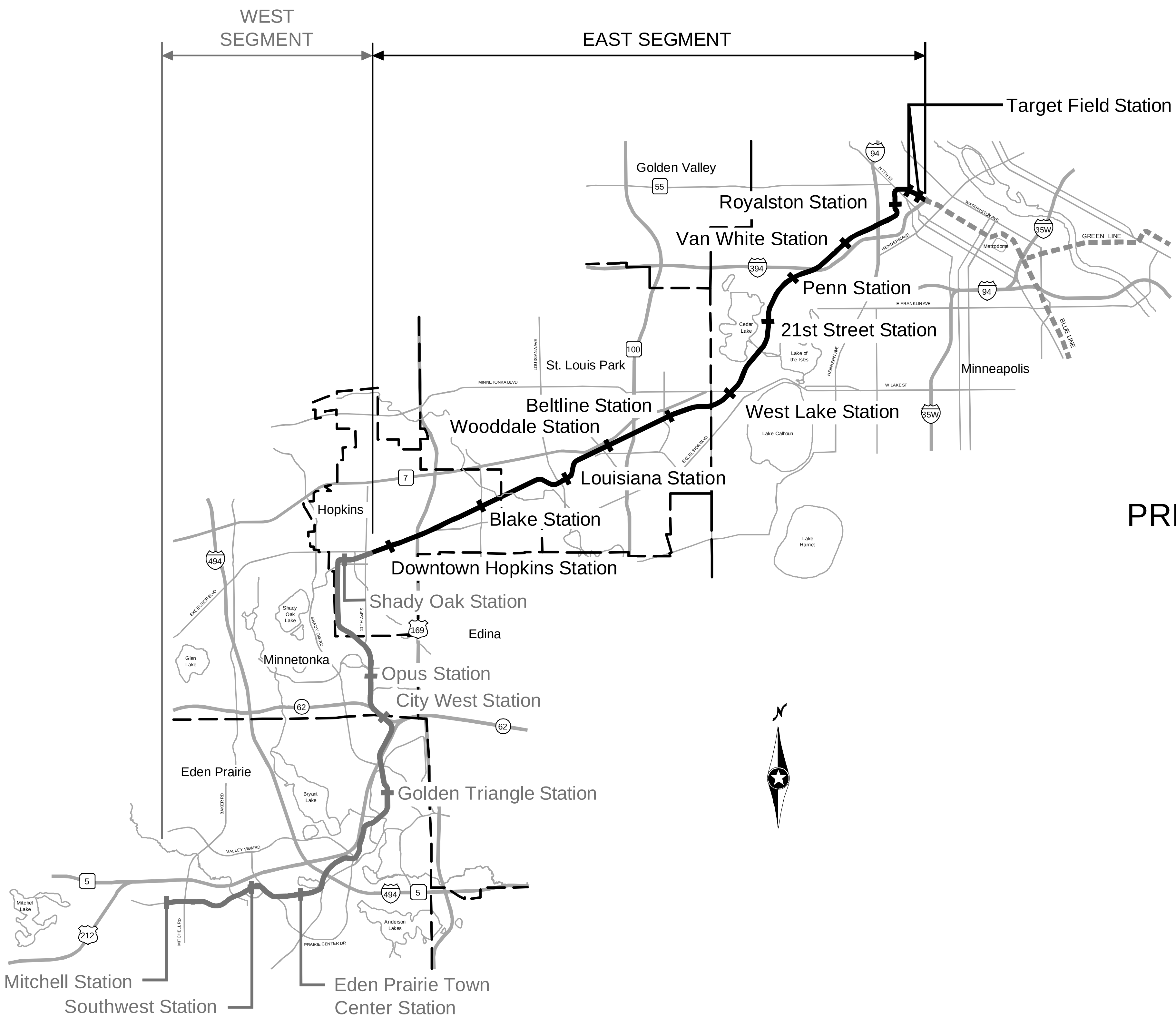

SOUTHWEST
Green Line LRT Extension

METROPOLITAN COUNCIL

EAST - VOLUME 1 (CIVIL) - SEGMENT 4

PRELIMINARY ENGINEERING (SEPTEMBER 2014)

INDEX

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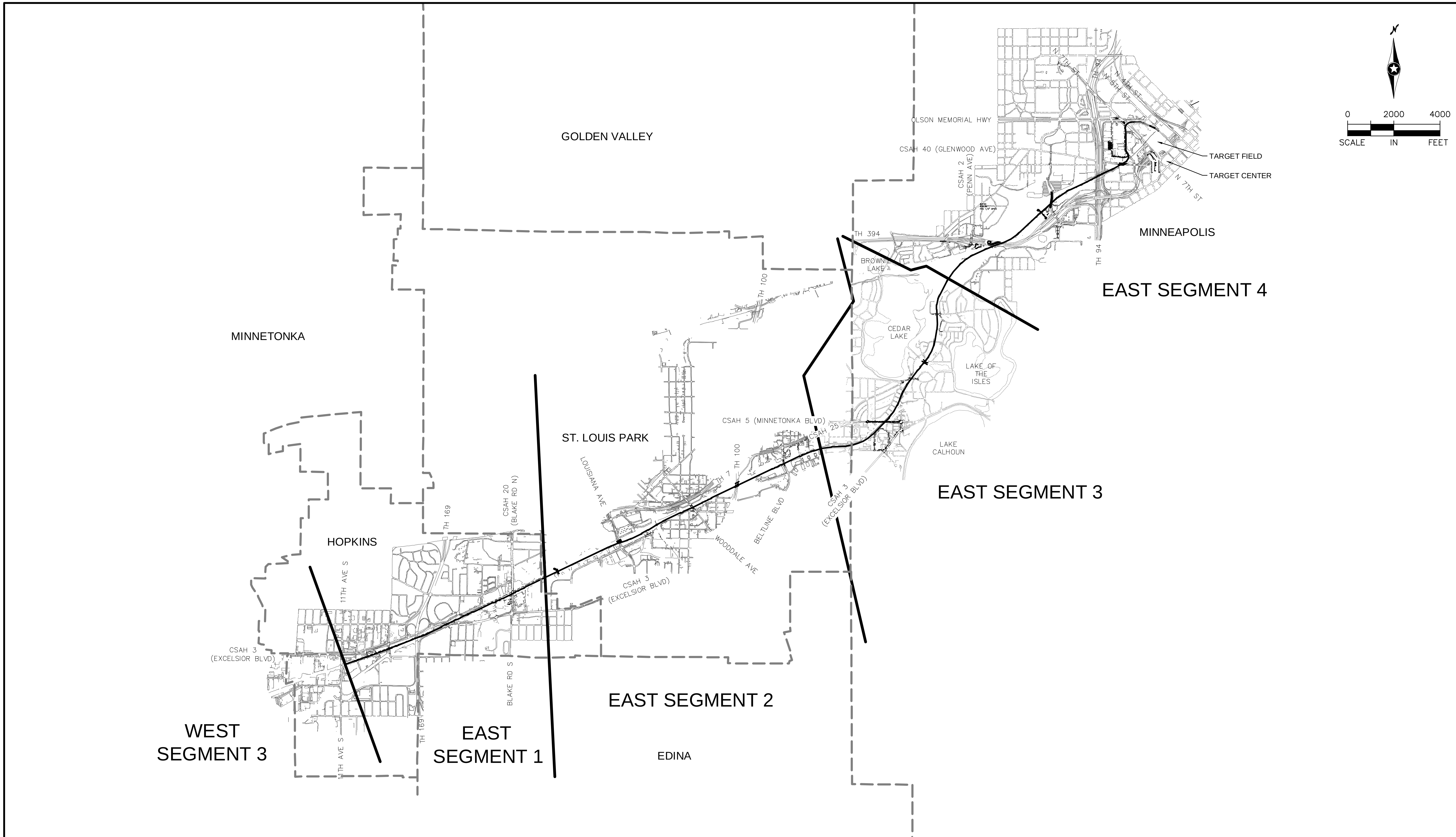

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PRELIMINARY ENGINEERING

METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
GENERAL
SEGMENT KEY MAP

DISCIPLINE: GENERAL

SHEET NAME: E4-GEN-KEY-001

SHEET 2 OF 163

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 MFRA, INC.
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.

TOPOGRAPHIC SYMBOLS

- CATCH BASIN
- STORM MANHOLE
- SANITARY MANHOLE
- SANITARY CLEANOUT
- WATER MANHOLE
- WATER GATE VALVE MANHOLE
- WATER VALVE
- WATER METER
- CORP STOP
- HYDRANT
- ELECTRIC METER
- ELECTRIC TRANSFORMER
- ELECTRIC PANEL
- ELECTRIC MANHOLE
- ELECTRIC BOX
- GAS VALVE
- GAS METER
- TRAFFIC SIGNAL
- LIGHT POLE
- HAND HOLE (STRUCTURE)
- CABLE TELEVISION
- COMMUNICATION STRUCTURE
- TELEPHONE STRUCTURE
- TELEPHONE MANHOLE
- FIBER OPTIC MANHOLE
- UTILITY POLE
- UTILITY POLE W/LIGHT
- TREE (DECIDUOUS)
- TREE (CONIFEROUS)
- LIGHT POLE
- CAMERA
- MONITOR WELL
- BOLLARD
- SIGN
- FLAG POLE
- UNIDENTIFIED STRUCTURE
- EXISTING DIRECTIONAL LANE USE
- EXISTING SIGNALIZED INTERSECTION
- SURVEY CONTROL STATION

LINETYPES

P-OH	OVERHEAD ELECTRIC
P-OH-TRAN	OVERHEAD ELECTRIC TRANSMISSION
P-UG	UNDERGROUND ELECTRIC
T-UG	UNDERGROUND TELEPHONE
COM-OH	OVERHEAD COMMUNICATION
COM-UG	UNDERGROUND COMMUNICATION
CABLE-OH	OVERHEAD CABLE TELEVISION
CATV	UNDERGROUND CABLE TELEVISION
FIB-OPT	UNDERGROUND FIBER OPTIC
FUEL-UG	UNDERGROUND FUEL
GAS	UNDERGROUND GAS
	ABANDONED UTILITY
	WATER
	SANITARY SEWER
	SANITARY FORCE MAIN
	STORM SEWER
	CURB AND GUTTER
	FENCE
	GUARDRAIL
	WALK
	BUILDING
	RIGHT-OF-WAY
	PROPERTY LINE
	CENTERLINE OF RAIL
	CENTERLINE OF TRAIL
	VEGETATION
	WATER BODY

TRAIL INDEX

ABBREVIATED NAME	FULL NAME/LOCATION
MN RIVER BLUFFS TRAIL	MINNESOTA RIVER BLUFFS LRT REGIONAL TRAIL/WEST OF EXCELSIOR
CEDAR LAKE TRAIL	CEDAR LAKE LRT REGIONAL TRAIL/EAST OF EXCELSIOR
TRAIL A	NOT USED
TRAIL B	NOT USED
TRAIL C	10' CONNECTOR TRAIL FROM CEDAR LAKE TRAIL TO TYLER AVE.
TRAIL D	10' CONNECTOR TRAIL/BELTLINE STATION
KENILWORTH TRAIL	KENILWORTH TRAIL (MAIN)/W LAKE ST TO PENN STATION
TRAIL E	KENILWORTH TRAIL (SECONDARY)/W LAKE ST TO CEDAR LAKE PKWY
TRAIL F	KENILWORTH TRAIL (SECONDARY)/WEST OF PENN STATION
TRAIL F	NORTH CEDAR LAKE TRAIL (SECONDARY)/EAST OF PENN STATION
TRAIL G	KENILWORTH TRAIL (SECONDARY)/WEST OF PENN STATION
TRAIL G	NORTH CEDAR LAKE TRAIL (SECONDARY)/EAST OF PENN STATION
TRAIL H	10' CONNECTOR TRAIL/EAST OF PENN STATION TO KENWOOD PKWY
TRAIL I	NORTH CEDAR LAKE TRAIL (MAIN) ON BRIDGE OVER LIGHT RAIL
TRAIL J	NORTH CEDAR LAKE TRAIL (SECONDARY)/NORTHWEST OF PENN STATION
TRAIL K	NORTH CEDAR LAKE TRAIL (SECONDARY)/NORTHWEST OF PENN STATION
TRAIL L	20' CONNECTOR TRAIL/VAN WHITE STATION
TRAIL M	NORTH CEDAR LAKE TRAIL (SECONDARY)/EAST OF I-94
TRAIL N	8' CONNECTOR TRAIL FROM CEDAR LAKE TRAIL TO EDGEBROOK 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 T.H. 7 SERVICE ROAD

ABBREVIATIONS

AVE	AVENUE
BLVD	BOULEVARD
BNSF	BURLINGTON NORTHERN SANTA FE RAILWAY
℄	CENTERLINE
CP	CANADIAN PACIFIC
CPRAIL	CANADIAN PACIFIC RAILWAY
CSAH	COUNTY STATE AID HIGHWAY
EB	EAST BOUND
EX	EXISTING
HCRRA	HENNEPIN COUNTY REGIONAL RAILROAD AUTHORITY
MPLS	CITY OF MINNEAPOLIS
MPRB	MINNEAPOLIS PARK AND RECREATION BOARD
N	NORTH
NB	NORTH BOUND
OH	OVERHEAD
PKWY	PARKWAY
ROW	RIGHT OF WAY
S	SOUTH
SB	SOUTH BOUND
SCS	SURVEY CONTROL STATION
ST	STREET
STA	STATION
UG	UNDERGROUND
WB	WEST BOUND

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PRELIMINARY ENGINEERING

METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
EXISTING CONDITIONS
NOTES AND LEGEND

DISCIPLINE: SURVEY

SHEET NAME: E4-SUR-NTS-001

SWLRT – SURVEY CONTROL STATIONS

Point #	Elevation	Northing	Easting	Description
50	925.20	147803.72	492997.59	NAIL IN WALK
51	924.63	147296.86	493041.40	1/2" PIPE W/ CAP
52	920.12	147457.54	493444.91	1/2" PIPE W/ CAP
53	918.88	149783.11	499410.13	SPIKE IN CONC.ISLAND
54	916.30	150249.30	499454.07	SPIKE IN WALK
55	914.34	150598.24	499375.94	SPIKE IN WALK
56	892.05	151747.10	504275.16	MAG NAIL IN BIT. ISLAND
57	893.52	152551.75	503890.55	NAIL IN CONC. ISLAND
58	912.16	153153.46	505103.84	1/2" PIPE W/ CAP
60	922.10	153902.36	506943.04	SPIKE IN WALK
61	914.44	153987.80	507459.25	TOP NUT HYDRANT
62	887.15	155207.09	511406.17	SPIKE IN WALK
63	888.82	155735.94	511126.66	MAG NAIL IN BIT. ISLAND
64	880.03	156199.11	511320.88	CP 64
65	874.88	156748.13	515073.56	TOP NUT HYDRANT
66	871.15	157066.04	515500.10	1/2" PIPE W/ CAP
67	900.57	157332.41	515573.29	MAG NAIL IN WALK
68	873.41	162065.52	517921.22	SPIKE IN CONC.
69	894.70	160820.23	517681.87	SPIKE IN CONC.
70	883.87	162053.75	518233.43	SPIKE IN CONC.

SWLRT – SURVEY CONTROL STATIONS

Point #	Elevation	Northing	Easting	Description
71	883.87	164784.02	518990.60	1/2" PIPE W/ CAP
72	878.63	165010.99	519354.33	MAG NAIL IN CONC.
73	868.05	164981.51	519784.70	MAG NAIL IN PED BRIDGE
74	822.45	167691.23	523787.15	1/2" PIPE W/ CAP
76	819.93	167634.47	523653.72	IRON PIPE
77	849.53	168719.56	526300.32	1/2" PIPE W/ CAP
78	851.67	168845.25	526108.98	1/2" PIPE W/ CAP
79	837.08	168863.92	525748.91	MAG NAIL IN WALK
80	923.03	148003.36	495053.47	LARGE SPIKE
81	922.07	147981.12	495437.89	LARGE SPIKE
82	832.55	170339.14	525851.45	MAG NAIL IN WALK
83	828.36	170329.54	525453.40	SPIKE IN BACK OF CURB
84	844.15	168518.87	525610.67	SPIKE IN WALK
85	922.35	148080.97	495381.24	MAG NAIL IN BIT. PATH
86	874.55	157268.46	515433.01	MAG NAIL IN BIT PATH
87	864.02	161338.52	517727.72	MAG NAIL IN BIT. PATH
88	865.88	160917.15	517712.96	MAG NAIL IN BIT PATH
89	848.56	164900.15	519989.73	MAG NAIL IN BIT PATH
90	840.08	165195.52	520795.95	MAG NAIL IN BIT PATH
91	843.57	165063.04	520475.13	MAG NAIL IN BIT. PATH

SWLRT – SURVEY CONTROL STATIONS

Point #	Elevation	Northing	Easting	Description
94	923.38	148101.27	495311.47	LARGE SPIKE
95	887.47	152190.79	504031.01	LARGE SPIKE
96	913.20	150917.04	501306.42	MAG NAIL IN BIT.
97	912.78	150966.60	501408.21	MAG NAIL IN BIT.
98	853.64	164593.72	519411.98	MAG NAIL IN BIT. PATH
99	920.01	148504.58	496237.41	MAG NAIL IN BIT.
100	921.79	148866.38	496673.90	MAG NAIL IN BIT. PATH
101	886.78	155648.11	511235.02	1/2" PIPE W/ CAP
102	883.42	156272.14	513588.70	1/2" PIPE W/ CAP
103	880.40	156338.34	514155.56	1/2" PIPE W/ CAP
104	871.62	157762.81	515869.76	1/2" PIPE W/ CAP
105	873.75	158678.79	516297.37	MAG NAIL IN BIT. PATH
106	866.40	162004.27	517707.75	1/2" PIPE W/ CAP
107	868.12	162688.55	517804.72	1/2" PIPE W/ CAP
108	861.02	163531.76	518305.19	SPIKE IN BIT. PATH
112	867.26	160249.76	517503.88	MAG NAIL IN BIT PATH
113	876.37	164973.60	519008.24	CUT CROSS IN CONC. ISLAND
115	880.49	165191.46	518300.44	1/2" PIPE W/CAP
116	880.52	165378.10	519337.76	MAG NAIL IN WALK
117	872.67	165140.44	518963.43	1/2" PIPE W/ CAP

SWLRT – SURVEY CONTROL STATIONS

Point #	Elevation	Northing	Easting	Description
150	866.11	160525.63	517639.90	MAG NAIL IN BIT. PATH
151	865.64	160775.49	517820.23	SPIKE
152	868.02	160196.77	517477.76	SPIKE IN BIT. PATH
153	823.10	168151.98	525117.22	MAG NAIL IN BIT. PATH
154	838.49	166512.10	522182.52	DRILL HOLE IN CONC.
155	841.33	166200.34	522480.63	DRILL HOLE IN CONC.
156	823.27	168187.84	525166.47	MAG NAIL IN BIT. PATH
157	822.30	168084.12	524994.65	MAG NAIL IN BIT. PATH
158	822.56	168015.53	524875.04	MAG NAIL IN BIT.
159	822.72	167933.08	524729.12	MAG NAIL IN BIT.
162	822.47	168430.42	525688.95	MAG NAIL IN BIT. PATH
163	822.94	168527.62	525863.31	MAG NAIL IN BIT. PATH
165	914.95	153502.80	505502.55	1/2" PIPE W/ CAP
167	899.33	151921.95	505886.04	1/2" PIPE W/ CAP
170	912.98	152946.50	505533.45	MAG NAIL IN BIT PATH
175	896.03	152982.35	505138.46	MAG NAIL IN BIT.
176	886.84	155760.74	511408.49	MAG NAIL IN BIT. PATH
177	887.43	156091.81	512264.50	MAG NAIL IN BIT. PATH
178	842.85	168825.29	526461.70	1/2" PIPE W/ CAP
179	885.66	156282.82	513324.58	MAG NAIL IN BIT. PATH

SWLRT – SURVEY CONTROL STATIONS

Point #	Elevation	Northing	Easting	Description
180	875.87	156943.11	515118.61	MAG NAIL IN BIT. PATH
181	874.01	158378.12	516184.61	MAG NAIL IN BIT PATH
182	872.80	159045.47	516509.37	SPIKE
183	869.09	159916.74	517227.56	MAG NAIL IN BIT. PATH
184	867.99	160069.02	517359.05	MAG NAIL IN BIT. PATH
185	830.32	169979.72	525948.03	SPIKE
188	921.26	148272.10	495855.92	MAG NAIL IN BIT. PATH
190	887.63	156137.69	512537.72	ROD INSIDE 2" PIPE
192	872.56	159258.76	516679.66	MAG NAIL IN BIT. PATH
193	856.58	164153.67	518695.30	1/2" PIPE W/ CAP
254	827.47	170118.88	525333.75	1/2" PIPE W/CAP
255	826.29	169791.42	525397.27	1/2" PIPE W/CAP
256	831.56	170382.26	525636.60	1/2" PIPE W/CAP
257	842.02	168796.94	525927.78	1/2" PIPE W/CAP
258	869.92	161307.56	517884.90	1/2" PIPE W/CAP
259	874.83	165634.38	519336.38	1/2" PIPE W/CAP
260	807.50	168457.50	522736.13	1/2" PIPE W/CAP
261	808.88	168184.26	522715.29	1/2" PIPE W/CAP
262	815.45	169010.87	522690.77	1/2" PIPE W/CAP
263	814.97	169368.54	522785.88	1/2" PIPE W/CAP

SWLRT – SURVEY CONTROL STATIONS

Point #	Elevation	Northing	Easting	Description
264	823.85	166431.61	522798.47	1/2" PIPE W/CAP
265	820.15	166071.49	523088.01	1/2" PIPE W/CAP
266	820.90	165962.80	523328.89	1/2" PIPE W/CAP
267	816.84	165949.34	523748.73	1/2" PIPE W/CAP

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METROPOLITAN COUNCIL

SOUTHWEST
Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
EXISTING CONDITIONS
SURVEY CONTROL STATIONS

DISCIPLINE: SURVEY

SHEET NAME: E4-SUR-NTS-CTRL-001

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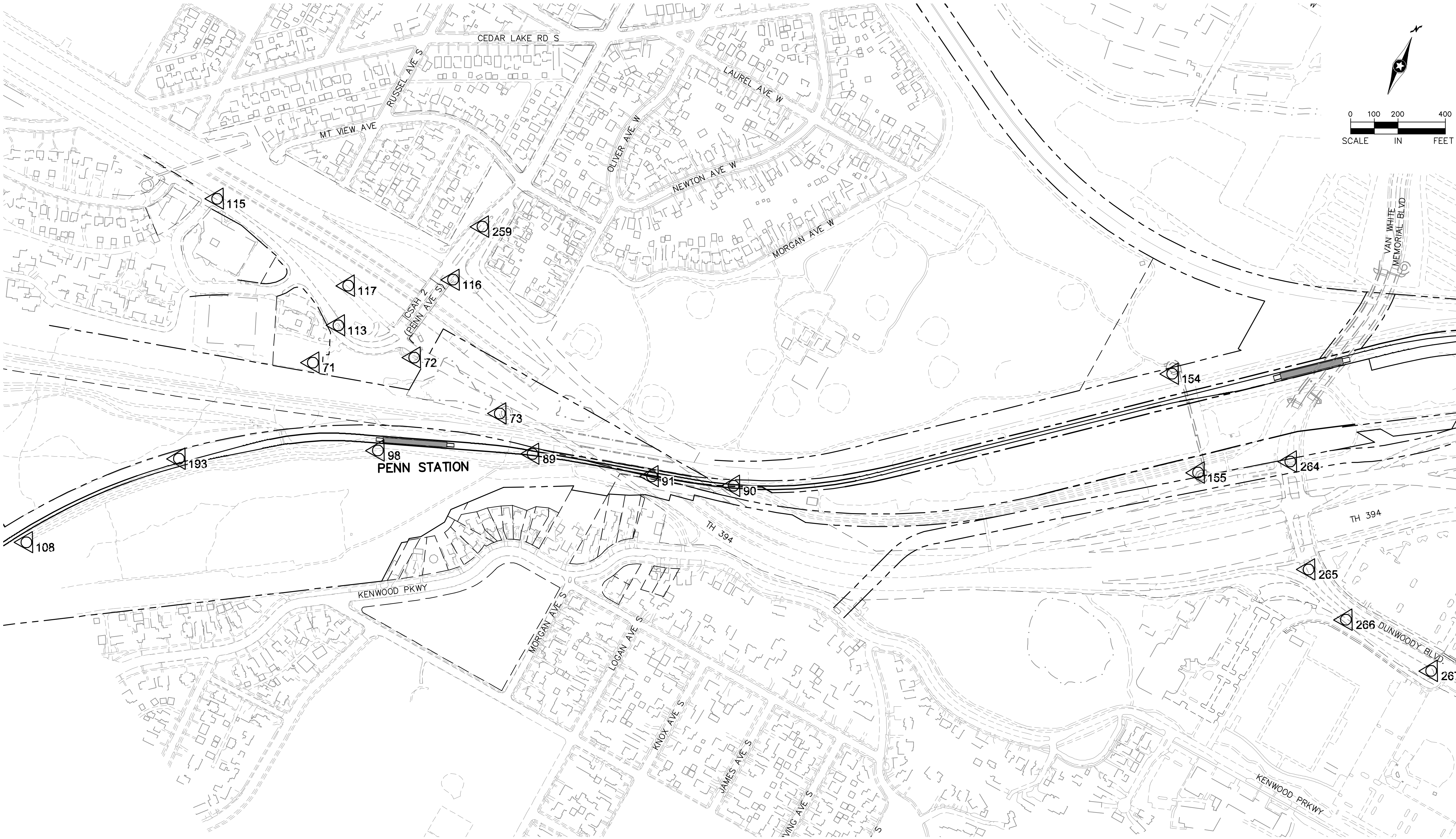

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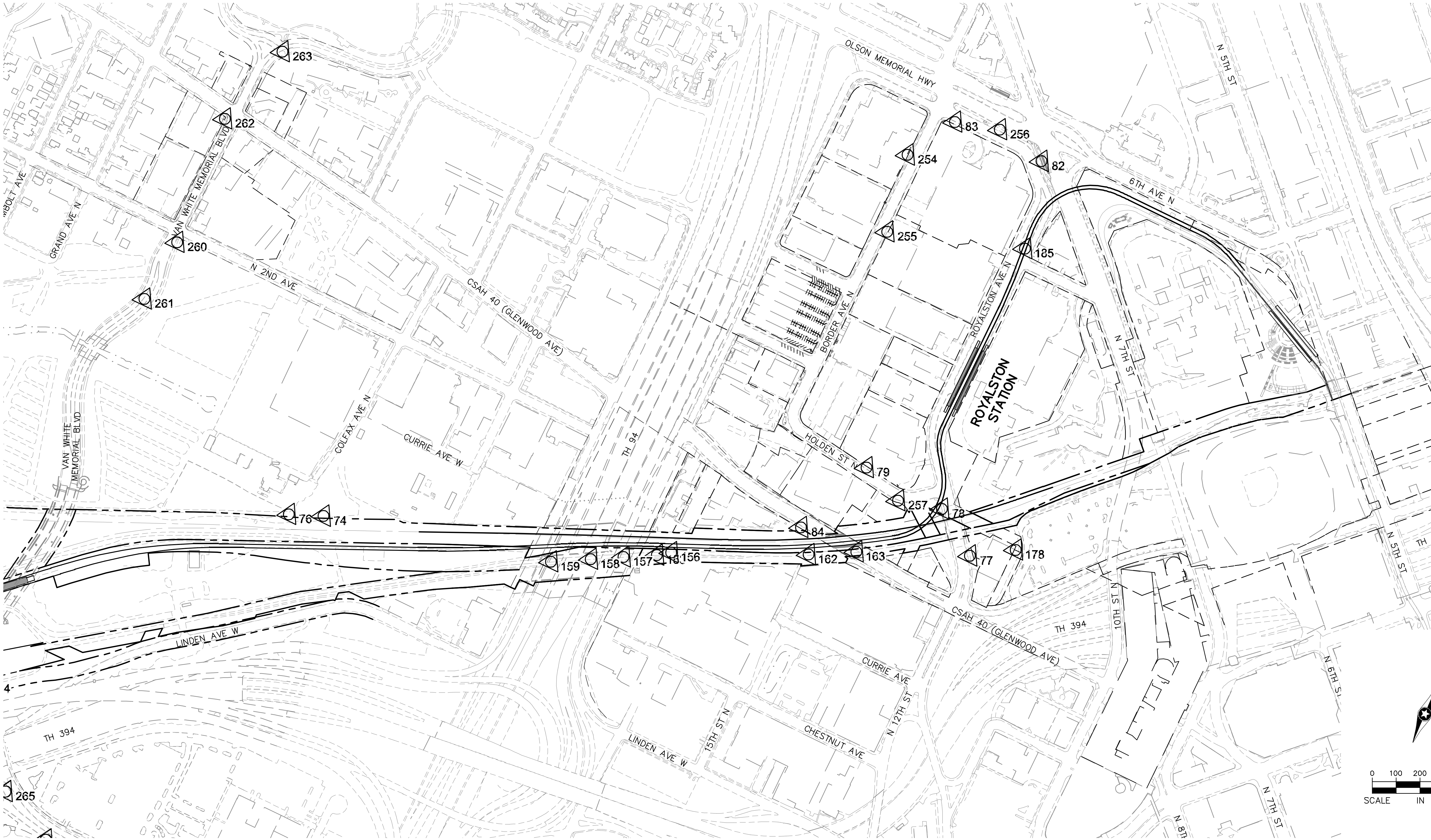
METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
EXISTING CONDITIONS
CONTROL POINTS PLAN

DISCIPLINE: SURVEY

SHEET NAME: E4-SUR-CTRL-001



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SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
EXISTING CONDITIONS
CONTROL POINTS PLAN

DISCIPLINE: SURVEY

SHEET NAME: E4-SUR-CTRL-002

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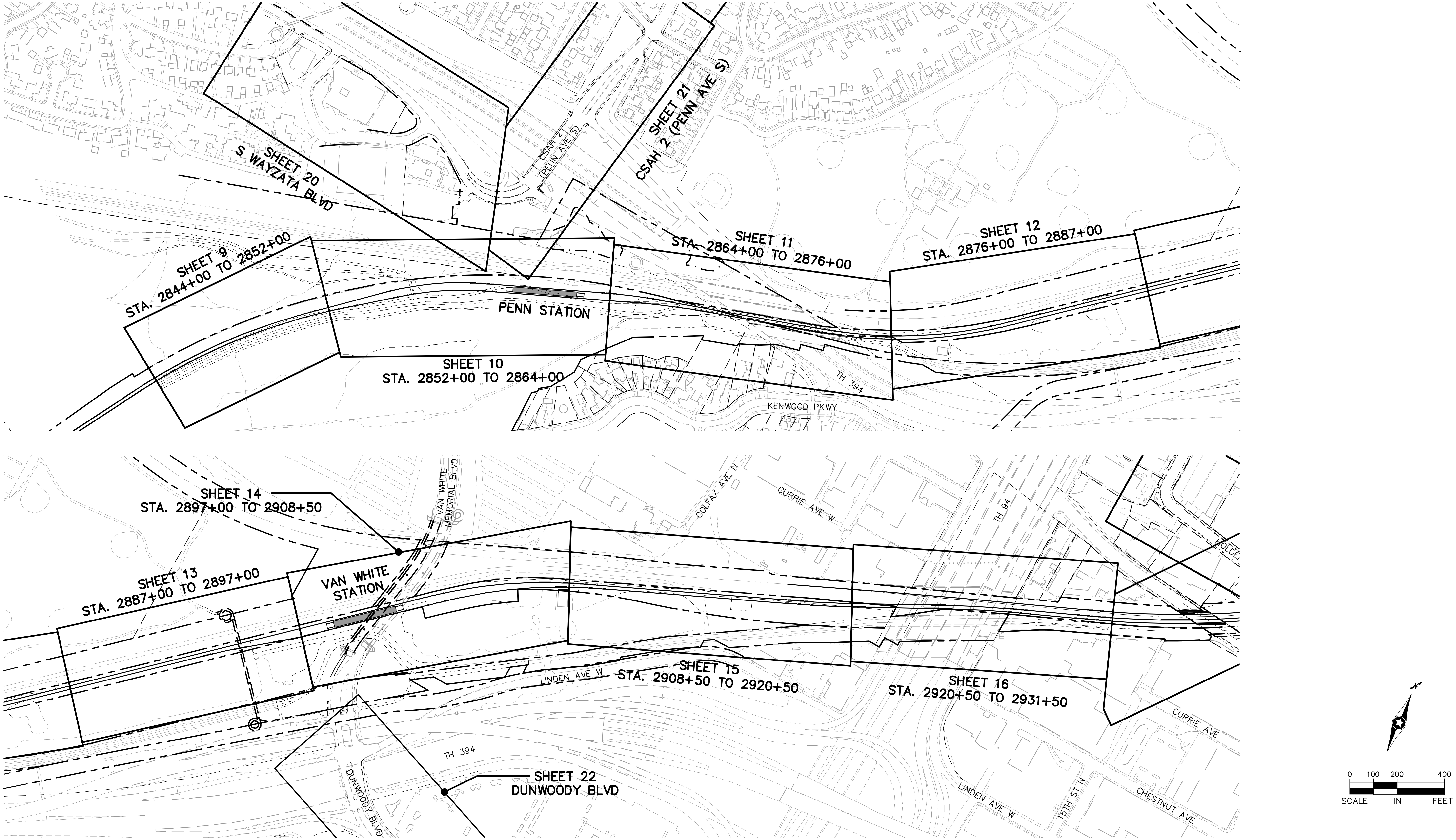

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EAST - VOLUME 1 (CIVIL) - SEGMENT 4
EXISTING CONDITIONS
SHEET INDEX

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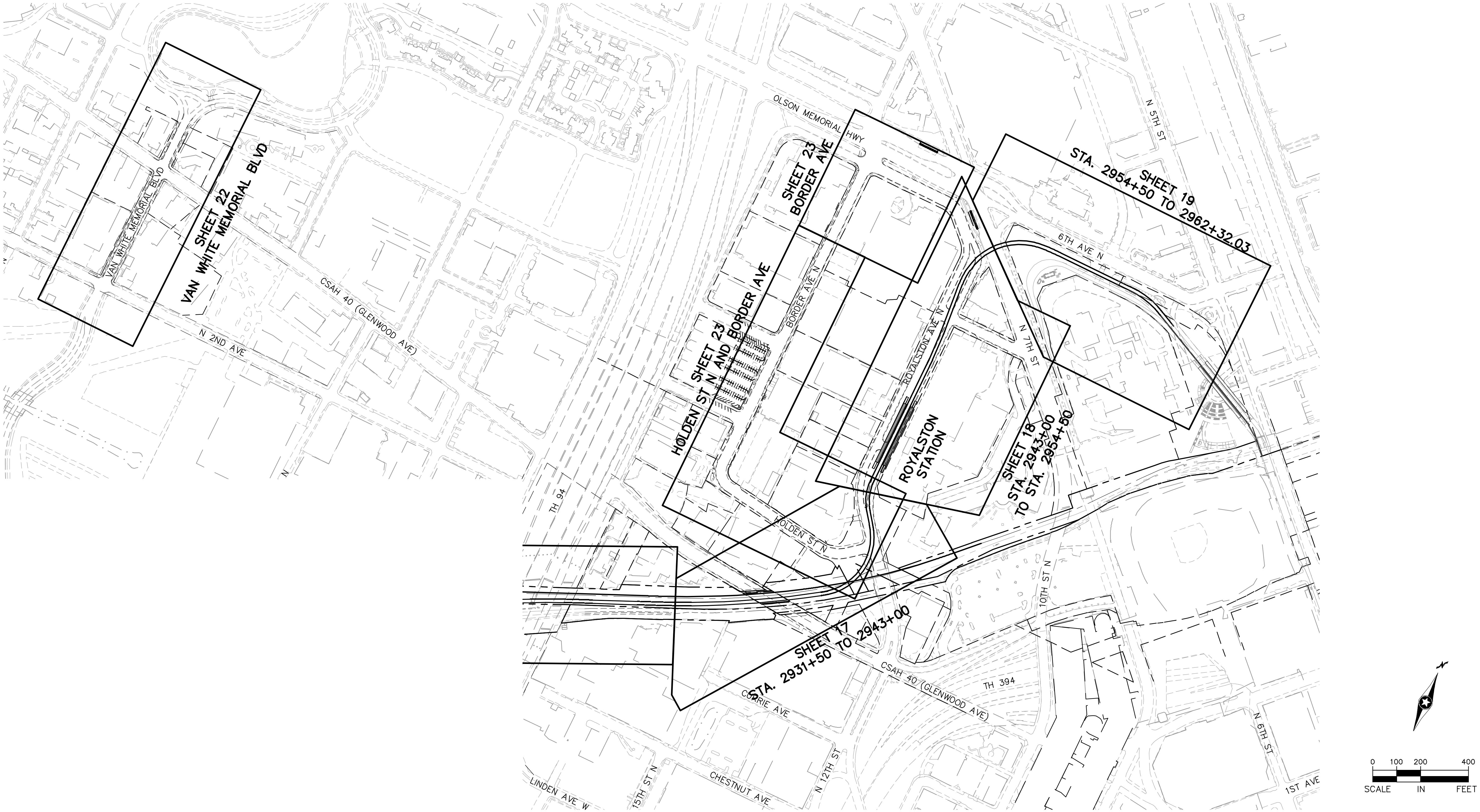

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EAST - VOLUME 1 (CIVIL) - SEGMENT 4
EXISTING CONDITIONS
SHEET INDEX

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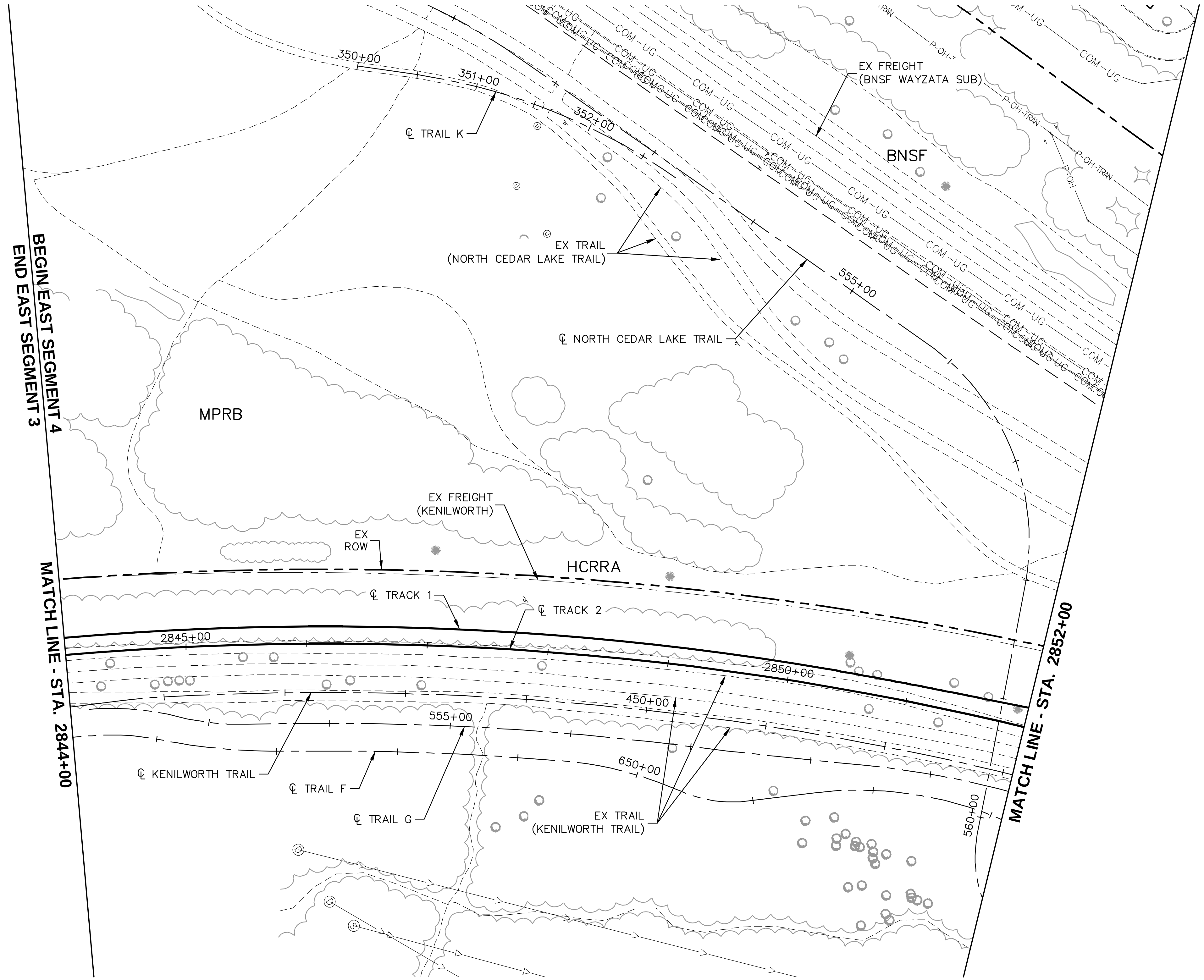

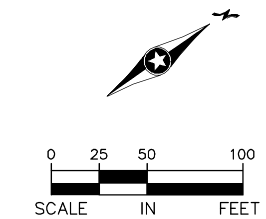

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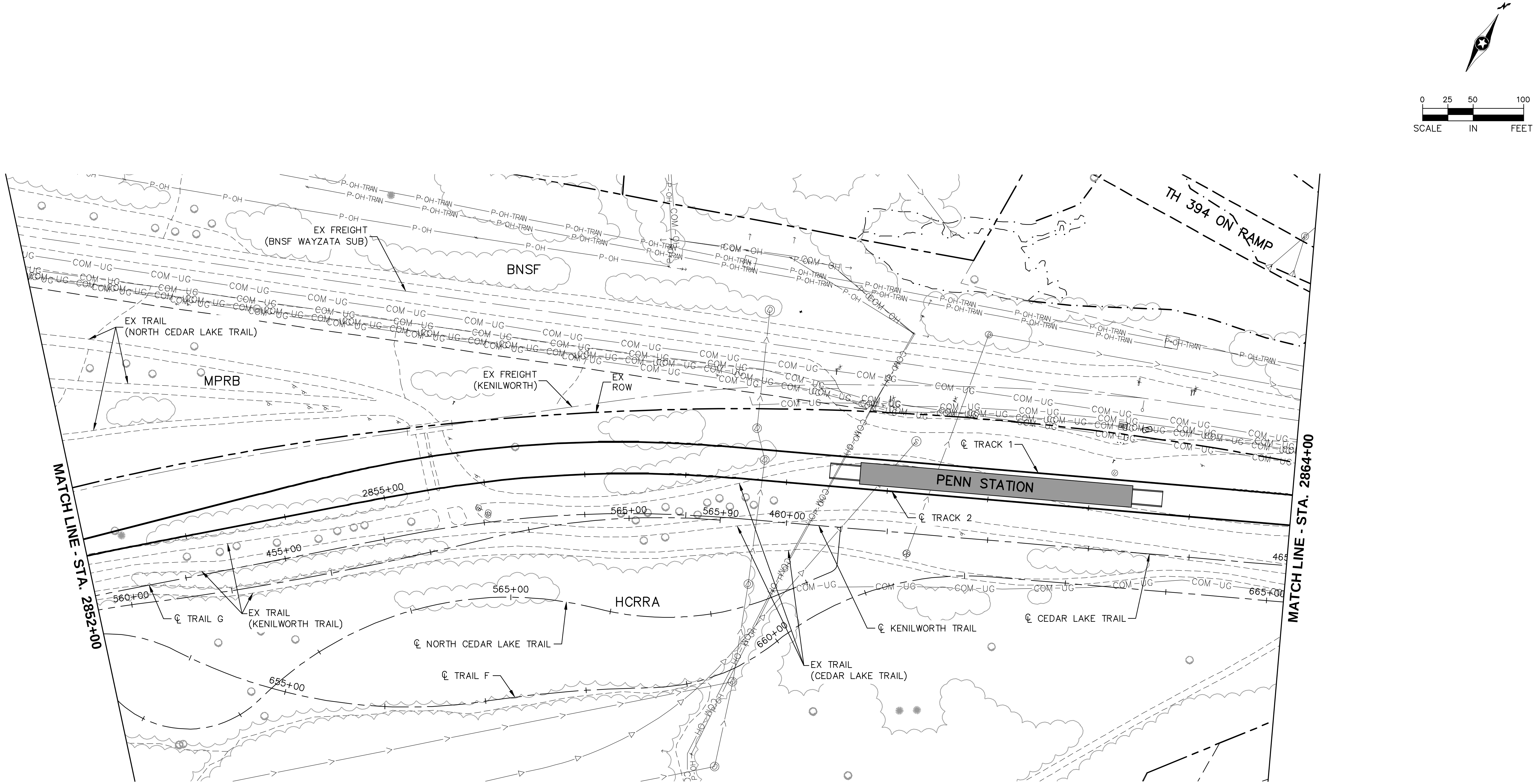
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
EXISTING CONDITIONS
PLAN
STA. 2844+00 TO STA. 2852+00

DISCIPLINE: **SURVEY**

SHEET NAME: **E4-SUR-PLN-001**



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EAST - VOLUME 1 (CIVIL) - SEGMENT 4
EXISTING CONDITIONS
PLAN
STA. 2852+00 TO STA. 2864+00

DISCIPLINE: SURVEY

SHEET NAME: E4-SUR-PLN-002

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EAST - VOLUME 1 (CIVIL) - SEGMENT 4
EXISTING CONDITIONS
PLAN
STA. 2864+00 TO STA. 2876+00

DISCIPLINE: SURVEY

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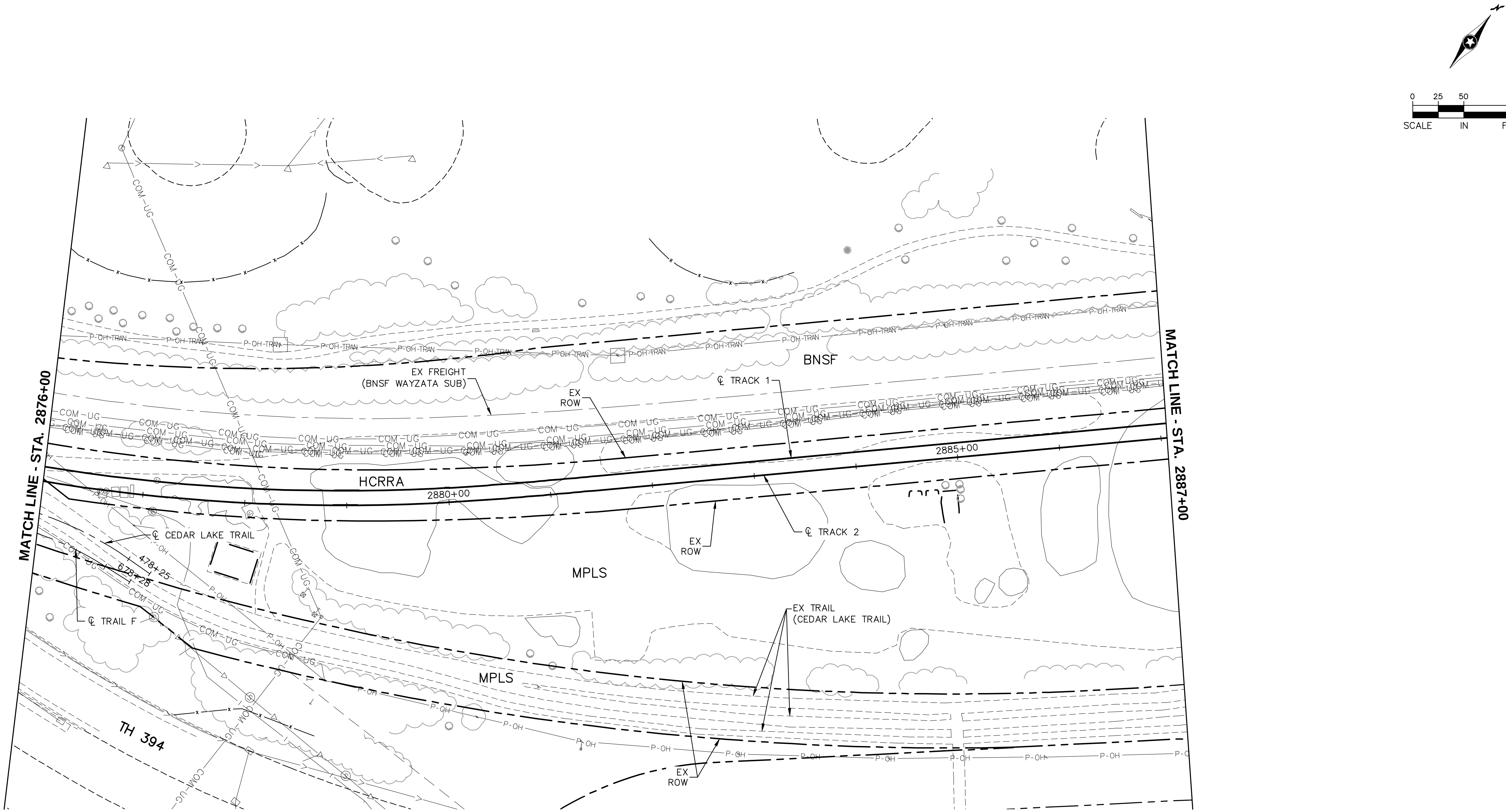

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SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
EXISTING CONDITIONS
PLAN
STA. 2876+00 TO STA. 2887+00

DISCIPLINE: **SURVEY**

SHEET NAME: **E4-SUR-PLN-004**

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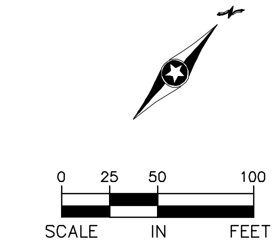

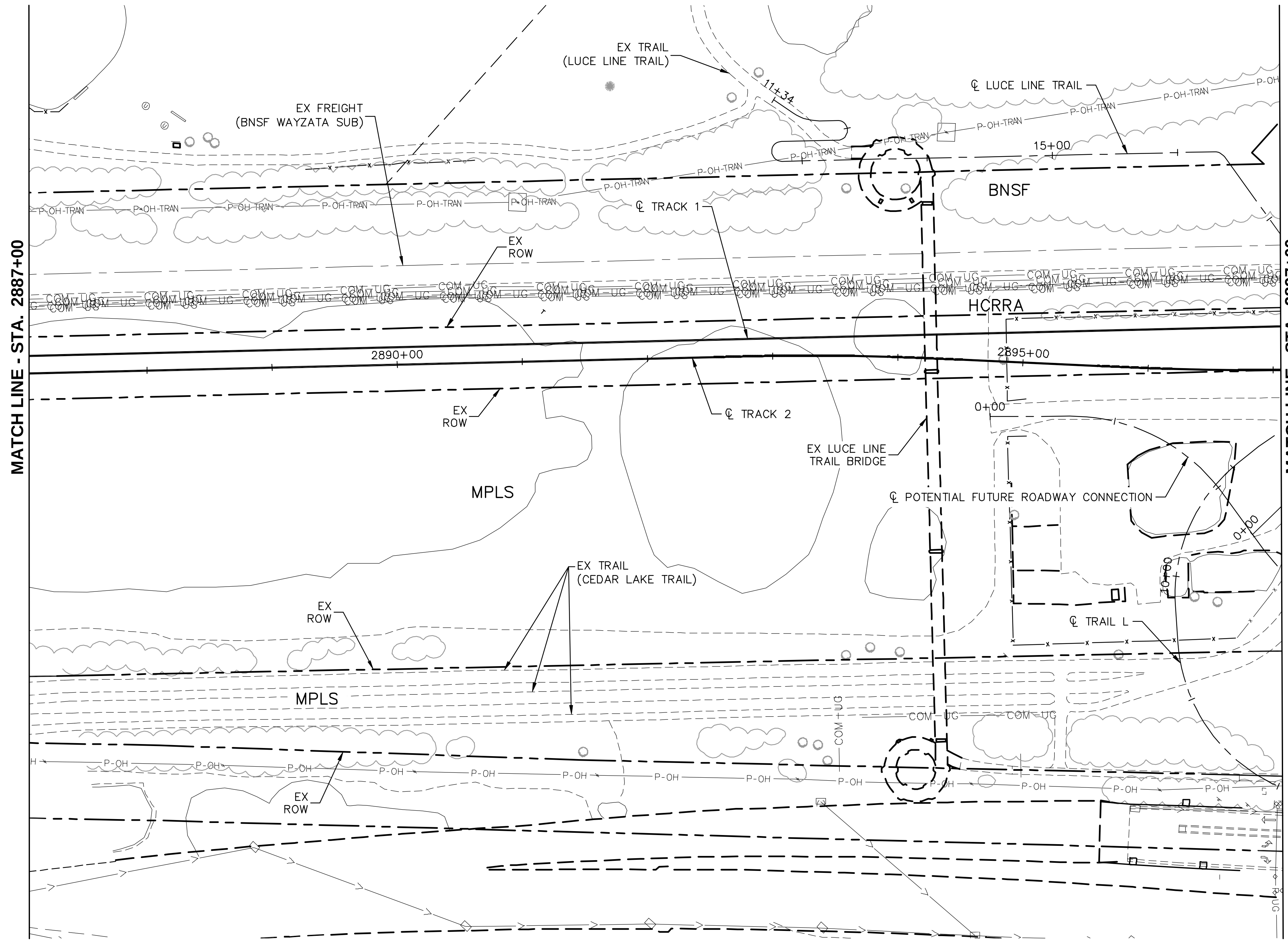

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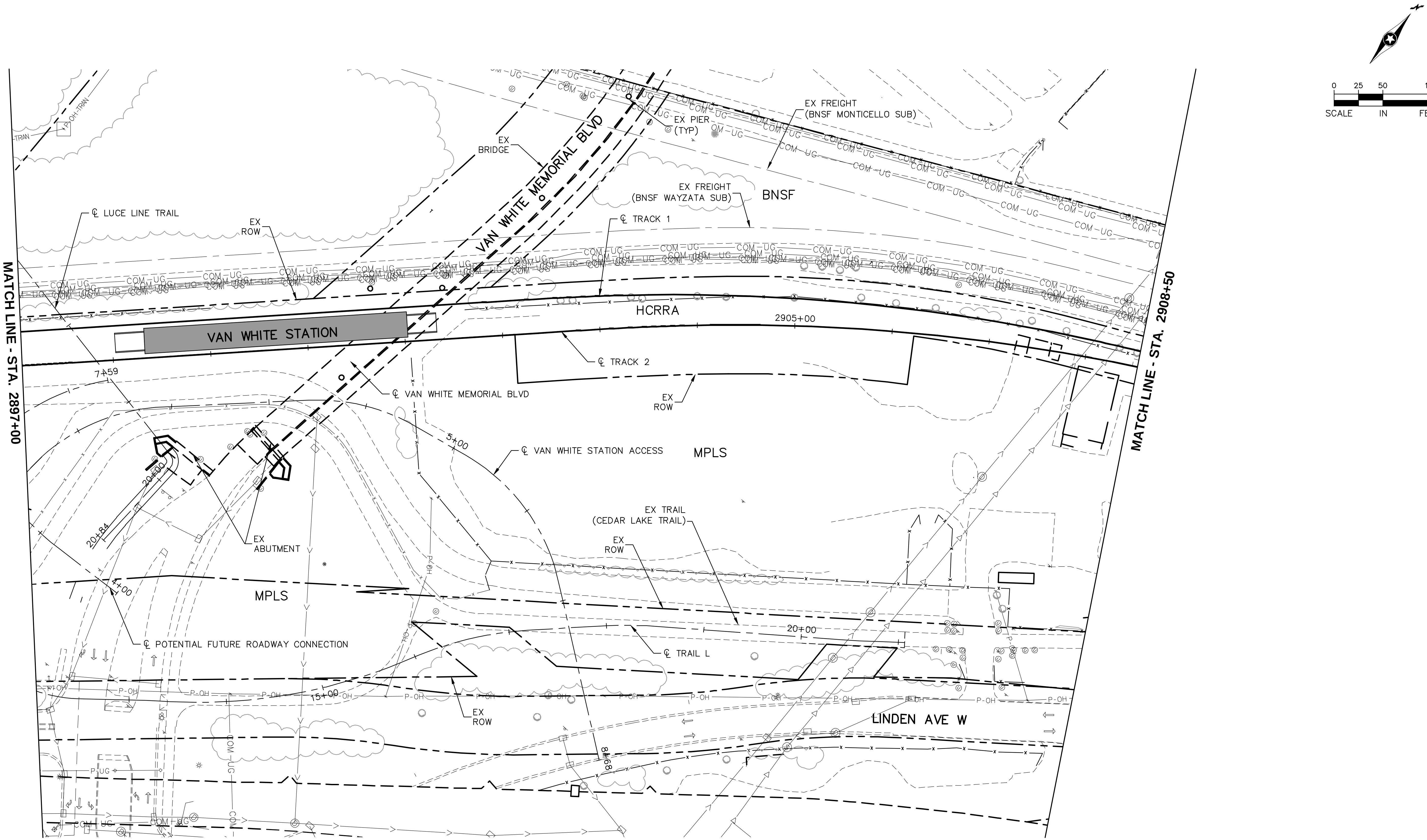
METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
EXISTING CONDITIONS
PLAN
STA. 2887+00 TO STA. 2897+00

DISCIPLINE: SURVEY

SHEET NAME: E4-SUR-PLN-005



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PRELIMINARY ENGINEERING

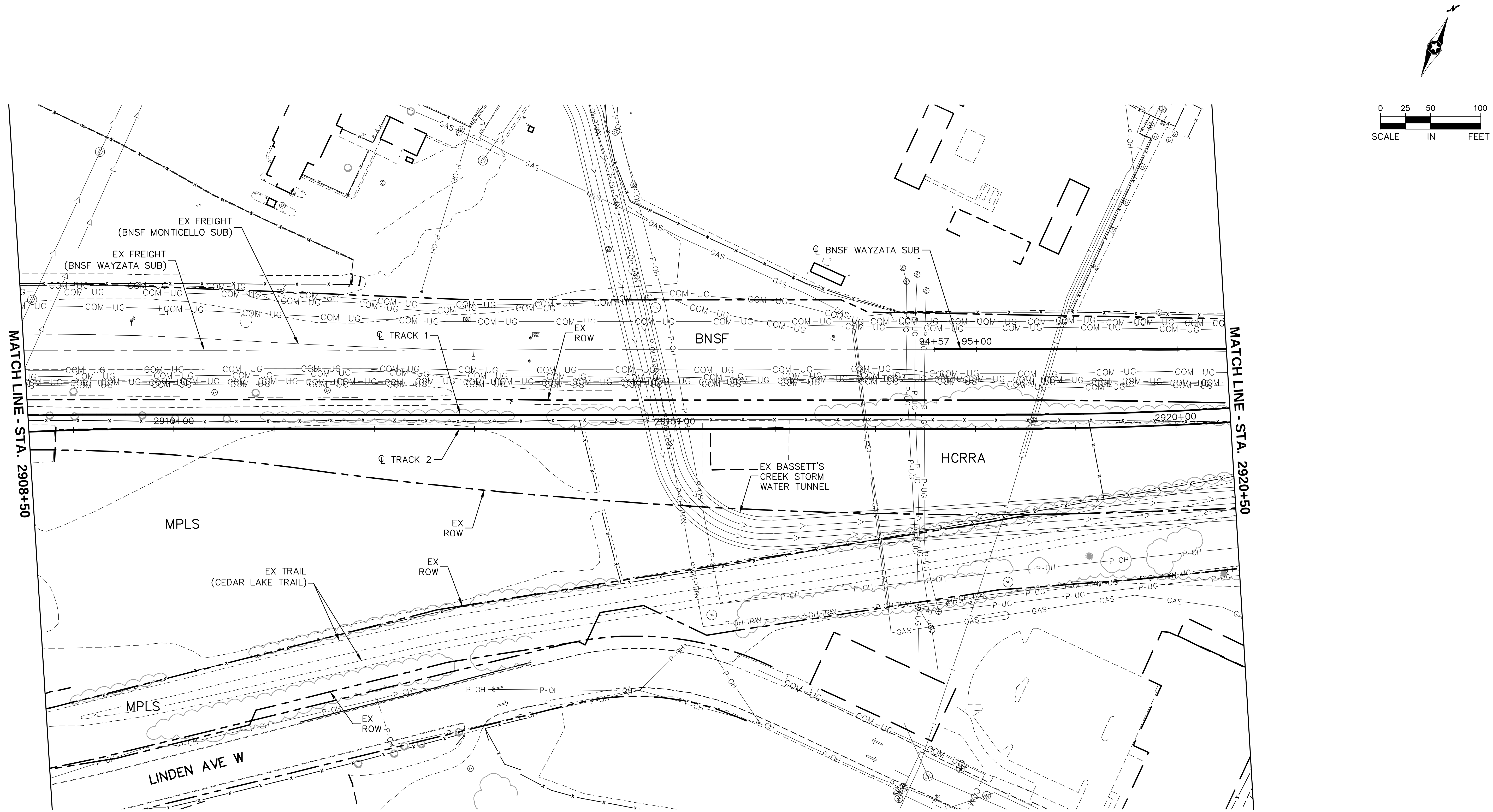
METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
EXISTING CONDITIONS
PLAN
STA. 2897+00 TO STA. 2908+50

DISCIPLINE: SURVEY

SHEET NAME: E4-SUR-PLN-006



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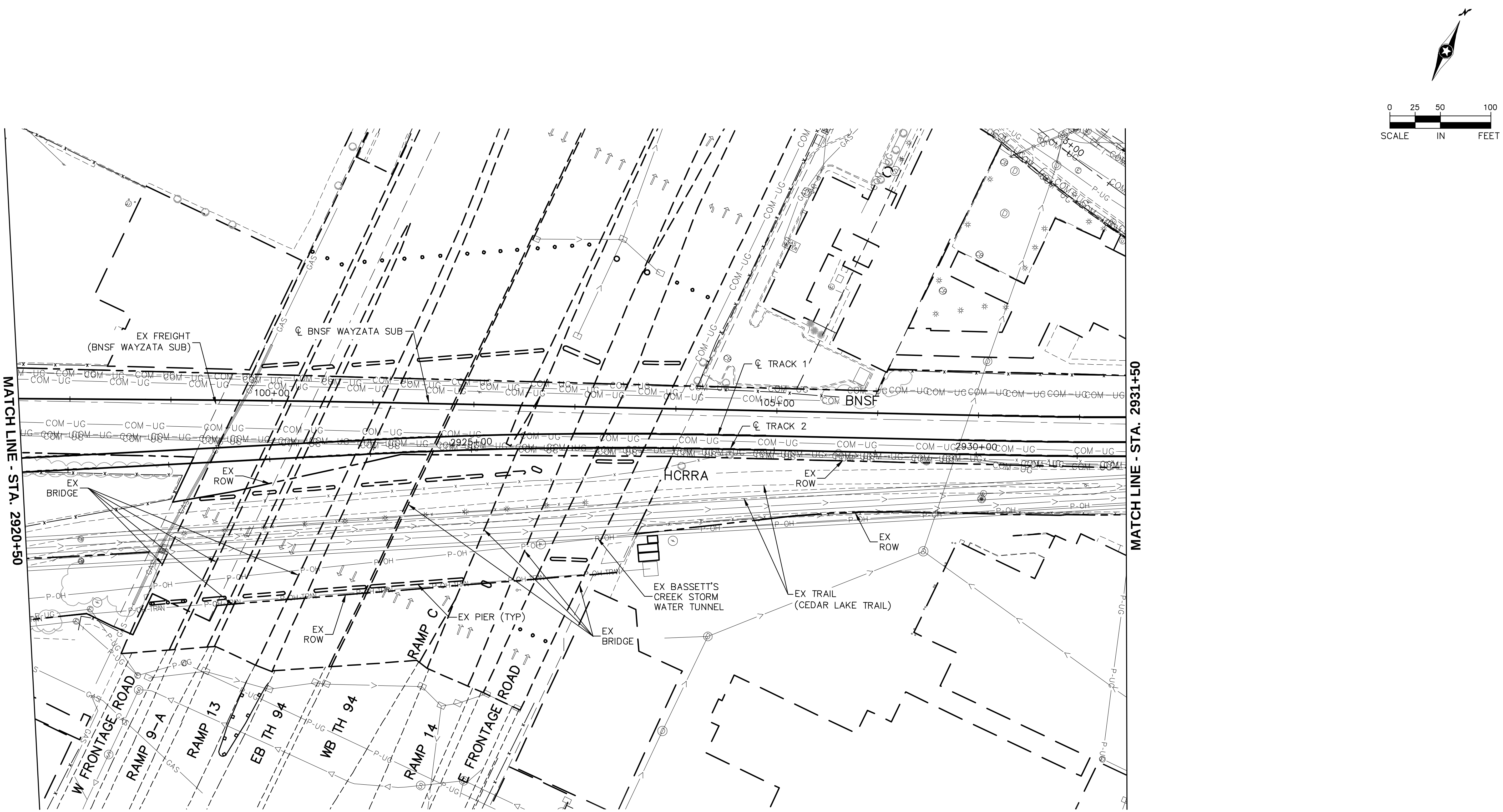
METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
EXISTING CONDITIONS
PLAN
STA. 2908+50 TO STA. 2920+50

DISCIPLINE: SURVEY

SHEET NAME: E4-SUR-PLN-007



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METROPOLITAN COUNCIL

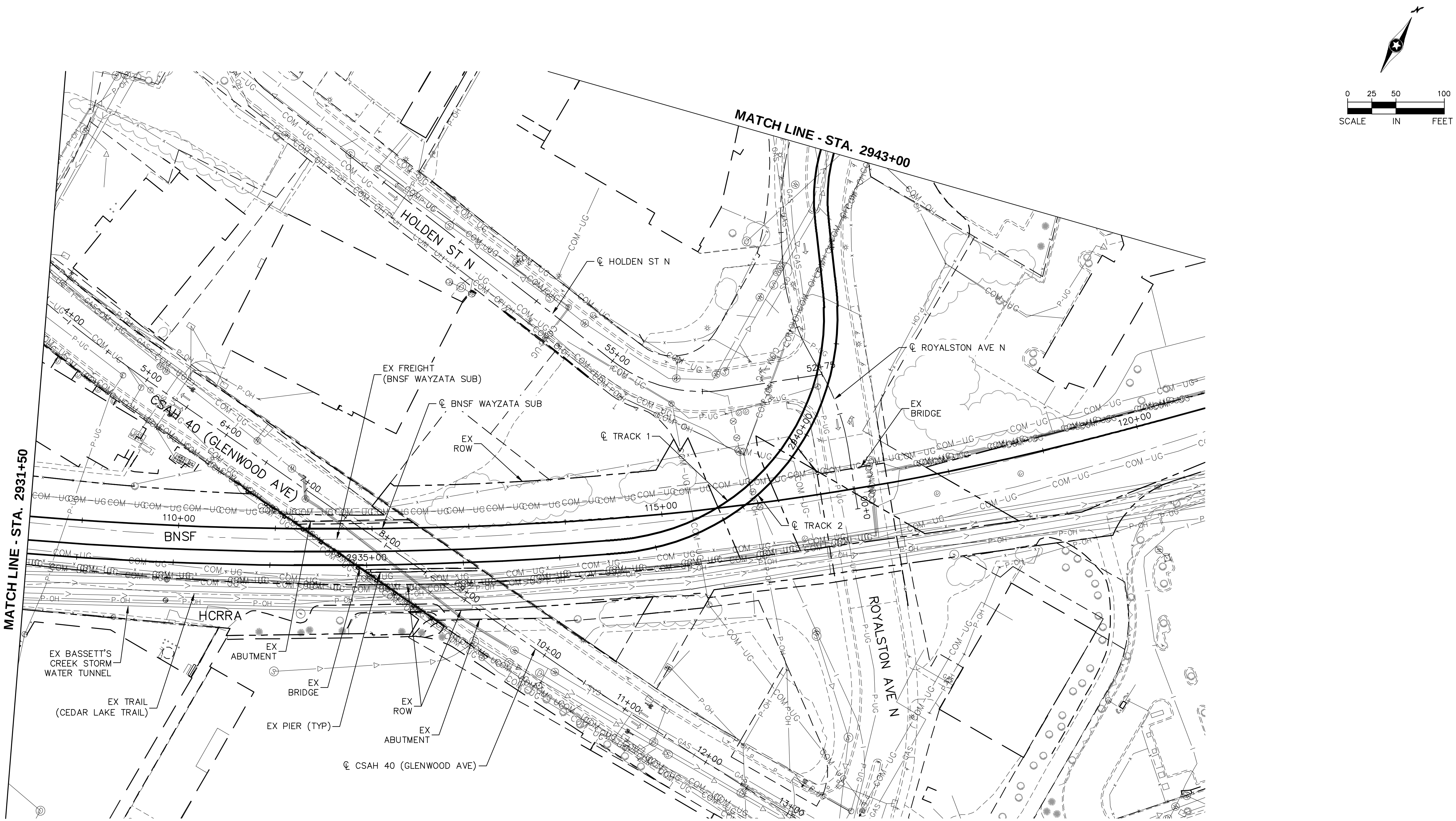
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
EXISTING CONDITIONS
PLAN
STA. 2920+50 TO STA. 2931+50

DISCIPLINE: SURVEY

SHEET NAME: E4-SUR-PLN-008

SHEET 16 OF 163



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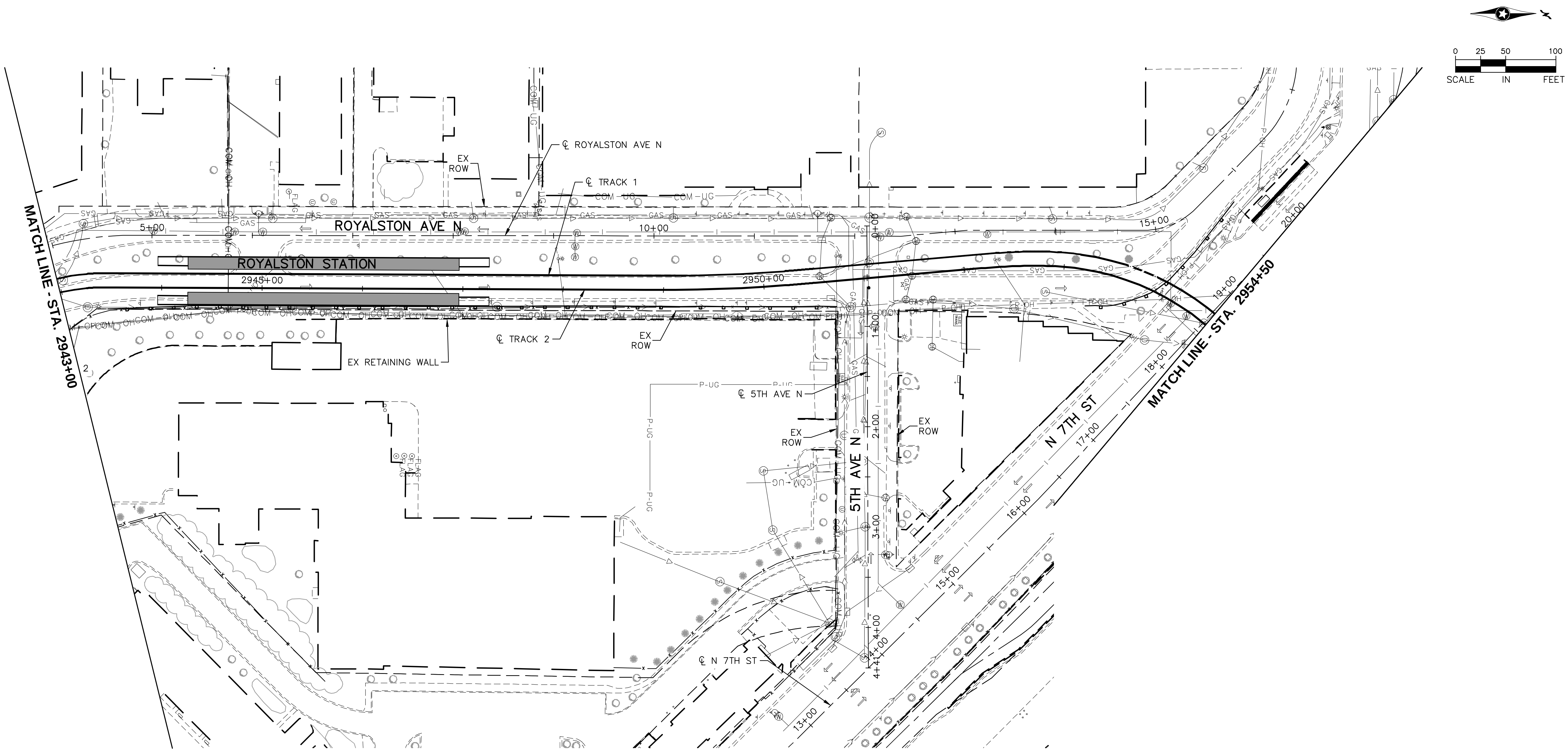
METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
EXISTING CONDITIONS
PLAN
STA. 2931+50 TO STA. 2943+00

DISCIPLINE: SURVEY

SHEET NAME: E4-SUR-PLN-009



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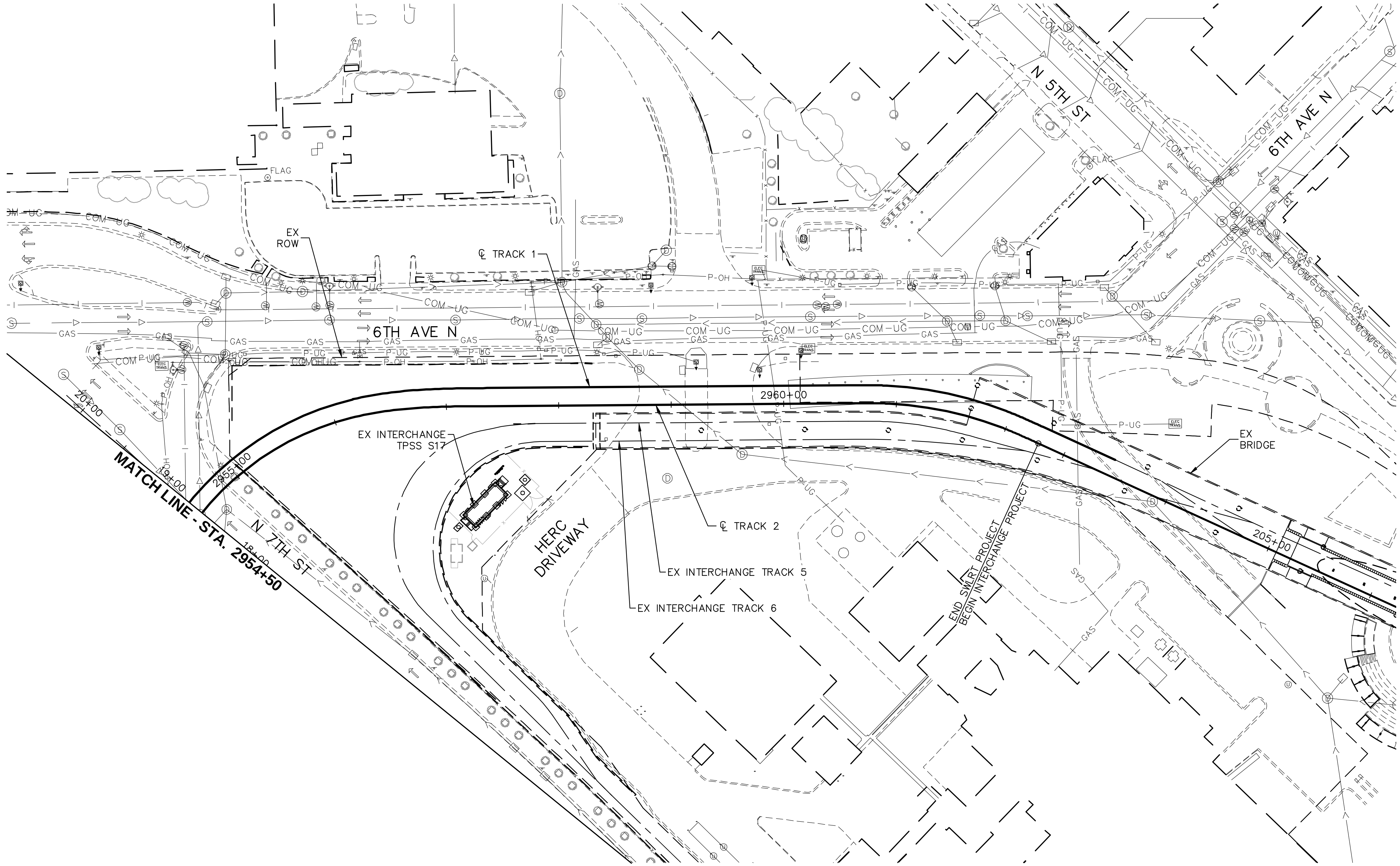
METROPOLITAN COUNCIL

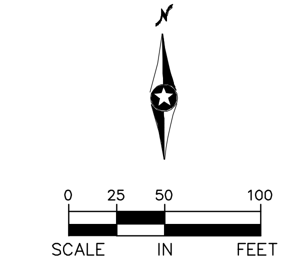
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
EXISTING CONDITIONS
PLAN
STA. 2943+00 TO STA. 2954+50

DISCIPLINE: SURVEY

SHEET NAME: E4-SUR-PLN-010





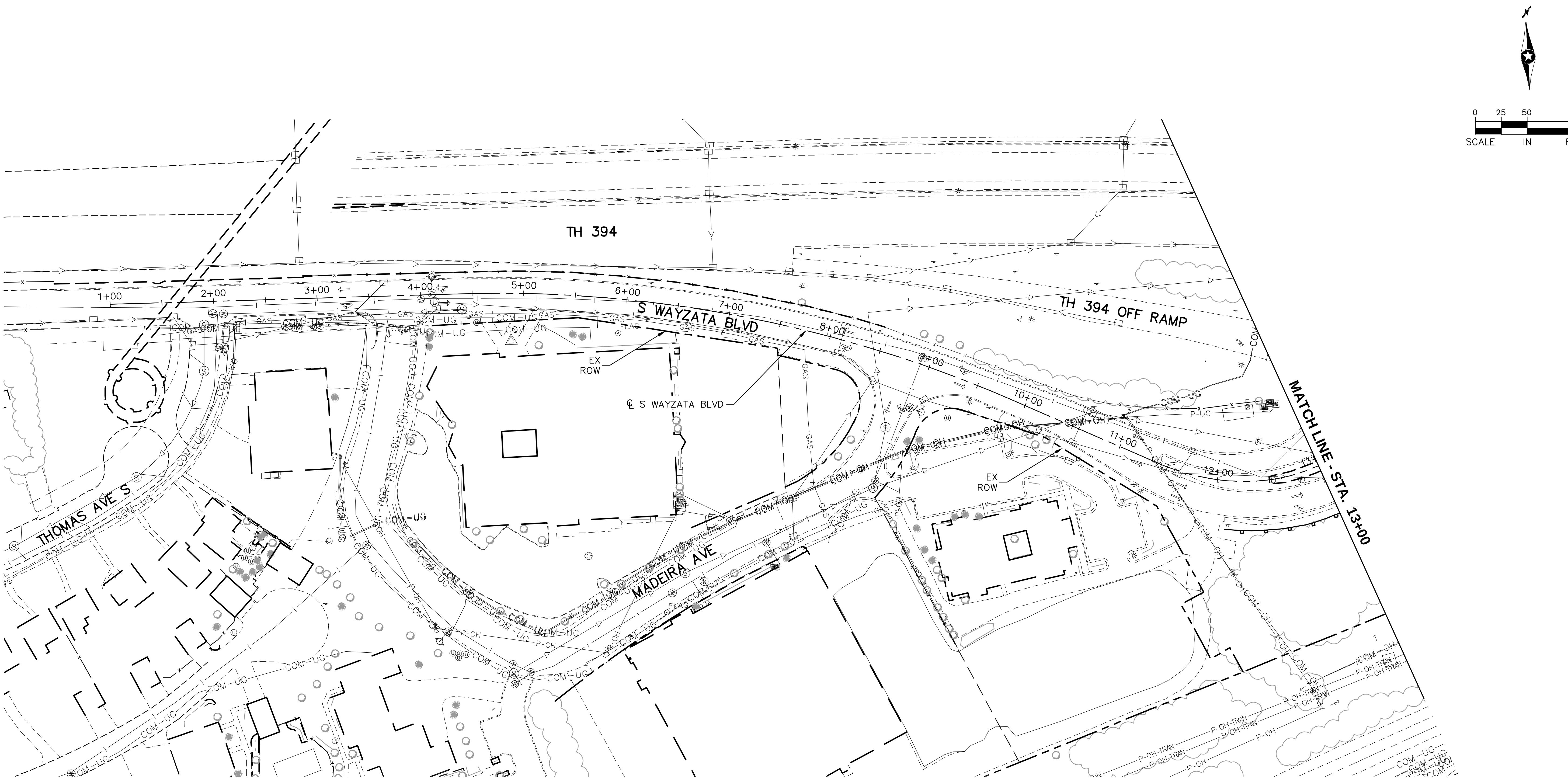
NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

PRELIMINARY ENGINEERING

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
EXISTING CONDITIONS
PLAN
STA. 2954+50 TO STA. 2962+32.03

DISCIPLINE: SURVEY

SHEET NAME: E4-SUR-PLN-011



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SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
EXISTING CONDITIONS
S WAYZATA BLVD
STA. 1+00 TO STA. 13+00

DISCIPLINE: SURVEY

SHEET NAME: E4-SUR-PLN - 012

SHEET 20 OF 163

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METROPOLITAN COUNCIL

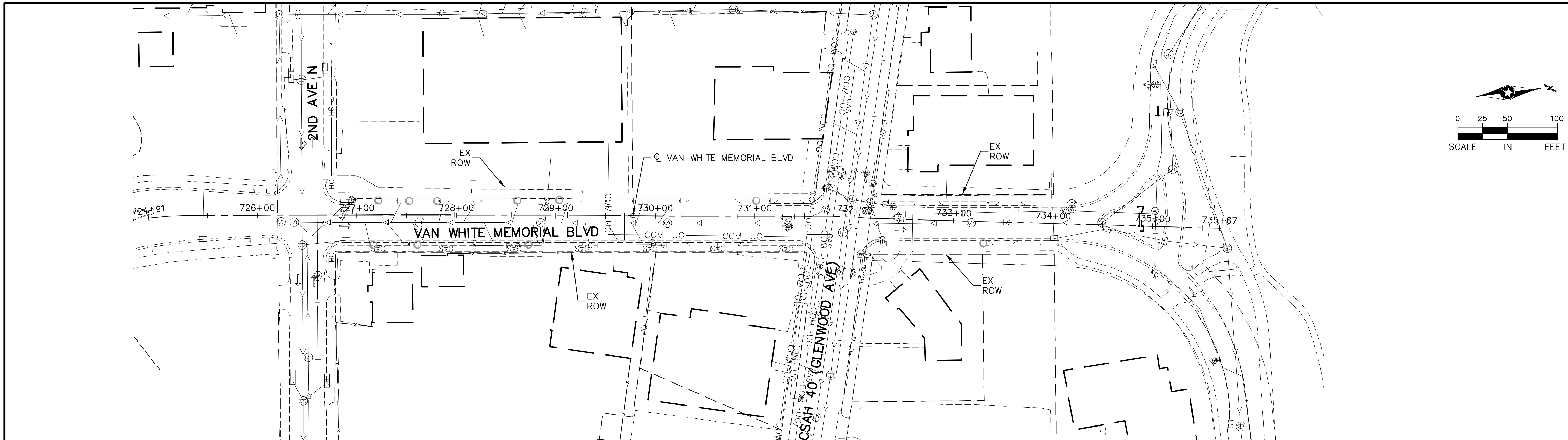
SOUTHWEST Green Line LRT Extension

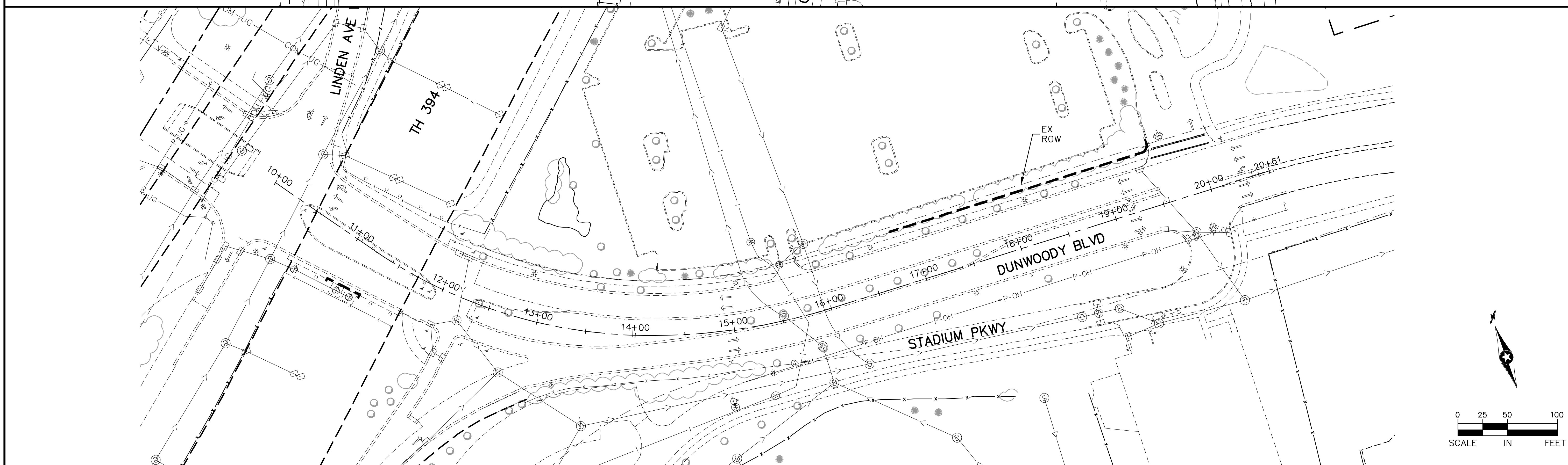
EAST - VOLUME 1 (CIVIL) - SEGMENT 4
EXISTING CONDITIONS
CSAH 2 (PENN AVE S)
STA. 13+00 TO STA. 31+60

DISCIPLINE: SURVEY

SHEET NAME: E4-SUR-PLN - 013

SHEET 21 OF 163





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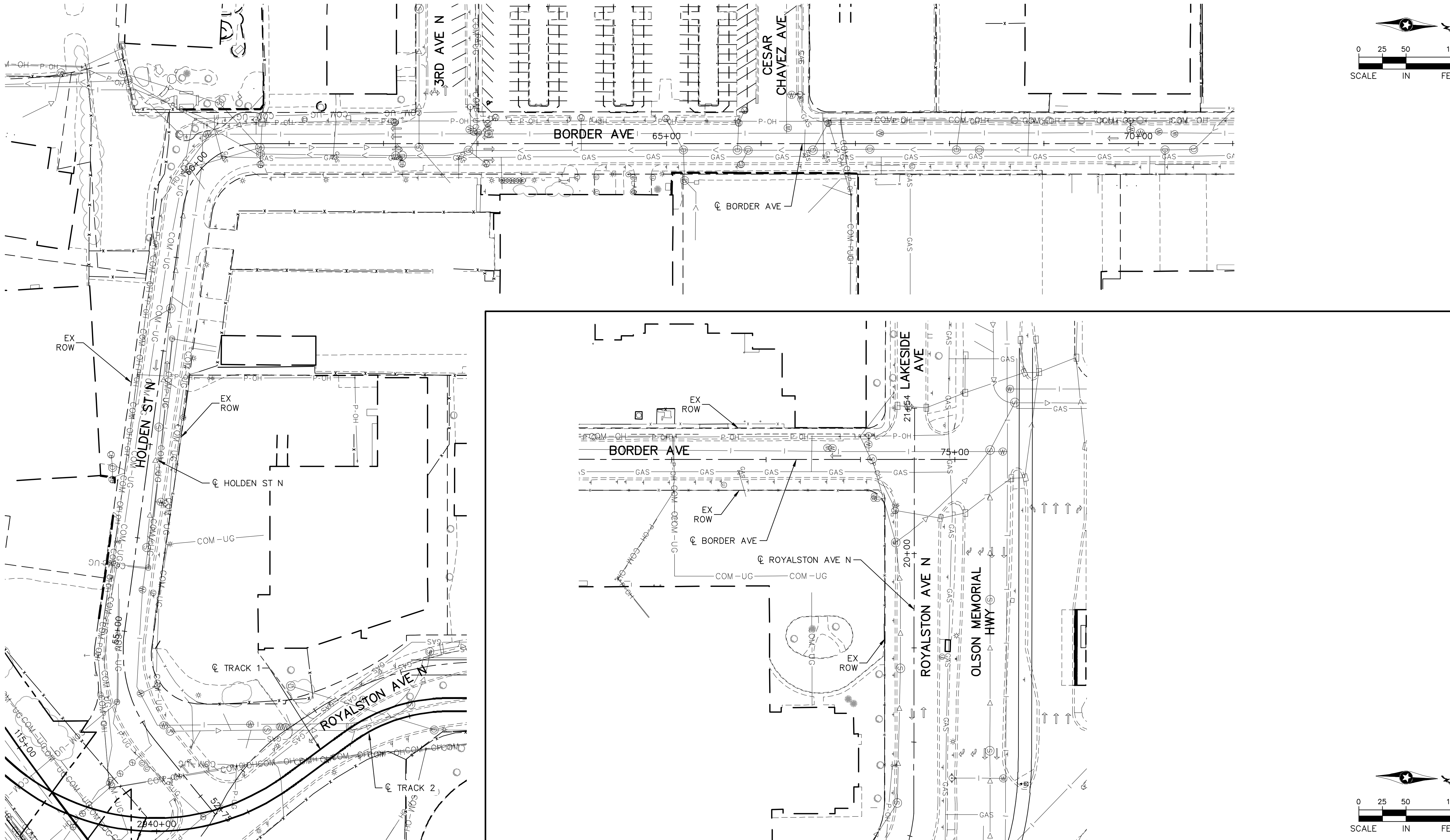
METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
EXISTING CONDITIONS
VAN WHITE MEMORIAL BLVD AND DUNWOODY BLVD

