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METROPOLITAN COUNCIL

SOUTHWEST
Green Line LRT Extension

PLAN PACKAGE INDEX / DESCRIPTION
CIVIL WEST CONSTRUCTION
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VOLUME 2 - CIVIL
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CIVIL WEST CONSTRUCTION

VOLUME 10
TRAFFIC / LIGHTING

THE PROPOSED SOUTHWEST LRT PROJECT IS NOT FINAL BUT IS STILL UNDER ENVIRONMENTAL REVIEW AND THE PROJECT IS SUBJECT TO CHANGE. THESE PLANS ARE NOT FINAL.

THE COUNCIL, THROUGH THE DEVELOPMENT OF THESE PLANS, DOES NOT INTEND THAT THEY WILL PREJUDICE OR COMPROMISE ANY STATE OR FEDERAL ENVIRONMENTAL REVIEW OR OTHER LEGAL REQUIREMENTS. THESE PLANS DO NOT LIMIT THE PROJECT DESIGN ALTERNATIVES OR MITIGATIVE MEASURES THAT THE COUNCIL MAY UNDERTAKE IF THE PROPOSED SWLRT PROJECT PROCEEDS TO CONSTRUCTION.

THE COUNCIL WILL NOT TAKE FINAL ACTION ON THIS MATTER UNLESS THE COUNCIL PROCEEDS WITH THE PROJECT AFTER THE FTA'S RECORD OF DECISION AND THE COUNCIL'S DETERMINATION OF ADEQUACY.

WARNING: THIS RECORD MAY CONTAIN SENSITIVE SECURITY INFORMATION THAT IS CONTROLLED UNDER 49 CFR PARTS 15 AND 1520. NO PART OF THIS RECORD MAY BE DISCLOSED TO PERSONS WITHOUT A "NEED TO KNOW", AS DEFINED IN 49 CFR PARTS 15 AND 1520, EXCEPT WITH THE WRITTEN PERMISSION OF THE ADMINISTRATOR OF THE TRANSPORTATION SECURITY ADMINISTRATION OR THE SECRETARY OF TRANSPORTATION. UNAUTHORIZED RELEASE MAY RESULT IN CIVIL PENALTY OR OTHER ACTION. FOR U.S. GOVERNMENT AGENCIES, PUBLIC DISCLOSURE IS GOVERNED BY 5 U.S.C. 552 AND 49 CFR PARTS 15 AND 1520.

60% SUBMISSION
DATE : 09/28/15

AECOM

CIVIL WEST

SHT #	SHEET NAME	SHEET DESCRIPTION	STATION	STATION	REV
		VOLUME 10 - TRAFFIC / LIGHTING			
1	W0-TFC-CVR-001	COVER SHEET			
2	W0-TFC-IDX-001	VOLUME INDEX OF PLAN SHEETS			
3	W0-GEN-KEY-001	GENERAL KEY MAP			
4	W0-GEN-NTS-001	GENERAL LEGEND AND ABBREVIATIONS SHEET 1			
5	W0-GEN-NTS-002	GENERAL LEGEND AND ABBREVIATIONS SHEET 2			
6	NOT USED				
7	W0-TFC-SIGN-STRP-DTL-001M	MNDOT NOTES AND LEGEND			
8	W0-TFC-SIGN-STRP-DTL-002H	HENNEPIN COUNTY NOTES SHEET 1			
9	W0-TFC-SIGN-STRP-DTL-003H	HENNEPIN COUNTY NOTES SHEET 2			
10	W0-TFC-SIGN-STRP-DTL-004M	MNDOT DETAIL SHEET 1			
11	W0-TFC-SIGN-STRP-DTL-005M	MNDOT DETAIL SHEET 2			
12	W0-TFC-SIGN-STRP-DTL-006M	MNDOT DETAIL SHEET 3			
13	W0-TFC-SIGN-STRP-DTL-007M	MNDOT DETAIL SHEET 4			
14	W0-TFC-SIGN-STRP-DTL-008M	MNDOT DETAIL SHEET 5			
15	W0-TFC-SIGN-STRP-DTL-009M	MNDOT DETAIL SHEET 6			
16	W0-TFC-SIGN-STRP-DTL-010M	MNDOT DETAIL SHEET 7			
17	W0-TFC-SIGN-STRP-DTL-011M	MNDOT DETAIL SHEET 8			
18	W0-TFC-SIGN-STRP-DTL-012M	MNDOT DETAIL SHEET 9			
19	W0-TFC-SIGN-STRP-DTL-013M	MNDOT DETAIL SHEET 10			
20	W0-TFC-SIGN-STRP-DTL-014M	MNDOT DETAIL SHEET 11			
21	W0-TFC-SIGN-STRP-DTL-015M	MNDOT DETAIL SHEET 12			
22	W0-TFC-SIGN-STRP-DTL-016M	MNDOT DETAIL SHEET 13			
23	W0-TFC-SIGN-STRP-DTL-017M	MNDOT DETAIL SHEET 14			
24	W0-TFC-SIGN-STRP-DTL-018M	MNDOT DETAIL SHEET 15			
25	W0-TFC-SIGN-STRP-DTL-019M	MNDOT DETAIL SHEET 16			
26	W0-TFC-SIGN-STRP-DTL-020M	MNDOT DETAIL SHEET 17			
27	W0-TFC-SIGN-STRP-DTL-021M	MNDOT DETAIL SHEET 18			
28	W0-TFC-SIGN-STRP-DTL-022H	HENNEPIN COUNTY DETAIL			
29	W1-TFC-SIGN-STRP-LAY-001	PLAN SHEET LAYOUT SHEET 1			
30	W2-TFC-SIGN-STRP-LAY-001	PLAN SHEET LAYOUT SHEET 2			
31	W3-TFC-SIGN-STRP-LAY-001	PLAN SHEET LAYOUT SHEET 3			
32	W1-TRAF-SIGN-STRP-001-001	TECHNOLOGY DRIVE WB SIGNING AND STRIPING	235+00	240+50	
33	W1-TRAF-SIGN-STRP-001-002	TECHNOLOGY DRIVE WB SIGNING AND STRIPING	240+50	246+00	
34	W1-TRAF-SIGN-STRP-001-003	TECHNOLOGY DRIVE WB SIGNING AND STRIPING	246+00	250+50	
35	W1-TRAF-SIGN-STRP-001-004	TECHNOLOGY DRIVE WB SIGNING AND STRIPING	250+50	254+06	
36	W1-TRAF-SIGN-STRP-001-005	BUS RAMP SIGNING AND STRIPING	10+00	12+47	
37	W1-TRAF-SIGN-STRP-001-006	BUS CONNECTION SIGNING AND STRIPING	20+00	24+25	
38	W1-TRAF-SIGN-STRP-001-007	TECHNOLOGY DRIVE SIGNING AND STRIPING	500+00	505+00	
39	W1-TRAF-SIGN-STRP-001-008	PRAIRIE CENTER DRIVE SIGNING AND STRIPING	303+50	309+50	
40	W1-TRAF-SIGN-STRP-001-009	PRAIRIE CENTER DRIVE SIGNING AND STRIPING	309+50	315+00	
41	W1-TRAF-SIGN-STRP-001-010	PRAIRIE CENTER DRIVE SIGNING AND STRIPING	315+00	320+50	
42	W1-TRAF-SIGN-STRP-001-011	PRAIRIE CENTER DRIVE SIGNING AND STRIPING	320+50	326+50	
43	W1-TRAF-SIGN-STRP-001-012	PRAIRIE CENTER DRIVE SIGNING AND STRIPING	326+50	332+50	
44	W1-TRAF-SIGN-STRP-001-013	PRAIRIE CENTER DRIVE SIGNING AND STRIPING	332+50	339+50	
45	W1-TRAF-SIGN-STRP-001-014	EDEN ROAD SIGNING AND STRIPING	100+00	106+00	
46	W1-TRAF-SIGN-STRP-001-015	EDEN ROAD SIGNING AND STRIPING	106+00	110+51	
47	W1-TRAF-SIGN-STRP-001-016	EDEN ROAD SOUTH SIGNING AND STRIPING	30+00	35+50	
48	W1-TRAF-SIGN-STRP-001-017	EDEN ROAD SOUTH SIGNING AND STRIPING	35+50	38+70	
49	W1-TRAF-SIGN-STRP-001-018	GLEN LANE SIGNING AND STRIPING	40+00	44+52	
50	W1-TRAF-SIGN-STRP-001-019	FLYING CLOUD DRIVE SIGNING AND STRIPING	501+00	507+50	
51	W1-TRAF-SIGN-STRP-001-020	FLYING CLOUD DRIVE SIGNING AND STRIPING	507+50	515+00	
52	W1-TRAF-SIGN-STRP-001-021	FLYING CLOUD DRIVE SIGNING AND STRIPING	515+00	520+00	
53	W1-TRAF-SIGN-STRP-001-022	FLYING CLOUD DRIVE SIGNING AND STRIPING	520+00	526+50	
54	W1-TRAF-SIGN-STRP-001-023	FLYING CLOUD DRIVE SIGNING AND STRIPING	526+50	530+77	
55	W1-TRAF-SIGN-STRP-001-024	TECHNOLOGY DRIVE EB SIGNING AND STRIPING	119+00	123+50	
56	W1-TRAF-SIGN-STRP-001-025	TECHNOLOGY DRIVE EB SIGNING AND STRIPING	123+50	129+00	
57	W1-TRAF-SIGN-STRP-001-026	TECHNOLOGY DRIVE EB SIGNING AND STRIPING	129+00	131+36	
58	W1-TRAF-SIGN-STRP-001-027	494 EXIT RAMP SIGNING AND STRIPING	0+00	6+73	
59	W1-TRAF-SIGN-STRP-001-028	VIKING DRIVE SIGNING AND STRIPING	0+00	2+27	
60	W1-TRAF-SIGN-STRP-001-029	212 ON RAMP SIGNING AND STRIPING	0+00	6+50	
61	W1-TRAF-SIGN-STRP-001-030	212 ON RAMP SIGNING AND STRIPING	6+50	13+06	
62	W2-TFC-SIGN-STRP-001-001	212 ON RAMP SIGNING AND STRIPING	453+15	458+50	
63	W2-TFC-SIGN-STRP-001-002	212 ON RAMP SIGNING AND STRIPING	458+50	465+50	
64	W2-TFC-SIGN-STRP-001-003	70TH STREET WEST	300+50	307+00	
65	W2-TFC-SIGN-STRP-001-004	LIBERTY DRIVEWAY WEST SIGNING AND STRIPING			
66	W2-TFC-SIGN-STRP-001-005	SHADY OAK ROAD SIGNING AND STRIPING	800+00	807+00	
67	W2-TFC-SIGN-STRP-001-006	W 62ND STREET SIGNING AND STRIPING	116+69	122+50	
68	W2-TFC-SIGN-STRP-001-007	W 62ND STREET SIGNING AND STRIPING	122+50	127+03	
69	W2-TFC-SIGN-STRP-001-008	RED CIRCLE DRIVE TO YELLOW CIRCLE DRIVE SIGNING AND STRIPING	200+00	204+50	
70	W2-TFC-SIGN-STRP-001-009	RED CIRCLE DRIVE TO YELLOW CIRCLE DRIVE SIGNING AND STRIPING	204+50	208+17	

CIVIL WEST

SHT #	SHEET NAME	SHEET DESCRIPTION	STATION	STATION	REV
71	W2-TFC-SIGN-STRP-001-010	RED CIRCLE DRIVE SIGNING AND STRIPING	202+93	208+50	
72	W2-TFC-SIGN-STRP-001-011	RED CIRCLE DRIVE SIGNING AND STRIPING	208+50	213+00	
73	W2-TFC-SIGN-STRP-001-012	YELLOW CIRCLE DRIVE SIGNING AND STRIPING	280+00	286+00	
74	W2-TFC-SIGN-STRP-001-013	YELLOW CIRCLE DRIVE TO RED CIRCLE DRIVE SIGNING AND STRIPING	221+00	227+50	
75	W2-TFC-SIGN-STRP-001-014	YELLOW CIRCLE DRIVE TO RED CIRCLE DRIVE SIGNING AND STRIPING	227+50	233+00	
76	W2-TFC-SIGN-STRP-001-015	BREN ROAD EAST SIGNING AND STRIPING	1012+50	1021+00	
77	W2-TFC-SIGN-STRP-001-016	BREN ROAD EAST TO RED CIRCLE DRIVE SIGNING AND STRIPING	270+67	271+87	
78	W3-TFC-SIGN-STRP-001-001	BREN RD EAST SIGNING AND STRIPING	998+00	1003+00	
79	W3-TFC-SIGN-STRP-001-002	BREN RD EAST SIGNING AND STRIPING	1003+00	1009+00	
80	W3-TFC-SIGN-STRP-001-003	BREN ROAD WEST SIGNING AND STRIPING	49+00	55+00	
81	W3-TFC-SIGN-STRP-001-004	BREN ROAD WEST SIGNING AND STRIPING	55+00	58+49	
82	W3-TFC-SIGN-STRP-001-005	FELTL ROAD SIGNING AND STRIPING	21+00	26+00	
83	W3-TFC-SIGN-STRP-001-006	SMETANA ROAD SIGNING AND STRIPING	52+50	59+50	
84	W3-TFC-SIGN-STRP-001-007	SMETANA ROAD SIGNING AND STRIPING	59+50	66+50	
85	W3-TFC-SIGN-STRP-001-008	K-TEL DRIVE SIGNING AND STRIPING	5+13	8+29	
86	W3-TFC-SIGN-STRP-001-009	5TH STREET SOUTH SIGNING AND STRIPING	0+00	5+50	
87	W3-TFC-SIGN-STRP-001-010	17TH AVENUE SOUTH SIGNING AND STRIPING	8+00	15+00	
88	W3-TFC-SIGN-STRP-001-011	17TH AVENUE SOUTH SIGNING AND STRIPING	15+00	18+78	
89	W3-TFC-SIGN-STRP-001-013	17TH AVENUE SOUTH SIGNING AND STRIPING			
90	W3-TFC-SIGN-STRP-001-012	EXCELSIOR BOULEVARD SIGNING AND STRIPING	301+50	308+50	
91	W0-TFC-SIG-DTL-01	MNDOT LEGEND AND ABBREVIATIONS			
92	W0-TFC-SIG-DTL-02	MNDOT DETAIL SHEET 1			
93	W0-TFC-SIG-DTL-03	MNDOT DETAIL SHEET 2			
94	W0-TFC-SIG-DTL-04	MNDOT DETAIL SHEET 3			
95	W0-TFC-SIG-DTL-05	MNDOT DETAIL SHEET 4			
96	W0-TFC-SIG-DTL-06	HENNEPIN COUNTY LEGEND AND ABBREVIATIONS			
97	W0-TFC-SIG-DTL-07	HENNEPIN COUNTY DETAIL SHEET 1			
98	W0-TFC-SIG-DTL-08	HENNEPIN COUNTY DETAIL SHEET 2			
99	W0-TFC-SIG-DTL-09	HENNEPIN COUNTY DETAIL SHEET 3			
100	W1-TFC-SIG-LAY-001	PLAN SHEET LAYOUT			
101	W3-TFC-SIG-LAY-003	PLAN SHEET LAYOUT			
102	W1-TFC-SIG-001-01	SYSTEM "G" - TECHNOLOGY DR AT SW STATION E ENTRANCE INTERSECTION LAYOUT			
103	W1-TFC-SIG-001-01B	SYSTEM "G" - TECHNOLOGY DR AT SW STATION E ENTRANCE EQUIPMENT SCHEDULE			
104	W1-TFC-SIG-001-01C	SYSTEM "G" - TECHNOLOGY DR AT SW STATION E ENTRANCE MAST ARM SIGNING			
105	W1-TFC-SIG-002-01	SYSTEM "G" - TECHNOLOGY DR AT SW STATION E ENTRANCE FOR INFORMATION ONLY			
106	W1-TFC-SIG-001-02	SYSTEM "H" - PRAIRIE CENTER DR AT TECHNOLOGY DR INTERSECTION LAYOUT			
107	W1-TFC-SIG-001-02B	SYSTEM "H" - PRAIRIE CENTER DR AT TECHNOLOGY DR INTERSECTION NOTES AND MATCHLINES			
108	W1-TFC-SIG-001-02C	SYSTEM "H" - PRAIRIE CENTER DR AT TECHNOLOGY DR MAST ARM SIGNING			
109	W1-TFC-SIG-002-02	SYSTEM "H" - PRAIRIE CENTER DR AT TECHNOLOGY DR FOR INFORMATION ONLY			
110	W1-TFC-SIG-001-03	SYSTEM "I" - PRAIRIE CENTER DR AT TH 212 S RAMPS/TECH DR INTERSECTION LAYOUT			
111	W1-TFC-SIG-001-03B	SYSTEM "I" - PRAIRIE CENTER DR AT TH 212 S RAMPS/TECH DR INTERSECTION NOTES AND MATCHLINES			
112	W1-TFC-SIG-002-03	SYSTEM "I" - PRAIRIE CENTER DR AT TH 212 S RAMPS/TECH DR FOR INFORMATION ONLY			
113	W1-TFC-SIG-001-04	SYSTEM "J" - PRAIRIE CENTER DR AT TH 212 N RAMPS/PLAZA DR INTERSECTION LAYOUT			
114	W1-TFC-SIG-001-04B	SYSTEM "J" - PRAIRIE CENTER DR AT TH 212 N RAMPS/PLAZA DR INTERSECTION NOTES AND MATCHLINES			
115	W1-TFC-SIG-002-04	SYSTEM "J" - PRAIRIE CENTER DR AT TH 212 N RAMPS/PLAZA DR FOR INFORMATION ONLY			
116	W1-TFC-SIG-001-05	SYSTEM "K" - EDEN ROAD AT EDEN ROAD INTERSECTION LAYOUT			
117	W1-TFC-SIG-001-05B	SYSTEM "K" - EDEN ROAD AT EDEN ROAD EQUIPMENT SCHEDULE			
118	W1-TFC-SIG-001-07	SYSTEM "M" - CSAH 61 (FLYING CL DR) AT EDEN RD/LEONA RD INTERSECTION LAYOUT			
119	W1-TFC-SIG-001-07B	SYSTEM "M" - CSAH 61 (FLYING CL DR) AT EDEN RD/LEONA RD MATCHLINE LAYOUT			

CIVIL WEST

SHT #	SHEET NAME	SHEET DESCRIPTION	STATION	STATION	REV
120	W1-TFC-SIG-001-07C	SYSTEM "M" - CSAH 61 (FLYING CL DR) AT EDEN RD/LEONA RD EQUIPMENT SCHEDULE			
121	W1-TFC-SIG-001-07D	SYSTEM "M" - CSAH 61 (FLYING CL DR) AT EDEN RD/LEONA RD MAST ARM SIGNING			
122	W1-TFC-SIG-002-07	SYSTEM "M" - CSAH 61 (FLYING CL DR) AT EDEN RD/LEONA RD FOR INFORMATION ONLY			
123	W1-TFC-SIG-001-08	SYSTEM "N" - CSAH 61 (FLYING CL DR) AT I-494 S RAMP/TECH DR INTERSECTION LAYOUT			
124	W1-TFC-SIG-001-08B	SYSTEM "N" - CSAH 61 (FLYING CL DR) AT I-494 S RAMP/TECH DR INTERSECTION NOTES AND MATCHLINES			
125	W1-TFC-SIG-001-08C	SYSTEM "N" - CSAH 61 (FLYING CL DR) AT I-494 S RAMP/TECH DR MATCHLINE LAYOUT			
126	W1-TFC-SIG-001-08D	SYSTEM "N" - CSAH 61 (FLYING CL DR) AT I-494 S RAMP/TECH DR MAST ARM SIGNING			
127	W1-TFC-SIG-002-08	SYSTEM "N" - CSAH 61 (FLYING CL DR) AT I-494 S RAMP/TECH DR FOR INFORMATION ONLY			
128	W1-TFC-SIG-001-09	SYSTEM "0" - CSAH 61 (FLYING CLOUD DR) AT VIKING DR INTERSECTION LAYOUT			
129	W1-TFC-SIG-001-09B	SYSTEM "0" - CSAH 61 (FLYING CLOUD DR) AT VIKING DR MATCHLINE LAYOUT			
130	W1-TFC-SIG-001-09C	SYSTEM "0" - CSAH 61 (FLYING CLOUD DR) AT VIKING DR EQUIPMENT SCHEDULE			
131	W3-TFC-SIG-001-01	SIGNAL SYSTEM "P" - C.S.A.H. 3 (EXCELSIOR BLVD) AT 17TH AVE S INTERSECTION LAYOUT			
132	W3-TFC-SIG-001-01B	SIGNAL SYSTEM "P" - C.S.A.H. 3 (EXCELSIOR BLVD) AT 17TH AVE S MATCHLINE LAYOUT			
133	W3-TFC-SIG-001-01C	SIGNAL SYSTEM "P" - C.S.A.H. 3 (EXCELSIOR BLVD) AT 17TH AVE S EQUIPMENT SCHEDULE			
134	W3-TFC-SIG-002-01	SIGNAL SYSTEM "P" - C.S.A.H. 3 (EXCELSIOR BLVD) AT 17TH AVE S FOR INFORMATION ONLY			
135	W1-TFC-SIG-IC-001	TRAFFIC SIGNAL INTERCONNECT ALONG TECHNOLOGY DRIVE AND PRAIRIE CENTER DRIVE			
136	W1-TFC-SIG-IC-002	TRAFFIC SIGNAL INTERCONNECT ALONG EDEN ROAD AND CSAH 61 (FLYING CLOUD DRIVE)			
137	W3-TFC-IC-001	TRAFFIC SIGNAL INTERCONNECT ALONG CSAH 3 (EXCESIOR BOULEVARD)			
138	W3-TFC-IC-002	TRAFFIC SIGNAL INTERCONNECT ALONG CSAH 3 (EXCESIOR BOULEVARD)			
139	W3-TRF-SIG-002-002	C.S.A.H. 3 (EXELSIOR BLVD) AT 11TH AVE S FOR INFORMATION ONLY			
140	W3-TRF-SIG-002-003	C.S.A.H. 3 (EXELSIOR BLVD) FOR INFORMATION ONLY			
141	W3-TRF-SIG-002-005	C.S.A.H. 3 (EXELSIOR BLVD) FOR INFORMATION ONLY			
		LIGHTING			
142	W2-GLT-ELE-PLN-101	GOLDEN TRIANGLE STATION ELECTRICAL SITE PLAN			
143	W2-CWS-ELE-PLN-101	CITY WEST STATION ELECTRICAL SITE PLAN (1 OF 2)			
144	W2-CWS-ELE-PLN-102	CITY WEST STATION ELECTRICAL SITE PLAN (2 OF 2)			
145	W3-OPS-ELE-PLN-101	OPUS STATION ELECTRICAL SITE PLAN (1 OF 2)			
146	W3-OPS-ELE-PLN-102	OPUS STATION ELECTRICAL SITE PLAN (2 OF 2)			
147	W3-SHD-ELE-PLN-101	SHADY OAK STATION ELECTRICAL SITE PLAN (1 OF 3)			
148	W3-SHD-ELE-PLN-102	SHADY OAK STATION ELECTRICAL SITE PLAN (2 OF 3)			
149	W3-SHD-ELE-PLN-103	SHADY OAK STATION ELECTRICAL SITE PLAN (3 OF 3)			
150	W0-ELE-SITE-SCH-501	ELECTRICAL - LUMINAIRE SCHEDULE (1 OF 3)			
151	W0-ELE-SITE-SCH-502	ELECTRICAL - LUMINAIRE SCHEDULE (2 OF 3)			
152	W0-ELE-SITE-SCH-503	ELECTRICAL - LUMINAIRE SCHEDULE (3 OF 3)			

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM

60% SUBMISSION - 09/28/15

METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
TRAFFIC / LIGHTING
VOLUME INDEX OF PLAN SHEETS

DISCIPLINE: GENERAL

SHEET NAME: W0-TFC-IDX - 001

SHEET 2 OF 152

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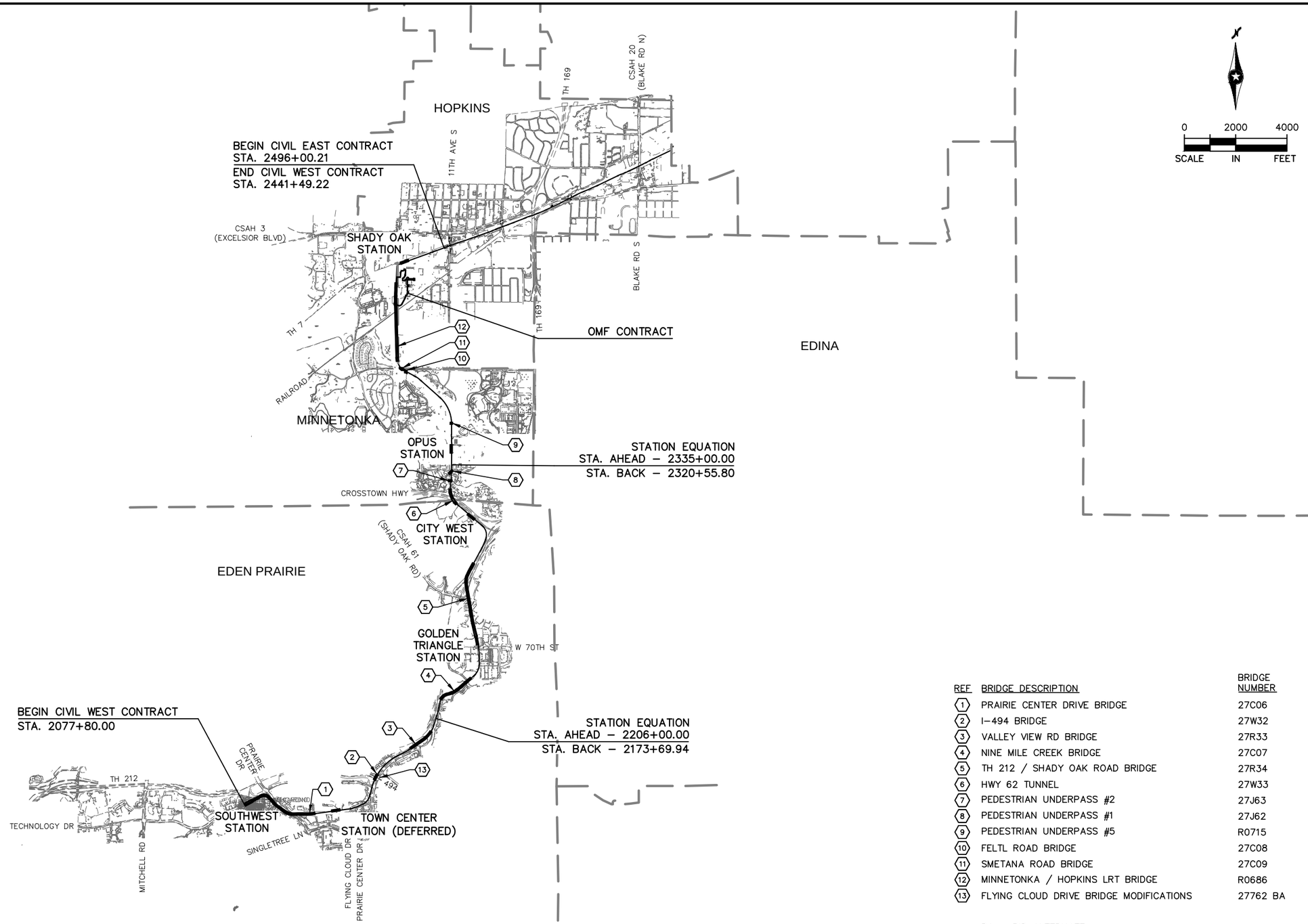

REF	BRIDGE DESCRIPTION	BRIDGE NUMBER
1	PRAIRIE CENTER DRIVE BRIDGE	27C06
2	I–494 BRIDGE	27W32
3	VALLEY VIEW RD BRIDGE	27R33
4	NINE MILE CREEK BRIDGE	27C07
5	TH 212 / SHADY OAK ROAD BRIDGE	27R34
6	HWY 62 TUNNEL	27W33
7	PEDESTRIAN UNDERPASS #2	27J63
8	PEDESTRIAN UNDERPASS #1	27J62
9	PEDESTRIAN UNDERPASS #5	R0715
10	FELTL ROAD BRIDGE	27C08
11	SMETANA ROAD BRIDGE	27C09
12	MINNETONKA / HOPKINS LRT BRIDGE	R0686
13	FLYING CLOUD DRIVE BRIDGE MODIFICATIONS	27762 BA

BA – BID ALTERNATE

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

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60% SUBMISSION - 09/28/15

METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
GENERAL
KEY MAP

DISCIPLINE: GENERAL

SHEET NAME: W0-GEN-KEY - 001

SHEET 3 OF 152

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TRACK LINETYPES

- ROADWAY ℄
- TRACK ℄ (LRT)
- TRACK ℄ (FRT)
- RETAINING WALL
- BALLAST CURB
- TUNNEL WALL
- FENCE
- EX ROW
- PROP ROW
- PROP TCE
- PROP PE
- FENCE / RAILING
- ID — ID — INTRUSION DETECTION

CIVIL LINETYPES

- ROADWAY ℄
- TRACK ℄ (LRT)
- TRACK ℄ (FRT)
- RETAINING WALL
- BALLAST CURB
- TUNNEL WALL
- CONCRETE CURB AND GUTTER
- TRAIL
- SIDEWALK
- DRIVEWAY
- BRIDGE
- SAWCUT
- FENCE
- DELINEATED WETLAND
- WATER EDGE
- EX ROW
- PROP ROW
- PROP TCE
- PROP PE
- CROSSWALK
- STOP BAR
- MEDIAN NOSE

TRACK SYMBOLS

- PROPOSED DIRECTIONAL LANE USE
- EXISTING DIRECTIONAL LANE USE
- PEDESTRIAN FLASHER
- AUTOMATIC GATE
- RAIL TURNOUT
- RAIL CROSSOVER (DOUBLE)
- RAIL CROSSOVER (SINGLE)
- POINT OF SWITCH (PS)
- OCS POLE FOUNDATION
- RAIL LUBRICATOR
- POINT OF INTERSECTION (PI) OF TURNOUT (TO)
- W2-200 — RAILROAD CURVE NUMBER

NOTE:
ALL TURNOUTS AND CROSSOVERS TO BE EQUIPPED WITH POWER SWITCH MACHINES AND SWITCH HEATERS

CIVIL SYMBOLS

- ACCESSIBLE PEDESTRIAN CURB RAMP (DESIGN VARIES)
- PROPOSED DIRECTIONAL LANE USE
- EXISTING DIRECTIONAL LANE USE
- AUTOMATIC GATE
- HANDICAP PARKING STALL
- TACTILE WARNING STRIP
- TPSS BUILDING (TPSS-SW###)
- SIGNAL OR INTERMEDIATE OR PLATFORM OR XING OR TUNNEL HOUSE OR ANY COMBINATION OF THESE

SURVEY NOTES

1. THE HORIZONTAL DATUM OF THIS MAP IS BASED ON THE HENNEPIN COUNTY COORDINATE SYSTEM WHICH IS RELATED TO THE MINNESOTA STATE PLANE COORDINATE SYSTEM NAD 83 (2007) ADJUSTMENT SOUTH ZONE.
2. THE PLANIMETRIC FEATURES SHOWN ON THIS MAP ARE AS PREPARED BY AERO-METRIC, INC. FROM AERIAL DATA AND IMAGERY COLLECTED IN APRIL 2012, AS SUPPLEMENTED BY FIELD SURVEYS COMPLETED BY RANI ENGINEERING.
3. HORIZONTAL POSITIONAL ACCURACY: USING THE NATIONAL STANDARD FOR SPATIAL DATA ACCURACY, THE DATA SET TESTED 0.14 FEET HORIZONTAL ACCURACY AT A 95% CONFIDENCE LEVEL.
4. VERTICAL POSITIONAL ACCURACY: USING THE NATIONAL STANDARD FOR SPATIAL DATA ACCURACY, THE DATA SET TESTED 0.10 FEET VERTICAL ACCURACY AT 95% CONFIDENCE LEVEL.

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METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
GENERAL
LEGEND AND ABBREVIATIONS
SHEET 1

DISCIPLINE: GENERAL

SHEET NAME: W0-GEN-NTS - 001

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ABBREVIATIONS

AD	ALGEBRAIC DIFFERENCE
AVE	AVENUE
BGN	BEGIN
BP	BEGINNING POINT
BVCE	BEGINNING VERTICAL CURVE ELEVATION
BVCS	BEGINNING VERTICAL CURVE STATION
BLVD	BOULEVARD
BNSF	BURLINGTON NORTHERN SANTA FE RAILWAY
C&G	CURB AND GUTTER
℄	CENTERLINE
CIR	CIRCLE
CP	CANADIAN PACIFIC
CPRAIL	CANADIAN PACIFIC RAILWAY
CS	CURVE TO SPIRAL
CSAH	COUNTY STATE AID HIGHWAY
D&U	DRAINAGE AND UTILITY
DF	DIRECT FIXATION
DR	DRIVE
DTL	DETAIL
DWY	DRIVEWAY
E	EAST
Ea	ACTUAL SUPERELEVATION (INCHES)
EB	EAST BOUND
EL or ELEV	ELEVATION
EP	END POINT
ESMT	EASEMENT
Eu	UNBALANCED SUPERELEVATION (INCHES)
EVCE	ENDING VERTICAL CURVE ELEVATION
EVCS	ENDING VERTICAL CURVE STATION
EX	EXISTING
HCRRA	HENNEPIN COUNTY REGIONAL RAILROAD AUTHORITY
LH	LEFT HAND
LN	LANE
LRT	LIGHT RAIL TRANSIT
L_c	CURVE LENGTH (FEET)
L_s	SPIRAL LENGTH (FEET)
MIN	MINIMUM
MPH	MILES PER HOUR
MPLS	CITY OF MINNEAPOLIS
MPRB	MINNEAPOLIS PARK AND RECREATION BOARD
N	NORTH
NB	NORTH BOUND
NIC	NOT IN CONTRACT
NO	NUMBER
OMF	OPERATIONS AND MAINTENANCE FACILITY
OCS	OVERHEAD CONTACT SYSTEM
OH	OVERHEAD
PC	POINT OF CURVE
PE	PERMANENT EASEMENT
PITO	POINT OF INTERSECTION OF TURNOUT
PKWY	PARKWAY
POT	POINT ON TANGENT
PROP	PROPOSED
PS	POINT OF SWITCH
PT	POINT OF TANGENT
PVI	POINT OF VERTICAL INTERSECTION
R	RADIUS (FEET)
RD	ROAD
RL	RAIL LUBRICATOR
r	RATE OF CHANGE VERTICAL CURVE
RH	RIGHT HAND
ROW	RIGHT OF WAY
S	SOUTH
SB	SOUTH BOUND
SC	SPIRAL TO CURVE
SIG-COMM	SIGNAL COMMUNICATION
ST	STREET
ST	SPIRAL TO TANGENT
STA	STATION
TCE	TEMPORARY CONSTRUCTION EASEMENT
TH	TRUNK HIGHWAY
THRU	THROUGH
TOR	TOP OF RAIL
TPSS	TRACTION POWER SUBSTATION
TRK	TRACK
TS	TANGENT TO SPIRAL
TYP	TYPICAL
UG	UNDERGROUND
V	DESIGN VELOCITY (MPH)
VC	VERTICAL CURVE
W	WEST
WB	WEST BOUND

TRAIL INDEX

ABBREVIATED NAME	FULL NAME / LOCATION
TRAIL 1	UNDER RED CIRCLE DR, LRT, AND YELLOW CIRCLE DR
TRAIL 2	FROM TRAIL 1 TO GREEN CIRCLE DR
TRAIL 3	OPUS STATION ACCESS FROM BREN RD E
TRAIL 4	FROM BREN RD W TO TRAIL 5
TRAIL 5	FROM OPUS STATION TO GREEN CIRCLE DR
TRAIL 6	FROM TRAIL 5 TO SMETANA RD
CEDAR LAKE TRAIL	CEDAR LAKE LRT REGIONAL TRAIL/FROM SHADY OAK STATION TO 11TH AVE
CEDAR LAKE TRAIL	CEDAR LAKE LRT REGIONAL TRAIL/WEST OF EXCELSIOR
CEDAR LAKE TRAIL	CEDAR LAKE LRT REGIONAL LRT TRAIL/BETWEEN EXCELSIOR AND KENILWORTH TRAIL CONNECTION
MIDTOWN GREENWAY	MIDTOWN GREENWAY/EAST OF KENILWORTH TRAIL CONNECTION
TRAIL A	KENILWORTH TRAIL (SECONDARY)/BETWEEN CEDAR-ISLES CHANNEL AND 21ST STREET STATION
TRAIL B	KENILWORTH TRAIL (SECONDARY)/BETWEEN 21ST STREET STATION AND PENN STATION
TRAIL B	CEDAR LAKE TRAIL (SECONDARY)/EAST OF PENN STATION
TRAIL C	10' CONNECTOR TRAIL FROM CEDAR LAKE LRT REGIONAL TRAIL TO TYLER AVE.
TRAIL D	10' CONNECTOR TRAIL/BELTLINE STATION TO CEDAR LAKE LRT REGIONAL TRAIL
KENILWORTH TRAIL	KENILWORTH TRAIL (MAIN)/W LAKE ST TO PENN STATION
CEDAR LAKE TRAIL	CEDAR LAKE TRAIL (MAIN)/PENN STATION TO TH 394
TRAIL E	KENILWORTH TRAIL (SECONDARY)/EAST OF W LAKE ST
TRAIL F	KENILWORTH TRAIL (SECONDARY)/WEST OF CEDAR LAKE PKWY
TRAIL G	KENILWORTH TRAIL (SECONDARY)/WEST OF PENN STATION
TRAIL G	CEDAR LAKE TRAIL (SECONDARY)/EAST OF PENN STATION
TRAIL H	10' CONNECTOR TRAIL/EAST OF PENN STATION TO KENWOOD PKWY
TRAIL I	NOT USED
CEDAR LAKE TRAIL	CEDAR LAKE TRAIL (MAIN)/AT-GRADE CROSSING AT PENN STATION
TRAIL J	CEDAR LAKE TRAIL (SECONDARY)/NORTHWEST OF PENN STATION
TRAIL K	CEDAR LAKE TRAIL (SECONDARY)/NORTHWEST OF PENN STATION
TRAIL L	CEDAR LAKE TRAIL (SECONDARY)/EAST OF PENN STATION
TRAIL M	NOT USED
TRAIL N	8' CONNECTOR TRAIL FROM CEDAR LAKE TRAIL TO EDGEBROOOK DRIVE
TRAIL O	8' CONNECTOR TRAIL FROM CEDAR LAKE TRAIL TO W LAKE STREET
TRAIL P	8' CONNECTOR TRAIL FROM CEDAR LAKE TRAIL TO LOUISIANA AVE
TRAIL Q	10' CONNECTOR TRAIL FROM CEDAR LAKE TRAIL TO TH 7 SERVICE ROAD
TRAIL R	20' CONNECTOR TRAIL FROM VAN WHITE STATION TO CEDAR LAKE TRAIL
TRAIL S	NOT USED
TRAIL T	8' CONNECTOR TRAIL FROM VAN WHITE STATION TO VAN WHITE MEMORIAL BLVD
TRAIL U	10' TRAIL PARALLEL TO CEDAR LAKE PKWY
LUCE LINE TRAIL	LUCE LINE REGIONAL TRAIL/ON BRIDGE OVER LIGHT RAIL
TRAIL V	CONNECTOR TRAIL TO LUCE LINE REGIONAL TRAIL WEST OF LIGHT RAIL
TRAIL W	CONNECTOR TRAIL TO LUCE LINE REGIONAL TRAIL WEST OF LIGHT RAIL

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METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
GENERAL
LEGEND AND ABBREVIATIONS
SHEET 2

DISCIPLINE: GENERAL

SHEET NAME: W0-GEN-NTS - 002

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PERMANENT PAVEMENT MARKING PLAN

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.

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.

FOR 20 MIL APPLICATIONS, GLASS BEADS SHALL BE APPLIED AT A RATE OF AT LEAST 25 LB/GAL. THE "NO-TRACKING" CONDITION SHALL BE DETERMINED ON AN APPLICATION OF SPECIFIED THICKNESS TO THE PAVEMENT AND COVERED WITH GLASS BEADS AT THE RATE OF AT LEAST 25 LB/GAL.

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.

POLY PREFORM INLAY APPLICATION:

MAT TEMPERATURE SHALL BE CHECKED USING A THERMOMETER TO MAKE SURE THE INLAY IS BEING DONE IN THE PROPER TEMPERATURE RANGE. THE TEMPERATURE SHOULD MEASURE BETWEEN 150° F (ASPHALT FIRM ENOUGH TO WALK ON) AND 120° F. APPLICATION BELOW 120° F MAY NOT GET A PROPER INLAY. INLAYS ARE NOT RECOMMENDED AFTER SEPTEMBER 15th AS THE ASPHALT COOLS TOO FAST AT THIS TIME OF THE YEAR.

NO PRIMERS ARE USED FOR INLAY APPLICATION. DO NOT INSTALL LANE LINES ON AN ASPHALT SEAM. ROLLING OF ALL THE MARKINGS SHOULD BE LENGTHWISE IN THE DIRECTION THEY WERE LAID. FOR CROSSWALKS AND STOP BARS, INITIAL TAMPING WITH THE TAMPING CART IS RECOMMENDED USING ONLY 100 LBS. OF WEIGHT.

USE COMPACTION ROLLER TO EMBED (INLAY) MARKINGS INTO PAVEMENT SURFACE. USE MINIMUM SPEED AND WATER ON ROLLER. DO NOT USE VIBRATOR. IF MARKING BUCKLES OR DISTORTS SEVERELY IN FRONT OF ROLLER, MAT TEMPERATURE OR ROLLER SPEED MAY BE TOO HIGH.

POLY PREFORM GROOVED APPLICATION:

CONCRETE PAVEMENT SURFACES AND BITUMINOUS PAVEMENT SURFACES WHERE PAVEMENT MARKINGS CANNOT BE INLAID IN THE HOT MAT, SHALL BE GROOVED FOR THE INSTALLATION OF DURABLE REFLECTORIZED PAVEMENT MARKINGS. SEE SPECIAL PROVISIONS.

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.

SYMBOLS & MATERIALS LEGEND

CROSSWALK BLOCK WHITE-PREFORM

PAVEMENT MESSAGE (LEFT ARROW) POLY PREFORM

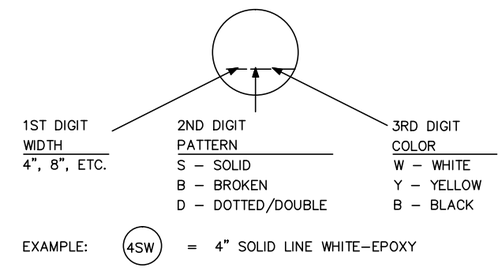
STRIPING KEY

XXX CIRCLE-EPOXY

XXX SQUARE-POLY PREFORM

XXX TRIANGLE-PAINT

XXX PENTAGON-REMOVEABLE-PREFORMED PLASTIC MARKING



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60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
SIGNING AND STRIPING
MNDOT NOTES AND LEGEND

DISCIPLINE: TRAFFIC

SHEET NAME: W0-TFC-SIGN-STRP-DTL - 001M

SHEET 7 OF 152

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GENERAL

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE MNDOT "TRAFFIC ENGINEERING MANUAL" AND THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD) INCLUDING PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS" WITH THE FOLLOWING EXCEPTIONS AND AS DIRECTED BY THE ENGINEER.

THESE GUIDELINES ARE TYPICAL. MODIFICATION MAY BE REQUIRED FOR UNUSUAL CONDITIONS OR TO CONFORM TO THE REQUIREMENTS OF OTHER AGENCIES.

ALL SIGNING, STRIPING AND PAVEMENT MARKINGS MAINTAINED BY THE CITY OF MINNEAPOLIS SHALL CONFORM TO THE REQUIREMENTS OF THE CITY OF MINNEAPOLIS.

SIGNING TYPE C

ALL SIGNING SHALL USE DG3 SIGN SHEETING.

ALL SIGNS SHALL BE CONVENTIONAL ROAD SIZE AS SHOWN IN THE MN MUTCD APPENDIX C EXCEPT AS FOLLOWS:
- ALL STOP SIGNS (R1–1) SHALL BE A MINIMUM OF 36" X 36"
- ALL NO PARKING SIGNS (R8–3) SHALL BE 18" X 18"
- ALL PEDESTRIAN CROSSING SIGNS (W11–2) SHALL BE A MINIMUM OF 36" X 36"

ALL SIGNS SHALL HAVE HOLES PUNCHED ONLY FOR THE NUMBER OF POSTS REQUIRED.

ALL SIGN POSTS SHALL BE 3 POUNDS PER FOOT, GALVANIZED "U" POSTS.

NUMBER OF POSTS:

SIGN WIDTH 35" OR LESS	USE 1 POST
SIGN WIDTH 36" – 70"	USE 2 POSTS WITH BACK BRACE
SIGN WIDTH OVER 70"	PLACE A POST APPROXIMATELY EVERY 2' WITH BACK BRACE

LATERAL BRACES MAY BE USED AS A STIFFENER FOR SIGNS IF REQUIRED BY THE ENGINEER.

KNEE BRACES SHALL NOT BE USED UNLESS REQUIRED BY THE ENGINEER.

MOUNTING HEIGHT TO THE BOTTOM EDGE OF THE LOWEST SIGN SHALL BE 7.0' EXCEPT AS FOLLOWS:
- OBJECT MARKERS AND SNOW PLOW MARKERS 5.0'
- OBJECT MARKER IF MOUNTED BELOW A KEEP RIGHT 4.0'

ALL SIGNS MOUNTED IN CONCRETE OR LANDSCAPE PAVER SURFACING SHALL USE A SIGN SOCKET WHICH SHALL BE PLACED IN CONCRETE. ALL SIGN SOCKETS LOCATED ON RAISED ISLANDS SHALL USE DOUBLE SIGN SOCKETS. SEE TYPICAL SIGN SOCKET DETAIL.

ALL KEEP RIGHT SIGNS (R4–7) SHALL HAVE REAR DELINEATION AS SHOWN IN THE REAR DELINEATION DETAIL AND AN OM1–3 MOUNTED BELOW THE KEEP RIGHT SIGN.

NO PARKING SIGNS SHALL WHERE POSSIBLE BE GROUPED WITH OTHER SIGNS TO REDUCE THE NUMBER OF SIGN POSTS.

ADOPT A HIGHWAY SIGN (I–X1) SHALL NOT BE USED. IF REQUIRED 36" X 24" ADOPT A HIGHWAY SIGNS SHALL BE FURNISHED BY HENNEPIN COUNTY FOR INSTALLATION BY THE CONTRACTOR.

A SCHOOL CROSSING SIGN (S1–1) WITH AHEAD PLAQUE (W16–9P) MOUNTED BELOW THE SCHOOL CROSSING SIGN SHALL BE IN ADVANCE OF ALL SCHOOL CROSSING SIGNS (S1–1).

ALL SIGNS SHOWN IN THE MN MUTCD WITH OPTIONAL FLUORESCENT YELLOW–GREEN BACKGROUND COLOR SHALL USE THE FLUORESCENT YELLOW–GREEN BACKGROUND COLOR.

NO PASSING ZONE SIGN (W14–3) SHALL BE USED ON THE LEFT WITH A DO NOT PASS SIGN (R4–1) ON THE RIGHT.

MERGE WITH DEMOUNTABLE ARROW SIGN (W20–X3) SHALL NOT BE USED. A LANE ENDS MERGE SIGN (W9–2) FOLLOWED BY A LANE REDUCTION SIGN (W4–2) SHALL BE USED.

ALL INPLACE SIGNS WITHIN THE CONSTRUCTION LIMITS SHALL BE PROTECTED INPLACE, SALVAGED OR SALVAGED AND REINSTALLED AS SHOWN IN THE PLANS AND AS DIRECTED BY THE ENGINEER. SALVAGED SIGNS SHALL NOT BE REINSTALLED UNLESS THEY ARE IN GOOD CONDITION, HAVE DG3 SIGN SHEETING AND ARE STILL APPLICABLE. ALL SALVAGED SIGNS NOT REINSTALLED SHALL BE COMPLETELY DISASSEMBLED BY THE CONTRACTOR AND BROKEN DOWN INTO THEIR BASIC COMPONENTS (SIGN PANELS, POST, NUTS AND BOLTS) WHICH SHALL BE RETURNED TO THEIR OWNERS.

PERMANENT STRIPING AND PAVEMENT MARKINGS

ALL LONGITUDINAL LINES SHALL BE 4" WIDE EPOXY GROUND IN (GROOVED) EXCEPT WHITE EDGE LINES WHICH SHALL BE 6", UNLESS NOTED.

A BROKEN LINE SHALL BE A 4" WIDE EPOXY GROUND IN (GROOVED) LINE AND SHALL HAVE A 10' LENGTH AND 30' GAP.

A DOTTED LINE (CAT TRACKS) SHALL BE A 4" WIDE THERMOPLASTIC GROUND IN (GROOVED) LINE AND SHALL HAVE A 2' LENGTH AND 6' GAP.

CROSSHATCHING (HASH MARKS) SHALL BE 24" WIDE EPOXY GROUND IN (GROOVED) LINE. INSTALLED AT 45^ WITH AN 20' PERPENDICULAR GAP. THEY SHALL ONLY BE PLACED WHEN AT LEAST 2 BARS OF MINIMUM 6' LENGTH CAN BE INSTALLED AT STANDARD SPACING.

ON BITUMINOUS PAVEMENTS LONGITUDINAL LINES SHALL NOT BE PLACED IMMEDIATELY ADJACENT (2' OR LESS FROM THE FACE OF CURB) TO CONCRETE CURB AND GUTTER, RAISED CONCRETE OR MONOLITHIC ISLANDS EXCEPT RIGHT TURN ISLANDS.

STOP LINES SHALL NOT BE PLACED EXCEPT AT RAILROAD CROSSINGS, SIGNALIZED INTERSECTION APPROACHES WITHOUT CROSSWALK MARKINGS AND AT "MINNEAPOLIS" STYLE CROSSWALK MARKINGS.

PERMANENT PAVEMENT MARKINGS, STRIPING AND MESSAGES SHALL NOT BE PLACED ONTO A CONCRETE GUTTER.

ALL PAVEMENT MESSAGES SHALL BE THERMOPLASTIC GROUND IN (GROOVED). ALL BIKE LANE AND SHARED LANE SYMBOLS SHALL HAVE A WHITE LEGEND CENTERED ON A BLACK RECTANGULAR BACKGROUND.

THE INSTALLERS OF ALL THERMOPLASTIC MATERIALS MUST CARRY A CARD CERTIFYING THAT THEY HAVE ATTENDED A TRAINING SESSION THAT ADDRESSES SURFACE PREPARATIONS AND ALL APPLICATION REQUIREMENTS AND TECHNIQUES NECESSARY FOR SUCCESSFUL APPLICATIONS.

IF THERMOPLASTIC MATERIAL IS TO BE INSTALLED ON CONCRETE PAVEMENT THE CONCRETE PAVEMENT SHALL HAVE A SEALER APPLIED THAT IS IN ACCORDANCE WITH ALL OF THE MANUFACTURE'S SPECIFICATIONS AFTER THE GROUND IN PROCESS (GROOVED) AND BEFORE ANY THERMOPLASTIC MATERIAL IS APPLIED, AS DIRECTED BY THE ENGINEER.

PAVEMENT MESSAGE SPECIAL SHALL NOT BE PLACED WITHIN ANY MARKED CROSSWALK.

PAVEMENT MESSAGE SPECIAL SHALL HAVE ALL THERMOPLASTIC MATERIAL OMITTED THAT WOULD BE PLACED ONTO A CONCRETE GUTTER, AS DIRECTED BY THE ENGINEER.

FULL WIDTH TURN LANES:
- UNDER 250' USE 1 ARROW PLACED AT THE CENTER OF THE TURN LANE.
- OVER 250' USE 2 ARROWS PLACED AS SHOWN IN THE MN/DOT "TRAFFIC ENGINEERING MANUAL"
- PAVEMENT MESSAGE "ONLY" SHALL NOT BE USED.

CROSSWALK MARKINGS OUTSIDE THE CITY OF MINNEAPOLIS SHALL BE WHITE THERMOPLASTIC "ZEBRA" STYLE. THEY SHALL MATCH IN WIDTH THE FACILITY THAT ENTERS THE CROSSWALK MARKINGS WITH A MINIMUM WIDTH OF 6' OR AS DIRECTED BY THE ENGINEER. CROSSWALK MARKINGS WITHIN THE CITY OF MINNEAPOLIS AND THE UNIVERSITY OF MINNESOTA CAMPUS SHALL BE TWO PARALLEL 12" WIDE WHITE THERMOPLASTIC LINES GROUND IN (GROOVED) INSTALLED A MINIMUM OF 10' APART, WITH A 24" WHITE THERMOPLASTIC STOP LINE GROUND IN (GROOVED) INSTALLED WITH A 10' PERPENDICULAR GAP FROM THE NEAR SIDE CROSSWALK MARKING, ACROSS ALL LANES OF APPROACHING TRAFFIC. AS DIRECTED BY THE ENGINEER.

CROSSWALK MARKINGS SHALL WHERE POSSIBLE CONNECT PEDESTRIAN CURB RAMPS WITH A STRAIGHT LINE, AT 90^ TO THE ROADWAY AND BE PLACED IN FRONT OF MEDIAN NOSES.

CROSSWALK MARKINGS SHALL NOT BE PLACED ACROSS FREE RIGHT TURN LANES, SLIP LANES OR AT SIGNED TRAIL CROSSING LOCATIONS.

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METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
SIGNING AND STRIPING
HENNEPIN COUNTY NOTES
SHEET 1

DISCIPLINE: TRAFFIC

SHEET NAME: W0-TFC-SIGN-STRP-DTL - 002H

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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 CROSSWALK.

A TOLERANCE OF 1/4" UNDER OR 1/4" 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 6" FROM THE SPECIFIED LENGTHS PROVIDED THE OVER AND UNDER VARIATIONS ARE REASONABLY COMPENSATORY. ALIGNMENT DEVIATIONS FROM THE CONTROL GUIDE SHALL NOT EXCEED 1" MATERIAL SHALL NOT BE APPLIED OVER LONGITUDINAL JOINTS. ESTABLISHMENT OF APPLICATION TOLERANCES SHALL NOT RELIEVE THE CONTRACTOR OF HIS 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 INCHES 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.

DO NOT APPLY OVER INPLACE PAINT, INPLACE EPOXY OR INPLACE THERMOPLASTIC UNLESS VERY WELL WORN (AT LEAST 75% – 80% WORN AWAY) AND WELL ADHERED TO THE PAVEMENT. GRIND OR SANDBLAST OLD MARKINGS AND SWEEP OR BLOW AREA CLEAN.

THERMOPLASTIC AND POLY PREFORM

THE INSTALLERS OF THIS MATERIAL MUST CARRY A CARD CERTIFYING THAT THEY HAVE ATTENDED A TRAINING SESSION THAT ADDRESSES SURFACE PREPARATIONS AND ALL APPLICATION REQUIREMENTS AND TECHNIQUES NECESSARY FOR SUCCESSFUL APPLICATION.

ALL MARKINGS SHALL BE OF THE "INLAY" METHOD UNLESS THE "GROUND IN" (GROOVED) OR "OVERLAY" PROCEDURE IS SPECIFIED.

GROOVE SPECIFICATIONS

THE PAVEMENT SURFACE SHALL BE GROUND (GROOVED) TO DIMENSIONS THAT ARE EQUAL OR GREATER THAN 1" LARGER (ALL DIRECTIONS) THAN THE DIMENSIONS OF THE MARKING TO BE INSTALLED (NOT TO EXCEED 2" GREATER THAN THE MARKING DIMENSIONS). THE DEPTH OF THE GROOVE SHALL BE 100 MILLS (+/– 10 MILLS). NOTE: 1000 MILLS = 1 INCH.

THE RECOMMENDED POSITION OF THE GROOVE EDGE IS A MINIMUM OF 2 INCHES FROM THE EDGE OF CONCRETE JOINTS OR ASPHALT SEAMS ALONG EDGE OR CENTERLINES.

INTERSECTION MARKINGS, LEGENDS, AND SYMBOLS MAY REQUIRE USE OF WIDER CUTTING HEADS TO REDUCE THE NUMBER OF RIDGES FORMED BY MULTIPLE PASSES WITH THE CUTTING HEAD. THE HEIGHT OF THE RIDGES SHOULD BE LESS THAN 20% OF THE GROOVE DEPTH. SMALLER EQUIPMENT MAY BE REQUIRED TO ACHIEVE A GROOVE AT THE RECOMMENDED DEPTH WHEN WORKING NEAR OBSTACLES SUCH AS CURBS OR MEDIANS.

NEW BITUMINOUS PAVEMENT SHOULD NOT BE GROOVED UNTIL AFTER 10 DAYS OF THE PLACEMENT OF THE FINAL COURSE OF PAVEMENT. INTERIM DEVICES (TEMP. TAPE, RAISED TABS, OR OTHER DELINEATION OR CHANNELIZATION DEVICES) SHALL DELINEATE THE PROPOSED MARKING AREAS IF THE ROADWAY IS OPEN TO TRAFFIC.

INLAY SPECIFICATIONS

MAT TEMPERATURE SHALL BE CHECKED USING A THERMOMETER TO MAKE SURE THE INLAY IS BEING DONE IN THE PROPER TEMPERATURE RANGE, THE TEMPERATURE SHOULD MEASURE BETWEEN 150 DEGREES F (ASPHALT FIRM ENOUGH TO WALK ON) AND 120 DEGREES F, APPLICATION BELOW 120 DEGREES F MAY NOT GET A PROPER INLAY. INLAYS ARE NOT RECOMMENDED AFTER SEPTEMBER 15TH AS THE ASPHALT COOLS TOO FAST AT THIS TIME OF YEAR.

NO PRIMERS ARE USED FOR INLAY APPLICATION, DO NOT INSTALL LANE LINES ON AN ASPHALT SEAM, ROLLING OF ALL THE MARKINGS SHOULD BE LENGTHWISE IN THE DIRECTION THEY WERE LAID. FOR CROSSWALKS AND STOP LINES, INITIAL TAMPING WITH THE TAMPING CART IS RECOMMENDED USING ONLY 100 LBS. OF WEIGHT.

USE COMPACTION ROLLER TO EMBED (INLAY) MARKINGS INTO PAVEMENT SURFACE. USE MINIMUM SPEED AND WATER ON ROLLER. DO NOT USE VIBRATOR. IF MARKING BUCKLES OR DISTORTS SEVERELY IN FRONT OF ROLLER, MAT TEMPERATURE OR ROLLER SPEED MAY BE TOO HIGH.

APPLICATION OF MARKING IN GROUND IN (GROOVED) PAVEMENT

THE GROOVE SHALL BE ALLOWED TO DRY A MINIMUM OF 24 HOURS AFTER GROOVE CLEANING, REMOVAL OF WATER, AND PRIOR TO PAVEMENT MARKING APPLICATION IF WATER IS USED IN THE GROOVING PROCESS. THE GROOVE MUST BE CLEAN AND DRY FOR PROPER APPLICATION OF THE PAVEMENT MARKING. CLEAN THE GROOVE COMPLETELY PRIOR TO PAVEMENT APPLICATION USING AN AIR COMPRESSOR WITH AT LEAST 185 CFM AIR FLOW AND 90 PSI AIR PRESSURE. ONE DRY PASS WITH A PICKUP SWEEPER WILL BE REQUIRED PRIOR TO AIRBLASTING THE GROOVE IF TRAFFIC IS PRESENT.

AIR TEMPERATURE SHALL BE A MINIMUM OF 40 DEGREES F.
SURFACE TEMPERATURE SHALL BE A MINIMUM OF 40 DEGREES F.

A SURFACE PREPARATION ADHESIVE IS REQUIRED WHEN PAVEMENT MARKING APPLICATION OCCURS OUTSIDE OF THE SEASON BETWEEN JUNE 1 AND SEPTEMBER 1. SURFACE PREPARATION ADHESIVE SHALL BE APPLIED ACCORDING TO PRODUCT RECOMMENDATIONS.

PAVEMENT MARKING SHALL BE INSTALLED AND TAMPED AS PER MANUFACTURES RECOMMENDATIONS. USE TAMPER CARTS WITH A 200-POUND LOAD. PAVEMENT MARKING APPLICATION IN A GROOVE WILL REQUIRE TAMPING WITH A TAMPER CART ROLLER CUT TO FIT IN THE GROOVE. USE A MODIFIED TAMPER CART ROLLER IF NECESSARY. A TYPICAL MODIFIED ROLLER WILL HAVE A 4" WIDTH AND A 1/4" DEPTH. USE OF A VEHICLE TIRE TO TAMP TAPE IN A GROOVE IS ACCEPTABLE FOR WAFFLE PATTERN TYPES.

OVERLAY SPECIFICATIONS

NEW CONCRETE (LESS THAN 3 MONTHS OLD):
REMOVE CURING COMPOUND BY SANDBLASTING, HYDROBLASTING OR SHOT BLASTING WHERE TAPE IS TO BE APPLIED. HYDROBLASTING LEAVES SURFACE WET, TIME SHALL BE ALLOWED FOR PAVEMENT TO DRY. SWEEP OR BLOW THE BLASTED AREAS CLEAN. APPLY REQUIRED PRIMER (SEE MANUFACTURERS SPECIFICATIONS).

ASPHALT (0 – 3 DAYS OLD):
SWEEP OR BLOW AREA CLEAN. NO PRIMER IS REQUIRED.

ASPHALT (4 DAYS OLD OR OLDER):
SWEEP OR BLOW AREA CLEAN. APPLY REQUIRED PRIMER.
(SEE MANUFACTURERS SPECIFICATIONS).

OLD CONCRETE:
SWEEP OR BLOW AREA CLEAN. APPLY REQUIRED PRIMER
(SEE MANUFACTURES SPECIFICATIONS).

OLD MARKINGS:
DO NOT APPLY OVER PAINT, EPOXY OR THERMOPLASTIC UNLESS VERY WELL WORN (AT LEAST 75% – 80% WORN AWAY) AND WELL ADHERED TO THE PAVEMENT. GRIND OR SANDBLAST OLD MARKING AND SWEEP OR BLOW AREA CLEAN. APPLY REQUIRED PRIMER (SEE MANUFACTURERS SPECIFICATIONS).

WORN POLY PREFORM MARKINGS:
OK TO APPLY NEW MATERIAL OVER WORN POLY PREFORM MARKINGS. REMOVE ALL LOOSE MATERIAL WITH SCRAPER OR KNIFE. SWEEP OR BLOW AREA CLEAN. APPLY REQUIRED PRIMER (SEE MANUFACTURES SPECIFICATIONS).

DRAFT-WORK IN PROCESS

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM SRF Consulting Group, Inc. METROPOLITAN COUNCIL SOUTHWEST Green Line LRT Extension

60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
SIGNING AND STRIPING
HENNEPIN COUNTY NOTES
SHEET 2

DISCIPLINE: TRAFFIC
SHEET NAME: W0-TFC-SIGN-STRP-DTL - 003H

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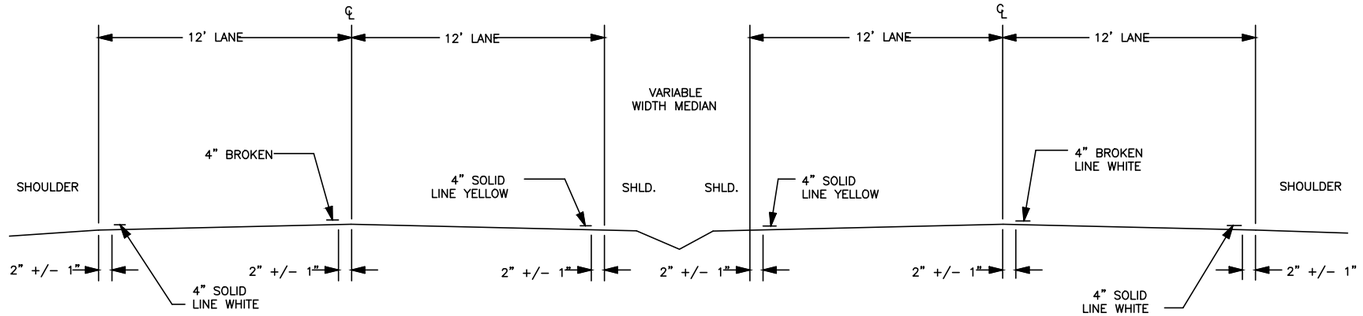
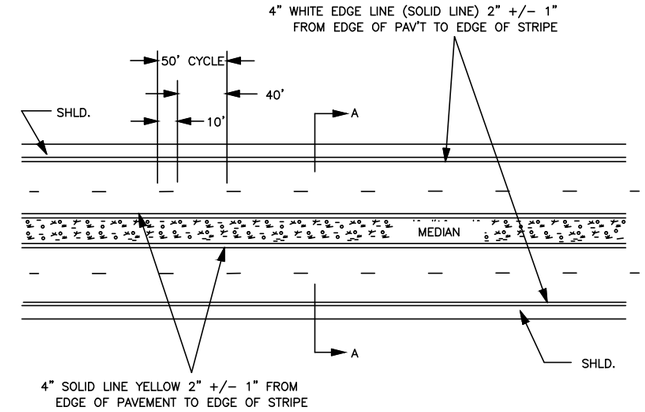
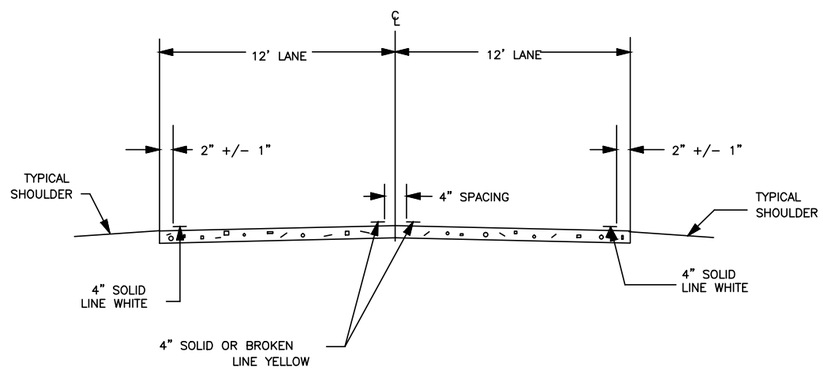


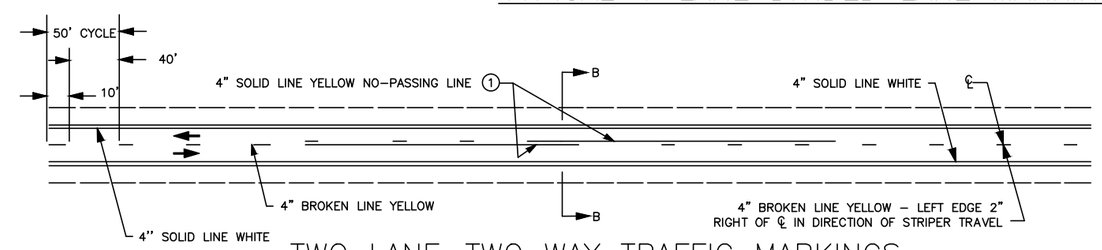
SECTION A–A
FOUR LANES



TYPICAL 4–LANE DIVIDED LANE MARKINGS

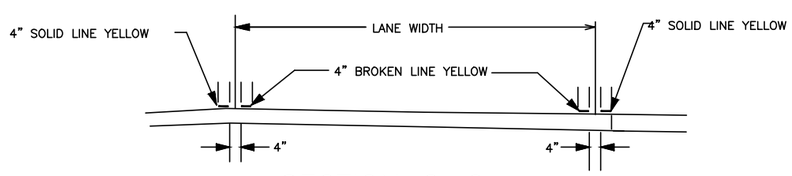


SECTION B–B

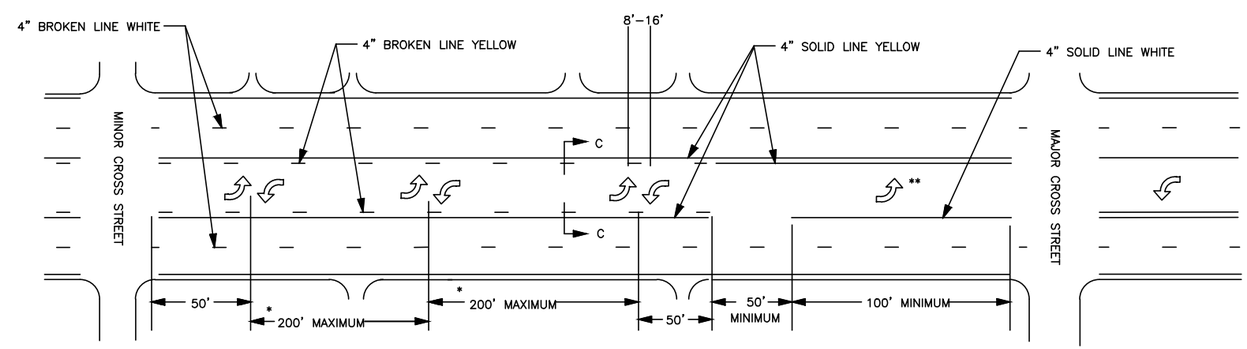


TWO LANE–TWO WAY TRAFFIC MARKINGS

(1) CONTACT TRAFFIC ENGINEER FOR NO PASSING ZONE SURVEY.



SECTION C–C
TWO WAY LEFT TURN LANE



TWO WAY LEFT TURN LANE

* THESE DISTANCES SHOULD BE EQUAL. THE PAVEMENTARROWS ARE PLACED TO SHOW THE OPERATION AND DO NOT HAVE TO LINE UP WITH ANY OF THE DRIVEWAYS.

NOTE:
SINGLE–DIRECTION LEFT–TURN ARROWS SHALL NOT BE USED IN LANES BORDERED ON BOTH SIDES BY TWO–WAY LEFT–TURN LANE MARKINGS

** SEE "TYPICAL MESSAGE PLACEMENT FOR TURN LANES" FOR NUMBER AND PLACEMENT OF ARROWS.

REVISED: 20–NOV–2013

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60% SUBMISSION - 09/28/15

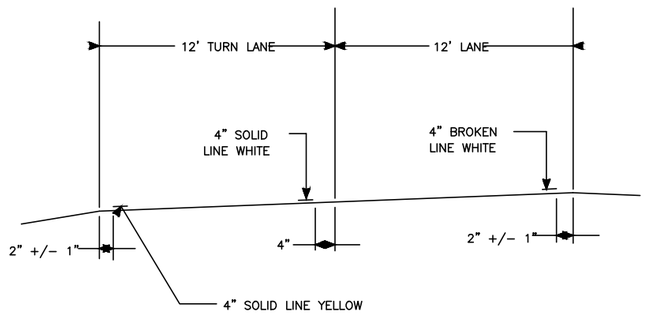
CIVIL WEST - VOLUME 10
SIGNING AND STRIPING
MNDOT DETAIL
SHEET 1

DISCIPLINE: TRAFFIC

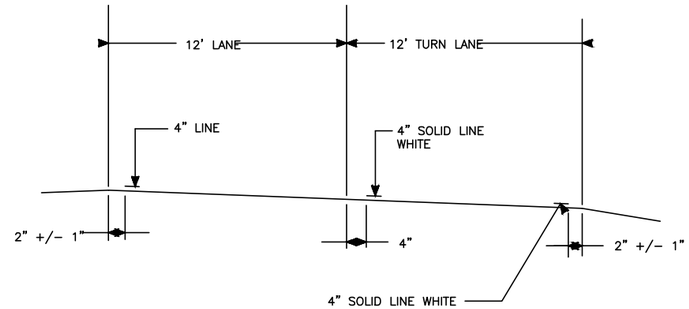
SHEET NAME: W0-TFC-SIGN-STRP-DTL - 004M

Sep, 21 2015 11:10 am V:\3400_ADC\CAD\OVERALL\PLAN SHEETS\TRAFFIC\W0-TFC-SIGN-STRP-DTL.dwg By: kmcclement

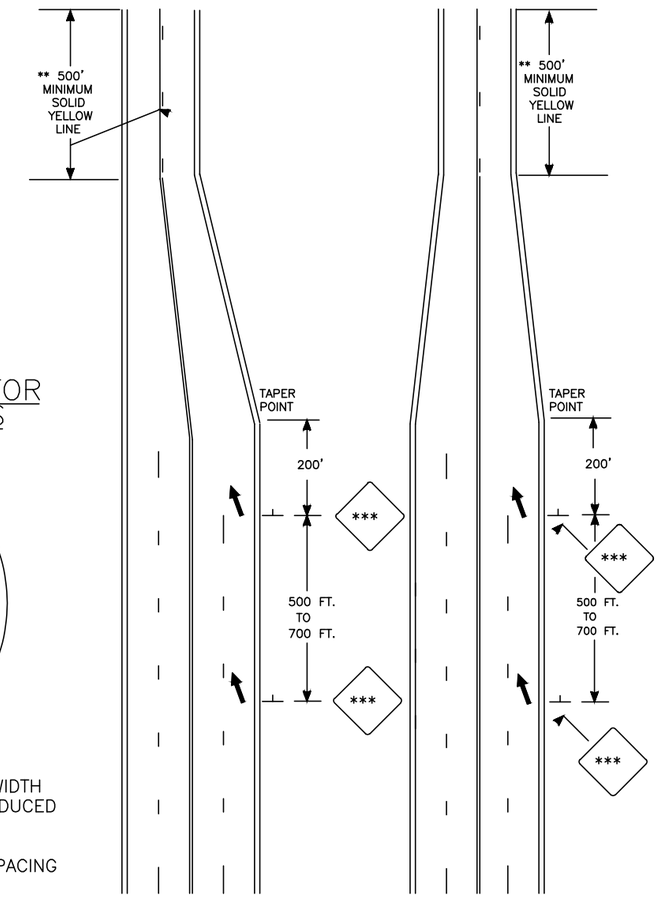
TYPICAL LEFT TURN LANE



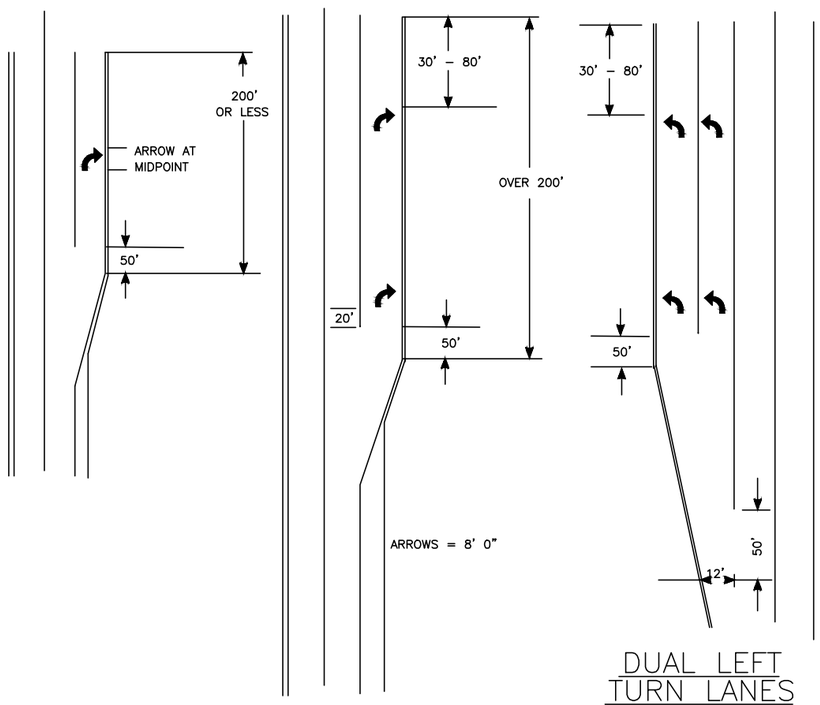
TYPICAL RIGHT TURN LANE



TYPICAL LANE REDUCTION TRANSITION

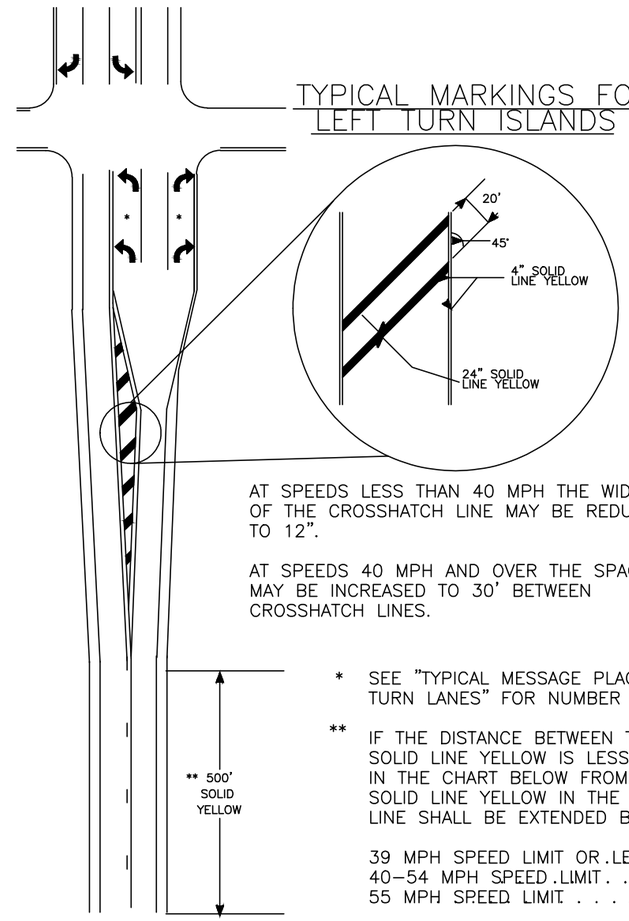


TYPICAL MESSAGE PLACEMENT FOR TURN LANES



DUAL LEFT TURN LANES

TYPICAL MARKINGS FOR LEFT TURN ISLANDS



AT SPEEDS LESS THAN 40 MPH THE WIDTH OF THE CROSSHATCH LINE MAY BE REDUCED TO 12".

AT SPEEDS 40 MPH AND OVER THE SPACING MAY BE INCREASED TO 30' BETWEEN CROSSHATCH LINES.

* SEE "TYPICAL MESSAGE PLACEMENT FOR TURN LANES" FOR NUMBER OF ARROWS.

** IF THE DISTANCE BETWEEN THE BEGINNING OF THE SOLID LINE YELLOW IS LESS THAN THE DISTANCES IN THE CHART BELOW FROM THE END OF A PRECEDING SOLID LINE YELLOW IN THE SAME LANE, THE SOLID LINE SHALL BE EXTENDED BETWEEN THEM.

39 MPH SPEED LIMIT OR LESS . . 500'
40–54 MPH SPEED LIMIT . . . . 650'
55 MPH SPEED LIMIT . . . . . 800'

*** PLACE TRANSITION ARROWS ADJACENT TO LANE REDUCTION SIGNS. REFER TO SIGNING TYPICALS FOR SIGN DETAILS AND PLACEMENT.

**** LANE REDUCTION TRANSITION ARROWS ARE OPTIONAL FOR SPEEDS LESS THAN 45 MPH.

REVISED: 20–NOV–2013

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METROPOLITAN COUNCIL SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
SIGNING AND STRIPING
MNDOT DETAIL
SHEET 2

DISCIPLINE: TRAFFIC

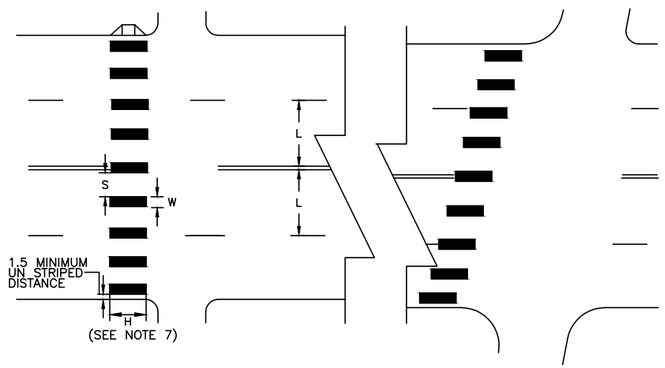
SHEET NAME: W0-TFC-SIGN-STRP-DTL - 005M

SHEET 11 OF 152

Sep, 21 2015 11:10 am V:\3400_ADC\CAD\OVERALL\PLAN SHEETS\TRAFFIC\W0-TFC-SIGN-STRP-DTL.dwg By: kmcclement

MARKINGS FOR PEDESTRIAN CROSSWALKS

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

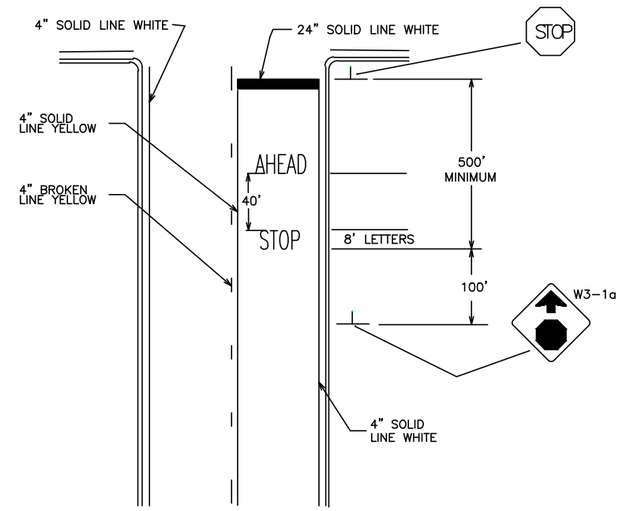


NOTES:

1. PAINTED AREAS TO BE CENTERED ON CENTERLINE AND LANE LINES.
2. A MINIMUM OF 1.5 FT. CLEAR DISTANCE SHALL BE LEFT ADJACENT TO THE CURB. IF LAST PAINTED AREA FALLS INTO THIS DISTANCE IT MUST BE OMITTED.
3. ON TWO LANE TWO WAY STREETS, USE SPACING SHOWN FOR AN 11 FT. INSIDE LANE.
4. FOR DIVIDED ROADWAYS, ADJUSTMENTS IN SPACING OF THE BLOCKS SHOULD BE MADE IN THE MEDIAN SO THAT THE BLOCKS ARE MAINTAINED IN THEIR PROPER LOCATION ACROSS THE TRAVELED PORTION OF THE ROADWAY.
5. AT SKEWED CROSSWALKS, THE BLOCKS ARE TO REMAIN PARALLEL TO THE LANE LINES AS SHOWN.
6. THE BLOCKS SHALL BE PLACED SO THAT THEY ARE NOT LOCATED IN THE WHEEL PATH OF THE VEHICLES
7. THE BLOCKS SHALL BE A MINIMUM OF 6' LONG AND AT LEAST AS LONG AS THE TRUNCATED DOMES. FOR FANNED TRUNCATED DOMES THE BLOCKS SHALL BE AT LEAST AS LONG AS THE APPROACHING SIDEWALK OR SHARED USE PATH.
8. THE ALTERNATE (W) AND (S) MAY BE USED WHEN BLOCKS LONGER THAN 6' (H) ARE USED.

REVISED: 10-JULY-2014

PLACEMENT FOR "STOP AHEAD" MARKINGS AND STOP LINES

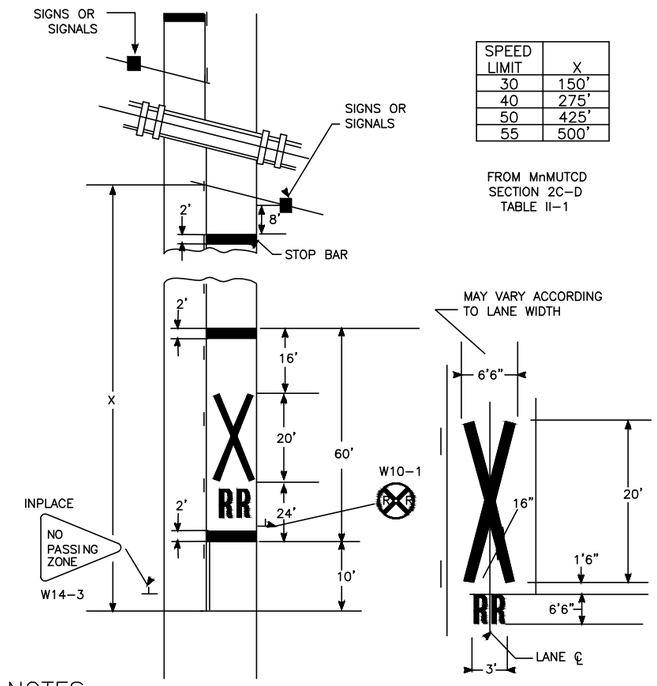


NOTES:

1. DO NOT INSTALL A STOP AHEAD PAVEMENT MESSAGE IF THE INTERSECTION HAS ADEQUATE LIGHTING
2. INSTALL ONLY ONE SET OF STOP AHEAD PAVEMENT MESSAGES. IF A STOP AHEAD SIGN NEEDS TO BE INSTALLED MORE THAN 1000 FEET FROM THE STOP SIGN, CONTACT DISTRICT TRAFFIC ENGINEER TO DETERMINE IF, AND WHERE, A SECOND SET OF STOP AHEAD PAVEMENT MESSAGES SHOULD BE INSTALLED.
3. THE STOP LINE SHOULD ORDINARILY BE PLACED 4 FEET IN ADVANCE OF AND PARALLEL TO THE NEAREST CROSSWALK LINE. IN THE ABSENCE OF A MARKED CROSSWALK, THE STOP LINE SHOULD BE PLACED AT THE DESIRED STOPPING POINT, AND IN NO CASE NO MORE THAN 30 FEET OR LESS THAN 4 FEET FROM THE NEAREST EDGE OF THE INTERSECTING CURB LINE OR THE NEAR EDGE OF THE THRU LANE.
4. IF A STOP LINE IS USED IN CONJUNCTION WITH A STOP SIGN, IT SHOULD ORDINARILY BE PLACED IN LINE WITH THE STOP SIGN. HOWEVER, IF THE SIGN CANNOT BE LOCATED EXACTLY WHERE VEHICLES ARE EXPECTED TO STOP, THE STOP LINE SHOULD BE PLACED AT THE STOPPING POINT.
5. IF THE DISTANCE BETWEEN THE BEGINNING OF THE SOLID LINE YELLOW IS LESS THAN THE DISTANCES IN THE CHART BELOW FROM THE END OF A PRECEDING SOLID LINE YELLOW IN THE SAME LANE, THE SOLID LINE SHALL BE EXTENDED BETWEEN THEM.

35 MPH SPEED LIMIT OR LESS
40-50 MPH SPEED LIMIT
55 MPH SPEED LIMIT

MARKINGS FOR RAILROAD CROSSINGS



SPEED LIMIT	X
30	150'
40	275'
50	425'
55	500'

FROM MnMUTCD SECTION 2C-D TABLE II-1

NOTES:

1. THE DISTANCE FROM THE RAILROAD CROSSING MARKING TO THE NEAREST TRACK WILL VARY ACCORDING TO THE APPROACH SPEED AND SIGHT DISTANCE OF THE VEHICULAR TRAFFIC APPROACHING, BUT SHOULD NOT BE LESS THAN 50 FEET.
2. ON MULTI-LANE ROADS THE TRANSVERSE BANDS SHOULD EXTEND ACROSS ALL APPROACH LANES, AND INDIVIDUAL R X R SYMBOLS SHOULD BE USED IN EACH APPROACH LANE.
3. THE STOP LINE MAY BE PARALLEL TO AND 15 FEET FROM THE TRACKS WHERE THERE ARE RAILROAD CROSSBUCK SIGNS.

DOUBLE PAVEMENT MESSAGE AS SHOWN SHOULD BE INSTALLED WHENEVER THE STOP AHEAD SIGN IS PLACED A MINIMUM OF 1100' IN ADVANCE OF THE STOP SIGN

IF THE DISTANCE BETWEEN THE BEGINNING OF THE SOLID LINE YELLOW IS LESS THAN THE DISTANCES IN THE CHART BELOW FROM THE END OF A PRECEDING SOLID LINE YELLOW IN THE SAME LANE, THE SOLID LINE SHALL BE EXTENDED BETWEEN THEM.

35 MPH SPEED LIMIT OR LESS. . . . . 500'
40-50 MPH. SPEED. LIMIT. . . . . 650'
55 MPH SPEED LIMIT . . . . . 800'

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

METROPOLITAN COUNCIL SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
SIGNING AND STRIPING
MNDOT DETAIL
SHEET 3

DISCIPLINE: TRAFFIC

SHEET NAME: W0-TFC-SIGN-STRP-DTL - 006M

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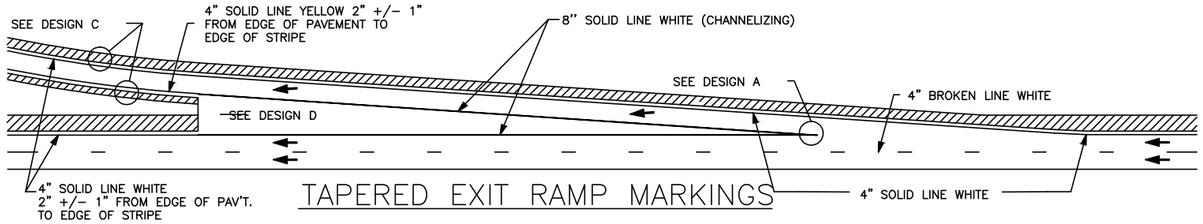
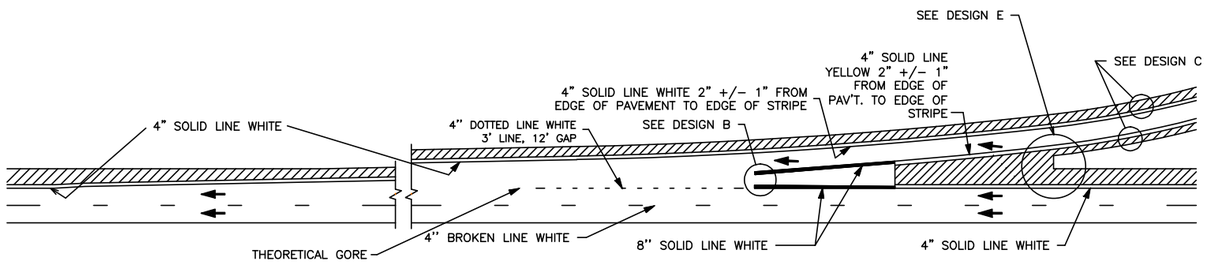
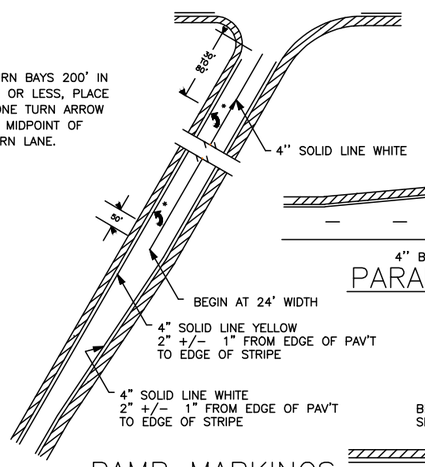


TAPERED EXIT RAMP MARKINGS

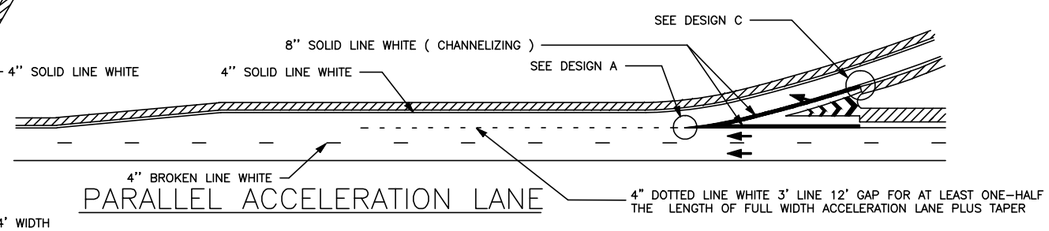


TAPERED ACCELERATION LANE

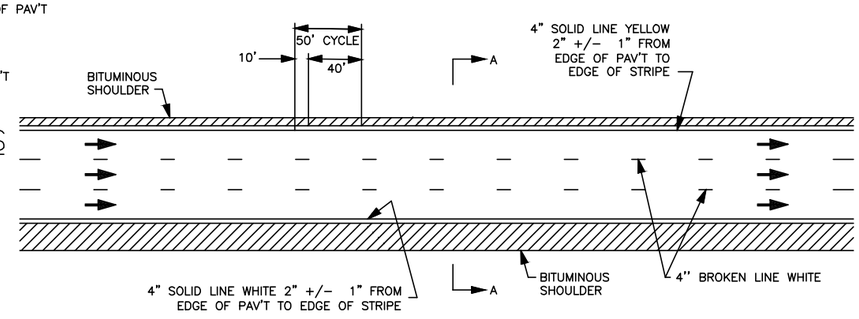


* FOR TURN BAYS 200' IN LENGTH OR LESS, PLACE ONLY ONE TURN ARROW AT THE MIDPOINT OF THE TURN LANE.

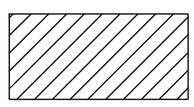
RAMP MARKINGS



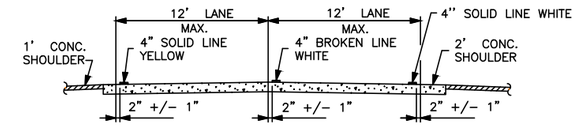
PARALLEL ACCELERATION LANE



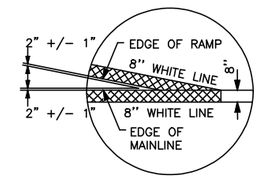
THROUGH LANE MARKINGS



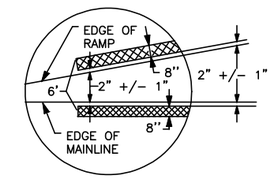
SHOULDER AREA



SECTION A–A
(TWO LANES)



DESIGN A



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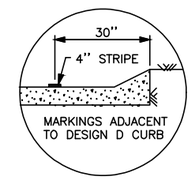
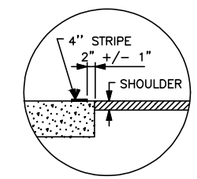
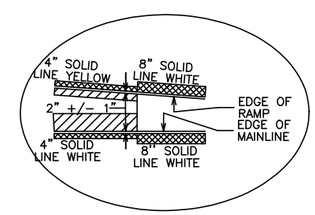


DESIGN C
URBAN



DESIGN C
RURAL



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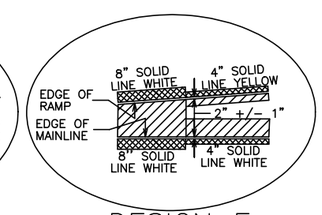
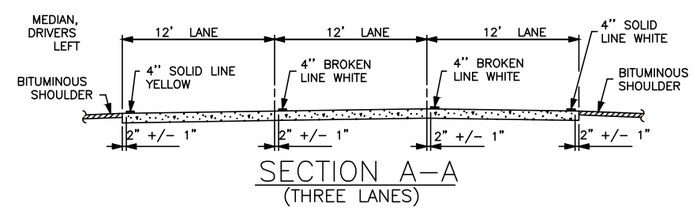


DESIGN E



SECTION A–A
(THREE LANES)

PUBLISHED BY OTST: 31–JULY–2014

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

METROPOLITAN COUNCIL SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
SIGNING AND STRIPING
MNDOT DETAIL
SHEET 4

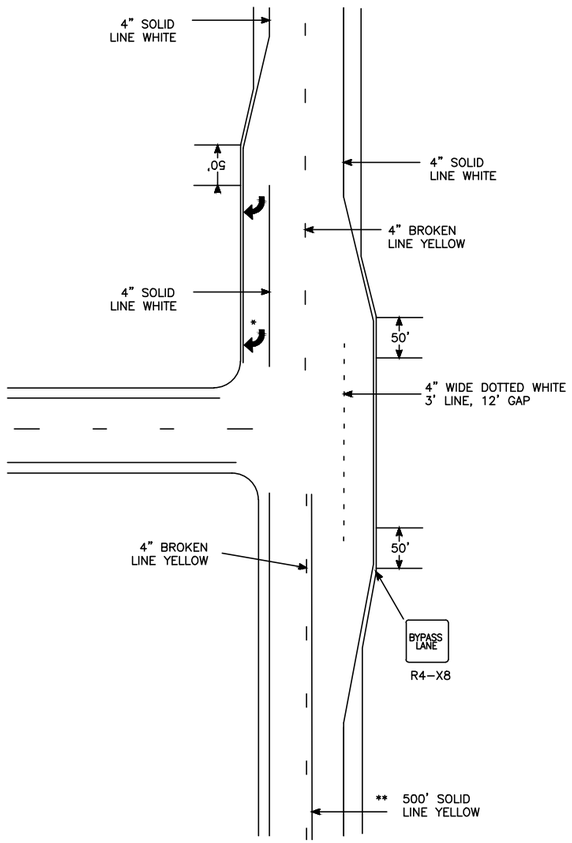
DISCIPLINE: TRAFFIC

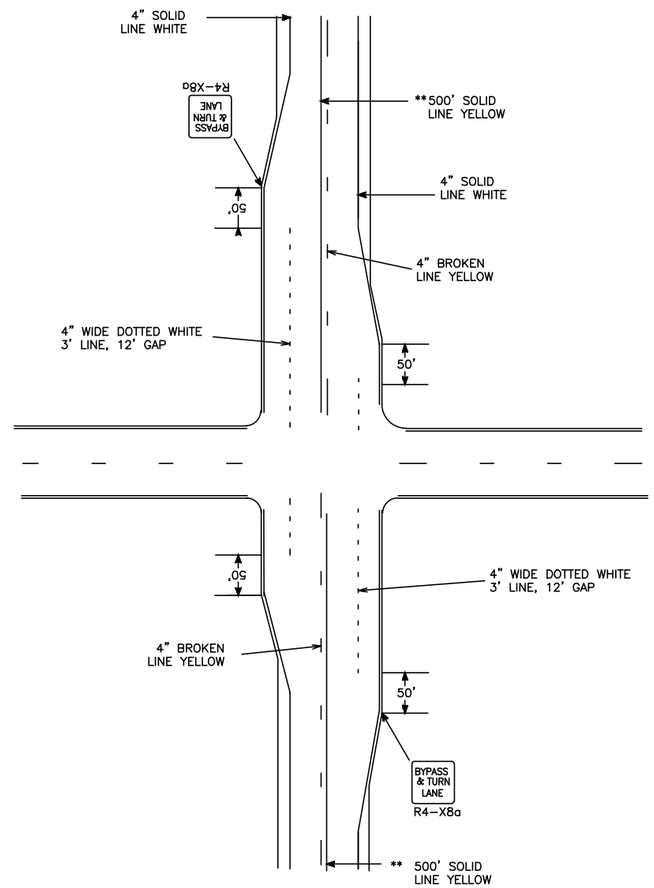
SHEET NAME: W0-TFC-SIGN-STRP-DTL - 007M

SHEET 13 OF 152

Sep. 21 2015 11:10 am V:\3400_ADC\CAD\OVERALL\PLAN SHEETS\TRAFFIC\W0-TFC-SIGN-STRP-DTL.dwg By: kmcclement

MARKINGS FOR BYPASS LANES





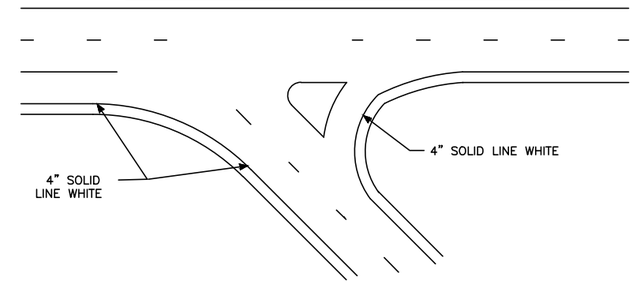
* SEE "TYPICAL MESSAGE PLACEMENT FOR TURN LANES" FOR NUMBER OF ARROWS.

** NO PASSING ZONES AT INTERSECTIONS SHALL BE STRIPED FOR 500 FEET ON BOTH SIDES OF THE INTERSECTION IF IT IS LOCATED WITHIN THE CITY LIMITS. NO PASSING ZONES AT INTERSECTIONS SHALL BE STRIPED IF LOCATED WITHIN ANY NO PASSING ZONE. NO PASSING ZONE STRIPING IS OPTIONAL AT THE DISCRETION OF THE DISTRICT TRAFFIC ENGINEER FOR RURAL INTERSECTIONS.

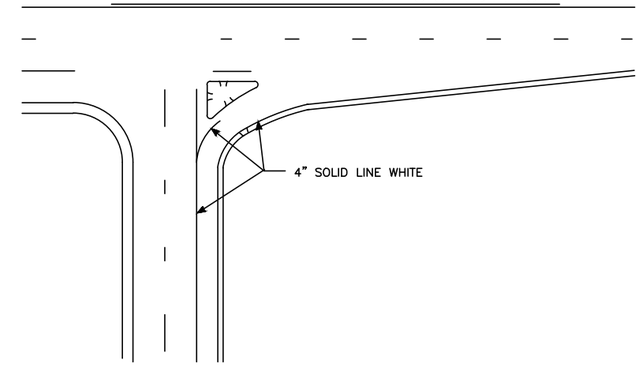
39 MPH SPEED LIMIT OR LESS	500'
40–54 MPH SPEED LIMIT	650'
55 MPH SPEED LIMIT	800'

PUBLISHED BY OTST: 21–AUGUST–2014

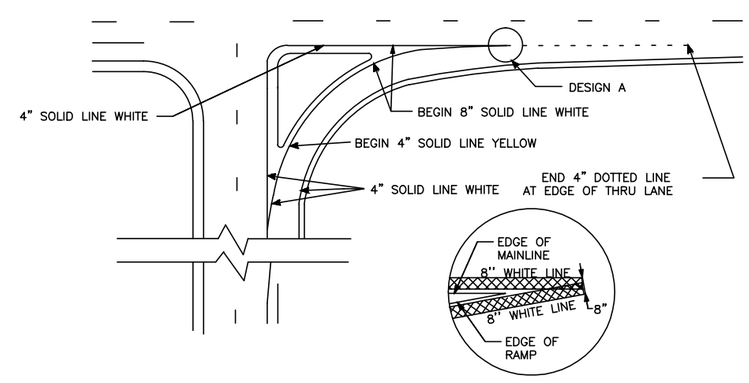
FREE RIGHT STOP CONDITION



FREE RIGHT YIELD CONDITION



FREE RIGHT ACCELERATION LANE CONDITION



DESIGN A

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM SRF Consulting Group, Inc.

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METROPOLITAN COUNCIL SOUTHWEST Green Line LRT Extension

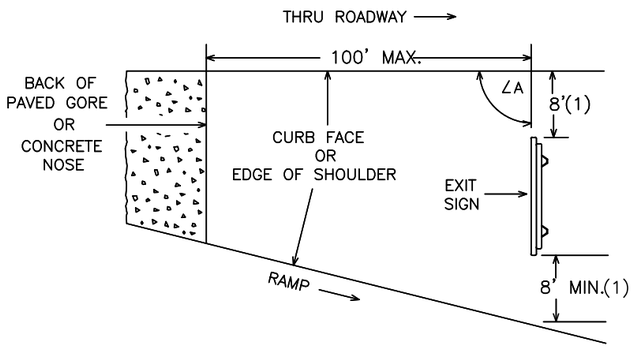
CIVIL WEST - VOLUME 10
SIGNING AND STRIPING
MNDOT DETAIL
SHEET 5

DISCIPLINE: TRAFFIC

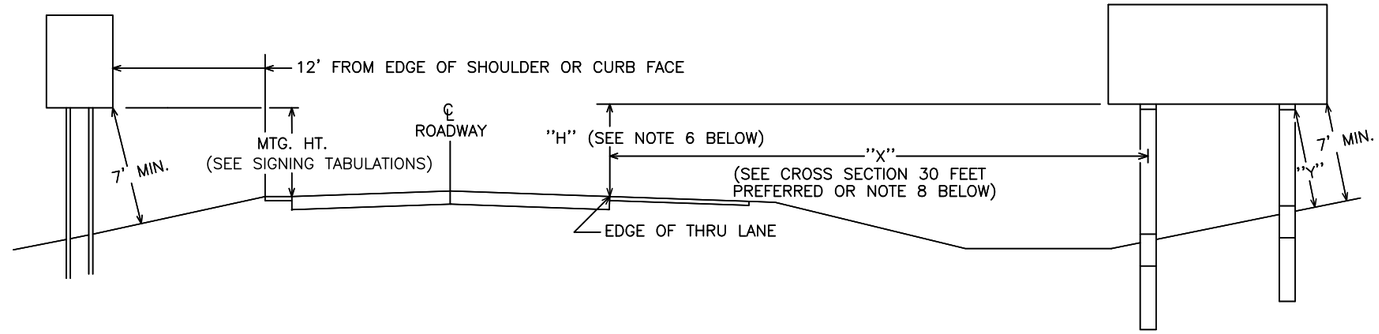
SHEET NAME: W0-TFC-SIGN-STRP-DTL - 008M

Sep, 21 2015 11:10 am V:\3400_ADC\CAD\OVERALL\PLAN SHEETS\TRAFFIC\W0-TFC-SIGN-STRP-DTL.dwg By: kmcclement

GORE PLACEMENT

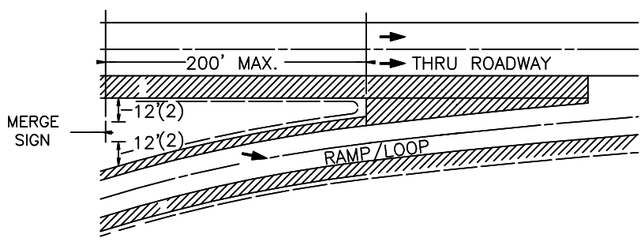


ROADSIDE PLACEMENT



ROUTE MARKER, REGULATORY & WARNING SIGNS – TYPE C
GUIDE SIGNS – TYPE D

GUIDE SIGN – TYPE A



SPECIFIC NOTES:

(1) EXIT SIGNS
IF THESE OFFSETS CANNOT BE ATTAINED WITHIN 100 FEET OF THE PAVED GORE, A 4 FOOT OFFSET IS ACCEPTABLE. IF THE 4 FOOT OFFSETS CANNOT BE ATTAINED WITHIN 100 FEET OF THE PAVED GORE, CONTACT THE PROJECT ENGINEER.

