKA COUNTY,  
 MINNESOTA  
 CITY OF COON RAPIDS

TEMPORARY SIGNAL PROVISIONS  
 INTERSECTION LAYOUT  
 CSAH 1 AT ROUND LAKE BOULEVARD

FILE NO. ANOKC 122916  
 SIGNAL SHEET 8 OF 15  
 41  
 48

S.P. 002-601-046  
 S.P. 114-121-010





F & I N.M.C. LOOP DETECTORS			
NUMBER	SIZE (FT.)	LOCATION	FUNCTION
D1-1	2-6x6	20' & 50'	1
D1-2	2-6x6	5' & 35'	1
D2-1	6x6	400'	1
D2-2	6x6	400'	1
D3-1	2-6x6	20' & 50'	1
D3-2	2-6x6	5' & 35'	7
D4-1	6x6	250'	3,8
D4-2	6x6	250'	3,8
D4-3	6x12&6x6	0' & 10'	7
D5-1	2-6x6	20' & 50'	1
D5-2	2-6x6	5' & 35'	1
D6-1	6x6	400'	1
D6-2	6x6	400'	1
D7-1	2-6x6	20' & 50'	1
D7-2	2-6x6	5' & 35'	7
D8-1	6x6	120'	3,8
D8-2	6x12&6x6	0' & 10'	7

- LOOP DETECTORS FUNCTIONS:**
- 1) CALL AND EXTEND
  - 3) EXTEND ONLY
  - 7) DELAYED CALL, IMMEDIATE EXTEND
  - 8) CARRY OVER (STRETCH)

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

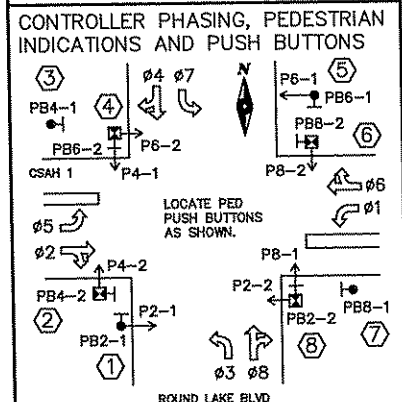
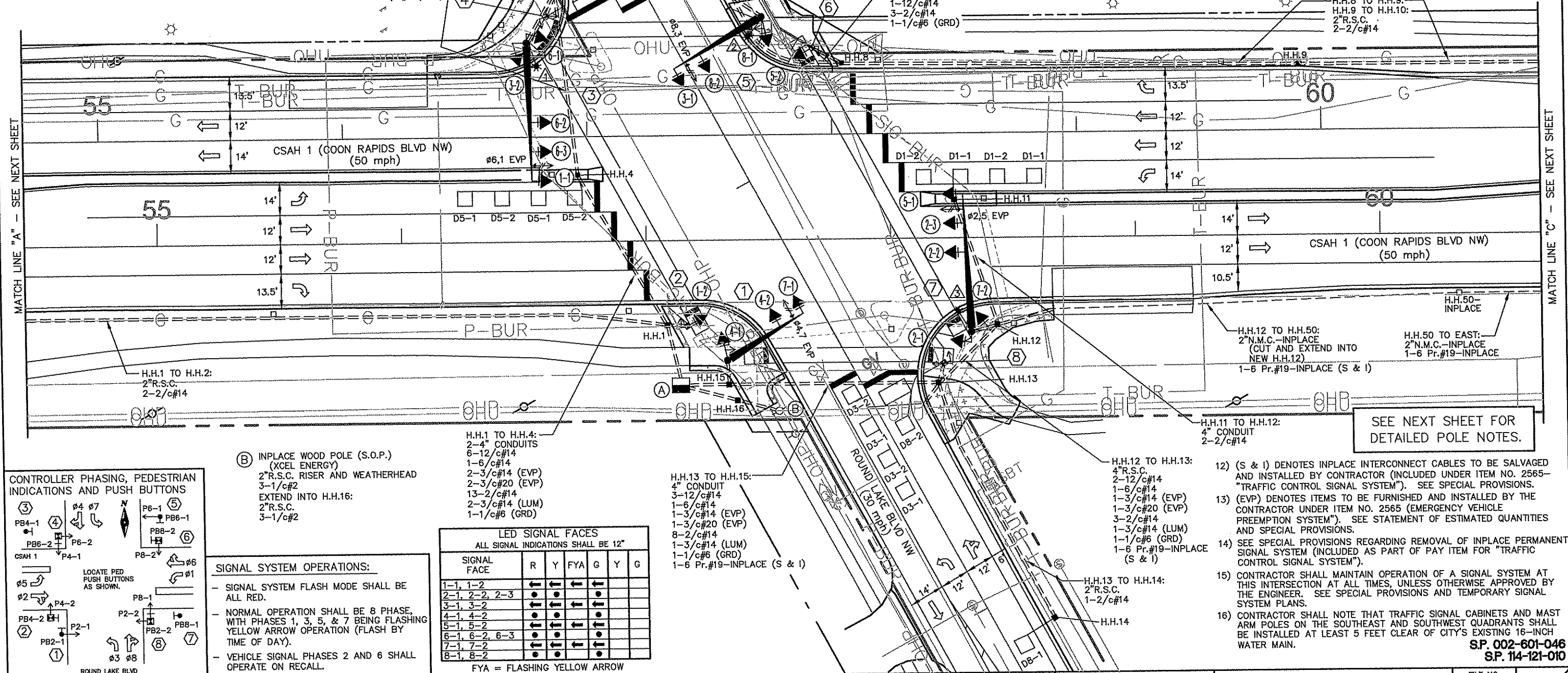


MATCH LINE "B" - SEE NEXT SHEET

- SERVICE CABINET TO H.H.1: 2"R.S.C.
- UNMETERED STREET LIGHT SERVICE 2-3/c#14 (LUM)
- SERVICE CABINET TO H.H.15: 2"R.S.C.
- UNMETERED STREET LIGHT SERVICE 1-3/c#14 (LUM)
- SERVICE CABINET TO H.H.16: 2"R.S.C.
- 3-1/c#2
- STUB OUT 3"R.S.C. FROM CONTROLLER CABINET TO NORTH (THREAD AND CAP-FOR FUTURE USE)
- STUB OUT 1"R.S.C. FROM CONTROLLER CABINET (FOR FUTURE PHONE LINE BY OTHERS)

- (A) INSTALL CONTROLLER AND CABINET (FURNISHED BY COUNTY) EQUIPMENT PAD FOUNDATION BATTERY BACK-UP SIGNAL SERVICE CABINET BETWEEN CONTROLLER CABINET AND SERVICE CABINET: METERED SIGNAL SERVICE**
- CONTROLLER CABINET TO H.H.1:  
 4"R.S.C. 4"R.S.C.  
 4-12/c#14 3-12/c#14  
 1-6/c#14 1-3/c#14 (EVP)  
 1-3/c#14 (EVP) 1-3/c#20 (EVP)  
 1-3/c#20 (EVP) 4-2/c#14  
 12-2/c#14  
 1-1/c#6 (GRD.)
- CONTROLLER CABINET TO H.H.15:  
 4"R.S.C. 4"R.S.C.  
 2-12/c#14 3-12/c#14  
 1-3/c#14 (EVP) 1-6/c#14  
 1-3/c#20 (EVP) 1-3/c#14 (EVP)  
 1-2/c#14 1-3/c#20 (EVP)  
 1-1/c#6 (GRD.) 8-2/c#14  
 1-6 Pr.#19-INPLACE (S & I)