DISCIPLINE: **SURVEY**

SHEET NAME: **E4-SUR-PLN - 014**



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PRELIMINARY ENGINEERING

METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
EXISTING CONDITIONS
HOLDEN ST N AND BORDER AVE

DISCIPLINE: SURVEY

SHEET NAME: E4-SUR-PLN - 015

TRACK LINETYPES

- TRACK ℄
- RETAINING WALL
- TUNNEL WALL
- ROADWAY ℄
- FENCE
- BALLAST CURB

TRACK SYMBOLS

- PROPOSED SIGNALIZED INTERSECTION
- EXISTING SIGNALIZED INTERSECTION
- PROPOSED DIRECTIONAL LANE USE
- EXISTING DIRECTIONAL LANE USE
- AUTOMATIC GATE
- RAIL TURNOUT
- RAIL CROSSOVER (DOUBLE)
- RAIL CROSSOVER (SINGLE)
- POINT OF SWITCH (PS)
- W2-200 RAILROAD CURVE NUMBER

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

CIVIL LINETYPES

- ROADWAY ℄
- TRACK ℄
- CONCRETE CURB AND GUTTER
- TRAIL
- SIDEWALK
- DRIVEWAY
- BRIDGE
- RETAINING WALL
- TUNNEL WALL
- CROSSWALK
- STOP BAR
- MEDIAN NOSE
- SAWCUT
- FENCE
- LIMITS OF DISTURBANCE
- CONCRETE SIDEWALK JOINTING

CIVIL SYMBOLS

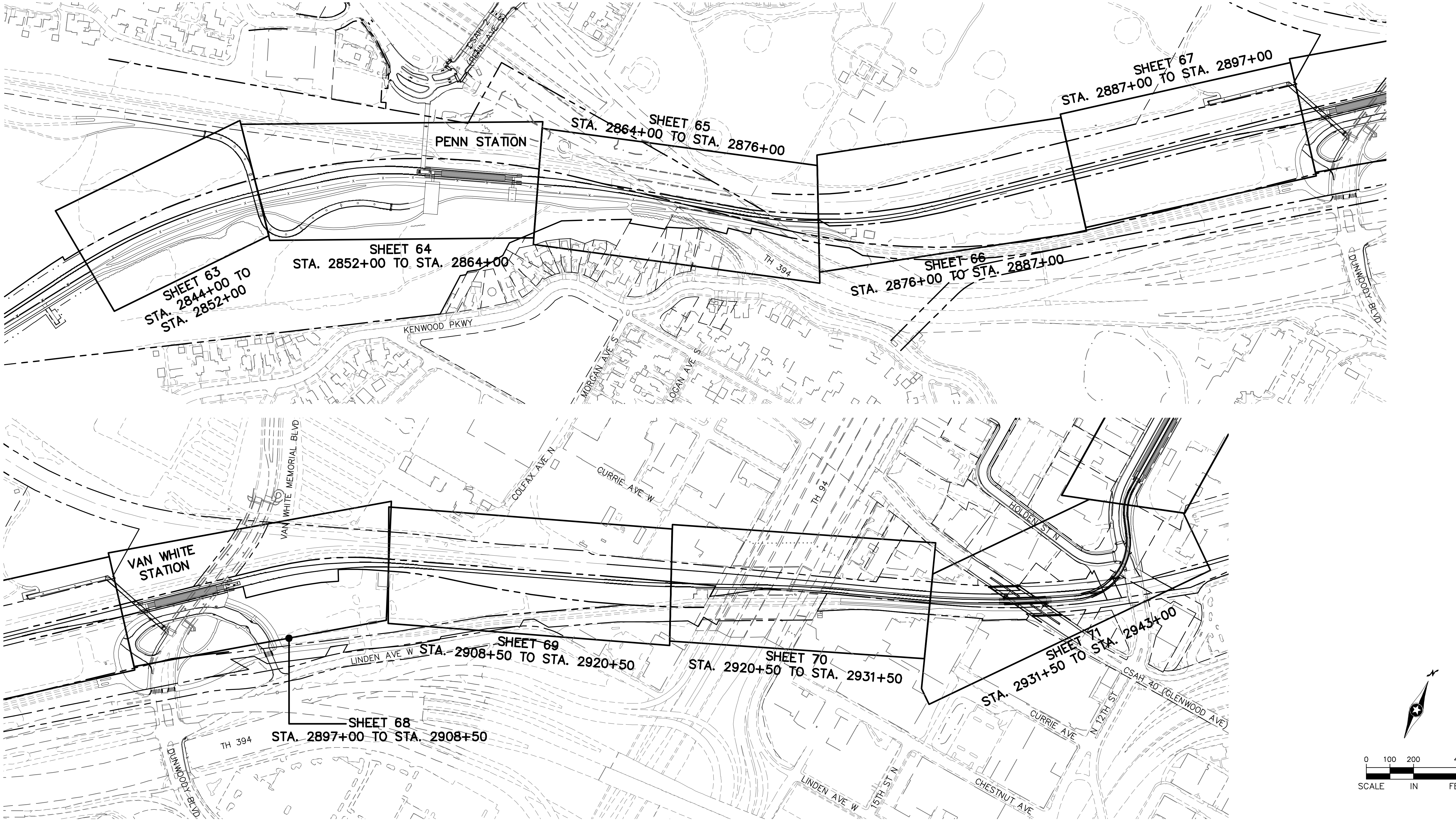
- ACCESSIBLE PEDESTRIAN CURB RAMP (DESIGN VARIES)
- PROPOSED SIGNALIZED INTERSECTION
- EXISTING SIGNALIZED INTERSECTION
- PROPOSED DIRECTIONAL LANE USE
- EXISTING DIRECTIONAL LANE USE
- AUTOMATIC GATE
- HANDICAP PARKING STALL
- TACTILE WARNING STRIP
- TPSS BUILDING (TPSS-SW-##)
- SIGNAL OR INTERMEDIATE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

ABBREVIATIONS

AD	ALGEBRAIC DIFFERENCE	OCS	OVERHEAD CONTACT SYSTEM
AVE	AVENUE	OH	OVERHEAD
BGN	BEGIN	PC	POINT OF CURVE
BVCE	BEGINNING VERTICAL CURVE ELEVATION	PE	PROPOSED EASEMENT
BVCS	BEGINNING VERTICAL CURVE STATION	PITO	POINT OF INTERSECTION OF TURNOUT
BLVD	BOULEVARD	PKWY	PARKWAY
BNSF	BURLINGTON NORTHERN SANTA FE RAILWAY	POT	POINT ON TANGENT
C&G	CURB AND GUTTER	PROP	PROPOSED
℄	CENTERLINE	PS	POINT OF SWITCH
CP	CANADIAN PACIFIC	PT	POINT OF TANGENT
CPRAIL	CANADIAN PACIFIC RAILWAY	PVI	POINT OF VERTICAL INTERSECTION
CS	CURVE TO SPIRAL	R	RADIUS (FEET)
CSAH	COUNTY STATE AID HIGHWAY	r	RATE OF CHANGE VERTICAL CURVE
DF	DIRECT FIXATION	RH	RIGHT HAND
DR	DRIVE	ROW	RIGHT OF WAY
Ea	ACTUAL SUPERELEVATION (INCHES)	S	SOUTH
EB	EAST BOUND	SB	SOUTH BOUND
ELEV	ELEVATION	SC	SPIRAL TO CURVE
Eu	UNBALANCED SUPERELEVATION (INCHES)	SIG-COMM	SIGNAL COMMUNICATION
EVCE	ENDING VERTICAL CURVE ELEVATION	ST	STREET
EVCS	ENDING VERTICAL CURVE STATION	ST	SPIRAL TO TANGENT
EX	EXISTING	STA	STATION
HCRRA	HENNEPIN COUNTY REGIONAL RAILROAD AUTHORITY	TCE	TEMPORARY CONSTRUCTION EASEMENT
LH	LEFT HAND	TOR	TOP OF RAIL
Ls	SPIRAL LENGTH (FEET)	TPSS	TRACTION POWER SUBSTATION
MPLS	CITY OF MINNEAPOLIS	TRK	TRACK
MPRB	MINNEAPOLIS PARK AND RECREATION BOARD	TS	TANGENT TO SPIRAL
N	NORTH	UG	UNDERGROUND
NB	NORTH BOUND	V	DESIGN VELOCITY (MPH)
NO	NUMBER	WB	WEST BOUND

TRAIL INDEX

ABBREVIATED NAME	FULL NAME/LOCATION
MN RIVER BLUFFS TRAIL	MINNESOTA RIVER BLUFFS LRT REGIONAL TRAIL/WEST OF EXCELSIOR
CEDAR LAKE TRAIL	CEDAR LAKE LRT REGIONAL TRAIL/EAST OF EXCELSIOR
TRAIL A	NOT USED
TRAIL B	NOT USED
TRAIL C	10' CONNECTOR TRAIL FROM CEDAR LAKE TRAIL TO TYLER AVE.
TRAIL D	10' CONNECTOR TRAIL/BELTLINE STATION
KENILWORTH TRAIL	KENILWORTH TRAIL (MAIN)/W LAKE ST TO PENN STATION
TRAIL E	KENILWORTH TRAIL (SECONDARY)/W LAKE ST TO CEDAR LAKE PKWY
TRAIL F	KENILWORTH TRAIL (SECONDARY)/WEST OF PENN STATION
TRAIL F	NORTH CEDAR LAKE TRAIL (SECONDARY)/EAST OF PENN STATION
TRAIL G	KENILWORTH TRAIL (SECONDARY)/WEST OF PENN STATION
TRAIL G	NORTH CEDAR LAKE TRAIL (SECONDARY)/EAST OF PENN STATION
TRAIL H	10' CONNECTOR TRAIL/EAST OF PENN STATION TO KENWOOD PKWY
TRAIL I	NORTH CEDAR LAKE TRAIL (MAIN) ON BRIDGE OVER LIGHT RAIL
TRAIL J	NORTH CEDAR LAKE TRAIL (SECONDARY)/NORTHWEST OF PENN STATION
TRAIL K	NORTH CEDAR LAKE TRAIL (SECONDARY)/NORTHWEST OF PENN STATION
TRAIL L	20' CONNECTOR TRAIL/VAN WHITE STATION
TRAIL M	NORTH CEDAR LAKE TRAIL (SECONDARY)/EAST OF I-94
TRAIL N	8' CONNECTOR TRAIL FROM CEDAR LAKE TRAIL TO EDGEBROOK 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 T.H. 7 SERVICE ROAD



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SYSTRA

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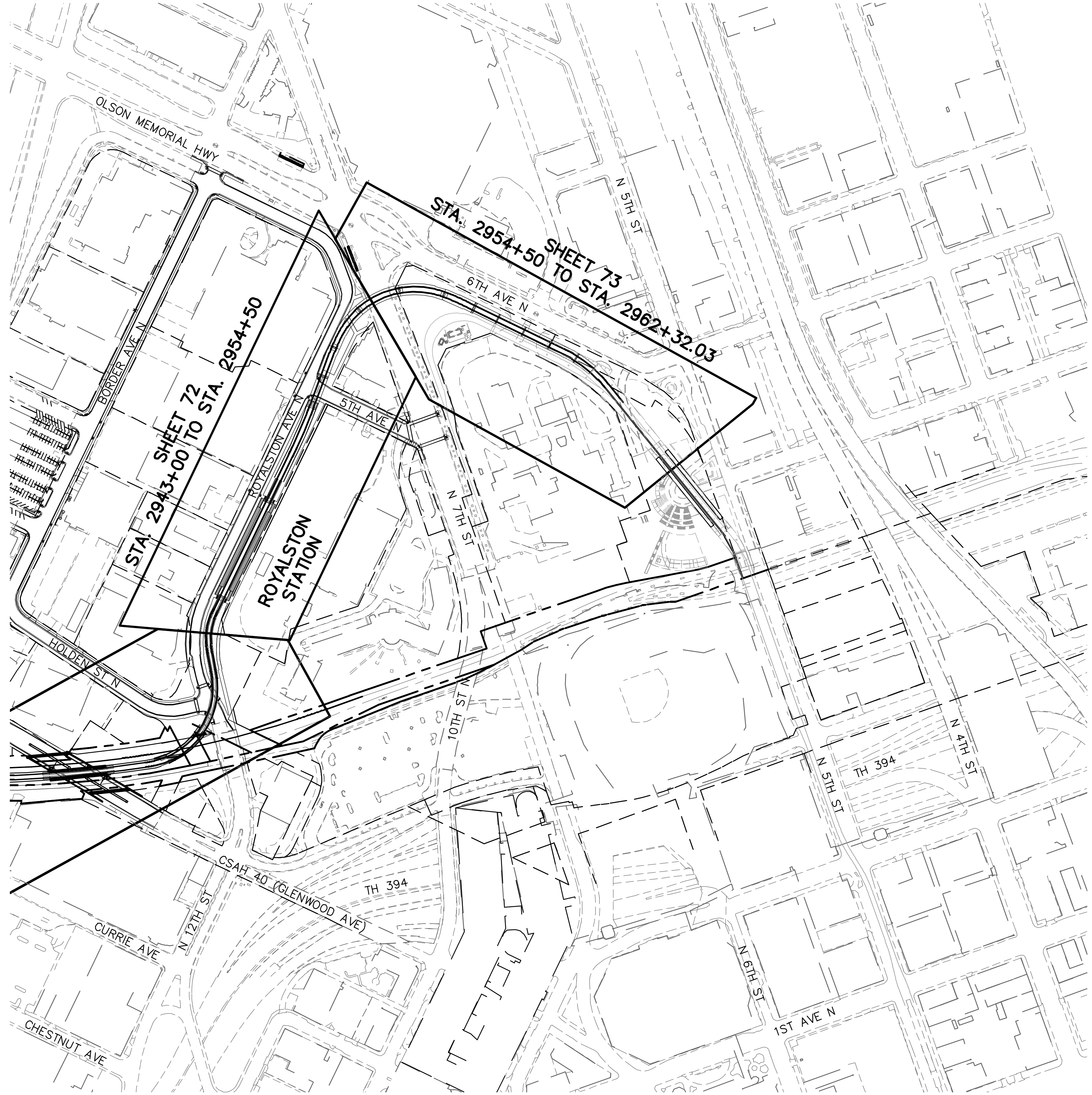
METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
SHEET INDEX

DISCIPLINE: **TRACK**

SHEET NAME: **E4-TRK-IDX-001**



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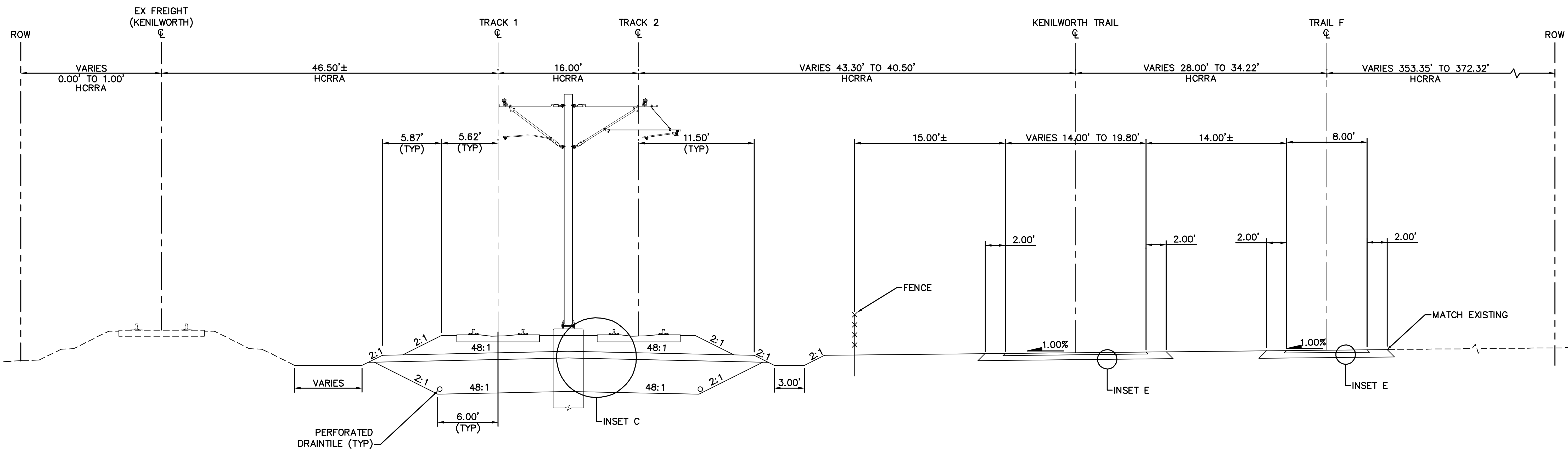
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
SHEET INDEX

DISCIPLINE: TRACK
SHEET NAME: E4-TRK-IDX-002

SHEET 26 OF 163



TYPICAL SECTION
STA. 2844+00 TO STA. 2844+70

NOTE:
FOR INSETS, SEE EAST – VOLUME 1 (CIVIL) – SEGMENT 4 SHEET 57.

0 2.5 5 10
SCALE IN FEET

Aug. 29 2014 07:54 am V:\3300_PEC-E\CAD\SEGMENT E4\PLAN SHEETS\TRACK\E4-TRK-TYP.dwg By: chris.bunders

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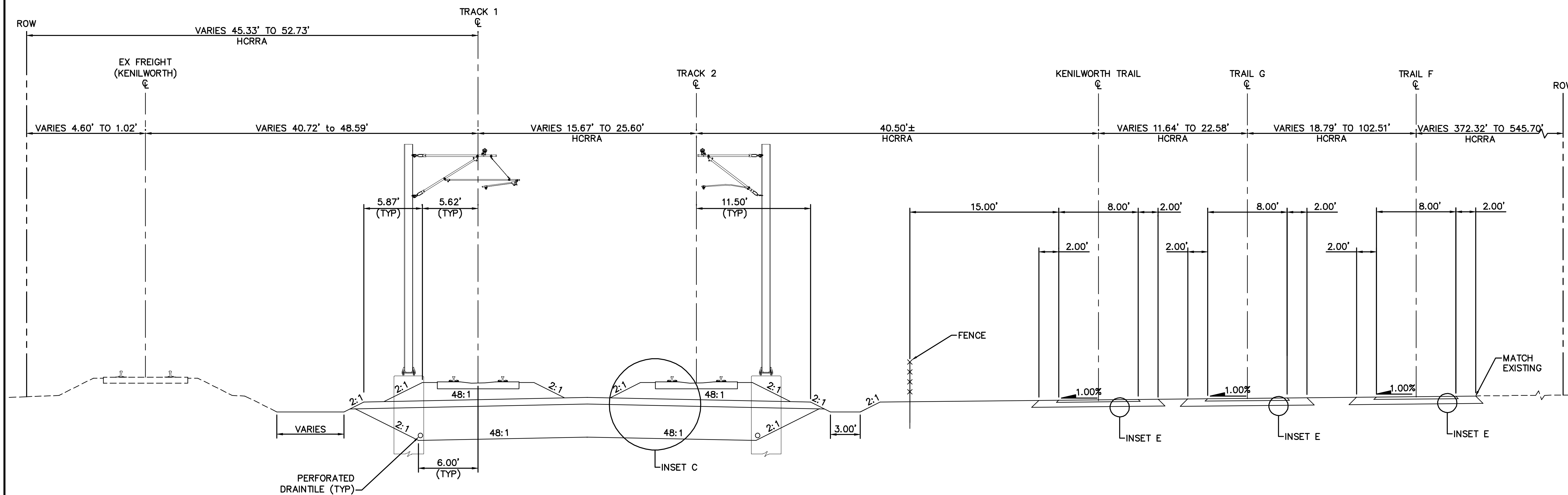
METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
TYPICAL SECTIONS

DISCIPLINE: TRACK

SHEET NAME: E4-TRK-TYP - 001



TYPICAL SECTION

STA. 2844+70 TO STA. 2851+65
STA. 2851+92 TO STA. 2853+58

NOTE:
FOR INSETS, SEE EAST – VOLUME 1 (CIVIL) – SEGMENT 4 SHEET 57.

0 2.5 5 10
SCALE IN FEET

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METROPOLITAN COUNCIL

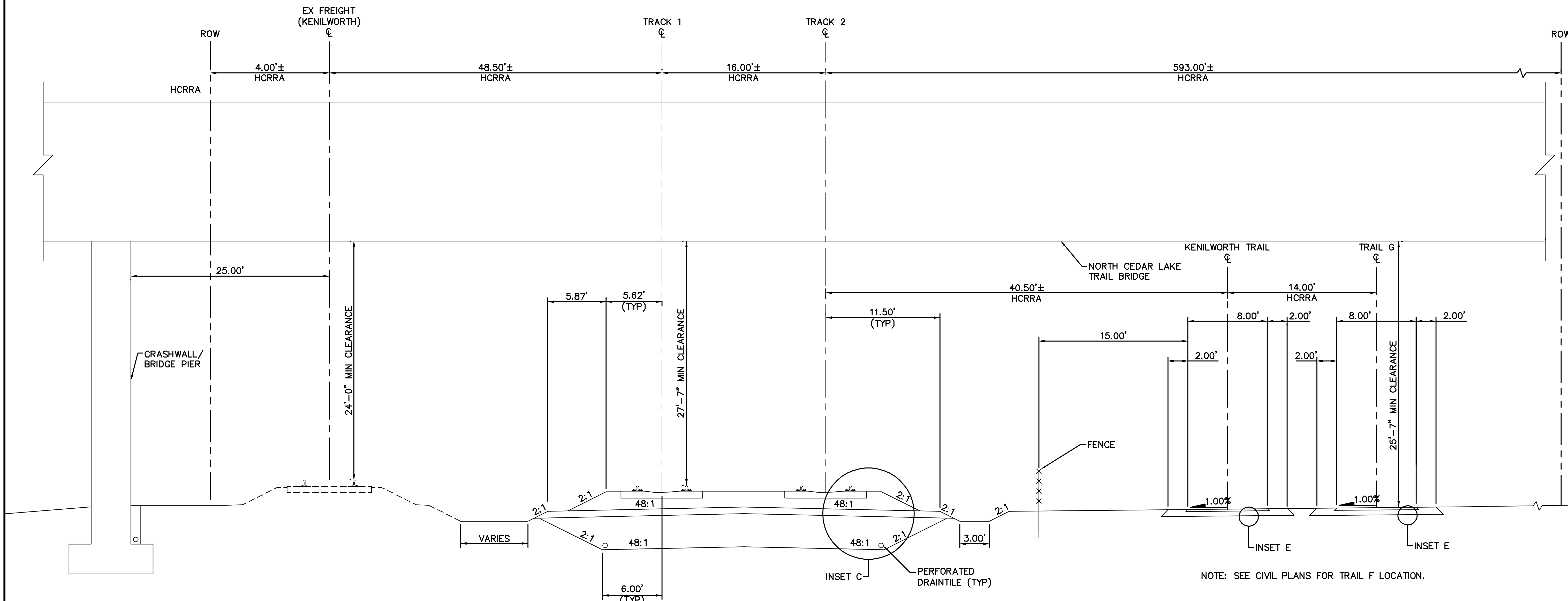
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
TYPICAL SECTIONS

DISCIPLINE: TRACK

SHEET NAME: E4-TRK-TYP - 002

SHEET 28 OF 163



TYPICAL SECTION
STA. 2851+65 TO STA. 2851+92

NOTE:
1. FOR INSETS, SEE EAST – VOLUME 1 (CIVIL) – SEGMENT 4 SHEET 57.
2. OCS NOT SHOWN.

0 2.5 5 10
SCALE IN FEET

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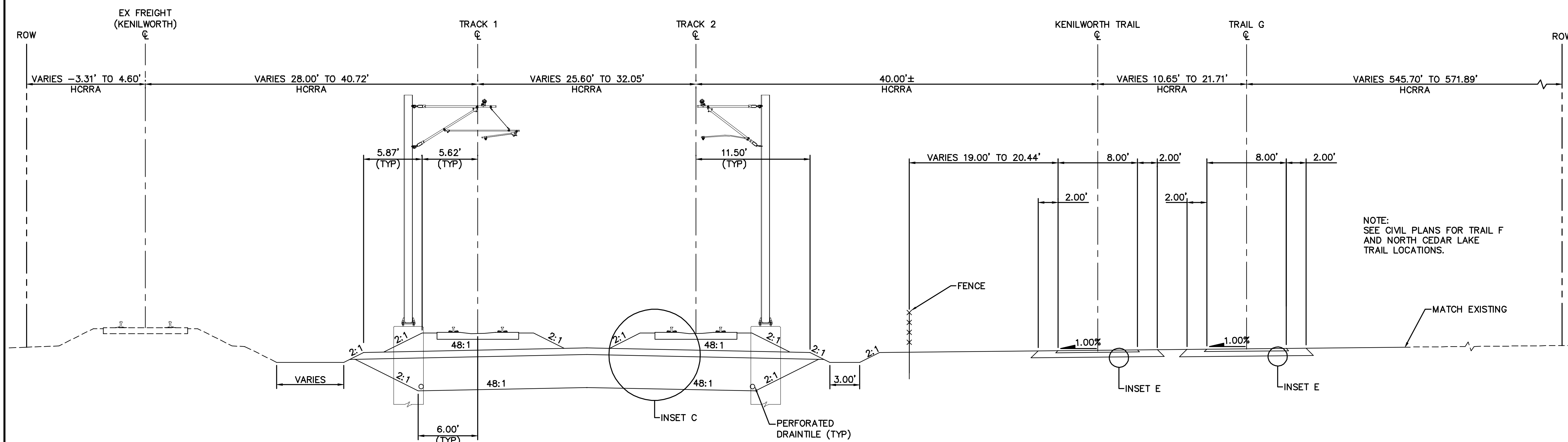
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
TYPICAL SECTIONS

DISCIPLINE: TRACK

SHEET NAME: E4-TRK-TYP - 003

SHEET 29 OF 163



NOTE:
SEE CIVIL PLANS FOR TRAIL F AND NORTH CEDAR LAKE TRAIL LOCATIONS.

TYPICAL SECTION
STA. 2853+58 TO STA. 2856+50

NOTE:
FOR INSETS, SEE EAST – VOLUME 1 (CIVIL) – SEGMENT 4 SHEET 57.

0 2.5 5 10
SCALE IN FEET

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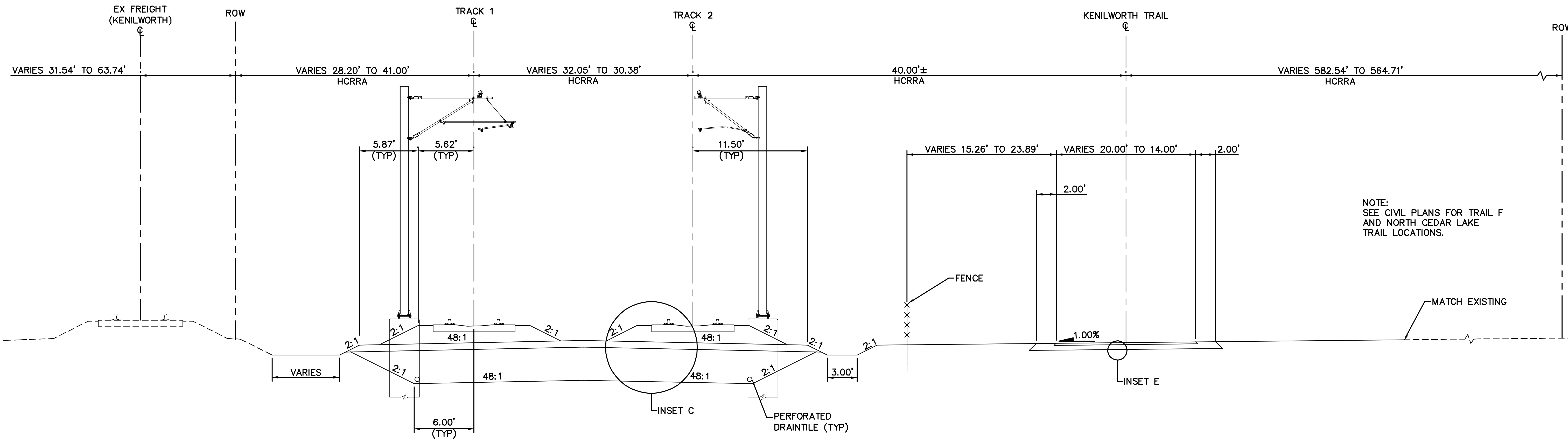
METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
TYPICAL SECTIONS

DISCIPLINE: TRACK

SHEET NAME: E4-TRK-TYP - 004



NOTE:
SEE CIVIL PLANS FOR TRAIL F AND NORTH CEDAR LAKE TRAIL LOCATIONS.

TYPICAL SECTION
STA. 2856+50 TO STA. 2858+82

NOTE:
FOR INSETS, SEE EAST – VOLUME 1 (CIVIL) – SEGMENT 4 SHEET 57.

0 2.5 5 10
SCALE IN FEET

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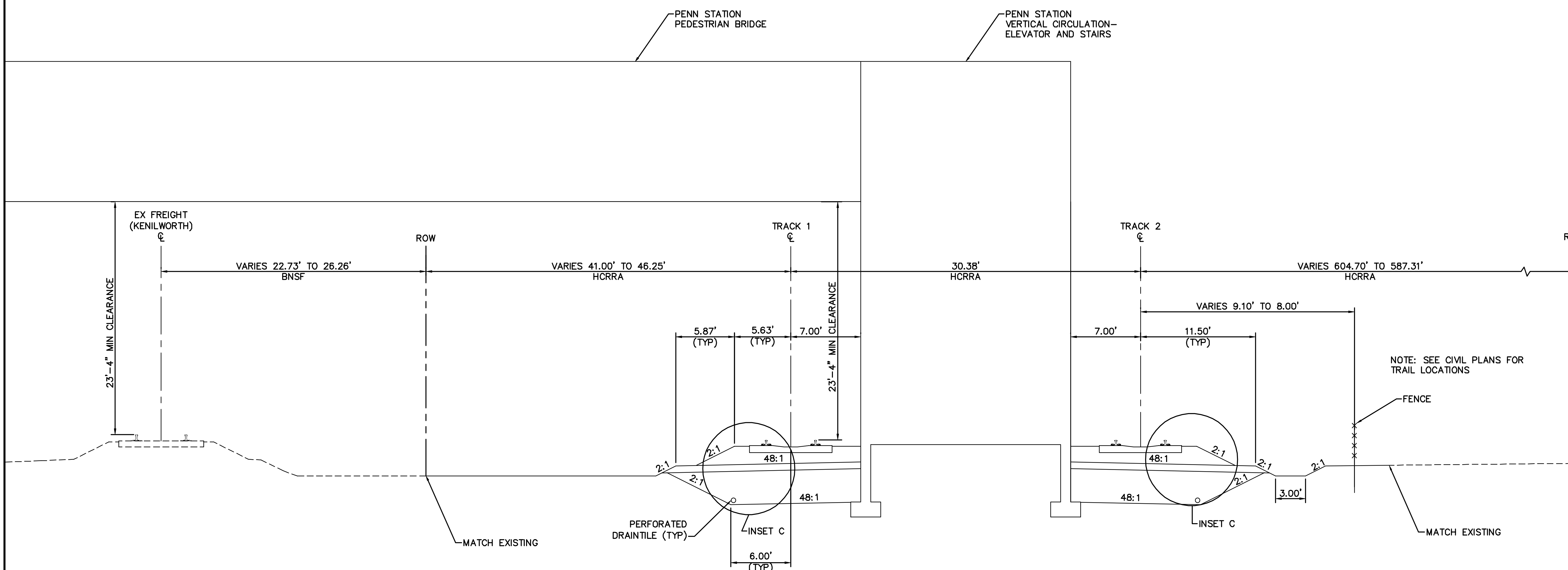
METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
TYPICAL SECTIONS

DISCIPLINE: TRACK

SHEET NAME: E4-TRK-TYP - 005



TYPICAL SECTION
STA. 2858+82 TO STA. 2859+72

NOTE:
1. FOR INSETS, SEE EAST – VOLUME 1 (CIVIL) – SEGMENT 4 SHEET 57.
2. OCS NOT SHOWN.

0 2.5 5 10
SCALE IN FEET

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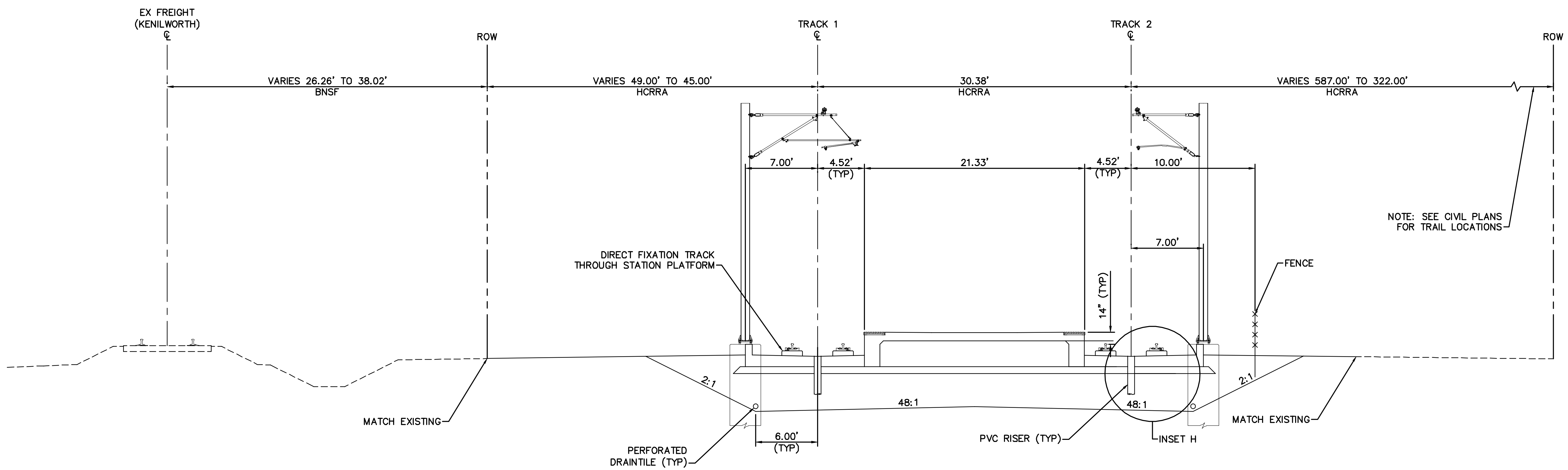
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
TYPICAL SECTIONS

DISCIPLINE: TRACK

SHEET NAME: E4-TRK-TYP - 006



TYPICAL SECTION – PENN STATION
STA. 2859+72 TO STA. 2862+42

NOTE:
FOR INSETS, SEE EAST – VOLUME 1 (CIVIL) – SEGMENT 4 SHEET 57.

0 2.5 5 10
SCALE IN FEET

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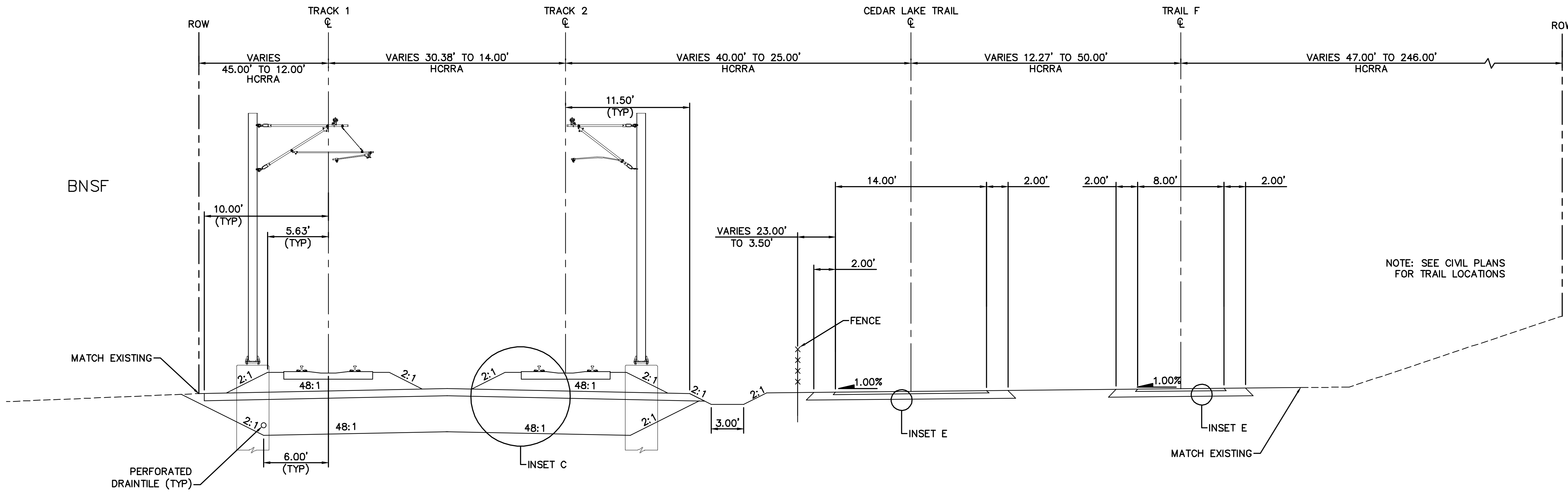
METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
TYPICAL SECTIONS

DISCIPLINE: TRACK

SHEET NAME: E4-TRK-TYP - 007



TYPICAL SECTION
STA. 2862+42 TO STA. 2869+50

NOTE:
FOR INSETS, SEE EAST – VOLUME 1 (CIVIL) – SEGMENT 4 SHEET 57.

0 2.5 5 10
SCALE IN FEET

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SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
TYPICAL SECTIONS

DISCIPLINE: TRACK

SHEET NAME: E4-TRK-TYP - 008

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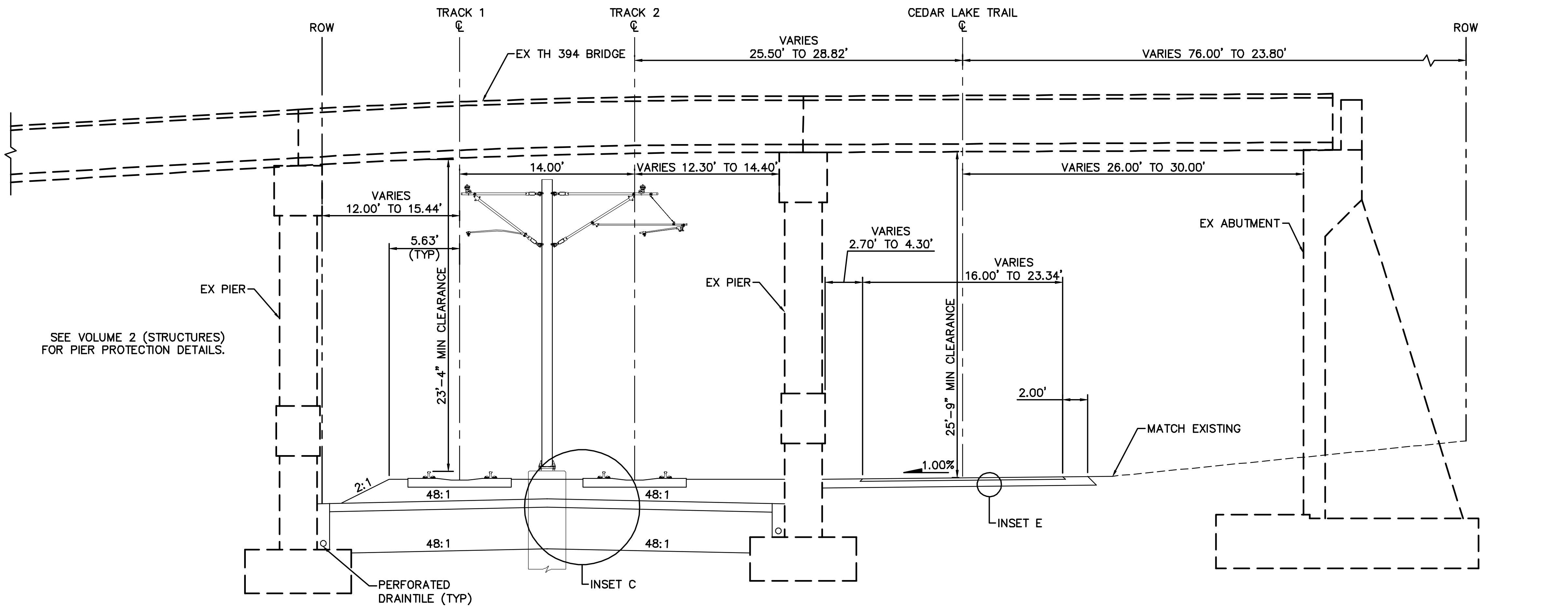

TYPICAL SECTION
STA. 2869+50 TO STA. 2873+47

NOTE:
FOR INSETS, SEE EAST - VOLUME 1 (CIVIL) - SEGMENT 4 SHEET 57.

0 2.5 5 10
SCALE IN FEET

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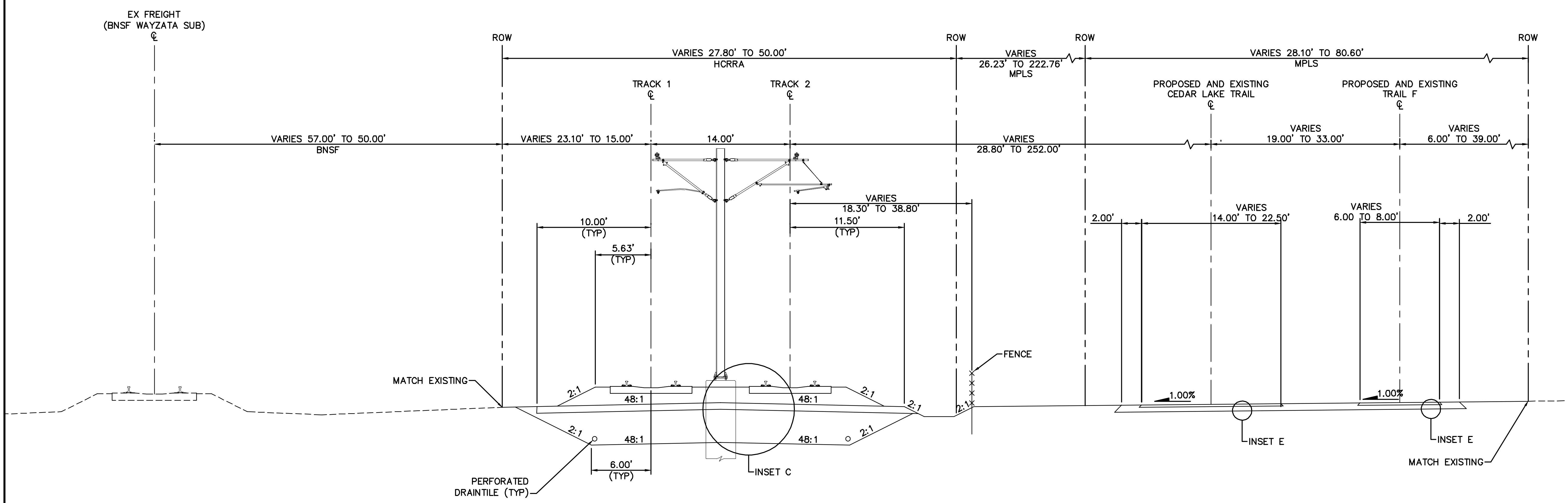
EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
TYPICAL SECTIONS

DISCIPLINE: TRACK

SHEET NAME: E4-TRK-TYP - 009

SHEET 35 OF 163



TYPICAL SECTION
STA. 2873+47 TO STA. 2892+53

NOTE:
FOR INSETS, SEE EAST – VOLUME 1 (CIVIL) – SEGMENT 4 SHEET 57.

0 2.5 5 10
SCALE IN FEET

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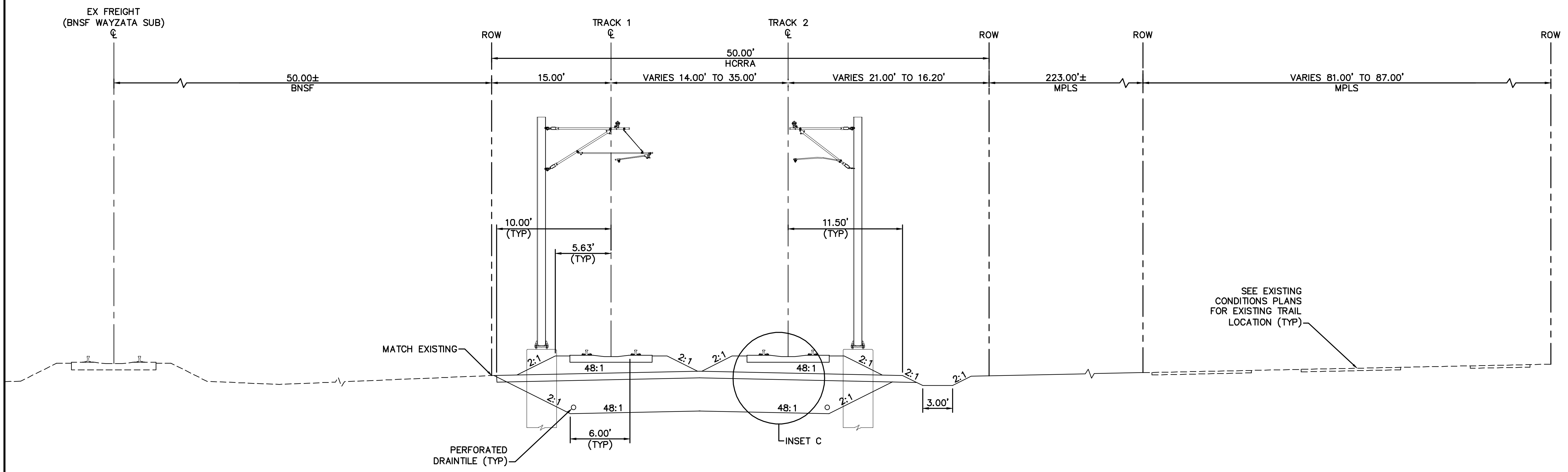
METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
TYPICAL SECTIONS

DISCIPLINE: TRACK

SHEET NAME: E4-TRK-TYP - 010



TYPICAL SECTION
STA. 2892+53 TO STA. 2897+74

NOTE:
FOR INSETS, SEE EAST – VOLUME 1 (CIVIL) – SEGMENT 4 SHEET 57.

0 2.5 5 10
SCALE IN FEET

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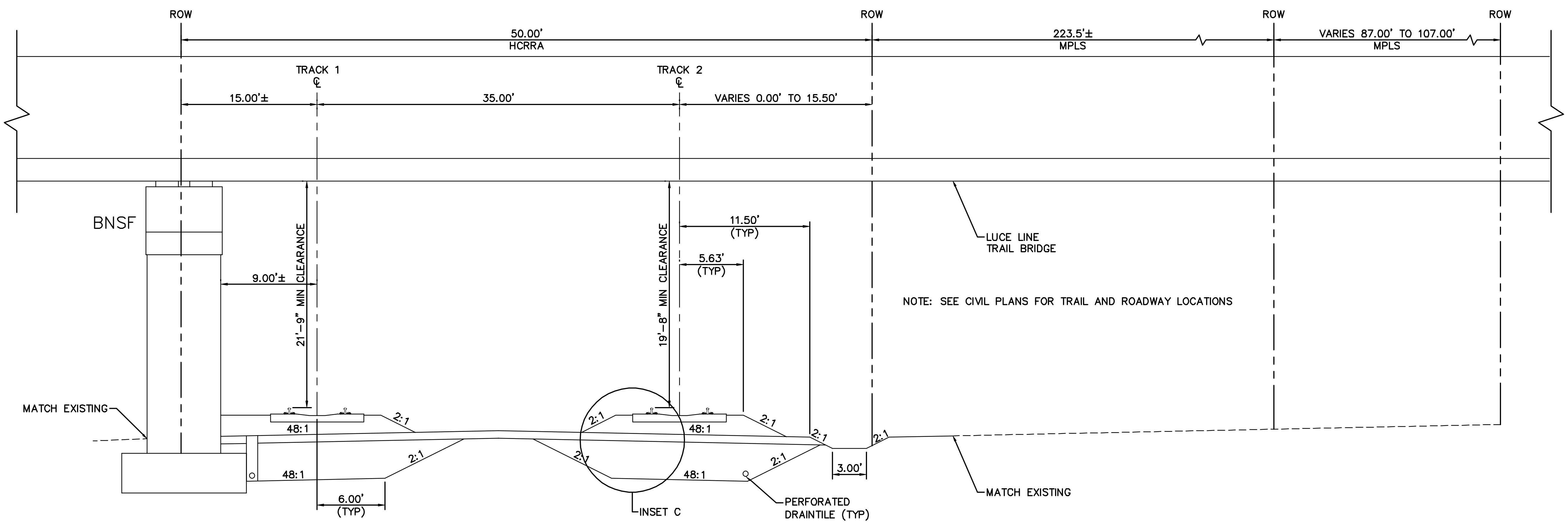
EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
TYPICAL SECTIONS

DISCIPLINE: TRACK

SHEET NAME: E4-TRK-TYP - 011

SHEET 37 OF 163



TYPICAL SECTION
STA. 2897+74 TO STA. 2897+92

NOTE:
1. FOR INSETS, SEE EAST – VOLUME 1 (CIVIL) – SEGMENT 4 SHEET 57.
2. OCS NOT SHOWN.

0 2.5 5 10
SCALE IN FEET

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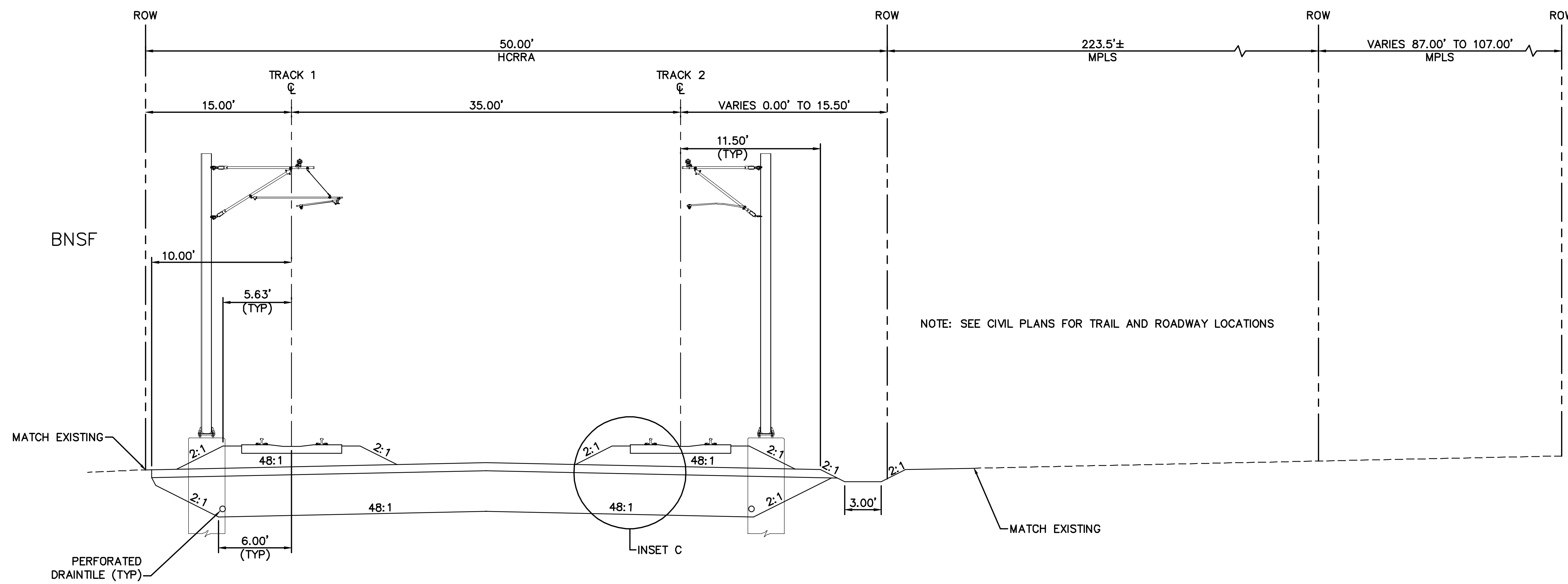
EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
TYPICAL SECTIONS

DISCIPLINE: TRACK

SHEET NAME: E4-TRK-TYP - 012



TYPICAL SECTION
STA. 2897+92 TO STA. 2898+33

NOTE:
FOR INSETS, SEE EAST – VOLUME 1 (CIVIL) – SEGMENT 4 SHEET 57.

0 2.5 5 10
SCALE IN FEET

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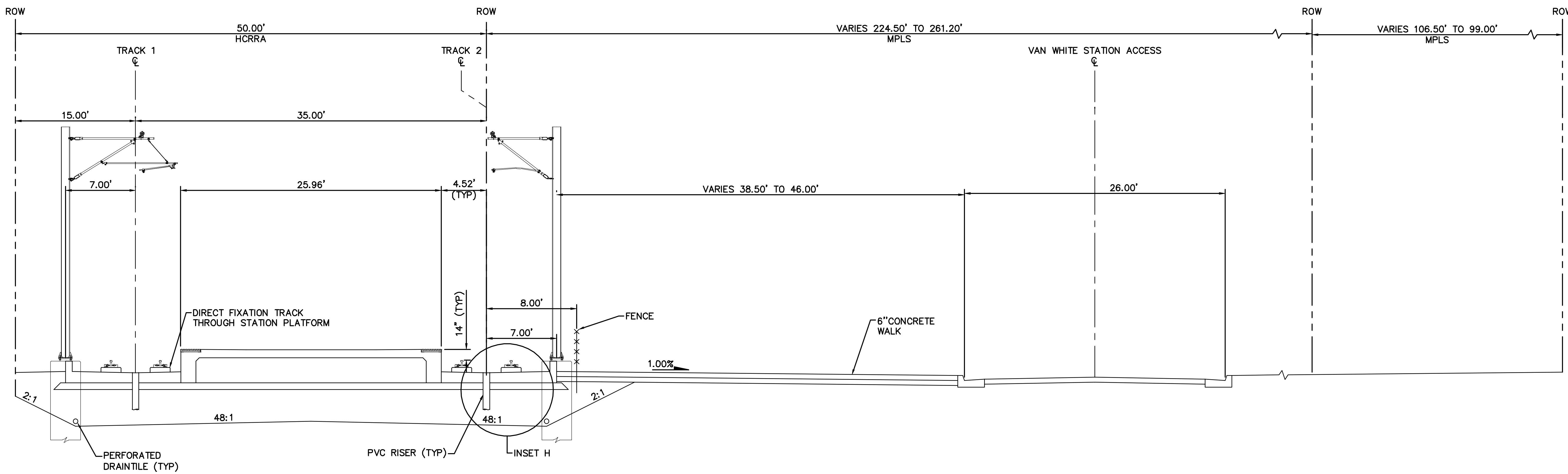
EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
TYPICAL SECTIONS

DISCIPLINE: TRACK

SHEET NAME: E4-TRK-TYP - 013



TYPICAL SECTION – VAN WHITE STATION
STA. 2898+33 TO STA. 2900+41

NOTE:
FOR INSETS, SEE EAST – VOLUME 1 (CIVIL) – SEGMENT 4 SHEET 57.

0 2.5 5 10
SCALE IN FEET

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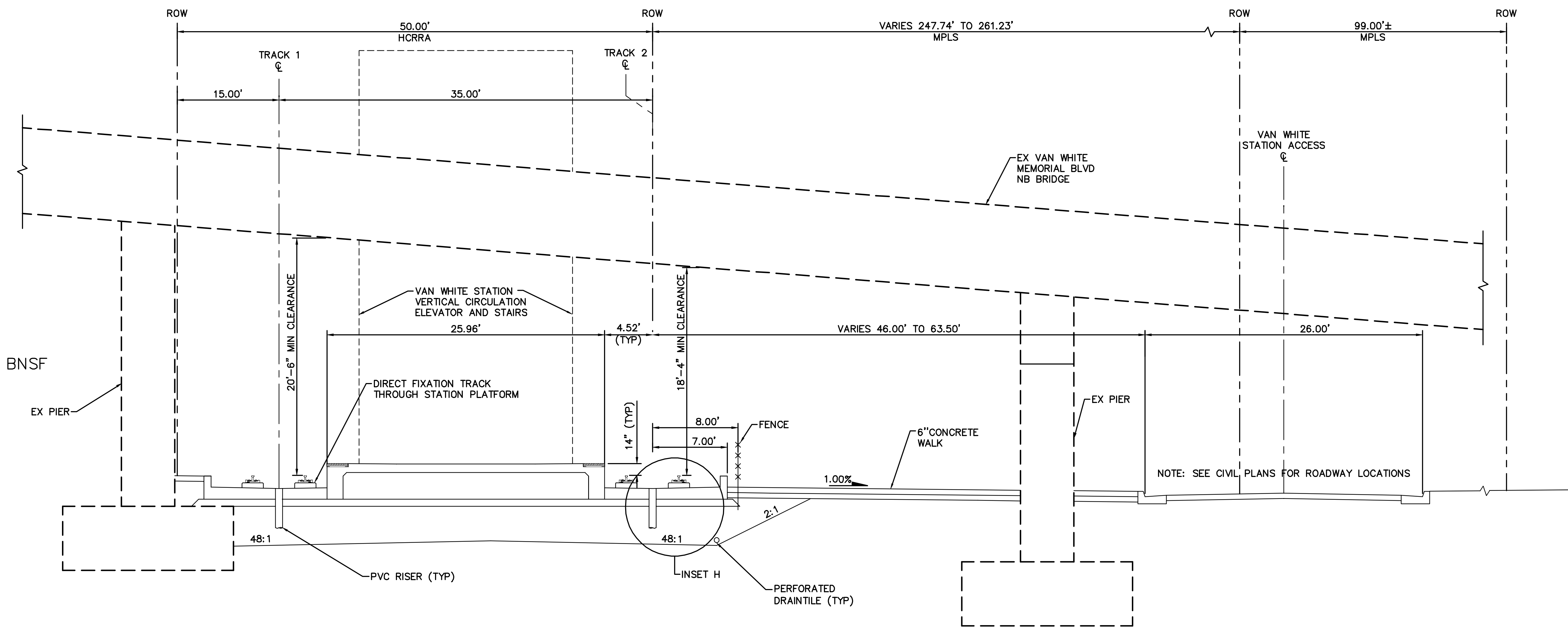
EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
TYPICAL SECTIONS

DISCIPLINE: TRACK

SHEET NAME: E4-TRK-TYP - 014



TYPICAL SECTION – VAN WHITE STATION
STA. 2900+41 TO STA. 2901+03

NOTE:
1. FOR INSETS, SEE EAST – VOLUME 1 (CIVIL) – SEGMENT 4 SHEET 57.
2. OCS NOT SHOWN.

0 2.5 5 10
SCALE IN FEET

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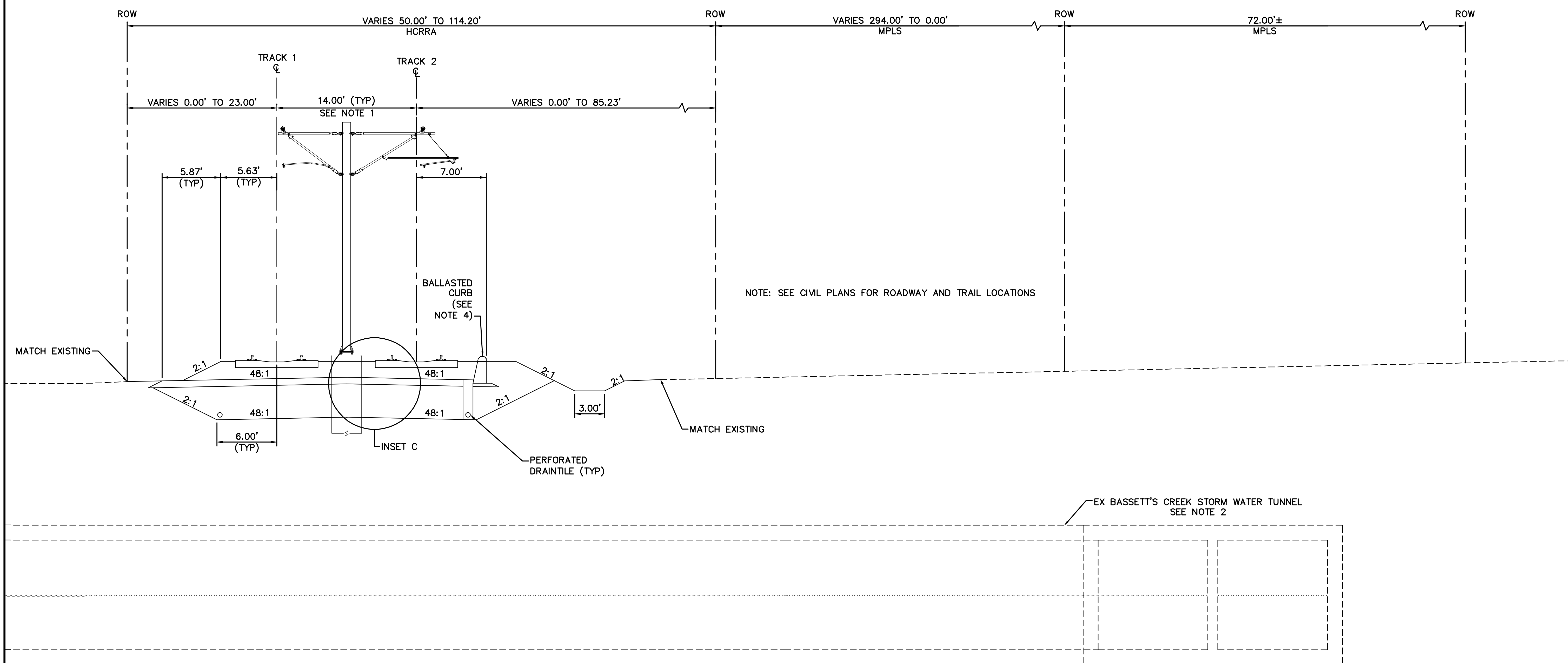
EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
TYPICAL SECTIONS

DISCIPLINE: TRACK

SHEET NAME: E4-TRK-TYP - 015



NOTE:
1. TRACK CENTERS NARROW FROM 35.00' TO 14.00' BETWEEN STA. 2901+76 AND 2910+30.
2. EX BASSETT'S CREEK TUNNEL CROSSING BETWEEN 2914+71 TO 2915+05. APPROXIMATE DEPTH OF TUNNEL BELOW TOR OF TRACK 2 = 16'±.
3. FOR INSETS, SEE EAST – VOLUME 1 (CIVIL) – SEGMENT 4 SHEET 57.
4. BALLAST CURB FROM STA. 2921+40 TO STA. 2922+41.

TYPICAL SECTION
STA. 2901+03 TO STA. 2922+41

0 2.5 5 10
SCALE IN FEET

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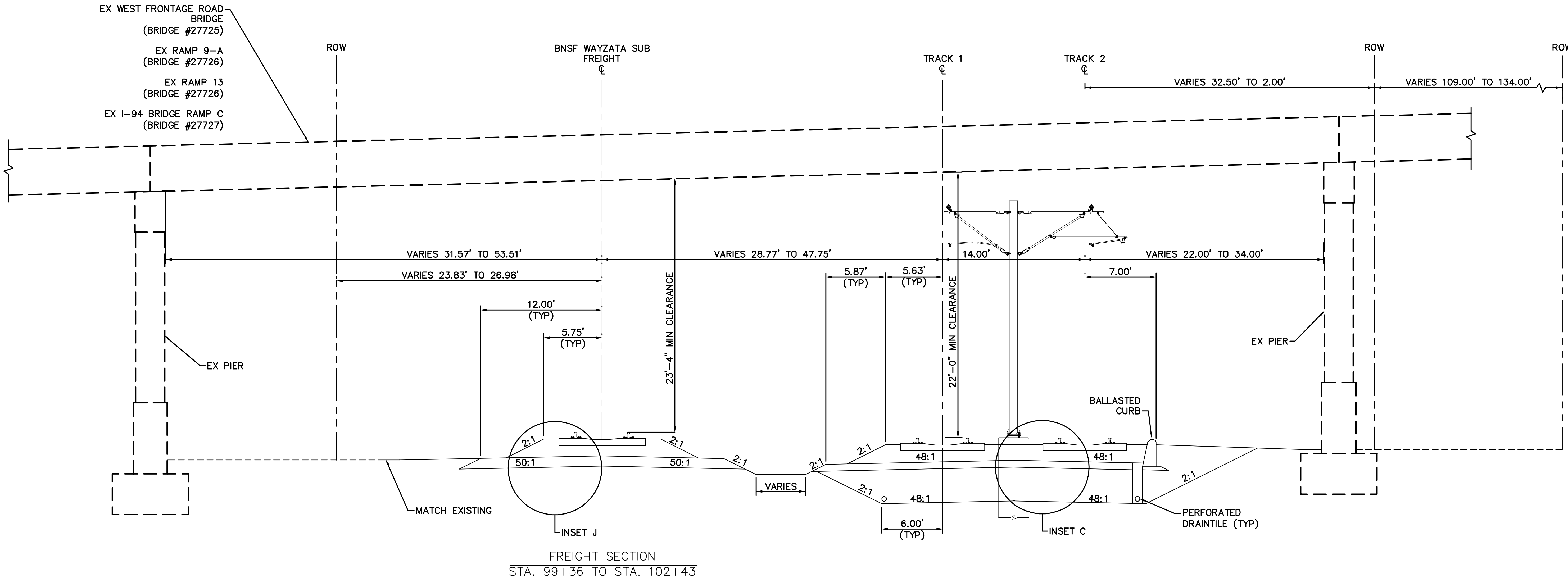
EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
TYPICAL SECTIONS

DISCIPLINE: TRACK

SHEET NAME: E4-TRK-TYP - 016



TYPICAL SECTION
STA. 2922+41 TO STA. 2925+46

NOTE:
FOR INSETS, SEE EAST – VOLUME 1 (CIVIL) – SEGMENT 4 SHEET 57.

0 2.5 5 10
SCALE IN FEET

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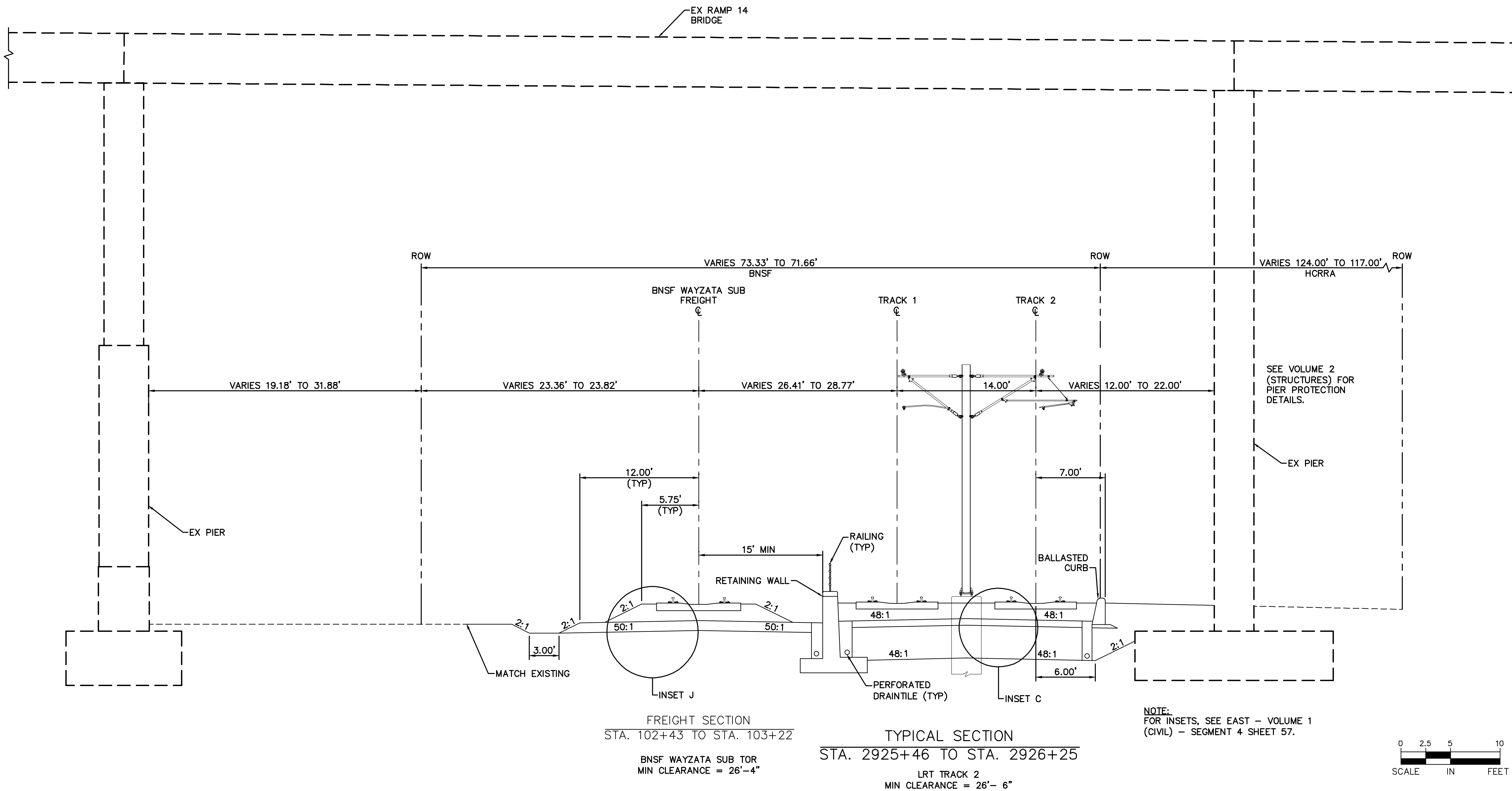
EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
TYPICAL SECTIONS

DISCIPLINE: TRACK

SHEET NAME: E4-TRK-TYP - 017

SHEET 43 OF 163



Aug. 29 2014 07:58 am V:\3300_PEC-E\CAD\SEGMENT E4\PLAN SHEETS\TRACK\E4-TRK-TYP.dwg By: chris.bunders

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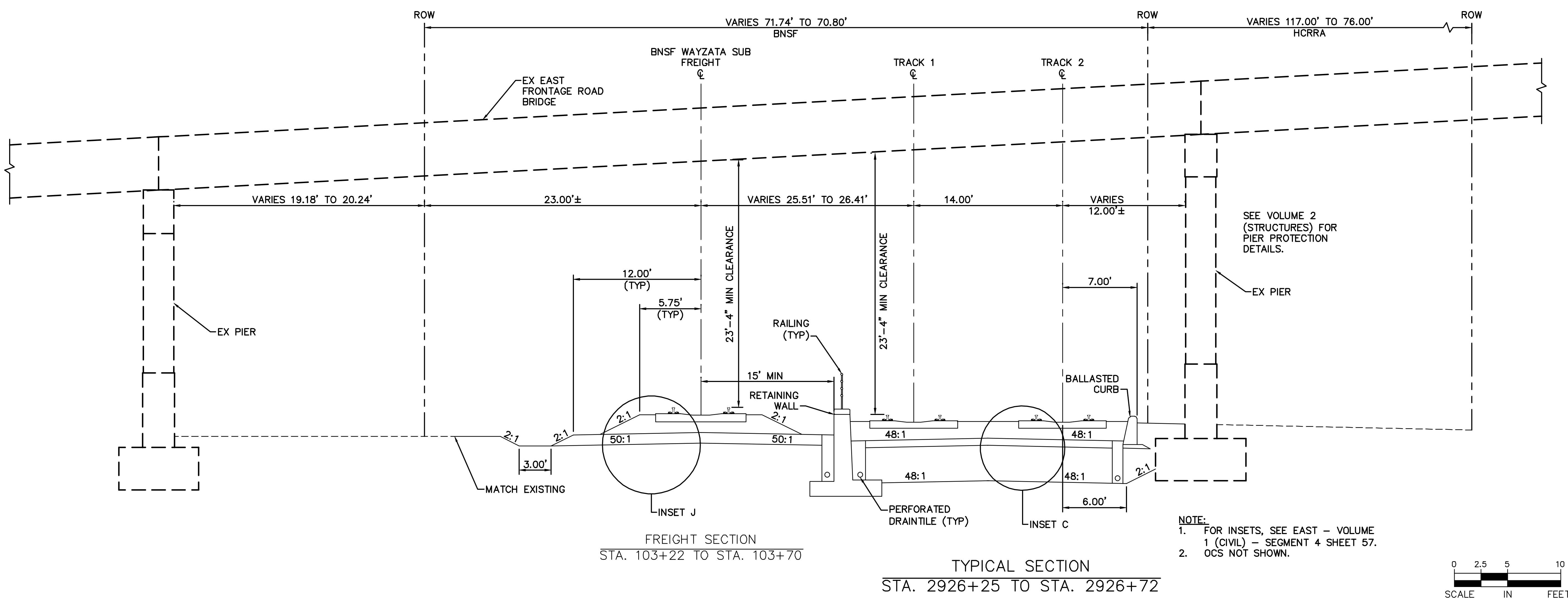
EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
TYPICAL SECTIONS

DISCIPLINE: TRACK

SHEET NAME: E4-TRK-TYP - 018



NOTE:
1. FOR INSETS, SEE EAST - VOLUME 1 (CIVIL) - SEGMENT 4 SHEET 57.
2. OCS NOT SHOWN.

Aug. 29 2014 07:58 am V:\3300_PEC-E\CAD\SEGMENT E4\PLAN SHEETS\TRACK\E4-TRK-TYP.dwg By: chris.bunders

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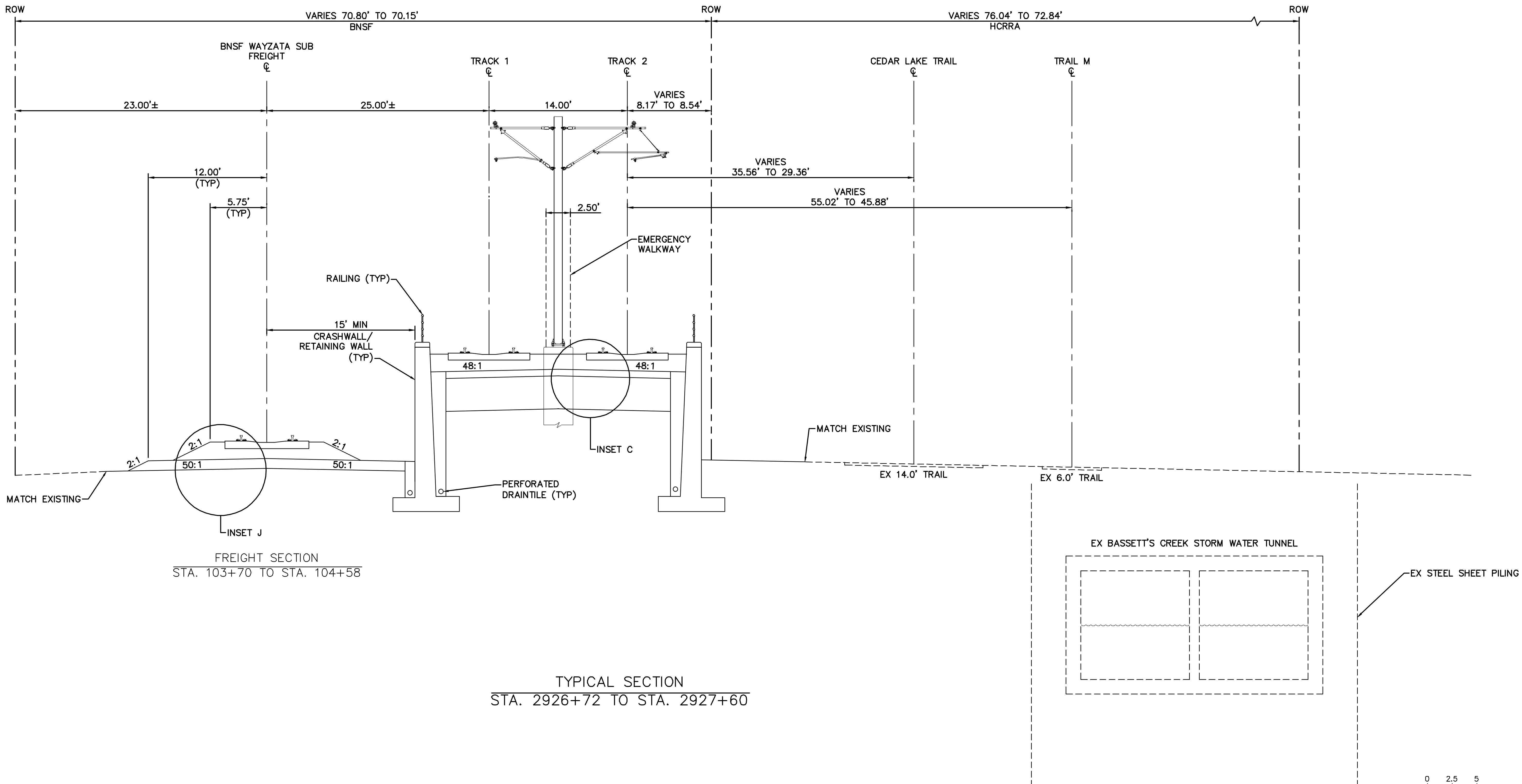
EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
TYPICAL SECTIONS

DISCIPLINE: TRACK

SHEET NAME: E4-TRK-TYP - 019



FREIGHT SECTION
STA. 103+70 TO STA. 104+58

TYPICAL SECTION
STA. 2926+72 TO STA. 2927+60

NOTE:
FOR INSETS, SEE EAST – VOLUME 1 (CIVIL) – SEGMENT 4 SHEET 57.

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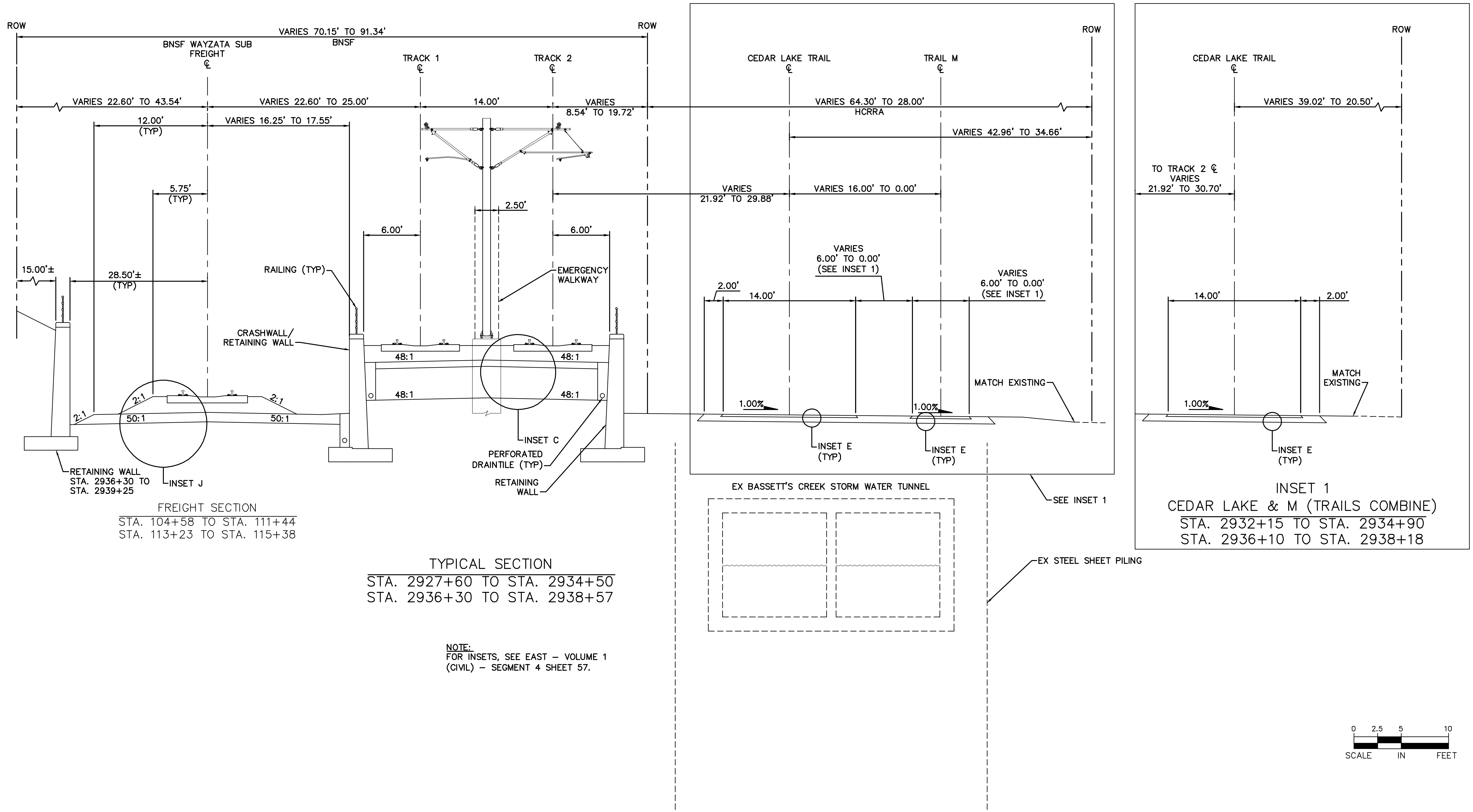
EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
TYPICAL SECTIONS

DISCIPLINE: **TRACK**

SHEET NAME: **E4-TRK-TYP - 020**



FREIGHT SECTION
STA. 104+58 TO STA. 111+44
STA. 113+23 TO STA. 115+38

TYPICAL SECTION
STA. 2927+60 TO STA. 2934+50
STA. 2936+30 TO STA. 2938+57

INSET 1
CEDAR LAKE & M (TRAILS COMBINE)
STA. 2932+15 TO STA. 2934+90
STA. 2936+10 TO STA. 2938+18

NOTE:
FOR INSETS, SEE EAST – VOLUME 1 (CIVIL) – SEGMENT 4 SHEET 57.

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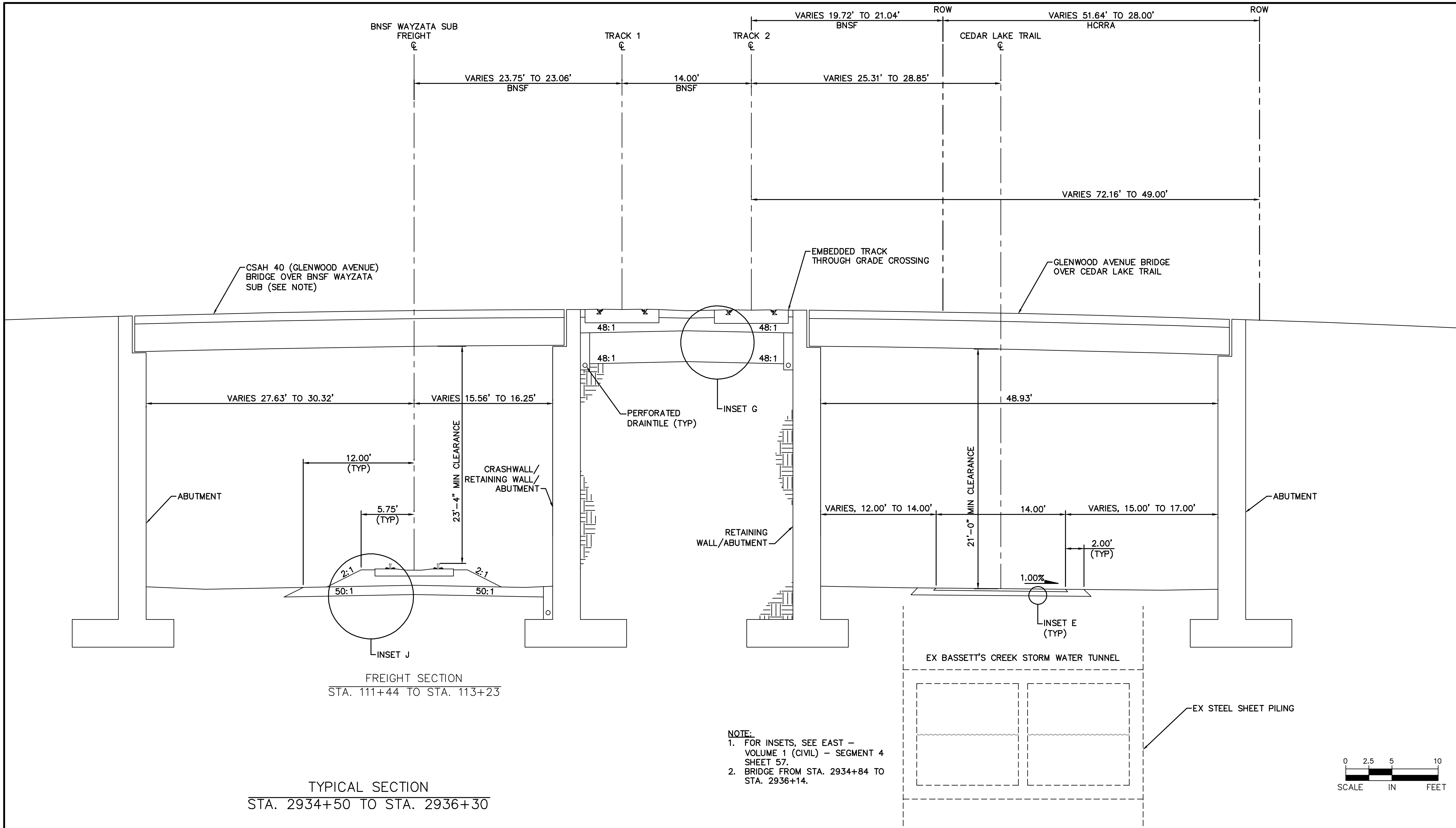
EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
TYPICAL SECTIONS

DISCIPLINE: TRACK

SHEET NAME: E4-TRK-TYP - 021



FREIGHT SECTION
STA. 111+44 TO STA. 113+23

TYPICAL SECTION
STA. 2934+50 TO STA. 2936+30

NOTE:
1. FOR INSETS, SEE EAST – VOLUME 1 (CIVIL) – SEGMENT 4 SHEET 57.
2. BRIDGE FROM STA. 2934+84 TO STA. 2936+14.