(2) MERGE SIGNS
IF THESE OFFSETS CANNOT BE ATTAINED WITHIN 200 FEET OF THE PAVED GORE, A 4 FOOT OFFSET IS ACCEPTABLE. IF THE 4 FOOT OFFSETS CANNOT BE ATTAINED WITHIN 200 FEET OF THE PAVED GORE, CONTACT THE PROJECT ENGINEER.

NOTES:

1. ALL TYPE C AND D MOUNTING HEIGHTS ARE MEASURED VERTICALLY FROM THE BOTTOM OF THE SIGN TO THE ELEVATION OF THE NEAR EDGE OF PAVEMENT IN RURAL AREAS OR TO THE TOP OF THE CURB OR IN THE ABSCENCE OF CURB, TO THE NEAR EDGE OF THE TRAVELED WAY.
2. SIGN FACES SHALL BE VERTICAL.
3. OVERHEAD SIGNS SHALL BE POSITIONED AT RIGHT ANGLES TO THE THRU ROADWAY UNLESS OTHERWISE NOTED.
4. TO AVOID SPECULAR GLARE, ∠A SHALL BE APPROXIMATELY 93° FOR SIGNS LOCATED LESS THAN 30' FROM THE EDGE OF THRU LANE AND APPROXIMATELY 92° FOR SIGNS LOCATED 30' OR MORE FROM EDGE OF THRU LANE. THIS APPLIES TO SIGNS TYPE A, C, & D AND INCLUDES SIGNS IN THE GORE.
5. "Y" IS THE PERPENDICULAR DISTANCE FROM THE GROUND LINE TO THE FRICTION FUSE ON THE POST. THIS DISTANCE SHALL BE AT LEAST 7'.
6. WHERE "X" IS LESS THAN 30', "H" SHALL BE 7'. WHERE "X" IS 30' OR GREATER, MINIMUM AND PREFERRED "H" IS 5'.
7. LATERAL CLEARANCES GIVEN APPLY TO RIGHT AND OR LEFT SIDE INSTALLATION.
8. WHEN A TYPE A SIGN IS INSTALLED DIRECTLY BEHIND TRAFFIC BARRIER, THE LEFT EDGE OF THE SIGN PANEL SHALL BE LOCATED A MINIMUM OF 8 FEET BEHIND THE FACE OF THE TRAFFIC BARRIER.

SIGN PLACEMENT

REVISED: 7-23-15

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM SRF Consulting Group, Inc.

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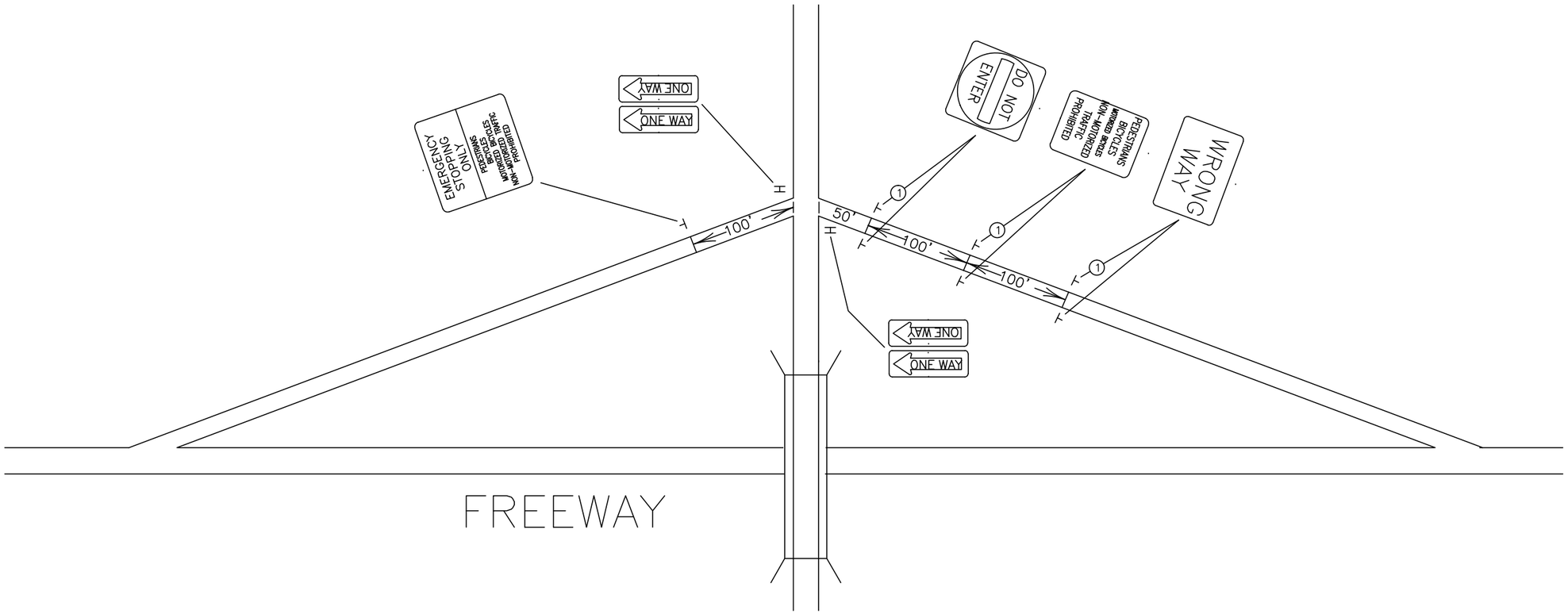
METROPOLITAN COUNCIL SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
SIGNING AND STRIPING
MNDOT DETAIL
SHEET 6

DISCIPLINE: TRAFFIC
SHEET NAME: W0-TFC-SIGN-STRP-DTL - 009M

Sep, 21 2015 11:10 am V:\3400_ADC\CAD\OVERALL\PLAN SHEETS\TRAFFIC\W0-TFC-SIGN-STRP-DTL.dwg By: kmcclement



1 ADDITIONAL SIGN REQUIRED WHEN RAMP IS 3 LANES OR WIDER

REVISED: 10-2-2013

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

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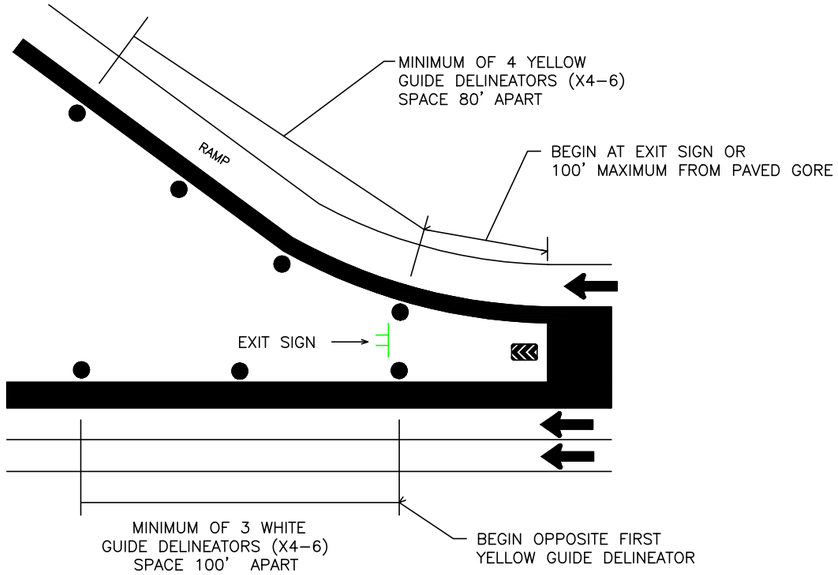
METROPOLITAN COUNCIL SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
SIGNING AND STRIPING
MNDOT DETAIL
SHEET 7

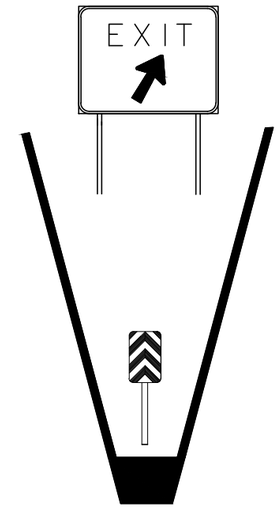
DISCIPLINE: TRAFFIC

SHEET NAME: W0-TFC-SIGN-STRP-DTL - 010M

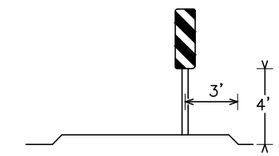
Sep, 21 2015 11:10 am V:\3400_ADC\CAD\OVERALL\PLAN SHEETS\TRAFFIC\W0-TFC-SIGN-STRP-DTL.dwg By: kmcclement



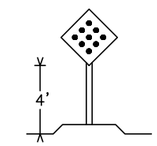
PLAN A
RAMP DELINEATION



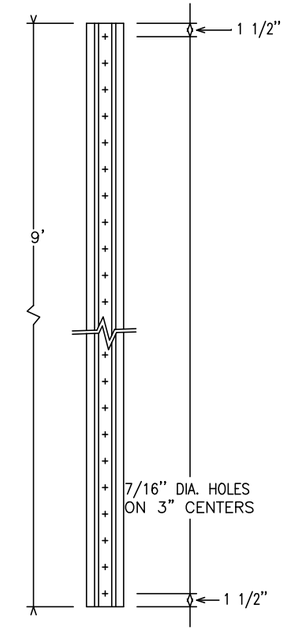
TYPE 3 OBJECT MARKER
12" X 24" (X4–4C)



RAISED ISLAND
TYPE 3 OBJECT MARKER
(X4–4)

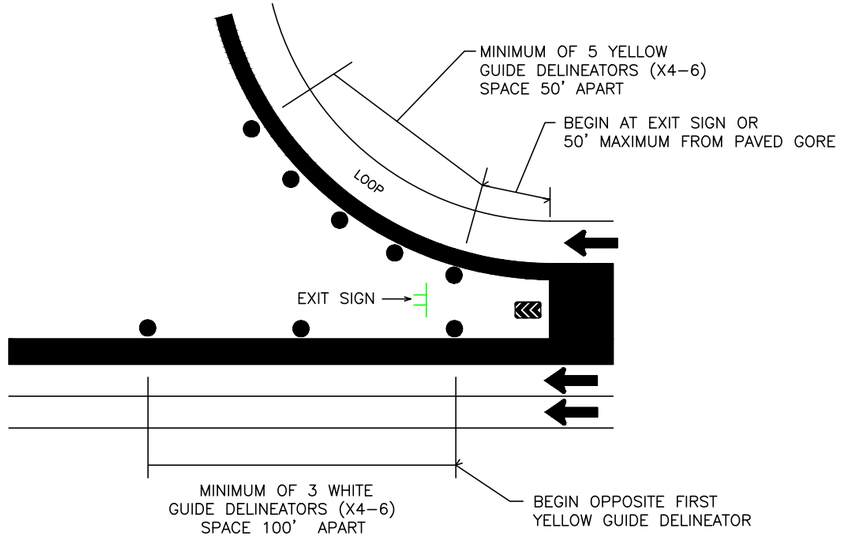


RAISED ISLAND
TYPE 2 OBJECT MARKER
(X4–2)

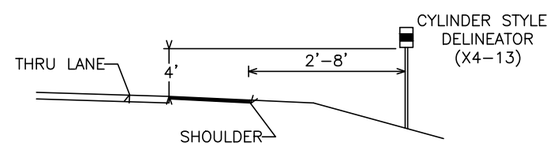


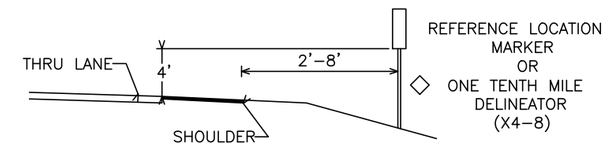
MNDOT 3401
NORMAL WEIGHT= 2 LB./FT.

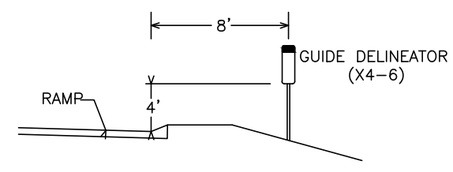
DELINEATOR POST



PLAN B
LOOP DELINEATION







TYPICAL PLACEMENT

DELINEATORS AND MARKERS

REVISED: 10–2–2013

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

METROPOLITAN COUNCIL SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
SIGNING AND STRIPING
MNDOT DETAIL
SHEET 8

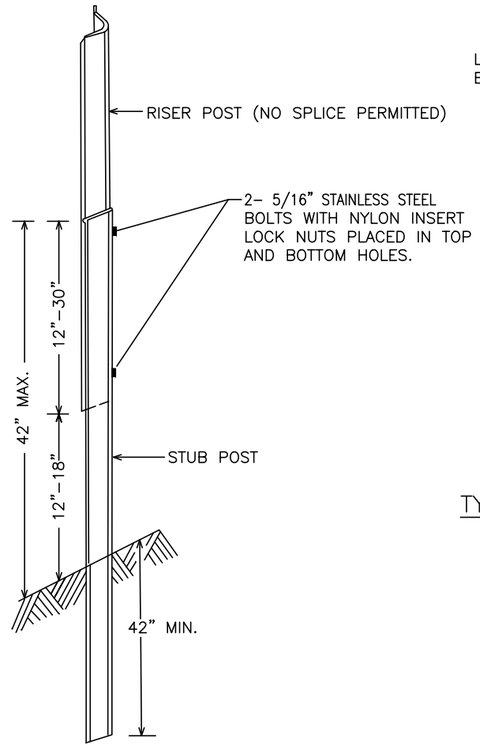
DISCIPLINE: TRAFFIC

SHEET NAME: W0-TFC-SIGN-STRP-DTL - 011M

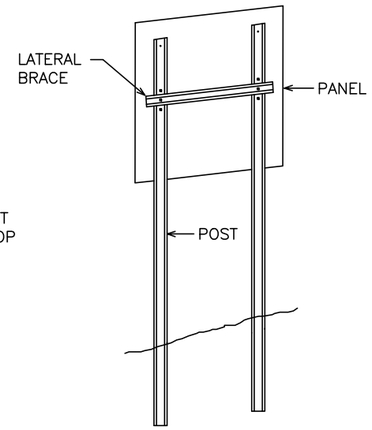
SHEET 17 OF 152

Sep, 21 2015 11:11 am V:\3400_ADC\CAD\OVERALL\PLAN SHEETS\TRAFFIC\W0-TFC-SIGN-STRP-DTL.dwg By: kmcclement

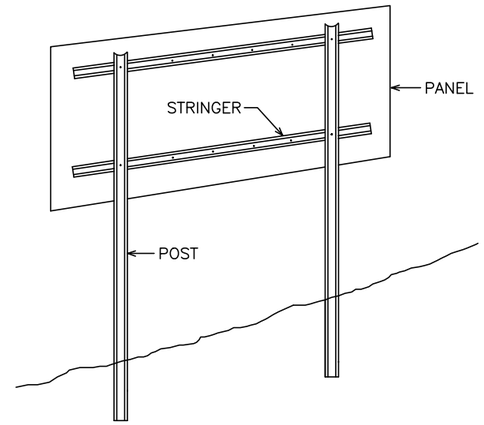
TYPE C & D POST



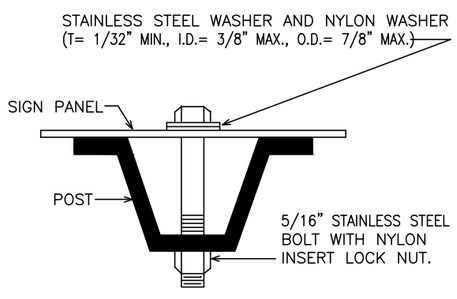
U POST BREAKAWAY SPLICE



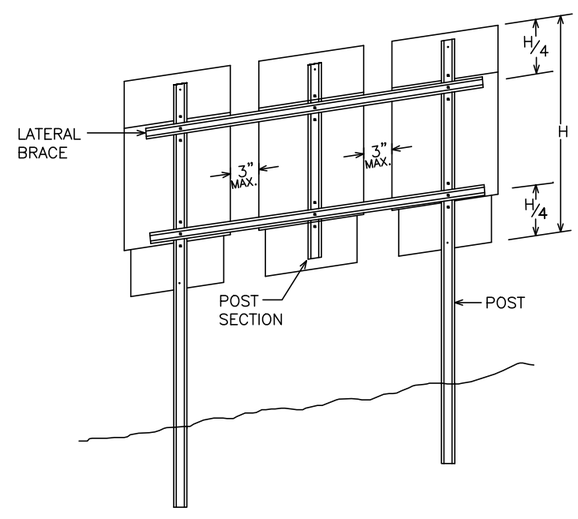
TYPICAL TYPE C INSTALLATION



TYPICAL TYPE D INSTALLATION



U POST MOUNTING
TYPE C SIGNS



MODIFIED TYPE C INSTALLATION

NOTES:

1. USE 3 LB/FT STUB POSTS. SHALL CONFORM TO MNDOT 3401.
2. USE 2.5 LB/FT RISER POSTS, STRINGERS, KNEE BRACES AND LATERAL BRACES. ALL SHALL CONFORM TO MNDOT 3401.
3. SEE SIGN DATA SHEETS FOR NUMBER OF POSTS, KNEE BRACES, POST LENGTHS AND SPACINGS, AS DETERMINED FROM TEM CHARTS 6.3 AND 6.4.
4. IF MORE THAN TWO POSTS ARE NEEDED, THE MINIMUM SPACING SHALL BE 45" BETWEEN POSTS.
5. TYPE D SIGN PANELS SHALL BE BOLTED TO STRINGERS AT 24" MAXIMUM INTERVALS IN ACCORDANCE WITH THE TYPE D STRINGER AND PANEL–JOINT DETAIL (SEE STANDARD SIGNS MANUAL).
6. MOUNTING (PUNCH CODE) FOR TYPE C SIGN PANELS SHALL BE AS INDICATED IN THE STANDARD SIGNS MANUAL UNLESS OTHERWISE SPECIFIED.
7. ALL RISER (VERTICAL) U POSTS SHALL BE SPLICED. DRIVEN STUB POSTS SHALL BE AT LEAST 7' LONG.
8. USE STAINLESS STEEL 5/16" BOLTS, WASHERS AND NYLON INSERT LOCK NUTS AS SHOWN FOR ALL GROUND MOUNTED AND OVERHEAD MOUNTED SIGNS.
9. STAINLESS STEEL WASHER WITH SAME DIMENSIONS SHALL BE PROVIDED BETWEEN ALL NYLON WASHERS AND BOLT HEADS.
10. BRACING STUBS SHALL BE NO MORE THAN 4" ABOVE GROUND AND EMBEDDED AT LEAST 42".
11. A–FRAME BRACKET SHALL BE STEEL CONFORMING TO MNDOT 3306 AND GALVANIZED IN ACCORDANCE WITH MNDOT 3394.
12. COLLARS SHALL BE USED TO SHIM OVERLAYS AND LEGEND COMPONENTS AWAY FROM PANEL WHERE INTER–FERENCE WITH BOLT HEADS IS ENCOUNTERED. MNDOT 3352.2A6.
13. 2 POST TYPE C SIGNS SHALL BE REINFORCED WITH AT LEAST ONE LATERAL BRACE. INSTALLATIONS WHERE THE TOTAL PANEL HEIGHT IS 60" OR MORE SHALL HAVE TWO LATERAL BRACES LOCATED APPROXIMATELY AT THE QUARTER POINTS.
14. WHERE 2 SINGLE POST TYPE C SIGNS ARE INSTALLED SIDE BY SIDE, THEY SHALL BE REINFORCED LATERALLY BY AT LEAST 2 BRACES, BOLTED AT EACH POST AND LOCATED APPROXIMATELY AT THE QUARTER POINTS.
15. WHERE 3 OR MORE TYPE C SIGNS ARE INSTALLED SIDE BY SIDE, THEY SHALL BE REINFORCED LATERALLY BY AT LEAST 2 BRACES, BOLTED AT EACH POST AND POST SECTION AND LOCATED APPROXIMATELY AT THE QUARTER POINTS AS SHOWN IN MODIFIED TYPE C INSTALLATION.

TYPE C & D SIGN
STRUCTURAL DETAILS

Sheet 1 of 3

REVISED: 3–7–2014

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

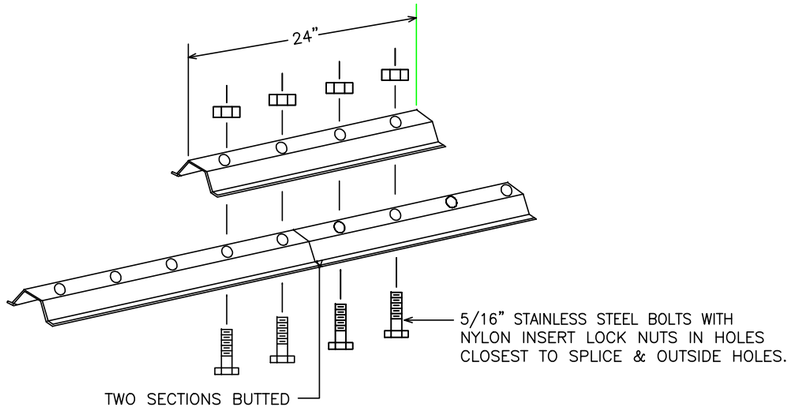
AECOM SRF Consulting Group, Inc. METROPOLITAN COUNCIL SOUTHWEST Green Line LRT Extension

60% SUBMISSION - 09/28/15

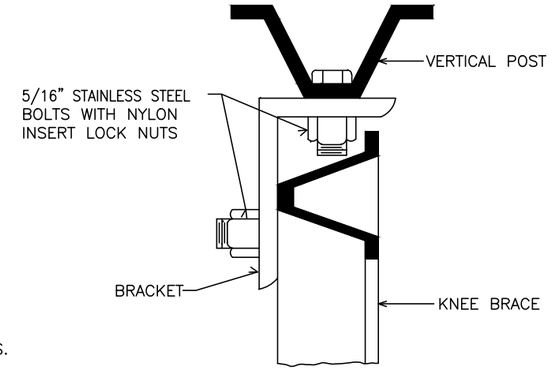
CIVIL WEST - VOLUME 10
SIGNING AND STRIPING
MNDOT DETAIL
SHEET 9

DISCIPLINE: TRAFFIC
SHEET NAME: W0-TFC-SIGN-STRP-DTL - 012M

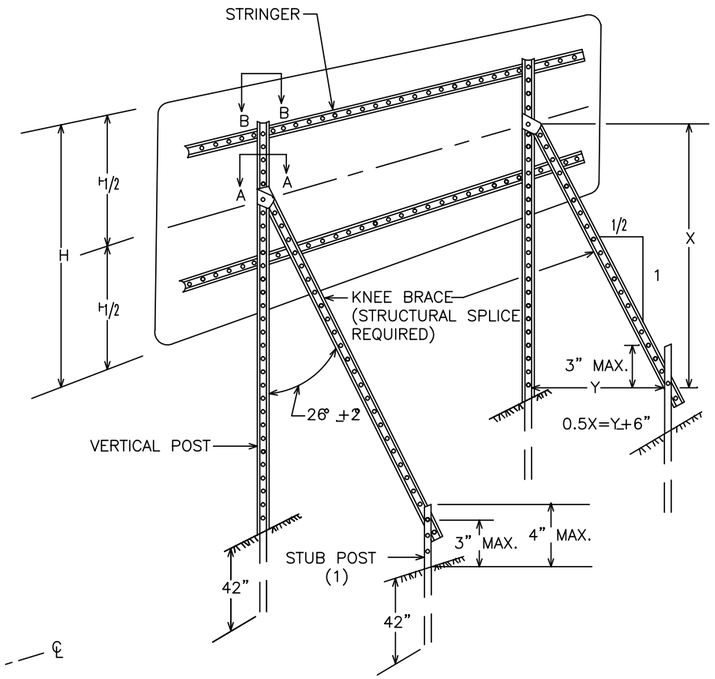
Sep, 21 2015 11:11 am V:\3400_ADC\CAD\OVERALL\PLAN SHEETS\TRAFFIC\W0-TFC-SIGN-STRP-DTL.dwg By: kmcclement



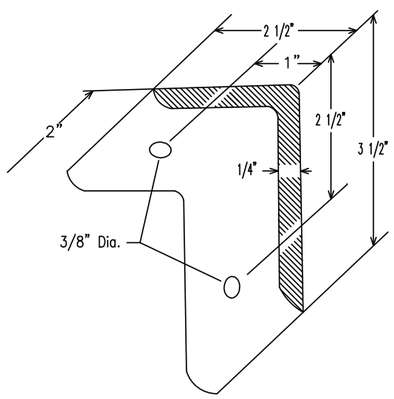
LATERAL BRACE OR STRINGER SPLICE DETAIL (EXPLODED VIEW)



SECTION A–A

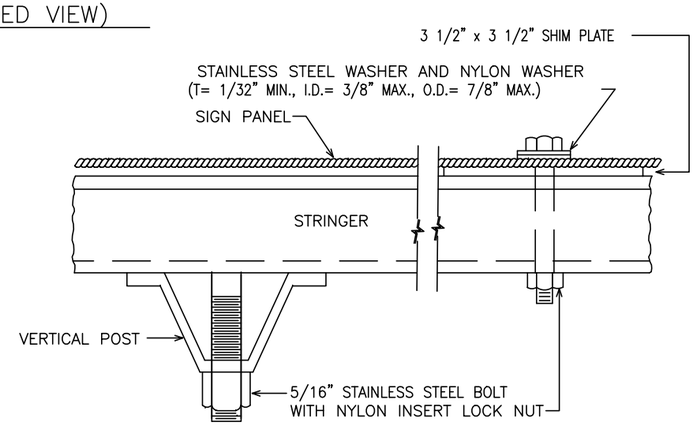


TYPICAL "A–FRAME" INSTALLATION TYPE "D" SIGNS

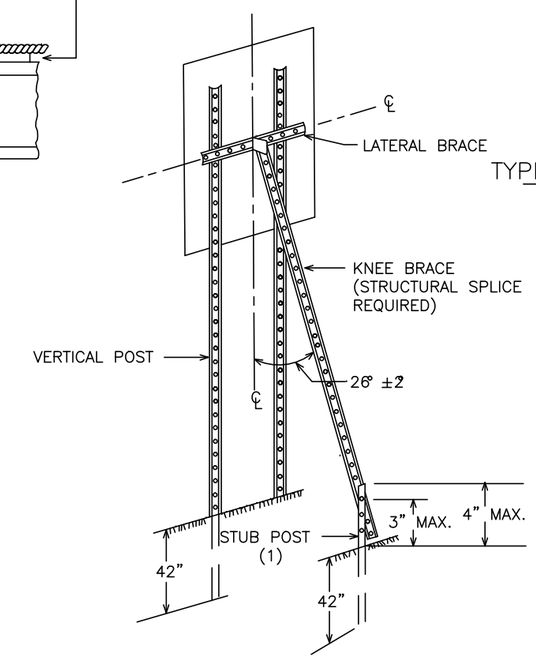


A–FRAME BRACKET

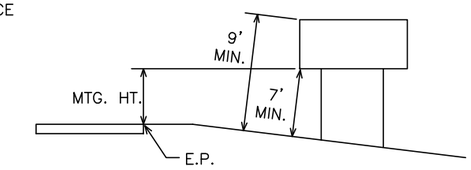
(STEEL MNDOT 3306 GALVANIZED PER MNDOT 3394)



SECTION B–B

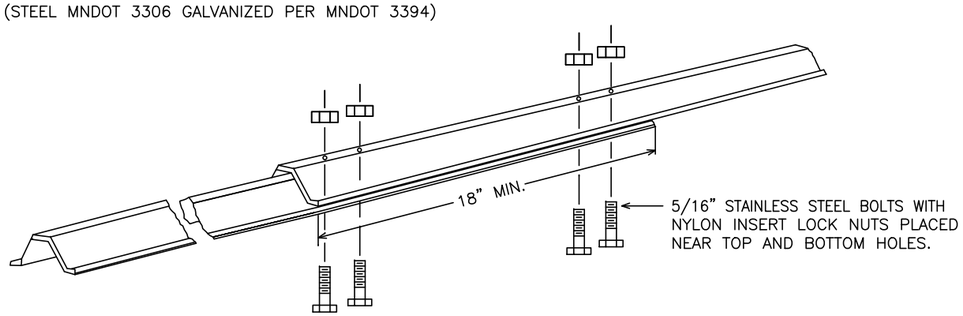


TYPICAL "A–FRAME" INSTALLATION TYPE "C" SIGNS



TYPICAL MOUNTING

(1) OFFSET STUB POST 1' TOWARD ROADWAY RELATIVE TO VERTICAL POST. ATTACH STUB POST AND KNEE BRACE BACK TO BACK.



STRUCTURAL SPLICE

(USE WHEN IT IS NECESSARY TO FABRICATE THE CORRECT LENGTH OF POST FROM TWO PIECES)

REVISED: 12–4–2013

TYPE C & D SIGN STRUCTURAL DETAILS

Sheet 2 of 3

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

METROPOLITAN COUNCIL SOUTHWEST Green Line LRT Extension

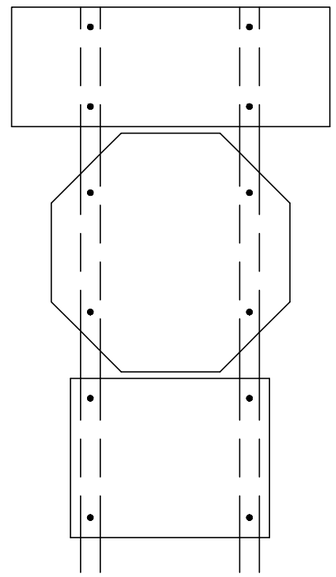
CIVIL WEST - VOLUME 10
SIGNING AND STRIPING
MNDOT DETAIL
SHEET 10

DISCIPLINE: TRAFFIC

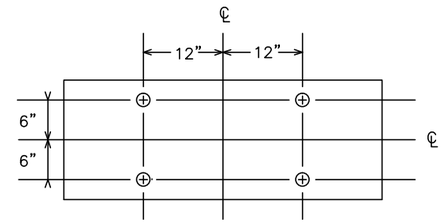
SHEET NAME: W0-TFC-SIGN-STRP-DTL - 013M

SHEET 19 OF 152

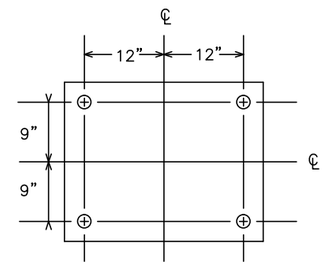
Sep, 21 2015 11:11 am V:\3400_ADC\CAD\OVERALL\PLAN SHEETS\TRAFFIC\W0-TFC-SIGN-STRP-DTL.dwg By: kmcclement



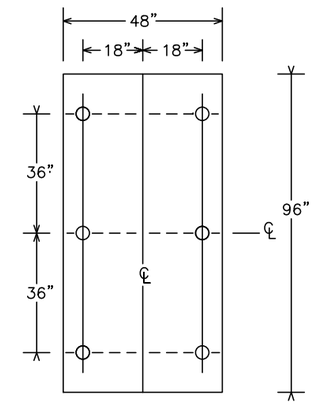
R6-1, R1-1 & (R6-3 OR R6-3a)
MOUNTING



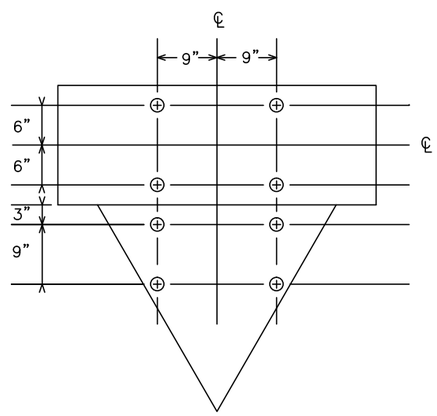
PUNCHING FOR R6-1(54"x18")



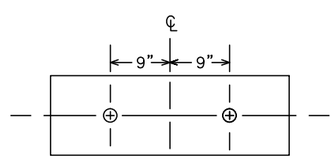
PUNCHING FOR R6-3 OR R6-3a(30"x24")



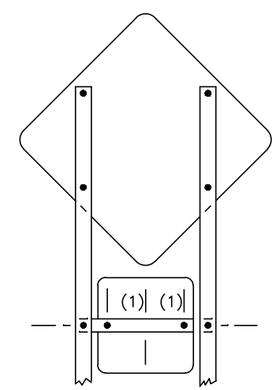
PUNCHING FOR R2-4b
SPEED LIMIT



PUNCHING FOR R6-1(54"x18")
& R1-2(36"x36"x36")



PUNCHING FOR R6-1(36"x12")



WARNING SIGN [30"x30 OR 48"X48"] AND
WARNING PLAQUE [18"x18" OR 30"x30"]
PUNCHING AND MOUNTING

(1) 6" FOR WARNING PLAQUE (18"x18")
12" FOR WARNING PLAQUE (30"x30")

TYPE C & D SIGN

STRUCTURAL DETAILS

Sheet 3 of 3

REVISED: 10-2-2013

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

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SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
SIGNING AND STRIPING
MNDOT DETAIL
SHEET 11

DISCIPLINE: TRAFFIC

SHEET NAME: W0-TFC-SIGN-STRP-DTL - 014M

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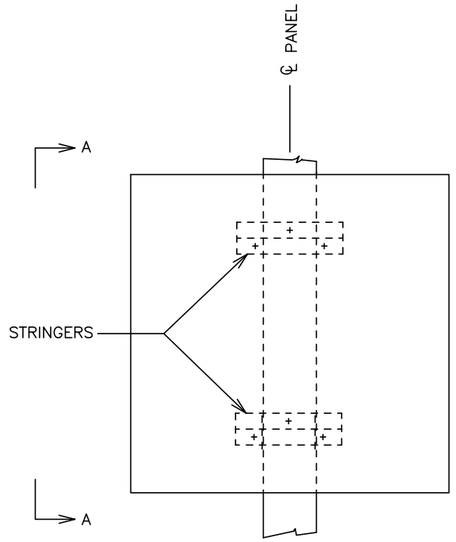
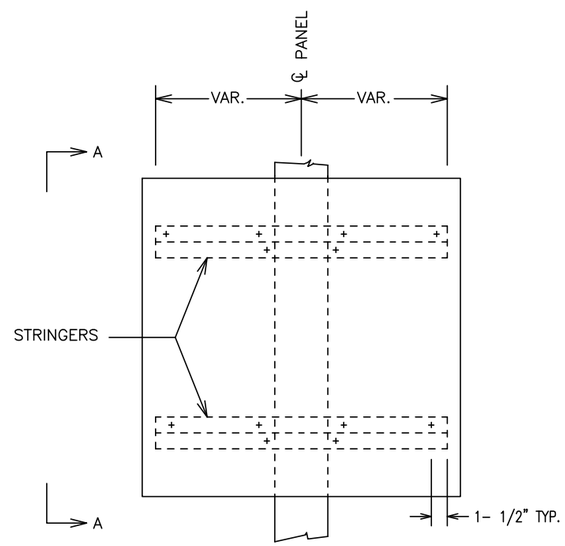


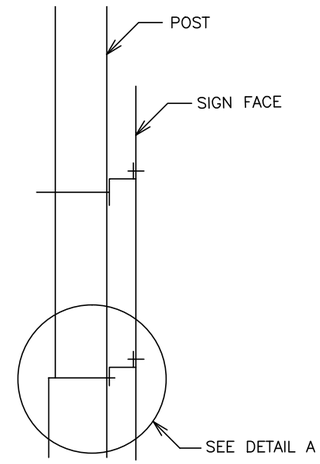
SINGLE POST PUNCHING

ELEVATION

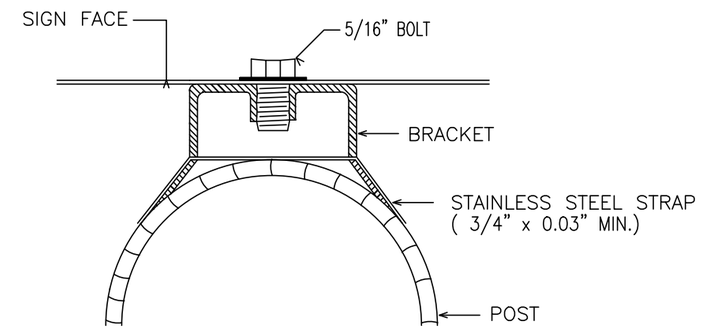


2-POST PUNCHING

ELEVATION

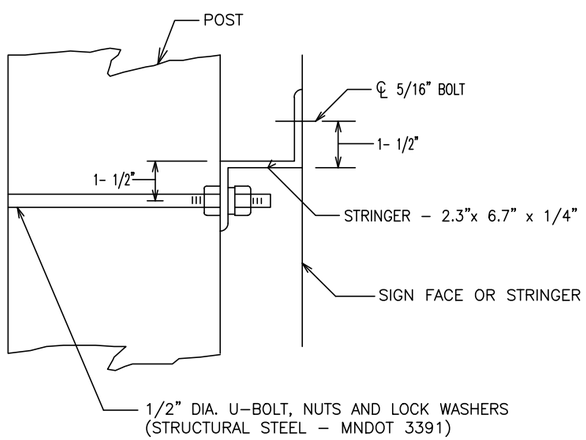


VIEW A-A

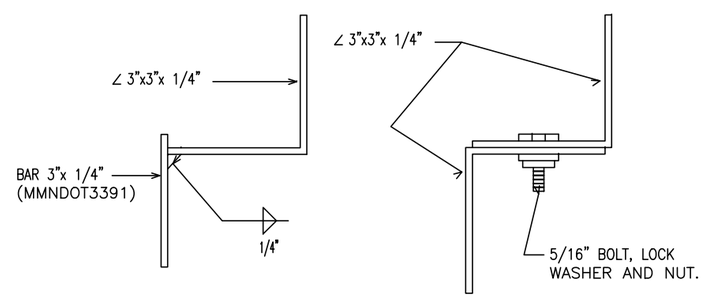


GALVANIZED OR STAINLESS STEEL BRACKET, BOLT AND WASHER.

STRAP MOUNTING DETAIL FOR OVERHEAD IDENTIFICATION AND LIGHTING SYSTEM IDENTIFICATION PLATES



DETAIL A



DETAIL A STRINGER ALTERNATES

NOTES:
1. FOR DETAILS AND NOTES NOT SHOWN SEE "C" & "D" SIGN DETAILS.
2. FOR BACK TO BACK MOUNTINGS, ROTATE STRINGERS FOR ONE PANEL 180° FROM WHAT IS SHOWN SUCH THAT PANELS CAN BE MOUNTED AT SAME ELEVATION.
3. DETAIL A STRINGER MAY BE ONE OF THE THREE DESIGNS DETAILED OR AN APPROVED EQUAL. STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH MNDOT 3306 AND GALVANIZED IN ACCORDANCE WITH MNDOT 3394. FASTENERS SHALL BE IN ACCORDANCE WITH MNDOT 3391.2B AND SHALL BE GALVANIZED EITHER BY THE HOT-DIP PROCESS IN ACCORDANCE WITH ASTM A153, OR BY THE MECHANICAL PROCESS IN ACCORDANCE WITH ASTM B695, CLASS 50 OR GREATER.

SIGN TYPE C AND D STRUCTURAL STEEL MOUNTING SYSTEM FOR ROUND SUPPORTS

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60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
SIGNING AND STRIPING
MNDOT DETAIL
SHEET 12

DISCIPLINE: TRAFFIC

SHEET NAME: W0-TFC-SIGN-STRP-DTL - 015M

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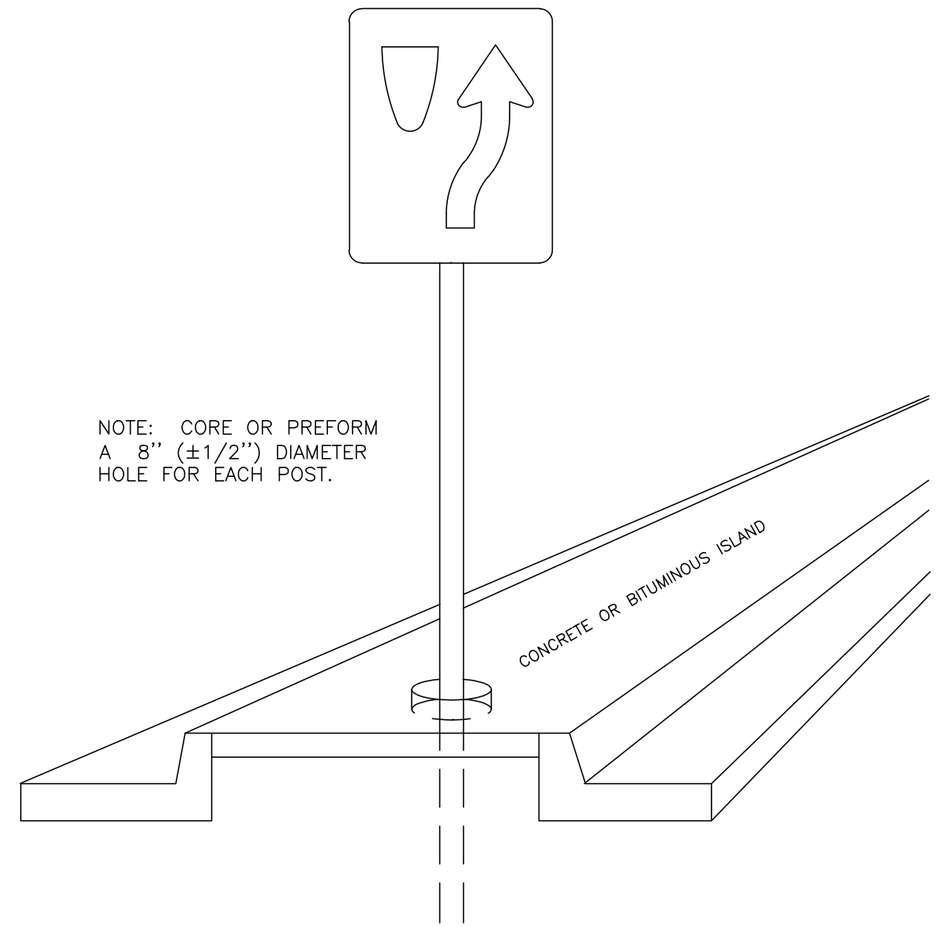

FLANGED U-CHANNEL POST MOUNTED THROUGH CONCRETE MEDIAN OR SIDEWALK

REVISED: 5-28-2015

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

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METROPOLITAN COUNCIL SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
SIGNING AND STRIPING
MNDOT DETAIL
SHEET 13

DISCIPLINE: TRAFFIC

SHEET NAME: W0-TFC-SIGN-STRP-DTL - 016M

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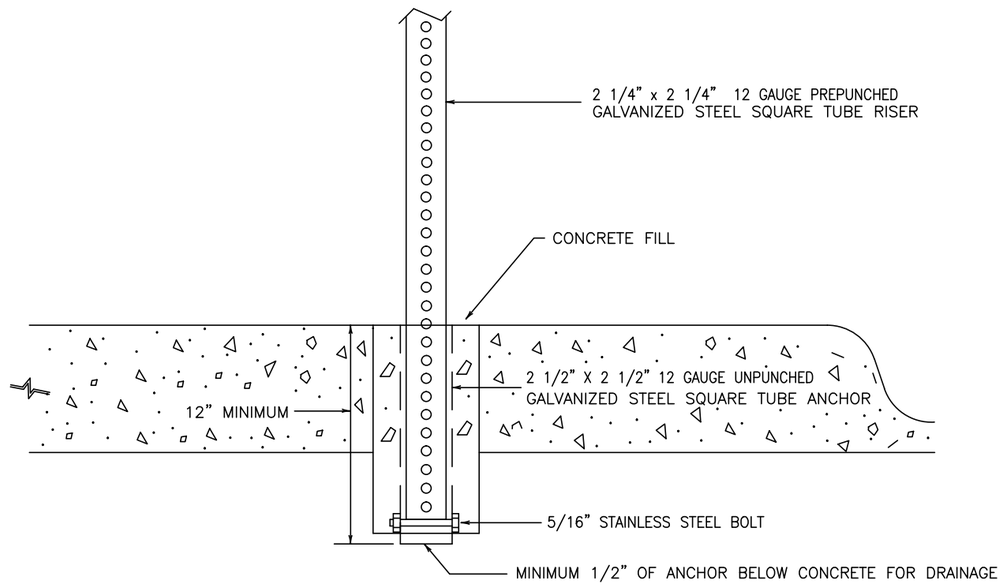

NOTES;

1. DRILL AN 8" DIAMETER HOLE THE FULL DEPTH OF THE ANCHOR.
2. DRILL 3/8" HOLES ON OPPOSITE SIDES OF THE UNPUNCHED GALVANIZED STEEL SQUARE TUBE ANCHOR APPROX. 1" FROM THE BOTTOM OF THE ANCHOR. INSERT A 5/16" STAINLESS STEEL BOLT THROUGH THE HOLES AND SECURE WITH A STAINLESS STEEL LOCK NUT WITH NYLON INSERT. THE PREPUNCHED GALVANIZED STEEL SQUARE TUBE RISER (TO BE INSERTED INSIDE THE UNPUNCHED GALVANIZED SQUARE TUBE ANCHOR) WILL REST ON BOLT.
3. INSERT THE ANCHOR IN THE HOLE.
4. AFTER INSTALLATION OF THE UNPUNCHED GALVANIZED STEEL SQUARE TUBE ANCHOR, FILL THE HOLE WITH A CONCRETE MIX APPROVED BY THE ENGINEER AND LEVEL OFF THE TOP OF CONCRETE.
5. MAXIMUM SIGN PANEL SIZE IS 42" WIDE X 48" HIGH.
6. SIGN PANEL TO BE MOUNTED 7 FT ABOVE THE GROUND.

TYPE C SIGNS, DELINEATORS & MARKERS IN CONCRETE

REVISED: 5-28-2015

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

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CIVIL WEST - VOLUME 10
SIGNING AND STRIPING
MNDOT DETAIL
SHEET 14

DISCIPLINE: TRAFFIC

SHEET NAME: W0-TFC-SIGN-STRP-DTL - 017M

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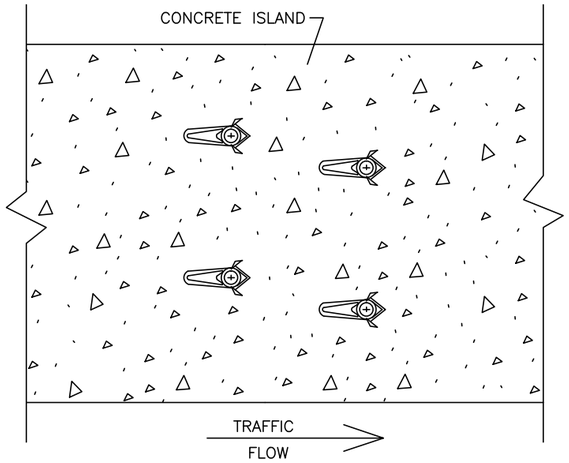
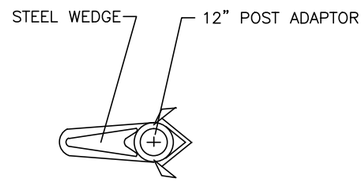
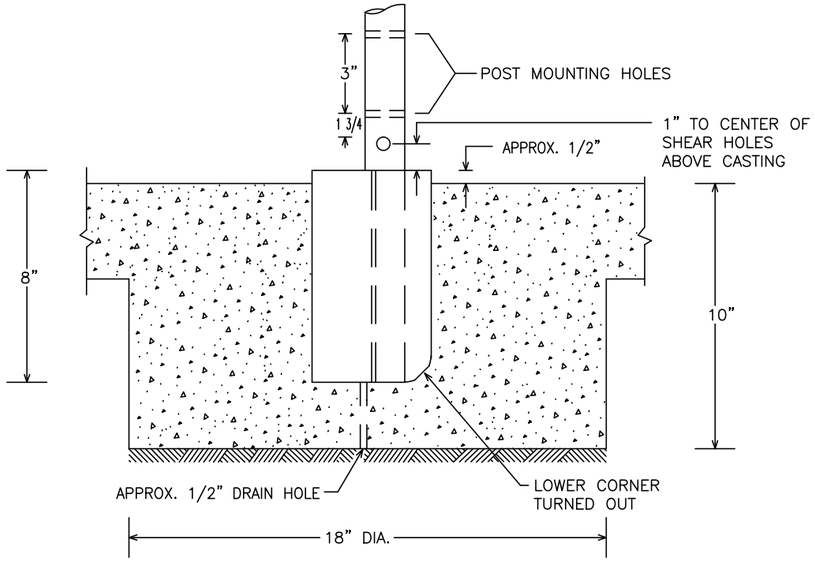


TOP VIEW
2 POSTS SIGN WITH 2 KNEE BRACES



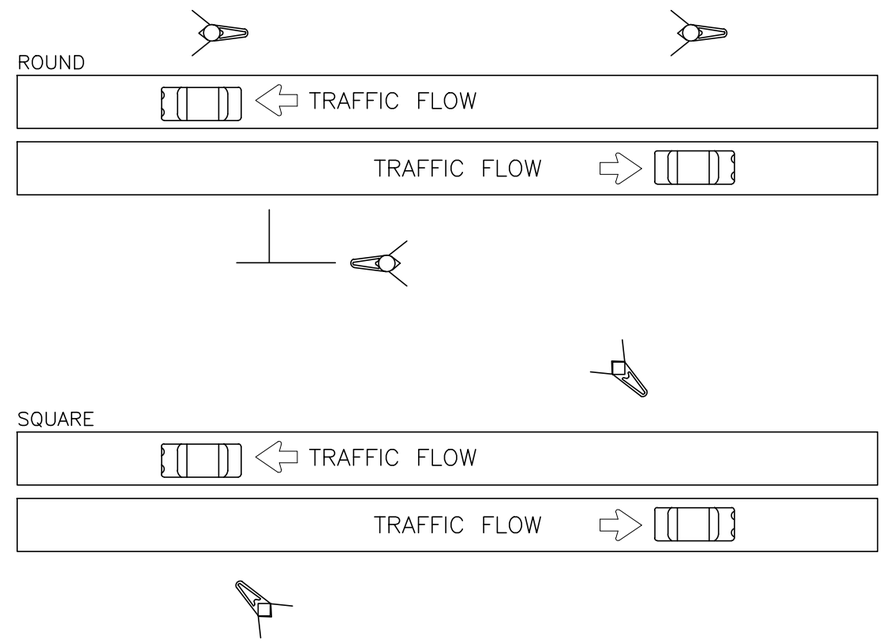
TOP VIEW – LOCKING DEVICE



ELEVATION VIEW

ROADSIDE OR MEDIAN PLACEMENT
FOR ROUND AND U CHANNEL SOCKETS

THE AXIS OF THE SIGNPOST SUPPORT WEDGE SHOULD ALIGN PARALLEL TO THE ROAD FOR MAXIMUM RESISTANCE TO IMPACT AS SHOWN BELOW:



GENERAL NOTES:

1. SEAL BOTTOM OF SIGNPOST SUPPORT WITH DUCT TAPE BEFORE INSTALLATION IN NEW CONCRETE.
2. SIGNPOST SUPPORTS SHALL BE INSTALLED PLUMB AND APPROXIMATELY 1/2" ABOVE THE TOP OF THE CONCRETE SURFACE.

SIGNPOST SUPPORT IN CONCRETE

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CIVIL WEST - VOLUME 10
SIGNING AND STRIPING
MNDOT DETAIL
SHEET 15

DISCIPLINE: TRAFFIC

SHEET NAME: W0-TFC-SIGN-STRP-DTL - 018M

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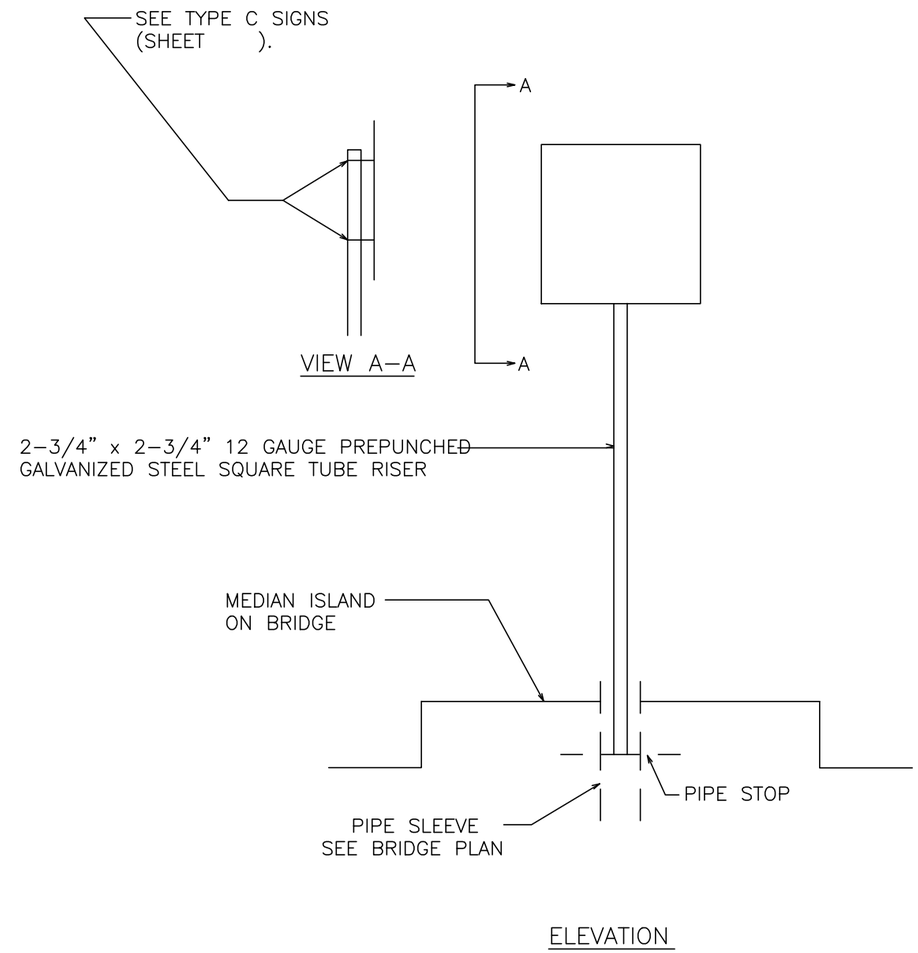

SEE TYPE C & D SIGN DETAILS
FOR NOTES AND DETAILS NOT SHOWN.

TYPE C SIGNS MOUNTED ON BRIDGE MEDIAN ISLAND

REVISED: 10–2–2013

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CIVIL WEST - VOLUME 10
SIGNING AND STRIPING
MNDOT DETAIL
SHEET 16

DISCIPLINE: TRAFFIC

SHEET NAME: W0-TFC-SIGN-STRP-DTL - 019M

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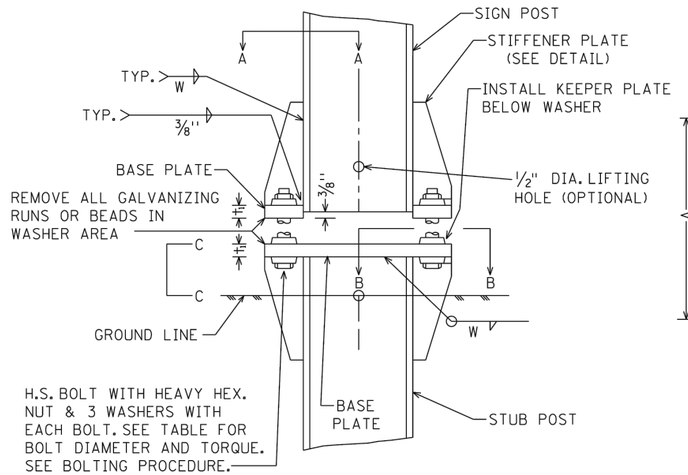
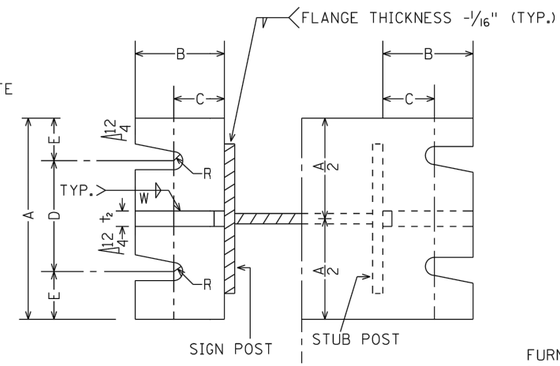


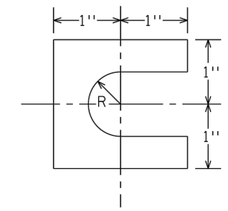
SIGN POST AND STUB POST ELEVATION



SECTION A-A SECTION B-B

(SEE TABLE FOR DIMENSIONS)

SECTIONS SHOWN ARE FOR INSTALLATIONS ON RIGHT SHOULDER AND IN GORE. PLATE SLOT BEVELS ARE OPPOSITE HAND FROM THAT SHOWN FOR INSTALLATIONS ON LEFT SHOULDER.

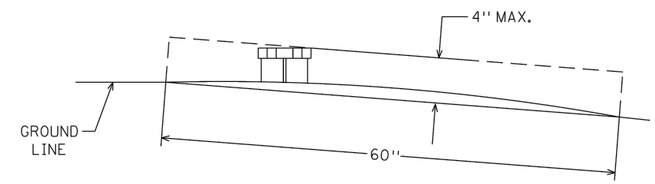


FURNISH TWO-.012"± THICK AND TWO-.032"± THICK SHIMS PER POST. SHIMS SHALL BE FABRICATED FROM BRASS SHIM STOCK OR STRIP CONFORMING TO A.S.T.M. B36.

SHIM DETAIL

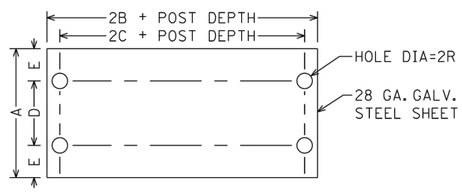
BOLTING PROCEDURE - BASE CONNECTION

1. ASSEMBLE SIGN POST TO STUB POST WITH BOLTS AND WITH ONE OF THE FLAT WASHERS ON EACH BOLT BETWEEN PLATES.
2. SHIM AS REQUIRED TO PLUMB POST.
3. TIGHTEN ALL BOLTS THE MAXIMUM POSSIBLE WITH 12" OR 15" WRENCH TO BED WASHERS AND SHIMS AND TO CLEAN BOLT THREADS, THEN LOOSEN EACH BOLT IN TURN AND RETIGHTEN IN A SYSTEMATIC ORDER TO THE PRESCRIBED TORQUE. (SEE TABLE)
4. BURR THREADS AT JUNCTION WITH NUT USING A CENTER PUNCH TO PREVENT NUT LOOSENING.

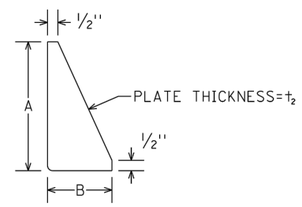


VIEW C-C

MAXIMUM PROJECTION OF STUB POST SHALL NOT EXTEND BEYOND A LINE, ABOVE AND 4" PARALLEL TO ANY CHORD, WHICH IS PERPENDICULAR TO (OR ALIGNED RADIALLY TO) THE CENTERLINE OF THE HIGHWAY AND HAS ITS (THE CHORD'S) END POINTS ON THE GROUND SURFACE ON OPPOSITE SIDES OF THE STUB POST.

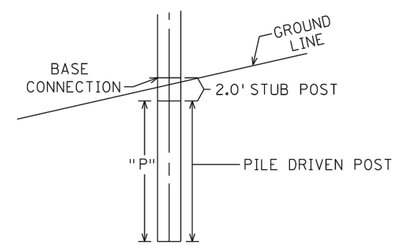


KEEPER PLATE



STIFFENER PLATE DETAIL

(SEE TABLE FOR DIMENSIONS)



H-PILE FOOTING

DIMENSION / POST SIZE	BASE CONNECTION DATA										FUSE AND HINGE PLATE DATA											FOOTING DATA	
	BOLT SIZE AND TORQUE	A	B	C	D	E	t_1	t_2	W	R	G	H	J	K	L	M	d_1	d_2	t_3	BOLT DIA.	BOLT LENGTH	STUB POST LENGTH (1)	H PILE POST "P" (MIN. LENGTH)
W4X13	3/4" DIA. x 3-1/2" TORQUE=600"#	6"	2 1/2"	1 1/2"	3 1/2"	1 1/4"	1"	1/2"	1/4"	13/32"	2"	1 1/4"	4"	2 1/4"	7/8"	1"	11/16"	3/4"	3/8"	5/8"	2"	2'	12'
W5X16											2 1/2"	1 1/4"	5"	2 3/4"	1 1/8"	1 1/8"	13/16"	7/8"	3/8"	3/4"	2"	2'	12'
W6X20	7/8" DIA. x 4-1/4" TORQUE=800"#	8"	3"	1 3/4"	4"	2"	1 1/4"	1/2"	1/4"	15/32"	2 1/2"	1 1/4"	6"	3 1/2"	1 1/4"	1 3/8"	13/16"	1 1/8"	3/8"	3/4"	2"	2'	12'
W8X24											2 1/2"	1 1/2"	6 1/2"	3 1/2"	1 1/2"	1 1/2"	15/16"	1 1/4"	1/2"	7/8"	2 1/2"	2'	12'
W8X28	1" DIA. x 5" TORQUE=1000"#	8"	3"	2"	4"	2"	1 1/2"	3/4"	5/16"	17/32"	2 1/2"	1 1/2"	6 1/2"	3 1/2"	1 1/2"	1 5/8"	1 1/16"	1 1/8"	1/2"	1"	2 1/2"	2'	12'
W8X31	1-1/8" DIA. x 5" TORQUE=1200"#	9"	3 1/2"	2"	5"	2"	1 1/2"	3/4"	5/16"	19/32"	3"	1 3/4"	8"	5 1/2"	1 1/4"	2"	1 1/16"	1 1/2"	1/2"	1"	2 1/2"	2'	12'
(2) W10X39											3"	1 3/4"	8"	5 1/2"	1 1/4"	1 7/8"	1 3/16"	1 3/8"	1/2"	1 1/8"	2 3/4"	2'	12'

SPECIFIC NOTES:

(1) MEASURED FROM TOP OF BASE PLATE

(2) OLD BEAM DEPTH = 10". NEW REVISED BEAM DEPTH = 9-7/8". KEEPER PLATES MUST BE FABRICATED ACCORDINGLY

TYPE A SIGN STRUCTURAL DETAILS

H-PILE FOOTING

SHEET 1 OF 2

REVISED: 10-2-2013

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

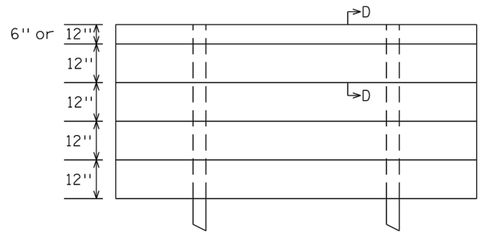
METROPOLITAN COUNCIL SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
SIGNING AND STRIPING
MNDOT DETAIL
SHEET 17

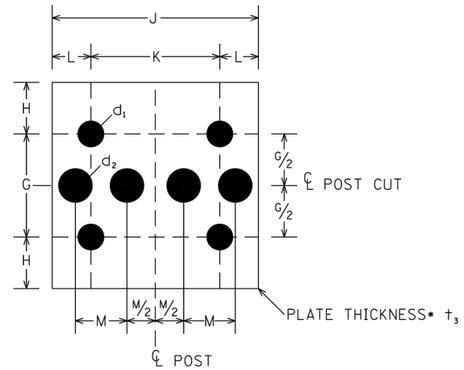
DISCIPLINE: TRAFFIC

SHEET NAME: W0-TFC-SIGN-STRP-DTL - 020M

Sep, 21 2015 11:11 am V:\3400_ADC\CAD\OVERALL\PLAN SHEETS\TRAFFIC\W0-TFC-SIGN-STRP-DTL.dwg By: kmcclement

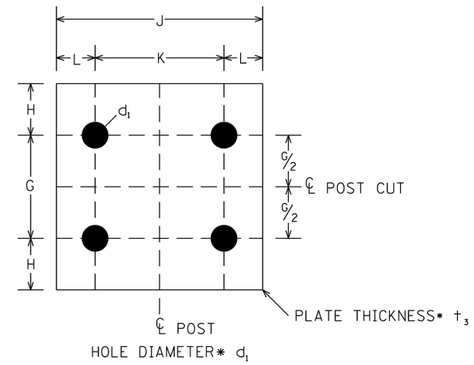


TYPICAL PANEL MOUNTING



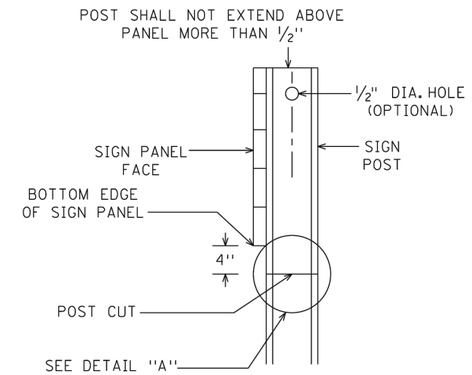
FRICTION FUSE PLATE DETAIL

(SEE TABLE ON SHEET 1 OF 2 FOR DIMENSIONS)

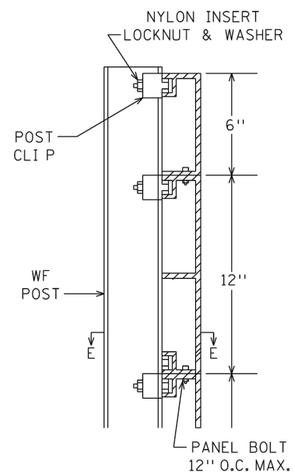


HINGE PLATE DETAIL

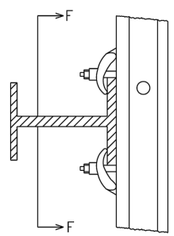
(SEE TABLE ON SHEET 1 OF 2 FOR DIMENSIONS)



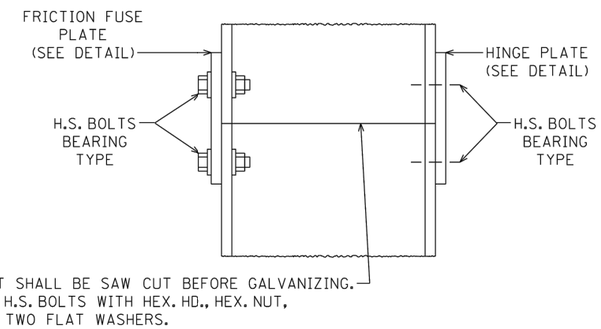
FRICTION FUSE SIDE VIEW



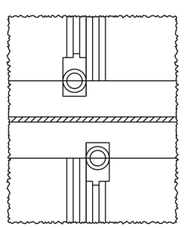
SECTION D-D



SECTION E-E



DETAIL "A" FRICTION FUSE



NOTE: POST CLIPS SHALL BE INSTALLED ON BOTH SIDES OF EACH POST AT EACH PANEL JOINT AS INDICATED.

SECTION F-F

CONTRACTOR NOTE: ALL FRICTION FUSE BOLTS SHALL BE TORQUE WRENCH TIGHTENED IN THE FIELD IN THE PRESENCE OF THE ENGINEER OR HIS REPRESENTATIVE. NUTS SHALL HAVE BEEN RETAPPED AND BOLT THREADS SHALL HAVE BEEN CLEANED WITH A 1/64" OVERSIZED RETHREADING DIE AFTER GALVANIZING. BEFORE TIGHTENING MAY BEGIN, THE TORQUE WRENCH SHALL BE CALIBRATED WITH A BOLT-TENSION-CALIBRATOR USING TYPICAL BOLT-NUT-WASHER ASSEMBLIES OF EACH SIZE AND LOT TO BE USED SO AS TO SHOW THE TORQUE NECESSARY TO OBTAIN THE FOLLOWING MINIMUM RESIDUAL TENSION IN EACH BOLT.

BOLT SIZE	MIN. RESIDUAL, BOLT TENSION
1/2" DIA.	12,050#
5/8" DIA.	19,200#
3/4" DIA.	28,400#
7/8" DIA.	39,250#
1" DIA.	51,500#
1-1/8" DIA.	56,450#

GENERAL NOTES:

1. STRUCTURAL STEEL SHALL CONFORM TO MNDOT 3308. REINFORCING BARS SHALL CONFORM TO MNDOT 3301. SPIRALS SHALL CONFORM TO MNDOT 3305-NO SPLICES. HIGH STRENGTH BOLTS SHALL CONFORM TO A.S.T.M.-A325.
2. FORMS WILL BE REQUIRED FOR THE EXPOSED VERTICAL SURFACES OF THE FOOTINGS.
3. REFER TO "SIGN DATA" SHEET FOR SPECIFIC DATA ON EACH INDIVIDUAL SIGN INSTALLATION.
4. FRICTION FUSE PLATE SHALL BE INSTALLED ON SIDE OF POST FACING TRAFFIC.
5. ALL POST CUTS SHALL BE SAW CUTS. PLATES MAY BE SHEARED OR FLAME CUT USING A MECHANICALLY GUIDED CUTTING TORCH. EDGE PREPARATION SHALL BE IN ACCORDANCE WITH MNDOT 2471.3.C.4 AND MNDOT 2471.3.D4.

TYPE A SIGN STRUCTURAL DETAILS

SHEET 2 OF 2

REVISED: 10-2-2013

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM SRF Consulting Group, Inc. METROPOLITAN COUNCIL SOUTHWEST Green Line LRT Extension

60% SUBMISSION - 09/28/15

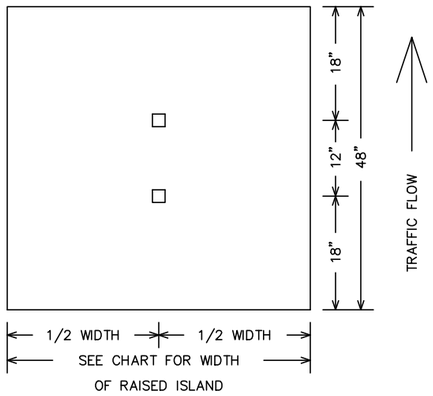
CIVIL WEST - VOLUME 10
SIGNING AND STRIPING
MNDOT DETAIL
SHEET 18

DISCIPLINE: TRAFFIC

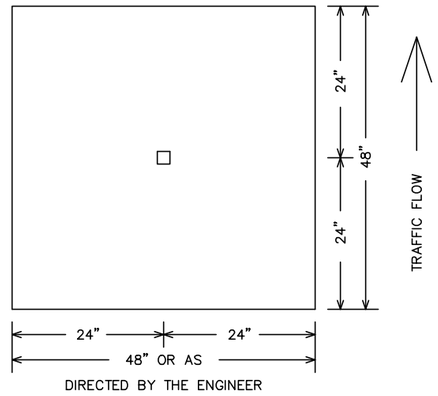
SHEET NAME: W0-TFC-SIGN-STRP-DTL - 021M

Sep. 21 2015 11:11 am V:\3400_ADC\CAD\OVERALL\PLAN SHEETS\TRAFFIC\W0-TFC-SIGN-STRP-DTL.dwg By: kmcclement

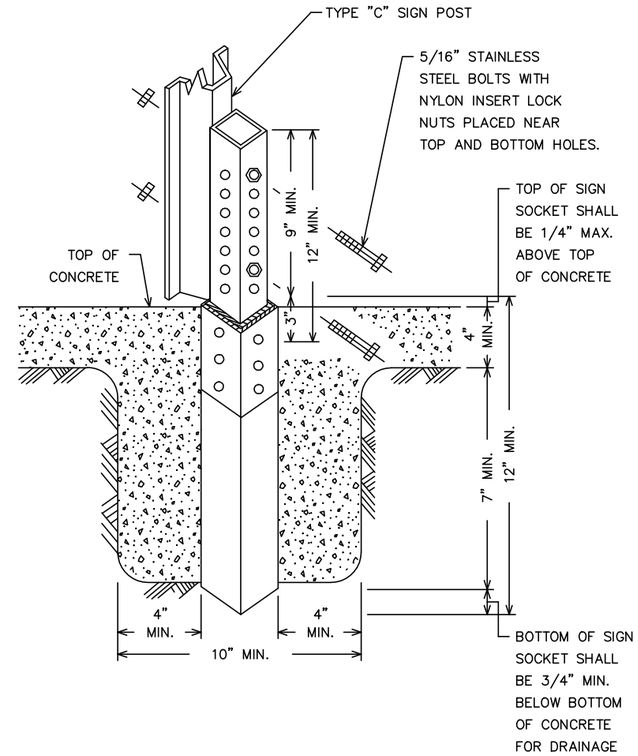
CONCRETE PAD FOR DOUBLE SIGN SOCKETS
WHEN LOCATED ON RAISED ISLANDS
WITH LANDSCAPE PAVER SURFACING
(NO SCALE)



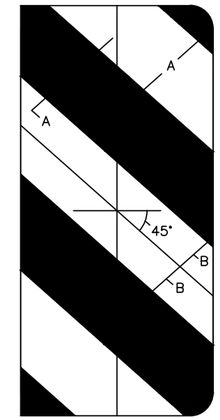
CONCRETE PAD FOR SIGN SOCKETS
IN ALL OTHER LOCATIONS
WITH LANDSCAPE PAVER SURFACING
(NO SCALE)



TYPICAL SIGN SOCKET DETAIL
(NO SCALE)



REAR DELINEATION FOR R4-7
(NO SCALE)

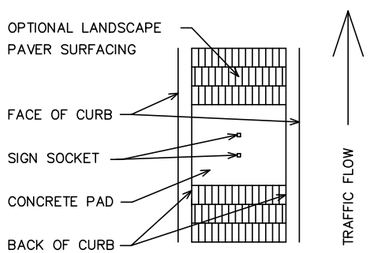


REAR DELINEATION FOR R4-7 DIMENSIONS			
SIZE	12"x 30"	15"x 36"	18"x 48"
MOUNT ON	24"x 30"	30"x 36"	36"x 48"
RADIUS	1.50"	1.88"	2.25"
A	5.00"	6.00"	6.00"
B	2.50"	3.00"	3.00"

COLOR: YELLOW & BLACK DG3 SIGN SHEETING ONLY.

CONCRETE PAD FOR SIGN SOCKETS	
WIDTH OF RAISED ISLAND (*)	WIDTH OF CONCRETE PAD REQUIRED
LESS THAN 12'	VARIABLE (**)
12' OR MORE	48" (***)

(*) AS MEASURED FROM FACE OF CURB TO FACE OF CURB.
(**) THE CONCRETE SHALL BE PLACED FROM BACK OF CURB TO BACK OF CURB, OR AS DIRECTED BY THE ENGINEER.
(***) OR AS DIRECTED BY THE ENGINEER.



NOTES:

1. ALL SIGNS LOCATED WITHIN CONCRETE OR LANDSCAPE PAVER SURFACING SHALL BE INSTALLED WITH A SIGN SOCKET, AS DIRECTED BY THE ENGINEER.

2. ALL SIGNS LOCATED WITHIN CONCRETE OR LANDSCAPE PAVER SURFACING AND ON A RAISED ISLAND SHALL BE INSTALLED WITH TWO SIGN SOCKETS PLACED 12" APART ON CENTER, AS DIRECTED BY THE ENGINEER.

3. SIGN SOCKETS AND SIGN SOCKET CAPS SHALL BE FURNISHED BY HENNEPIN COUNTY AT NO COST TO THE CONTRACTOR. THE CONTRACTOR SHALL INSTALL THE SIGN SOCKETS, SIGN SOCKET CAPS AND ALL REQUIRED CONCRETE, AS DIRECTED BY THE ENGINEER UNDER THE PAY ITEM INSTALL SIGN SOCKET.

4. THE TOP OF THE CONCRETE SHALL BE FORMED IN A NEAT MANNER TO ALLOW WATER TO DRAIN AWAY FROM THE SIGN SOCKET, AS DIRECTED BY THE ENGINEER.

5. SAWING AND/OR DRILLING OF CONCRETE SURFACING WHICH MAY BE REQUIRED SHALL BE INCIDENTAL TO THE INSTALLATION OF THE SIGN SOCKET, AS DIRECTED BY THE ENGINEER.

6. WHEN DOUBLE SIGN SOCKETS ARE INSTALLED ONE SHALL BE A SPARE FOR FUTURE USE, AS DIRECTED BY THE ENGINEER.

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

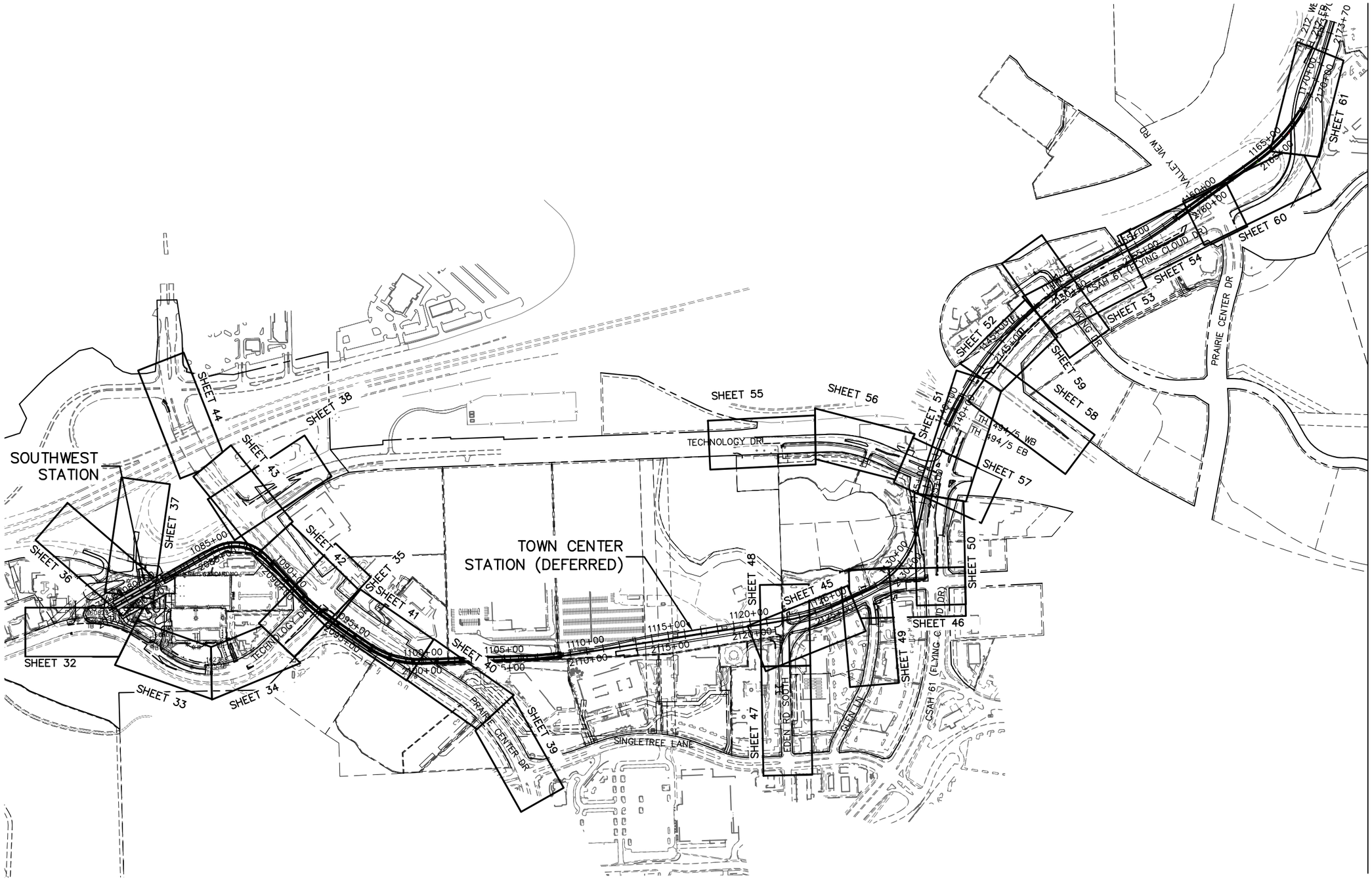
METROPOLITAN COUNCIL SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
SIGNING AND STRIPING
HENNEPIN COUNTY DETAIL

DISCIPLINE: TRAFFIC

SHEET NAME: W0-TFC-SIGN-STRP-DTL - 022H

Sep. 21 2015 11:11 am V:\3400_ADC\CAD\OVERALL\PLAN SHEETS\TRAFFIC\W0-TFC-SIGN-STRP-DTL.dwg By: kmcclement



DRAFT-WORK IN PROCESS

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM

SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

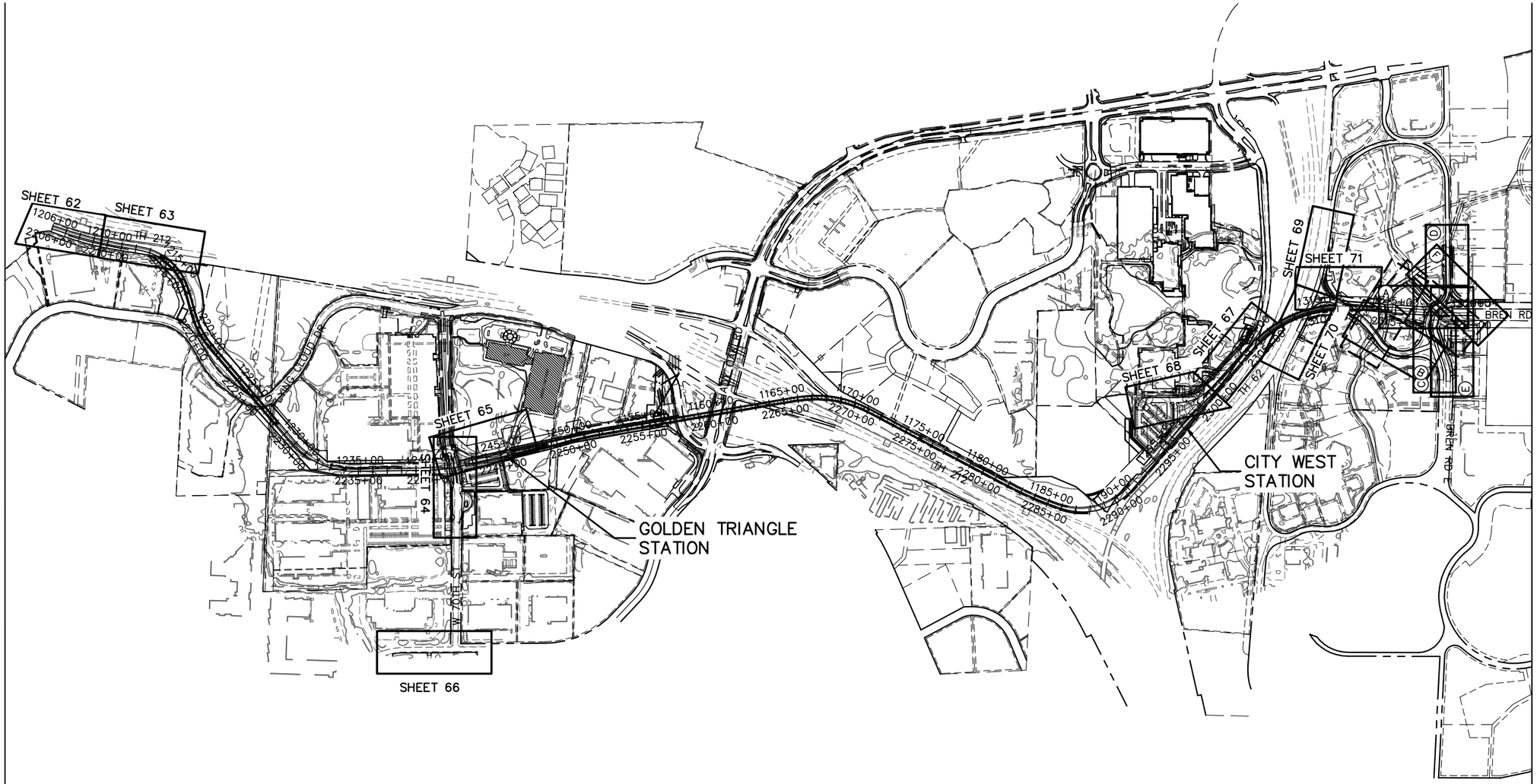
CIVIL WEST - VOLUME 10
SIGNING AND STRIPING
PLAN SHEET LAYOUT
SHEET 1

DISCIPLINE: TRAFFIC

SHEET NAME: W1-TFC-SIGN-STRP-LAY - 001

SHEET 29 OF 152

Sep. 21 2015 11:12 am V:\3400_ADC\CAD\SEGMENT W1\PLAN SHEETS\TRAFFIC\W1-TFC-SIGN-STRP-LAY.dwg By: kmcclement



INDEX		DESCRIPTION
A	SHEET 72	RED CIRCLE DRIVE STA. 208+50 TO STA. 213+00
B	SHEET 73	YELLOW CIRCLE DRIVE
C	SHEET 74	BREN ROAD EAST STA. 221+00 TO STA. 227+50
D	SHEET 75	RED CIRCLE DRIVE STA. 227+50 TO STA. 233+00
E	SHEET 76	BREN ROAD EAST
F	SHEET 77	BREN ROAD EAST TO RED CIRCLE DRIVE

0 200 400 800
SCALE HORIZONTAL IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM

SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
SIGNING AND STRIPING
PLAN SHEET LAYOUT
SHEET 2

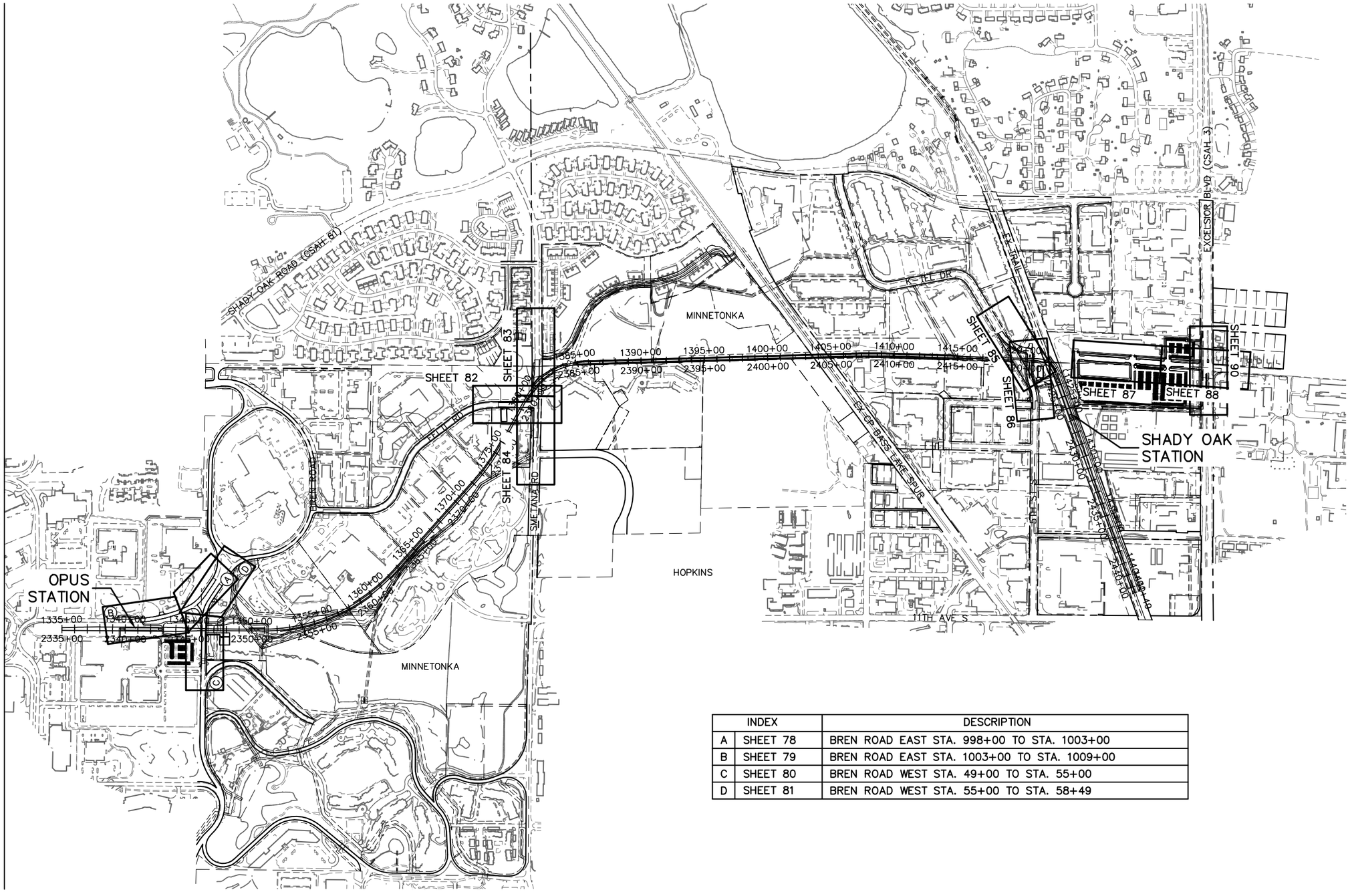
DISCIPLINE: TRAFFIC

SHEET NAME: W2-TFC-SIGN-STRP-LAY - 001

SHEET 30 OF 152

Sep. 21 2015 11:13 am V:\3400_ADC\CAD\SEGMENT W2\PLAN SHEETS\TRAFFIC\W2-TFC-SIGN-STRP-LAY.dwg By: kmcclement

MATCH LINE - SEE SHEET 30



INDEX		DESCRIPTION
A	SHEET 78	BREN ROAD EAST STA. 998+00 TO STA. 1003+00
B	SHEET 79	BREN ROAD EAST STA. 1003+00 TO STA. 1009+00
C	SHEET 80	BREN ROAD WEST STA. 49+00 TO STA. 55+00
D	SHEET 81	BREN ROAD WEST STA. 55+00 TO STA. 58+49

0 200 400 800
HORIZONTAL SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM

SRF Consulting Group, Inc.

METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

60% SUBMISSION - 09/28/15

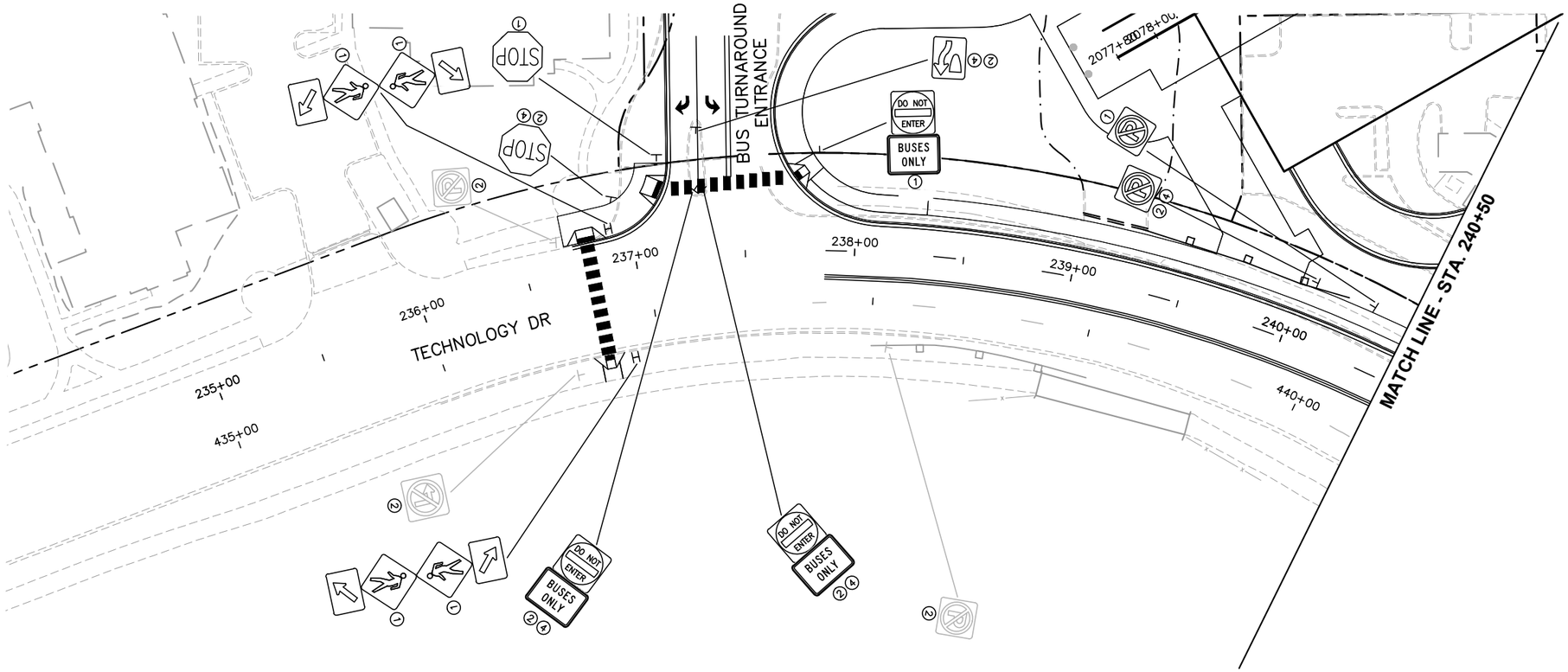
CIVIL WEST - VOLUME 10
SIGNING AND STRIPING
PLAN SHEET LAYOUT
SHEET 3

DISCIPLINE: TRAFFIC

SHEET NAME: W3-TFC-SIGN-STRP-LAY - 001

SHEET 31 OF 152

Sep. 21 2015 11:14 am V:\3400_ADC\CAD\SEGMENT W3\PLAN SHEETS\TRAFFIC\W3-TFC-SIGN-STRP-LAY.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

0 15 30 60
HORIZONTAL SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM
SRF Consulting Group, Inc.
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

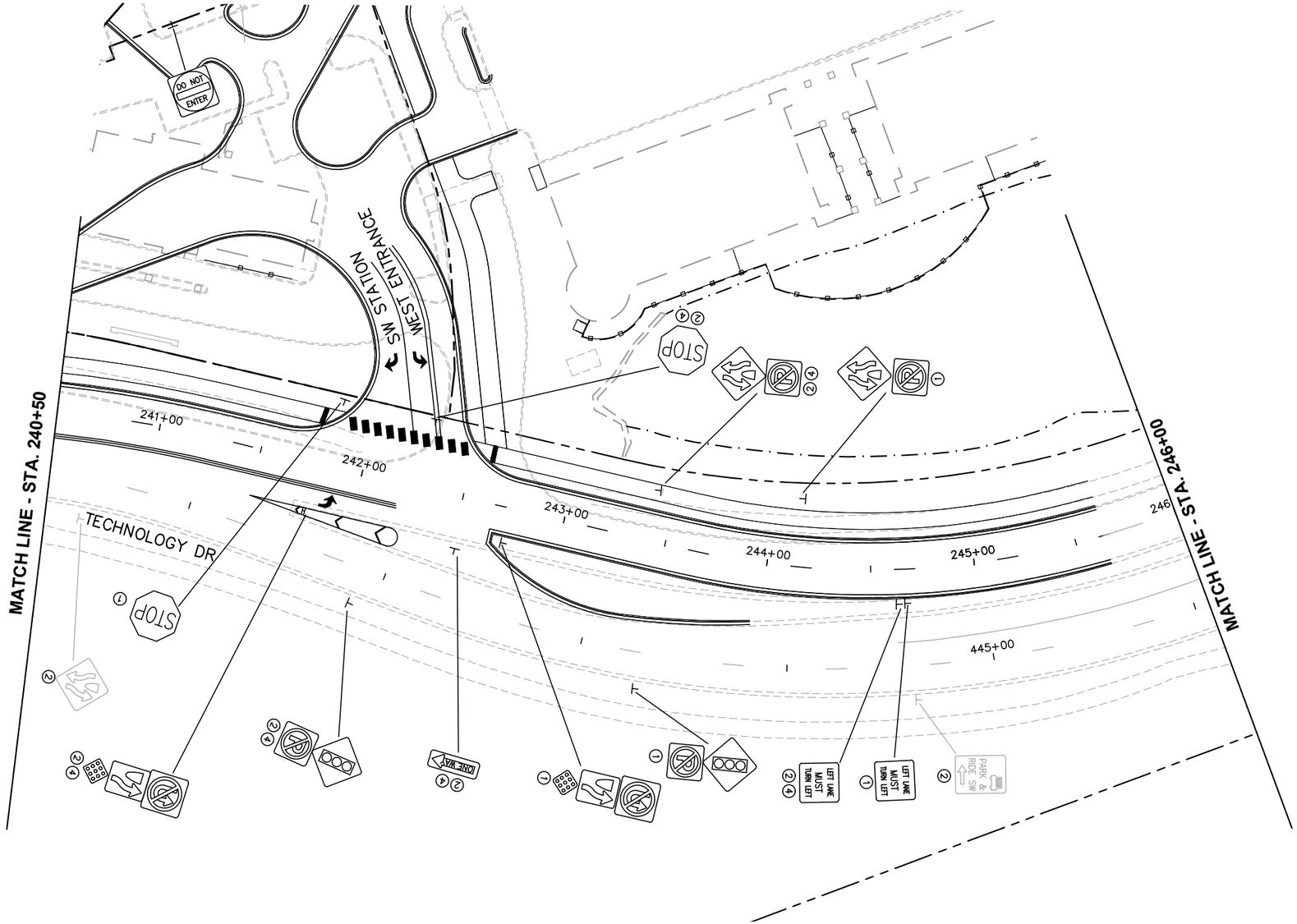
60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
TECHNOLOGY DRIVE WB
SIGNING AND STRIPING
STA. 235+00 TO STA. 240+50

DISCIPLINE: TRAFFIC
SHEET NAME: W1-TFC-SIGN-STRP-001 - 001

SHEET 32 OF 152

Sep, 21 2015 11:14 am V:\3400_ADC\CAD\SEGMENT W1\PLAN SHEETS\TRAFFIC\W1-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

0 15 30 60
HORIZONTAL SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM
SRF Consulting Group, Inc.
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

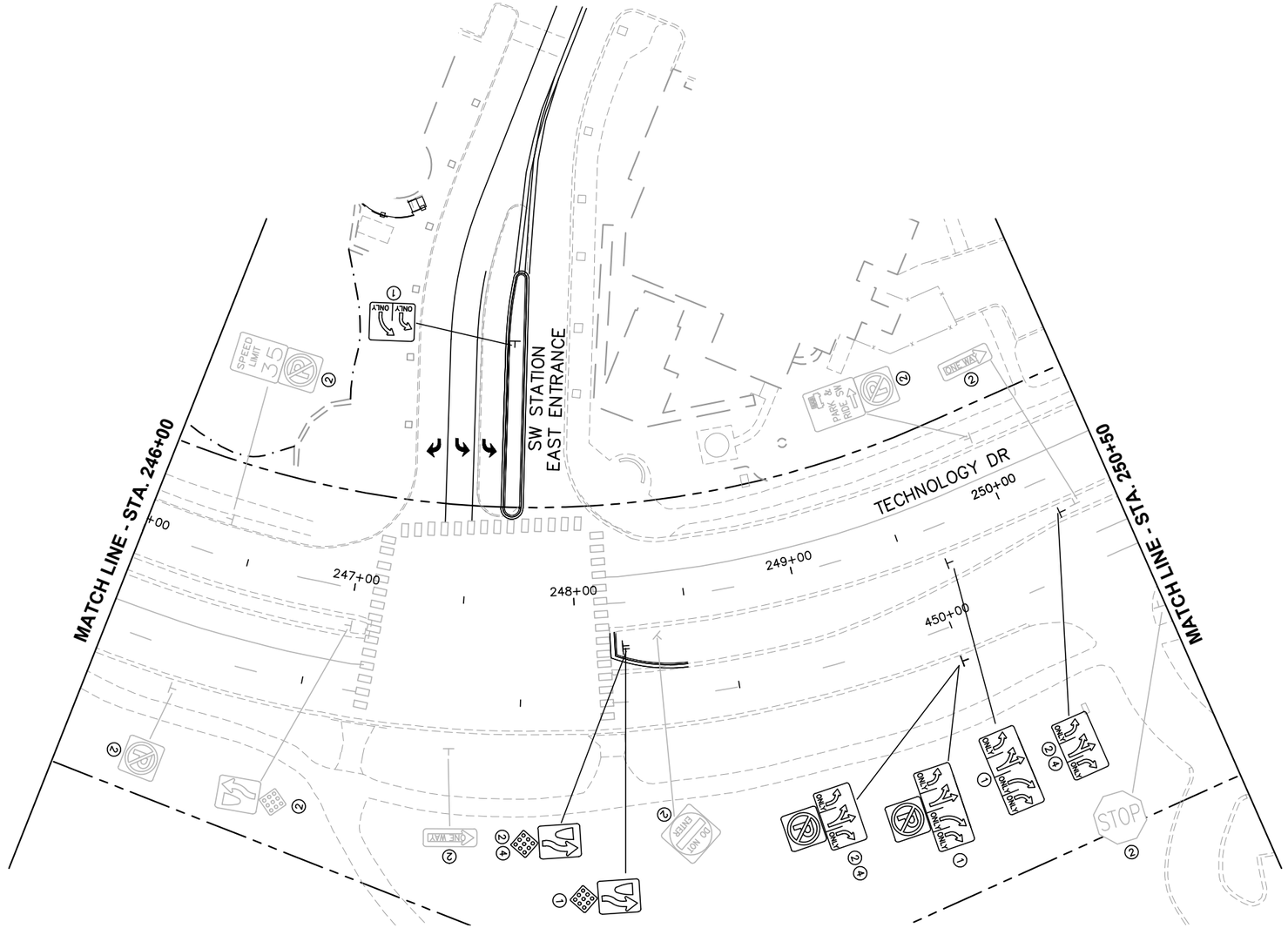
60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
TECHNOLOGY DRIVE WB
SIGNING AND STRIPING
STA. 240+50 TO STA. 246+00

DISCIPLINE: TRAFFIC
SHEET NAME: W1-TFC-SIGN-STRP-001 - 002

SHEET 33 OF 152

Sep, 21 2015 11:14 am V:\3400_ADC\CAD\SEGMENT W1\PLAN SHEETS\TRAFFIC\W1-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

0 15 30 60
HORIZONTAL SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM
SRF Consulting Group, Inc.
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

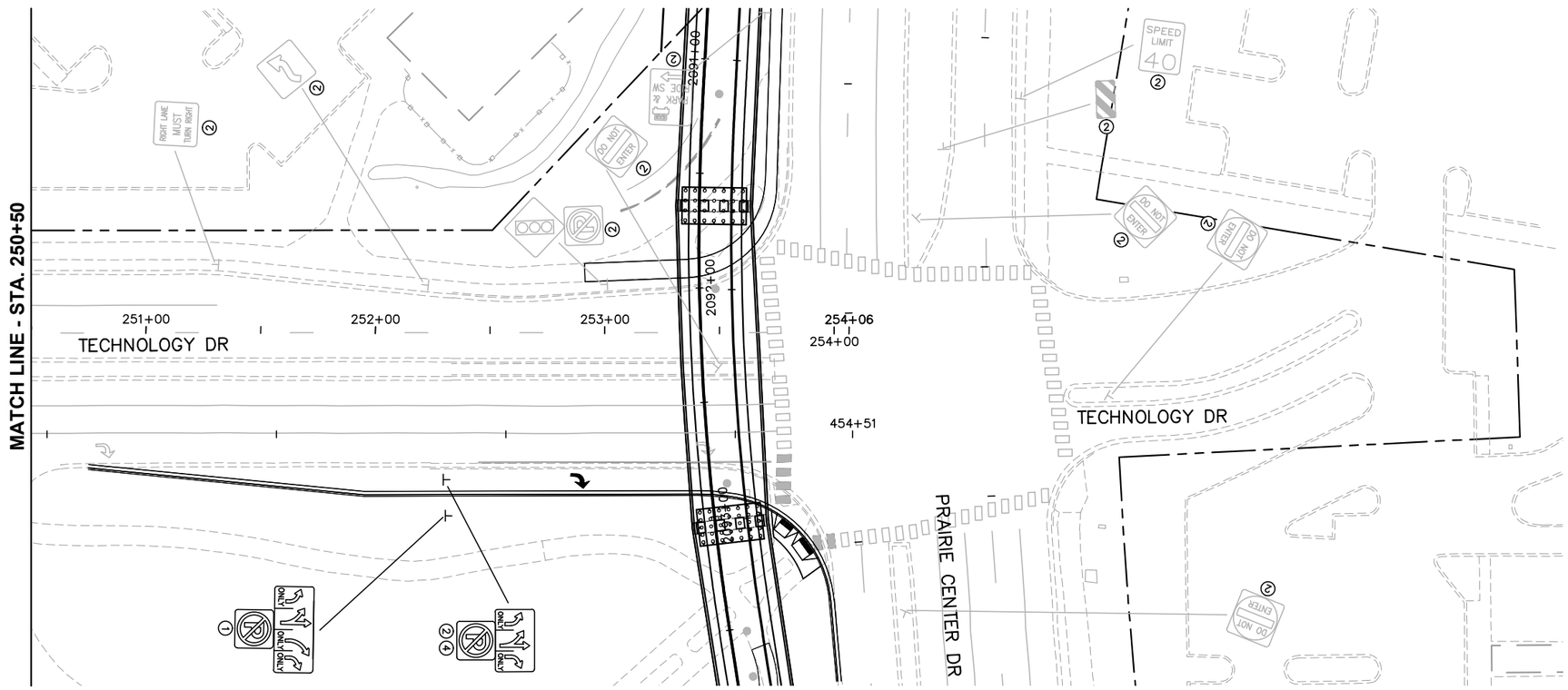
60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
TECHNOLOGY DRIVE WB
SIGNING AND STRIPING
STA. 246+00 TO STA. 250+50

DISCIPLINE: TRAFFIC
SHEET NAME: W1-TFC-SIGN-STRP-001 - 003

SHEET 34 OF 152

Sep, 21 2015 11:14 am V:\3400_ADC\CAD\SEGMENT W1\PLAN SHEETS\TRAFFIC\W1-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

0 15 30 60
HORIZONTAL SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM
SRF Consulting Group, Inc.
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