- NOTES:**
- 1) THE EXACT LOCATION OF HANDHOLES, FOUNDATIONS, AND LOOP DETECTORS SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
  - 2) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
  - 3) NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS.
  - 4) A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE, AND CONDUIT OUTLET BODY SHALL BE FURNISHED AND INSTALLED 6 FEET FROM THE END OF EACH MAST ARM (FOR EVP).
  - 5) THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE POWER COMPANY TO ARRANGE FOR THE POWER CONNECTION (XCEL ENERGY). SEE SPECIAL PROVISIONS.
  - 6) SEE SPECIAL PROVISIONS AND DETAILS REGARDING SIGNS TO BE FURNISHED AND INSTALLED BY CONTRACTOR (INCLUDED AS PART OF PAY ITEM FOR "TRAFFIC CONTROL SIGNAL SYSTEM").
  - 7) EACH PEDESTRIAN INDICATION SHALL BE ONE SECTION FILLED COUNTDOWN TIMER "HAND/WALKING PERSON" INDICATION.
  - 8) ALL VEHICLE AND PEDESTRIAN SIGNAL INDICATIONS SHALL BE LED.
  - 9) EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.
  - 10) SEE DETAILS, SPECIAL PROVISIONS, AND STATEMENT OF ESTIMATED QUANTITIES REGARDING BATTERY BACK-UP SIGNAL SERVICE CABINET TO BE FURNISHED AND INSTALLED BY CONTRACTOR (SEPARATE FROM ITEM NO. 2565 FOR THIS SIGNAL SYSTEM).
  - 11) LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) IN 3/4" N.M.C. SEE SPECIAL PROVISIONS.



- (B) INPLACE WOOD POLE (S.O.P.) (XCEL ENERGY) 2"R.S.C. RISER AND WEATHERHEAD 3-1/c#2 EXTEND INTO H.H.16: 2"R.S.C. 3-1/c#2**
- SIGNAL SYSTEM OPERATIONS:**
- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
  - NORMAL OPERATION SHALL BE 8 PHASE, WITH PHASES 1, 3, 5, & 7 BEING FLASHING YELLOW ARROW OPERATION (FLASH BY TIME OF DAY).
  - VEHICLE SIGNAL PHASES 2 AND 6 SHALL OPERATE ON RECALL.

**LED SIGNAL FACES**  
ALL SIGNAL INDICATIONS SHALL BE 12"

SIGNAL FACE	R	Y	FYA	G	Y	G
1-1, 1-2	←	←	←	←		
2-1, 2-2, 2-3	•	•	•	•		
3-1, 3-2	←	←	←	←		
4-1, 4-2	•	•	•	•		
5-1, 5-2	←	←	←	←		
6-1, 6-2, 6-3	•	•	•	•		
7-1, 7-2	←	←	←	←		
8-1, 8-2	•	•	•	•		

FYA = FLASHING YELLOW ARROW

SEE NEXT SHEET FOR DETAILED POLE NOTES.

- 12) (S & I) DENOTES INPLACE INTERCONNECT CABLES TO BE SALVAGED AND INSTALLED BY CONTRACTOR (INCLUDED UNDER ITEM NO. 2565-"TRAFFIC CONTROL SIGNAL SYSTEM"). SEE SPECIAL PROVISIONS.
- 13) (EVP) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (EMERGENCY VEHICLE PREEMPTION SYSTEM"). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- 14) SEE SPECIAL PROVISIONS REGARDING REMOVAL OF INPLACE PERMANENT SIGNAL SYSTEM (INCLUDED AS PART OF PAY ITEM FOR "TRAFFIC CONTROL SIGNAL SYSTEM").
- 15) CONTRACTOR SHALL MAINTAIN OPERATION OF A SIGNAL SYSTEM AT THIS INTERSECTION AT ALL TIMES, UNLESS OTHERWISE APPROVED BY THE ENGINEER. SEE SPECIAL PROVISIONS AND TEMPORARY SIGNAL SYSTEM PLANS.
- 16) CONTRACTOR SHALL NOTE THAT TRAFFIC SIGNAL CABINETS AND MAST ARM POLES ON THE SOUTHEAST AND SOUTHWEST QUADRANTS SHALL BE INSTALLED AT LEAST 5 FEET CLEAR OF CITY'S EXISTING 16-INCH WATER MAIN.

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.

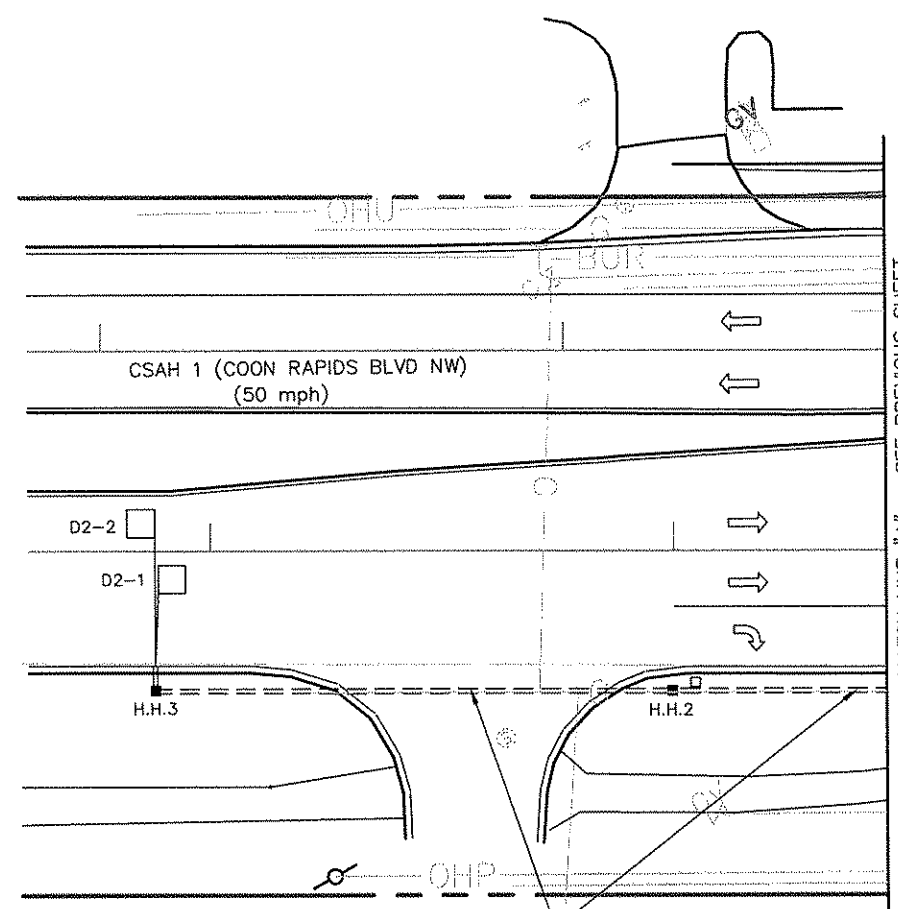
*John M. Gray*  
 Name: John M. Gray, PE  
 Lc. No. 22457  
 Date: March 29, 2013