0 2.5 5 10
SCALE IN FEET

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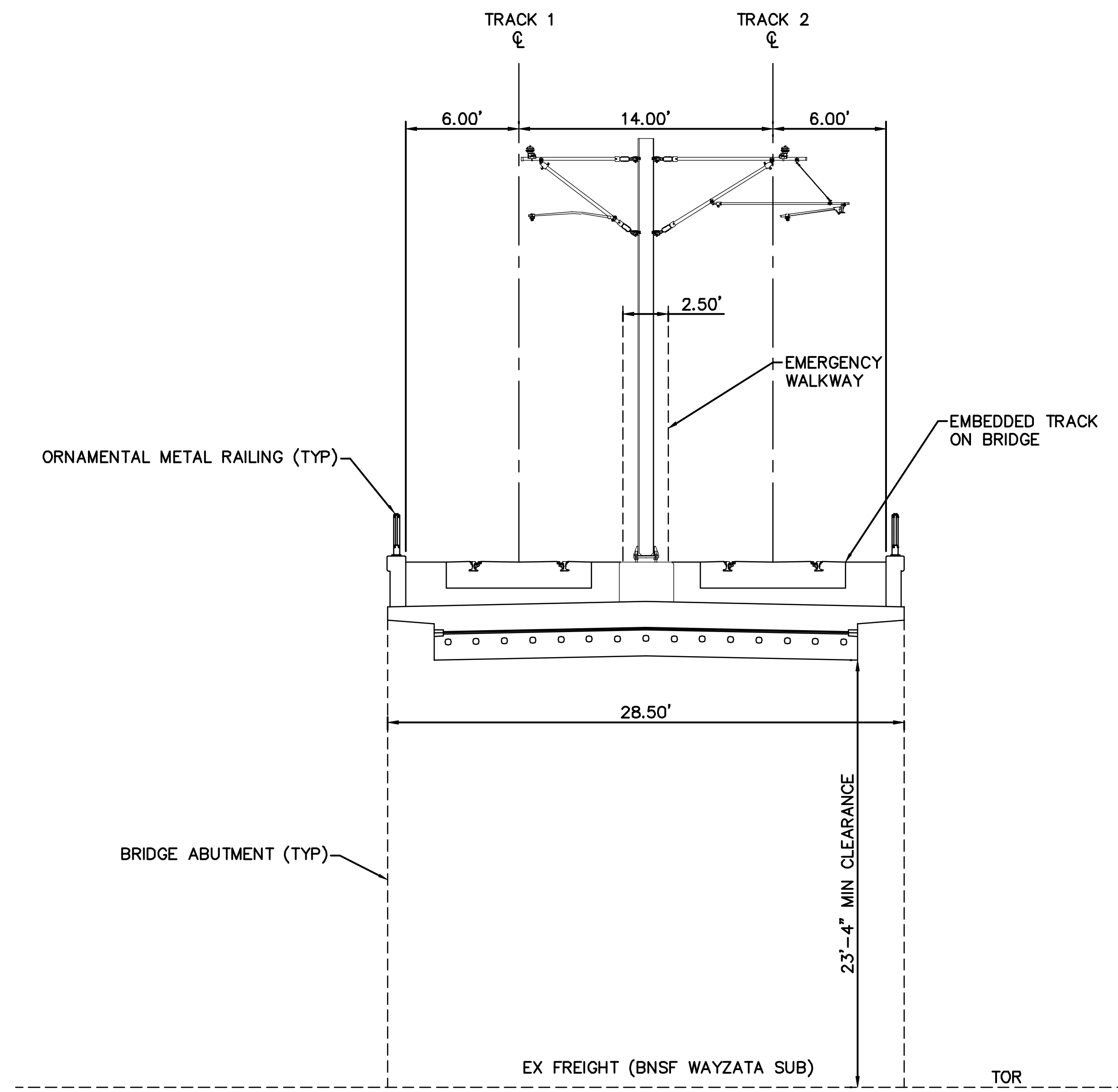
EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
TYPICAL SECTIONS

DISCIPLINE: TRACK

SHEET NAME: E4-TRK-TYP - 022

SHEET 48 OF 163



TYPICAL SECTION
STA. 2938+57 TO STA. 2939+60

0 2.5 5 10
SCALE IN FEET

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EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
TYPICAL SECTIONS

DISCIPLINE: TRACK

SHEET NAME: E4-TRK-TYP - 023

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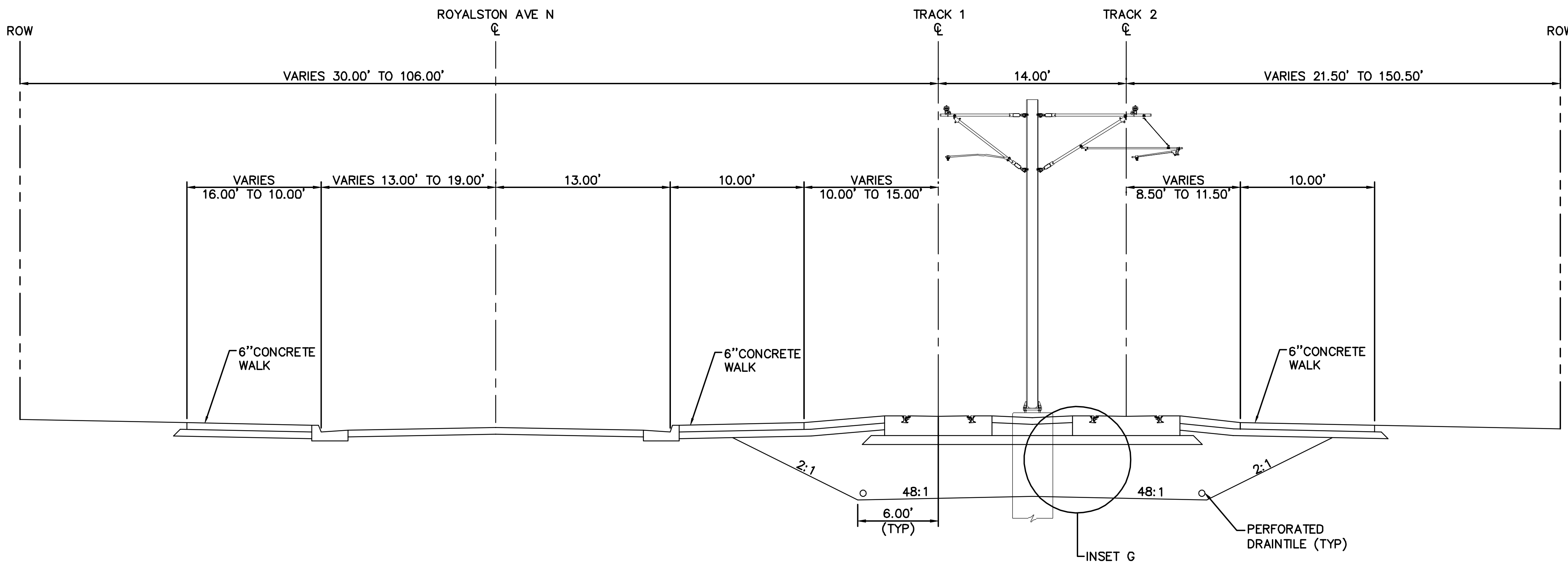

TYPICAL SECTION
STA. 2939+50 TO STA. 2944+26

NOTE:
1. FOR INSETS, SEE EAST – VOLUME 1 (CIVIL) – SEGMENT 4 SHEET 57.
2. STA. 2939+52 TO 2941+50 INCLUDES AT GRADE CROSSING THAT IS NOT DEPICTED.

0 2.5 5 10
SCALE IN FEET

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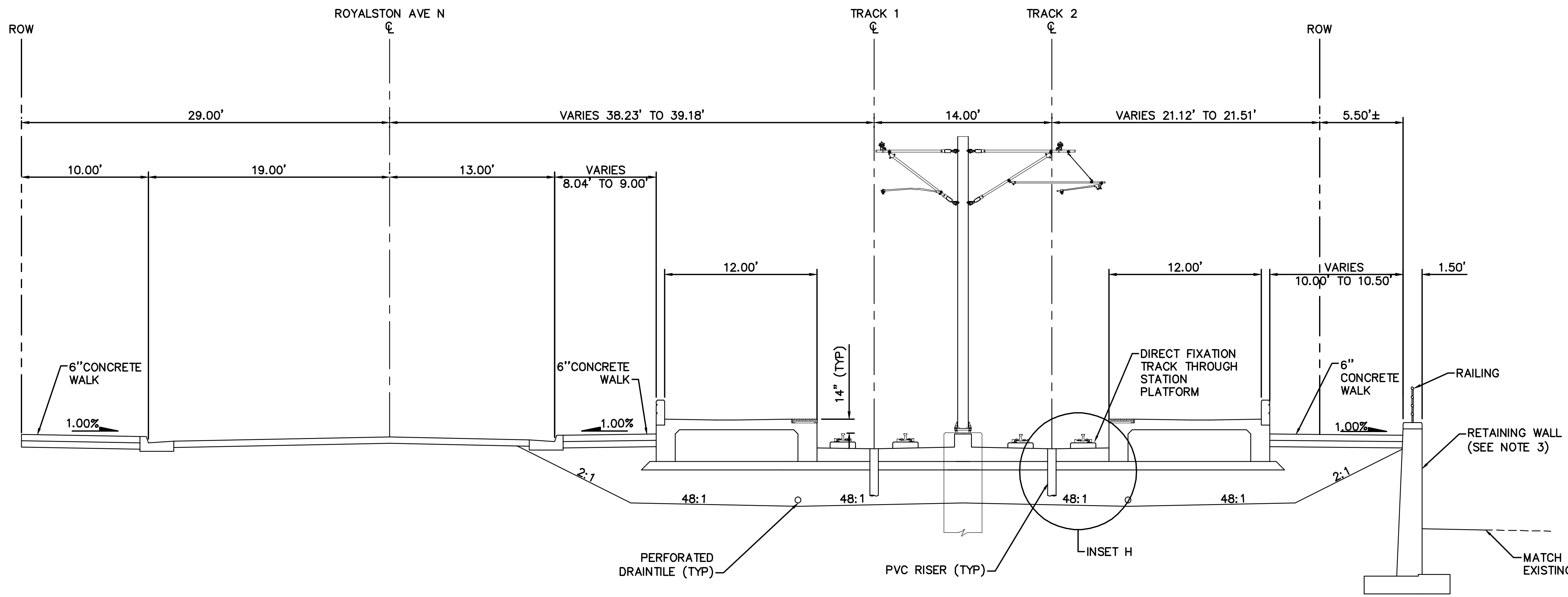
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
TYPICAL SECTIONS

DISCIPLINE: TRACK

SHEET NAME: E4-TRK-TYP - 024



TYPICAL SECTION – ROYALSTON STATION
STA. 2944+26 TO STA. 2946+96

NOTE:
1. USE INSET G (EMBEDDED TRACK) WHERE LIGHT RAIL TRACKS CROSS ROYALSTON AVENUE.
2. FOR INSETS, SEE EAST – VOLUME 1 (CIVIL) – SEGMENT 4 SHEET 57.
3. RETAINING WALL STARTS AT STA. 2945+34.

0 2.5 5 10
SCALE IN FEET

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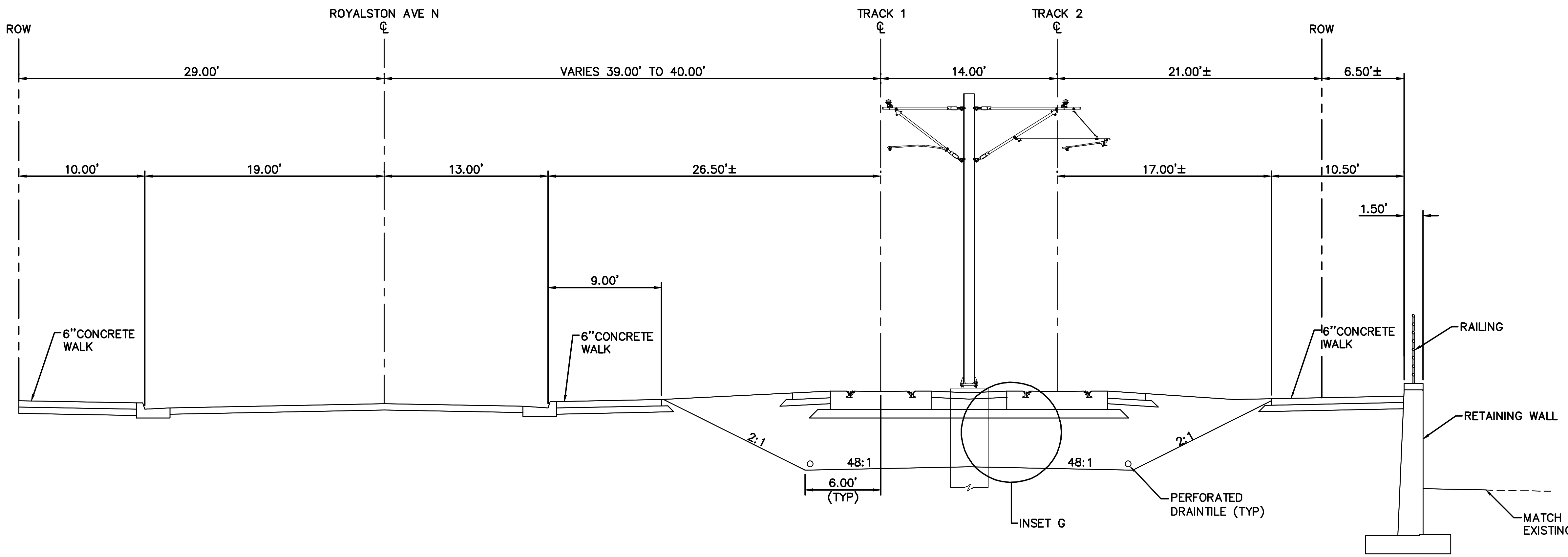
EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
TYPICAL SECTIONS

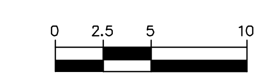
DISCIPLINE: TRACK

SHEET NAME: E4-TRK-TYP - 025



TYPICAL SECTION
STA. 2946+96 TO STA. 2948+00

NOTE:
FOR INSETS, SEE EAST – VOLUME 1 (CIVIL) – SEGMENT 4 SHEET 57.



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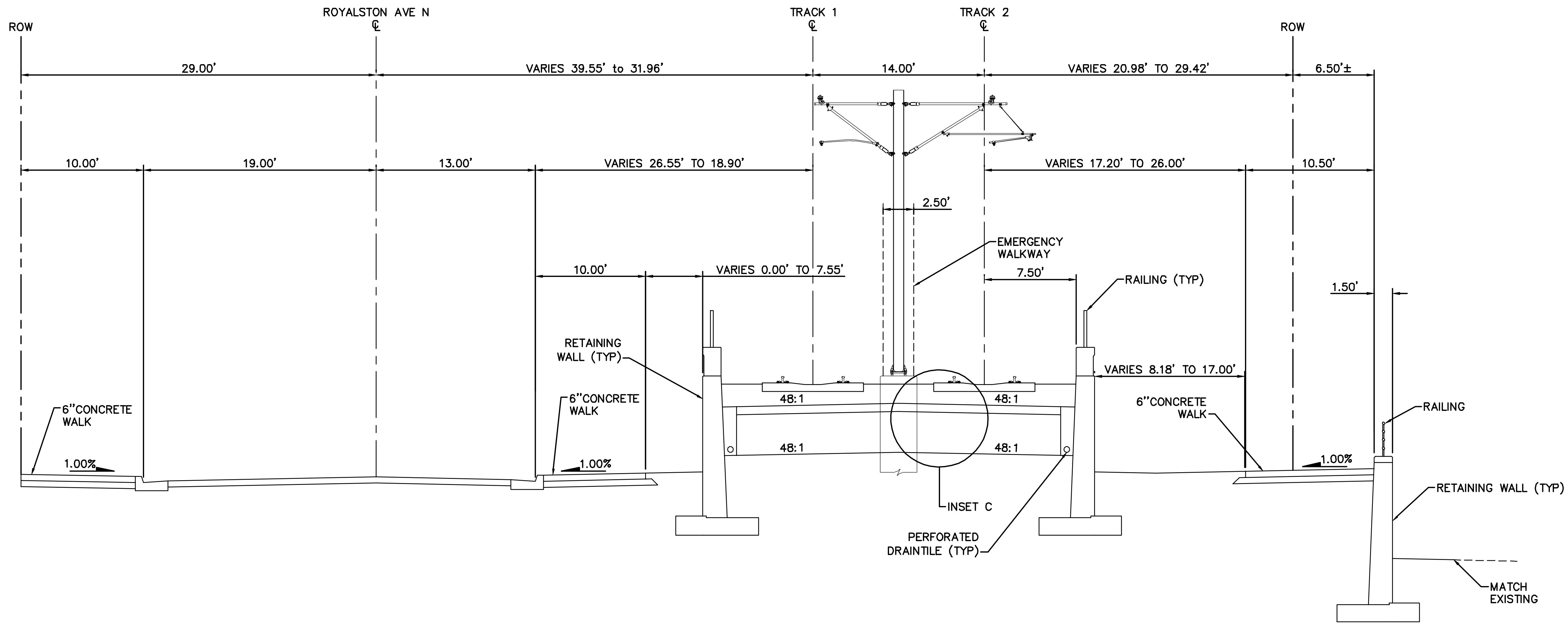
EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
TYPICAL SECTIONS

DISCIPLINE: TRACK

SHEET NAME: E4-TRK-TYP - 026

SHEET 52 OF 163



TYPICAL SECTION
STA. 2948+00 TO STA. 2950+61

NOTE:
FOR INSETS, SEE EAST – VOLUME 1 (CIVIL) – SEGMENT 4 SHEET 57.

0 2.5 5 10
SCALE IN FEET

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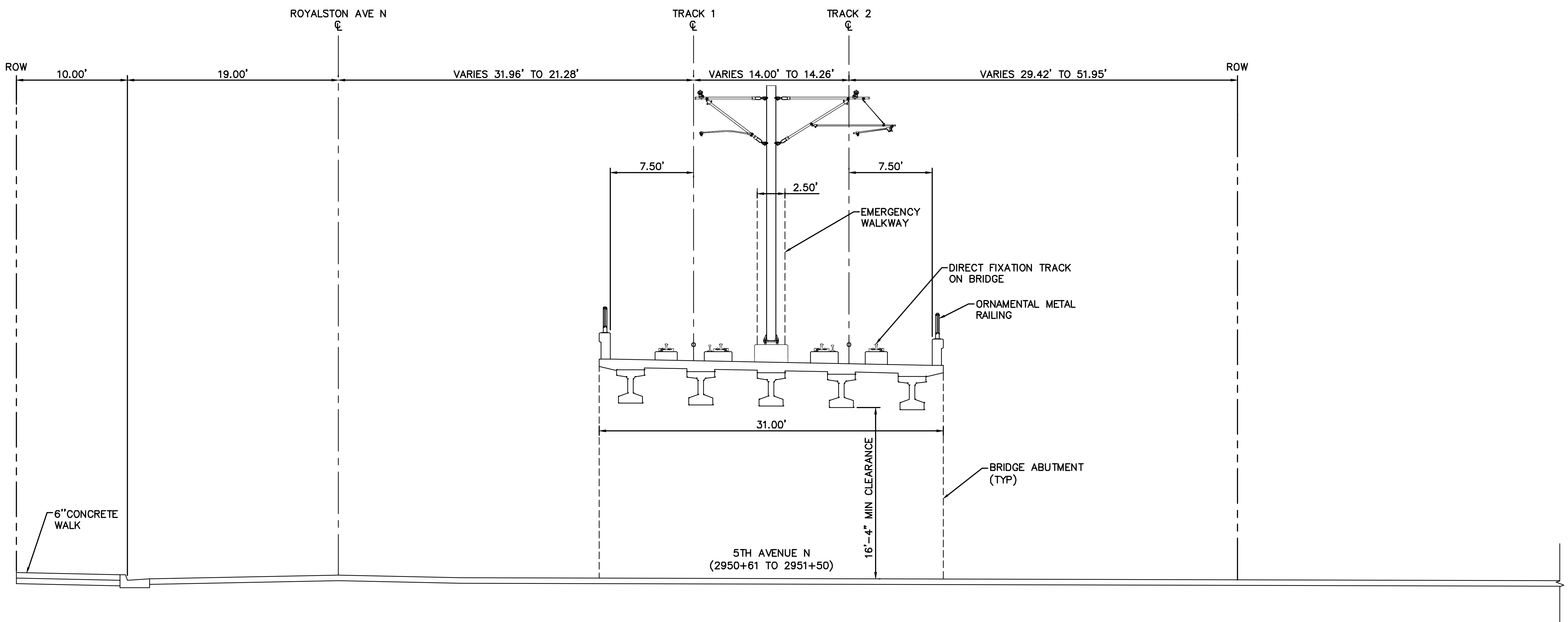
EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
TYPICAL SECTIONS

DISCIPLINE: TRACK

SHEET NAME: E4-TRK-TYP - 027



TYPICAL SECTION
STA. 2950+61 TO STA. 2951+50

0 2.5 5 10
SCALE IN FEET

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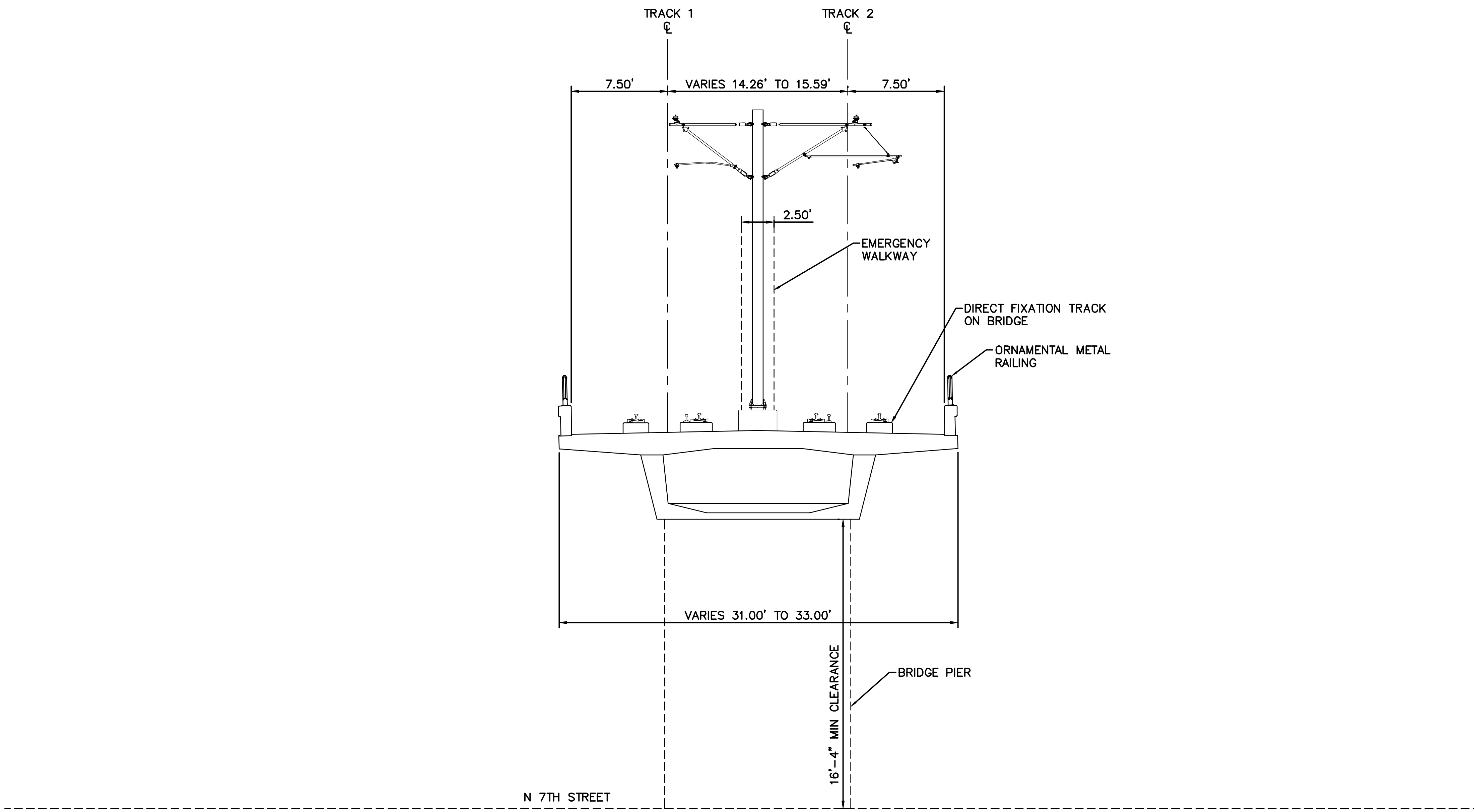
EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
TYPICAL SECTIONS

DISCIPLINE: TRACK

SHEET NAME: E4-TRK-TYP - 028



TYPICAL SECTION
STA. 2951+50 TO STA. 2957+50

0 2.5 5 10
SCALE IN FEET

Aug. 29 2014 08:00 am V:\3300_PEC-E\CAD\SEGMENT E4\PLAN SHEETS\TRACK\E4-TRK-TYP.dwg By: chris.bunders

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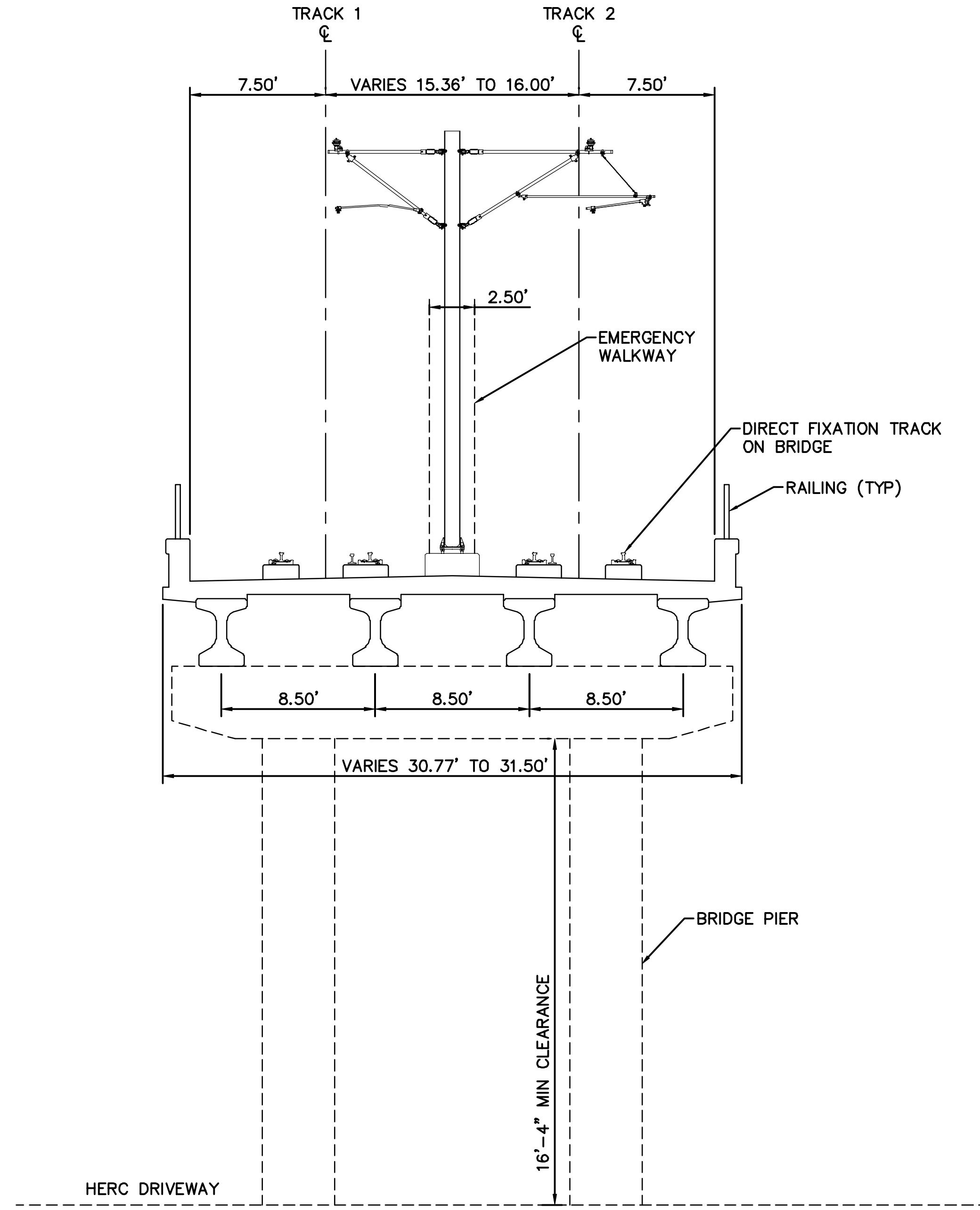
EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
TYPICAL SECTIONS

DISCIPLINE: TRACK

SHEET NAME: E4-TRK-TYP - 029



TYPICAL SECTION
STA. 2957+50 TO STA. 2961+63

0 2.5 5 10
SCALE IN FEET

Aug. 29 2014 08:00 am V:\3300_PEC-E\CAD\SEGMENT E4\PLAN SHEETS\TRACK\E4-TRK-TYP.dwg By: chris.bunders

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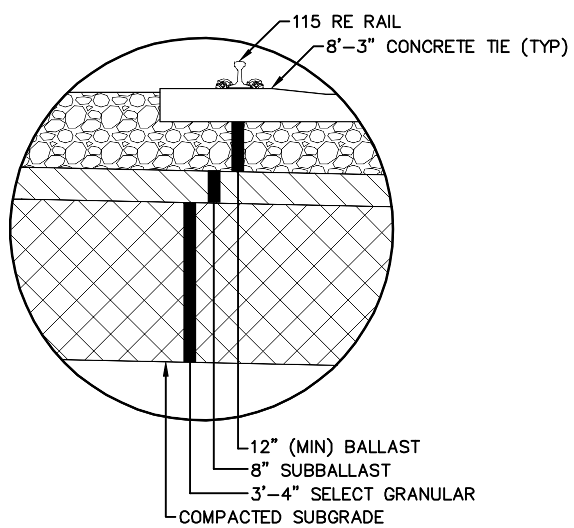
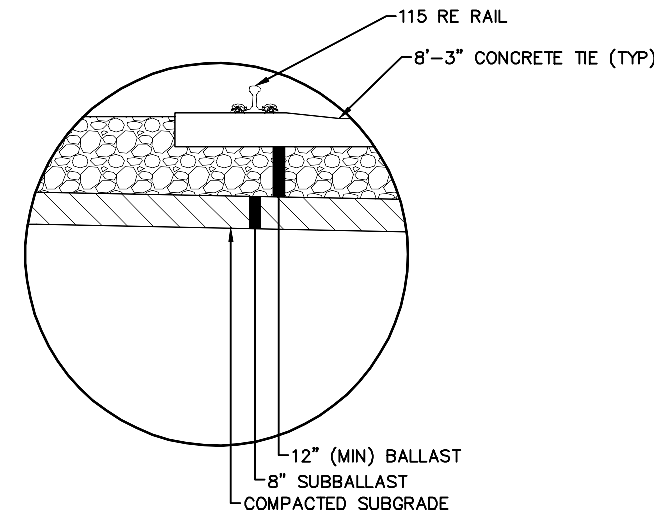
EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
TYPICAL SECTIONS

DISCIPLINE: TRACK

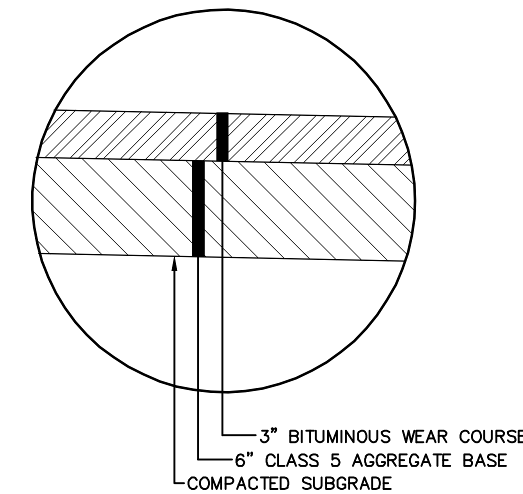
SHEET NAME: E4-TRK-TYP - 030



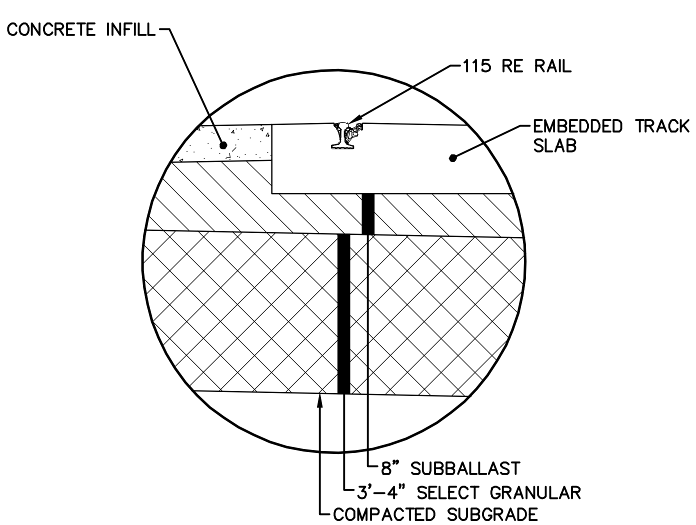
INSET C – TYPICAL BALLASTED TRACK



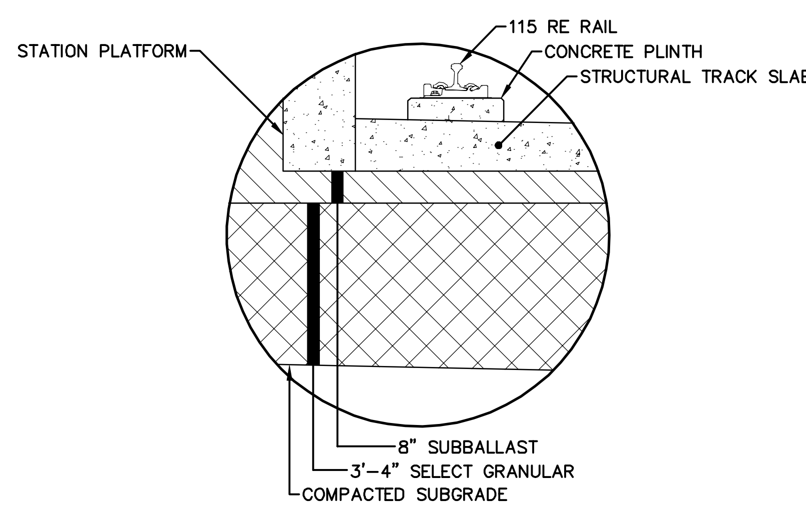
INSET D – TYPICAL LRT BALLASTED TRACK ON EXISTING SUBGRADE



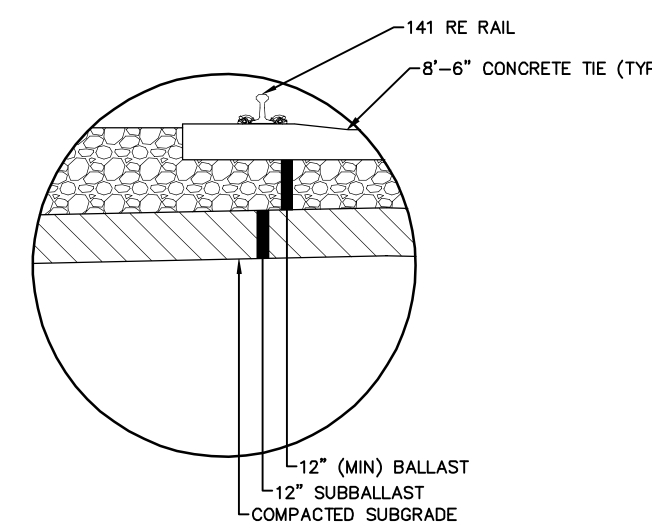
INSET E – TYPICAL TRAIL



INSET G – TYPICAL EMBEDDED TRACK



INSET H – TYPICAL DIRECT FIXATION INTERFACE AT STATION PLATFORM



INSET J – TYPICAL FREIGHT BALLASTED TRACK ON EXISTING SUBGRADE

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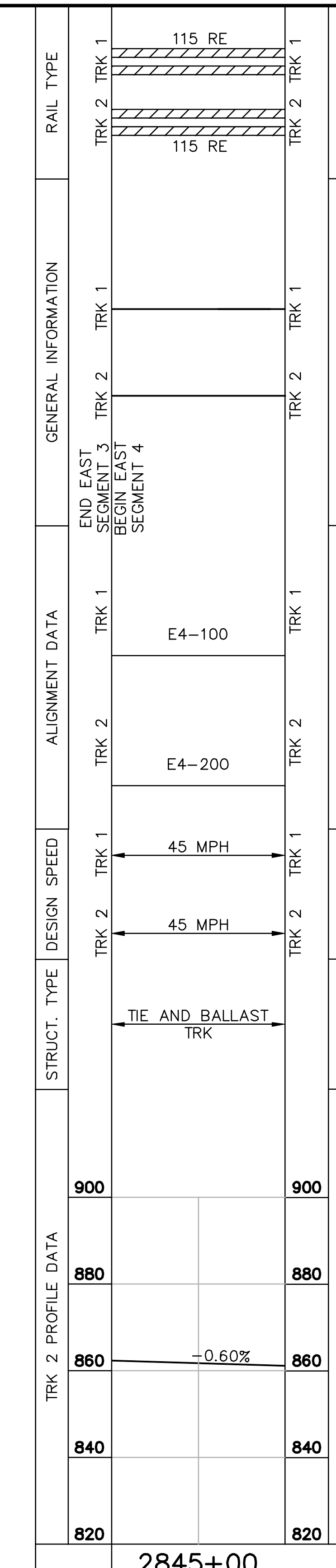
METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
INSETS

DISCIPLINE: **TRACK**

SHEET NAME: **E4-TRK-TYP - 031**



NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

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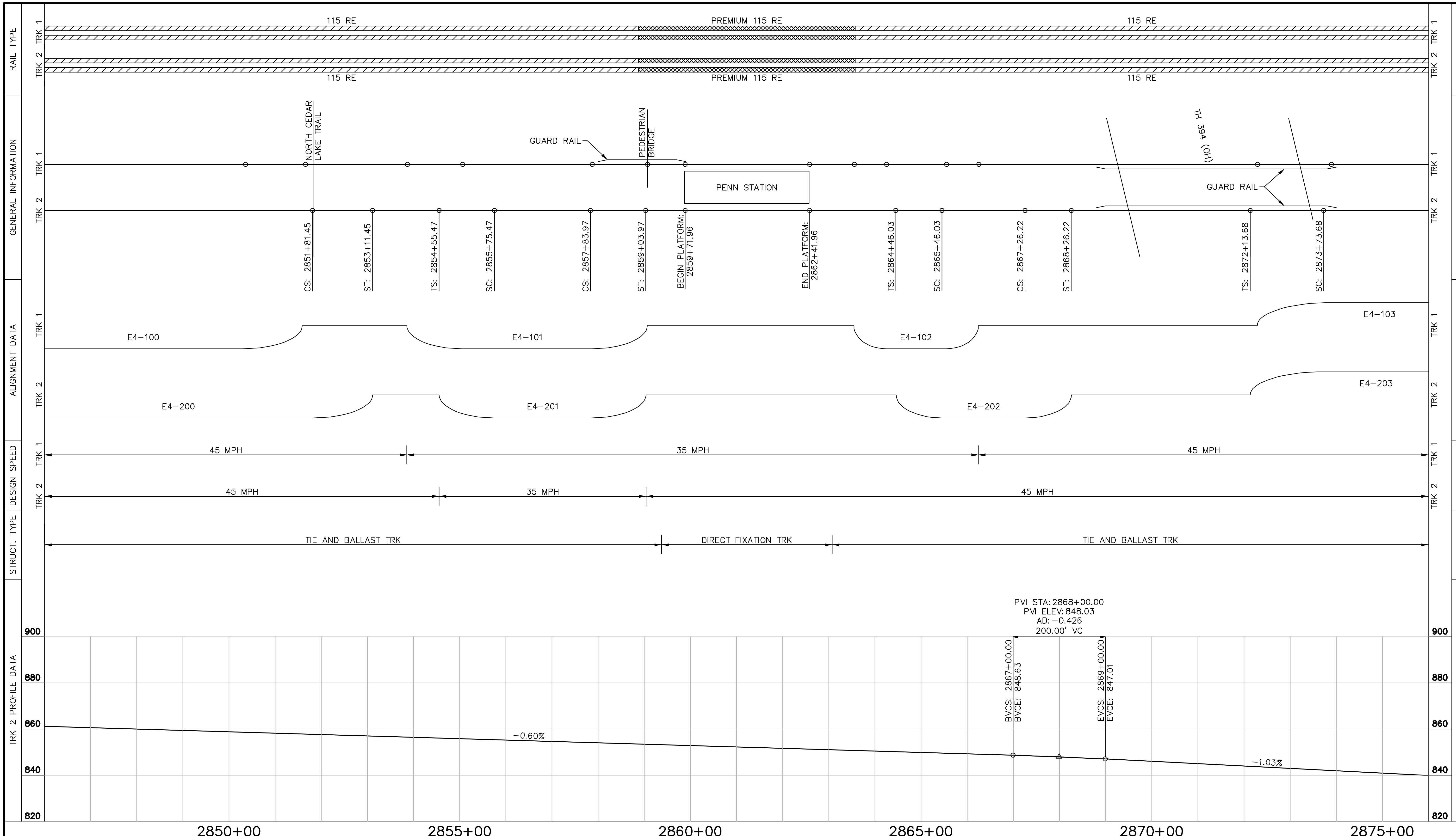
PRELIMINARY ENGINEERING

METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK CHARTS
STA. 2844+00 TO STA. 2846+00

DISCIPLINE: TRACK
SHEET NAME: E4-TRK-CHART-001



Aug. 29 2014 08:01 am V:\3300_PEC-E\CAD\SEGMENT E4\PLAN SHEETS\TRACK\E4-TRK-CHART.dwg By: chris.bunders

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PRELIMINARY ENGINEERING

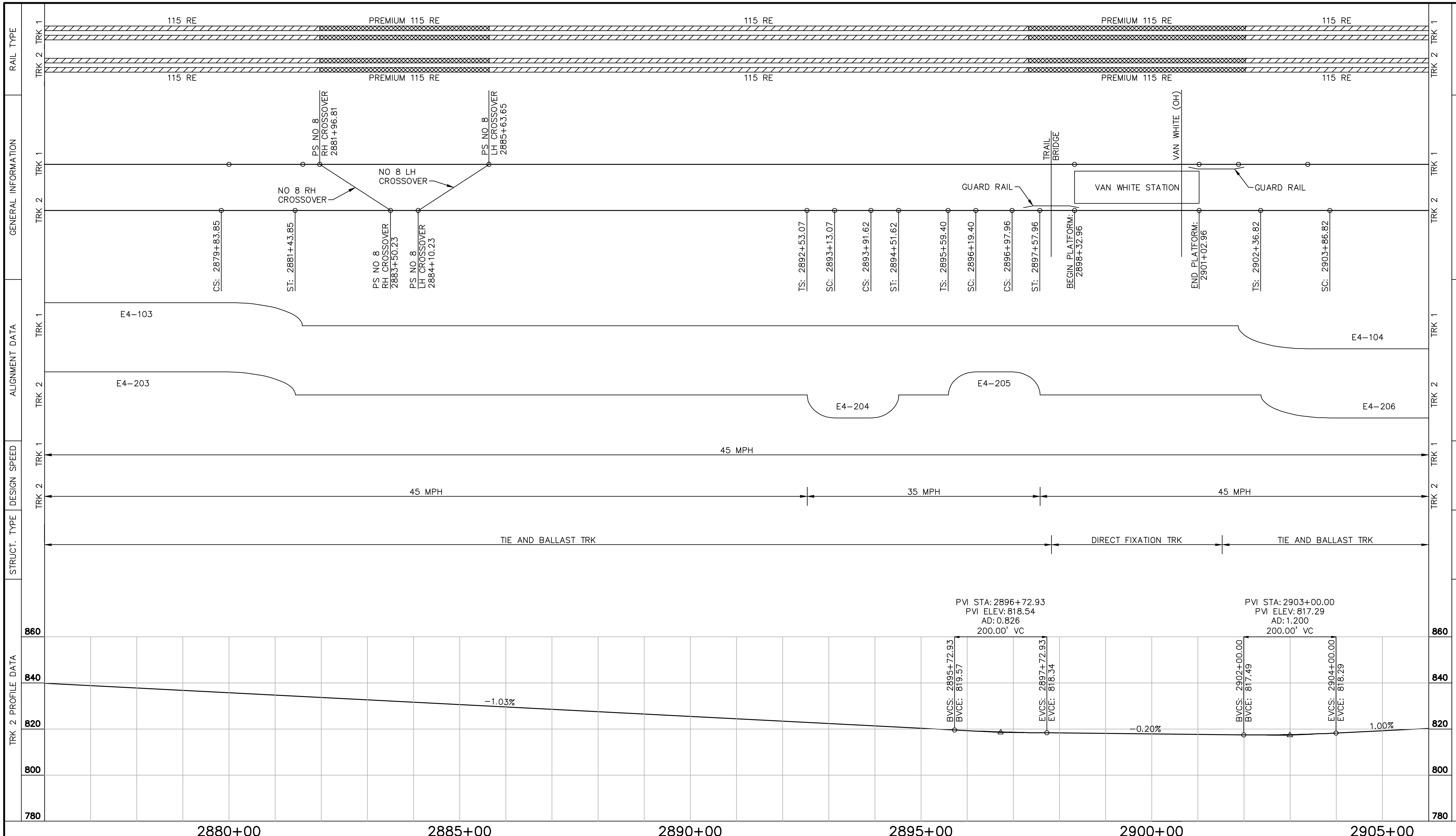
METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK CHARTS
STA. 2846+00 TO STA. 2876+00

DISCIPLINE: TRACK

SHEET NAME: E4-TRK-CHART-002



Aug. 29 2014 08:01 am V:\3300_PEC-E\CAD\SEGMENT E4\PLAN SHEETS\TRACK\E4-TRK-CHART.dwg By: chris.bunders

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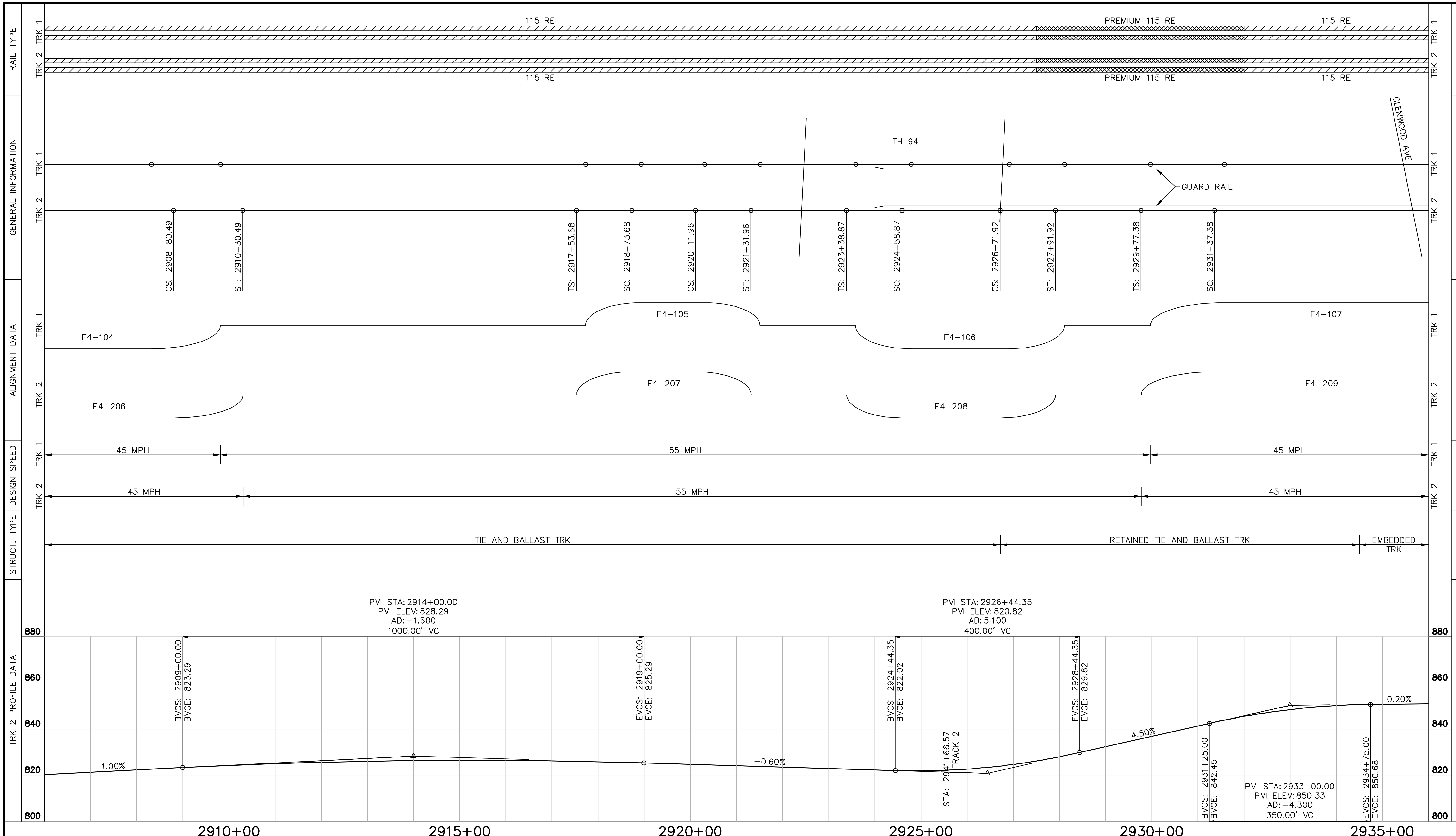
METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK CHARTS
STA. 2876+00 TO STA. 2906+00

DISCIPLINE: TRACK

SHEET NAME: E4-TRK-CHART-003



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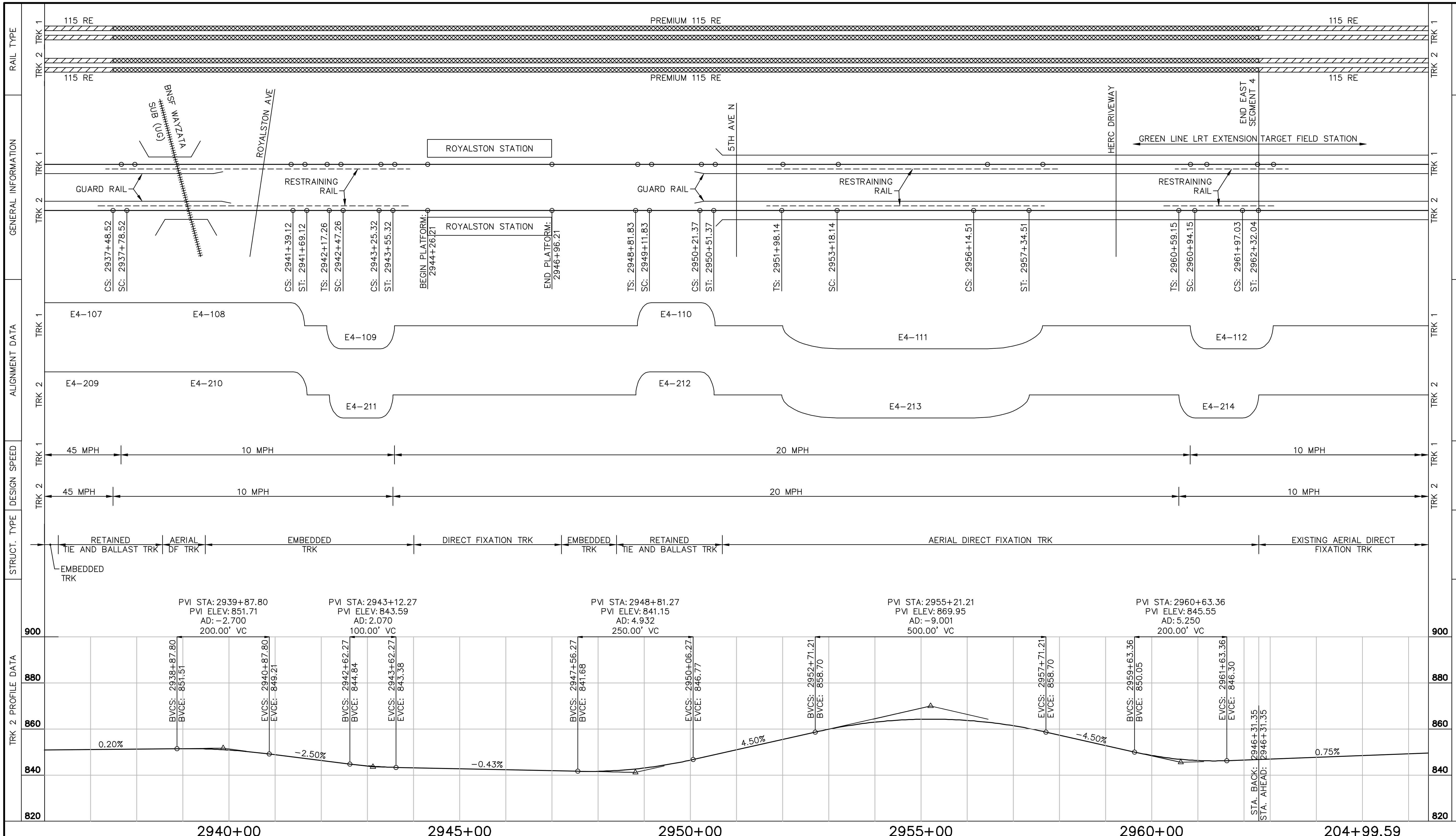
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK CHARTS
STA. 2906+00 TO STA. 2936+00

DISCIPLINE: TRACK
SHEET NAME: E4-TRK-CHART-004



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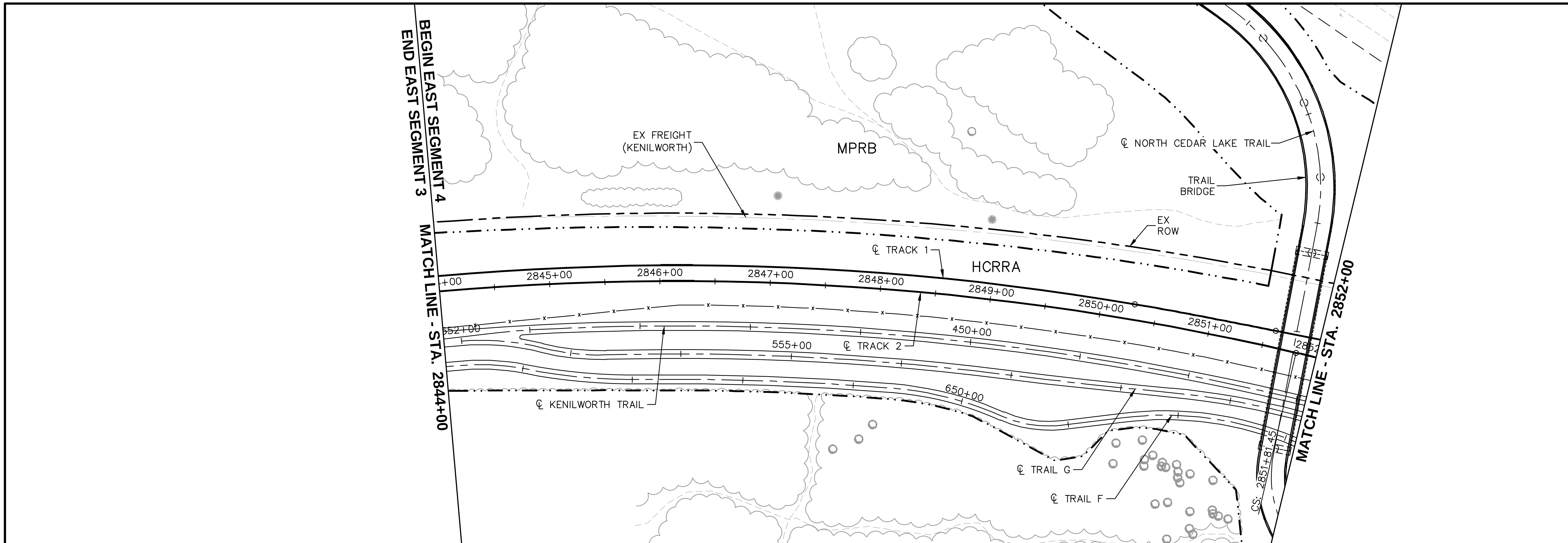
METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK CHARTS
STA. 2936+00 TO STA. 2962+32.03

DISCIPLINE: TRACK

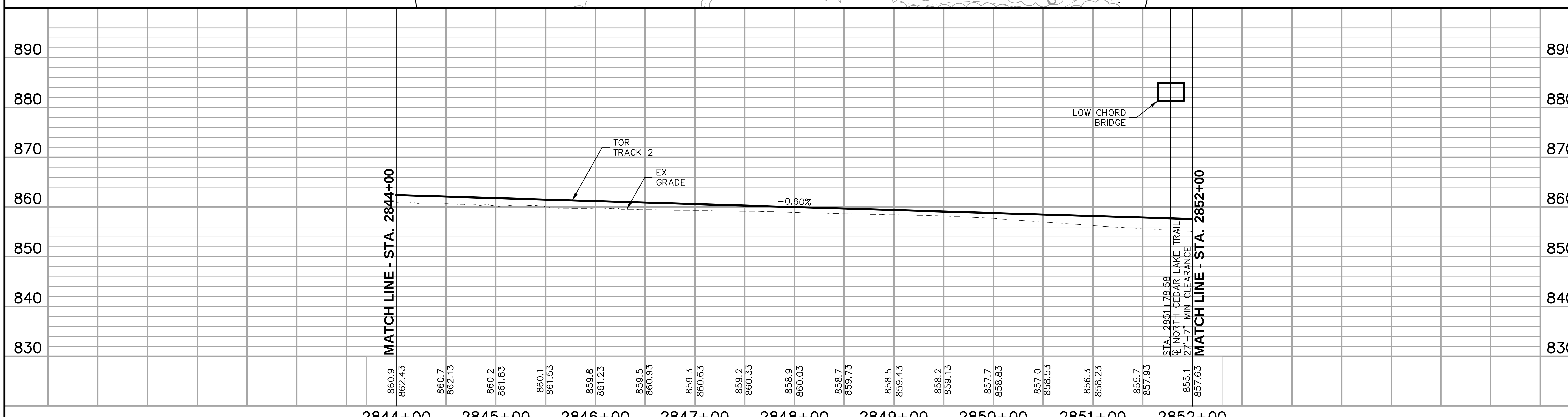
SHEET NAME: E4-TRK-CHART-005



CURVE NO. E4–100
R = 2,460.00'
Lc = 747.13'
Ls = 130.00'
Ea = 1.50"
Eu = 1.76"
V = 45 MPH

CURVE NO. E4–200
R = 2,460.00'
Lc = 897.40'
Ls = 130.00'
Ea = 1.50"
Eu = 1.76"
V = 45 MPH

0 5 10 20
VERTICAL
0 25 50 100
HORIZONTAL
SCALE IN FEET



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METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
PLAN AND PROFILE
STA. 2844+00 TO STA. 2852+00

DISCIPLINE: TRACK
SHEET NAME: E4-TRK-PPFL-001

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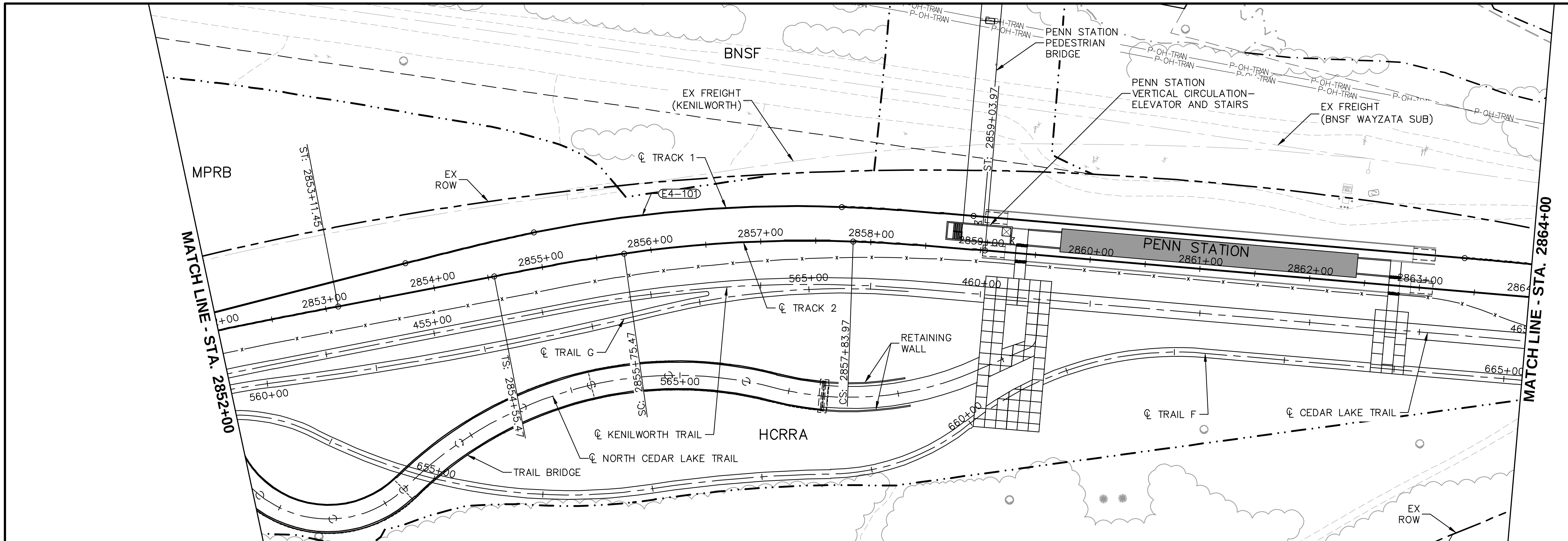
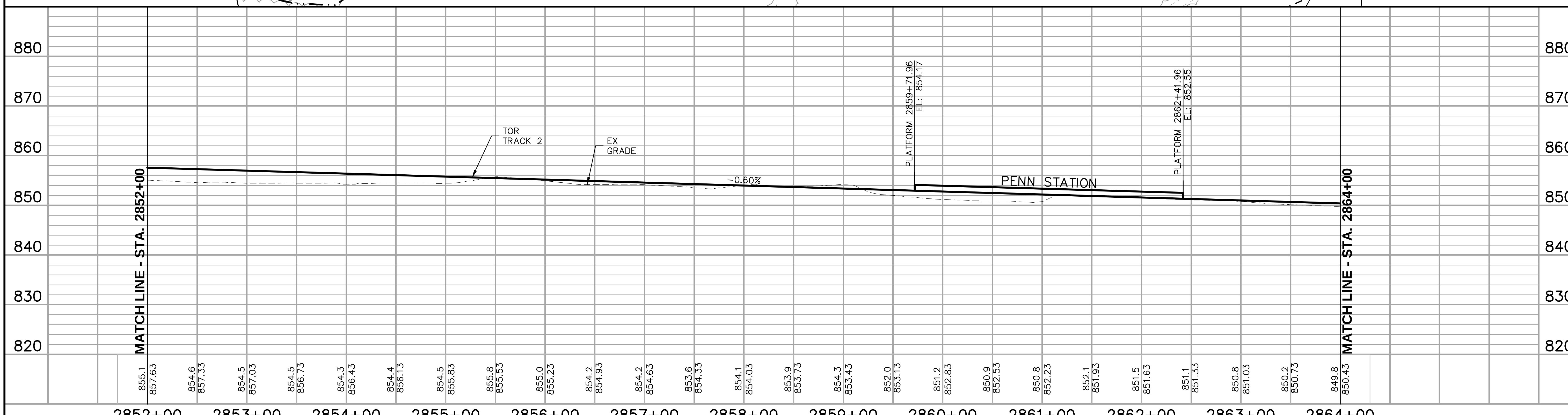


CURVE NO. E4–101
R = 1,190.00'
Lc = 281.20'
Ls = 120.00'
Ea = 2.00"
Eu = 2.08"
V = 35 MPH

CURVE NO. E4–201
R = 1,190.00'
Lc = 208.50'
Ls = 120.00'
Ea = 2.00"
Eu = 2.08"
V = 35 MPH



Aug. 29 2014 08:03 am V:\3300_PEC-E\CAD\SEGMENT E4\PLAN SHEETS\TRACK\E4-TRK-PPFL.dwg By: chris.bunders

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METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
PLAN AND PROFILE
STA. 2852+00 TO STA. 2864+00

DISCIPLINE: TRACK

SHEET NAME: E4-TRK-PPFL-002

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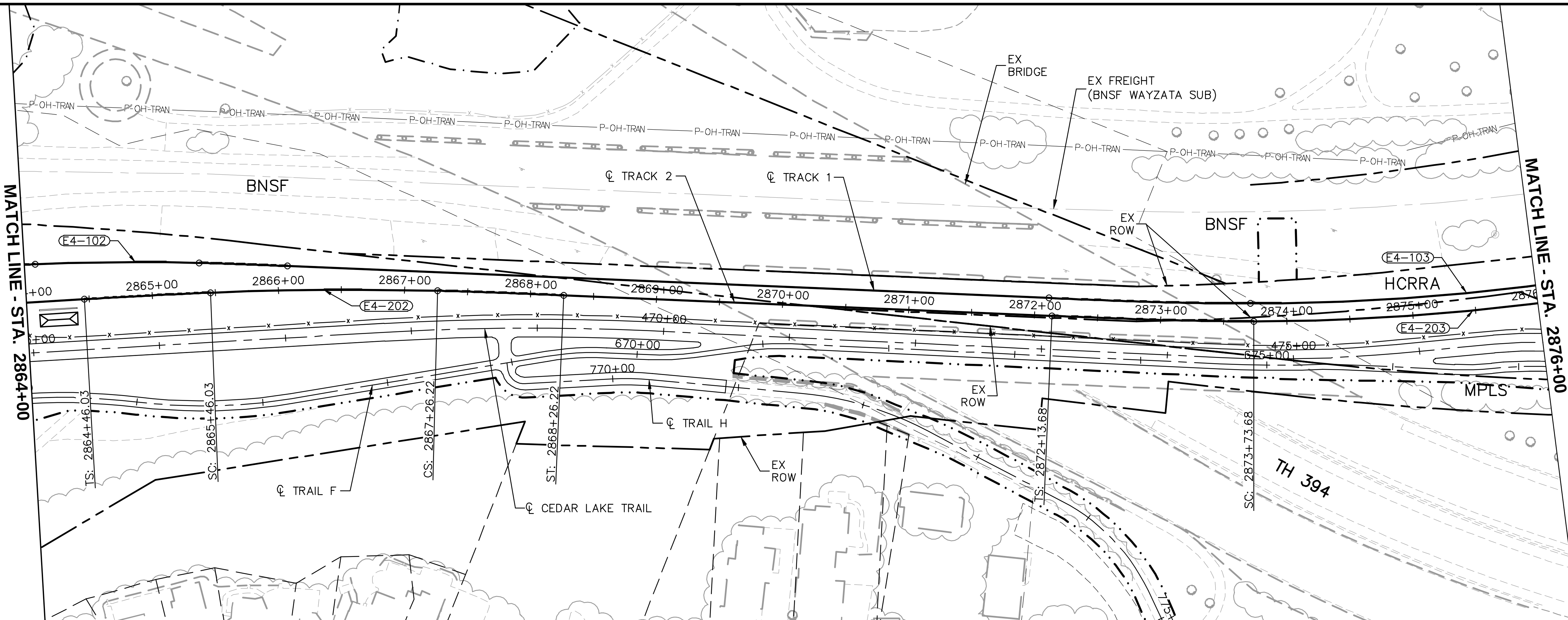
CURVE NO. E4–102
R = 2,000.00'
Lc = 130.14'
Ls = 70.00'
Ea = 1.25"
Eu = 1.18"
V = 35 MPH

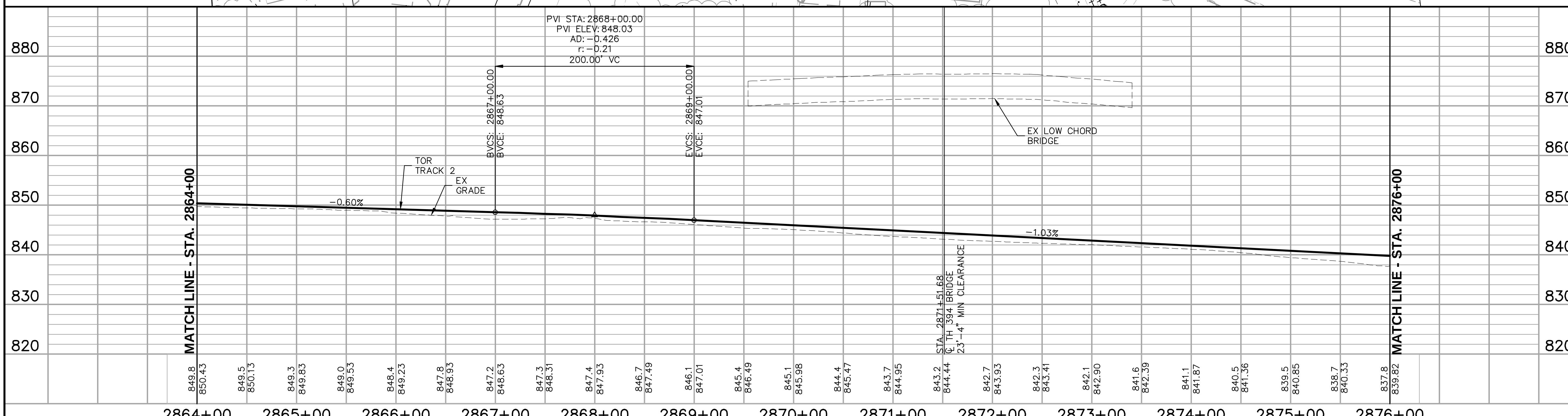
CURVE NO. E4–202
R = 2,800.00'
Lc = 180.19'
Ls = 100.00'
Ea = 1.50"
Eu = 1.36"
V = 45 MPH



CURVE NO. E4–103
R = 1,830.00'
Lc = 610.17'
Ls = 160.00'
Ea = 2.25"
Eu = 2.13"
V = 45 MPH

CURVE NO. E4–203
R = 1,830.00'
Lc = 610.17'
Ls = 160.00'
Ea = 2.25"
Eu = 2.13"
V = 45 MPH

0 5 10 20
VERTICAL
0 25 50 100
HORIZONTAL
SCALE IN FEET



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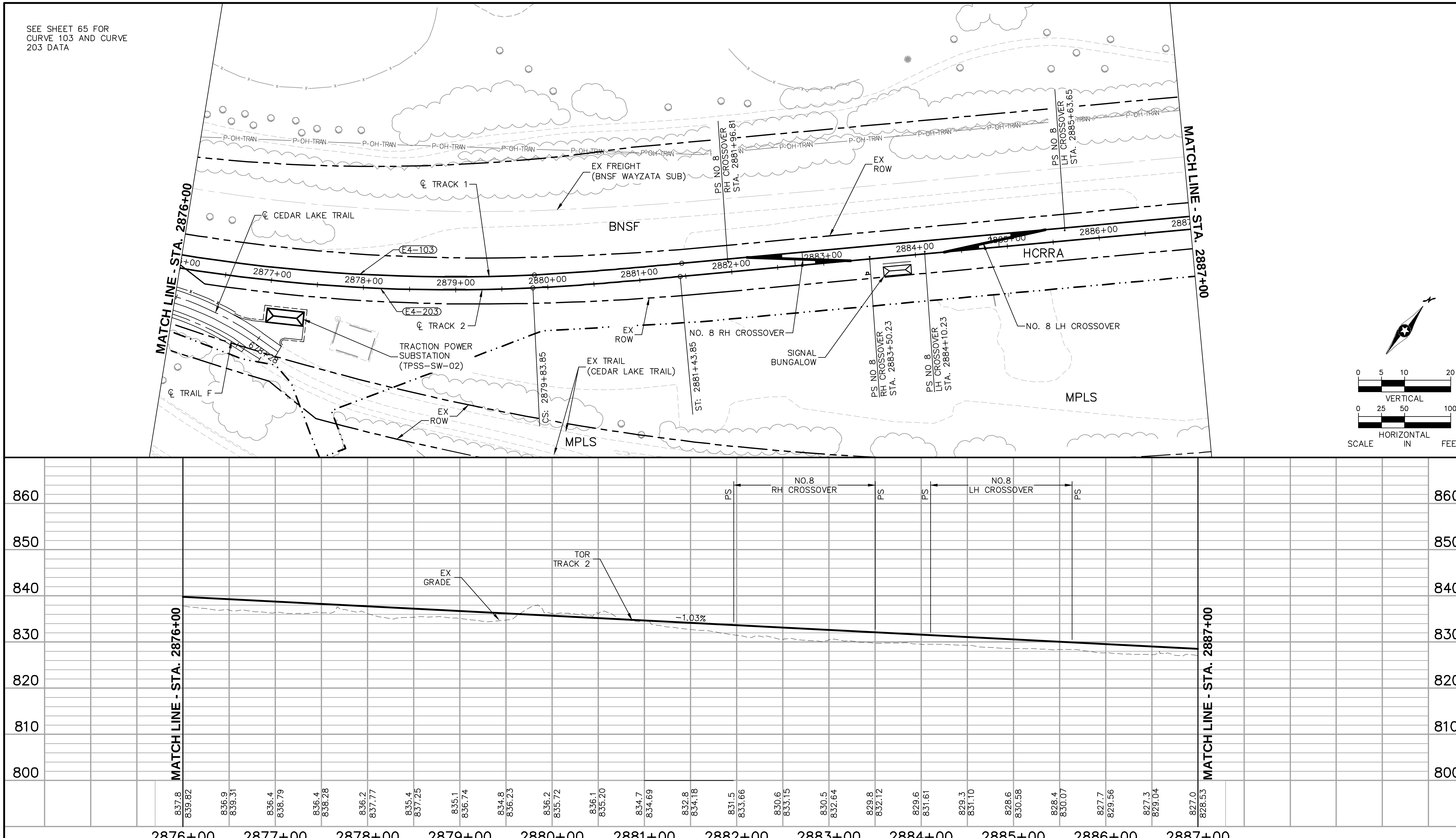
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
PLAN AND PROFILE
STA. 2864+00 TO STA. 2876+00

DISCIPLINE: TRACK
SHEET NAME: E4-TRK-PPFL-003



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PRELIMINARY ENGINEERING

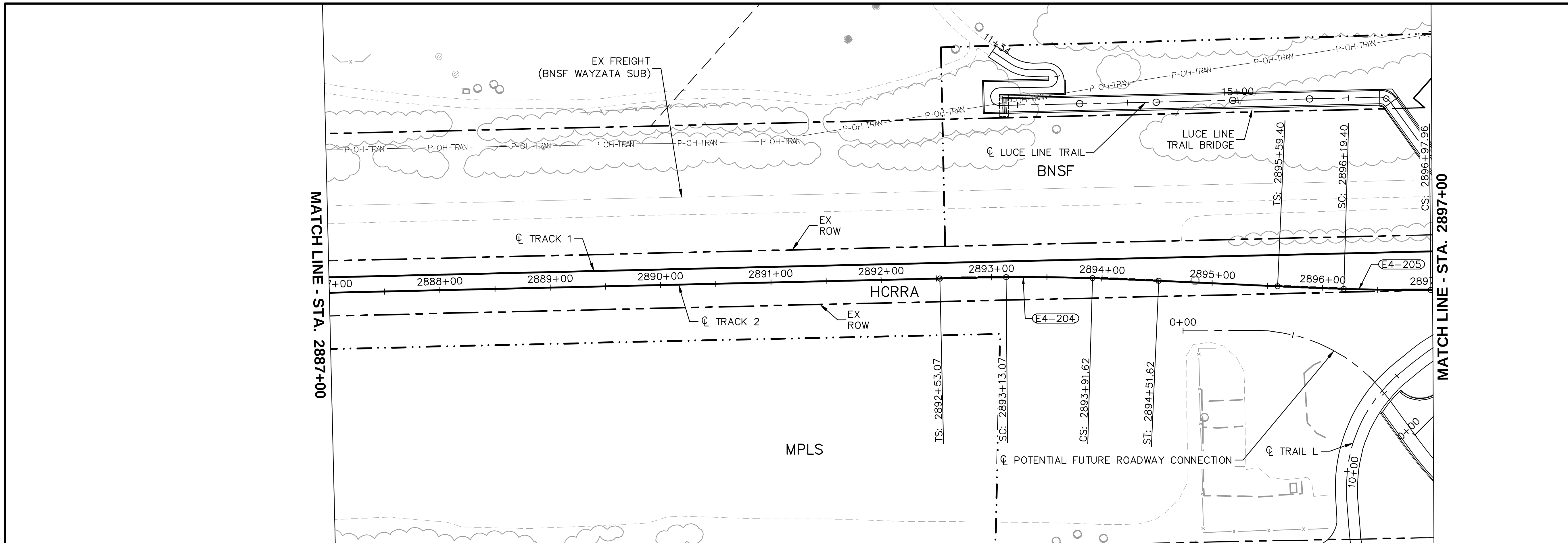
METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
PLAN AND PROFILE
STA. 2876+00 TO STA. 2887+00

DISCIPLINE: TRACK

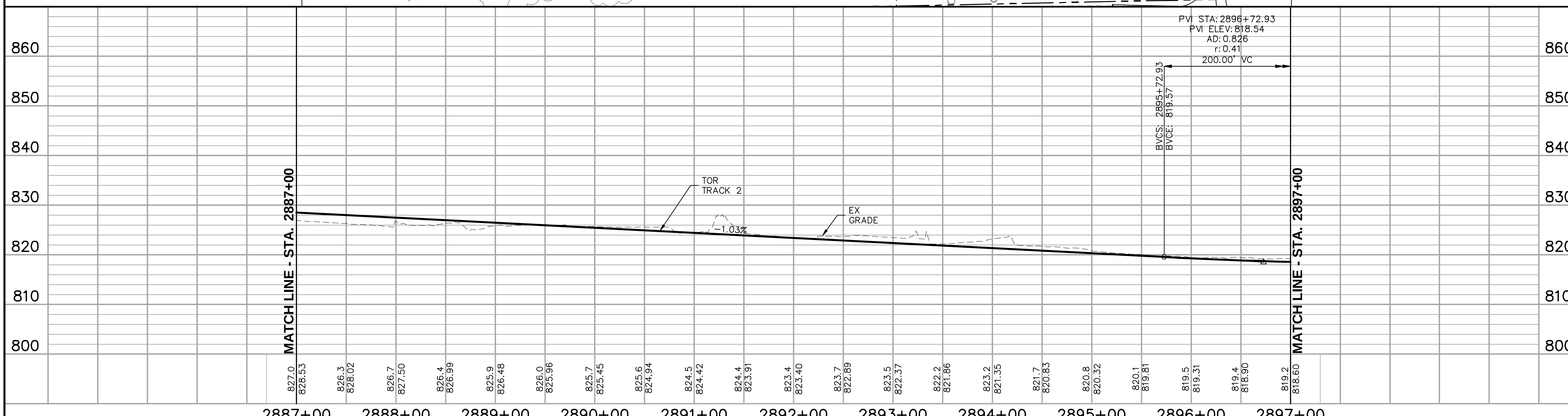
SHEET NAME: E4-TRK-PPFL-004



CURVE NO. E4-204
R = 2,020.00'
Lc = 78.56'
Ls = 60.00'
Ea = 1.00"
Eu = 1.40"
V = 35 MPH

CURVE NO. E4-205
R = 2,020.00'
Lc = 78.56'
Ls = 60.00'
Ea = 1.00"
Eu = 1.40"
V = 35 MPH

0 5 10 20
VERTICAL
0 25 50 100
HORIZONTAL
SCALE IN FEET



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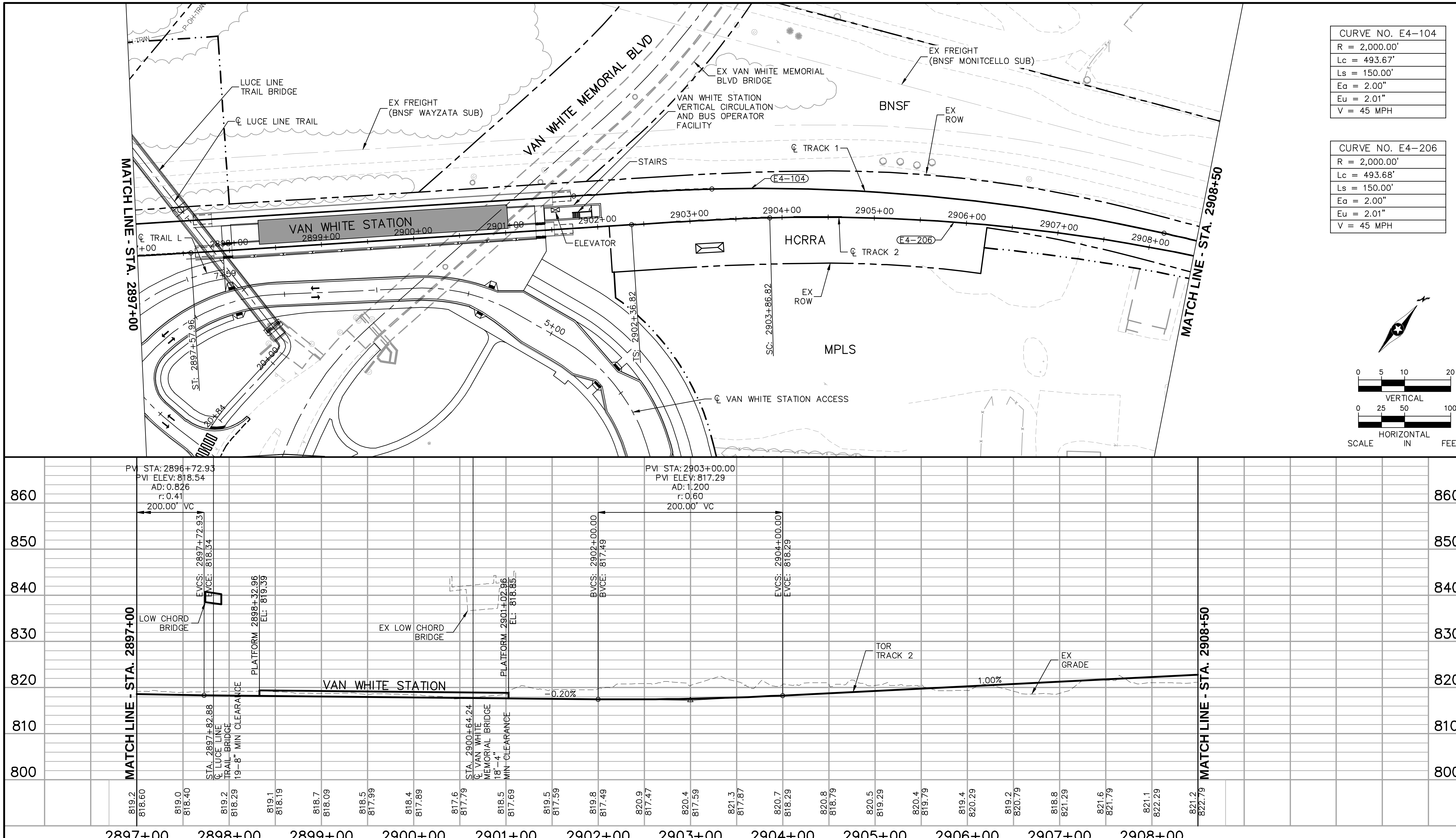
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
PLAN AND PROFILE
STA. 2887+00 TO STA. 2897+00

DISCIPLINE: TRACK
SHEET NAME: E4-TRK-PPFL-005



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METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
PLAN AND PROFILE
STA. 2897+00 TO STA. 2908+50

DISCIPLINE: TRACK

SHEET NAME: E4-TRK-PPFL-006

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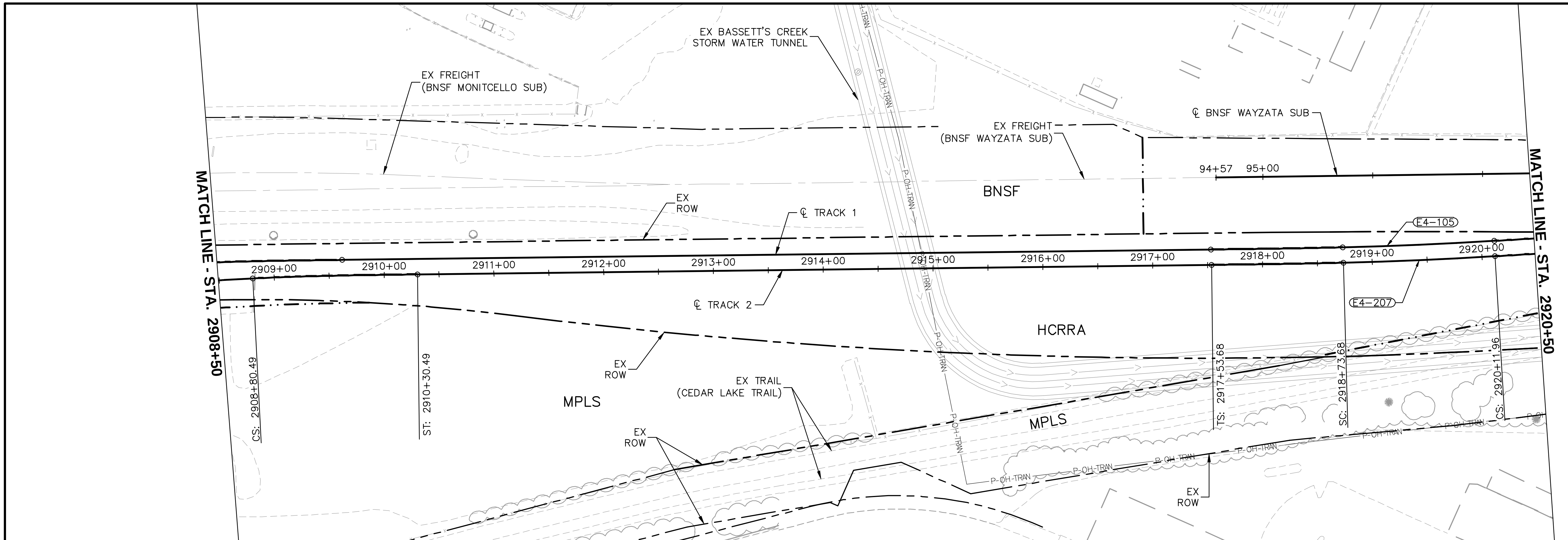
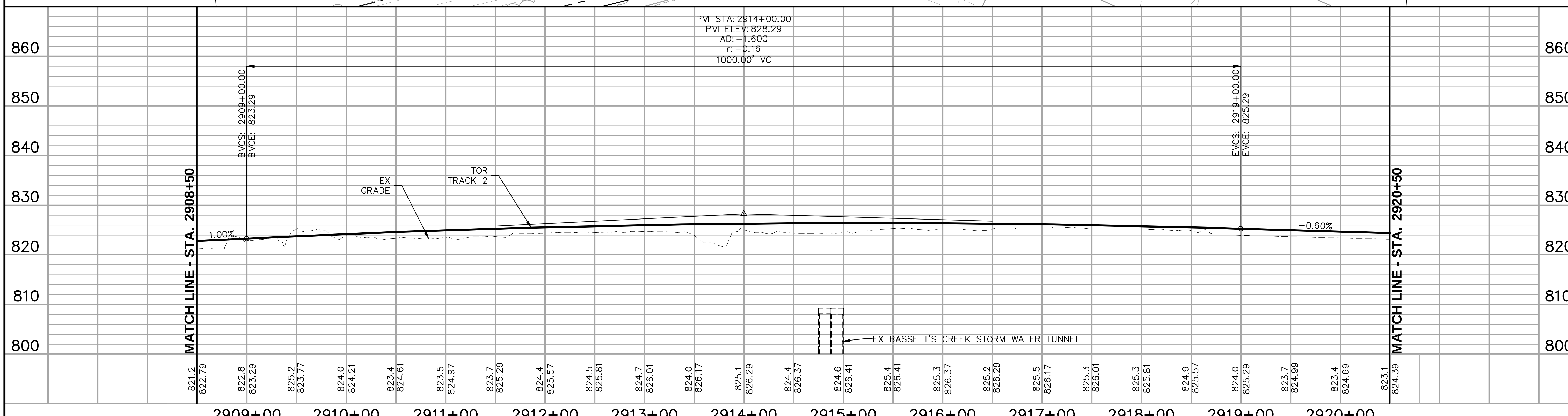


CURVE NO. E4–105
R = 4,240.00'
Lc = 138.28'
Ls = 120.00'
Ea = 1.50"
Eu = 1.33"
V = 55 MPH

CURVE NO. E4–207
R = 4,240.00'
Lc = 138.28'
Ls = 120.00'
Ea = 1.50"
Eu = 1.33"
V = 55 MPH

0 5 10 20
VERTICAL
0 25 50 100
HORIZONTAL
SCALE IN FEET



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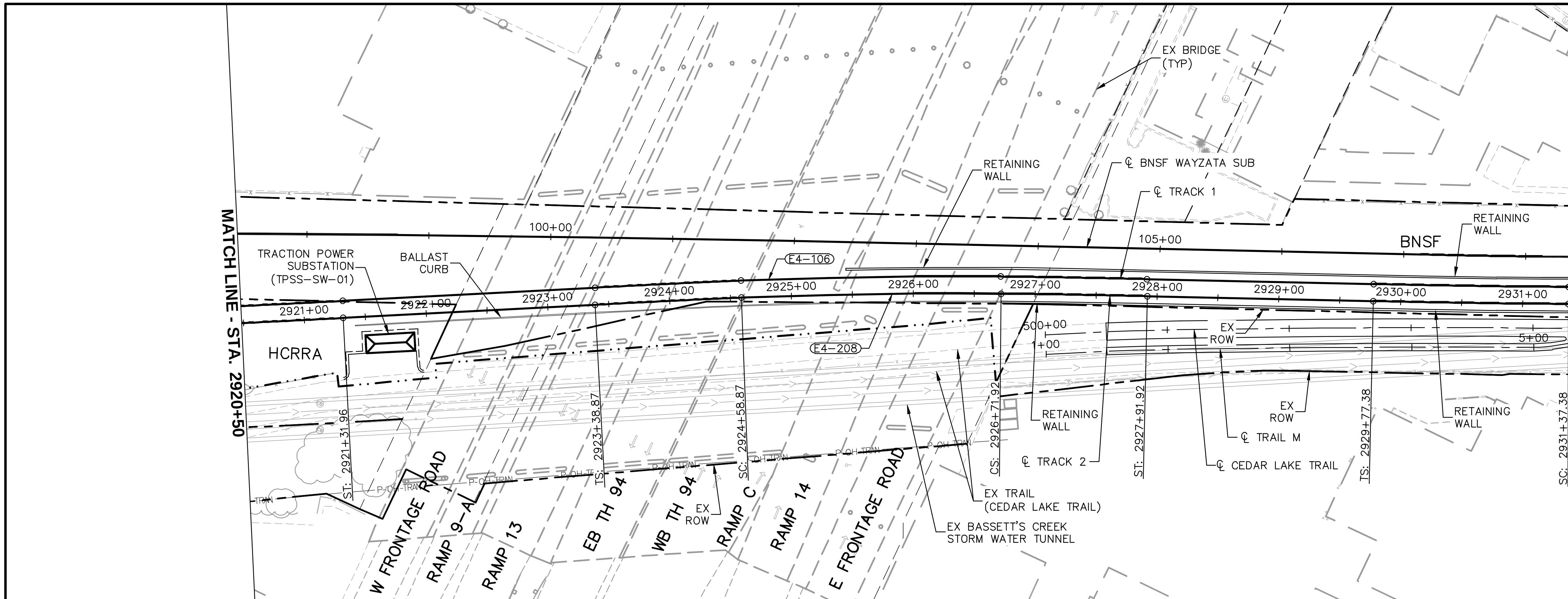
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
PLAN AND PROFILE
STA. 2908+50 TO STA. 2920+50