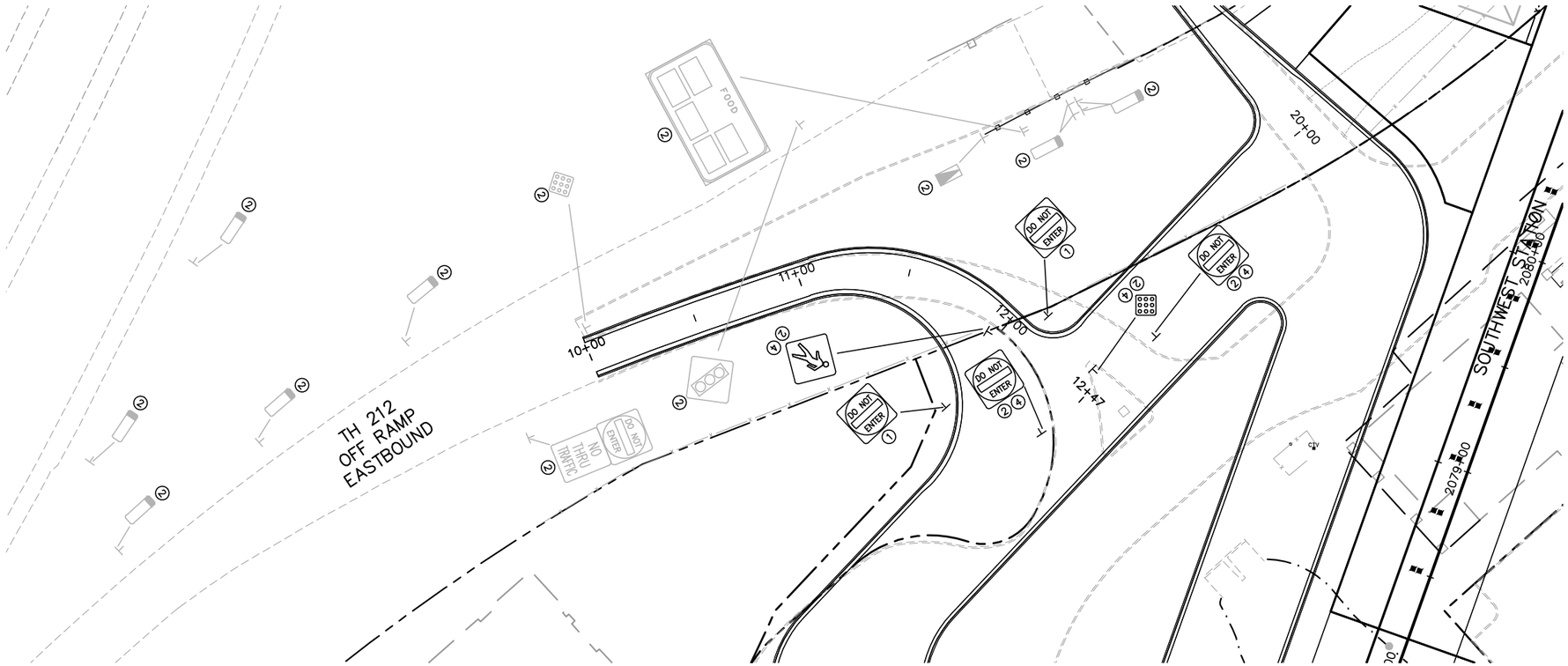
60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
TECHNOLOGY DRIVE WB
SIGNING AND STRIPING
STA. 250+50 TO STA. 254+06

DISCIPLINE: TRAFFIC
SHEET NAME: W1-TFC-SIGN-STRP-001 - 004

SHEET 35 OF 152

Sep, 21 2015 11:14 am V:\3400_ADC\CAD\SEGMENT W1\PLAN SHEETS\TRAFFIC\W1-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

0 15 30 60
HORIZONTAL SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM
SRF Consulting Group, Inc.
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

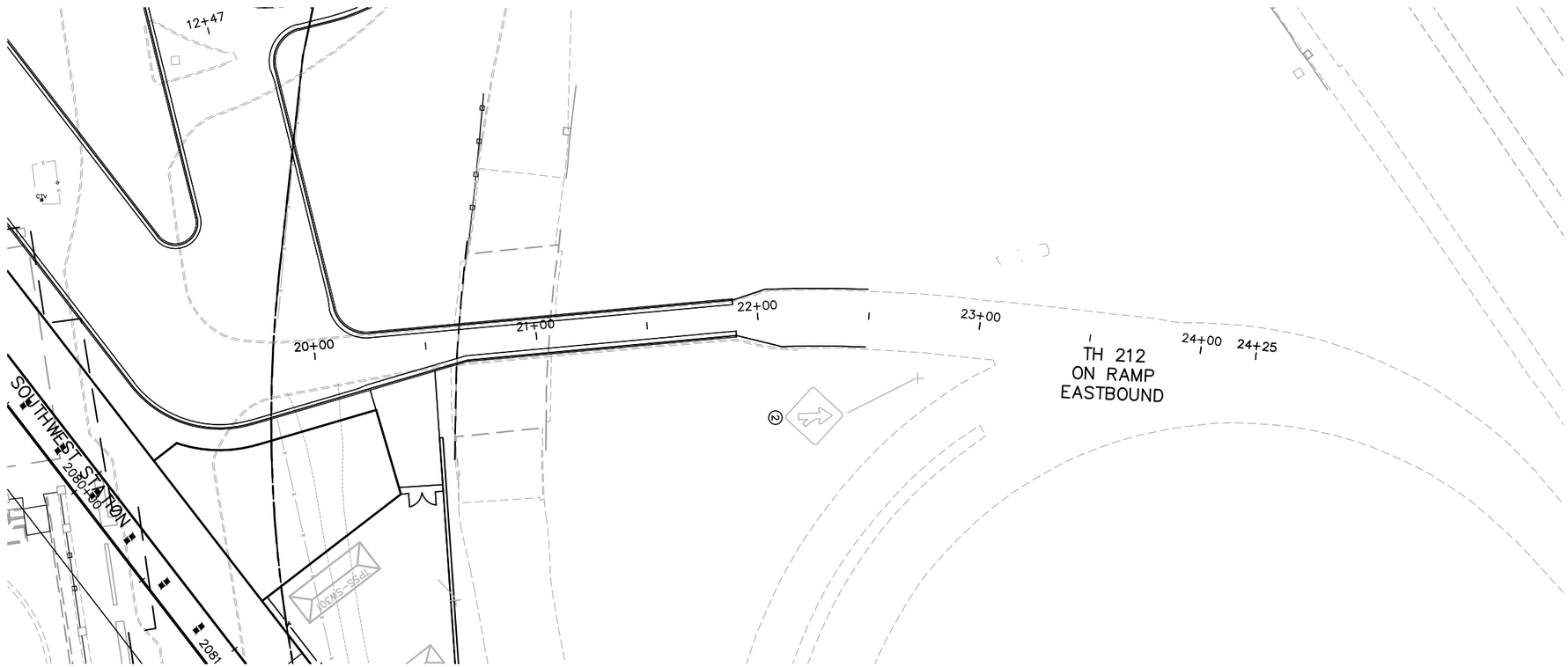
60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
BUS RAMP
SIGNING AND STRIPING
STA. 10+00 TO STA. 12+47

DISCIPLINE: TRAFFIC
SHEET NAME: W1-TFC-SIGN-STRP-001 - 005

SHEET 36 OF 152

Sep. 21 2015 11:14 am V:\3400_ADC\CAD\SEGMENT W1\PLAN SHEETS\TRAFFIC\W1-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

0 15 30 60
HORIZONTAL SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM
SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

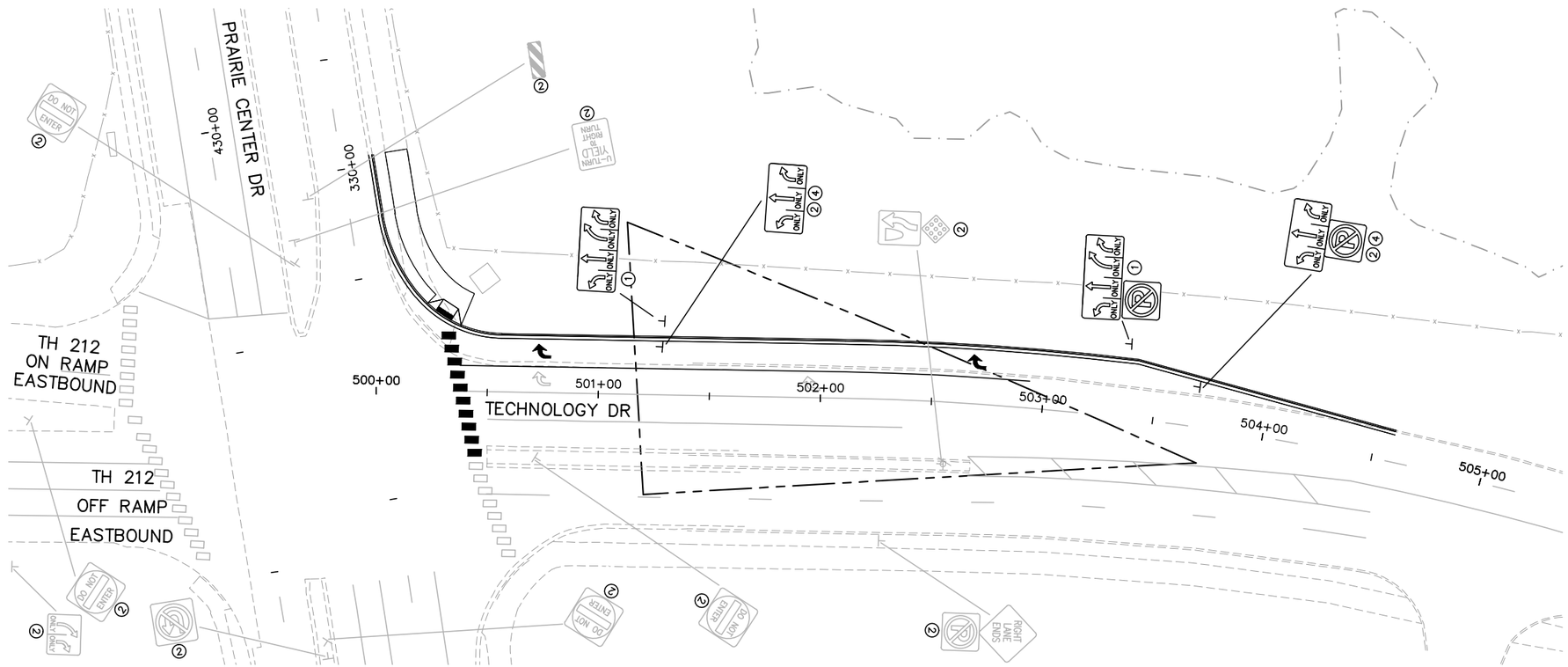
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
BUS CONNECTION
SIGNING AND STRIPING
STA. 20+00 TO STA. 24+25

DISCIPLINE: TRAFFIC
SHEET NAME: W1-TFC-SIGN-STRP-001 - 006

SHEET 37 OF 152

Sep, 21 2015 11:15 am V:\3400_ADC\CAD\SEGMENT W1\PLAN SHEETS\TRAFFIC\W1-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

0 15 30 60
HORIZONTAL SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM
SRF Consulting Group, Inc.
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

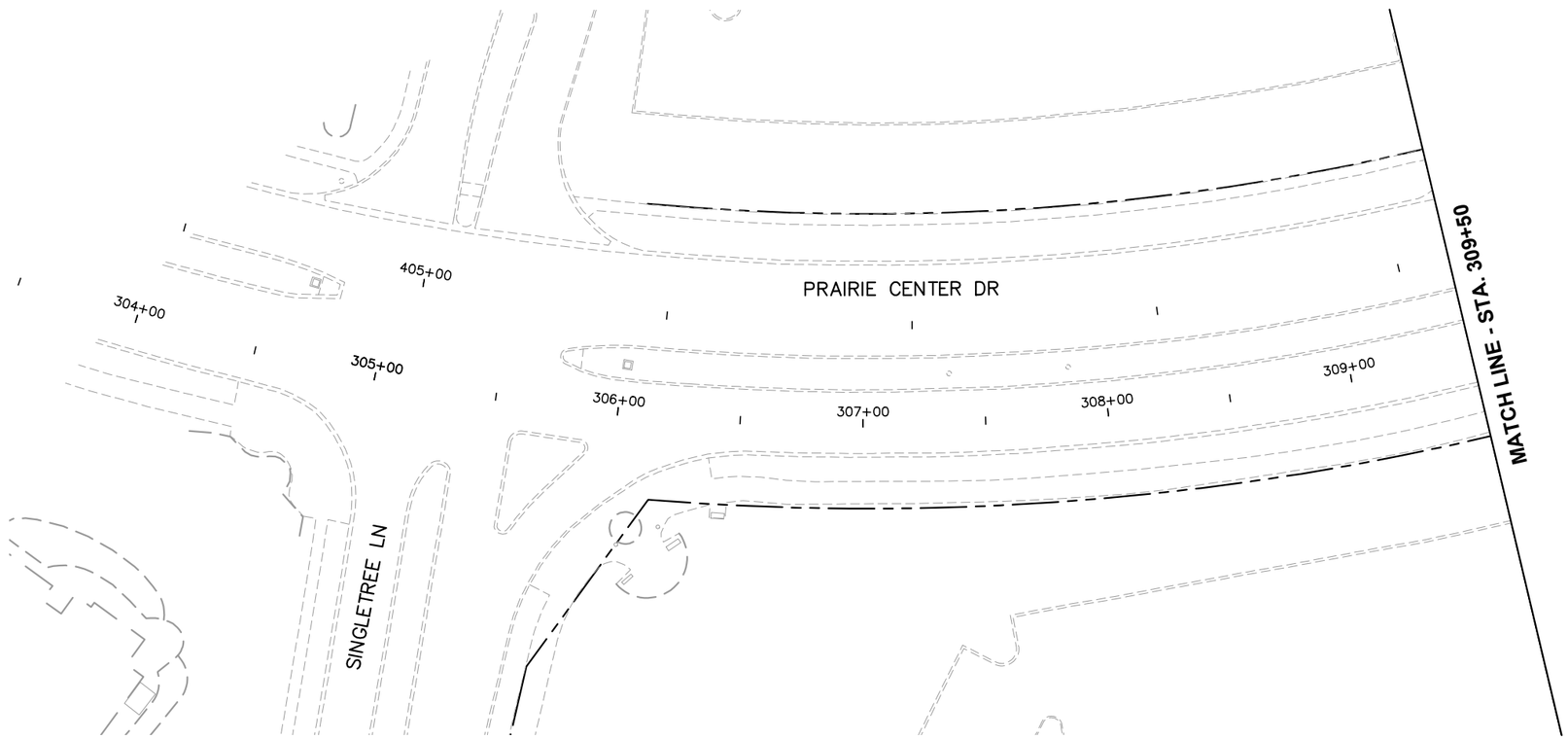
60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
TECHNOLOGY DRIVE
SIGNING AND STRIPING
STA. 500+00 TO STA. 505+00

DISCIPLINE: TRAFFIC
SHEET NAME: W1-TFC-SIGN-STRP-001 - 007

SHEET 38 OF 152

Sep, 21 2015 11:15 am V:\3400_ADC\CAD\SEGMENT W1\PLAN SHEETS\TRAFFIC\W1-TFC-SIGN-STRP-001.dwg By: kmcclement



FOR REFERENCE ONLY

0 15 30 60
HORIZONTAL
SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM

SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

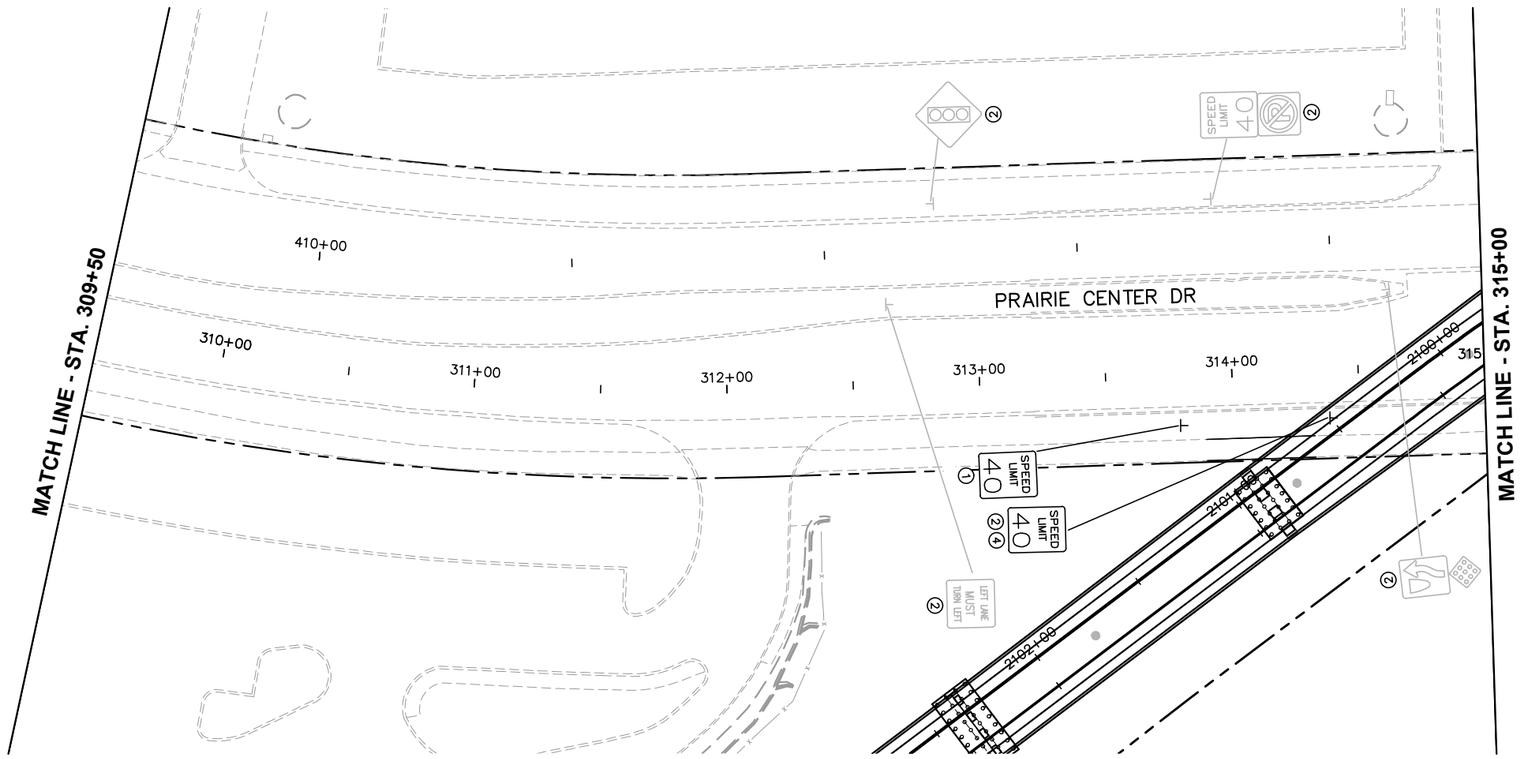
CIVIL WEST - VOLUME 10
PRAIRIE CENTER DRIVE
SIGNING AND STRIPING
STA. 303+50 TO STA. 309+50

DISCIPLINE: TRAFFIC

SHEET NAME: W1-TFC-SIGN-STRP-001 - 008

SHEET 39 OF 152

Sep, 21 2015 11:15 am V:\3400_ADC\CAD\SEGMENT W1\PLAN SHEETS\TRAFFIC\W1-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

0 15 30 60
HORIZONTAL SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM
SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

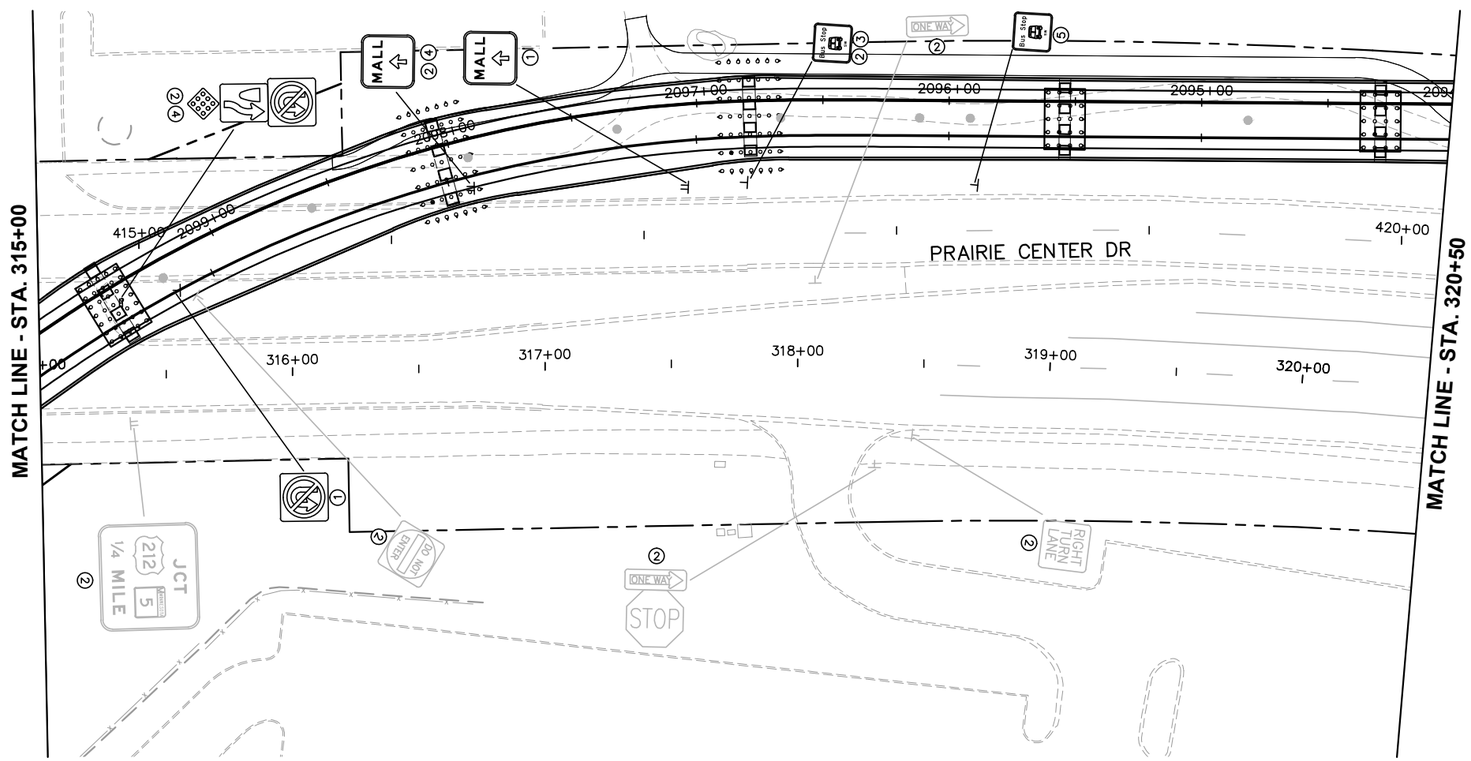
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
PRAIRIE CENTER DRIVE
SIGNING AND STRIPING
STA. 309+50 TO STA. 315+00

DISCIPLINE: TRAFFIC
SHEET NAME: W1-TFC-SIGN-STRP-001 - 009

SHEET 40 OF 152

Sep, 21 2015 11:15 am V:\3400_ADC\CAD\SEGMENT W1\PLAN SHEETS\TRAFFIC\W1-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

0 15 30 60
HORIZONTAL SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM
SRF Consulting Group, Inc.
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

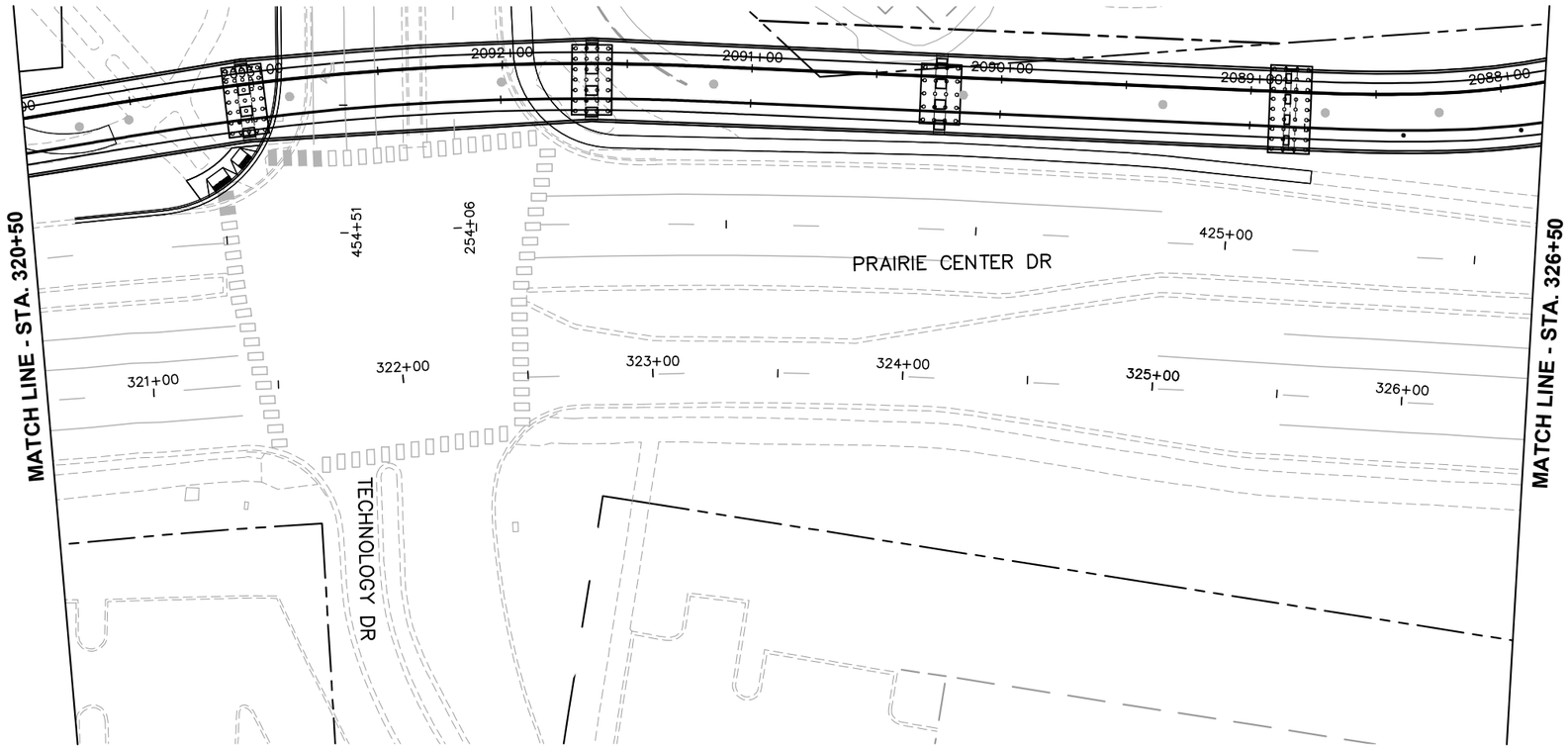
60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
PRAIRIE CENTER DRIVE
SIGNING AND STRIPING
STA. 315+00 TO STA. 320+50

DISCIPLINE: TRAFFIC
SHEET NAME: W1-TFC-SIGN-STRP-001 - 010

SHEET 41 OF 152

Sep. 21 2015 11:15 am V:\3400_ADC\CAD\SEGMENT W1\PLAN SHEETS\TRAFFIC\W1-TFC-SIGN-STRP-001.dwg By: kmcclement



FOR REFERENCE ONLY

0 15 30 60
HORIZONTAL
SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM

SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

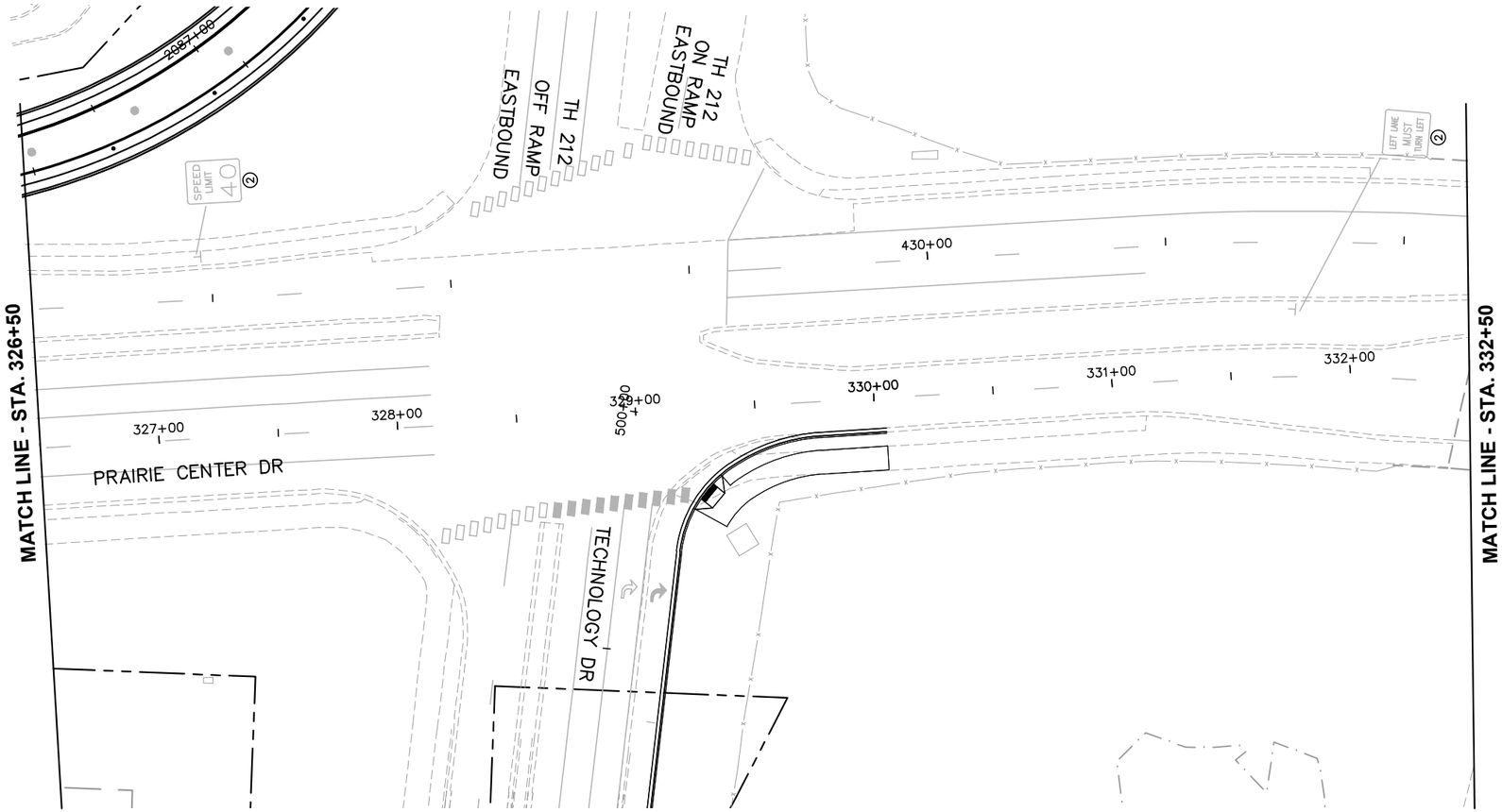
CIVIL WEST - VOLUME 10
PRAIRIE CENTER DRIVE
SIGNING AND STRIPING
STA. 320+50 TO STA. 326+50

DISCIPLINE: TRAFFIC

SHEET NAME: W1-TFC-SIGN-STRP-001 - 011

SHEET 42 OF 152

Sep, 21 2015 11:15 am V:\3400_ADC\CAD\SEGMENT W1\PLAN SHEETS\TRAFFIC\W1-TFC-SIGN-STRP-001.dwg By: kmcclement



① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

0 15 30 60
HORIZONTAL SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

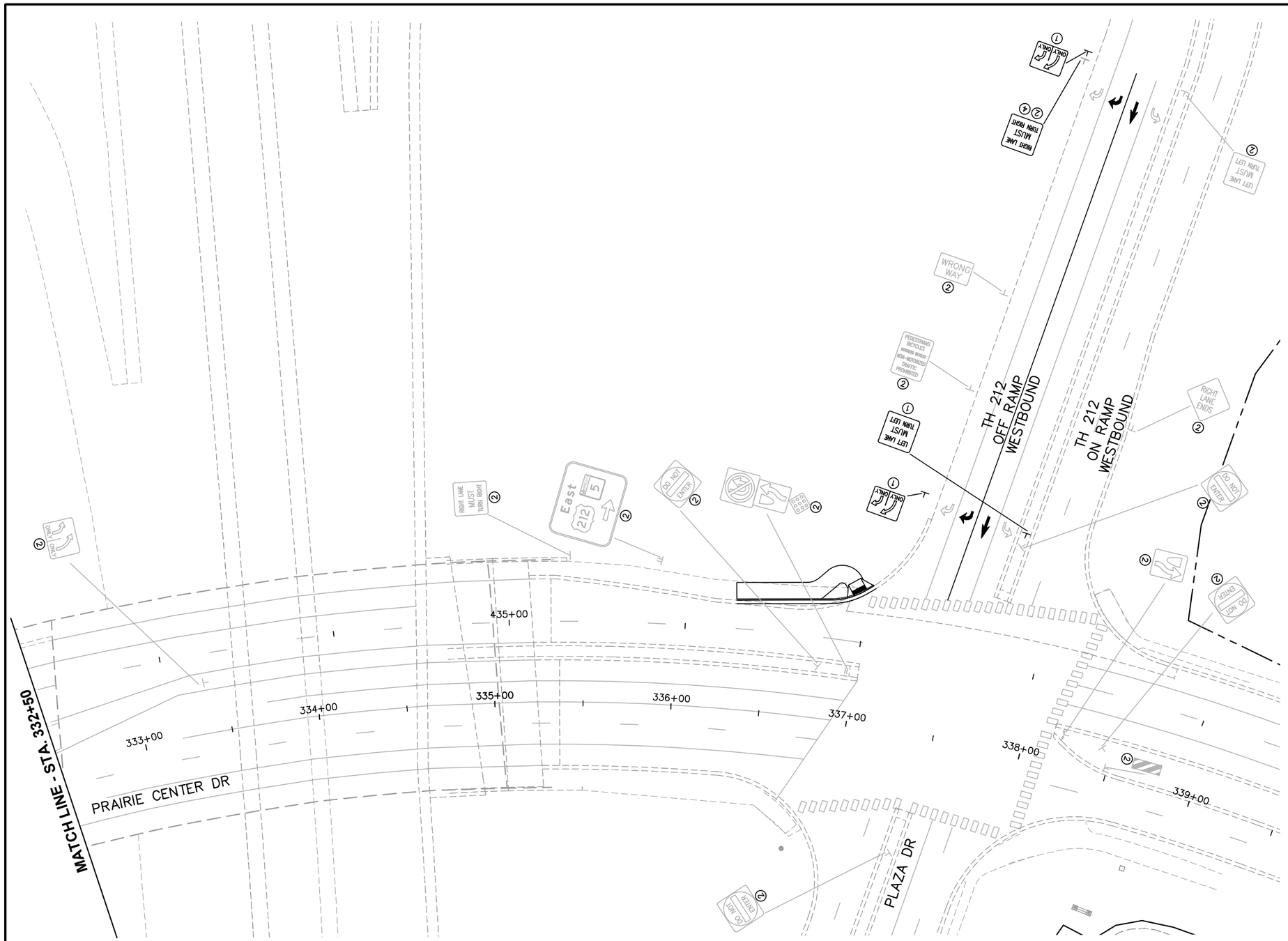
AECOM
SRF Consulting Group, Inc.
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
PRAIRIE CENTER DRIVE
SIGNING AND STRIPING
STA. 326+50 TO STA. 332+50

DISCIPLINE: TRAFFIC
SHEET NAME: W1-TFC-SIGN-STRP-001 - 012

Sep, 21 2015 11:15 am V:\3400_ADC\CAD\SEGMENT W1\PLAN SHEETS\TRAFFIC\W1-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

0 15 30 60
HORIZONTAL
SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM
SRF Consulting Group, Inc.
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

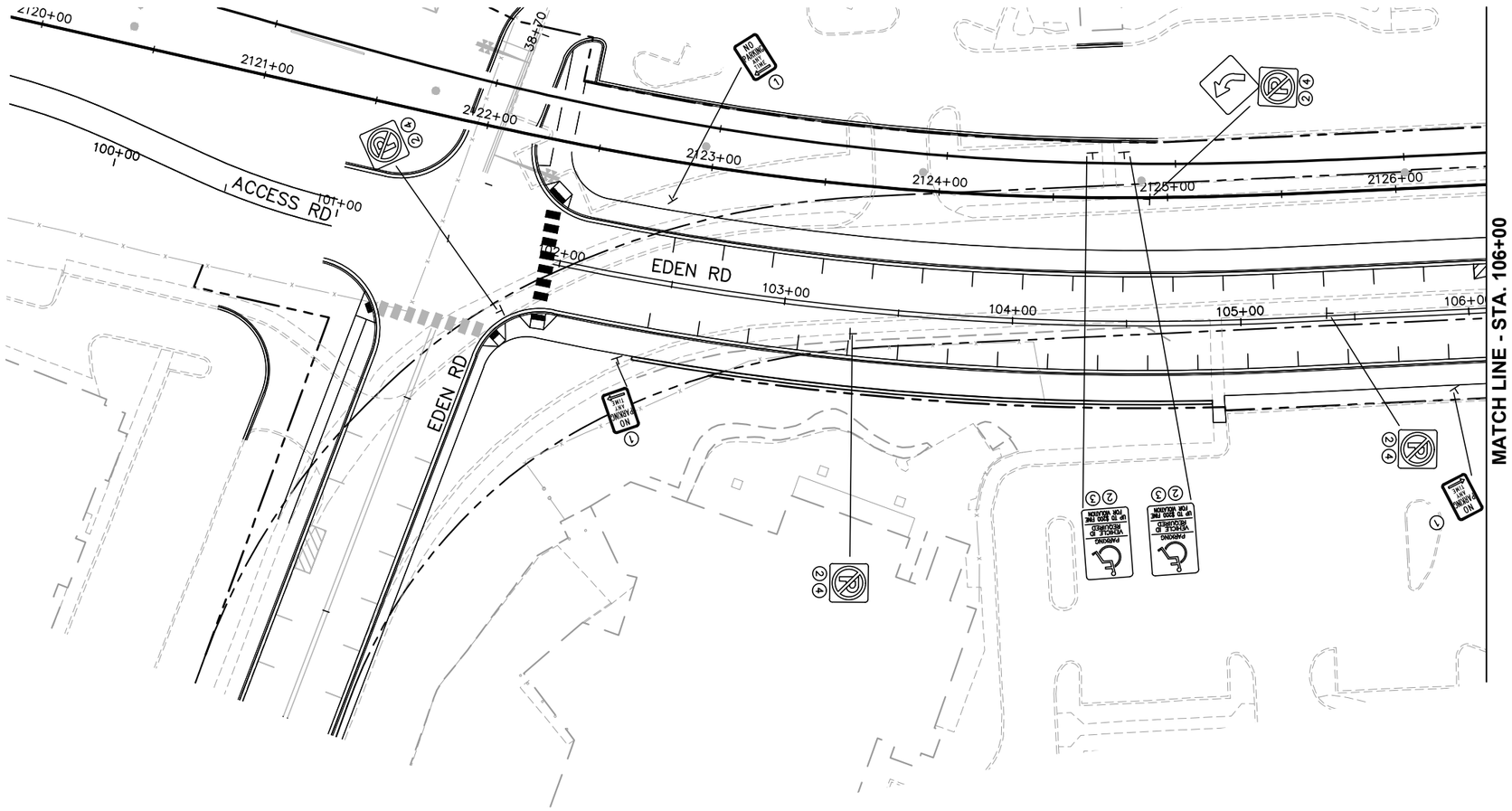
60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
PRAIRIE CENTER DRIVE
SIGNING AND STRIPING
STA. 332+50 TO STA. 339+50

DISCIPLINE: TRAFFIC
SHEET NAME: W1-TFC-SIGN-STRP-001 - 013

SHEET 44 OF 152

Sep. 21 2015 11:16 am V:\3400_ADC\CAD\SEGMENT W1\PLAN SHEETS\TRAFFIC\W1-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

0 15 30 60
HORIZONTAL SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM
SRF Consulting Group, Inc.
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

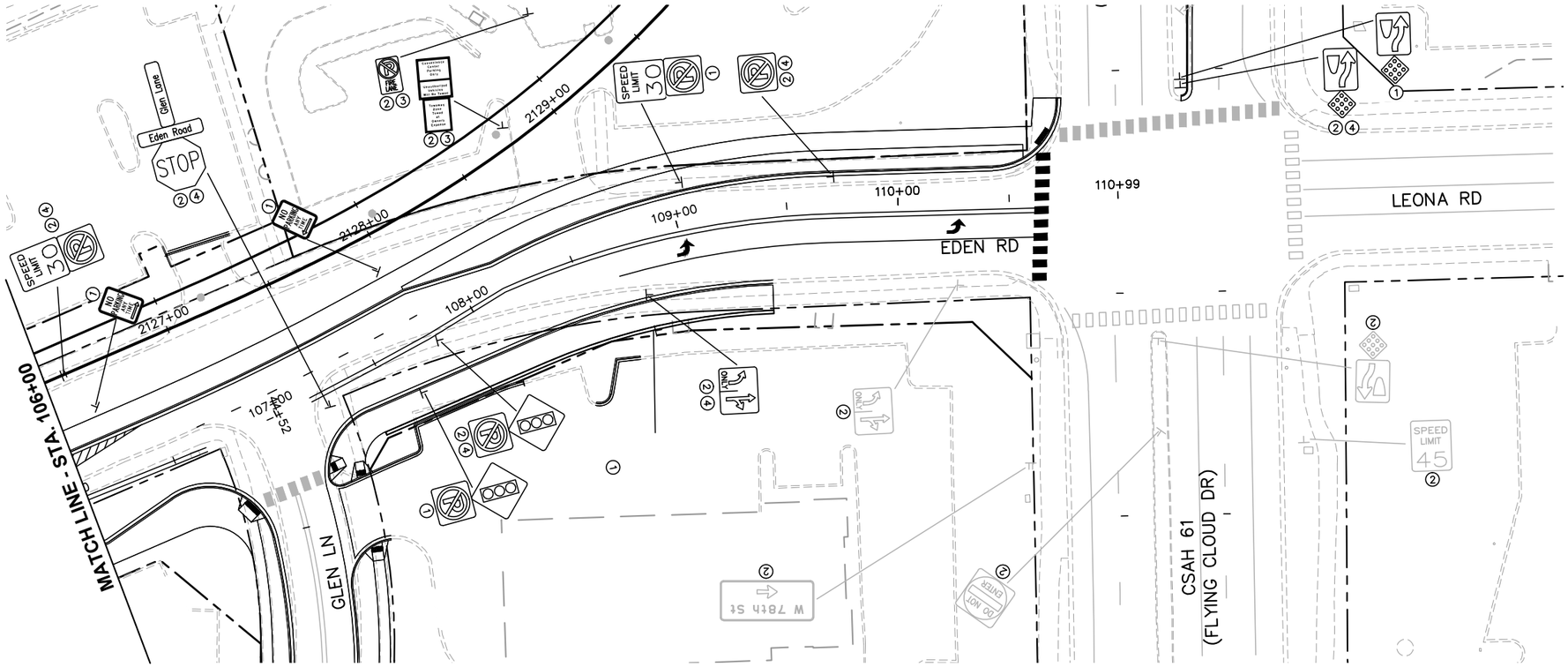
60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
EDEN ROAD
SIGNING AND STRIPING
STA. 100+00 TO STA. 106+00

DISCIPLINE: TRAFFIC
SHEET NAME: W1-TFC-SIGN-STRP-001 - 014

SHEET 45 OF 152

Sep, 21 2015 11:16 am V:\3400_ADC\CAD\SEGMENT W1\PLAN SHEETS\TRAFFIC\W1-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

0 15 30 60
HORIZONTAL SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM
SRF Consulting Group, Inc.
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

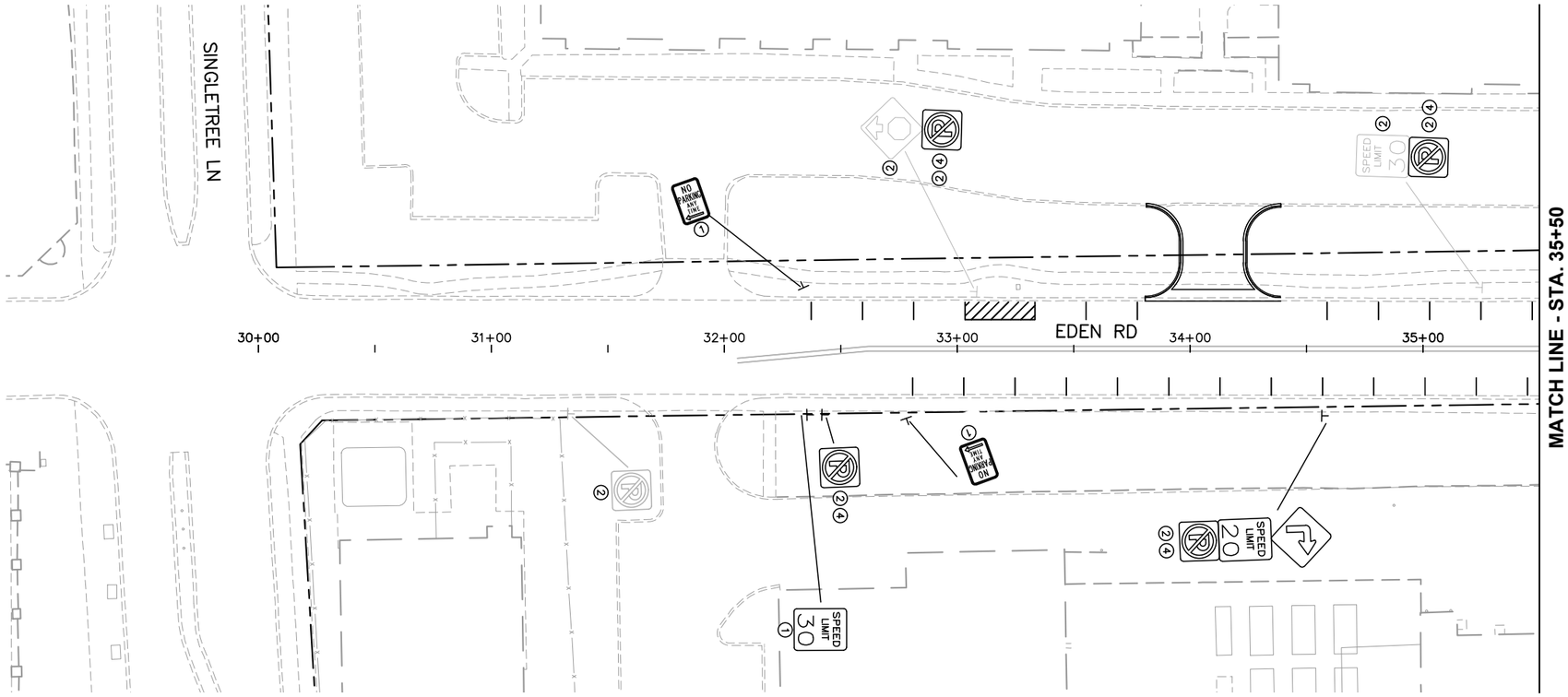
60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
EDEN ROAD
SIGNING AND STRIPING
STA. 106+00 TO STA. 110+51

DISCIPLINE: TRAFFIC
SHEET NAME: W1-TFC-SIGN-STRP-001 - 015

SHEET 46 OF 152

Sep, 21 2015 11:16 am V:\3400_ADC\CAD\SEGMENT W1\PLAN SHEETS\TRAFFIC\W1-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

0 15 30 60
HORIZONTAL SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM
SRF Consulting Group, Inc.
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

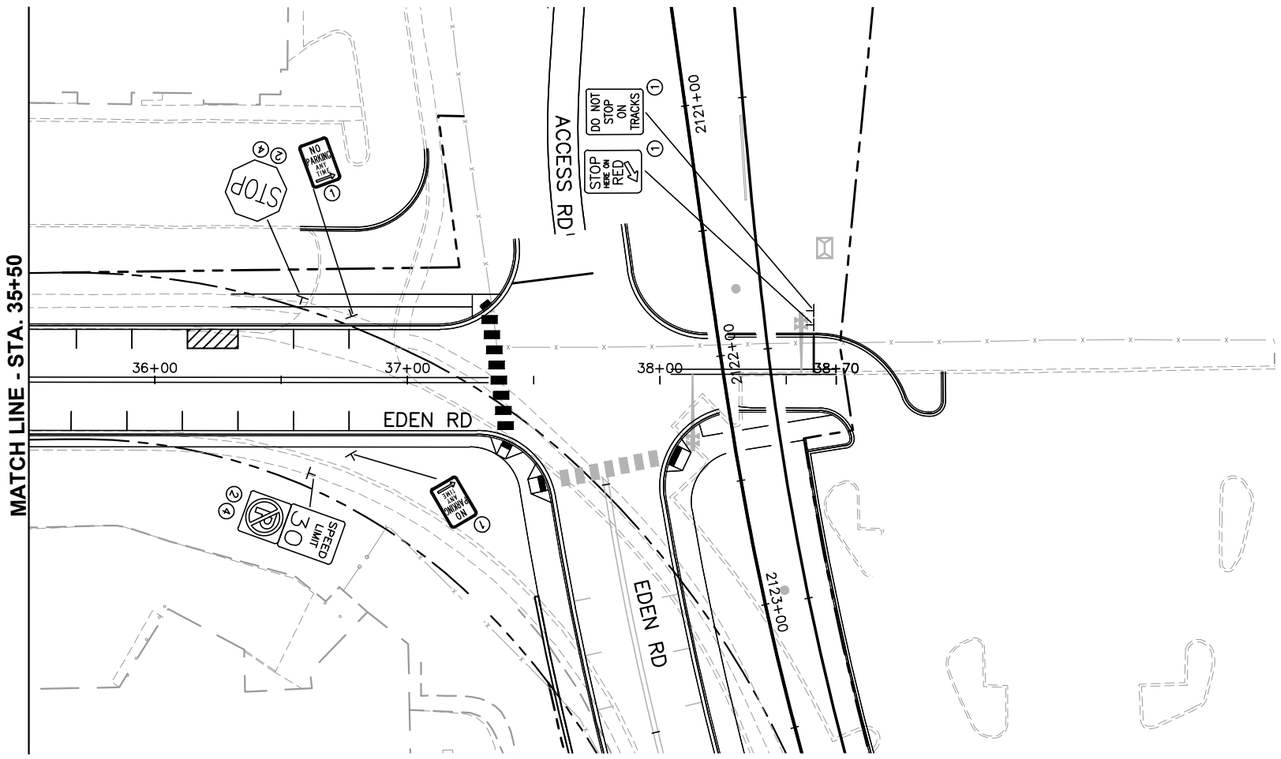
60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
EDEN ROAD SOUTH
SIGNING AND STRIPING
STA. 30+00 TO STA. 35+50

DISCIPLINE: TRAFFIC
SHEET NAME: W1-TFC-SIGN-STRP-001 - 016

SHEET 47 OF 152

Sep. 21 2015 11:16 am V:\3400_ADC\CAD\SEGMENT W1\PLAN SHEETS\TRAFFIC\W1-TFC-SIGN-STRP-001.dwg By: kmcclement



0 15 30 60
HORIZONTAL
SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM

SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

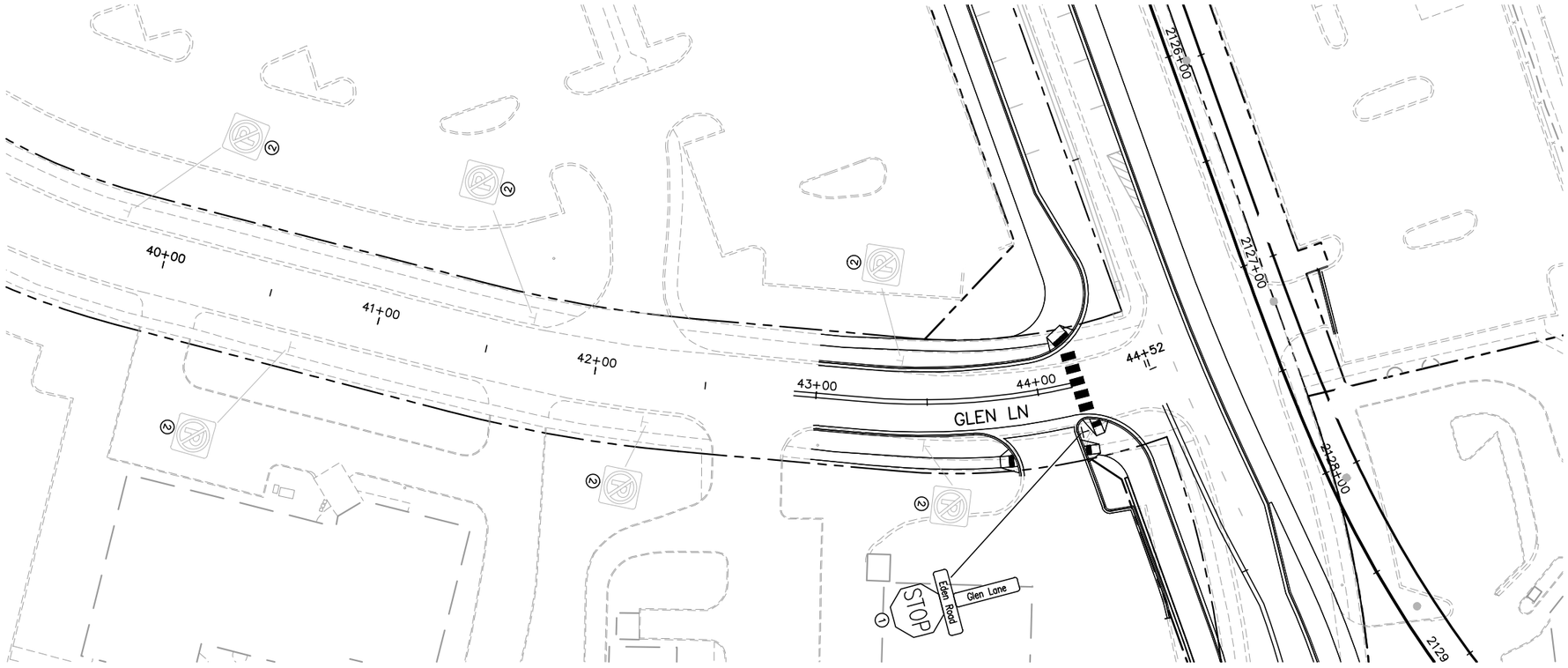
CIVIL WEST - VOLUME 10
EDEN ROAD SOUTH
SIGNING AND STRIPING
STA. 35+50 TO STA. 38+70

DISCIPLINE: TRAFFIC

SHEET NAME: W1-TFC-SIGN-STRP-001 - 017

SHEET 48 OF 152

Sep, 21 2015 11:16 am V:\3400_ADC\CAD\SEGMENT W1\PLAN SHEETS\TRAFFIC\W1-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

0 15 30 60
HORIZONTAL
SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM
SRF Consulting Group, Inc.
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

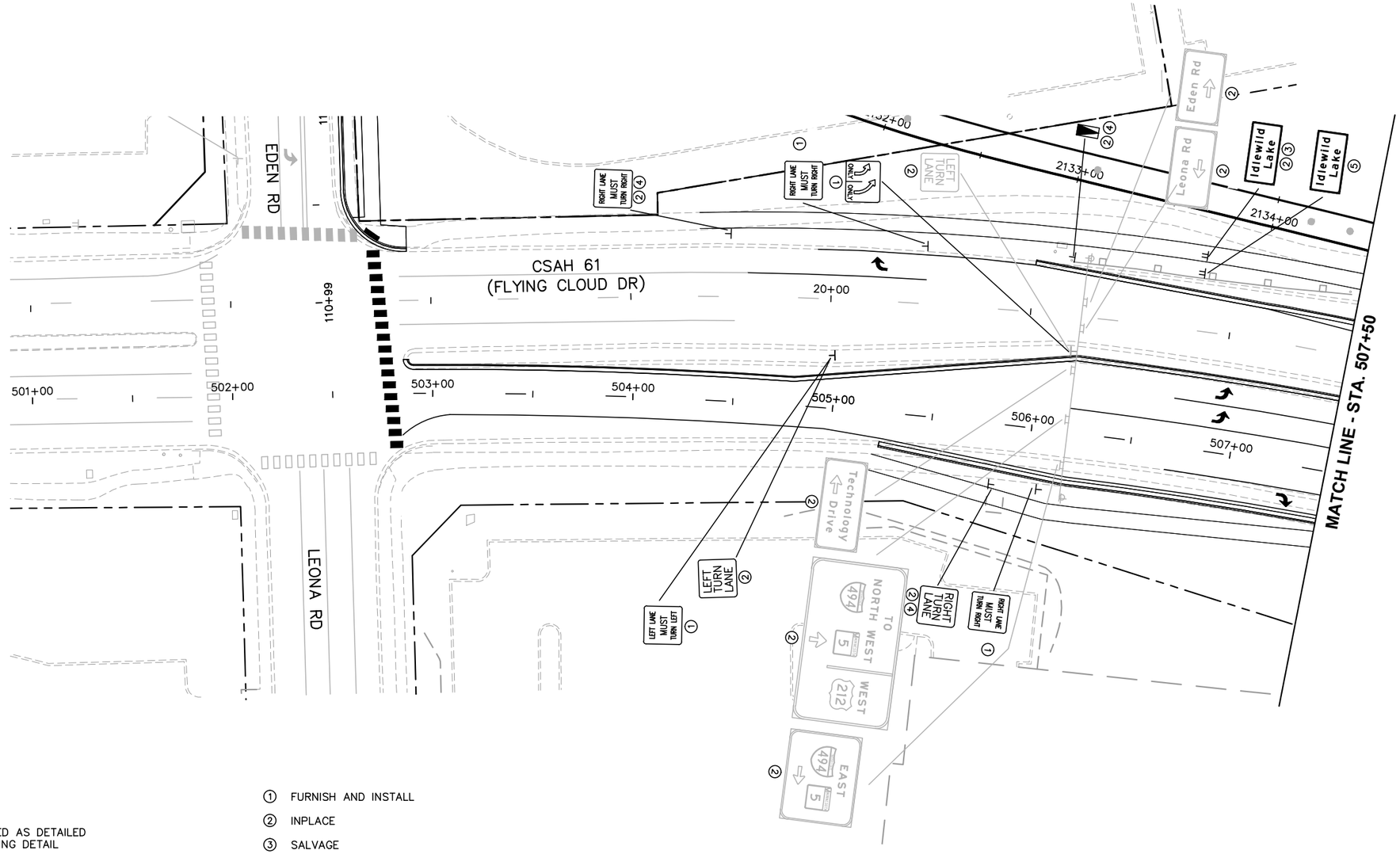
60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
GLEN LANE
SIGNING AND STRIPING
STA. 40+00 TO STA. 44+52

DISCIPLINE: TRAFFIC
SHEET NAME: W1-TFC-SIGN-STRP-001 - 018

SHEET 49 OF 152

Sep. 21 2015 11:16 am V:\3400_ADC\CAD\SEGMENT W1\PLAN SHEETS\TRAFFIC\W1-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

0 15 30 60
HORIZONTAL SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM
SRF Consulting Group, Inc.
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

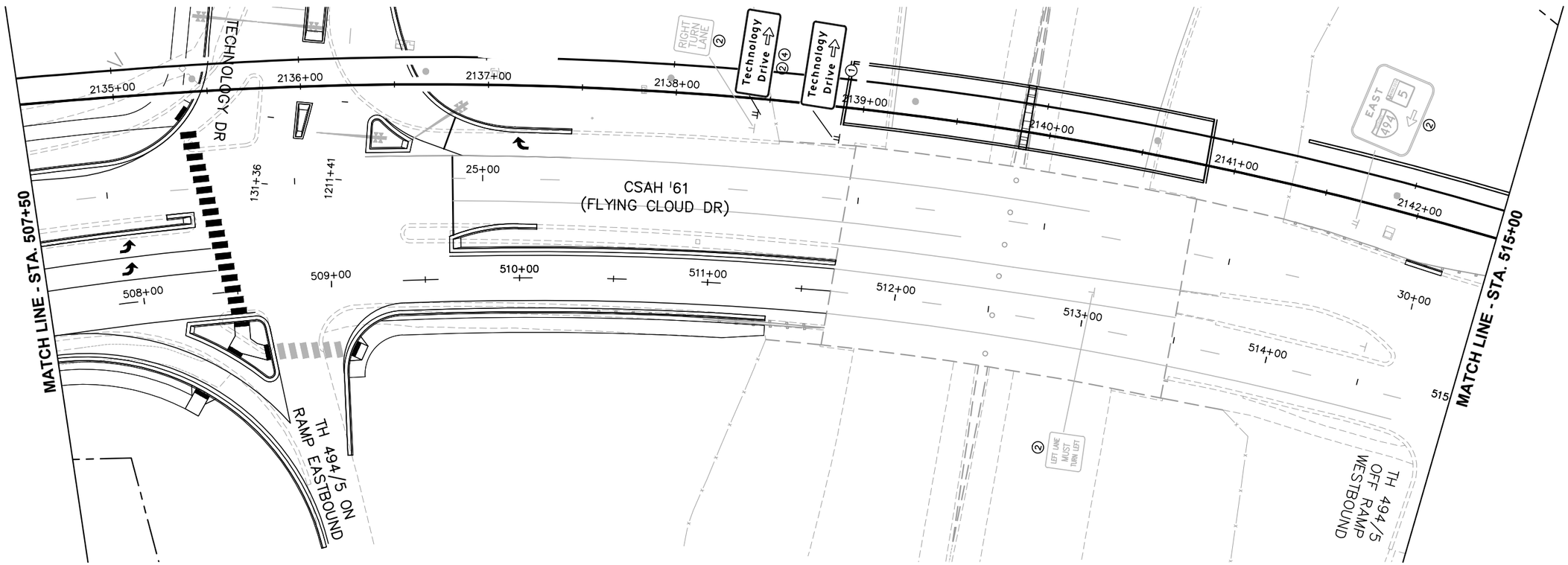
60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
FLYING CLOUD DRIVE
SIGNING AND STRIPING
STA. 501+00 TO STA. 507+50

DISCIPLINE: TRAFFIC
SHEET NAME: W1-TFC-SIGN-STRP-001 - 019

SHEET 50 OF 152

Sep, 21 2015 11:16 am V:\3400_ADC\CAD\SEGMENT W1\PLAN SHEETS\TRAFFIC\W1-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

0 15 30 60
HORIZONTAL SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM
SRF Consulting Group, Inc.
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

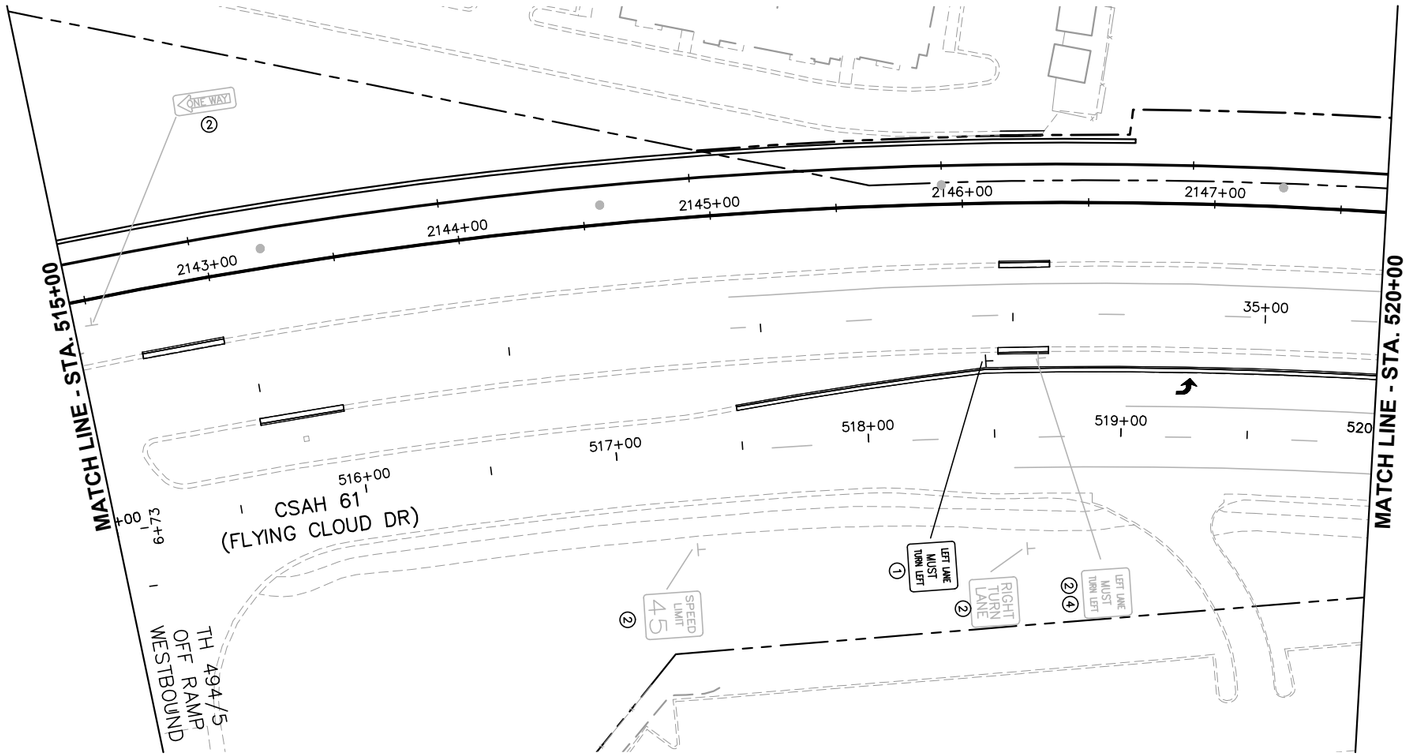
60% SUBMISSION - 09/28/15

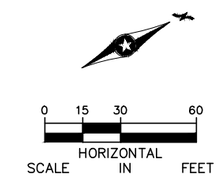
CIVIL WEST - VOLUME 10
FLYING CLOUD DRIVE
SIGNING AND STRIPING
STA. 507+50 TO STA. 515+00

DISCIPLINE: TRAFFIC
SHEET NAME: W1-TFC-SIGN-STRP-001 - 020

SHEET 51 OF 152

Sep. 21 2015 11:17 am V:\3400_ADC\CAD\SEGMENT W1\PLAN SHEETS\TRAFFIC\W1-TFC-SIGN-STRP-001.dwg By: kmcclement





NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM

SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

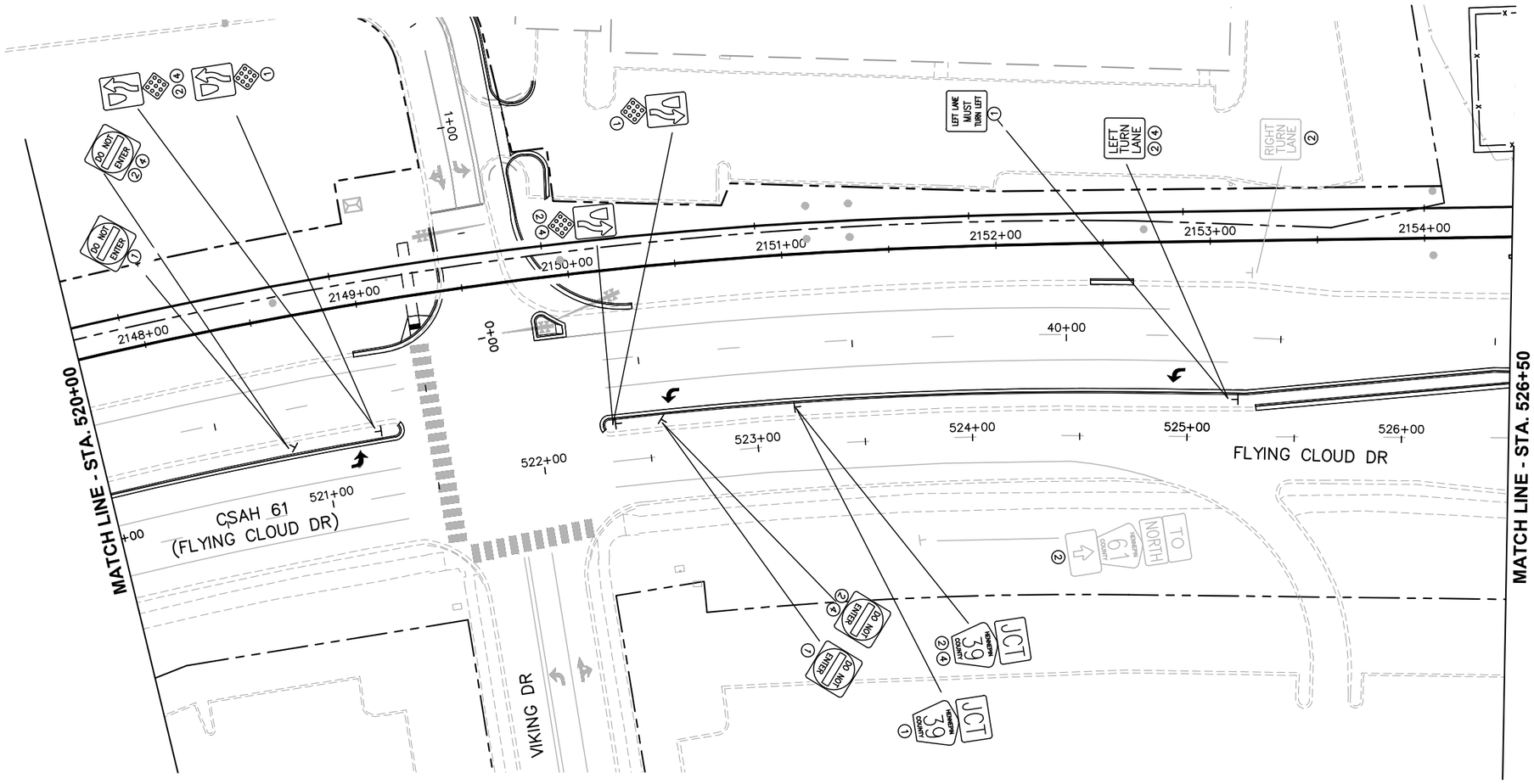
CIVIL WEST - VOLUME 10
FLYING CLOUD DRIVE
SIGNING AND STRIPING
STA. 515+00 TO STA. 520+00

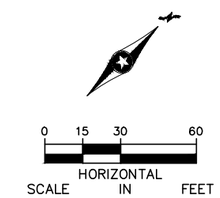
DISCIPLINE: TRAFFIC

SHEET NAME: W1-TFC-SIGN-STRP-001 - 021

SHEET 52 OF 152

Sep. 21 2015 11:17 am V:\3400_ADC\CAD\SEGMENT W1\PLAN SHEETS\TRAFFIC\W1-TFC-SIGN-STRP-001.dwg By: kmcclement





NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM

SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

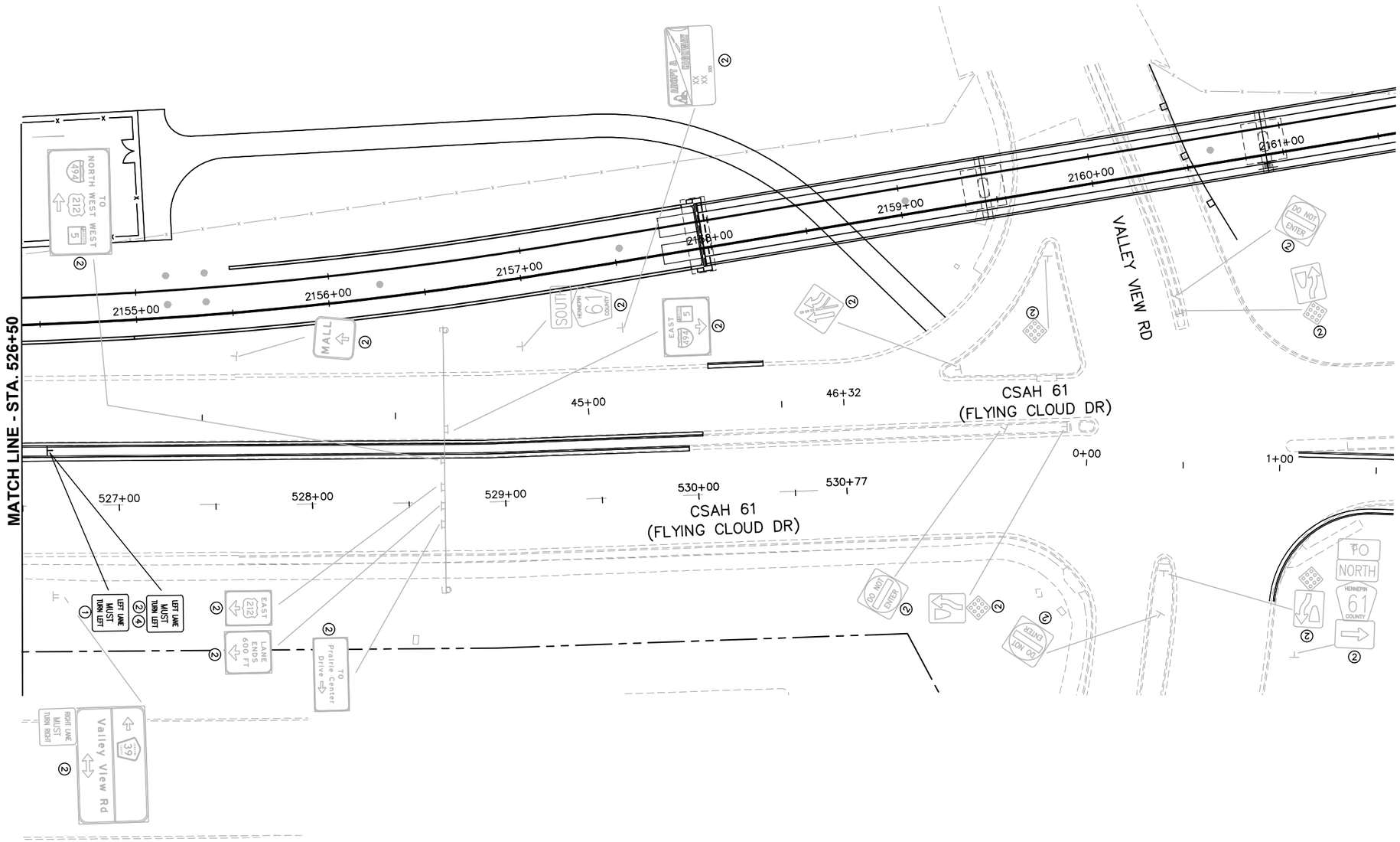
CIVIL WEST - VOLUME 10
FLYING CLOUD DRIVE
SIGNING AND STRIPING
STA. 520+00 TO STA. 526+50

DISCIPLINE: TRAFFIC

SHEET NAME: W1-TFC-SIGN-STRP-001 - 022

SHEET 53 OF 152

Sep, 21 2015 11:17 am V:\3400_ADC\CAD\SEGMENT W1\PLAN SHEETS\TRAFFIC\W1-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM

SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

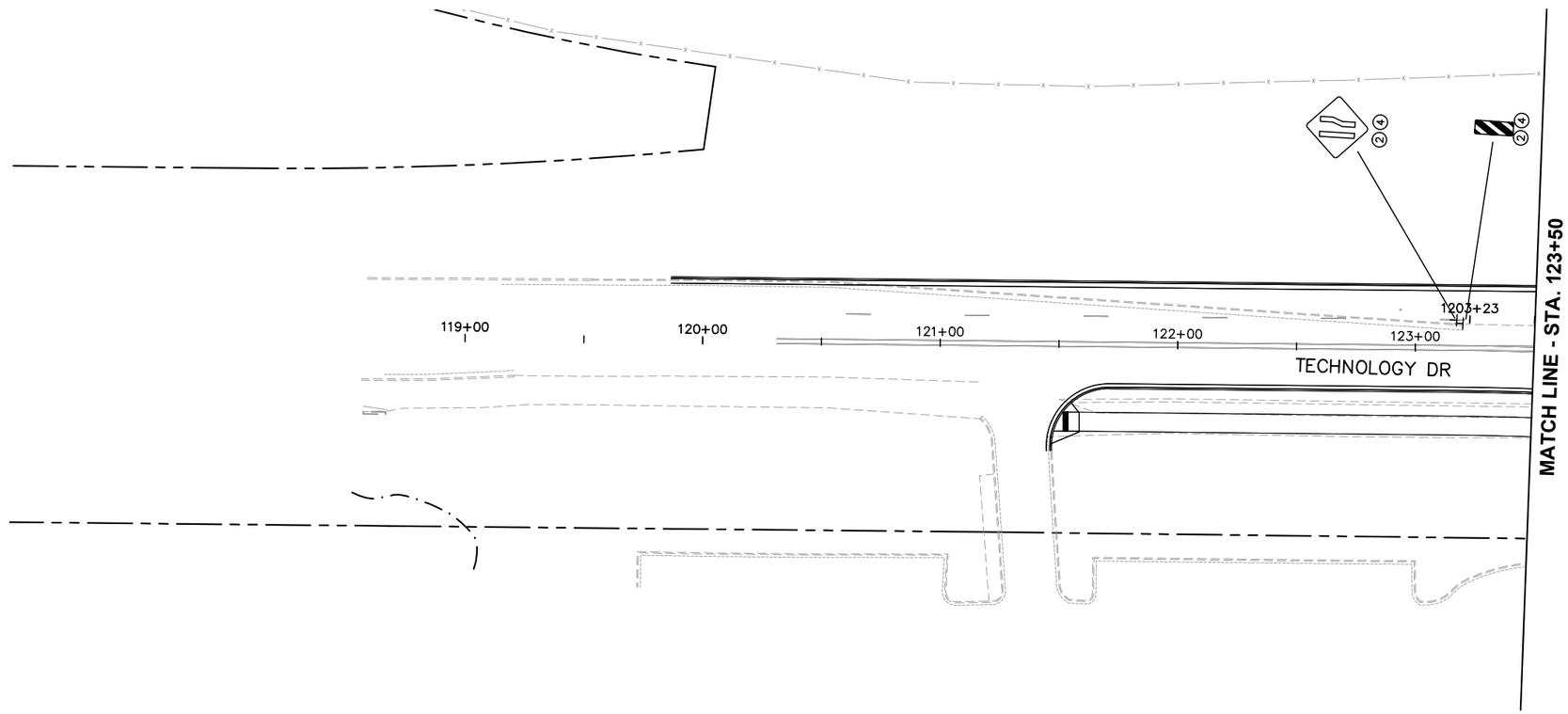
CIVIL WEST - VOLUME 10
FLYING CLOUD DRIVE
SIGNING AND STRIPING
STA. 526+50 TO STA. 530+77

DISCIPLINE: TRAFFIC

SHEET NAME: W1-TFC-SIGN-STRP-001 - 023

SHEET 54 OF 152

Sep, 21 2015 11:17 am V:\3400_ADC\CAD\SEGMENT W1\PLAN SHEETS\TRAFFIC\W1-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

0 15 30 60
HORIZONTAL SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM
SRF Consulting Group, Inc.
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

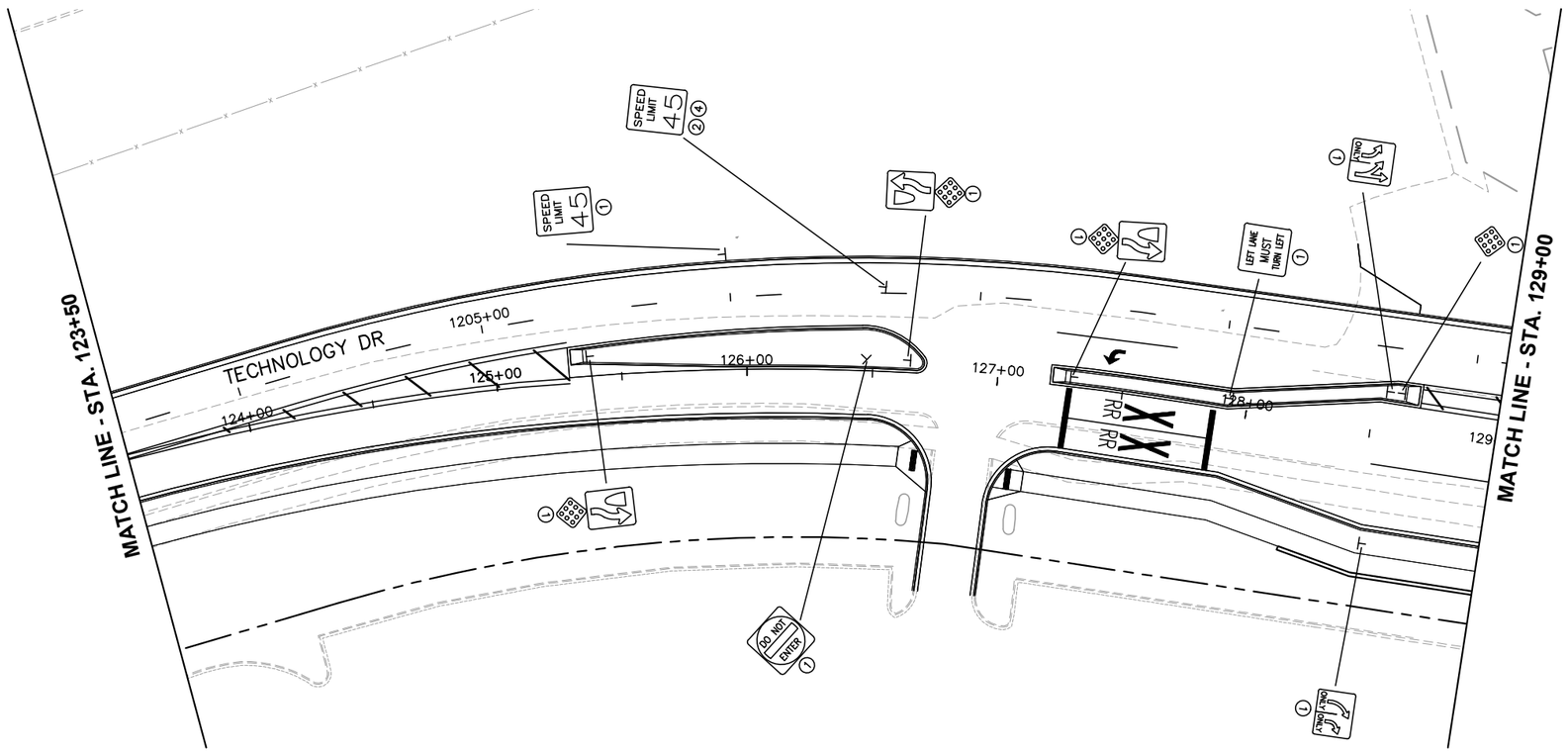
60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
TECHNOLOGY DRIVE EB
SIGNING AND STRIPING
STA. 119+00 TO STA. 123+50

DISCIPLINE: TRAFFIC
SHEET NAME: W1-TFC-SIGN-STRP-001 - 024

SHEET 55 OF 152

Sep, 21 2015 11:17 am V:\3400_ADC\CAD\SEGMENT W1\PLAN SHEETS\TRAFFIC\W1-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

0 15 30 60
HORIZONTAL SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM
SRF Consulting Group, Inc.
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

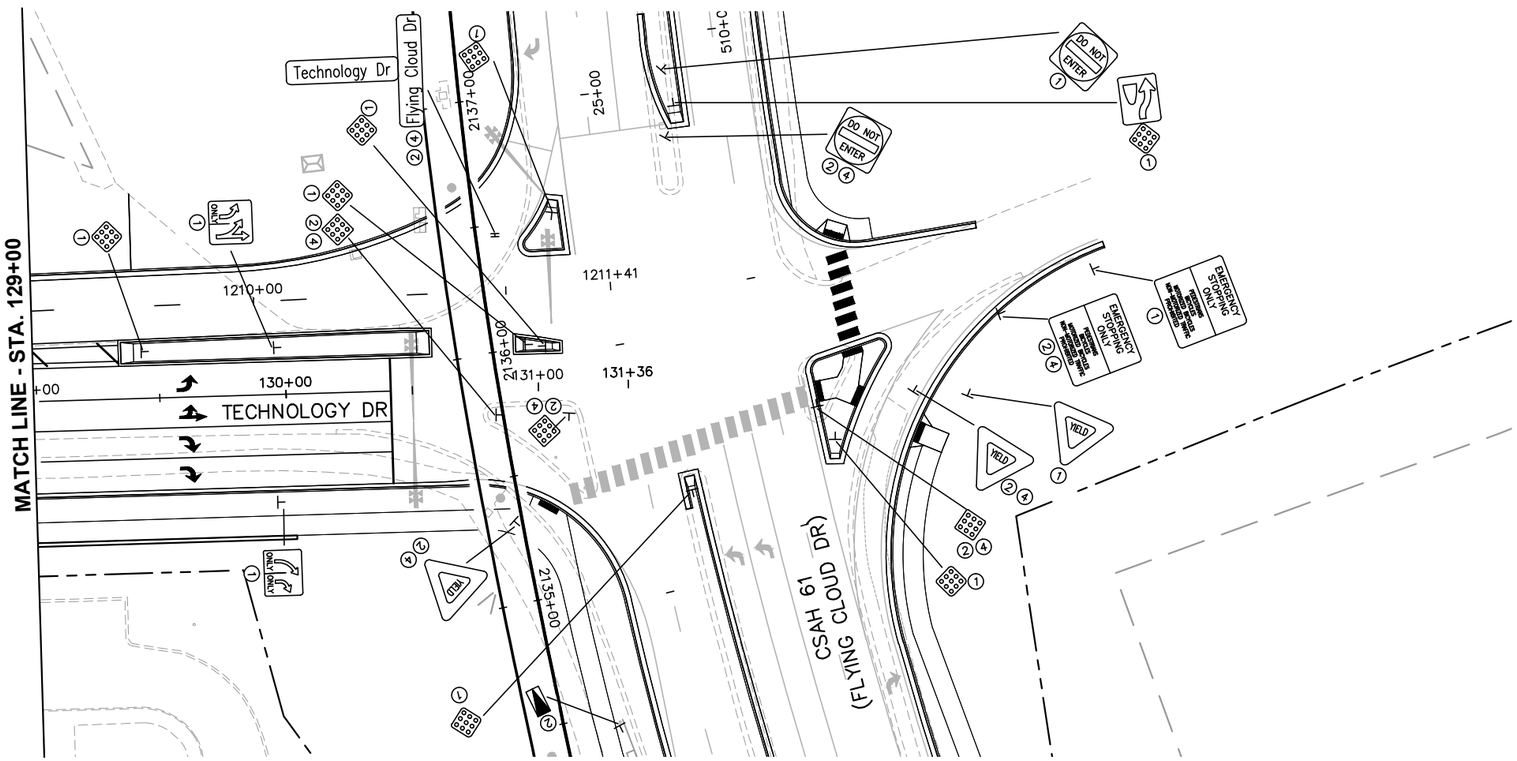
60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
TECHNOLOGY DRIVE EB
SIGNING AND STRIPING
STA. 123+50 TO STA. 129+00

DISCIPLINE: TRAFFIC
SHEET NAME: W1-TFC-SIGN-STRP-001 - 025

SHEET 56 OF 152

Sep, 21 2015 11:17 am V:\3400_ADC\CAD\SEGMENT W1\PLAN SHEETS\TRAFFIC\W1-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

SCALE HORIZONTAL IN FEET: 0 15 30 60

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM
SRF Consulting Group, Inc.
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

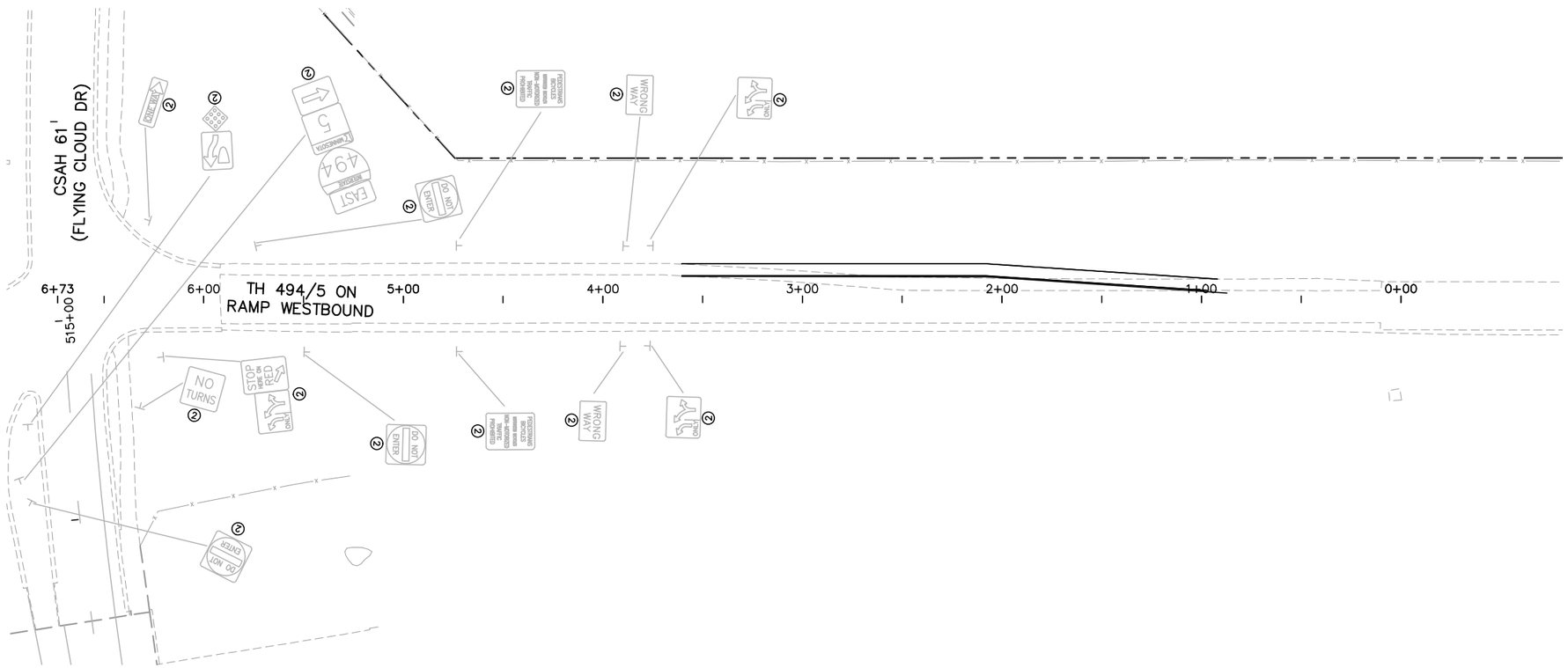
60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
TECHNOLOGY DRIVE EB
SIGNING AND STRIPING
STA. 129+00 TO STA. 131+36

DISCIPLINE: TRAFFIC
SHEET NAME: W1-TFC-SIGN-STRP-001 - 026

SHEET 57 OF 152

Sep, 21 2015 11:18 am V:\3400_ADC\CAD\SEGMENT W1\PLAN SHEETS\TRAFFIC\W1-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

0 15 30 60
HORIZONTAL
SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM
SRF Consulting Group, Inc.
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

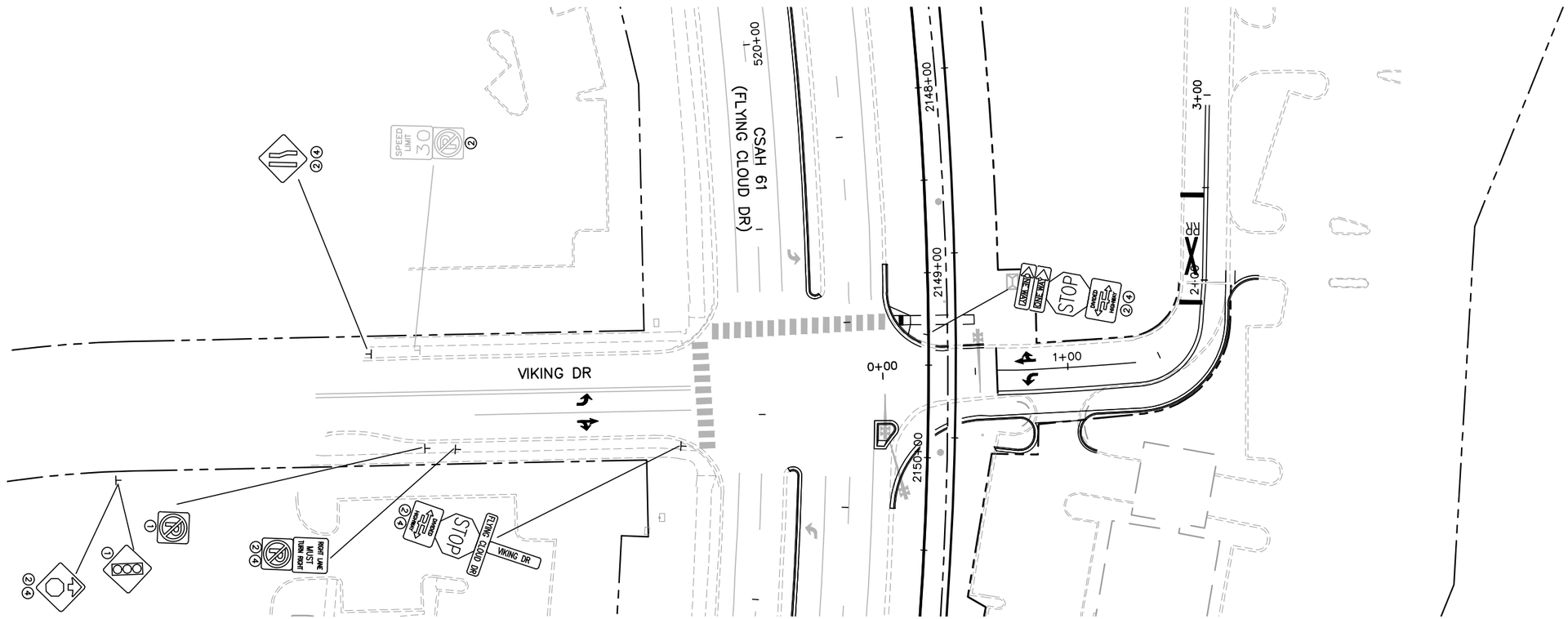
60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
494 EXIT RAMP
SIGNING AND STRIPING
STA. 0+00 TO STA. 6+73

DISCIPLINE: TRAFFIC
SHEET NAME: W1-TFC-SIGN-STRP-001 - 027

SHEET 58 OF 152

Sep, 21 2015 11:18 am V:\3400_ADC\CAD\SEGMENT W1\PLAN SHEETS\TRAFFIC\W1-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

0 15 30 60
HORIZONTAL SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM
SRF Consulting Group, Inc.
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

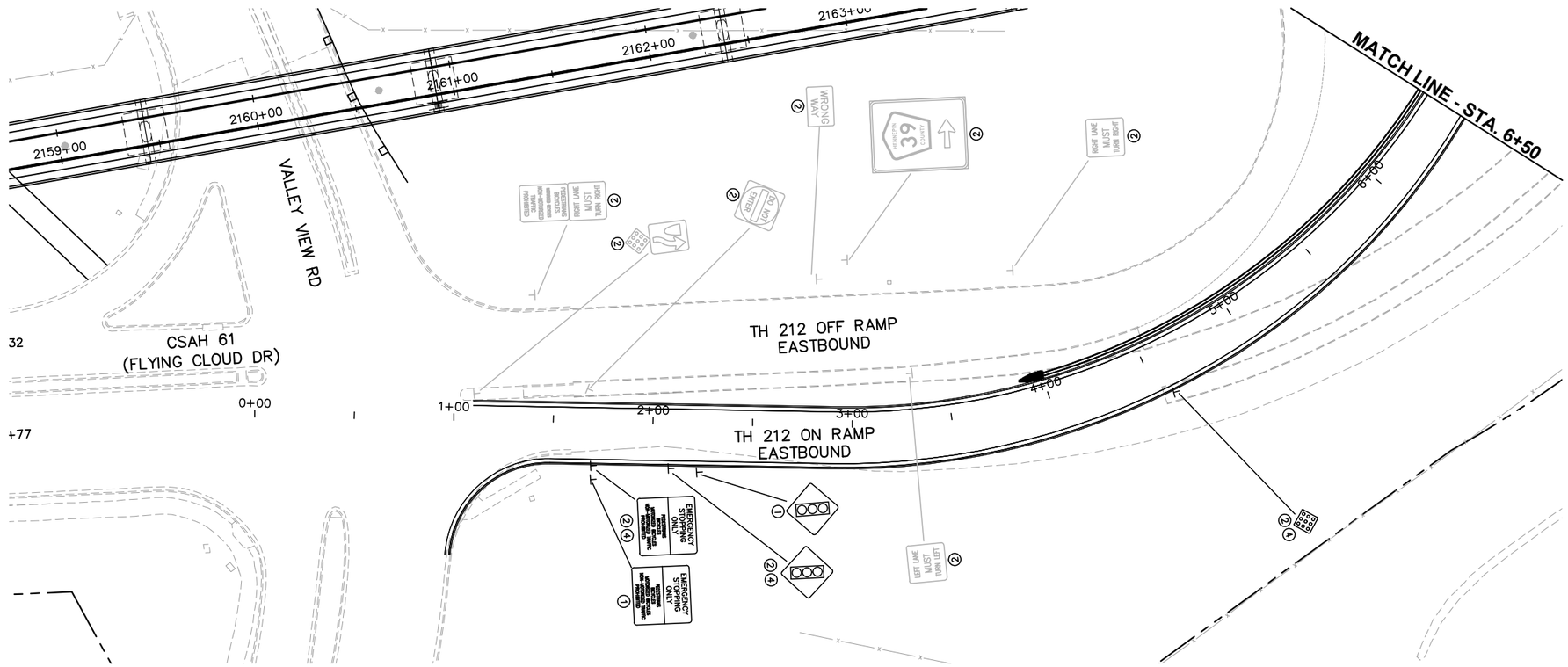
60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
VIKING DRIVE
SIGNING AND STRIPING
STA. 0+00 TO STA. 2+27

DISCIPLINE: TRAFFIC
SHEET NAME: W1-TFC-SIGN-STRP-001 - 028

SHEET 59 OF 152

Sep, 21 2015 11:18 am V:\3400_ADC\CAD\SEGMENT W1\PLAN SHEETS\TRAFFIC\W1-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

0 15 30 60
HORIZONTAL SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM
SRF Consulting Group, Inc.
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

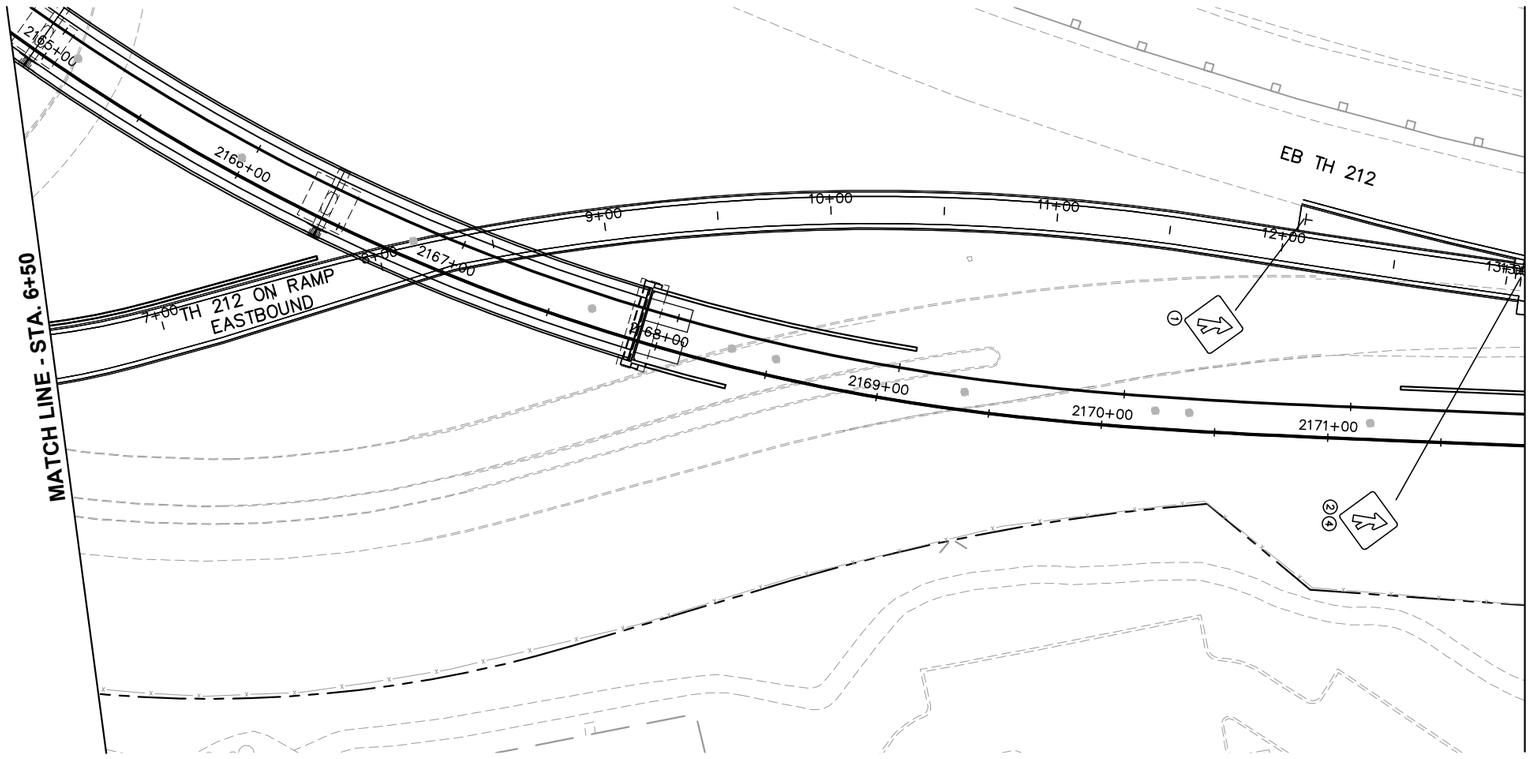
60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
212 ON RAMP
SIGNING AND STRIPING
STA. 0+00 TO STA. 6+50

DISCIPLINE: TRAFFIC
SHEET NAME: W1-TFC-SIGN-STRP-001 - 029

SHEET 60 OF 152

Sep, 21 2015 11:18 am V:\3400_ADC\CAD\SEGMENT W1\PLAN SHEETS\TRAFFIC\W1-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

0 15 30 60
HORIZONTAL SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM
SRF Consulting Group, Inc.
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

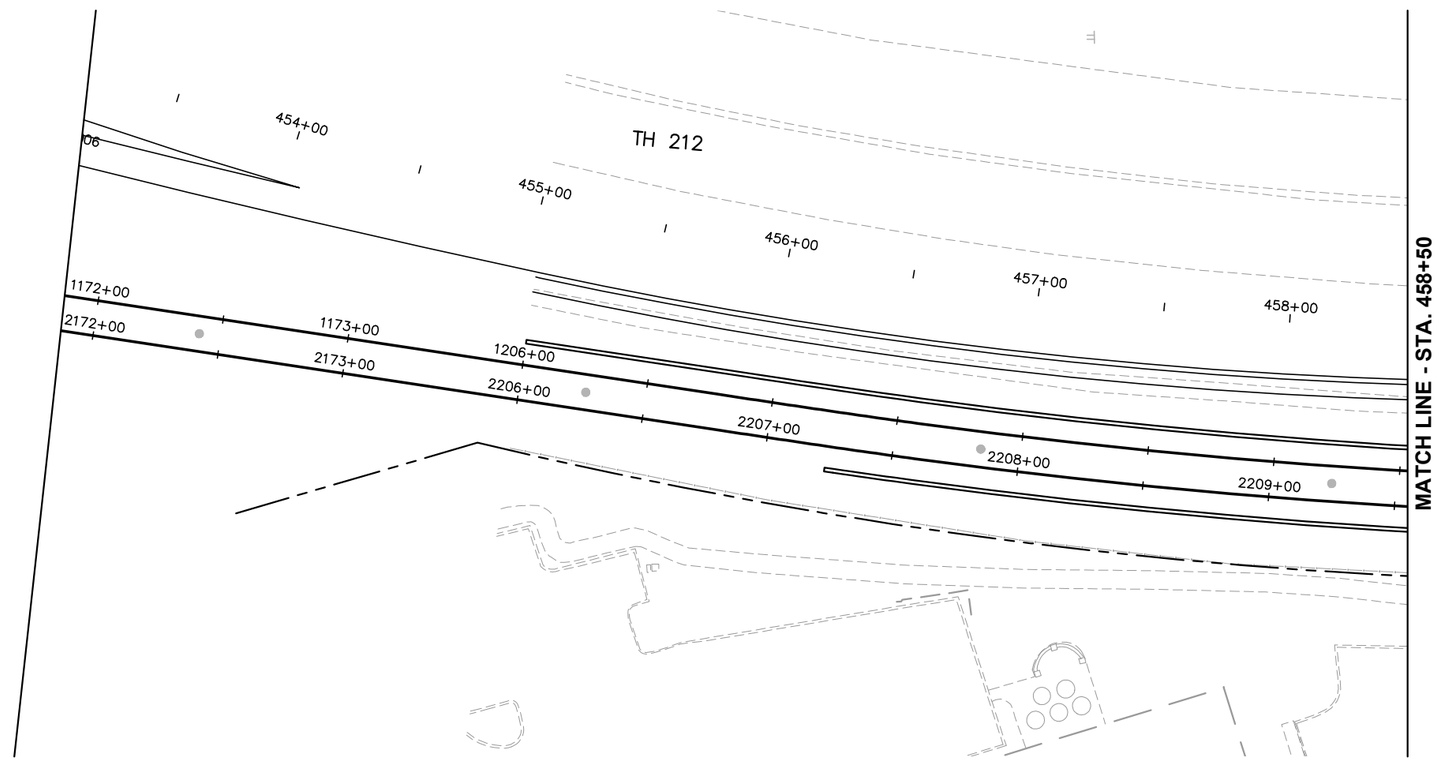
60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
212 ON RAMP
SIGNING AND STRIPING
STA. 6+50 TO STA. 13+06