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

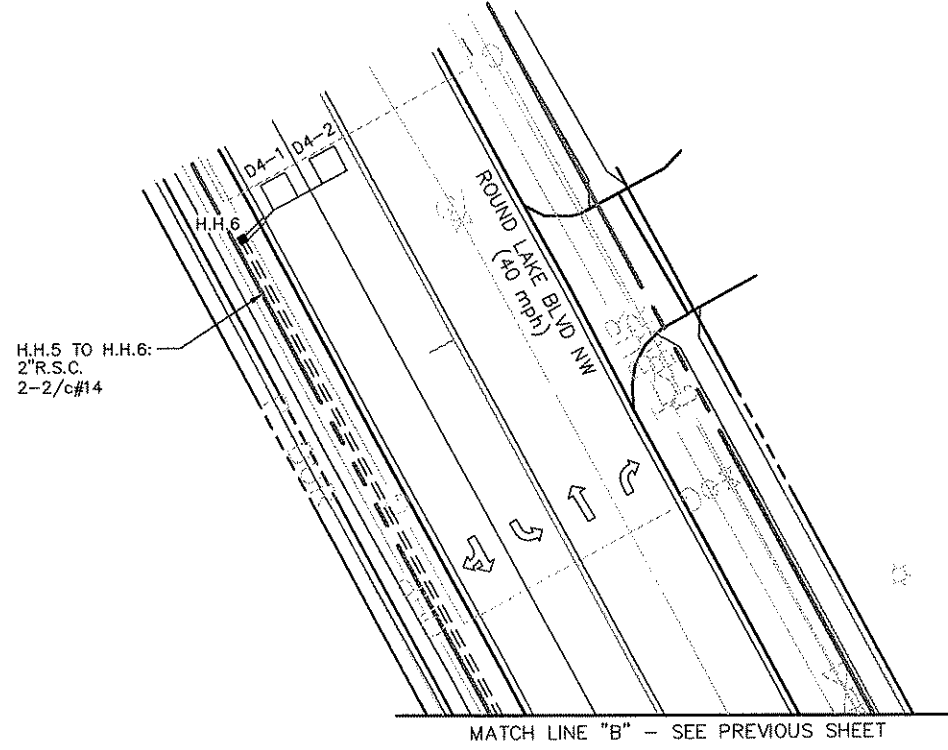
**ANOKA COUNTY, MINNESOTA**  
**CITY OF COON RAPIDS**

**TRAFFIC SIGNAL SYSTEM INTERSECTION LAYOUT**  
**CSAH 1 AT ROUND LAKE BOULEVARD**

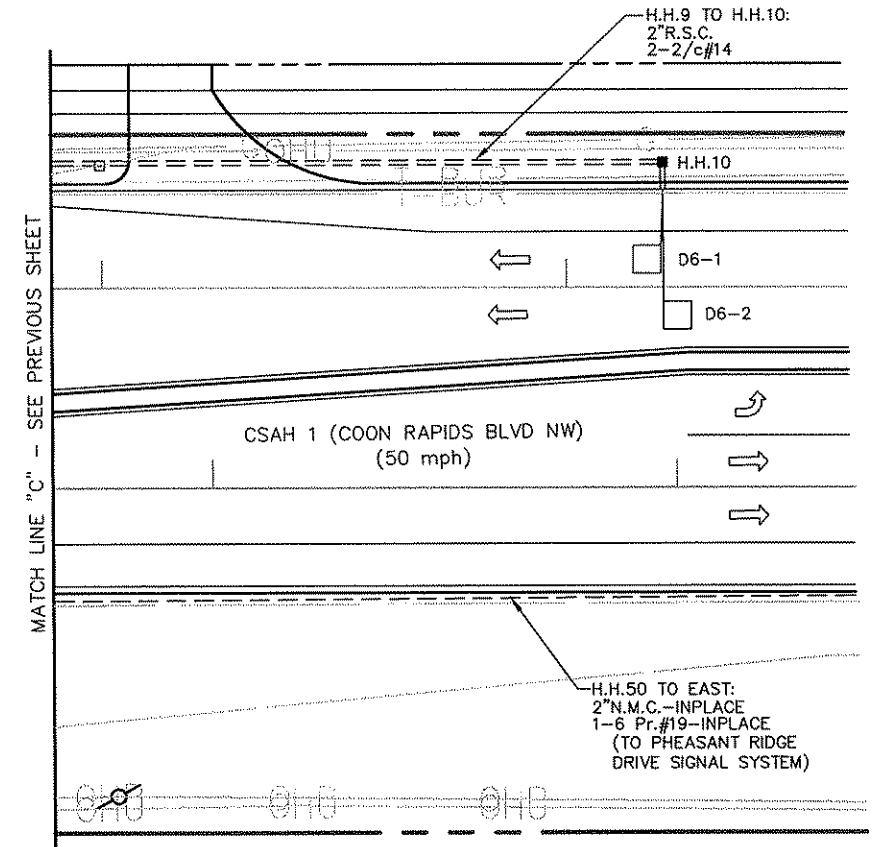
FILE NO. ANOKC 122916  
 SIGNAL SHEET 10 OF 15  
**43**  
**48**



MATCH LINE "A" - SEE PREVIOUS SHEET



MATCH LINE "B" - SEE PREVIOUS SHEET



MATCH LINE "C" - SEE PREVIOUS SHEET

**1** INSTALL TYPE PA100-A-35 (FURNISHED BY COUNTY)

- PA100 POLE FOUNDATION
- 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
- 1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 11'
- 1-ANGLE MOUNT SIGNAL-POLE MOUNTED 270°
- 1-ANGLE MOUNT C.D. PED INDICATION-POLE MOUNTED 270°
- 1-PEDESTRIAN PUSH BUTTON
- R10-X12 SIGN PANEL-ADJACENT TO 7-1
- TYPE D SIGN PANEL-OVERHEAD (D-1)
- ONE WAY EVP DETECTOR AND LIGHT (Ø4.7) (EVP)
- EXTEND INTO H.H.15:
- 3"R.S.C.
- 2-12/c#14
- 1-3/c#14 (EVP)
- 1-3/c#20 (EVP)
- 1-2/c#14
- 1-1/c#6 (GRD.)

**2** PEDESTAL FOUNDATION

- 12' PEDESTAL POLE (INCLUDES BASE, WIND COLLAR)
- 1-STRAIGHT MOUNT SIGNAL-POLE MOUNTED (FACING WB LT TRAFFIC)
- 1-STRAIGHT MOUNT C.D. PED INDICATION-POLE MOUNTED (FOR CROSSING CSAH 1)
- 1-PEDESTRIAN PUSH BUTTON
- EXTEND INTO H.H.1:
- 3"R.S.C.
- 1-12/c#14
- 1-2/c#14
- 1-1/c#6 (GRD.)

**3** INSTALL TYPE PA100-A-55-D40-9 (DAVIT AT 350°) (FURNISHED BY COUNTY)

- PA100 POLE FOUNDATION
- LUMINAIRE-COBRAHEAD LED (SEE SPECIAL PROVISIONS)
- 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
- 2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 11' & 23'
- 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90° & 180°
- 1-PEDESTRIAN PUSH BUTTON
- R6-1L SIGN PANEL-POLE MOUNTED 0°
- R10-X12 SIGN PANEL-ADJACENT TO 1-1
- TYPE D SIGN PANEL-OVERHEAD (D-2)
- ONE WAY EVP DETECTOR AND LIGHT (Ø6.1) (EVP)
- EXTEND INTO H.H.5:
- 3"R.S.C.
- 2-12/c#14
- 1-6/c#14
- 1-3/c#14 (EVP)
- 1-3/c#20 (EVP)
- 1-2/c#14
- 1-3/c#14 (LUM)
- 1-1/c#6 (GRD.)