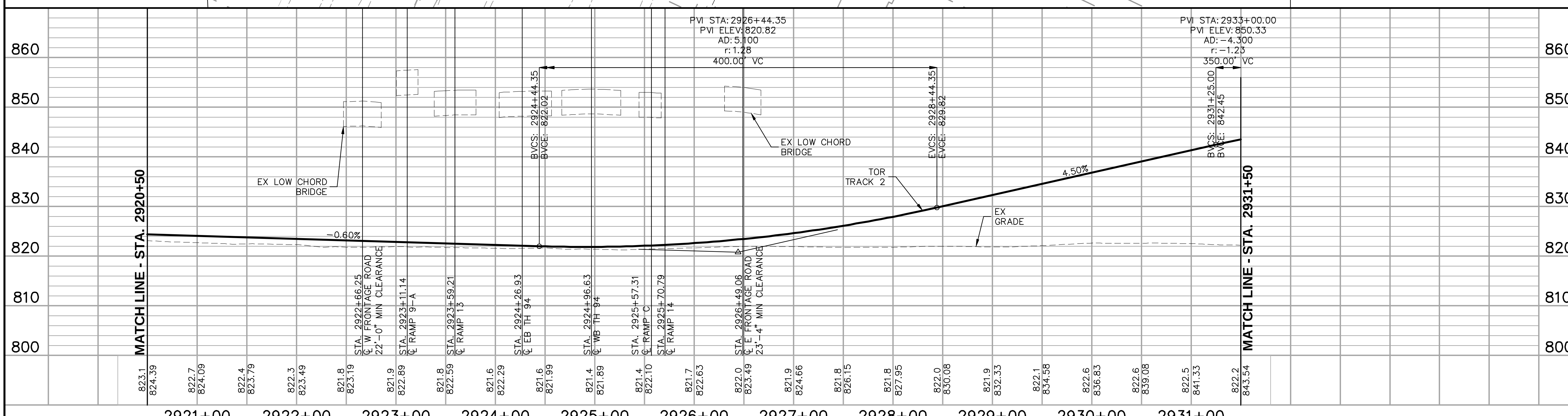
DISCIPLINE: TRACK
SHEET NAME: E4-TRK-PPFL-007



CURVE NO. E4-106
R = 4,500.00'
Lc = 213.05'
Ls = 120.00'
Ea = 1.00"
Eu = 1.66"
V = 55 MPH

CURVE NO. E4-208
R = 4,500.00'
Lc = 213.05'
Ls = 120.00'
Ea = 1.00"
Eu = 1.66"
V = 55 MPH

0 5 10 20
VERTICAL
0 25 50 100
HORIZONTAL
SCALE IN FEET



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METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
PLAN AND PROFILE
STA. 2920+50 TO STA. 2931+50

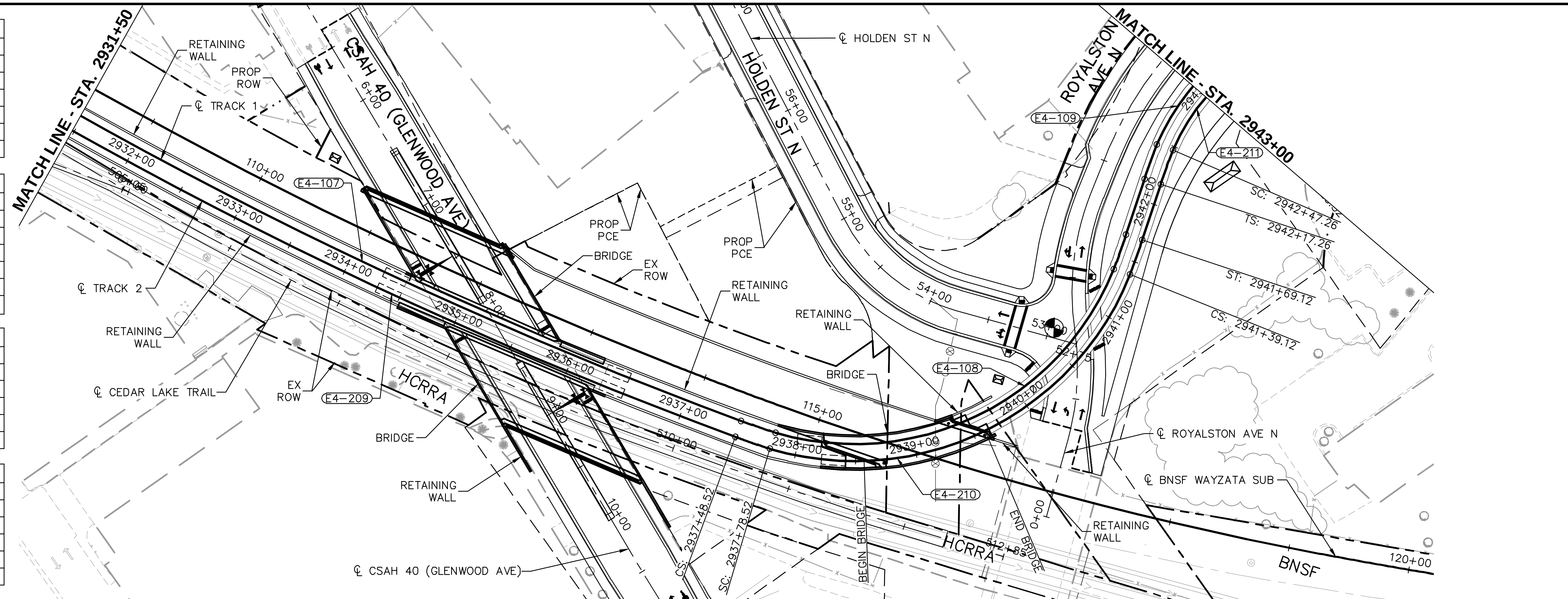
DISCIPLINE: TRACK
SHEET NAME: E4-TRK-PPFL-008

CURVE NO. E4-107
R = 3,790.00'
Lc = 608.53'
Ls1 = 160.00'
Ls2 = 30.00'
Ea = 0.00"
Eu = 2.12"-0.10"
V = 45-10 MPH

CURVE NO. E4-209
R = 3,804.00'
Lc = 611.14'
Ls1 = 160.00'
Ls2 = 30.00'
Ea = 0.00"
Eu = 2.11"-0.10"
V = 45-10 MPH

CURVE NO. E4-108
R = 230.00'
Lc = 338.19'
Ls = 30.00'
Ea = 0.00"
Eu = 1.72"
V = 10 MPH

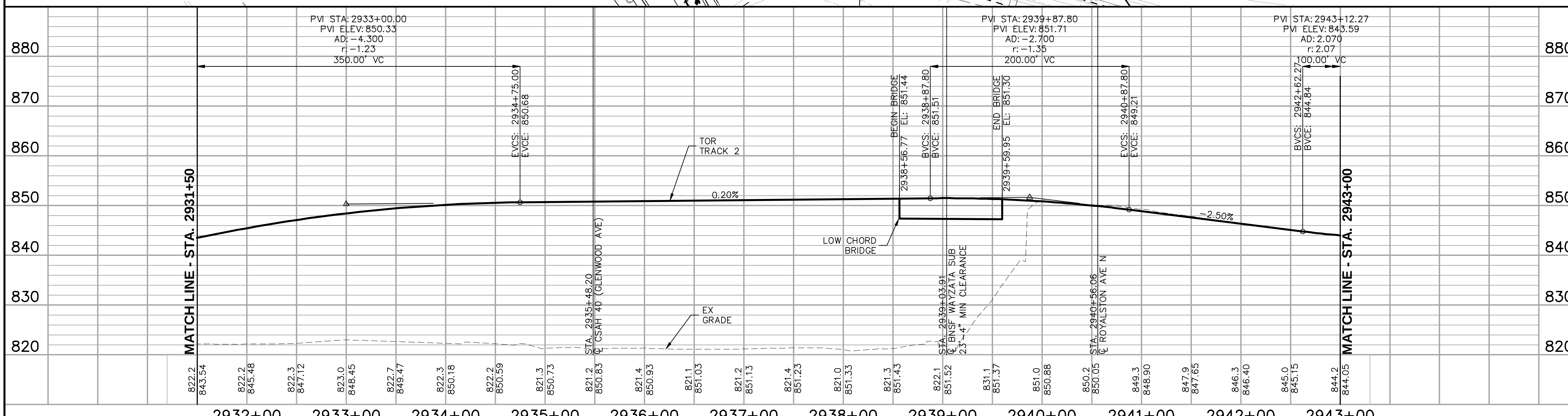
CURVE NO. E4-210
R = 244.00'
Lc = 360.60'
Ls = 30.00'
Ea = 0.00"
Eu = 1.62"
V = 10 MPH



CURVE NO. E4-211
R = 170.00'
Lc = 78.07'
Ls = 30.00'
Ea = 0.75"
Eu = 1.58"
V = 10 MPH

CURVE NO. E4-109
R = 184.00'
Lc = 86.96'
Ls = 30.00'
Ea = 0.75"
Eu = 1.40"
V = 10 MPH

0 5 10 20
VERTICAL
0 25 50 100
HORIZONTAL
SCALE IN FEET



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PRELIMINARY ENGINEERING

METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
PLAN AND PROFILE
STA. 2931+50 TO STA. 2943+00

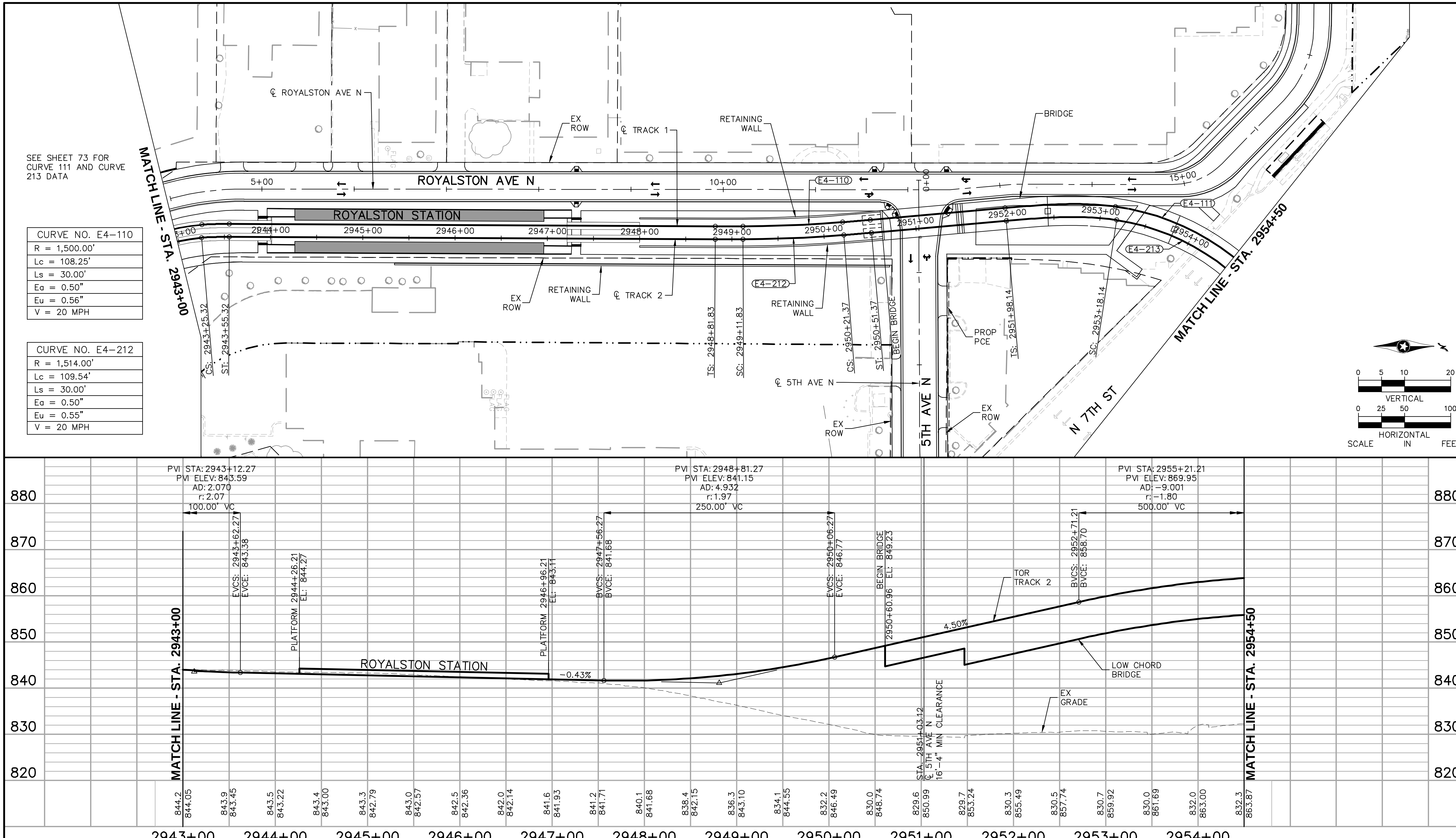
DISCIPLINE: TRACK

SHEET NAME: E4-TRK-PPFL-009

SEE SHEET 73 FOR CURVE 111 AND CURVE 213 DATA

CURVE NO. E4-110
R = 1,500.00'
Lc = 108.25'
Ls = 30.00'
Ea = 0.50"
Eu = 0.56"
V = 20 MPH

CURVE NO. E4-212
R = 1,514.00'
Lc = 109.54'
Ls = 30.00'
Ea = 0.50"
Eu = 0.55"
V = 20 MPH



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PRELIMINARY ENGINEERING

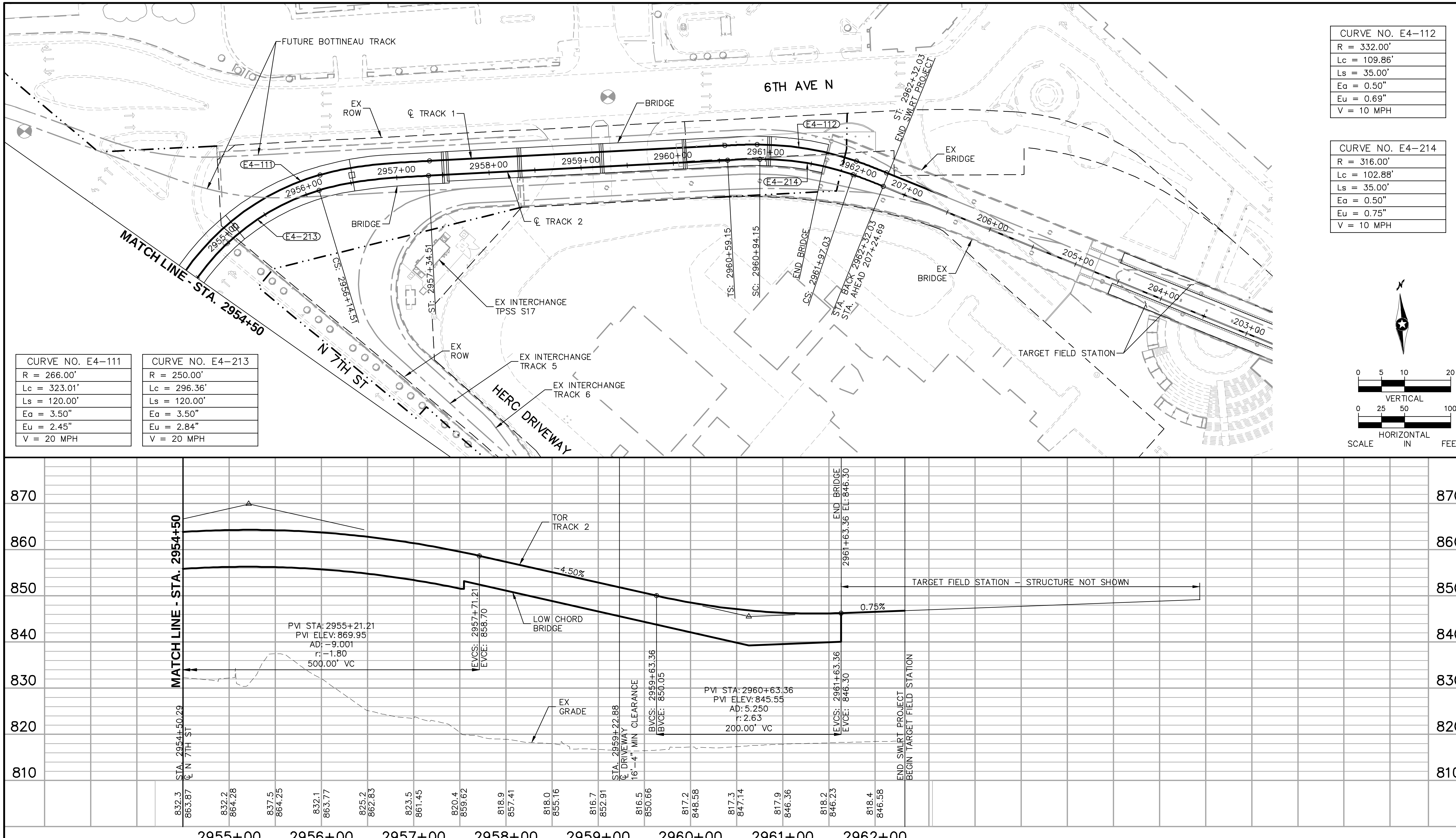
METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
PLAN AND PROFILE
STA. 2943+00 TO STA. 2954+50

DISCIPLINE: TRACK

SHEET NAME: E4-TRK-PPFL-010



CURVE NO. E4-112
R = 332.00'
Lc = 109.86'
Ls = 35.00'
Ea = 0.50"
Eu = 0.69"
V = 10 MPH

CURVE NO. E4-214
R = 316.00'
Lc = 102.88'
Ls = 35.00'
Ea = 0.50"
Eu = 0.75"
V = 10 MPH

CURVE NO. E4-111
R = 266.00'
Lc = 323.01'
Ls = 120.00'
Ea = 3.50"
Eu = 2.45"
V = 20 MPH

CURVE NO. E4-213
R = 250.00'
Lc = 296.36'
Ls = 120.00'
Ea = 3.50"
Eu = 2.84"
V = 20 MPH

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PRELIMINARY ENGINEERING

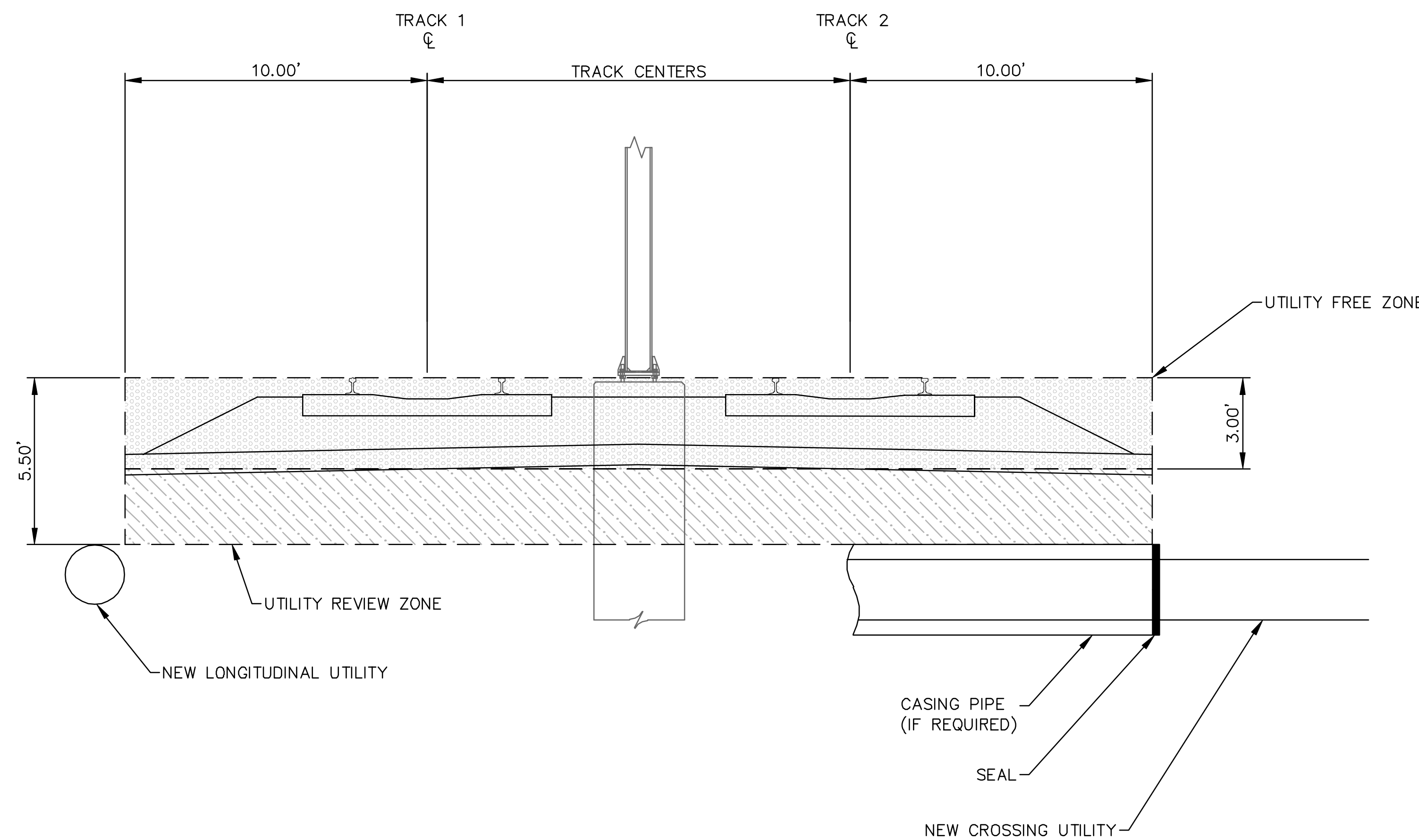
METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
PLAN AND PROFILE
STA. 2954+50 TO STA. 2962+32.03

DISCIPLINE: TRACK

SHEET NAME: E4-TRK-PPFL-011



UTILITY ZONES
BALLASTED TRACK

NOTES:

1. ADJUSTMENTS OF LIMITS REQUIRE METROPOLITAN COUNCIL APPROVAL.
2. UTILITIES SUSCEPTIBLE TO EFFECTS OF STRAY CURRENT SHOULD BE RELOCATED FROM UTILITY REVIEW ZONE OR APPROPRIATE MITIGATION MEASURES SHOULD BE TAKEN.

0 1.5 3 6
SCALE IN FEET

Aug. 29 2014 08:06 am V:\3300_PEC-E\CAD\SEGMENT E4\PLAN SHEETS\TRACK\E4-TRK-DTL.dwg By: chris.bunders

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PRELIMINARY ENGINEERING

METROPOLITAN COUNCIL

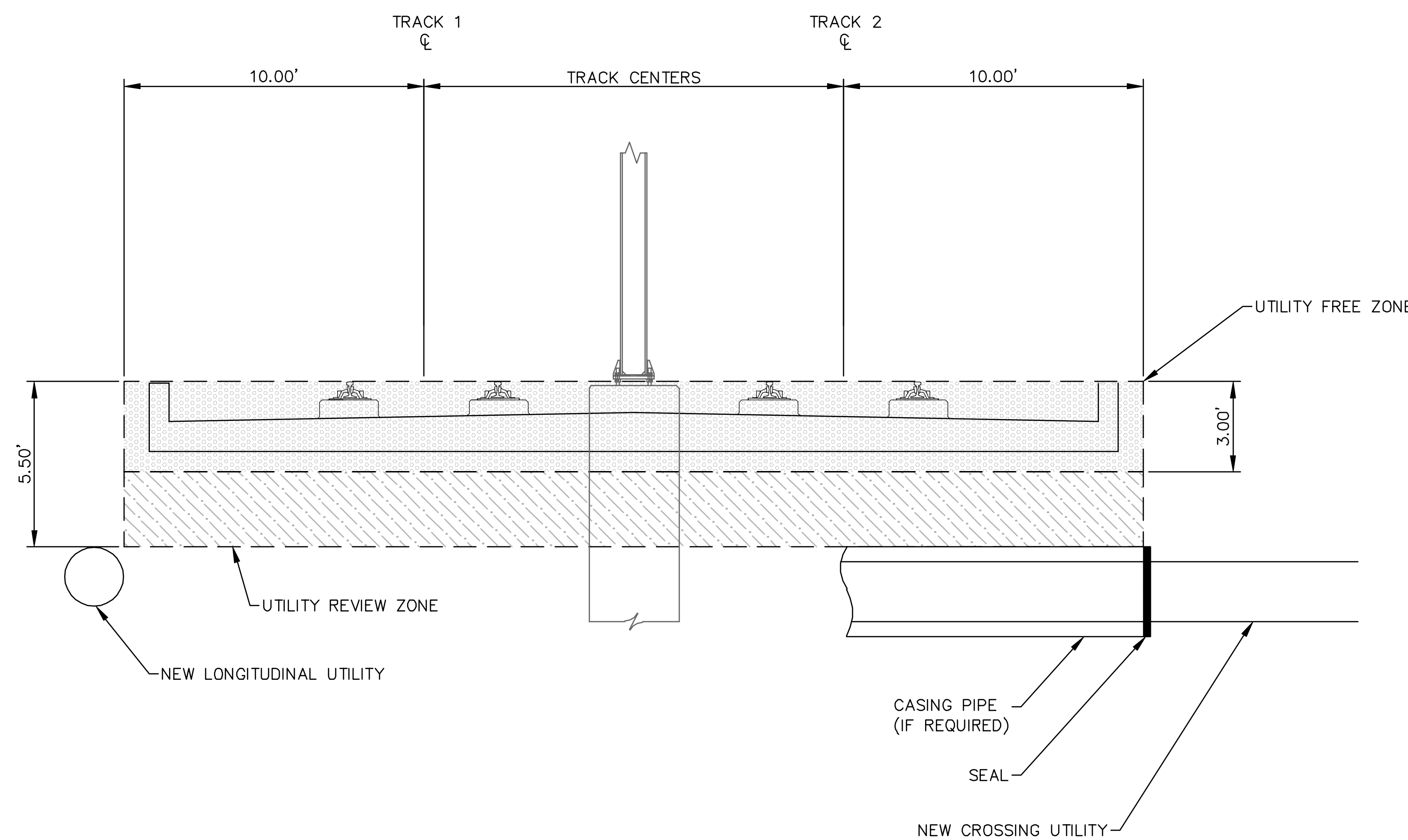
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
DETAILS

DISCIPLINE: TRACK

SHEET NAME: E4-TRK-DTL - 101

SHEET 74 OF 163



UTILITY ZONES
DIRECT FIXATION TRACK

NOTES:

1. ADJUSTMENTS OF LIMITS REQUIRE METROPOLITAN COUNCIL APPROVAL.
2. UTILITIES SUSCEPTIBLE TO EFFECTS OF STRAY CURRENT SHOULD BE RELOCATED FROM UTILITY REVIEW ZONE OR APPROPRIATE MITIGATION MEASURES SHOULD BE TAKEN.

0 1.5 3 6
SCALE IN FEET

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PRELIMINARY ENGINEERING

METROPOLITAN COUNCIL

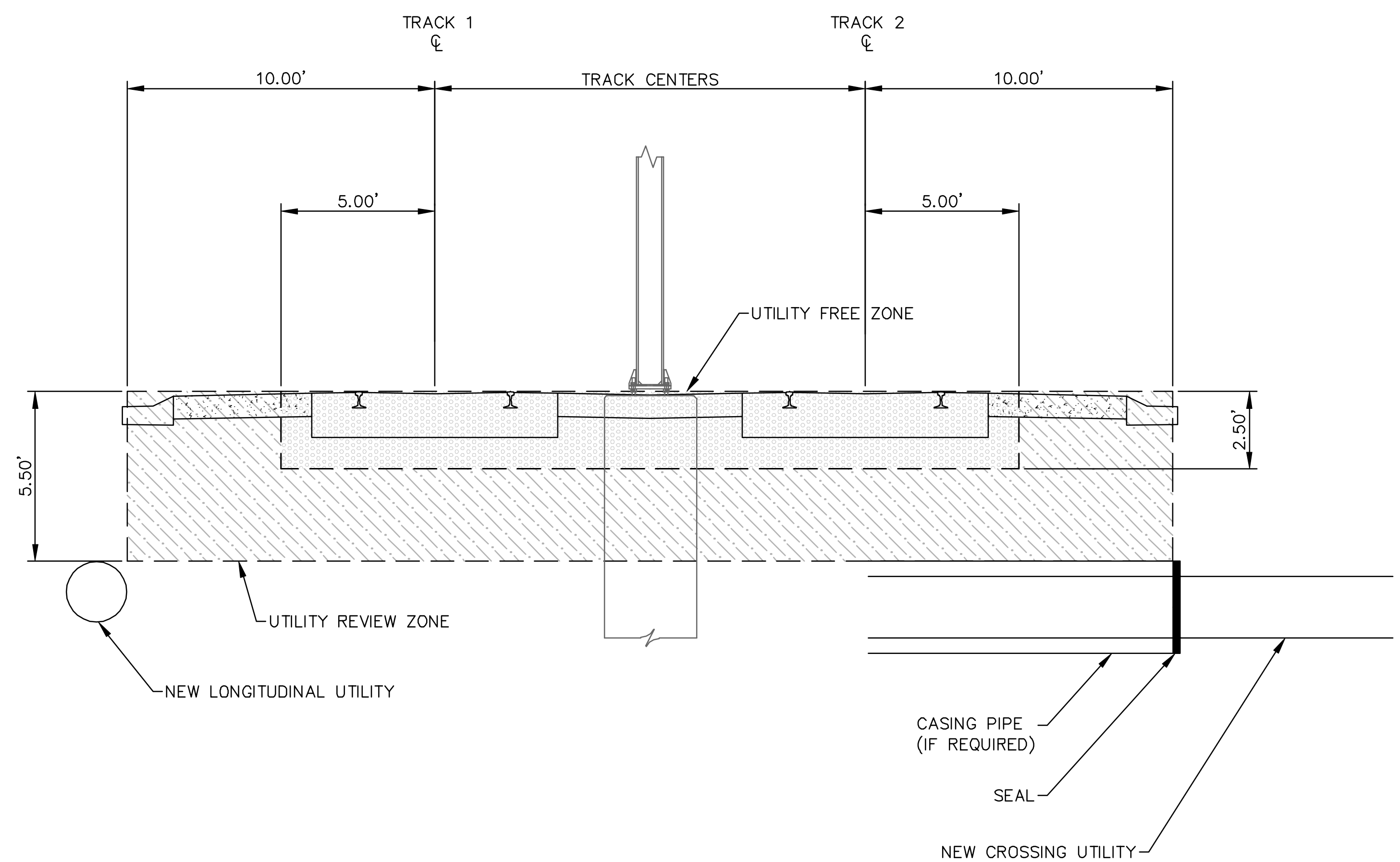
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
DETAILS

DISCIPLINE: TRACK

SHEET NAME: E4-TRK-DTL - 102

SHEET 75 OF 163



UTILITY ZONES
EMBEDDED TRACK

NOTES:

1. ADJUSTMENTS OF LIMITS REQUIRE METROPOLITAN COUNCIL APPROVAL.
2. UTILITIES SUSCEPTIBLE TO EFFECTS OF STRAY CURRENT SHOULD BE RELOCATED FROM UTILITY REVIEW ZONE OR APPROPRIATE MITIGATION MEASURES SHOULD BE TAKEN.

0 1.5 3 6
SCALE IN FEET

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PRELIMINARY ENGINEERING

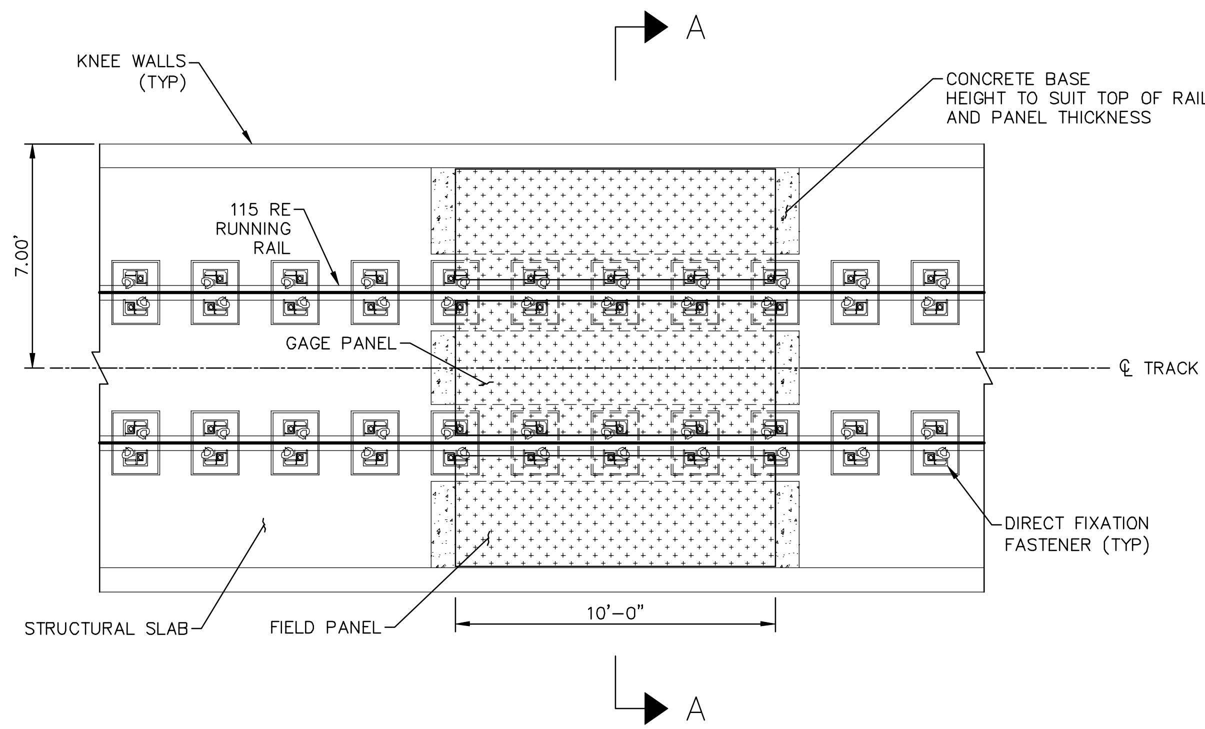
METROPOLITAN COUNCIL

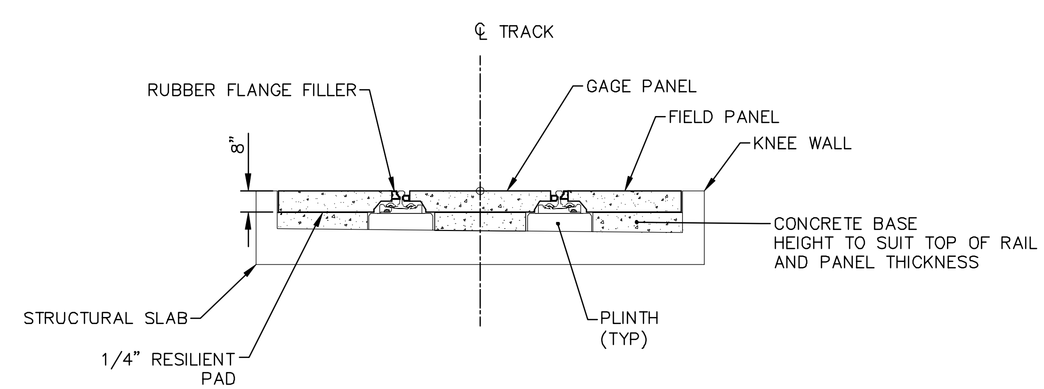
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
DETAILS

DISCIPLINE: **TRACK**

SHEET NAME: **E4-TRK-DTL - 103**





SECTION A–A

PEDESTRIAN CROSSING PANEL AT DIRECT FIXATION
(NTS)

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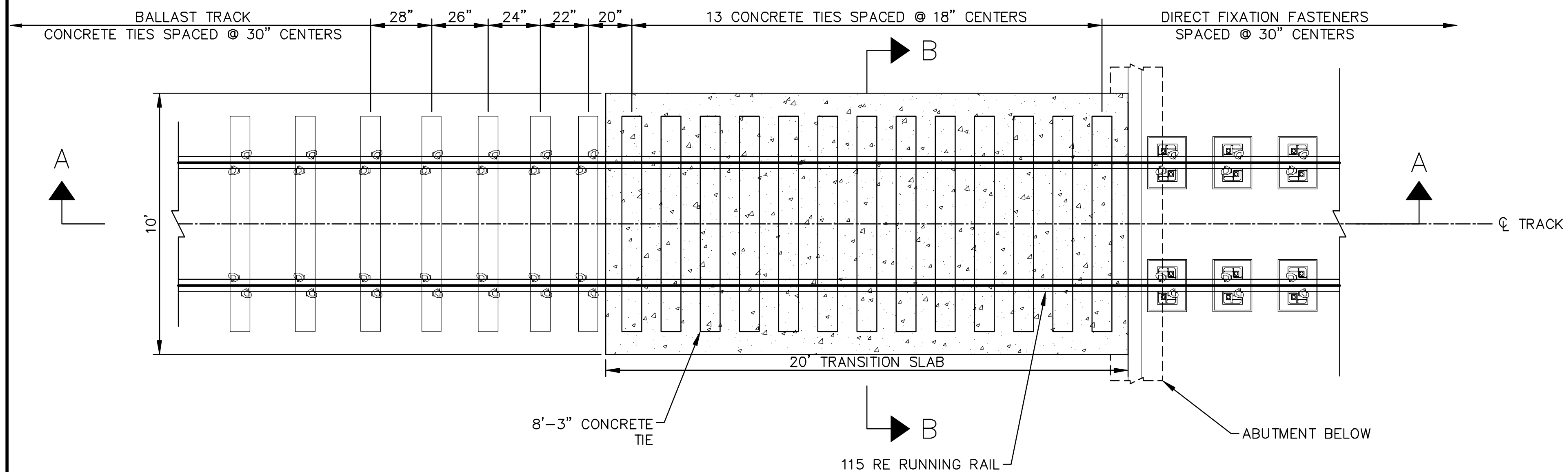
METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

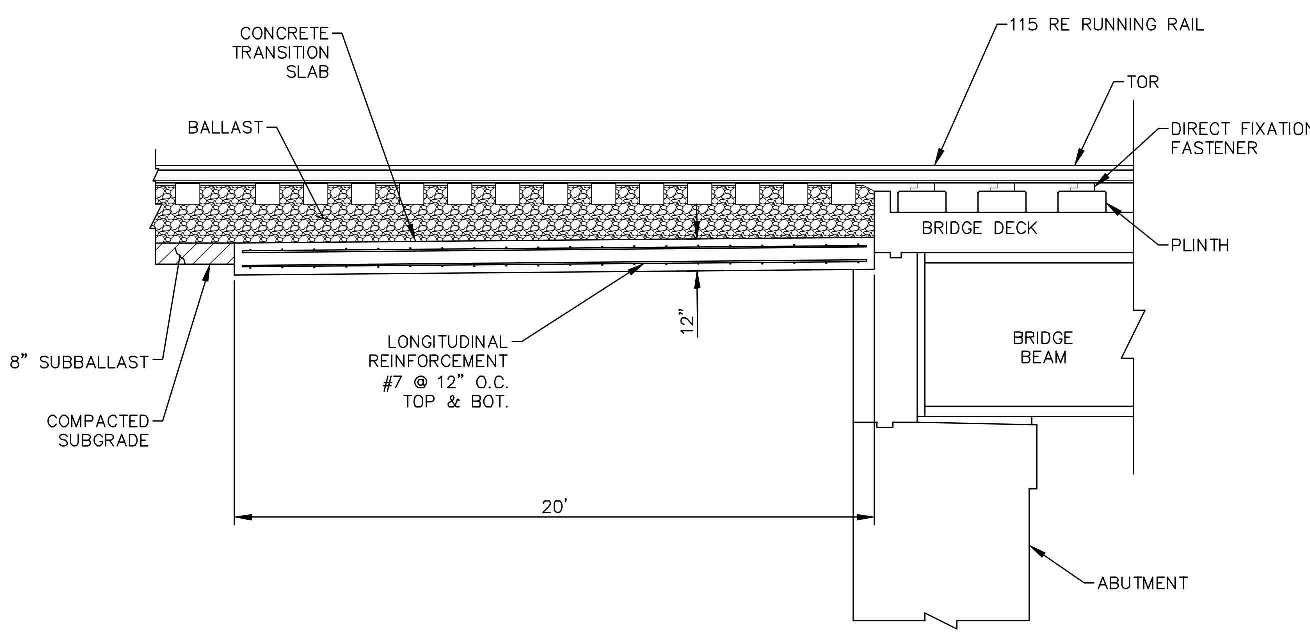
EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
DETAILS

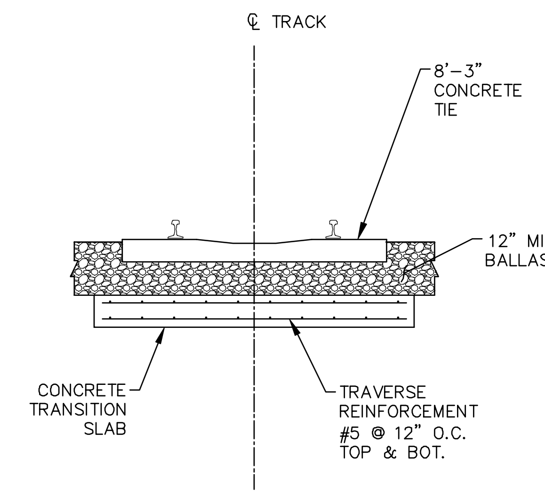
DISCIPLINE: TRACK

SHEET NAME: E4-TRK-DTL - 203



PLAN VIEW





SECTION B-B

NOTE:

1. DRAIN TILE NOT SHOWN FOR CLARITY.

SECTION A-A

BALLAST TRACK TRANSITION SLAB AT DIRECT FIXATION BRIDGE
(NTS)

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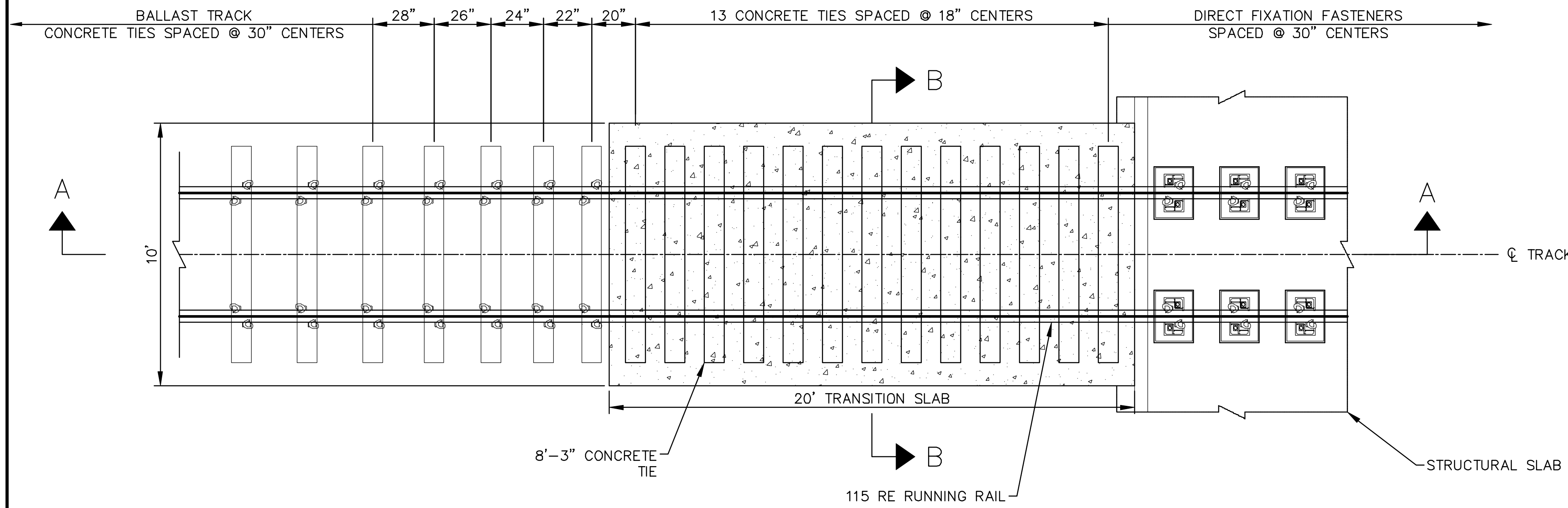
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
DETAILS

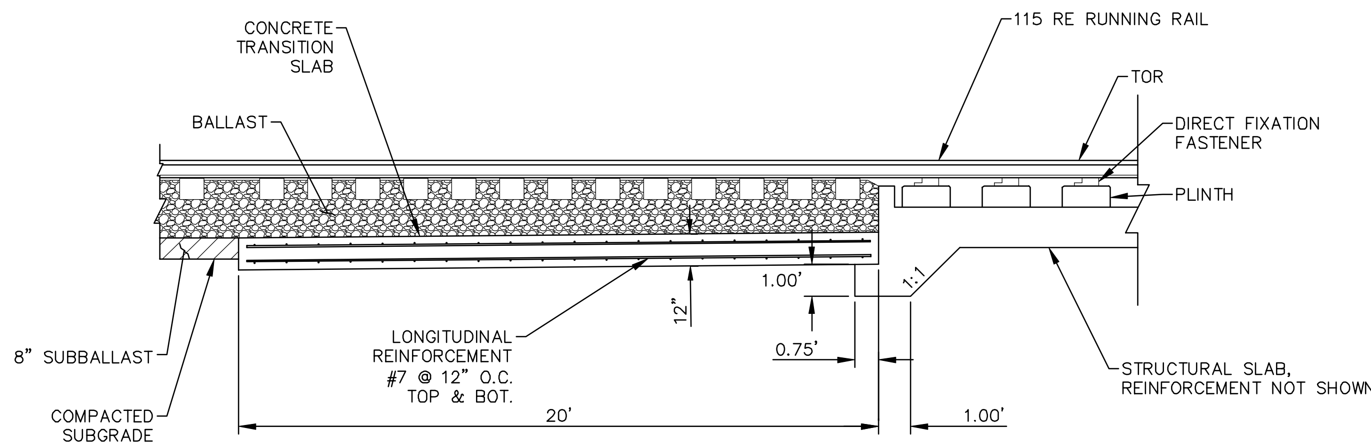
DISCIPLINE: TRACK

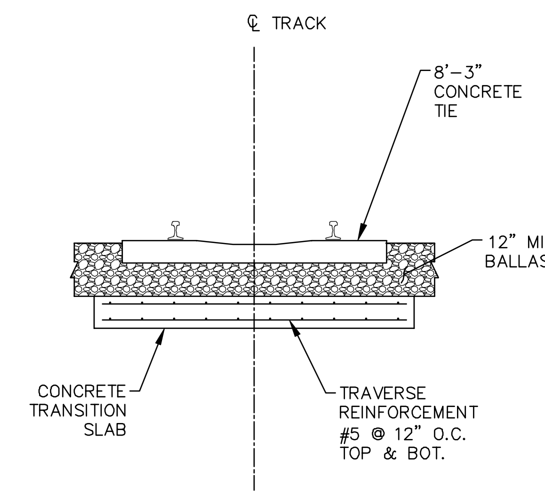
SHEET NAME: E4-TRK-DTL - 302

SHEET 78 OF 163



PLAN VIEW





SECTION B–B

NOTE:

1. DRAIN TILE NOT SHOWN FOR CLARITY.

SECTION A–A

BALLAST TRACK TRANSITION SLAB AT DIRECT FIXATION TRACK
(NTS)

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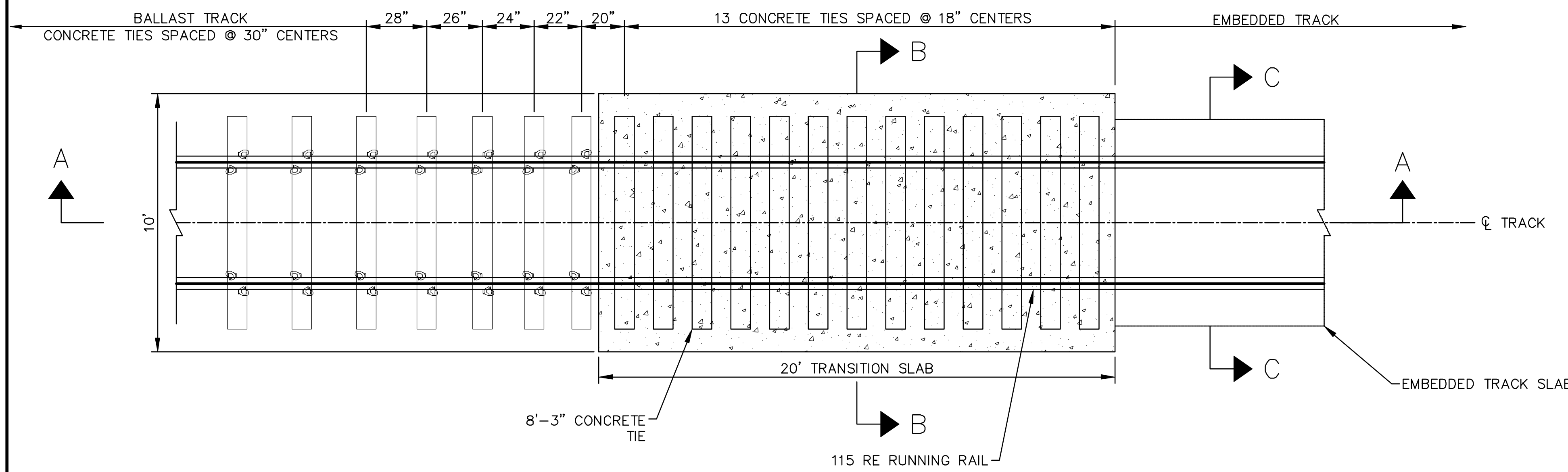
METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

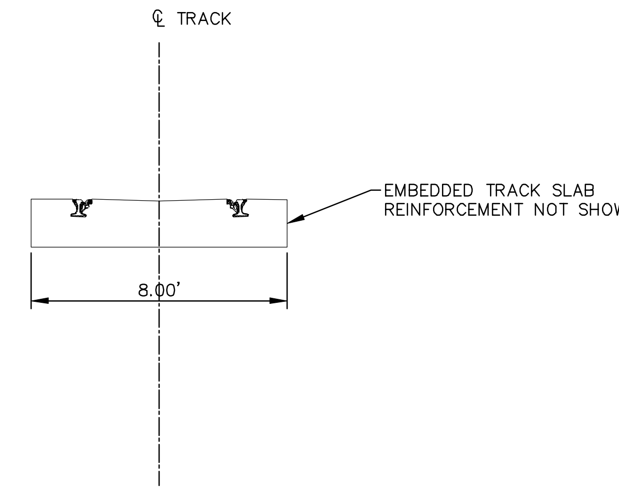
EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
DETAILS

DISCIPLINE: TRACK

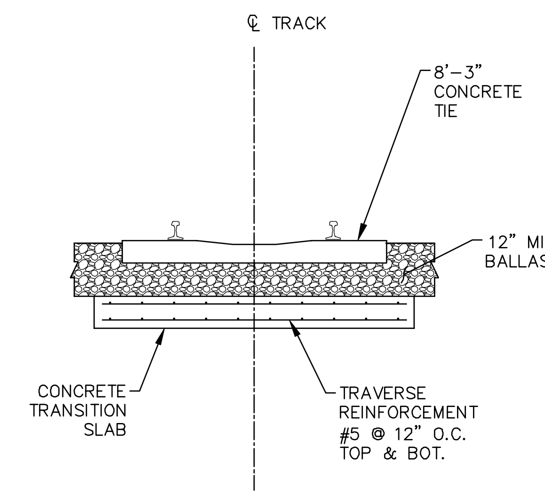
SHEET NAME: E4-TRK-DTL - 303



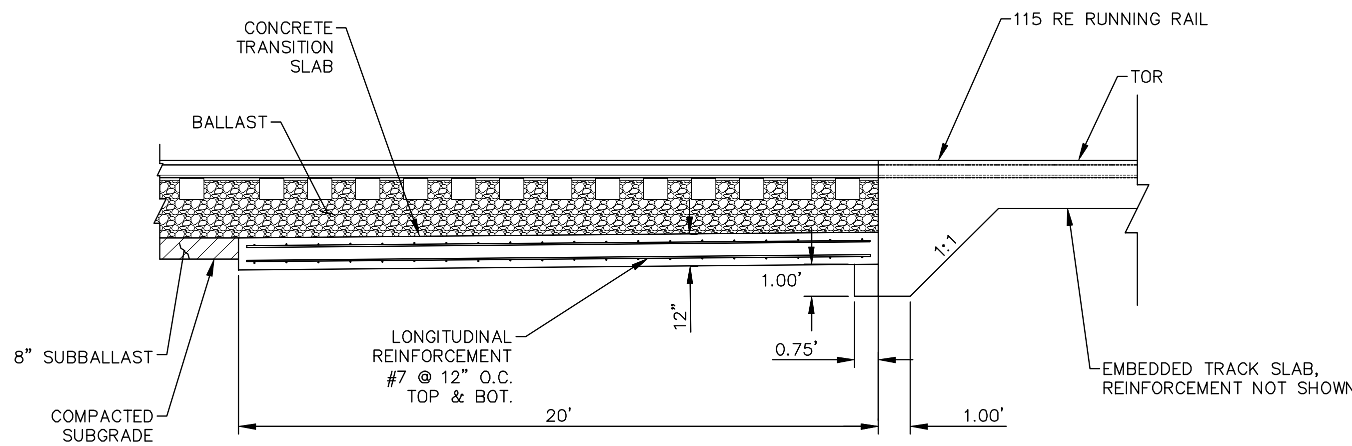
PLAN VIEW



SECTION C–C



SECTION B–B



NOTE:

1. DRAIN TILE NOT SHOWN FOR CLARITY.

SECTION A–A

BALLAST TRACK TRANSITION SLAB AT EMBEDDED
(NTS)

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METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
DETAILS

DISCIPLINE: TRACK

SHEET NAME: E4-TRK-DTL - 304

SHEET 80 OF 163

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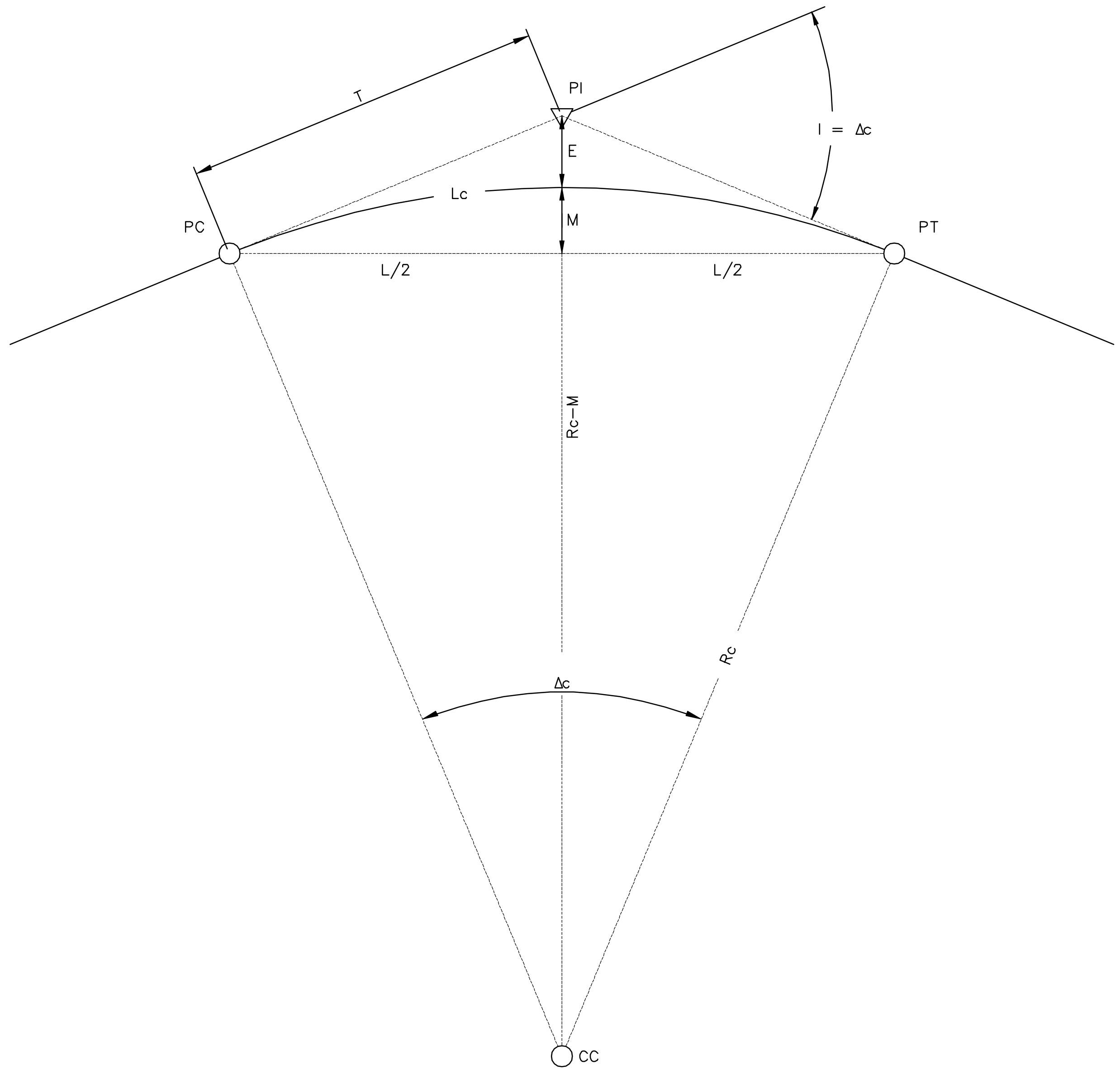
Aug. 29 2014 08:06 am V:\3300_PEC-E\CAD\SEGMENT E4\PLAN SHEETS\TRACK\E4-TRK-DTL.dwg By: chris.bunders



SIMPLE CURVE DIAGRAM

DEFINITIONS

Dc = DEGREE OF CURVE IN ARC DEFINITION (DECIMAL DEGREES)
Rc = RADIUS OF CURVE (FEET)
Lc = LENGTH OF CURVE ALONG THE ARC (FEET)
Δc = CENTRAL ANGLE OF CURVE (DECIMAL DEGREES)
E = EXTERNAL DISTANCE (FEET)
T = TANGENT DISTANCE (FEET)
M = MIDDLE ORDINATE (FEET)
L = CHORD LENGTH (FEET)
I = DEFLECTION ANGLE (DECIMAL DEGREES)
PC = POINT OF CURVE
PT = POINT OF TANGENT
PI = POINT OF INTERSECTION
CC = CENTER OF CURVE

SIMPLE CURVE FORMULAS

$$\frac{Dc}{360^\circ} = \frac{100}{2\pi\ Rc}$$

$$Dc = \frac{5729.58'}{Rc}$$

$$Lc = \frac{\pi Rc\Delta c}{180}$$

$$T = Rc\ TAN\ \tfrac{I}{2}$$

$$E = Rc\ SEC\tfrac{I}{2} - Rc$$

$$M = Rc - Rc\ COS\tfrac{I}{2}$$

$$L = 2\ Rc\ SIN\tfrac{I}{2}$$

NOTE
THIS DRAWING IS APPLICABLE TO SIMPLE CURVES WITHOUT TRANSITION SPIRALS AND SHALL ONLY BE USED ON NON-REVENUE TRACK.

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PRELIMINARY ENGINEERING

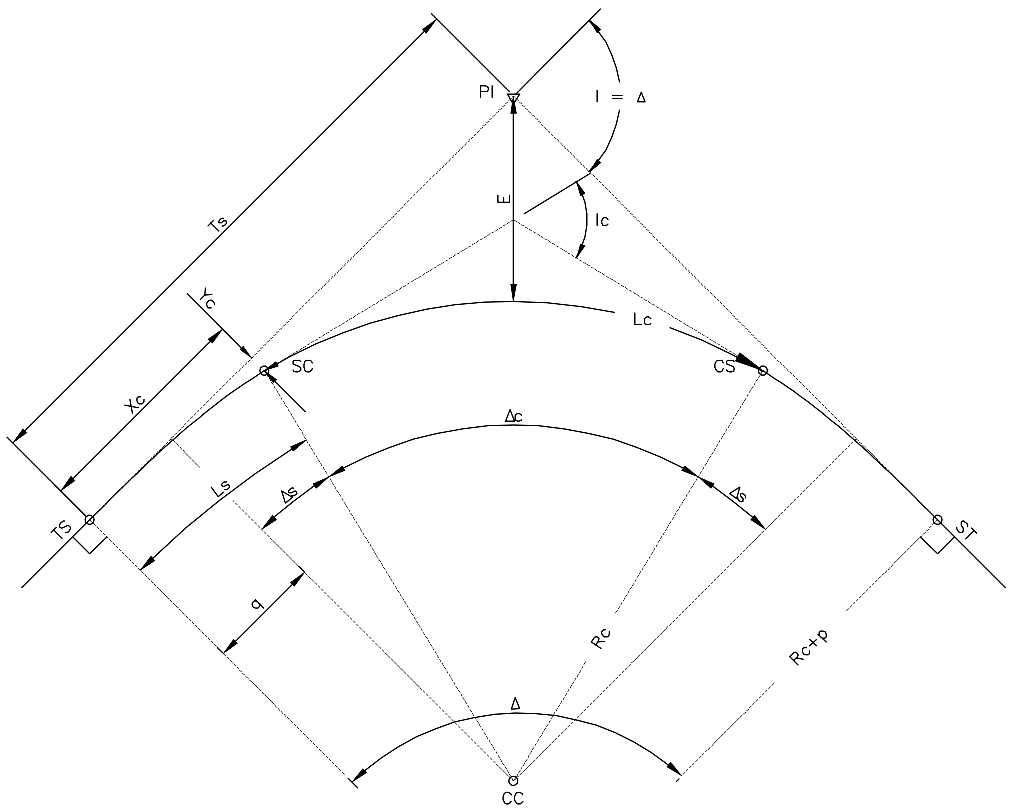
METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

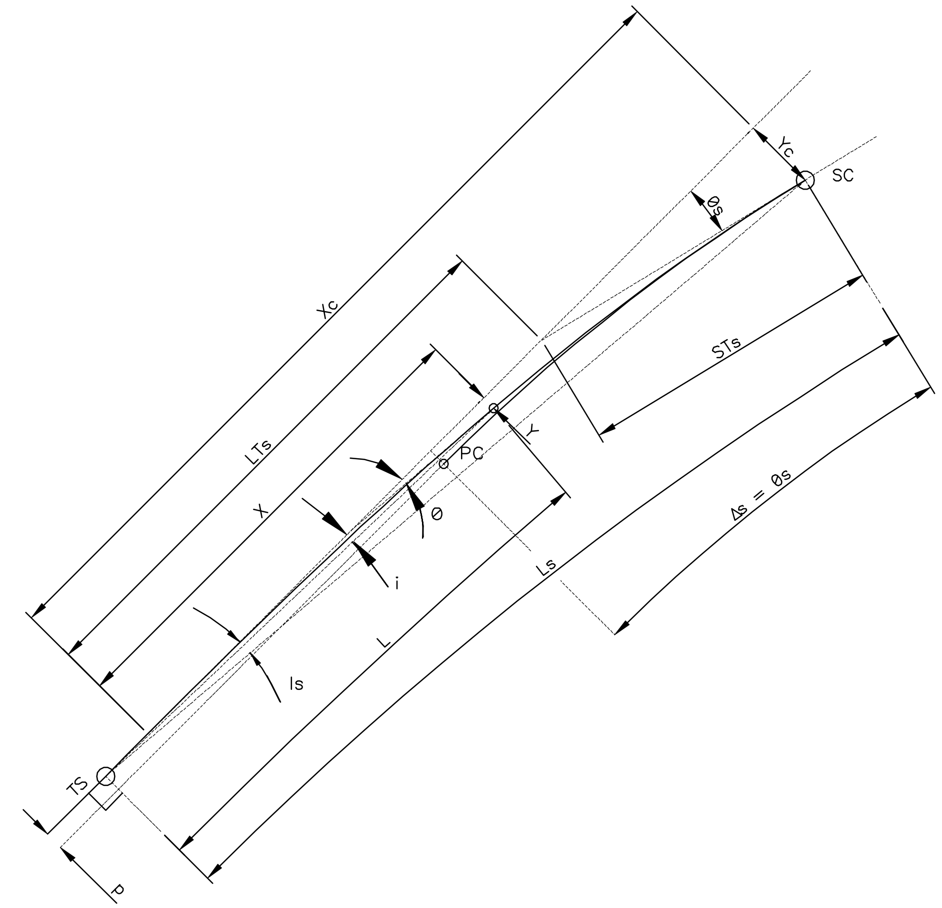
EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
DETAILS

DISCIPLINE: TRACK

SHEET NAME: E4-TRK-DTL - 401



SPIRAL CURVE DIAGRAM



SPIRAL DIAGRAM

DEFINITIONS

- Dc = DEGREE OF SIMPLE CURVE IN ARC DEFINITION (DEGREES)
- Rc = RADIUS OF CURVE (FEET)
- Δ = TOTAL CENTRAL ANGLE OF CURVE (DEGREES)
- Δc = CENTRAL ANGLE OF SIMPLE CURVE (DEGREES)
- Δs = CENTRAL ANGLE OF SPIRAL (RADIANS)
- E = EXTERNAL DISTANCE OF THE SIMPLE CURVE (FEET)
- Ts = TOTAL TANGENT DISTANCE (FEET)
- Ls = LENGTH OF SPIRAL (FEET)
- Lc = LENGTH OF THE SIMPLE CURVE ARC (FEET)
- L = LENGTH FROM TS TO ANY POINT ALONG THE SPIRAL (FEET)
- I = TOTAL DEFLECTION ANGLE (DEGREES)
- Ic = DEFLECTION ANGLE OF THE SIMPLE CURVE (DEGREES)
- Is = DEFLECTION ANGLE OF THE SPIRAL (DEGREES)
- i = DEFLECTION ANGLE FROM TS TO ANY POINT ON THE SPIRAL
- p = LENGTH OF THROW, OFFSET DISTANCE FROM TANGENT TO PC/PT
- q = DISTANCE FROM TS/ST TO THE OFFSET TC/CT
- Xc = DISTANCE ALONG TANGENT FROM TS/ST TO THE SC/CS (FEET)
- Yc = OFFSET DISTANCE FROM TANGENT TO SC/CS (FEET)
- X = DISTANCE ALONG TANGENT FROM TS/ST TO ANY POINT ON THE SPIRAL
- Y = OFFSET DISTANCE FROM TANGENT TO ANY POINT ON THE SPIRAL
- θs = SPIRAL ANGLE FROM TANGENT TO SC
- θ = SPIRAL ANGLE FROM TANGENT TO ANY POINT ON THE SPIRAL
- LTs = LONG TANGENT OF SPIRAL (FEET)
- STs = SHORT TANGENT OF SPIRAL (FEET)
- TS = POINT OF TANGENT TO SPIRAL CURVE
- SC = POINT OF SPIRAL CURVE TO SIMPLE CURVE
- CS = POINT OF SIMPLE CURVE TO SPIRAL CURVE
- ST = POINT OF SPIRAL CURVE TO TANGENT
- PC = POINT OF CURVE
- PT = POINT OF TANGENT
- PI = POINT OF INTERSECTION
- CC = CENTER OF CURVE

FORMULAS

$$\Delta = \Delta c + 2\Delta s$$

$$\Delta s = \frac{Ls}{2Rc}$$

$$i = \frac{\theta}{3}$$

$$X = L - \frac{L^5}{40Rc^2 Ls^2}$$

$$Xc = Ls - \frac{Ls^3}{40Rc^2}$$

$$Y = \frac{L^3}{6RcLs}$$

$$Yc = \frac{Ls^2}{6Rc}$$

$$q = Xc - Rc\ \mathrm{SIN}\Delta s$$

$$p = \tfrac{1}{4}Yc = \frac{Ls^2}{24Rc}$$

$$Ts = (Rc + p)\ \mathrm{TAN}\tfrac{\Delta}{2} + q$$

$$E = \frac{Rc + p}{\mathrm{COS}\frac{\Delta}{2}} - Rc$$

$$LTs = Xc - \frac{Yc}{\mathrm{TAN}\Delta s}$$

$$STs = \frac{Yc}{\mathrm{SIN}\Delta s}$$

$$\frac{Dc}{360^\circ} = \frac{100}{2\pi\ Rc}$$

$$Dc = \frac{5729.58'}{Rc}$$

$$Lc = \frac{\pi Rc \Delta c}{180}$$

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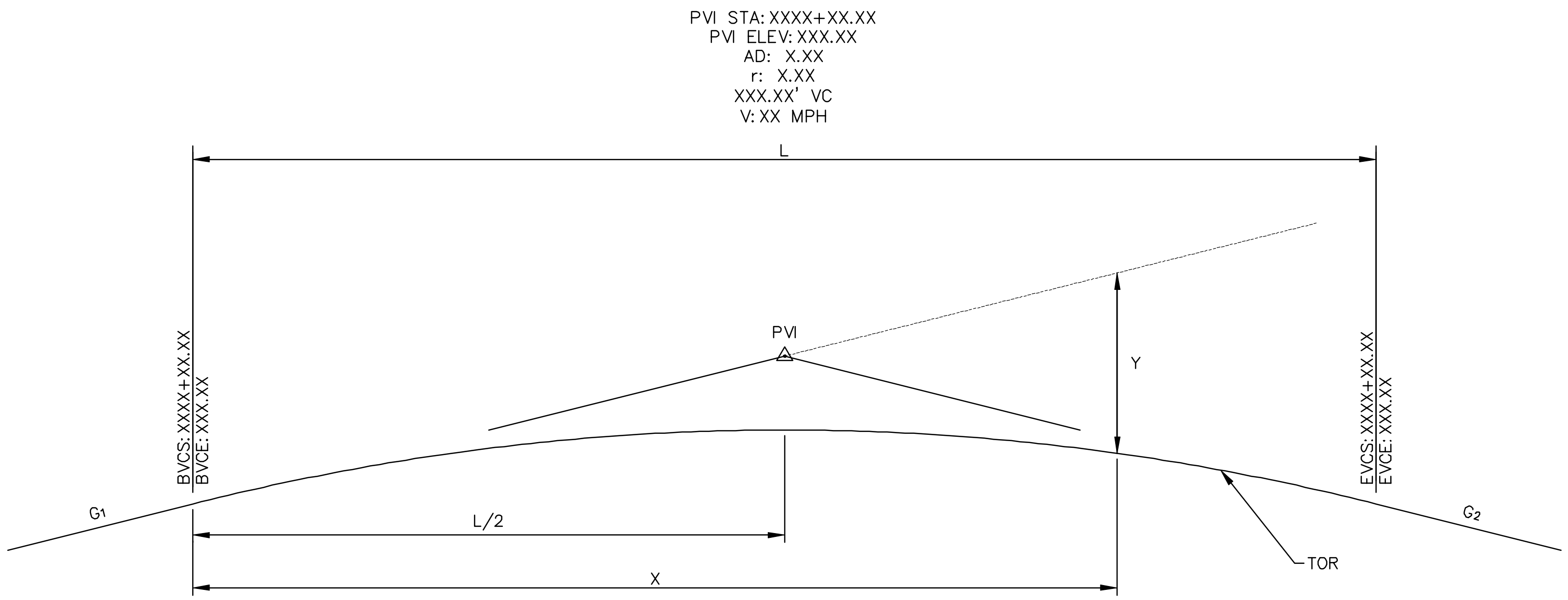
SOUTHWEST Green Line LRT Extension

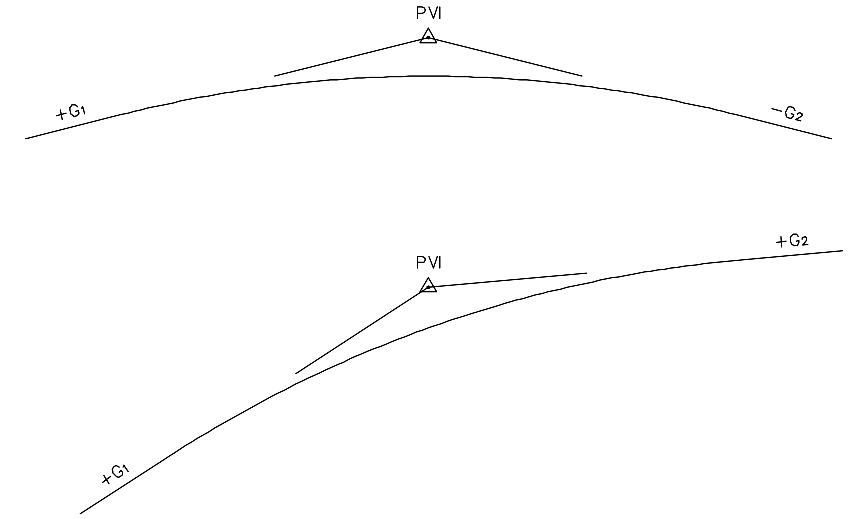
EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
DETAILS

DISCIPLINE: TRACK

SHEET NAME: E4-TRK-DTL - 402



STANDARD VERTICAL CURVE



CREST TYPE VERTICAL CURVES

DEFINITIONS

- G_1 = ENTRY GRADE %
- G_2 = DEPARTING GRADE %
- PVI = POINT OF VERTICAL INTERSECTION
- AD = ALGEBRAIC DIFFERENCE
- r = RATE OF CHANGE OF GRADE
- L = LENGTH OF VERTICAL CURVE
- V = DESIGN VELOCITY (MPH)
- BVCS = BEGIN VERTICAL CURVE STATION
- BVCE = BEGIN VERTICAL CURVE ELEVATION
- EVCS = END VERTICAL CURVE STATION
- EVCE = END VERTICAL CURVE ELEVATION
- X = HORIZONTAL DISTANCE FROM BVC
- Y = ELEVATION OF PARABOLA BELOW G_1
- Rv = EQUIVALENT RADIUS OF VERTICAL CURVE

FORMULAS

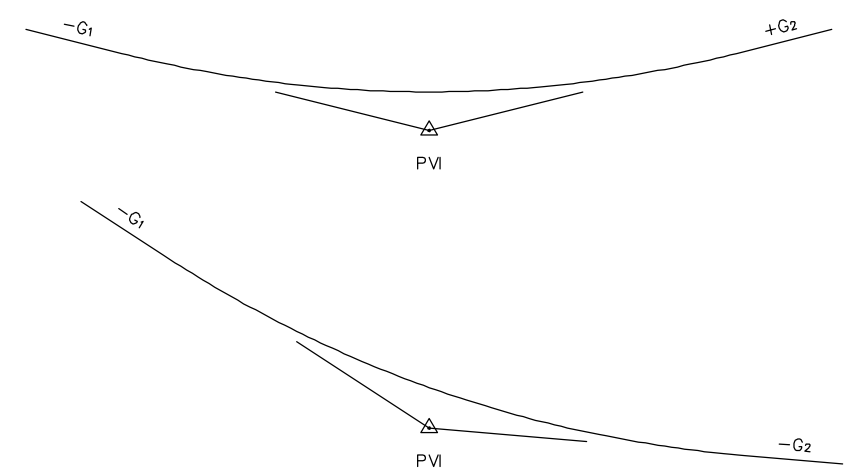
$$a = \frac{G_2 - G_1}{2L}$$

$$Y = BVCE + G_1X + aX^2$$

$$AD = G_2 - G_1$$

$$r = \frac{100\ AD}{L}$$

$$Rv = \frac{L}{0.01\ AD}$$



VERTICAL CURVE GEOMETRY

SAG TYPE VERTICAL CURVES

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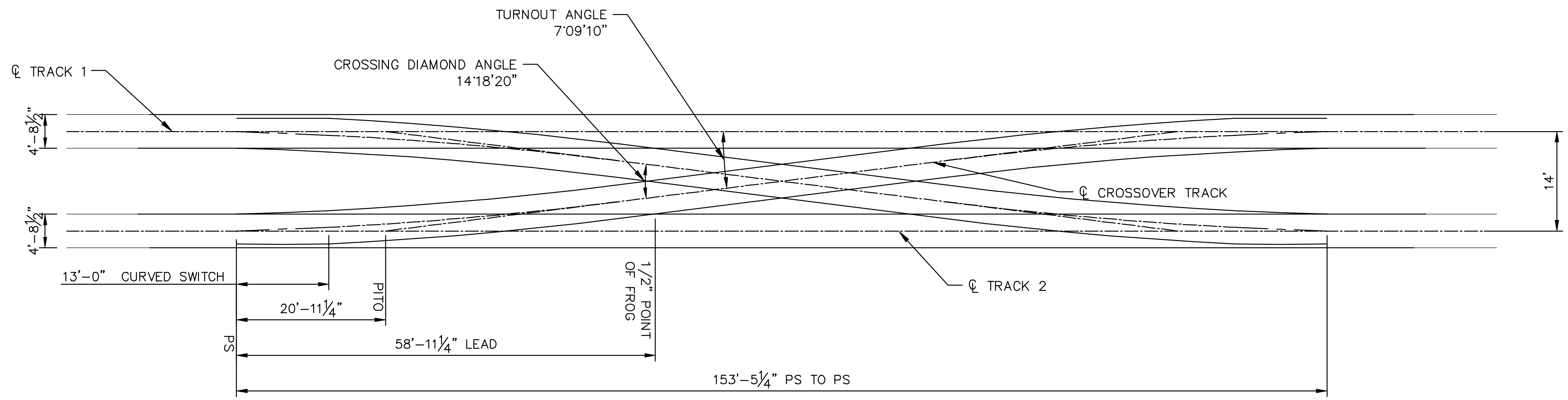
SOUTHWEST Green Line LRT Extension

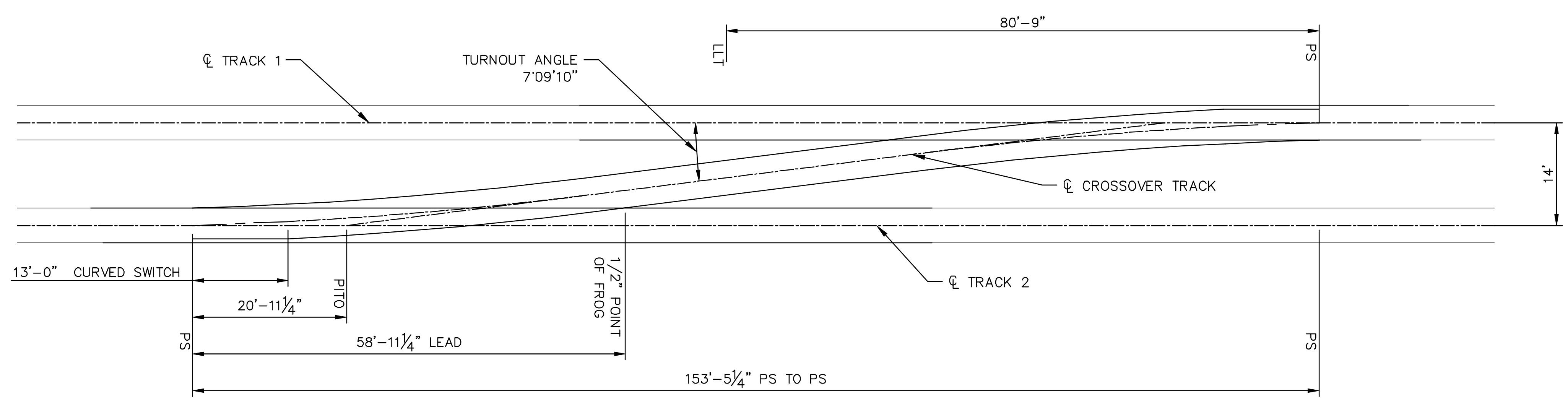
EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
DETAILS

DISCIPLINE: TRACK

SHEET NAME: E4-TRK-DTL - 403



NO 8 DOUBLE CROSS OVER GEOMETRY DETAIL
(14.0' TRACK CENTERS)



NO 8 CROSS OVER GEOMETRY DETAIL
(14.0' TRACK CENTERS)

NOTE
LEFT HAND CROSS OVER ILLUSTRATED. MIRROR FOR RIGHT HAND CROSS OVER.