DISCIPLINE: TRAFFIC
SHEET NAME: W1-TFC-SIGN-STRP-001 - 030

SHEET 61 OF 152

Sep, 21 2015 11:18 am V:\3400_ADC\CAD\SEGMENT W1\PLAN SHEETS\TRAFFIC\W1-TFC-SIGN-STRP-001.dwg By: kmcclement



0 15 30 60
HORIZONTAL
SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM

SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

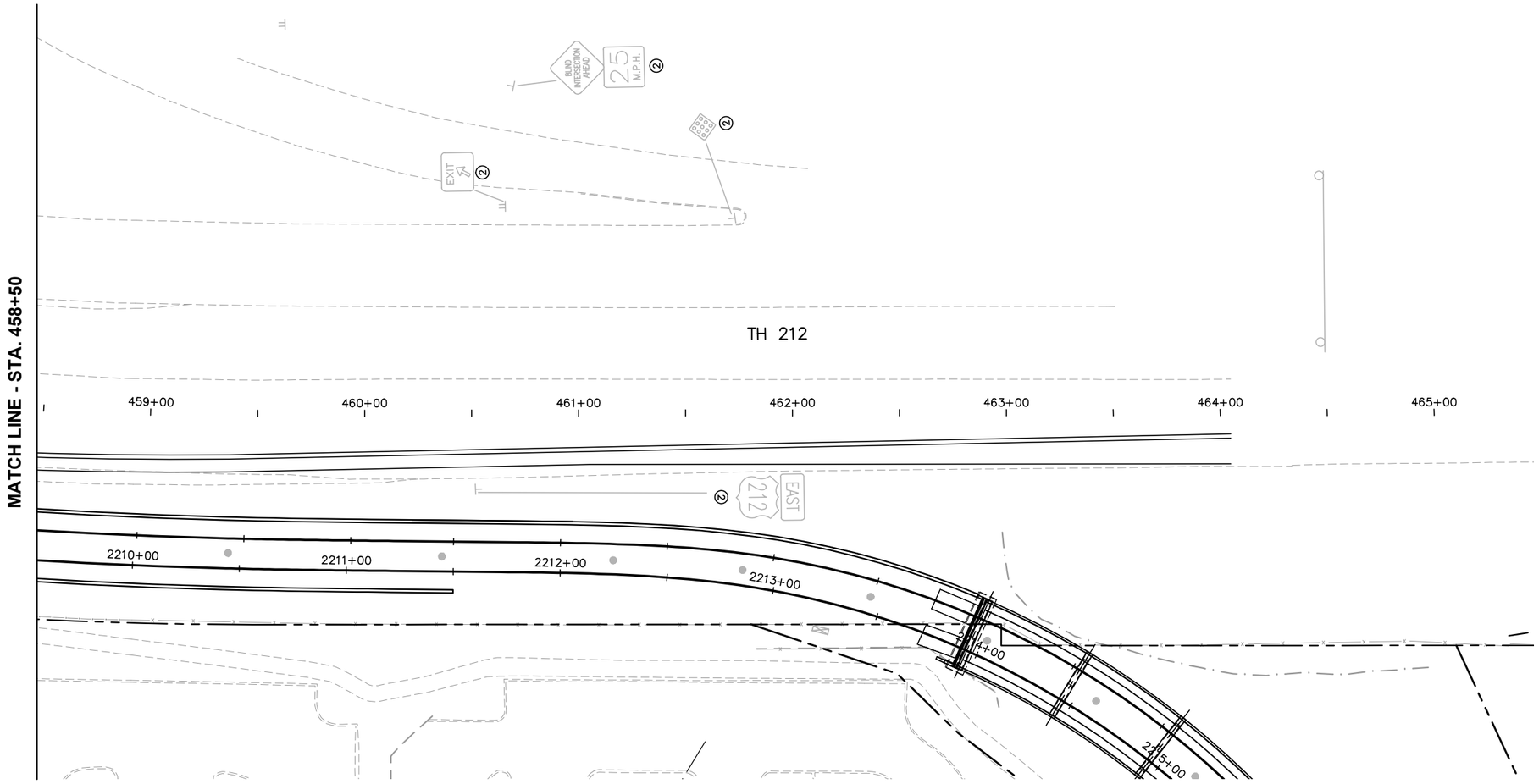
CIVIL WEST - VOLUME 10
212 ON RAMP
SIGNING AND STRIPING
STA. 453+15 TO STA. 458+50

DISCIPLINE: TRAFFIC

SHEET NAME: W2-TFC-SIGN-STRP-001 - 001

SHEET 62 OF 152

Sep. 21 2015 11:20 am V:\3400_ADC\CAD\SEGMENT W2\PLAN SHEETS\TRAFFIC\W2-TFC-SIGN-STRP-001.dwg By: kmcclement



① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

0 15 30 60
HORIZONTAL
SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM

SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

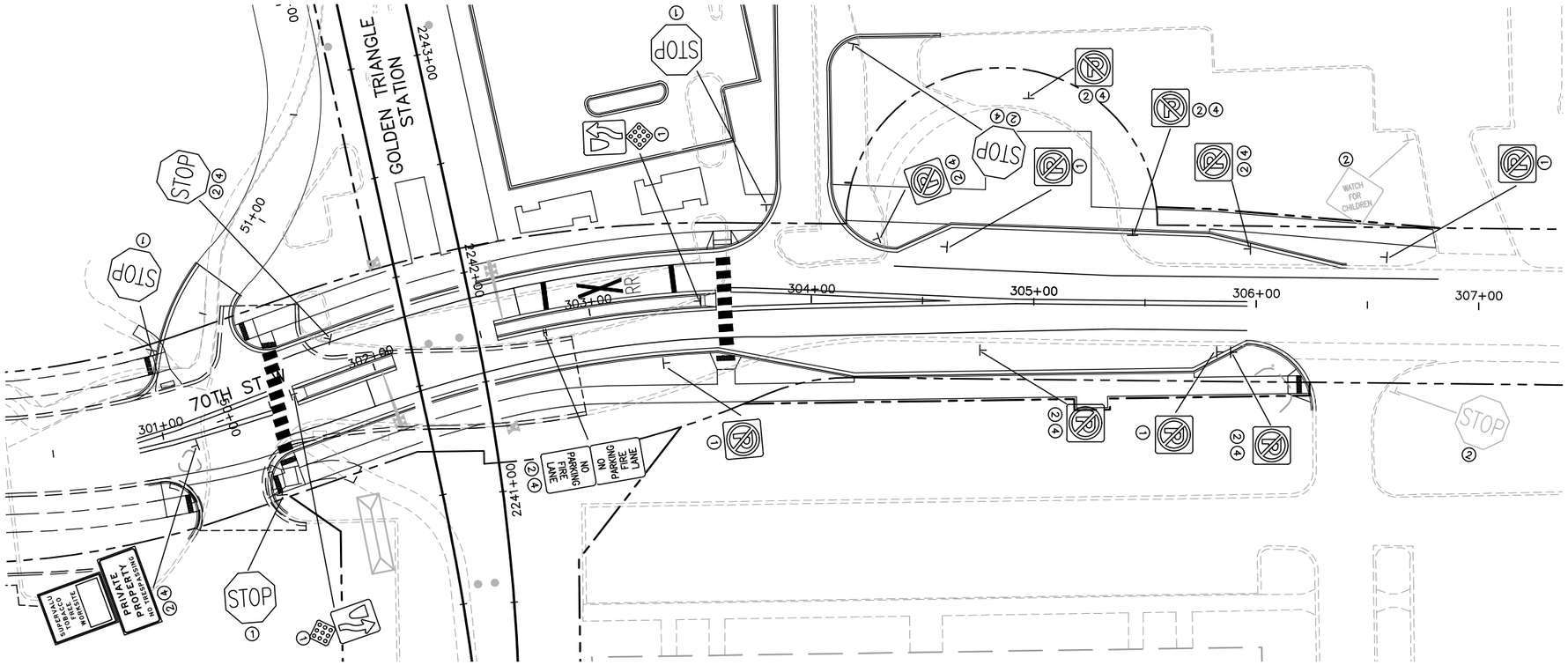
CIVIL WEST - VOLUME 10
212 ON RAMP
SIGNING AND STRIPING
STA. 458+50 TO STA. 465+50

DISCIPLINE: TRAFFIC

SHEET NAME: W2-TFC-SIGN-STRP-001 - 002

SHEET 63 OF 152

Sep. 21 2015 11:20 am V:\3400_ADC\CAD\SEGMENT W2\PLAN SHEETS\TRAFFIC\W2-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

0 15 30 60
HORIZONTAL SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM
SRF Consulting Group, Inc.
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

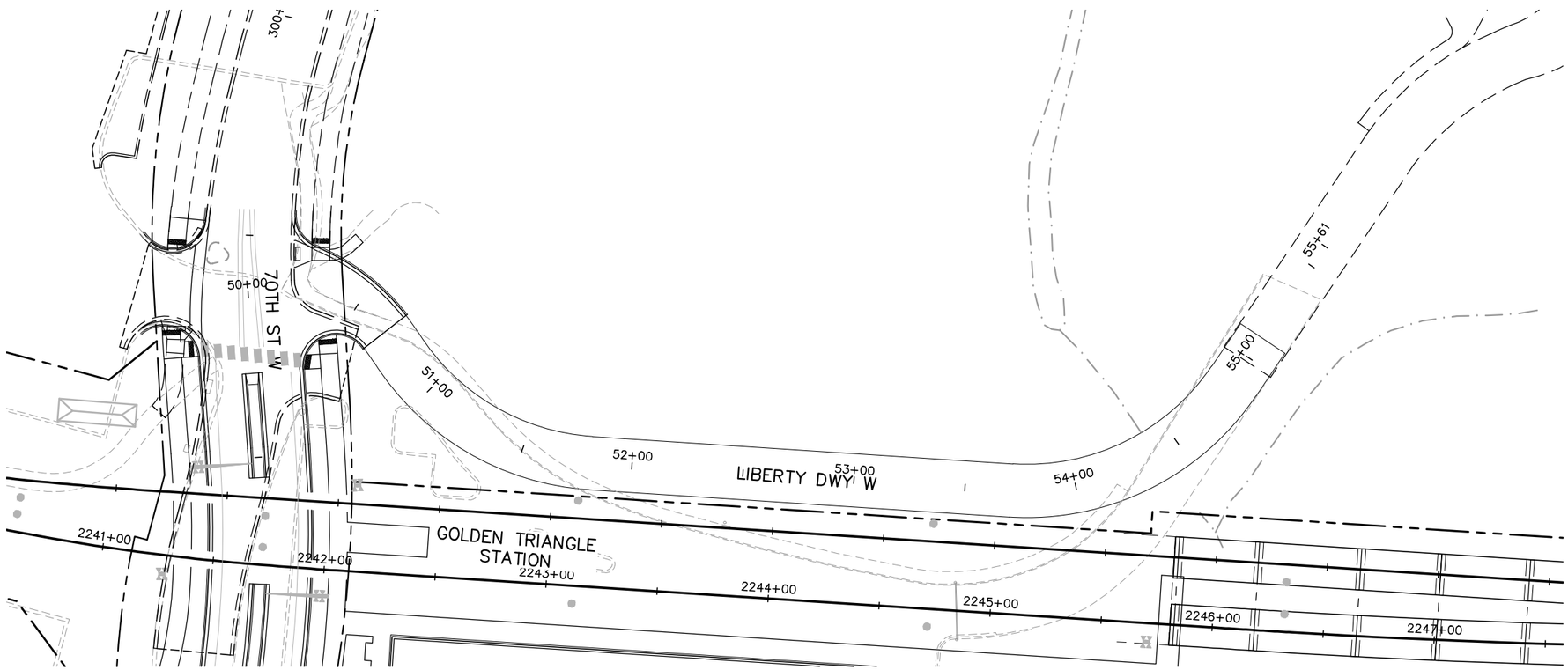
60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
70TH STREET WEST
SIGNING AND STRIPING
STA. 300+50 TO STA. 307+00

DISCIPLINE: TRAFFIC
SHEET NAME: W2-TFC-SIGN-STRP-001 - 003

SHEET 64 OF 152

Sep. 21 2015 11:21 am V:\3400_ADC\CAD\SEGMENT W2\PLAN SHEETS\TRAFFIC\W2-TFC-SIGN-STRP-001.dwg By: kmcclement



FOR REFERENCE ONLY

0 15 30 60
HORIZONTAL
SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM

SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

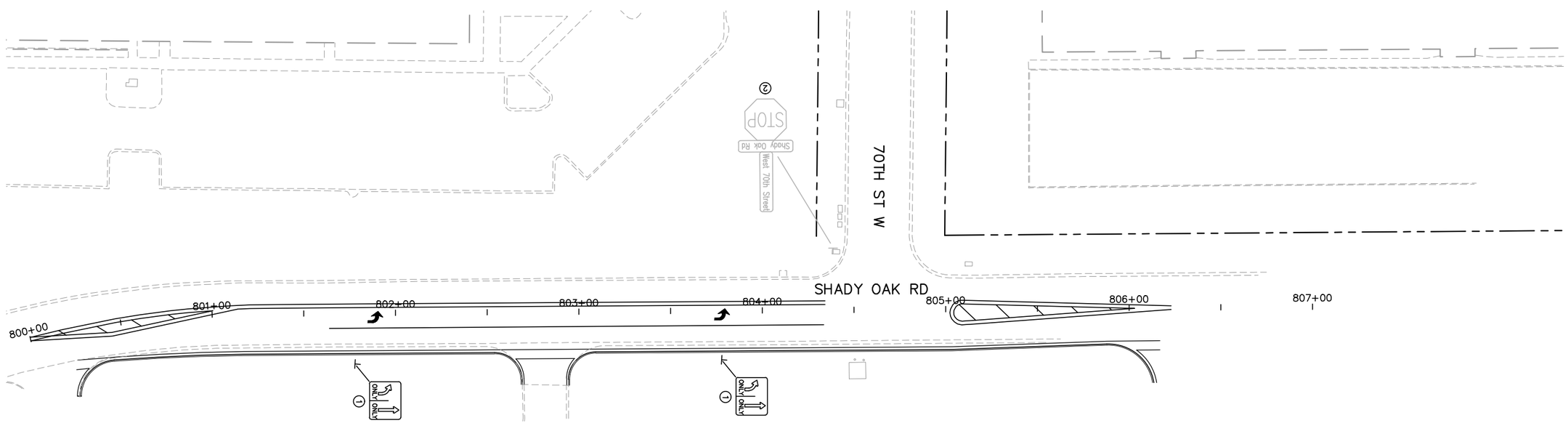
CIVIL WEST - VOLUME 10
LIBERTY DRIVEWAY WEST
SIGNING AND STRIPING

DISCIPLINE: TRAFFIC

SHEET NAME: W2-TFC-SIGN-STRP-001 - 004

SHEET 65 OF 152

Sep, 21 2015 11:21 am V:\3400_ADC\CAD\SEGMENT W2\PLAN SHEETS\TRAFFIC\W2-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM

SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

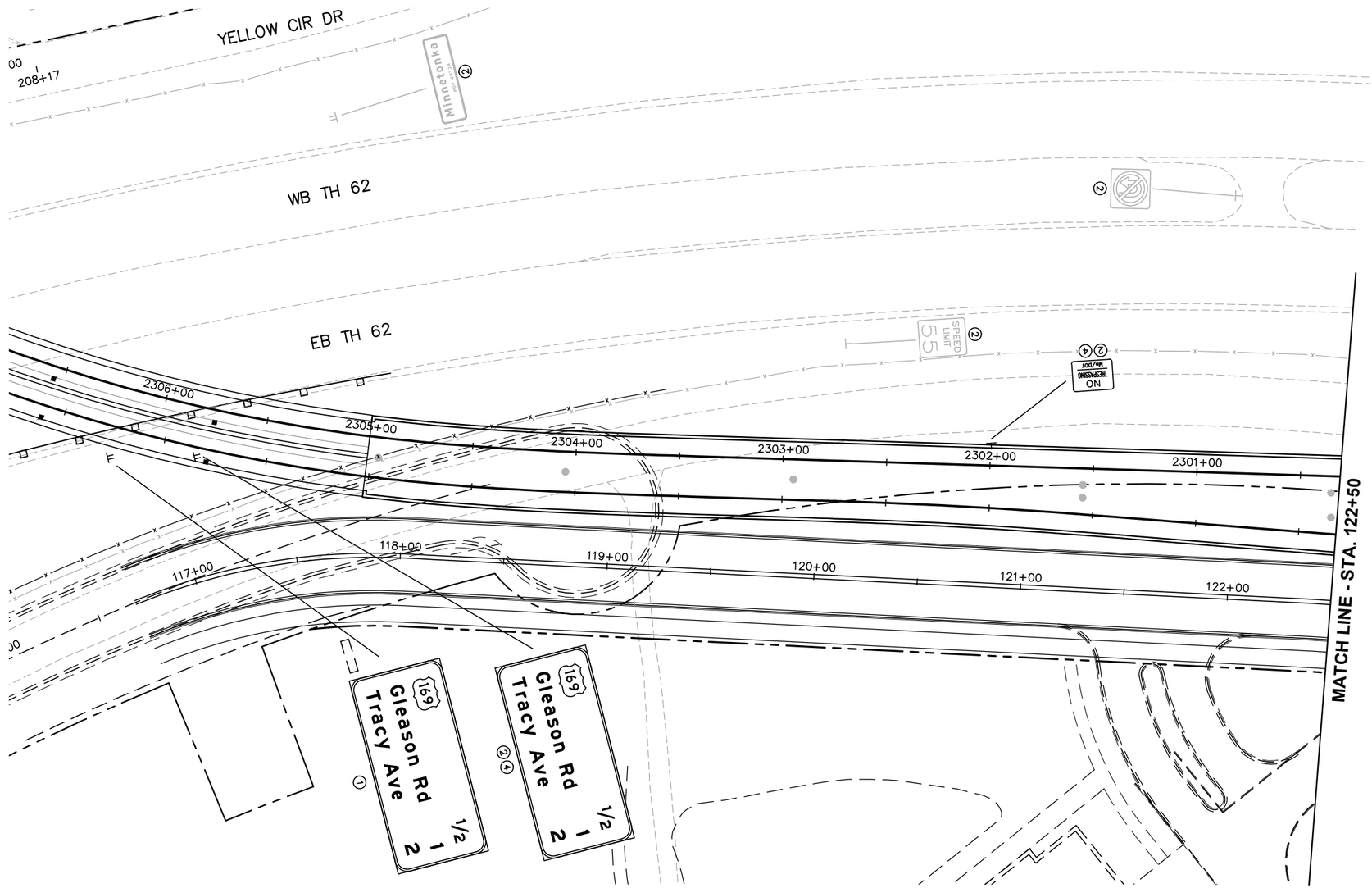
CIVIL WEST - VOLUME 10
SHADY OAK ROAD
SIGNING AND STRIPING
STA. 800+00 TO STA. 807+00

DISCIPLINE: TRAFFIC

SHEET NAME: W2-TFC-SIGN-STRP-001 - 005

SHEET 66 OF 152

Sep, 21 2015 11:21 am V:\3400_ADC\CAD\SEGMENT W2\PLAN SHEETS\TRAFFIC\W2-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

0 15 30 60
HORIZONTAL SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM
SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

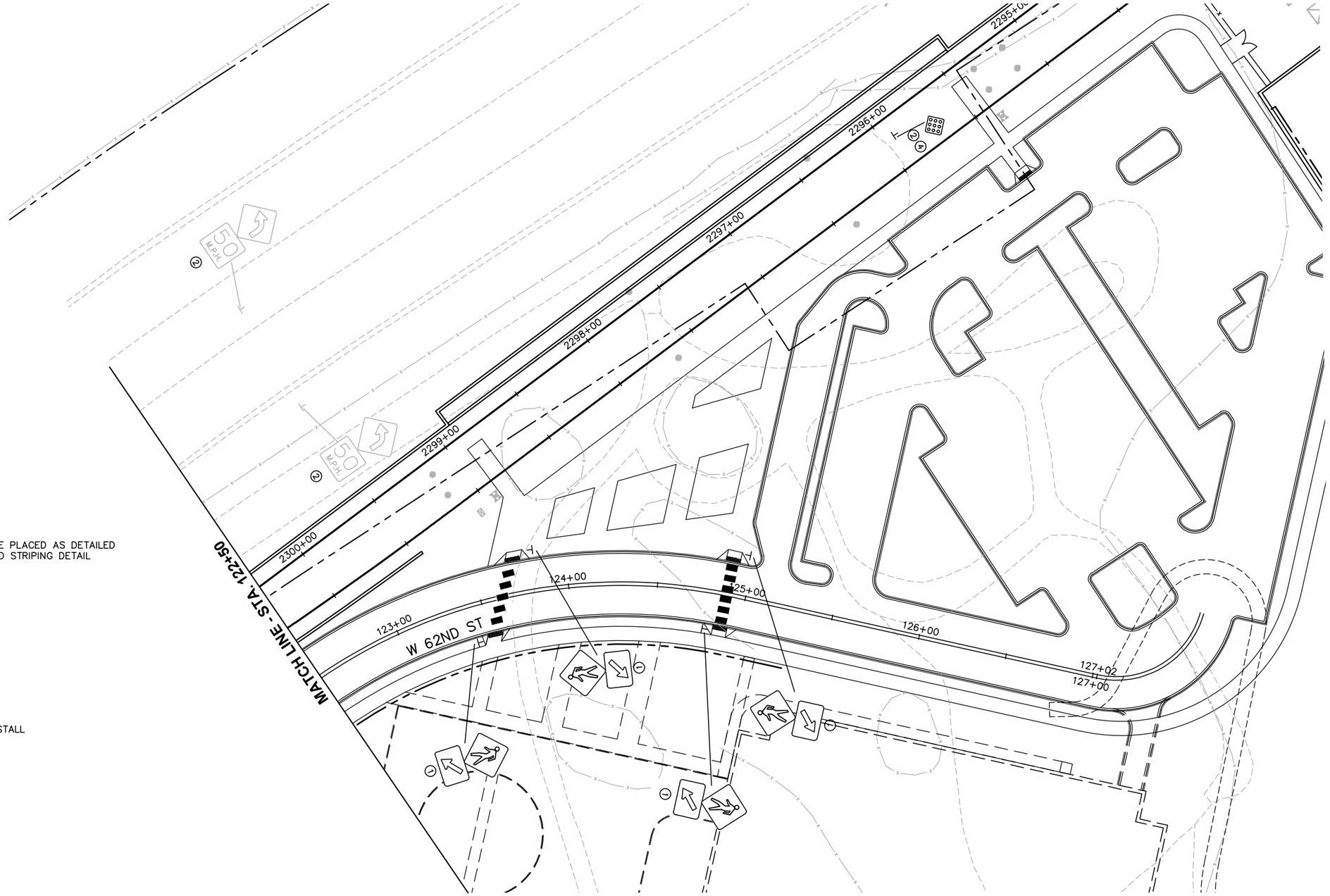
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
WEST 62ND STREET
SIGNING AND STRIPING
STA. 116+69 TO STA. 122+50

DISCIPLINE: TRAFFIC
SHEET NAME: W2-TFC-SIGN-STRP-001 - 006

SHEET 67 OF 152

Sep, 21 2015 11:21 am V:\3400_ADC\CAD\SEGMENT W2\PLAN SHEETS\TRAFFIC\W2-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM

SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

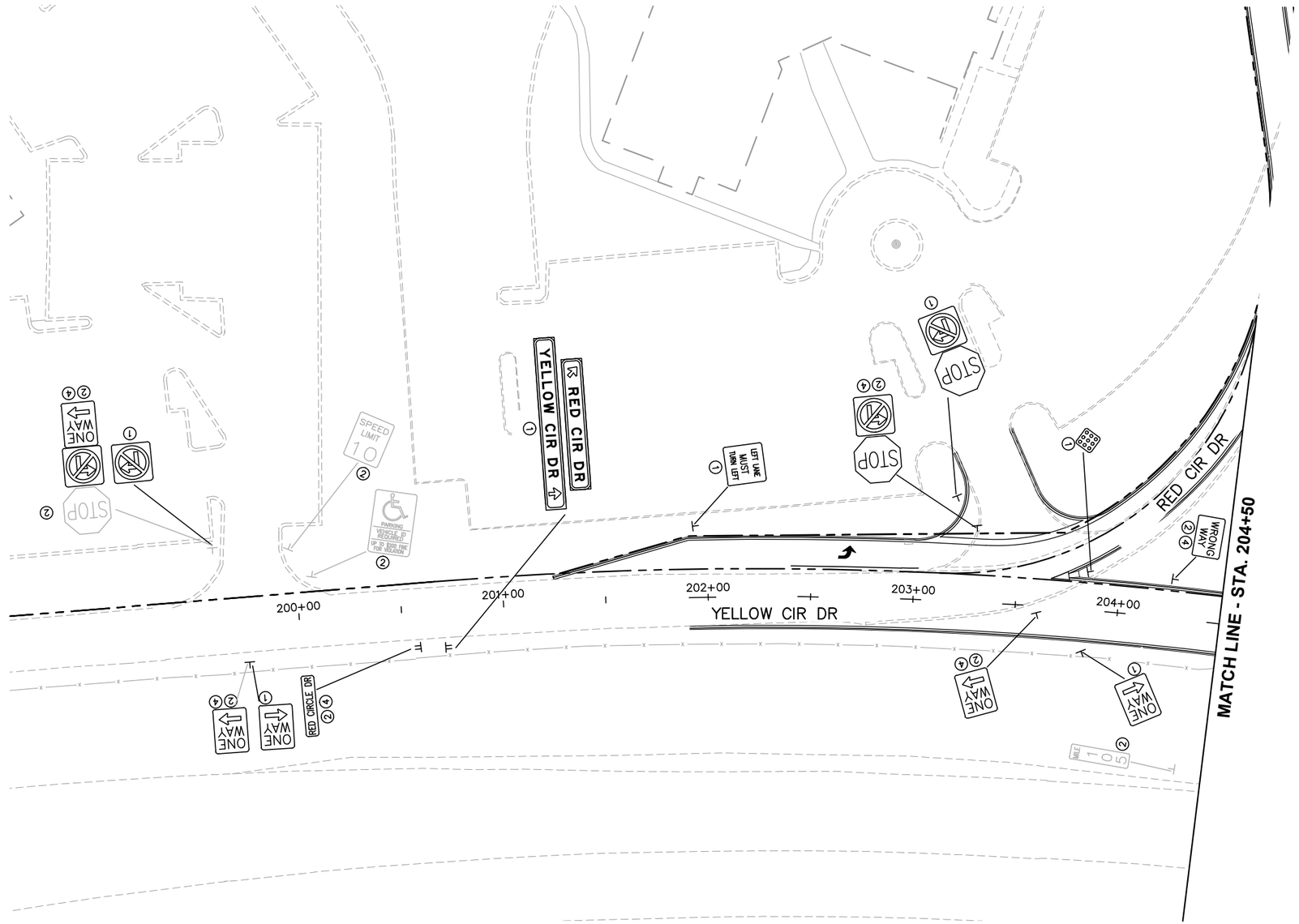
CIVIL WEST - VOLUME 10
WEST 62ND STREET
SIGNING AND STRIPING
STA. 122+50 TO STA. 127+03

DISCIPLINE: TRAFFIC

SHEET NAME: W2-TFC-SIGN-STRP-001 - 007

SHEET 68 OF 152

Sep, 21 2015 11:22 am V:\3400_ADC\CAD\SEGMENT W2\PLAN SHEETS\TRAFFIC\W2-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM

SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

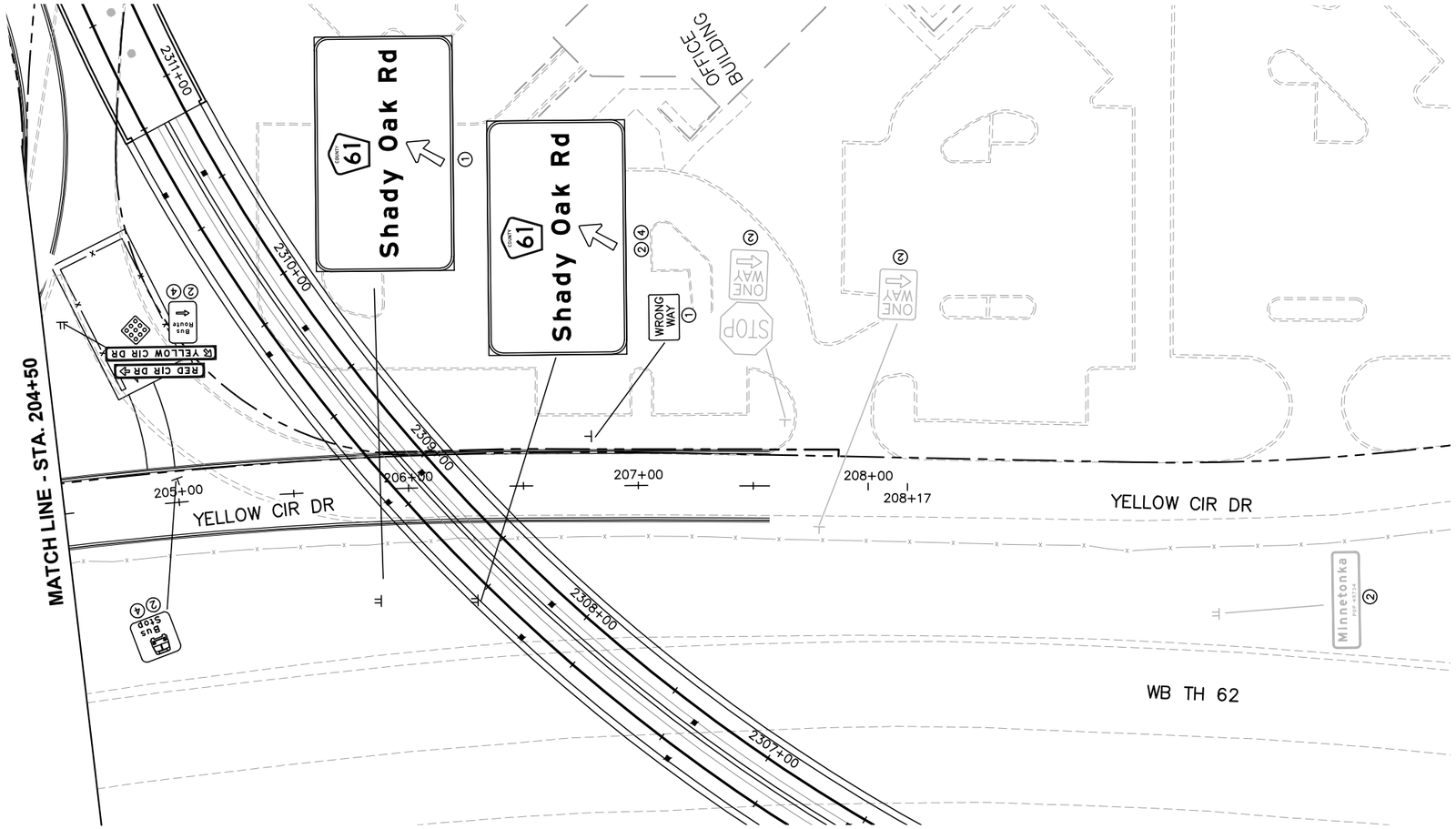
CIVIL WEST - VOLUME 10
RED CIRCLE DRIVE TO YELLOW CIRCLE DRIVE
SIGNING AND STRIPING
STA. 200+00 TO STA. 204+50

DISCIPLINE: TRAFFIC

SHEET NAME: W2-TFC-SIGN-STRP-001 - 008

SHEET 69 OF 152

Sep. 21 2015 11:22 am V:\3400_ADC\CAD\SEGMENT W2\PLAN SHEETS\TRAFFIC\W2-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

0 15 30 60
HORIZONTAL SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

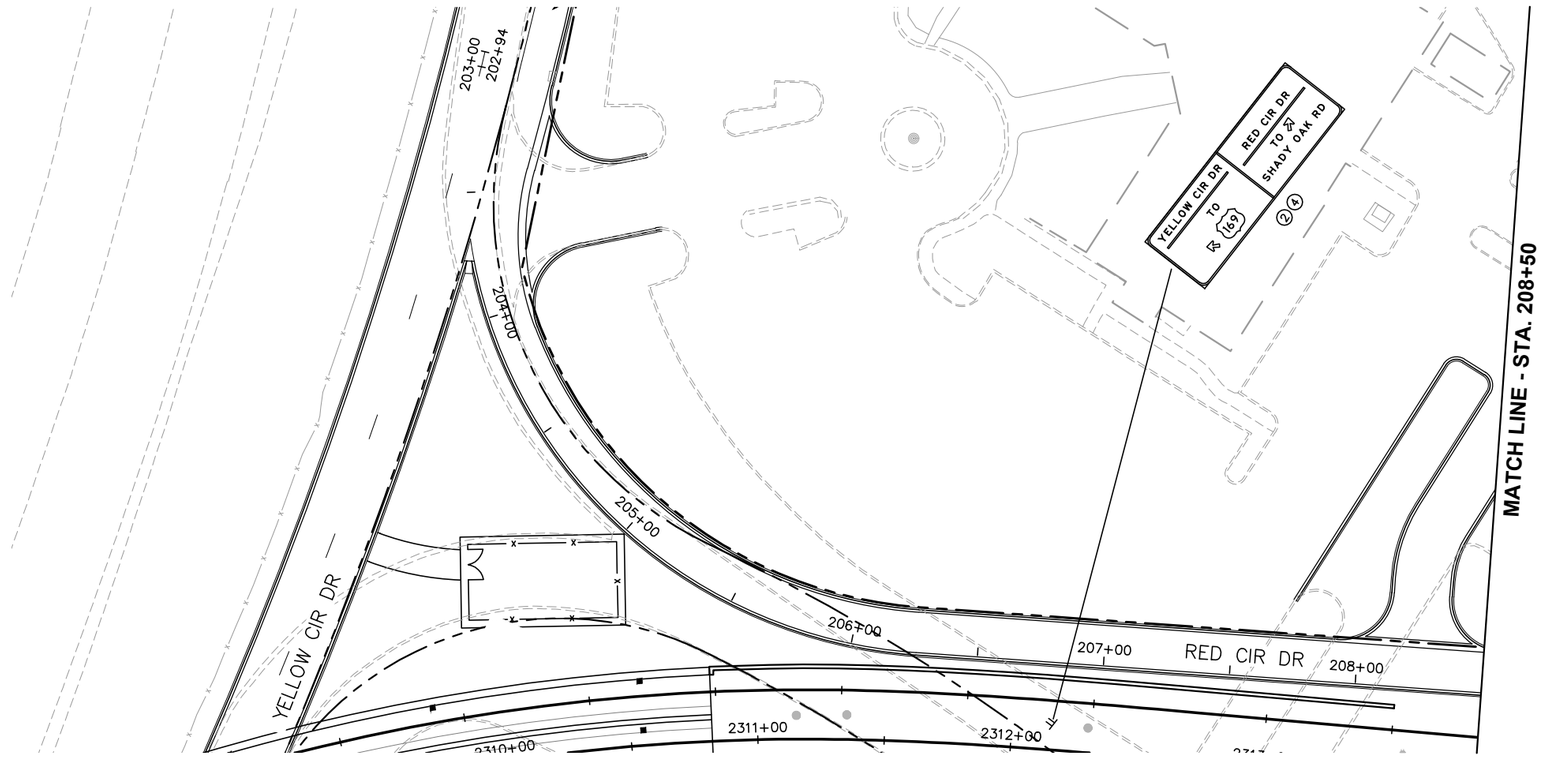
AECOM
SRF Consulting Group, Inc.
60% SUBMISSION - 09/28/15
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
RED CIRCLE DRIVE TO YELLOW CIRCLE DRIVE
SIGNING AND STRIPING
STA. 204+50 TO STA. 208+17

DISCIPLINE: TRAFFIC
SHEET NAME: W2-TFC-SIGN-STRP-001 - 009

SHEET 70 OF 152

Sep, 21 2015 11:22 am V:\3400_ADC\CAD\SEGMENT W2\PLAN SHEETS\TRAFFIC\W2-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

1. FURNISH AND INSTALL
2. INPLACE
3. SALVAGE
4. REMOVE
5. INSTALL

0 15 30 60
SCALE HORIZONTAL IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM
SRF Consulting Group, Inc.
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

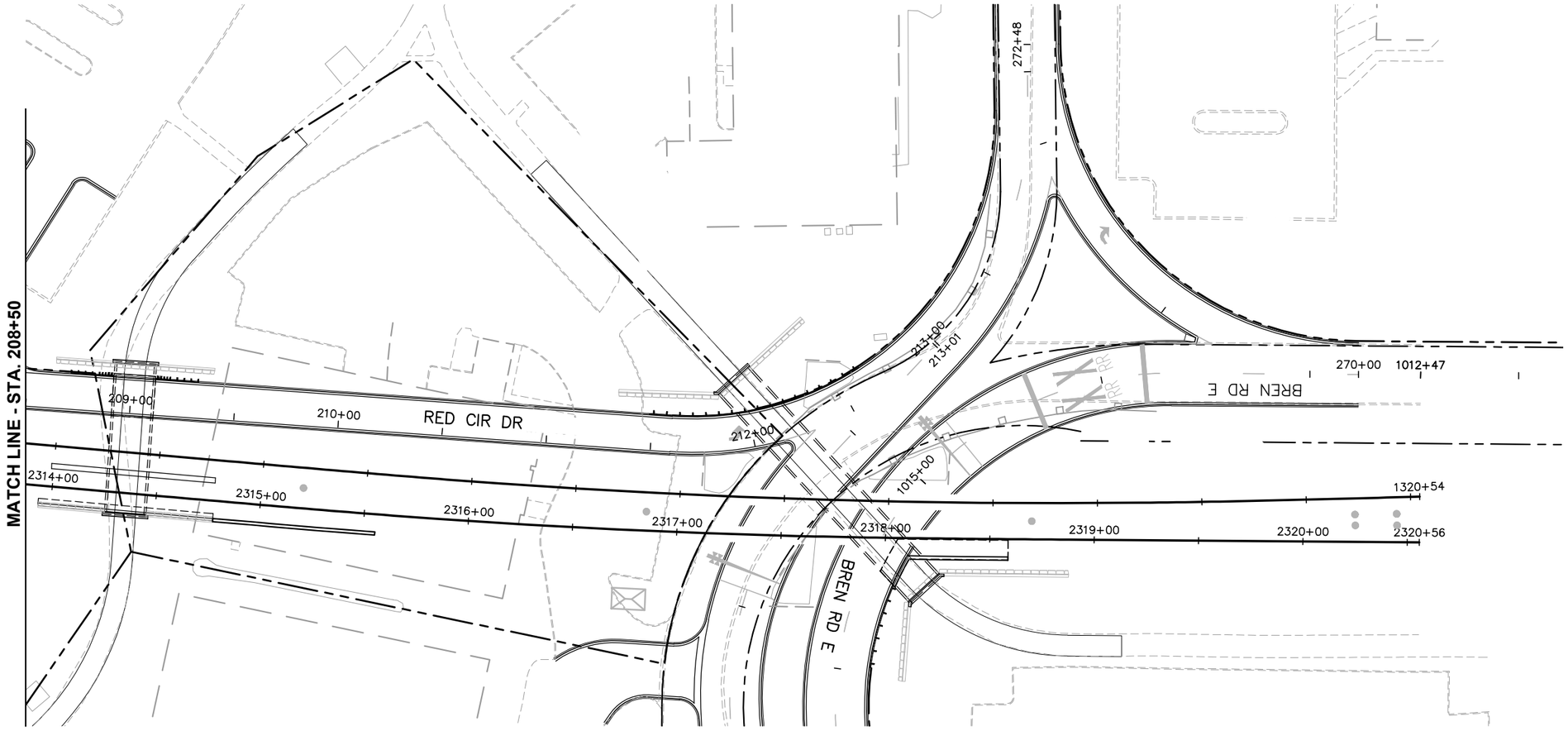
60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
RED CIRCLE DRIVE
SIGNING AND STRIPING
STA. 202+93 TO STA. 208+50

DISCIPLINE: TRAFFIC
SHEET NAME: W2-TFC-SIGN-STRP-001 - 010

SHEET 71 OF 152

Sep. 21 2015 11:23 am V:\3400_ADC\CAD\SEGMENT W2\PLAN SHEETS\TRAFFIC\W2-TFC-SIGN-STRP-001.dwg By: kmcclement



FOR REFERENCE ONLY

0 15 30 60
HORIZONTAL
SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM

SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

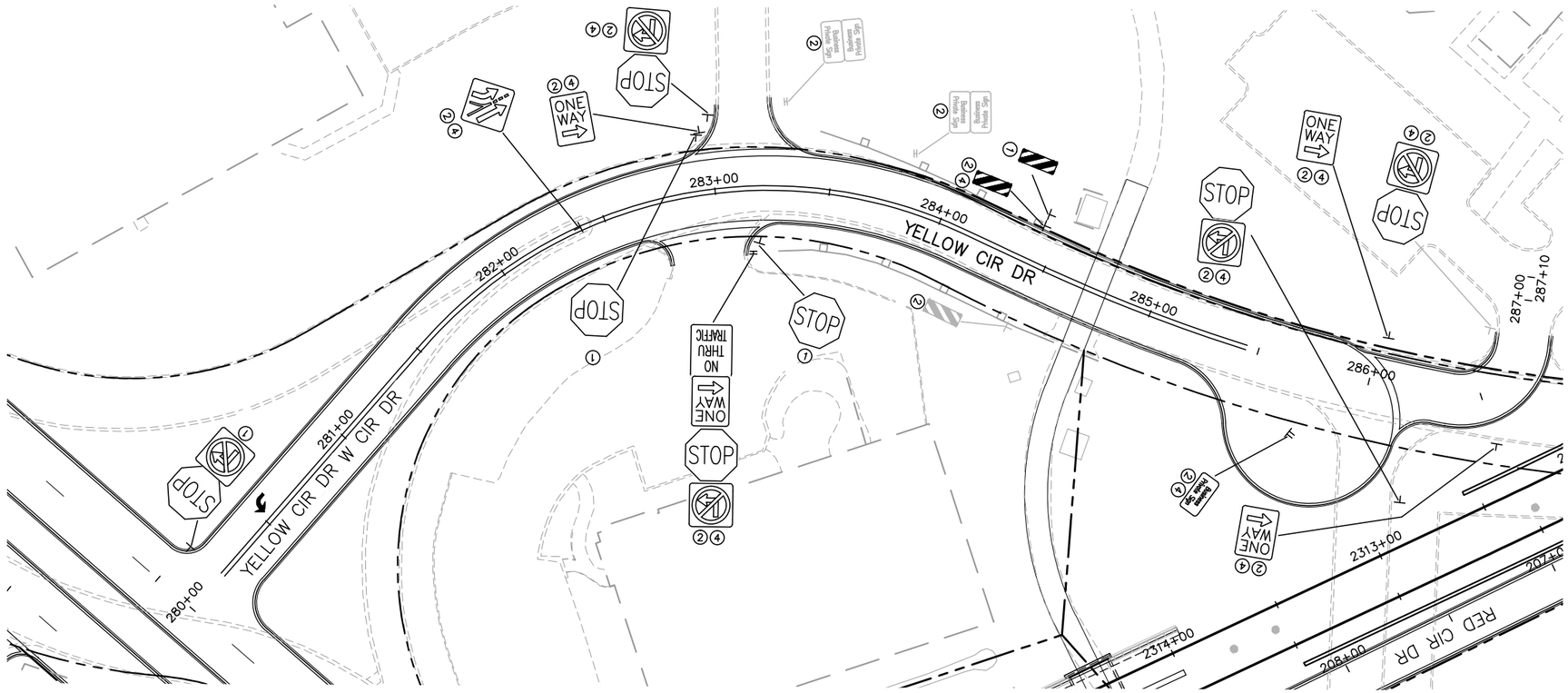
CIVIL WEST - VOLUME 10
RED CIRCLE DRIVE
SIGNING AND STRIPING
STA. 208+50 TO STA. 213+00

DISCIPLINE: TRAFFIC

SHEET NAME: W2-TFC-SIGN-STRP-001 - 011

SHEET 72 OF 152

Sep, 21 2015 11:23 am V:\3400_ADC\CAD\SEGMENT W2\PLAN SHEETS\TRAFFIC\W2-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

0 15 30 60
HORIZONTAL
SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM
SRF Consulting Group, Inc.
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

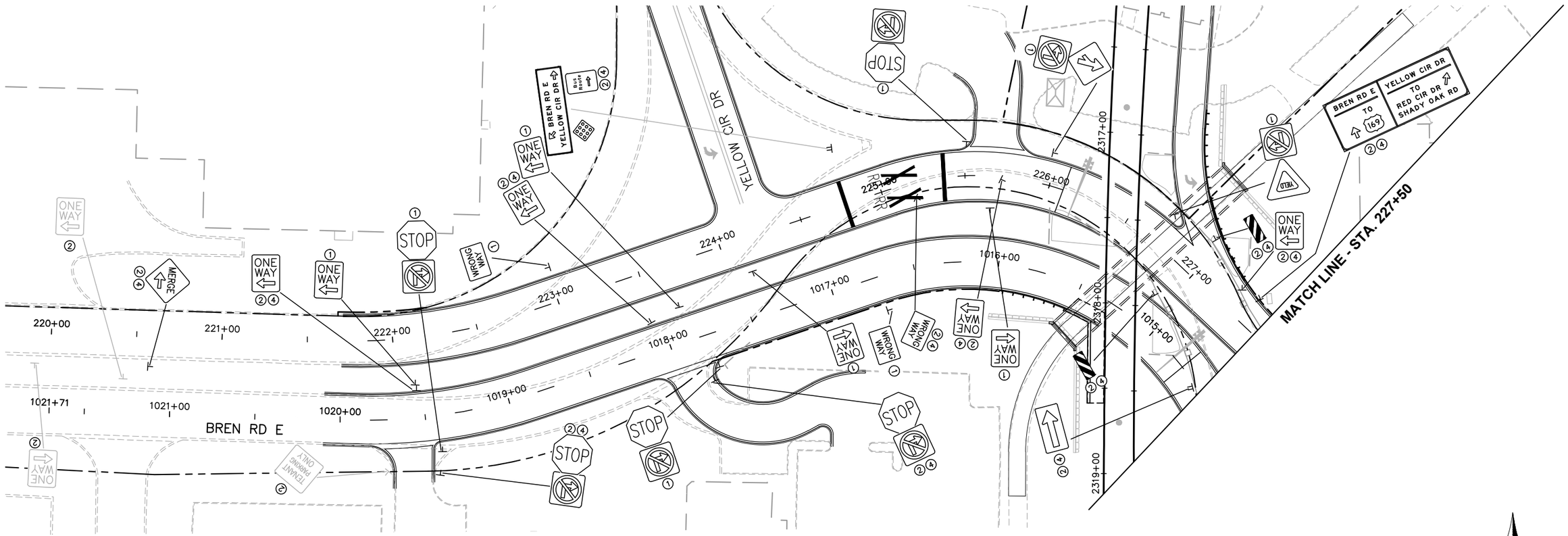
60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
YELLOW CIRCLE DRIVE
SIGNING AND STRIPING
STA. 280+00 TO STA. 286+00

DISCIPLINE: TRAFFIC
SHEET NAME: W2-TFC-SIGN-STRP-001 - 012

SHEET 73 OF 152

Sep, 21 2015 11:23 am V:\3400_ADC\CAD\SEGMENT W2\PLAN SHEETS\TRAFFIC\W2-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

0 15 30 60
HORIZONTAL SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM
SRF Consulting Group, Inc.
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

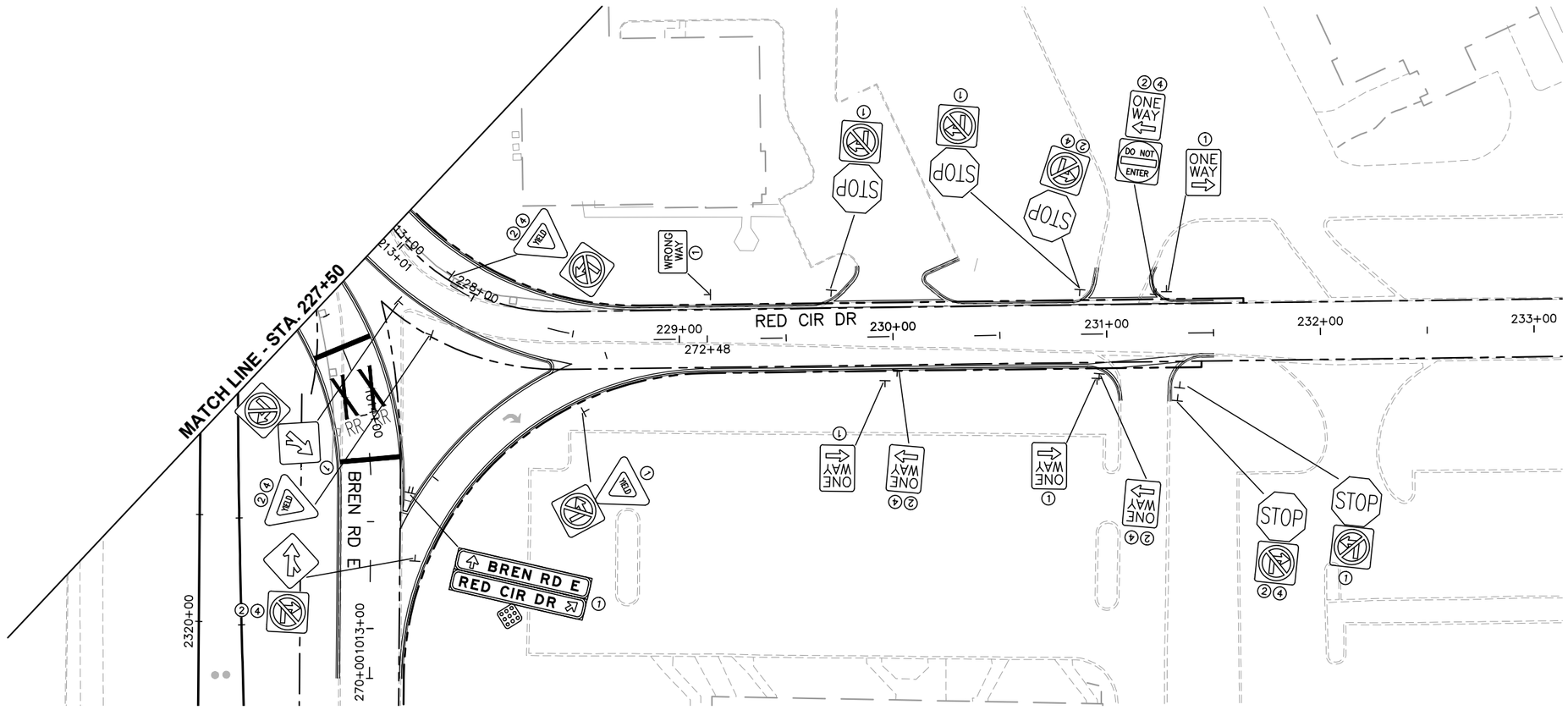
60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
YELLOW CIRCLE DRIVE TO RED CIRCLE DRIVE
SIGNING AND STRIPING
STA. 221+00 TO STA. 227+50

DISCIPLINE: TRAFFIC
SHEET NAME: W2-TFC-SIGN-STRP-001 - 013

SHEET 74 OF 152

Sep, 21 2015 11:23 am V:\3400_ADC\CAD\SEGMENT W2\PLAN SHEETS\TRAFFIC\W2-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

0 15 30 60
HORIZONTAL SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM
SRF Consulting Group, Inc.
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

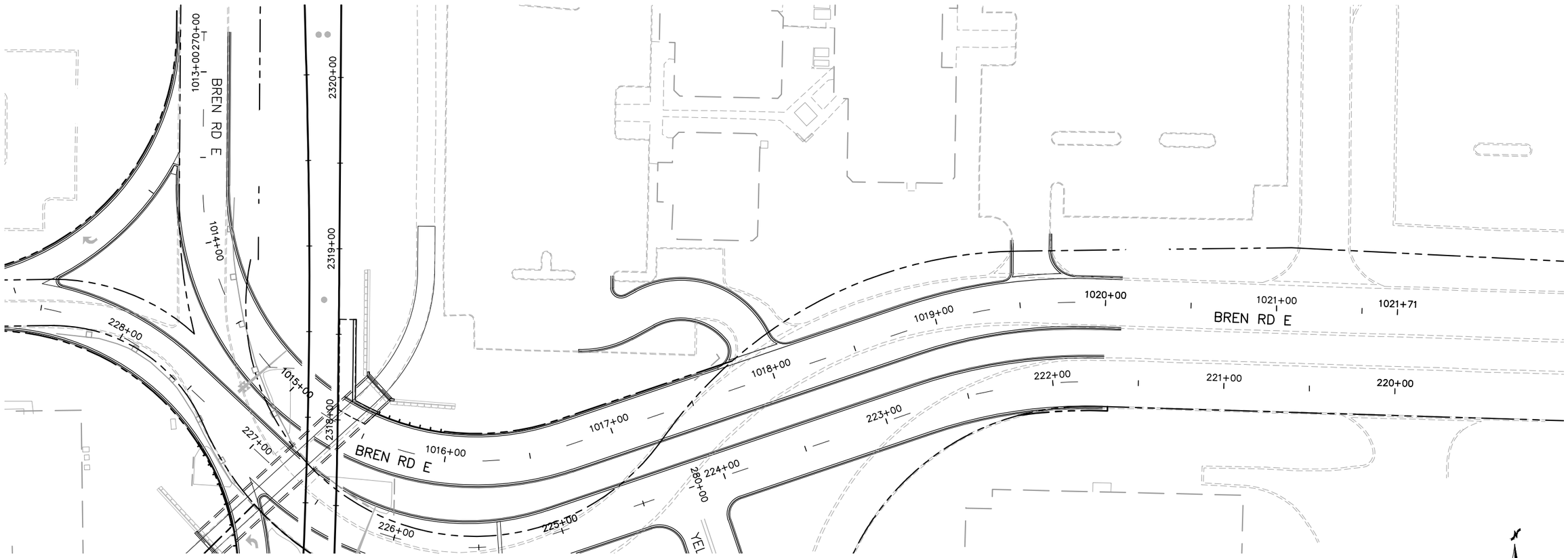
60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
YELLOW CIRCLE DRIVE TO RED CIRCLE DRIVE
SIGNING AND STRIPING
STA. 227+50 TO STA. 233+00

DISCIPLINE: TRAFFIC
SHEET NAME: W2-TFC-SIGN-STRP-001 - 014

SHEET 75 OF 152

Sep, 21 2015 11:24 am V:\3400_ADC\CAD\SEGMENT W2\PLAN SHEETS\TRAFFIC\W2-TFC-SIGN-STRP-001.dwg By: kmcclement



FOR REFERENCE ONLY

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM

SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
BREN ROAD EAST
SIGNING AND STRIPING
STA. 1012+50 TO STA. 1021+00

DISCIPLINE: TRAFFIC

SHEET NAME: W2-TFC-SIGN-STRP-001 - 015

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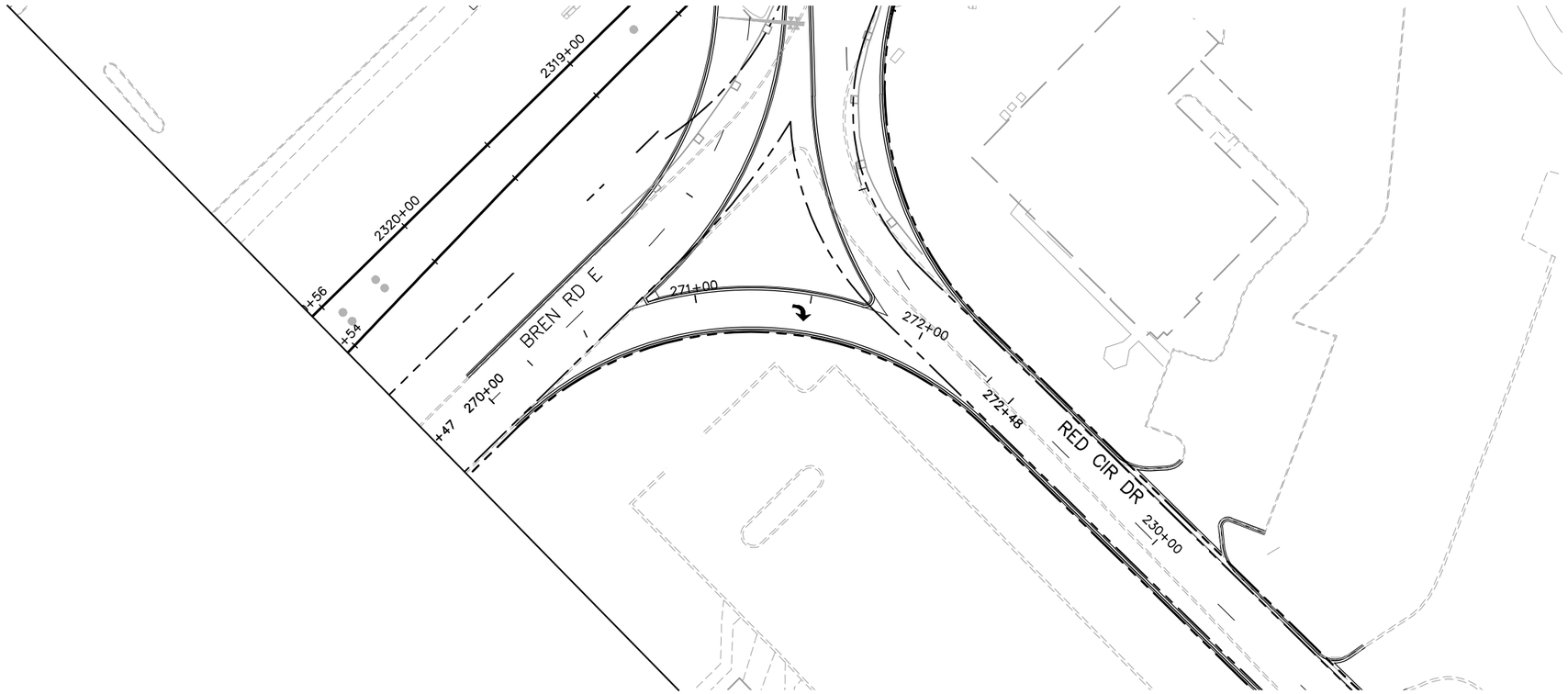
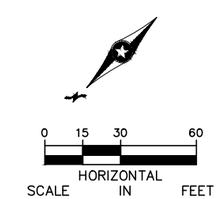




NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM

SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

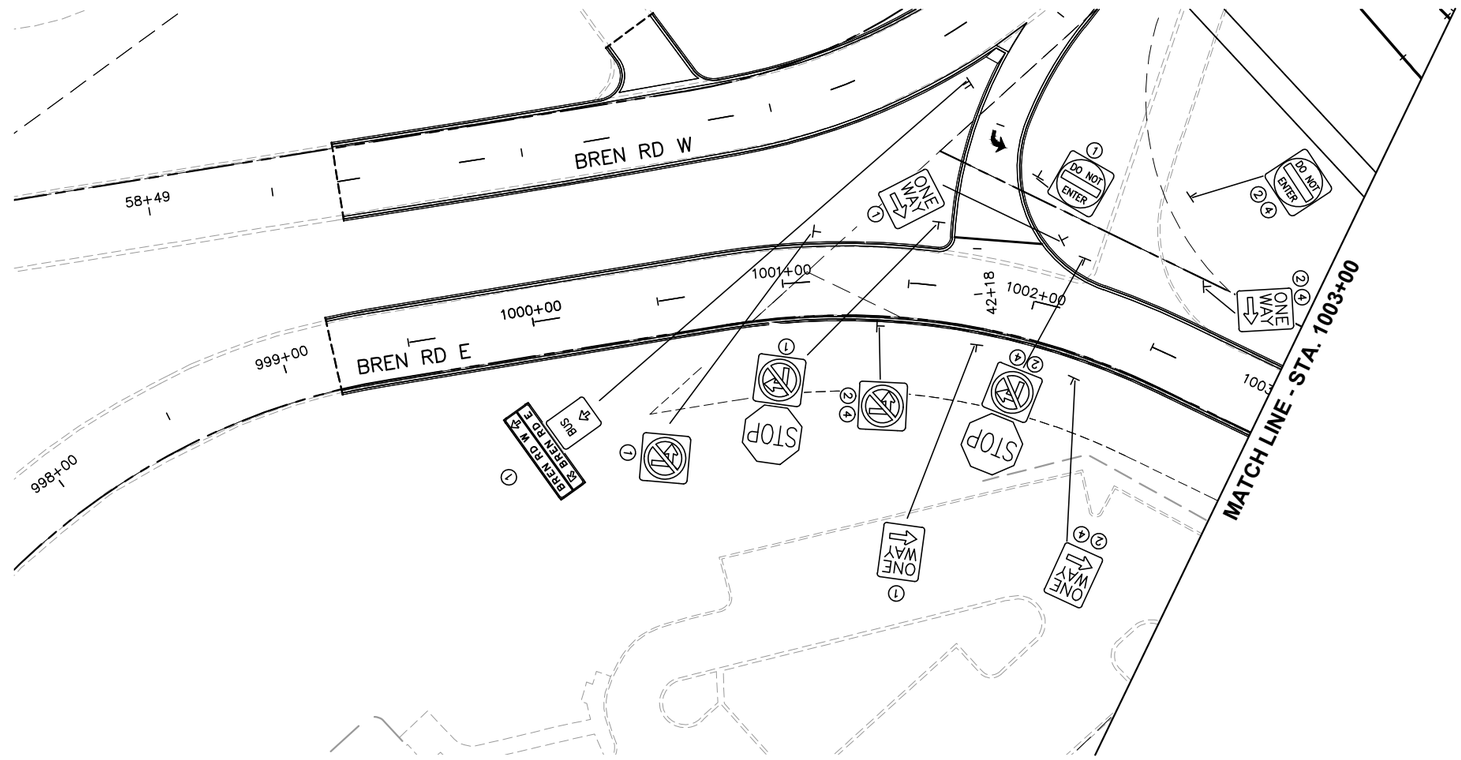
CIVIL WEST - VOLUME 10
BREN ROAD EAST TO RED CIRCLE DRIVE
SIGNING AND STRIPING
STA. 270+67 TO STA. 271+87

DISCIPLINE: TRAFFIC

SHEET NAME: W2-TFC-SIGN-STRP-001 - 016

SHEET 77 OF 152

Sep, 21 2015 11:24 am V:\3400_ADC\CAD\SEGMENT W2\PLAN SHEETS\TRAFFIC\W2-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

0 15 30 60
HORIZONTAL SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM
SRF Consulting Group, Inc.
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

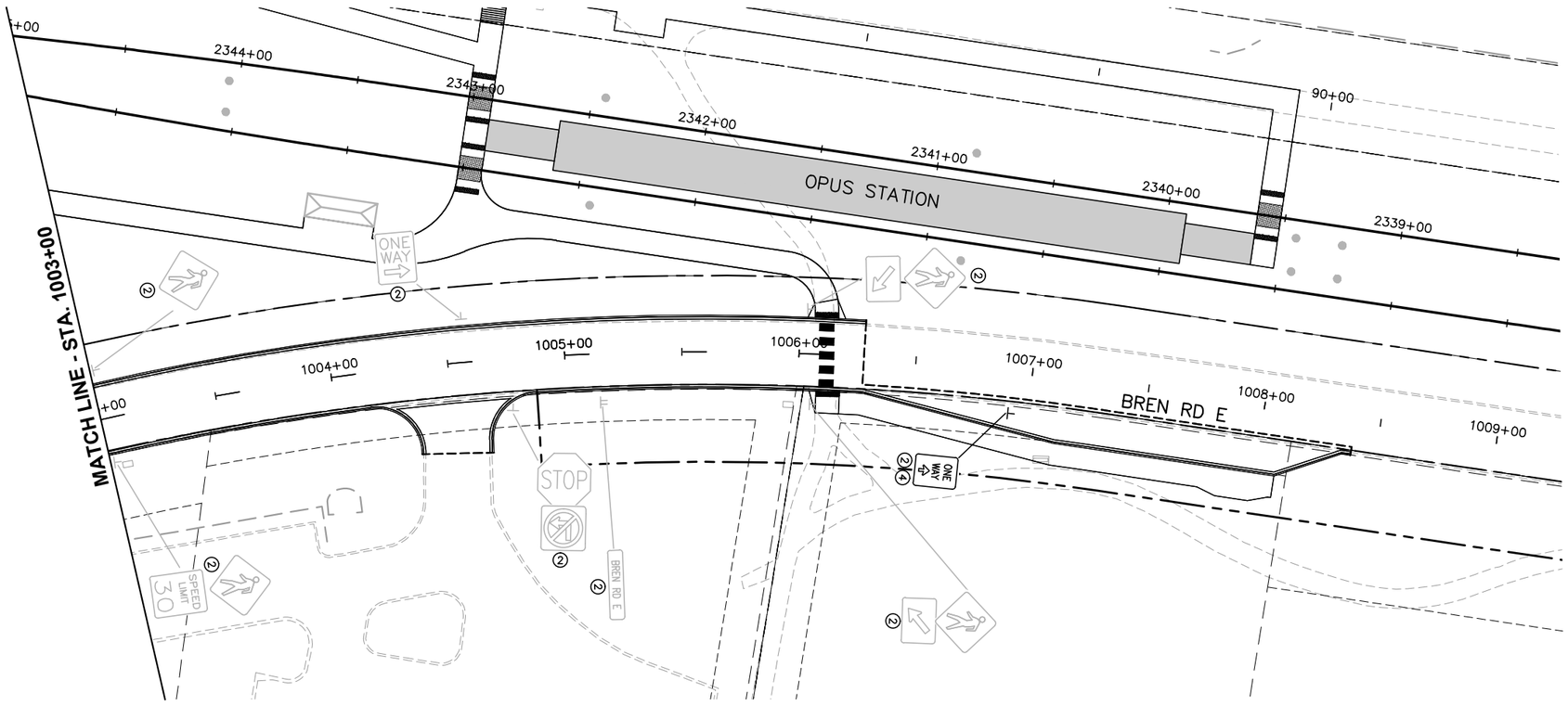
60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
BREN ROAD EAST
SIGNING AND STRIPING
STA. 998+00 TO STA. 1003+00

DISCIPLINE: TRAFFIC
SHEET NAME: W3-TFC-SIGN-STRP-001 - 001

SHEET 78 OF 152

Sep. 21 2015 11:26 am V:\3400_ADC\CAD\SEGMENT W3\PLAN SHEETS\TRAFFIC\W3-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

0 15 30 60
HORIZONTAL SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM
SRF Consulting Group, Inc.
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

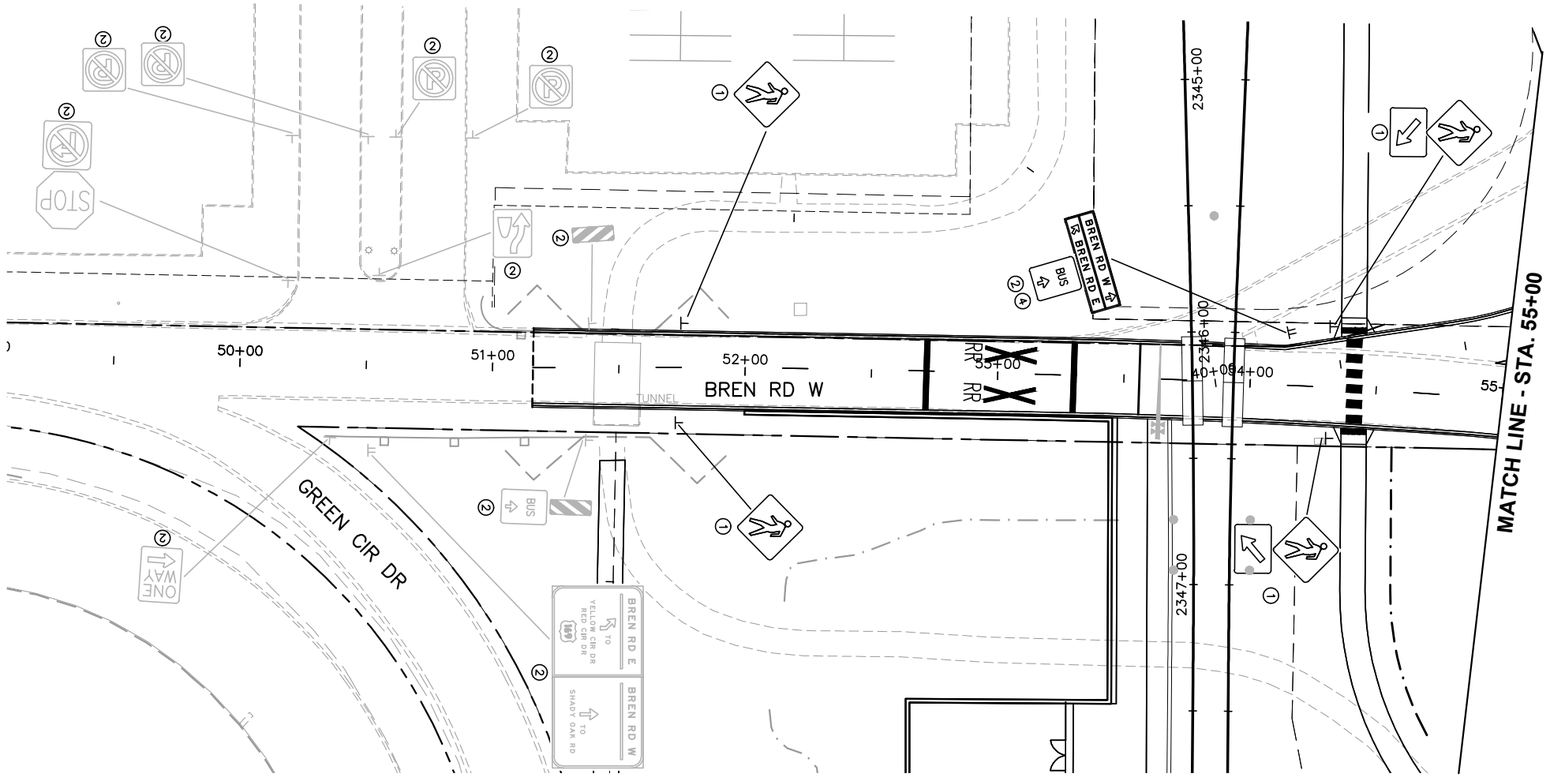
60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
BREN ROAD EAST
SIGNING AND STRIPING
STA. 1003+00 TO STA. 1009+00

DISCIPLINE: TRAFFIC
SHEET NAME: W3-TFC-SIGN-STRP-001 - 002

SHEET 79 OF 152

Sep, 21 2015 11:26 am V:\3400_ADC\CAD\SEGMENT W3\PLAN SHEETS\TRAFFIC\W3-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

0 15 30 60
HORIZONTAL SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM
SRF Consulting Group, Inc.
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

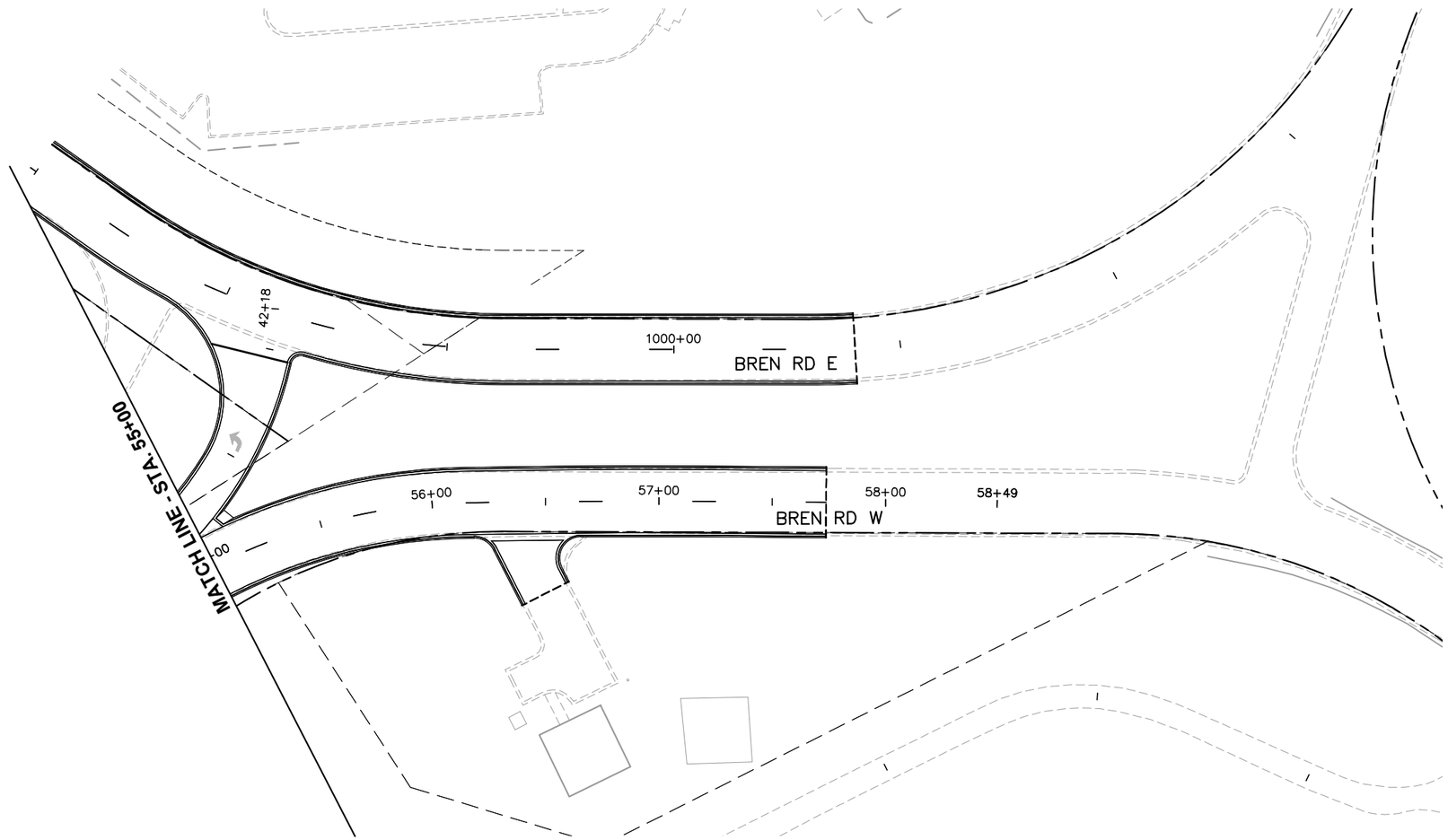
60% SUBMISSION - 09/28/15

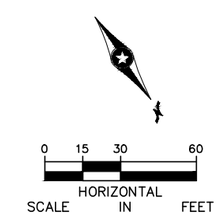
CIVIL WEST - VOLUME 10
BREN ROAD WEST
SIGNING AND STRIPING
STA. 49+00 TO STA. 55+00

DISCIPLINE: TRAFFIC
SHEET NAME: W3-TFC-SIGN-STRP-001 - 003

SHEET 80 OF 152

Sep, 21 2015 11:26 am V:\3400_ADC\CAD\SEGMENT W3\PLAN SHEETS\TRAFFIC\W3-TFC-SIGN-STRP-001.dwg By: kmcclement





NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM

SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

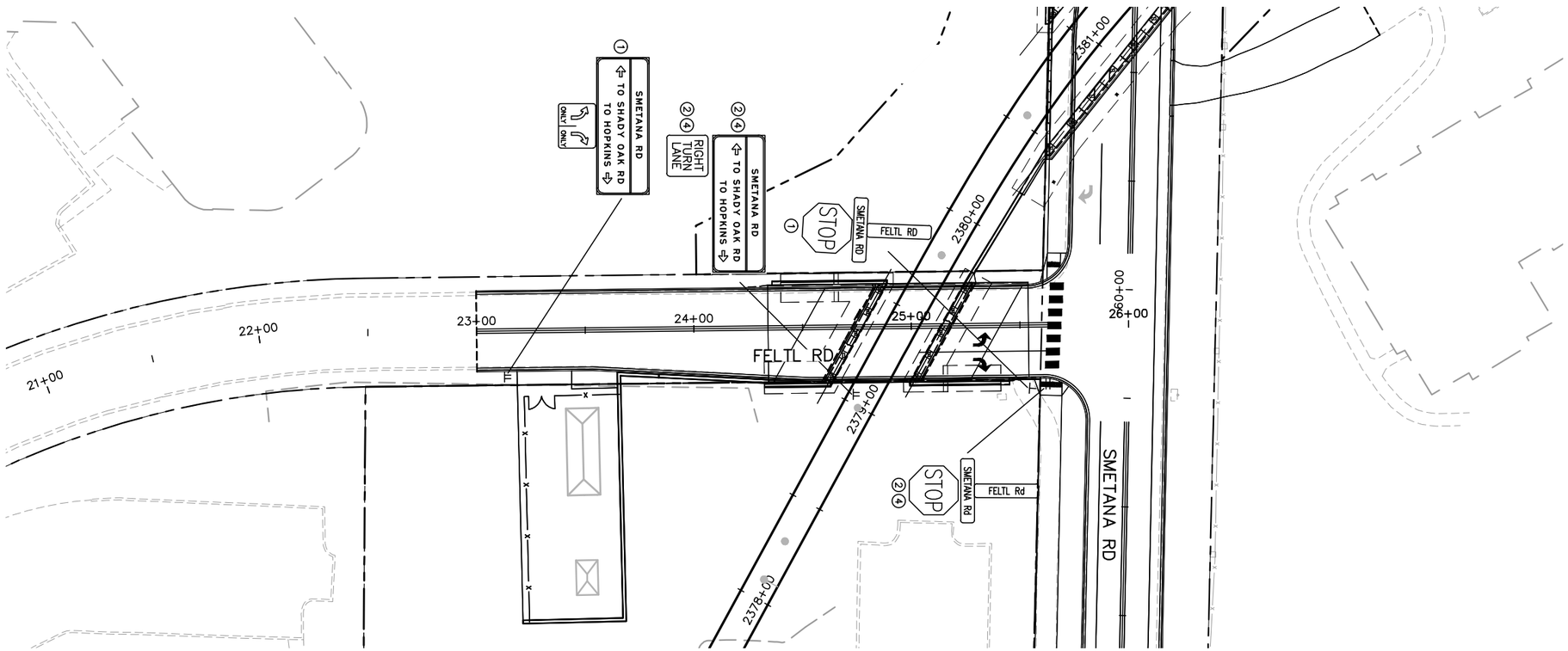
CIVIL WEST - VOLUME 10
BREN ROAD WEST
SIGNING AND STRIPING
STA. 55+00 TO STA. 58+49

DISCIPLINE: TRAFFIC

SHEET NAME: W3-TFC-SIGN-STRP-001 - 004

SHEET 81 OF 152

Sep, 21 2015 11:27 am V:\3400_ADC\CAD\SEGMENT W3\PLAN SHEETS\TRAFFIC\W3-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

0 15 30 60
HORIZONTAL SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM
SRF Consulting Group, Inc.
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

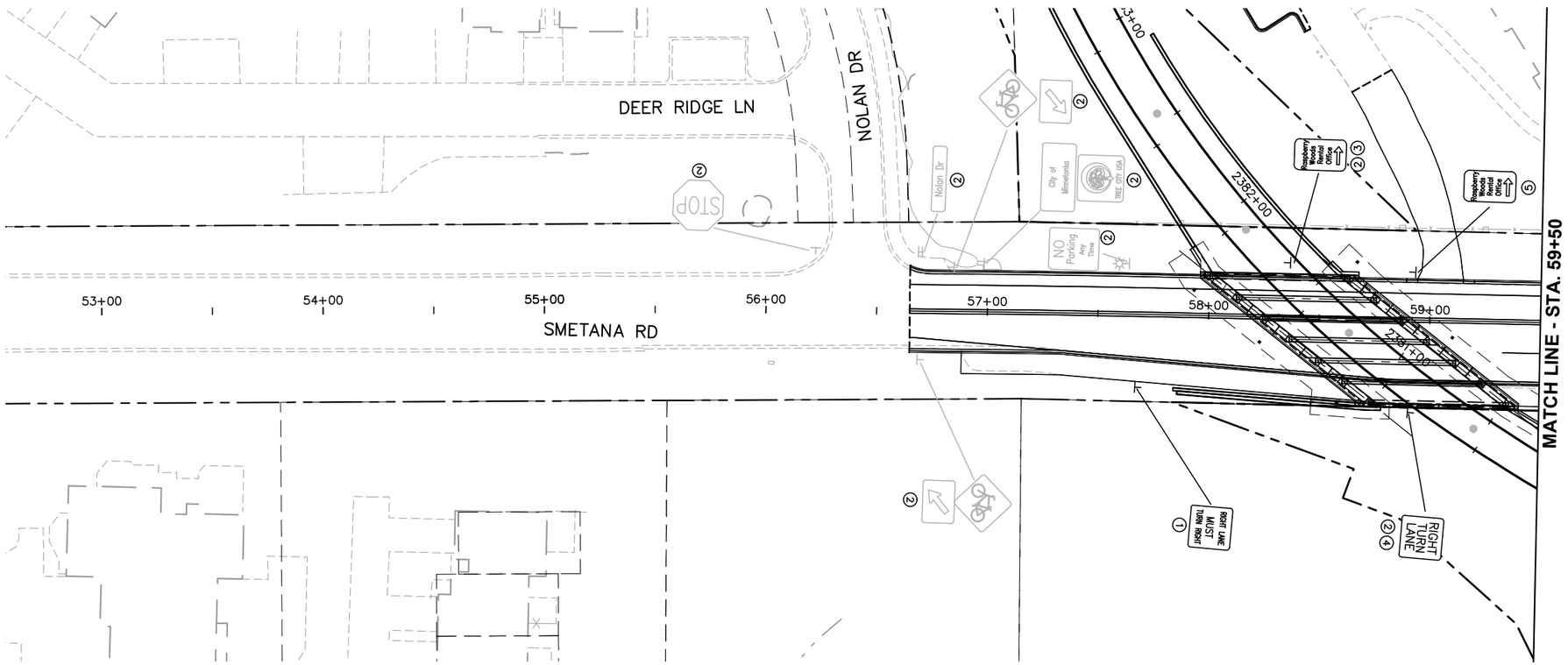
60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
FELTL ROAD
SIGNING AND STRIPING
STA. 21+00 TO STA. 26+00

DISCIPLINE: TRAFFIC
SHEET NAME: W3-TFC-SIGN-STRP-001 - 005

SHEET 82 OF 152

Sep, 21 2015 11:27 am V:\3400_ADC\CAD\SEGMENT W3\PLAN SHEETS\TRAFFIC\W3-TFC-SIGN-STRP-001.dwg By: kmcclement



0 15 30 60
HORIZONTAL
SCALE IN FEET

NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM
SRF Consulting Group, Inc.
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

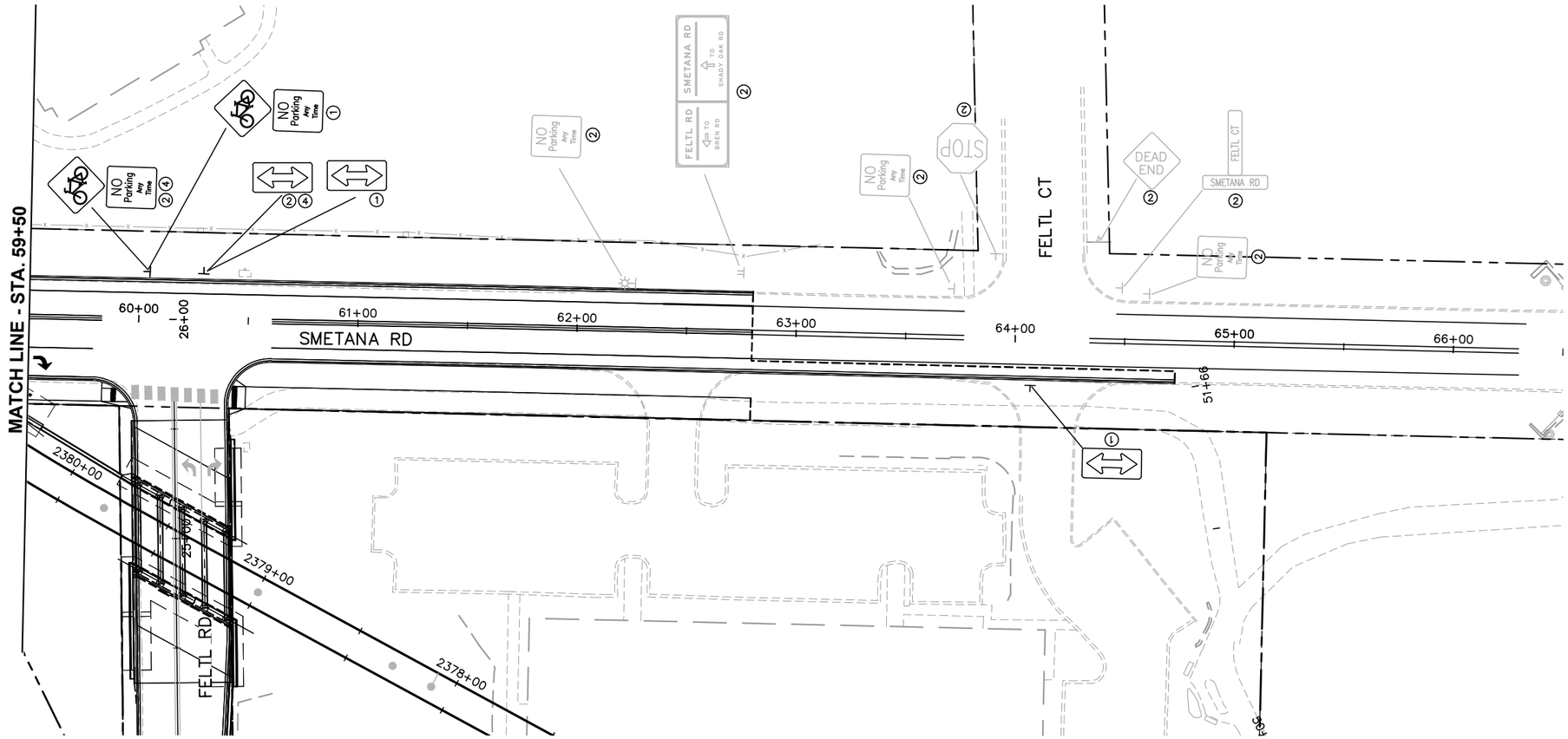
60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
SMETANA ROAD
PLAN AND PROFILE
STA. 52+50 TO STA. 59+50

DISCIPLINE: TRAFFIC
SHEET NAME: W3-TFC-SIGN-STRP-001 - 006

SHEET 83 OF 152

Sep, 21 2015 11:27 am V:\3400_ADC\CAD\SEGMENT W3\PLAN SHEETS\TRAFFIC\W3-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM

SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

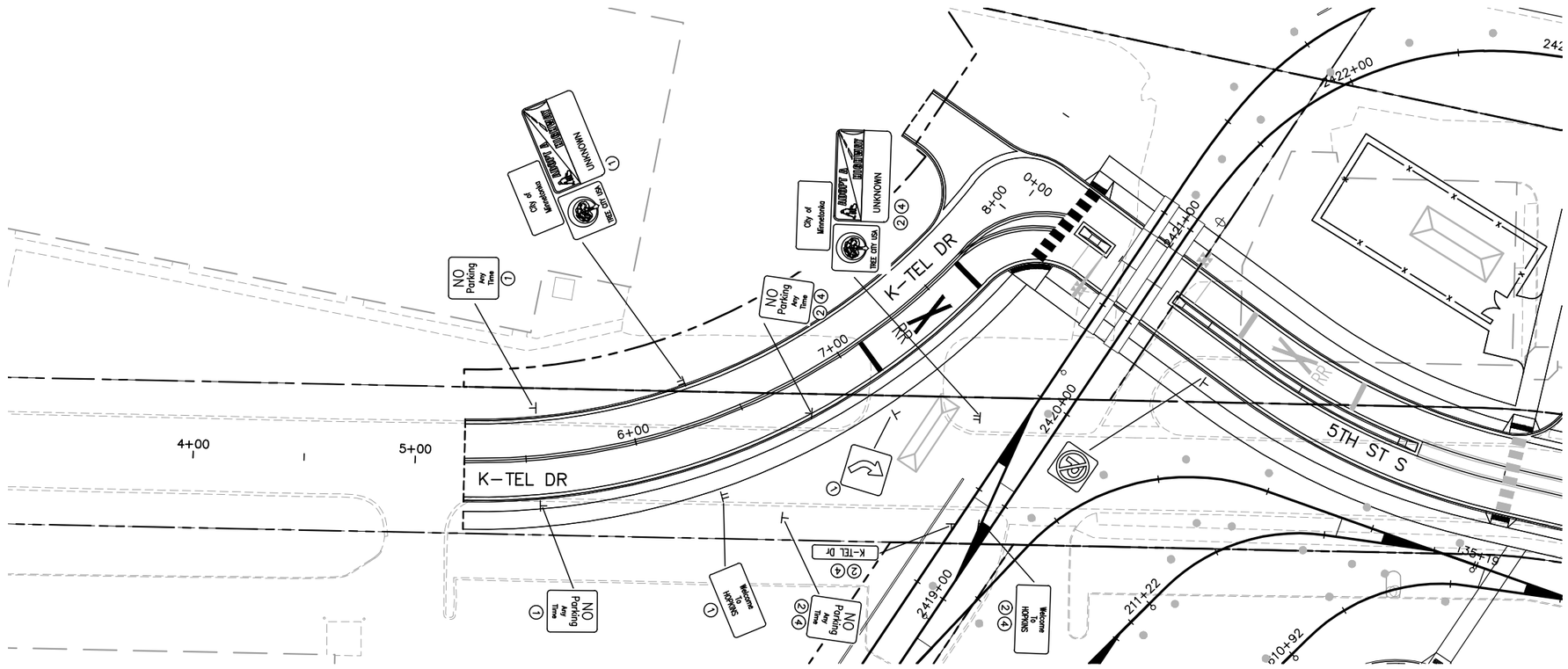
CIVIL WEST - VOLUME 10
SMETANA ROAD
SIGNING AND STRIPING
STA. 59+50 TO STA. 66+50

DISCIPLINE: TRAFFIC

SHEET NAME: W3-TFC-SIGN-STRP-001 - 007

SHEET 84 OF 152

Sep. 21 2015 11:27 am V:\3400_ADC\CAD\SEGMENT W3\PLAN SHEETS\TRAFFIC\W3-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

0 15 30 60
HORIZONTAL SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM
SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

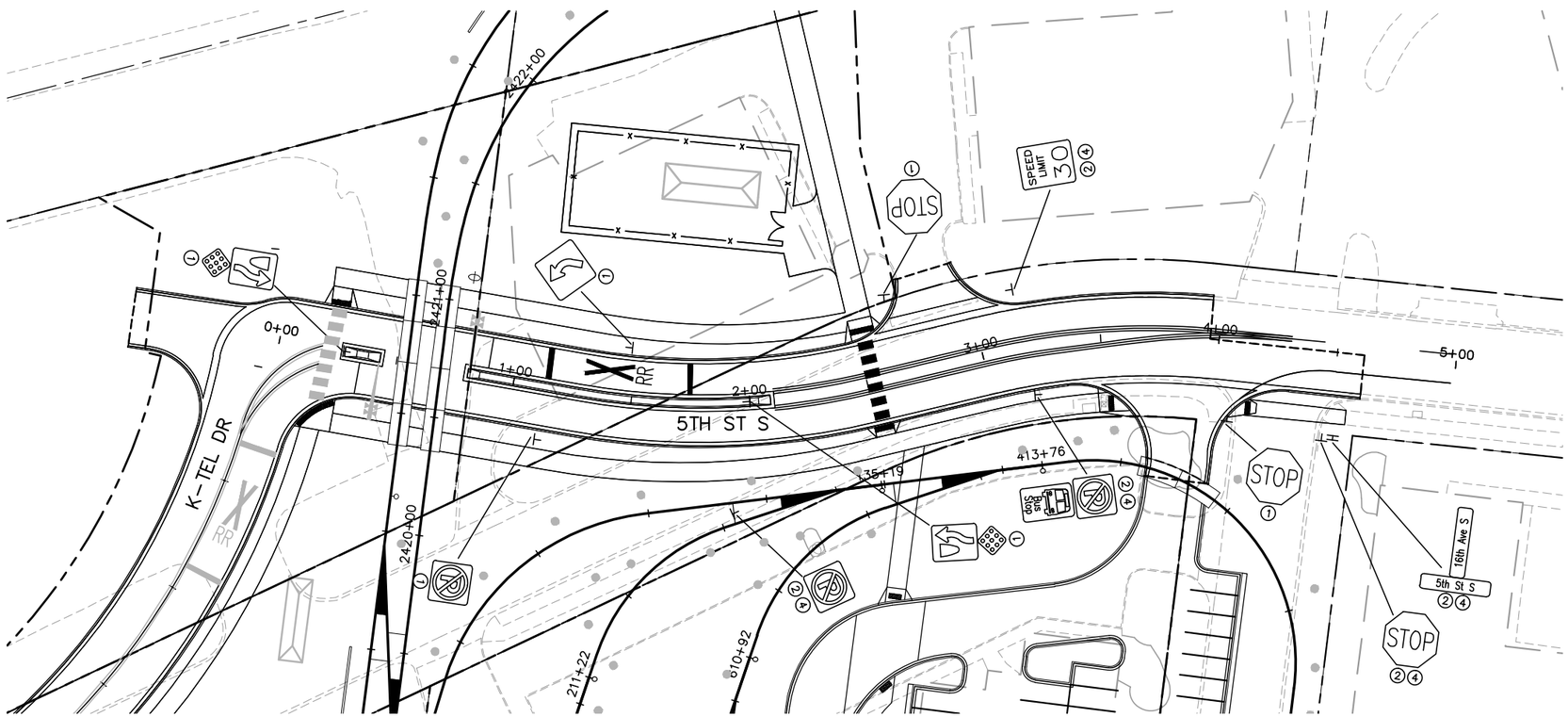
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
K-TEL DRIVE
SIGNING AND STRIPING
STA. 5+13 TO STA. 8+29

DISCIPLINE: TRAFFIC
SHEET NAME: W3-TFC-SIGN-STRP-001 - 008

SHEET 85 OF 152

Sep, 21 2015 11:28 am V:\3400_ADC\CAD\SEGMENT W3\PLAN SHEETS\TRAFFIC\W3-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

0 15 30 60
HORIZONTAL SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM
SRF Consulting Group, Inc.
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

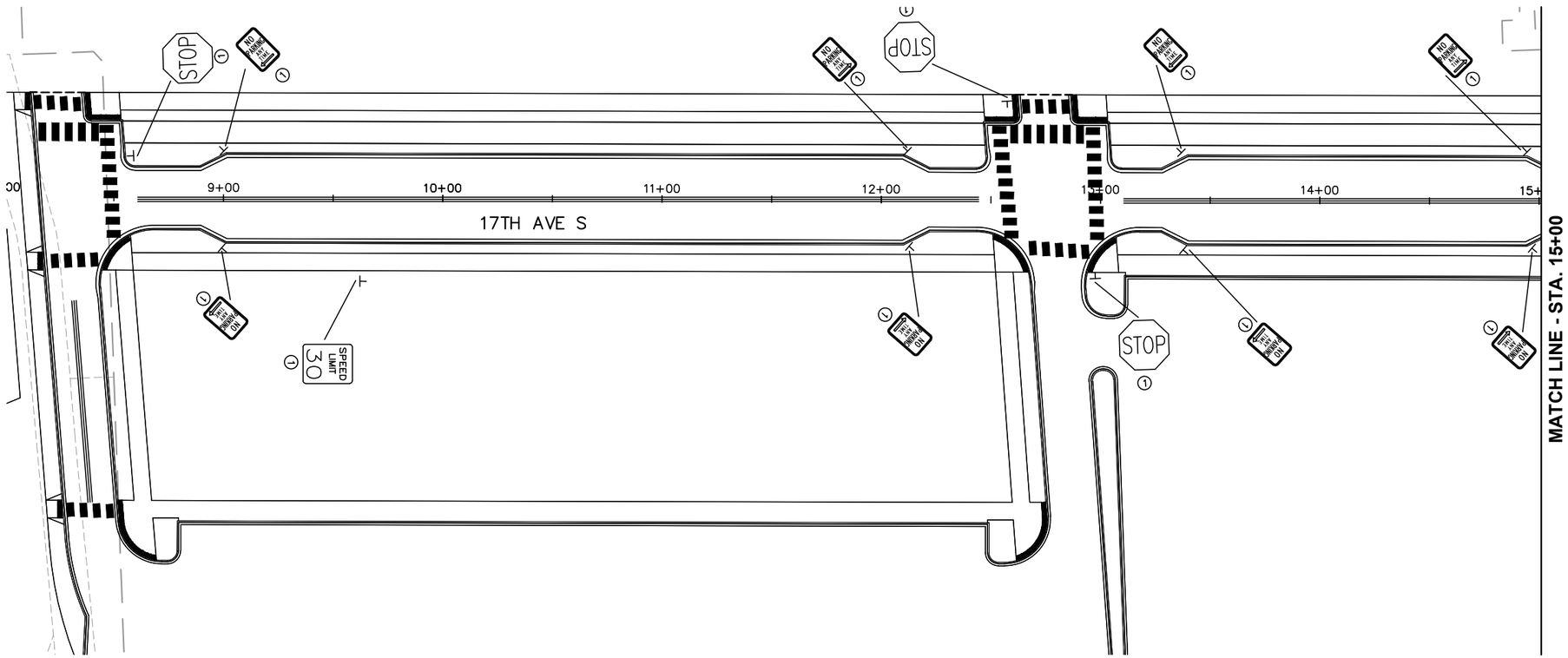
60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
5TH STREET SOUTH
SIGNING AND STRIPING
STA. 0+00 TO STA. 5+50

DISCIPLINE: TRAFFIC
SHEET NAME: W3-TFC-SIGN-STRP-001 - 009

SHEET 86 OF 152

Sep. 21 2015 11:28 am V:\3400_ADC\CAD\SEGMENT W3\PLAN SHEETS\TRAFFIC\W3-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

0 15 30 60
HORIZONTAL
SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM
SRF Consulting Group, Inc.
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

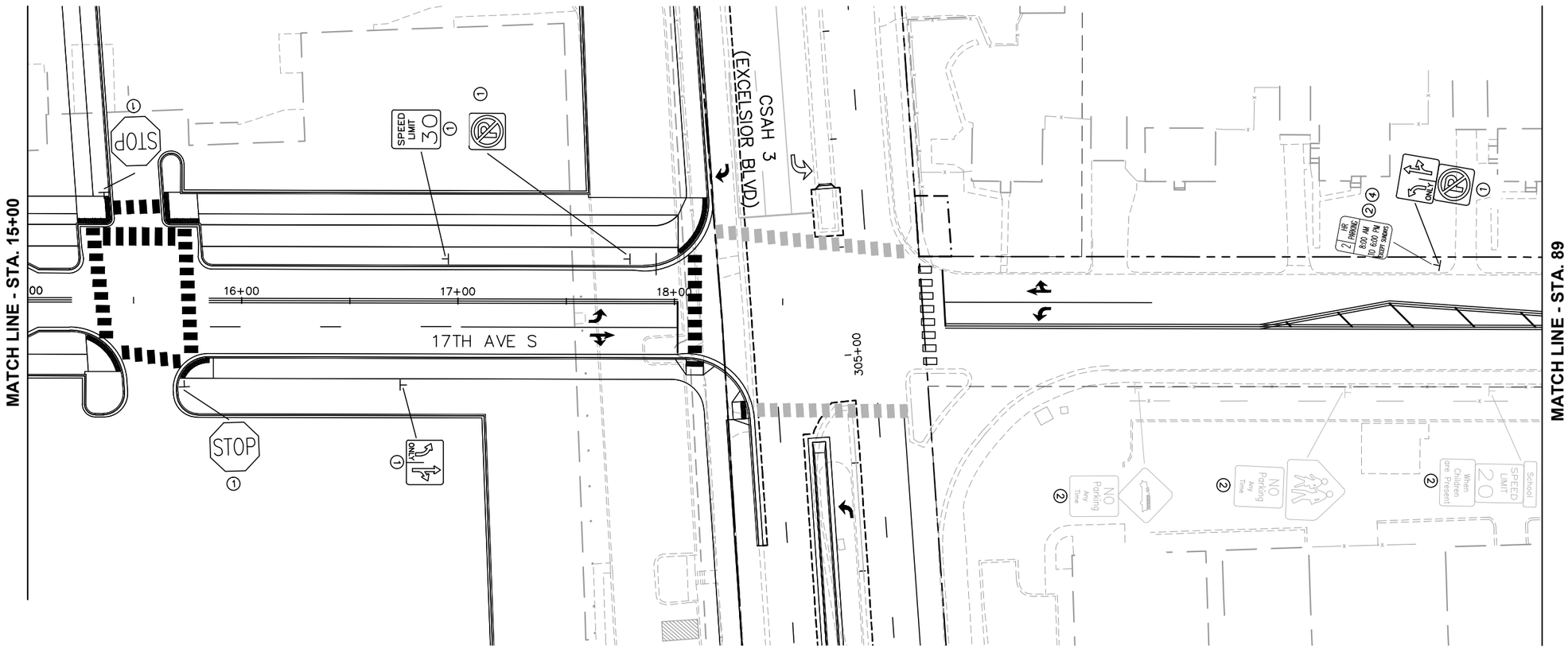
60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
17TH AVENUE SOUTH
SIGNING AND STRIPING
STA. 8+00 TO STA. 15+00

DISCIPLINE: TRAFFIC
SHEET NAME: W3-TFC-SIGN-STRP-001 - 010

SHEET 87 OF 152

Sep. 21 2015 11:28 am V:\3400_ADC\CAD\SEGMENT W3\PLAN SHEETS\TRAFFIC\W3-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

0 15 30 60
HORIZONTAL SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM
SRF Consulting Group, Inc.
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

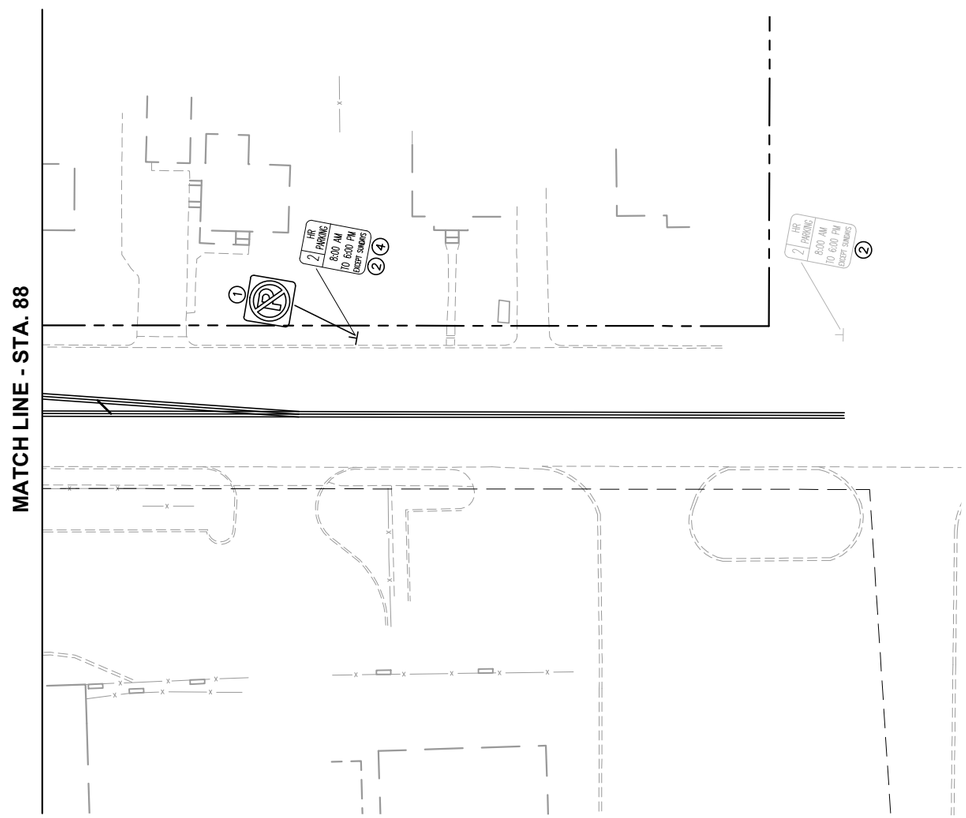
60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
17TH AVENUE SOUTH
SIGNING AND STRIPING
STA. 15+00 TO STA. 18+78

DISCIPLINE: TRAFFIC
SHEET NAME: W3-TFC-SIGN-STRP-001 - 011

SHEET 88 OF 152

Sep, 21 2015 11:29 am V:\3400_ADC\CAD\SEGMENT W3\PLAN SHEETS\TRAFFIC\W3-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

0 15 30 60
HORIZONTAL SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM
SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

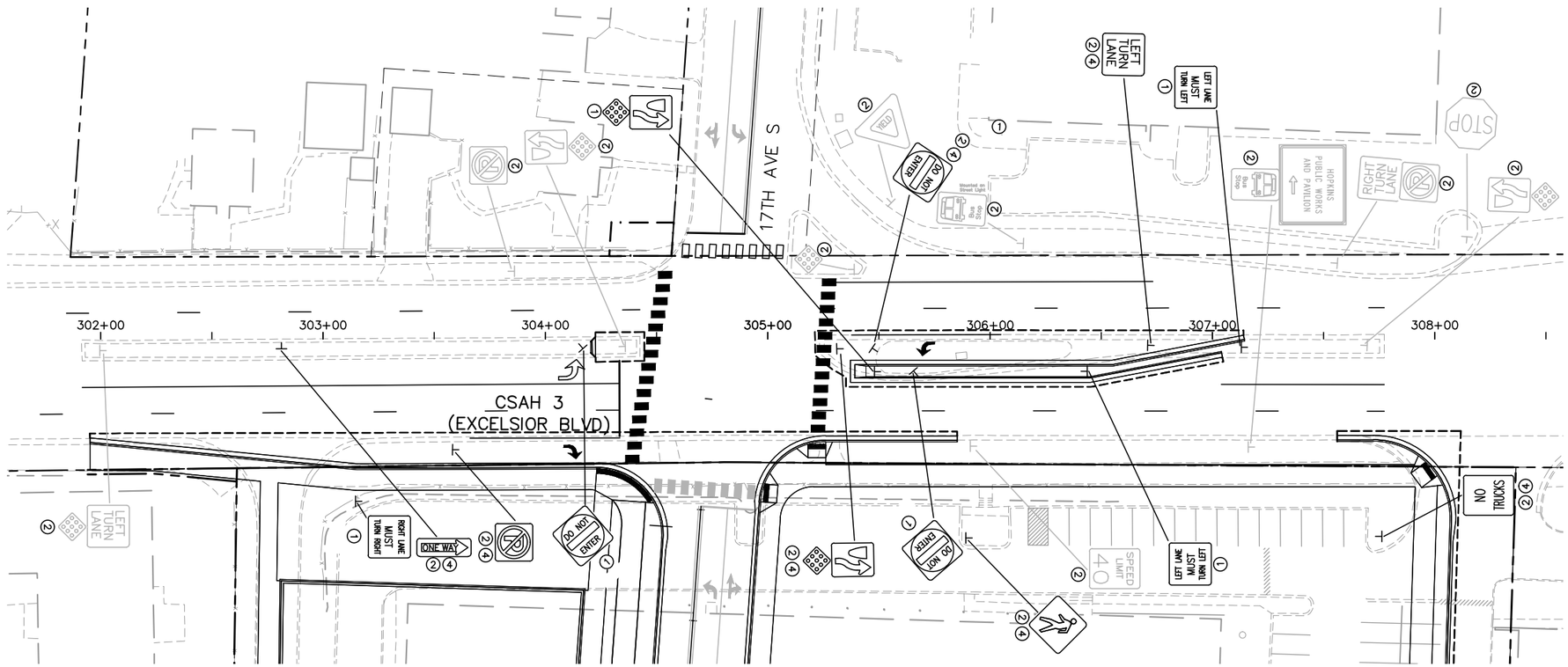
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
17TH AVENUE SOUTH
SIGNING AND STRIPING

DISCIPLINE: TRAFFIC
SHEET NAME: W3-TFC-SIGN-STRP-001 - 013

SHEET 89 OF 152

Sep, 21 2015 11:29 am V:\3400_ADC\CAD\SEGMENT W3\PLAN SHEETS\TRAFFIC\W3-TFC-SIGN-STRP-001.dwg By: kmcclement



NOTES:
1. SIGNS SHALL BE PLACED AS DETAILED ON SIGNING AND STRIPING DETAIL SHEETS.

① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
④ REMOVE
⑤ INSTALL

0 15 30 60
HORIZONTAL SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM SRF Consulting Group, Inc. METROPOLITAN COUNCIL SOUTHWEST Green Line LRT Extension

60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
EXCELSIOR BOULEVARD
SIGNING AND STRIPING
STA. 301+50 TO STA. 308+50

DISCIPLINE: TRAFFIC
SHEET NAME: W3-TFC-SIGN-STRP-001 - 012

SHEET 90 OF 152

Sep. 21 2015 11:29 am V:\3400_ADC\CAD\SEGMENT W3\PLAN SHEETS\TRAFFIC\W3-TFC-SIGN-STRP-001.dwg By: kmcclement

TRAFFIC LEGEND

INPLACE

- PUSHBUTTON PEDESTAL
- LUMINAIRE
- SIG. POLE W/MASTARM
- SIGNAL PEDESTAL
- SIGNAL FACE
- TRAFFIC SIGNAL EQUIPMENT PAD
- PEDESTRIAN INDICATION
- PUSHBUTTON
- EVP CONFIRMATORY LIGHT
- EVP DETECTOR
- EVP DETECTOR AND CONFIRMATORY LIGHT

FURNISH & INSTALL

- PUSHBUTTON PEDESTAL
- LUMINAIRE
- SIG. POLE W/MASTARM
- SIGNAL PEDESTAL
- SIGNAL FACE
- TRAFFIC SIGNAL EQUIPMENT PAD
- PEDESTRIAN INDICATION
- PUSHBUTTON
- EVP CONFIRMATORY LIGHT
- EVP DETECTOR
- EVP DETECTOR AND CONFIRMATORY LIGHT
- AUTOMATIC GATE
- BLANK OUT SIGN
- POWER POLE
- OCS POLE

ABBREVIATIONS

2–1	SIGNAL HEAD NUMBER
EVP	EMERGENCY VEHICLE PRE–EMPTION
FYA	FLASHING YELLOW ARROW
GRN	GREEN INDICATION
GR. RD.	GROUND ROD
INP	INPLACE
INS. GR.	INSULATED GROUND
LED	LIGHT EMITTING DIODE
LUM	LUMINAIRE
P1–1 (e.g.)	PEDESTRIAN HEAD (PHASE 1, NO. 1)
PB2–1 (e.g.)	PUSH BUTTON (PHASE 2, NO. 1)
PED	PEDESTRIAN
SOP	SOURCE OF POWER
STA	STATION
WLK	WALK INDICATION
YEL	YELLOW INDICATION
RED	RED INDICATION
CAC	CONTROLLER AND CABINET
SP	SERVICE PANEL
Ø2	SIGNAL PHASE NUMBER

THIS DETAIL APPLIES TO SYSTEMS "H", "I", "J", and "N"

DRAFT-WORK IN PROCESS

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

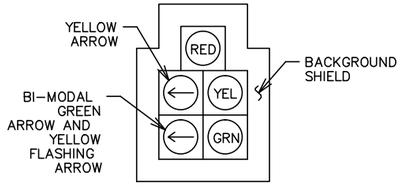
METROPOLITAN COUNCIL SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL
MNDOT LEGEND AND ABBREVIATIONS

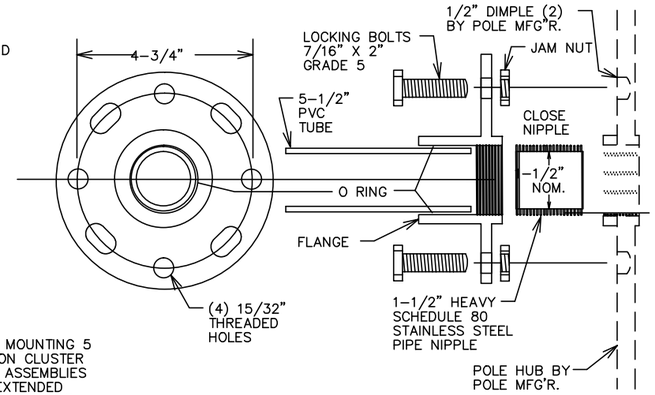
DISCIPLINE: TRAFFIC

SHEET NAME: W0-TFC-SIG-DTL - 01

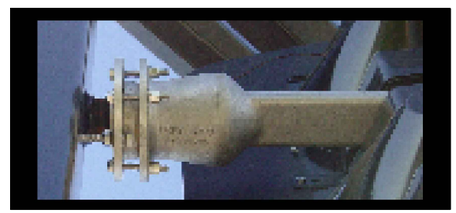
Sep, 21 2015 11:30 am V:\3400_ADC\CAD\OVERALL\PLAN SHEETS\TRAFFIC\W0-TFC-SIG-DTL.dwg By: kmcclement

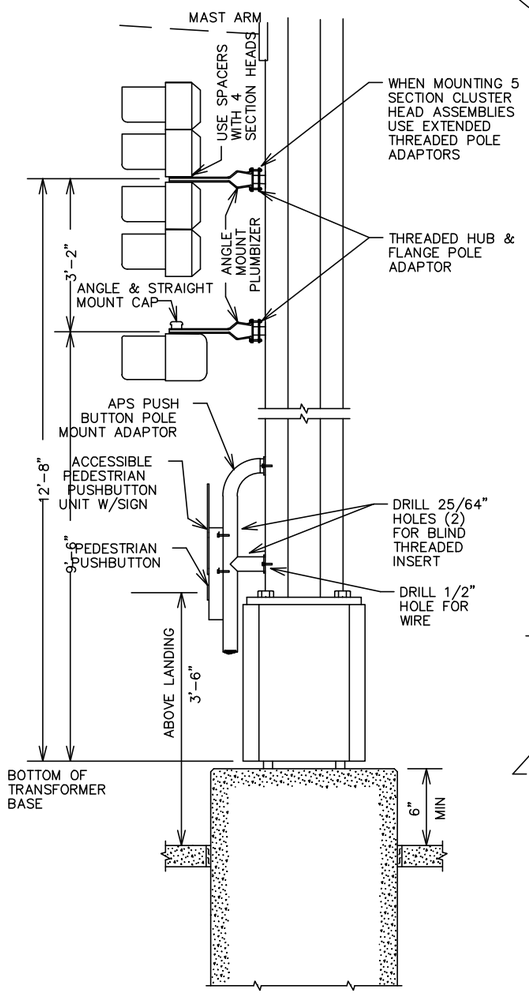


5 SECTION FYA
CLUSTER HEAD DETAIL



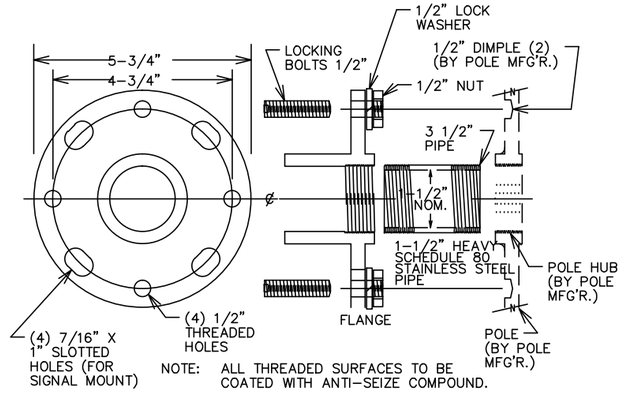
THREADED HUB AND FLANGE POLE ADAPTOR





TYPICAL SIGNAL POLE MOUNTING

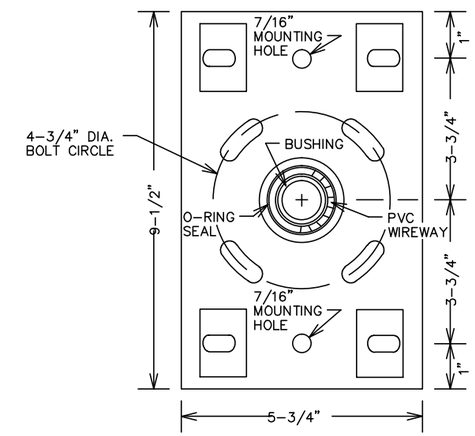
NOT TO SCALE



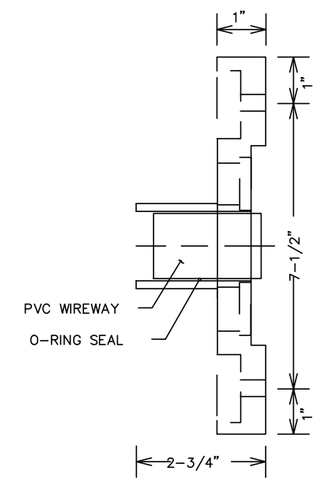
NOTE: ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.

EXTENDED THREADED POLE ADAPTER

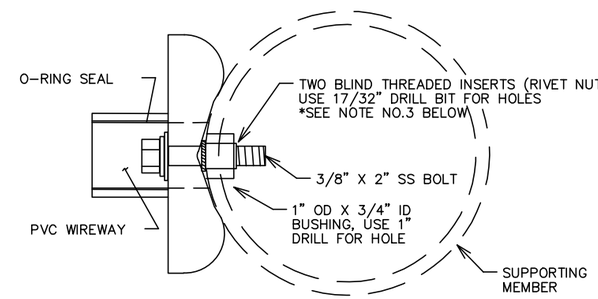
NOTES:
1. ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.
2. USE SIGNAL HEAD MOUNTED SPACERS FOR 4 SECTION POLY HEADS.
3. SEE STANDARD PLATE NUMBER 8123 FOR ADDITIONAL SIGNAL POLE DETAILS.
4. EXTENDED THREADED POLE ADAPTOR ONLY USED WITH 5 SECTION CLUSTER HEADS.



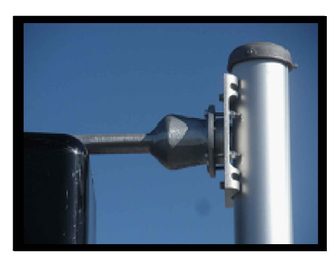
BOLT ON HUB & FLANGE



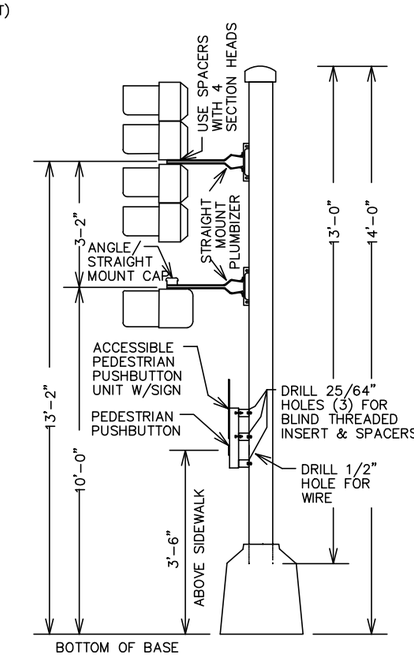
SIDE VIEW



TOP VIEW



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



TYPICAL PEDESTAL MOUNTING

NOT TO SCALE

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60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL
MNDOT DETAIL
SHEET 1

DISCIPLINE: **TRAFFIC**
SHEET NAME: **W0-TFC-SIG-DTL - 02**

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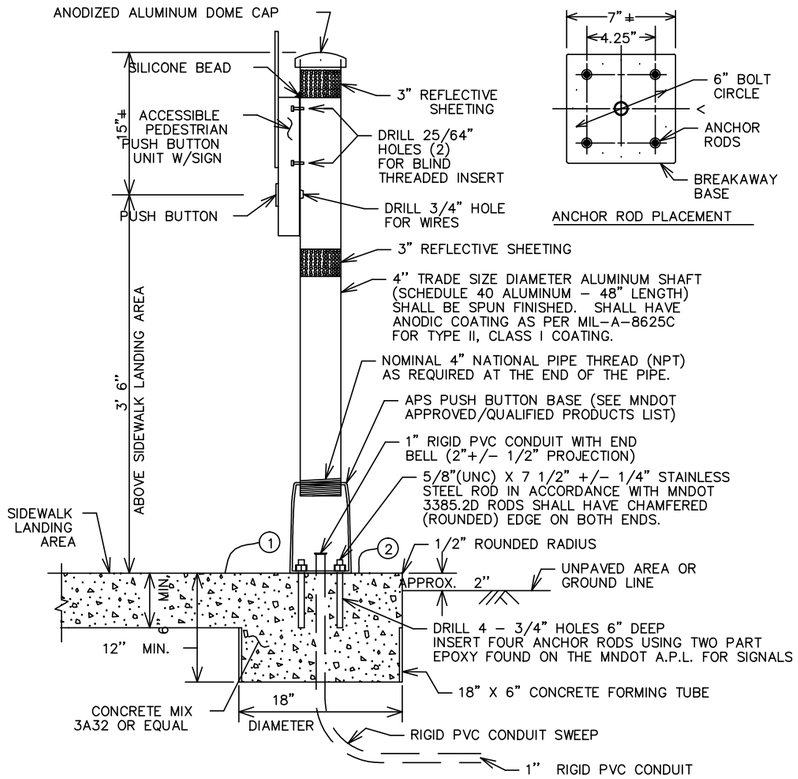
APS PUSH BUTTON STATION



NOTES:

- PLACEMENT AND ORIENTATION OF THE PUSH BUTTON STATION IS CRITICAL. MOUNT THE BUTTON SO THAT THE FACE IS PARALLEL WITH THE ASSOCIATED CROSSWALK. SCREW IN POST TO A TIGHTENED POSITION BEFORE MOUNTING ACCESSIBLE PEDESTRIAN PUSH BUTTON UNIT TO THE POST.
- ORIENT ACCESS OPENING ON THE BREAKAWAY PEDESTAL DIRECTLY BELOW THE APS BUTTON.
- PLUMB THE PUSH BUTTON STATION WITH LEVELING SHIMS IN ACCORDANCE WITH STANDARD PLATE 8129.
- BLIND THREADED INSERTS (RIVET NUT) MUST BE INSERTED USING MANUFACTURERS SPECIFIC INSERTION TOOL. NO OTHER METHOD IS ACCEPTABLE.
- BLIND THREADED INSERTS SHALL BE ZINC PLATED STEEL WITH 1/4 – 20 UNC THREADS. INSERT SHALL BE SUITABLE FOR USE ON A MOUNTING SURFACE WALL THICKNESS OF .337". APPROVED BLIND THREADED INSERTS CAN BE FOUND ON THE MN/DOT QUALIFIED PRODUCTS LIST FOR SIGNALS.
- A.P.S. MOUNTING BOLTS SHALL BE 1/4 – 20 STAINLESS STEEL. APPLY BRUSH ON ANTI SEIZE COMPOUND TO BOLTS PRIOR TO ASSEMBLY.
- APPLY A BEAD OF 100% SILICONE SEALANT ALONG THE TOP OF THE PUSH BUTTON UNIT WHERE IT COMES IN CONTACT WITH THE 4" POST.
- THE REFLECTIVE SHEETING SHALL BE WHITE AT INTERSECTION CORNERS AND SHALL BE YELLOW WHEN USED IN CENTER MEDIANS. SEE MN/DOT SIGNING QUALIFIED PRODUCTS LIST (QPL) FOR APPROVED TUBE DELINEATOR SHEETING.
- ANTI–SEIZE COMPOUND MUST BE USED ON ALL THREADED BOLTS WHEN ASSEMBLING PEDESTRIAN PUSH BUTTON STATIONS.

(1) THE PUSH BUTTON STATION FOUNDATION IS CONSTRUCTED AS PART OF THE SIDEWALK. INCREASE THE SIDEWALK THICKNESS TO 12" THICK (MIN.) TO PROVIDE FOR THE PUSH BUTTON STATION FOUNDATION.

(2) ALL JOINTS SHALL BE A MINIMUM OF 9" FROM THE CENTER OF THE PUSH BUTTON FOUNDATION.

TYPICAL APS PEDESTRIAN PUSH BUTTON LOCATION

THIS IS A GENERAL DETAIL INTENDED TO SHOW THE REQUIREMENTS OF APS PUSH BUTTON LOCATION. FOR PROJECT SPECIFIC INFORMATION REGARDING PEDESTRIAN RAMP LAYOUT AND PUSH BUTTON LOCATIONS, SEE THE PLAN.

SUPPLEMENTAL GUIDANCE FOR CONSTRUCTING COMPLIANT APS PUSH BUTTONS:

(1) THE FACE OF THE BUTTON SHALL BE PARALLEL WITH THE OUTSIDE EDGE OF CROSSWALK.

(2) A MINIMUM 4 FT X 4 FT LANDING AREA SHALL BE PROVIDED ADJACENT TO EACH BUTTON, WITH A 2 PERCENT MAXIMUM SLOPE IN ALL DIRECTIONS.

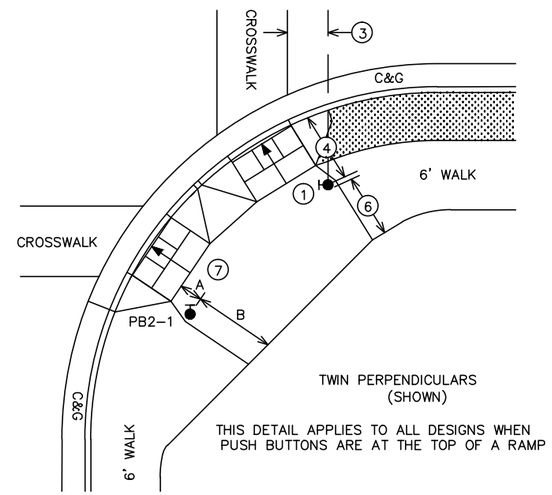
(3) BUTTONS SHALL BE WITHIN 5 FT OF THE OUTSIDE EDGE OF THE CROSSWALK.

(4) BUTTONS SHALL BE BETWEEN 1.5 FT AND 10 FT FROM THE BACK OF CURB OR EDGE OF ROADWAY, MEASURED IN THE DIRECTION OF TRAVEL. STANDALONE PUSH BUTTON STATIONS SHOULD BE 4' MINIMUM FROM THE BACK OF CURB TO AVOID KNOCKDOWNS.

(5) BUTTONS SHALL BE AT LEAST 10 FT APART.

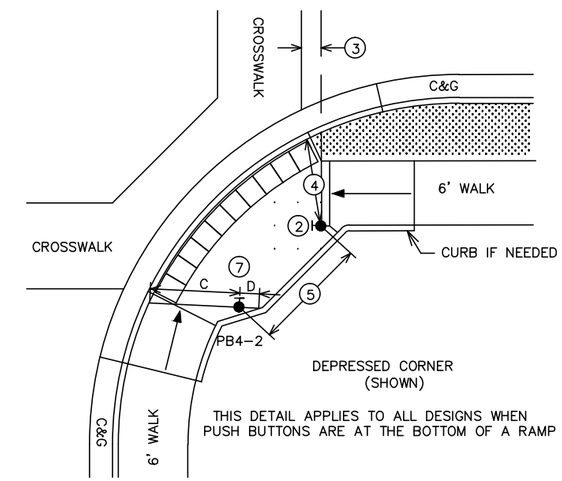
(6) PROVIDE A MAINTENANCE ACCESS ROUTE (MAR) WHEREVER POSSIBLE FOR SNOW REMOVAL PURPOSES. A MAR REQUIRES A 6 FT MINIMUM CLEAR DISTANCE BETWEEN A PUSH BUTTON AND ANY OBSTRUCTIONS,INCLUDING BUILDINGS, V–CURB, ELECTRICAL FOUNDATIONS, SIGNAL CABINETS, OR ANOTHER PUSH BUTTON.

(7) BUTTON SHOULD BE 2 FT MINIMUM FROM RAMP GRADE BREAK AND BACK OF WALK.



TWIN PERPENDICULARS (SHOWN)

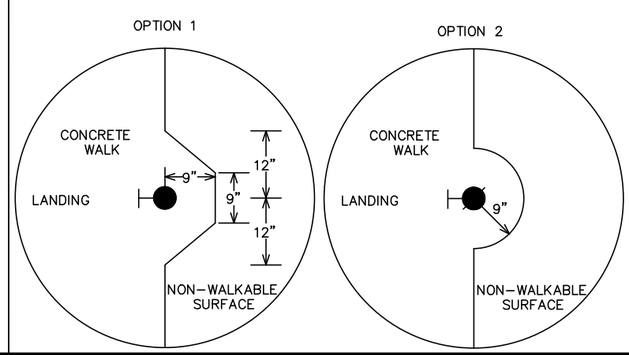
THIS DETAIL APPLIES TO ALL DESIGNS WHEN PUSH BUTTONS ARE AT THE TOP OF A RAMP



DEPRESSED CORNER (SHOWN)

THIS DETAIL APPLIES TO ALL DESIGNS WHEN PUSH BUTTONS ARE AT THE BOTTOM OF A RAMP

CONTRACTOR MUST USE OPTION 1 OR 2 WHEN THE APS PUSH BUTTON IS SHOWN AT THE EDGE OF WALK. OPTION USED (OR SELECTED) MUST BE THE SAME THROUGHOUT THE ENTIRE PROJECT.



SIGNAL CONTROL POINTS			DISTANCE TO FRONT OF LANDING (FT)	DISTANCE TO BACK OF LANDING (FT)
SIGNAL NO.	X	Y		
PB2–1	–	–	A	B
PB4–2	–	–	C	D

A – DISTANCE MEASURED FROM THE PUSH BUTTON TO THE FRONT OF LANDING/TOP OF RAMP

B – CLEAR DISTANCE MEASURED FROM THE PUSH BUTTON TO THE BACK OF LANDING/EDGE OF WALK

C – CLEAR DISTANCE MEASURED FROM THE PUSH BUTTON TO THE OUTSIDE EDGE OF DOMES IN THE DIRECTION OF TRAVEL

D – CLEAR DISTANCE FROM THE PUSH BUTTON TO THE BACK OF LANDING MEASURED IN THE OPPOSITE DIRECTION OF TRAVEL

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CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL
MNDOT DETAIL
SHEET 2

DISCIPLINE: TRAFFIC

SHEET NAME: W0-TFC-SIG-DTL - 03

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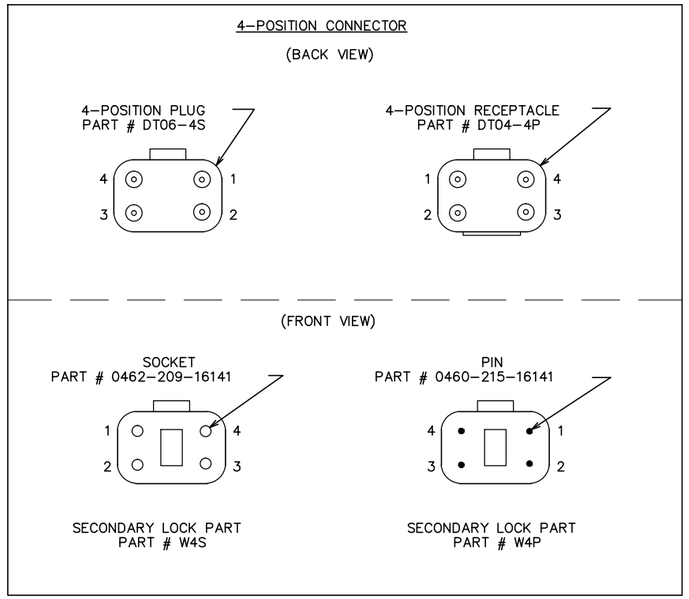

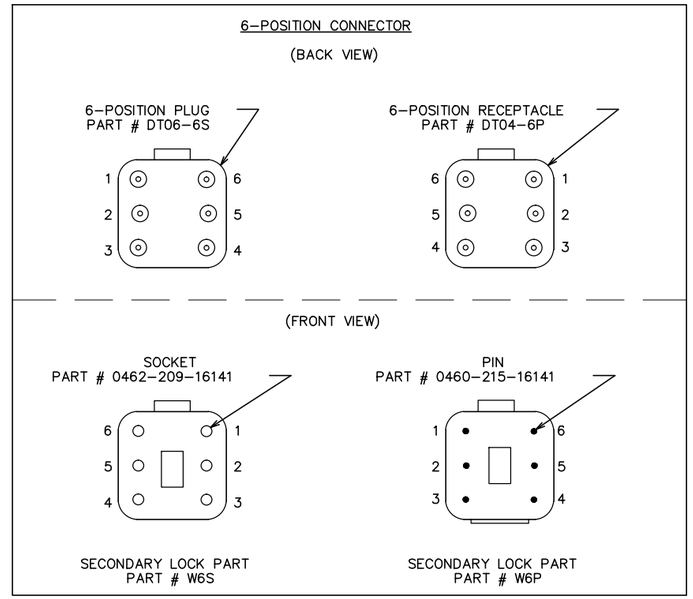

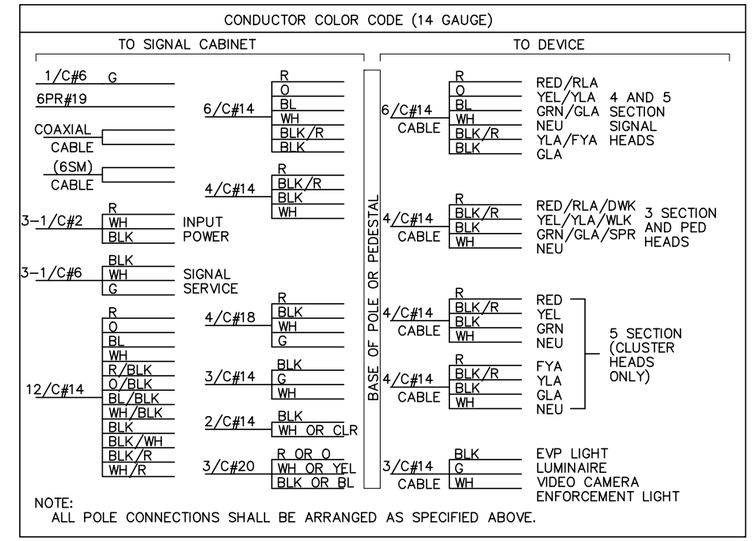

4 Position DT Connector			(3 Section Head/DWK/WLK)
Wire to Control Cabinet	Connector pin #	Wire to Signal Indication	Signal Indication
R or R/BLK or BLK	1	R	RED or DWK
O or O/BLK or BLK/WH or BLK	2	BLK/R	YEL or WLK
BL or BL/BLK or BLK/R or BLK	3	BLK	GRN or SPR
WH or WH/BLK or WH/R	4	WH	NEU

6 Position DT Connector			(4 and 5 Section Heads)
Wire to Control Cabinet	Connector pin #	Wire to Signal Indication	Signal Indication
R	1	R	RED
O	2	O	YEL
BL	3	BL	GRN
WH	4	WH	NEU
O/BLK or BLK/R (6/C)	5	BLK/R	YLA or FYLA
BL/BLK or BLK (6/C)	6	BLK	GLA

WIRE SPECIFICATION CHART		
Type	Name	Specification Number
1/C#2	Power Conductors	3815.2B.1
1/C#6	Power Conductors	3815.2B.1
1/C#6 INS.GR.	Grounding Conductors	3815.2B.5
2/C#14	Loop Detector Lead-In Cable	3815.2C.4
3/C#14	Signal Control Cable	3815.2C.3
4/C#14	Signal Control Cable	3815.2C.3
6/C#14	Signal Control Cable	3815.2C.3
12/C#14	Signal Control Cable	3815.2C.3
6PR#19	Telephone Cables Outdoor	3815.2C.6.b
3/C#20	EVP Detector Cable	3815.2C.5

4 Position DT Connector (Used with 3 Conductor Cable Only)			(EVP LHT/LUM/ VID CAM/ENF LHT)
Wire to Control Cabinet	Connector pin #	Wire to Signal Indication	Signal Indication
BLK	1	BLK	EVP LHT or LUM or RED or YEL or VID CAM or ENF LHT
(Not Used)	2	(Not Used)	(Not Used) (See Note #8)
G	3	G	EQ.G
WH	4	WH	NEU

WIRE COLOR CODE KEY	
R	Red
O	Orange
BL	Blue
WH	White
BLK	Black
BRN	Brown
CL	Clear
G	Green
R/BLK	Red with Black Stripe
O/BLK	Orange with Black Stripe
BL/BLK	Blue with Black Stripe
WH/BLK	White with Black Stripe
WH/R	White with Red Stripe
BLK/WH	Black with White Stripe
BLK/R	Black with Red Stripe

4 Position DT Connectors (Use Two Connectors for 5 Section FYA Cluster Heads)			
12 Conductor Wire to Control Cabinet	Connector pin #	4 Conductor to Signal Indication	Signal Indication
R	1	R	RED
O	2	BLK/R	YEL
BL	3	BLK	GRN
WH	4	WH	NEU
R/BLK	1	R	FYA
O/BLK	2	BLK/R	YLA
BL/BLK	3	BLK	GLA
WH/BLK	4	WH	NEU

NOTES:

1. DT04-P RECEPTACLE SHALL BE TERMINATED TO THE WIRING HARNESS RUNNING FROM THE BASE/JUNCTION BOX OF THE POLE TO SIGNAL INDICATIONS.
2. DT06-_S PLUG SHALL BE TERMINATED TO THE CABLES RUNNING FROM THE TRAFFIC SIGNAL CABINET TO THE BASE/JUNCTION BOX OF THE POLE.
3. THERE SHALL BE A MINIMUM OF 24 INCHES OF SLACK ON EACH CABLE IN EVERY POLE BASE /JUNCTION BOX.
4. STRIP A MAXIMUM OF 6 INCHES OF THE OUTER JACKET OF EACH SIGNAL CABLE.
5. STRIP .250 INCHES OF INSULATION FROM EACH INDIVIDUAL CONDUCTOR.
6. CRIMP PINS OR SOCKETS USING RATCHETING TYPE CRIMPING TOOL HDT-48-00. NO OTHER CRIMPING TOOL WILL BE ALLOWED.
7. WIRES MUST BE TERMINATED AS DETAILED IN TABLES DEPENDING ON WIRE COUNT.
8. ANY UNUSED PIN MUST HAVE A SEALING PLUG PLACED IN BOTH THE PLUG & RECEPTACLE (PART # 114017).
9. LABEL EACH HALF OF THE CONNECTOR (PLUG AND RECEPTACLE) WITH THE DEVICE DESIGNATION (AS INDICATED IN THE WIRING DIAGRAM) USING A PERMANENT BLACK MARKER.

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NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

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METROPOLITAN COUNCIL SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL
MNDOT DETAIL
SHEET 3

DISCIPLINE: TRAFFIC
SHEET NAME: W0-TFC-SIG-DTL - 04

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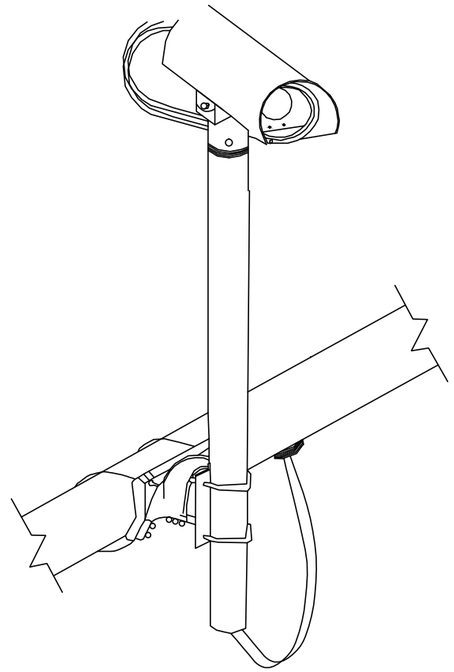
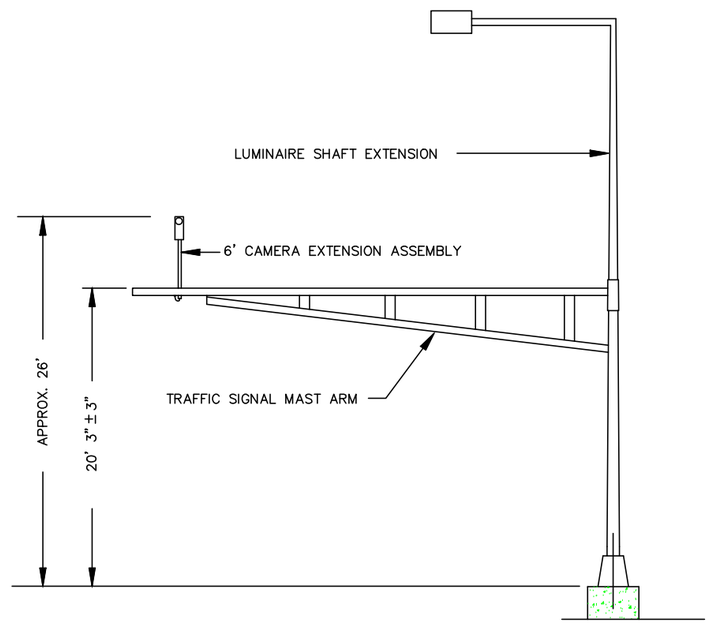
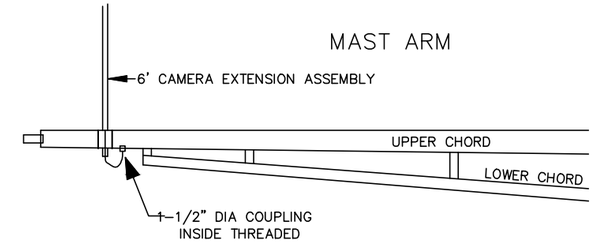


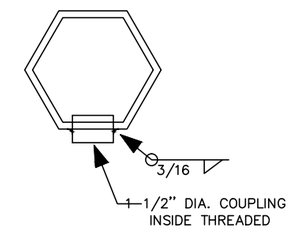
MAST ARM CAMERA INSTALLATION

TYPICAL MAST ARM CAMERA MOUNTING DETAILS



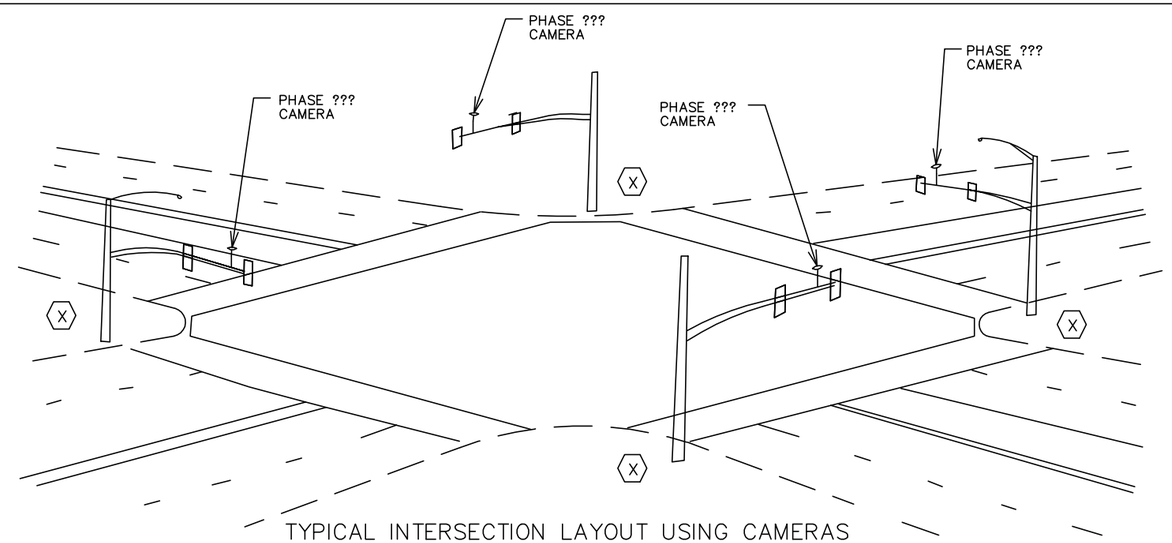


UPPER CHORD SECTION



NOTES:

1) ALL CAMERA DETECTION EQUIPMENT SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR.
2) IT IS DESIRABLE FOR CABLES BETWEEN THE CAMERA AND THE TRAFFIC SIGNAL CONTROL CABINET TO BE CONTINUOUS, HOWEVER, A SPLICE (APPROVED FOR OUTDOOR USE) WILL BE ALLOWED IN THE TRANSFORMER BASE OF THE SIGNAL POLE.
3) CAMERA DETECTOR CABLES SHALL BE RUN THROUGHOUT INSIDE OF POLE AND MAST ARM OVER TO CAMERA (NO SPLICE).
4) CABLES FOR CAMERA OPERATION SHALL BE AS INDICATED IN THE SPECIAL PROVISIONS AND SHALL BE IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF THE MANUFACTURER OF THE VIDEO DETECTION SYSTEM USED.
5) WHERE THE CABLES ARE ROUTED THROUGH THE MAST ARM, PROVIDE BUSHINGS TO PROTECT THE CABLES.
6) THE 6-FOOT CAMERA MOUNTING EXTENSION ASSEMBLY SHALL CONSIST OF A MAST ARM MOUNTING BRACKET THAT IS CONSTRUCTED OF CAST ALUMINUM. THE MAST ARM MOUNTING BRACKET SHALL BE ATTACHED TO THE MAST ARM WITH STAINLESS STEEL STRAPS, USING STAINLESS STEEL MOUNTING HARDWARE.
7) A 1 1/2" HALF COUPLING, 1 1/2" PIPE NIPPLE AND CONDUIT OUTLET BODY FOR CAMERA CABLES SHALL BE F&I ON THE UNDER SIDE OF MAST ARM SEE SIGNAL LAYOUT FOR LOCATION OF HUB.



TYPICAL INTERSECTION LAYOUT USING CAMERAS
(DRAWING NOT TO SCALE)

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METROPOLITAN COUNCIL SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL
MNDOT DETAIL
SHEET 4

DISCIPLINE: TRAFFIC

SHEET NAME: W0-TFC-SIG-DTL - 05

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ABBREVIATIONS
WIRING DIAGRAM LEGEND

●	DENOTES TAP OF CABLED CONDUCTOR OR PARALLELING OF CABLED CONDUCTORS WITH TAPS AS INDICATED BY THE WIRING DIAGRAM
ø	PHASE
2–1	SIGNAL PHASE AND FACE NUMBER
RED	RED
YEL	YELLOW
GRN	GREEN
RLTA	RED LEFT TURN ARROW
YLTA	YELLOW LEFT TURN ARROW
FYLTA	FLASHING YELLOW LEFT TURN ARROW
GLTA	GREEN LEFT TURN ARROW
RRTA	RED RIGHT TURN ARROW
YRTA	YELLOW RIGHT TURN ARROW
FYRTA	FLASHING YELLOW RIGHT TURN ARROW
GRTA	GREEN RIGHT TURN ARROW
DW	DON'T WALK
W	WALK
NEU	NEUTRAL
SPARE	SPARE CONDUCTOR
EQG	EQUIPMENT GROUND
○	EQUIPMENT GROUND CONNECTION
PB	PUSH BUTTON
IND	INDICATOR
EVP	EMERGENCY VEHICLE PREEMPTION
PED	PEDESTRIAN INDICATION
LUM	LUMINAIRE
CAC	CONTROLLER AND CABINET
SP	SERVICE PANEL
SOP	SOURCE OF POWER
HH	HANDHOLE
MA	MAST ARM
SA	SIGNAL ASSEMBLY
FYEL	FLASHING YELLOW
D_	DETECTOR LOOP (_ DENOTES PHASE)
———	NEUTRAL CONDUCTOR
— — —	INPLACE STRUCTURE
—— ——	INPLACE CONDUCTOR OR CONDUIT

SIGNAL PLAN LAYOUT LEGEND

SP, CAC	CONTROLLER CABINET AND BATTERY BACK–UP READY SERVICE PANEL WITH METER AND DISCONNECT ON ONE CONCRETE PAD
SOP	SOURCE OF POWER PAD MOUNTED POLE MOUNTED
HH	PVC HANDHOLE WITH METAL COVER
MA	MAST ARM SIGNAL POLE WITH OPTIONAL LUMINAIRE SHAFT EXTENSION AS NOTED
	MAST ARM SIGNAL POLE UPRIGHT ONLY (NO MAST ARM) WITH OPTIONAL LUMINAIRE SHAFT EXTENSION AS NOTED
SA	SIGNAL ASSEMBLY PEDESTAL MOUNT
PBS	APS PUSH BUTTON STATION
SV	SIGNAL INTERCONNECT SPLICE VAULT
	VIDEO DETECTOR
	LUMINAIRE
	EMERGENCY VEHICLE PREEMPTION (EVP) ONE–WAY
	SIGNAL FACE WITH BACKGROUND SHIELD
	PEDESTRIAN INDICATION
2–1	SIGNAL PHASE AND FACE NUMBER
=======	RIGID STEEL CONDUIT (RSC)
=======	NON–METALLIC CONDUIT (NMC) HIGH DENSITY POLYETHYLENE (HDPE)
1	PROPOSED SIGNAL STRUCTURE NUMBER
	AUTOMATIC GATE
	OCS POLE

CAC	INPLACE CONTROLLER AND CABINET
SP	INPLACE SERVICE PANEL WITH METER AND DISCONNECT
SOP	INPLACE SOURCE OF POWER PAD MOUNTED POLE MOUNTED
HH	INPLACE HANDHOLE
MA, SA	INPLACE MAST ARM OR PEDESTAL
– – – – – – –	INPLACE CONDUIT
	INPLACE EMERGENCY VEHICLE PRE–EMPTION ONE–WAY
	INPLACE EMERGENCY VEHICLE PRE–EMPTION LIGHT
A	INPLACE SIGNAL STRUCTURE NUMBER
	INPLACE LUMINAIRE
	INPLACE PEDESTRIAN INDICATION

THIS DETAIL APPLIES TO SYSTEMS "G", "K", "M", "O", AND "P"

DRAFT-WORK IN PROCESS

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AECOM SRF Consulting Group, Inc. METROPOLITAN COUNCIL SOUTHWEST Green Line LRT Extension

60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL
HENNEPIN COUNTY DETAIL
LEGEND AND ABBREVIATIONS

DISCIPLINE: TRAFFIC
SHEET NAME: W0-TFC-SIG-DTL - 06

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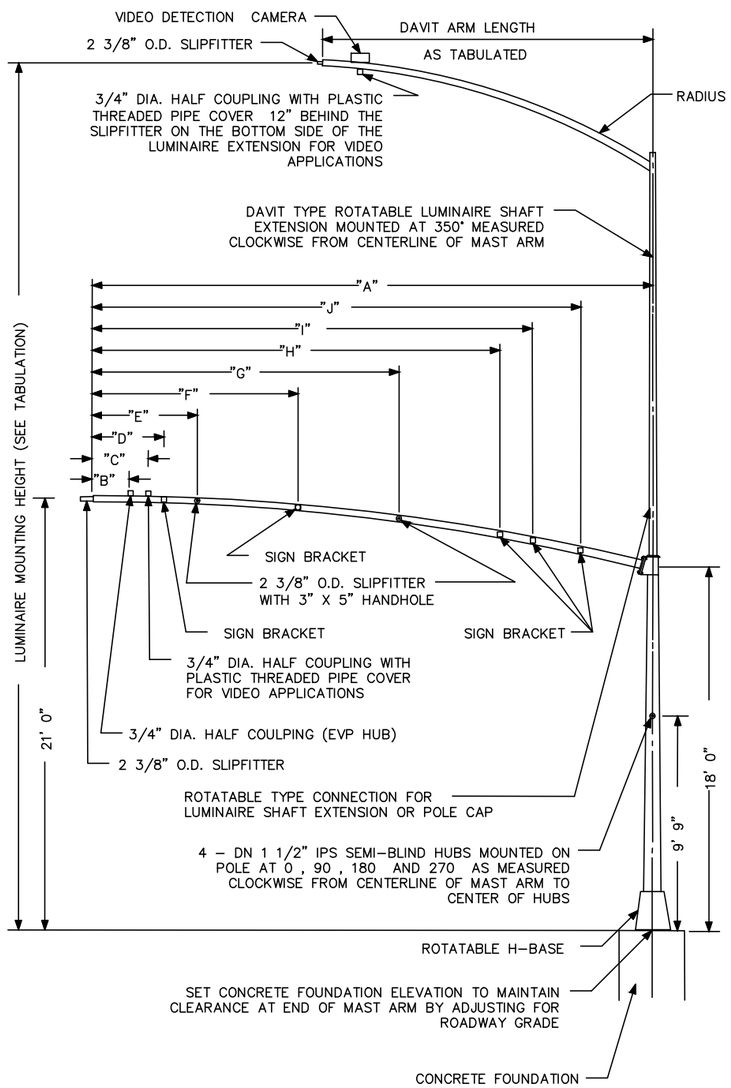
CLASSIC HEAVY MAST ARM SIGNAL POLE AND ROTATABLE LUMINAIRE SHAFT EXTENSION (NO SCALE, SEE SPECIAL PROVISIONS)



NOTES:

1.) POLE SHAFT SHALL BE BACK RAKED TO SET PLUMB UNDER NORMAL LOAD.

2.) SEE SPECIAL PROVISIONS FOR PAINTING AND GALVANIZING REQUIREMENTS OF MAST ARM SIGNAL POLES.

MAST ARM POLE MOUNTING DETAILS

	POLE	MAST ARM DIMENSIONS "A" MAST ARM	"B" EVP HUB	"D" SIGN	"E" SIG. HEAD	"F" SIGN	"G" SIG. HEAD	"H" SIGN	"I" SIGN	"J" SIGN	LUMINAIRE MOUNTING HEIGHT	DAVIT ARM LENGTH
SYS "G"	MA-A											
	MA-B	INPLACE	INPLACE	INPLACE	INPLACE						INPLACE	INPLACE
	MA-C (1)	55' (1)	6'		11'			(2)				
	MA-D	INPLACE	INPLACE		INPLACE						INPLACE	INPLACE
SYS "K"	MA-1	30'	3'								40'	8'
	MA-2	25'	3'					9'	12'		40'	8'
	MA-3	20'	3'					7'	11'		40'	8'
	MA-5	30'	3'					13'	17'		40'	8'
SYS "M"	MA-A	INPLACE	INPLACE		INPLACE		INPLACE	INPLACE			INPLACE	INPLACE
	MA-1 (3)	40' (3)	6'		11'			(4)			40'	9'
	MA-B	INPLACE	INPLACE		INPLACE		INPLACE	INPLACE				
	MA-3 (6)										40'	9'
SYS "O"	MA-1	55'	3'		11'		23'	35.5'	38.5'		40'	8'
	MA-2	25'	3'					13.75'	16.75'	19.75'	40'	8'
	MA-3 (7)	45'	3'		10'		22'	31.5'	34.5'		40'	8'
	MA-3 (8)	45'										
	MA-4	15'	3'					5.75'	8.75'	11.75'	40'	8'
SYS "P"	MA-A	20'	3'		8'			13.25'	16.25'	19.25	40'	8'
	MA-B	35'	3'		11'		23'	28'	31'		40'	8'
	MA-C	30'	3'		10'			15.25'	18.25	21.25'	40'	8'
	MA-D	50'	3'		11'		23'	32'	35'		40'	8'

(1) INPLACE FOUNDATION AND POLE. F&I-TYPE A-55 MAST ARM
(2) SEE SHEET 104 FOR MAST ARM MOUNTED SIGN DETAILS.
(3) F.&I. PA100 POLE FOUNDATION TYPE PA100-A-40-D40-9 (DAVIT AT 350 DEG)
(4) SEE SHEET 121 FOR MAST ARM MOUNTED SIGN DETAILS.
(5) "BLANK-OUT SIGN". SEE SPECIAL PROVISIONS.
(6) F & I PA90 POLE FOUNDATION, TYPE PA90-A-35-D40-9 (DAVIT AT 350 DEG)
(7) MAST ARM AT 0 DEG
(8) MAST ARM AT 270 DEG

DRAFT-WORK IN PROCESS

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

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60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL
HENNEPIN COUNTY DETAIL
SHEET 1

DISCIPLINE: TRAFFIC
SHEET NAME: W0-TFC-SIG-DTL - 07

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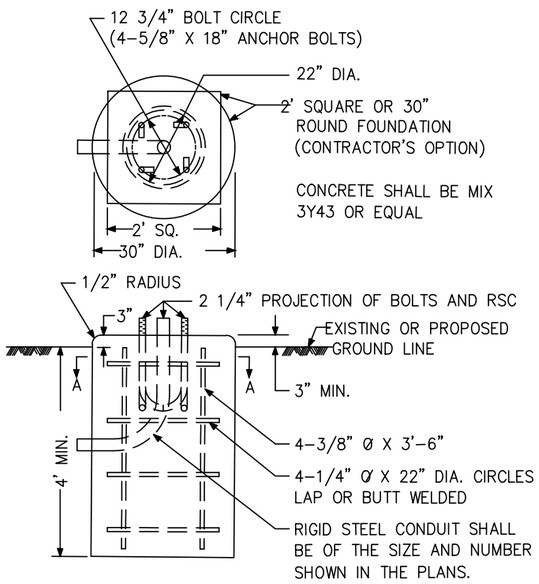
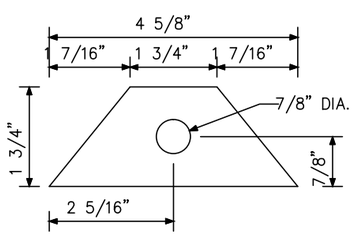
SIGNAL ASSEMBLY FOUNDATION
(NO SCALE)

SEC. A–A



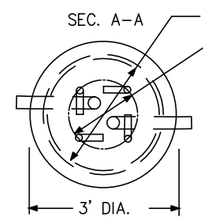
NOTE:
STEEL REINFORCEMENT SHALL BE DEFORMED BARS.
THE REINFORCEMENT SHALL BE SECURELY
FASTENED OR WELDED TOGETHER.

SIGNAL ASSEMBLY FLAT WASHER TYPICAL
(NO SCALE)



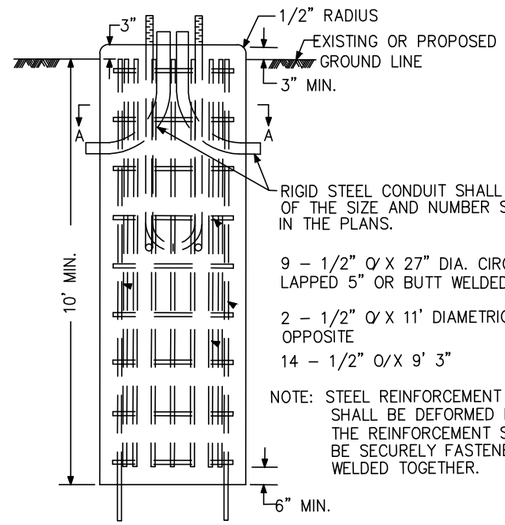
NOTE:
FLAT WASHERS SHALL BE 1/4" THICK A36
GALVANIZED STEEL.

MAST ARM SIGNAL POLE FOUNDATION
(NO SCALE)



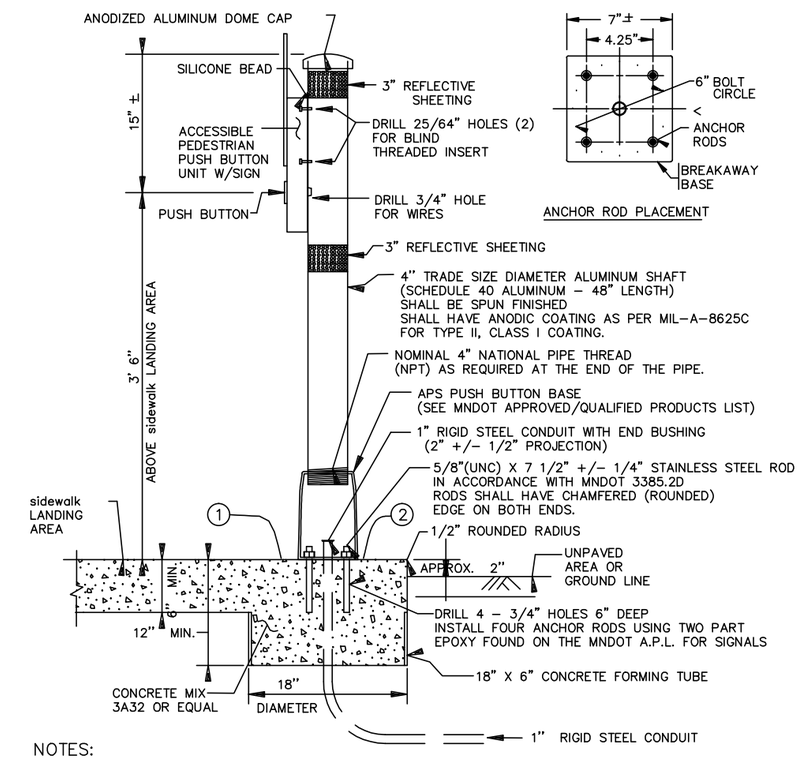
CONCRETE SHALL BE MIX 3Y43 OR EQUAL

MINIMUM ANCHOR BOLTS:
4 – 2" X 96"
PER ASTM F1554, GRADE 105,
EACH COMPLETE WITH LEVELING NUTS.



NOTE: STEEL REINFORCEMENT
SHALL BE DEFORMED BARS.
THE REINFORCEMENT SHALL
BE SECURELY FASTENED OR
WELDED TOGETHER.

APS PUSH BUTTON STATION
(NO SCALE)



NOTES:

- PLACEMENT AND ORIENTATION OF THE PUSH BUTTON STATION IS CRITICAL. MOUNT THE BUTTON SO THAT THE FACE IS PARALLEL WITH THE ASSOCIATED CROSSWALK. SCREW IN POST TO A TIGHTENED POSITION BEFORE MOUNTING ACCESSIBLE PEDESTRIAN PUSH BUTTON UNIT TO THE POST.
- ORIENT ACCESS OPENING ON THE BREAKAWAY PEDESTAL DIRECTLY BELOW THE APS BUTTON.
- PLUMB THE PUSH BUTTON STATION WITH LEVELING SHIMS IN ACCORDANCE WITH STANDARD PLATE 8129.
- BLIND THREADED INSERTS (RIVET NUT) MUST BE INSERTED USING MANUFACTURERS SPECIFIC INSTALLATION TOOL. NO OTHER METHOD OF INSTALLATION IS ACCEPTABLE.
- BLIND THREADED INSERTS SHALL BE ZINC PLATED STEEL WITH 1/4 – 20 UNC THREADS. INSERT SHALL BE SUITABLE FOR USE ON A MOUNTING SURFACE WALL THICKNESS OF .337". APPROVED BLIND THREADED INSERTS CAN BE FOUND ON THE MN/DOT QUALIFIED PRODUCTS LIST FOR SIGNALS.
- A.P.S. MOUNTING BOLTS SHALL BE 1/4 – 20 STAINLESS STEEL. APPLY BRUSH ON ANTI SEIZE COMPOUND TO BOLTS PRIOR TO ASSEMBLY.
- APPLY A BEAD OF 100% SILICONE SEALANT ALONG THE TOP OF THE PUSH BUTTON UNIT WHERE IT COMES IN CONTACT WITH THE 4" POST.
- THE REFLECTIVE SHEETING SHALL BE WHITE AT INTERSECTION CORNERS AND SHALL BE YELLOW WHEN USED IN CENTER MEDIANS. SEE MN/DOT SIGNING QUALIFIED PRODUCTS LIST (QPL) FOR APPROVED TUBE DELINEATOR SHEETING.
- ANTI–SEIZE COMPOUND MUST BE USED ON ALL THREADED BOLTS WHEN INSTALLING PEDESTRIAN PUSH BUTTON STATIONS.

(1) THE PUSH BUTTON STATION FOUNDATION IS CONSTRUCTED AS PART OF THE SIDEWALK. INCREASE THE SIDEWALK THICKNESS TO 12" THICK (MIN.) TO PROVIDE FOR THE PUSH BUTTON STATION FOUNDATION.

(2) ALL JOINTS SHALL BE A MINIMUM OF 9" FROM THE CENTER OF THE PUSH BUTTON FOUNDATION.

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60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL
HENNEPIN COUNTY DETAIL
SHEET 2

DISCIPLINE: TRAFFIC
SHEET NAME: W0-TFC-SIG-DTL - 08

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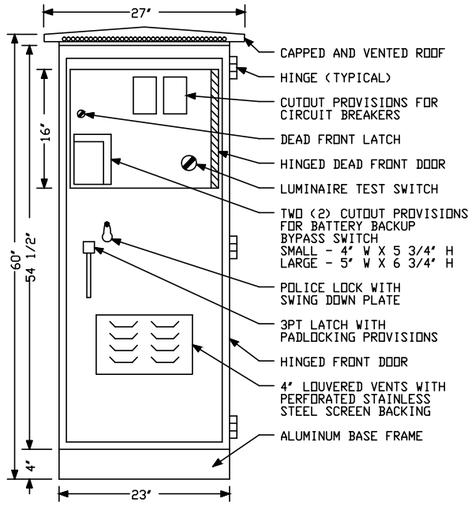
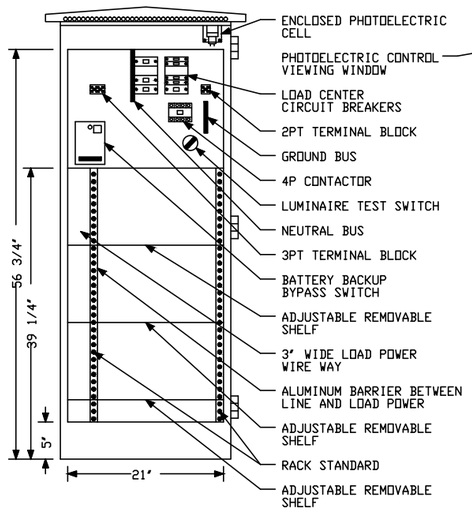
TYPICAL SERVICE CABINET DETAILS

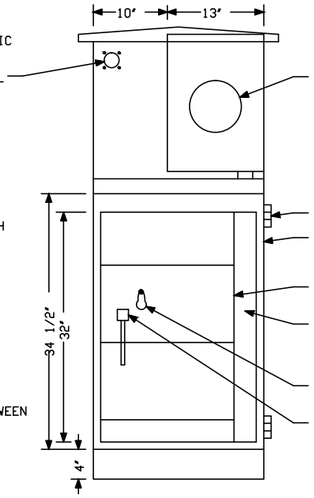
FRONT ELEVATION



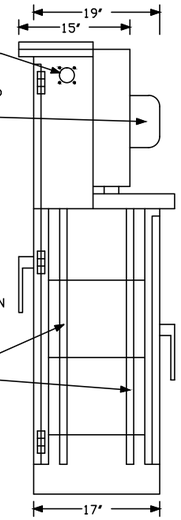
FRONT ELEVATION (DOOR REMOVED)



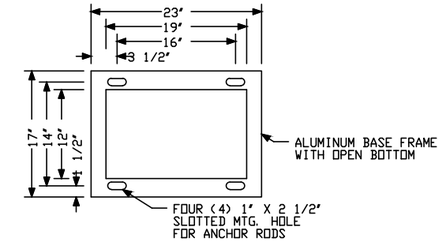
BACK ELEVATION



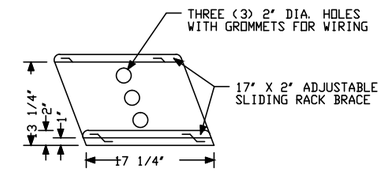
RIGHT SIDE ELEVATION



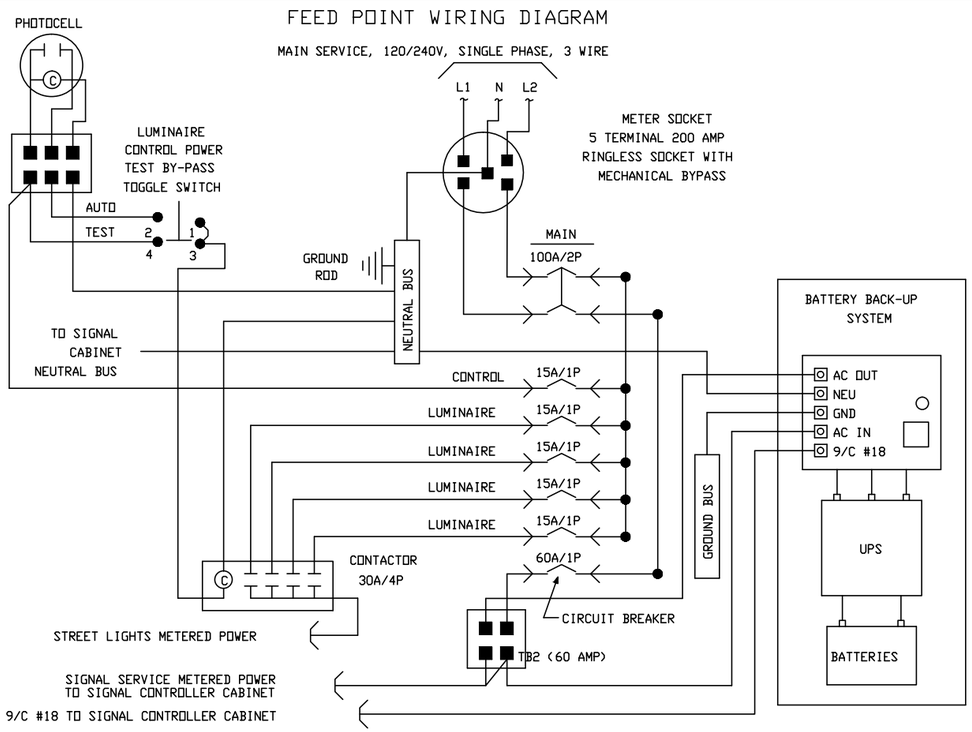
SERVICE CABINET BASE DETAILS



SERVICE CABINET SHELF DETAILS



FEED POINT WIRING DIAGRAM



CONSTRUCTION NOTES

1. EACH SERVICE CABINET SHALL BE FABRICATED FROM 1/8" ALUMINUM FOR OUTDOOR WEATHERPROOF SERVICE. AFTER FABRICATION, THE SERVICE CABINET, BOTH INSIDE AND OUTSIDE, SHALL BE PROTECTED WITH AN EXTERNAL THIRTY (30) MINUTE CLEAR ANODIZED FINISH.
2. ALL HINGES, HINGE PINS AND LOCKS SHALL BE OF NON-CORRODING CONSTRUCTION.
3. THE SERVICE CABINET DOORS SHALL BE ATTACHED TO THE ENCLOSURE WITH NON-CORRODING TAMPERPROOF CARRIAGE BOLTS AND SECURED WITH A STANDARD POLICE LOCK COMPLETE WITH A NUMBER 2 KEY AND SWING DOWN PLATE. PROVIDE ONE (1) KEY.
4. BOTH DOOR OPENINGS SHALL BE PROVIDED WITH A NEOPRENE GASKET TO FORM A COMPLETE SEAL WITH THE ENCLOSURE.
5. PROVIDE A 2" DIA. WEATHERPROOF AND VANDAL RESISTANT CLEAR PLASTIC PHOTOELECTRIC CONTROL VIEWING WINDOW. LOCATED IN THE TOP SECTION OF THE CABINET AND ON THE LEFT OR RIGHT SIDE OF THE CABINET, ORIENTED TO ELIMINATE INTERFERENCE BY MANMADE LIGHT SOURCES AND SHALL NORMALLY FACE NORTH OR EAST.
6. THE CIRCUIT BREAKERS SHALL BE 120/240 VOLT AC, 60 HZ, AND SHALL BE CLEARLY MARKED WITH THE "ON" AND "OFF" POSITIONS AND IDENTIFIED WITH THE LOAD WHICH IT IS CARRYING (E.G. "SIGNALS", "LUMINAIRE WITH NUMBER" OR "FUTURE"). ALL CIRCUIT BREAKERS SHALL BE CLEARLY MARKED IN A MANNER THAT WILL NOT DETERIORATE WITH MOISTURE OR AGE.
7. SHORT CIRCUIT RATING - 10,000 AIC SYMMETRICAL.
8. PROVIDE A PHOTOELECTRIC CONTROL CELL AND LUMINAIRE TEST SWITCH WITHIN THE CABINET.
9. PROVIDE CLEARANCE TO INSTALL OR REMOVE THE PHOTOELECTRIC CONTROL CELL.
10. ALL CONDUIT ENTERING THE FOUNDATION SHALL BE SEALED WITH AN APPROVED DUCT SEAL.
11. EACH SERVICE CABINET SHALL BE U.L. LISTED AND LABELED AS "SUITABLE FOR USE AS SERVICE ENTRANCE EQUIPMENT" AND APPROVED FOR OUTDOOR USE.
12. EACH SERVICE CABINET SHALL BE WELDED TO THE BASE IN ACCORDANCE WITH U.L. STANDARDS.
13. SEE THE INTERSECTION LAYOUT FOR THE REQUIRED NUMBER OF LUMINAIRES AT EACH INTERSECTION.
14. A 1/2" THICK SOLID BUTYL RUBBER GASKET SHALL BE PROVIDED BETWEEN THE CONCRETE FOUNDATION AND THE SERVICE CABINET. THE GASKET SHALL CONSIST OF FOUR (4) STRIPS, SIZED TO FIT THE BASE INCLUDING CORNER HOLE/SLOTS TO ACCOMMODATE THE ANCHOR RODS. PROVIDE A 1/2" GAP FOR DRAINAGE.
15. UNISTRUT RAILS (#A400EA OR EQUIVALENT) USED FOR SHELF SUPPORTS FOR THREE (3) ADJUSTABLE AND REMOVABLE SHELVES SHALL BE MOUNTED TO THE SIDES OF THE SERVICE CABINET.
16. THE 19" RACK IN THE BASE OF THE CABINET SHALL BE CONSTRUCTED TO TIA/EIA 310D STANDARDS.
17. SEE THE EQUIPMENT PAD DETAIL SHEET FOR TYPICAL ANCHOR ROD DETAILS.
18. THE SERVICE PANEL SHALL BE SUPPLIED AND INSTALLED WITH BATTERY BACK-UP EQUIPMENT.

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NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

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SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL
HENNEPIN COUNTY DETAIL
SHEET 3

DISCIPLINE: TRAFFIC

SHEET NAME: W0-TFC-SIG-DTL - 09

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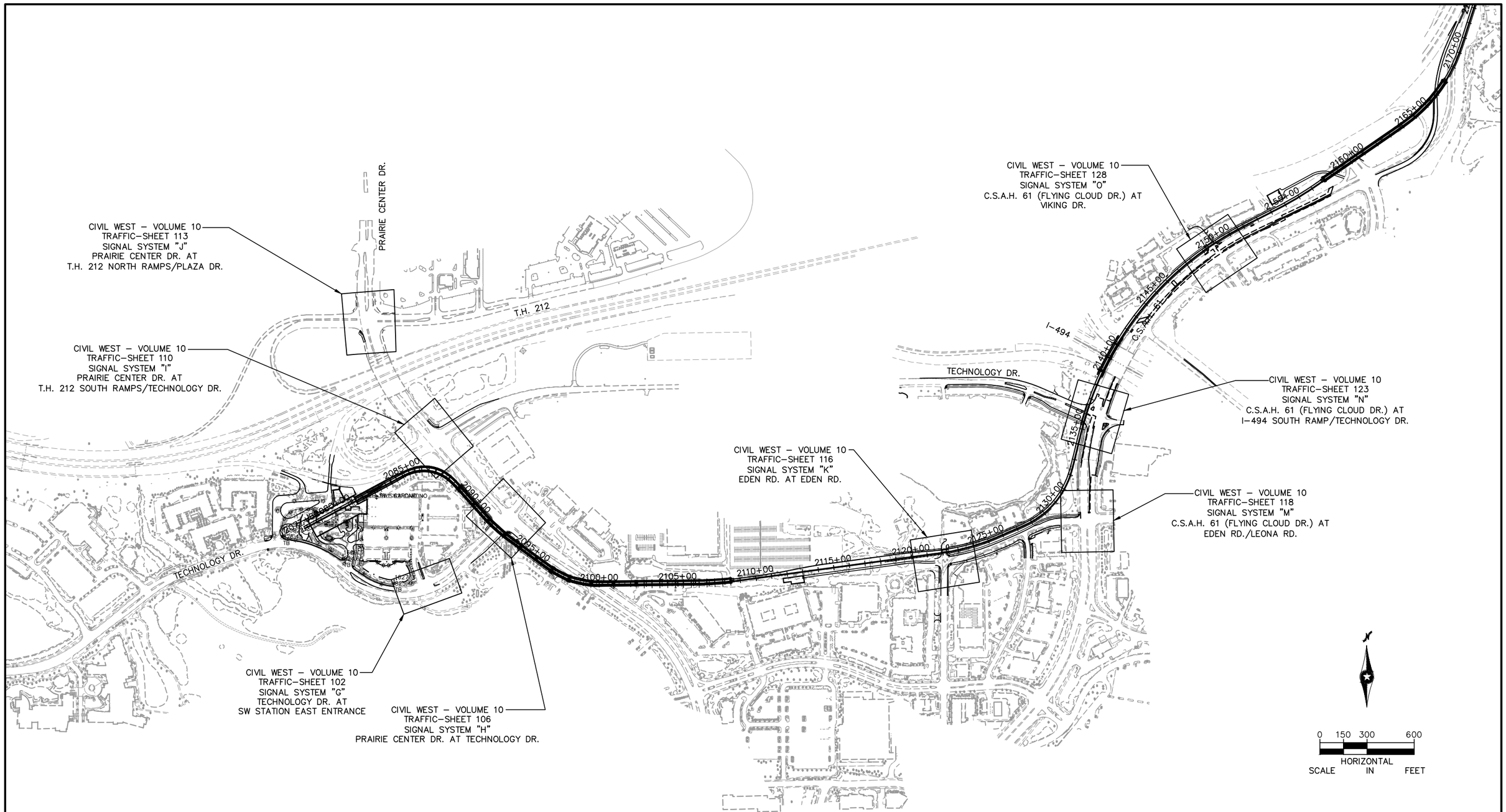

DRAFT-WORK IN PROCESS

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

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METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10 TRAFFIC SIGNAL PLAN SHEET LAYOUT

DISCIPLINE: TRAFFIC

SHEET NAME: W1-TFC-SIG-LAY - 001

SHEET 100 OF 152

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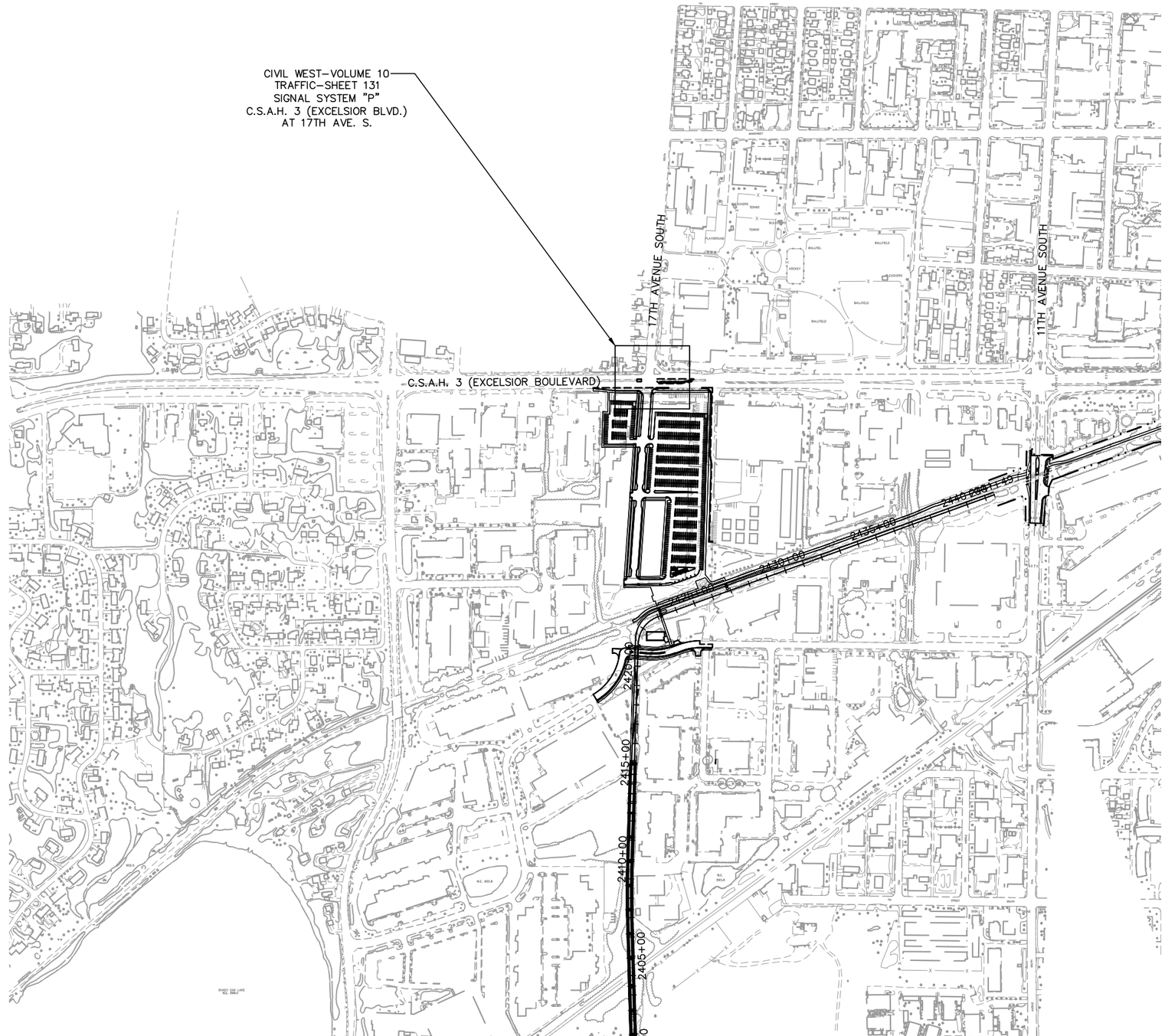

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NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

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METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL
PLAN SHEET LAYOUT

DISCIPLINE: TRAFFIC

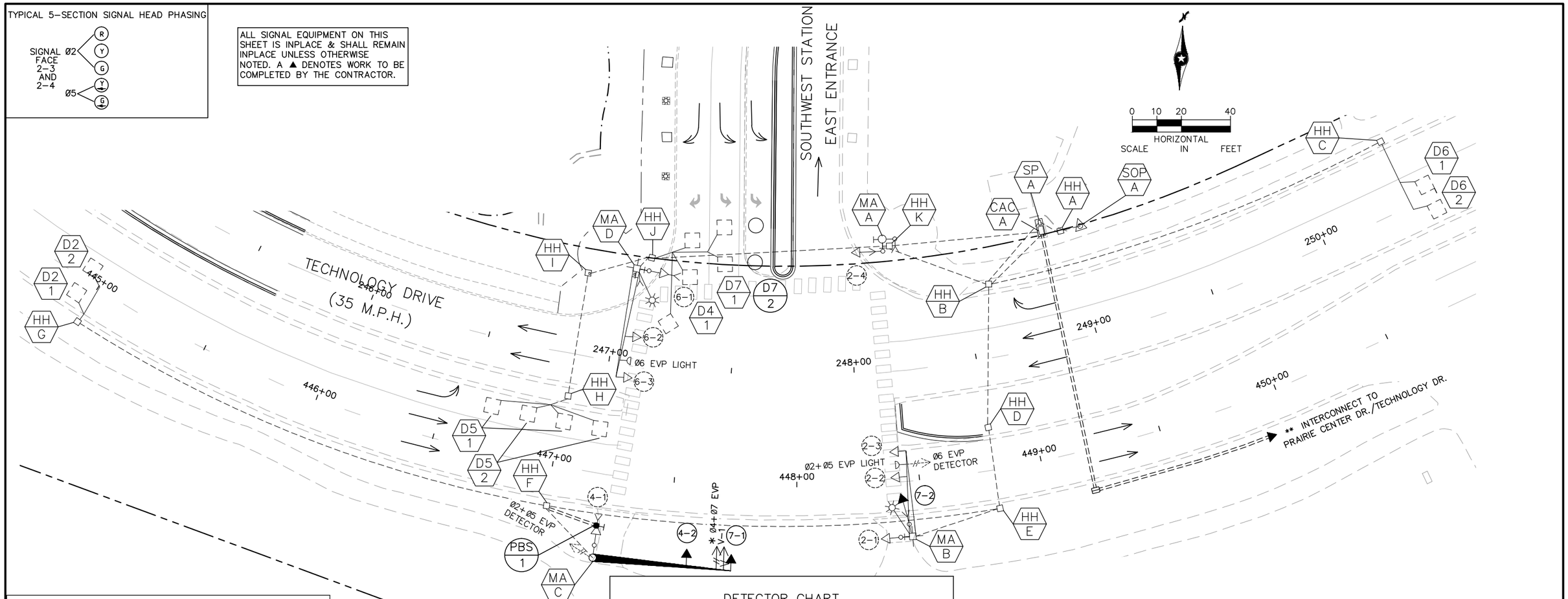
SHEET NAME: W3-TFC-SIG-LAY - 003

SHEET 101 OF 152

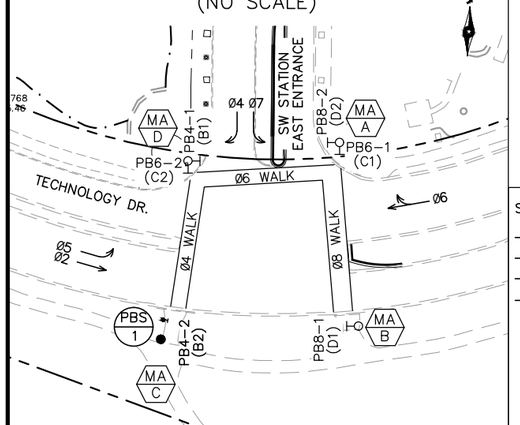
Sep, 21 2015 11:33 am V:\3400_ADC\CAD\SEGMENT W3\PLAN SHEETS\TRAFFIC\W3-TFC-SIG-LAY.dwg By: kmcclement

TYPICAL 5-SECTION SIGNAL HEAD PHASING

ALL SIGNAL EQUIPMENT ON THIS SHEET IS INPLACE & SHALL REMAIN INPLACE UNLESS OTHERWISE NOTED. A ▲ DENOTES WORK TO BE COMPLETED BY THE CONTRACTOR.



CONTROLLER PHASING LAYOUT
(NO SCALE)



SIGNAL SYSTEM OPERATION

- SIGNAL SYSTEM FLASH MODE IS ALL RED.
- PHASES 2 AND 6 ARE ON VEHICLE SOFT RECALL.
- PHASE 5 IS PROTECTED-PERMISSIVE.
- PHASE 7 IS PROTECTED.

APS ADDRESS LABELING:

PHASE 4 = B
PHASE 6 = C
PHASE 8 = D

DETECTOR CHART

	NUMBER	SIZE (FT)	CAMERA	FUNCTION	LOCATION
	D2-1,D2-2	INPLACE		(1)	INPLACE
	D4-1	INPLACE		(7)	INPLACE
	D5-1	INPLACE		(1)	INPLACE
	D5-2	INPLACE		(1)	INPLACE
	D6-1,D6-2	INPLACE		(1)	INPLACE
◎	D7-1	INPLACE		(1)	INPLACE
▲	D7-2		V-1	(1)	5', 20'

-LOCATION: DISTANCE FROM CROSSWALK/STOP BAR IN FEET

◎ - EXISTING D4-2; CHANGE TO D7-1

DETECTOR FUNCTIONS:

(1) -CALL AND EXTEND

(7) - DELAY CALL - IMMEDIATE EXTEND

NOTES:

1) SEE DIVISION "SS" OF SPECIAL PROVISIONS FOR EMERGENCY VEHICLE PREEMPTION (EVP) SYSTEM, ACCESSIBLE PEDESTRIAN SIGNAL (APS) AND MATERIALS PROVIDED BY HENNEPIN COUNTY.
2) ONE APS PEDESTRIAN PUSH BUTTON WITH SIGN R10-3E (9" X 15") SHALL BE INSTALLED ON EACH SIGNAL MAST ARM AND ON EACH PUSH BUTTON STATION AS DIRECTED BY THE ENGINEER FOR OPERATION AS SHOWN IN THE PHASING LAYOUT.
3) THE CONTRACTOR SHALL PLACE COMMON BACK FILL AND RESTORE ALL DISTURBED TURF, CONCRETE, OR BITUMINOUS WALK, ETC. TO ITS ORIGINAL CONDITION OR BETTER. ALL COSTS FOR THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR REVISE SIGNAL SYSTEM (SYS) AS DIRECTED BY THE ENGINEER.
4) ALL COSTS FOR ANY REQUIRED RELOCATION OF THE EVP DETECTORS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR REVISE SIGNAL SYSTEM (SYS) AS DIRECTED BY THE ENGINEER.
5) THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE CONNECTION OF THE POWER FOR THE TRAFFIC SIGNAL SYSTEM WITH THE POWER COMPANY.
6) THE CITY WILL BE BILLED FOR ALL TRAFFIC SIGNAL SYSTEM POWER COSTS WHICH THE CITY WILL PAY TO THE POWER COMPANY. HENNEPIN COUNTY SHALL NOT BE BILLED. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE TO THE POWER COMPANY THE BILLING INFORMATION FOR THE CITY OF EDEN PRAIRIE.
7) THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION.
8) * DENOTES ITEM TO BE PAID FOR UNDER THE PAY ITEM EMERGENCY VEHICLE PREEMPTION SYSTEM (LS).
9) ** DENOTES ITEM TO BE PAID FOR AS PART OF THE SIGNAL INTERCONNECT SYSTEM. SEE SIGNAL INTERCONNECT PLANS FOR ADDITIONAL INFORMATION.

DRAFT-WORK IN PROCESS

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

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60% SUBMISSION - 09/28/15

METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL-SIGNAL SYSTEM "G"
TECHNOLOGY DR AT SW STATION E ENTRANCE
INTERSECTION LAYOUT

DISCIPLINE: TRAFFIC

SHEET NAME: W1-TFC-SIG-001 - 01

SHEET 102 OF 152

Sep, 21 2015 11:36 am V:\3400_ADC\CAD\SEGMENT W1\PLAN SHEETS\TRAFFIC\W1-TFC-SIG-001.dwg By: kmcclement

SIGNAL STRUCTURE LOCATIONS

NO.	LOCATION (1)	NO.	LOCATION (1)

NO.	LOCATION		MAST ARM
	FOUNDATION (1)	AIM ARM TO	
MA–C	INPLACE	XXX+XX	55'

(1) TO THE CENTER OF THE HANDHOLE OR CONCRETE FOUNDATION.

INPLACE SIGNAL STRUCTURES

NO.	REMARKS	NO.	REMARKS
HH–A	REMAIN INPLACE	CAC–A	REMAIN INPLACE
HH–B	REMAIN INPLACE	SP–A	REMAIN INPLACE
HH–C	REMAIN INPLACE		
HH–D	REMAIN INPLACE	SOP–A	REMAIN INPLACE
HH–E	REMAIN INPLACE		
HH–F	REMAIN INPLACE	MA–A	REMAIN INPLACE
HH–G	REMAIN INPLACE	MA–B	REMAIN INPLACE
HH–H	REMAIN INPLACE	MA–C	▲ REPLACE MAST ARM
HH–I	REMAIN INPLACE	MA–D	REMAIN INPLACE
HH–J	REMAIN INPLACE		
HH–K	REMAIN INPLACE		

SIGNAL INDICATIONS AND BRACKETING

SIG. POLE NO.	FACE NO.	SIGNAL FACE MOUNT	SIG. Ø	LED INDICATIONS 12" INDICATIONS RED	YEL	FYEL	GRN	PED SYM.	BRACKET MOUNTING ANGLE, TYPE AND STANDARD PLATE NO.	
MA–A	2–4	POLE MOUNT	2	○	○		○		INPLACE 270° TYPE 10B	
			5		◄—		◄—			
			6					✳		
		POLE MOUNT	8					✳	INPLACE 180° TYPE 30A	
MA–B	2–3	MAST ARM (END)	2	○	○		○		INPLACE	
			5		◄—		◄—			
	2–2	MAST ARM (MID)	6	○	○		○		INPLACE	
	2–1	POLE MOUNT	6	○	○		○		INPLACE 270° TYPE 10A	
	7–2	POLE MOUNT	7	◄—	◄—		◄—		0° PLATE 8110E TYPE 10B	▲
			8					✳(2)		
MA–C	7–1	MAST ARM (END)	7	◄—	◄—		◄—		✳✳	▲
	4–2	MAST ARM (MID)	4	●	●		●		✳✳	
	4–1	POLE MOUNT	4	○	○		○	✳	INPLACE 270° TYPE 10B	
MA–D	6–3	MAST ARM (END)	6	○	○		○		✳✳	
	6–2	MAST ARM (MID)	6	○	○		○		✳✳	
	6–1	POLE MOUNT	6	○	○		○	✳	INPLACE 270° TYPE 10B	
		POLE MOUNT	4					✳	INPLACE 0° TYPE 30A	

✳ INPLACE PEDESTRIAN INDICATION

✳✳ STRAIGHT MOUNT PLUMBIZER, SEE SPECIAL PROVISIONS.

(2) SALVAGE AND INSTALL EXISTING PEDESTRIAN INDICATION ONTO NEW TYPE 10B BRACKETING.

ALL SIGNAL EQUIPMENT ON THIS SHEET IS INPLACE & SHALL REMAIN INPLACE UNLESS OTHERWISE NOTED. A ▲ DENOTES WORK TO BE COMPLETED BY THE CONTRACTOR.

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METROPOLITAN COUNCIL SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL-SIGNAL SYSTEM "G"
TECHNOLOGY DR AT SW STATION E ENTRANCE
EQUIPMENT SCHEDULE

DISCIPLINE: **TRAFFIC**

SHEET NAME: **W1-TFC-SIG-001 - 01B**

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MAST ARM MOUNTED SIGNS									
SIGN NO	POLE NO	QTY	a	PANEL				MOUNTING		PANEL LEGEND
				SIZE		AREA	TOTAL AREA	NUMBER	SPACING (1)	
			FEET	INCH		SQFT	SQFT			
D–X	MA–C	1	28.5	102 x	18	12.75	12.75	4		TECHNOLOGY DR

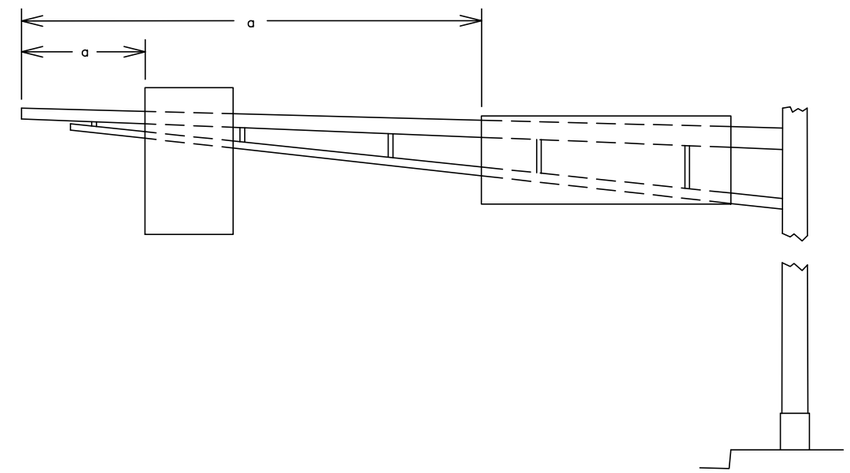
SPECIFIC NOTES:

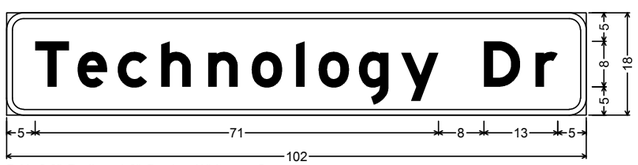
(1) SPACING BETWEEN STIFFENERS SHALL NOT EXCEED 36 INCHES AND SHALL BE UNIFORMLY SPACED. SEE STANDARD SIGNS MANUAL, PAGE 105A FOR BRACKET SPACING REQUIREMENTS.

GENERAL NOTES:

1. CORNERS OF STANDARD SIGN PANELS WITH MARGINS SHALL BE TRIMMED.
2. TYPE D SIGN PANELS EXTENDING BEYOND THE BORDER SHALL NOT BE TRIMMED.
3. FOR STRUCTURAL DETAILS OF MAST ARM MOUNTED SIGNS SEE STANDARD SIGNS MANUAL, PAGE 105A.
4. FOR TYPE D STRINGER AND PANEL JOINT DETAILS SEE STANDARD SIGNS MANUAL, PAGE 105.
5. THE MAST ARM MOUNTED SIGNS ARE INCIDENTAL.
6. AT INTERSECTIONS WITH MEDIAN WIDTHS LESS THAN 30',ONE WAY (R6–1) SIGNS SHALL NOT BE PLACED AS PART OF THE SIGNALS PLAN.

MAST ARM SIGN LOCATION





D-X; 3.0" Radius, 1.0" Border, White on Green;
[Technology Dr] E Mod;

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METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL-SIGNAL SYSTEM "G"
TECHNOLOGY DR AT SW STATION E ENTRANCE
MAST ARM SIGNING

DISCIPLINE: TRAFFIC

SHEET NAME: W1-TFC-SIG-001 - 01C

SHEET 104 OF 152

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LED SIGNAL INDICATIONS

FACE	R	Y	G	Y	G
2-1,2-2	●	●	●		
2-3,2-4	●	●	●	←	←
4-1,4-2,4-3	●	●	●		
6-1,6-2,6-3	●	●	●		

-ALL VEHICLE SIGNAL INDICATIONS SHALL BE 12"

-EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD

SIGNAL HEAD PHASING

FACE	PHASE
2-3: R, Y, G	Ø2
2-4: Y, G	Ø5

(4) PA100 POLE FOUNDATION
TYPE PA100-A-45-D40-9 (DAVIT AT 350°)
2 - ONE WAY SIGNALS OVERHEAD
(0' AND 11' FROM END OF MAST ARM)
TYPE 10B POLE MOUNTED AT 270°
TYPE 30A POLE MOUNTED AT 0°
ONE WAY EVP DETECTOR (PHASE 2+5) AND CONFIRMATORY LIGHT (PHASE 6)
LUMINAIRE - 250 WATT H.P.S.
2 - PED. PB AND SIGNS (R10-4b)
EXTEND INTO HH-9:
3" RSC
2 - 12/C #12
3 - 3/C #12
1 - 3/C #12 (LUM.)
1 - 3/C #20

(2)

(1) PA100 POLE FOUNDATION
TYPE PA100
TYPE 10B POLE MOUNTED AT ~~0°~~ 270°
TYPE 30A POLE MOUNTED AT ~~270°~~ 180°
2 - PED. PB AND SIGNS (R10-4b)
EXTEND INTO ~~HH-10~~ INPLACE HH:
3" RSC
2 - 12/C #12
2 - 3/C #12
1 - 3/C #20

(A) EQUIPMENT PAD - SEE DETAIL
CONTROLLER & CABINET
EXTEND 4" RSC INTO HH-1 WITH:
4 - 12/C #12
5 - 3/C #12
8 - 2/C #14
1 - 6PR #19 ✱
2 - 3/C #20
EXTEND 4" RSC INTO ~~HH-10~~ INPLACE HH WITH:
4 - 12/C #12
5 - 3/C #12
4 - 2/C #14
2 - 3/C #20
3" RSC STUBBED OUT (THREADED AND CAPPED BOTH ENDS)
3/4" PVC STUBBED OUT (THREADED AND CAPPED BOTH ENDS)
2" RSC TO SERVICE CABINET
2 - 1/C #6
1 - 1/C #6 INS.GR.
SERVICE CABINET TO HH-1
2" RSC
2 - 3/C #12 (LUM.)
SERVICE CABINET TO HH-11
2" RSC
3 - 1/C #2

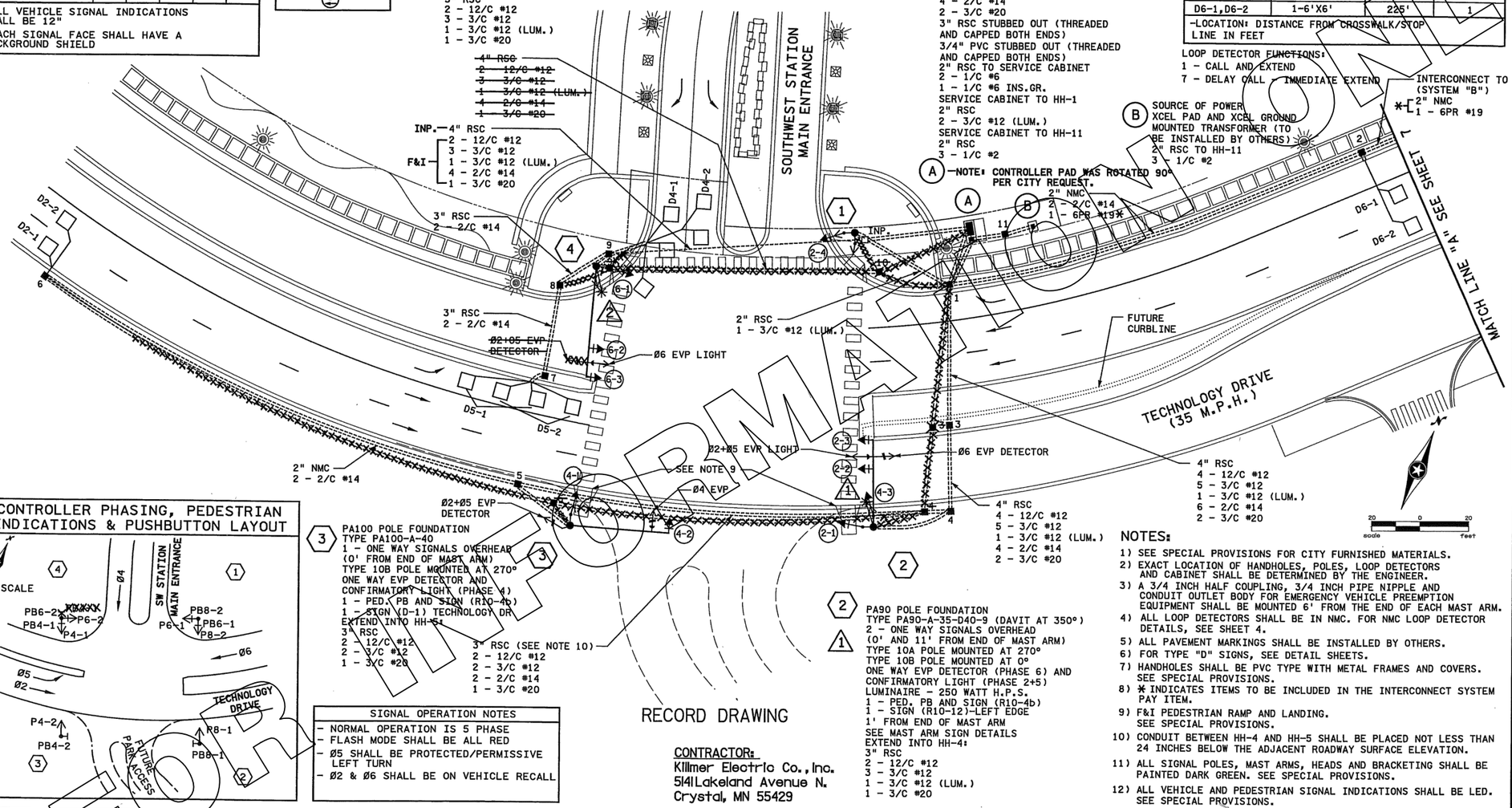
(A) -NOTE: CONTROLLER PAD WAS ROTATED 90° PER CITY REQUEST.

LOOP DETECTORS

DESIGNATION	NO. & SIZE/FT.	LOCATION	FUNCTION
D2-1,D2-2	1-6'X6'	225'	1
D4-1	3-6'X6'	-15',0',15'	7
D4-2	2-6'X6'	5',20'	1
D5-1	2-6'X6'	20',30'	1
D5-2	2-6'X6'	5',35'	1
D6-1,D6-2	1-6'X6'	225'	1

-LOCATION: DISTANCE FROM CROSSWALK/STOP LINE IN FEET

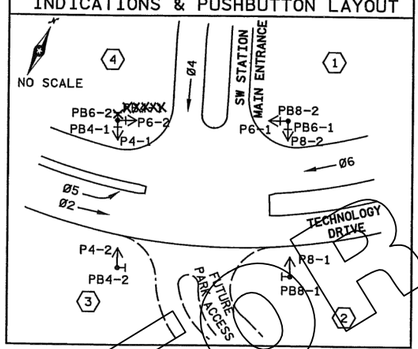
LOOP DETECTOR FUNCTIONS:
1 - CALL AND EXTEND
7 - DELAY CALL - IMMEDIATE EXTEND



(3) PA100 POLE FOUNDATION
TYPE PA100-A-40
1 - ONE WAY SIGNALS OVERHEAD
(0' FROM END OF MAST ARM)
TYPE 10B POLE MOUNTED AT 270°
ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 4)
1 - PED. PB AND SIGN (R10-4b)
1 - SIGN (D-1) TECHNOLOGY DR
EXTEND INTO HH-5:
3" RSC
2 - 12/C #12
2 - 3/C #12
1 - 3/C #20

(2)
(1) PA90 POLE FOUNDATION
TYPE PA90-A-35-D40-9 (DAVIT AT 350°)
2 - ONE WAY SIGNALS OVERHEAD
(0' AND 11' FROM END OF MAST ARM)
TYPE 10A POLE MOUNTED AT 270°
TYPE 10B POLE MOUNTED AT 0°
ONE WAY EVP DETECTOR (PHASE 6) AND CONFIRMATORY LIGHT (PHASE 2+5)
LUMINAIRE - 250 WATT H.P.S.
1 - PED. PB AND SIGN (R10-4b)
1 - SIGN (R10-12)-LEFT EDGE
1' FROM END OF MAST ARM
SEE MAST ARM SIGN DETAILS
EXTEND INTO HH-4:
3" RSC
2 - 12/C #12
3 - 3/C #12
1 - 3/C #12 (LUM.)
1 - 3/C #20

CONTROLLER PHASING, PEDESTRIAN INDICATIONS & PUSHBUTTON LAYOUT



SIGNAL OPERATION NOTES

- NORMAL OPERATION IS 5 PHASE
- FLASH MODE SHALL BE ALL RED
- Ø5 SHALL BE PROTECTED/PERMISSIVE LEFT TURN
- Ø2 & Ø6 SHALL BE ON VEHICLE RECALL

CONTRACTOR:
Killmer Electric Co., Inc.
5141 Lakeland Avenue N.
Crystal, MN 55429

NOTES:

1) SEE SPECIAL PROVISIONS FOR CITY FURNISHED MATERIALS.
2) EXACT LOCATION OF HANDHOLES, POLES, LOOP DETECTORS AND CABINET SHALL BE DETERMINED BY THE ENGINEER.
3) A 3/4 INCH HALF COUPLING, 3/4 INCH PIPE NIPPLE AND CONDUIT OUTLET BODY FOR EMERGENCY VEHICLE PREEMPTION EQUIPMENT SHALL BE MOUNTED 6' FROM THE END OF EACH MAST ARM.
4) ALL LOOP DETECTORS SHALL BE IN NMC. FOR NMC LOOP DETECTOR DETAILS, SEE SHEET 4.
5) ALL PAVEMENT MARKINGS SHALL BE INSTALLED BY OTHERS.
6) FOR TYPE "D" SIGNS, SEE DETAIL SHEETS.
7) HANDHOLES SHALL BE PVC TYPE WITH METAL FRAMES AND COVERS. SEE SPECIAL PROVISIONS.
8) ✱ INDICATES ITEMS TO BE INCLUDED IN THE INTERCONNECT SYSTEM PAY ITEM.
9) F&I PEDESTRIAN RAMP AND LANDING. SEE SPECIAL PROVISIONS.
10) CONDUIT BETWEEN HH-4 AND HH-5 SHALL BE PLACED NOT LESS THAN 24 INCHES BELOW THE ADJACENT ROADWAY SURFACE ELEVATION.
11) ALL SIGNAL POLES, MAST ARMS, HEADS AND BRACKETING SHALL BE PAINTED DARK GREEN. SEE SPECIAL PROVISIONS.
12) ALL VEHICLE AND PEDESTRIAN SIGNAL INDICATIONS SHALL BE LED. SEE SPECIAL PROVISIONS.

NO	DATE	BY	CKD	APPR	REVISION
...\4670.ILA					

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Electrical Engineer under the laws of the State of Minnesota.
Print Name: BRIAN D. HOLT
Date 4/4/03 License # 21428

I hereby certify that this plan, specification, or report 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: GEORGE M. STUEMPFIG
Date 4/4/03 License # 21849

CITY PROJECT NO. I.C.03-5590

DRAWN BY R.W.SMITH
DESIGNED BY R.CORNELIUS
CHECKED BY G.STUEMPFIG
COMM. NO. 0024670

SRF CONSULTING GROUP, INC.

CITY OF EDEN PRAIRIE
INTERSECTION LAYOUT
TECHNOLOGY DRIVE AT SOUTHWEST STATION
SYSTEM "A"

SHEET 5 OF 14

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METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL-SIGNAL SYSTEM "G"
TECHNOLOGY DR AT SW STATION E ENTRANCE
FOR INFORMATION ONLY

DISCIPLINE: TRAFFIC
SHEET NAME: W1-TRF-SIG-002-01

SHEET 105 OF 152

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SIGNAL HEAD CHART

FACE	R	Y	G	G
1–1,1–2	◁	◁	◁	
2–1,2–2	○	○	○	
3–1	○	○	○	
▲ 3–2,3–3	●	●	●	
3–4	○	◁	◁	
▲ 3–5	●	◀	◀	
4–1,4–2	○	○	○	
4–3	○	○	○	◁
4–4,4–5	○	◁	◁	
▲ 4–6	●	●	●	
5–1,5–2	◁	◁	◁	
▲ 5–3	◀	◀	◀	
6–1	○	○	○	
▲ 6–2,6–3	●	●	●	

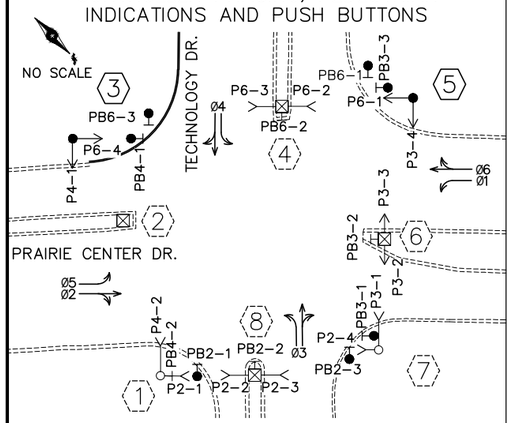
–ALL NEW SIGNAL INDICATIONS SHALL BE 12" LED
–ALL NEW SIGNAL HEADS SHALL BE BLACK POLYCARBONATE WITH BACKGROUND SHIELDS

ALL SIGNAL EQUIPMENT ON THIS SHEET IS INPLACE & SHALL REMAIN INPLACE UNLESS OTHERWISE NOTED. A ▲ DENOTES WORK TO BE COMPLETED BY THE CONTRACTOR.