**4** PEDESTAL FOUNDATION

- 12' PEDESTAL POLE (INCLUDES BASE, WIND COLLAR)
- 2-STRAIGHT MOUNT C.D. PED INDICATIONS-POLE MOUNTED
- 1-PEDESTRIAN PUSH BUTTON
- EXTEND INTO H.H.5:
- 3"R.S.C.
- 1-12/c#14
- 1-2/c#14
- 1-1/c#6 (GRD.)

**5** INSTALL TYPE PA100-A-40-D40-9 (DAVIT AT 350°) (FURNISHED BY COUNTY)

- PA100 POLE FOUNDATION
- LUMINAIRE-COBRAHEAD LED (SEE SPECIAL PROVISIONS)
- 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
- 1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 11'
- 1-ANGLE MOUNT SIGNAL-POLE MOUNTED 270°
- 1-ANGLE MOUNT C.D. PED INDICATION-POLE MOUNTED 270°
- 1-PEDESTRIAN PUSH BUTTON
- R10-X12 SIGN PANEL-ADJACENT TO 3-1
- TYPE D SIGN PANEL-OVERHEAD (D-3)
- ONE WAY EVP DETECTOR AND LIGHT (Ø8.3) (EVP)
- EXTEND INTO H.H.7:
- 3"R.S.C.
- 2-12/c#14
- 1-3/c#14 (EVP)
- 1-3/c#20 (EVP)
- 1-2/c#14
- 1-3/c#14 (LUM)
- 1-1/c#6 (GRD.)

**6** PEDESTAL FOUNDATION

- 12' PEDESTAL POLE (INCLUDES BASE, WIND COLLAR)
- 1-STRAIGHT MOUNT SIGNAL-POLE MOUNTED (FACING EB LT TRAFFIC)
- 1-STRAIGHT MOUNT C.D. PED INDICATION-POLE MOUNTED (FOR CROSSING CSAH 1)
- 1-PEDESTRIAN PUSH BUTTON
- EXTEND INTO H.H.8:
- 3"R.S.C.
- 1-12/c#14
- 1-2/c#14
- 1-1/c#6 (GRD.)

**7** INSTALL TYPE PA100-A-55-D40-9 (DAVIT AT 350°) (FURNISHED BY COUNTY)

- PA100 POLE FOUNDATION
- LUMINAIRE-COBRAHEAD LED (SEE SPECIAL PROVISIONS)
- 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
- 2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 11' & 23'
- 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90° & 180°
- 1-PEDESTRIAN PUSH BUTTON
- R6-1L SIGN PANEL-POLE MOUNTED 0°
- R10-X12 SIGN PANEL-ADJACENT TO 5-1
- TYPE D SIGN PANEL-OVERHEAD (D-4)
- ONE WAY EVP DETECTOR AND LIGHT (Ø2.5) (EVP)
- EXTEND INTO H.H.12:
- 3"R.S.C.
- 2-12/c#14
- 1-6/c#14
- 1-3/c#14 (EVP)
- 1-3/c#20 (EVP)
- 1-2/c#14
- 1-3/c#14 (LUM)
- 1-1/c#6 (GRD.)

**8** PEDESTAL FOUNDATION

- 12' PEDESTAL POLE (INCLUDES BASE, WIND COLLAR)
- 2-STRAIGHT MOUNT C.D. PED INDICATIONS-POLE MOUNTED
- 1-PEDESTRIAN PUSH BUTTON
- EXTEND INTO H.H.13:
- 3"R.S.C.
- 1-12/c#14
- 1-2/c#14
- 1-1/c#6 (GRD.)

DRAWN BY: JMG	1	JMG	5/8/13	REVISED POLES AND MAST ARMS TO BE COUNTY FURNISHED/CONTRACTOR INSTALLED
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.

Date: March 29, 2013 Name: John M. Gray, PE Lic. No. 22457



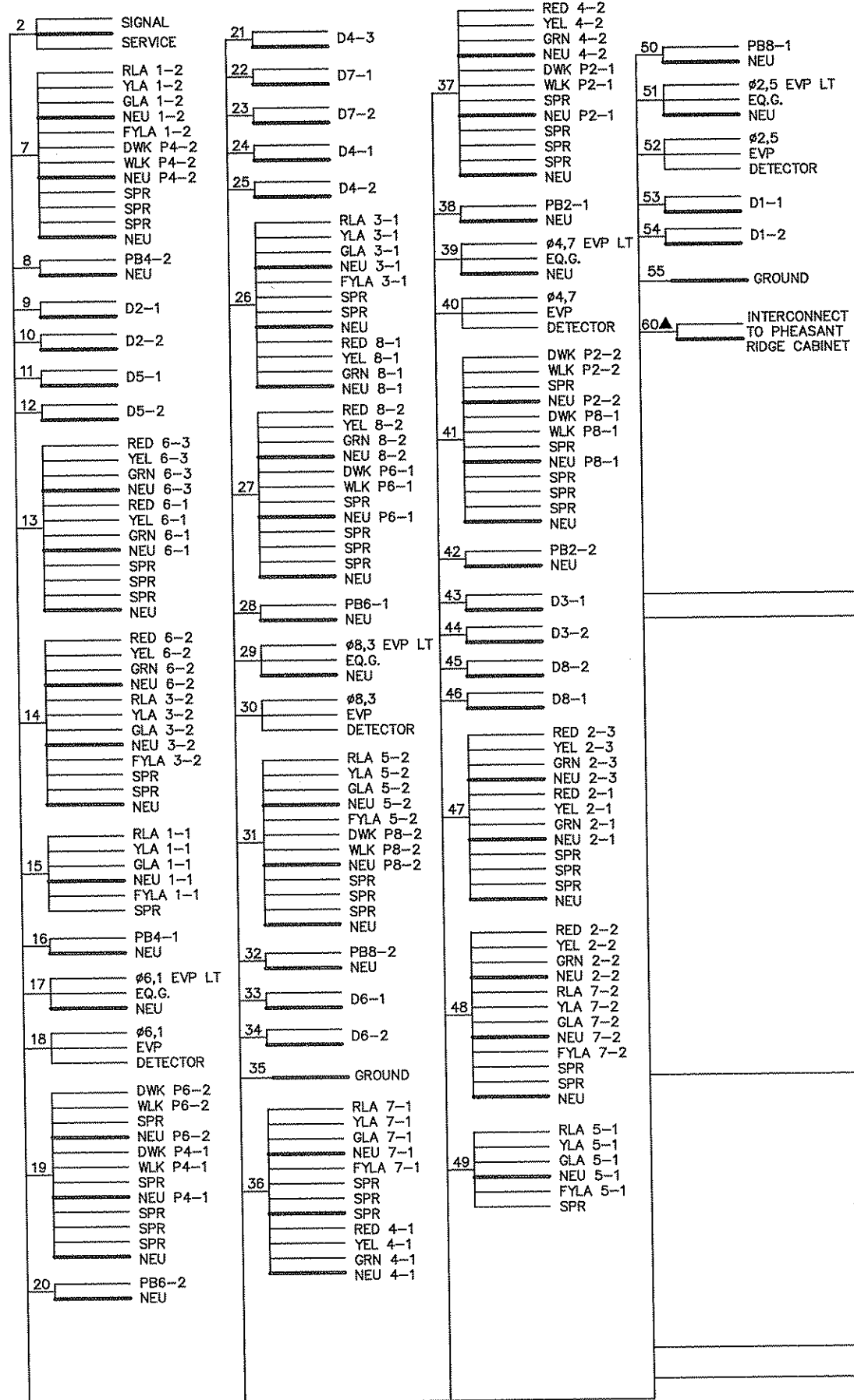
**ANOKA COUNTY, MINNESOTA**  
CITY OF COON RAPIDS