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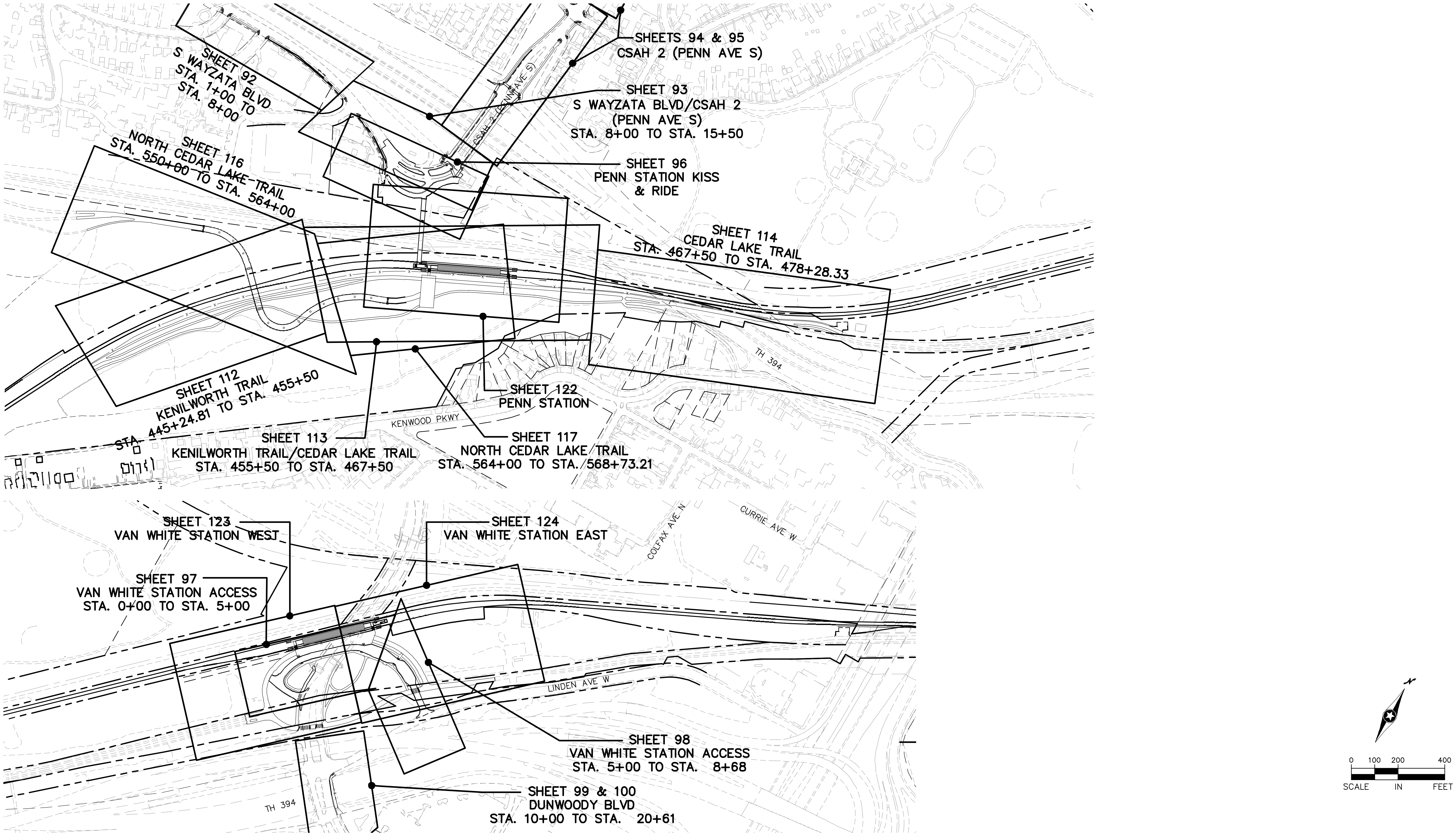
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
TRACK
DETAILS

DISCIPLINE: TRACK
SHEET NAME: E4-TRK-DTL - 502



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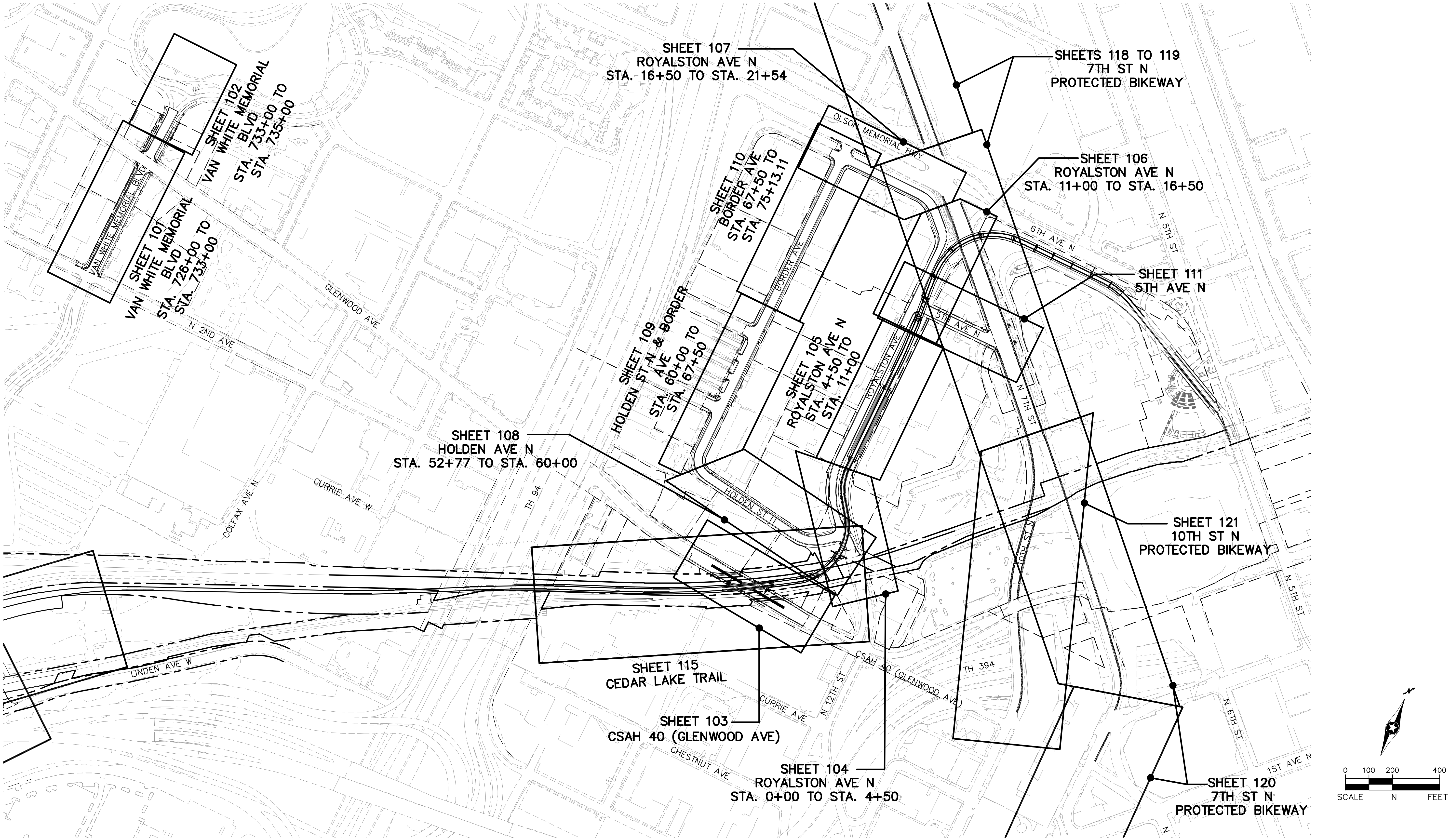
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
CIVIL
SHEET INDEX

DISCIPLINE: CIVIL

SHEET NAME: E4-CIV-IDX-001



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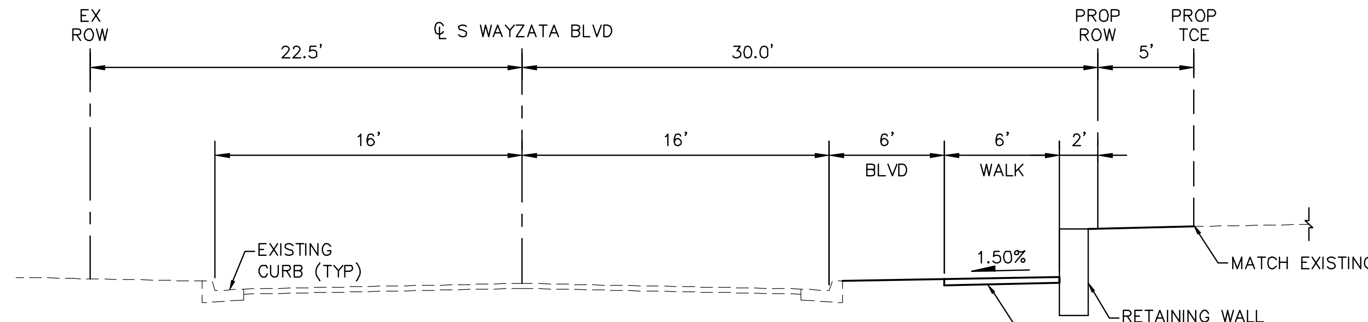
SOUTHWEST Green Line LRT Extension

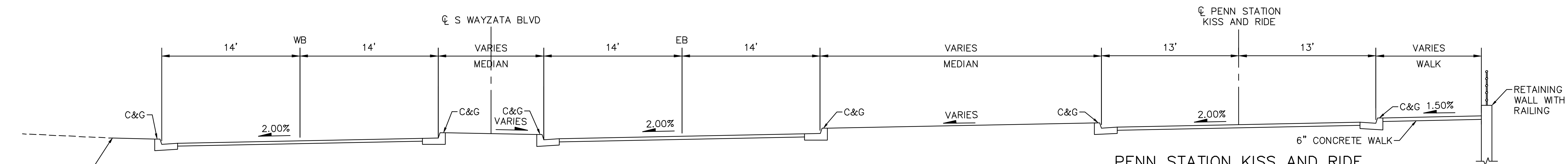
EAST - VOLUME 1 (CIVIL) - SEGMENT 4
CIVIL
SHEET INDEX

DISCIPLINE: CIVIL

SHEET NAME: E4-CIV-IDX-002

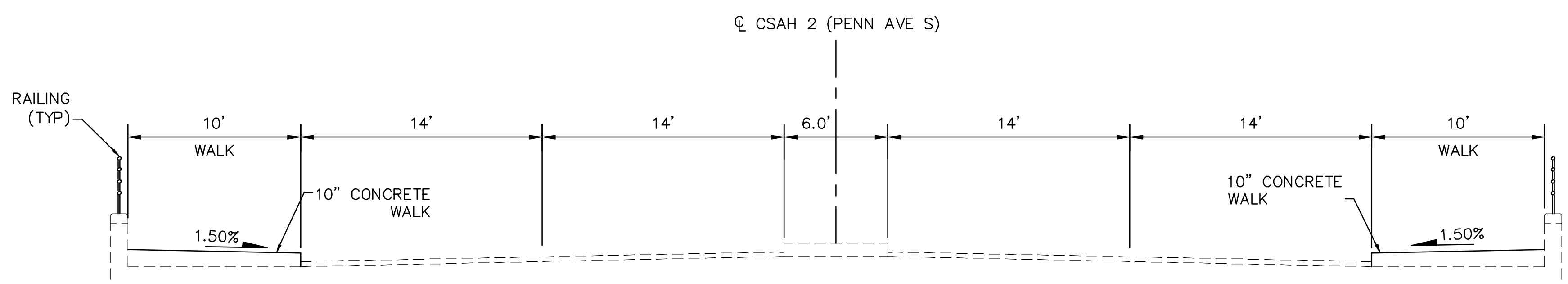


S WAYZATA BLVD
STA. 1+66 TO STA. 11+50



S WAYZATA BLVD
STA. 11+50 TO STA. 14+50

PENN STATION KISS AND RIDE
STA. 0+00 TO STA. 3+55



CSAH 2 (PENN AVE S) BRIDGE
STA. 14+50 TO STA. 18+00

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SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
CIVIL
TYPICAL SECTIONS

DISCIPLINE: CIVIL

SHEET NAME: E4-CIV-TYP-001

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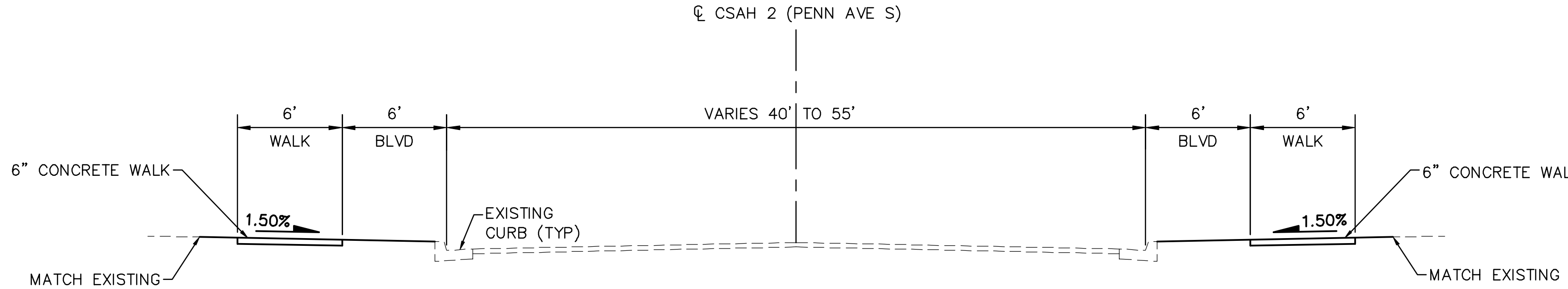
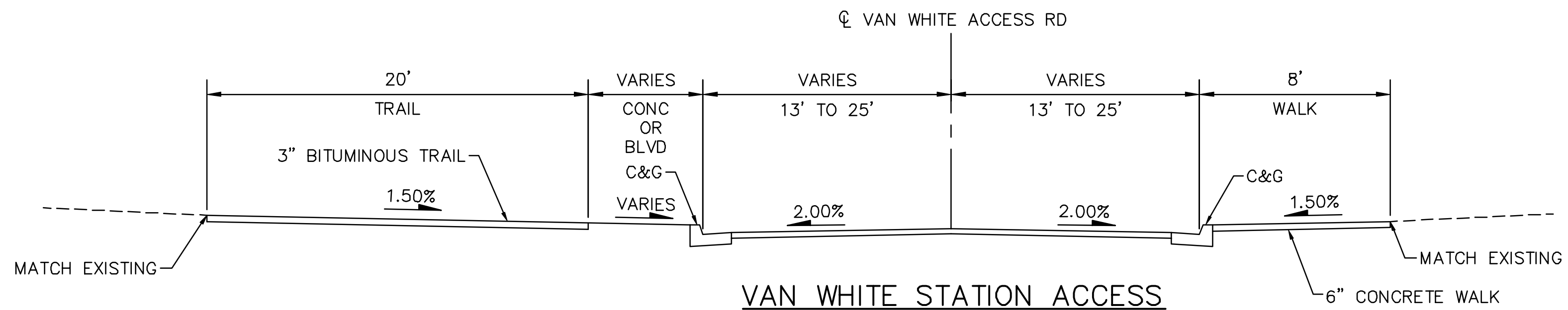
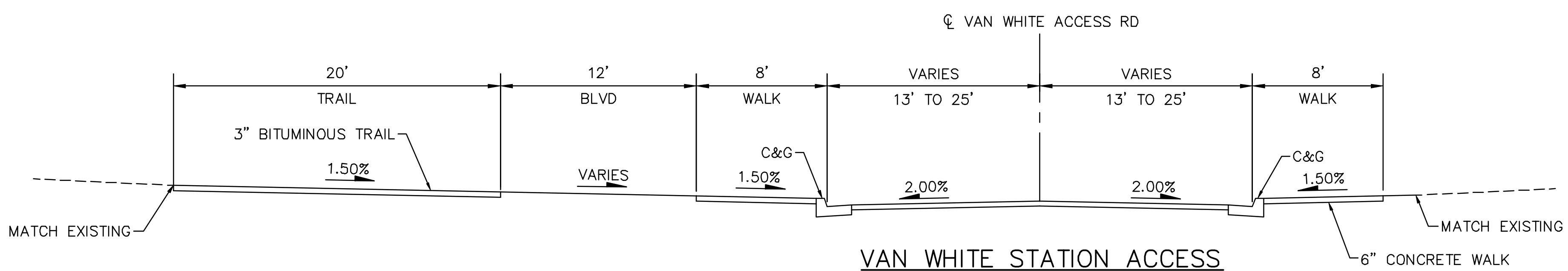


CSAH 2 (PENN AVE S)
STA. 18+00 TO STA. 22+79



VAN WHITE STATION ACCESS
STA. 0+00 TO STA. 4+50



VAN WHITE STATION ACCESS
STA. 4+50 TO STA. 8+68

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METROPOLITAN COUNCIL

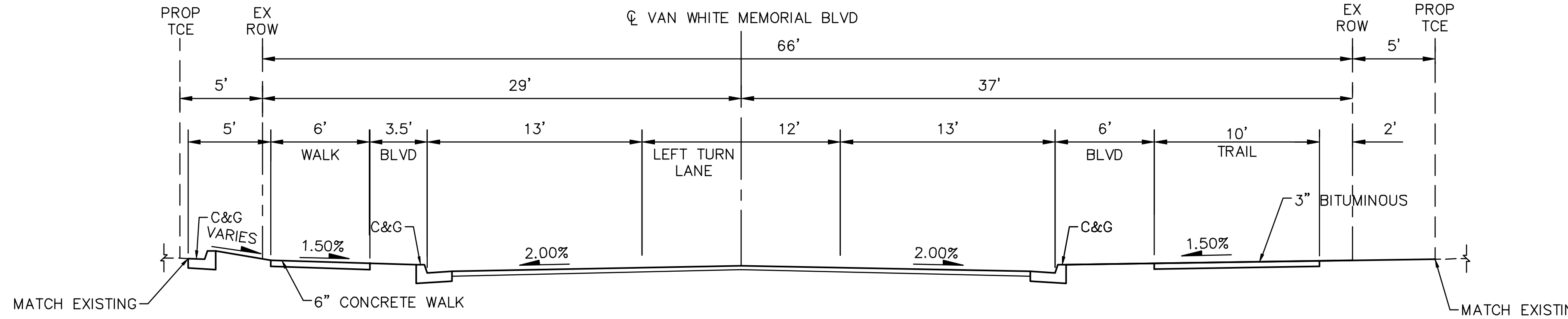
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
CIVIL
TYPICAL SECTIONS

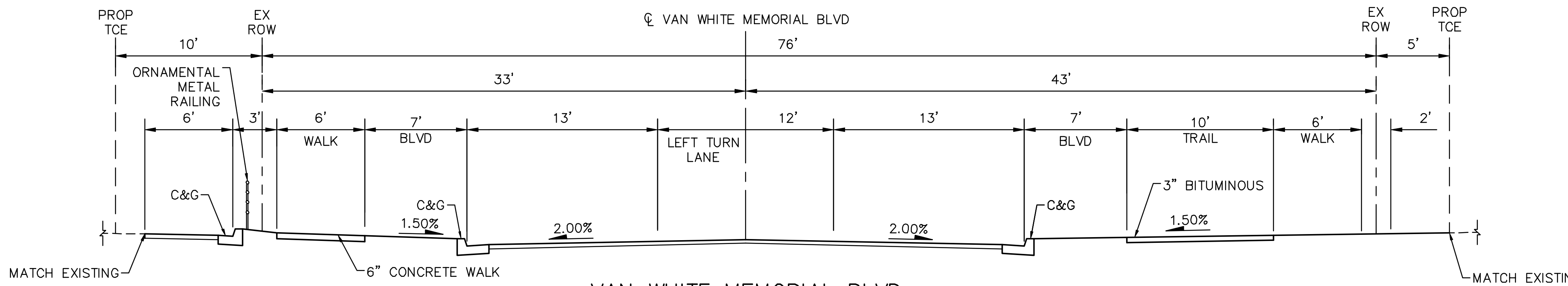
DISCIPLINE: CIVIL

SHEET NAME: E4-CIV-TYP - 002

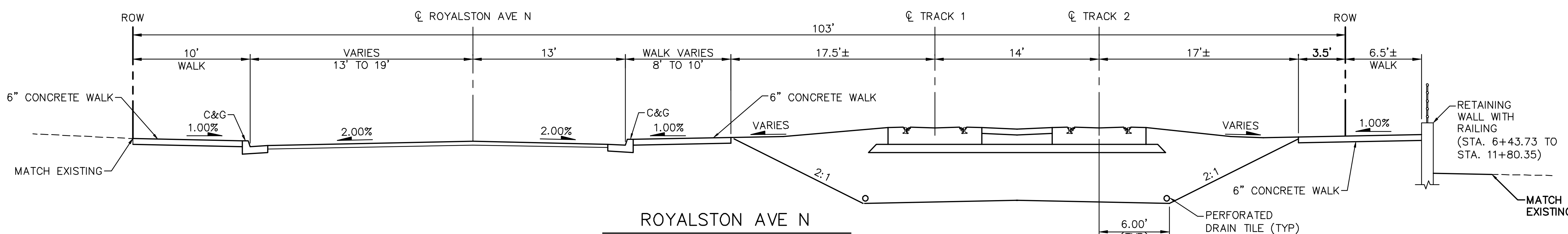
SHEET 88 OF 163



VAN WHITE MEMORIAL BLVD
STA. 726+80 TO STA. 731+91



VAN WHITE MEMORIAL BLVD
STA. 731+91 TO STA. 735+67.36



ROYALSTON AVE N
STA. 0+00 TO STA. 12+00

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

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PRELIMINARY ENGINEERING

METROPOLITAN COUNCIL

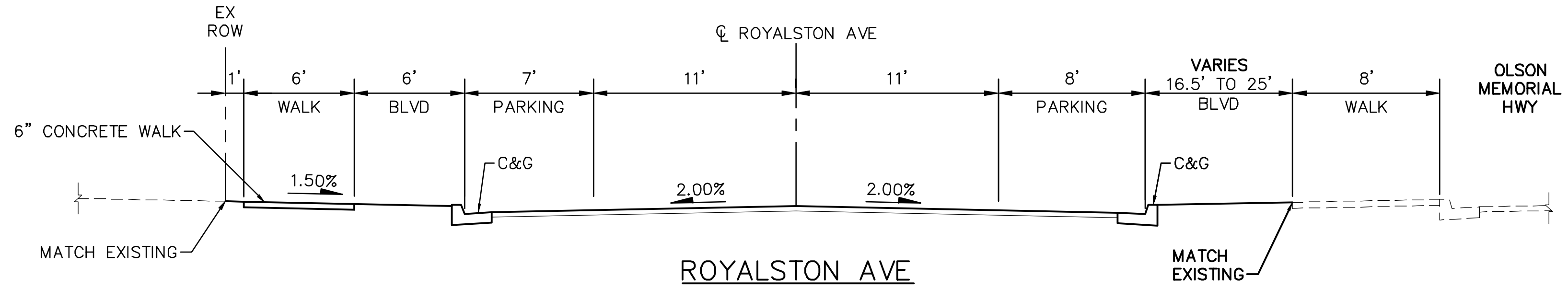
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
CIVIL
TYPICAL SECTIONS

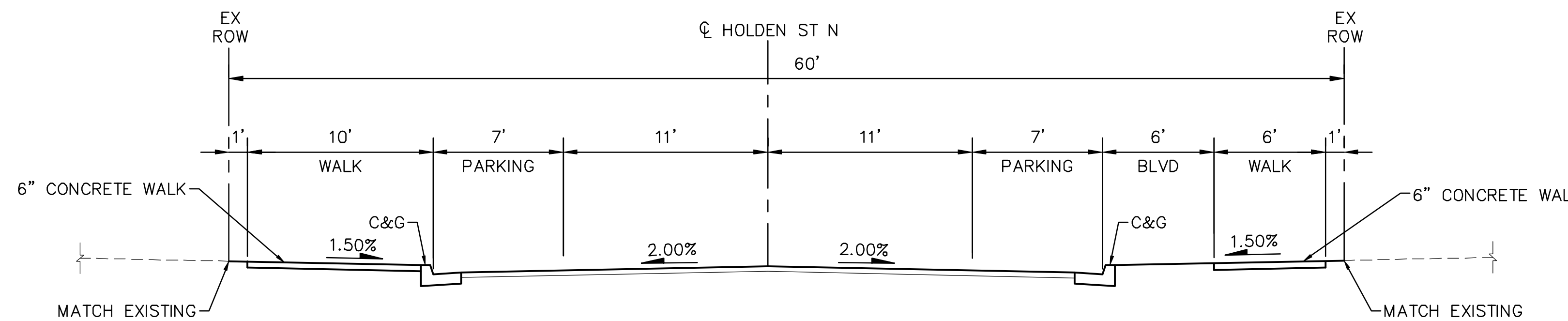
DISCIPLINE: CIVIL

SHEET NAME: E4-CIV-TYP - 003

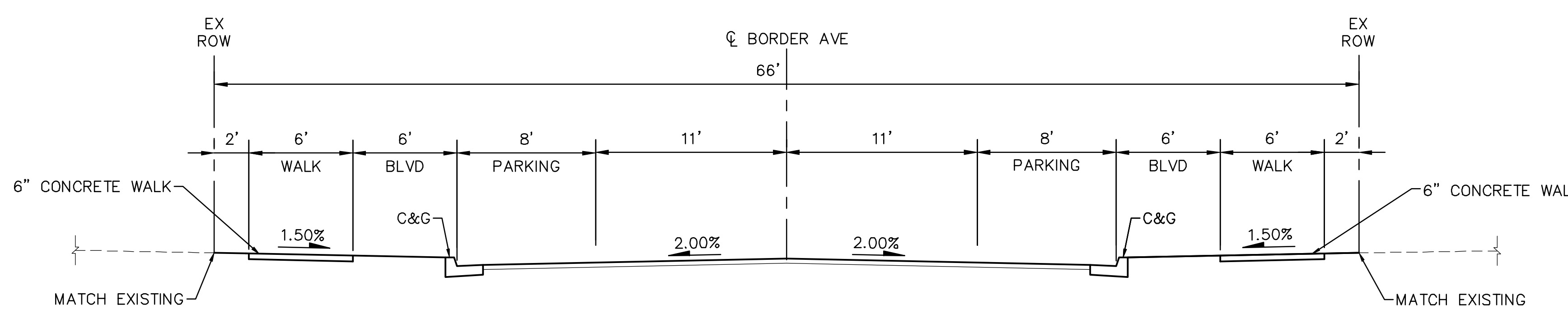
SHEET 89 OF 163



ROYALSTON AVE
STA. 12+00 TO STA. 21+00



HOLDEN ST N
STA. 52+77 TO STA. 60+00



BORDER AVE
STA. 60+00 TO STA. 66+00

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

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PRELIMINARY ENGINEERING

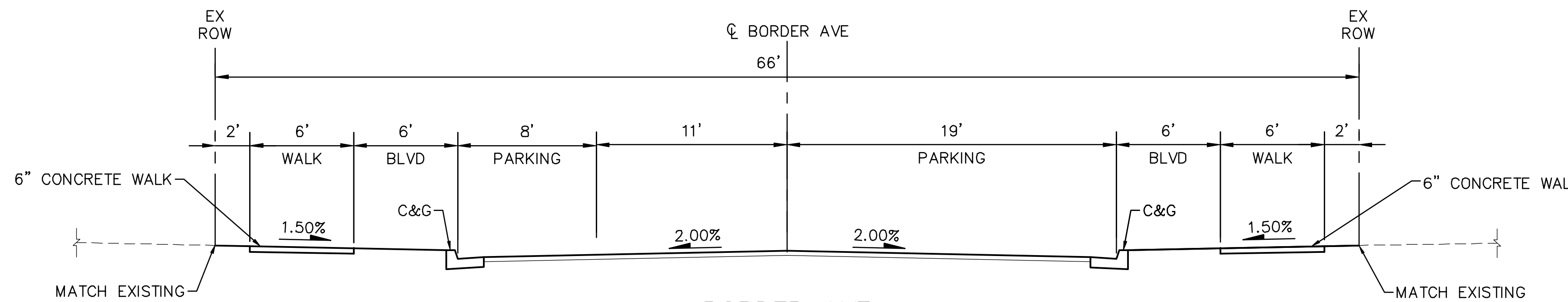
METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

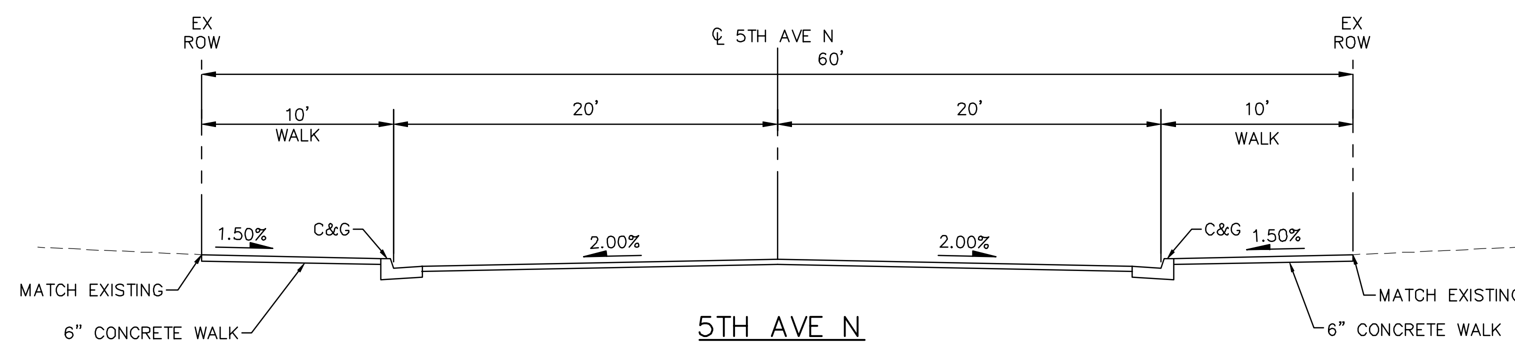
EAST - VOLUME 1 (CIVIL) - SEGMENT 4
CIVIL
TYPICAL SECTIONS

DISCIPLINE: CIVIL

SHEET NAME: E4-CIV-TYP - 004



BORDER AVE
STA. 66+00 TO STA. 75+13



5TH AVE N
STA. 0+00 TO STA. 4+41

Aug. 29 2014 08:49 am V:\3300_PEC-E\CAD\SEGMENT E4\PLAN SHEETS\CIVIL\E4-CIV-TYP.dwg By: tracy.fosmo

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PRELIMINARY ENGINEERING

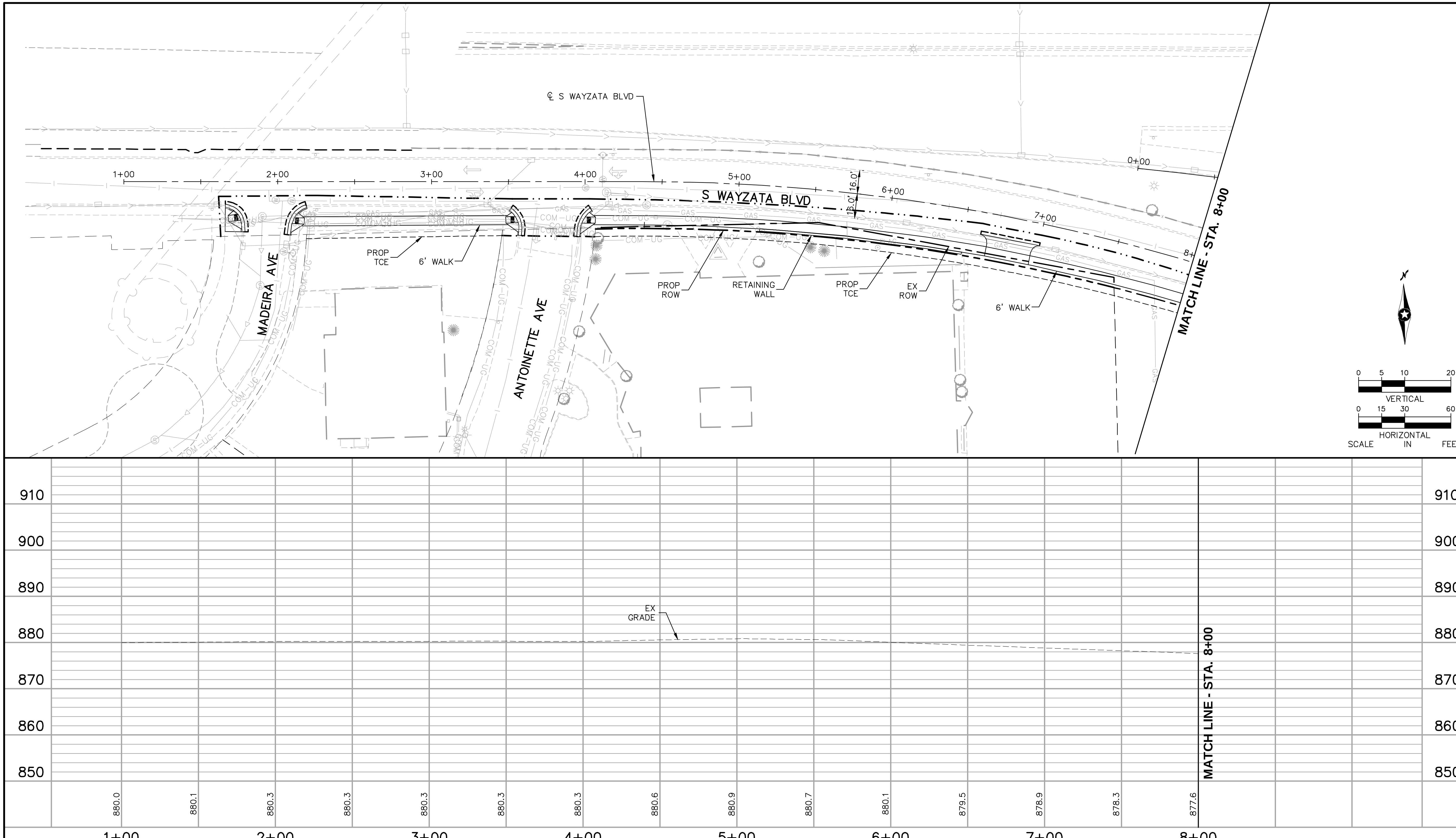
METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
CIVIL
TYPICAL SECTIONS

DISCIPLINE: **CIVIL**

SHEET NAME: **E4-CIV-TYP - 005**



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PRELIMINARY ENGINEERING

METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

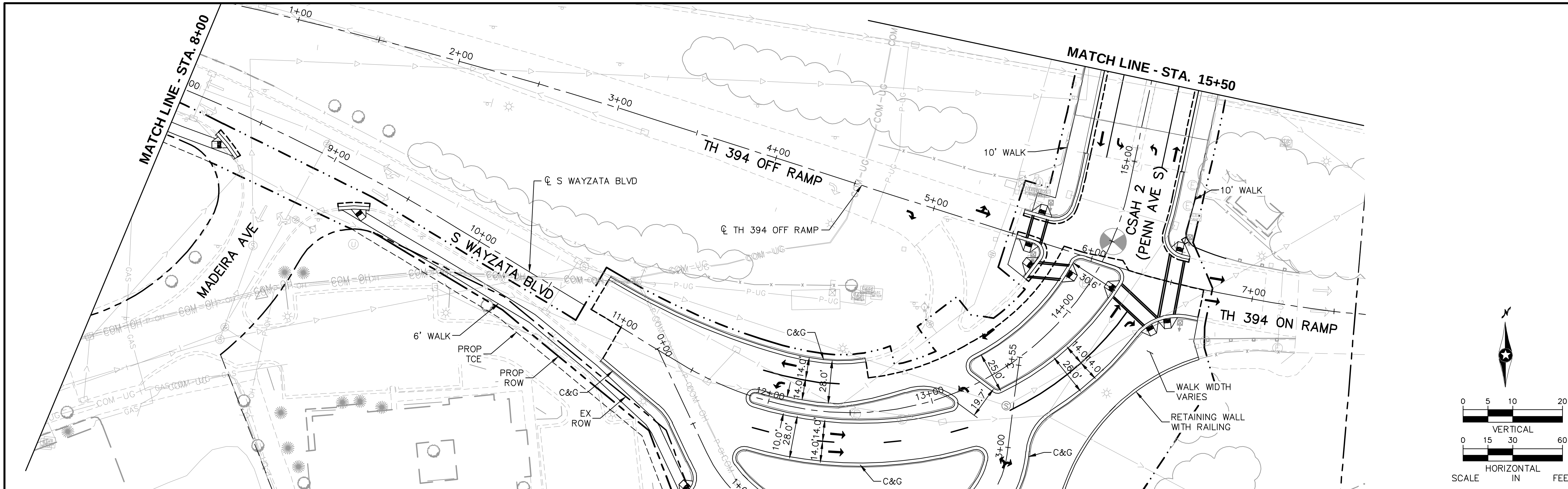
EAST - VOLUME 1 (CIVIL) - SEGMENT 4
S WAYZATA BLVD
PLAN AND PROFILE
STA. 1+00 TO STA. 8+00

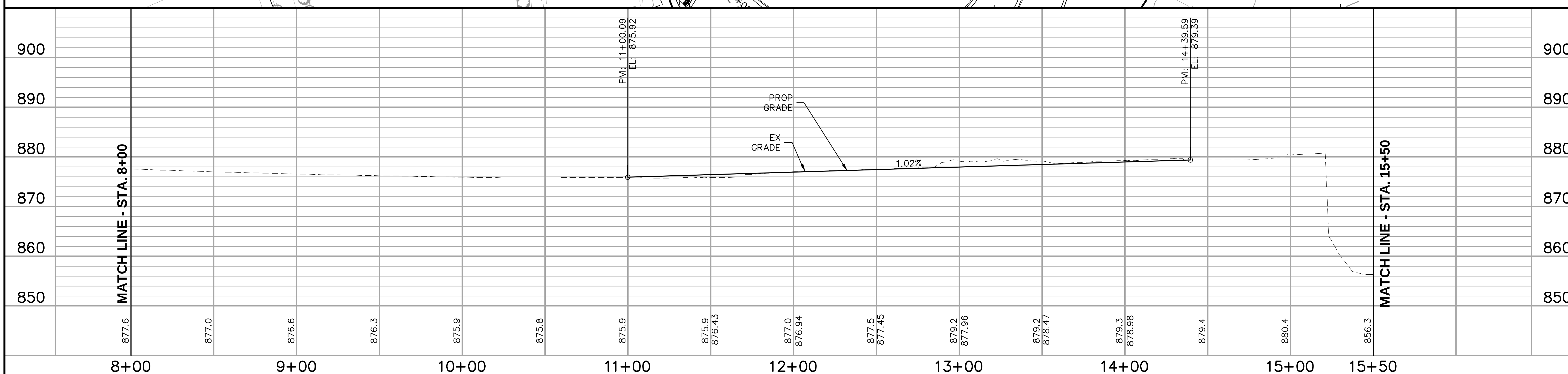
DISCIPLINE: CIVIL

SHEET NAME: E4-CIV-PPFL-WAY - 001

SHEET 92 OF 163

Aug. 29 2014 08:50 am V:\3300_PEC-E\CAD\SEGMENT E4\PLAN SHEETS\CIVIL\E4-CIV-PPFL-WAY.dwg By: tracy.fosmo





NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

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PRELIMINARY ENGINEERING

METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

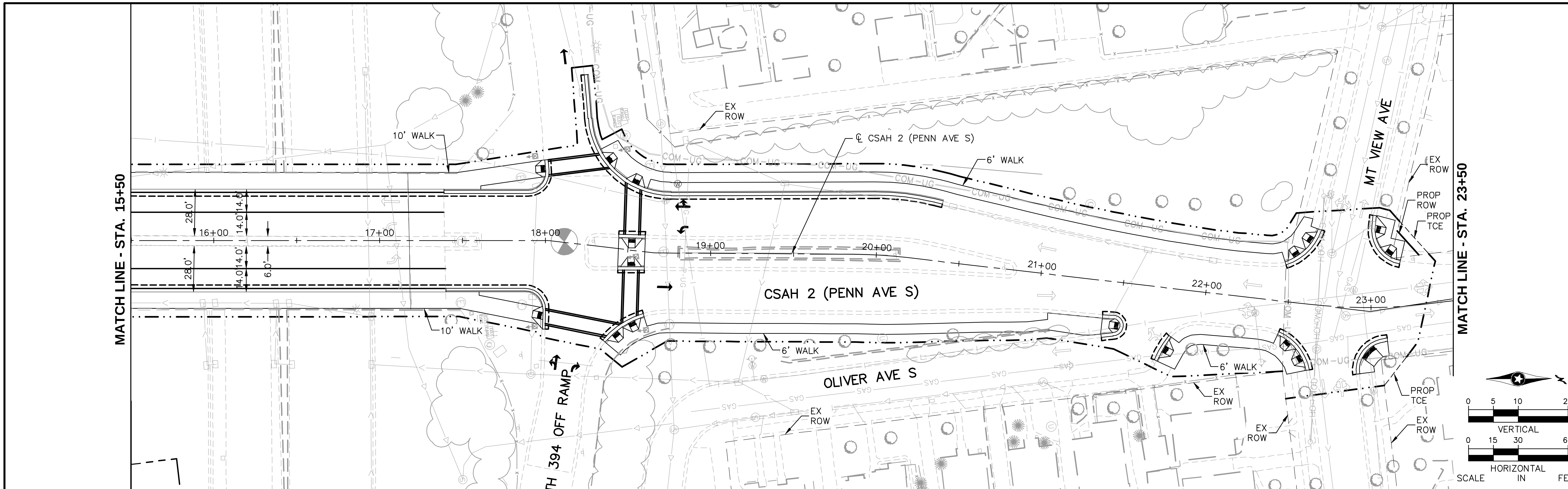
EAST - VOLUME 1 (CIVIL) - SEGMENT 4
S WAYZATA BLVD/CSAH 2 (PENN AVE S)
PLAN AND PROFILE
STA. 8+00 TO STA. 15+50

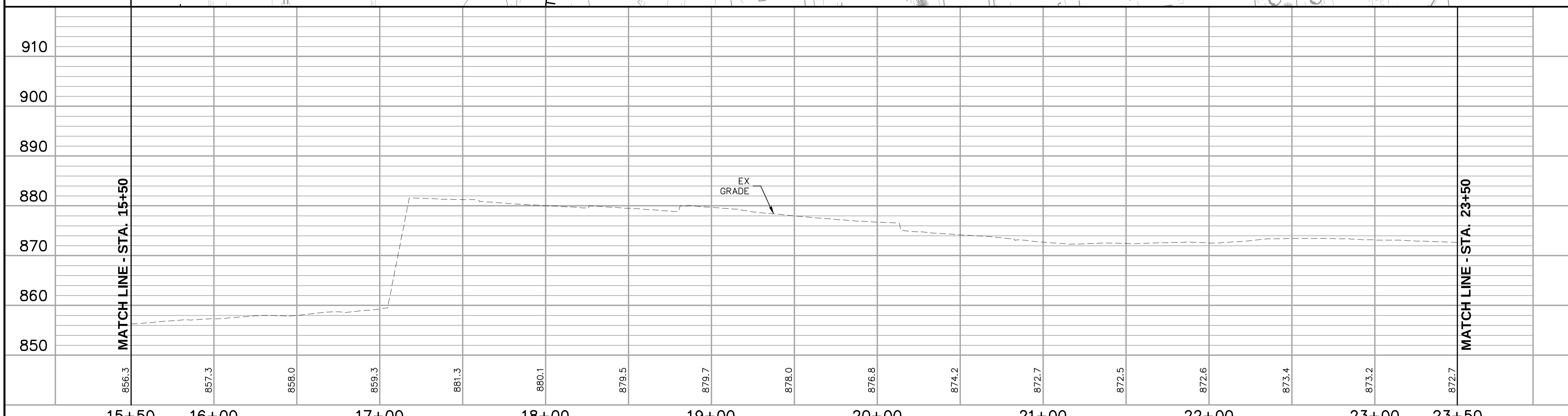
DISCIPLINE: CIVIL

SHEET NAME: E4-CIV-PPFL-WAY - 002

SHEET 93 OF 163

Aug. 29 2014 08:51 am V:\3300_PEC-E\CAD\SEGMENT E4\PLAN SHEETS\CIVIL\E4-CIV-PPFL-WAY.dwg By: tracy.fosmo





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PRELIMINARY ENGINEERING

METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
CSAH 2 (PENN AVE S)
PLAN AND PROFILE
STA. 15+50 TO STA. 23+50

DISCIPLINE: CIVIL

SHEET NAME: E4-CIV-PPFL-WAY - 003

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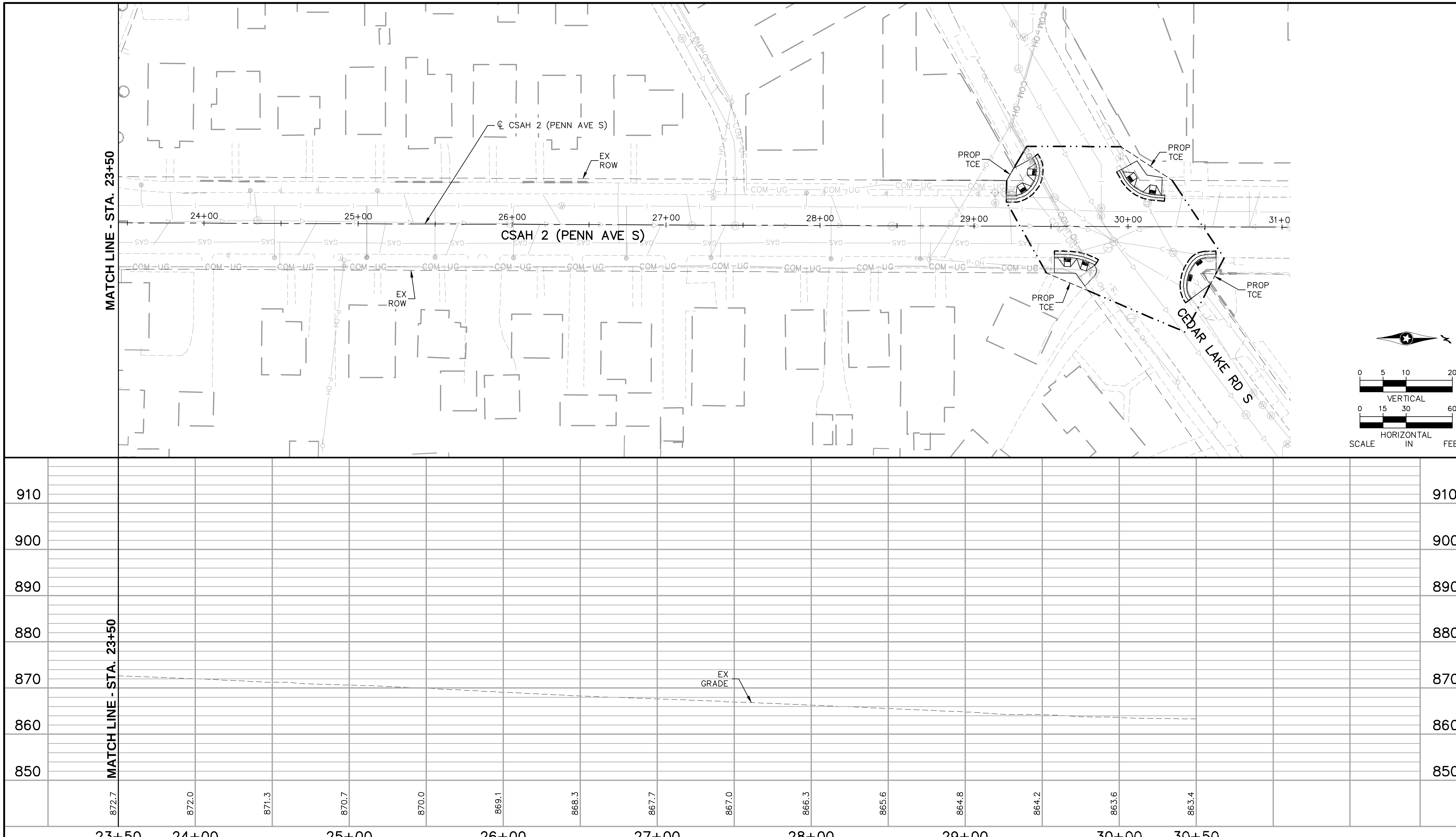

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SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
CSAH 2 (PENN AVE S)
PLAN AND PROFILE
STA. 23+50 TO STA. 30+50

DISCIPLINE: CIVIL

SHEET NAME: E4-CIV-PPFL-WAY - 004

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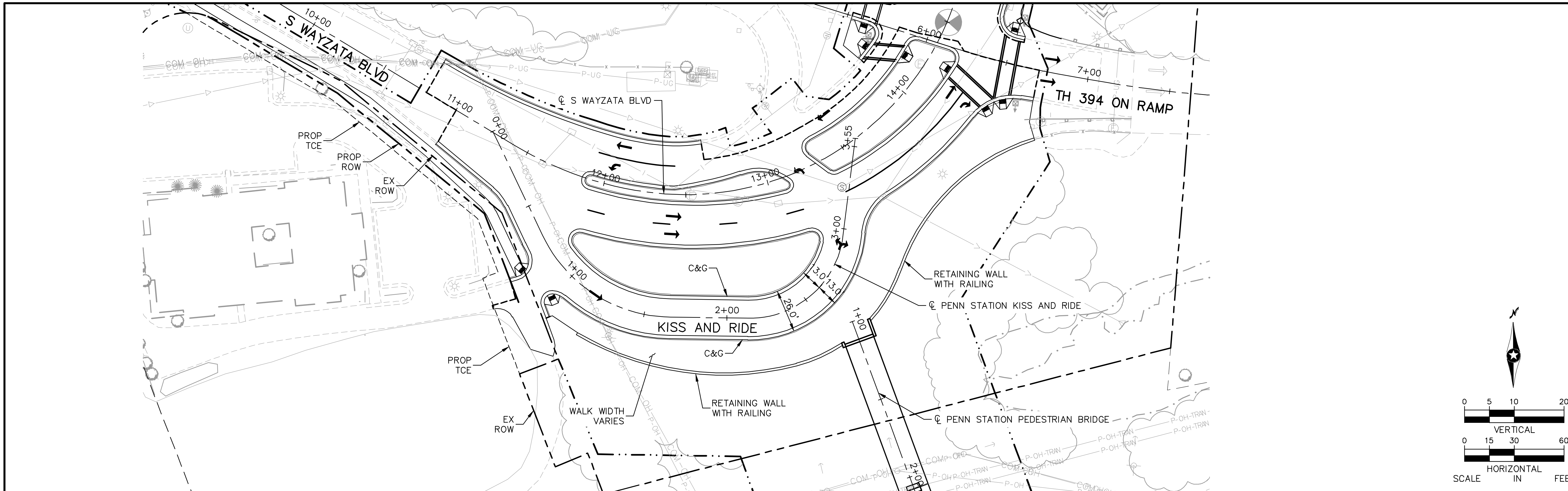

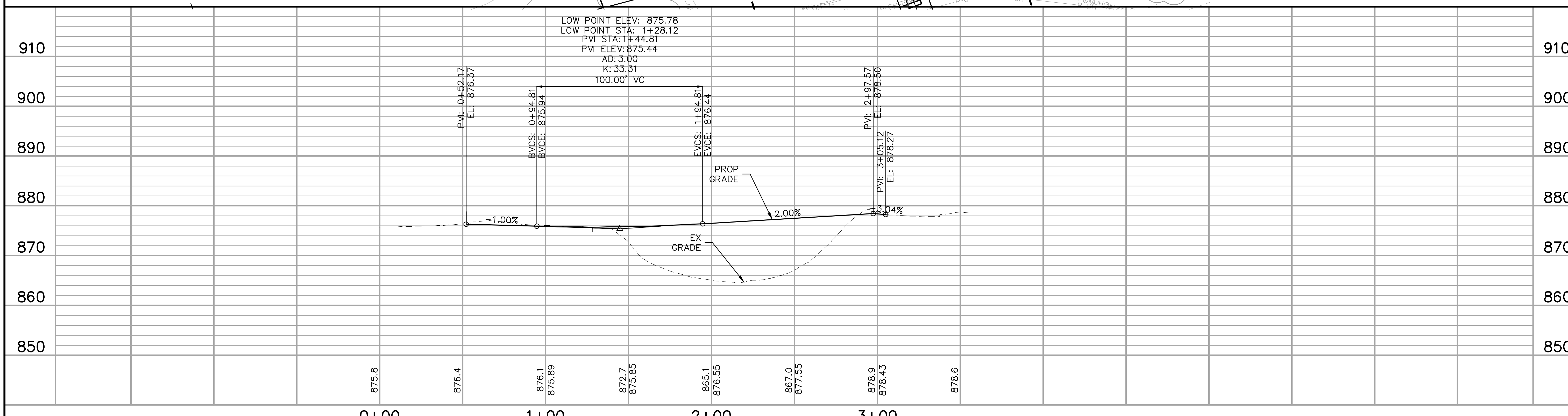

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PRELIMINARY ENGINEERING

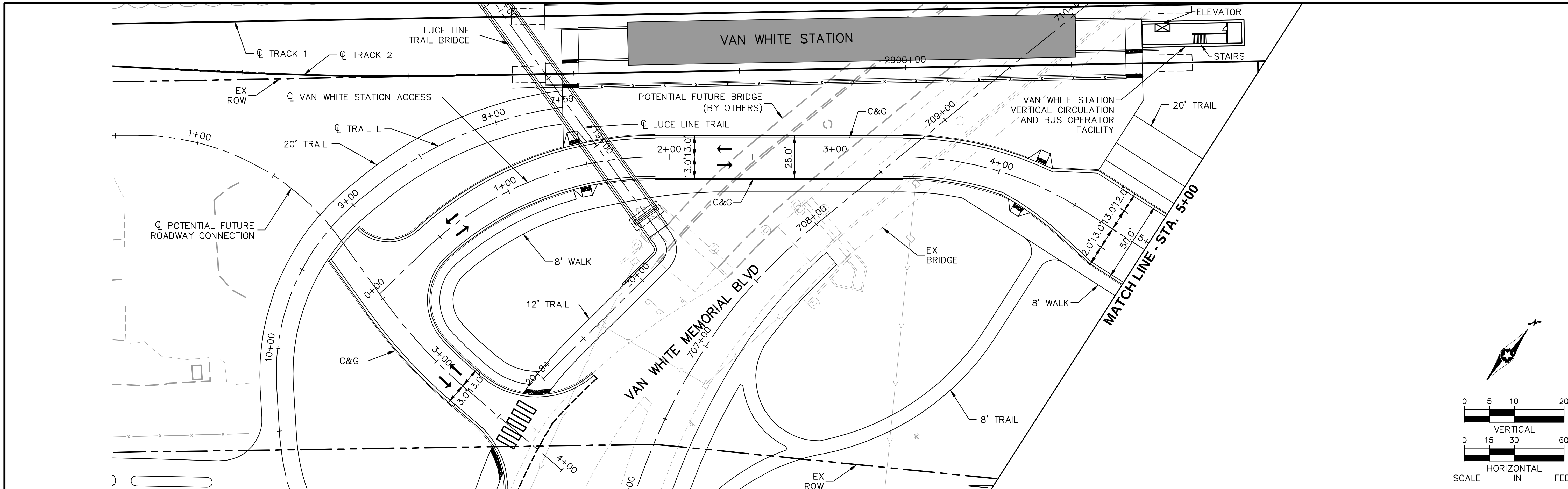
METROPOLITAN COUNCIL

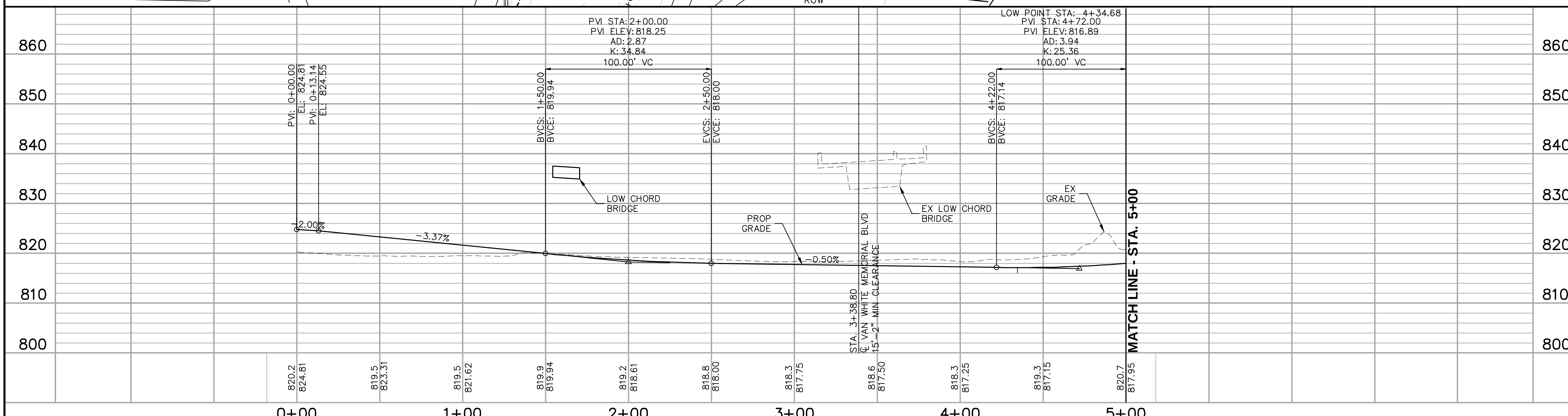
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
PENN STATION KISS & RIDE
PLAN AND PROFILE
STA. 0+00 TO STA. 3+55

DISCIPLINE: CIVIL

SHEET NAME: E4-CIV-PPFL-WAY - 005





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METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

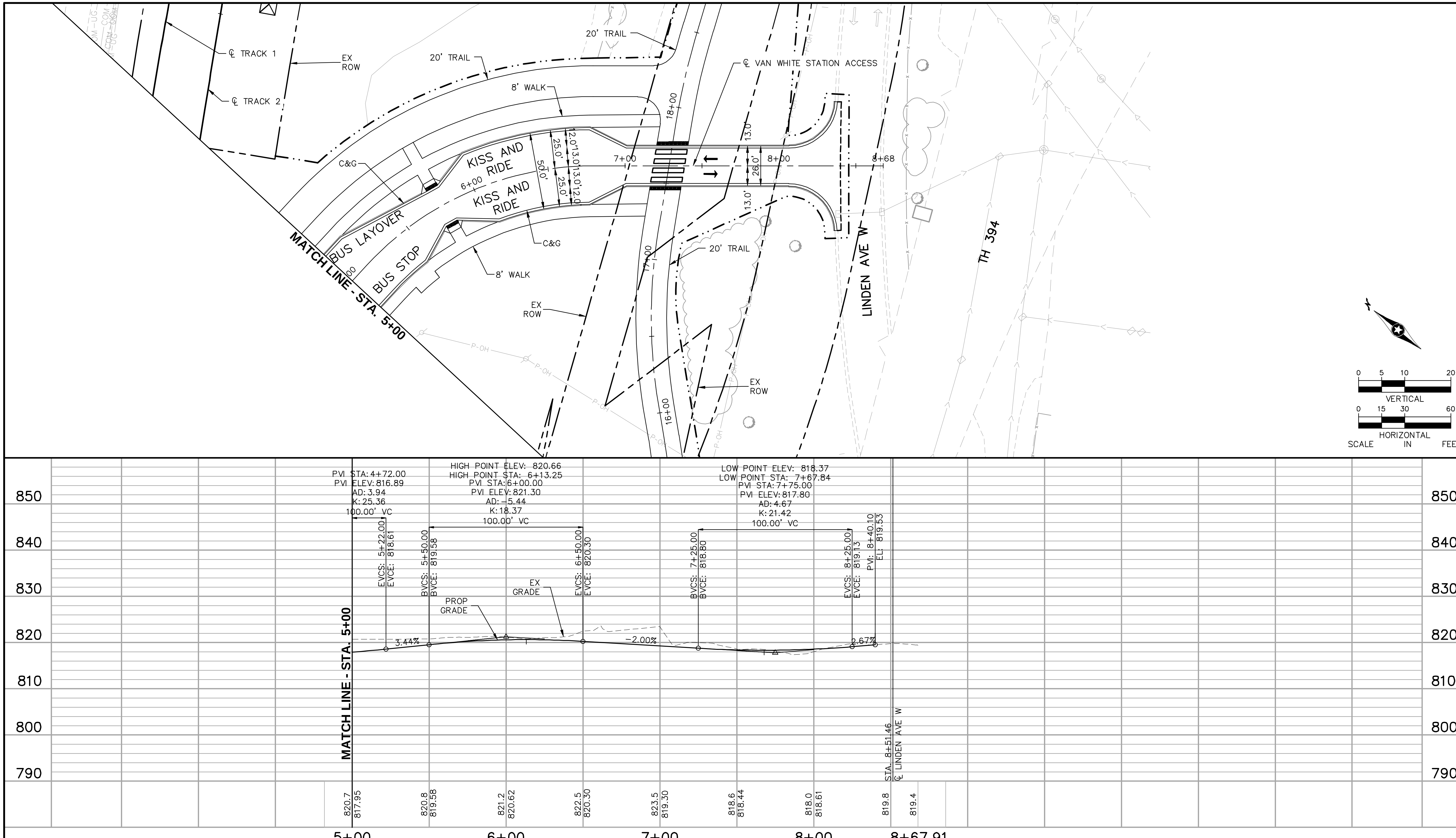
EAST - VOLUME 1 (CIVIL) - SEGMENT 4
VAN WHITE STATION ACCESS
PLAN AND PROFILE
STA. 0+00 TO STA. 5+00

SHEET 97 OF 163

DISCIPLINE: CIVIL

SHEET NAME: E4-CIV-PPFL-VAN - 001

Aug. 29 2014 08:53 am V:\3300_PEC-E\CAD\SEGMENT E4\PLAN SHEETS\CIVIL\E4-CIV-PPFL-VAN.dwg By: tracy.fosmo



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PRELIMINARY ENGINEERING

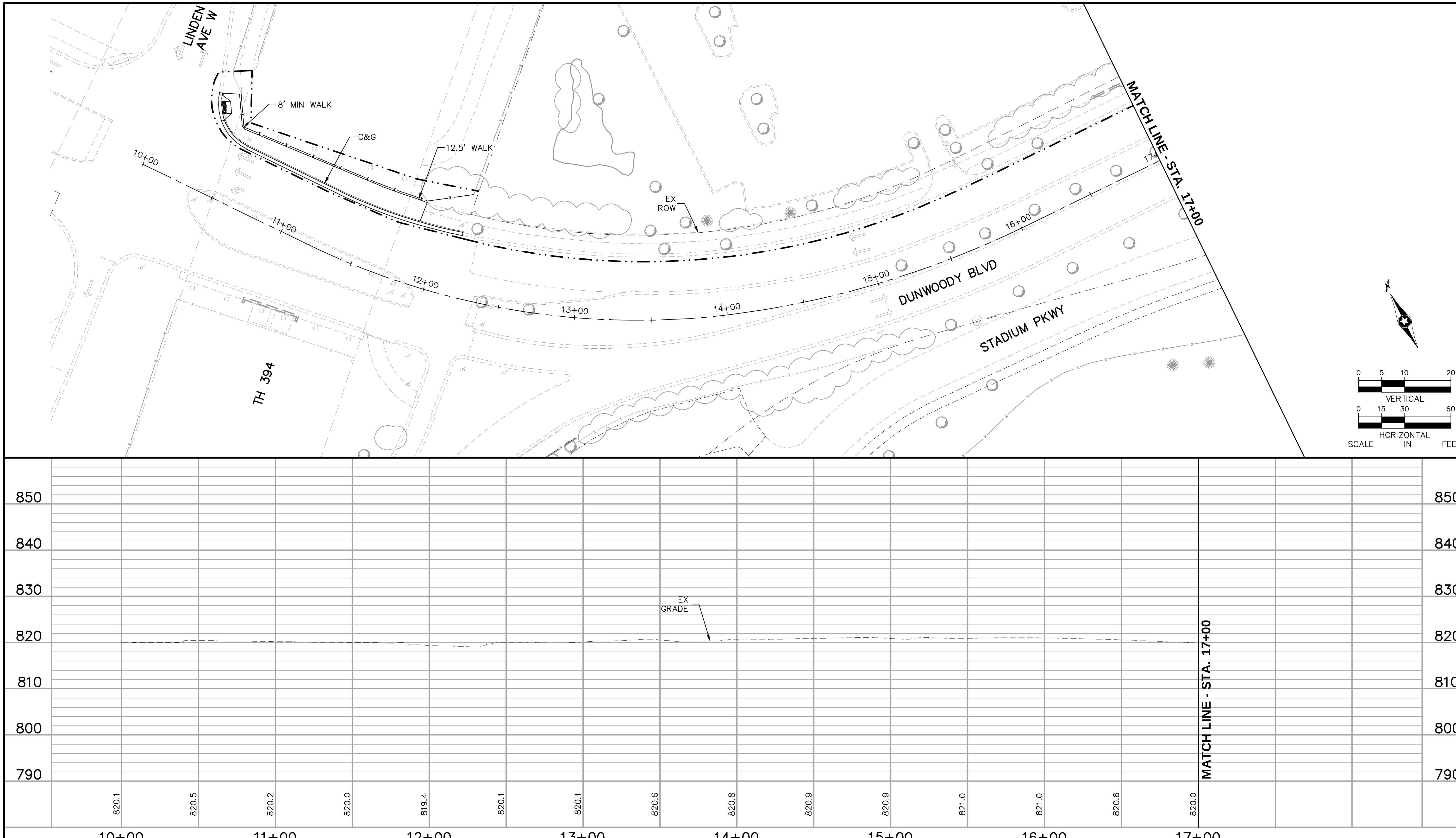
METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
VAN WHITE STATION ACCESS
PLAN AND PROFILE
STA. 5+00 TO STA. 8+68

DISCIPLINE: CIVIL

SHEET NAME: E4-CIV-PPFL-VAN - 002



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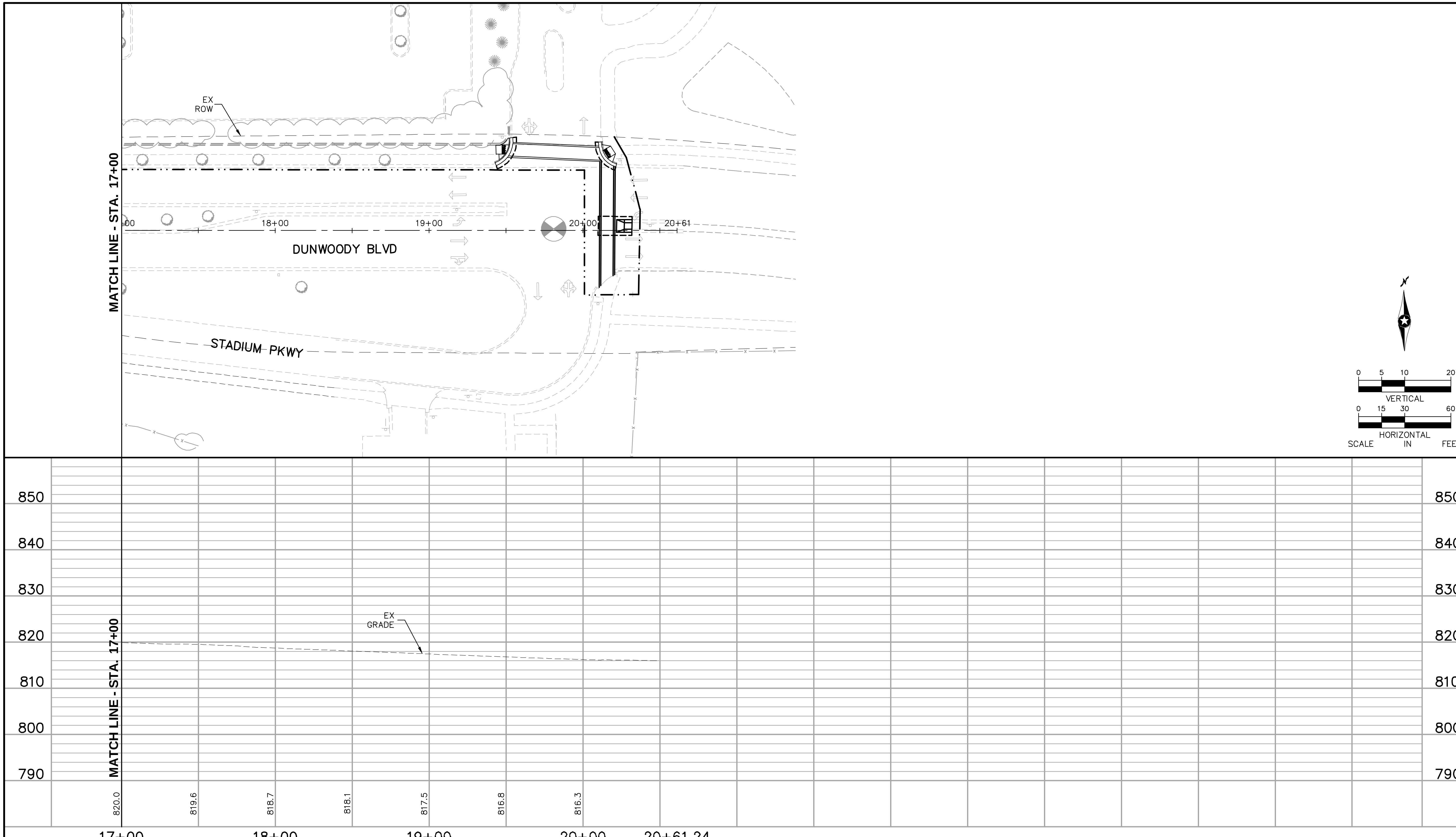
METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
DUNWOODY BLVD
PLAN AND PROFILE
STA. 10+00 TO STA. 17+00

DISCIPLINE: CIVIL

SHEET NAME: E4-CIV-PPFL-DUN - 001



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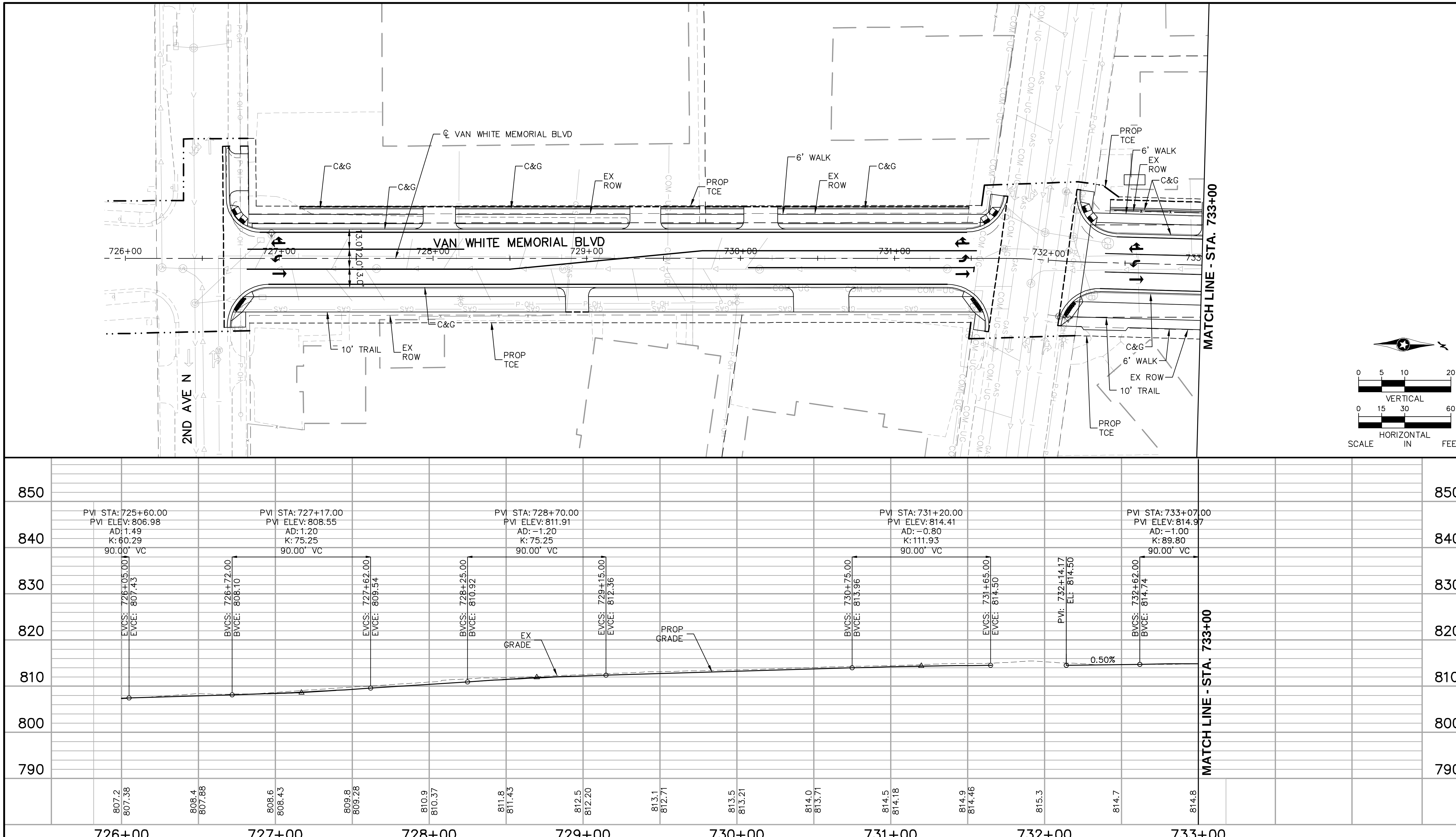
METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
DUNWOODY BLVD
PLAN AND PROFILE
STA. 17+00 TO STA. 20+61

DISCIPLINE: CIVIL

SHEET NAME: E4-CIV-PPFL-DUN - 002



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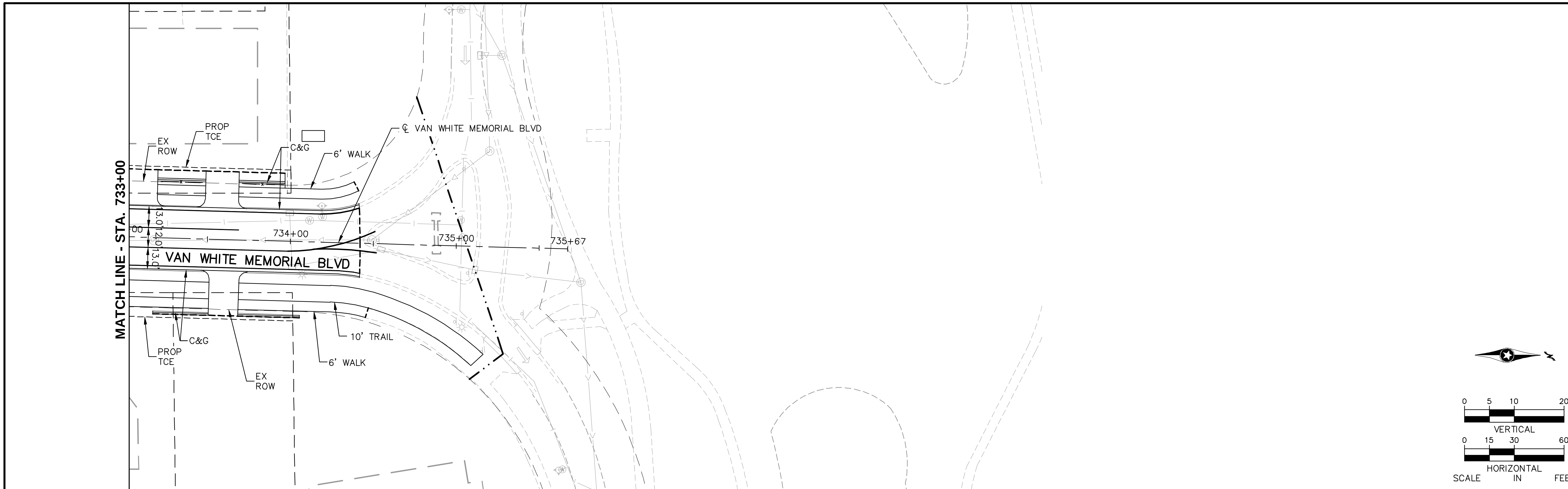
METROPOLITAN COUNCIL

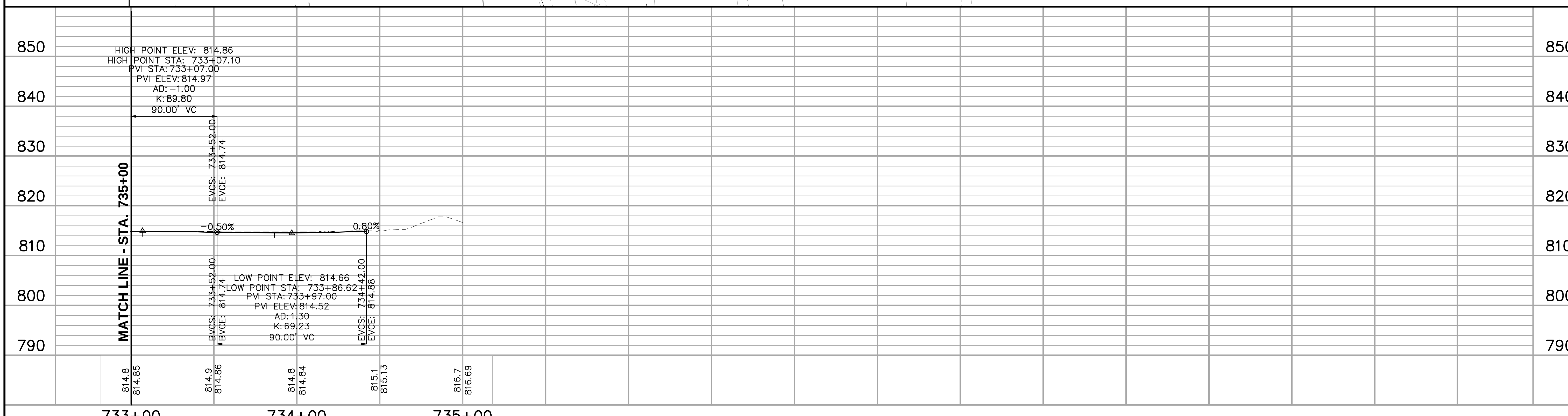
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
VAN WHITE MEMORIAL BLVD
PLAN AND PROFILE
STA. 726+00 TO STA. 733+00

DISCIPLINE: CIVIL

SHEET NAME: E4-CIV-PPFL-FRE - 001





NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

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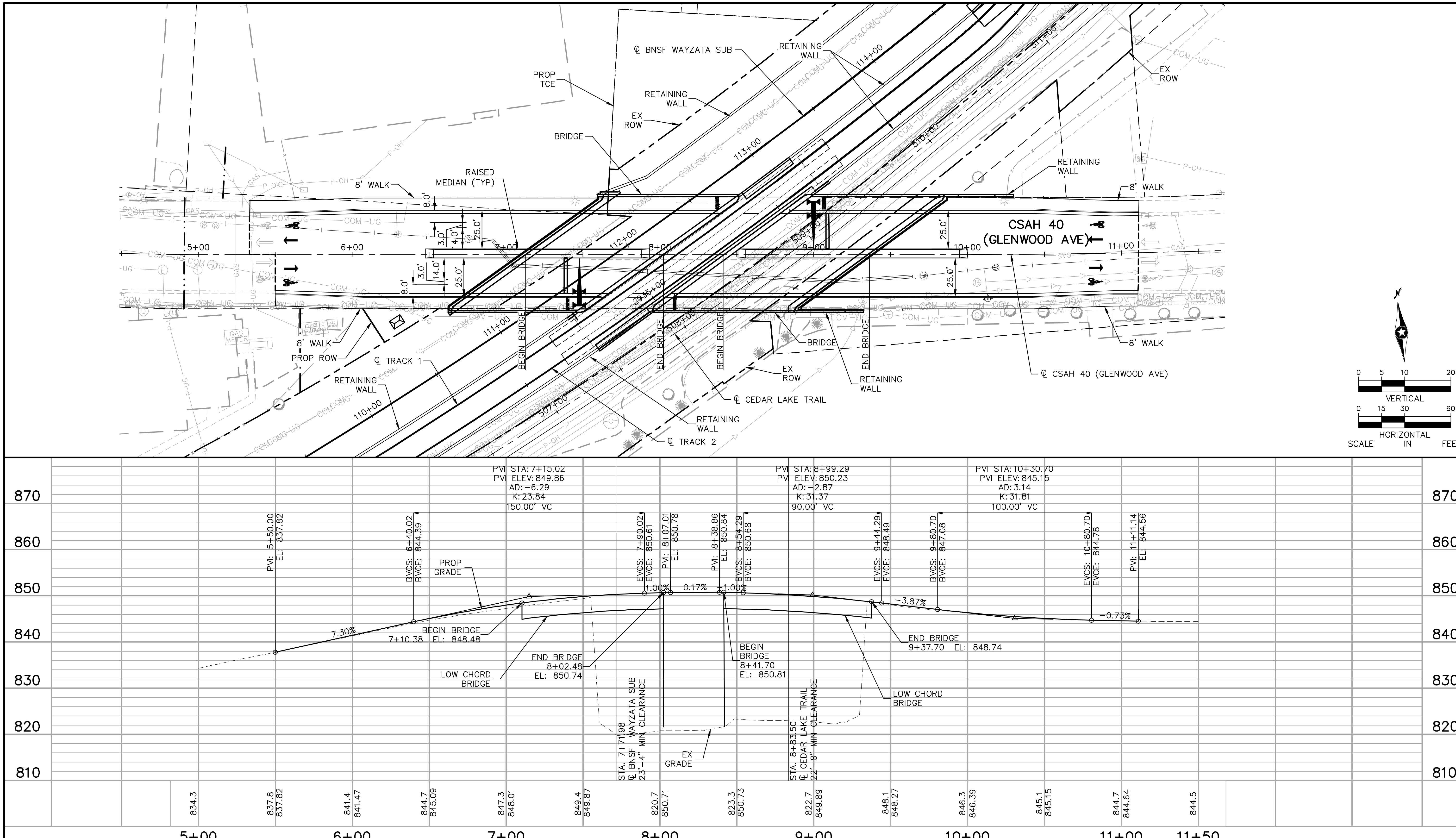
METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
VAN WHITE MEMORIAL BLVD
PLAN AND PROFILE
STA. 733+00 TO STA. 735+00

DISCIPLINE: CIVIL

SHEET NAME: E4-CIV-PPFL-FRE - 002



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PRELIMINARY ENGINEERING

METROPOLITAN COUNCIL

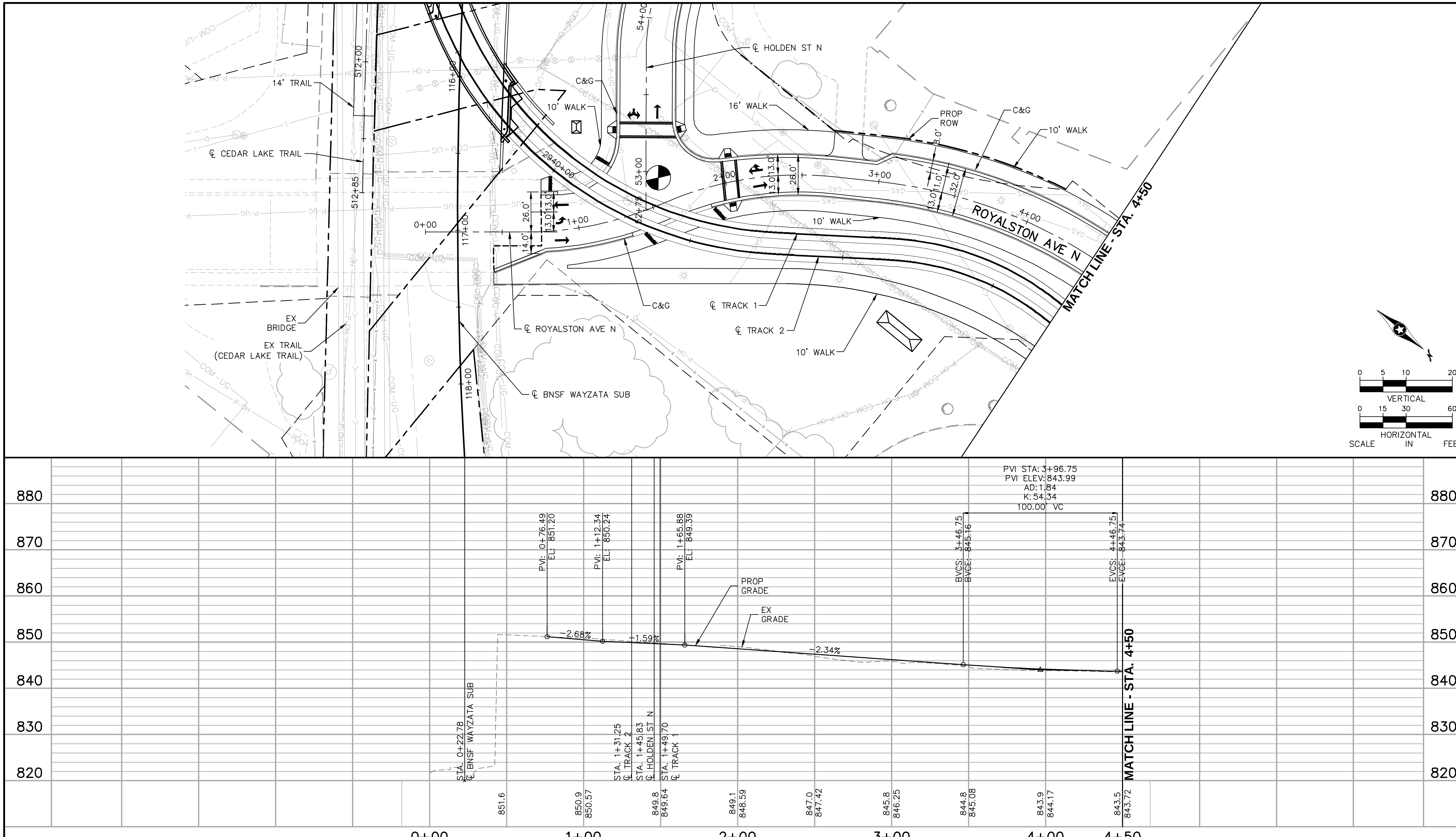
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
CSAH 40 (GLENWOOD AVE)
PLAN AND PROFILE
STA. 5+00 TO STA. 11+50

DISCIPLINE: CIVIL

SHEET NAME: E4-CIV-PPFL-GLN - 001

SHEET 103 OF 163



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PRELIMINARY ENGINEERING

METROPOLITAN COUNCIL

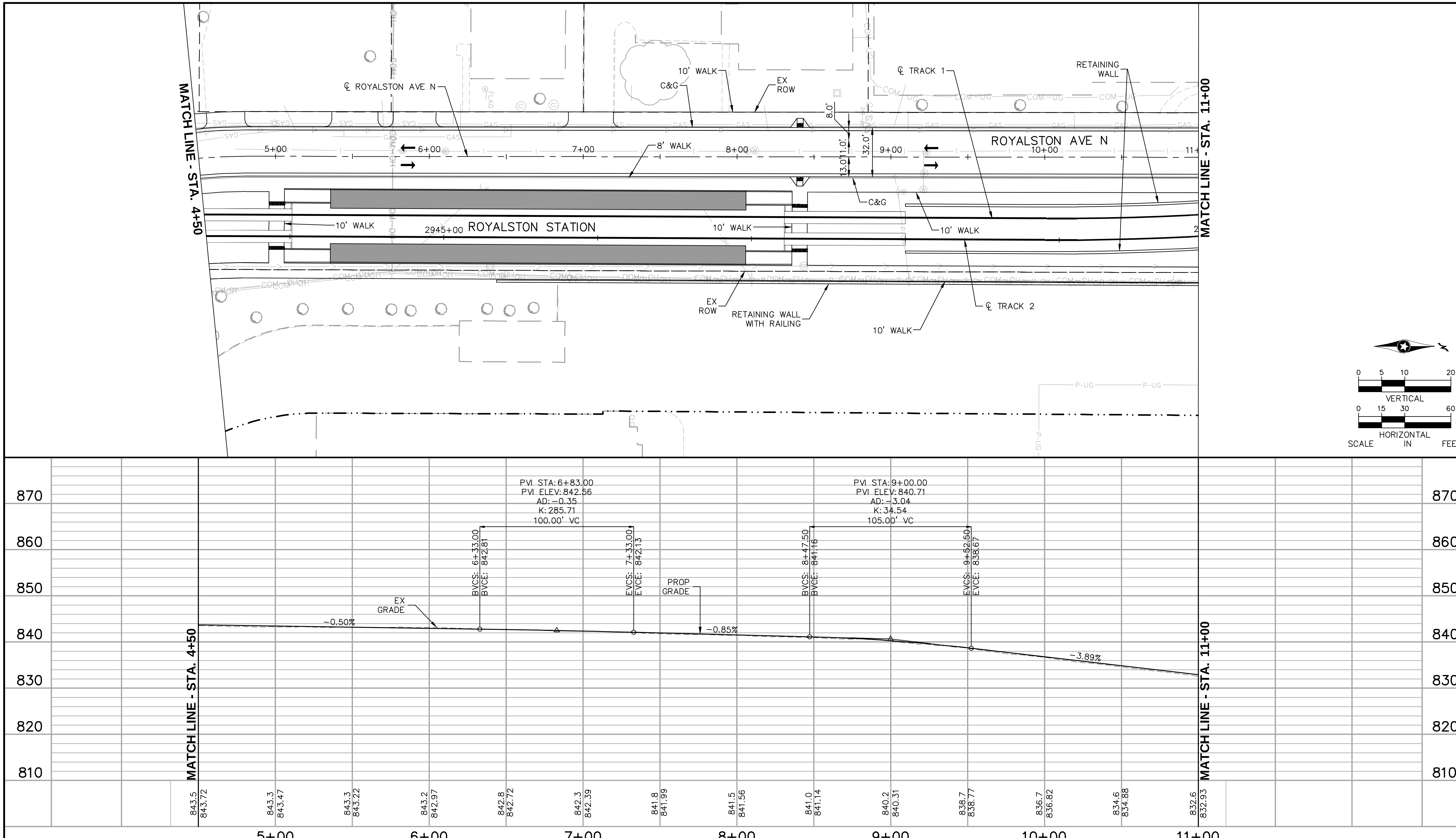
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
ROYALSTON AVE N
PLAN AND PROFILE
STA. 0+00 TO STA. 4+50

DISCIPLINE: CIVIL

SHEET NAME: E4-CIV-PPFL-ROY - 001

SHEET 104 OF 163



NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

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PRELIMINARY ENGINEERING

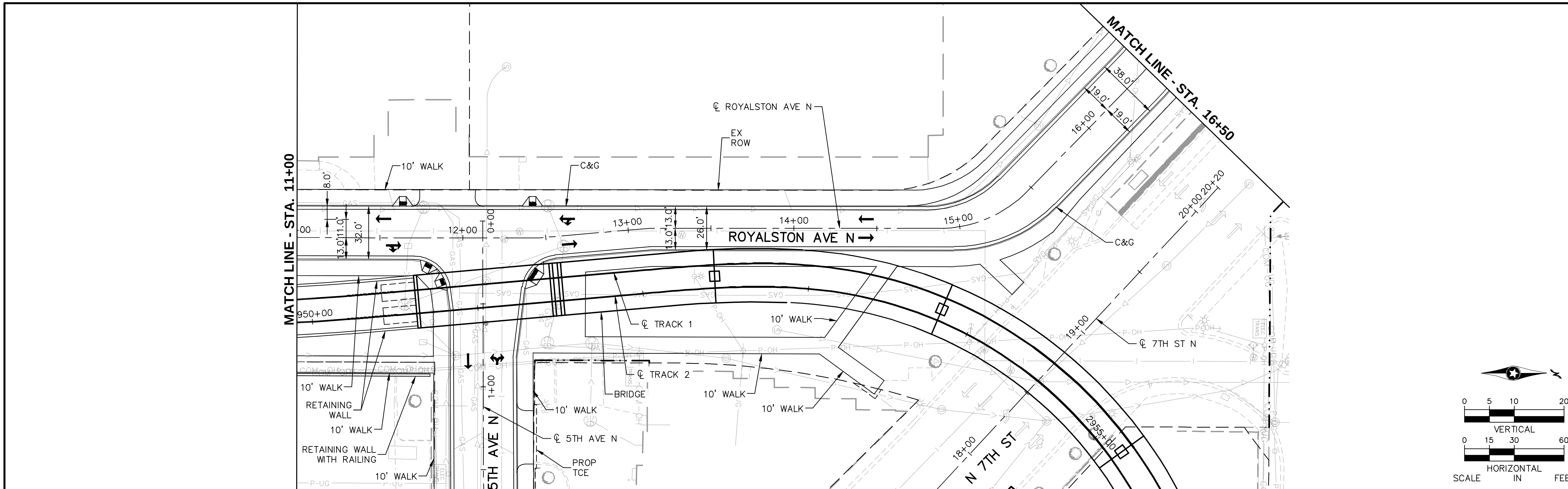
METROPOLITAN COUNCIL

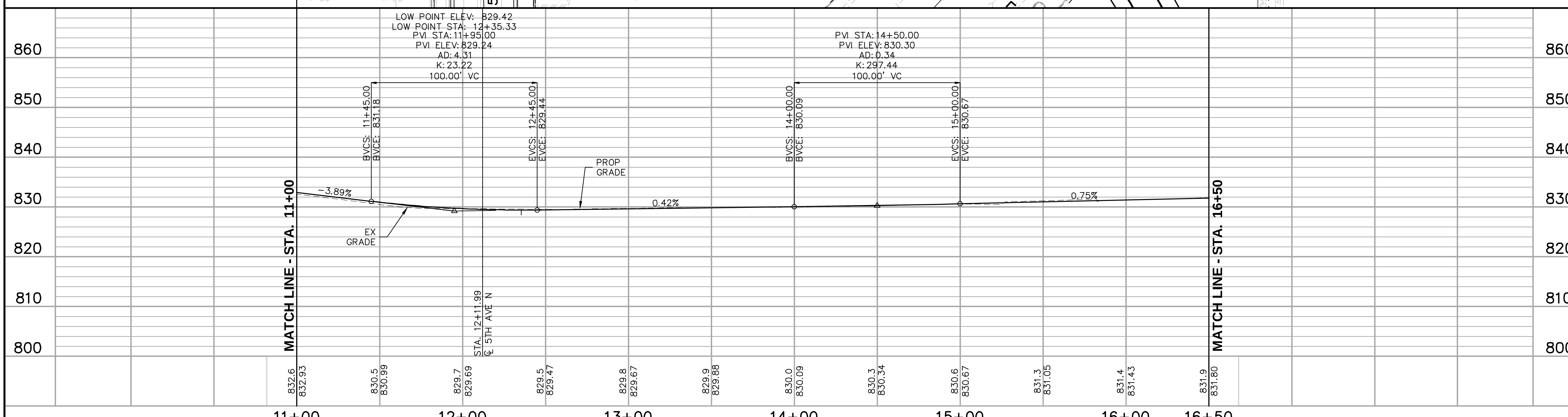
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
ROYALSTON AVE N
PLAN AND PROFILE
STA. 4+50 TO STA. 11+00

DISCIPLINE: CIVIL

SHEET NAME: E4-CIV-PPFL-ROY - 002





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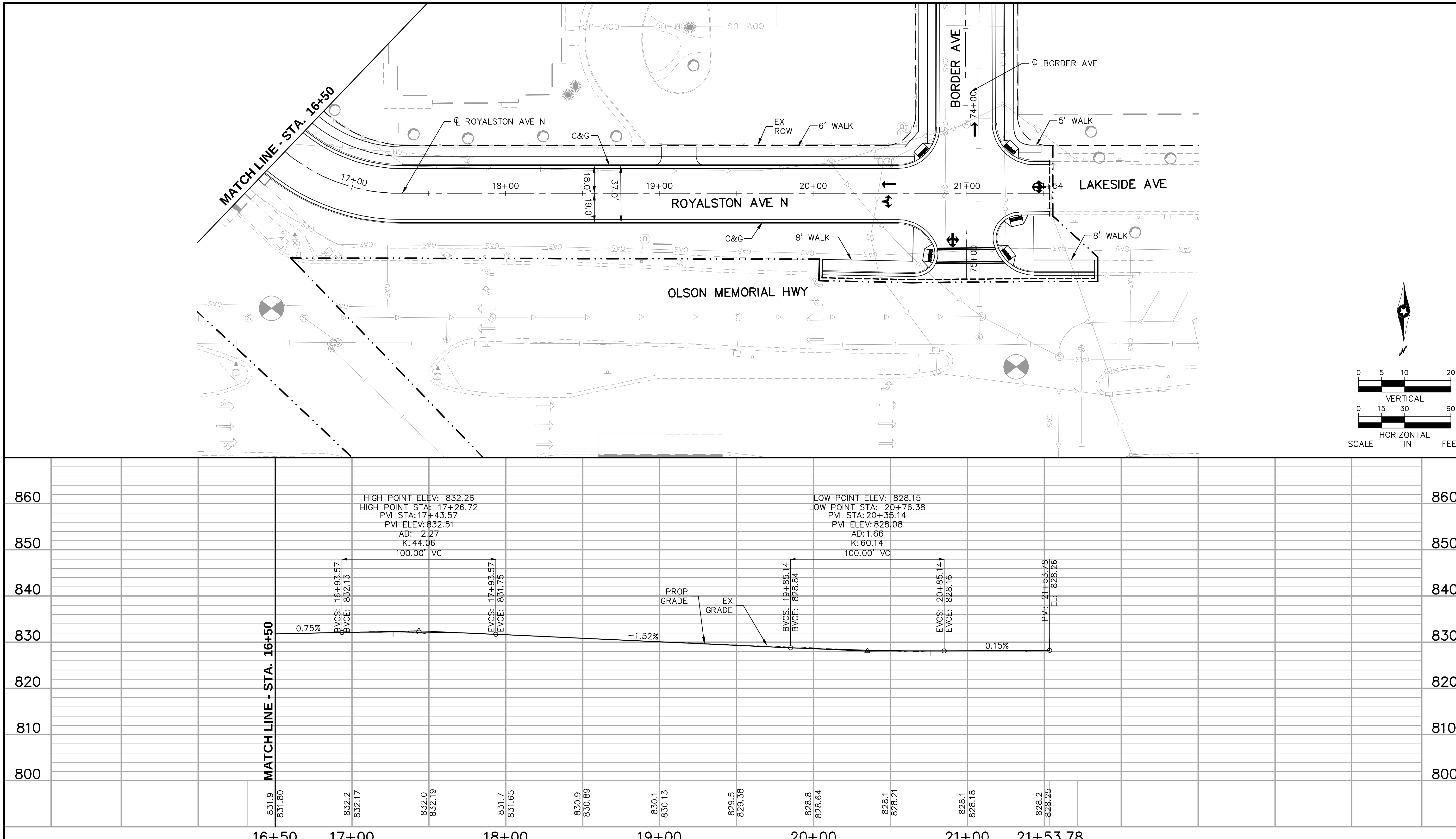
METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
ROYALSTON AVE N
PLAN AND PROFILE
STA. 11+00 TO STA. 16+50