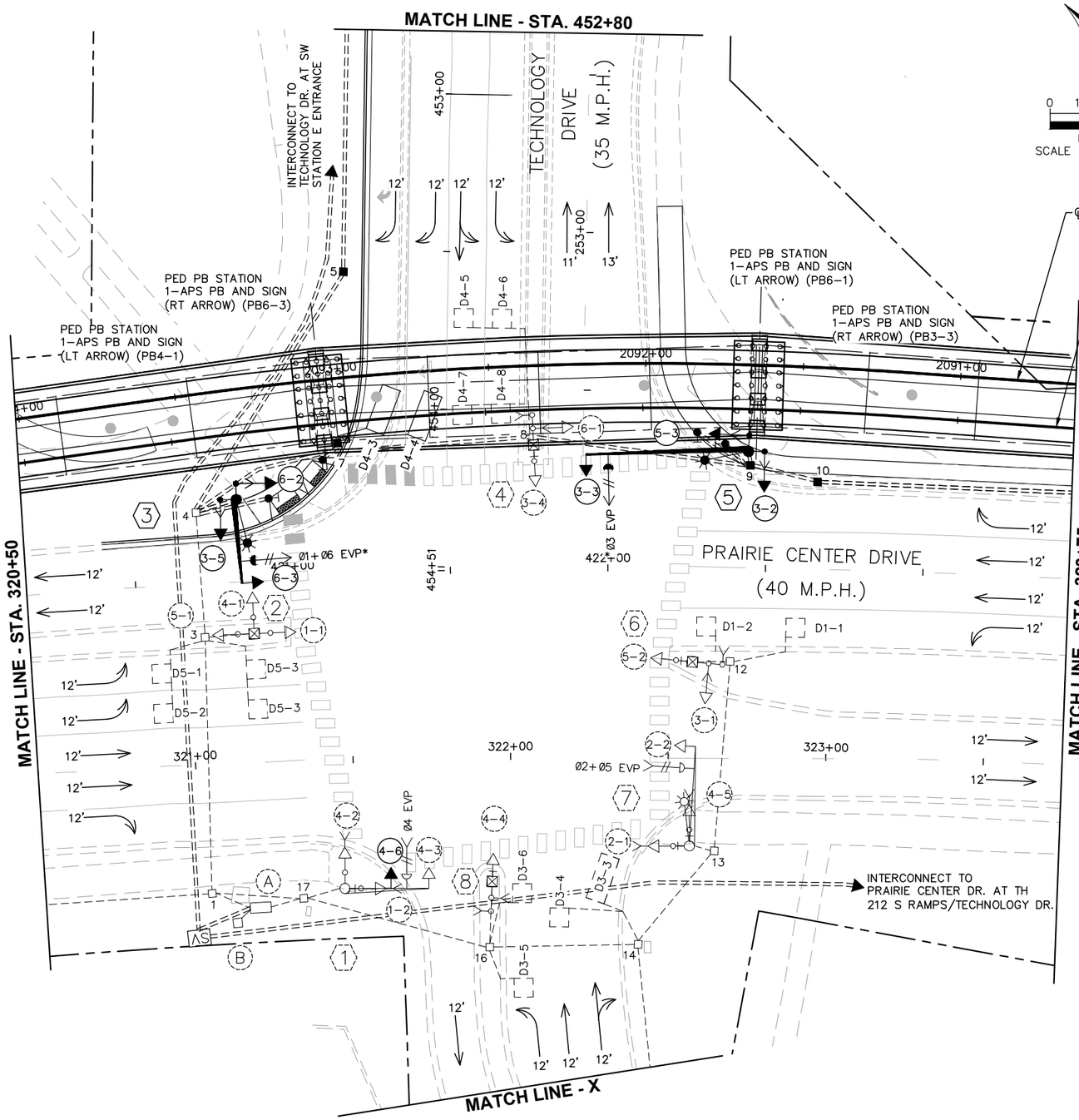
SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- THE SIGNAL SYSTEM IS FULLY ACTUATED.
- NORMAL OPERATION IS 6 PHASE, WITH PHASES 1,3,4 & 5 BEING PROTECTED LEFT TURN PHASES.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE



DETECTOR CHART

NUMBER	SIZE (FT)	LOCATION
D1–1	6X6	INPLACE
D1–2	6X6	INPLACE
D2–1,D2–2	6X6	INPLACE
D3–1,D3–2	6X6	INPLACE
D3–3	6X15	INPLACE
D3–4	6X6	INPLACE
D3–5	6X6	INPLACE
D3–6	6X6	INPLACE
▲ D4–1,D4–2	6X6	180
▲ D4–3,D4–4	6X15	5
D4–5,D4–6	6X6	INPLACE
D4–7,D4–8	6X6	INPLACE
D5–1,D5–2	6X6	INPLACE
D5–3	2–6X6	INPLACE
D6–1,D6–2	6X6	INPLACE

–ALL LOOP DETECTORS SHALL BE PVC UNLESS NOTED OTHERWISE
–LOCATION: DISTANCE FROM CROSSWALK/STOP BAR IN FEET

NOTES:

1. ALL ITEMS ARE INPLACE, UNLESS NOTED OTHERWISE.
2. SEE SPECIAL PROVISIONS FOR STATE FURNISHED MATERIALS.
3. REFER TO "FOR INFORMATION ONLY" SHEETS FOR INPLACE SIGNAL COMPONENTS.
4. THE EXACT LOCATION OF HANDHOLES, POLES, LOOP DETECTORS AND PUSH BUTTON STATIONS SHALL BE VERIFIED IN THE FIELD BY MNDOT TRAFFIC OFFICE PERSONNEL.
5. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE CONNECTION OF THE POWER FOR THE TRAFFIC SIGNAL SYSTEM.
6. FOR TYPE D SIGNS SEE DETAIL SHEET. ALL SIGNS REQUIRED ARE INCIDENTAL.
7. FOR PAVEMENT MARKINGS SEE SIGNING AND STRIPING PLANS.
8. FOR CONSTRUCTION OF PEDESTRIAN CURB RAMPS, CONCRETE WALK AND MEDIAN WORK SEE DETAIL SHEET.
9. THIS PLAN SPECIFIES CONDUIT SIZES, TYPES, AND GENERAL LOCATIONS. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD. CONDUITS UNDER EXISTING ROADWAYS REQUIRE BORING.
10. ALL NEW CONDUIT SHALL BE PVC – SCHEDULE 80 OR HDPE SCHEDULE 80 AND SHALL CARRY 1/C#6 GREEN INSULATED GROUNDING CONDUCTOR AS SHOWN IN THE PLAN.
11. ITEMS DENOTED WITH AN * ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM.
12. ITEMS DENOTED WITH AN ** ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION PAY ITEM.

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NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

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METROPOLITAN COUNCIL SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL-SIGNAL SYSTEM "H"
PRAIRIE CENTER DR AT TECHNOLOGY DR
INTERSECTION LAYOUT

DISCIPLINE: TRAFFIC
SHEET NAME: W1-TFC-SIG-001 - 02

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INTERSECTION NOTES

(1) PA90 POLE FOUNDATION
TYPE PA90-A-25
ONE WAY SIGNAL OVERHEAD
TYPE 10B AT 0 DEG
TYPE 10A AT 270 DEG
ONE WAY EVP DETECTOR AND
CONFIRMATORY LIGHT (PHASE 4)
1-PEDESTRIAN PUSH BUTTON AND SIGN
1-SIGN (D-3) PRAIRIE CENTER DR
1-SIGN (R6-1L) ONE WAY
1-SIGN (R6-1R) ONE WAY
1-SIGN FACING POLE NO. 3 (R9-3a) NO PED
3" RSC TO HH 17:

(2) PEDESTAL FOUNDATION
10' SIGNAL PEDESTAL POLE AND BASE
TYPE 3A
3" RSC TO HH 3:

(3) PA85 POLE FOUNDATION
TYPE PA85-A-25-D40-9 (DAVIT AT 350 DEG)
1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
2-ANGLE MOUNT SIGNALS AT 90 AND 180 DEG
2-ANGLE MOUNT C.D. PED HEADS AT 90 AND 180 DEG
▲ * 1-ONE WAY EVP DETECTOR AND
CONFIRMATORY LIGHT (PHASES 1+6)
LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)
1-TYPE D SIGN (D-X) (SEE SIGN DETAILS)
3" CONDUIT TO INP. HH 4:

(4) PEDESTAL FOUNDATION
10' SIGNAL PEDESTAL POLE AND BASE
TYPE 2D
1-PEDESTRIAN PUSH BUTTON AND SIGN
3" RSC TO HH 8

(5) PA100 POLE FOUNDATION
TYPE PA100-A-50-D40-9 (DAVIT AT 350 DEG)
1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
2-ANGLE MOUNT SIGNALS AT 90 AND 180 DEG
2-ANGLE MOUNT C.D. PED HEADS AT 90 AND 180 DEG
▲ * 1-ONE WAY EVP DETECTOR AND
CONFIRMATORY LIGHT (PHASE 3)
LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)
1-TYPE D SIGN (D-X) (SEE SIGN DETAILS)
3" CONDUIT TO HH 9:

(6) PEDESTAL FOUNDATION
10' SIGNAL PEDESTAL POLE AND BASE
TYPE 2D
1-PEDESTRIAN PUSH BUTTON AND SIGN
3" RSC TO HH 12:

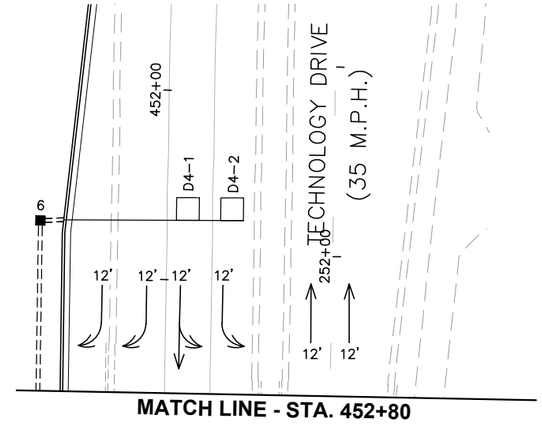
(7) PA90 POLE FOUNDATION
TYPE PA90-A-30-D40-9 (DAVIT AT 350 DEG)
ONE WAY SIGNAL OVERHEAD
TYPE 10B AT 0 DEG
TYPE 10B AT 270 DEG
ONE WAY EVP DETECTOR AND
CONFIRMATORY LIGHT (PHASE 2+5)
LUMINAIRE-200W HPS
1-SIGN (D-2) TECHNOLOGY DR
1-SIGN (R6-1L) ONE WAY
1-SIGN (R6-1R) ONE WAY
3" RSC TO HH 13:

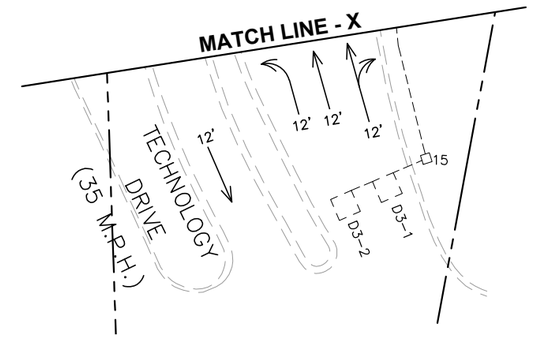
(8) PEDESTAL FOUNDATION
10' SIGNAL PEDESTAL POLE AND BASE
TYPE 1E
1-PEDESTRIAN PUSH BUTTON AND SIGN
3" RSC TO HH 16:

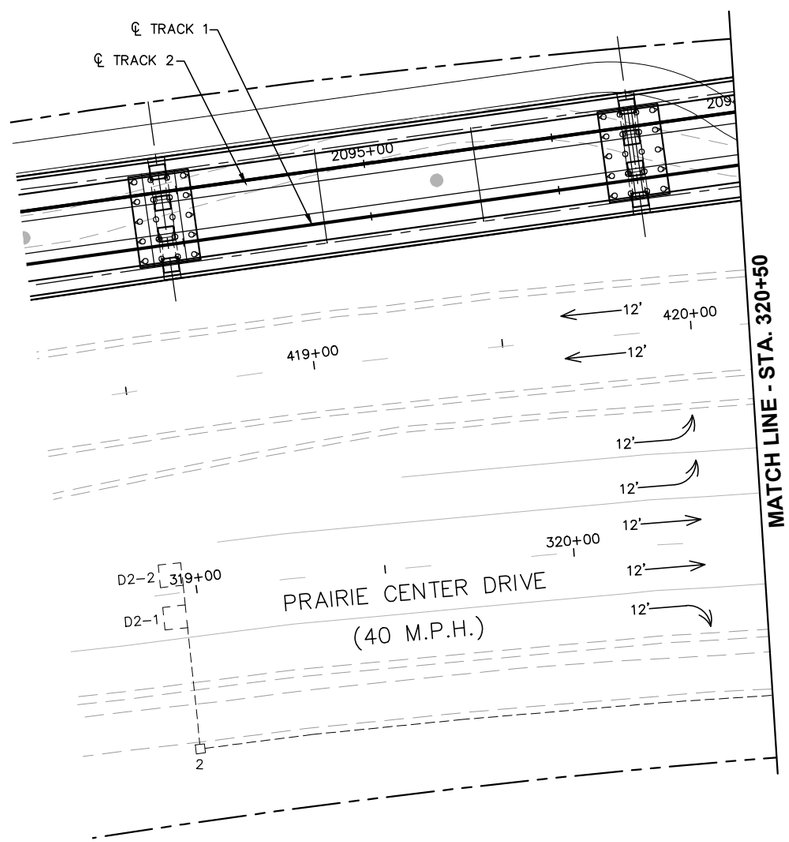
(A) EQUIPMENT PAD (INPLACE)
SERVICE CABINET (INPLACE)
CONTROLLER CABINET AND CONTROLLER

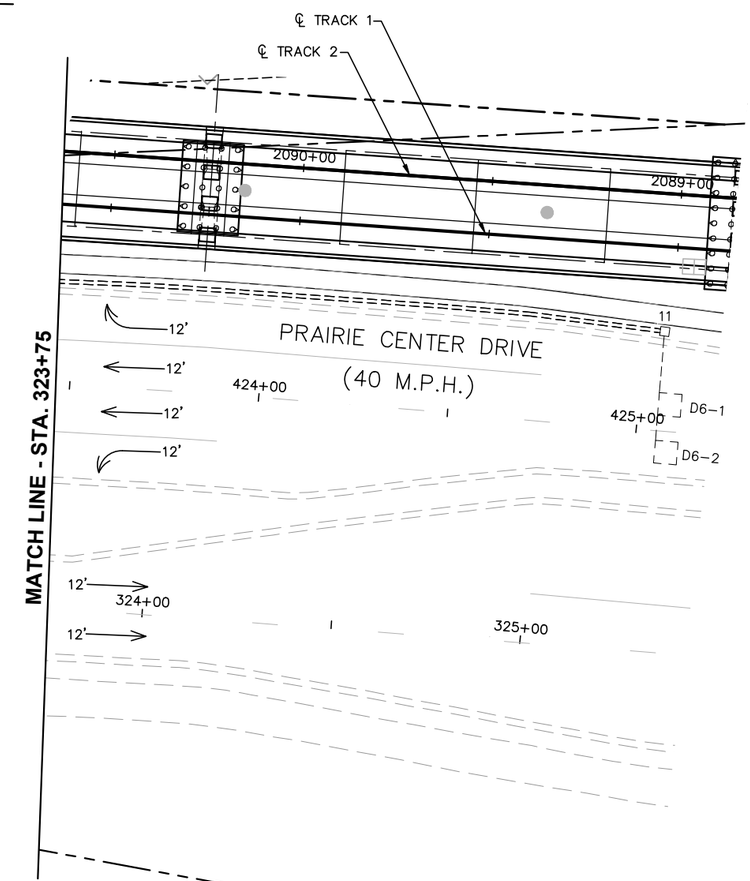
(B) NSP PAD AND NSP TRANSFORMER (INPLACE)

ALL SIGNAL EQUIPMENT ON THIS SHEET IS INPLACE & SHALL REMAIN INPLACE UNLESS OTHERWISE NOTED. A ▲ DENOTES WORK TO BE COMPLETED BY THE CONTRACTOR.









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NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

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METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL-SIGNAL SYSTEM "H"
PRAIRIE CENTER DR AT TECHNOLOGY DR
INTERSECTION NOTES AND MATCHINES

DISCIPLINE: TRAFFIC
SHEET NAME: W1-TFC-SIG-001 - 02B

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MAST ARM MOUNTED SIGNS

SIGN NO	POLE NO	QTY	a	PANEL SIZE	PANEL AREA	PANEL TOTAL AREA	MOUNTING NUMBER	MOUNTING SPACING (1)	PANEL LEGEND
			FEET	INCH	SQFT	SQFT			
D–X	3	1	12.0	120 x 24	20.0	20.0	4		TECHNOLOGY DR
D–X	5	1	20.0	144 x 24	24.0	24.0	5		PRAIRIE CENTER DR

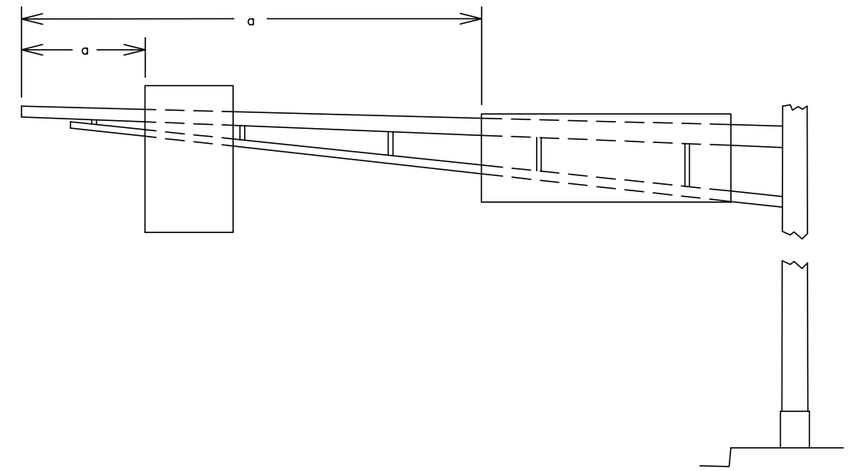
SPECIFIC NOTES:

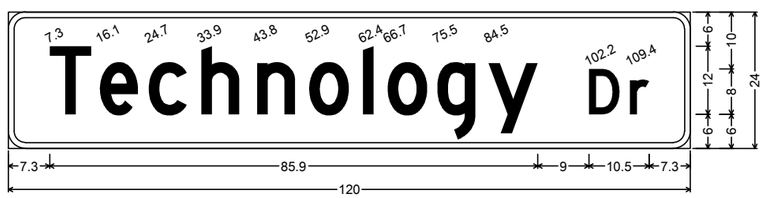
(1) SPACING BETWEEN STIFFENERS SHALL NOT EXCEED 36 INCHES AND SHALL BE UNIFORMLY SPACED. SEE STANDARD SIGNS MANUAL, PAGE 105A FOR BRACKET SPACING REQUIREMENTS.

GENERAL NOTES:

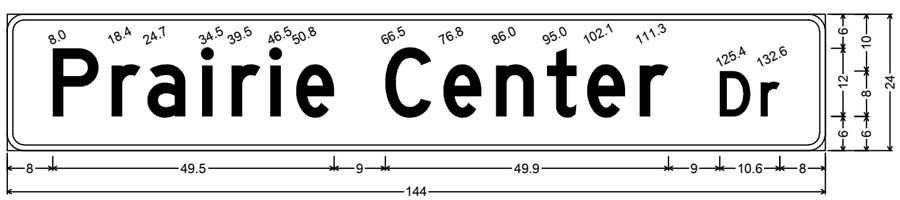
1. CORNERS OF STANDARD SIGN PANELS WITH MARGINS SHALL BE TRIMMED.
2. TYPE D SIGN PANELS EXTENDING BEYOND THE BORDER SHALL NOT BE TRIMMED.
3. FOR STRUCTURAL DETAILS OF MAST ARM MOUNTED SIGNS SEE STANDARD SIGNS MANUAL, PAGE 105A.
4. FOR TYPE D STRINGER AND PANEL JOINT DETAILS SEE STANDARD SIGNS MANUAL, PAGE 105.
5. THE MAST ARM MOUNTED SIGNS ARE INCIDENTAL.
6. AT INTERSECTIONS WITH MEDIAN WIDTHS LESS THAN 30',ONE WAY (R6–1) SIGNS SHALL NOT BE PLACED AS PART OF THE SIGNALS PLAN.

MAST ARM SIGN LOCATION





D-X; 3.0" Radius, 1.0" Border, White on Green;
[Technology] D [ ] E Mod [Dr] D;



D-X; 3.0" Radius, 1.0" Border, White on Green;
[Prairie Center] D [ ] E Mod [Dr] D;

DRAFT-WORK IN PROCESS

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM SRF Consulting Group, Inc. METROPOLITAN COUNCIL SOUTHWEST Green Line LRT Extension

60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL-SIGNAL SYSTEM "H"
PRAIRIE CENTER DR AT TECHNOLOGY DR
MAST ARM SIGNING

DISCIPLINE: TRAFFIC

SHEET NAME: W1-TFC-SIG-001 - 02C

SHEET 108 OF 152

Sep, 21 2015 11:40 am V:\3400_ADC\CAD\SEGMENT W1\PLAN SHEETS\TRAFFIC\W1-TFC-SIG-001.dwg By: kmcclement

(1) PA90 POLE FOUNDATION
TYPE PA90-A-25
ONE WAY SIGNAL OVERHEAD
TYPE 10B AT 0°
TYPE 10A AT 270°
ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 4)
1-PEDESTRIAN PUSH BUTTON AND SIGN
1-SIGN (D-3) PRAIRIE CENTER DR
1-SIGN (R6-1L) ONE WAY
1-SIGN (R6-1R) ONE WAY
1-SIGN FACING POLE NO. 3 (R9-3a) NO PED
3" RSC TO HH 15
1-12/C#12
3-3/C#12
1-3/C#20

(2) PEDESTAL FOUNDATION
10' SIGNAL PEDESTAL POLE AND BASE
TYPE 3A
3" RSC TO HH 3
1-12/C#12
1-5/C#12

(3) PA90 POLE FOUNDATION
TYPE PA90-A-25-D40-9 (DAVIT AT 350°)
ONE WAY SIGNAL OVERHEAD
TYPE 10A AT 0°
TYPE 10B AT 270°
ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 1 & 6)
LUMINAIRE-200W HPS
1-PEDESTRIAN PUSH BUTTON AND SIGN
1-SIGN (D-1) TECHNOLOGY DR
1-SIGN (R6-1L) ONE WAY
1-SIGN (R6-1R) ONE WAY
1-SIGN FACING POLE NO. 1 (R9-3a) NO PED
3" RSC TO HH 4
1-12/C#12
4-3/C#12
1-3/C#20

(4) PEDESTAL FOUNDATION
10' SIGNAL PEDESTAL POLE AND BASE
TYPE 2D
1-PEDESTRIAN PUSH BUTTON AND SIGN
3" RSC TO HH 7
1-12/C#12
2-3/C#12

(5) PA100 POLE FOUNDATION
TYPE PA100-A-40
ONE WAY SIGNAL OVERHEAD
TYPE 10B AT 0°
TYPE 10B AT 270°
ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 3)
2-PEDESTRIAN PUSH BUTTONS AND SIGNS
1-SIGN (D-3) PRAIRIE CENTER DR
1-SIGN (R6-1L) ONE WAY
1-SIGN (R6-1R) ONE WAY
3" RSC TO HH 8
1-12/C#12
4-3/C#12
1-3/C#20

(6) PEDESTAL FOUNDATION
10' SIGNAL PEDESTAL POLE AND BASE
TYPE 2D
1-PEDESTRIAN PUSH BUTTON AND SIGN
3" RSC TO HH 10
1-12/C#12
2-3/C#12

(7) PA90 POLE FOUNDATION
TYPE PA90-A-30-D40-9 (DAVIT AT 350°)
ONE WAY SIGNAL OVERHEAD
TYPE 10B AT 0°
TYPE 10B AT 270°
ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 2 & 5)
LUMINAIRE-200W HPS
2-PEDESTRIAN PUSH BUTTONS AND SIGNS
1-SIGN (D-2) TECHNOLOGY DR
1-SIGN (R6-1L) ONE WAY
1-SIGN (R6-1R) ONE WAY
3" RSC TO HH 11
1-12/C#12
5-3/C#12
1-3/C#20

(8) PEDESTAL FOUNDATION
10' SIGNAL PEDESTAL POLE AND BASE
TYPE 1E
PEDESTRIAN PUSH BUTTON AND SIGN
3" RSC TO HH 14
1-12/C#12
1-3/C#12

(A) EQUIPMENT PAD (INPLACE)-TEMP. SIG. SYS. A
SERVICE CABINET (INPLACE).
CONTROLLER CABINET AND CONTROLLER
4" RSC (INPLACE) TO HH 1 (INPLACE)
4-12/C#12
1-5/C#12
9-3/C#12
15-2/C#14
2-3/C#20
1-6PR#19
4" RSC (INPLACE) TO HH 15 (INPLACE)
4-12/C#12
10-3/C#12
8-2/C#14
2-3/C#20
3" RSC STUBBED OUT (THREADED AND CAPPED BOTH ENDS) (INPLACE)
2" RSC (INPLACE) TO SERVICE CABINET
2-1/C#14
1-1/C#6 INS. GR.
SERVICE CABINET TO HH 1
2" RSC (INPLACE)
1-3/C#20
2-3/C#12
SERVICE CABINET TO NSP TRANSFORMER
3" RSC (INPLACE)
3-1/C#12 (INPLACE)

(B) NSP PAD AND NSP TRANSFORMER (INPLACE)

F&I-1-6PR#19 ✱

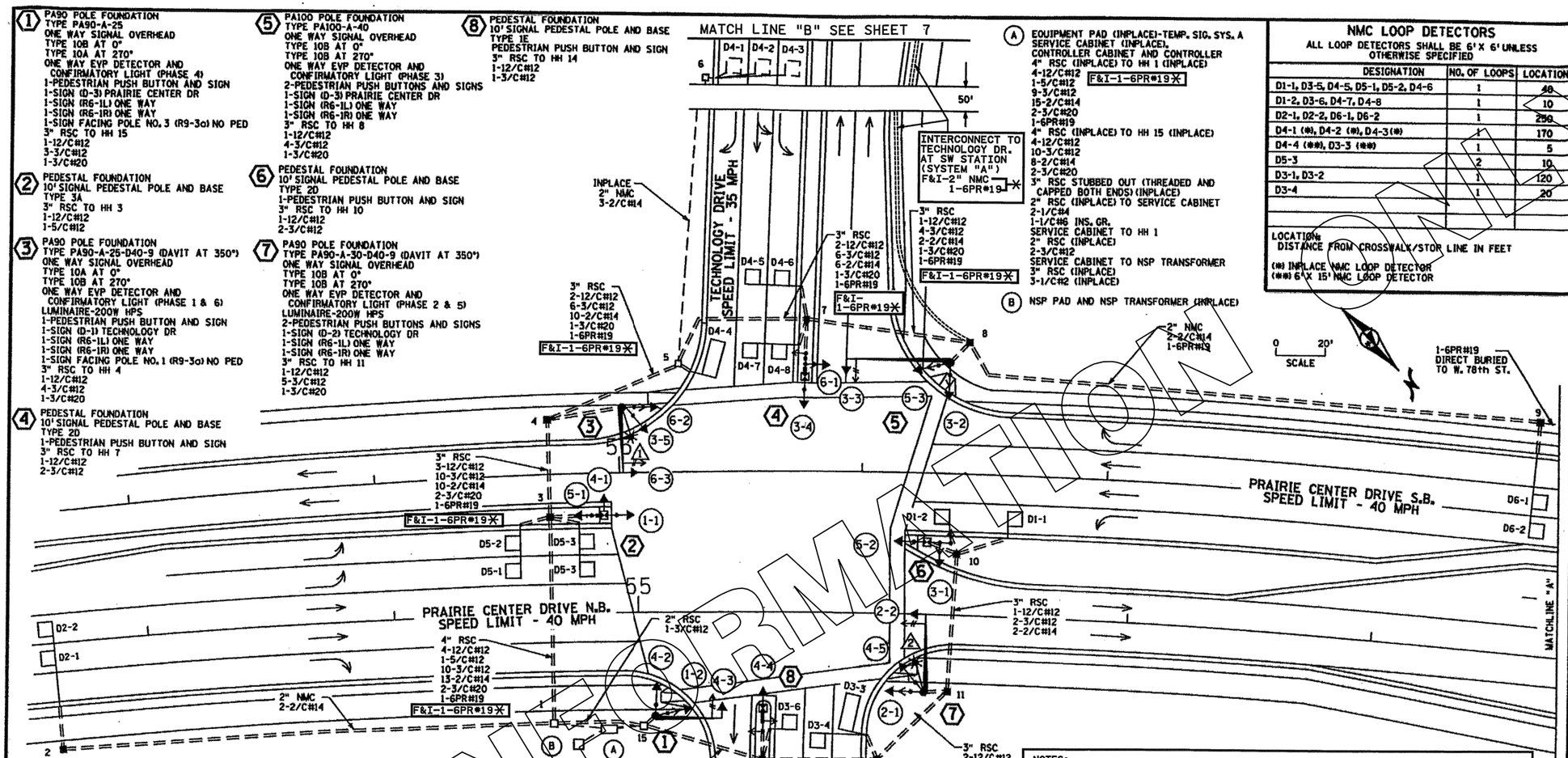
NMC LOOP DETECTORS

ALL LOOP DETECTORS SHALL BE 6' X 6' UNLESS OTHERWISE SPECIFIED

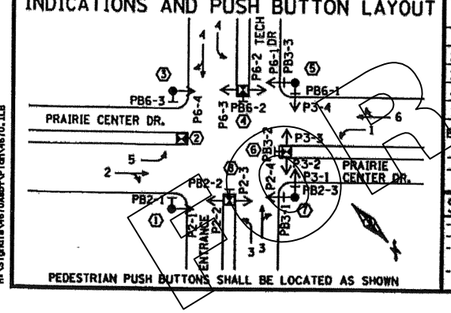
DESIGNATION	NO. OF LOOPS	LOCATION
D1-1, D3-5, D4-5, D5-1, D5-2, D4-6	1	40
D1-2, D3-6, D4-7, D4-8	1	10
D2-1, D2-2, D6-1, D6-2	1	250
D4-1 (*), D4-2 (*), D4-3 (*)	1	170
D4-4 (**), D3-3 (**)	1	5
D5-3	2	10
D3-1, D3-2	1	120
D3-4	1	20

LOCATION: DISTANCE FROM CROSSWALK/STOP LINE IN FEET

(*) INPLACE NMC LOOP DETECTOR
(**) 6' X 15' NMC LOOP DETECTOR



CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTON LAYOUT



PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN

SIGNAL FACES

FACE	R LED	Y	G
1-1, 1-2, 5-1, 5-2, 5-3	●	←	←
2-1, 2-2, 6-1, 6-2, 6-3	●	●	●
3-4, 3-5, 4-4, 4-5	●	←	←
4-1, 4-2, 4-3	●	●	●
3-1, 3-2, 3-3	●	●	●

EACH SIGNAL FACE SHALL HAVE A BACK-GROUND SHIELD
-ALL SIGNAL INDICATIONS SHALL BE 12"
-ALL YELLOW AND GREEN VEHICLE SIGNAL INDICATIONS SHALL HAVE GLASS LENSES

SIGNAL SYSTEM OPERATION

- FLASH MODE IS ALL RED
- NORMAL OPERATION IS SIX PHASE
- PHASES ONE, THREE, FOUR AND FIVE SHALL BE PROTECTED LEFT TURNS
- PHASES TWO AND SIX SHALL BE ON VEHICLE RECALL

RECORD DRAWING

CONTRACTOR:
Killmer Electric Co., Inc.
5141 Lakeland Avenue N.
Crystal, MN 55429

NOTES:
EVERYTHING ON THIS PLAN IS IN PLACE EXCEPT FOR WORK ITEMS INCLUDED WITH THIS PROJECT, WHICH ARE NOTED HEREIN:

1) RELABEL VEHICLE AND PEDESTRIAN SIGNAL HEAD WIRING, LOOP DETECTOR WIRING, AND EVP DETECTOR AND CONFIRMATORY LIGHT WIRING, AS SHOWN IN THIS PLAN. CHANGES TO SIGNAL CONTROLLER SETTINGS WILL BE MADE BY MN/DOT.
2) AT SIGNAL FACES 3-4, 3-5, 4-4 AND 4-5, REPLACE RED LEFT TURN ARROW INDICATIONS WITH RED LED CIRCULAR INDICATIONS.
3) F&I 6PR #19 INTERCONNECT AND CONDUIT WHERE NOTED. THESE NOTES ARE BOXED IN. ALL BOXED IN WORK ITEMS FOLLOWED BY ✱ THIS SHEET SHALL BE PAID FOR UNDER THE INTERCONNECT SYSTEM PAY ITEM.

DRAWN BY R.W.SMITH
DESIGNED BY R.W.SMITH
CHECKED BY G.STUEMPFIG
COMM. NO. 0024670

SRF CONSULTING GROUP, INC.

I hereby certify that this plan, specification, or report 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: GEORGE M. STUEMPFIG
Date 4/4/03 License # 21849

CITY PROJECT NO.
I.C.03-5590

SYSTEM "B"
INTERSECTION LAYOUT
PRAIRIE CENTER DRIVE
AT TECHNOLOGY DRIVE
IN EDEN PRAIRIE, HENNEPIN COUNTY

SYSTEM ID: 21932
METER ADDRESS:

SHEET NO. 8 OF 14 SHEETS

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL-SIGNAL SYSTEM "H"
PRAIRIE CENTER DR AT TECHNOLOGY DR
FOR INFORMATION ONLY

DISCIPLINE: TRAFFIC
SHEET NAME: W1-TRF-SIG-002-02

SHEET 109 OF 152

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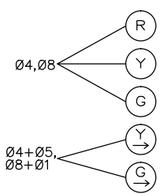
SIGNAL HEAD CHART

	FACE	R	Y	G	Y	G
	1–1,1–2	◁—	◁—	◁—		
	2–1,2–2,2–3	○	○	○		
	3–1,3–2	◁—	◁—	◁—		
	4–1	○	○	○	⇨	⇨
▲	4–2	●	●	●	➡	➡
	4–3	○	○	○		
	5–2,5–3	◁—	◁—	◁—		
	6–1,6–2,6–3	○	○	○		
	7–1,7–2	◁—	◁—	◁—		
	8–1	○	○	○	⇨	⇨
▲	8–2	●	●	●	➡	➡
	8–3	○	○	○		

–ALL NEW SIGNAL INDICATIONS SHALL BE 12" LED
–ALL NEW SIGNAL HEADS SHALL BE BLACK POLYCARBONATE WITH BACKGROUND SHIELDS

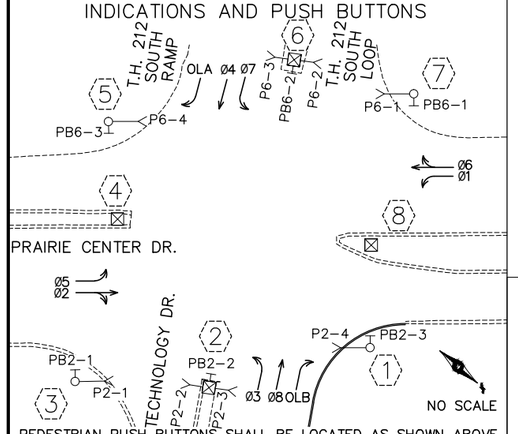
SIGNAL HEAD PHASING

HEADS 4–1,4–2,8–1&8–2

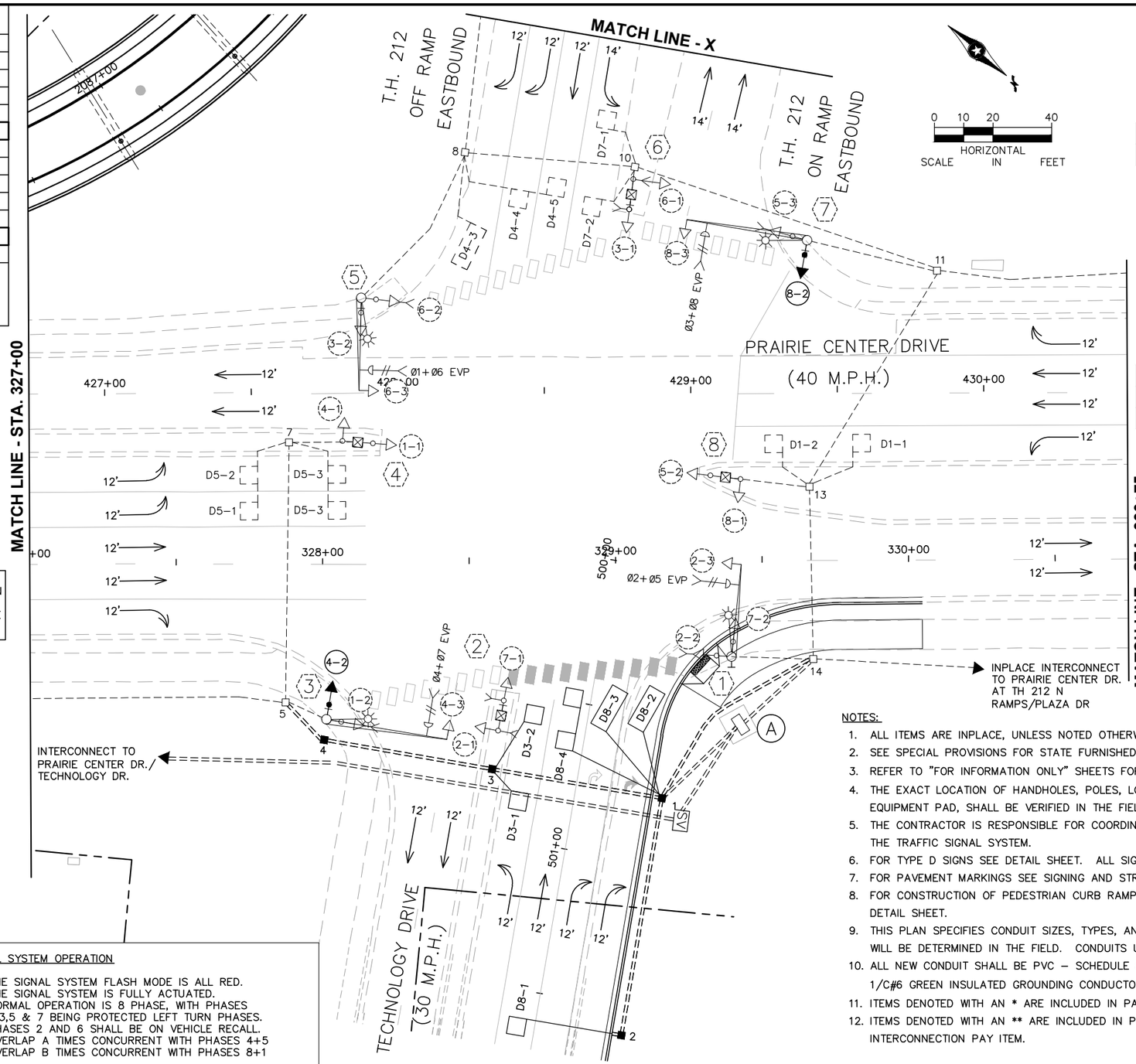


ALL SIGNAL EQUIPMENT ON THIS SHEET IS INPLACE & SHALL REMAIN INPLACE UNLESS OTHERWISE NOTED. A ▲ DENOTES WORK TO BE COMPLETED BY THE CONTRACTOR.

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE



DETECTOR CHART

	NUMBER	SIZE (FT)	LOCATION
	D1–1	6X6	INPLACE
	D1–2	6X6	INPLACE
	D2–1,D2–2	6X6	INPLACE
▲	D3–1	6X6	40
▲	D3–2	6X6	10
	D4–1,D4–2	6X6	INPLACE
	D4–3	6X15	INPLACE
	D4–4	6X6	INPLACE
	D4–5	6X6	INPLACE
	D5–1,D5–2	6X6	INPLACE
	D5–3	2–6X6	INPLACE
	D6–1,D6–2	6X6	INPLACE
	D7–1	6X6	INPLACE
	D7–2	6X6	INPLACE
▲	D8–1	6X6	120
▲	D8–2,D8–3	6X15	5
▲	D8–4	2–6X6	5 & 20

–ALL LOOP DETECTORS SHALL BE PVC UNLESS NOTED OTHERWISE
–LOCATION: DISTANCE FROM CROSSWALK/STOP BAR IN FEET

SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- THE SIGNAL SYSTEM IS FULLY ACTUATED.
- NORMAL OPERATION IS 8 PHASE, WITH PHASES 1,3,5 & 7 BEING PROTECTED LEFT TURN PHASES.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.
- OVERLAP A TIMES CONCURRENT WITH PHASES 4+5
- OVERLAP B TIMES CONCURRENT WITH PHASES 8+1

NOTES:

1. ALL ITEMS ARE INPLACE, UNLESS NOTED OTHERWISE.
2. SEE SPECIAL PROVISIONS FOR STATE FURNISHED MATERIALS.
3. REFER TO "FOR INFORMATION ONLY" SHEETS FOR INPLACE SIGNAL COMPONENTS.
4. THE EXACT LOCATION OF HANDHOLES, POLES, LOOP DETECTORS, PUSH BUTTON STATIONS, AND EQUIPMENT PAD, SHALL BE VERIFIED IN THE FIELD BY MNDOT TRAFFIC OFFICE PERSONNEL.
5. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE CONNECTION OF THE POWER FOR THE TRAFFIC SIGNAL SYSTEM.
6. FOR TYPE D SIGNS SEE DETAIL SHEET. ALL SIGNS REQUIRED ARE INCIDENTAL.
7. FOR PAVEMENT MARKINGS SEE SIGNING AND STRIPING PLANS.
8. FOR CONSTRUCTION OF PEDESTRIAN CURB RAMPS, CONCRETE WALK AND MEDIAN WORK SEE DETAIL SHEET.
9. THIS PLAN SPECIFIES CONDUIT SIZES, TYPES, AND GENERAL LOCATIONS. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD. CONDUITS UNDER EXISTING ROADWAYS REQUIRE BORING.
10. ALL NEW CONDUIT SHALL BE PVC – SCHEDULE 80 OR HDPE SCHEDULE 80 AND SHALL CARRY 1/C#6 GREEN INSULATED GROUNDING CONDUCTOR AS SHOWN IN THE PLAN.
11. ITEMS DENOTED WITH AN * ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM.
12. ITEMS DENOTED WITH AN ** ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION PAY ITEM.

DRAFT-WORK IN PROCESS

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AECOM SRF Consulting Group, Inc. METROPOLITAN COUNCIL SOUTHWEST Green Line LRT Extension

60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL-SIGNAL SYSTEM "I"
PRAIRIE CENTER DR AT TH 212 S RAMPS/TECH DR INTERSECTION LAYOUT

DISCIPLINE: TRAFFIC

SHEET NAME: W1-TFC-SIG-001 - 03

SHEET 110 OF 152

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INTERSECTION NOTES

(1) PA90 POLE FOUNDATION
TYPE PA90-A-30-D40-9 (DAVIT AT 350 DEG)
2-SWING AWAY HINGES
ONE WAY SIGNAL OVERHEAD
TYPE 10A AT 0 DEG
TYPE 10B AT 270 DEG
ONE WAY EVP DETECTOR AND
CONFIRMATORY LIGHT (PHASE 2+5)
LUMINAIRE-200W HPS
REMOVE- 1-PEDESTRIAN PUSH BUTTON AND SIGN
▲- 1-PEDESTRIAN PUSH BUTTON AND SIGN AT 180 DEG
1-SIGN (D-4) EAST 5
1-SIGN (D-1) TECHNOLOGY DR
1-SIGN (R6-1L) ONE WAY
1-SIGN (R6-1R) ONE WAY
1-SIGN FACING POLE 7 (R9-3a) NO PED
3" RSC TO HH 14:

(2) PEDESTAL FOUNDATION
10' SIGNAL PEDESTAL AND BASE
TYPE 2D
1-PEDESTRIAN PUSH BUTTON AND SIGN
3" RSC TO HH 3:

(3) PA100 POLE FOUNDATION
TYPE PA100-A-40-D40-9 (DAVIT AT 350 DEG)
ONE WAY SIGNAL OVERHEAD
TYPE 10B AT 0 DEG
TYPE 10A AT 270 DEG
▲- 1-ANGLE MOUNT SIGNAL AT 270 DEG
ONE WAY EVP DETECTOR AND
CONFIRMATORY LIGHT (PHASES 4+7)
LUMINAIRE-200W HPS
1-PEDESTRIAN PUSH BUTTON AND SIGN
1-SIGN R9-3a FACING POLE 4
1-SIGN (D-3) PRAIRIE CENTER DR
2-SIGN (R6-1) ONE WAY
3" RSC TO HH 5:

(4) PEDESTAL FOUNDATION
10' SIGNAL PEDESTAL POLE AND BASE
TYPE 2A
2-SIGNS R9-3a FACING POLE 3 AND 5
3" RSC TO HH 7:

(5) PA90 POLE FOUNDATION
TYPE PA90-A-30-D40-9 (DAVIT AT 350 DEG)
ONE WAY SIGNAL OVERHEAD
TYPE 10A AT 0 DEG
TYPE 10B AT 270 DEG
ONE WAY EVP DETECTOR AND
CONFIRMATORY LIGHT (PHASES 6+1)
LUMINAIRE-200W HPS
1-PEDESTRIAN PUSH BUTTON AND SIGN
1-SIGN R9-3a FACING POLE 4
1-SIGN (D-2) TECHNOLOGY DR
2-SIGN (R6-1) ONE WAY
3" RSC TO HH 8:

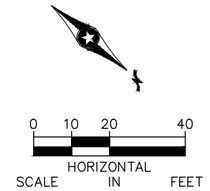
(6) PEDESTAL FOUNDATION
10' SIGNAL PEDESTAL POLE AND BASE
TYPE 2D
1-PEDESTRIAN PUSH BUTTON AND SIGN
3" RSC TO HH 10:

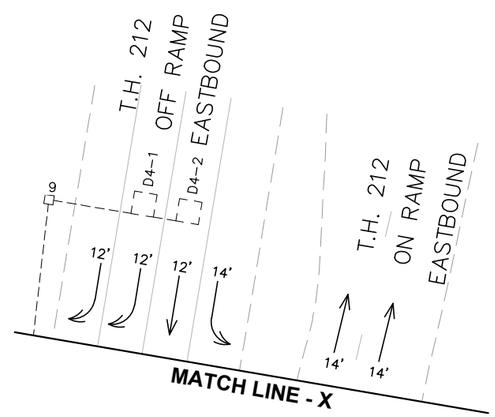
(7) PA100 POLE FOUNDATION
TYPE PA100-A-40-D40-9 (DAVIT AT 350 DEG)
ONE WAY SIGNAL OVERHEAD
TYPE 10B AT 0 DEG
TYPE 10A AT 270 DEG
▲- 1-ANGLE MOUNT SIGNAL AT 270 DEG
ONE WAY EVP DETECTOR AND
CONFIRMATORY LIGHT (PHASES 8+3)
LUMINAIRE-200W HPS
1-PEDESTRIAN PUSH BUTTON AND SIGN
1-SIGN (D-6) EAST 5
1-SIGN (D-3) PRAIRIE CENTER DR
1-SIGN (R6-1L) ONE WAY
1-SIGN (R6-1R) ONE WAY
1-SIGN FACING POLE NO. 1 (R9-3a) NO PED
3" RSC TO HH 11:

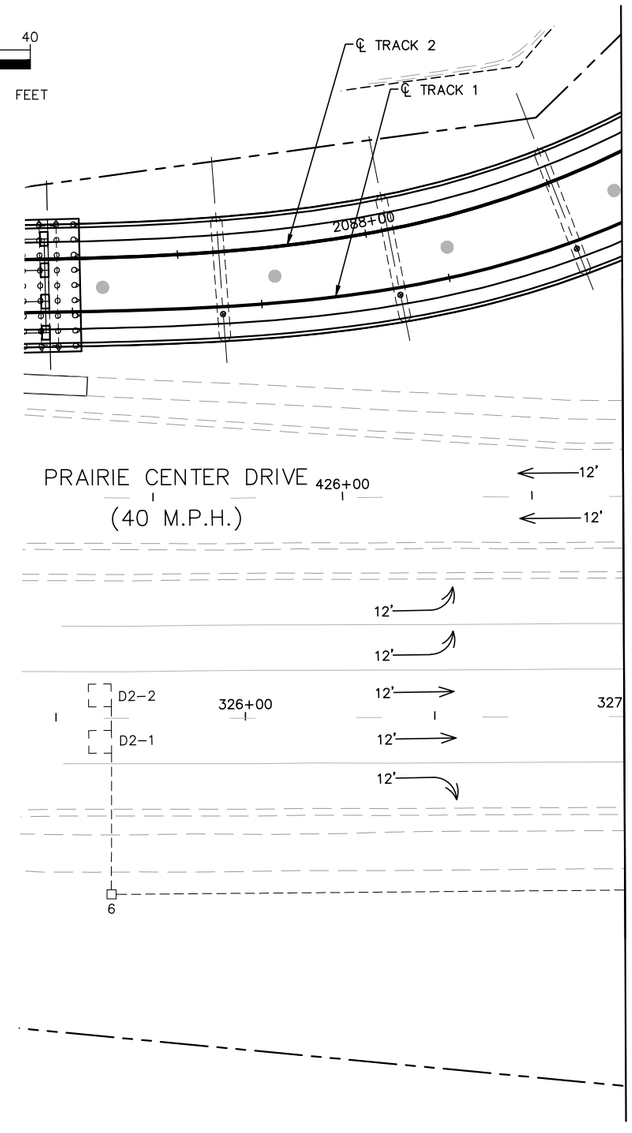
(8) PEDESTAL FOUNDATION
10' SIGNAL PEDESTAL POLE AND BASE
TYPE 2D
3" RSC TO HH 13:

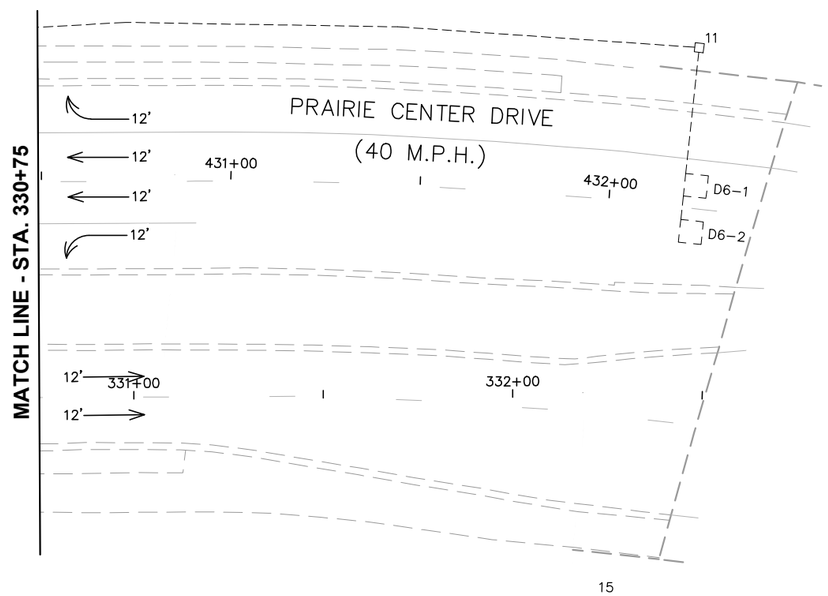
(A) ▲ EQUIPMENT PAD (SEE DETAIL SHEET)
SERVICE CABINET (SSB)
CONTROLLER AND CABINET (STATE FURNISHED)

ALL SIGNAL EQUIPMENT ON THIS SHEET IS INPLACE & SHALL REMAIN INPLACE UNLESS OTHERWISE NOTED. A ▲ DENOTES WORK TO BE COMPLETED BY THE CONTRACTOR.









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METROPOLITAN COUNCIL SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL-SIGNAL SYSTEM "I"
PRAIRIE CENTER DR AT TH 212 S RAMPS/TECH DR
INTERSECTION NOTES AND MATCHLINES

DISCIPLINE: TRAFFIC
SHEET NAME: W1-TFC-SIG-001 - 03B

SHEET 111 OF 152

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PROJECTNAME

1 PA90 POLE FOUNDATION
TYPE PA90-A-30-D40-9 (DAVIT AT 350°)
2-SWING AWAY HINGES
ONE WAY SIGNAL OVERHEAD
TYPE 10A AT 0°
TYPE 10B AT 270°
ONE WAY EVP DETECTOR AND
CONFIRMATORY LIGHT (PHASE 2 & 5)
LUMINAIRE-200W HPS
1-PEDESTRIAN PUSH BUTTON AND SIGN
1-SIGN (D-4) EAST 5
1-SIGN (D-1) TECHNOLOGY DR
1-SIGN (R6-1L) ONE WAY
1-SIGN (R6-1R) ONE WAY
1-SIGN FACING POLE 7 (R9-3a) NO PED
3" RSC TO HH 1
1-12/C#12
4-3/C#12
1-3/C#20

5 PA90 POLE FOUNDATION
TYPE PA90-A-30-D40-9 (DAVIT AT 350°)
ONE WAY SIGNAL OVERHEAD
TYPE 10A AT 0°
TYPE 10B AT 270°
ONE WAY EVP DETECTOR AND
CONFIRMATORY LIGHT (PHASE 6 & 1)
LUMINAIRE-200W HPS
1-PEDESTRIAN PUSH BUTTON AND SIGN
1-SIGN R9-3a FACING POLE 4
1-SIGN (D-2) TECHNOLOGY DR
2-SIGN (R6-1) ONE WAY
3" RSC TO HH 7
1-12/C#12
5-3/C#12
1-3/C#20

3 PA100 POLE FOUNDATION
TYPE PA100-A-40-D40-9 (DAVIT AT 350°)
ONE WAY SIGNAL OVERHEAD
TYPE 10B AT 0°
TYPE 10A AT 270°
ONE WAY EVP DETECTOR AND
CONFIRMATORY LIGHT (PHASE 4 & 7)
LUMINAIRE-200W HPS
1-PEDESTRIAN PUSH BUTTON AND SIGN
1-SIGN R9-3a FACING POLE 4
1-SIGN (D-3) PRAIRIE CENTER DR
2-SIGN (R6-1) ONE WAY
3" RSC TO HH 4
1-12/C#12
5-3/C#12
1-3/C#20

7 PA100 POLE FOUNDATION
TYPE PA100-A-40-D40-9 (DAVIT AT 350°)
ONE WAY SIGNAL OVERHEAD
TYPE 10B AT 0°
TYPE 10A AT 270°
ONE WAY EVP DETECTOR AND
CONFIRMATORY LIGHT (PHASE 8 &3)
LUMINAIRE-200W HPS
1-PEDESTRIAN PUSH BUTTON AND SIGN
1-SIGN (D-6) EAST 5
1-SIGN (D-3) PRAIRIE CENTER DR
1-SIGN (R6-1L) ONE WAY
1-SIGN (R6-1R) ONE WAY
1-SIGN FACING POLE NO. 1 (R9-3a) NO PED
3" RSC TO HH 10
1-12/C#12
4-3/C#12
1-3/C#20

A
EQUIPMENT PAD
SERVICE CABINET
CONTROLLER AND CABINET
EXTEND INTO HH 1:
4-12/C#12
1-5/C#12
11-3/C#12
12-2/C#14
2-3/C#20

EXTEND INTO HH 13:
2-4" RSC
4-12/C#12
9-3/C#12
11-2/C#14
2-3/C#20
2-6 PR.#19

3" RSC STUBBED OUT (THREADED AND CAPPED BOTH ENDS)
SERVICE CABINET TO CONTROLLER CABINET
2" RSC
2-1/C#4
1-1/C#6 BR. GR.
SERVICE CABINET TO HH 1:
2" RSC
4-3/C#12
SERVICE CABINET TO TRANSFORMER
2" RSC
3-1/C#2

EQUIPMENT PAD, SEE SHEET NO. 5.
SERVICE CABINET, SEE SHEET NO. 4.
CONTROLLER CABINET AND CONTROLLE

2 PEDESTAL FOUNDATION
10' SIGNAL PEDESTAL AND BASE
TYPE 2D
1-PEDESTRIAN PUSH BUTTON AND SIGN
3" RSC TO HH 3
1-12/C#12
2-3/C#12

4 PEDESTAL FOUNDATION
10' SIGNAL PEDESTAL AND BASE
TYPE 2A
2-SIGNS R9-3a FACING POLE 3 AND 5
3" RSC TO HH 6
1-12/C#12
1-5/C#12
2-3/C#12

6 PEDESTAL FOUNDATION
10' SIGNAL PEDESTAL AND BASE
TYPE 2D
1-PEDESTRIAN PUSH BUTTON AND SIGN
3" RSC TO HH 9
1-12/C#12
2-3/C#12

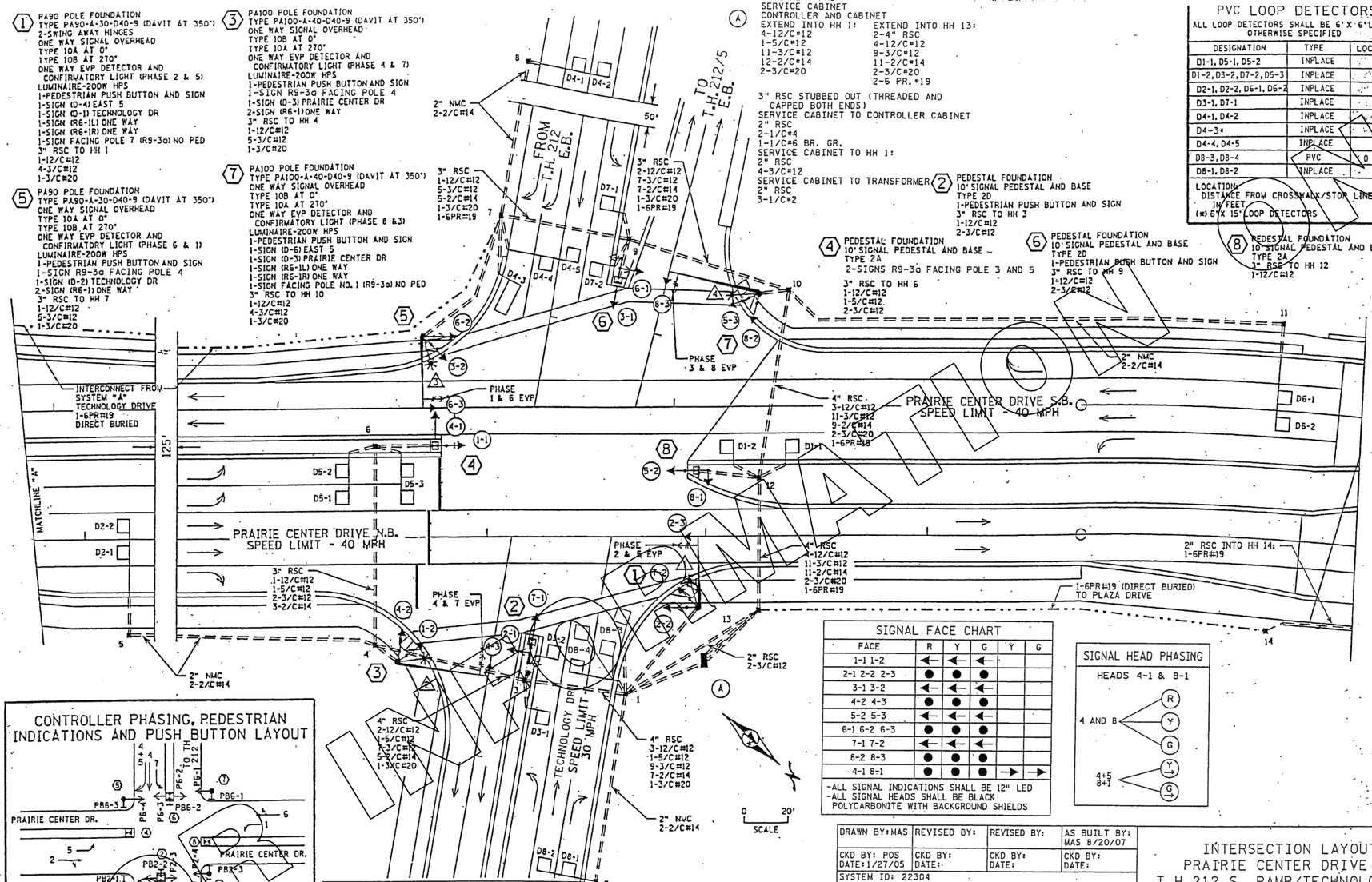
8 PEDESTAL FOUNDATION
10' SIGNAL PEDESTAL AND BASE
TYPE 2A
3" RSC TO HH 12
1-12/C#12

PVC LOOP DETECTORS

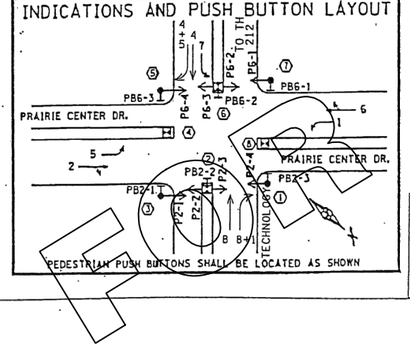
ALL LOOP DETECTORS SHALL BE 6' X 6' UNLESS OTHERWISE SPECIFIED

DESIGNATION	TYPE	LOCATION
D1-1, D5-1, D5-2	INPLACE	40
D1-2, D3-2, D7-2, D5-3	INPLACE	10
D2-1, D2-2, D6-1, D6-2	INPLACE	250
D3-1, D7-1	INPLACE	120
D4-1, D4-2	INPLACE	20
D4-3*	INPLACE	5
D4-4, D4-5	INPLACE	20
D8-3, D8-4	PVC	0 & 15
D8-1, D8-2	INPLACE	120

LOCATION:
DISTANCE FROM CROSSWALK/STOP LINE IN FEET
(*) 6' X 15' LOOP DETECTORS



CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTON LAYOUT



SIGNAL FACE CHART

FACE	R	Y	G	Y	G
1-1 1-2	←	←	←		
2-1 2-2 2-3	●	●	●		
3-1 3-2	←	←	←		
4-2 4-3	●	●	●		
5-2 5-3	←	←	←		
6-1 6-2 6-3	●	●	●		
7-1 7-2	←	←	←		
8-2 8-3	●	●	●		
4-1 8-1	●	●	●	→	→

-ALL SIGNAL INDICATIONS SHALL BE 12" LED
-ALL SIGNAL HEADS SHALL BE BLACK POLYCARBONITE WITH BACKGROUND SHIELDS

SIGNAL HEAD PHASING

HEADS 4-1 & 8-1

4 AND 8: R, Y, G
4+5, 8+1: Y→, G→

SIGNAL SYSTEM OPERATION

- FLASH MODE IS ALL RED
- NORMAL OPERATION IS EIGHT PHASE WITH PHASES 1,3,5 AND 7 BEING PROTECTED LEFT TURNS
- OVERLAP A TIMES CONCURRENT WITH PHASE 4+5
- OVERLAP B TIME CONCURRENT WITH PHSE 8+1.

REVISED AT MN/DOT BY EJA AND SJK PER TE 5252 1/6/11

DRAWN BY: MAS	REVISED BY:	REVISED BY:	AS BUILT BY: MAS 8/20/07
CKD BY: POS DATE: 1/27/05	CKD BY: DATE:	CKD BY: DATE:	CKD BY: DATE:

SYSTEM ID: 22304
METER ADDRESS:
S.A.P. NO.

INTERSECTION LAYOUT
PRAIRIE CENTER DRIVE AT
T.H.212 S. RAMP/TECHNOLOGY DR
IN EDEN PRAIRIE, HENNEPIN COUNTY

CERTIFIED BY _____ LICENSED PROFESSIONAL ENGINEER LIC. NO. _____ DATE: _____

STATE PROJ. NO. SHEET NO. OF SHEETS

FILENAME: FILENAME
PLOTTED: DATEANDTIME

Sep, 21 2015 11:44 am V:\3400_ADC\CAD\SEGMENT W1\PLAN SHEETS\TRAFFIC\W1-TFC-SIG-002.dwg By: kmcclement

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM
SRF Consulting Group, Inc.
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL-SIGNAL SYSTEM "I"
PRAIRIE CENTER DR AT TH 212 S RAMPS/TECH DR
FOR INFORMATION ONLY

DISCIPLINE: TRAFFIC
SHEET NAME: W1-TRF-SIG-002-03

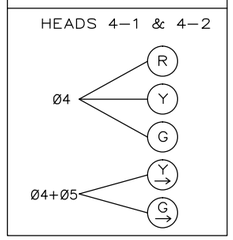
SHEET 112 OF 152

SIGNAL HEAD CHART

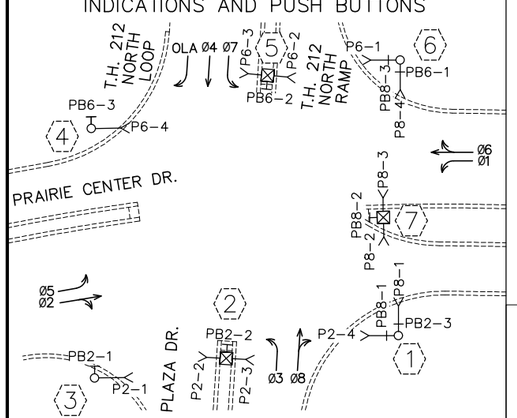
	FACE	R	Y	G	Y	G
	1–1,1–2	◁	◁	◁		
	2–1,2–2,2–3	○	○	○		
	3–1,3–2	◁	◁	◁		
▲	4–1	●	●	●	→	→
	4–2	○	○	○	⇢	⇢
	4–3	○	○	○		
	5–1,5–2,5–3	◁	◁	◁		
	6–1,6–2,6–3	○	○	○		
	7–1,7–2	◁	◁	◁		
	8–1,8–2,8–3	○	○	○		
	–ALL NEW SIGNAL INDICATIONS SHALL BE 12" LED –ALL NEW SIGNAL HEADS SHALL BE BLACK POLYCARBONATE WITH BACKGROUND SHIELDS					

ALL SIGNAL EQUIPMENT ON THIS SHEET IS INPLACE & SHALL REMAIN INPLACE UNLESS OTHERWISE NOTED. A ▲ DENOTES WORK TO BE COMPLETED BY THE CONTRACTOR.

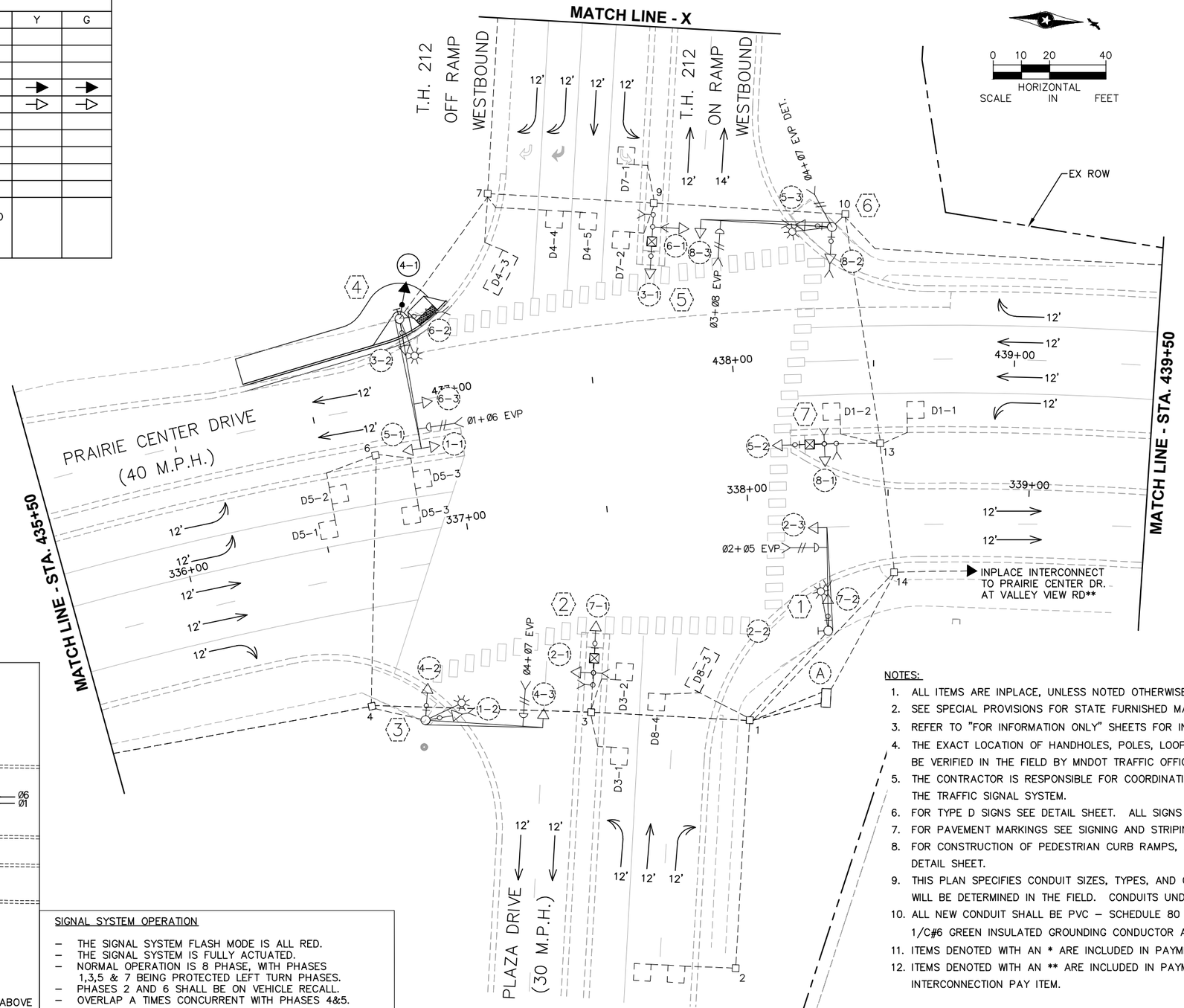
SIGNAL HEAD PHASING



CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE



DETECTOR CHART

NUMBER	SIZE (FT)	LOCATION
D1–1	6X6	INPLACE
D1–2	6X6	INPLACE
D2–1,D2–2	6X6	INPLACE
D3–1	6X6	INPLACE
D3–2	6X6	INPLACE
D4–1,D4–2	6X6	INPLACE
D4–3	6X15	INPLACE
D4–4,D4–5	6X6	INPLACE
D5–1	6X6	INPLACE
D5–2	6X6	INPLACE
D5–3	2–6X6	INPLACE
D6–1,D6–2	6X6	INPLACE
D8–1,D8–2	6X6	INPLACE
D8–3	6X15	INPLACE
D8–4	6X6	INPLACE

–ALL LOOP DETECTORS SHALL BE PVC UNLESS NOTED OTHERWISE
–LOCATION: DISTANCE FROM CROSSWALK/STOP BAR IN FEET

SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- THE SIGNAL SYSTEM IS FULLY ACTUATED.
- NORMAL OPERATION IS 8 PHASE, WITH PHASES 1,3,5 & 7 BEING PROTECTED LEFT TURN PHASES.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.
- OVERLAP A TIMES CONCURRENT WITH PHASES 4&5.

NOTES:

1. ALL ITEMS ARE INPLACE, UNLESS NOTED OTHERWISE.
2. SEE SPECIAL PROVISIONS FOR STATE FURNISHED MATERIALS.
3. REFER TO "FOR INFORMATION ONLY" SHEETS FOR INPLACE SIGNAL COMPONENTS.
4. THE EXACT LOCATION OF HANDHOLES, POLES, LOOP DETECTORS, AND PUSH BUTTON STATIONS SHALL BE VERIFIED IN THE FIELD BY MNDOT TRAFFIC OFFICE PERSONNEL.
5. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE CONNECTION OF THE POWER FOR THE TRAFFIC SIGNAL SYSTEM.
6. FOR TYPE D SIGNS SEE DETAIL SHEET. ALL SIGNS REQUIRED ARE INCIDENTAL.
7. FOR PAVEMENT MARKINGS SEE SIGNING AND STRIPING PLANS.
8. FOR CONSTRUCTION OF PEDESTRIAN CURB RAMPS, CONCRETE WALK AND MEDIAN WORK SEE DETAIL SHEET.
9. THIS PLAN SPECIFIES CONDUIT SIZES, TYPES, AND GENERAL LOCATIONS. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD. CONDUITS UNDER EXISTING ROADWAYS REQUIRE BORING.
10. ALL NEW CONDUIT SHALL BE PVC – SCHEDULE 80 OR HDPE SCHEDULE 80 AND SHALL CARRY 1/C#6 GREEN INSULATED GROUNDING CONDUCTOR AS SHOWN IN THE PLAN.
11. ITEMS DENOTED WITH AN * ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM.
12. ITEMS DENOTED WITH AN ** ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION PAY ITEM.

DRAFT-WORK IN PROCESS

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM SRF Consulting Group, Inc. METROPOLITAN COUNCIL SOUTHWEST Green Line LRT Extension

60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL-SIGNAL SYSTEM "J"
PRAIRIE CENTER DR AT TH 212 N RAMPS/PLAZA DR
INTERSECTION LAYOUT

DISCIPLINE: TRAFFIC
SHEET NAME: W1-TFC-SIG-001 - 04

SHEET 113 OF 152

Sep. 21 2015 11:45 am V:\3400_ADC\CAD\SEGMENT W1\PLAN SHEETS\TRAFFIC\W1-TFC-SIG-001.dwg By: kmcclement

INTERSECTION NOTES

(1) PA90 POLE FOUNDATION
TYPE PA90–A–35–D40–9 (DAVIT AT 350 DEG)
ONE WAY SIGNAL OVERHEAD
TYPE 10B AT 0 DEG
TYPE 10B AT 270 DEG
ONE WAY EVP DETECTOR AND
CONFIRMATORY LIGHT (PHASE 2+5)
LUMINAIRE–200W HPS
2–PEDESTRIAN PUSH BUTTONS AND SIGNS
1–SIGN (D–5) WEST 5
1–SIGN (D–9) PLAZA DR
1–SIGN (R6–1L) ONE WAY
1–SIGN (R6–1R) ONE WAY
3" RSC TO HH 1:

(2) PEDESTAL FOUNDATION
10' SIGNAL PEDESTAL POLE AND BASE
TYPE 2D
1–PEDESTRIAN PUSH BUTTON AND SIGN
3" RSC TO HH 3:

(3) PA100 POLE FOUNDATION
TYPE PA100–A–40–D40–9 (DAVIT AT 350 DEG)
ONE WAY SIGNAL OVERHEAD
TYPE 10B AT 0 DEG
TYPE 10A AT 270 DEG
ONE WAY EVP DETECTOR AND
CONFIRMATORY LIGHT (PHASE 4+7)
LUMINAIRE–200W HPS
1–PEDESTRIAN PUSH BUTTON AND SIGN
1–SIGN (D–3) PRAIRIE CENTER DR
1–SIGN (R6–1L) ONE WAY
1–SIGN (R6–1R) ONE WAY
1–SIGN FACING POLE NO. 4 (R9–3a) NO PED
3" RSC TO HH 4:

(4) PA100 POLE FOUNDATION
TYPE PA100–A–45–D40–9 (DAVIT AT 350 DEG)
TWO WAY SIGNAL OVERHEAD
ONE WAY SIGNAL OVERHEAD
(15' FROM END OF MAST ARM)
TYPE 10A AT 0 DEG
TYPE 10A AT 180 DEG
TYPE 10B AT 270 DEG
▲– 1–ANGLE MOUNT SIGNAL AT 180 DEG
ONE WAY EVP DETECTOR AND
CONFIRMATORY LIGHT (PHASE 6+1)
LUMINAIRE–200W HPS
REMOVE– 1–PEDESTRIAN PUSH BUTTON AND SIGN
▲– 1–PEDESTRIAN PUSH BUTTON AND SIGN AT 180 DEG
1–SIGN (D–8) PLAZA DR
1–SIGN (R6–1L) ONE WAY
1–SIGN (R6–1R) ONE WAY
1–SIGN FACING POLE NO. 3 (R9–3a) NO PED
3" RSC TO HH 7:

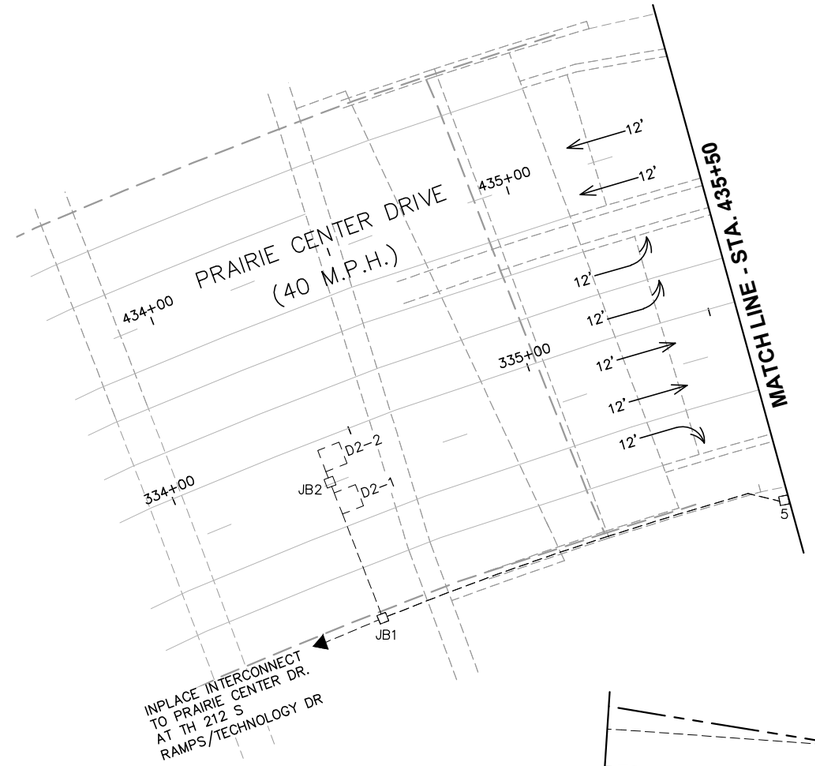
(5) PEDESTAL FOUNDATION
10' SIGNAL PEDESTAL POLE AND BASE
TYPE 2D
1–PEDESTRIAN PUSH BUTTON AND SIGN
3" RSC TO HH 9:

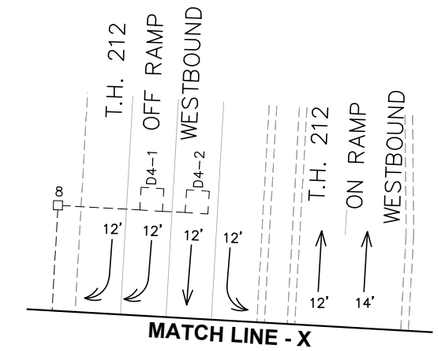
(6) PA100 POLE FOUNDATION
TYPE PA100–A–45–D40–9 (DAVIT AT 350 DEG)
2–SWING AWAY HINGES
ONE WAY SIGNAL OVERHEAD
TYPE 10B AT 0 DEG
TYPE 10B AT 270 DEG
ONE WAY EVP DETECTOR AND
CONFIRMATORY LIGHT (PHASE 8+3)
1–ONE WAY EVP DETECTOR–POLE MOUNTED
AT 90 DEG (PHASE 4+7)
LUMINAIRE–200W HPS
2–PEDESTRIAN PUSH BUTTONS AND SIGNS
1–SIGN (D–7) WEST 5
1–SIGN (D–3) PRAIRIE CENTER DR
1–SIGN (R6–1L) ONE WAY
1–SIGN (R6–1R) ONE WAY
3" RSC TO HH 10:

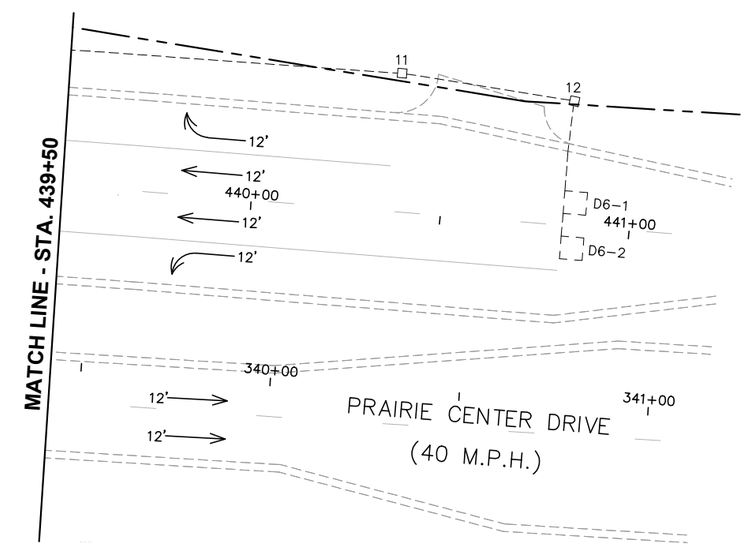
(7) PEDESTAL FOUNDATION
10' SIGNAL PEDESTAL POLE AND BASE
TYPE 2D
1–PEDESTRIAN PUSH BUTTON AND SIGN
3" RSC TO HH 13:

(A) EQUIPMENT PAD (INPLACE)
SERVICE CABINET (INPLACE)
CONTROLLER CABINET, MASTER CONTROLLER
AND CONTROLLER

ALL SIGNAL EQUIPMENT ON THIS SHEET IS INPLACE & SHALL REMAIN INPLACE UNLESS OTHERWISE NOTED. A ▲ DENOTES WORK TO BE COMPLETED BY THE CONTRACTOR.







DRAFT-WORK IN PROCESS

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM SRF Consulting Group, Inc. METROPOLITAN COUNCIL SOUTHWEST Green Line LRT Extension

60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL-SIGNAL SYSTEM "J"
PRAIRIE CENTER DR AT TH 212 N RAMPS/PLAZA DR
INTERSECTION NOTES AND MATCHLINES

DISCIPLINE: TRAFFIC
SHEET NAME: W1-TFC-SIG-001 - 04B

Sep, 21 2015 11:46 am V:\3400_ADC\CAD\SEGMENT W1\PLAN SHEETS\TRAFFIC\W1-TFC-SIG-001.dwg By: kmcclement

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTON LAYOUT

PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN

NMC LOOP DETECTORS

ALL LOOP DETECTORS SHALL BE 6' X 6' UNLESS OTHERWISE SPECIFIED

DESIGNATION	NO. OF LOOPS	LOCATION
D1-1, D5-1, D5-2	1	40
D1-2, D3-2, D7-2	1	10
D2-1, D2-2 (*)	1	250
D3-1, D7-1	1	120
D4-1, D4-2	1	40
D4-3, D8-3 (**)	1	5
D4-4, D4-5, D8-4	1	20
D5-3	2	10
D6-1, D6-2	1	250
D8-1, D8-2	1	120

LOCATION: DISTANCE FROM CROSSWALK/STOP LINE IN FEET
(*) SAW CUT LOOP DETECTORS IN BR. DECK (SEE SHEET NO. 8)
(**) 6' X 15' LOOP DETECTOR

SIGNAL HEAD PHASING

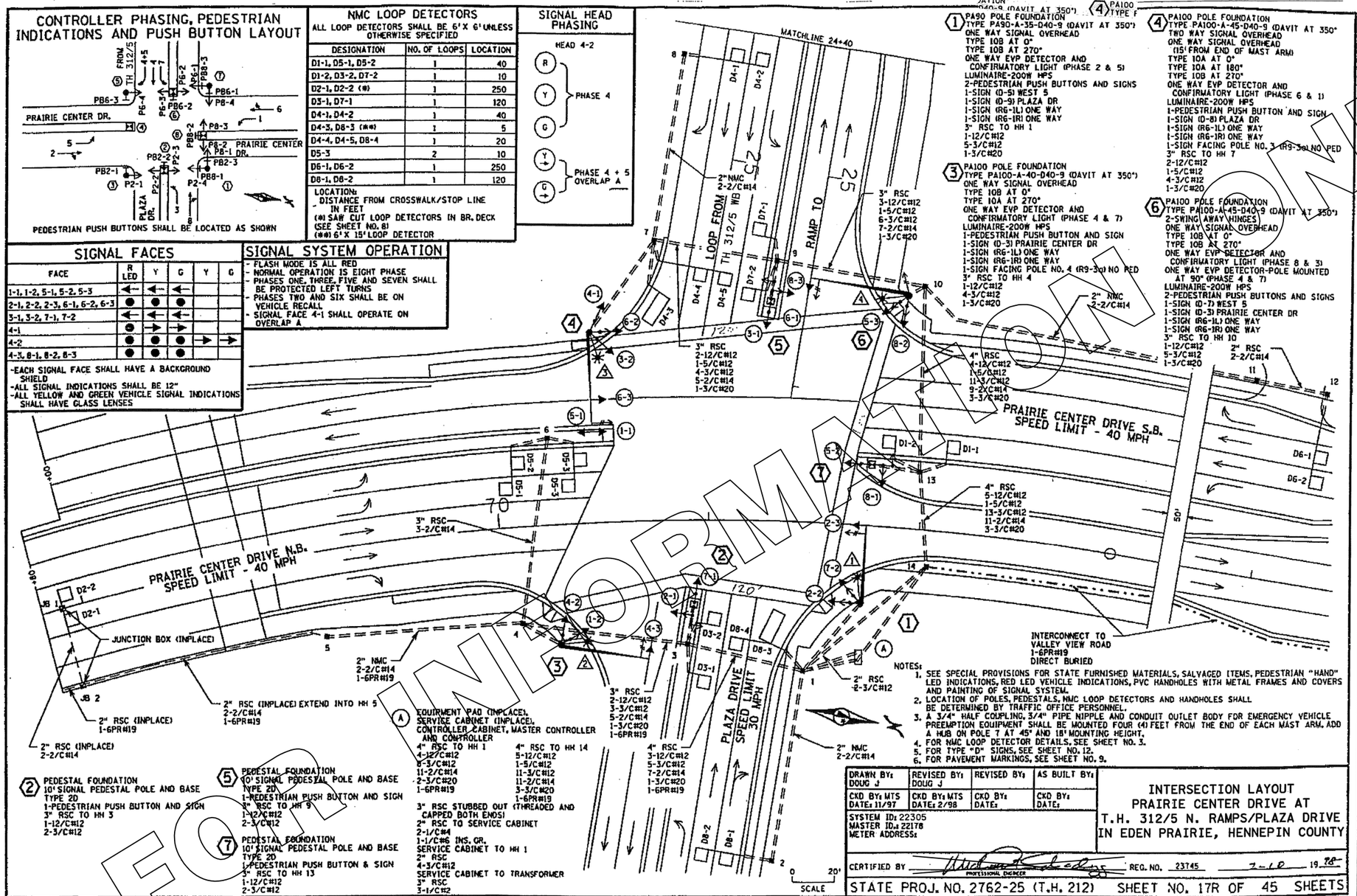
SIGNAL FACES

FACE	R LED	Y	G	Y	G
1-1, 1-2, 5-1, 5-2, 5-3	←	←			
2-1, 2-2, 2-3, 6-1, 6-2, 6-3	●	●	●		
3-1, 3-2, 7-1, 7-2	←	←	←		
4-1	●	→	→		
4-2	●	●	●	→	→
4-3, 8-1, 8-2, 8-3	●	●	●		

- EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD
- ALL SIGNAL INDICATIONS SHALL BE 12"
- ALL YELLOW AND GREEN VEHICLE SIGNAL INDICATIONS SHALL HAVE GLASS LENSES

SIGNAL SYSTEM OPERATION

- FLASH MODE IS ALL RED
- NORMAL OPERATION IS EIGHT PHASE
- PHASES ONE, THREE, FIVE AND SEVEN SHALL BE PROTECTED LEFT TURNS
- PHASES TWO AND SIX SHALL BE ON VEHICLE RECALL
- SIGNAL FACE 4-1 SHALL OPERATE ON OVERLAP A



(1) PA90 POLE FOUNDATION
TYPE PA90-A-35-D40-9 (DAVIT AT 350°)
ONE WAY SIGNAL OVERHEAD
TYPE 10B AT 0°
TYPE 10B AT 270°
ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 2 & 5)
LUMINAIRE-200W HPS
2-PEDESTRIAN PUSH BUTTONS AND SIGNS
1-SIGN (D-5) WEST 5
1-SIGN (D-9) PLAZA DR
1-SIGN (R6-1L) ONE WAY
1-SIGN (R6-1R) ONE WAY
3" RSC TO HH 1
1-12/C#12
5-3/C#12
1-3/C#20

(3) PA100 POLE FOUNDATION
TYPE PA100-A-40-D40-9 (DAVIT AT 350°)
ONE WAY SIGNAL OVERHEAD
TYPE 10B AT 0°
TYPE 10A AT 270°
ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 4 & 7)
LUMINAIRE-200W HPS
1-PEDESTRIAN PUSH BUTTON AND SIGN
1-SIGN (D-3) PRAIRIE CENTER DR
1-SIGN (R6-1L) ONE WAY
1-SIGN (R6-1R) ONE WAY
1-SIGN FACING POLE NO. 4 (R9-3a) NO PED
3" RSC TO HH 4
1-12/C#12
4-3/C#12
1-3/C#20

(4) PA100 POLE FOUNDATION
TYPE PA100-A-45-D40-9 (DAVIT AT 350°)
TWO WAY SIGNAL OVERHEAD
ONE WAY SIGNAL OVERHEAD
(15' FROM END OF MAST ARM)
TYPE 10A AT 0°
TYPE 10A AT 180°
TYPE 10B AT 270°
ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 6 & 1)
LUMINAIRE-200W HPS
1-PEDESTRIAN PUSH BUTTON AND SIGN
1-SIGN (D-8) PLAZA DR
1-SIGN (R6-1L) ONE WAY
1-SIGN (R6-1R) ONE WAY
1-SIGN FACING POLE NO. 3 (R9-3a) NO PED
3" RSC TO HH 7
2-12/C#12
1-5/C#12
4-3/C#12
1-3/C#20

(6) PA100 POLE FOUNDATION
TYPE PA100-A-45-D40-9 (DAVIT AT 350°)
2-SWING AWAY HINGES
ONE WAY SIGNAL OVERHEAD
TYPE 10B AT 0°
TYPE 10B AT 270°
ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 8 & 3)
ONE WAY EVP DETECTOR-POLE MOUNTED AT 90° (PHASE 4 & 7)
LUMINAIRE-200W HPS
2-PEDESTRIAN PUSH BUTTONS AND SIGNS
1-SIGN (D-7) WEST 5
1-SIGN (D-3) PRAIRIE CENTER DR
1-SIGN (R6-1L) ONE WAY
1-SIGN (R6-1R) ONE WAY
3" RSC TO HH 10
1-12/C#12 2" RSC 2-2/C#14
5-3/C#12
1-3/C#20

(2) PEDESTAL FOUNDATION
10' SIGNAL PEDESTAL POLE AND BASE
TYPE 2D
1-PEDESTRIAN PUSH BUTTON AND SIGN
3" RSC TO HH 3
1-12/C#12
2-3/C#12

(5) PEDESTAL FOUNDATION
10' SIGNAL PEDESTAL POLE AND BASE
TYPE 2D
1-PEDESTRIAN PUSH BUTTON AND SIGN
3" RSC TO HH 9
1-12/C#12
2-3/C#12

(7) PEDESTAL FOUNDATION
10' SIGNAL PEDESTAL POLE AND BASE
TYPE 2D
1-PEDESTRIAN PUSH BUTTON & SIGN
3" RSC TO HH 13
1-12/C#12
2-3/C#12

NOTES:
1. SEE SPECIAL PROVISIONS FOR STATE FURNISHED MATERIALS, SALVAGED ITEMS, PEDESTRIAN "HAND" LED INDICATIONS, RED LED VEHICLE INDICATIONS, PVC HANDHOLES WITH METAL FRAMES AND COVERS AND PAINTING OF SIGNAL SYSTEM.
2. LOCATION OF POLES, PEDESTALS, NMC LOOP DETECTORS AND HANDHOLES SHALL BE DETERMINED BY TRAFFIC OFFICE PERSONNEL.
3. A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE AND CONDUIT OUTLET BODY FOR EMERGENCY VEHICLE PREEMPTION EQUIPMENT SHALL BE MOUNTED FOUR (4) FEET FROM THE END OF EACH MAST ARM. ADD A HUB ON POLE 7 AT 45° AND 18' MOUNTING HEIGHT.
4. FOR NMC LOOP DETECTOR DETAILS, SEE SHEET NO. 3.
5. FOR TYPE "D" SIGNS, SEE SHEET NO. 12.
6. FOR PAVEMENT MARKINGS, SEE SHEET NO. 9.

DRAWN BY: DOUG J	REVISED BY: DOUG J	REVISED BY:	AS BUILT BY:
CKD BY: MTS DATE: 11/97	CKD BY: MTS DATE: 2/98	CKD BY: DATE:	CKD BY: DATE:

SYSTEM ID: 22305
MASTER ID: 22178
METER ADDRESS:

INTERSECTION LAYOUT
PRAIRIE CENTER DRIVE AT
T.H. 312/5 N. RAMPS/PLAZA DRIVE
IN EDEN PRAIRIE, HENNEPIN COUNTY

CERTIFIED BY _____ PROFESSIONAL ENGINEER REG. NO. 23745 7-10 19 98

STATE PROJ. NO. 2762-25 (T.H. 212) SHEET NO. 17R OF 45 SHEETS

FOR INFORMATION ONLY

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

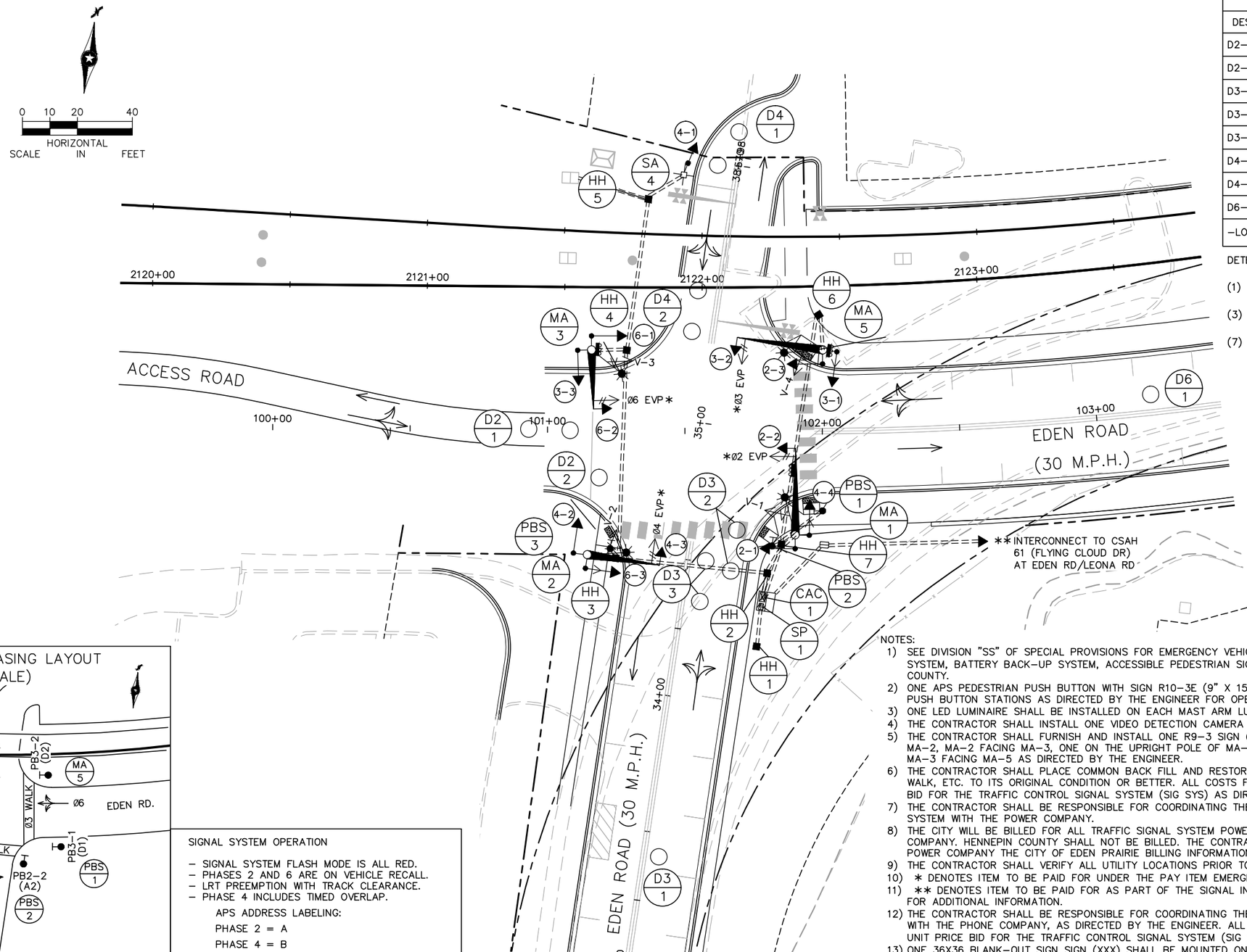
AECOM
SRF Consulting Group, Inc.
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL-SIGNAL SYSTEM "J"
PRAIRIE CENTER DR AT TH 212 N RAMPS/PLAZA DR
FOR INFORMATION ONLY

DISCIPLINE: TRAFFIC
SHEET NAME: W1-TRF-SIG-002-04

Sep, 21 2015 11:46 am V:\3400_ADC\CAD\SEGMENT W1\PLAN SHEETS\TRAFFIC\W1-TFC-SIG-002.dwg By: kmcclement



DETECTOR CHART

DESIGNATION	CAMERA	FUNCTION	LOCATION
D2–1	V–1	(1)	5,20
D2–2	V–1	(7)	–6
D3–1	V–4	(3)	120
D3–2	V–4	(7)	–6,9
D3–3	V–4	(1)	5,20
D4–1	V–2	(1)	5,20
D4–2	V–2	(1)	–60,–51
D6–1	V–3	(1)	120

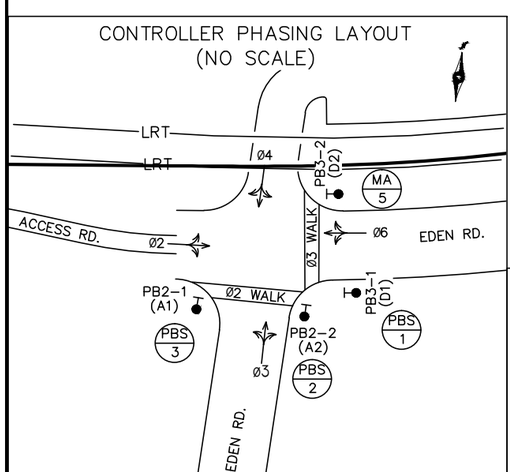
–LOCATION: DISTANCE FROM CROSSWALK/STOP BAR IN FEET

DETECTOR FUNCTIONS:

(1) –CALL AND EXTEND

(3) –EXTEND ONLY

(7) – DELAY CALL – IMMEDIATE EXTEND



SIGNAL SYSTEM OPERATION

- SIGNAL SYSTEM FLASH MODE IS ALL RED.
- PHASES 2 AND 6 ARE ON VEHICLE RECALL.
- LRT PREEMPTION WITH TRACK CLEARANCE.
- PHASE 4 INCLUDES TIMED OVERLAP.

APS ADDRESS LABELING:

PHASE 2 = A

PHASE 4 = B

PHASE 6 = C

PHASE 3 = D

NOTES:

1) SEE DIVISION "SS" OF SPECIAL PROVISIONS FOR EMERGENCY VEHICLE PREEMPTION (EVP) SYSTEM, VIDEO DETECTION SYSTEM, BATTERY BACK–UP SYSTEM, ACCESSIBLE PEDESTRIAN SIGNAL (APS) AND MATERIALS PROVIDED BY HENNEPIN COUNTY.
2) ONE APS PEDESTRIAN PUSH BUTTON WITH SIGN R10–3E (9" X 15") SHALL BE INSTALLED ON SIGNAL MAST ARMS AND PUSH BUTTON STATIONS AS DIRECTED BY THE ENGINEER FOR OPERATION AS SHOWN IN THE PHASING LAYOUT.
3) ONE LED LUMINAIRE SHALL BE INSTALLED ON EACH MAST ARM LUMINAIRE SHAFT EXTENSION, SEE SPECIAL PROVISIONS.
4) THE CONTRACTOR SHALL INSTALL ONE VIDEO DETECTION CAMERA ON EACH DAVIT ARM.
5) THE CONTRACTOR SHALL FURNISH AND INSTALL ONE R9–3 SIGN (18" X 18") ON THE UPRIGHT POLE OF MA–3 FACING MA–2, MA–2 FACING MA–3, ONE ON THE UPRIGHT POLE OF MA–5 FACING MA–3, AND ONE ON THE UPRIGHT POLE OF MA–3 FACING MA–5 AS DIRECTED BY THE ENGINEER.
6) THE CONTRACTOR SHALL PLACE COMMON BACK FILL AND RESTORE ALL DISTURBED TURF, CONCRETE, OR BITUMINOUS WALK, ETC. TO ITS ORIGINAL CONDITION OR BETTER. ALL COSTS FOR THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE TRAFFIC CONTROL SIGNAL SYSTEM (SIG SYS) AS DIRECTED BY THE ENGINEER.
7) THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE CONNECTION OF THE POWER FOR THE TRAFFIC SIGNAL SYSTEM WITH THE POWER COMPANY.
8) THE CITY WILL BE BILLED FOR ALL TRAFFIC SIGNAL SYSTEM POWER COSTS WHICH THE CITY WILL PAY TO THE POWER COMPANY. HENNEPIN COUNTY SHALL NOT BE BILLED. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE TO THE POWER COMPANY THE CITY OF EDEN PRAIRIE BILLING INFORMATION.
9) THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION.
10) * DENOTES ITEM TO BE PAID FOR UNDER THE PAY ITEM EMERGENCY VEHICLE PREEMPTION SYSTEM (LS).
11) ** DENOTES ITEM TO BE PAID FOR AS PART OF THE SIGNAL INTERCONNECT SYSTEM. SEE SIGNAL INTERCONNECT PLANS FOR ADDITIONAL INFORMATION.
12) THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE INSTALLATION OF A TELEPHONE DROP INTO CAC–1 WITH THE PHONE COMPANY, AS DIRECTED BY THE ENGINEER. ALL COSTS FOR THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE TRAFFIC CONTROL SIGNAL SYSTEM (SIG SYS).
13) ONE 36X36 BLANK–OUT SIGN SIGN (XXX) SHALL BE MOUNTED ON POLES MA–3 AND MA–5 TO THE SATISFACTION OF THE ENGINEER.

DRAFT-WORK IN PROCESS

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

METROPOLITAN COUNCIL SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10

TRAFFIC SIGNAL-SIGNAL SYSTEM "K"
EDEN ROAD AT EDEN ROAD
INTERSECTION LAYOUT

DISCIPLINE: TRAFFIC

SHEET NAME: W1-TFC-SIG-001 - 05

SHEET 116 OF 152

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SIGNAL STRUCTURE LOCATIONS

NO.	LOCATION (1)	NO.	LOCATION (1)
HH–1			
HH–2		CAC–1	
HH–3			
HH–4		SP–1	SOUTH SIDE OF CAC–1 FOUNDATION
HH–5			
HH–6			
HH–7			
		SOP–1	BY OTHERS

NO.	LOCATION		MAST ARM
	FOUNDATION (1)	AIM ARM TO	
MA–1		XXX+XX	30'
PBS–1			
MA–2			25'
MA–3			20'
SA–4			
MA–5			30'

(1) TO THE CENTER OF THE HANDHOLE OR CONCRETE FOUNDATION.

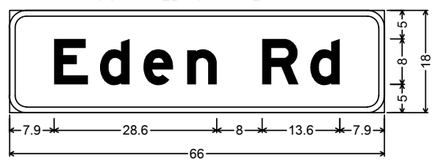
SIGNAL INDICATIONS AND BRACKETING

SIG. POLE NO.	FACE NO.	SIGNAL FACE MOUNT	SIG. Ø	LED INDICATIONS 12" INDICATIONS RED	YEL	FYEL	GRN	GTA	PED SYM.	BRACKET MOUNTING ANGLE, TYPE AND STANDARD PLATE NO.
MA–1	2–2	MAST ARM (END)	2	●	●		●			**
	2–1	POLE MOUNT	2	●	●		●		*	180° PLATE 8110E TYPE 10B
	4–4	POLE MOUNT	4	●	←			←		90° PLATE 8110E TYPE 10B
			3						*	
MA–2	4–3	MAST ARM (END)	4	●	●		●	←		**
	4–2	POLE MOUNT	4	●	●		●			180° PLATE 8110E TYPE 10A
	6–3	POLE MOUNT	6	●	●		●			90° PLATE 8110E TYPE 10B
			2						*	
MA–3	6–2	MAST ARM (END)	6	●	●		●			**
	6–1	POLE MOUNT	6	●	●		●			180° PLATE 8110E TYPE 10A
	3–3	POLE MOUNT	3	●	←			←		90° PLATE 8110E TYPE 10A
SA–4	4–1	POLE MOUNT	4	●	●		●			0° PLATE 8111E TYPE 5A
MA–5	3–2	MAST ARM (END)	3	●	●		●	←		**
	3–1	POLE MOUNT	3	●	●		●		*	180° PLATE 8110E TYPE 10B
	2–3	POLE MOUNT	2	●	●		●			90° PLATE 8110E TYPE 10A

* PEDESTRIAN INDICATIONS SHALL BE INTERNATIONAL SYMBOLS IN A DUAL FACE SINGLE HOUSING WITH PEDESTRIAN COUNTDOWN TIMER.

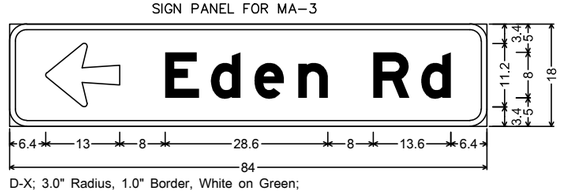
** STRAIGHT MOUNT PLUMBIZER, SEE SPECIAL PROVISIONS.

SIGN PANEL FOR MA–2



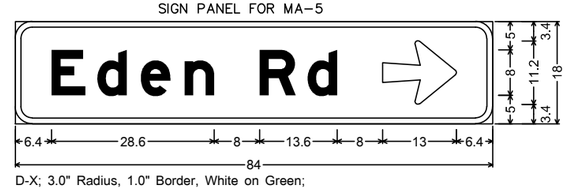
D-X; 3.0" Radius, 1.0" Border, White on Green;
[Eden Rd] E Mod;

SIGN PANEL FOR MA–3



D-X; 3.0" Radius, 1.0" Border, White on Green;
Arrow 5 - 13.0" 180°; [Eden Rd] E Mod;

SIGN PANEL FOR MA–5



D-X; 3.0" Radius, 1.0" Border, White on Green;
[Eden Rd] E Mod; Arrow 5 - 13.0" 0°;

NOTES:
1. SEE SHEET #### FOR SIGN MOUNTING PLATE LOCATIONS.
2. COLOR – WHITE LEGEND AND BORDER ON GREEN BACKGROUND. ALL SIGNING SHALL USE DG3 SIGN SHEETING.
3. ALL COSTS TO PROVIDE AND INSTALL MAST ARM MOUNTED SIGN PANELS SHALL BE INCIDENTAL.