**TRAFFIC SIGNAL SYSTEM INTERSECTION LAYOUT**  
CSAH 1 AT ROUND LAKE BOULEVARD

FILE NO. ANOKC 122916  
SIGNAL SHEET 11 OF 15



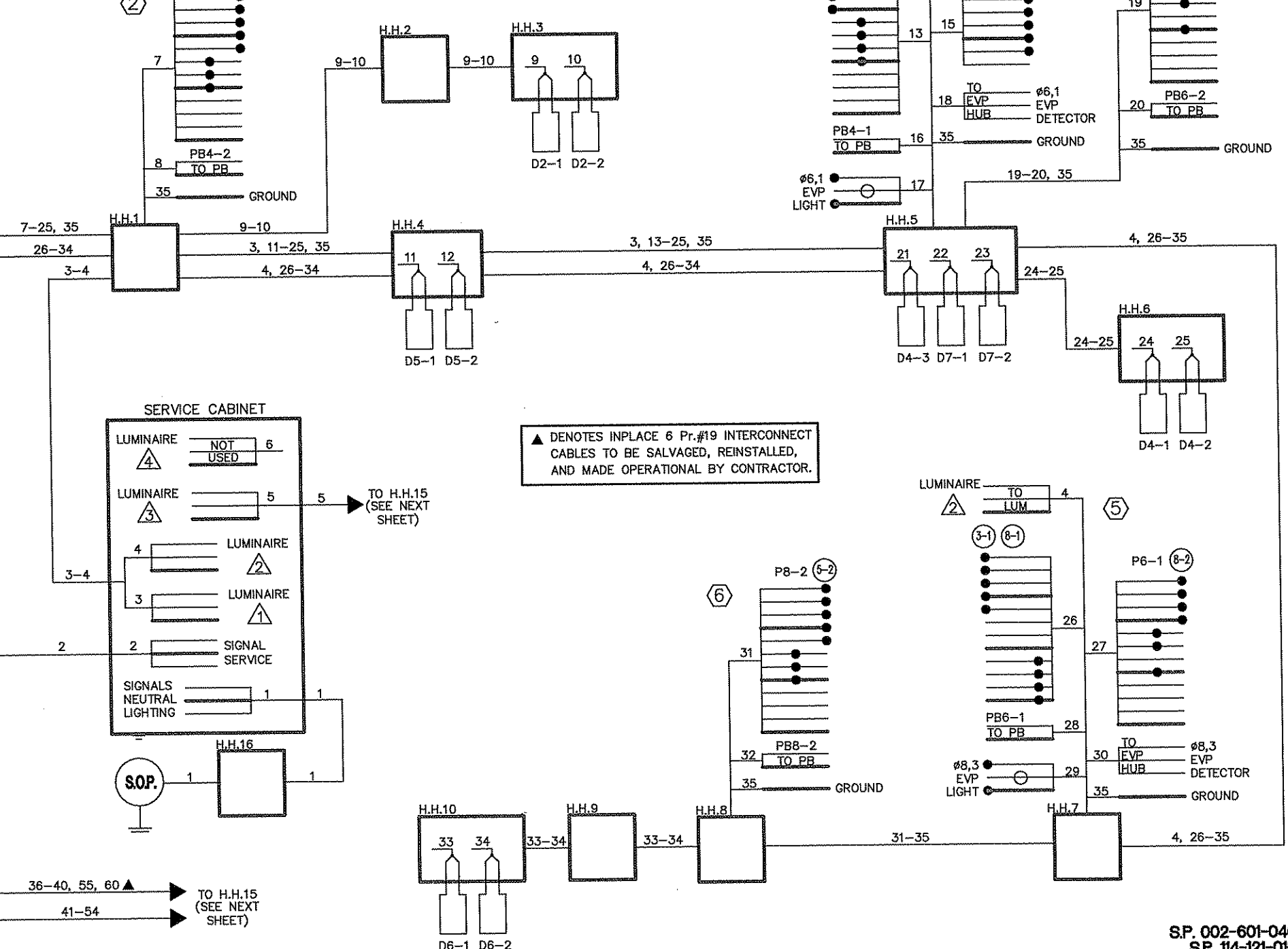
CONTROLLER AND CABINET



CONDUCTOR COLOR CODE (14 GAUGE)

TO SIGNAL CABINET	TO DEVICE
1/C#6 G	R RED
6PR#19	O YEL
6/C#14	BL GRN
3-1/C#2 WH	WH NEU
3-1/C#6 WH	BLK/R YLA
BLK	BLK BLK
3-1/C#6 WH	BLK
LG	LG
R	4/C#14 BLK/R
BL	BLK
WH	WH
R/BLK	3/C#14 G
O/BLK	BLK
BLK/WH	2/C#14 BLK
BLK	WH or G
BLK/WH	R or O
BLK/R	3/C#20 WH or YEL
WH/R	BLK or BL