DISCIPLINE: **CIVIL**

SHEET NAME: **E4-CIV-PPFL-ROY - 003**



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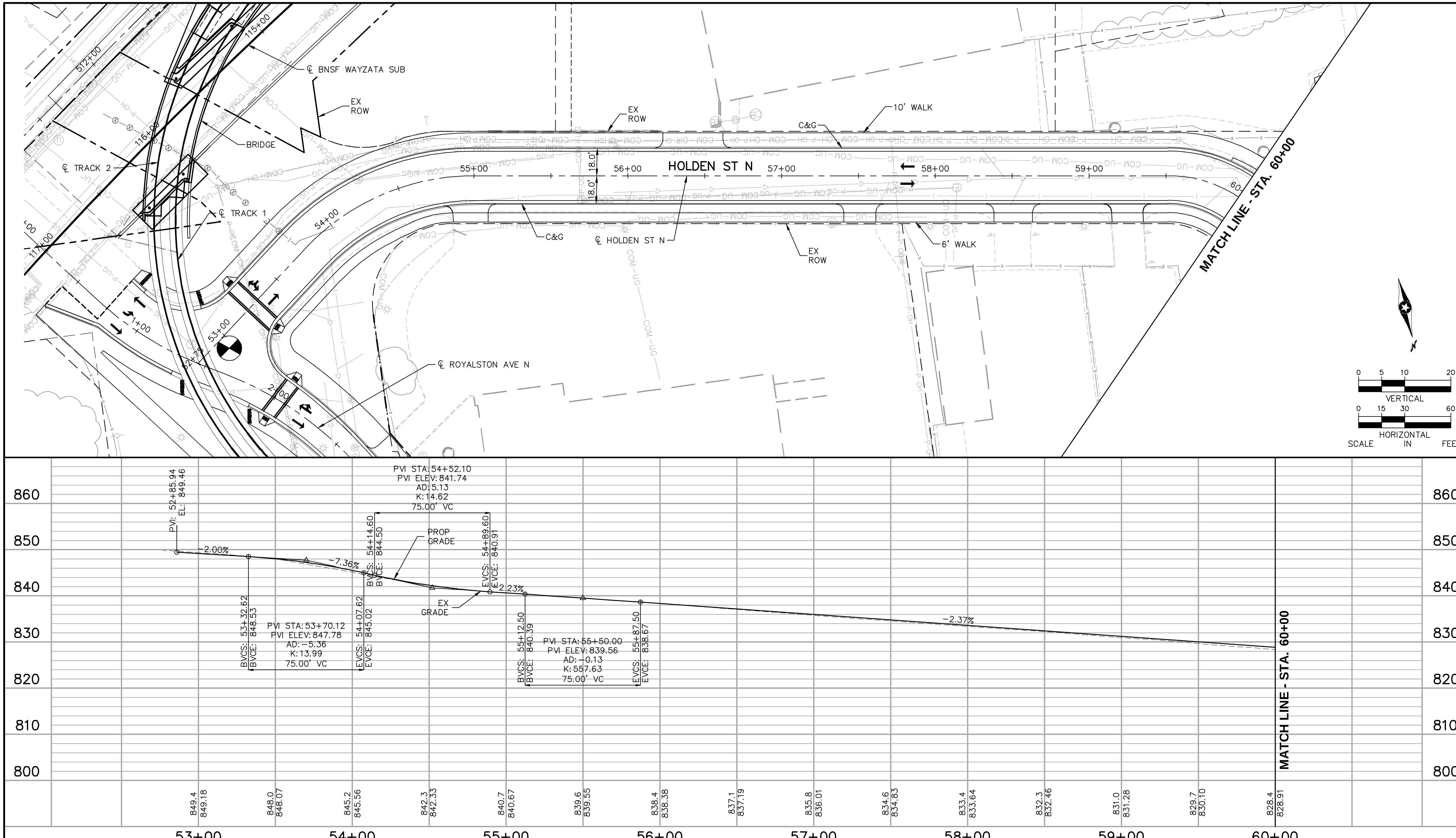
METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
ROYALSTON AVE N
PLAN AND PROFILE
STA. 16+50 TO STA. 21+54

DISCIPLINE: CIVIL

SHEET NAME: E4-CIV-PPFL-ROY - 004



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METROPOLITAN COUNCIL

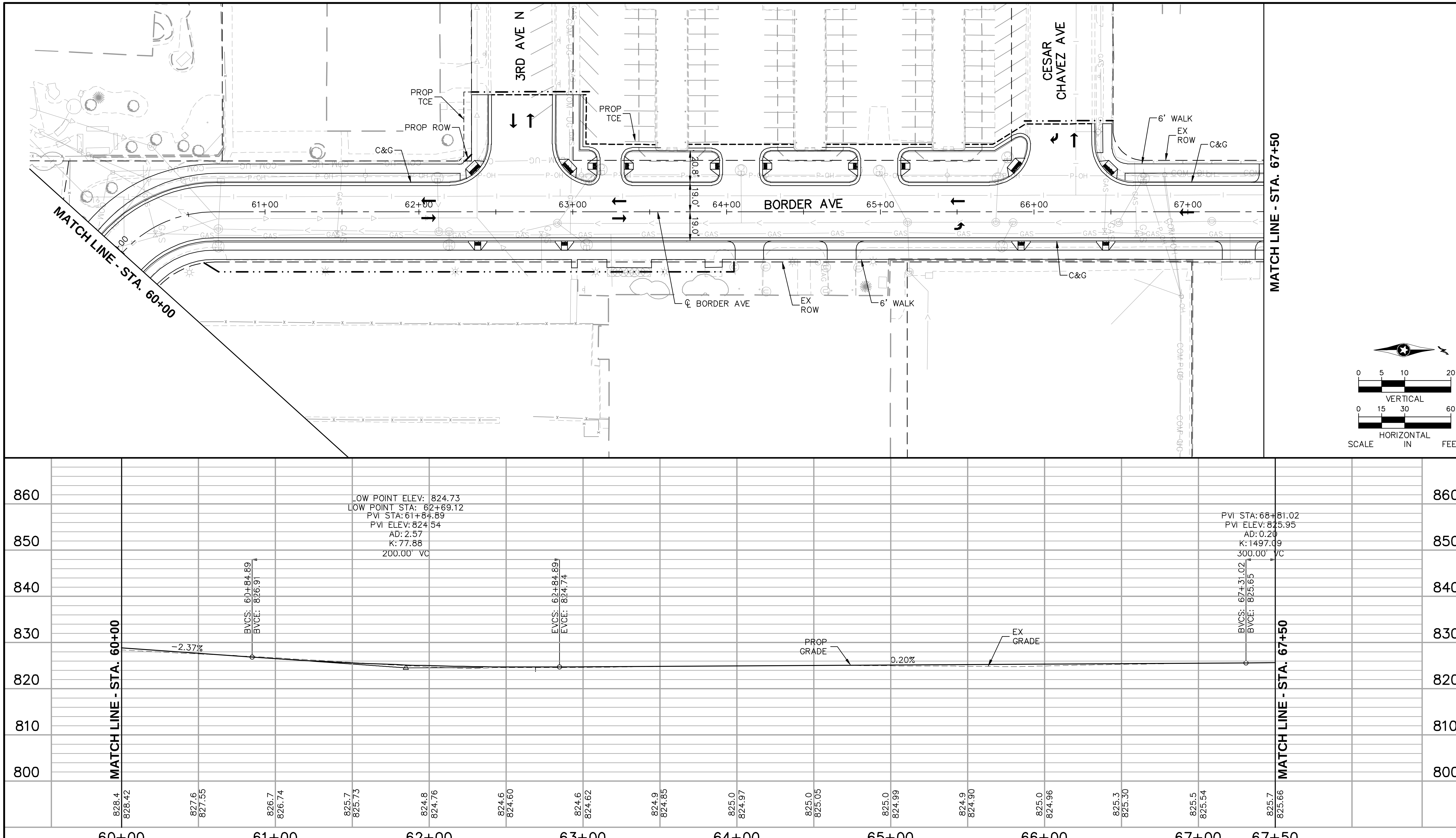
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
HOLDEN AVE N
PLAN AND PROFILE
STA. 52+77 TO STA. 60+00

DISCIPLINE: CIVIL

SHEET NAME: E4-CIV-PPFL-HLD - 001

SHEET 108 OF 163



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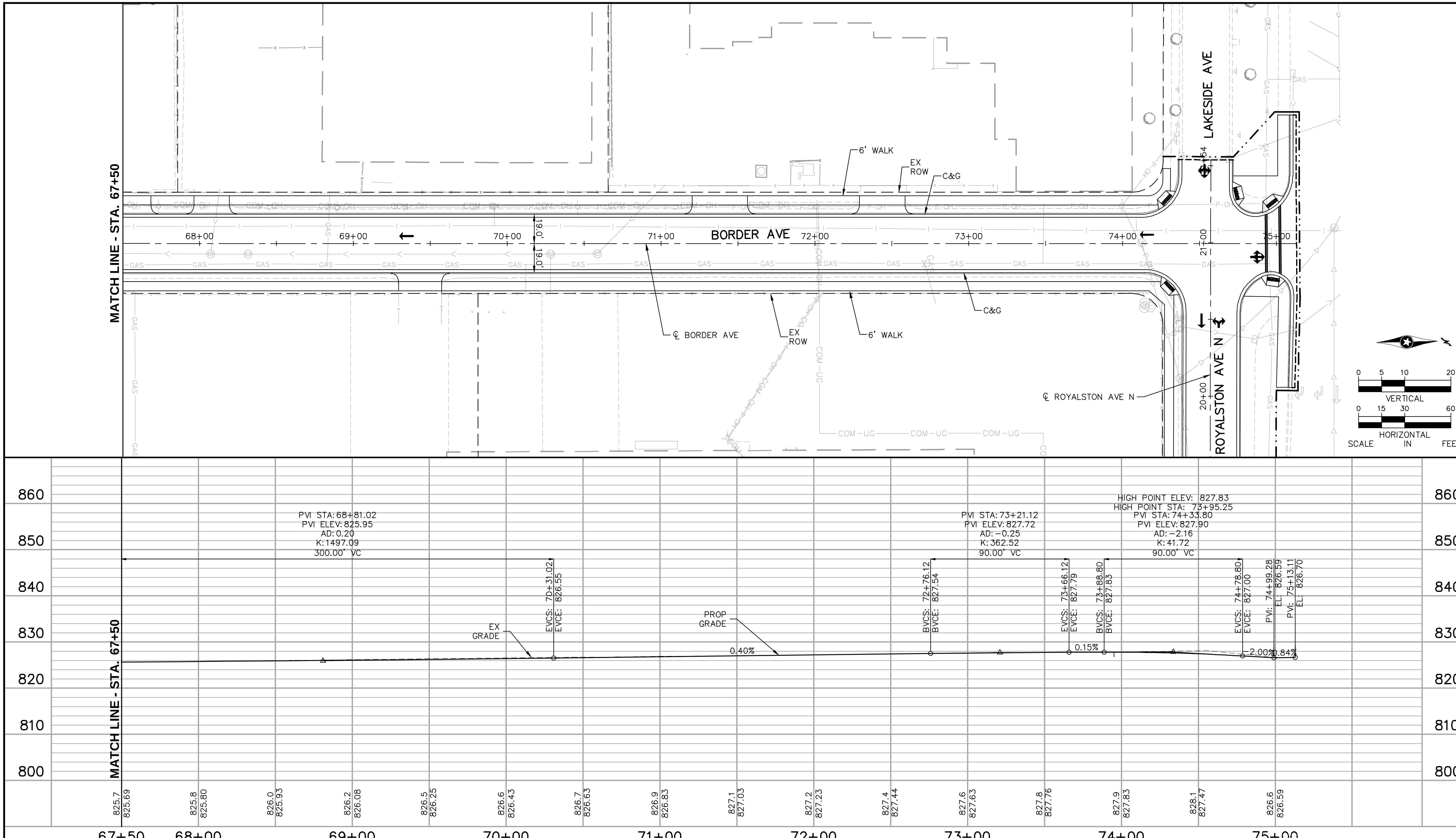
METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
HOLDEN ST N & BORDER AVE
PLAN AND PROFILE
STA. 60+00 TO STA. 67+50

DISCIPLINE: CIVIL

SHEET NAME: E4-CIV-PPFL-BOR - 002



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METROPOLITAN COUNCIL

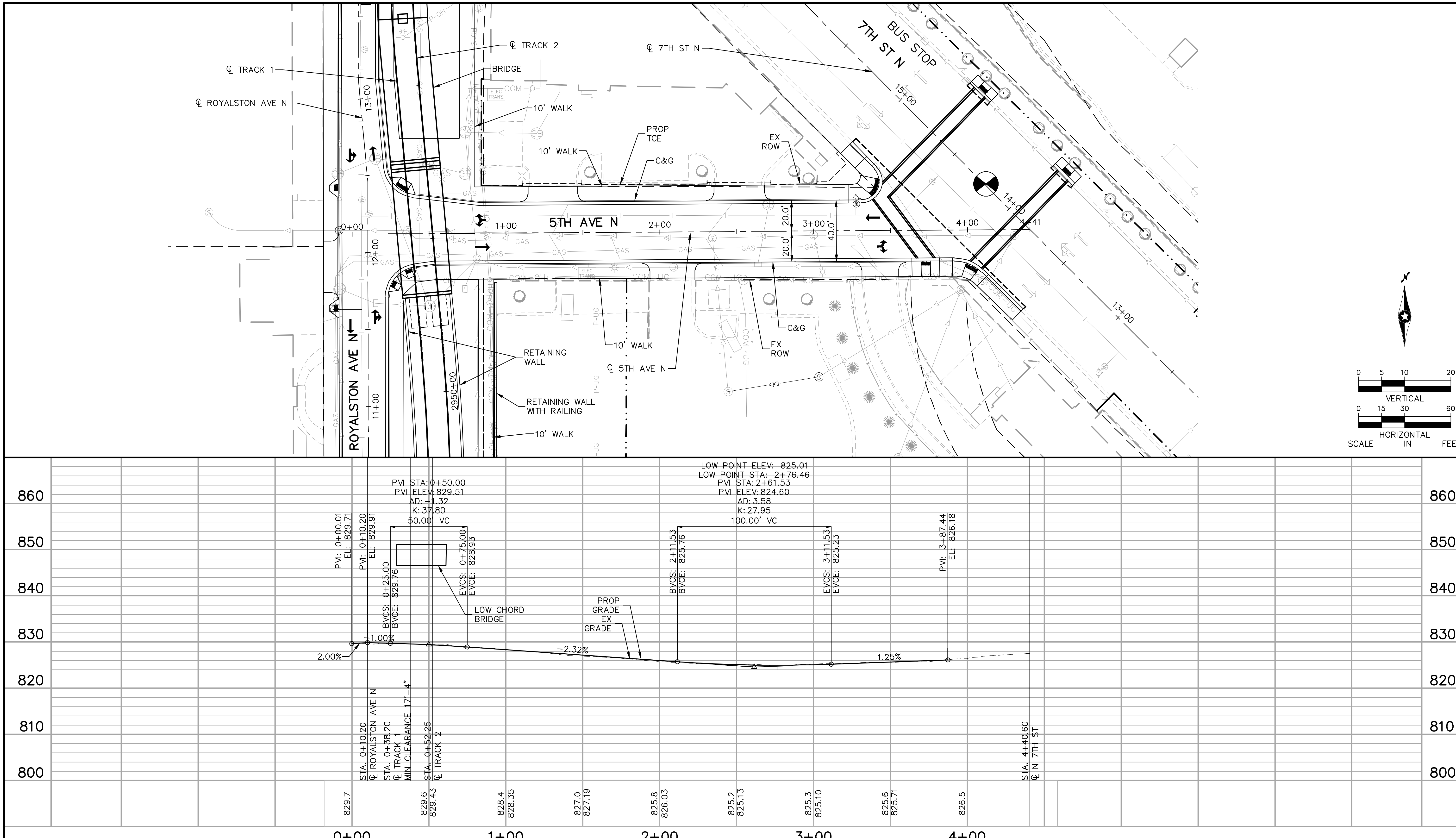
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
BORDER AVE
PLAN AND PROFILE
STA. 67+50 TO STA. 75+13.11

DISCIPLINE: CIVIL

SHEET NAME: E4-CIV-PPFL-BOR - 003

SHEET 110 OF 163



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PRELIMINARY ENGINEERING

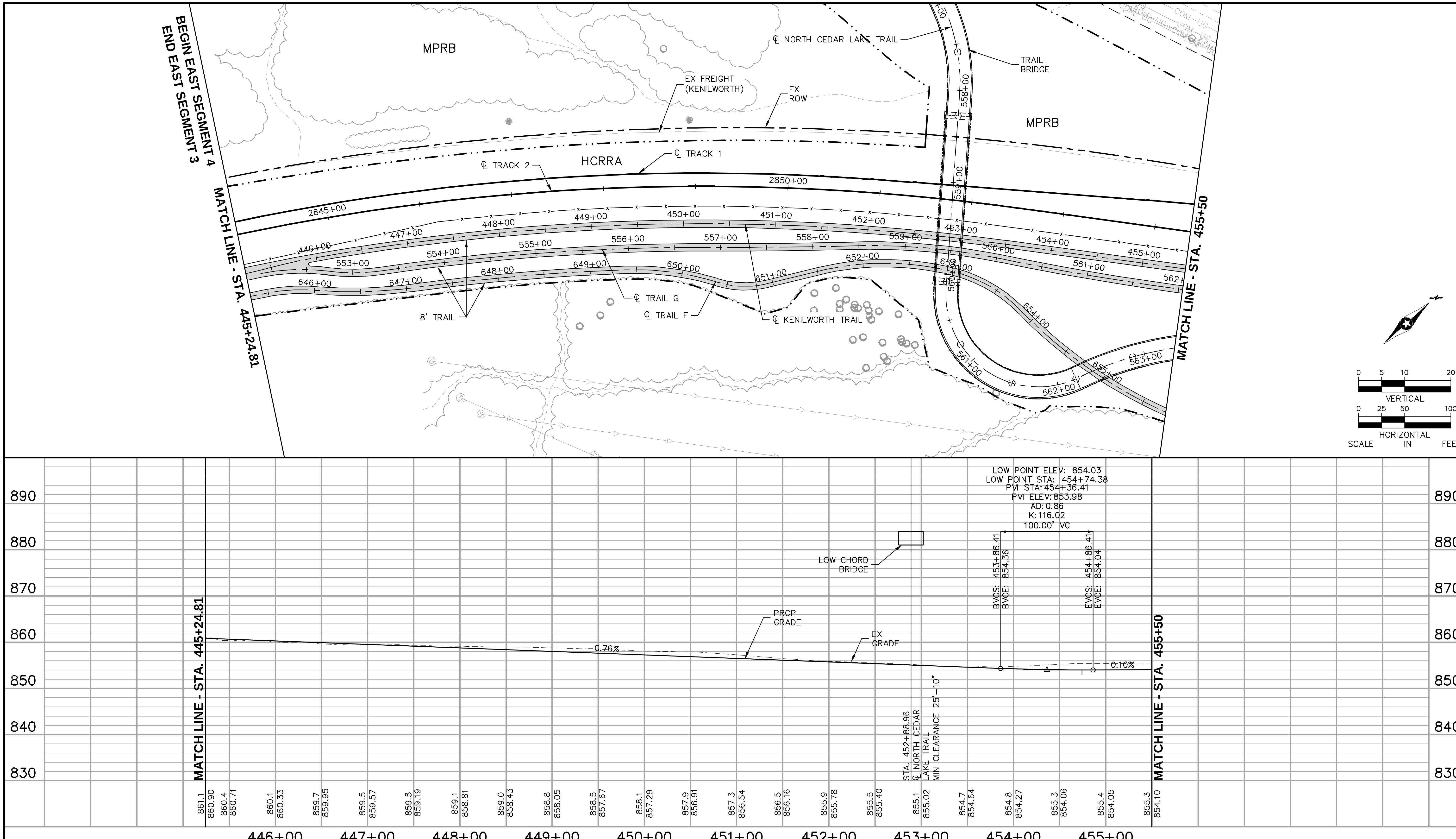
METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
5TH AVE N
PLAN AND PROFILE
STA. 0+00 TO STA. 4+41

DISCIPLINE: CIVIL

SHEET NAME: E4-CIV-PPFL-5TH - 001



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PRELIMINARY ENGINEERING

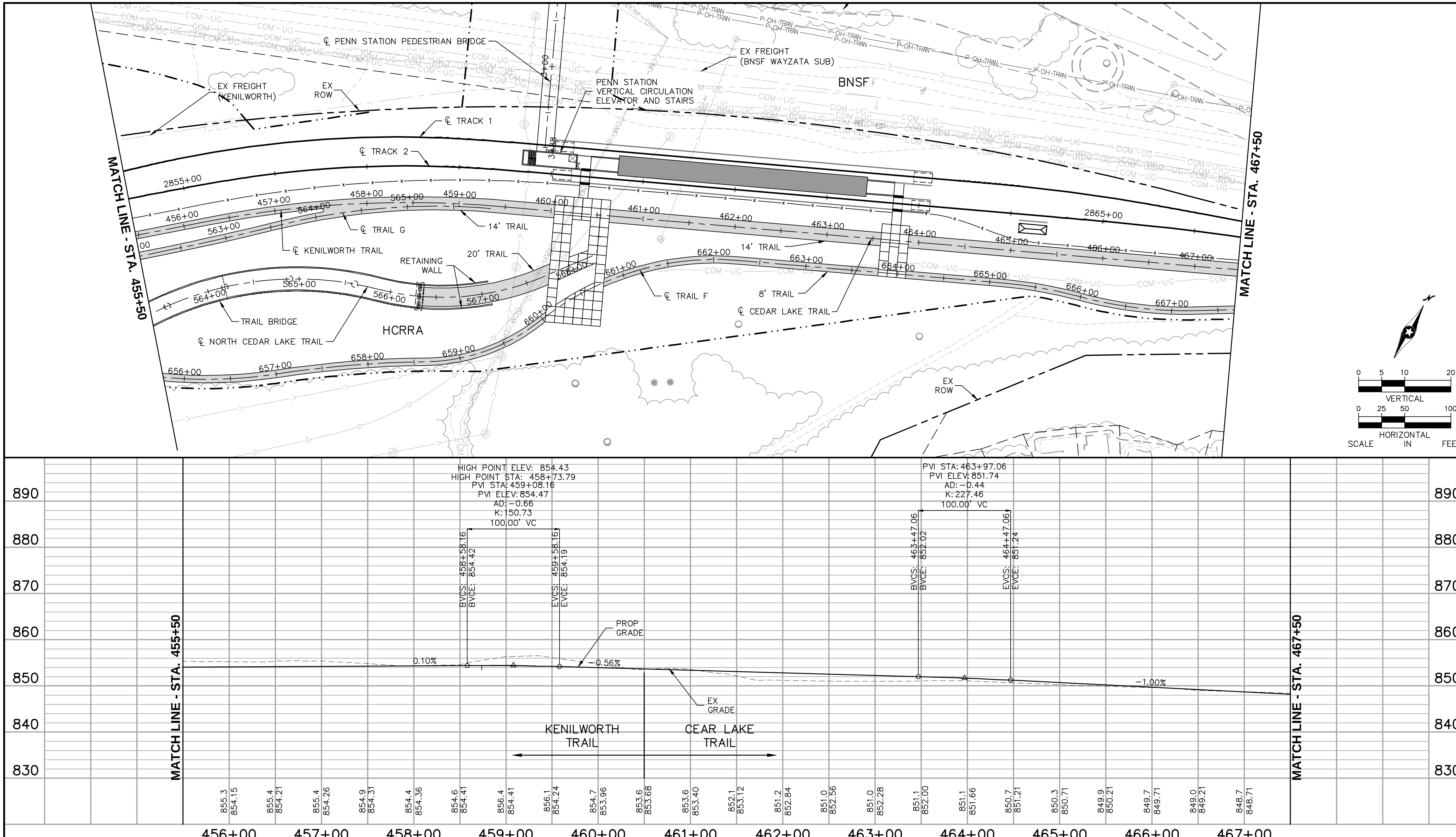
METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
KENILWORTH TRAIL
PLAN AND PROFILE
STA. 445+24.81 TO STA. 455+50

DISCIPLINE: CIVIL

SHEET NAME: E4-TRL-PPFL-001



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PRELIMINARY ENGINEERING

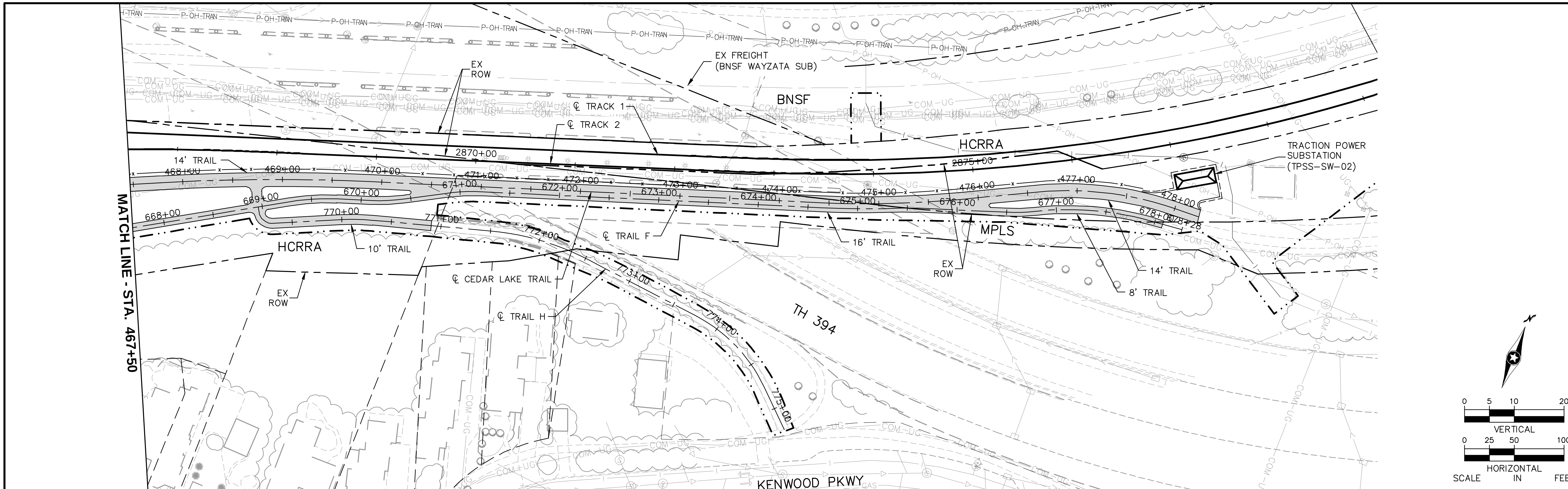
METROPOLITAN COUNCIL

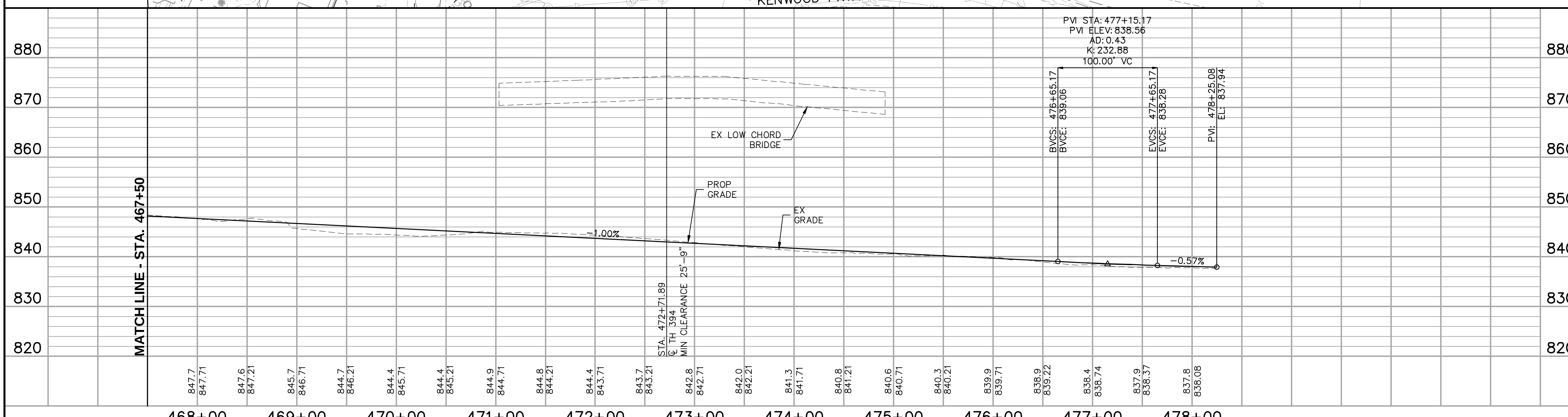
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
KENILWORTH TRAIL/CEDAR LAKE TRAIL
PLAN AND PROFILE
STA. 455+50 TO STA. 467+50

DISCIPLINE: CIVIL

SHEET NAME: E4-TRL-PPFL-002





NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

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PRELIMINARY ENGINEERING

METROPOLITAN COUNCIL

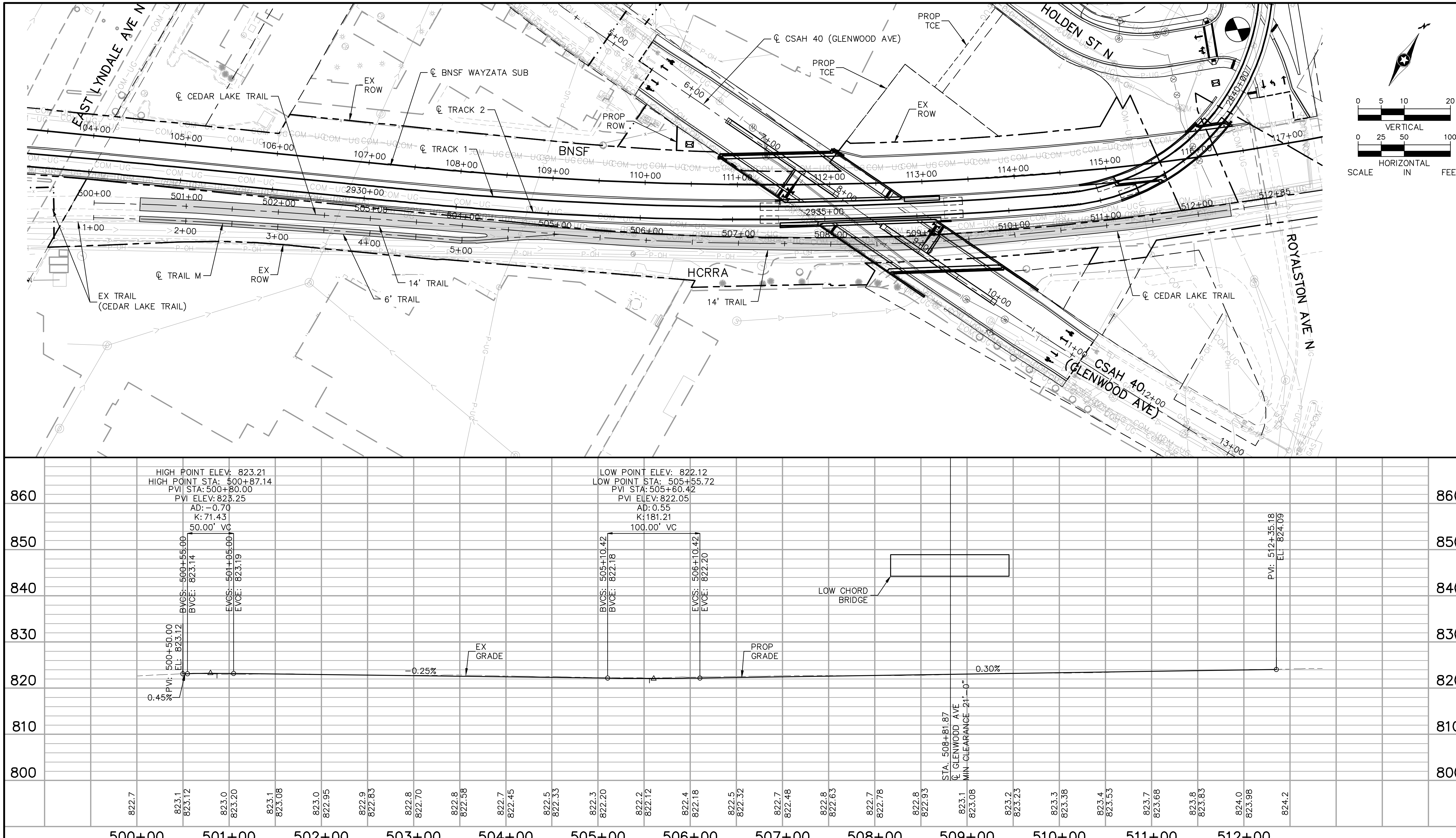
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
CEDAR LAKE TRAIL
PLAN AND PROFILE
STA. 467+50 TO STA. 478+28.33

DISCIPLINE: CIVIL

SHEET NAME: E4-TRL-PPFL-003

Aug. 29 2014 01:06 pm V:\3300_PEC-E\CAD\SEGMENT E4\PLAN SHEETS\CIVIL\E4-TRL-PPFL.dwg By: tracy.fosmo



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PRELIMINARY ENGINEERING

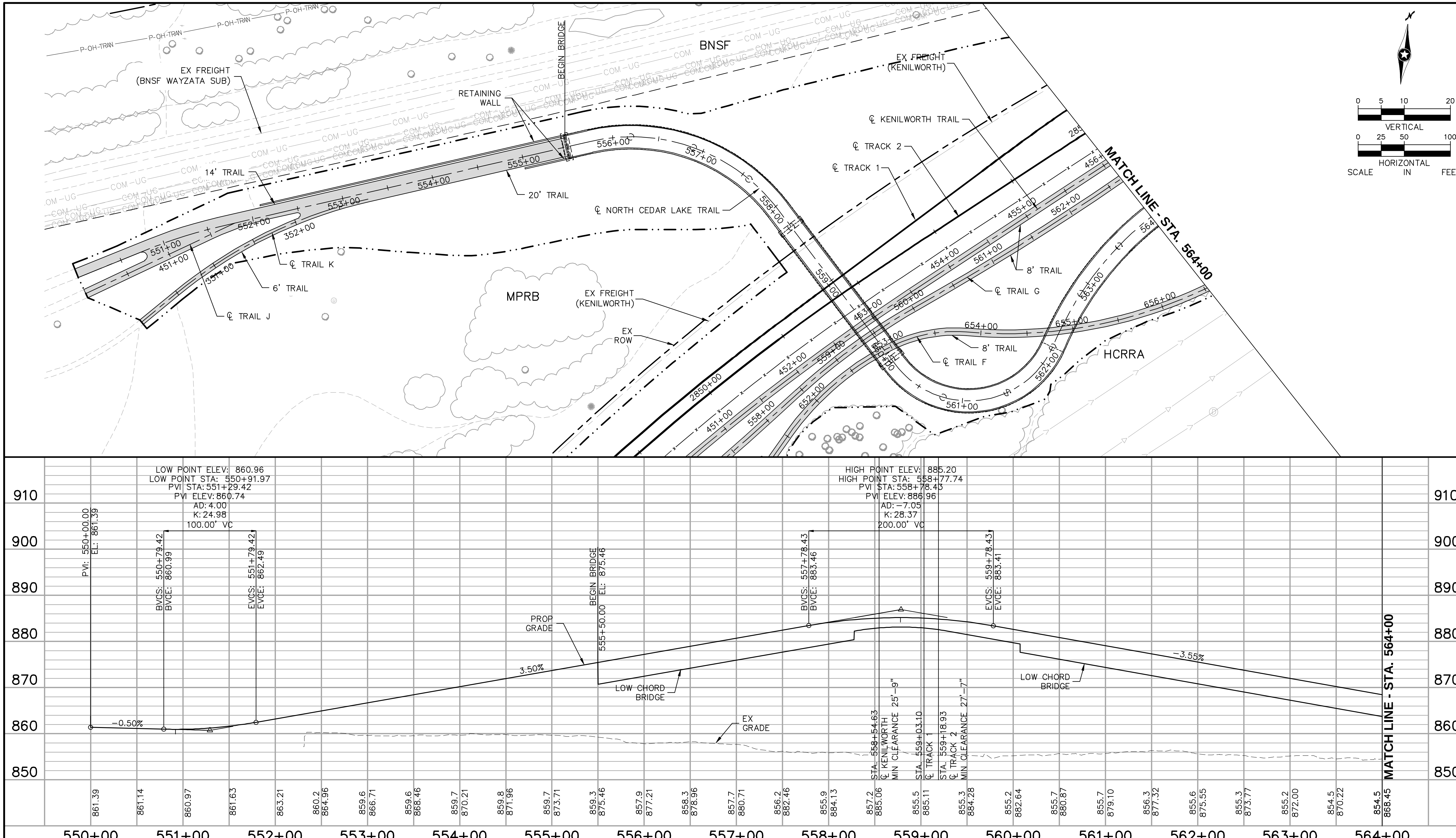
METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
CEDAR LAKE TRAIL
PLAN AND PROFILE
STA. 500+00 TO STA. 512+85

DISCIPLINE: CIVIL

SHEET NAME: E4-TRL-PPFL-005



NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

Kimley»Horn

PRELIMINARY ENGINEERING

METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

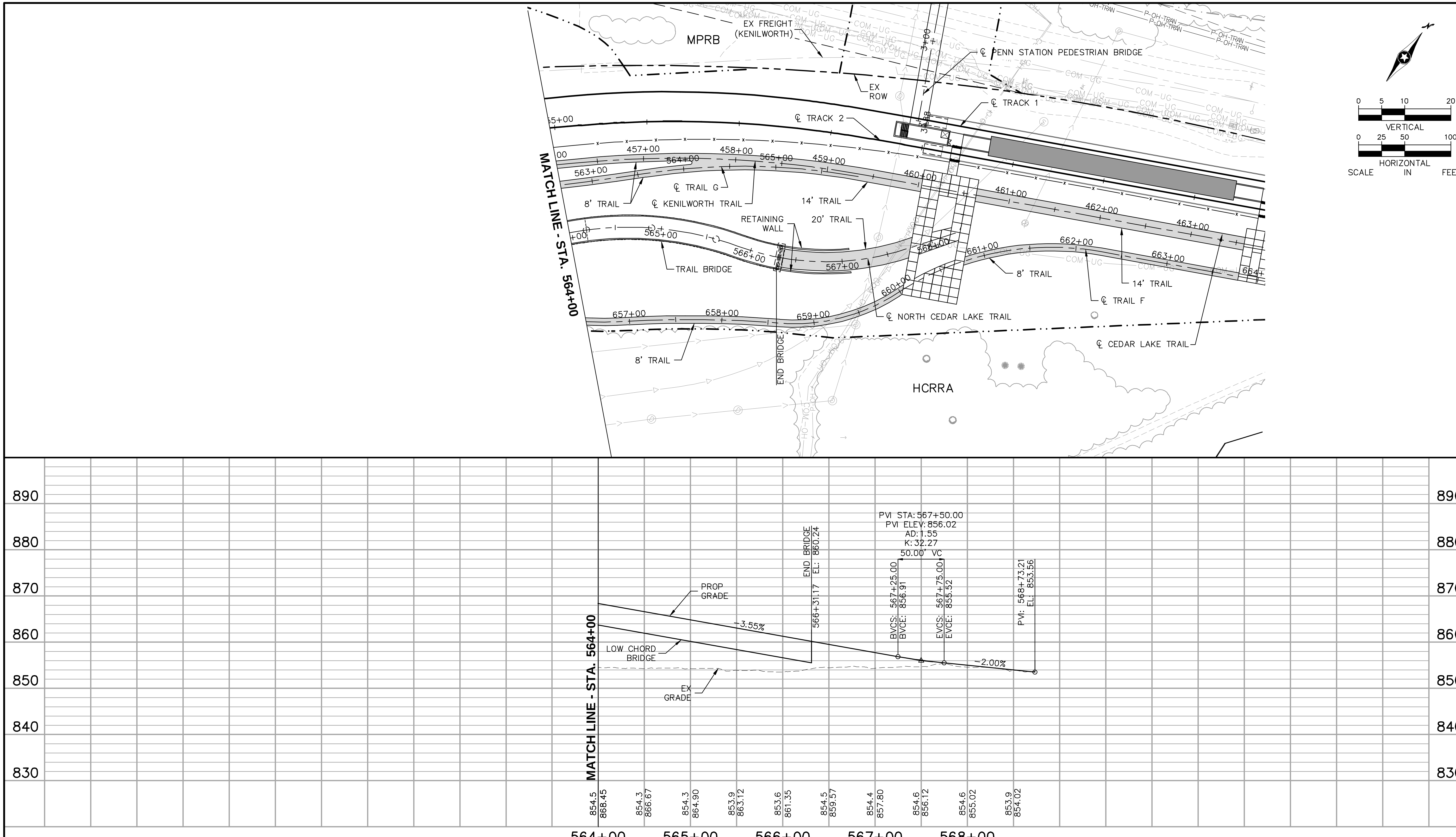
EAST - VOLUME 1 (CIVIL) - SEGMENT 4
NORTH CEDAR LAKE TRAIL
PLAN AND PROFILE
STA. 550+00 TO STA. 564+00

DISCIPLINE: CIVIL

SHEET NAME: E4-TRL-PPFL-006

SHEET 116 OF 163

Aug. 29 2014 01:07 pm V:\3300_PEC-E\CAD\SEGMENT E4\PLAN SHEETS\CIVIL\E4-TRL-PPFL.dwg By: tracy.fosmo



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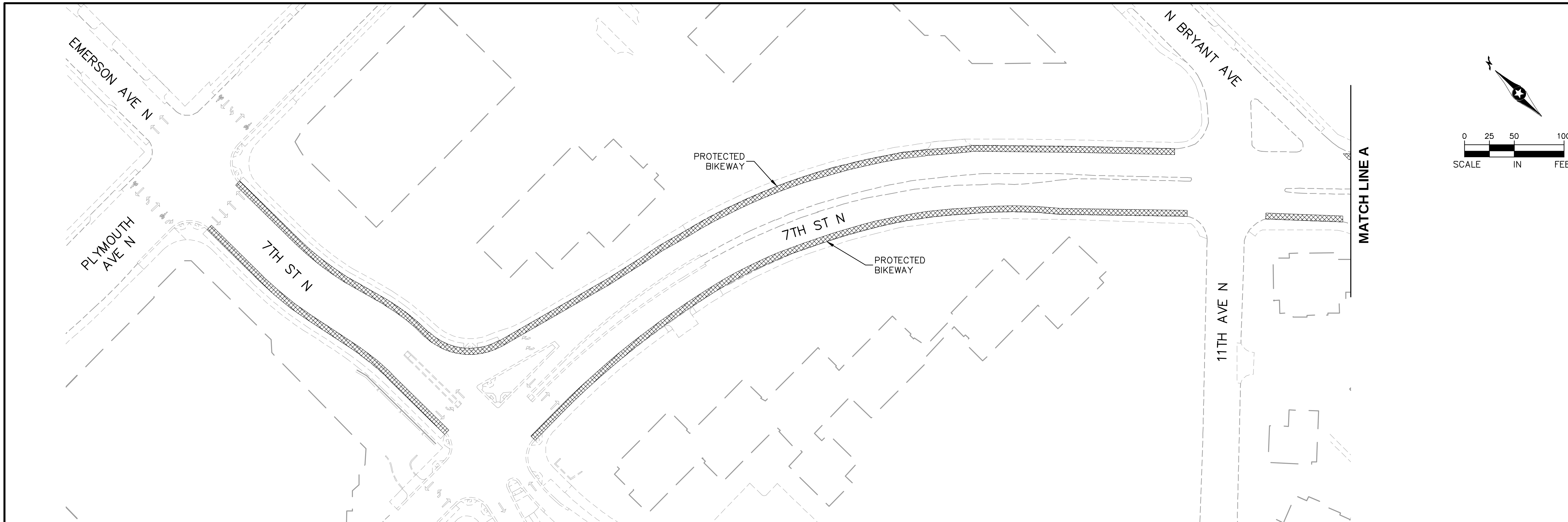
METROPOLITAN COUNCIL

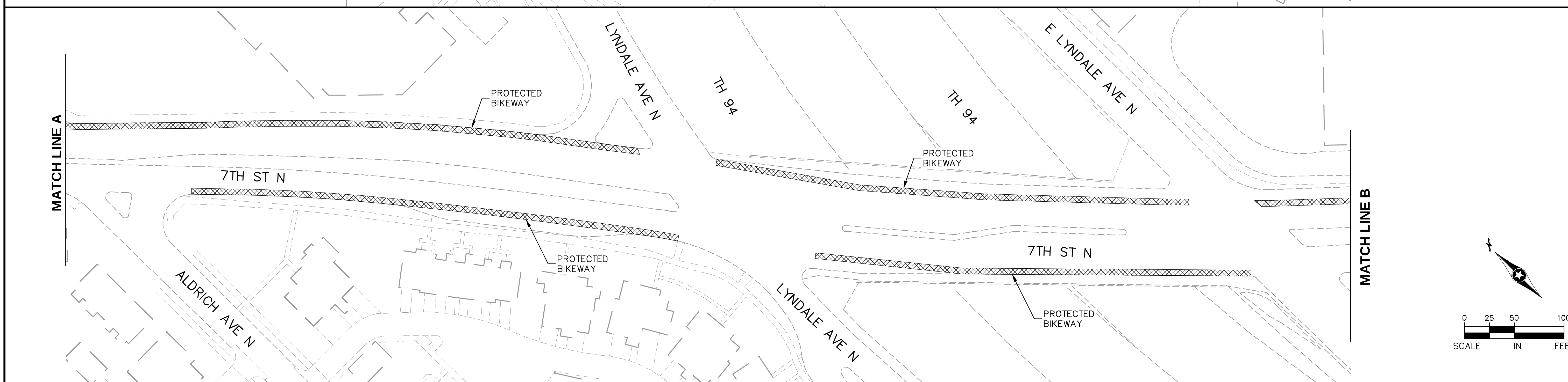
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
NORTH CEDAR LAKE TRAIL
PLAN AND PROFILE
STA. 564+00 TO STA. 568+73.21

DISCIPLINE: CIVIL

SHEET NAME: E4-TRL-PPFL-007





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PRELIMINARY ENGINEERING

METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
7TH ST N
PROTECTED BIKEWAY

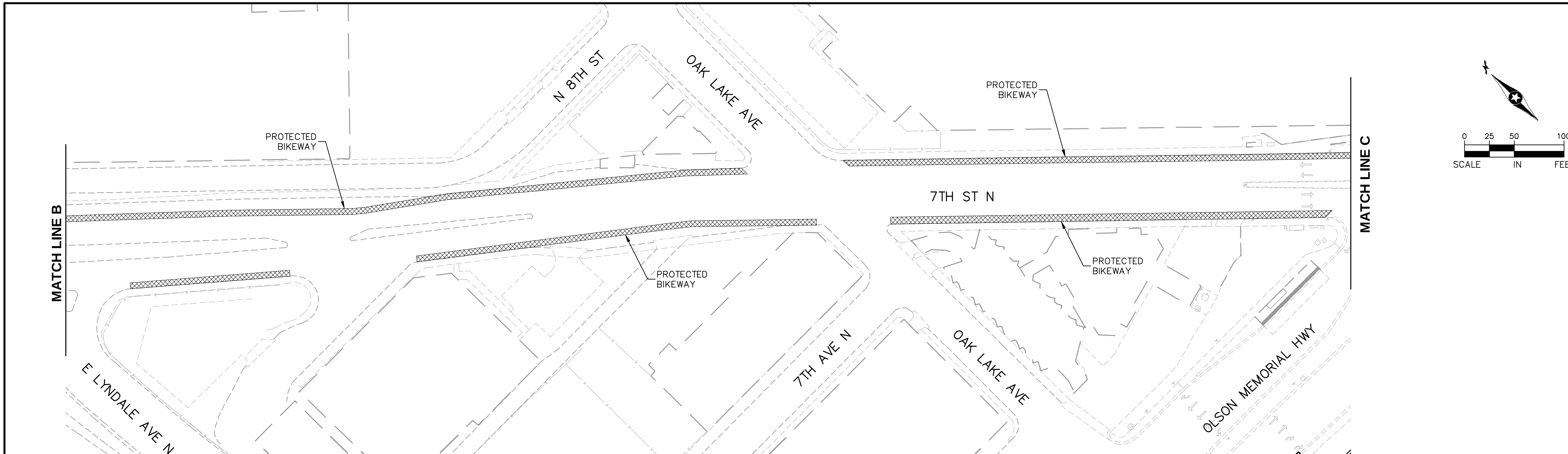
DISCIPLINE: CIVIL

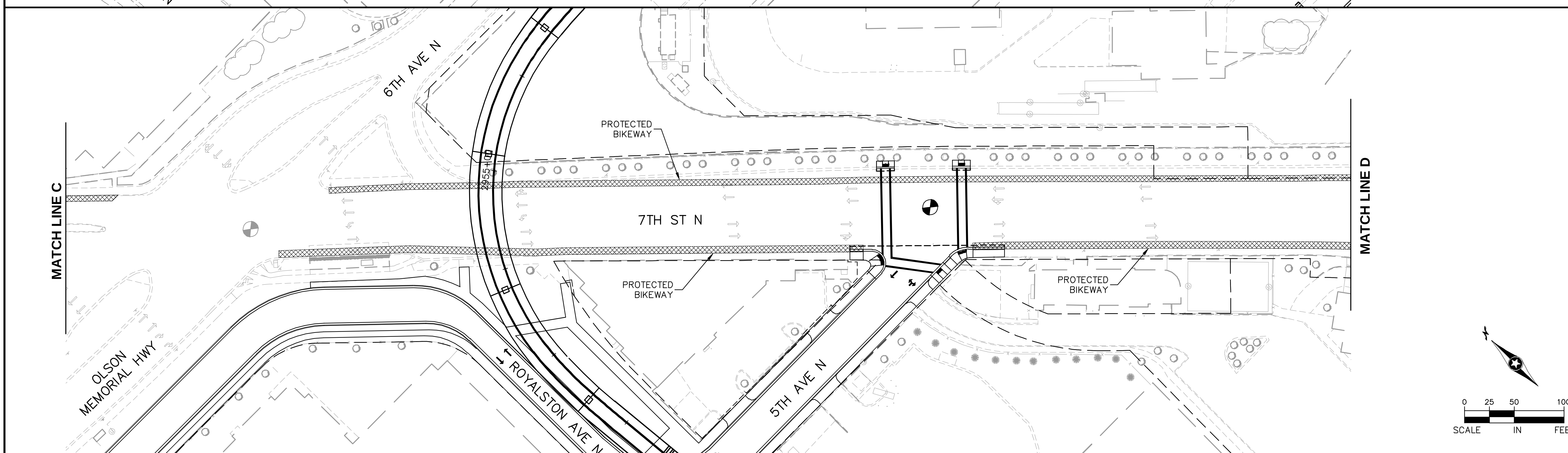
SHEET NAME: E4-TRL-PPFL-7TH - 001

SHEET 118 OF 163

Aug. 29 2014 09:10 am V:\3300_PEC-E\CAD\SEGMENT E4\PLAN SHEETS\CIVIL\E4-TRL-PPFL-7TH.dwg By: tracy.fosmo

Aug. 29 2014 09:11 am V:\3300_PEC-E\CAD\SEGMENT E4\PLAN SHEETS\CIVIL\E4-TRL-PPFL-7TH.dwg By: tracy.fosmo





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METROPOLITAN COUNCIL

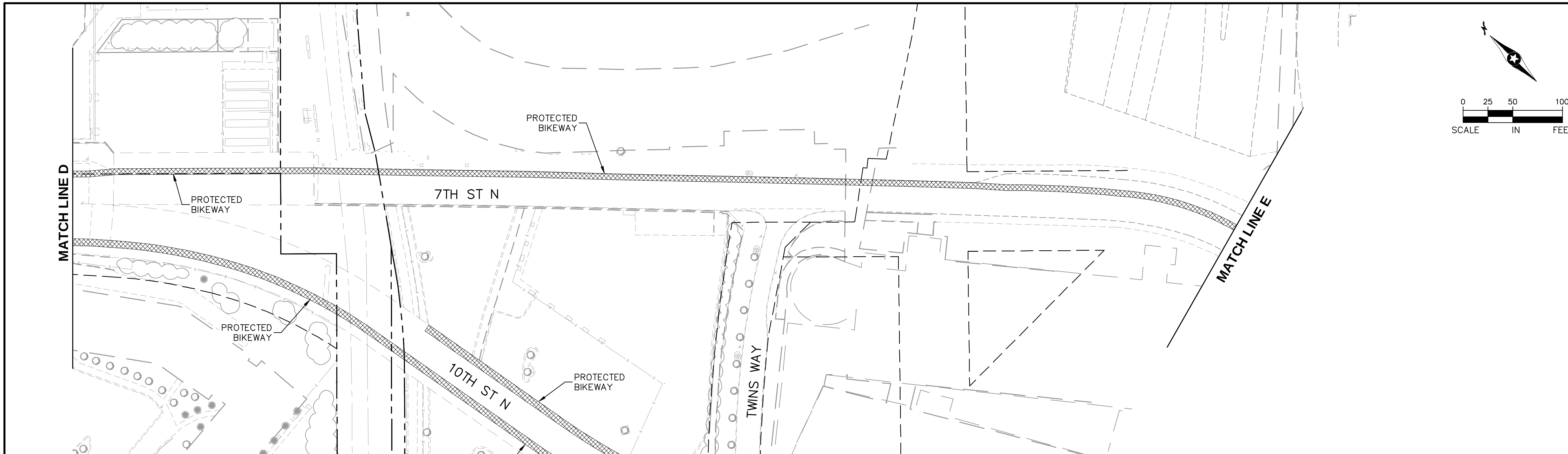
SOUTHWEST Green Line LRT Extension

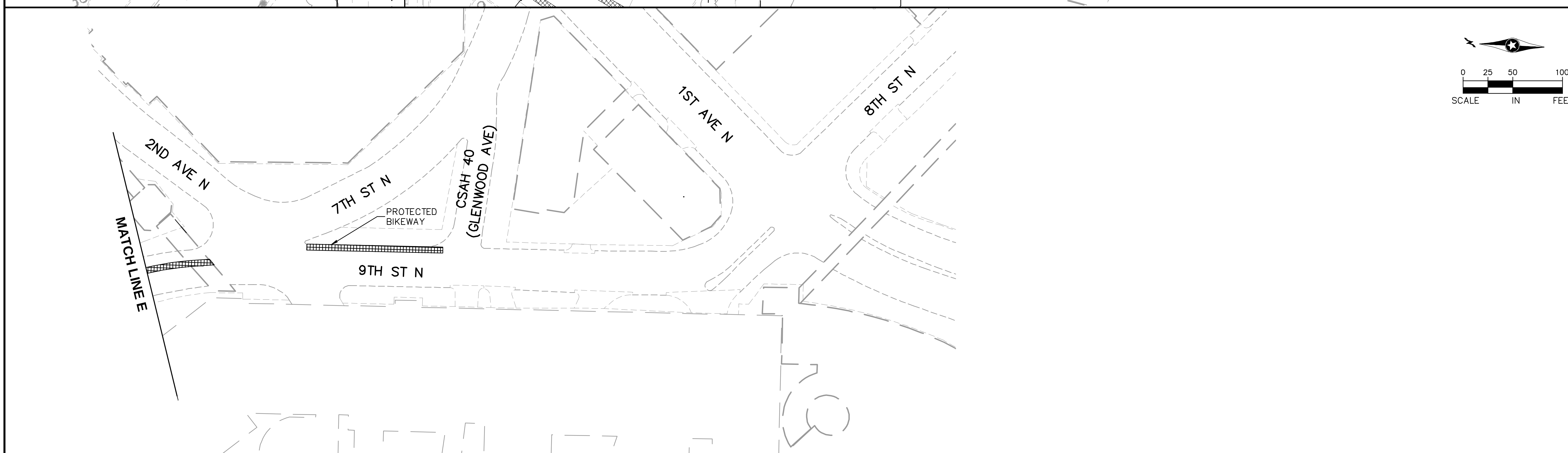
EAST - VOLUME 1 (CIVIL) - SEGMENT 4
7TH ST N
PROTECTED BIKEWAY

DISCIPLINE: CIVIL

SHEET NAME: E4-TRL-PPFL-7TH - 002

SHEET 119 OF 163





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PRELIMINARY ENGINEERING

METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

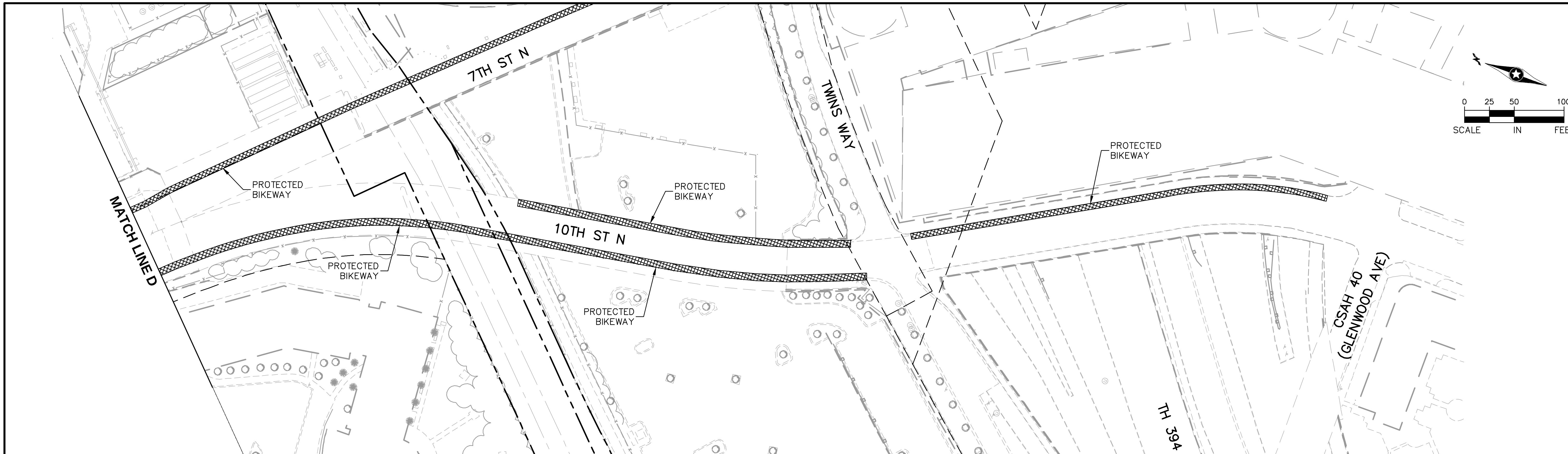
EAST - VOLUME 1 (CIVIL) - SEGMENT 4
7TH ST N
PROTECTED BIKEWAY

DISCIPLINE: CIVIL

SHEET NAME: E4-TRL-PPFL-7TH - 003

SHEET 120 OF 163

Aug. 29 2014 09:12 am V:\3300_PEC-E\CAD\SEGMENT E4\PLAN SHEETS\CIVIL\E4-TRL-PPFL-7TH.dwg By: tracy.fosmo



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METROPOLITAN COUNCIL

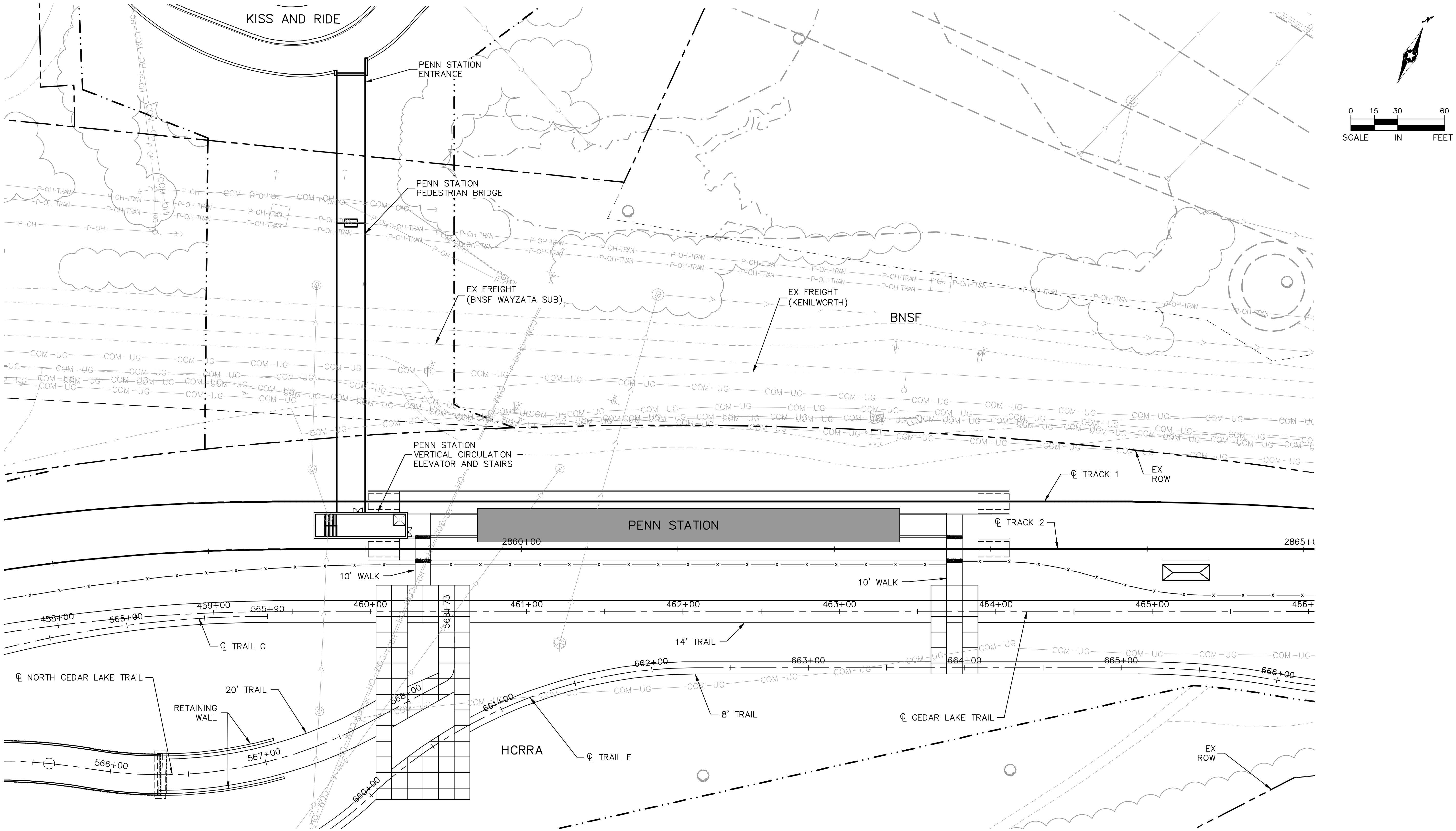
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
10TH ST N
PROTECTED BIKEWAY

DISCIPLINE: CIVIL

SHEET NAME: E4-TRL-PPFL-7TH - 004

SHEET 121 OF 163



Aug. 29 2014 09:13 am V:\3300_PEC-E\CAD\SEGMENT E4\PLAN SHEETS\CIVIL\E4-CIV-PLN.dwg By: tracy.fosmo

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METROPOLITAN COUNCIL

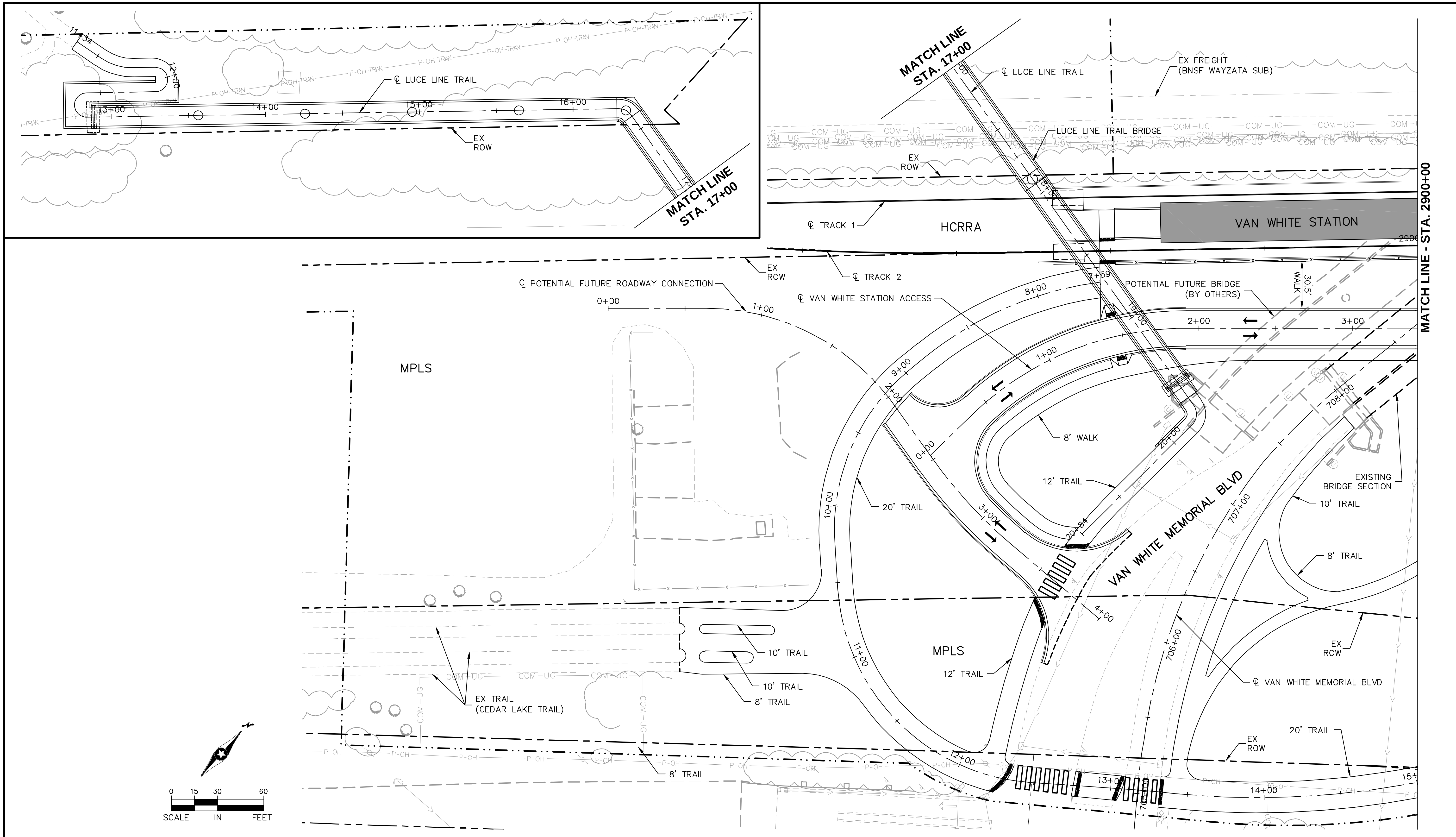
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
PENN STATION
SITE PLAN

DISCIPLINE: CIVIL

SHEET NAME: E4-CIV-PLN-001

SHEET 122 OF 163



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METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

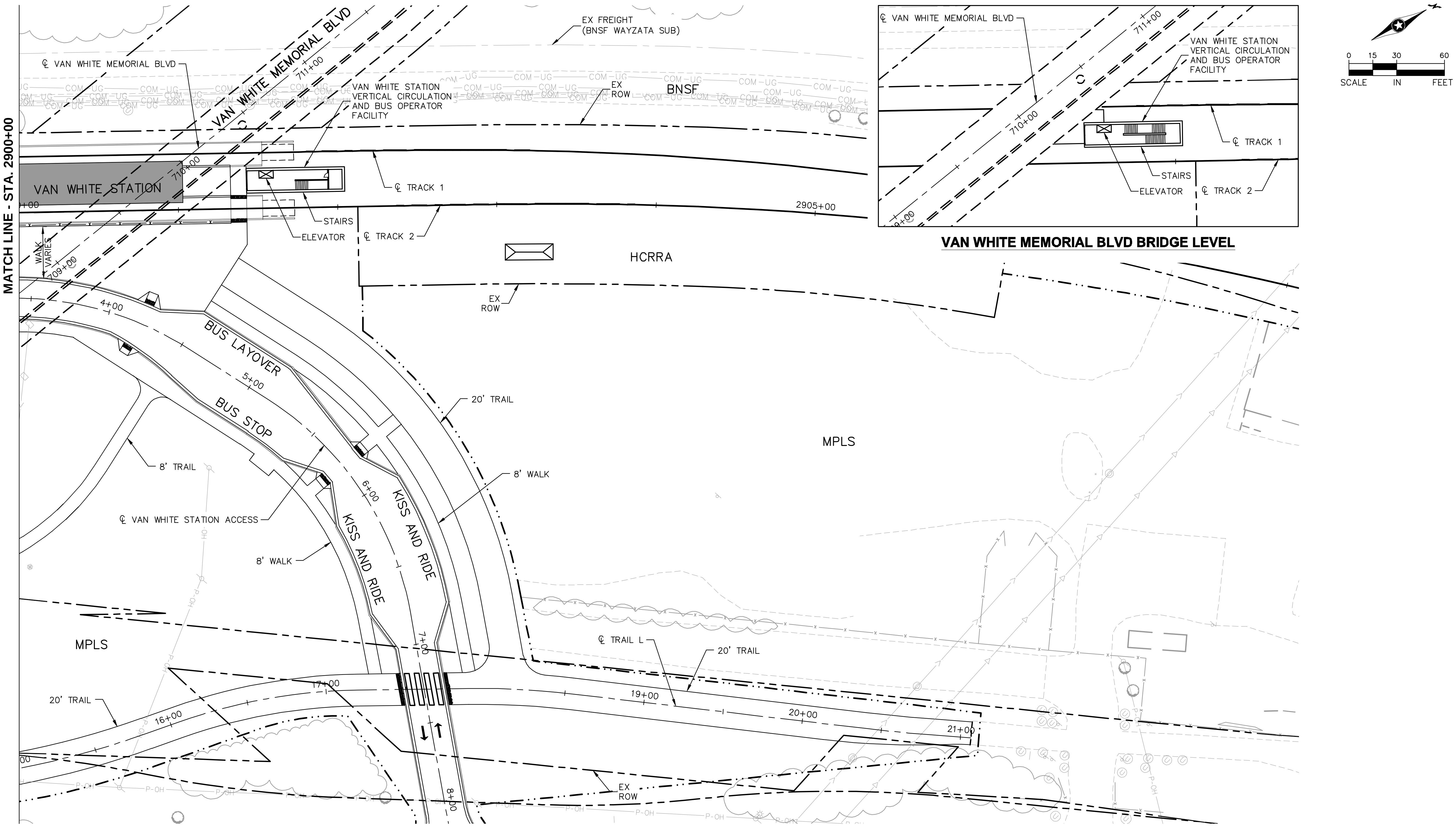
EAST - VOLUME 1 (CIVIL) - SEGMENT 4
VAN WHITE STATION
SITE PLAN WEST

DISCIPLINE: CIVIL

SHEET NAME: E4-CIV-PLN-002

SHEET 123 OF 163

Aug. 29 2014 09:14 am V:\3300_PEC-E\CAD\SEGMENT E4\PLAN SHEETS\CIVIL\E4-CIV-PLN.dwg By: tracy.fosmo



Aug. 29 2014 09:15 am V:\3300_PEC-E\CAD\SEGMENT E4\PLAN SHEETS\CIVIL\E4-CIV-PLN.dwg By: tracy.fosmo

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METROPOLITAN COUNCIL

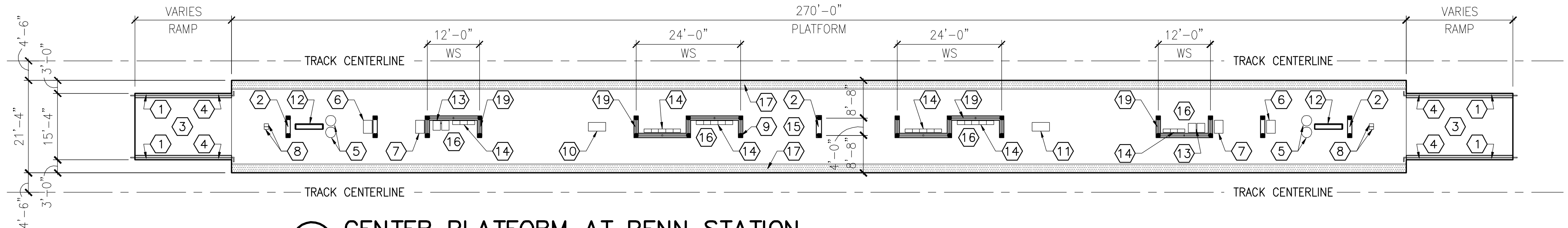
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
VAN WHITE STATION
SITE PLAN EAST

SHEET 124 OF 163

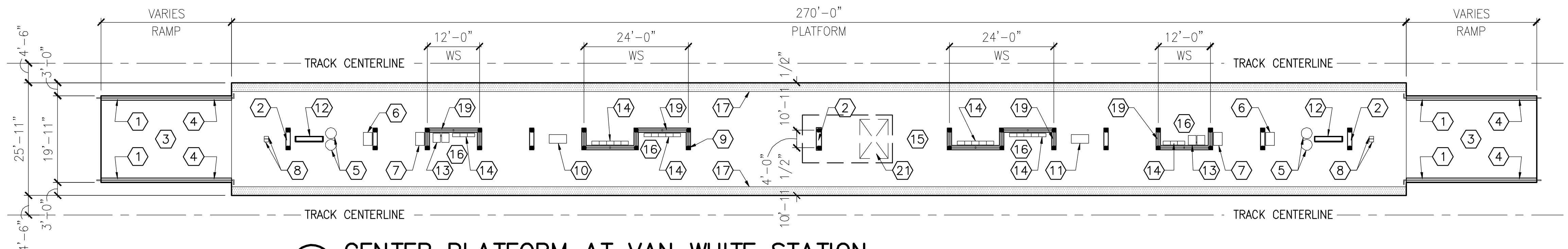
DISCIPLINE: CIVIL

SHEET NAME: E4-CIV-PLN-003



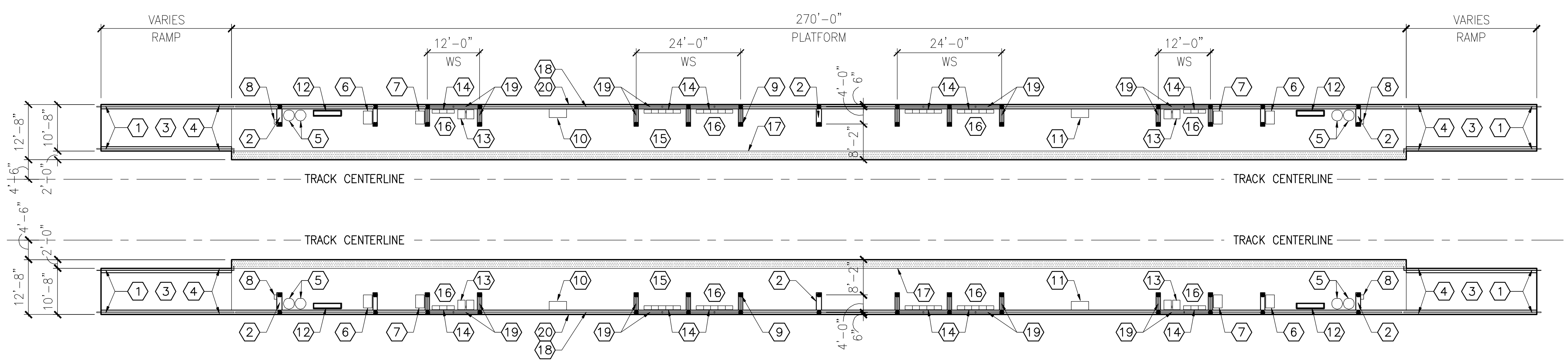
1 CENTER PLATFORM AT PENN STATION
SCALE: 1"=30'-0"

0 7.5 15 30
SCALE



2 CENTER PLATFORM AT VAN WHITE STATION
SCALE: 1"=30'-0"

0 7.5 15 30
SCALE



3 SIDE PLATFORM AT ROYALSTON STATION
SCALE: 1"=30'-0"

0 7.5 15 30
SCALE

KEYNOTES

NOTE: ALL KEYNOTES MAY NOT BE USED

1	ENTRY SIGN
2	LIGHT MOUNTED TO STRUCTURE
3	ACCESS RAMP – 5% MAX
4	HAND RAIL
5	TRASH/RECYCLING RECEPTACLE, BLAST CONTROLLING TYPE
6	TICKET VENDING MACHINE
7	FUTURE TICKET VENDING MACHINE
8	STORED VALUE VALIDATOR
9	EMERGENCY CALL BOX
10	COMMUNICATION CABINET
11	ELECTRICAL CABINET
12	INFORMATION KIOSK WITH TRANSIT INFO AND ADVERTISING
13	BENCH
14	LEANING RAIL/BENCH
15	CONCRETE PLATFORM
16	SHELTER: WINDSCREEN,LIGHT,HEATERS WITH CANOPY ABOVE
17	DETECTABLE WARNING AT BOARDING EDGE
18	GUARD RAIL AND SAFETY SCREEN
19	ALUMINUM & GLASS FRAMING SYSTEM
20	CONCRETE WALL
21	POTENTIAL FUTURE ELEVATOR

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miller dunwiddie ARCHITECTURE

PRELIMINARY ENGINEERING

METROPOLITAN COUNCIL

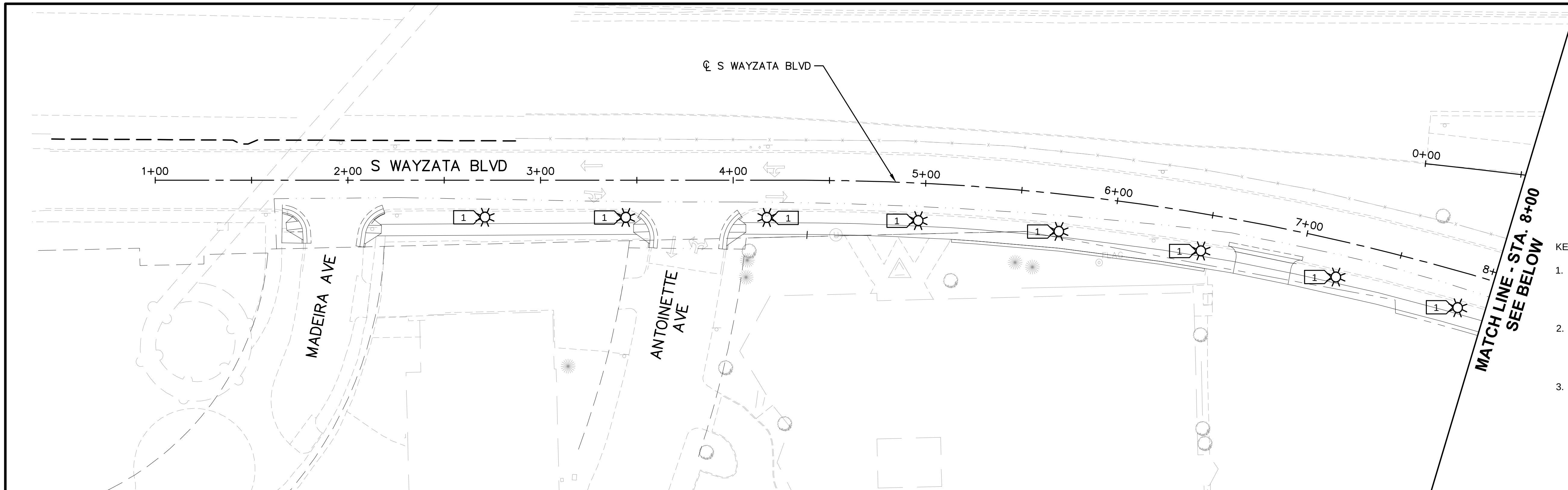
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
PLATFORM LAYOUTS
PENN, VAN WHITE, AND ROYALSTON STATIONS

DISCIPLINE: ARCHITECTURE

SHEET NAME: E4-ARC-PLN-1

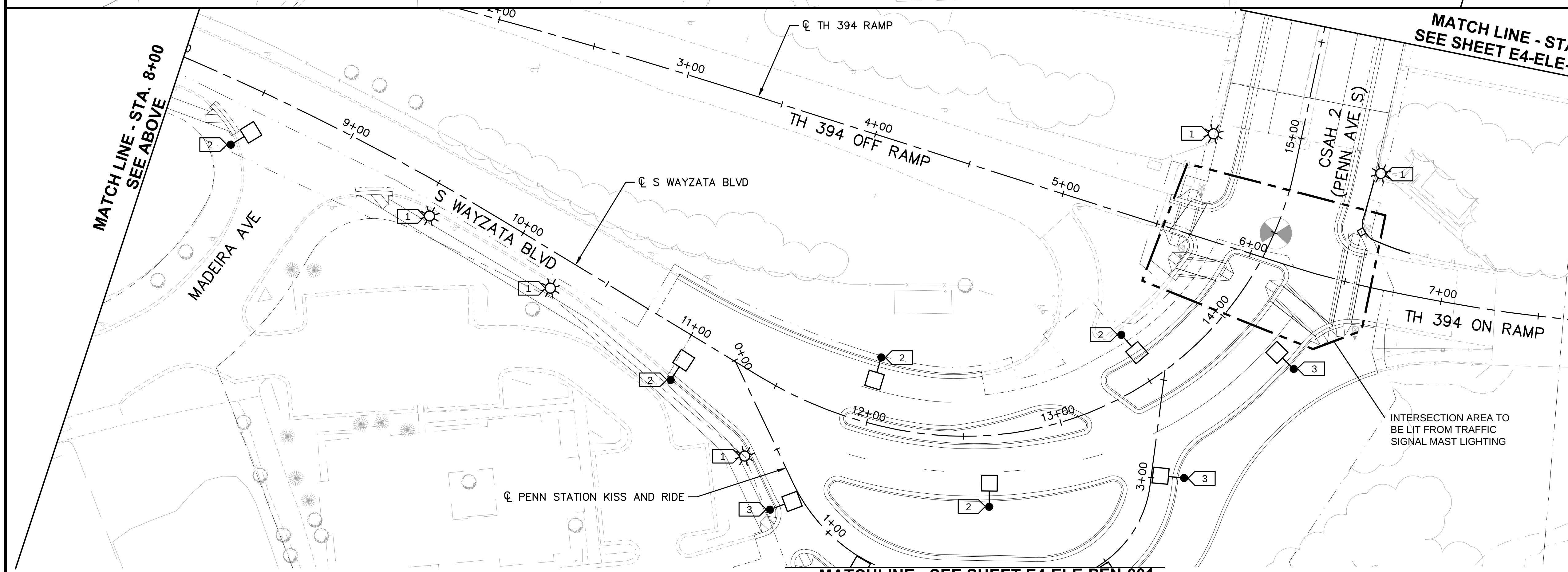
Aug. 29 2014 09:15 am V:\3300_PEC-E\CAD\SEGMENT E4\PLAN SHEETS\ARCH\E4-ARC-PLN-1.dwg By: tracy.fosmo



0 15 30 60
SCALE IN FEET

KEYNOTES:

1. POST TOP MOUNTED LUMINAIRE, LED, TYPE 5 DISTRIBUTION, COOL WHITE COLOR TEMPERATURE, 5,183 LUMENS, MOUNTED @15'. (EQUAL TO MINNEAPOLIS LANTERN LUMINAIRE).
2. SINGLE POLE MOUNTED LUMINAIRE, LED, TYPE 4 DISTRIBUTION, COOL WHITE COLOR TEMPERATURE, 12,942 LUMENS, MOUNTED @ 20'. (EQUAL TO MINNEAPOLIS SHOE BOX LUMINAIRE).
3. SINGLE POLE MOUNTED LUMINAIRE, LED, TYPE 3 DISTRIBUTION, COOL WHITE COLOR TEMPERATURE, 15,740 LUMENS, MOUNTED @ 20'.



0 15 30 60
SCALE IN FEET

LIGHTING SHOWN IS DIAGRAMMATIC. TYPE AND LOCATION OF LIGHTING WILL BE DETERMINED DURING ADVANCED DESIGN.

Aug. 28 2014 01:52 pm V:\3300_PEC-E\CAD\SEGMENT E4\PLAN SHEETS\ELECTRICAL\E4-ELE-WAY.dwg By: Fergtk

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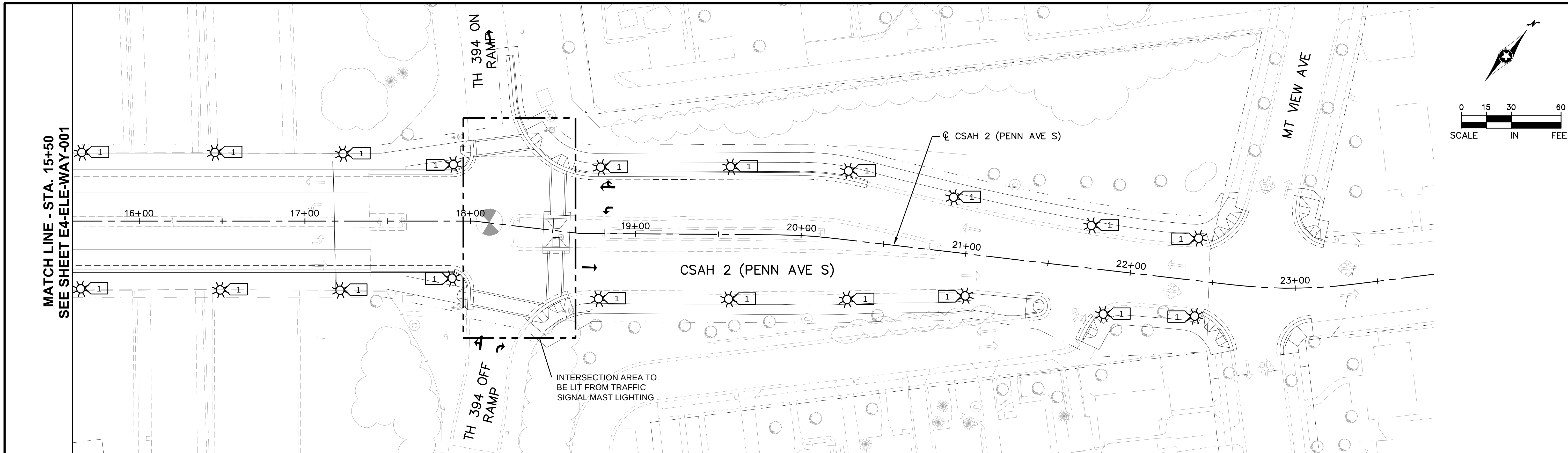
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
ELECTRICAL SITE PLAN
WAYZATA BLVD/PENN AVE S
STA 1+00 TO STA 15+50

DISCIPLINE: ELECTRICAL
SHEET NAME: E4-ELE-WAY - 001



KEYNOTES:

1. POST TOP MOUNTED LUMINAIRE, LED, TYPE 5 DISTRIBUTION, COOL WHITE COLOR TEMPERATURE, 5,183 LUMENS, MOUNTED @15'. (EQUAL TO MINNEAPOLIS LANTERN LUMINAIRE).

LIGHTING SHOWN IS DIAGRAMMATIC. TYPE AND LOCATION OF LIGHTING WILL BE DETERMINED DURING ADVANCED DESIGN.