DRAFT-WORK IN PROCESS

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM SRF Consulting Group, Inc. METROPOLITAN COUNCIL SOUTHWEST Green Line LRT Extension

60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL-SIGNAL SYSTEM "K"
EDEN ROAD AT EDEN ROAD
EQUIPMENT SCHEDULE

DISCIPLINE: TRAFFIC
SHEET NAME: W1-TFC-SIG-001 - 05B

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DETECTOR CHART

DESIGNATION	SIZE (FT)	CAMERA	FUNCTION	LOCATION
D1-1,D1-2	INPLACE			INPLACE
D2-1,D2-2	INPLACE			INPLACE
D3-1	INPLACE		(1)	INPLACE
D3-2		V-1	(1)	35',50'
D4-1		V-2	(1)	120'
D4-2		V-2	(1)	5',20'
D7-1		V-2	(1)	20',50'
D7-2		V-2	(1)	5',35'
D5-1	INPLACE			INPLACE
D5-2	INPLACE			INPLACE
D6-1,D6-2,D6-3	INPLACE			INPLACE
D8-1	INPLACE			INPLACE
D8-2	INPLACE			INPLACE
D8-3	INPLACE			INPLACE

▲ D3-1 — CURRENT D8-4; REDESIGNATE D3-1

-LOCATION: DISTANCE FROM CROSSWALK/STOP BAR IN FEET

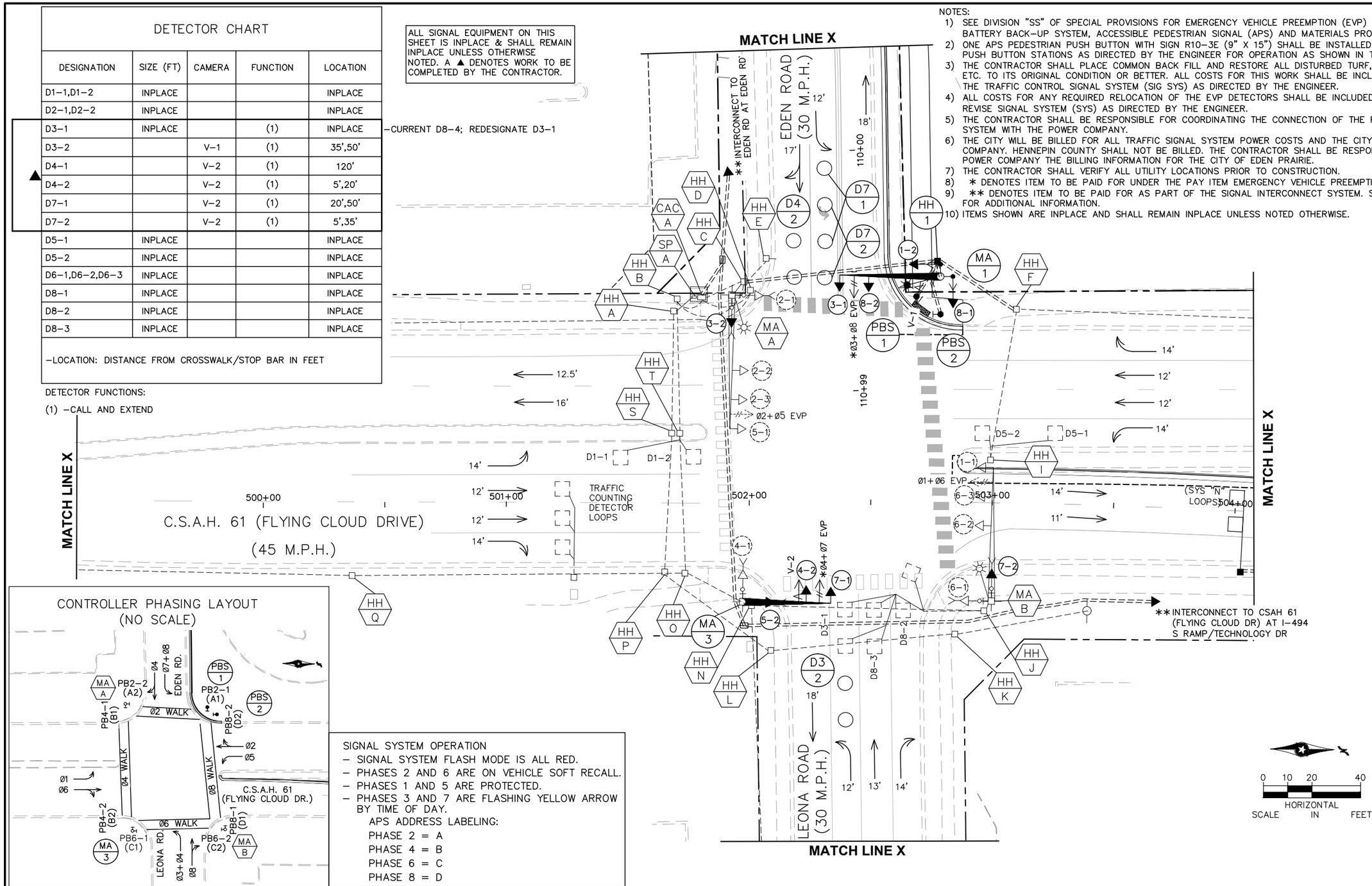
DETECTOR FUNCTIONS:

(1) -CALL AND EXTEND

ALL SIGNAL EQUIPMENT ON THIS SHEET IS INPLACE & SHALL REMAIN INPLACE UNLESS OTHERWISE NOTED. A ▲ DENOTES WORK TO BE COMPLETED BY THE CONTRACTOR.

NOTES:

1) SEE DIVISION "SS" OF SPECIAL PROVISIONS FOR EMERGENCY VEHICLE PREEMPTION (EVP) SYSTEM, VIDEO DETECTION SYSTEM, BATTERY BACK-UP SYSTEM, ACCESSIBLE PEDESTRIAN SIGNAL (APS) AND MATERIALS PROVIDED BY HENNEPIN COUNTY.
2) ONE APS PEDESTRIAN PUSH BUTTON WITH SIGN R10-3E (9" X 15") SHALL BE INSTALLED ON SIGNAL MAST ARMS AND PUSH BUTTON STATIONS AS DIRECTED BY THE ENGINEER FOR OPERATION AS SHOWN IN THE PHASING LAYOUT.
3) THE CONTRACTOR SHALL PLACE COMMON BACK FILL AND RESTORE ALL DISTURBED TURF, CONCRETE, OR BITUMINOUS WALK, ETC. TO ITS ORIGINAL CONDITION OR BETTER. ALL COSTS FOR THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE TRAFFIC CONTROL SIGNAL SYSTEM (SIG SYS) AS DIRECTED BY THE ENGINEER.
4) ALL COSTS FOR ANY REQUIRED RELOCATION OF THE EVP DETECTORS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR REVISE SIGNAL SYSTEM (SYS) AS DIRECTED BY THE ENGINEER.
5) THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE CONNECTION OF THE POWER FOR THE TRAFFIC SIGNAL SYSTEM WITH THE POWER COMPANY.
6) THE CITY WILL BE BILLED FOR ALL TRAFFIC SIGNAL SYSTEM POWER COSTS AND THE CITY WILL PAY TO THE POWER COMPANY. HENNEPIN COUNTY SHALL NOT BE BILLED. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE TO THE POWER COMPANY THE BILLING INFORMATION FOR THE CITY OF EDEN PRAIRIE.
7) THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION.
8) * DENOTES ITEM TO BE PAID FOR UNDER THE PAY ITEM EMERGENCY VEHICLE PREEMPTION SYSTEM (LS).
9) ** DENOTES ITEM TO BE PAID FOR AS PART OF THE SIGNAL INTERCONNECT SYSTEM. SEE SIGNAL INTERCONNECT PLANS FOR ADDITIONAL INFORMATION.
10) ITEMS SHOWN ARE INPLACE AND SHALL REMAIN INPLACE UNLESS NOTED OTHERWISE.



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NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

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60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL-SIGNAL SYSTEM "M"
CSAH 61 (FLYING CL DR) AT EDEN RD/LEONA RD
INTERSECTION LAYOUT

DISCIPLINE: TRAFFIC

SHEET NAME: W1-TFC-SIG-001 - 07

SHEET 118 OF 152

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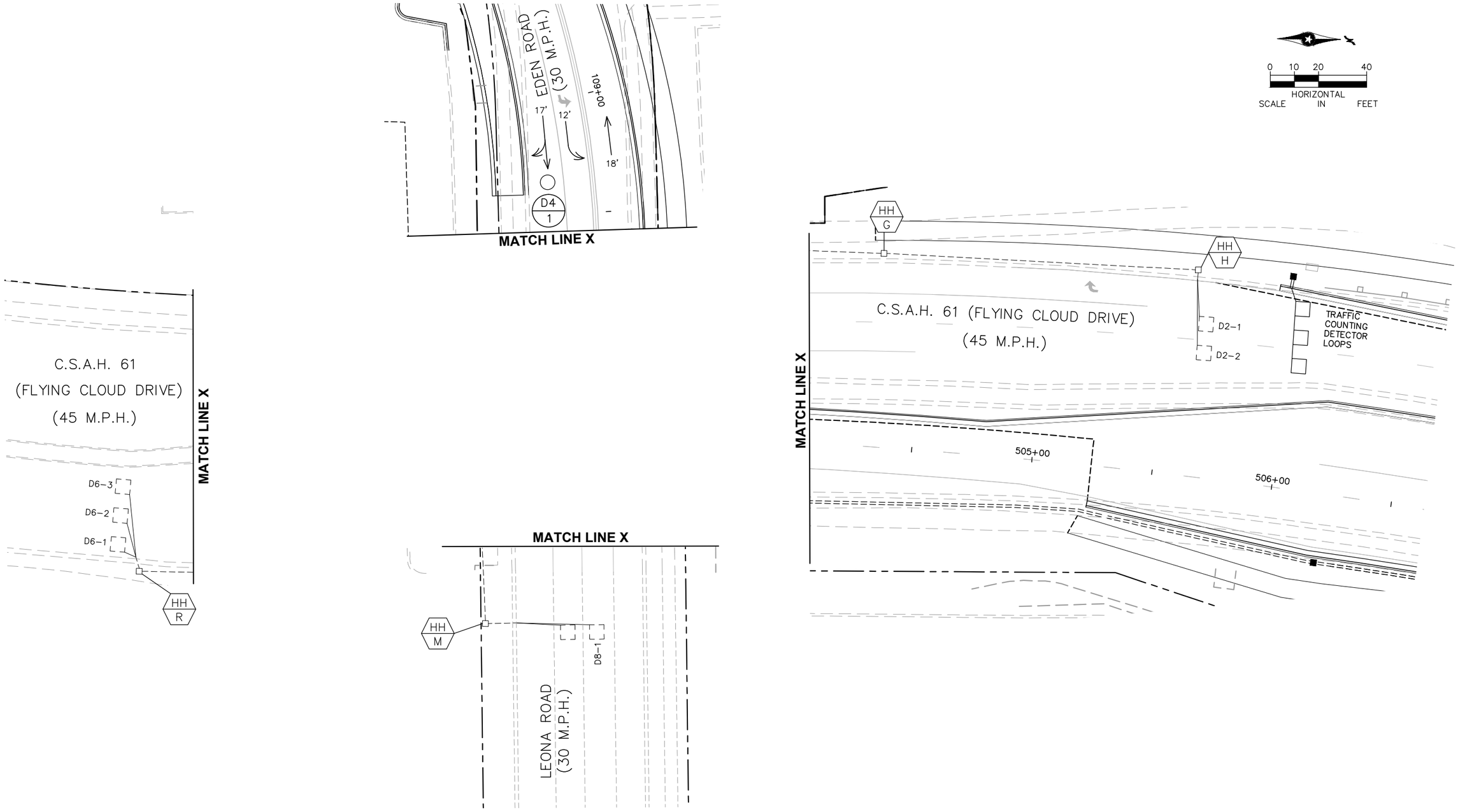

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NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

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METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL-SIGNAL SYSTEM "M"
CSAH 61 (FLYING CL DR) AT EDEN RD/LEONA RD
MATCHLINE LAYOUT

DISCIPLINE: TRAFFIC

SHEET NAME: W1-TFC-SIG-001 - 07B

SHEET 119 OF 152

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SIGNAL STRUCTURE LOCATIONS

NO.	LOCATION (1)	NO.	LOCATION (1)
HH-1			
HH-2			

NO.	LOCATION		MAST ARM
	FOUNDATION (1)	AIM ARM TO	
MA-1		XXX+XX	40'
MA-3		XXX+XX	35'
PBS-1			
PBS-2			

(1) TO THE CENTER OF THE HANDHOLE OR CONCRETE FOUNDATION.

ALL SIGNAL EQUIPMENT ON THIS SHEET IS INPLACE & SHALL REMAIN INPLACE UNLESS OTHERWISE NOTED. A ▲ DENOTES WORK TO BE COMPLETED BY THE CONTRACTOR.

INPLACE SIGNAL STRUCTURES

NO.	REMARKS	NO.	REMARKS
HH-A	REMAIN INPLACE	INP HH-11 (2)	REMOVE
HH-B	REMAIN INPLACE	INP HH-12 (2)	REMOVE
HH-C	REMAIN INPLACE		
HH-D	REMAIN INPLACE		
HH-E	REMAIN INPLACE		
HH-F	REMAIN INPLACE		
HH-G	REMAIN INPLACE		
HH-H	REMAIN INPLACE		
HH-I	REMAIN INPLACE		
HH-J	REMAIN INPLACE	CAC-A	REMAIN INPLACE
HH-K	REMAIN INPLACE	SP-A	REMAIN INPLACE
HH-L	REMAIN INPLACE		
HH-M	REMAIN INPLACE	SOP-1	REMAIN INPLACE
HH-N	REMAIN INPLACE		
HH-O	REMAIN INPLACE	MA-A	REMAIN INPLACE
HH-P	REMAIN INPLACE	MA-2 (2)	REMOVE
HH-Q	REMAIN INPLACE	MA-B	REMAIN INPLACE
HH-R	REMAIN INPLACE	MA-3	REMAIN INPLACE (POLE AND FOUNDATION
HH-S	REMAIN INPLACE		
HH-T	REMAIN INPLACE		

(2) SEE "FOR INFORMATION ONLY" SHEET 122.

SIGNAL INDICATIONS AND BRACKETING

SIG. POLE NO.	FACE NO.	SIGNAL FACE MOUNT	SIG. Ø	LED INDICATIONS 12" INDICATIONS RED	YEL	FYEL	GRN	LRT STOP	LRT PTS	LRT GO	PED SYM.	BRACKET MOUNTING ANGLE, TYPE AND STANDARD PLATE NO.	
MA-A	5-1	MAST ARM (END)	5	◁—	◁—		◁—					INPLACE	
	2-3	MAST ARM (MID)	2	○	○		○					INPLACE	
	2-2	MAST ARM (INSIDE)	2	○	○		○					INPLACE	
	2-1	POLE MOUNT	2	○	○		○					INPLACE 270° TYPE 10B	
			2								✳		
	3-2	POLE MOUNT	3	←	←		←					0° PLATE 8110E TYPE 10B -SALVAGE & INSTALL PED HEAD ON NEW BRACKETING	▲
			4			←					✳		
MA-1	3-1	MAST ARM (END)	3	←	←		←					**	▲
			4			←							
	8-2	MAST ARM (MID)	8	●	●		●					**	
	8-1	POLE MOUNT	8	●	●		●					180° PLATE 8110E TYPE 10B	
			8								✳		
	1-2	POLE MOUNT	1	←	←		←					90° PLATE 8110E TYPE 10B	
			2								✳		
MA-B	1-1	MAST ARM (END)	1	◁—	◁—		◁—					INPLACE	
	6-3	MAST ARM (MID)	6	○	○		○					INPLACE	
	6-2	MAST ARM (INSIDE)	6	○	○		○					INPLACE	
	6-1	POLE MOUNT	6	○	○		○					INPLACE 270° TYPE 10B	
			6								✳		
	7-2	POLE MOUNT	7	←	←		←					0° PLATE 8110E TYPE 10B -SALVAGE & INSTALL PED HEAD ON NEW BRACKETING	▲
			8			←					✳		
MA-3	7-1	MAST ARM (END)	7	←	←		←					**	▲
			8			←							
	4-2	MAST ARM (MID)	4	●	●		●					**	
	4-1	POLE MOUNT	4	○	○		○					INPLACE 270° TYPE 10B	
			4								✳		
	5-2	POLE MOUNT	5	←	←		←					0° PLATE 8110E TYPE 10B -SALVAGE & INSTALL PED HEAD ON NEW BRACKETING	
			6								✳		

✳ ALL NEW PEDESTRIAN INDICATIONS SHALL BE INTERNATIONAL SYMBOLS IN A DUAL FACE SINGLE HOUSING WITH PEDESTRIAN COUNTDOWN TIMER.

✳ INPLACE PEDESTRIAN INDICATION

** STRAIGHT MOUNT PLUMBIZER, SEE SPECIAL PROVISIONS.

DRAFT-WORK IN PROCESS

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

METROPOLITAN COUNCIL SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL-SIGNAL SYSTEM "M"
CSAH 61 (FLYING CL DR) AT EDEN RD/LEONA RD
EQUIPMENT SCHEDULE

DISCIPLINE: TRAFFIC

SHEET NAME: W1-TFC-SIG-001 - 07C

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MAST ARM MOUNTED SIGNS

SIGN NO	POLE NO	QTY	a	PANEL SIZE	PANEL AREA	PANEL TOTAL AREA	MOUNTING NUMBER	MOUNTING SPACING (1)	PANEL LEGEND
			FEET	INCH	SQFT	SQFT			
D-X	MA-1	1	13	114 x 18	14.25	14.25	4		FLYING CLOUD DR
D-X	MA-1	1	24.5	42 x 54	15.75	15.75	3		HENNEPIN COUNTY 61
D-X	MA-3	1	13	114 x 18	14.25	14.25	4		FLYING CLOUD DR
D-X	MA-3	1	24.5	42 x 54	15.75	15.75	3		HENNEPIN COUNTY 61

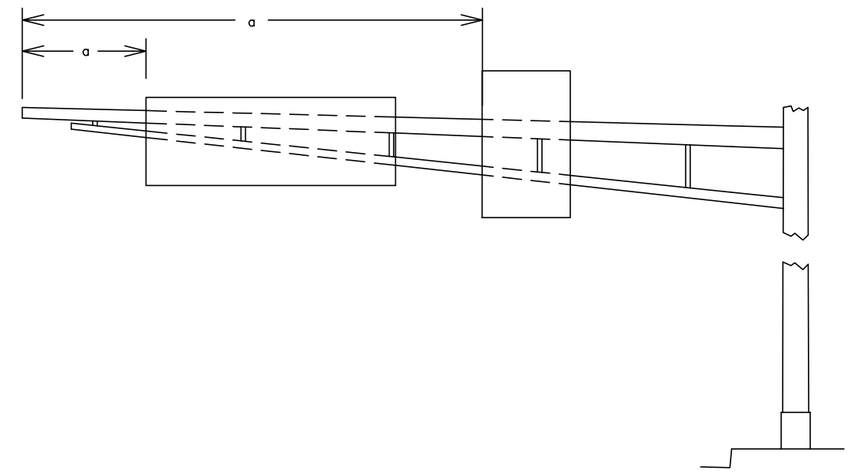
SPECIFIC NOTES:

(1) SPACING BETWEEN STIFFENERS SHALL NOT EXCEED 36 INCHES AND SHALL BE UNIFORMLY SPACED. SEE STANDARD SIGNS MANUAL, PAGE 105A FOR BRACKET SPACING REQUIREMENTS.

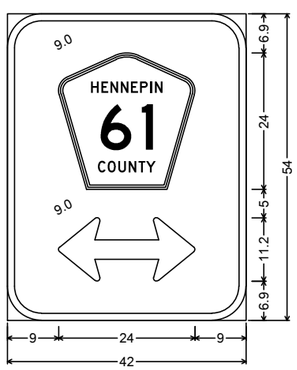
GENERAL NOTES:

1. CORNERS OF STANDARD SIGN PANELS WITH MARGINS SHALL BE TRIMMED.
2. TYPE D SIGN PANELS EXTENDING BEYOND THE BORDER SHALL NOT BE TRIMMED.
3. FOR STRUCTURAL DETAILS OF MAST ARM MOUNTED SIGNS SEE STANDARD SIGNS MANUAL, PAGE 105A.
4. FOR TYPE D STRINGER AND PANEL JOINT DETAILS SEE STANDARD SIGNS MANUAL, PAGE 105.
5. THE MAST ARM MOUNTED SIGNS ARE INCIDENTAL.
6. AT INTERSECTIONS WITH MEDIAN WIDTHS LESS THAN 30',ONE WAY (R6-1) SIGNS SHALL NOT BE PLACED AS PART OF THE SIGNALS PLAN.

MAST ARM SIGN LOCATION



D-X; 3.0" Radius, 1.0" Border, White on Green;
[Flying Cloud Dr] E Mod;



D-X;
6.0" Radius, 1.3" Border, White on Green;
Double Headed Arrow 5 - 24.0" 0°;

DRAFT-WORK IN PROCESS

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM SRF Consulting Group, Inc. METROPOLITAN COUNCIL SOUTHWEST Green Line LRT Extension

60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL-SIGNAL SYSTEM "M"
CSAH 61 (FLYING CL DR) AT EDEN RD/LEONA RD
MAST ARM SIGNING

DISCIPLINE: TRAFFIC

SHEET NAME: W1-TFC-SIG-001 - 07D

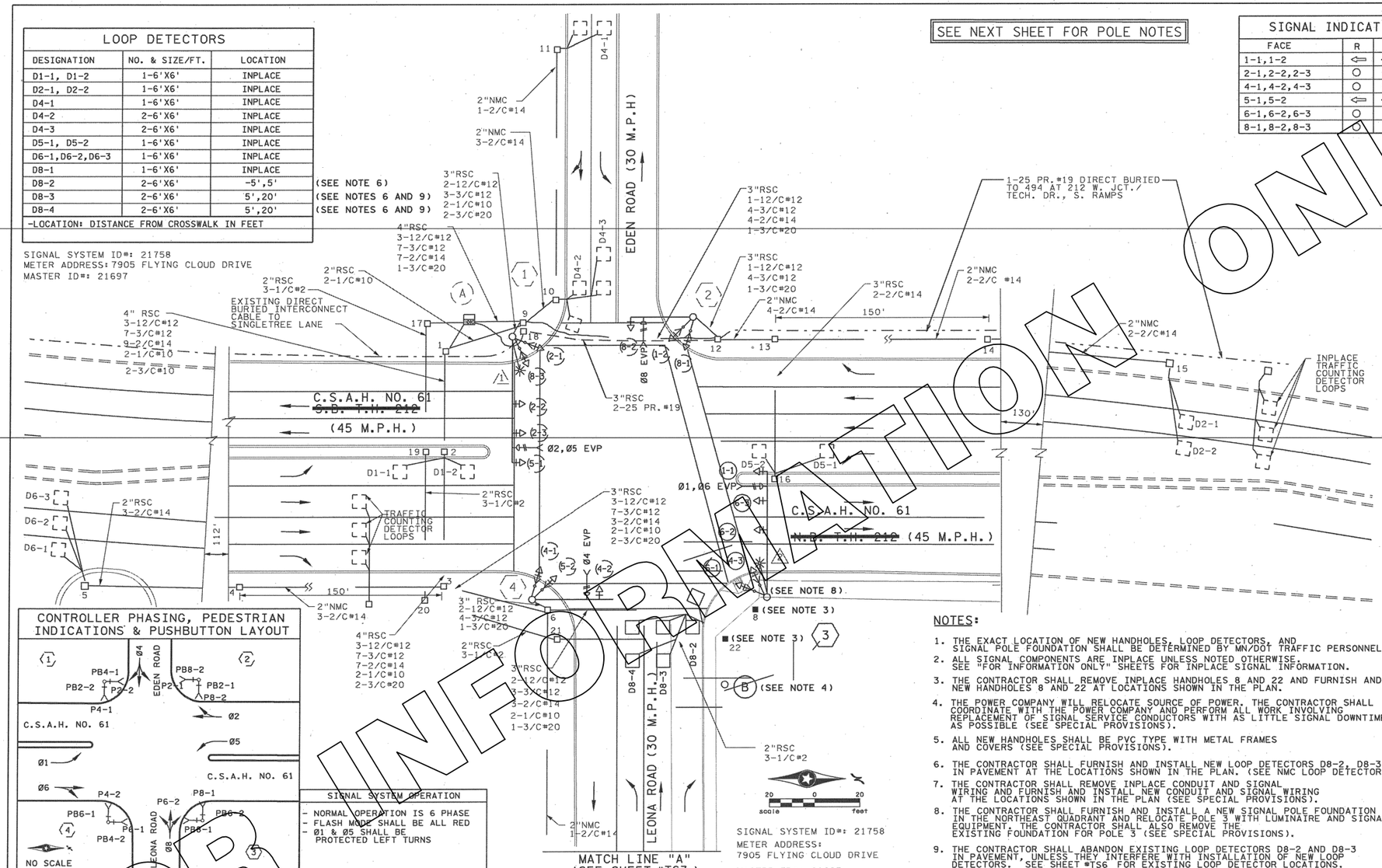
SHEET 121 OF 152

Sep, 21 2015 11:48 am V:\3400_ADC\CAD\SEGMENT W1\PLAN SHEETS\TRAFFIC\W1-TFC-SIG-001.dwg By: kmcclement

LOOP DETECTORS			
DESIGNATION	NO. & SIZE/FT.	LOCATION	
D1-1, D1-2	1-6'X6'	INPLACE	
D2-1, D2-2	1-6'X6'	INPLACE	
D4-1	1-6'X6'	INPLACE	
D4-2	2-6'X6'	INPLACE	
D4-3	2-6'X6'	INPLACE	
D5-1, D5-2	1-6'X6'	INPLACE	
D6-1,D6-2,D6-3	1-6'X6'	INPLACE	
D8-1	1-6'X6'	INPLACE	
D8-2	2-6'X6'	-5',5'	(SEE NOTE 6)
D8-3	2-6'X6'	5',20'	(SEE NOTES 6 AND 9)
D8-4	2-6'X6'	5',20'	(SEE NOTES 6 AND 9)
-LOCATION: DISTANCE FROM CROSSWALK IN FEET			

SEE NEXT SHEET FOR POLE NOTES

SIGNAL INDICATIONS			
FACE	R	Y	G
1-1,1-2	⇦	⇦	⇦
2-1,2-2,2-3	○	○	○
4-1,4-2,4-3	○	○	○
5-1,5-2	⇦	⇦	⇦
6-1,6-2,6-3	○	○	○
8-1,8-2,8-3	○	○	○



NOTES:

1. THE EXACT LOCATION OF NEW HANDHOLES, LOOP DETECTORS, AND SIGNAL POLE FOUNDATION SHALL BE DETERMINED BY MN/DOT TRAFFIC PERSONNEL.
2. ALL SIGNAL COMPONENTS ARE INPLACE UNLESS NOTED OTHERWISE. SEE "FOR INFORMATION ONLY" SHEETS FOR INPLACE SIGNAL INFORMATION.
3. THE CONTRACTOR SHALL REMOVE INPLACE HANDHOLES 8 AND 22 AND FURNISH AND INSTALL NEW HANDHOLES 8 AND 22 AT LOCATIONS SHOWN IN THE PLAN.
4. THE POWER COMPANY WILL RELOCATE SOURCE OF POWER. THE CONTRACTOR SHALL COORDINATE WITH THE POWER COMPANY AND PERFORM ALL WORK INVOLVING REPLACEMENT OF SIGNAL SERVICE CONDUCTORS WITH AS LITTLE SIGNAL DOWNTIME AS POSSIBLE (SEE SPECIAL PROVISIONS).
5. ALL NEW HANDHOLES SHALL BE PVC TYPE WITH METAL FRAMES AND COVERS (SEE SPECIAL PROVISIONS).
6. THE CONTRACTOR SHALL FURNISH AND INSTALL NEW LOOP DETECTORS D8-2, D8-3 AND D8-4 IN PAVEMENT AT THE LOCATIONS SHOWN IN THE PLAN. (SEE NMC LOOP DETECTOR DETAILS).
7. THE CONTRACTOR SHALL REMOVE INPLACE CONDUIT AND SIGNAL WIRING AND FURNISH AND INSTALL NEW CONDUIT AND SIGNAL WIRING AT THE LOCATIONS SHOWN IN THE PLAN (SEE SPECIAL PROVISIONS).
8. THE CONTRACTOR SHALL FURNISH AND INSTALL A NEW SIGNAL POLE FOUNDATION IN THE NORTHEAST QUADRANT AND RELOCATE POLE 3 WITH LUMINAIRE AND SIGNAL EQUIPMENT. THE CONTRACTOR SHALL ALSO REMOVE THE EXISTING FOUNDATION FOR POLE 3 (SEE SPECIAL PROVISIONS).
9. THE CONTRACTOR SHALL ABANDON EXISTING LOOP DETECTORS D8-2 AND D8-3 IN PAVEMENT, UNLESS THEY INTERFERE WITH INSTALLATION OF NEW LOOP DETECTORS. SEE SHEET #TS6 FOR EXISTING LOOP DETECTOR LOCATIONS.

NO	DATE	BY	CKD	APPR	REVISION
1	10/25/07	MAS	EJ		AS BUILT

#TIME# #DATE# #DGN#
#FILE#

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Electrical Engineer under the laws of the State of Minnesota.
Print Name: BRIAN D. HOLT
Date _____ License # 21788

I hereby certify that this plan, survey, or report was prepared by me or under my direct supervision and that I am a duly Licensed Land Surveyor under the laws of the State of Minnesota.
Print Name: ADRIAN S. POTTER
Date _____ License # 42786

DRAWN BY B.BETTS
DESIGNED BY A.POTTER
CHECKED BY G.STUEMPFIG
COMM. NO. 5344

SRF CONSULTING GROUP, INC.

WCL ASSOCIATES
REVISED INTERSECTION LAYOUT
C.S.A.H. NO. 61
~~TRUNK HIGHWAY 212~~ AT LEONA RD/EDEN RD

SHEET #TS1 OF #XXX

FOR INFORMATION ONLY

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60% SUBMISSION - 09/28/15
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL-SIGNAL SYSTEM "M"
CSAH 61 (FLYING CL DR) AT EDEN RD/LEONA RD
FOR INFORMATION ONLY

DISCIPLINE: TRAFFIC
SHEET NAME: W1-TRF-SIG-002-07

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DETECTOR CHART

NUMBER	SIZE (FT)	LOCATION
D1-1,D1-3	2-6X6	20' & 50'
D1-2,D1-4	2-6X6	5' & 35'
D2-1,D2-2	6X6	INPLACE
D4-1,D4-2	6X6	300'
D4-3,D4-4	6X6	5'
D4-5	2-6X6	5' & 20'
D4-6	6X6	40'
D4-7	6X6	10'
D5-1	2-6X6	20' & 50'
D5-2	2-6X6	5' & 35'
D6-1,D6-2	6X6	425'

-ALL LOOP DETECTORS SHALL BE PVC UNLESS NOTED OTHERWISE
-LOCATION: DISTANCE FROM CROSSWALK/STOP BAR IN FEET

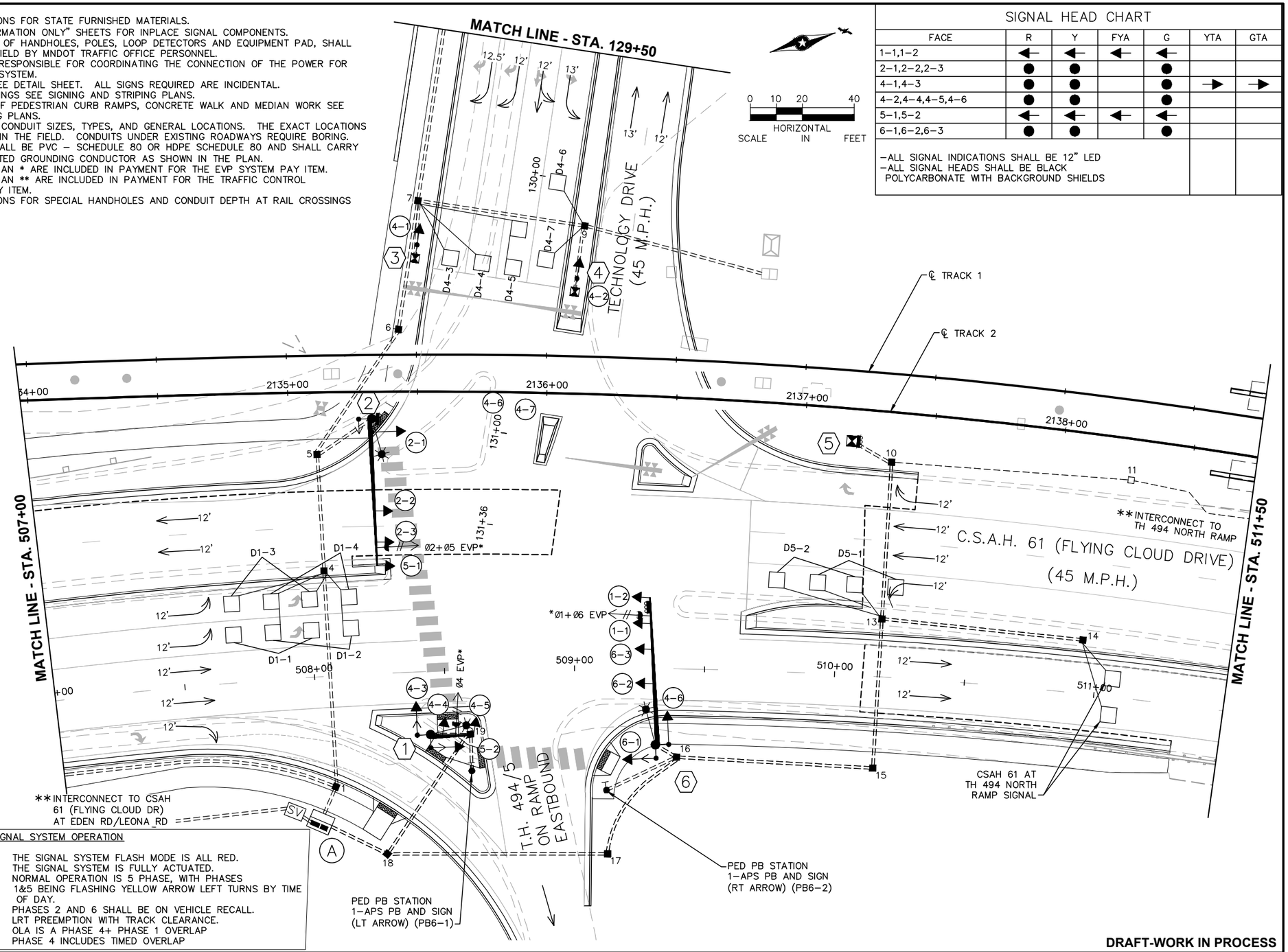
NOTES:

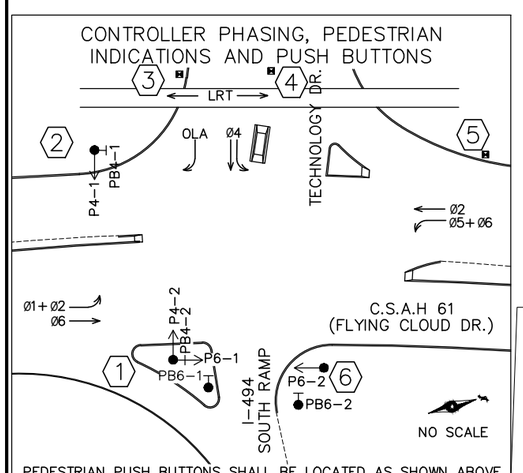
1. SEE SPECIAL PROVISIONS FOR STATE FURNISHED MATERIALS.
2. REFER TO "FOR INFORMATION ONLY" SHEETS FOR INPLACE SIGNAL COMPONENTS.
3. THE EXACT LOCATION OF HANDHOLES, POLES, LOOP DETECTORS AND EQUIPMENT PAD, SHALL BE VERIFIED IN THE FIELD BY MNDOT TRAFFIC OFFICE PERSONNEL.
4. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE CONNECTION OF THE POWER FOR THE TRAFFIC SIGNAL SYSTEM.
5. FOR TYPE D SIGNS SEE DETAIL SHEET. ALL SIGNS REQUIRED ARE INCIDENTAL.
6. FOR PAVEMENT MARKINGS SEE SIGNING AND STRIPING PLANS.
7. FOR CONSTRUCTION OF PEDESTRIAN CURB RAMPS, CONCRETE WALK AND MEDIAN WORK SEE SIGNING AND STRIPING PLANS.
8. THIS PLAN SPECIFIES CONDUIT SIZES, TYPES, AND GENERAL LOCATIONS. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD. CONDUITS UNDER EXISTING ROADWAYS REQUIRE BORING.
9. ALL NEW CONDUIT SHALL BE PVC - SCHEDULE 80 OR HDPE SCHEDULE 80 AND SHALL CARRY 1/C#6 GREEN INSULATED GROUNDING CONDUCTOR AS SHOWN IN THE PLAN.
10. ITEMS DENOTED WITH AN * ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM.
11. ITEMS DENOTED WITH AN ** ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION PAY ITEM.
12. SEE SPECIAL PROVISIONS FOR SPECIAL HANDHOLES AND CONDUIT DEPTH AT RAIL CROSSINGS

SIGNAL HEAD CHART

FACE	R	Y	FYA	G	YTA	GTA
1-1,1-2	←	←	←	←		
2-1,2-2,2-3	●	●		●		
4-1,4-3	●	●		●	→	→
4-2,4-4,4-5,4-6	●	●		●		
5-1,5-2	←	←	←	←		
6-1,6-2,6-3	●	●		●		

-ALL SIGNAL INDICATIONS SHALL BE 12" LED
-ALL SIGNAL HEADS SHALL BE BLACK POLYCARBONATE WITH BACKGROUND SHIELDS





PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE

SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- THE SIGNAL SYSTEM IS FULLY ACTUATED.
- NORMAL OPERATION IS 5 PHASE, WITH PHASES 1&5 BEING FLASHING YELLOW ARROW LEFT TURNS BY TIME OF DAY.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.
- LRT PREEMPTION WITH TRACK CLEARANCE.
- OLA IS A PHASE 4+ PHASE 1 OVERLAP
- PHASE 4 INCLUDES TIMED OVERLAP

DRAFT-WORK IN PROCESS

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

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60% SUBMISSION - 09/28/15

METROPOLITAN COUNCIL SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10

TRAFFIC SIGNAL-SIGNAL SYSTEM "N"
CSAH 61 (FLYING CLOUD DR) AT
TH 494 S RAMP/TECH DR
INTERSECTION LAYOUT

DISCIPLINE: TRAFFIC

SHEET NAME: W1-TFC-SIG-001 - 08

SHEET 123 OF 152

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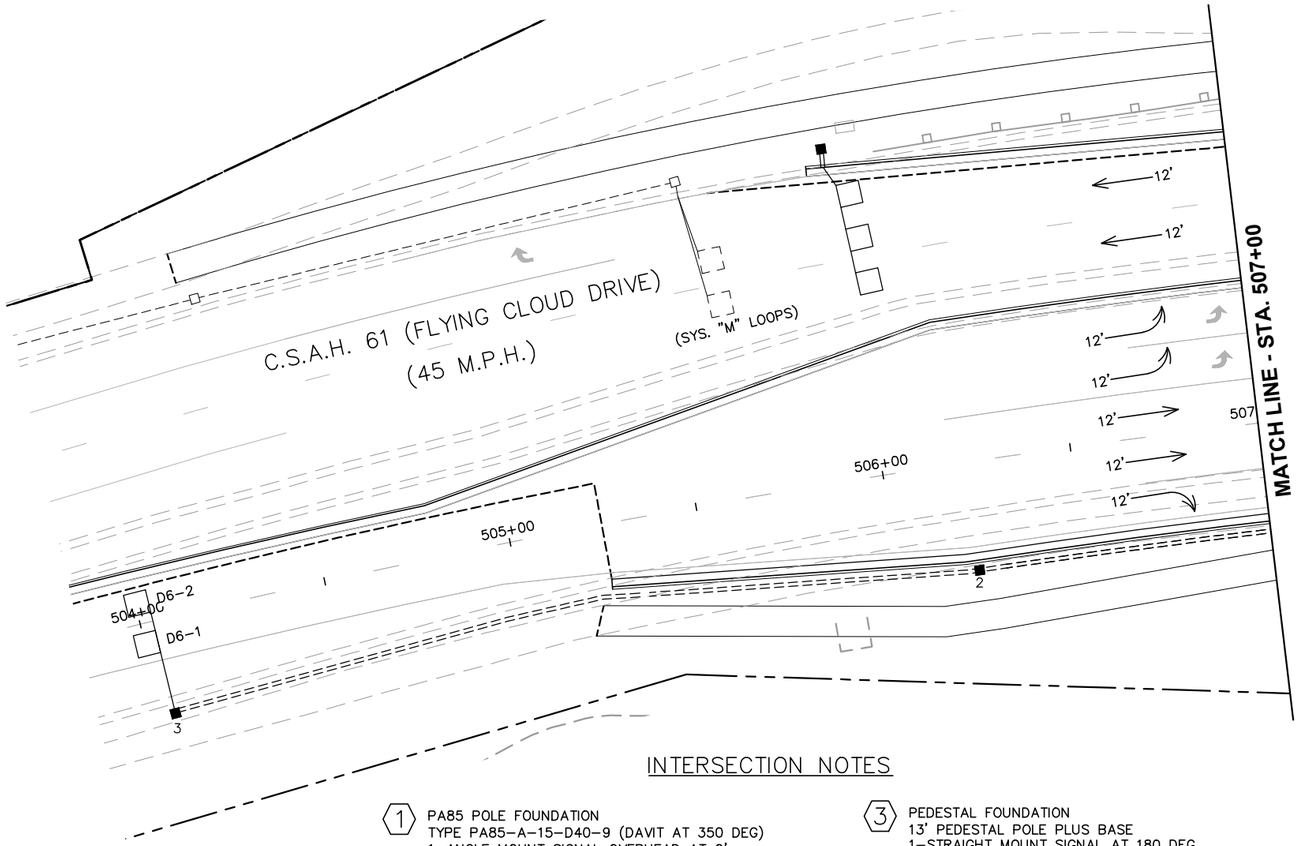

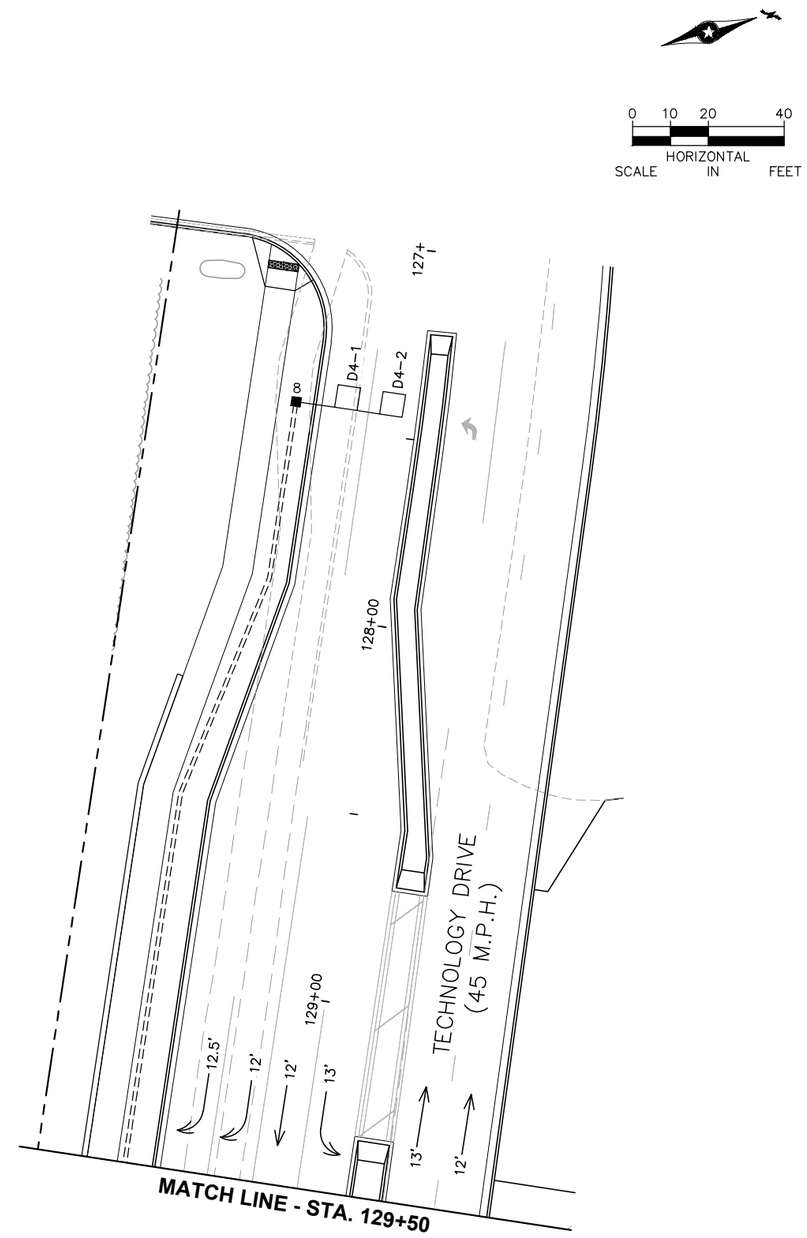

INTERSECTION NOTES

(1) PA85 POLE FOUNDATION
TYPE PA85-A-15-D40-9 (DAVIT AT 350 DEG)
1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
1-STRAIGHT MOUNT SIGNAL OVERHEAD AT 12'
2-ANGLE MOUNT SIGNALS AT 90 AND 180 DEG
*1-ONE WAY EVP DETECTOR AND
CONFIRMATORY LIGHT (PHASE 4)
LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)
1-APS PB AND SIGN (RT ARROW) (PB4-2)
1-TYPE D SIGN (D-X) (SEE SIGN DETAILS)
3" CONDUIT TO HH 19:

(2) PA100 POLE FOUNDATION
TYPE PA100-A-55-D40-9 (DAVIT AT 350 DEG)
1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
2-STRAIGHT MOUNT SIGNALS OVERHEAD
AT 9' AND 21'
1-ANGLE MOUNT SIGNAL AT 0 DEG
1-ANGLE MOUNT C.D. PED HEAD AT 90 DEG
1-ONE WAY EVP DETECTOR AND
CONFIRMATORY LIGHT (PHASES 2+5)
1-BLANK OUT SIGN (NO RIGHT TURN)
* POLE-MOUNTED, FACING PEDESTAL 5
LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)
1-APS PB AND SIGN (LT ARROW) PB4-1
1-TYPE D SIGN (D-X) (SEE SIGN DETAILS)
3" CONDUIT TO HH 5:

(3) PEDESTAL FOUNDATION
13' PEDESTAL POLE PLUS BASE
1-STRAIGHT MOUNT SIGNAL AT 180 DEG
3" CONDUIT TO HH 7:

(4) PEDESTAL FOUNDATION
13' PEDESTAL POLE PLUS BASE
1-STRAIGHT MOUNT SIGNAL AT 180 DEG
3" CONDUIT TO HH 9:

(5) PEDESTAL FOUNDATION
13' PEDESTAL POLE PLUS BASE
1-BLANK OUT SIGN (NO RIGHT TURN)
3" CONDUIT TO HH 10:

(6) PA100 POLE FOUNDATION
TYPE PA100-A-55-D40-9 (DAVIT AT 350 DEG)
1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
3-STRAIGHT MOUNT SIGNALS OVERHEAD
AT 12', 24', AND 36'
2-ANGLE MOUNT SIGNALS AT 90 AND 180 DEG
1-ANGLE MOUNT C.D. PED HEAD AT 180 DEG
*1-ONE WAY EVP DETECTOR AND
CONFIRMATORY LIGHT (PHASES 1+6)
LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)
1-TYPE D SIGN (D-X) (SEE SIGN DETAILS)
3" CONDUIT TO HH 16:

(A) EQUIPMENT PAD (SEE DETAIL SHEET)
SERVICE CABINET (SSB)
CONTROLLER AND CABINET (STATE FURNISHED)

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CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL-SIGNAL SYSTEM "N"
CSAH 61 (FLYING CL DR) AT I-494 S RAMP/TECH DR
INTERSECTION NOTES AND MATCHLINES

DISCIPLINE: TRAFFIC
SHEET NAME: W1-TFC-SIG-001 - 08B

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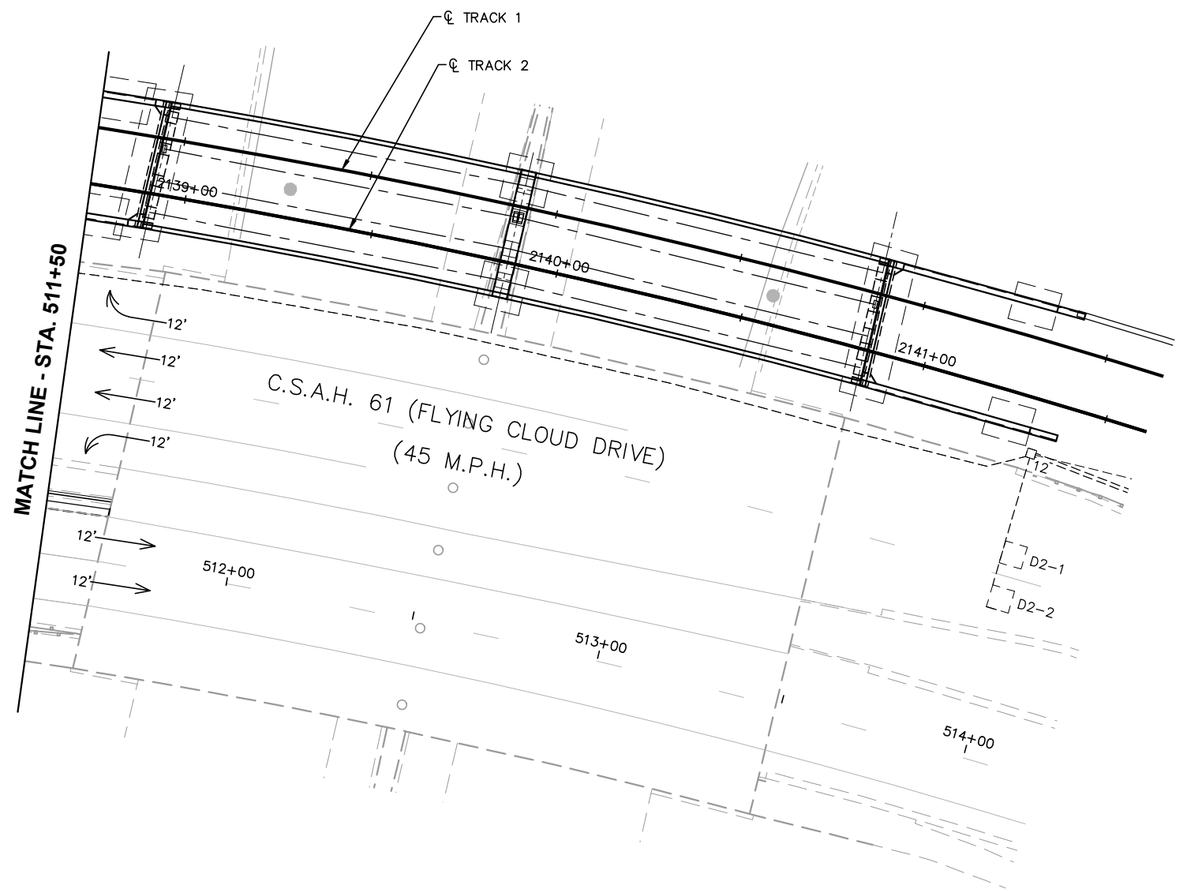

0 10 20 40
HORIZONTAL
SCALE IN FEET

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METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL-SIGNAL SYSTEM "N"
CSAH 61 (FLYING CL DR) AT I-494 S RAMP/TECH DR
MATCHLINE LAYOUT

DISCIPLINE: TRAFFIC

SHEET NAME: W1-TFC-SIG-001 - 08C

SHEET 125 OF 152

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MAST ARM MOUNTED SIGNS

SIGN NO	POLE NO	QTY	a	PANEL SIZE	PANEL AREA	PANEL TOTAL AREA	MOUNTING NUMBER	MOUNTING SPACING (1)	PANEL LEGEND
			FEET	INCH	SQFT	SQFT			
D–X	6	1	40.0	138 x 24	23.0	23.0	5		(Lt Arrow) TECHNOLOGY DR
D–X	2	1	26.0	78 x 66	35.75	35.75	3		EAST 494/5 (Lt Arrow)
D–X	1	1	4.0	42 x 54	15.75	15.75	2		CSAH 61

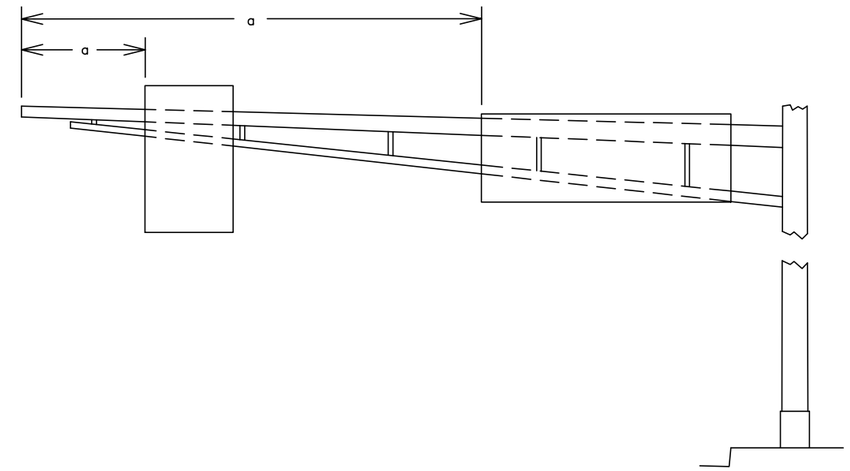
SPECIFIC NOTES:

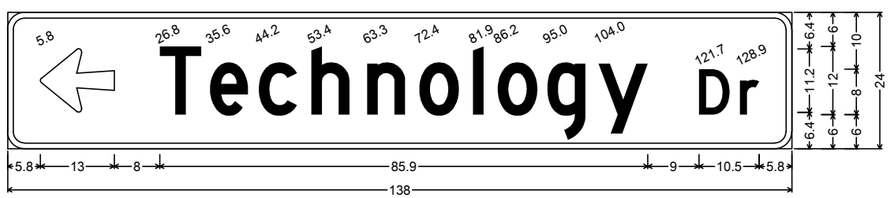
(1) SPACING BETWEEN STIFFENERS SHALL NOT EXCEED 36 INCHES AND SHALL BE UNIFORMLY SPACED. SEE STANDARD SIGNS MANUAL, PAGE 105A FOR BRACKET SPACING REQUIREMENTS.

GENERAL NOTES:

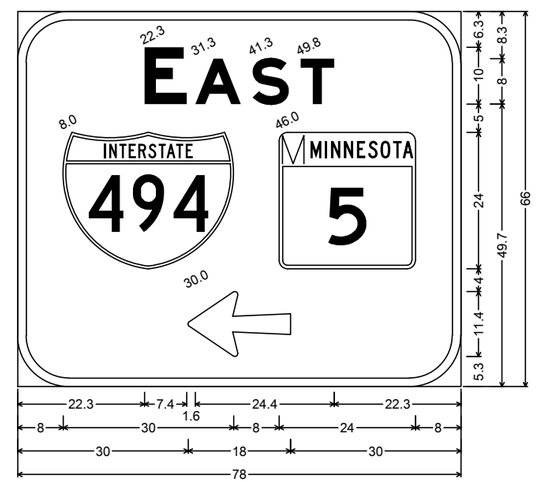
1. CORNERS OF STANDARD SIGN PANELS WITH MARGINS SHALL BE TRIMMED.
2. TYPE D SIGN PANELS EXTENDING BEYOND THE BORDER SHALL NOT BE TRIMMED.
3. FOR STRUCTURAL DETAILS OF MAST ARM MOUNTED SIGNS SEE STANDARD SIGNS MANUAL, PAGE 105A.
4. FOR TYPE D STRINGER AND PANEL JOINT DETAILS SEE STANDARD SIGNS MANUAL, PAGE 105.
5. THE MAST ARM MOUNTED SIGNS ARE INCIDENTAL.
6. AT INTERSECTIONS WITH MEDIAN WIDTHS LESS THAN 30',ONE WAY (R6–1) SIGNS SHALL NOT BE PLACED AS PART OF THE SIGNALS PLAN.

MAST ARM SIGN LOCATION

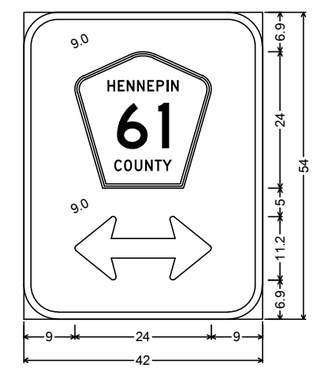




D-X; 3.0" Radius, 1.0" Border, White on Green;
Arrow 5 - 13.0" 180°; [Technology] D [ ] E Mod [Dr] D;



D-X; 9.0" Radius, 1.5" Border, White on Green;
[EAST] E Mod; Arrow 14 - 18.0" 180°;



D-X;
6.0" Radius, 1.3" Border, White on Green;
Double Headed Arrow 5 - 24.0" 0°;

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METROPOLITAN COUNCIL SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL-SIGNAL SYSTEM "N"
CSAH 61 (FLYING CL DR) AT I-494 S RAMP/TECH DR
MAST ARM SIGNING

DISCIPLINE: TRAFFIC

SHEET NAME: W1-TFC-SIG-001 - 08D

SHEET 126 OF 152

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SIGNAL FACE CHART

FACE	R	Y	G
1-1, 1-2	◁	◁	◁
2-1, 2-2, 2-3	○	○	○
4-1, 4-2, 4-3	○	○	○
5-1, 5-2	◁	◁	◁
6-1, 6-2	○	○	○

-ALL SIGNAL INDICATIONS ARE 12" LED

(1) TYPE-A-35-D40-9
2-ONE WAY SIGNALS OVERHEAD
2-SWING AWAY HINGES
TYPE 20B POLE MOUNTED AT 270 DEG
ONE WAY EVP AND CONFIRMARTORY LIGHT (PHASE 2&5)
LUMINAIRE 200 WATT HPS MOUNTED AT 355 DEG
1-PEDESTRIAN PUSH BUTTON AND SIGN
EXTEND INTO HH 15:
3" RSC
2-12/C#12
3-3/C#12
1-3/C#20
2-1/C#10

(2) TYPE-A-30-D40-9
1-ONE WAY SIGNALS OVERHEAD
2-SWING AWAY HINGES
TYPE 10C POLE MOUNTED AT 270 DEG
ONE WAY EVP AND CONFIRMARTORY LIGHT (PHASE 1&6)
LUMINAIRE 200 WATT HPS MOUNTED AT 355 DEG
2-PEDESTRIAN PUSH BUTTON AND SIGN
EXTEND INTO HH 23:
3" RSC
1-12/C#12
3-3/C#12
1-3/C#20
2-1/C#10

(3) 8' SIGNAL PEDESTAL PLUS BASE
1-TYPE 4A
1-PEDESTRIAN PUSH BUTTON AND SIGN
EXTEND INTO HH 17:
3" RSC
4-3/C#12
1-1/C#6 BR GR

(4) TYPE-A-30
1-ONE WAY SIGNALS OVERHEAD
TYPE 10C POLE MOUNTED AT 270 DEG
ONE WAY EVP AND CONFIRMARTORY LIGHT (PHASE 4)
2-PEDESTRIAN PUSH BUTTON AND SIGN
EXTEND INTO HH 34:
3" RSC
1-12/C#12
3-3/C#12
1-3/C#20

(5) TWO WAY SIGNAL (TYPE 2A)
EXTEND INTO HH 30:
3" RSC
1-12/C#12

(6) TWO WAY SIGNAL (TYPE 2A)
EXTEND INTO HH 22:
3" RSC
1-12/C#12

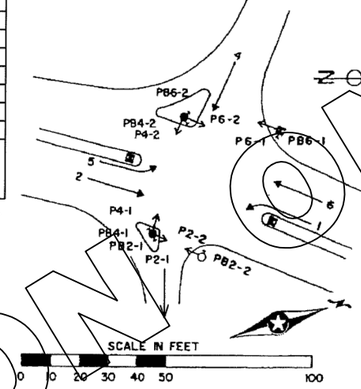
LOOP DETECTOR CHART

NUMBER	SIZE (FT)	LOCATION
D1-1	4-6X6	-
D2-1	6X6	425'
D2-2	6X6	425'
* D4-1	2-6X6	5&15'
D4-2	6X6	150'
D5-1	4-6X6	-
D6-1	6X6	425'
D6-2	6X6	425'
SS-1	6X6	-
SS-2	6X6	-
D2-T	6X6	425'

-ALL LOOP DETECTORS SHALL BE PVC UNLESS NOTED OTHERWISE
-LOCATION: DISTANCE FROM CROSSWALK/STOP BAR IN FEET

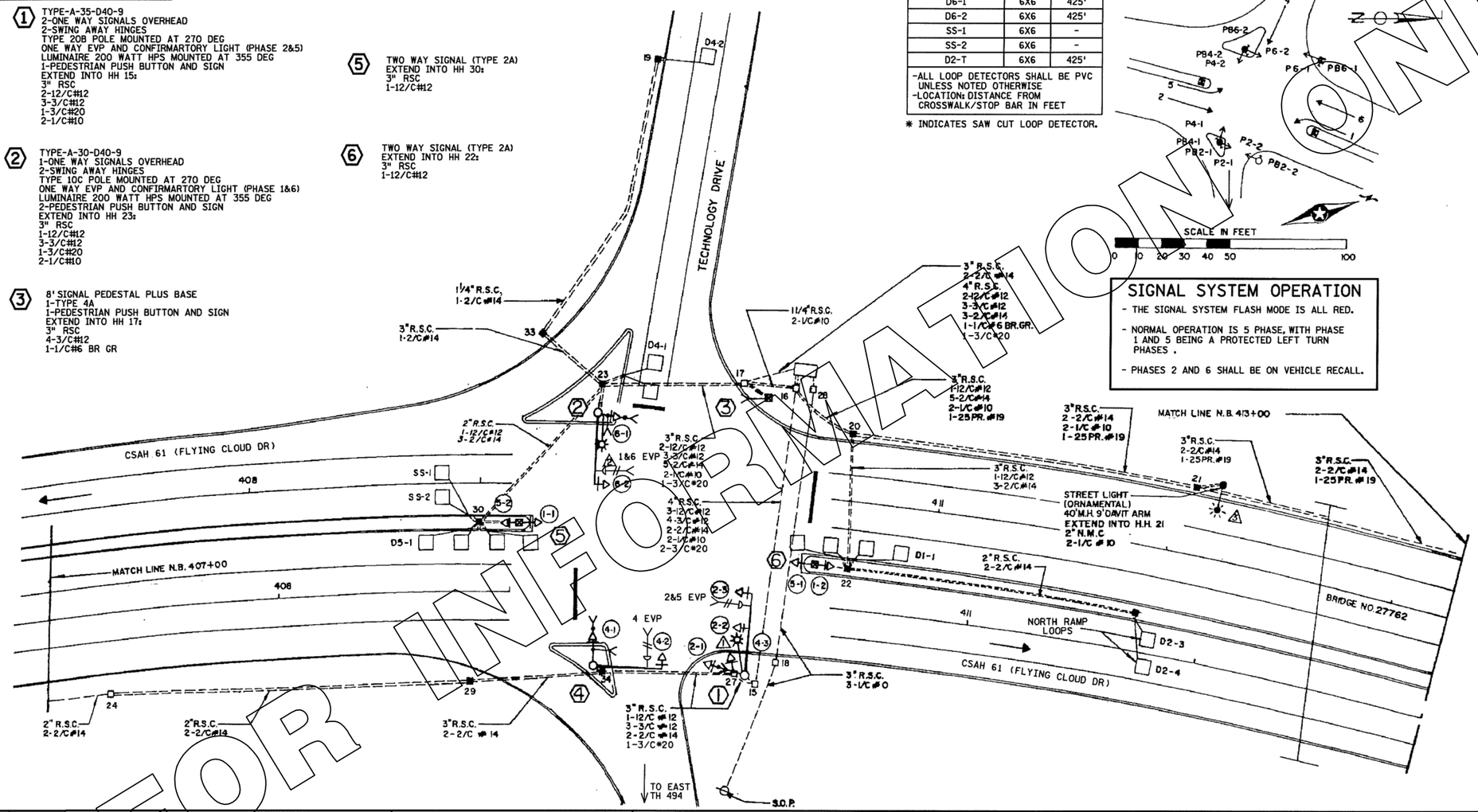
* INDICATES SAW CUT LOOP DETECTOR.

CONTROLLER PHASING, PEDESTRIAN INDICATION AND PUSHBUTTON LAYOUT



SIGNAL SYSTEM OPERATION

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



BY	DATE	REVISIONS
SJK	11-07-13	REVISED: ADDED EVP AND CHANGED ROAD NAME

SYSTEM ID: 21699 T.E.
METER ADDRESS: 7798 FLYING CLOUD DR
MASTER ID: 21697 T.E.

INTERSECTION LAYOUT
TH 494 AT CSAH 61 (FLYING CLOUD DR)/
TECHNOLOGY DR SOUTH RAMP
IN EDEN PRAIRIE, HENNEPIN COUNTY

S.A.P. NO. | DRAWN BY: | CKD BY: | DATE:
CERTIFIED BY _____ LICENSED PROFESSIONAL ENGINEER LIC. NO. _____ DATE: _____
STATE PROJ.NO. (T.H.494) SHEET NO. 1 OF 3 SHEETS

FOR INFORMATION ONLY

PLOTTED/REVISED: 11/13/2013

DISTRICT *: METRO
IPLOT NAME: layout
PATH & FILENAME: IP_PWP-d0782263\T21699R.sgl.dgn

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NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

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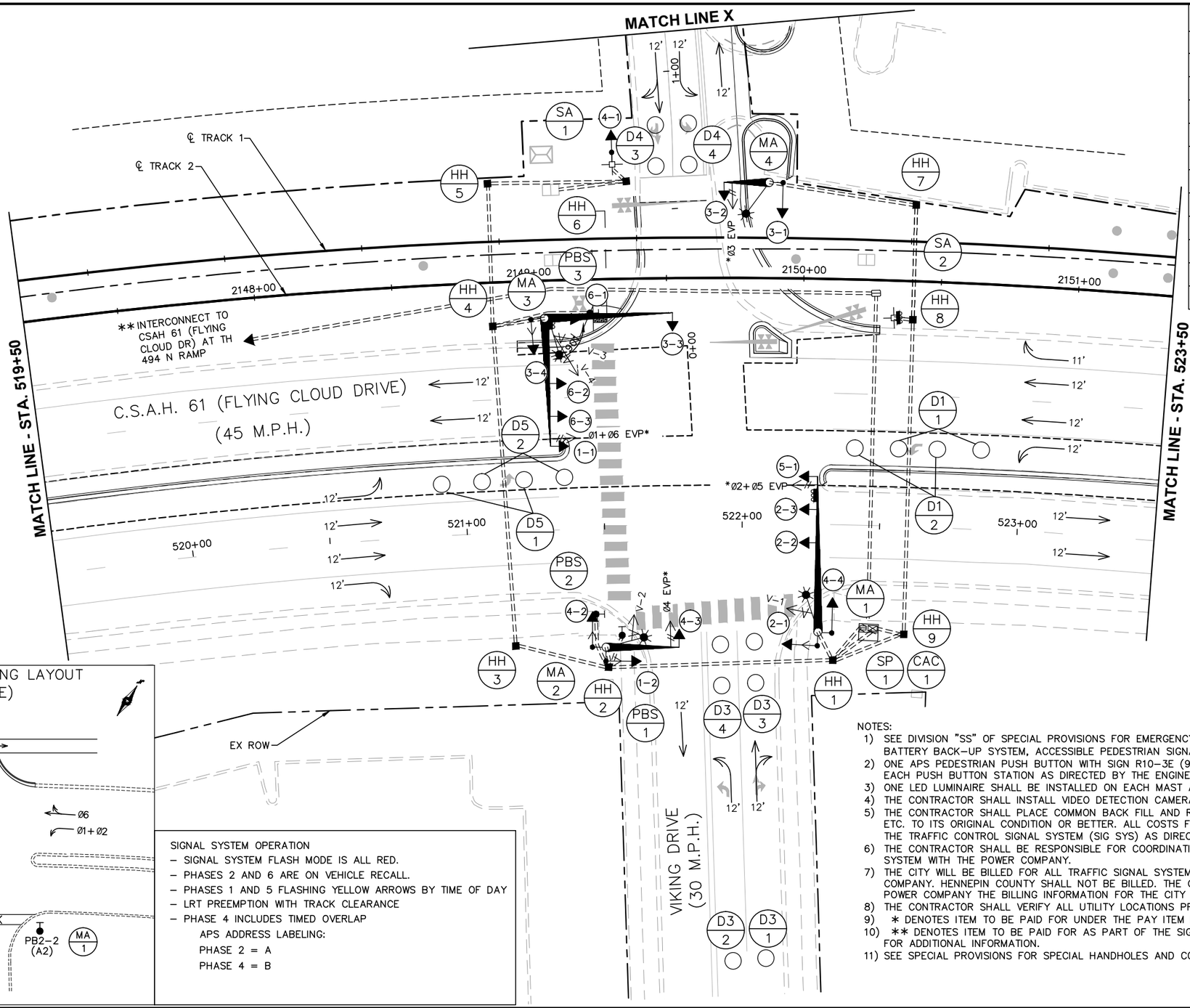
SRF Consulting Group, Inc.
60% SUBMISSION - 09/28/15
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL-SIGNAL SYSTEM "N"
CSAH 61 (FLYING CL DR) AT I-494 S RAMP/TECH DR
FOR INFORMATION ONLY

DISCIPLINE: TRAFFIC
SHEET NAME: W1-TRF-SIG-002-08

SHEET 127 OF 152



DETECTOR CHART

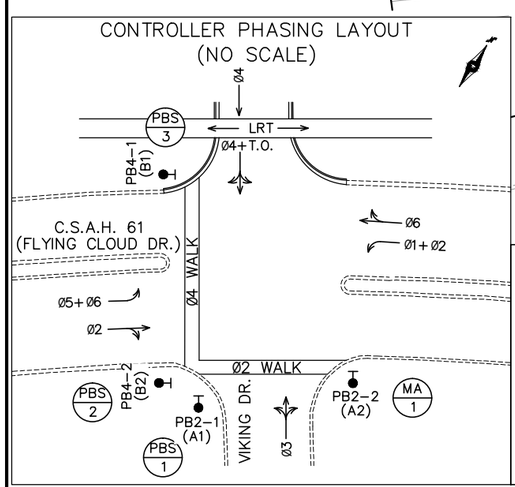
DESIGNATION	CAMERA	FUNCTION	LOCATION
D1–1	V–3	(1)	20' & 50'
D1–2	V–3	(1)	5' & 35'
D2–1,D2–2	V–1	(1)	300'
D4–1,D4–2	V–2	(1)	120'
D4–3,D4–4	V–2	(1)	5',20'
D5–1	V–1	(1)	20' & 50'
D5–2	V–1	(1)	5' & 35'
D6–1,D6–2	V–3	(1)	300'
D3–1,D3–2	V–4	(1)	120'
D3–3,D3–4	V–4	(1)	5',20'

–LOCATION: DISTANCE FROM TO CROSSWALK/STOP BAR IN FEET

FUNCTION NOTES:

(1) CALL & EXTEND

0 10 20 40
HORIZONTAL SCALE IN FEET



SIGNAL SYSTEM OPERATION
- SIGNAL SYSTEM FLASH MODE IS ALL RED.
- PHASES 2 AND 6 ARE ON VEHICLE RECALL.
- PHASES 1 AND 5 FLASHING YELLOW ARROWS BY TIME OF DAY
- LRT PREEMPTION WITH TRACK CLEARANCE
- PHASE 4 INCLUDES TIMED OVERLAP

APS ADDRESS LABELING:
PHASE 2 = A
PHASE 4 = B

NOTES:
1) SEE DIVISION "SS" OF SPECIAL PROVISIONS FOR EMERGENCY VEHICLE PREEMPTION (EVP) SYSTEM, VIDEO DETECTION SYSTEM, BATTERY BACK–UP SYSTEM, ACCESSIBLE PEDESTRIAN SIGNAL (APS) AND MATERIALS PROVIDED BY HENNEPIN COUNTY.
2) ONE APS PEDESTRIAN PUSH BUTTON WITH SIGN R10–3E (9" X 15") SHALL BE INSTALLED ON SIGNAL MAST ARM 1 AND ON EACH PUSH BUTTON STATION AS DIRECTED BY THE ENGINEER FOR OPERATION AS SHOWN IN THE PHASING LAYOUT,
3) ONE LED LUMINAIRE SHALL BE INSTALLED ON EACH MAST ARM LUMINAIRE SHAFT EXTENSION, SEE SPECIAL PROVISIONS.
4) THE CONTRACTOR SHALL INSTALL VIDEO DETECTION CAMERAS ON DAVIT ARMS AS SHOWN IN THE PLAN.
5) THE CONTRACTOR SHALL PLACE COMMON BACK FILL AND RESTORE ALL DISTURBED TURF, CONCRETE, OR BITUMINOUS WALK, ETC. TO ITS ORIGINAL CONDITION OR BETTER. ALL COSTS FOR THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE TRAFFIC CONTROL SIGNAL SYSTEM (SIG SYS) AS DIRECTED BY THE ENGINEER.
6) THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE CONNECTION OF THE POWER FOR THE TRAFFIC SIGNAL SYSTEM WITH THE POWER COMPANY.
7) THE CITY WILL BE BILLED FOR ALL TRAFFIC SIGNAL SYSTEM POWER COSTS WHICH THE CITY WILL PAY TO THE POWER COMPANY. HENNEPIN COUNTY SHALL NOT BE BILLED. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE TO THE POWER COMPANY THE BILLING INFORMATION FOR THE CITY OF EDEN PRAIRIE.
8) THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION.
9) * DENOTES ITEM TO BE PAID FOR UNDER THE PAY ITEM EMERGENCY VEHICLE PREEMPTION SYSTEM (LS).
10) ** DENOTES ITEM TO BE PAID FOR AS PART OF THE SIGNAL INTERCONNECT SYSTEM. SEE SIGNAL INTERCONNECT PLANS FOR ADDITIONAL INFORMATION.
11) SEE SPECIAL PROVISIONS FOR SPECIAL HANDHOLES AND CONDUIT DEPTH AT RAIL CROSSINGS.

DRAFT-WORK IN PROCESS

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM SRF Consulting Group, Inc. METROPOLITAN COUNCIL SOUTHWEST Green Line LRT Extension

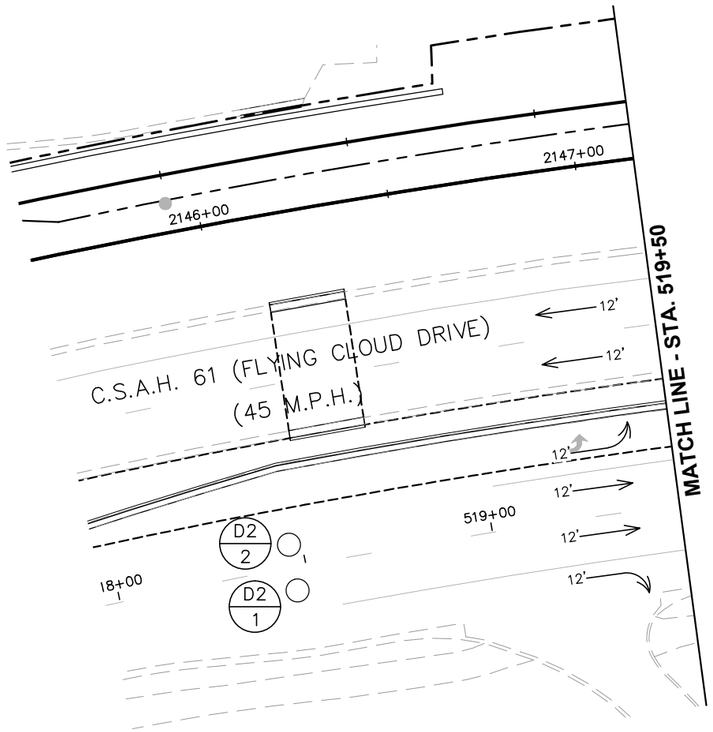
60% SUBMISSION - 09/28/15

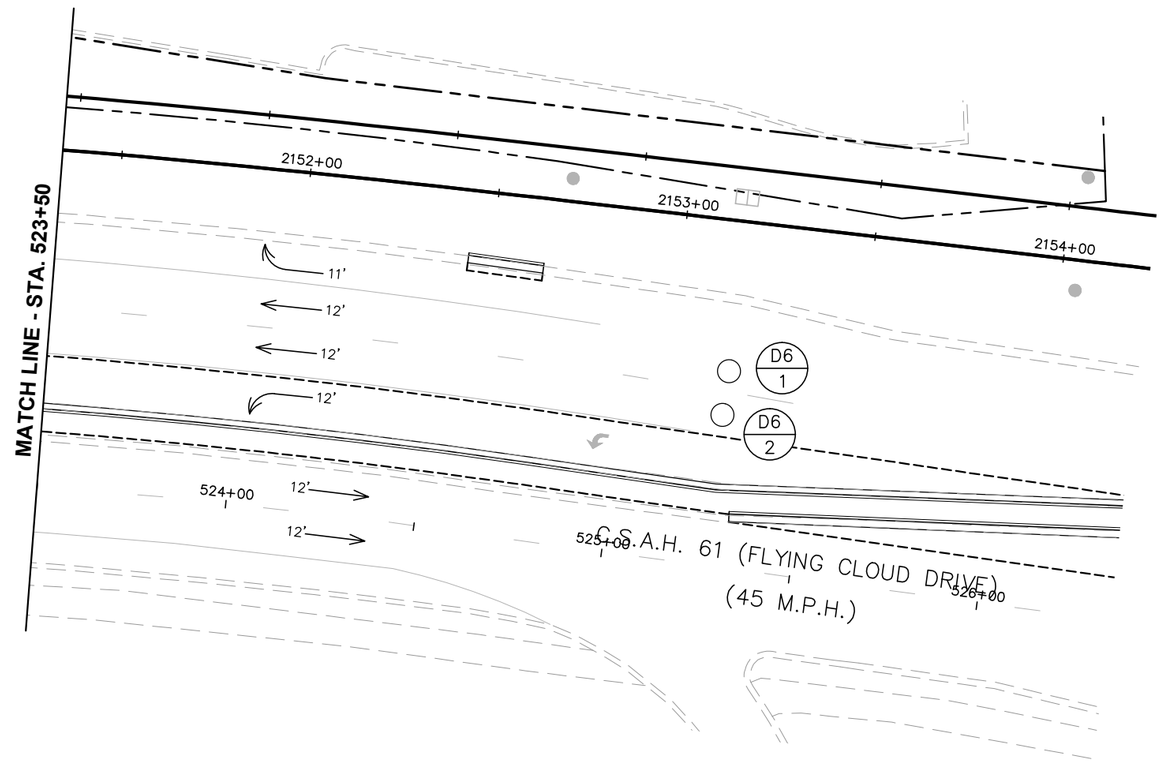
CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL-SIGNAL SYSTEM "O"
CSAH 61 (FLYING CLOUD DR) AT VIKING DR
INTERSECTION LAYOUT

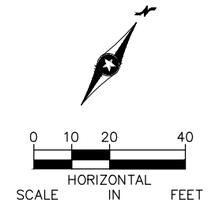
DISCIPLINE: TRAFFIC
SHEET NAME: W1-TFC-SIG-001 - 09

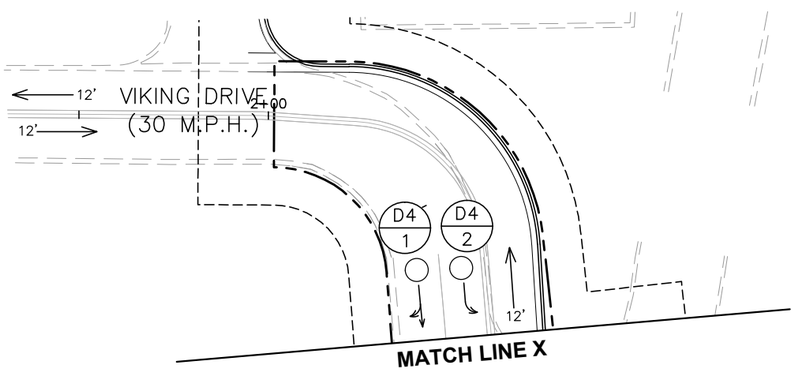
SHEET 128 OF 152

Sep, 21 2015 11:51 am V:\3400_ADC\CAD\SEGMENT W1\PLAN SHEETS\TRAFFIC\W1-TFC-SIG-001.dwg By: kmcclement









DRAFT-WORK IN PROCESS

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM

SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10

TRAFFIC SIGNAL-SIGNAL SYSTEM "O"
CSAH 61 (FLYING CLOUD DR) AT VIKING DR
MATCHLINE LAYOUT

DISCIPLINE: TRAFFIC

SHEET NAME: W1-TFC-SIG-001 - 09B

SHEET 129 OF 152

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SIGNAL STRUCTURE LOCATIONS

NO.	LOCATION (1)	NO.	LOCATION (1)

NO.	LOCATION		MAST ARM
	FOUNDATION (1)	AIM ARM TO	

(1) TO THE CENTER OF THE HANDHOLE OR CONCRETE FOUNDATION.

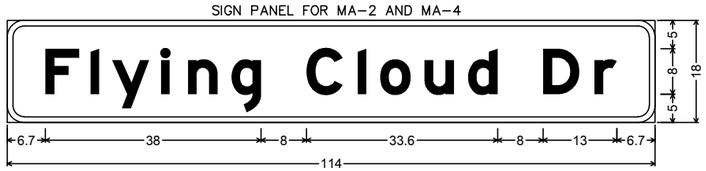
SIGNAL INDICATIONS AND BRACKETING

SIG. POLE NO.	FACE NO.	SIGNAL FACE MOUNT	SIG. Ø	LED INDICATIONS 12" INDICATIONS RED	YEL	FYEL	GRN	GTA	PED SYM.	BRACKET MOUNTING ANGLE, TYPE AND STANDARD PLATE NO.
MA-1	5-1	MAST ARM (END)	5	←	←			←		**
			6			←				
	2-3	MAST ARM (MID)	2	●	●		●			**
	2-2	MAST ARM (MID)	2	●	●		●			**
	2-1	POLE MOUNT	2	●	●		●		*	180° PLATE 8110E TYPE 10B
	4-4	POLE MOUNT	4	●	●		●			90° PLATE 8110E TYPE 10A
MA-2	4-3	MAST ARM (END)	4	●	●		●	←		**
	4-2	POLE MOUNT	4	●	●		●		*	180° PLATE 8110E TYPE 10B
	1-2	POLE MOUNT	1	←	←			←		90° PLATE 8110E TYPE 10B
			2			←			*	
MA-3	1-1	MAST ARM (END)	1	←	←			←		**
			2			←				
	6-3	MAST ARM (MID)	6	●	●		●			**
	6-2	MAST ARM (MID)	6	●	●		●			**
	6-1	POLE MOUNT	6	●	●		●			270° PLATE 8110E TYPE 10A
	3-4	POLE MOUNT	3	●	←			←		90° PLATE 8110E TYPE 10B
			4						*	
	3-3	MAST ARM (END)	3	●	←			←		**
MA-4	3-2	MAST ARM (END)	3	●	●		●			**
	3-1	POLE MOUNT	3	●	●		●			180° PLATE 8110E TYPE 10A
SA-1	4-1	POLE MOUNT	4	●	●		●			180° PLATE 8111E TYPE 5A
SA-2										

* PEDESTRIAN INDICATIONS SHALL BE INTERNATIONAL SYMBOLS IN A DUAL FACE SINGLE HOUSING WITH PEDESTRIAN COUNTDOWN TIMER.

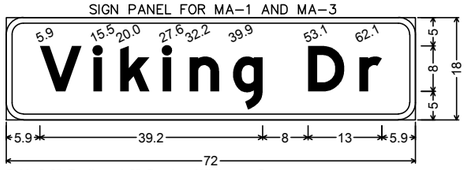
** STRAIGHT MOUNT PLUMBIZER, SEE SPECIAL PROVISIONS.

SIGN PANEL FOR MA-2 AND MA-4



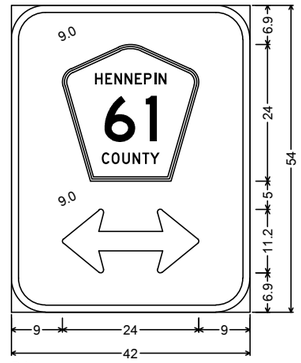
D-X; 3.0" Radius, 1.0" Border, White on Green;
[Flying Cloud Dr] E Mod;

SIGN PANEL FOR MA-1 AND MA-3



D-X; 3.0" Radius, 1.0" Border, White on Green;
[Viking Dr] E Mod;

SIGN PANEL FOR MA-2 AND MA-3



D-X;
6.0" Radius, 1.3" Border, White on Green;
Double Headed Arrow 5 - 24.0" 0°;

NOTES:
1. SEE SHEET #### FOR SIGN MOUNTING PLATE LOCATIONS.
2. COLOR – WHITE LEGEND AND BORDER ON GREEN BACKGROUND. ALL SIGNING SHALL USE DG3 SIGN SHEETING.
3. ALL COSTS TO PROVIDE AND INSTALL MAST ARM MOUNTED SIGN PANELS SHALL BE INCIDENTAL.

DRAFT-WORK IN PROCESS

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

METROPOLITAN COUNCIL SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL-SIGNAL SYSTEM "O"
CSAH 61 (FLYING CLOUD DR) AT VIKING DR
EQUIPMENT SCHEDULE

DISCIPLINE: TRAFFIC

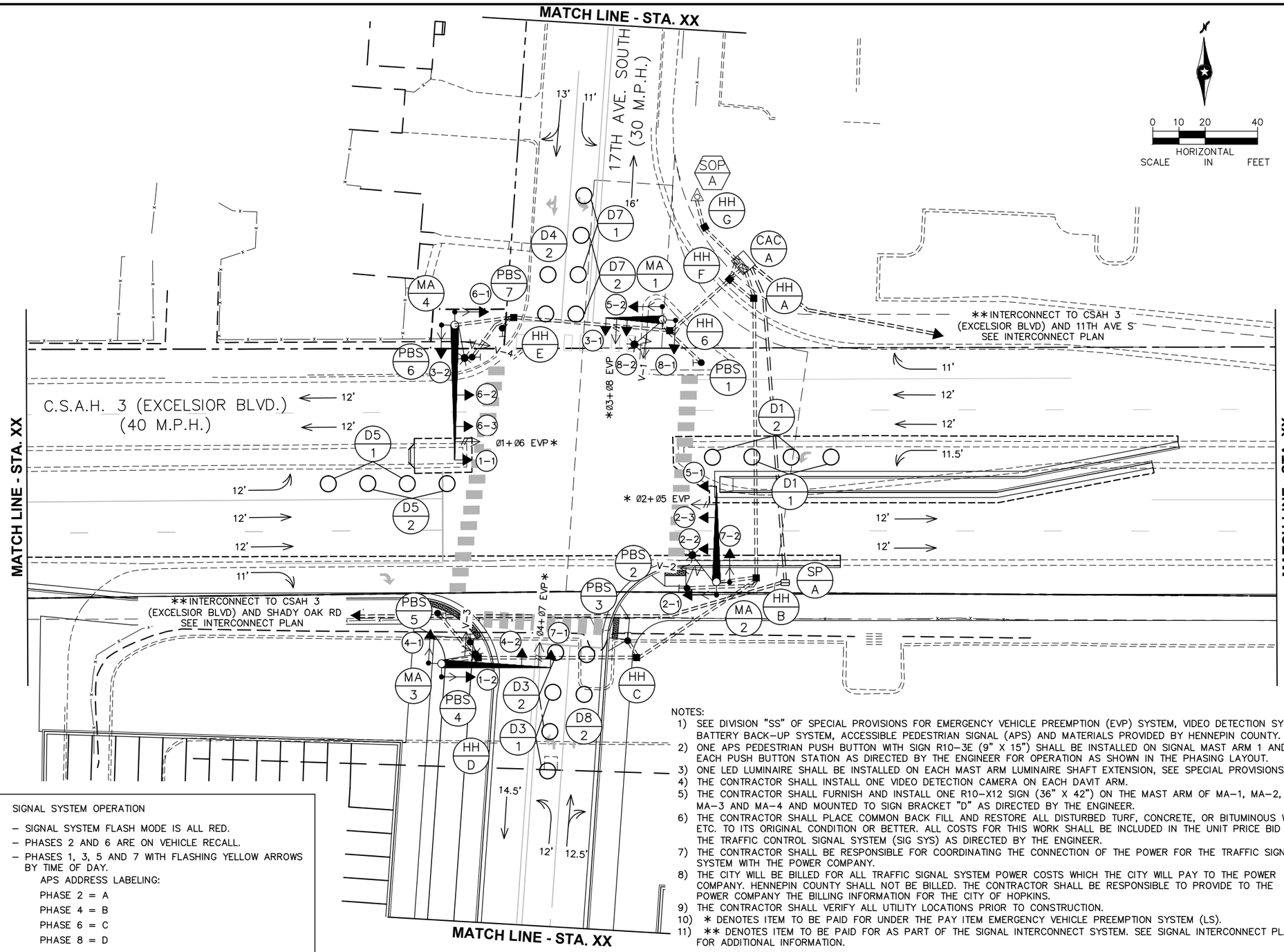
SHEET NAME: W1-TFC-SIG-001 - 09C

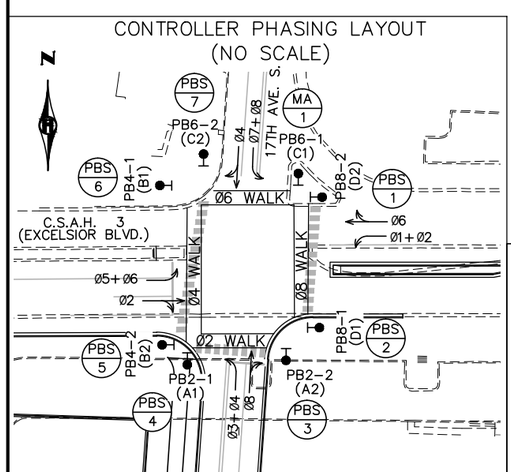
Sep, 21 2015 11:51 am V:\3400_ADC\CAD\SEGMENT W1\PLAN SHEETS\TRAFFIC\W1-TFC-SIG-001.dwg By: kmcclement

DETECTOR CHART			
DESIGNATION	CAMERA	FUNCTION	LOCATION
D1–1	V–4	(1)	20',50'
D1–2	V–4	(1)	5',35'
D2–1,D2–2	V–2	(1)	250'
D3–1	V–1	(1)	20',50'
D3–2	V–1	(1)	5',35'
D4–1	V–3	(1)	120'
D4–2	V–3	(1)	5',35'
D5–1	V–2	(1)	20',50'
D5–2	V–2	(1)	5',35'
D6–1,D6–2	V–4	(1)	250'
D7–1	V–3	(1)	20',50'
D7–2	V–3	(1)	5',35'
D8–1	V–1	(1)	120'
D8–2	V–1	(1)	5',20'
–LOCATION: DISTANCE FROM TO CROSSWALK/STOP BAR IN FEET			

FUNCTION NOTES:

(1) CALL & EXTEND





SIGNAL SYSTEM OPERATION

- SIGNAL SYSTEM FLASH MODE IS ALL RED.
- PHASES 2 AND 6 ARE ON VEHICLE RECALL.
- PHASES 1, 3, 5 AND 7 WITH FLASHING YELLOW ARROWS BY TIME OF DAY.

APS ADDRESS LABELING:

PHASE 2 = A
PHASE 4 = B
PHASE 6 = C
PHASE 8 = D

NOTES:

1) SEE DIVISION "SS" OF SPECIAL PROVISIONS FOR EMERGENCY VEHICLE PREEMPTION (EVP) SYSTEM, VIDEO DETECTION SYSTEM, BATTERY BACK–UP SYSTEM, ACCESSIBLE PEDESTRIAN SIGNAL (APS) AND MATERIALS PROVIDED BY HENNEPIN COUNTY.
2) ONE APS PEDESTRIAN PUSH BUTTON WITH SIGN R10–3E (9" X 15") SHALL BE INSTALLED ON SIGNAL MAST ARM 1 AND ON EACH PUSH BUTTON STATION AS DIRECTED BY THE ENGINEER FOR OPERATION AS SHOWN IN THE PHASING LAYOUT.
3) ONE LED LUMINAIRE SHALL BE INSTALLED ON EACH MAST ARM LUMINAIRE SHAFT EXTENSION, SEE SPECIAL PROVISIONS.
4) THE CONTRACTOR SHALL INSTALL ONE VIDEO DETECTION CAMERA ON EACH DAVIT ARM.
5) THE CONTRACTOR SHALL FURNISH AND INSTALL ONE R10–X12 SIGN (36" X 42") ON THE MAST ARM OF MA–1, MA–2, MA–3 AND MA–4 AND MOUNTED TO SIGN BRACKET "D" AS DIRECTED BY THE ENGINEER.
6) THE CONTRACTOR SHALL PLACE COMMON BACK FILL AND RESTORE ALL DISTURBED TURF, CONCRETE, OR BITUMINOUS WALK, ETC. TO ITS ORIGINAL CONDITION OR BETTER. ALL COSTS FOR THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE TRAFFIC CONTROL SIGNAL SYSTEM (SIG SYS) AS DIRECTED BY THE ENGINEER.
7) THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE CONNECTION OF THE POWER FOR THE TRAFFIC SIGNAL SYSTEM WITH THE POWER COMPANY.
8) THE CITY WILL BE BILLED FOR ALL TRAFFIC SIGNAL SYSTEM POWER COSTS WHICH THE CITY WILL PAY TO THE POWER COMPANY. HENNEPIN COUNTY SHALL NOT BE BILLED. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE TO THE POWER COMPANY THE BILLING INFORMATION FOR THE CITY OF HOPKINS.
9) THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION.
10) * DENOTES ITEM TO BE PAID FOR UNDER THE PAY ITEM EMERGENCY VEHICLE PREEMPTION SYSTEM (LS).
11) ** DENOTES ITEM TO BE PAID FOR AS PART OF THE SIGNAL INTERCONNECT SYSTEM. SEE SIGNAL INTERCONNECT PLANS FOR ADDITIONAL INFORMATION.

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

METROPOLITAN COUNCIL SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL - SIGNAL SYSTEM "P"
C.S.A.H. 3 (EXCELSIOR BLVD) AT 17TH AVE S
INTERSECTION LAYOUT

DISCIPLINE: TRAFFIC

SHEET NAME: W3-TFC-SIG-001 - 01

SHEET 131 OF 152

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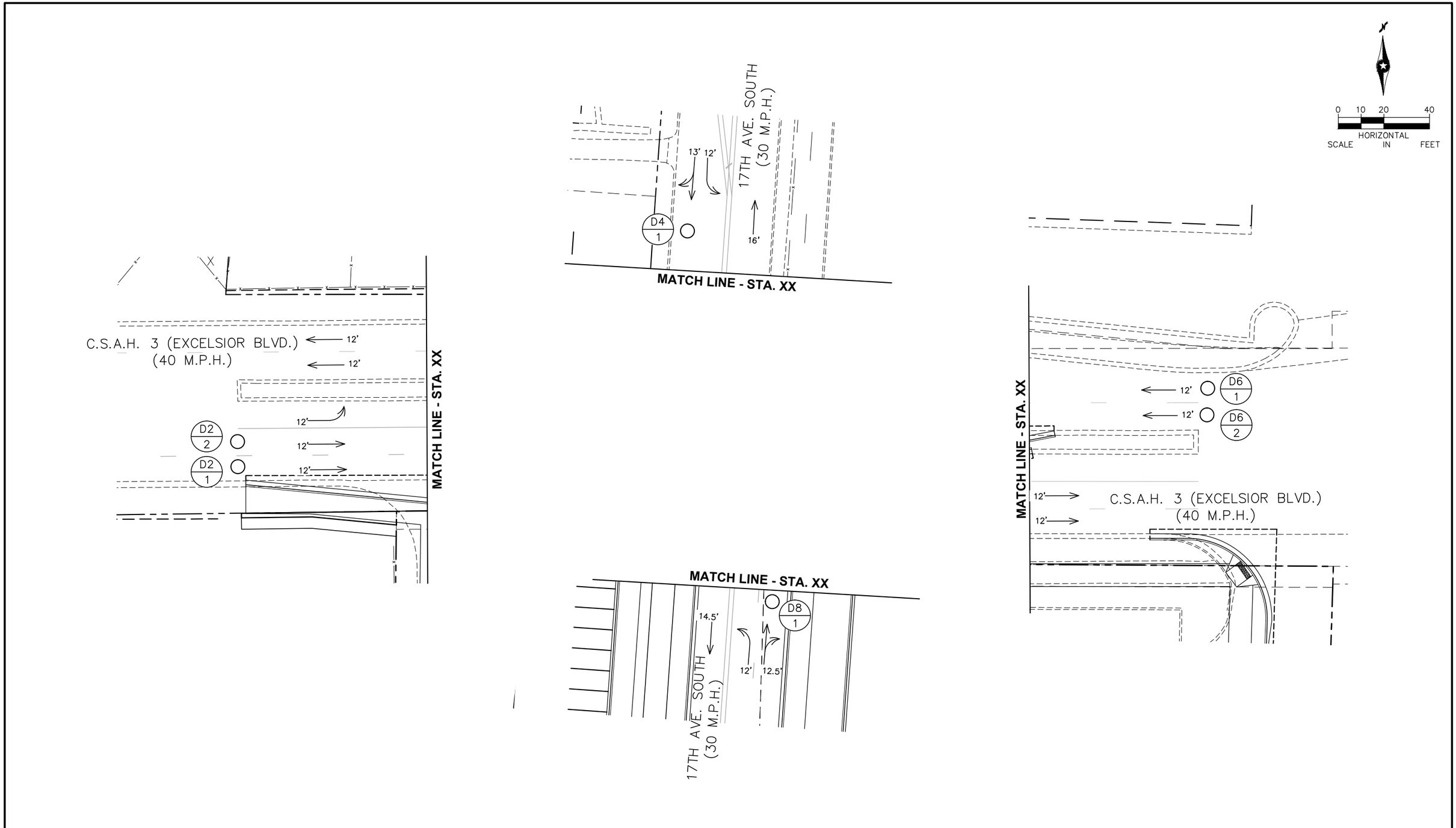

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

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SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL - SIGNAL SYSTEM "P"
C.S.A.H. 3 (EXCELSIOR BLVD) AT 17TH AVE
MATCHLINE LAYOUT

DISCIPLINE: TRAFFIC

SHEET NAME: W3-TFC-SIG-001 - 01B

SHEET 132 OF 152

Sep. 21 2015 11:53 am V:\3400_ADC\CAD\SEGMENT W3\PLAN SHEETS\TRAFFIC\W3-TFC-SIG-001.dwg By: kmcclement

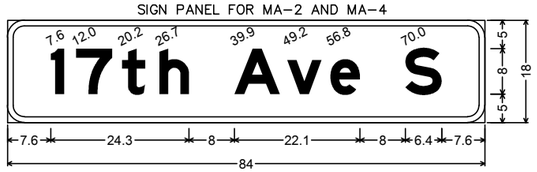
SIGNAL STRUCTURE LOCATIONS

NO.	LOCATION (1)	NO.	LOCATION (1)

NO.	LOCATION		MAST ARM
	FOUNDATION (1)	AIM ARM TO	

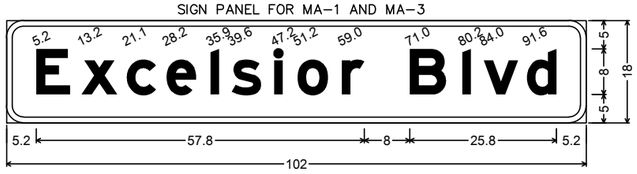
(1) TO THE CENTER OF THE HANDHOLE OR CONCRETE FOUNDATION.

SIGN PANEL FOR MA-2 AND MA-4



D-X; 3.0" Radius, 1.0" Border, White on Green;
[17th Ave S] E Mod;

SIGN PANEL FOR MA-1 AND MA-3



D-X; 3.0" Radius, 1.0" Border, White on Green;
[Excelsior Blvd] E Mod;

NOTES:
1. SEE SHEET #### FOR SIGN MOUNTING PLATE LOCATIONS.
2. COLOR – WHITE LEGEND AND BORDER ON GREEN BACKGROUND. ALL SIGNING SHALL USE DG3 SIGN SHEETING.
3. ALL COSTS TO PROVIDE AND INSTALL MAST ARM MOUNTED SIGN PANELS SHALL BE INCIDENTAL.

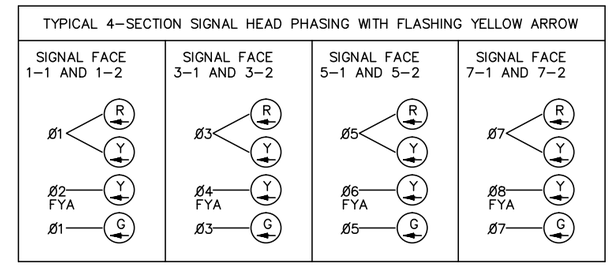
SIGNAL INDICATIONS AND BRACKETING

SIG. POLE NO.	FACE NO.	SIGNAL FACE MOUNT	SIG. Ø	LED INDICATIONS 12" INDICATIONS RED	YEL	FYEL	GRN	PED SYM.	BRACKET MOUNTING ANGLE, TYPE AND STANDARD PLATE NO.
MA-1	3-1	MAST ARM (END)	3	←	←		←		**
			4			←			
	8-2	MAST ARM (MID)	8	●	●		●		**
	8-1	POLE MOUNT	8	●	●		●	*	180° PLATE 8110E TYPE 10B
	5-2	POLE MOUNT	5	←	←		←		90° PLATE 8110E TYPE 10B
			6			←			
			6					*	
MA-2	5-1	MAST ARM (END)	5	←	←		←		**
			6			←			
	2-3	MAST ARM (MID)	2	●	●		●		**
	2-2	MAST ARM (MID)	2	●	●		●		**
	2-1	POLE MOUNT	2	●	●		●	*	180° PLATE 8110E TYPE 10B
	7-2	POLE MOUNT	7	←	←		←		90° PLATE 8110E TYPE 10B
			8			←			
			8					*	
MA-3	7-1	MAST ARM (END)	7	←	←		←		**
			8			←			
	4-2	MAST ARM (MID)	4	●	●		●		**
	4-1	POLE MOUNT	4	●	●		●	*	180° PLATE 8110E TYPE 10B
	1-2	POLE MOUNT	1	←	←		←		90° PLATE 8110E TYPE 10B
			2			←			
			2					*	
MA-4	1-1	MAST ARM (END)	1	←	←		←		**
			2			←			
	6-3	MAST ARM (MID)	6	●	●		●		**
	6-2	MAST ARM (MID)	6	●	●		●		**
	6-1	POLE MOUNT	6	●	●		●	*	180° PLATE 8110E TYPE 10B
	3-2	POLE MOUNT	3	←	←		←		90° PLATE 8110E TYPE 10B
			4			←			
			4					*	

* PEDESTRIAN INDICATIONS SHALL BE INTERNATIONAL SYMBOLS IN A DUAL FACE SINGLE HOUSING WITH PEDESTRIAN COUNTDOWN TIMER.