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



DRAWN BY: JMG  
 DESIGNER: JMG  
 CHECKED BY: JMG

DESIGN TEAM	NO.	BY	DATE	REVISIONS

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

ANOKA COUNTY,  
 MINNESOTA  
 CITY OF COON RAPIDS

TRAFFIC SIGNAL SYSTEM  
 FIELD WIRING DIAGRAM  
 CSAH 1 AT ROUND LAKE BOULEVARD

FILE NO.  
 ANOKC 122916  
 SIGNAL SHEET  
 12 OF 15

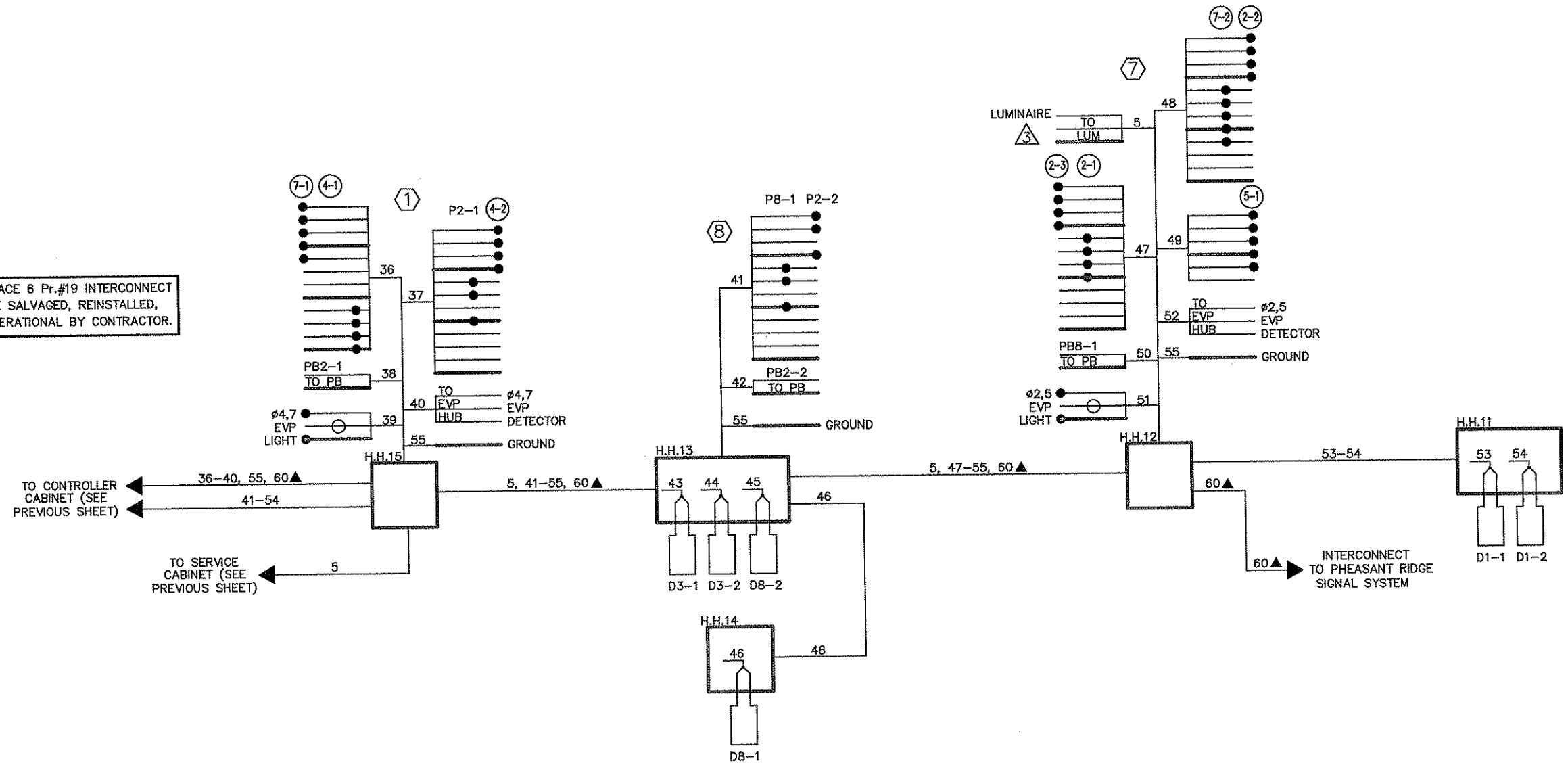
45  
 48

S.P. 002-601-046  
 S.P. 114-121-010

CONDUCTOR COLOR CODE (14 GAUGE)			
TO SIGNAL CABINET		TO DEVICE	
1/C#8 G	R	R	RED
0PR#19	O	O	YEL
R	BL	BL	GRN
3-1/C#21 WH	WH	WH	NEU
BLK	BLK/R	BLK/R	YLA
INPUT	BLK	BLK	GLA
POWER			
3-1/C#8 WH	R	R	RED/DWK
BLK	BLK/R	BLK/R	YEL/WLK
SIGNAL SERVICE	BLK	BLK	GRN/SPR
	WH	WH	NEU
R	4/C#14	BLK/R	RED/DWK
O	BLK	BLK	YEL/WLK
BL	WH	WH	GRN/SPR
WH	3/C#14	G	NEU
12/C#14	12/C#14	BLK	EVP LIGHT
12/C#14	12/C#14	WH	LUM/FLASHER
12/C#14	12/C#14	BLK	
12/C#14	12/C#14	WH/BLK	
12/C#14	12/C#14	BLK	
12/C#14	12/C#14	WH/WH	
12/C#14	12/C#14	BLK/R	
12/C#14	12/C#14	WH/R	
12/C#14	12/C#14	BLK/R	
12/C#14	12/C#14	WH/R	
12/C#14	12/C#14	BLK or O	
12/C#14	12/C#14	WH or YEL	
12/C#14	12/C#14	BLK or BL	
		2/C#14	BLK
		2/C#14	WH or CL
		3/C#20	WH or YEL
		3/C#20	BLK or BL

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

▲ DENOTES INPLACE 6 Pr.#19 INTERCONNECT CABLES TO BE SALVAGED, REINSTALLED, AND MADE OPERATIONAL BY CONTRACTOR.



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

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**ANOKA COUNTY, MINNESOTA**  
 CITY OF COON RAPIDS

**TRAFFIC SIGNAL SYSTEM**  
 FIELD WIRING DIAGRAM  
 CSAH 1 AT ROUND LAKE BOULEVARD

FILE NO. ANOKC 122916  
 SIGNAL SHEET 13 OF 15  
**46**  
**48**

S.P. 002-601-046  
 S.P. 114-121-010

INPLACE NMC LOOP DETECTORS			
NUMBER	SIZE (FT.)	LOCATION	FUNCTION
D1-1	4-6x6	AS SHOWN	1
D2-1	6x20	300'	1
D2-2	6x20	10'	2
D4-1	4-6x6	AS SHOWN	1
D4-2	6x15	40'	3
D4-3	4-6x6	AS SHOWN	1
D4-4	6x15	40'	3
D5-1	4-6x6	AS SHOWN	1
D6-1	6x20	10'	2
D6-2	6x20	300'	1

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

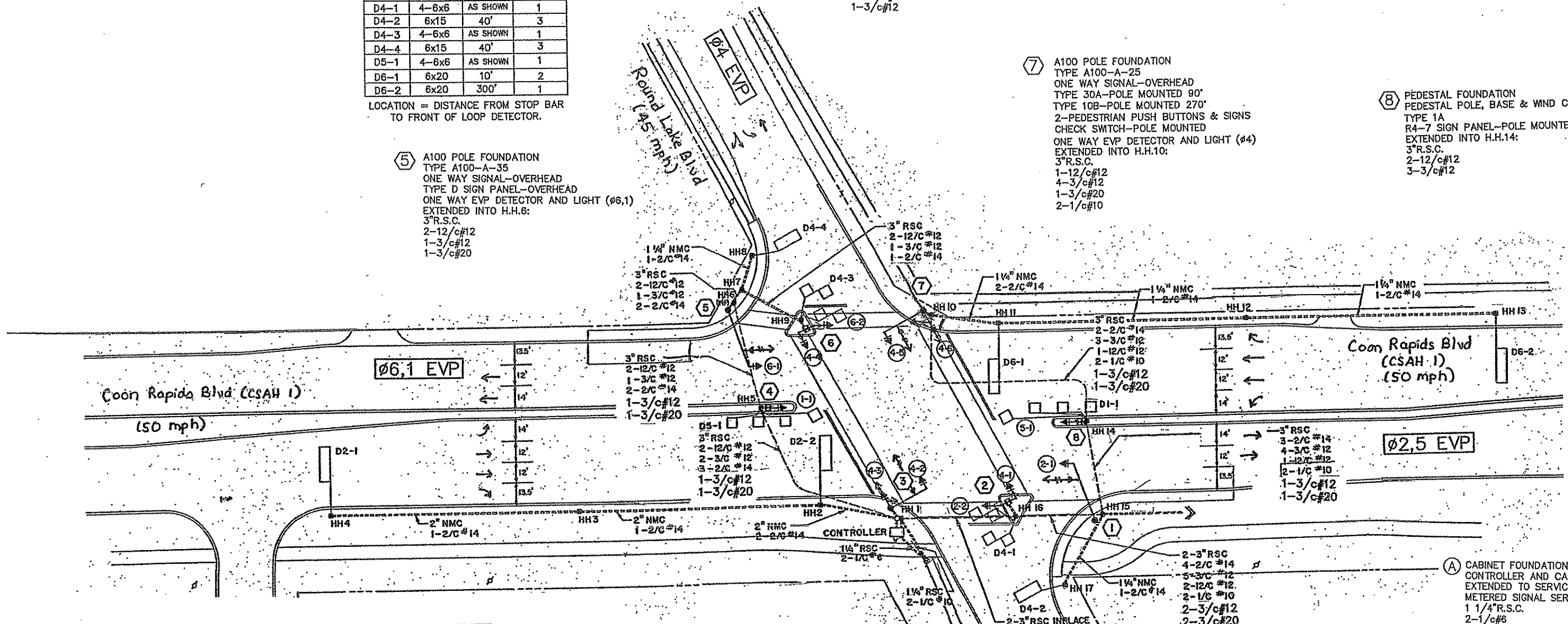
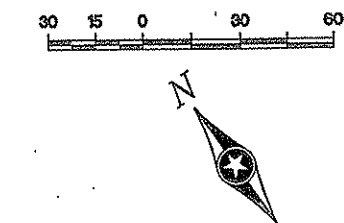
FUNCTIONS:  
 1 = CALL AND EXTEND  
 2 = CALL ONLY  
 3 = EXTEND ONLY