Aug. 28 2014 10:41 am V:\3300_PEC-E\CAD\SEGMENT E4\PLAN SHEETS\ELECTRICAL\E4-ELE-WAY.dwg By: Fergtk

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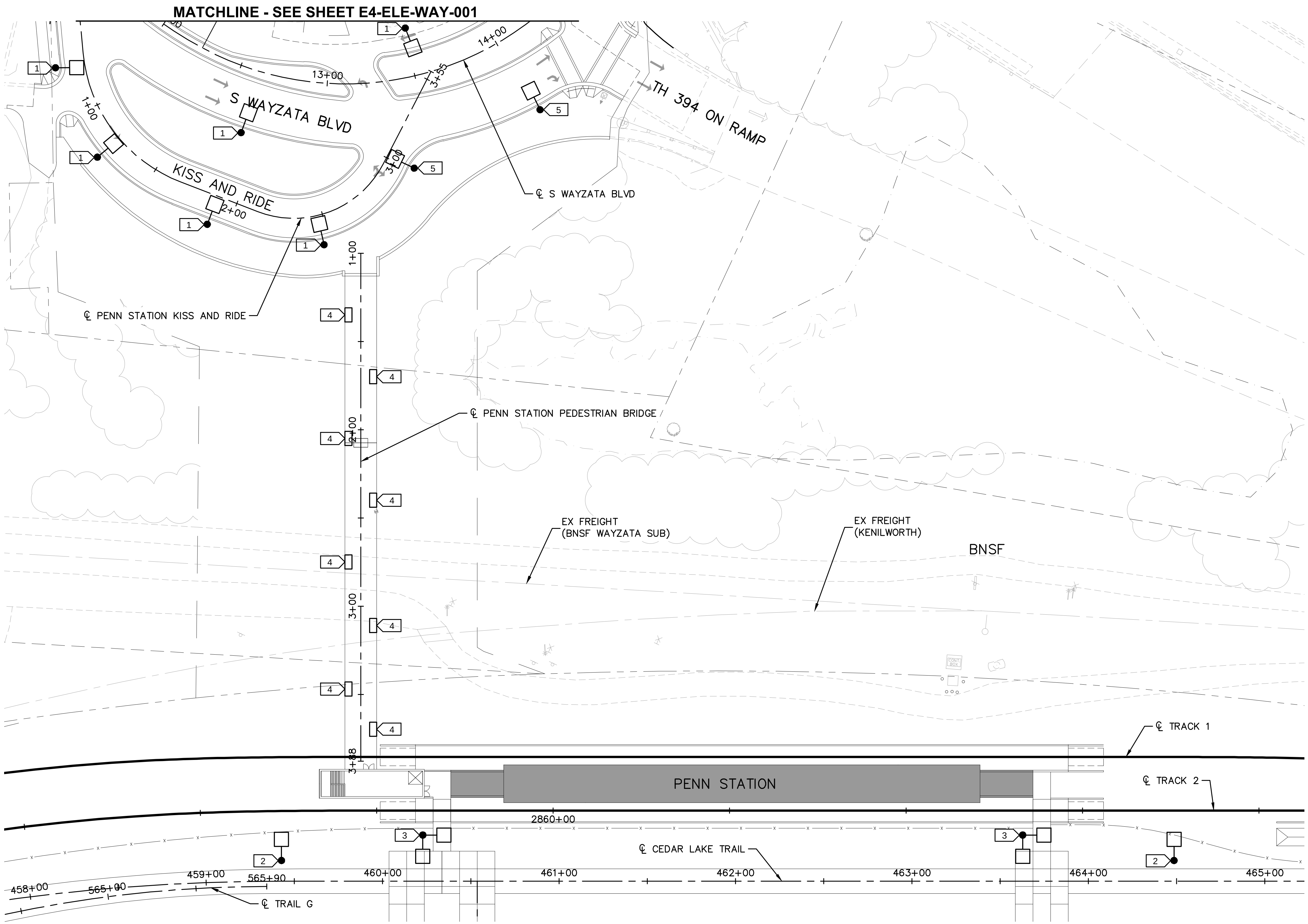
METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
ELECTRICAL SITE PLAN
PENN AVE S

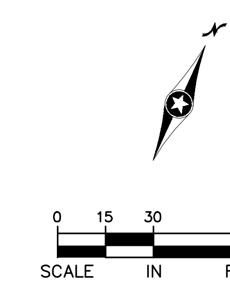
DISCIPLINE: ELECTRICAL

SHEET NAME: E4-ELE-WAY - 002



KEYNOTES:

1. SINGLE POLE MOUNTED LUMINAIRE, LED, TYPE 3 DISTRIBUTION, COOL WHITE COLOR TEMPERATURE, 15,740 LUMENS, MOUNTED @ 20'.
2. SINGLE POLE MOUNTED LUMINAIRE, LED, TYPE 3 DISTRIBUTION, COOL WHITE COLOR TEMPERATURE, 7,714 LUMENS, MOUNTED @ 15'.
3. TWIN @ 90 DEGREE CONFIGURATION POLE MOUNTED LUMINAIRE, LED, TYPE 3 DISTRIBUTION, COOL WHITE COLOR TEMPERATURE, 7,714 LUMENS EACH, MOUNTED @ 15'.
4. WALL MOUNTED LED WALL PACK, COOL TEMPERATURE, 3,500 LUMENS, MOUNTED @ 9', INSIDE PEDESTRIAN BRIDGE.
5. SINGLE POLE MOUNTED LUMINAIRE, LED, TYPE 5 DISTRIBUTION, COOL WHITE COLOR TEMPERATURE, 18,254 LUMENS, MOUNTED @ 20'.



LIGHTING SHOWN IS DIAGRAMMATIC. TYPE AND LOCATION OF LIGHTING WILL BE DETERMINED DURING ADVANCED DESIGN.

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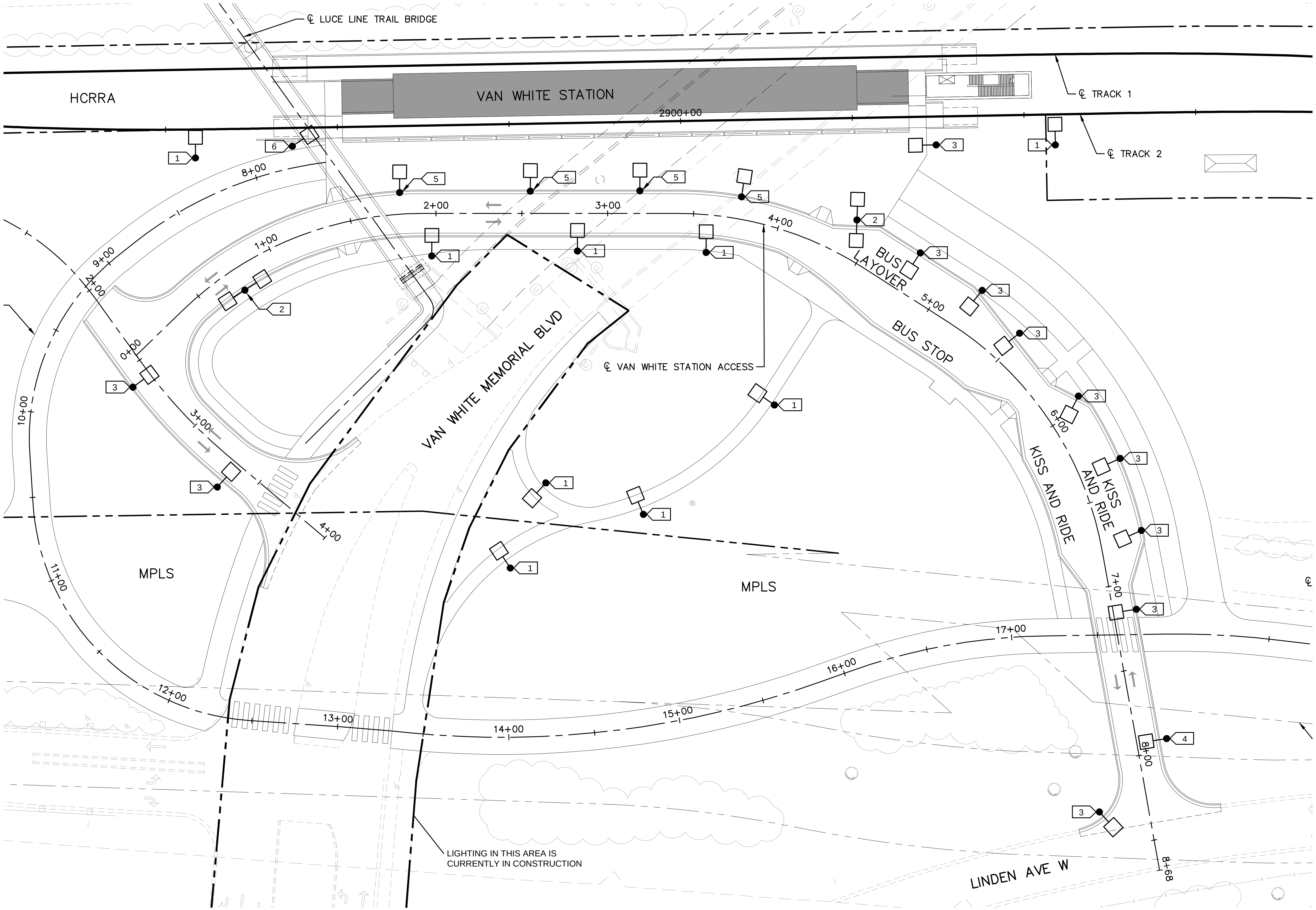
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
ELECTRICAL SITE PLAN
PENN SITE

DISCIPLINE: ELECTRICAL

SHEET NAME: E4-ELE-PEN - 001

Aug. 28 2014 10:43 am V:\3300_PEC-E\CAD\SEGMENT E4\PLAN SHEETS\ELECTRICAL\E4-ELE-PEN.dwg By: Fergtk



KEYNOTES:

1. SINGLE POLE MOUNTED LUMINAIRE, LED, TYPE 2 DISTRIBUTION, COOL WHITE COLOR TEMPERATURE, 7,531 LUMENS, MOUNTED @ 15'.
2. DOUBLE POLE MOUNTED LUMINAIRE, LED, TYPE 4 DISTRIBUTION, COOL WHITE COLOR TEMPERATURE, 15,529 LUMENS EACH, MOUNTED @ 20'.
3. SINGLE POLE MOUNTED LUMINAIRE, LED, TYPE 4 DISTRIBUTION, COOL WHITE COLOR TEMPERATURE, 15,529 LUMENS, MOUNTED @ 20'.
4. SINGLE POLE MOUNTED LUMINAIRE, LED, TYPE 3 DISTRIBUTION, COOL WHITE COLOR TEMPERATURE, 15,740 LUMENS, MOUNTED @ 20'.
5. SINGLE POLE MOUNTED LUMINAIRE, LED, TYPE 5 DISTRIBUTION, COOL WHITE COLOR TEMPERATURE, 7,384 LUMENS, MOUNTED @ 15'.
6. SINGLE POLE MOUNTED LUMINAIRE, LED, TYPE 5 DISTRIBUTION, COOL WHITE COLOR TEMPERATURE, 10,223 LUMENS, MOUNTED @ 15'.

0 15 30 60
SCALE IN FEET

LIGHTING SHOWN IS DIAGRAMMATIC. TYPE AND LOCATION OF LIGHTING WILL BE DETERMINED DURING ADVANCED DESIGN.

Aug. 28 2014 10:44 am V:\3300_PEC-E\CAD\SEGMENT E4\PLAN SHEETS\ELECTRICAL\E4-ELE-VAN.dwg By: Fergtk

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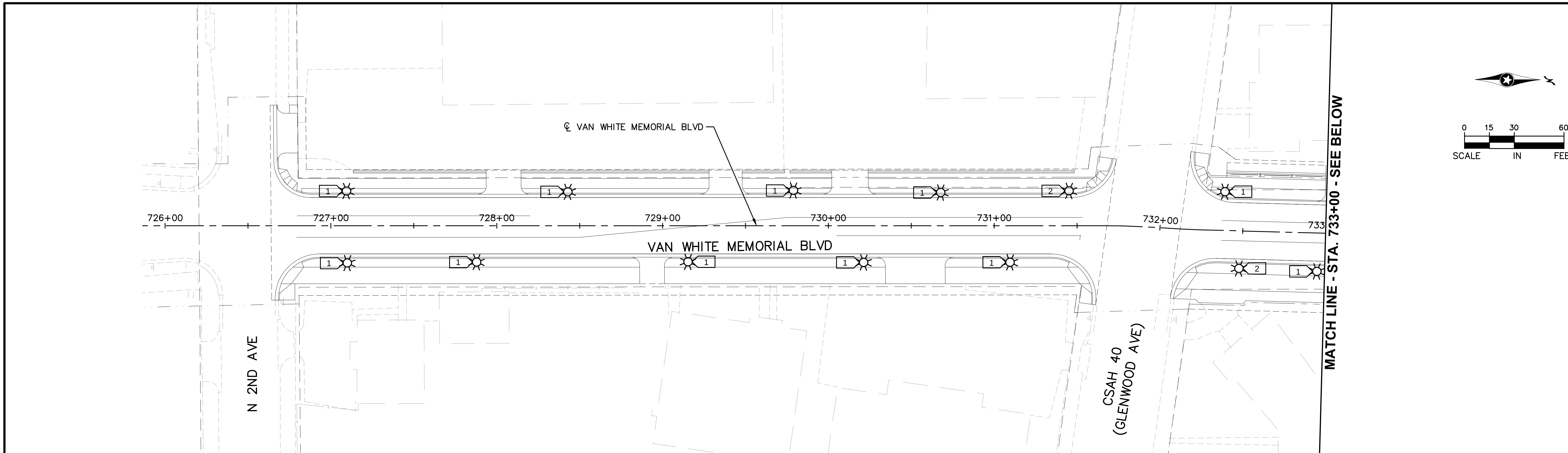
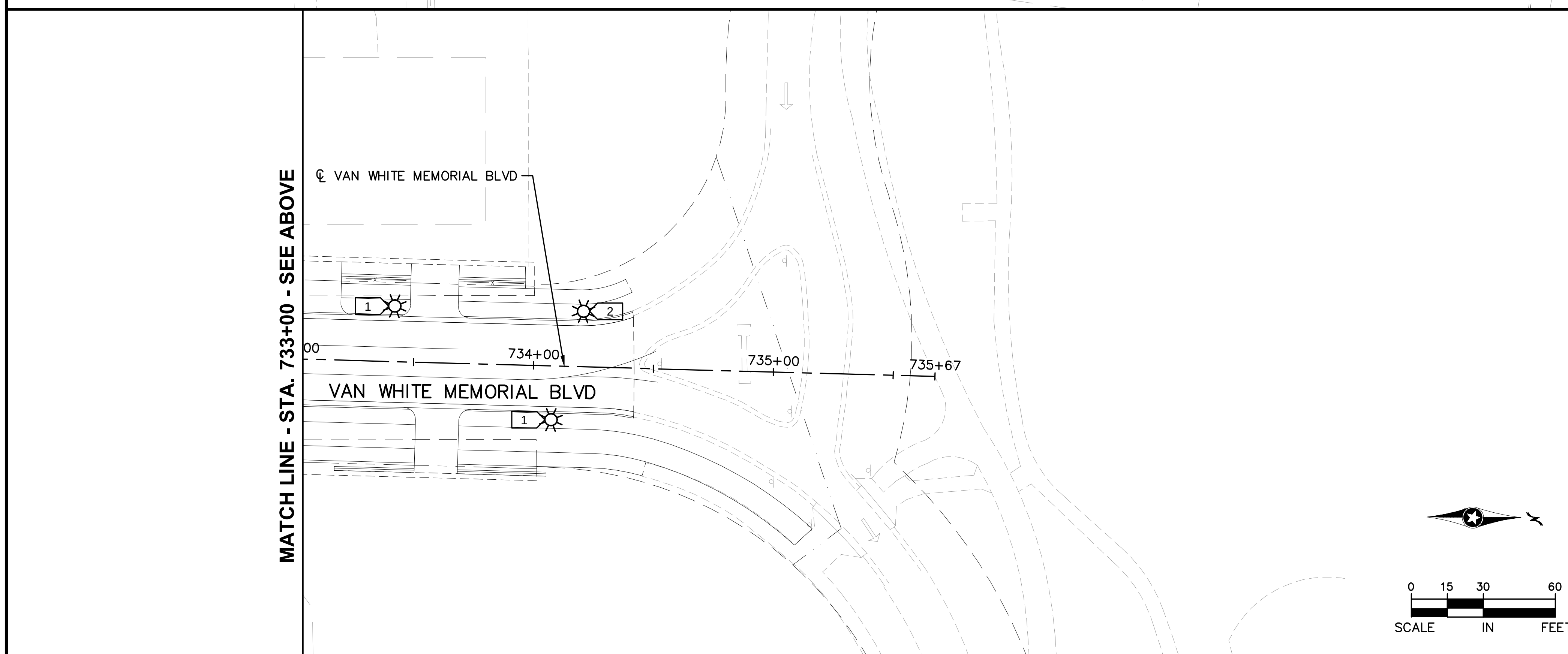
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
ELECTRICAL SITE PLAN
VAN WHITE SITE

DISCIPLINE: ELECTRICAL
SHEET NAME: E4-ELE-VAN - 001

SHEET 129 OF 163





KEYNOTES:

1. POST TOP MOUNTED LUMINAIRE, LED, TYPE 5 DISTRIBUTION, COOL WHITE COLOR TEMPERATURE, 5,183 LUMENS, MOUNTED @15'. (EQUAL TO MINNEAPOLIS LANTERN LUMINAIRE).
2. POST TOP MOUNTED LUMINAIRE, LED, TYPE 2 DISTRIBUTION, COOL WHITE COLOR TEMPERATURE, 5,427 LUMENS, MOUNTED @ 15'. (EQUAL TO MINNEAPOLIS LANTERN LUMINAIRE).

LIGHTING SHOWN IS DIAGRAMMATIC. TYPE AND LOCATION OF LIGHTING WILL BE DETERMINED DURING ADVANCED DESIGN.

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

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SOUTHWEST Green Line LRT Extension

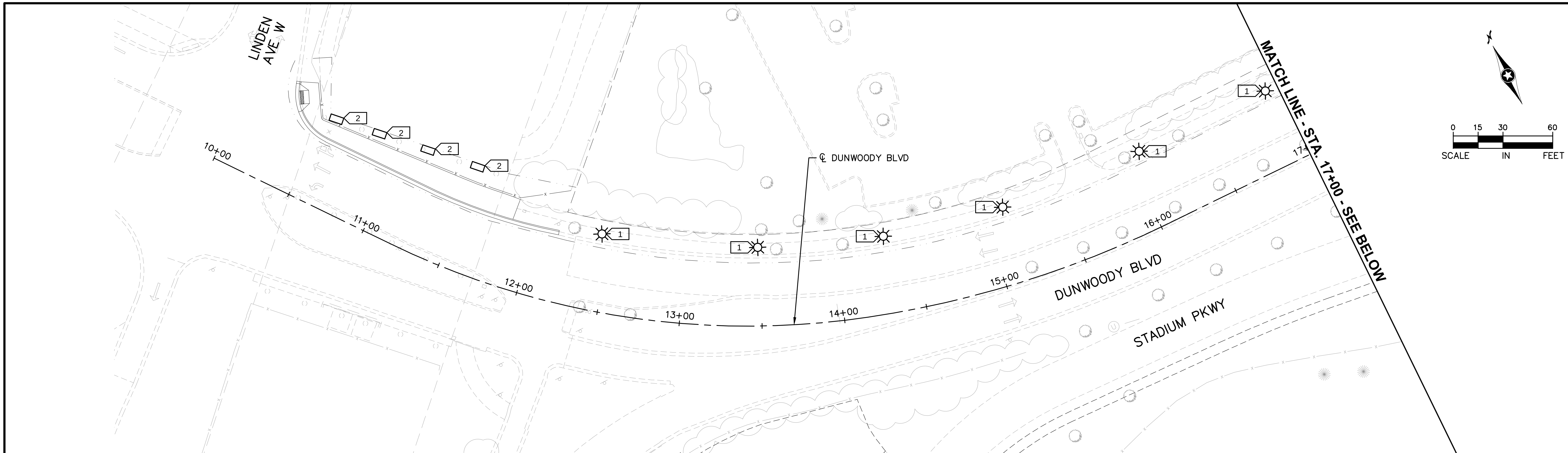
EAST - VOLUME 1 (CIVIL) - SEGMENT 4
ELECTRICAL SITE PLAN
VAN WHITE MEMORIAL BLVD
STA. 726+50 TO STA. 735+67

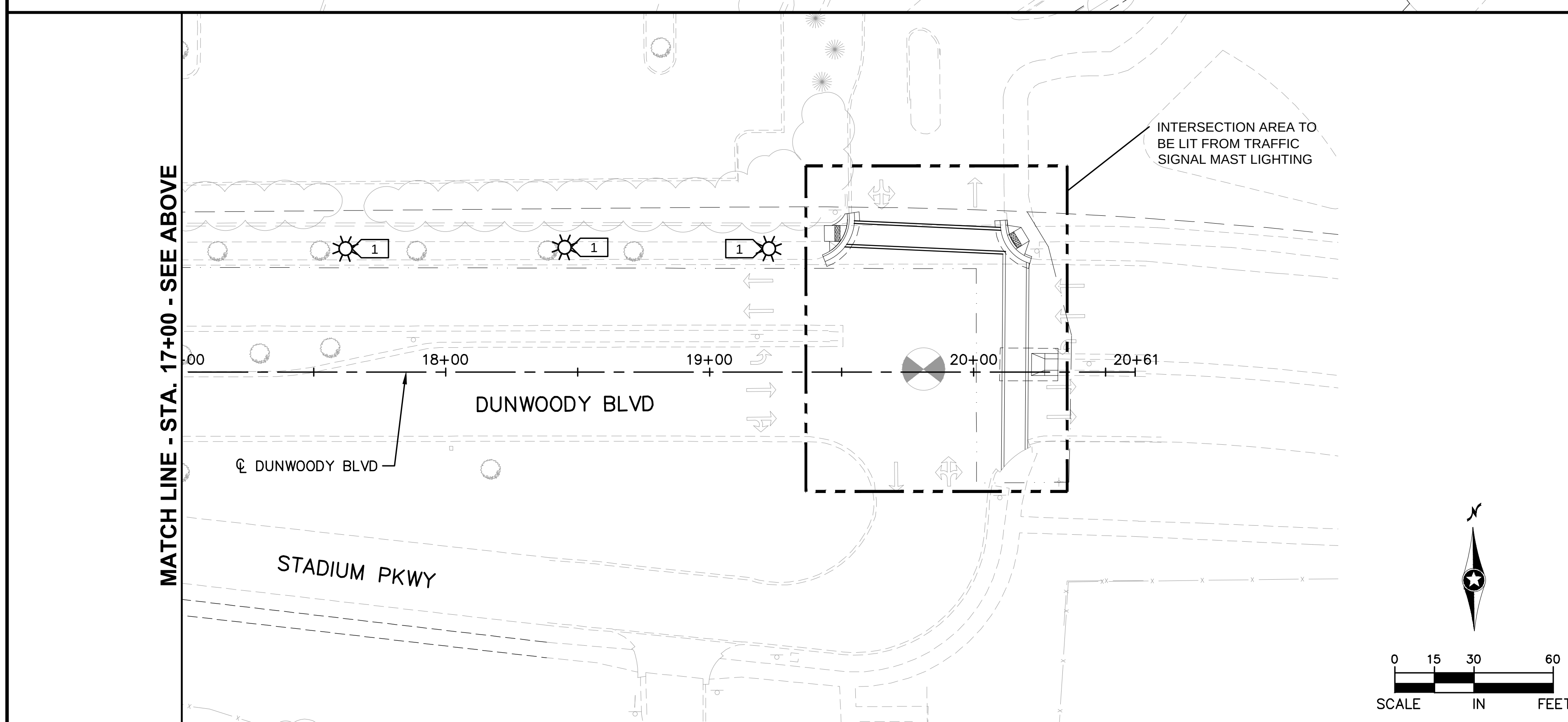
DISCIPLINE: ELECTRICAL

SHEET NAME: E4-ELE-FRE - 001

SHEET 130 OF 163

Aug. 28 2014 10:46 am V:\3300_PEC-E\CAD\SEGMENT E4\PLAN SHEETS\ELECTRICAL\E4-ELE-FRE.dwg By: Fergtk





KEYNOTES:

1. POST TOP MOUNTED LUMINAIRE, LED, TYPE 5 DISTRIBUTION, COOL WHITE COLOR TEMPERATURE, 5,183 LUMENS, MOUNTED @15'. (EQUAL TO MINNEAPOLIS LANTERN LUMINAIRE).
2. WALL MOUNTED LED WALL PACK, COOL WHITE COLOR TEMPERATURE, 3,500 LUMENS, MOUNTED @ 10'. MOUNT TO EXISTING BRIDGE BEAM.

LIGHTING SHOWN IS DIAGRAMMATIC. TYPE AND LOCATION OF LIGHTING WILL BE DETERMINED DURING ADVANCED DESIGN.

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METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

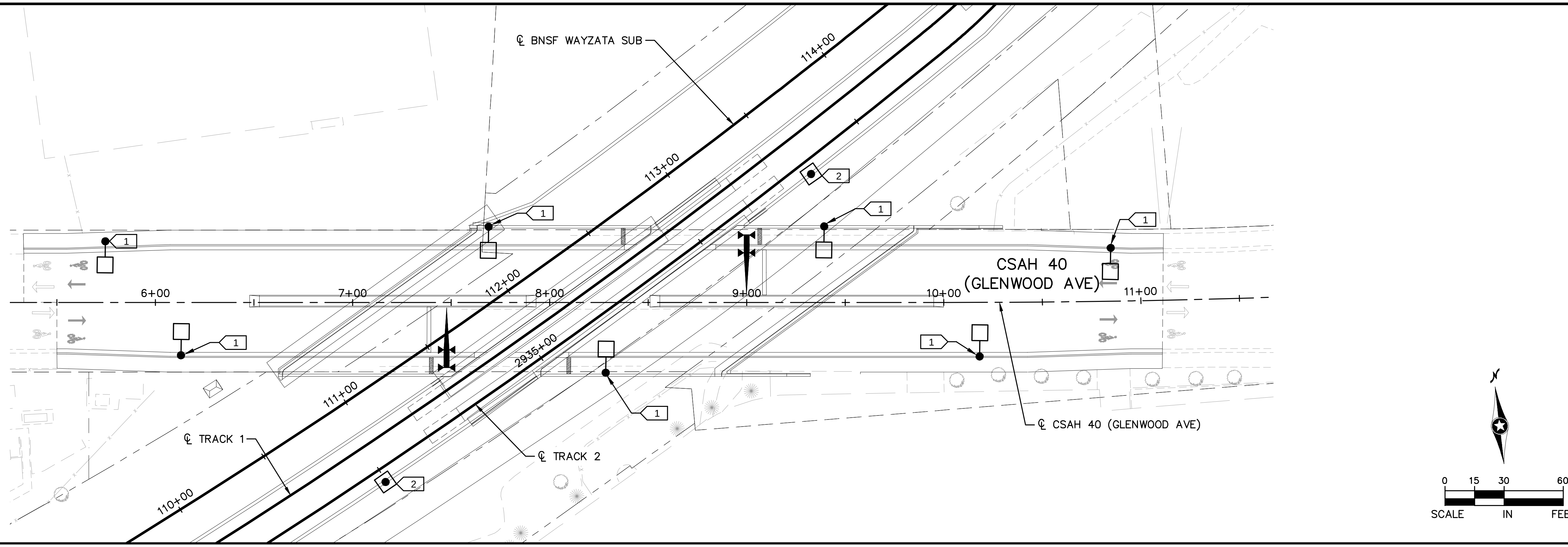
EAST - VOLUME 1 (CIVIL) - SEGMENT 4
ELECTRICAL SITE PLAN
DUNWOODY BLVD
STA. 10+00 TO STA. 20+61

DISCIPLINE: ELECTRICAL

SHEET NAME: E4-ELE-DUN - 001

SHEET 131 OF 163

Aug. 28, 2014 10:48 am V:\3300_PEC-E\CAD\SEGMENT E4\PLAN SHEETS\ELECTRICAL\E4-ELE-DUN.dwg By: Fergtk



KEYNOTES:

1. SINGLE POLE MOUNTED LUMINAIRE, HPS, TYPE 2 DISTRIBUTION, 250W HPS, MOUNTED @ 30'.
2. POST TOP MOUNTED LUMINAIRE, HPS, TYPE 2 DISTRIBUTION, 250W HPS, MOUNTED @ 30' ON TOP OF RETAINING WALL.

LIGHTING SHOWN IS DIAGRAMMATIC. TYPE AND LOCATION OF LIGHTING WILL BE DETERMINED DURING ADVANCED DESIGN.

Aug. 28 2014 10:49 am V:\3300_PEC-E\CAD\SEGMENT E4\PLAN SHEETS\ELECTRICAL\E4-ELE-GLN.dwg By: Fergtk

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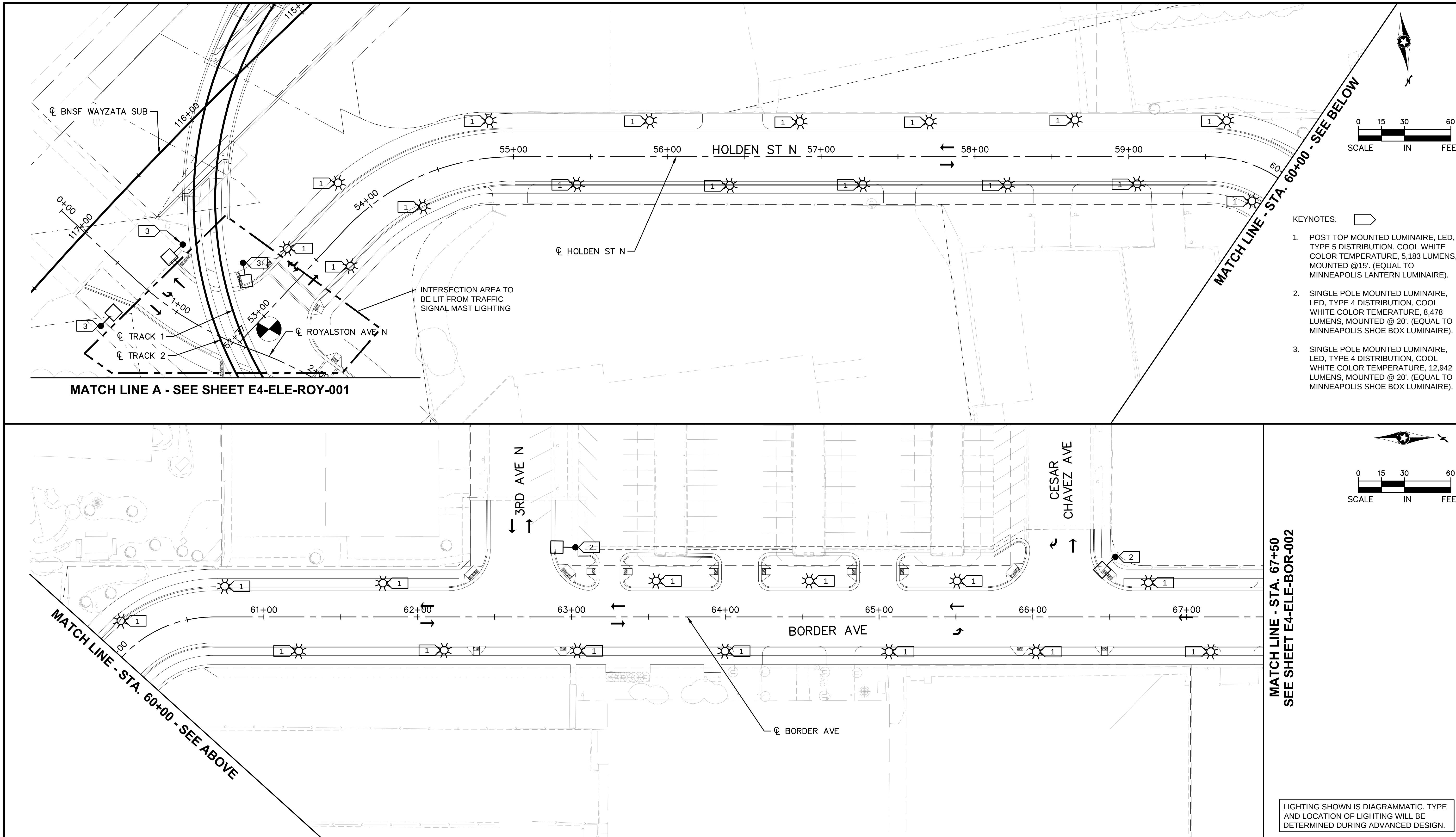
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
ELECTRICAL SITE PLAN
CSAH 40 (GLENWOOD AVE)
STA. 5+00 TO STA. 11+50

DISCIPLINE: ELECTRICAL

SHEET NAME: E4-ELE-GLN - 001

SHEET 132 OF 163



KEYNOTES:

1. POST TOP MOUNTED LUMINAIRE, LED, TYPE 5 DISTRIBUTION, COOL WHITE COLOR TEMPERATURE, 5,183 LUMENS, MOUNTED @15'. (EQUAL TO MINNEAPOLIS LANTERN LUMINAIRE).
2. SINGLE POLE MOUNTED LUMINAIRE, LED, TYPE 4 DISTRIBUTION, COOL WHITE COLOR TEMERATURE, 8,478 LUMENS, MOUNTED @ 20'. (EQUAL TO MINNEAPOLIS SHOE BOX LUMINAIRE).
3. SINGLE POLE MOUNTED LUMINAIRE, LED, TYPE 4 DISTRIBUTION, COOL WHITE COLOR TEMPERATURE, 12,942 LUMENS, MOUNTED @ 20'. (EQUAL TO MINNEAPOLIS SHOE BOX LUMINAIRE).

LIGHTING SHOWN IS DIAGRAMMATIC. TYPE AND LOCATION OF LIGHTING WILL BE DETERMINED DURING ADVANCED DESIGN.

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

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PRELIMINARY ENGINEERING

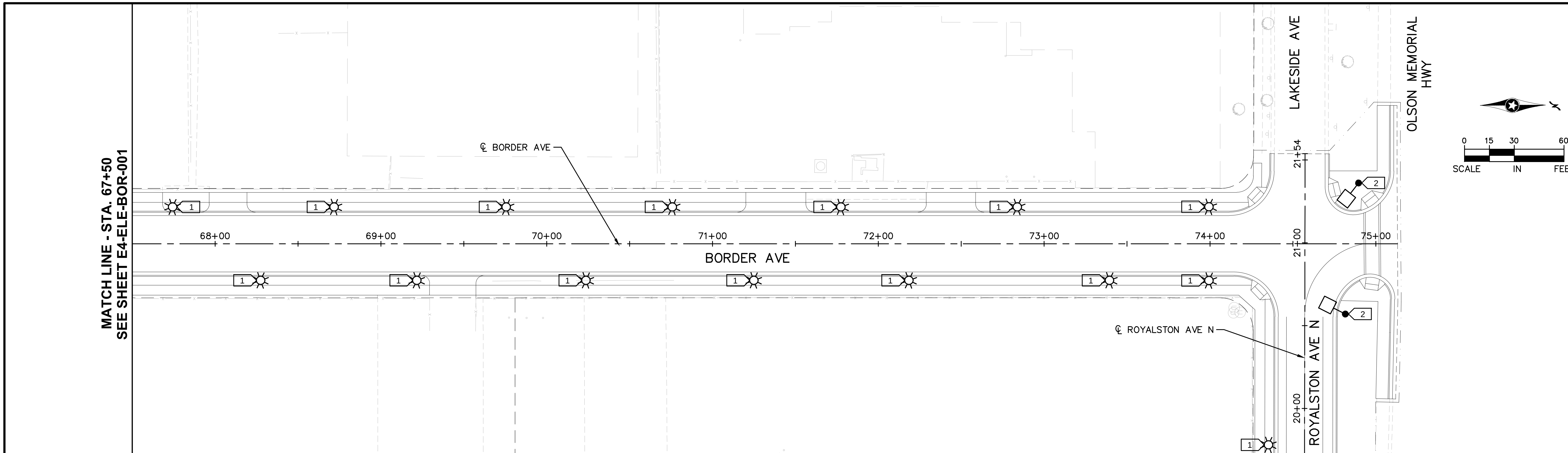
METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
ELECTRICAL SITE PLAN
HOLDEN AVE N
STA. 52+77.07 TO STA. 67+50

DISCIPLINE: ELECTRICAL

SHEET NAME: E4-ELE-BOR - 001



MATCH LINE - STA. 19+71
SEE SHEET E4-ELE-ROY-002

KEYNOTES:

1. POST TOP MOUNTED LUMINAIRE, LED, TYPE 5 DISTRIBUTION, COOL WHITE COLOR TEMPERATURE, 5,183 LUMENS, MOUNTED @15'. (EQUAL TO MINNEAPOLIS LANTERN LUMINAIRE).

2. SINGLE POLE MOUNTED LUMINAIRE, LED, TYPE 5 DISTRIBUTION, COOL WHITE COLOR TEMERATURE, 10,223 LUMENS, MOUNTED @ 20'. (EQUAL TO MINNEAPOLIS SHOE BOX LUMINAIRE).

LIGHTING SHOWN IS DIAGRAMMATIC. TYPE AND LOCATION OF LIGHTING WILL BE DETERMINED DURING ADVANCED DESIGN.

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

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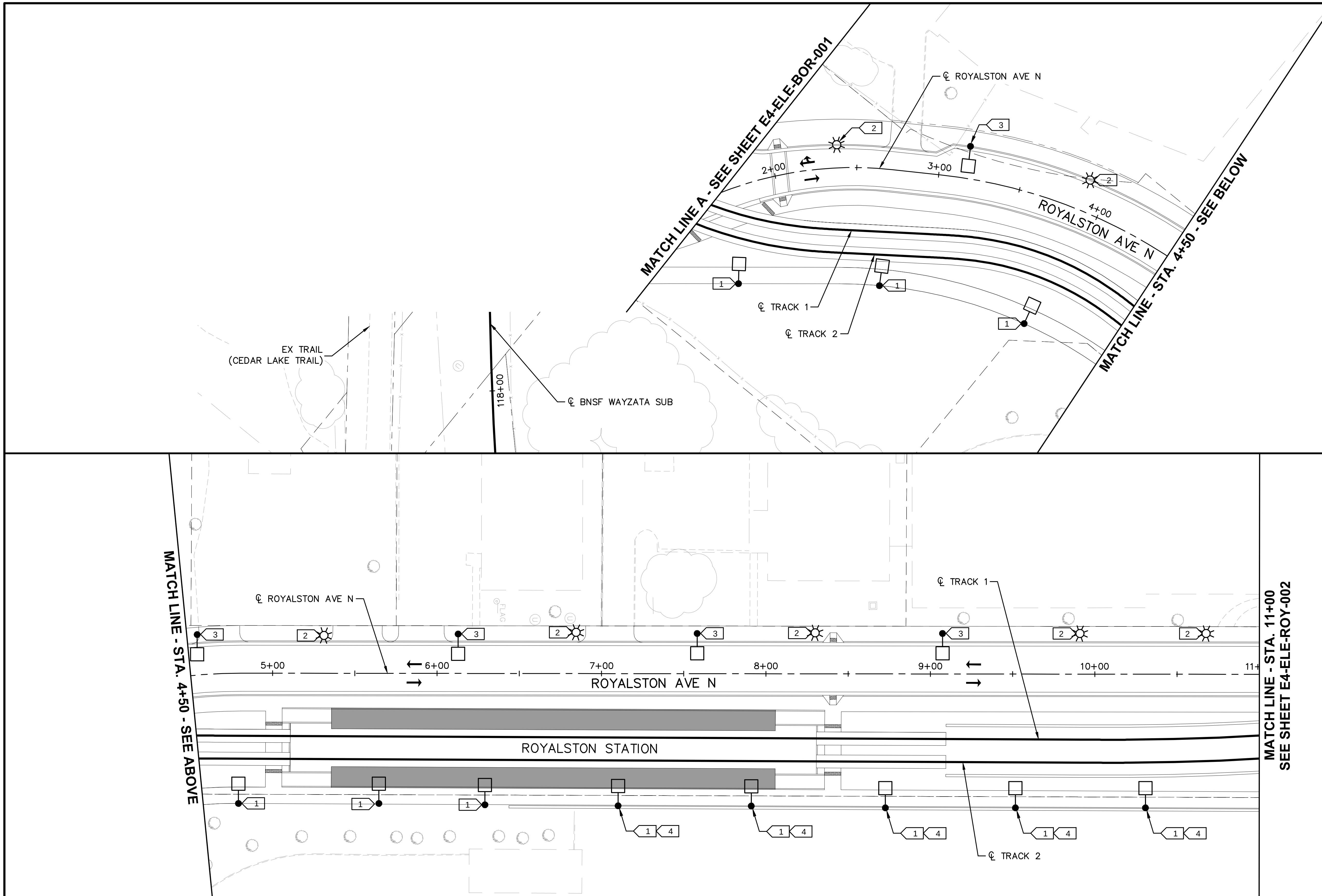
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
ELECTRICAL SITE PLAN
BORDER AVE
STA. 67+50 TO STA. 75+13.11

DISCIPLINE: ELECTRICAL
SHEET NAME: E4-ELE-BOR - 002

SHEET 134 OF 163



0 15 30 60
SCALE IN FEET

KEYNOTES:

1. SINGLE POLE MOUNTED LUMINAIRE, LED, TYPE 4 DISTRIBUTION, COOL WHITE COLOR TEMPERATURE, 12,942 LUMENS, MOUNTED @ 20'.
2. POST TOP MOUNTED LUMINAIRE, LED, TYPE 5 DISTRIBUTION, COOL WHITE COLOR TEMPERATURE, 5,183 LUMENS, MOUNTED @15'. (EQUAL TO MINNEAPOLIS LANTERN LUMINAIRE).
3. SINGLE POLE MOUNTED LUMINAIRE, LED, TYPE 5 DISTRIBUTION, COOL WHITE COLOR TEMPERATURE, 15,271 LUMENS, MOUNTED @ 20'.
4. LUMINAIRE MOUNTED ON TOP OF RETAINING WALL.

0 15 30 60
SCALE IN FEET

LIGHTING SHOWN IS DIAGRAMMATIC. TYPE AND LOCATION OF LIGHTING WILL BE DETERMINED DURING ADVANCED DESIGN.

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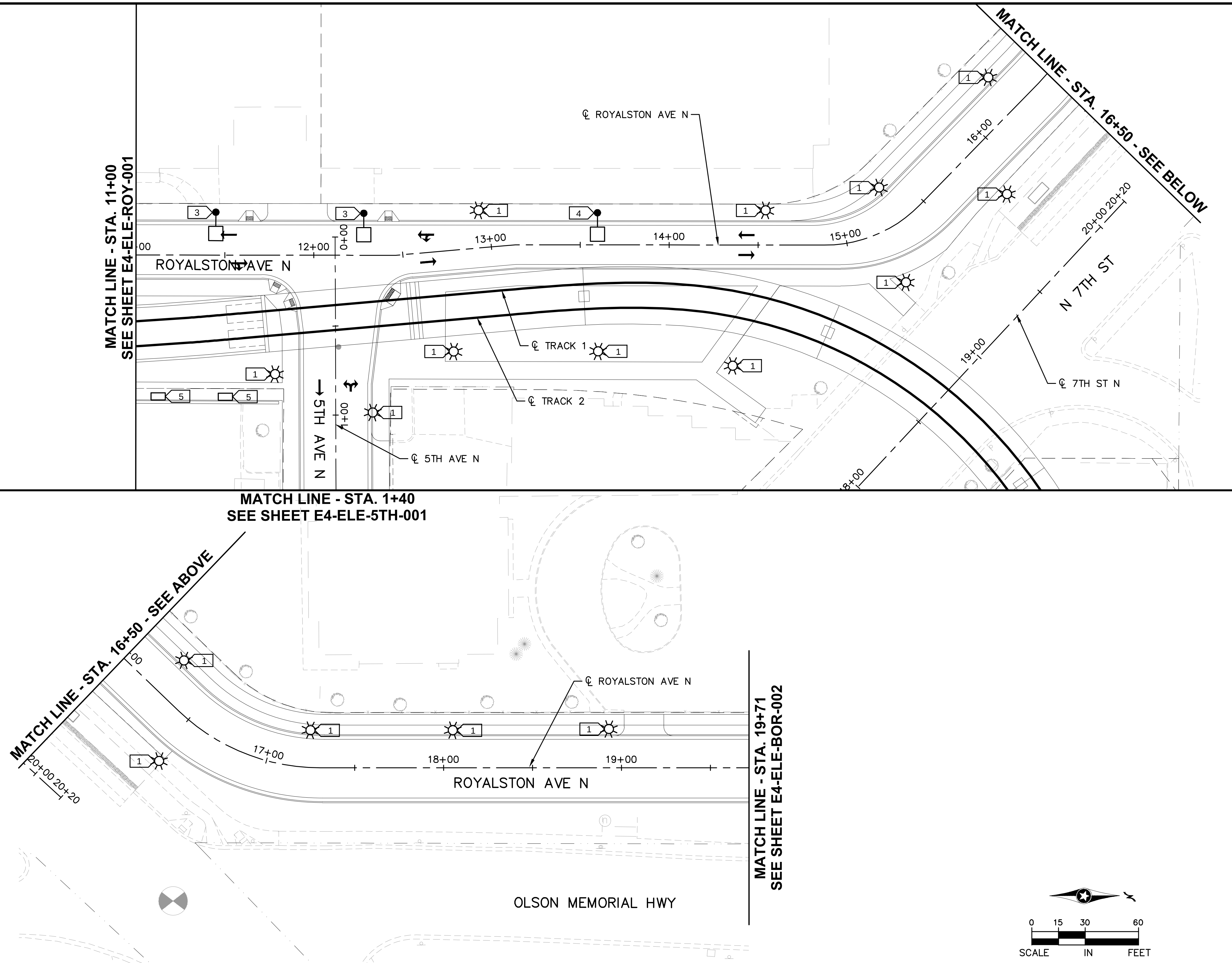
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
ELECTRICAL SITE PLAN
ROYALSTON AVE N
STA. 0+00 TO STA. 11+00

DISCIPLINE: ELECTRICAL
SHEET NAME: E4-ELE-ROY - 001

SHEET 135 OF 163

Aug. 28 2014 10:53 am V:\3300_PEC-E\CAD\SEGMENT E4\PLAN SHEETS\ELECTRICAL\E4-ELE-ROY.dwg By: Fergtk



0 15 30 60
SCALE IN FEET

KEYNOTES:

1. POST TOP MOUNTED LUMINAIRE, LED, TYPE 5 DISTRIBUTION, COOL WHITE COLOR TEMPERATURE, 5,183 LUMENS, MOUNTED @15'. (EQUAL TO MINNEAPOLIS LANTERN LUMINAIRE).
2. NOT USED.
3. SINGLE POLE MOUNTED LUMINAIRE, LED, TYPE 4 DISTRIBUTION, COOL WHITE COLOR TEMPERATURE, 12,942 LUMENS, MOUNTED @ 20'.
4. SINGLE POLE MOUNTED LUMINAIRE, LED, TYPE 5 DISTRIBUTION, COOL WHITE COLOR TEMPERATURE, 15,271 LUMENS, MOUNTED @ 20'.
5. WALL MOUNTED LED WALL PACK, COOL WHITE COLOR TEMPERATURE, 3,500 LUMENS, MOUNTED @ 10'. MOUNT TO EXISTING BRIDGE BEAM.

LIGHTING SHOWN IS DIAGRAMMATIC. TYPE AND LOCATION OF LIGHTING WILL BE DETERMINED DURING ADVANCED DESIGN.

Aug. 28 2014 10:54 am V:\3300_PEC-E\CAD\SEGMENT E4\PLAN SHEETS\ELECTRICAL\E4-ELE-ROY.dwg By: Fergtk

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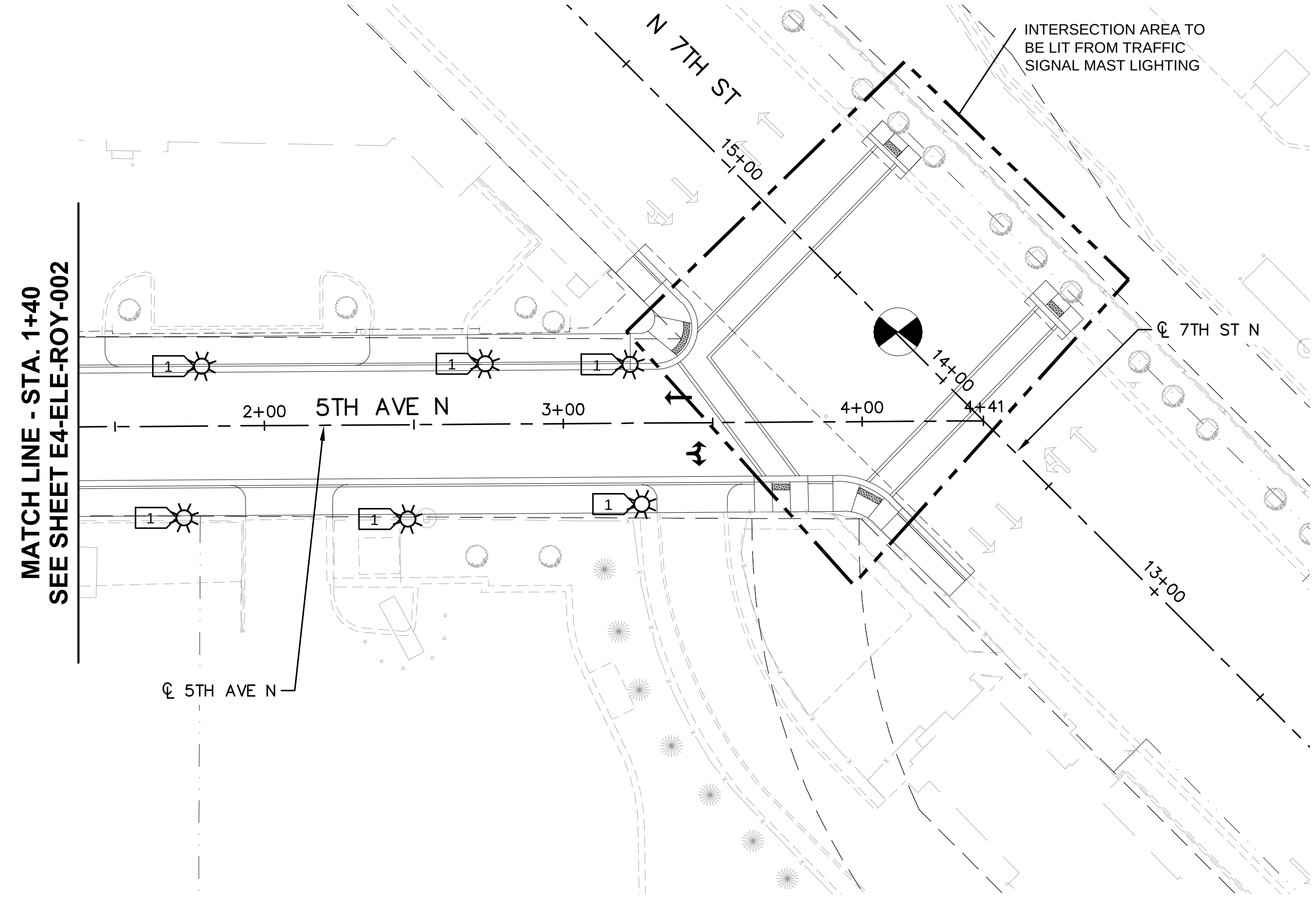
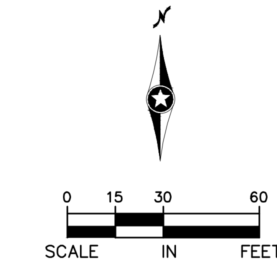
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
ELECTRICAL SITE PLAN
ROYALSTON AVE N
STA. 11+00 TO STA. 21+54

DISCIPLINE: ELECTRICAL
SHEET NAME: E4-ELE-ROY - 002





KEYNOTES:

1. POST TOP MOUNTED LUMINAIRE, LED, TYPE 5 DISTRIBUTION, COOL WHITE COLOR TEMPERATURE, 5,183 LUMENS, MOUNTED @ 15'. (EQUAL TO MINNEAPOLIS LANTERN LUMINAIRE).

LIGHTING SHOWN IS DIAGRAMMATIC. TYPE AND LOCATION OF LIGHTING WILL BE DETERMINED DURING ADVANCED DESIGN.

Aug. 28 2014 10:55 am V:\3300_PEC-E\CAD\SEGMENT E4\PLAN SHEETS\ELECTRICAL\E4-ELE-5TH.dwg By: Fergtk

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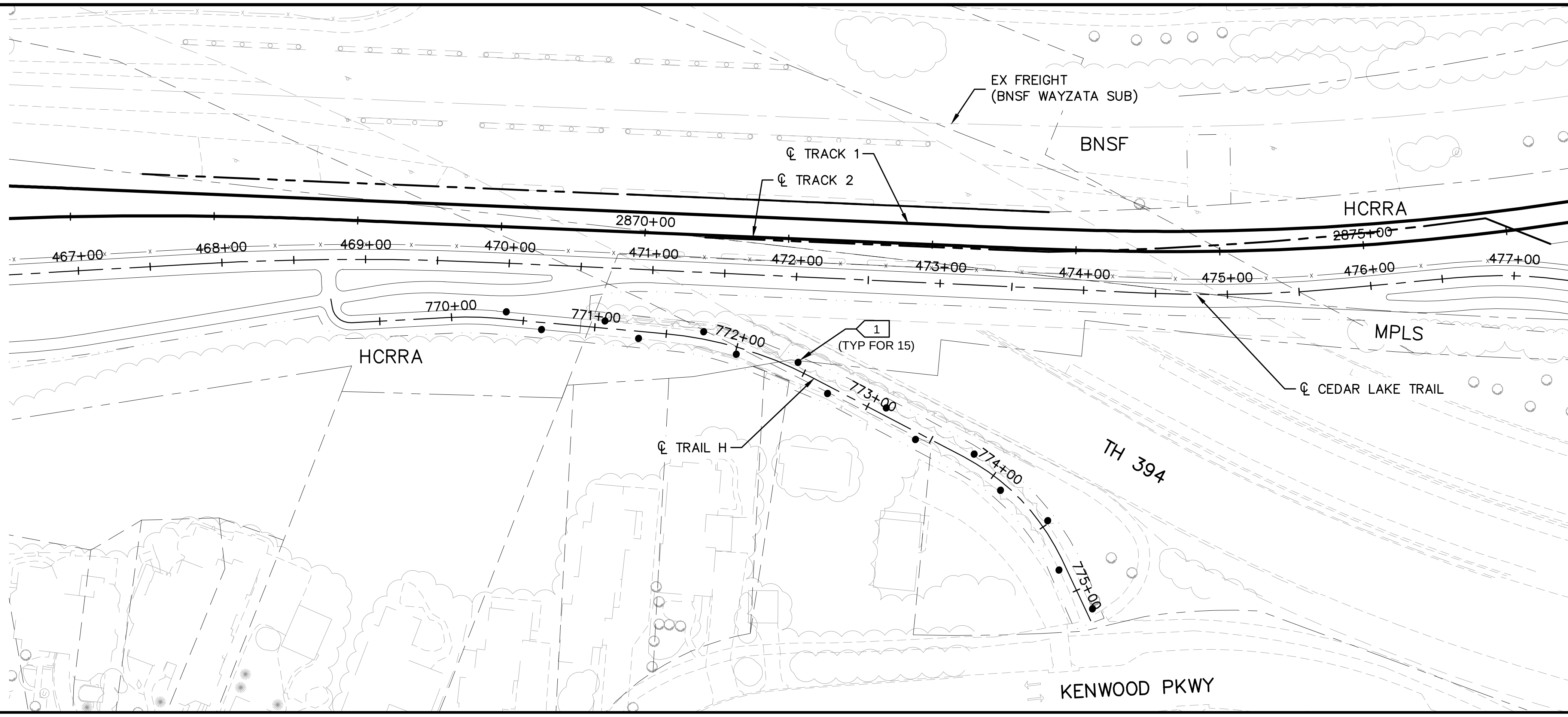
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
ELECTRICAL SITE PLAN
5TH AVE N

DISCIPLINE: ELECTRICAL

SHEET NAME: E4-ELE-5TH - 001

SHEET 137 OF 163



0 25 50 100
SCALE IN FEET

KEYNOTES:

1. BOLLARD LUMINAIRE, LED, COOL WHITE COLOR TEMPERATURE, 739 LUMENS, MOUNTED @ 3.5'.

LIGHTING SHOWN IS DIAGRAMMATIC. TYPE AND LOCATION OF LIGHTING WILL BE DETERMINED DURING ADVANCED DESIGN.

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SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
ELECTRICAL SITE PLAN
TRAIL H

DISCIPLINE: ELECTRICAL

SHEET NAME: E4-ELE-TRH - 001

Aug. 28 2014 10:57 am V:\3300_PEC-E\CAD\SEGMENT E4\PLAN SHEETS\ELECTRICAL\E4-ELE-TRH.dwg By: Fergtk

LEGEND

PROPOSED UTILITY LINE TYPES

——I——	WATER MAIN
——▶——	SANITARY SEWER
——▶▶——	SANITARY SEWER FORCE MAIN
——COM-UG——	FIBER OPTIC COMMUNICATION

PROPOSED UTILITY SYMBOLS

Ⓦ	WATER MANHOLE
⋈	WATER VALVE
◈	WATER HYDRANT
Ⓢ	SANITARY SEWER MANHOLE

SANITARY AND WATER PLAN CONSTRUCTION NOTES

1. CONNECT TO EXISTING WATER MAIN. VERIFY EXISTING WATER MAIN SIZE AND LOCATION. PROVIDE FITTINGS, PIPE COUPLING (ISOLATING COUPLING WHERE REQUIRED-SEE CORROSION CONTROL PLANS) AND MECHANICAL THRUST RESTRAINT AT THE FITTINGS, COUPLING AND ACROSS COUPLING.
2. 8" GATE VALVE AND VALVE BOX.
3. 6" GATE VALVE, VALVE BOX, HYDRANT AND DIP LEAD.
4. COORDINATE WITH CITY FOR SERVICE CONNECTIONS.
5. 6" GATE VALVE, VALVE MANHOLE, HYDRANT AND DIP LEAD
6. CONSTRUCT MANHOLE OVER EXISTING SEWER.
7. RECONSTRUCT MANHOLE AS NECESSARY TO MATCH PROPOSED GRADE
8. CONSTRUCT WATER SERVICE. SEE TABULATION OF WATER SERVICES IN THE EXISTING UTILITY TABULATIONS FOR PROPOSED SIZE AND MATERIAL. PROVIDE ADAPTORS AND FITTINGS AS NECESSARY TO MAKE CONNECTION TO EXISTING SERVICE. REFER TO CORROSION CONTROL PLANS FOR CORROSION CONTROL NOTES. CONTRACTOR SHALL TAP MAIN FOR ALL SERVICES. VERIFY EXISTING WATER SERVICE SIZE AND LOCATION.
9. CONNECT TO EXISTING WATER SERVICE. VERIFY EXISTING WATER SERVICE SIZE AND LOCATION. PROVIDE FITTINGS, PIPE COUPLING (ISOLATING COUPLING WHERE REQUIRED-SEE CORROSION CONTROL PLANS) AND MECHANICAL THRUST RESTRAINT AT THE FITTINGS, COUPLING AND ACROSS COUPLING. CONSTRUCT WATER SERVICES 4" AND LARGER WITH MECHANICAL JOINT DIP. PROVIDE MECHANICAL THRUST RESTRAINT FOR ALL JOINTS. INSTALL WITH A CAP AND OUTLET AT THE END OF THE SERVICE OF SUFFICIENT SIZE TO ALLOW FOR FLUSHING AND TESTING OF THE SERVICE LINE. ALL SERVICES WILL BE SUBJECT TO THE SAME TESTING AS THE WATER MAIN. AFTER SUCCESSFUL COMPLETION OF TESTING, REMOVE CAP AND CONNECT TO EXISTING SERVICE PIPE. CONNECTION TO EXISTING PIPE WILL BE VISUALLY INSPECTED UNDER CITY OPERATING PRESSURE PRIOR TO BURYING. COORDINATE TESTING AND INSPECTION WITH CAR (COUNCIL AUTHORIZED REPRESENTATIVE) AND CITY INSPECTOR.
10. SEE TYPICAL PIPE CASING INSTALLATION DETAIL.
11. PROTECT SEWER IN PLACE.
12. STATION WATER SERVICE. SEE STATION MECHANICAL PLANS FOR CONTINUATION AND DETAIL. COORDINATE WITH CAR (COUNCIL AUTHORIZED REPRESENTATIVE) FOR LOCATION OF CURB STOP.
13. PROVIDE AND INSTALL MECHANICAL THRUST RESTRAINT FOR ALL JOINTS.
14. CONCRETE PIERS FOR PIPE CROSSING. SEE DETAIL.
15. INSULATE WATER MAIN.
16. SEWER CONSTRUCTION JOINT. SEE DETAIL.
17. SEE JOINING DISSIMILAR PIPE DETAIL.
18. CONSTRUCT WATER SERVICE TRACK CROSSING PER TYPICAL WATER SERVICE TRACK CROSSING FOR 2" COPPER SERVICE OR SMALLER DETAIL.
19. NOT USED
20. RECONSTRUCT SEWER SERVICE PER RECONNECTION OF HOUSE SERVICES DETAIL. COORDINATE WITH PROPERTY OWNER TO MINIMIZE INTERRUPTION OF SERVICE. COORDINATE WITH LOCATION AND ELEVATION OF PUBLIC AND PRIVATE UTILITIES AND PROPOSED RELOCATION OF PUBLIC AND PRIVATE UTILITIES.
21. NOT USED

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UTILITY CONTACTS

UTILITY: ARVIG COMMUNICATIONS SYSTEMS CONTACT: PATRICK LYNCH PHONE: (320) 256–0271 MOBILE: (320) 492–8763 ADDRESS: 224 MAIN STREET EAST MELROSE, MINNESOTA 56352	UTILITY: CITY OF MINNEAPOLIS TRAFFIC CONTACT: ALLAN KLUGMAN PHONE: (612) 673–2743 MOBILE: (612) 655–6292 ADDRESS: 300 BORDER AVENUE NORTH MINNEAPOLIS, MN 55405	UTILITY: LEVEL 3 COMMUNICATIONS CONTACT: BRAD MORSETH PHONE: MOBILE: (612) 805–9479 ADDRESS: 715 N. 2ND ST. MINNEAPOLIS, MINNESOTA 55401	UTILITY: TDS TELECOM CONTACT: MICHAEL RITCHIE PHONE: (608) 664–4461 MOBILE: ADDRESS: 525 JUNCTION ROAD MADISON, WISCONSIN 53717	UTILITY: ZAYO FIBER SOLUTIONS CONTACT: JACK JELINEK PHONE: (952) 230–4288 MOBILE: (715) 245–0491 ADDRESS: 2300 BERKSHIRE LN N. SUITE 4 PLYMOUTH, MN 55441
UTILITY: AT & T CONTACT: JERRY STREETER PHONE: (612) 344–3327 MOBILE: (612) 248–8674 ADDRESS: 420 3RD AVE. S., 9TH FLOOR MINNEAPOLIS, MINNESOTA 55415	UTILITY: CITY OF MINNEAPOLIS WATER CONTACT: MARIE ASGIAN PHONE: (612) 673–5682 MOBILE: ADDRESS: ROOM MAIN, WATER – EAST YARD 935 5TH AVENUE SE MINNEAPOLIS, MN 55414	UTILITY: METROPOLITAN COUNCIL, ENVIRONMENTAL SERVICES CONTACT: ADAM GORDON PHONE: (651) 602–4508 MOBILE: ADDRESS: 3565 KENNEBEC DRIVE EAGAN, MINNESOTA 55122	UTILITY: TELECOM TRANSPORT MANAGEMENT, INC. CONTACT: DAVE SMITH PHONE: (612) 309–8422 MOBILE: ADDRESS: 6844 WASHINGTON AVE. EDEN PRAIRIE, MN 55344	
UTILITY: CENTERPOINT ENERGY CONTACT: ANDREW BALGOBIN PHONE: (612) 321–5426 MOBILE: ADDRESS: 700 WEST LINDEN AVENUE MINNEAPOLIS, MINNESOTA 55403	UTILITY: CITY OF ST. LOUIS PARK CONTACT: JACK SULLIVAN PHONE: (952) 924–2691 MOBILE: ADDRESS: ENGINEERING DEPARTMENT CITY HALL 5005 MINNETONKA BLVD ST. LOUIS PARK, MINNESOTA 55416	UTILITY: METRO TRANSIT CONTACT: BOJAN MISIC PHONE: (612) 373–3874 MOBILE: (619) 549–7620 ADDRESS: SOUTHWEST LRT PROJECT OFFICE PARK PLACE WEST 6465 WAYZATA BOULEVARD, SUITE 500 ST. LOUIS PARK, MN 55426	UTILITY: TW TELECOM, INCORPORATED CONTACT: BOB STRONG PHONE: (952) 351–2353 MOBILE: (612) 805–6827 ADDRESS: 5480 FELTL ROAD MINNETONKA, MINNESOTA 55343–7982	
UTILITY: CENTURYLINK CONTACT: BRANDON ELVERUM PHONE: (651) 250–3996 MOBILE: ADDRESS: 390 COMMERCE DRIVE, ROOM #104 WOODBURY, MINNSOTA 55125	UTILITY: COMCAST CABLE CONTACT: TOM NIEDZIELSKI PHONE: (651) 493–5407 MOBILE: (612) 490–7750 ADDRESS: 2621 FAIRVIEW AVE. NORTH ROSEVILLE, MINNESOTA 55113	UTILITY: MNDOT CONTACT: MIKE MANNING PHONE: (612) 373–3809 MOBILE: (651) 775–0227 ADDRESS: SOUTHWEST LRT PROJECT OFFICE PARK PLACE WEST 6465 WAYZATA BOULEVARD, SUITE 500 ST. LOUIS PARK, MN 55426	UTILITY: VERIZON COMMUNICATIONS CONTACT: STEPHEN BONCZKOWSKI PHONE: (630) 395–6161 MOBILE: (630) 327–6959 ADDRESS: 501 63RD ST. DOWNERS GROVE, ILLINOIS 60516	
UTILITY: CENTURYLINK CONTACT: KATHY HOGGARTH PHONE: (651) 312–5306 MOBILE: ADDRESS: 425 MONROE ST. ANOKA, MINNESOTA 55303	UTILITY: EDCO PRODUCTS CONTACT: RUSS CLARNO PHONE: (952) 945–2650 MOBILE: ADDRESS: 8700 EXCELSIOR BLVD. HOPKINS, MINNESOTA 55343	UTILITY: ROGERS COMMUNICATIONS CONTACT: RICHARD AUSTRIA PHONE: (647) 747–2976 MOBILE: (647) 241–6534 ADDRESS: EAST BUILDING 2ND FLOOR BRAMPTON, ONTARIO L6T 0C1	UTILITY: WINDSTREAM CONTACT: ERIC BECKER PHONE: MOBILE: (612) 790–4110 ADDRESS: 2996 CENTRE POINT DR. ROSEVILLE, MINNESOTA 55113	
UTILITY: CENTURYLINK – LITECORE/KMC CONTACT: KYLE TOSTENSON PHONE: (318) 417–2768 MOBILE: ADDRESS: 100 CENTURYLINK DRIVE MONROE, LA 71203	UTILITY: HENNEPIN COUNTY CONTACT: KRISTY MORTER PHONE: (612) 596–0384 MOBILE: ADDRESS: HENNEPIN COUNTY TRANSPORTATION DEPARTMENT, DESIGN DIVISION 1600 PRAIRIE DRIVE MEDINA, MN 55340	UTILITY: SPRINT COMMUNICATIONS COMPANY, LP CONTACT: DAN HILLIARD PHONE: (651) 772–6714 MOBILE: (612) 414–2089 ADDRESS: 849 EARL STREET ST. PAUL, MINNESOTA 55106	UTILITY: XCEL ENERGY – TRANSMISSION CONTACT: BRUCE ZEMKE PHONE: (612) 330–7815 MOBILE: (651) 214–2620 ADDRESS: 414 NICOLLET MALL, (MP 8) MINNEAPOLIS, MINNESOTA 55401	
UTILITY: CITY OF HOPKINS CONTACT: NATE STANLEY PHONE: (952) 548–6356 MOBILE: (952) 292–6872 ADDRESS: 1010 1ST ST. S. HOPKINS, MINNESOTA 55343	UTILITY: HERC CONTACT: ANDREW LEITH PHONE: (612) 348–8993 MOBILE: ADDRESS: HENNEPIN COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES SOLID WASTE & ENERGY DIVISION 701 FOURTH AVENUE SOUTH, SUITE 700 MINNEAPOLIS, MN 55415–1842	UTILITY: ST. LOUIS PARK PUBLIC SCHOOLS – ISD #283 CONTACT: TOM MARBLE PHONE: (952) 928–6152 MOBILE: ADDRESS: ST. LOUIS PARK PUBLIC SCHOOLS – ISD #283 6425 WEST 33RD STREET ST. LOUIS PARK, MINNESOTA 55426	UTILITY: XCEL ENERGY – DISTRIBUTION CONTACT: MORGAN IMPOLA PHONE: (952) 829–4538 MOBILE: (612) 876–5447 ADDRESS: 5309 WEST 70TH STREET EDINA, MINNESOTA 55439	
UTILITY: CITY OF MINNEAPOLIS SEWER CONTACT: KELLY MORIARITY PHONE: (612) 673–3617 MOBILE: ADDRESS: CITY OF LAKES BUILDING 309 2ND AVENUE SOUTH – ROOM 330 MINNEAPOLIS, MN 55401–2268	UTILITY: HOPKINS PUBLIC SCHOOLS CONTACT: JOHN WETTER PHONE: (952) 988–5373 MOBILE: ADDRESS: EDUCATIONAL TECHNOLOGY, MEDIA & INFORMATION SERVICES HOPKINS DISTRICT 270 1001 HIGHWAY 7 HOPKINS, MINNESOTA 55305	UTILITY: SUPER–VALU CONTACT: AARON RESTEMAYER PHONE: (952) 238–3231 MOBILE: ADDRESS: 300 2ND AVE. S. HOPKINS, MINNESOTA 55343	UTILITY: XO COMMUNICATIONS CONTACT: ED PARKER PHONE: (602) 324–6488 MOBILE: ADDRESS: 3930 E. WATKINS SUITE 200 PHOENIX, ARIZONA 85034	

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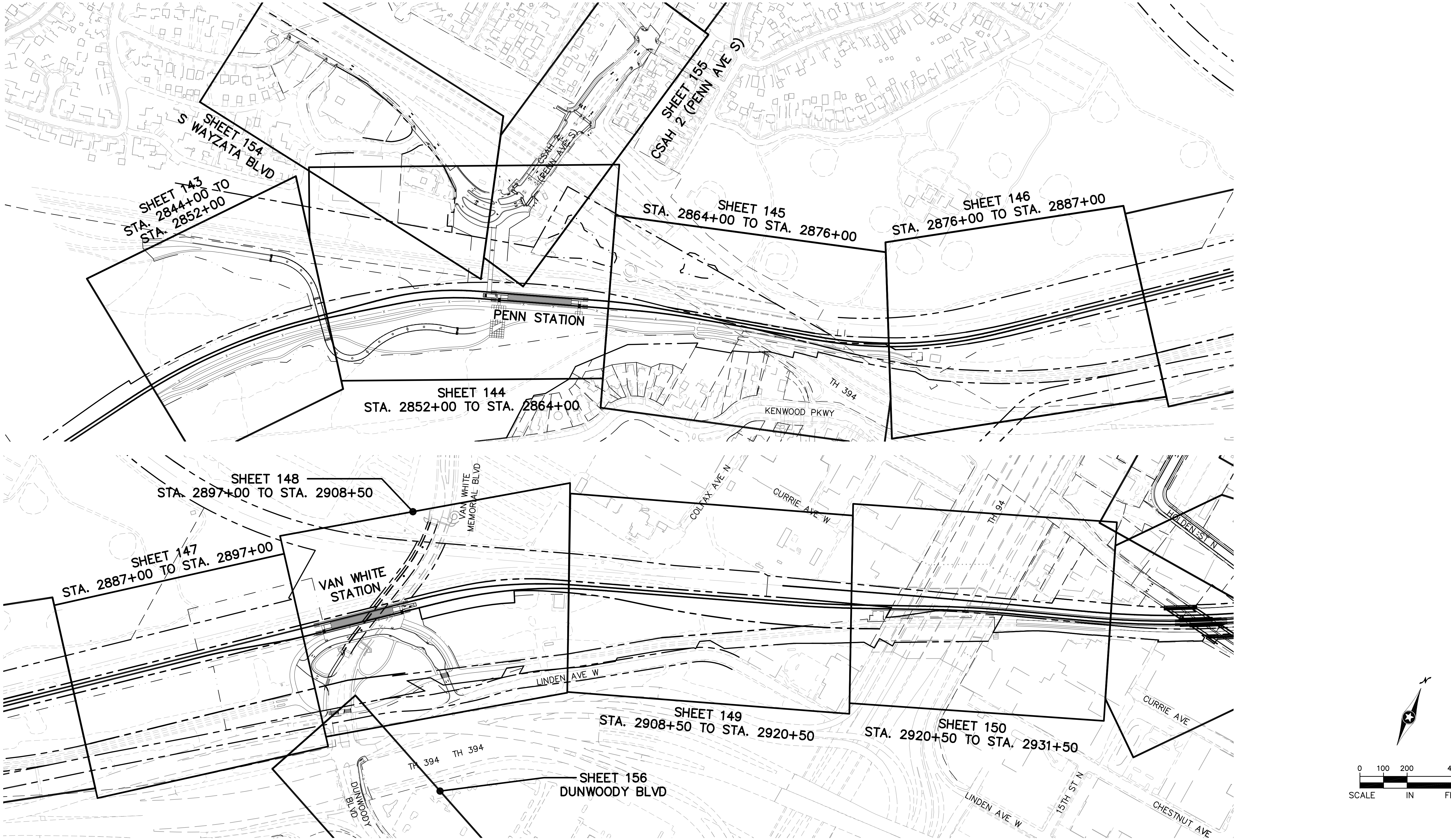
METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
UTILITY CONTACTS

DISCIPLINE: UTILITY

SHEET NAME: E4-UTL-CNTC-001



Aug. 28 2014 09:09 am V:\3300_PEC-E\CAD\SEGMENT E4\PLAN SHEETS\UTILITIES\E4-UTL-IDX.dwg By: hope.wedge

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PRELIMINARY ENGINEERING

METROPOLITAN COUNCIL

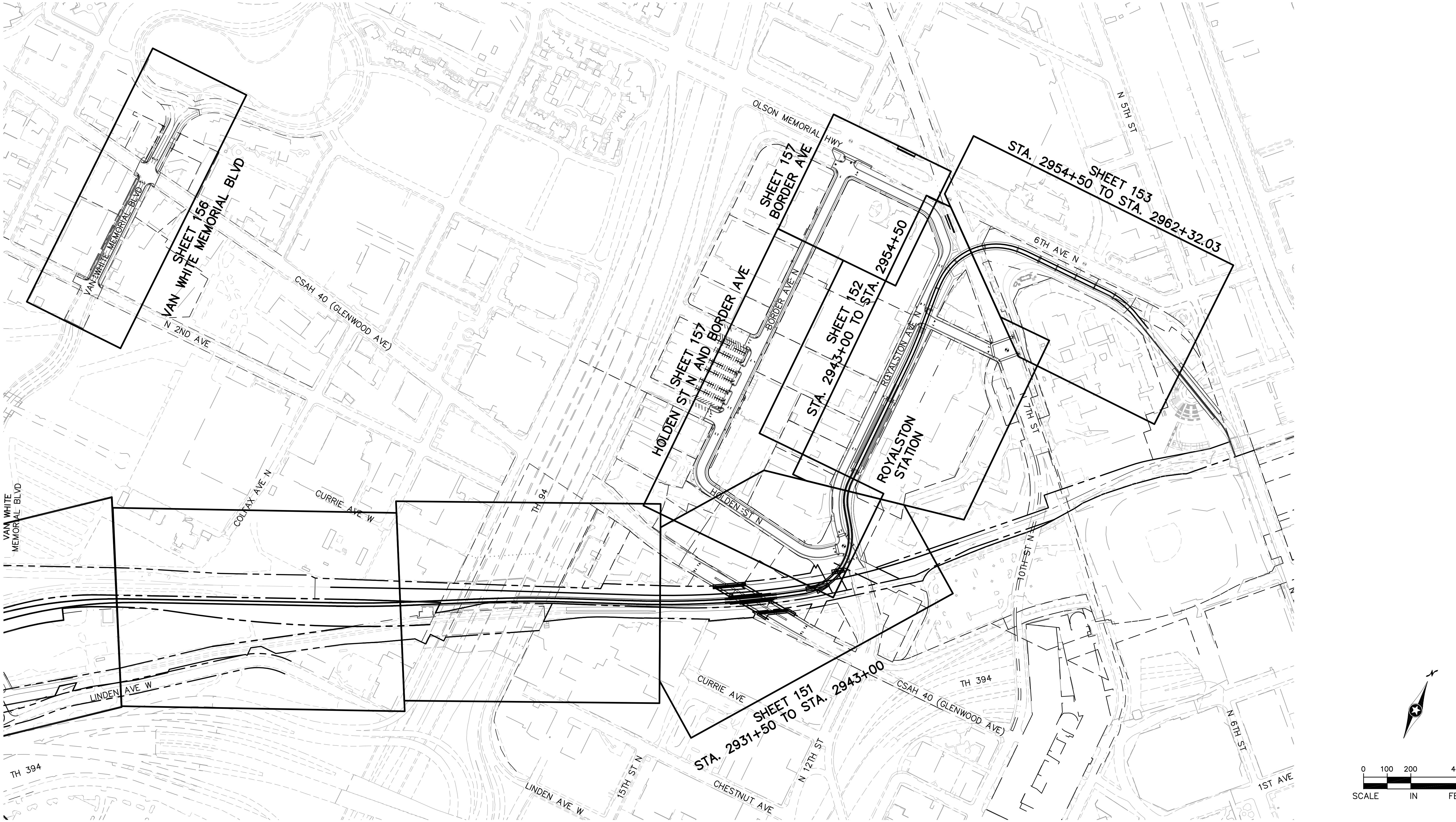
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
UTILITY PLAN
SHEET INDEX

DISCIPLINE: UTILITY

SHEET NAME: E4-UTL-IDX-001

SHEET 141 OF 163



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NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

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PRELIMINARY ENGINEERING

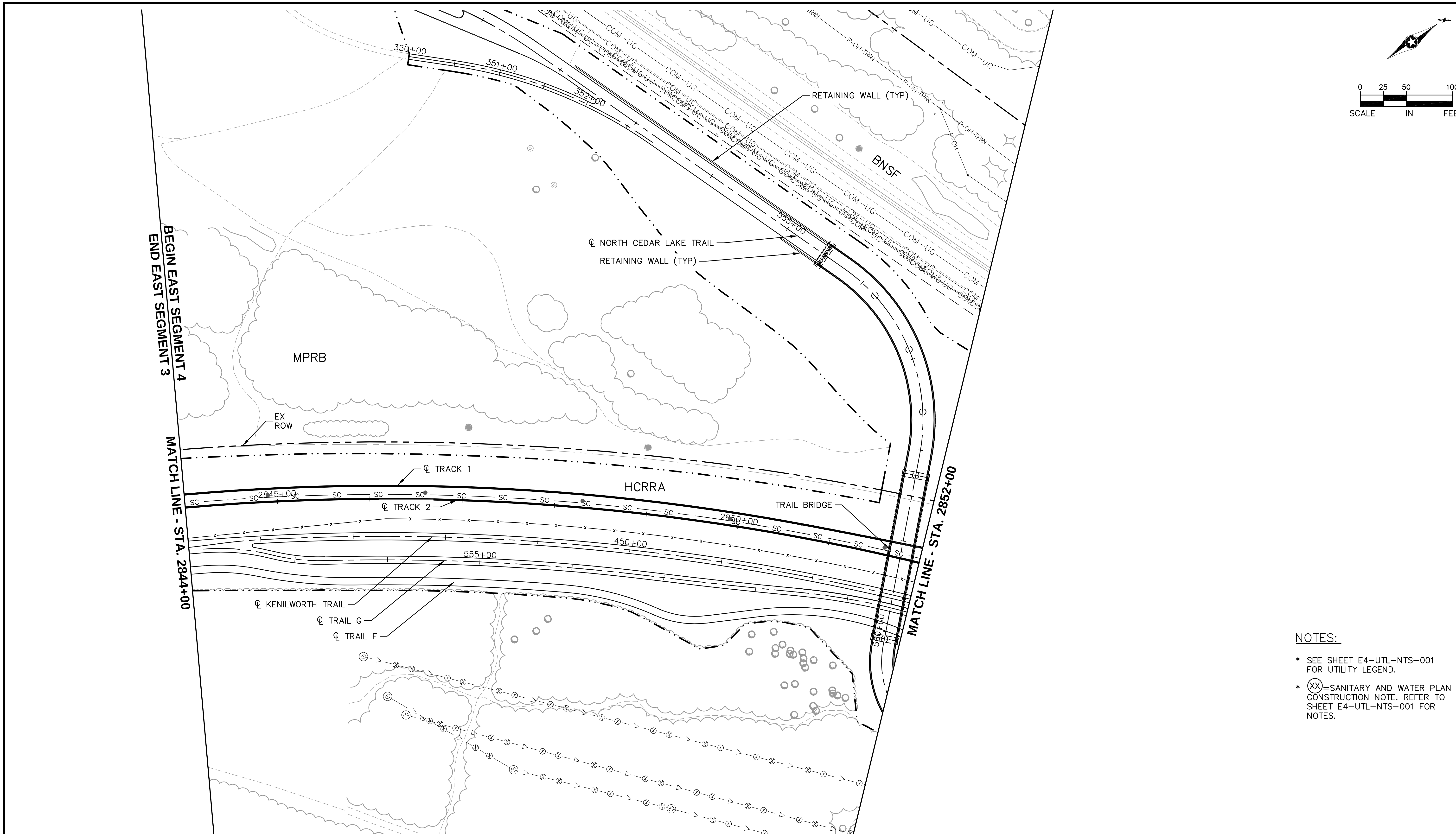
METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
UTILITY PLAN
SHEET INDEX

DISCIPLINE: UTILITY

SHEET NAME: E4-UTL-IDX-002



NOTES:

* SEE SHEET E4-UTL-NTS-001 FOR UTILITY LEGEND.
* (XX)=SANITARY AND WATER PLAN CONSTRUCTION NOTE. REFER TO SHEET E4-UTL-NTS-001 FOR NOTES.

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METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

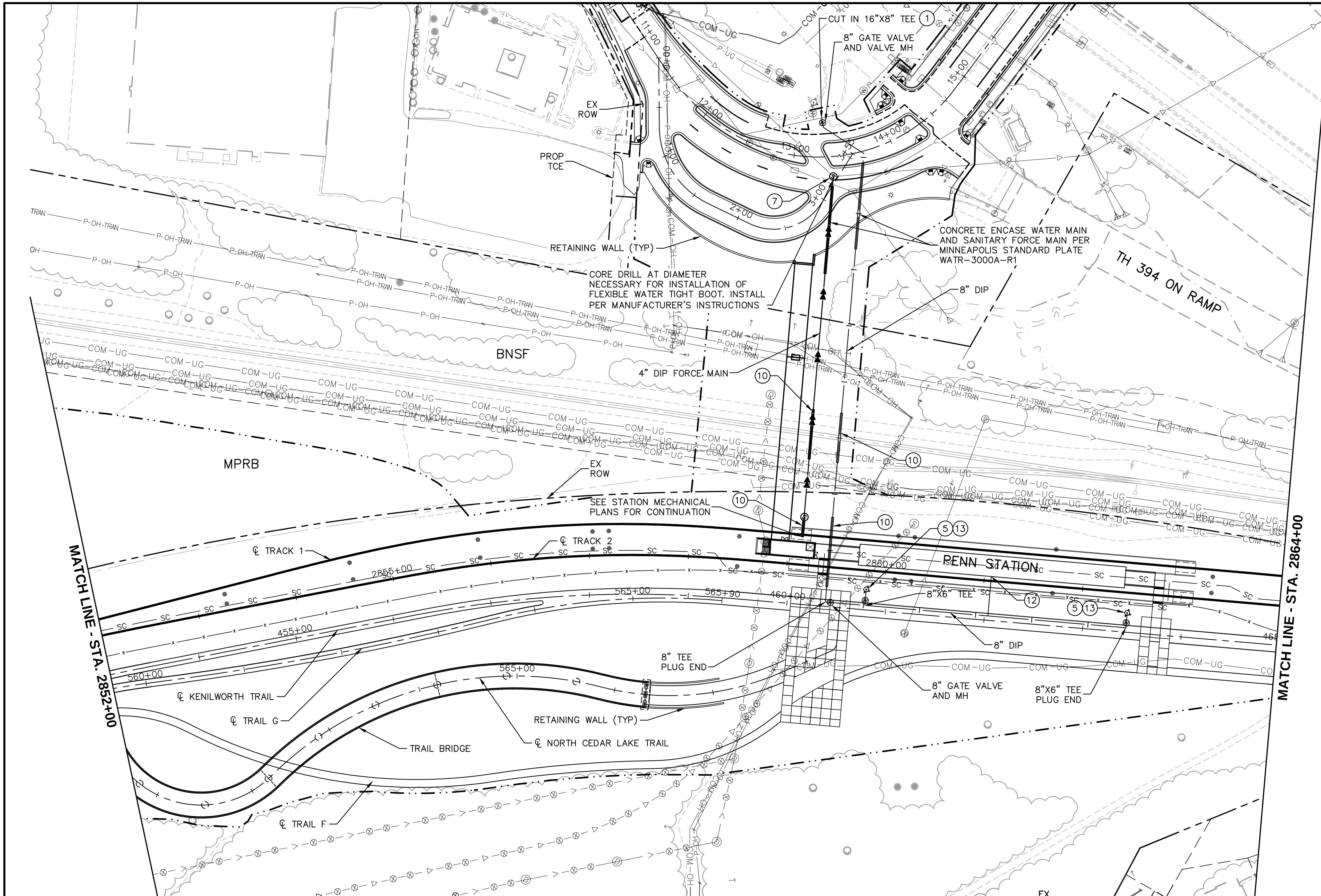
EAST - VOLUME 1 (CIVIL) - SEGMENT 4
UTILITY PLAN

STA. 2844+00 TO STA. 2852+00

DISCIPLINE: UTILITY
SHEET NAME: E4-UTL-PLN-001

SHEET 143 OF 163

Aug. 28 2014 09:11 am V:\3300_PEC-E\CAD\SEGMENT E4\PLAN SHEETS\UTILITIES\E4-UTL-PLN.dwg By: hope.wedge



0 25 50 100
SCALE IN FEET

NOTES:

* SEE SHEET E4-UTL-NTS-001 FOR UTILITY LEGEND.
* (XX)=SANITARY AND WATER PLAN CONSTRUCTION NOTE. REFER TO SHEET E4-UTL-NTS-001 FOR NOTES.