** STRAIGHT MOUNT PLUMBIZER, SEE SPECIAL PROVISIONS.

TYPICAL 4-SECTION SIGNAL HEAD PHASING WITH FLASHING YELLOW ARROW



NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

METROPOLITAN COUNCIL SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL - SIGNAL SYSTEM "P"
C.S.A.H. 3 (EXCELSIOR BLVD) AT 17TH AVE S
EQUIPMENT SCHEDULE

DISCIPLINE: TRAFFIC

SHEET NAME: W3-TFC-SIG-001 - 01C

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SIGNAL STRUCTURE AND COMPONENT LOCATION

LOOP DETECTORS						HANDHOLES		
NUMBER	STATION	OFFSET (SURVEY C/L)	SIZE IN METERS	FUNCTION	DISTANCE CROSSWALK	NUMBER	STATION	OFFSET (SURVEY C/L)
D2-1B	1+451.7	5.2 RT	1.7x1.7	1	82.0	HH-1B	1+541.2	23.0 LT
D2-2B	1+451.7	8.7 RT	1.7x1.7	1	62.0	HH-2B	1+570.3	17.3 LT
						HH-3B	1+600.3	13.7 LT
D4-1B	1+521.0	14.6 LT	2-1.7x1.7	2	1.5 & -3.1	HH-4B	1+539.9	13.9 LT
D4-2B	1+524.1	14.6 LT	2-1.7x1.7	1	-3.1 & 1.5	HH-5B	1+543.5	0.7 LT
						HH-6B	1+542.7	12.0 RT
D5-1B	1+512.3	1.5 RT	4-1.7x1.7	1	1.5, 6.1, 10.7 & 15.3	HH-7B	1+519.7	12.1 RT
						HH-8B	1+487.1	12.0 RT
D6-1B	1+603.6	8.7 LT	1.7x1.7	1	62.0	HH-9B	1+435.9	12.0 RT
D6-2B	1+603.6	4.8 LT	1.7x1.7	1	62.0	HH-10B	1+508.8	1.8 LT
						HH-11B	1+514.0	13.7 LT
DC-1B	1+547.0	5.2 RT	1.7x1.7	4	–	HH-12B	1+517.9	20.2 LT
DC-2B	1+547.0	8.7 RT	1.7x1.7	4	–	HH-14B	1+536.2	15.5 LT
DC-3B	1+580.0	12.3 LT	1.7x1.7	4	–	HH-15B	1+539.1	25.9 LT

MAST ARMS AND PEDESTALS				
NUMBER	STATION	OFFSET	AIM ARM TO	LENGTH
MA-1B	1+541.5	13.6 RT	1+541.4-C/L	12.2
MA-2B	1+517.6	13.5 RT	1+523.1-13.5 RT	4.6
MA-3B	1+511.6	13.3 LT	1+511.6-C/L	7.6
SA-1B	1+536.8	13.9 LT	–	–

SOURCE OF POWER		
SOP-1B	1+542.6	24.4 LT
CONTROLLER & CABINET		
CAC-1B	1+541.2	28.4 LT
SERVICE PANEL		
SP-1B SE SIDE OF CAC-1B		

LOOP DETECTOR FUNCTIONS:

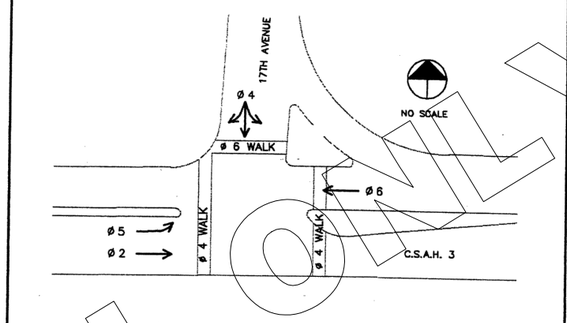
1=CALL AND EXTEND
2=DELAY CALL-IMMEDIATE EXTEND
3=EXTEND ONLY
4=COUNTING

* DISTANCE IS FROM NEAR EDGE OF CROSSWALK TO CENTER OF DETECTOR

** NUMBER OF TURNS IN ALL LOOPS IS 4 UNLESS OTHERWISE SPECIFIED BY MANUFACTURER

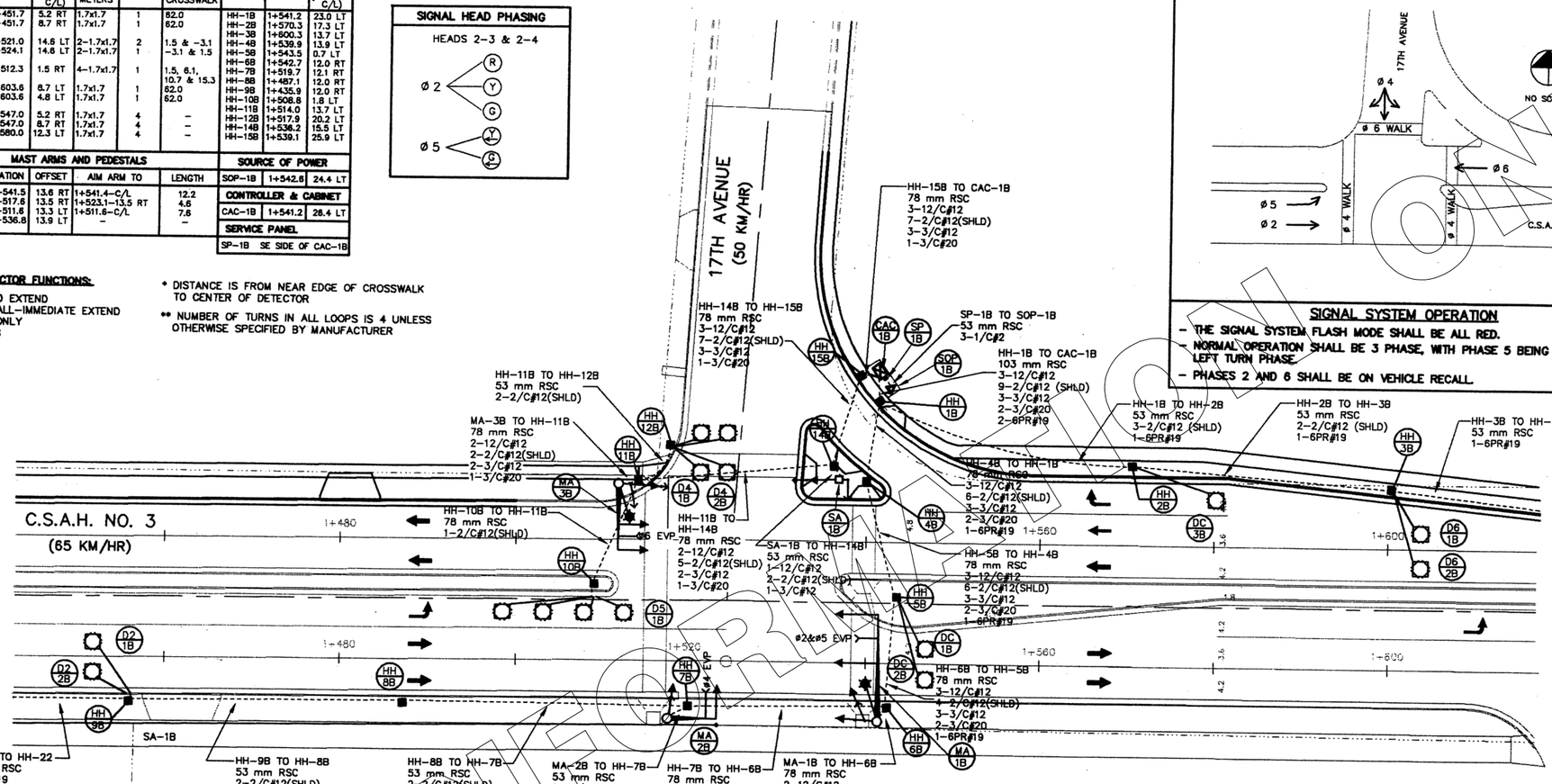
SIGNAL HEAD PHASING

CONTROLLER PHASING LAYOUT



SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 3 PHASE, WITH PHASE 5 BEING A PROTECTED LEFT TURN PHASE.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.



C.S.A.H. 3 AT 17TH AVE. SIGNAL INDICATIONS AND BRACKETING

SIGNAL POLE NO.	FACE NO.	SIGNAL FACE MOUNT	SIGNAL #	VEHICULAR INDICATION SIZE AND TYPE IN mm: CIRCULAR RED	CIRCULAR YELLOW	CIRCULAR GREEN	TURN ARROWS RED	TURN ARROWS YELLOW	TURN ARROWS GREEN	PEDESTRIAN IN mm: DON'T WALK	WALK	BRACKET MOUNTING ANGLE, TYPE AND STANDARD PLATE NO.
SA-1B	2-4	PEDESTAL MOUNT	2&5	300	300	300		300 LTA	300 LTA			TYPE 1D PLATE 8111B
	–	PEDESTAL MOUNT	4							300	300	
	–	PEDESTAL MOUNT	6							300	300	
MA-1B	2-3	MAST ARM(END)	2&5	300	300	300		300 LTA	300 LTA			ONE-WAY MNT./PLT. 8124D
	2-2	MAST ARM(MID)	2	300	300	300						ONE-WAY MNT./PLT. 8124D
	2-1	POLE MOUNT	2	300	300	300						270 TYPE 20B
	4-3	POLE MOUNT	4	300	300	300				300	300	PLATE 8110C
MA-2B	4-2	MAST ARM(END)	4	300	300	300						ONE-WAY MNT./PLT. 8124D
	4-1	POLE MOUNT	4	300	300	300				300	300	270 TYPE 10B PLATE 8110C
MA-3B	6-3	MAST ARM(END)	6	300	300	300						ONE-WAY MNT./PLT. 8124D
	6-2	MAST ARM(MID)	6	300	300	300						ONE-WAY MNT./PLT. 8124D
	6-1	POLE MOUNT	6	300	300	300				300	300	270 TYPE 10C
	–	POLE MOUNT	4							300	300	PLATE 8110C

HC001S17

NOTES:

1. SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
2. EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.
3. A 21 mm HALF COUPLING, 21 mm NIPPLE AND CONDUIT OUTLET BODY FOR EVP EQUIPMENT SHALL BE FURNISHED AND INSTALLED 1.2 m FROM THE END OF MAST ARMS MA-1B, MA-2B AND MA-3B.
4. ALL RED VEHICLE SIGNAL INDICATIONS SHALL USE LED TECHNOLOGY ALL OTHER VEHICLE SIGNAL INDICATIONS SHALL HAVE GLASS LENSES
5. PEDESTRIAN PUSH BUTTONS SHALL BE INSTALLED ON EACH MAST ARM SIGNAL POLE AND SIGNAL PEDESTAL FOR OPERATION AS SHOWN IN THE PHASING LAYOUT.
6. HANDHOLES SHALL BE PVC WITH METAL FRAMES AND COVERS.
7. FOR PEDESTRIAN INDICATIONS, SEE SPECIAL PROVISIONS.
8. ONE 250 WATT HIGH PRESSURE SODIUM VAPOR LUMINAIRE WITH PHOTO ELECTRIC CELL RECEPTACLE SHALL BE INSTALLED ON MA-1B AND MA-3B LUMINAIRE SHAFT EXTENSIONS.
9. THE CONTRACTOR SHALL SALVAGE THE INPLACE SIGNAL SYSTEM, SALVAGE SIGNAL SYSTEM SHALL BE INCIDENTAL TO SIGNAL SYSTEM. SEE SPECIAL PROVISIONS.
10. OVERHEAD MAST ARM MOUNTED SIGN PANELS SHALL BE INCIDENTAL TO SIGNAL SYSTEM SEE SPECIAL PROVISIONS
11. EVP SYSTEM SHALL BE INCIDENTAL TO SIGNAL SYSTEM. SEE SPECIAL PROVISIONS.

0 10 20 30
SCALE IN METERS

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
DATE 11/20/09 REG.NO. 21641

INTERSECTION LAYOUT
SYSTEM "B"
C.S.A.H. 3 AT 17TH AVENUE

HENN. CO., PROJ. NO. 9224 M.S.A.S. NO. 132-020-10 SHEET 93 OF 112 SHEETS

FOR INFORMATION ONLY

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM
SRF Consulting Group, Inc.
60% SUBMISSION - 09/28/15

METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL - SIGNAL SYSTEM "P"
C.S.A.H. 3 (EXCELSIOR BLVD) AT 17TH AVE S
FOR INFORMATION ONLY

DISCIPLINE: TRAFFIC
SHEET NAME: W3-TFC-SIG-002 - 001

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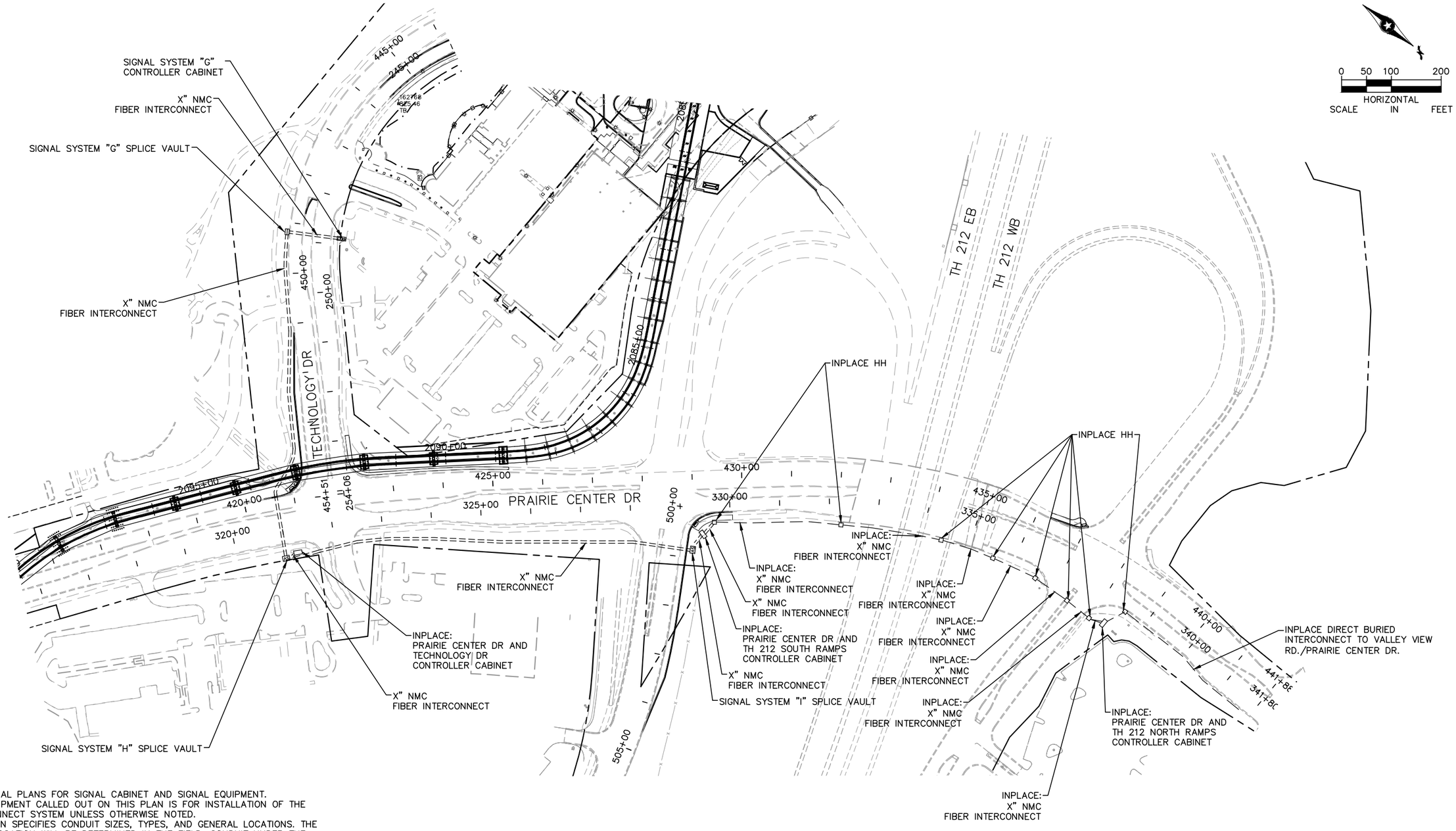

NOTES:
1. SEE SIGNAL PLANS FOR SIGNAL CABINET AND SIGNAL EQUIPMENT.
2. THE EQUIPMENT CALLED OUT ON THIS PLAN IS FOR INSTALLATION OF THE INTERCONNECT SYSTEM UNLESS OTHERWISE NOTED.
3. THIS PLAN SPECIFIES CONDUIT SIZES, TYPES, AND GENERAL LOCATIONS. THE EXACT LOCATION WILL BE DETERMINED IN THE FIELD. CONDUIT UNDER THE ROADWAY REQUIRE BORING.
4. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION.

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM

SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL INTERCONNECT ALONG TECHNOLOGY DRIVE AND PRAIRIE CENTER DRIVE

DISCIPLINE: TRAFFIC

SHEET NAME: W1-TFC-SIG-IC - 001

SHEET 135 OF 152

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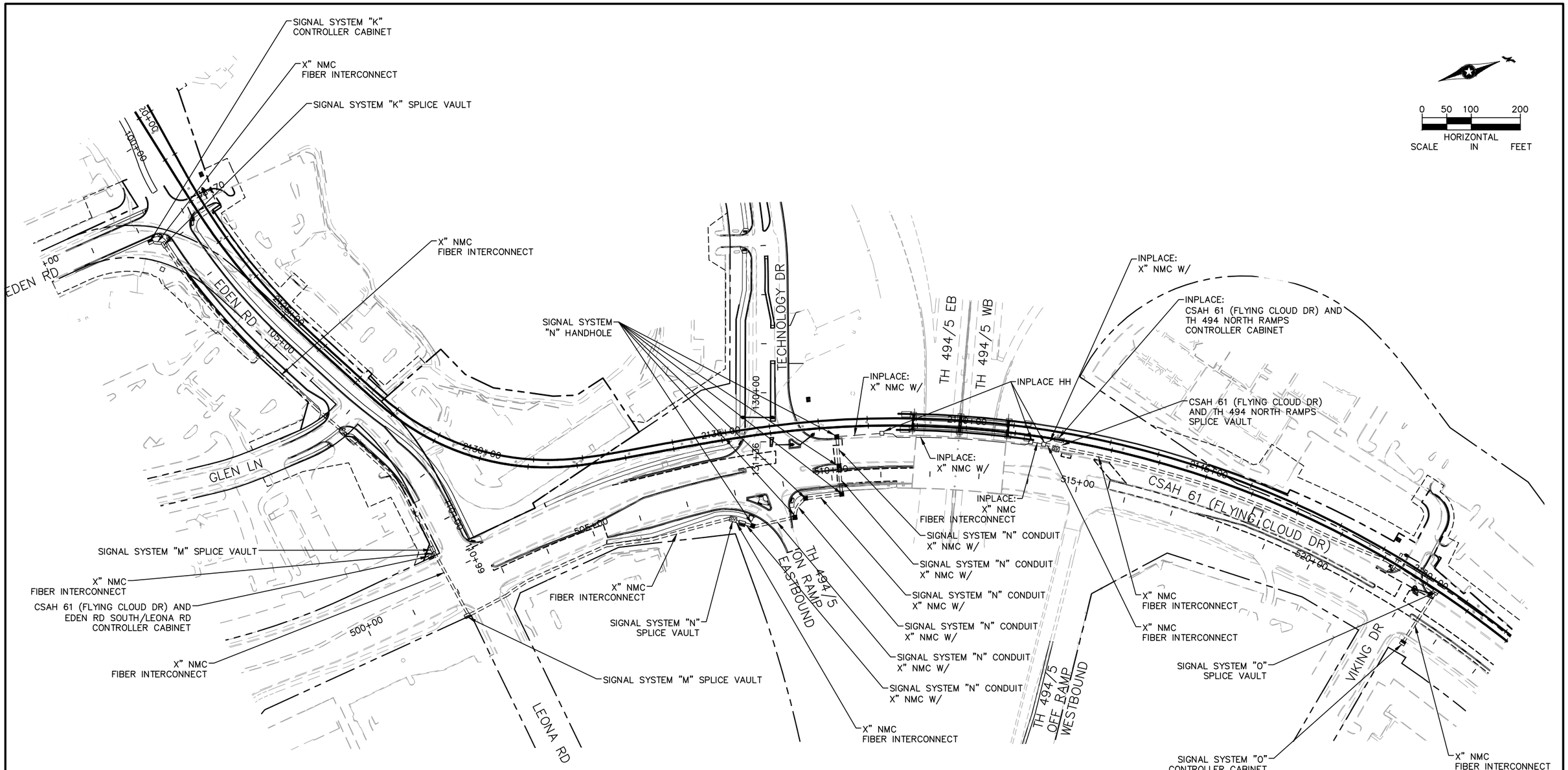

NOTES:
1. SEE SIGNAL PLANS FOR SIGNAL CABINET AND SIGNAL EQUIPMENT.
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4. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION.

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM SRF Consulting Group, Inc. METROPOLITAN COUNCIL SOUTHWEST Green Line LRT Extension

60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL INTERCONNECT ALONG EDEN ROAD AND CSAH 61 (FLYING CLOUD DRIVE)

DISCIPLINE: TRAFFIC

SHEET NAME: W1-TFC-SIG-IC - 002

SHEET 136 OF 152

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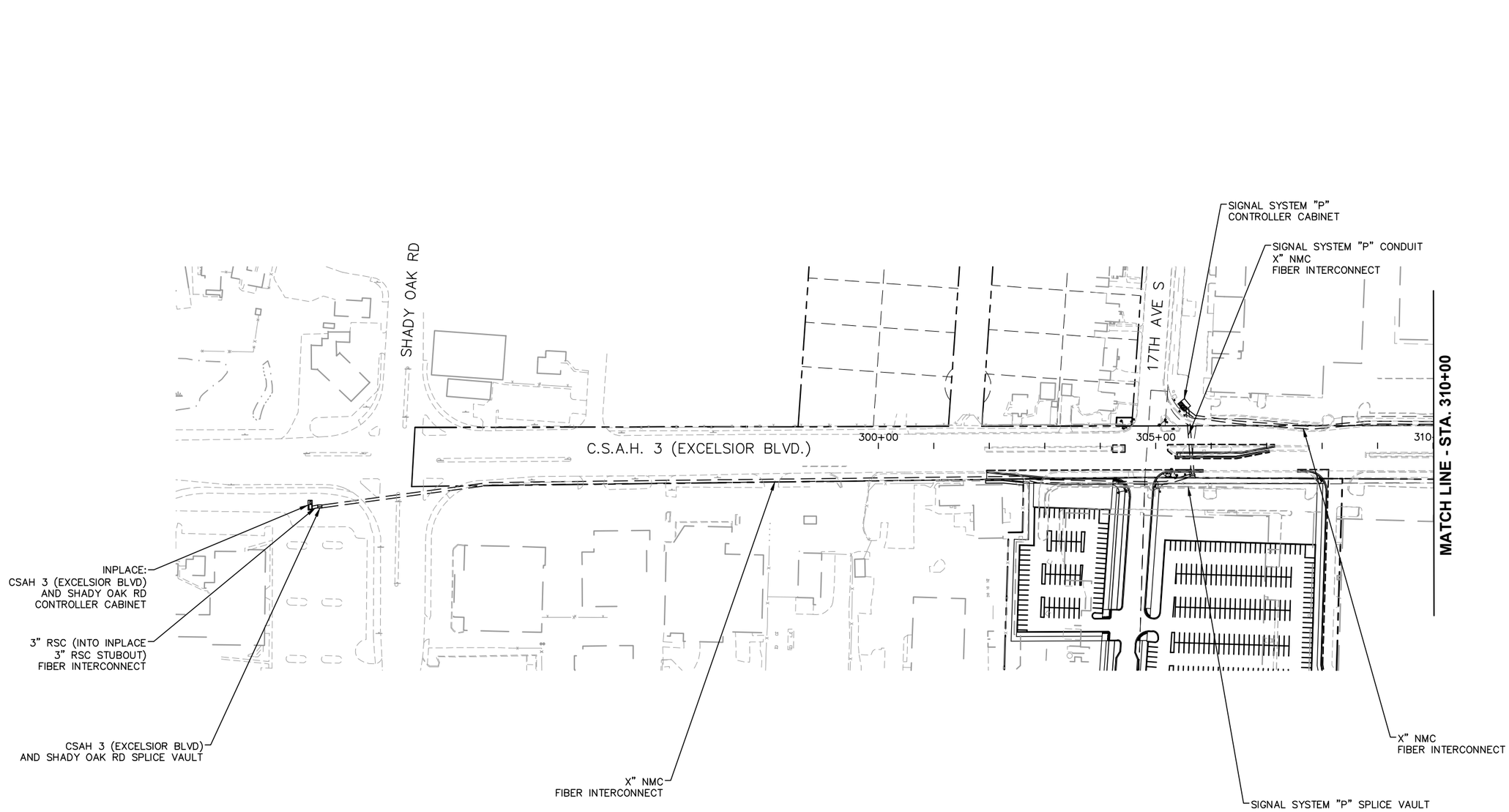

NOTES:
1. SEE SIGNAL PLANS FOR SIGNAL CABINET AND SIGNAL EQUIPMENT.
2. THE EQUIPMENT CALLED OUT ON THIS PLAN IS FOR INSTALLATION OF THE INTERCONNECT SYSTEM UNLESS OTHERWISE NOTED.
3. THIS PLAN SPECIFIES CONDUIT SIZES, TYPES, AND GENERAL LOCATIONS. THE EXACT LOCATION WILL BE DETERMINED IN THE FIELD. CONDUIT UNDER THE ROADWAY REQUIRE BORING.
4. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION.

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM SRF Consulting Group, Inc.

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METROPOLITAN COUNCIL SOUTHWEST Green Line LRT Extension

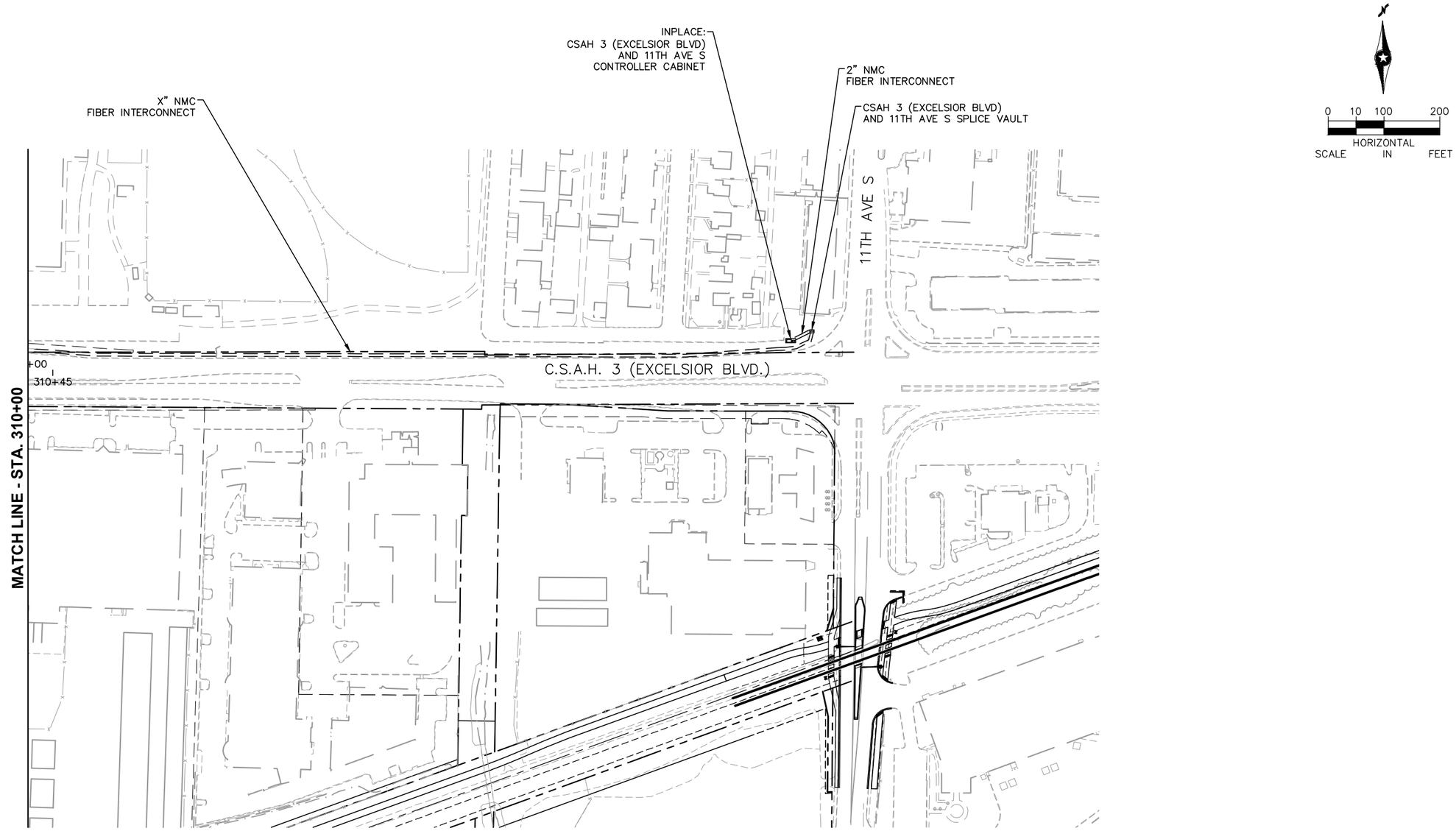
CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL INTERCONNECT
ALONG CSAH 3 (EXCELSIOR BOULEVARD)

DISCIPLINE: TRAFFIC

SHEET NAME: W3-TFC-IC - 001

SHEET 137 OF 152

Sep, 21 2015 11:55 am V:\3400_ADC\CAD\SEGMENT W3\PLAN SHEETS\TRAFFIC\W3-TFC-IC.dwg By: kmcclement



NOTES:
1. SEE SIGNAL PLANS FOR SIGNAL CABINET AND SIGNAL EQUIPMENT.
2. THE EQUIPMENT CALLED OUT ON THIS PLAN IS FOR INSTALLATION OF THE INTERCONNECT SYSTEM UNLESS OTHERWISE NOTED.
3. THIS PLAN SPECIFIES CONDUIT SIZES, TYPES, AND GENERAL LOCATIONS. THE EXACT LOCATION WILL BE DETERMINED IN THE FIELD. CONDUIT UNDER THE ROADWAY REQUIRE BORING.
4. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION.

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

METROPOLITAN COUNCIL SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL INTERCONNECT
ALONG CSAH 3 (EXCELSIOR BOULEVARD)

DISCIPLINE: TRAFFIC

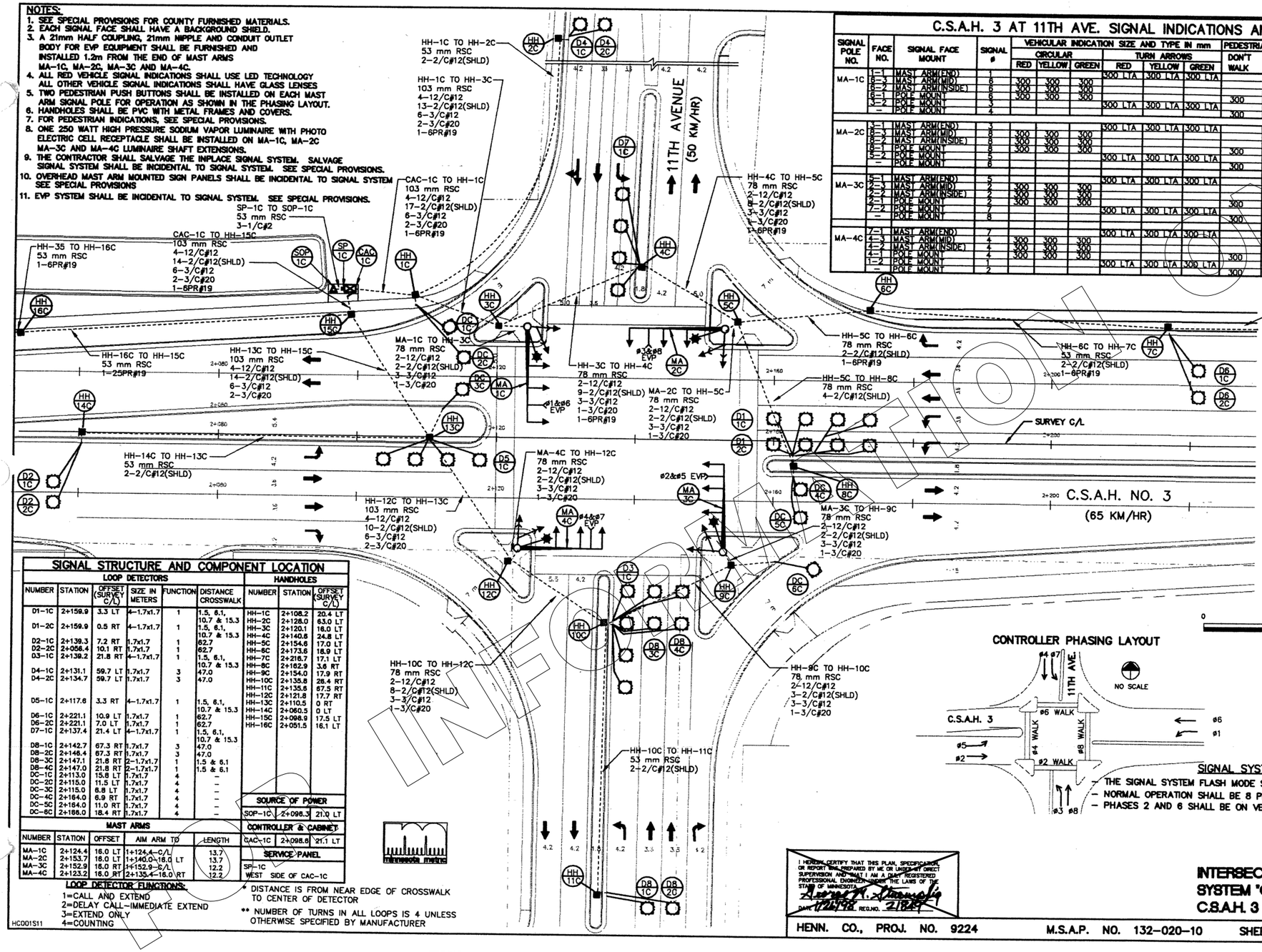
SHEET NAME: W3-TFC-IC - 002

SHEET 138 OF 152

Sep. 21 2015 11:56 am V:\3400_ADC\CAD\SEGMENT W3\PLAN SHEETS\TRAFFIC\W3-TFC-IC.dwg By: kmcclement

NOTES:

1. SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
2. EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.
3. A 21mm HALF COUPLING, 21mm NIPPLE AND CONDUIT OUTLET BODY FOR EVP EQUIPMENT SHALL BE FURNISHED AND INSTALLED 1.2m FROM THE END OF MAST ARMS MA-1C, MA-2C, MA-3C AND MA-4C.
4. ALL RED VEHICLE SIGNAL INDICATIONS SHALL USE LED TECHNOLOGY ALL OTHER VEHICLE SIGNAL INDICATIONS SHALL HAVE GLASS LENSES
5. TWO PEDESTRIAN PUSH BUTTONS SHALL BE INSTALLED ON EACH MAST ARM SIGNAL POLE FOR OPERATION AS SHOWN IN THE PHASING LAYOUT.
6. HANDHOLES SHALL BE PVC WITH METAL FRAMES AND COVERS.
7. FOR PEDESTRIAN INDICATIONS, SEE SPECIAL PROVISIONS.
8. ONE 250 WATT HIGH PRESSURE SODIUM VAPOR LUMINAIRE WITH PHOTO ELECTRIC CELL RECEPTACLE SHALL BE INSTALLED ON MA-1C, MA-2C MA-3C AND MA-4C LUMINAIRE SHAFT EXTENSIONS.
9. THE CONTRACTOR SHALL SALVAGE THE INPLACE SIGNAL SYSTEM. SALVAGE SIGNAL SYSTEM SHALL BE INCIDENTAL TO SIGNAL SYSTEM. SEE SPECIAL PROVISIONS.
10. OVERHEAD MAST ARM MOUNTED SIGN PANELS SHALL BE INCIDENTAL TO SIGNAL SYSTEM SEE SPECIAL PROVISIONS
11. EVP SYSTEM SHALL BE INCIDENTAL TO SIGNAL SYSTEM. SEE SPECIAL PROVISIONS.



C.S.A.H. 3 AT 11TH AVE. SIGNAL INDICATIONS AND BRACKETING

SIGNAL POLE NO.	FACE NO.	SIGNAL FACE MOUNT	SIGNAL ø	VEHICULAR INDICATION SIZE AND TYPE IN mm: CIRCULAR RED	CIRCULAR YELLOW	CIRCULAR GREEN	TURN ARROWS RED	TURN ARROWS YELLOW	TURN ARROWS GREEN	PEDESTRIAN IN mm: DON'T WALK	WALK	BRACKET MOUNTING ANGLE, TYPE AND STANDARD PLATE NO.
MA-1C	1-1	MAST ARM(END)	1				300 LTA	300 LTA	300 LTA			
	6-3	MAST ARM(MID)	6	300	300	300						ONE-WAY MNT./PLT. 81240
	6-2	MAST ARM(INSIDE)	6	300	300	300						ONE-WAY MNT./PLT. 81240
	6-1	POLE MOUNT	6	300	300	300						ONE-WAY MNT./PLT. 81240
	3-2	POLE MOUNT	3				300 LTA	300 LTA	300 LTA	300	300	270 TYPE 20C
	–	POLE MOUNT	4							300	300	PLATE 8110C
MA-2C	3-1	MAST ARM(END)	3				300 LTA	300 LTA	300 LTA			
	8-3	MAST ARM(MID)	8	300	300	300						ONE-WAY MNT./PLT. 81240
	8-2	MAST ARM(INSIDE)	8	300	300	300						ONE-WAY MNT./PLT. 81240
	8-1	POLE MOUNT	8	300	300	300						ONE-WAY MNT./PLT. 81240
	5-2	POLE MOUNT	5				300 LTA	300 LTA	300 LTA	300	300	270 TYPE 20C
	–	POLE MOUNT	6							300	300	PLATE 8110C
MA-3C	5-1	MAST ARM(END)	5				300 LTA	300 LTA	300 LTA			
	2-3	MAST ARM(MID)	2	300	300	300						ONE-WAY MNT./PLT. 81240
	2-2	MAST ARM(INSIDE)	2	300	300	300						ONE-WAY MNT./PLT. 81240
	2-1	POLE MNT	2	300	300	300						ONE-WAY MNT./PLT. 81240
	7-2	POLE MOUNT	7				300 LTA	300 LTA	300 LTA	300	300	270 TYPE 20C
	–	POLE MOUNT	8							300	300	PLATE 8110C
MA-4C	7-1	MAST ARM(END)	7				300 LTA	300 LTA	300 LTA			
	4-3	MAST ARM(MID)	4	300	300	300						ONE-WAY MNT./PLT. 81240
	4-2	MAST ARM(INSIDE)	4	300	300	300						ONE-WAY MNT./PLT. 81240
	4-1	POLE MOUNT	4	300	300	300						ONE-WAY MNT./PLT. 81240
	1-2	POLE MOUNT	1				300 LTA	300 LTA	300 LTA	300	300	270 TYPE 20C
	–	POLE MOUNT	2							300	300	PLATE 8110C

SIGNAL STRUCTURE AND COMPONENT LOCATION

LOOP DETECTORS

NUMBER	STATION	OFFSET (SURVEY C/L)	SIZE IN METERS	FUNCTION	DISTANCE CROSSWALK
D1-1C	2+159.9	3.3 LT	4-1.7x1.7	1	1.5, 6.1, 10.7 & 15.3
D1-2C	2+159.9	0.5 RT	4-1.7x1.7	1	1.5, 6.1, 10.7 & 15.3
D2-1C	2+139.3	7.2 RT	1.7x1.7	1	62.7
D2-2C	2+056.4	10.1 RT	1.7x1.7	1	62.7
D3-1C	2+139.2	21.8 RT	4-1.7x1.7	1	1.5, 6.1, 10.7 & 15.3
D4-1C	2+131.1	59.7 LT	1.7x1.7	3	47.0
D4-2C	2+134.7	59.7 LT	1.7x1.7	3	47.0
D5-1C	2+117.6	3.3 RT	4-1.7x1.7	1	1.5, 6.1, 10.7 & 15.3
D6-1C	2+221.1	10.9 LT	1.7x1.7	1	62.7
D6-2C	2+221.1	7.0 LT	1.7x1.7	1	62.7
D7-1C	2+137.4	21.4 LT	4-1.7x1.7	1	1.5, 6.1, 10.7 & 15.3
D8-1C	2+142.7	67.3 RT	1.7x1.7	3	47.0
D8-2C	2+146.4	67.3 RT	1.7x1.7	3	47.0
D8-3C	2+147.1	21.8 RT	2-1.7x1.7	1	1.5 & 6.1
D8-4C	2+147.0	21.8 RT	2-1.7x1.7	1	1.5 & 6.1
DC-1C	2+113.0	15.8 LT	1.7x1.7	4	–
DC-2C	2+115.0	11.5 LT	1.7x1.7	4	–
DC-3C	2+115.0	8.8 LT	1.7x1.7	4	–
DC-4C	2+164.0	6.9 RT	1.7x1.7	4	–
DC-5C	2+164.0	11.0 RT	1.7x1.7	4	–
DC-6C	2+186.0	18.4 RT	1.7x1.7	4	–

MAST ARMS

NUMBER	STATION	OFFSET	AIM ARM TO	LENGTH
MA-1C	2+124.4	16.0 LT	1+124.4-C/L	13.7
MA-2C	2+153.7	16.0 LT	1+140.0-16.0 LT	13.7
MA-3C	2+152.9	16.0 RT	1+152.9-C/L	12.2
MA-4C	2+123.2	16.0 RT	2+135.4-16.0 RT	12.2

HANDHOLES

NUMBER	STATION	OFFSET (SURVEY C/L)
HH-1C	2+108.2	20.4 LT
HH-2C	2+128.0	63.0 LT
HH-3C	2+120.1	16.0 LT
HH-4C	2+140.6	24.8 LT
HH-5C	2+154.6	17.0 LT
HH-6C	2+173.6	16.9 LT
HH-7C	2+216.7	17.1 LT
HH-8C	2+162.9	3.6 RT
HH-9C	2+154.0	17.9 RT
HH-10C	2+135.8	28.4 RT
HH-11C	2+135.6	67.5 RT
HH-12C	2+121.8	17.7 RT
HH-13C	2+110.5	0 RT
HH-14C	2+060.5	0 LT
HH-15C	2+098.9	17.5 LT
HH-16C	2+051.5	16.1 LT

SOURCE OF POWER

SOP-1C	2+096.3	21.0 LT

CONTROLLER & CABINET

CAC-1C	2+098.6	21.1 LT

SERVICE PANEL

SP-1C
WEST SIDE OF CAC-1C

LOOP DETECTOR FUNCTIONS:
1=CALL AND EXTEND
2=DELAY CALL-IMMEDIATE EXTEND
3=EXTEND ONLY
4=COUNTING

HC001S11

* DISTANCE IS FROM NEAR EDGE OF CROSSWALK TO CENTER OF DETECTOR

** NUMBER OF TURNS IN ALL LOOPS IS 4 UNLESS OTHERWISE SPECIFIED BY MANUFACTURER

CONTROLLER PHASING LAYOUT

0 10 20 30
SCALE IN METERS

SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 8 PHASE.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
DATE 12/04/98 REG.NO. 21889

INTERSECTION LAYOUT
SYSTEM "C"
C.S.A.H. 3 AT 11TH AVENUE

HENN. CO., PROJ. NO. 9224 | M.S.A.P. NO. 132-020-10 | SHEET 95 OF 112 SHEETS

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM | SRF Consulting Group, Inc. | METROPOLITAN COUNCIL | SOUTHWEST Green Line LRT Extension

60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL
C.S.A.H. 3 (EXCELSIOR BLVD) AT 11TH AVE S
FOR INFORMATION ONLY

DISCIPLINE: TRAFFIC
SHEET NAME: W3-TFC-SIG-002 - 002

SHEET 139 OF 152

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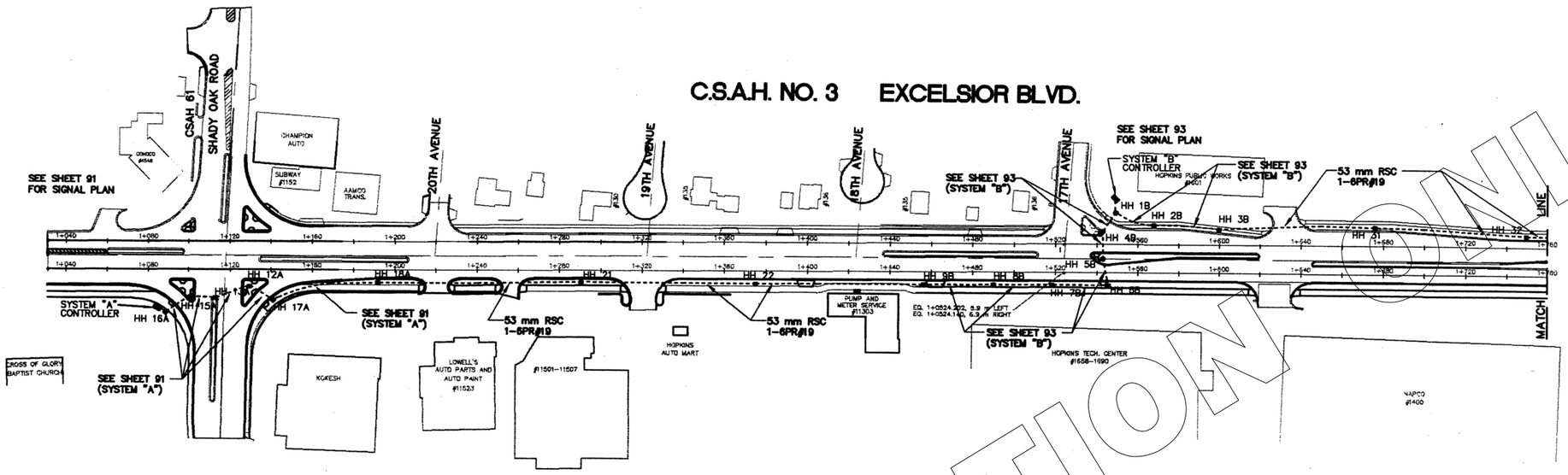
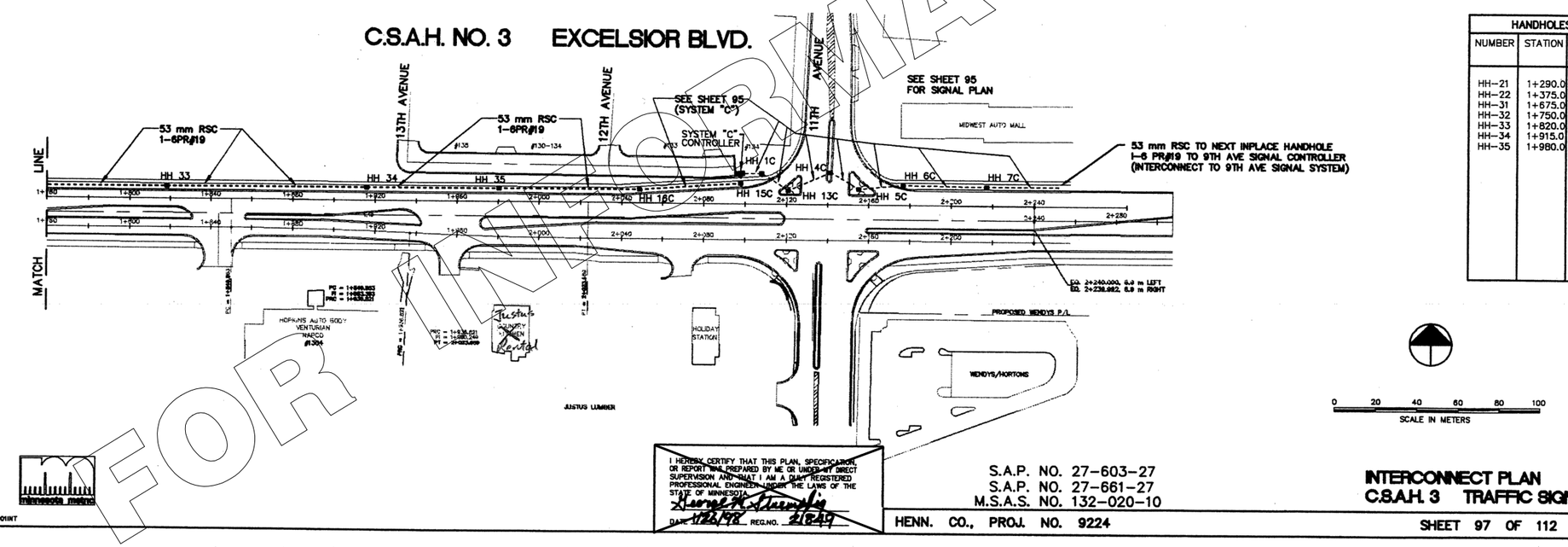




HANDHOLES		
NUMBER	STATION	OFFSET
HH-21	1+290.0	13.0 RT
HH-22	1+375.0	13.0 RT
HH-31	1+675.0	16.5 LT
HH-32	1+750.0	12.5 LT
HH-33	1+820.0	12.8 LT
HH-34	1+915.0	13.0 LT
HH-35	1+980.0	13.0 LT

0 20 40 60 80 100
SCALE IN METERS

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
DATE 1/26/98 REG.NO. 21849

S.A.P. NO. 27-603-27
S.A.P. NO. 27-661-27
M.S.A.S. NO. 132-020-10

HENN. CO., PROJ. NO. 9224

INTERCONNECT PLAN
C.S.A.H. 3 TRAFFIC SIGNALS

SHEET 97 OF 112 SHEETS

HC001INT

FOR INFORMATION ONLY

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM SRF Consulting Group, Inc.

60% SUBMISSION - 09/28/15

METROPOLITAN COUNCIL SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL INTERCONNECT
C.S.A.H. 3 (EXCELSIOR BLVD)
FOR INFORMATION ONLY

DISCIPLINE: TRAFFIC
SHEET NAME: W3-TFC-SIG-002 - 003

Sep. 21 2015 11:56 am V:\3400_ADC\CAD\SEGMENT W3\PLAN SHEETS\TRAFFIC\W3-TFC-SIG-002.dwg By: kmcclement

SIGNAL STRUCTURE AND COMPONENT LOCATION

LOOP DETECTORS

NUMBER	STATION	OFFSET	SIZE IN METERS	FUNCTION	DISTANCE CROSSWALK
D1-1A	1+132.8	1.3 LT	4-1.7x1.7	1	1.5, 6.1, 10.7 & 15.3
D2-1A	1+034.8	5.1 RT	1.7x1.7	1	62.7
D2-2A	1+035.7	8.9 RT	1.7x1.7	1	62.7
D2-3A	1+096.0	5.0 RT	2-1.7x1.7	2	1.5 & 6.1
D2-4A	1+096.0	8.8 RT	2-1.7x1.7	2	1.5 & 6.1
D3-1A	1+115.5	20.2 RT	4-1.7x1.7	1	1.5, 6.1, 10.7 & 15.3
D4-1A	1+107.4	56.5 LT	1.7x1.7	1	40.0
D4-2A	1+111.2	56.5 LT	1.7x1.7	1	40.0
D5-1A	1+096.0	1.5 RT	4-1.7x1.7	1	1.5, 6.1, 10.7 & 15.3
D6-1A	1+196.1	9.0 LT	1.7x1.7	1	62.7
D6-2A	1+196.1	5.5 LT	1.7x1.7	1	62.7
D7-1A	1+113.9	18.7 LT	4-1.7x1.7	1	1.5, 6.1, 10.7 & 15.3
D8-1A	1+118.3	62.2 RT	1.7x1.7	1	62.7
D8-2A	1+122.1	62.2 RT	1.7x1.7	1	62.7

HANDHOLES

NUMBER	STATION	OFFSET
HH-1A	1+081.5	23.1 RT
HH-2A	1+041.5	15.4 RT
HH-3A	1+095.0	14.6 RT
HH-4A	1+091.1	1.7 LT
HH-5A	1+101.0	16.2 LT
HH-6A	1+096.0	23.4 LT
HH-7A	1+104.6	54.2 LT
HH-8A	1+133.4	15.1 LT
HH-9A	1+148.5	17.5 LT
HH-10A	1+190.8	13.4 LT
HH-11A	1+137.8	1.8 RT
HH-12A	1+129.4	16.2 RT
HH-13A	1+112.6	24.0 RT
HH-14A	1+112.0	77.1 RT
HH-15A	1+101.0	20.2 RT
HH-16A	1+088.6	27.0 RT
HH-17A	1+140.6	21.4 RT
HH-18A	1+190.7	13.8 RT
HH-19A	1+117.0	24.9 LT
HH-20A	1+093.6	33.6 RT

SOURCE OF POWER

SOP-1A	1+095.4	35.3 RT

CONTROLLER & CABINET

CAC-1A	1+084.4	25.6 RT

SERVICE PANEL

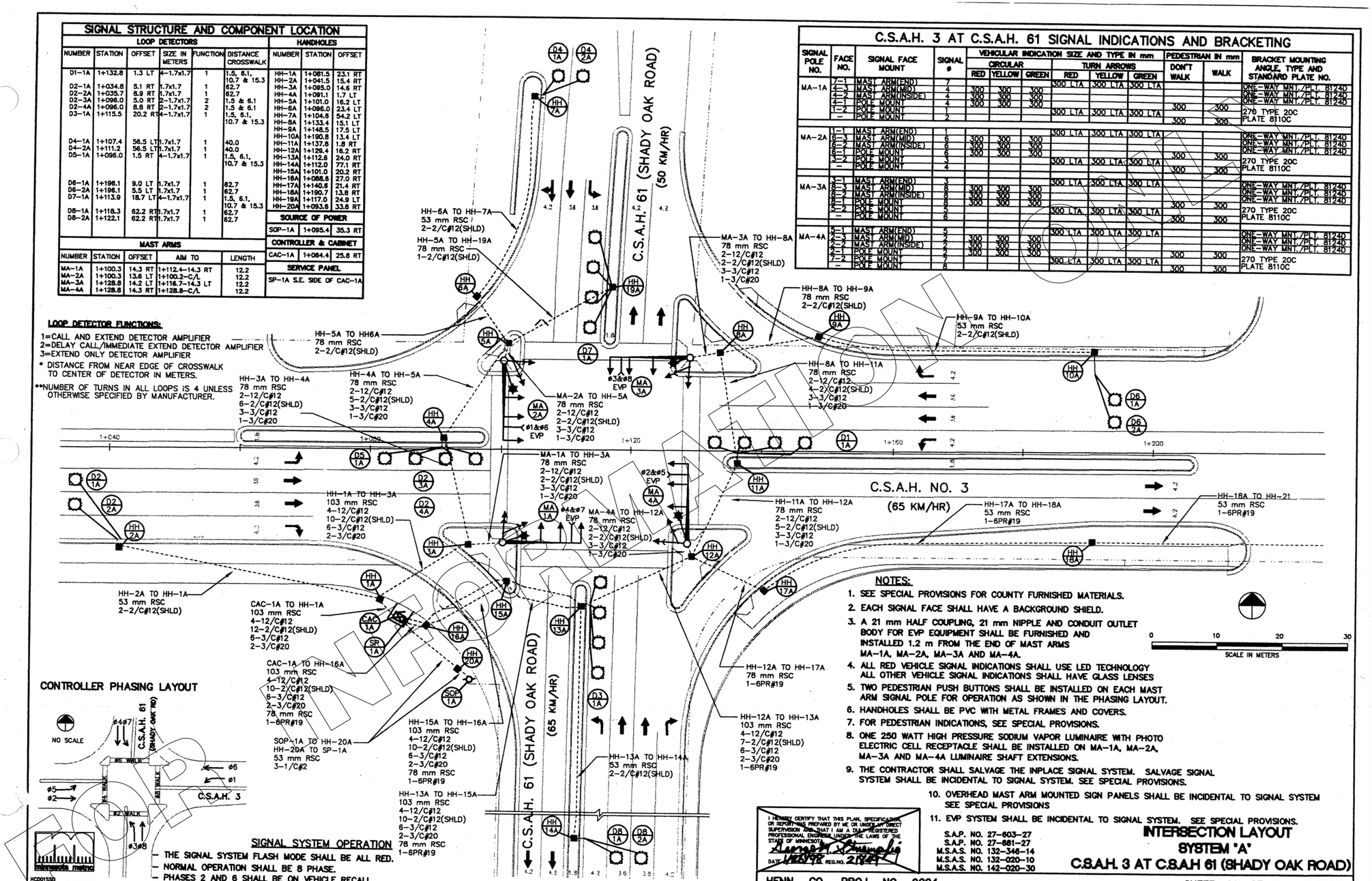
SP-1A S.E. SIDE OF CAC-1A

MAST ARMS

NUMBER	STATION	OFFSET	AIM TO	LENGTH
MA-1A	1+100.3	14.3 RT	1+112.4-14.3 RT	12.2
MA-2A	1+100.3	13.6 LT	1+100.2-C/L	12.2
MA-3A	1+128.8	14.2 LT	1+116.7-14.3 LT	12.2
MA-4A	1+128.8	14.3 RT	1+128.8-C/L	12.2

C.S.A.H. 3 AT C.S.A.H. 61 SIGNAL INDICATIONS AND BRACKETING

SIGNAL POLE NO.	FACE NO.	SIGNAL FACE MOUNT	SIGNAL #	VEHICULAR INDICATION SIZE AND TYPE IN mm: CIRCULAR RED	CIRCULAR YELLOW	CIRCULAR GREEN	TURN ARROWS RED	TURN ARROWS YELLOW	TURN ARROWS GREEN	PEDESTRIAN IN mm: DON'T WALK	WALK	BRACKET MOUNTING ANGLE, TYPE AND STANDARD PLATE NO.
MA-1A	7-1	MAST ARM(END)	7				300 LTA	300 LTA	300 LTA			
	4-3	MAST ARM(MID)	4	300	300	300						ONE-WAY MNT./PLT. 8124D
	4-2	MAST ARM(INSIDE)	4	300	300	300						ONE-WAY MNT./PLT. 8124D
	4-1	POLE MOUNT	4	300	300	300						ONE-WAY MNT./PLT. 8124D
	1-2	POLE MOUNT	1				300 LTA	300 LTA	300 LTA	300	300	270 TYPE 20C PLATE 8110C
	–	POLE MOUNT	2							300	300	
MA-2A	1-1	MAST ARM(END)	1				300 LTA	300 LTA	300 LTA			
	6-3	MAST ARM(MID)	6	300	300	300						ONE-WAY MNT./PLT. 8124D
	6-2	MAST ARM(INSIDE)	6	300	300	300						ONE-WAY MNT./PLT. 8124D
	6-1	POLE MOUNT	6	300	300	300						ONE-WAY MNT./PLT. 8124D
	3-2	POLE MOUNT	3				300 LTA	300 LTA	300 LTA	300	300	270 TYPE 20C PLATE 8110C
	–	POLE MOUNT	4							300	300	
MA-3A	3-1	MAST ARM(END)	3				300 LTA	300 LTA	300 LTA			
	8-3	MAST ARM(MID)	8	300	300	300						ONE-WAY MNT./PLT. 8124D
	8-2	MAST ARM(INSIDE)	8	300	300	300						ONE-WAY MNT./PLT. 8124D
	8-1	POLE MOUNT	8	300	300	300						ONE-WAY MNT./PLT. 8124D
	5-2	POLE MOUNT	5				300 LTA	300 LTA	300 LTA	300	300	270 TYPE 20C PLATE 8110C
	–	POLE MOUNT	6							300	300	
MA-4A	5-1	MAST ARM(END)	5				300 LTA	300 LTA	300 LTA			
	2-3	MAST ARM(MID)	2	300	300	300						ONE-WAY MNT./PLT. 8124D
	2-2	MAST ARM(INSIDE)	2	300	300	300						ONE-WAY MNT./PLT. 8124D
	2-1	POLE MOUNT	2	300	300	300						ONE-WAY MNT./PLT. 8124D
	7-2	POLE MOUNT	7				300 LTA	300 LTA	300 LTA	300	300	270 TYPE 20C PLATE 8110C
	–	POLE MOUNT	8							300	300	



LOOP DETECTOR FUNCTIONS:

1=CALL AND EXTEND DETECTOR AMPLIFIER
2=DELAY CALL/IMMEDIATE EXTEND DETECTOR AMPLIFIER
3=EXTEND ONLY DETECTOR AMPLIFIER
* DISTANCE FROM NEAR EDGE OF CROSSWALK TO CENTER OF DETECTOR IN METERS.
**NUMBER OF TURNS IN ALL LOOPS IS 4 UNLESS OTHERWISE SPECIFIED BY MANUFACTURER.

CONTROLLER PHASING LAYOUT

SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 8 PHASE.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.

NOTES:

1. SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
2. EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.
3. A 21 mm HALF COUPLING, 21 mm NIPPLE AND CONDUIT OUTLET BODY FOR EVP EQUIPMENT SHALL BE FURNISHED AND INSTALLED 1.2 m FROM THE END OF MAST ARMS MA-1A, MA-2A, MA-3A AND MA-4A.
4. ALL RED VEHICLE SIGNAL INDICATIONS SHALL USE LED TECHNOLOGY ALL OTHER VEHICLE SIGNAL INDICATIONS SHALL HAVE GLASS LENSES
5. TWO PEDESTRIAN PUSH BUTTONS SHALL BE INSTALLED ON EACH MAST ARM SIGNAL POLE FOR OPERATION AS SHOWN IN THE PHASING LAYOUT.
6. HANDHOLES SHALL BE PVC WITH METAL FRAMES AND COVERS.
7. FOR PEDESTRIAN INDICATIONS, SEE SPECIAL PROVISIONS.
8. ONE 250 WATT HIGH PRESSURE SODIUM VAPOR LUMINAIRE WITH PHOTO ELECTRIC CELL RECEPTACLE SHALL BE INSTALLED ON MA-1A, MA-2A, MA-3A AND MA-4A LUMINAIRE SHAFT EXTENSIONS.
9. THE CONTRACTOR SHALL SALVAGE THE INPLACE SIGNAL SYSTEM. SALVAGE SIGNAL SYSTEM SHALL BE INCIDENTAL TO SIGNAL SYSTEM. SEE SPECIAL PROVISIONS.
10. OVERHEAD MAST ARM MOUNTED SIGN PANELS SHALL BE INCIDENTAL TO SIGNAL SYSTEM SEE SPECIAL PROVISIONS
11. EVP SYSTEM SHALL BE INCIDENTAL TO SIGNAL SYSTEM. SEE SPECIAL PROVISIONS.

0 10 20 30
SCALE IN METERS

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
DATE 12/28/98 REG. NO. 21847

S.A.P. NO. 27-603-27
S.A.P. NO. 27-681-27
M.S.A.S. NO. 132-346-14
M.S.A.S. NO. 132-020-10
M.S.A.S. NO. 142-020-30

INTERSECTION LAYOUT
SYSTEM "A"
C.S.A.H. 3 AT C.S.A.H 61 (SHADY OAK ROAD)

HENN. CO., PROJ. NO. 9224

SHEET 91 OF 112 SHEETS

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM
SRF Consulting Group, Inc.
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

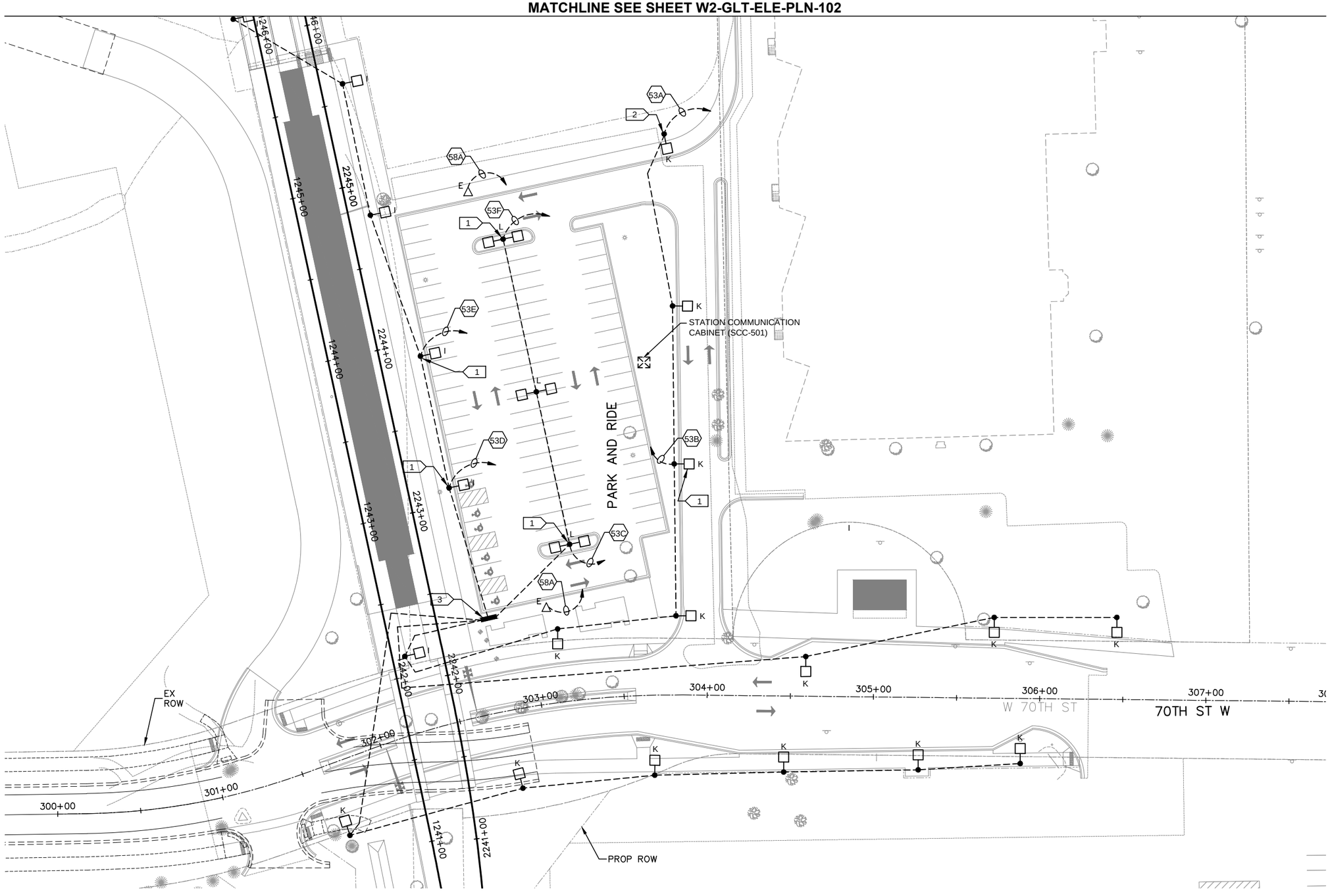
60% SUBMISSION - 09/28/15

CIVIL WEST - VOLUME 10
TRAFFIC SIGNAL INTERCONNECT
C.S.A.H. 3 (EXCELSIOR BLVD)
FOR INFORMATION ONLY

DISCIPLINE: TRAFFIC
SHEET NAME: W3-TFC-SIG-002 - 005

Sep, 21 2015 11:56 am V:\3400_ADC\CAD\SEGMENT W3\PLAN SHEETS\TRAFFIC\W3-TFC-SIG-002.dwg By: kmcclement

MATCHLINE SEE SHEET W2-GLT-ELE-PLN-102



KEYNOTES:

1. PROVIDE CCTV CAMERA ON THIS POLE AT 20'-0" A.F.F.
2. PROVIDE LICENSE PLATE READER (LPR) CAMERA ON THIS POLE AT 15'-0" A.F.F.
3. CUSTOMER METERING ENCLOSURE.

GENERAL NOTES:

1. DASHED LINES WITH ARROWHEAD DENOTE HOMERUN TO SCC-501 UNLESS OTHERWISE NOTED.

0 15 30 60
HORIZONTAL SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

AECOM

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CONSULTING ENGINEERING
MINNEAPOLIS • MINNESOTA

60% SUBMISSION - 09/28/15

METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
GOLDEN TRIANGLE STATION
ELECTRICAL
SITE PLAN

DISCIPLINE: ELECTRICAL

SHEET NAME: W2-GLT-ELE-PLN-101

SHEET 142 OF 152

Sep, 21 2015 01:31 pm V:\3400_ADC\CAD\SEGMENT W2\PLAN SHEETS\ELECTRICAL\W2-GLT-ELE-PLN-101.dwg By: V-BegeJB

MATCH LINE SEE SHEET W2-CWS-ELE-PLN-102

0 15 30 60
HORIZONTAL
SCALE IN FEET

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METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
CITY WEST STATION
ELECTRICAL
SITE PLAN (1 OF 2)

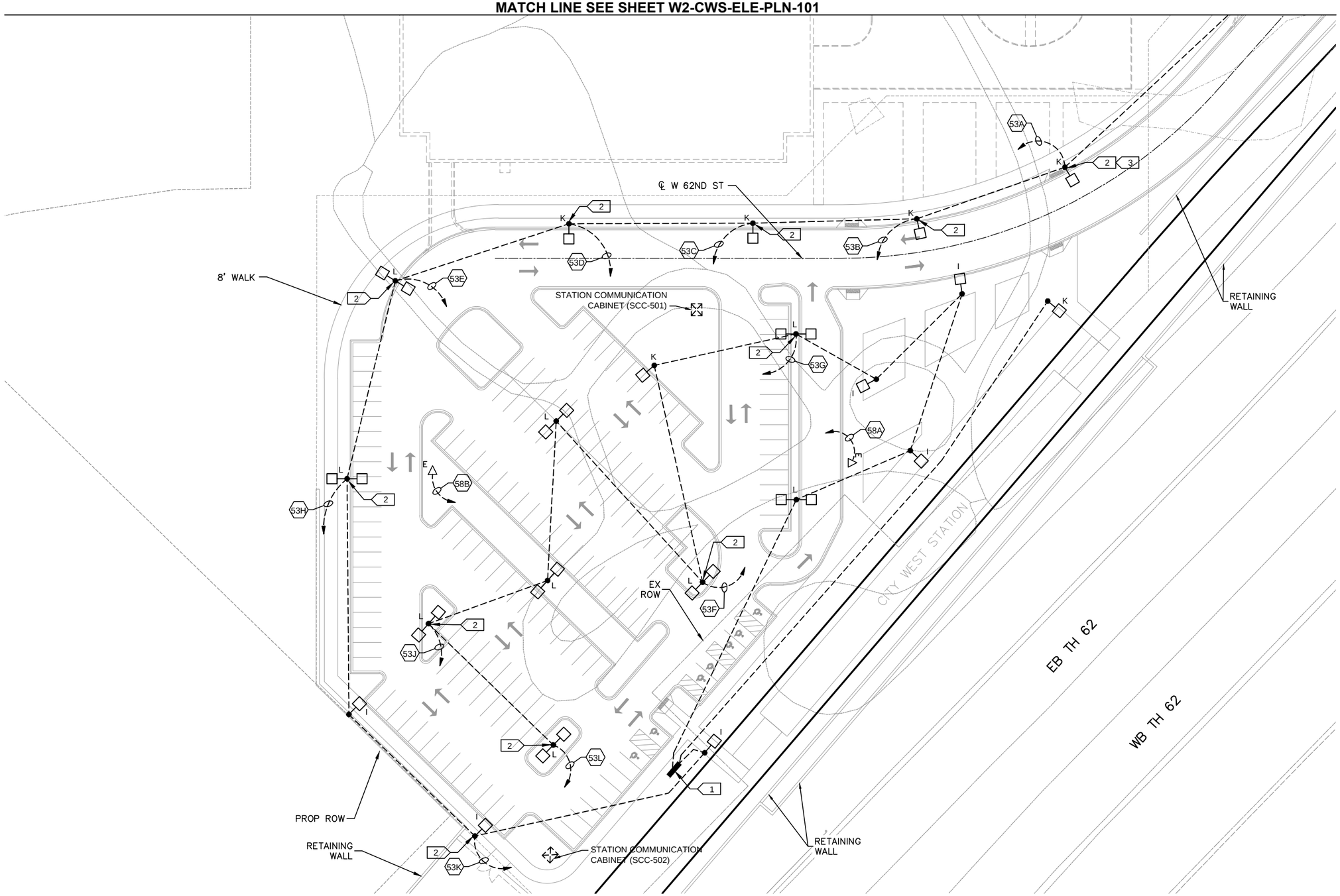
DISCIPLINE: ELECTRICAL

SHEET NAME: W2-CWS-ELE-PLN-101

SHEET 143 OF 152

Sep, 21 2015 01:46 pm V:\3400_ADC\CAD\SEGMENT W2\PLAN SHEETS\ELECTRICAL\W2-CWS-ELE-PLN-101.dwg By: V-Bege.JB

MATCH LINE SEE SHEET W2-CWS-ELE-PLN-101



KEYNOTES:

1. CUSTOMER METERING ENCLOSURE.
2. PROVIDE CCTV CAMERA ON THIS POLE AT 20'-0" A.F.F.
3. PROVIDE LICENSE PLATE READER (LPR) CAMERA ON THIS POLE AT 15'-0" A.F.F.

GENERAL NOTES:

1. DASHED LINES WITH ARROWHEAD DENOTE HOMERUN TO NEAREST COMMUNICATION CABINET UNLESS OTHERWISE NOTED.

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METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
CITY WEST STATION
ELECTRICAL
SITE PLAN (2 OF 2)

DISCIPLINE: ELECTRICAL

SHEET NAME: W2-CWS-ELE-PLN-102

SHEET 144 OF 152

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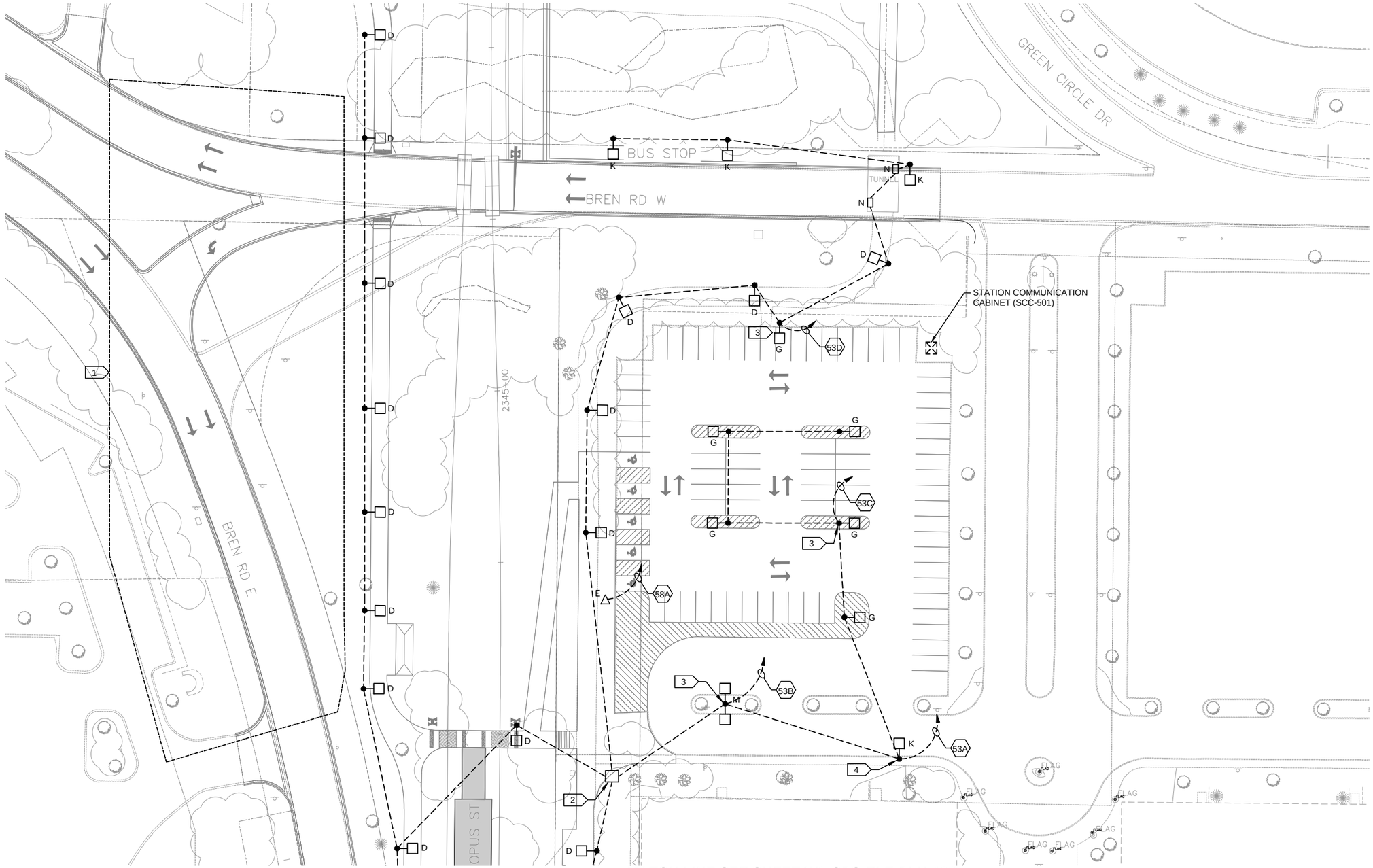

KEYNOTES:

1. SALVAGE AND REINSTALL EXISTING LIGHTING.
2. ELECTRICAL METERING ENCLOSURE.
3. PROVIDE CCTV CAMERA ON THIS POLE AT 20'-0" A.F.F.
4. PROVIDE LICENSE PLATE READER (LPR) CAMERA ON THIS POLE AT 15'-0" A.F.F.

GENERAL NOTES:

1. DASHED LINES WITH ARROWHEAD DENOTE HOMERUN TO NEAREST COMMUNICATION CABINET UNLESS OTHERWISE NOTED.

0 15 30 60
HORIZONTAL SCALE IN FEET

MATCH LINE SEE SHEET W3-OPS-ELE-PLN-102

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

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METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
OPUS STATION
ELECTRICAL
SITE PLAN (1 OF 2)

DISCIPLINE: ELECTRICAL
SHEET NAME: W3-OPS-ELE-PLN-101

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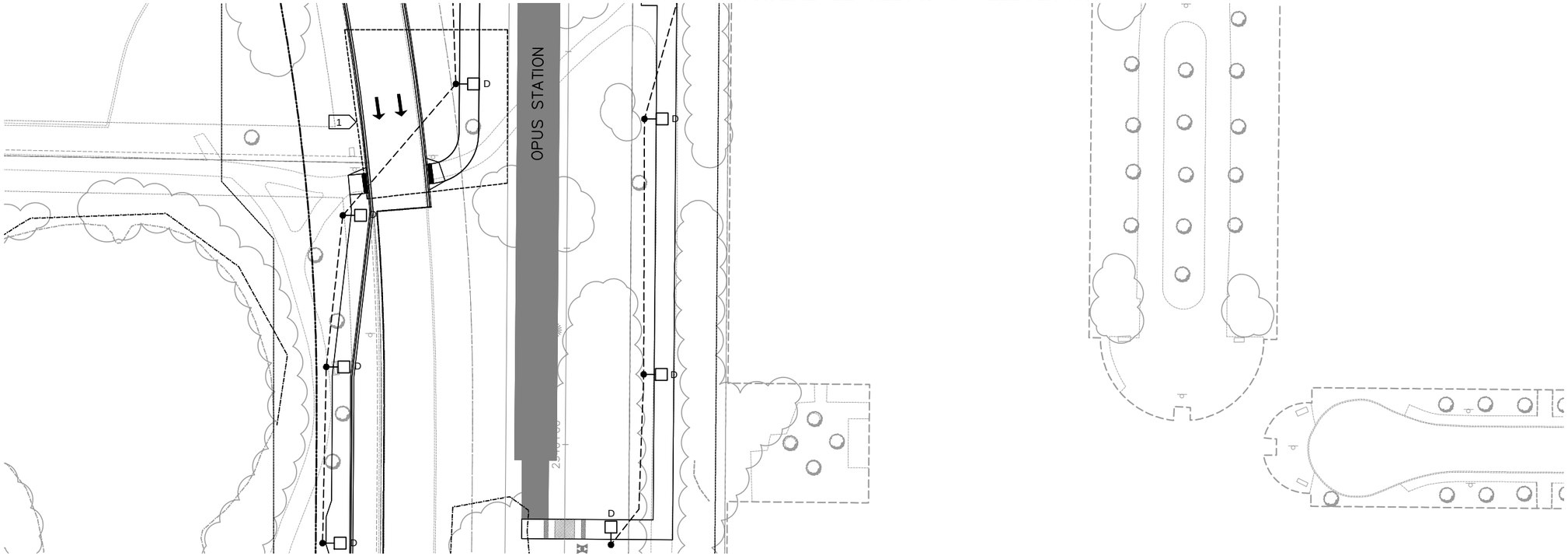
MATCH LINE SEE SHEET W3-OPS-ELE-PLN-101



KEYNOTES:

1. ELECTRICAL METERING ENCLOSURE.

0 15 30 60
HORIZONTAL
SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

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METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
OPUS STATION
ELECTRICAL
SITE PLAN (2 OF 2)

DISCIPLINE: ELECTRICAL

SHEET NAME: W3-OPS-ELE-PLN-102

SHEET 146 OF 152

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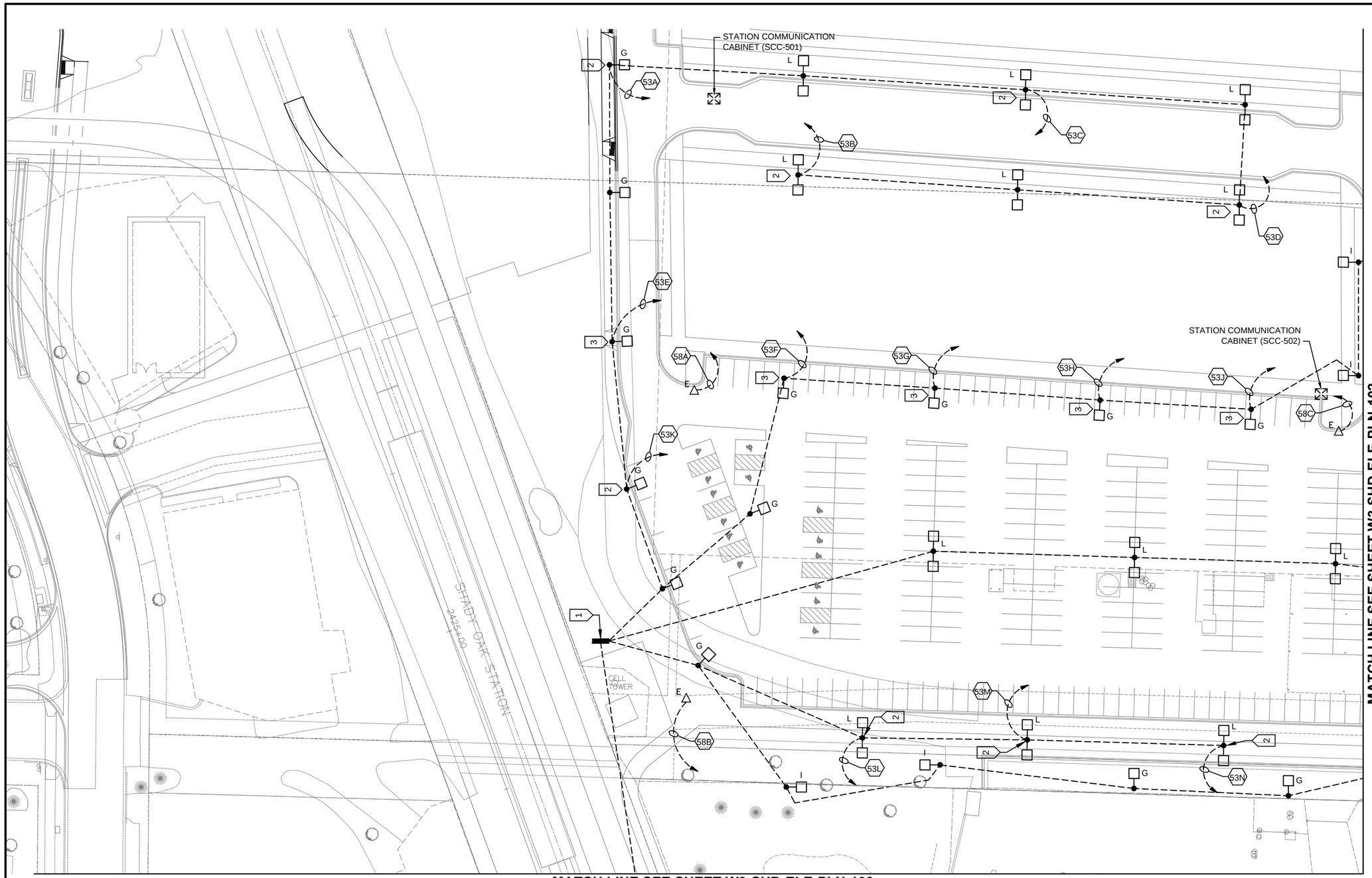

KEYNOTES:

1. CUSTOMER METERING ENCLOSURE.
2. PROVIDE CCTV CAMERA ON THIS POLE AT 20'-0" A.F.F.
3. PROVIDE LICENSE PLATE READER (LPR) CAMERA ON THIS POLE AT 15'-0" A.F.F.

GENERAL NOTES:

1. DASHED LINES WITH ARROWHEAD DENOTE HOMERUN TO NEAREST COMMUNICATION CABINET UNLESS OTHERWISE NOTED.

0 15 30 60
HORIZONTAL SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

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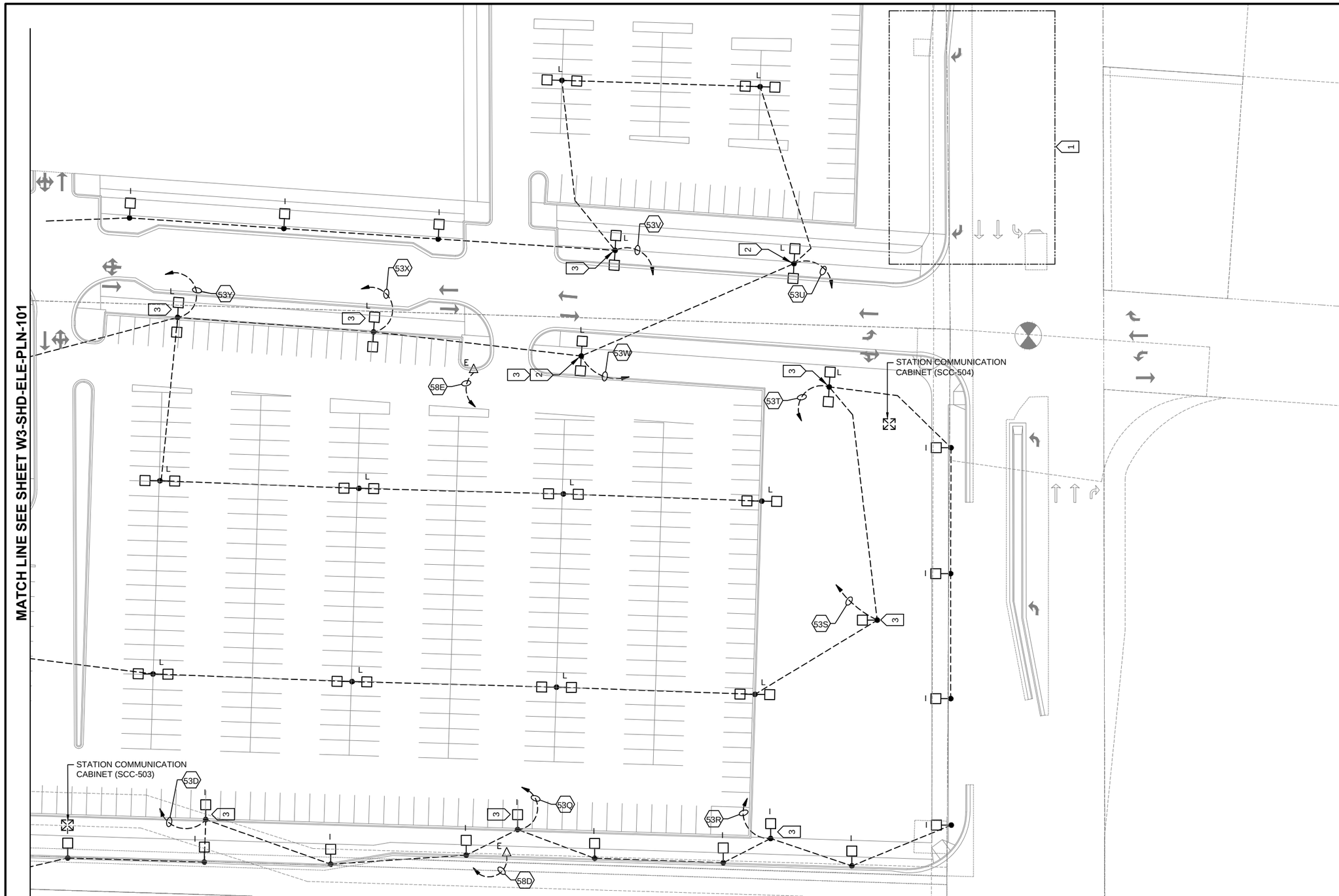
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
SHADY OAK STATION
ELECTRICAL
SITE PLAN (1 OF 3)

DISCIPLINE: ELECTRICAL
SHEET NAME: W3-SHD-ELE-PLN-101

SHEET 147 OF 152

Sep, 21 2015 01:31 pm V:\3400_ADC\CAD\SEGMENT W3\PLAN SHEETS\ELECTRICAL\W3-SHD-ELE-PLN-101.dwg By: V-BegeJB



KEYNOTES:

1. SALVAGE AND REINSTALL EXISTING LIGHTING.
2. PROVIDE CCTV CAMERA ON THIS POLE AT 20'-0" A.F.F.
3. PROVIDE LICENSE PLATE READER (LPR) CAMERA ON THIS POLE AT 15'-0" A.F.F.

GENERAL NOTES:

1. DASHED LINES WITH ARROWHEAD DENOTE HOMERUN TO NEAREST COMMUNICATION CABINET UNLESS OTHERWISE NOTED.

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

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METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
SHADY OAK STATION
ELECTRICAL
SITE PLAN (2 OF 3)

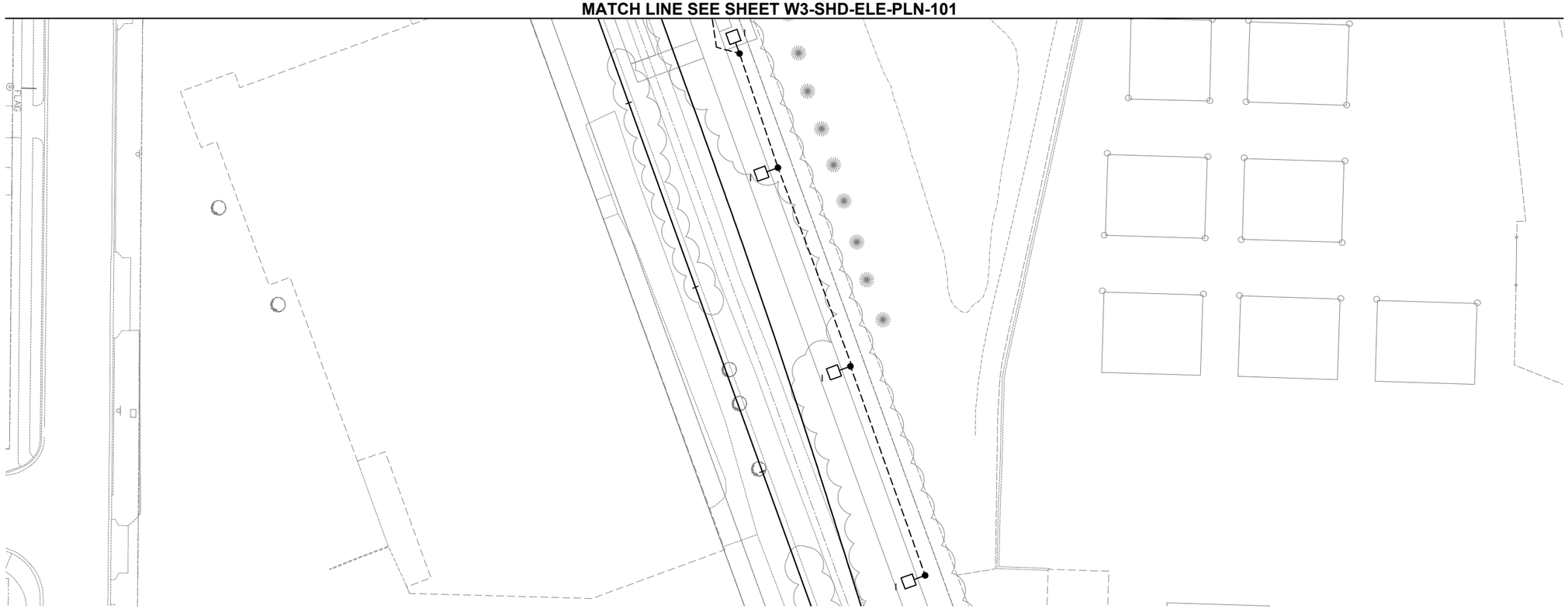
DISCIPLINE: ELECTRICAL

SHEET NAME: W3-SHD-ELE-PLN-102

SHEET 148 OF 152

Sep, 21 2015 01:32 pm V:\3400_ADC\CAD\SEGMENT W3\PLAN SHEETS\ELECTRICAL\W3-SHD-ELE-PLN-102.dwg By: V-BegeJB

MATCH LINE SEE SHEET W3-SHD-ELE-PLN-101



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HORIZONTAL SCALE IN FEET

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

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60% SUBMISSION - 09/28/15

METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
SHADY OAK STATION
ELECTRICAL
SITE PLAN (3 OF 3)

DISCIPLINE: ELECTRICAL

SHEET NAME: W3-SHD-ELE-PLN-103

Sep. 21 2015 01:56 pm V:\3400_ADC\CAD\SEGMENT W3\PLAN SHEETS\ELECTRICAL\W3-SHD-ELE-PLN-103.dwg By: V-BegeJB

TYPE	DESCRIPTION	MANUFACTURER	HOUSING	OPTICS	VOLTAGE	LAMP TYPE	DRIVER	MOUNTING	FINISH
A	SINGLE HEAD POLE MOUNTED LUMINAIRE	PHILIPS GARDCO ECOFORM ECF-1-3-75LA-4853-CW-UNV-BLP-	ONE PIECE DIE CAST ALUMINUM HOUSING, ONE PIECE DIE CAST DOOR FRAME, ELECTROSTATICALLY APPLIED POWDER COAT FINISH, IP66 RATED, 120-277V	TYPE III DISTRIBUTION	SEE PANELBOARD SCHEDULE	LED/COOL WHITE, 8753 LUMENS	530mA	20' POLE	BLACK
B	SINGLE HEAD POLE MOUNTED LUMINAIRE	PHILIPS GARDCO ECOFORM ECF-1-4-55LA-3253-CW-UNV-BLP-	ONE PIECE DIE CAST ALUMINUM HOUSING, ONE PIECE DIE CAST DOOR FRAME, ELECTROSTATICALLY APPLIED POWDER COAT FINISH, IP66 RATED, 120-277V	TYPE IV DISTRIBUTION	SEE PANELBOARD SCHEDULE	LED/COOL WHITE, 5823 LUMENS	530mA	20' POLE	BLACK
C	SINGLE HEAD POLE MOUNTED LUMINAIRE	PHILIPS GARDCO ECOFORM ECF-1-2-55LA-3253-CW-UNV-BLP-	ONE PIECE DIE CAST ALUMINUM HOUSING, ONE PIECE DIE CAST DOOR FRAME, ELECTROSTATICALLY APPLIED POWDER COAT FINISH, IP66 RATED, 120-277V	TYPE II DISTRIBUTION	SEE PANELBOARD SCHEDULE	LED/COOL WHITE, 5994 LUMENS	530mA	15' POLE	BLACK
D	SINGLE HEAD POLE MOUNTED LUMINAIRE	PHILIPS GARDCO ECOFORM ECF-1-4-75LA-4853-CW-UNV-BLP-	ONE PIECE DIE CAST ALUMINUM HOUSING, ONE PIECE DIE CAST DOOR FRAME, ELECTROSTATICALLY APPLIED POWDER COAT FINISH, IP66 RATED, 120-277V	TYPE IV DISTRIBUTION	SEE PANELBOARD SCHEDULE	LED/COOL WHITE, 8646 LUMENS	530mA	20' POLE	BLACK
E	SINGLE HEAD UTILITY POLE MOUNTED LUMINAIRE	PHILIPS GARDCO ECOFORM EC-1-2-100LA-4853-CW-UNV-BLP-	ONE PIECE DIE CAST ALUMINUM HOUSING, ONE PIECE DIE CAST DOOR FRAME, ELECTROSTATICALLY APPLIED POWDER COAT FINISH, IP66 RATED, 120-277V	TYPE II DISTRIBUTION	SEE PANELBOARD SCHEDULE	LED, COOL WHITE, 11896 LUMENS	530mA	20' POLE	BLACK
F	SINGLE HEAD POLE MOUNTED LUMINAIRE	PHILIPS GARDCO ECOFORM ECF-1-4-160LA-481A-CW-UNV-BLP-	ONE PIECE DIE CAST ALUMINUM HOUSING, ONE PIECE DIE CAST DOOR FRAME, ELECTROSTATICALLY APPLIED POWDER COAT FINISH, IP66 RATED, 120-277V	TYPE IV DISTRIBUTION	SEE PANELBOARD SCHEDULE	LED/COOL WHITE, 14955 LUMENS	1050mA	20' POLE	BLACK
G1	SINGLE HEAD POLE MOUNTED LUMINAIRE	PHILIPS GARDCO ECOFORM ECF-1-4-100LA-6453-CW-UNV-BLP-	ONE PIECE DIE CAST ALUMINUM HOUSING, ONE PIECE DIE CAST DOOR FRAME, ELECTROSTATICALLY APPLIED POWDER COAT FINISH, IP66 RATED, 120-277V	TYPE IV DISTRIBUTION	SEE PANELBOARD SCHEDULE	LED/COOL WHITE, 11558 LUMENS	530mA	20' POLE	BLACK
G2	SINGLE HEAD POLE MOUNTED LUMINAIRE	PHILIPS GARDCO ECOFORM ECF-1-4-100LA-6453-CW-UNV-BLP-	ONE PIECE DIE CAST ALUMINUM HOUSING, ONE PIECE DIE CAST DOOR FRAME, ELECTROSTATICALLY APPLIED POWDER COAT FINISH, IP66 RATED, 120-277V	TYPE IV DISTRIBUTION	SEE PANELBOARD SCHEDULE	LED/COOL WHITE, 11558 LUMENS	530mA	15' POLE	BLACK
H	SINGLE HEAD POLE MOUNTED LUMINAIRE	PHILIPS GARDCO ECOFORM ECF-1-2-70LA-3270-CW-UNV-BLP-	ONE PIECE DIE CAST ALUMINUM HOUSING, ONE PIECE DIE CAST DOOR FRAME, ELECTROSTATICALLY APPLIED POWDER COAT FINISH, IP66 RATED, 120-277V	TYPE II DISTRIBUTION	SEE PANELBOARD SCHEDULE	LED/COOL WHITE, 7385 LUMENS	700mA	15' POLE	BLACK
I	SINGLE HEAD POLE MOUNTED LUMINAIRE	PHILIPS GARDCO ECOFORM ECF-1-4-70LA-3270-CW-UNV-BLP-	ONE PIECE DIE CAST ALUMINUM HOUSING, ONE PIECE DIE CAST DOOR FRAME, ELECTROSTATICALLY APPLIED POWDER COAT FINISH, IP66 RATED, 120-277V	TYPE IV DISTRIBUTION	SEE PANELBOARD SCHEDULE	LED/COOL WHITE, 7293 LUMENS	700mA	15' POLE	BLACK
J	SINGLE HEAD POLE MOUNTED LUMINAIRE	PHILIPS GARDCO ECOFORM ECF-1-3-100LA-6453-CW-UNV-BLP-	ONE PIECE DIE CAST ALUMINUM HOUSING, ONE PIECE DIE CAST DOOR FRAME, ELECTROSTATICALLY APPLIED POWDER COAT FINISH, IP66 RATED, 120-277V	TYPE III DISTRIBUTION	SEE PANELBOARD SCHEDULE	LED/COOL WHITE, 11700 LUMENS	530mA	20' POLE	BLACK
K	TWIN HEAD POLE MOUNTED LUMINAIRE	PHILIPS GARDCO ECOFORM ECF-2@90-4-100LA-6453-CW-UNV-BLP-	ONE PIECE DIE CAST ALUMINUM HOUSING, ONE PIECE DIE CAST DOOR FRAME, ELECTROSTATICALLY APPLIED POWDER COAT FINISH, IP66 RATED, 120-277V	TYPE IV DISTRIBUTION	SEE PANELBOARD SCHEDULE	LED/COOL WHITE, 11558 LUMENS EACH	530mA	20' POLE	BLACK
L	TWIN HEAD POLE MOUNTED LUMINAIRE	PHILIPS GARDCO ECOFORM ECF-2@90-4-160LA-481A-CW-UNV-BLP-	ONE PIECE DIE CAST ALUMINUM HOUSING, ONE PIECE DIE CAST DOOR FRAME, ELECTROSTATICALLY APPLIED POWDER COAT FINISH, IP66 RATED, 120-277V	TYPE IV DISTRIBUTION	SEE PANELBOARD SCHEDULE	LED/COOL WHITE, 14955 LUMENS EACH	1050mA	20' POLE	BLACK
M	WALLPACK LUMINAIRE	LITHONIA TWH LED TWHLED-30C-1000-4K-T3M-MVOLT-PE-DBLXD	DIE CAST ALUMINUM HOUSING HAS AN IMPACT-RESISTANT, TEMPERED GLASS LENS THAT IS FULLY GASKETED. ZINK-INFUSED SUPER DURABLE TGIC THERMOSET POWDER COAT FINISH.	TYPE III MEDIUM DISTRIBUTION	SEE PANELBOARD SCHEDULE	LED/COOL WHITE, 6391 LUMENS	1000mA	SURFACE	BLACK

1 LUMINAIRE SCHEDULE

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SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
ELECTRICAL
LUMINAIRE SCHEDULE
1 OF 3

DISCIPLINE: ELECTRICAL

SHEET NAME: W0-ELE-SITE-SCH-501

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TYPE	DESCRIPTION	MANUFACTURER	HOUSING	OPTICS	VOLTAGE	LAMP TYPE	DRIVER	MOUNTING	FINISH
N	SINGLE HEAD POLE MOUNTED LUMINAIRE	PHILIPS GARDCO ECOFORM ECF-1-5-160LA-481A-CW-UNV-BLP-	ONE PIECE DIE CAST ALUMINUM HOUSING, ONE PIECE DIE CAST DOOR FRAME, ELECTROSTATICALLY APPLIED POWDER COAT FINISH, IP66 RATED, 120-277V	TYPE V DISTRIBUTION	SEE PANELBOARD SCHEDULE	LED/COOL WHITE, 14465 LUMENS	1050mA	20' POLE	BLACK
O	POST TOP POLE MOUNTED LUMINAIRE	HOLOPHANE PTUE-70-4K-AS-P3-B-S	CAST ALUMINUM HOUSING, ASYMMETRIC POLYCARBONATE REFRACTOR, GASKETED, 4000K, SPIKE FINIAL, SLIPFITTER, 120-277V	TYPE V DISTRIBUTION	SEE PANELBOARD SCHEDULE	LED/COOL WHITE, 5183 LUMENS	350mA	15' POLE	BLACK
P	NOT USED								BLACK
Q	POST TOP POLE MOUNTED LUMINAIRE	HOLOPHANE PTUE-70-4K-AS-P3-B-S	CAST ALUMINUM HOUSING, ASYMMETRIC POLYCARBONATE REFRACTOR, GASKETED, 4000K, SPIKE FINIAL, SLIPFITTER, 120-277V	TYPE II DISTRIBUTION	SEE PANELBOARD SCHEDULE	LED/COOL WHITE, 5427 LUMENS	530mA	15' POLE	BLACK
R	POST TOP POLE MOUNTED LUMINAIRE	HOLOPHANE PTUE-70-4K-AS-P3-B-S	CAST ALUMINUM HOUSING, ASYMMETRIC POLYCARBONATE REFRACTOR, GASKETED, 4000K, SPIKE FINIAL, SLIPFITTER, 120-277V	TYPE IV DISTRIBUTION	SEE PANELBOARD SCHEDULE	LED/COOL WHITE, 5736 LUMENS	530mA	15' POLE	BLACK
S	TWIN HEAD POLE MOUNTED LUMINAIRE	PHILIPS GARDCO ECOFORM ECF-2@90-4-55LA-3253-CW-UNV-BLP-	ONE PIECE DIE CAST ALUMINUM HOUSING, ONE PIECE DIE CAST DOOR FRAME, ELECTROSTATICALLY APPLIED POWDER COAT FINISH, IP66 RATED, 120-277V	TYPE IV DISTRIBUTION	SEE PANELBOARD SCHEDULE	LED/COOL WHITE, 5823 LUMENS EACH	530mA	15' POLE	BLACK
T	TWIN HEAD POLE MOUNTED LUMINAIRE	PHILIPS GARDCO ECOFORM ECF-2@90-2-55LA-3253-CW-UNV-BLP-	ONE PIECE DIE CAST ALUMINUM HOUSING, ONE PIECE DIE CAST DOOR FRAME, ELECTROSTATICALLY APPLIED POWDER COAT FINISH, IP66 RATED, 120-277V	TYPE II DISTRIBUTION	SEE PANELBOARD SCHEDULE	LED/COOL WHITE, 5994 LUMENS EACH	530mA	15' POLE	BLACK
U	SINGLE HEAD POLE MOUNTED LUMINAIRE	PHILIPS GARDCO ECOFORM ECF-1-105LA-4870-CW-UNV-BLP-	ONE PIECE DIE CAST ALUMINUM HOUSING, ONE PIECE DIE CAST DOOR FRAME, ELECTROSTATICALLY APPLIED POWDER COAT FINISH, IP66 RATED, 120-277V	TYPE V DISTRIBUTION	SEE PANELBOARD SCHEDULE	LED/COOL WHITE, 10494 LUMENS	700mA	20' POLE	BLACK
V	SINGLE HEAD POLE MOUNTED LUMINAIRE			TYPE II DISTRIBUTION	SEE PANELBOARD SCHEDULE	250W HIGH PRESSURE SODIUM	N/A	20' POLE	BLACK
W	TWIN HEAD POLE MOUNTED LUMINAIRE	PHILIPS GARDCO ECOFORM ECF-2@90-3-70LA-3270-CW-UNV-BLP-	ONE PIECE DIE CAST ALUMINUM HOUSING, ONE PIECE DIE CAST DOOR FRAME, ELECTROSTATICALLY APPLIED POWDER COAT FINISH, IP66 RATED, 120-277V	TYPE III DISTRIBUTION	SEE PANELBOARD SCHEDULE	LED/COOL WHITE, 7576 LUMENS	700mA	15' POLE	BLACK
Y	WALLPACK LUMINAIRE			UP AND DOWN DISTRIBUTION	SEE PANELBOARD SCHEDULE	LED		WALL	BLACK
Z	WALLPACK LUMINAIRE			DOWN DISTRIBUTION	SEE PANELBOARD SCHEDULE	LED		WALL	BLACK
A1	RECESSED CAN LUMINAIRE			WIDE DISTRIBUTION	SEE PANELBOARD SCHEDULE	LED		RECESSED	WHITE TRIM

1 LUMINAIRE SCHEDULE

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SOUTHWEST Green Line LRT Extension

CIVIL WEST - VOLUME 10
ELECTRICAL
LUMINAIRE SCHEDULE
2 OF 3

DISCIPLINE: ELECTRICAL

SHEET NAME: W0-ELE-SITE-SCH-502

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TYPE	DESCRIPTION	MANUFACTURER	HOUSING	OPTICS	VOLTAGE	LAMP TYPE	DRIVER	MOUNTING	FINISH
B1	WALLPACK LUMINAIRE			UP AND DOWN DISTRIBUTION	SEE PANELBOARD SCHEDULE	LED		WALL	ALUMINUM
C1	LINEAR LUMINAIRE			N/A	SEE PANELBOARD SCHEDULE	LED		SURFACE	WHITE
D1	LINEAR LUMINAIRE			N/A	SEE PANELBOARD SCHEDULE	LED		RECESSED	WHITE TRIM
E1	2X2 LUMINAIRE			N/A	SEE PANELBOARD SCHEDULE	LED		RECESSED	WHITE TRIM

1 LUMINAIRE SCHEDULE

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SOUTHWEST
Green Line LRT Extension

CIVIL WEST - VOLUME 10
ELECTRICAL
LUMINAIRE SCHEDULE
3 OF 3

DISCIPLINE: ELECTRICAL

SHEET NAME: W0-ELE-SITE-SCH-503

SHEET 152 OF 152

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