⑥ PEDESTAL FOUNDATION  
 PEDESTAL POLE, BASE & WIND COLLAR  
 TYPE 2C  
 2-PEDESTRIAN PUSH BUTTONS & SIGNS  
 EXTENDED INTO H.H.9:  
 3"R.S.C.  
 2-12/c#12  
 1-3/c#12

⑦ A100 POLE FOUNDATION  
 TYPE A100-A-25  
 ONE WAY SIGNAL-OVERHEAD  
 TYPE 30A-POLE MOUNTED 90'  
 TYPE 10B-POLE MOUNTED 270'  
 2-PEDESTRIAN PUSH BUTTONS & SIGNS  
 CHECK SWITCH-POLE MOUNTED  
 ONE WAY EVP DETECTOR AND LIGHT (ø4)  
 EXTENDED INTO H.H.10:  
 3"R.S.C.  
 1-12/c#12  
 4-3/c#12  
 1-3/c#20  
 2-1/c#10

⑧ PEDESTAL FOUNDATION  
 PEDESTAL POLE, BASE & WIND COLLAR  
 TYPE 1A  
 R4-7 SIGN PANEL-POLE MOUNTED  
 EXTENDED INTO H.H.14:  
 3"R.S.C.  
 2-12/c#12  
 3-3/c#12

⑤ A100 POLE FOUNDATION  
 TYPE A100-A-35  
 ONE WAY SIGNAL-OVERHEAD  
 TYPE D SIGN PANEL-OVERHEAD  
 ONE WAY EVP DETECTOR AND LIGHT (ø6,1)  
 EXTENDED INTO H.H.6:  
 3"R.S.C.  
 2-12/c#12  
 1-3/c#12  
 1-3/c#20



NOTE: THIS PLAN SHEET IS BEING PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

② PEDESTAL FOUNDATION  
 PEDESTAL POLE, BASE & WIND COLLAR  
 TYPE 2C  
 2-PEDESTRIAN PUSH BUTTONS & SIGNS  
 EXTENDED INTO H.H.16:  
 3"R.S.C.  
 2-12/c#12  
 3-3/c#12

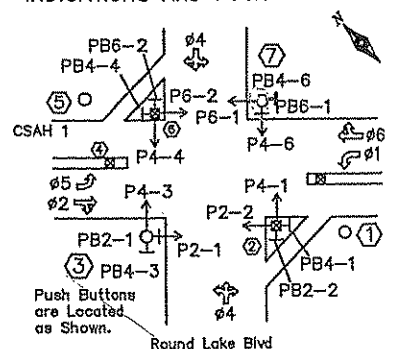
① A100 POLE FOUNDATION  
 TYPE A100-A-35  
 ONE WAY SIGNAL-OVERHEAD  
 PEC FOR DOWNLIGHTS  
 TYPE D SIGN PANEL-OVERHEAD  
 ONE WAY EVP DETECTOR AND LIGHT (ø2,5)  
 EXTENDED INTO H.H.15:  
 3"R.S.C.  
 1-12/c#12  
 2-3/c#12  
 1-3/c#20

Ⓐ CABINET FOUNDATION  
 CONTROLLER AND CABINET  
 EXTENDED TO SERVICE CABINET:  
 METERED SIGNAL SERVICE  
 1 1/4"R.S.C.  
 2-1/c#6  
 CONTROLLER CABINET TO H.H.1:  
 2-3"R.S.C.  
 5-12/c#12  
 12-3/c#12  
 10-2/c#14  
 4-3/c#12  
 4-3/c#20

④ PEDESTAL FOUNDATION  
 PEDESTAL POLE, BASE & WIND COLLAR  
 TYPE 1A  
 R4-7 SIGN PANEL-POLE MOUNTED  
 EXTENDED INTO H.H.5:  
 3"R.S.C.  
 2-12/c#12  
 3-3/c#12

③ A100 POLE FOUNDATION  
 TYPE A100-A-25  
 ONE WAY SIGNAL-OVERHEAD  
 TYPE 30A-POLE MOUNTED 90'  
 TYPE 10B-POLE MOUNTED 270'  
 2-PEDESTRIAN PUSH BUTTONS & SIGNS  
 ONE WAY EVP DETECTOR AND LIGHT (ø4)  
 EXTENDED INTO H.H.1:  
 3"R.S.C.  
 1-12/c#12  
 3-3/c#12  
 1-3/c#20

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



SIGNAL SYSTEM OPERATIONS:  
 - SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.  
 - NORMAL OPERATION SHALL BE 6 PHASE, WITH PHASES 1 AND 5 BEING PROTECTED LEFT TURN PHASES.  
 - VEHICLE SIGNAL PHASES 2 AND 6 SHALL OPERATE ON RECALL.

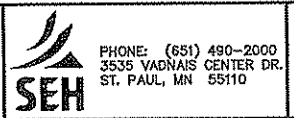
Ⓑ CABINET FOUNDATION  
 SIGNAL SERVICE CABINET  
 EXTENDED TO SOP:  
 1 1/4"R.S.C.  
 3-1/c#6

LED SIGNAL FACES			
SIGNAL FACE	ALL 12"		
	R	Y	G
1-1	←	←	←
2-1, 2-2	○	○	○
4-1, 4-2, 4-3	○	○	○
5-1	←	←	←
6-1, 6-2	○	○	○
4-4, 4-5, 4-6	○	○	○

○ ← = INPLACE LED INDICATION, REUSE INPLACE.