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METROPOLITAN COUNCIL

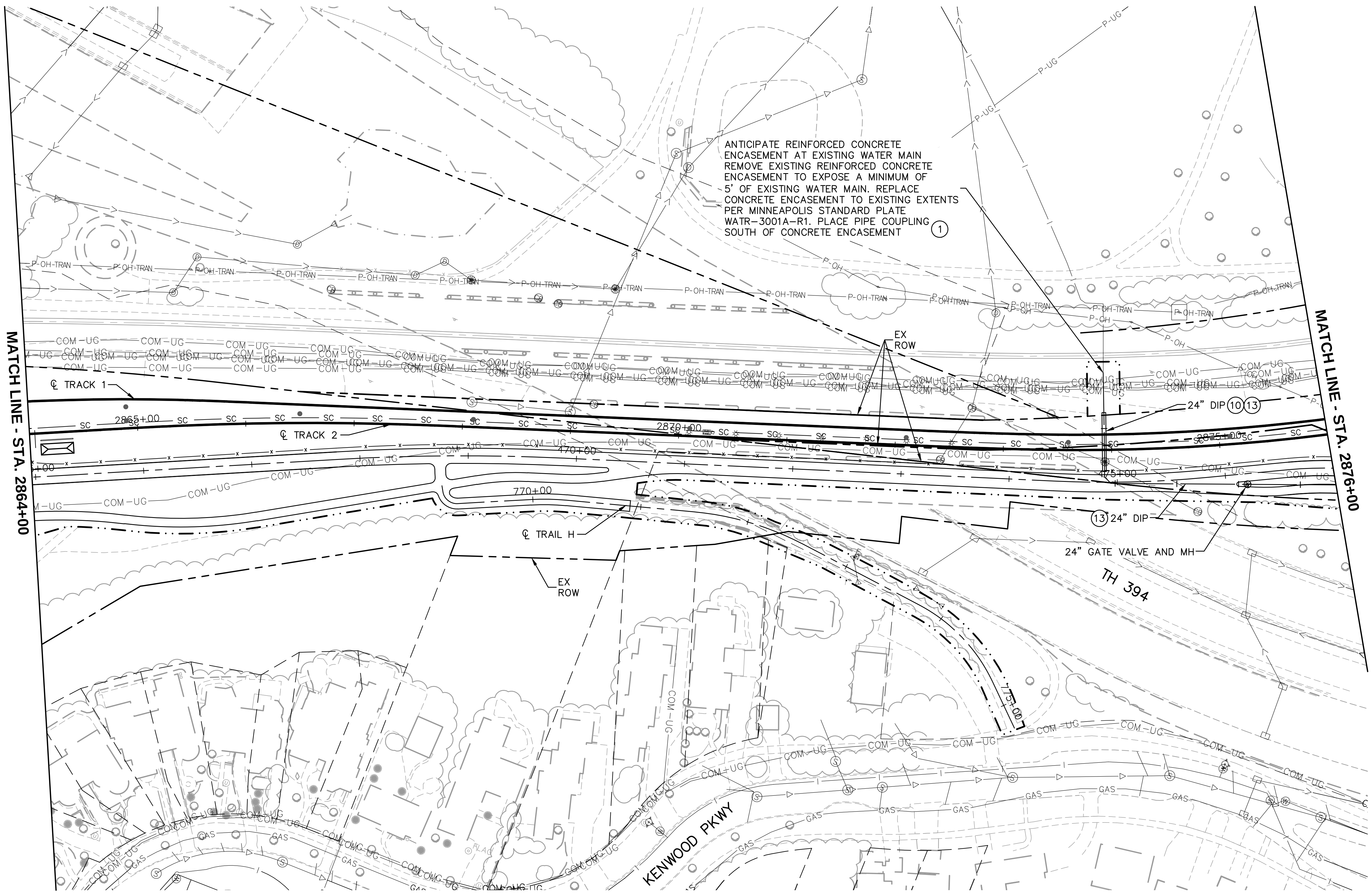
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
UTILITY PLAN

STA. 2852+00 TO STA. 2864+00

DISCIPLINE: UTILITY

SHEET NAME: E4-UTL-PLN-002



0 25 50 100
SCALE IN FEET

NOTES:

* SEE SHEET E4-UTL-NTS-001 FOR UTILITY LEGEND.
* XX =SANITARY AND WATER PLAN CONSTRUCTION NOTE. REFER TO SHEET E4-UTL-NTS-001 FOR NOTES.

Aug. 28 2014 09:12 am V:\3300_PEC-E\CAD\SEGMENT E4\PLAN SHEETS\UTILITIES\E4-UTL-PLN.dwg By: hope.wedge

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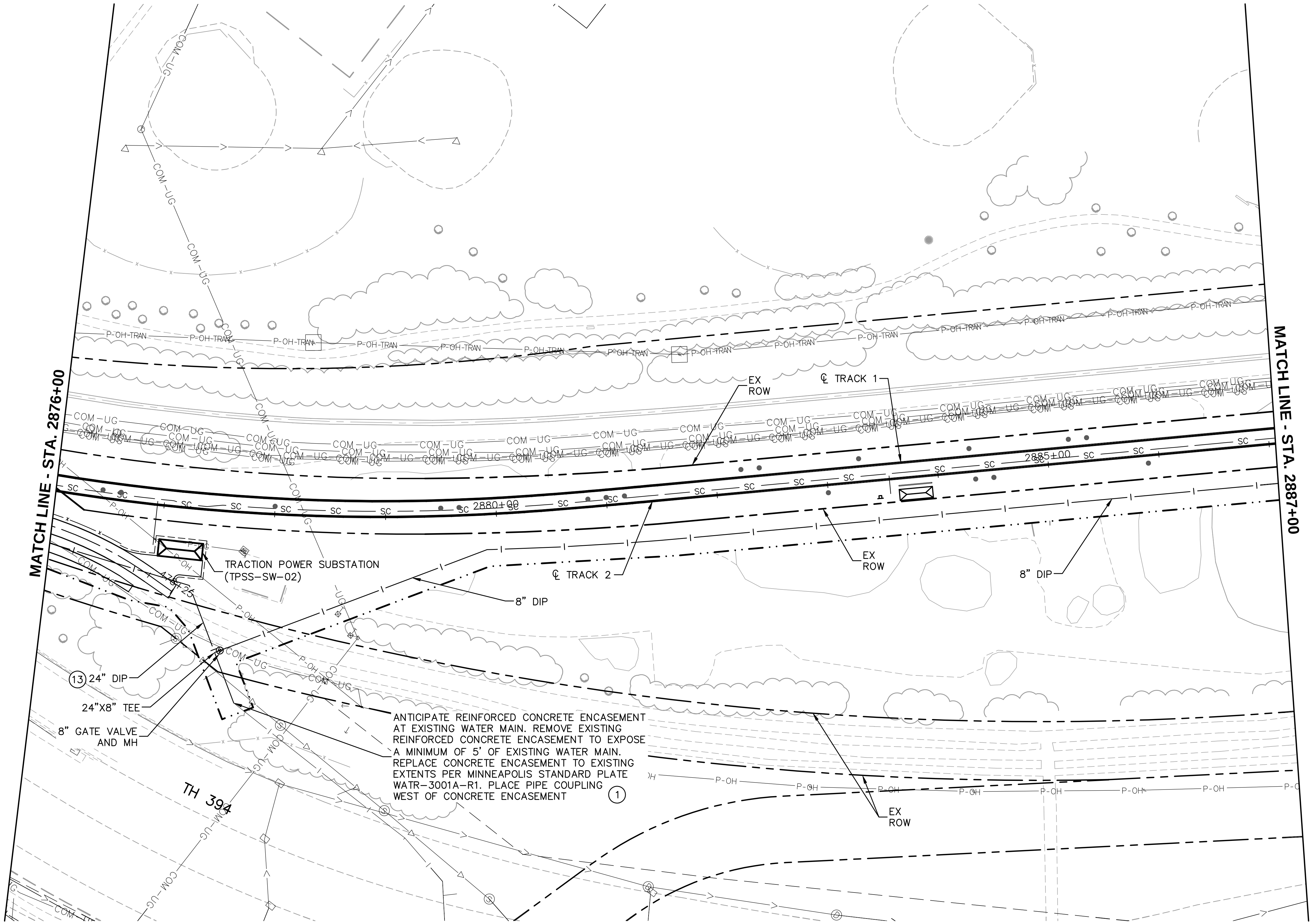
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
UTILITY PLAN

STA. 2864+00 TO STA. 2876+00

DISCIPLINE: UTILITY
SHEET NAME: E4-UTL-PLN-003



0 25 50 100
SCALE IN FEET

NOTES:

* SEE SHEET E4-UTL-NTS-001 FOR UTILITY LEGEND.
* (XX)=SANITARY AND WATER PLAN CONSTRUCTION NOTE. REFER TO SHEET E4-UTL-NTS-001 FOR NOTES.

Aug. 28 2014 09:12 am V:\3300_PEC-E\CAD\SEGMENT E4\PLAN SHEETS\UTILITIES\E4-UTL-PLN.dwg By: hope.wedge

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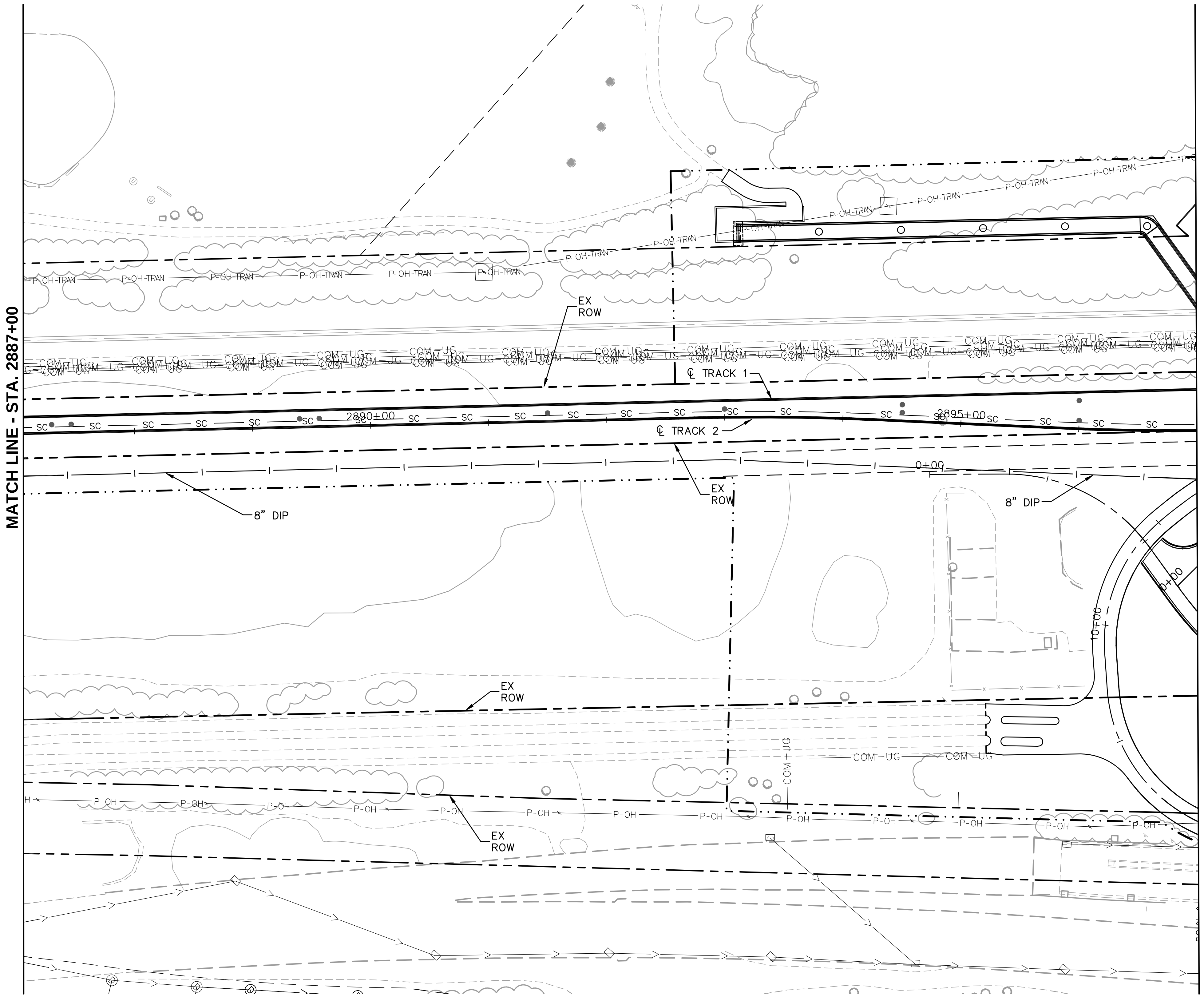
METROPOLITAN COUNCIL
SOUTHWEST Green Line LRT Extension

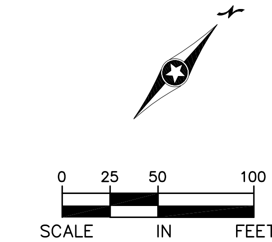
EAST - VOLUME 1 (CIVIL) - SEGMENT 4
UTILITY PLAN

STA. 2876+00 TO STA. 2887+00

DISCIPLINE: UTILITY
SHEET NAME: E4-UTL-PLN-004

SHEET 146 OF 163





NOTES:

* SEE SHEET E4-UTL-NTS-001 FOR UTILITY LEGEND.
* (XX)=SANITARY AND WATER PLAN CONSTRUCTION NOTE. REFER TO SHEET E4-UTL-NTS-001 FOR NOTES.

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SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
UTILITY PLAN

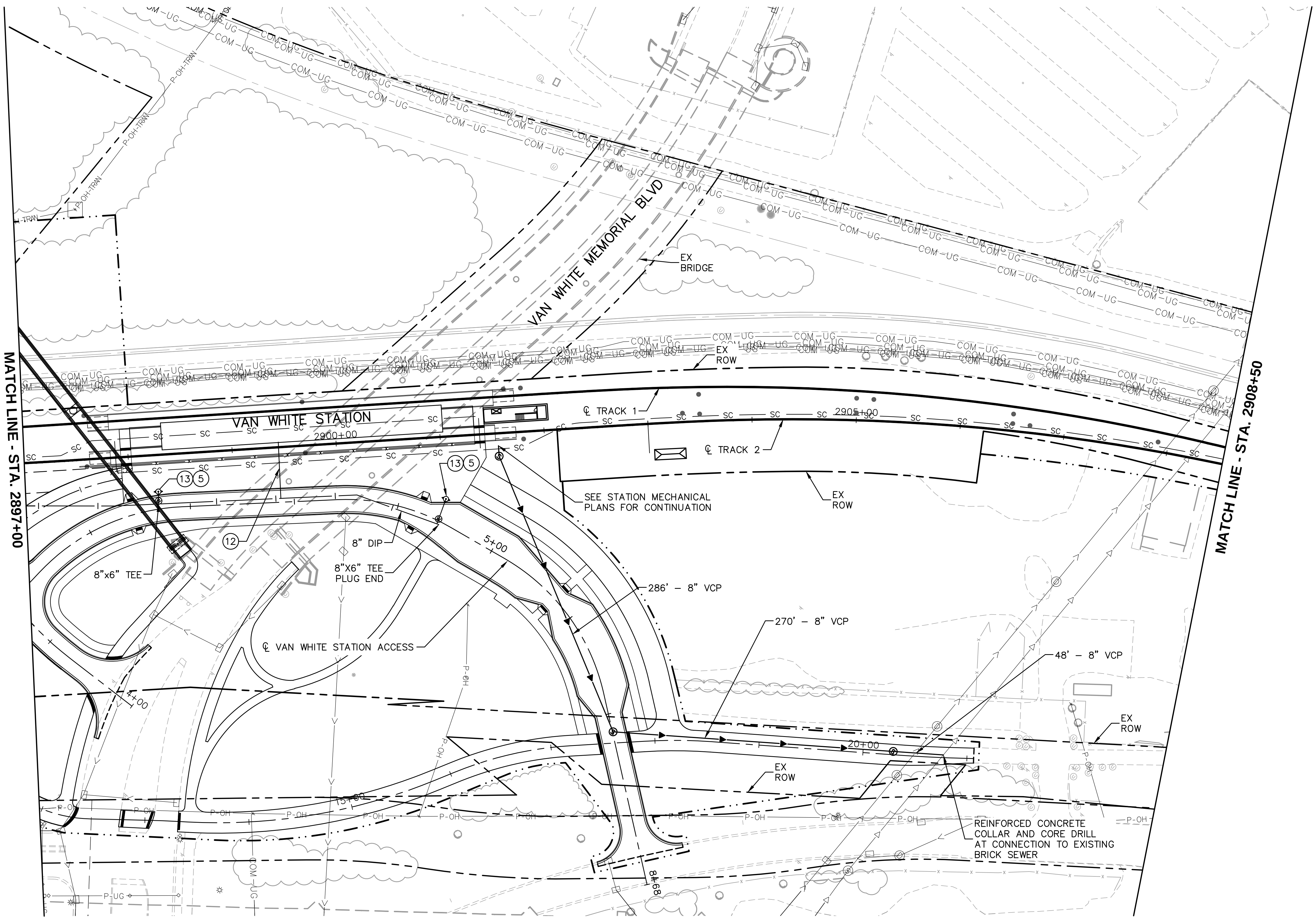
STA. 2887+00 TO STA. 2897+00

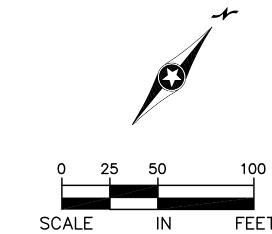
DISCIPLINE: UTILITY

SHEET NAME: E4-UTL-PLN-005

SHEET 147 OF 163

Aug. 28 2014 09:13 am V:\3300_PEC-E\CAD\SEGMENT E4\PLAN SHEETS\UTILITIES\E4-UTL-PLN.dwg By: hope.wedge





NOTES:

* SEE SHEET E4-UTL-NTS-001 FOR UTILITY LEGEND.
* (XX)=SANITARY AND WATER PLAN CONSTRUCTION NOTE. REFER TO SHEET E4-UTL-NTS-001 FOR NOTES.

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SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
UTILITY PLAN

STA. 2897+00 TO STA. 2908+50

DISCIPLINE: UTILITY

SHEET NAME: E4-UTL-PLN-006

SHEET 148 OF 163

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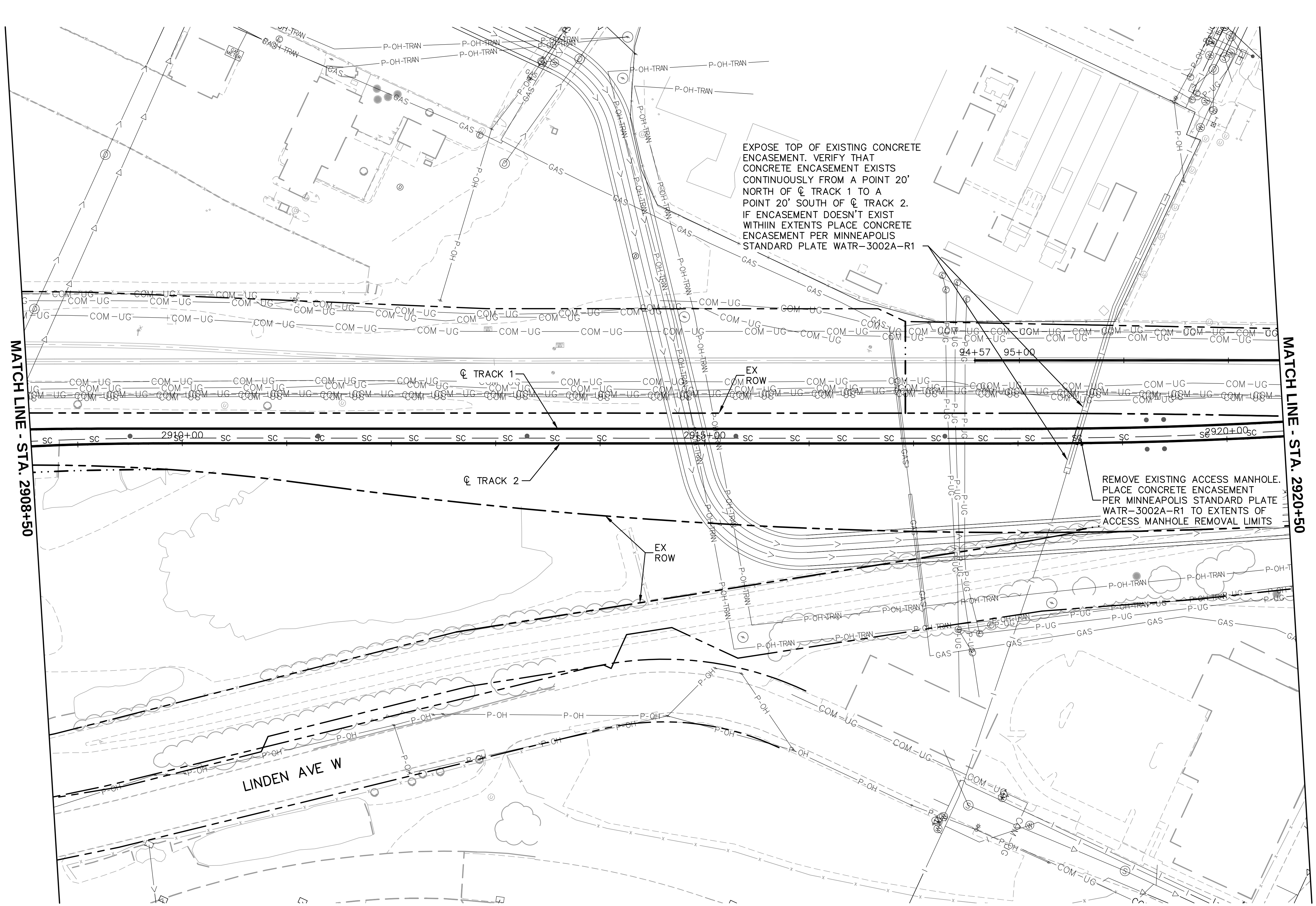

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SCALE IN FEET

NOTES:

* SEE SHEET E4-UTL-NTS-001 FOR UTILITY LEGEND.
* (XX)=SANITARY AND WATER PLAN CONSTRUCTION NOTE. REFER TO SHEET E4-UTL-NTS-001 FOR NOTES.

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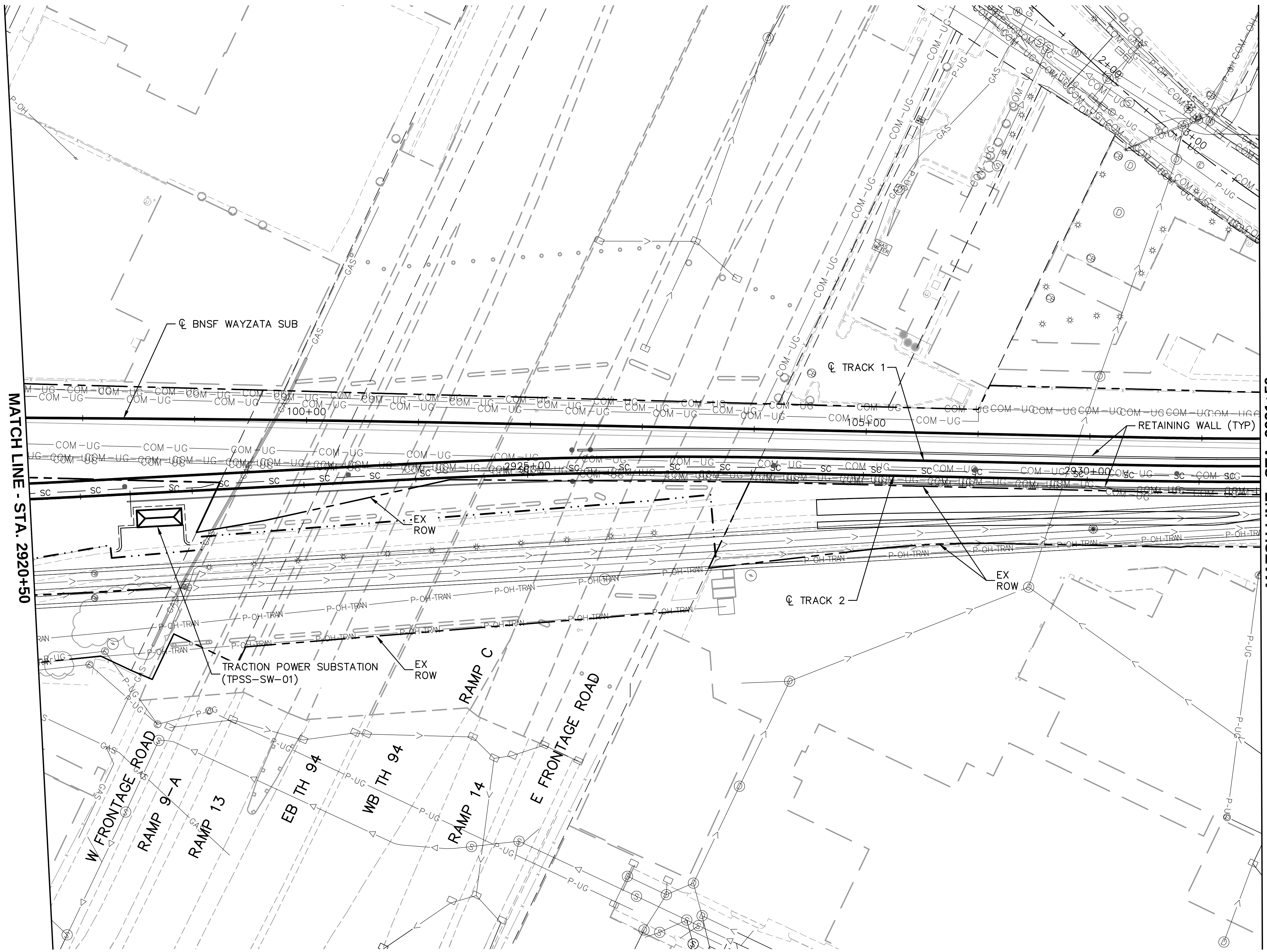
EAST - VOLUME 1 (CIVIL) - SEGMENT 4
UTILITY PLAN

STA. 2908+50 TO STA. 2920+50

DISCIPLINE: UTILITY
SHEET NAME: E4-UTL-PLN-007

SHEET 149 OF 163

Aug. 28 2014 09:14 am V:\3300_PEC-E\CAD\SEGMENT E4\PLAN SHEETS\UTILITIES\E4-UTL-PLN.dwg By: hope.wedge



0 25 50 100
SCALE IN FEET

NOTES:

* SEE SHEET E4-UTL-NTS-001 FOR UTILITY LEGEND.
* (XX)=SANITARY AND WATER PLAN CONSTRUCTION NOTE. REFER TO SHEET E4-UTL-NTS-001 FOR NOTES.

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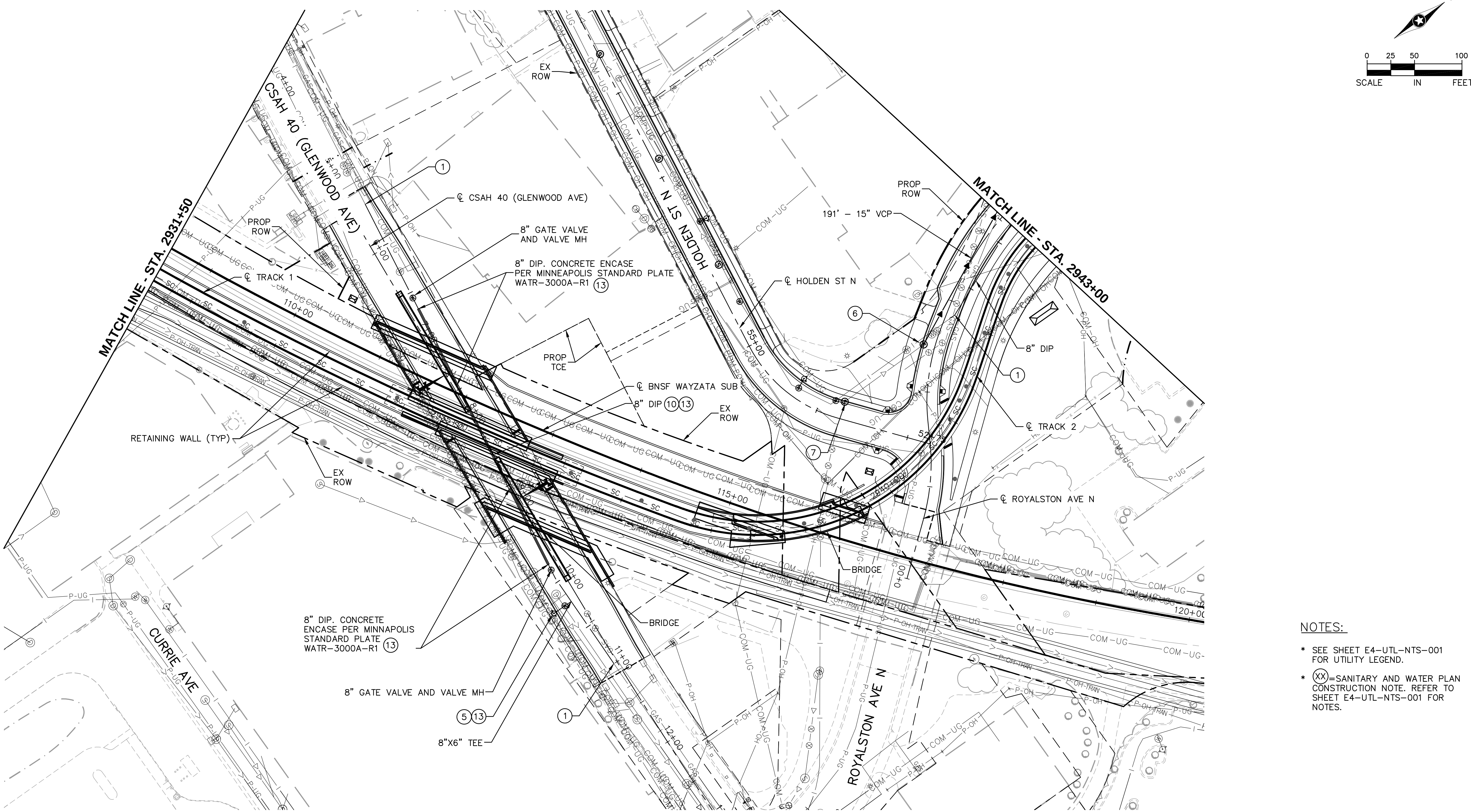
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
UTILITY PLAN
STA. 2920+50 TO STA. 2931+50

DISCIPLINE: UTILITY
SHEET NAME: E4-UTL-PLN-008

SHEET 150 OF 163



NOTES:

* SEE SHEET E4-UTL-NTS-001 FOR UTILITY LEGEND.
* XX =SANITARY AND WATER PLAN CONSTRUCTION NOTE. REFER TO SHEET E4-UTL-NTS-001 FOR NOTES.

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SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
UTILITY PLAN

STA. 2931+50 TO STA. 2943+00

DISCIPLINE: UTILITY

SHEET NAME: E4-UTL-PLN-009

SHEET 151 OF 163

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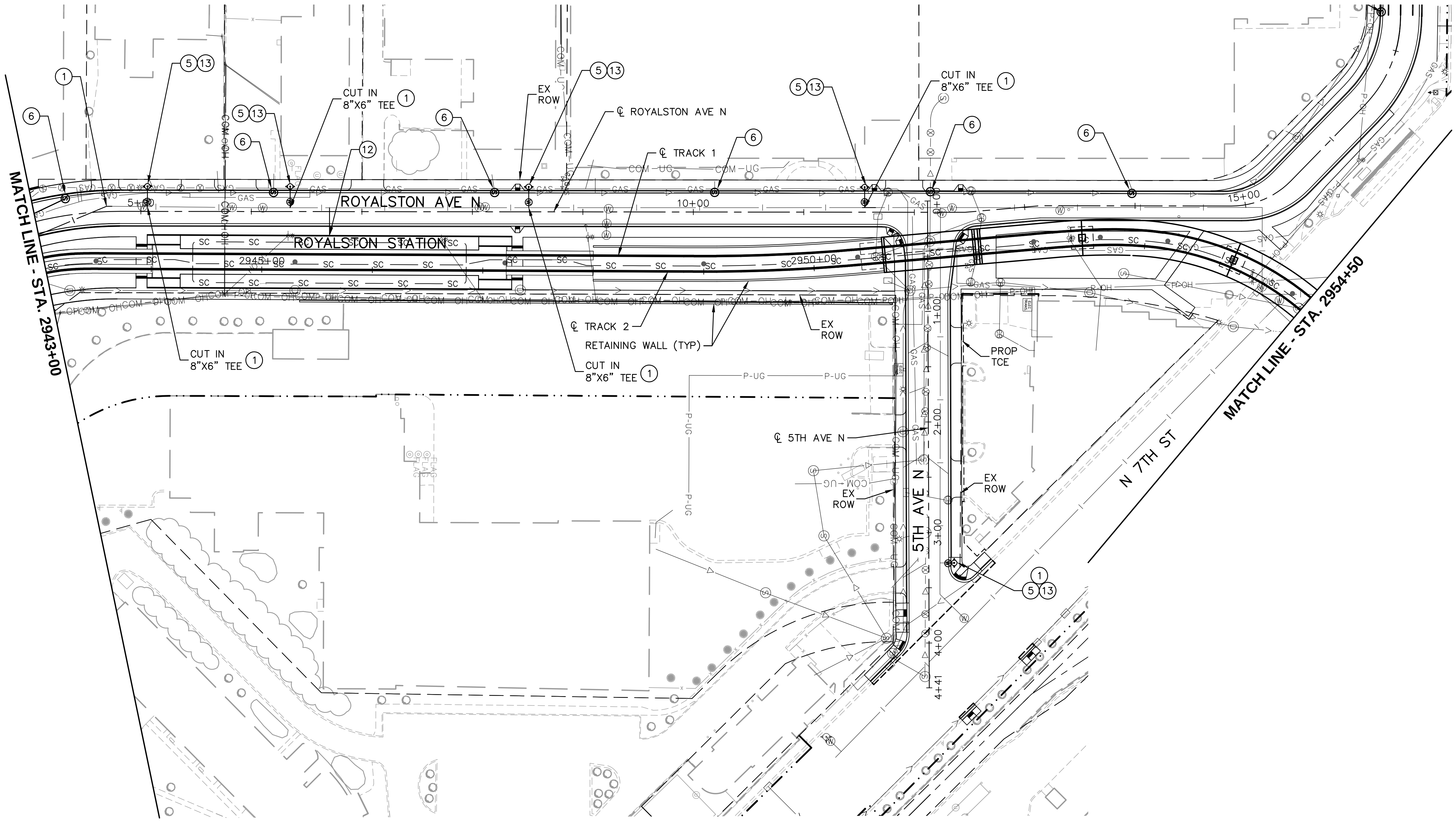

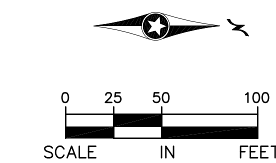

NOTES:

* SEE SHEET E4-UTL-NTS-001 FOR UTILITY LEGEND.
* (XX)=SANITARY AND WATER PLAN CONSTRUCTION NOTE. REFER TO SHEET E4-UTL-NTS-001 FOR NOTES.

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SOUTHWEST Green Line LRT Extension

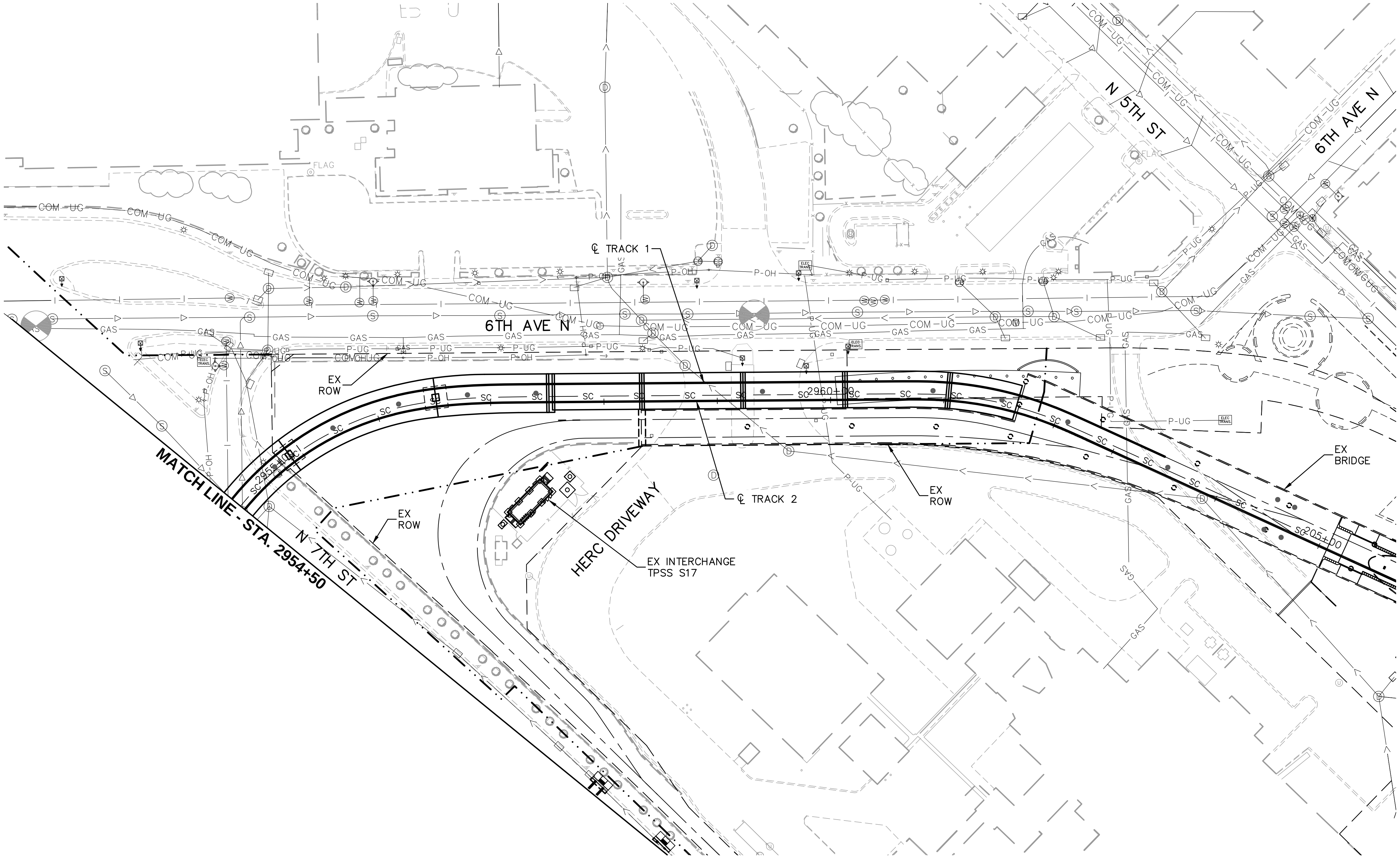
EAST - VOLUME 1 (CIVIL) - SEGMENT 4
UTILITY PLAN

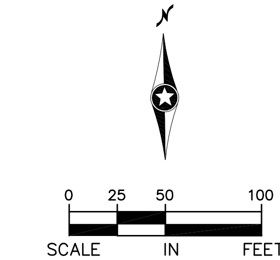
STA. 2943+00 TO STA. 2954+50

DISCIPLINE: UTILITY

SHEET NAME: E4-UTL-PLN-010

SHEET 152 OF 163





NOTES:

* SEE SHEET E4-UTL-NTS-001 FOR UTILITY LEGEND.
* (XX)=SANITARY AND WATER PLAN CONSTRUCTION NOTE. REFER TO SHEET E4-UTL-NTS-001 FOR NOTES.

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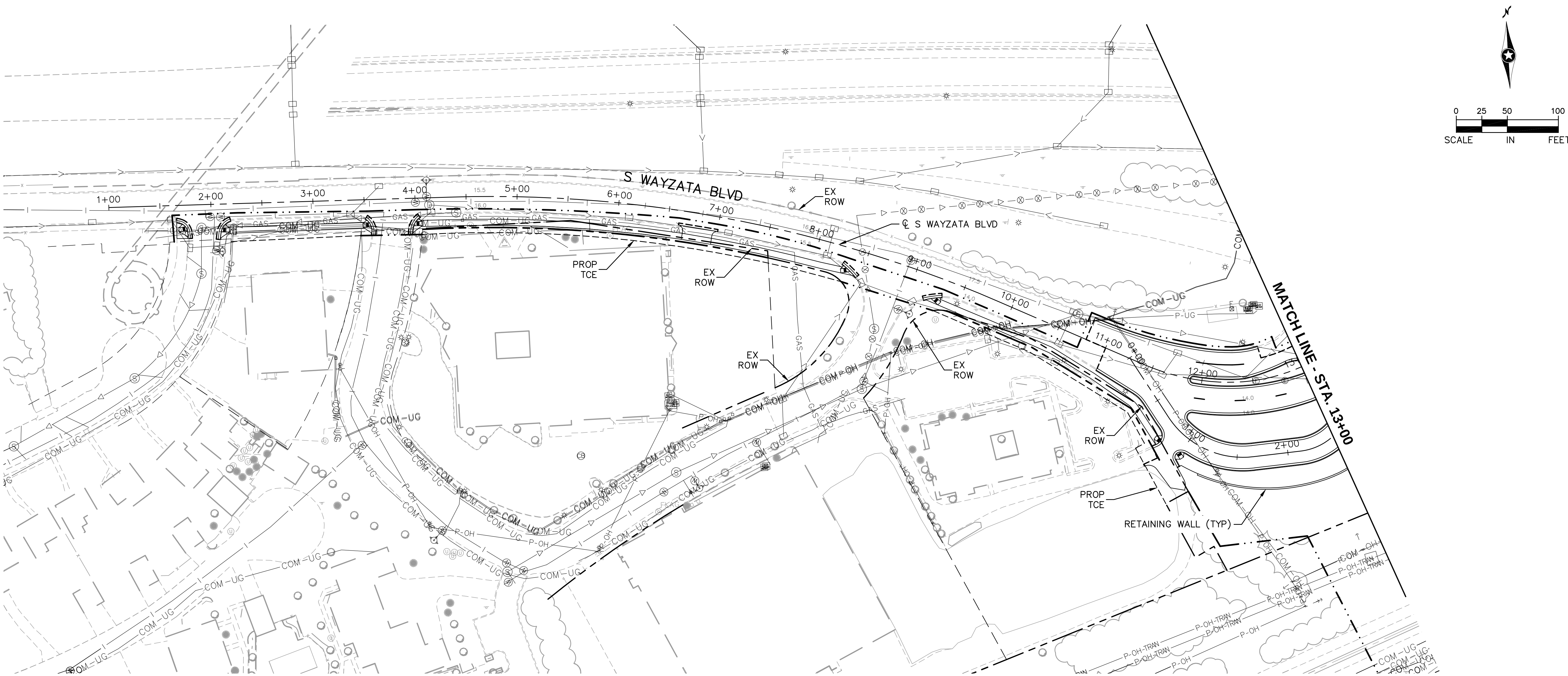
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
UTILITY PLAN

STA. 2954+50 TO STA. 2962+32.03

DISCIPLINE: **UTILITY**

SHEET NAME: **E4-UTL-PLN-011**



NOTES:

* SEE SHEET E4-UTL-NTS-001 FOR UTILITY LEGEND.

* (XX)=SANITARY AND WATER PLAN CONSTRUCTION NOTE. REFER TO SHEET E4-UTL-NTS-001 FOR NOTES.

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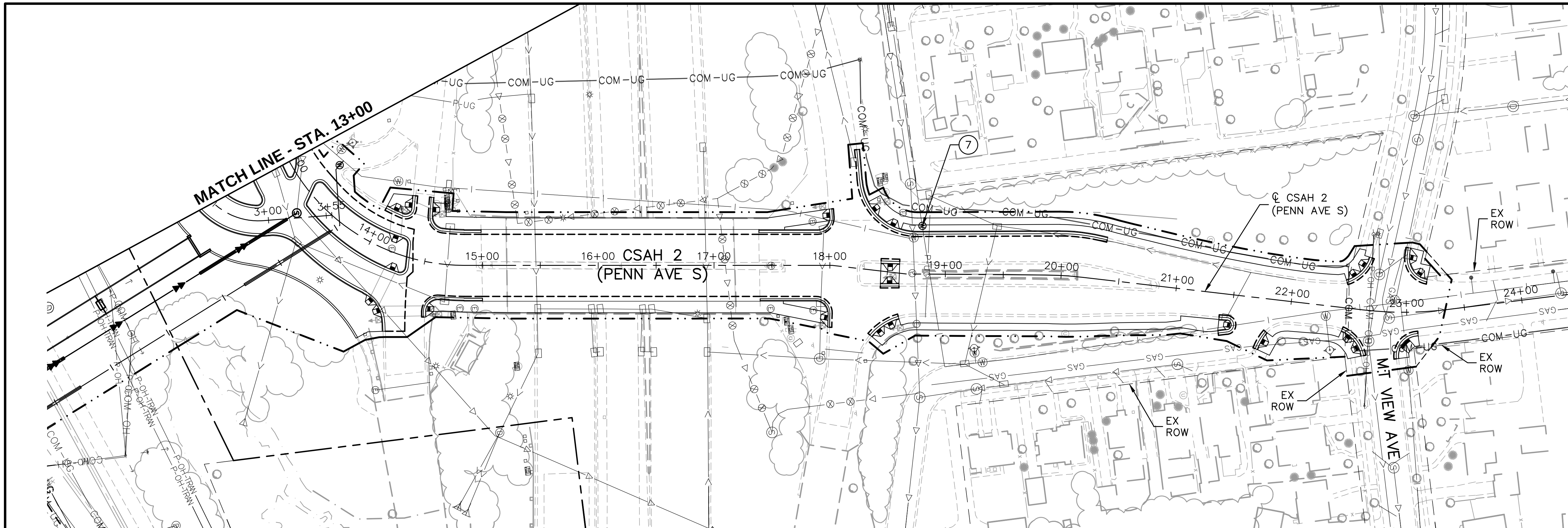
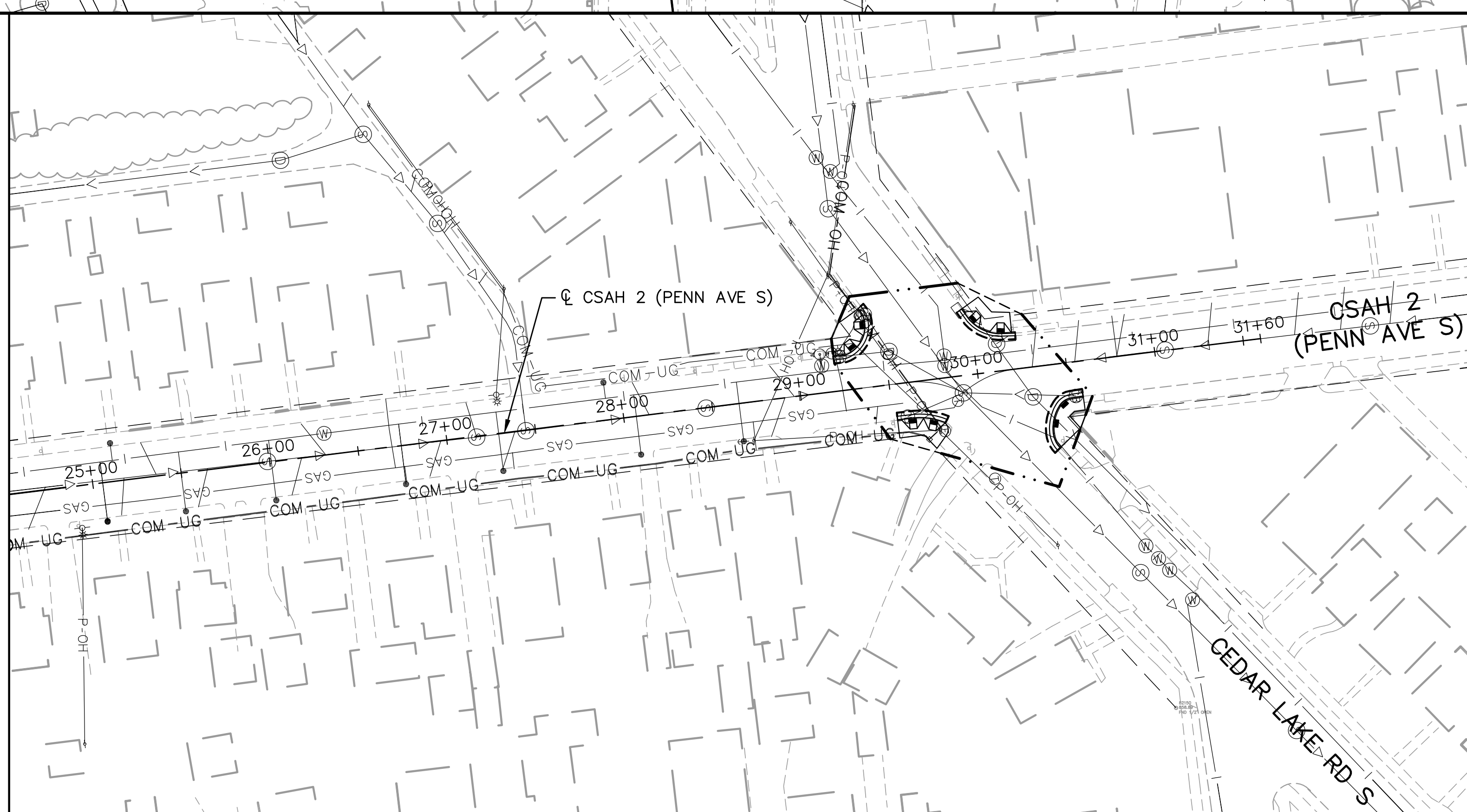
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
UTILITY PLAN
S WAYZATA BLVD
STA. 1+00 TO STA. 13+00

DISCIPLINE: UTILITY

SHEET NAME: E4-UTL-PLN-012





NOTES:

* SEE SHEET E4-UTL-NTS-001 FOR UTILITY LEGEND.
* (XX)=SANITARY AND WATER PLAN CONSTRUCTION NOTE. REFER TO SHEET E4-UTL-NTS-001 FOR NOTES.

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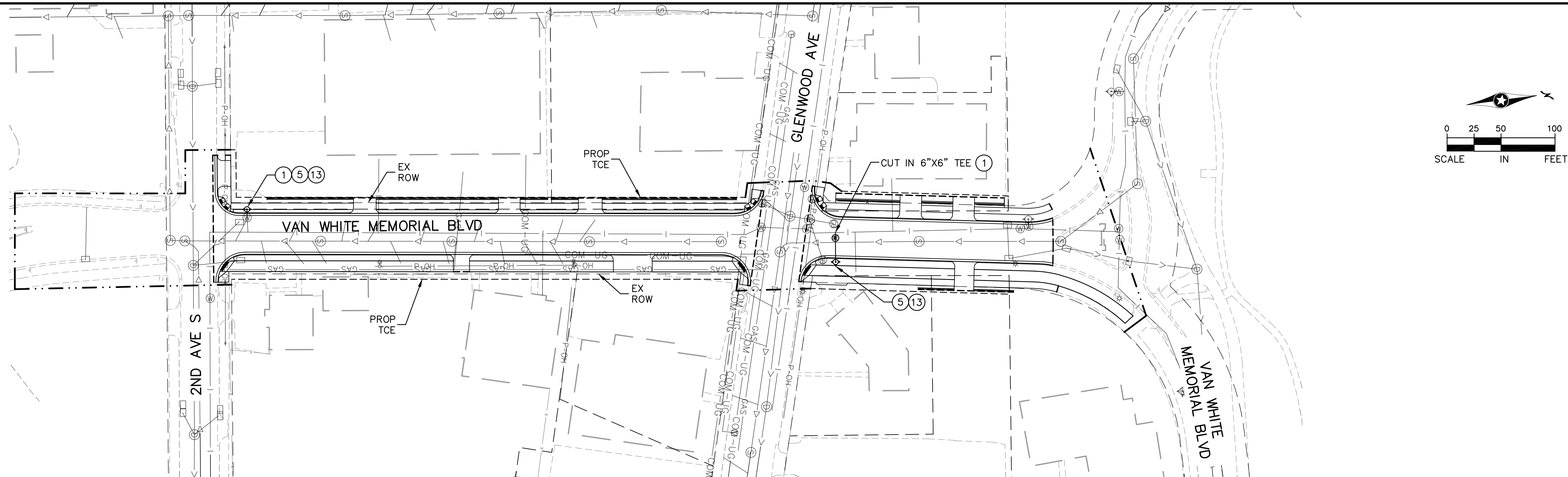
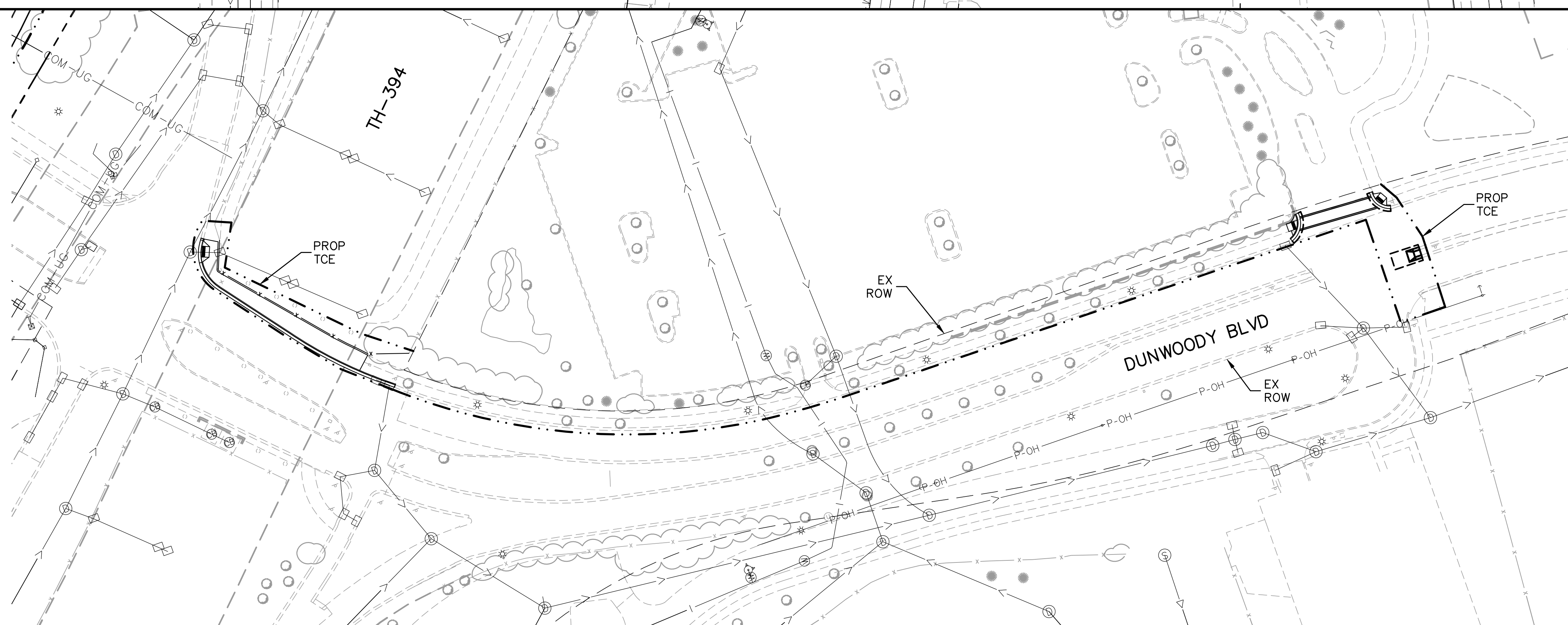
EAST - VOLUME 1 (CIVIL) - SEGMENT 4
UTILITY PLAN
CSAH 2 (PENN AVE S)
STA. 13+00 TO STA. 31+60

DISCIPLINE: UTILITY
SHEET NAME: E4-UTL-PLN-013

SHEET 155 OF 163





NOTES:

* SEE SHEET E4-UTL-NTS-001 FOR UTILITY LEGEND.
* (XX)=SANITARY AND WATER PLAN CONSTRUCTION NOTE. REFER TO SHEET E4-UTL-NTS-001 FOR NOTES.

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EAST - VOLUME 1 (CIVIL) - SEGMENT 4
UTILITY PLAN
VAN WHITE MEMORIAL BLVD AND DUNWOODY BLVD

DISCIPLINE: UTILITY
SHEET NAME: E4-UTL-PLN-014

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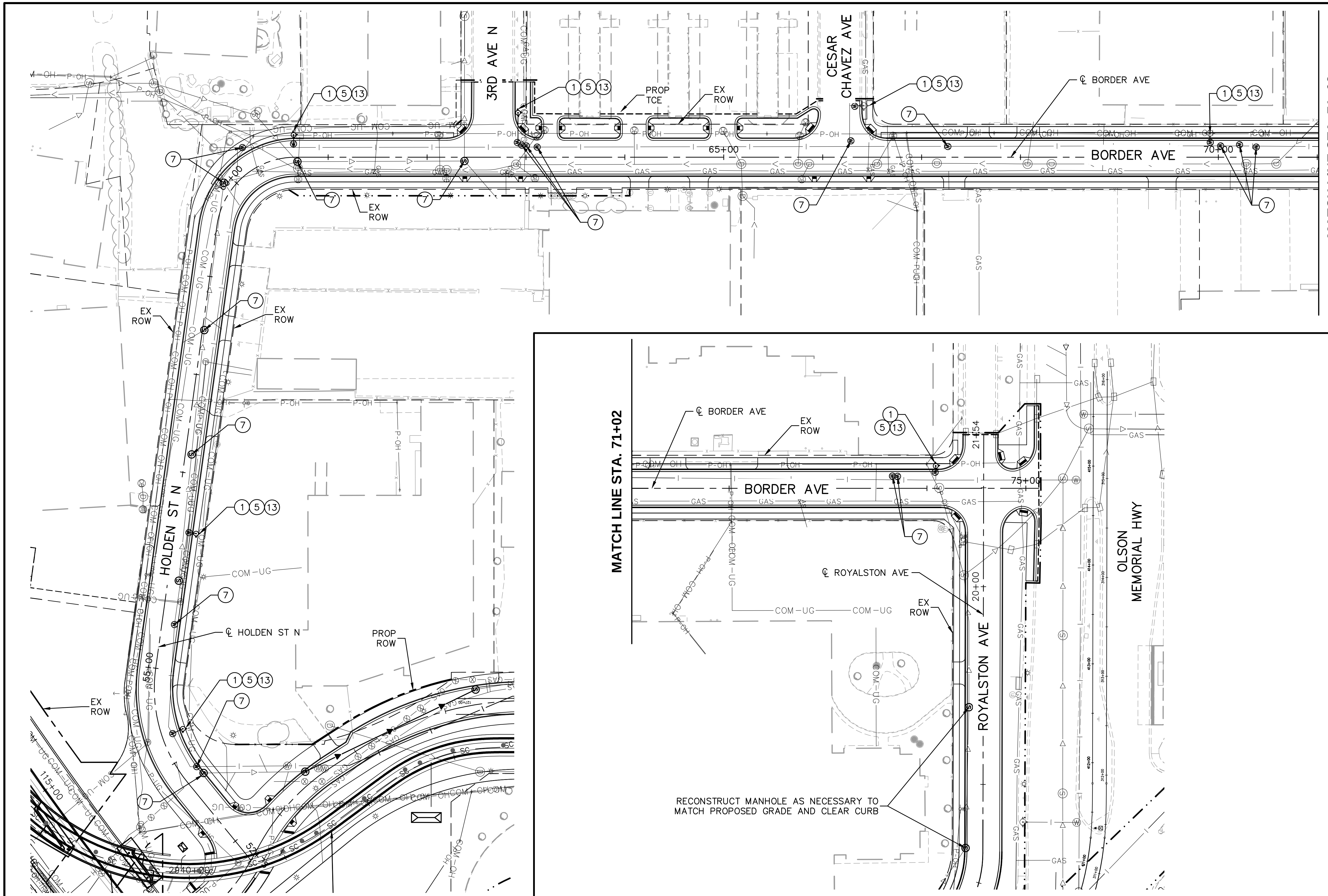

0 25 50 100
SCALE IN FEET

0 25 50 100
SCALE IN FEET

NOTES:

* SEE SHEET E4-UTL-NTS-001 FOR UTILITY LEGEND.

* (XX)=SANITARY AND WATER PLAN CONSTRUCTION NOTE. REFER TO SHEET E4-UTL-NTS-001 FOR NOTES.

Aug. 28 2014 09:18 am V:\3300_PEC-E\CAD\SEGMENT E4\PLAN SHEETS\UTILITIES\E4-UTL-PLN.dwg By: hope.wedge

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SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
UTILITY PLAN
HOLDEN ST N AND
BORDER AVE

DISCIPLINE: UTILITY
SHEET NAME: E4-UTL-PLN-015

SHEET 157 OF 163

TRAFFIC LEGEND

INPLACE

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

FURNISH & INSTALL

- POWER POLE
- PUSHBUTTON PEDESTAL
- LUMINAIRE
- SIG. POLE W/MASTARM
- SIGNAL PEDESTAL
- SIGNAL FACE
- WARNING FLASHER
- TRAFFIC PAD
- PEDESTRIAN INDICATION
- PUSHBUTTON
- EVP CONFIRMATORY LIGHT
- EVP DETECTOR
- EVP DETECTOR AND CONFIRMATORY LIGHT
- AUTOMATIC GATE
- RAIL CROSSING FLASHER

ABBREVIATIONS

2-1	SIGNAL HEAD NUMBER
AWF	ADVANCE WARNING FLASHER
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
Ø2	SIGNAL PHASE NUMBER

INPLACE EQUIPMENT LABELS

- 3 SIGNAL BASE NO.
- 3-2 SIGNAL HEAD NO./FLASHER HEAD NO.
- 2 LUMINAIRE NO.
- A CONTROLLER CABINET
- B SIGNAL SERVICE CABINET

EQUIPMENT LABELS

- 3 SIGNAL BASE NO.
- 3-2 SIGNAL HEAD NO./FLASHER HEAD NO.
- 2 LUMINAIRE NO.
- A CONTROLLER CABINET
- B SIGNAL SERVICE CABINET

Aug. 28 2014 09:36 am V:\3300_PEC-E\CAD\SEGMENT E4\PLAN SHEETS\TRAFFIC\E4-TFC-SIG-NTS.dwg By: guillermo.madrigal

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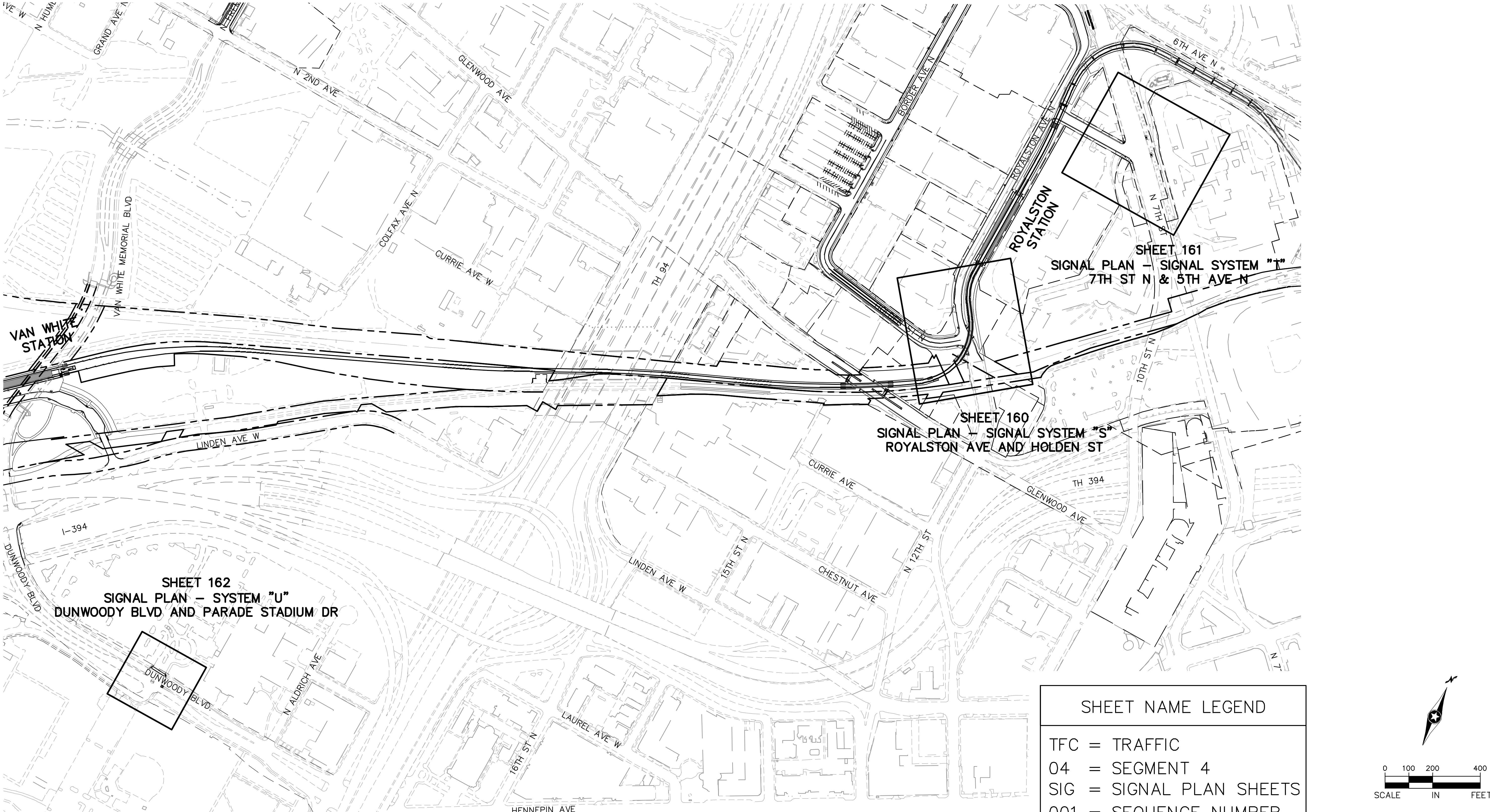
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
SIGNAL PLAN
NOTES AND LEGEND

DISCIPLINE: TRAFFIC

SHEET NAME: E4-TFC-SIG-NTS-001



SHEET NAME LEGEND		
TFC	=	TRAFFIC
04	=	SEGMENT 4
SIG	=	SIGNAL PLAN SHEETS
001	=	SEQUENCE NUMBER

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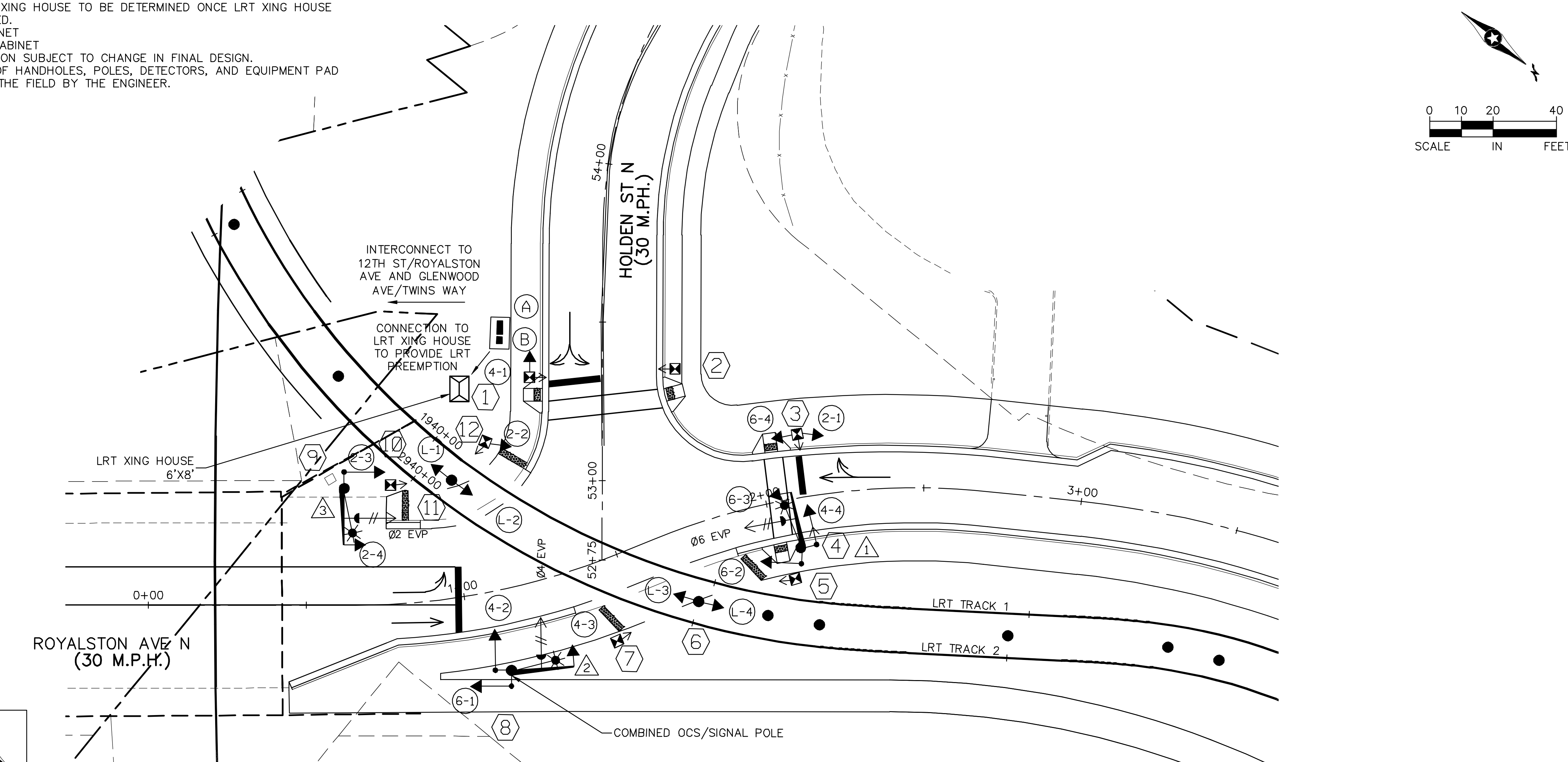
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
SIGNAL PLAN
SHEET INDEX

DISCIPLINE: TRAFFIC

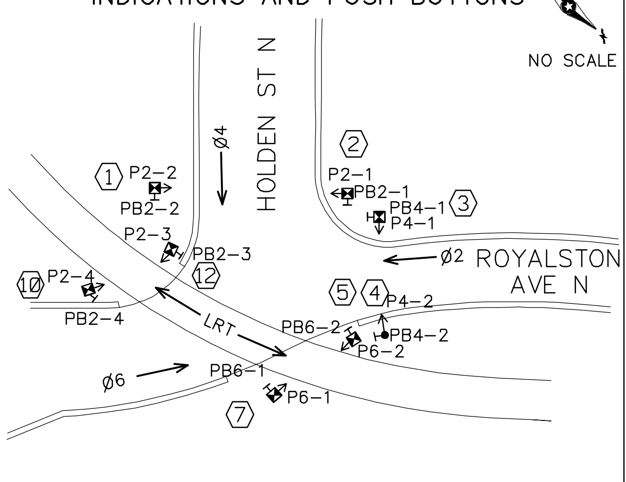
SHEET NAME: E4-TFC-SIG-IDX-001

NOTES
1. ALL PEDESTRIAN INDICATIONS SHALL INCLUDE COUNTDOWN TIMERS.
2. INTERCONNECT TO LRT XING HOUSE TO BE DETERMINED ONCE LRT XING HOUSE LOCATION IS DETERMINED.
3. Ⓐ – CONTROLLER CABINET
Ⓑ – SIGNAL SERVICE CABINET
EQUIPMENT PAD LOCATION SUBJECT TO CHANGE IN FINAL DESIGN.
4. THE EXACT LOCATION OF HANDHOLES, POLES, DETECTORS, AND EQUIPMENT PAD SHALL BE VERIFIED IN THE FIELD BY THE ENGINEER.



CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS

NO SCALE



PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE

SIGNAL FACE CHART

FACE	R	Y	G	LRT STOP	LRT PTS	LRT GO
2–1, 2–2, 2–3, 2–4	●	●	●			
4–1, 4–2, 4–3, 4–4	●	●	●			
6–1, 6–2, 6–3, 6–4	●	●	●			
L–1, L–2, L–3, L–4				⊖	◐ (1)	◐

(1) FLASHING LRT SIGNAL. PTS = PREPARE TO STOP
– ALL SIGNAL INDICATIONS SHALL BE 12" LED
– ALL SIGNAL HEADS SHALL BE BLACK POLYCARBONATE WITH BACKGROUND SHIELDS

SIGNAL SYSTEM OPERATIONS

– THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
– NORMAL OPERATION SHALL BE 3 PHASE.
– SIGNAL SYSTEM SHALL BE FULLY ACTUATED.
– LRT SHALL OPERATE WITH PREEMPTION.

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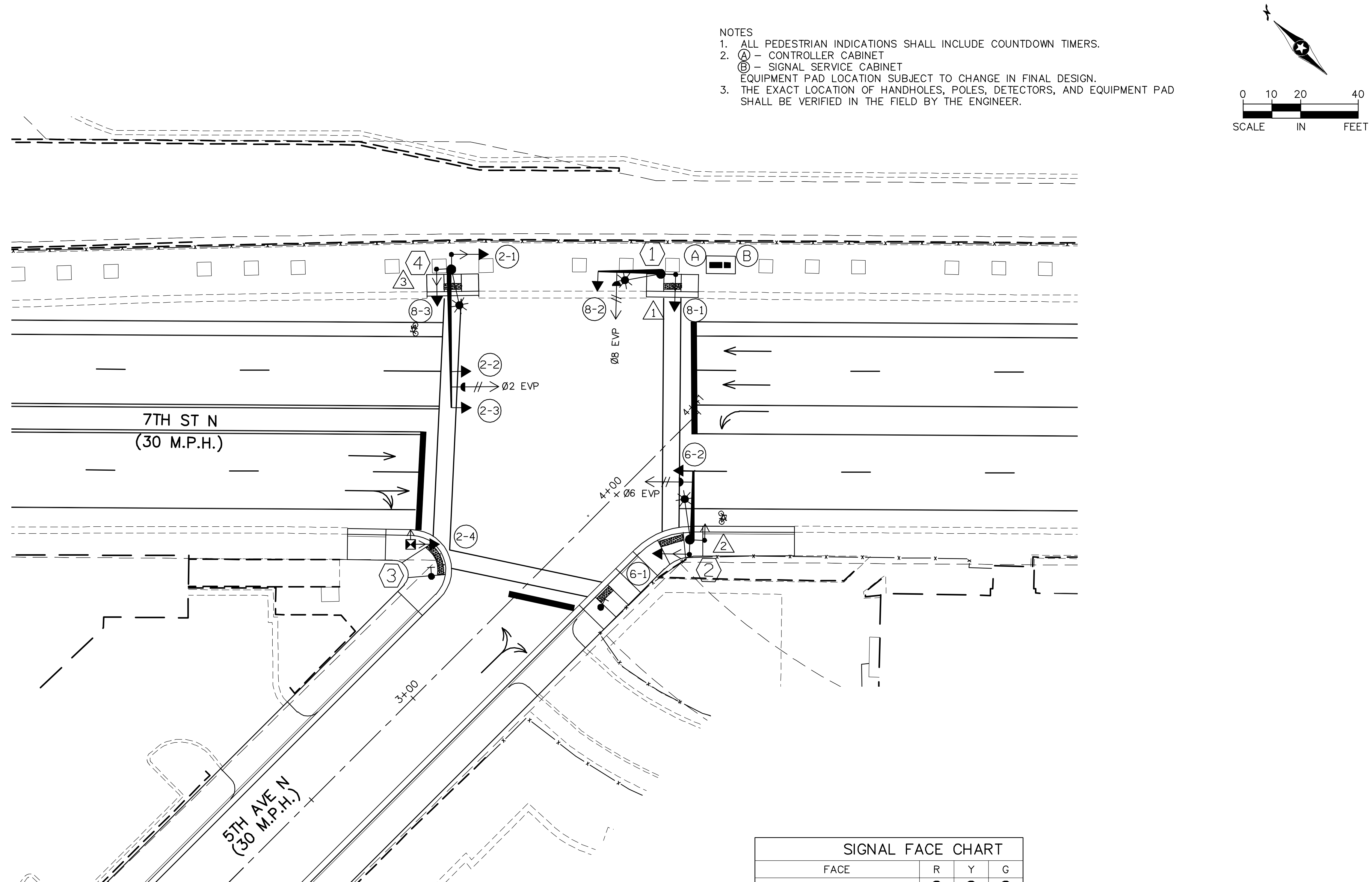
SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
SIGNAL PLAN - SIGNAL SYSTEM "S"
ROYALSTON AVE AND HOLDEN ST

DISCIPLINE: TRAFFIC

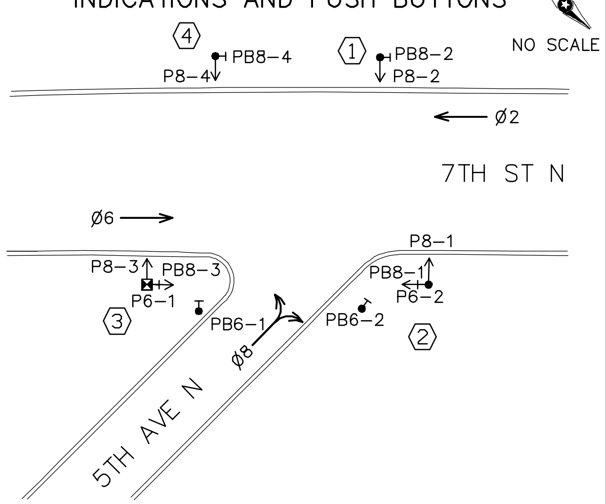
SHEET NAME: E4-TFC-SIG-ROY-001

NOTES
1. ALL PEDESTRIAN INDICATIONS SHALL INCLUDE COUNTDOWN TIMERS.
2. (A) – CONTROLLER CABINET
(B) – SIGNAL SERVICE CABINET
EQUIPMENT PAD LOCATION SUBJECT TO CHANGE IN FINAL DESIGN.
3. THE EXACT LOCATION OF HANDHOLES, POLES, DETECTORS, AND EQUIPMENT PAD SHALL BE VERIFIED IN THE FIELD BY THE ENGINEER.



CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS

NO SCALE



PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE

SIGNAL FACE CHART

FACE	R	Y	G
2-1, 2-2, 2-3, 2-4	●	●	●
6-1, 6-2	●	●	●
8-1, 8-2, 8-3	●	●	●

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

SIGNAL SYSTEM OPERATIONS

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION SHALL BE 3 PHASE.
- SIGNAL SYSTEM SHALL BE FULLY ACTUATED.

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

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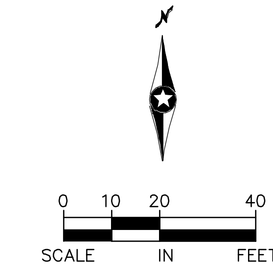
SOUTHWEST Green Line LRT Extension

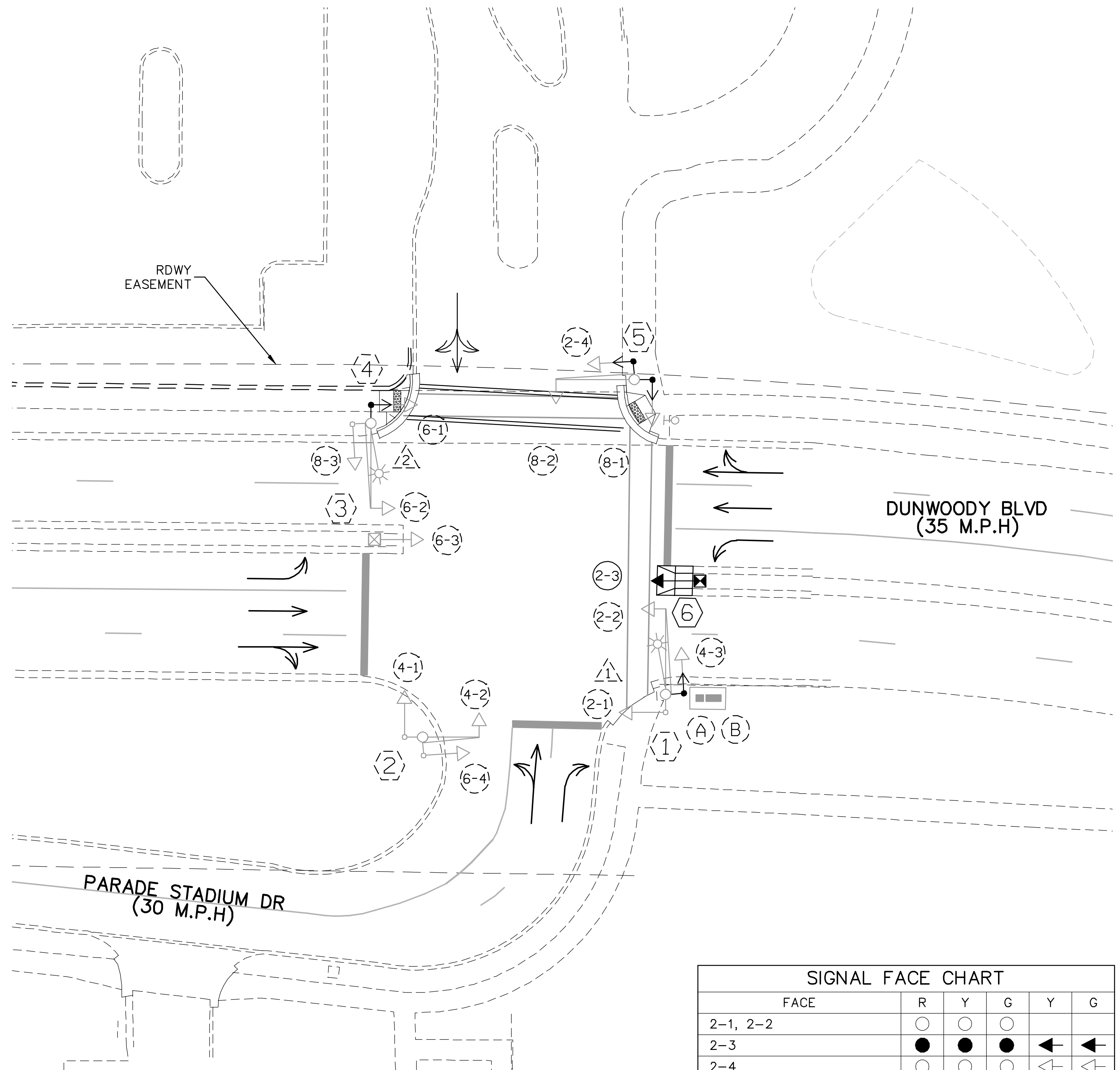
EAST - VOLUME 1 (CIVIL) - SEGMENT 4
SIGNAL PLAN - SIGNAL SYSTEM "T"
7TH ST N & 5TH AVE N

DISCIPLINE: TRAFFIC

SHEET NAME: E4-TFC-SIG-7TH-001

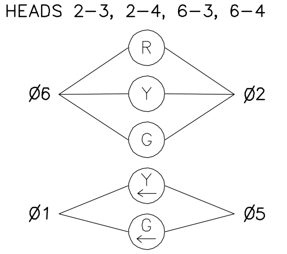
NOTES
1. ALL PEDESTRIAN INDICATIONS SHALL INCLUDE COUNTDOWN TIMERS.
2. Ⓐ – CONTROLLER CABINET
Ⓑ – SIGNAL SERVICE CABINET
3. THE EXACT LOCATION OF HANDHOLES, POLES, DETECTORS, AND EQUIPMENT PAD SHALL BE VERIFIED IN THE FIELD BY THE ENGINEER.





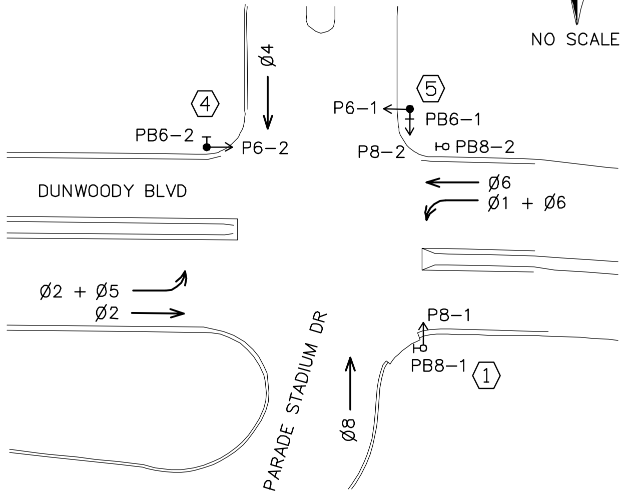
SIGNAL HEAD PHASING

HEADS 2-3, 2-4, 6-3, 6-4



CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS

NO SCALE



PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE

SIGNAL FACE CHART

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, 6-4	○	○	○	⇦	⇦
8-1, 8-2, 8-3	○	○	○		

SIGNAL SYSTEM "U" IS BEING MODIFIED TO PROVIDE PESESTRIAN PUSH BUTTONS AND COUNTDOWN TIMERS.

SIGNAL SYSTEM OPERATIONS

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 6 PHASE.

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

Kimley»Horn

PRELIMINARY ENGINEERING

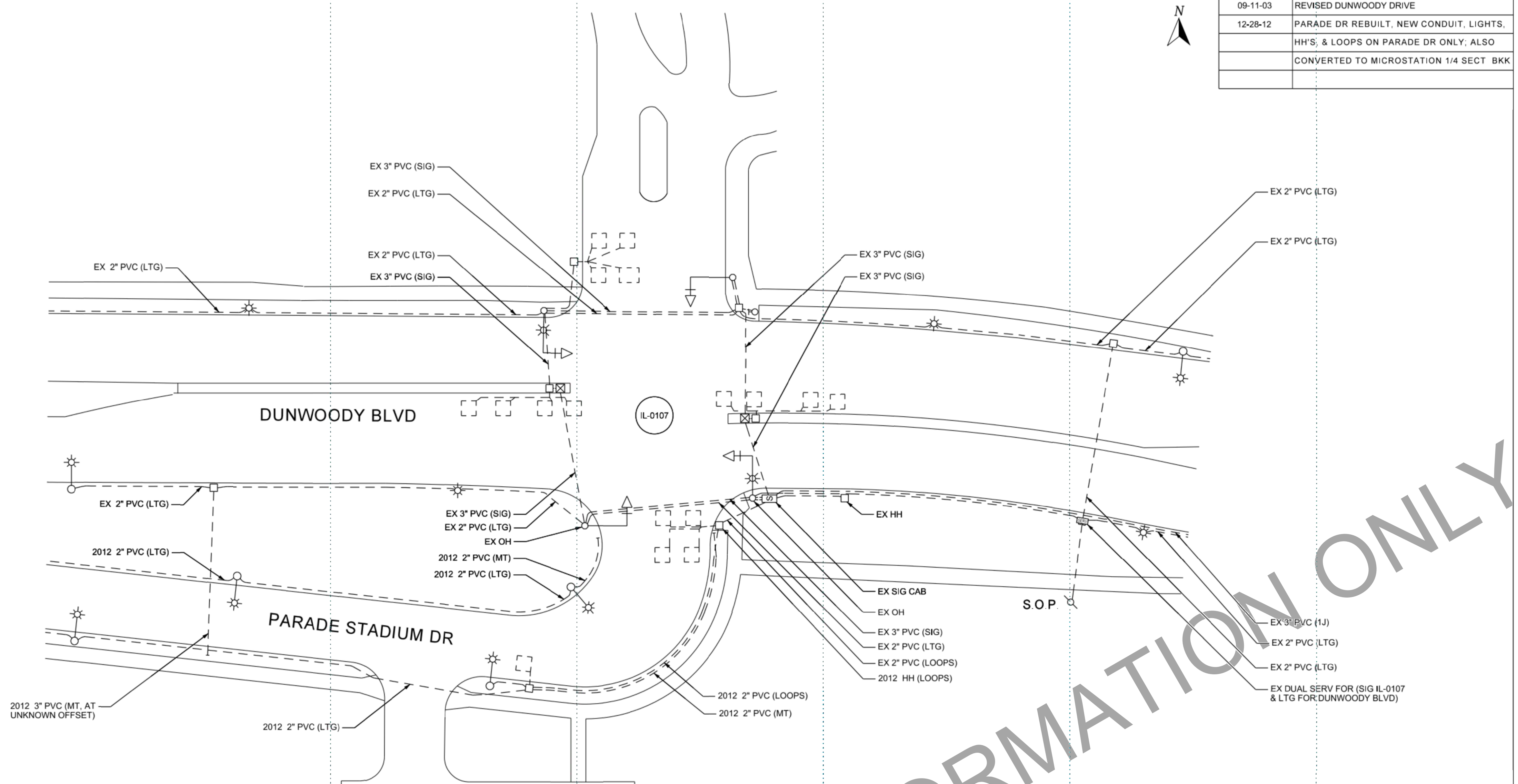
METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
SIGNAL PLAN - SYSTEM "U"
DUNWOODY BLVD AND PARADE STADIUM DR

DISCIPLINE: TRAFFIC

SHEET NAME: E4-TFC-SIG-DUN-001



DATE	REVISION
09-11-03	REVISED DUNWOODY DRIVE
12-28-12	PARADE DR REBUILT, NEW CONDUIT, LIGHTS,
	HH'S, & LOOPS ON PARADE DR ONLY; ALSO
	CONVERTED TO MICROSTATION 1/4 SECT BKK

CABLE LEGEND

A: 12/C#12	L: 1/C#1/0
B: 5/C#12	M: 1/C#2
C: 3/C#12	N: 1/C#4
D: 2/C#10 W/GRD	O: 1/C#6
E: 3/C#10 W/GRD	P: 1/C#8
F: 2/C#14 SH	Q: 3/C#20
G: 50PR#19	R: 4/C#18
H: 25PR#19	S: 2/C#12
I: 18PR#19	T: COAXIAL
J: 12PR#19	U: 2/C#14 W/GRD
K: 3PR#19	

INTERSECTION LAYOUT
PARADE STADIUM DR & DUNWOODY BLVD

MINNEAPOLIS DEPT. OF PUBLIC WORKS
TRAFFIC AND PARKING SERVICES

DRAWN: DRM CHKD: - REV: BKK	SCALE 1" = 40'	B
	DATE: 12-20-96	107

FILENAME: TRAFFIC_282924NE_TEXT.DGN

Aug. 28 2014 09:39 am V:\3300_PEC-E\CAD\SEGMENT E4\PLAN SHEETS\TRAFFIC\E4-TFC-SIG-DUN.dwg By: guillermo.madrigal

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

Kimley»Horn

PRELIMINARY ENGINEERING

METROPOLITAN COUNCIL

SOUTHWEST Green Line LRT Extension

EAST - VOLUME 1 (CIVIL) - SEGMENT 4
SIGNAL PLAN - SYSTEM "U"
DUNWOODY BLVD AND PARADE STADIUM DR
FOR INFORMATION ONLY

DISCIPLINE: TRAFFIC

SHEET NAME: E4-TFC-SIG-DUN-002