DRAWN BY: JMG  
 DESIGNER: JMG  
 CHECKED BY: JMG

DESIGN TEAM	NO.	BY	DATE	REVISIONS

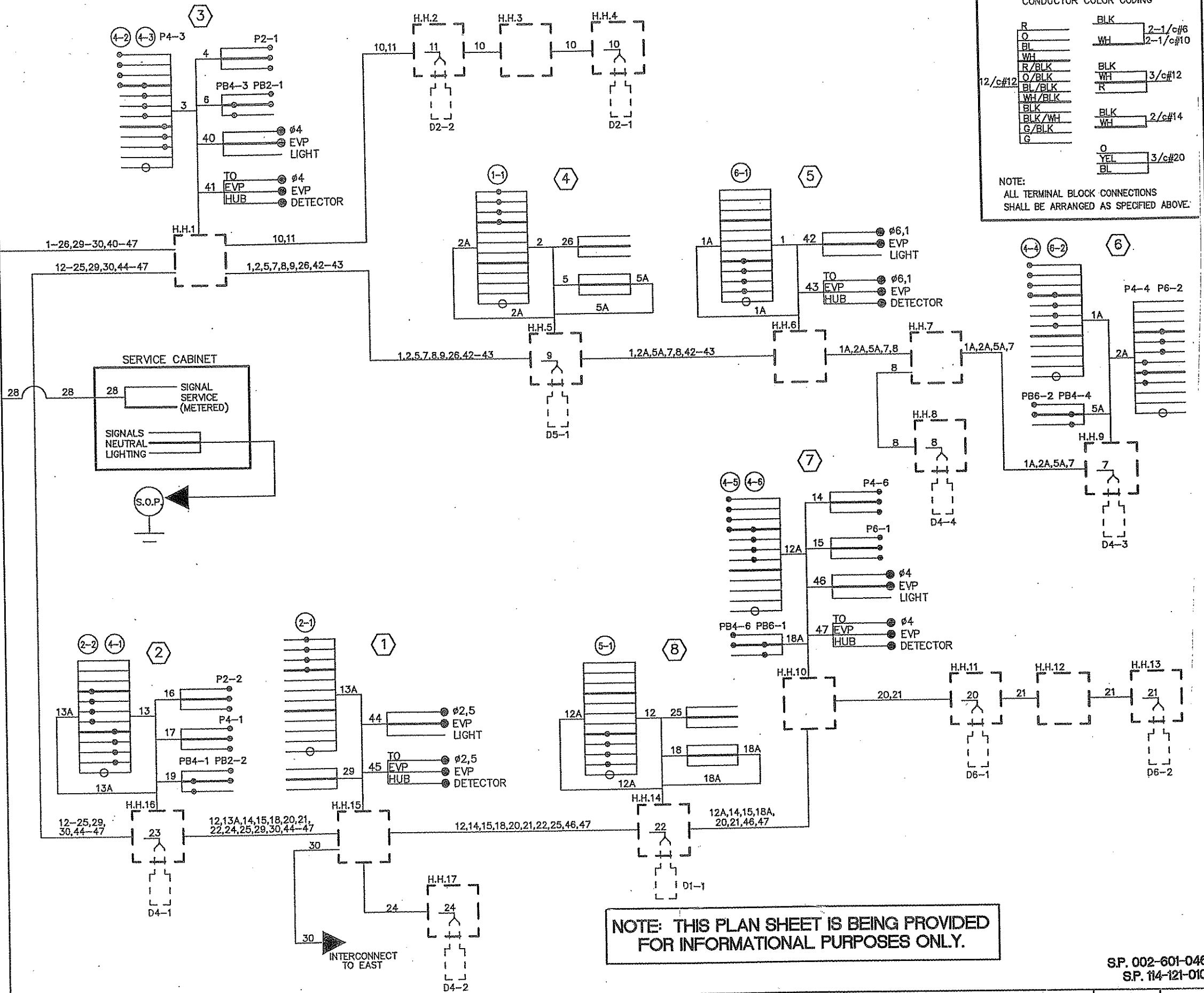
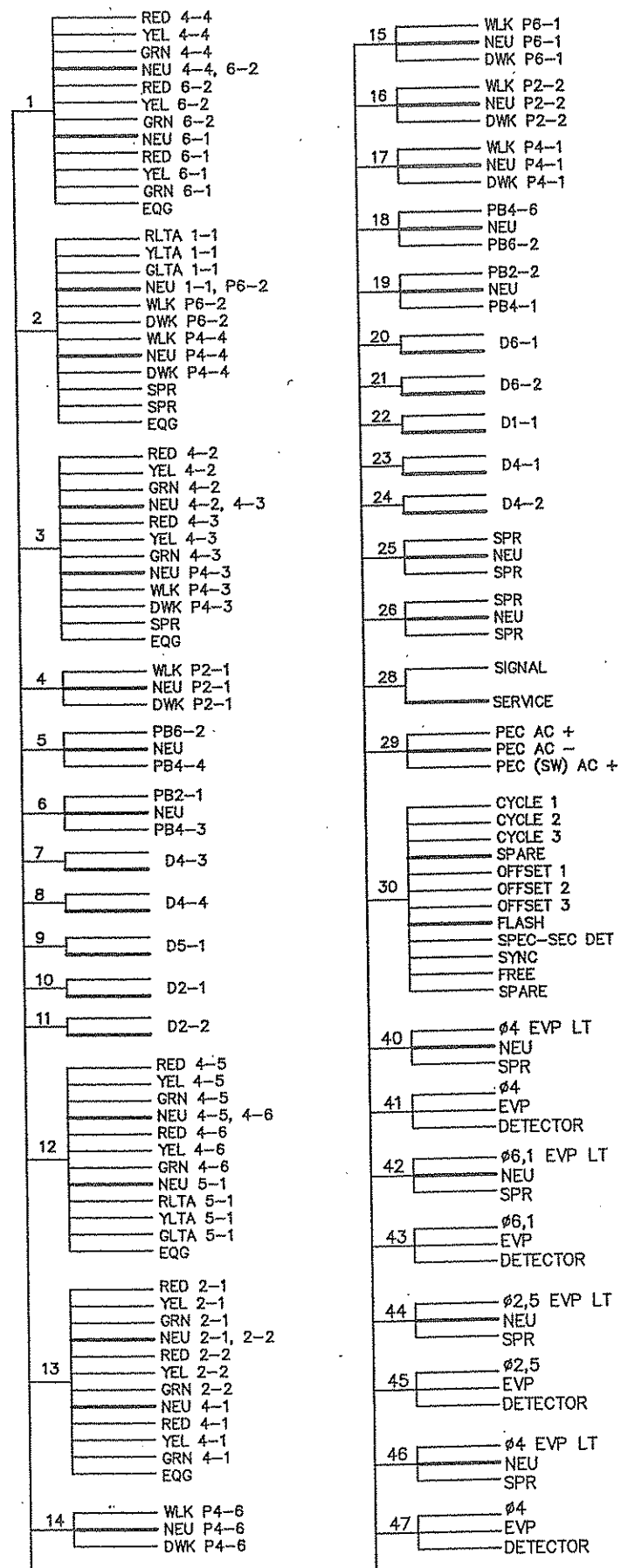


ANOKA COUNTY,  
 MINNESOTA  
 CITY OF COON RAPIDS

INPLACE SIGNAL SYSTEM  
 'FOR INFORMATION ONLY'  
 CSAH 1 AT ROUND LAKE BOULEVARD

FILE NO. ANOKC 122916  
 SIGNAL SHEET 14 OF 15  
 47  
 48

CONTROLLER CABINET



CONDUCTOR COLOR CODING

R	BLK	2-1/c#6
O	WH	2-1/c#10
BL	BLK	3/c#12
WH	WH	R
R/BLK	BLK	2/c#14
O/BLK	WH	
BL/BLK	BLK	
WH/BLK	WH	
BLK	BLK	
BLK/WH	WH	
G/BLK		
G		
O		
YEL		3/c#20
BL		

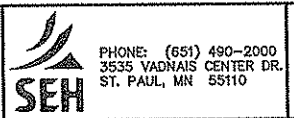
NOTE:  
ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE.

NOTE: THIS PLAN SHEET IS BEING PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

S.P. 002-601-046  
S.P. 114-121-010

DRAWN BY: JMG  
DESIGNER: JMG  
CHECKED BY: JMG

NO.	BY	DATE	REVISIONS



ANOKA COUNTY, MINNESOTA  
CITY OF COON RAPIDS

INPLACE SIGNAL SYSTEM  
'FOR INFORMATION ONLY'  
CSAH 1 AT ROUND LAKE BOULEVARD

FILE NO. ANOKC 122916  
SIGNAL SHEET 15 OF 15  
48