



November 12, 2014

Sarah Beimers
Minnesota State Historic Preservation Office
345 Kellogg Blvd. W.
St. Paul, MN 55102

RE: Southwest Light Rail Transit Project, Hennepin County, Minnesota; consultation on potential effects, SHPO #2009-0080

Dear Ms. Beimers,

We are writing to continue our consultation regarding the Southwest Light Rail Transit (LRT) Project (Project). This submittal includes information related to Project adjustments, preliminary determinations of Project effects to historic properties, and potential measures to avoid, reduce, or mitigate adverse effects. The information updates the material discussed with your office and all consulting parties at the Southwest LRT Project Office (SPO) on April 30, 2014. Since that time, additional cultural resource surveys have been completed; the Metropolitan Council entered into a Memorandum of Understanding (MOU) with the City of Minneapolis related to the design of the Project in Minneapolis; the Cities of Minneapolis, St. Louis, Park, Hopkins, Minnetonka, and Eden Prairie all provided Municipal Consent for the Project; and preliminary engineering has advanced to approximately 30% design (Preliminary Design Plans).

Following standard practice, all Section 106 consulting parties for this Project are copied on this letter. We welcome all parties to review the material, participate in the upcoming consultation meeting that will be held during the review period for this submittal, and to submit any comments within the 30-day review period. We have scheduled the consultation meeting with your office and Section 106 consulting parties to provide an opportunity for questions and discussion on this review. All consulting parties have received an invitation to the meeting, and we look forward to the discussion. The meeting will be held at the SPO, 6465 Wayzata Boulevard, Suite 500, St. Louis Park, on November 24, 2014, at 1:00 p.m. This meeting will cover Project adjustments since the April 30, 2014 consultation meeting and provide an opportunity to discuss effects to historic properties. The second half of the meeting will focus on effects to historic properties related to the proposed new crossing over the Kenilworth Lagoon and include a presentation on potential design concepts for the new bridges.

The materials listed below are included in this submittal. Please note that, to date, no historic properties have been identified in the western portion of the Project's area of potential effect (APE) in Eden Prairie and Minnetonka); therefore, some of the enclosed materials only cover the eastern portion of the Project in Hopkins, St. Louis Park, and Minneapolis.

- Plan Set with APE and Historic Properties (October 2014). (***Contains archaeological site locations; please do not post or distribute.***) These sheets show the segments of the Project in Hopkins, St. Louis Park, and Minneapolis, where historic properties have been identified within the area of potential effect (APE). Further, these sheets show the revised and expanded APE (the revisions were submitted to your office for review on October 17, 2014), all identified listed and eligible historic properties, and the alignment and track profile of the Project, as well as sections for locations where the line will cross historic properties.

- The cover sheet shows the entire project alignment (the east segment is shown in black).
- The next nine sheets (index sheets) show the entire east segment, from Hopkins to the existing Target Field Station. All historic properties are noted. Some properties which lie outside the edges of the plan sheets are noted on the margins. On these nine index sheets, individual sheets which include historic properties are outlined in red.
- The next 20 sheets are individual plan and profile sheets that show more detail of areas with historic properties.
- The last four sheets show various details related to the reconstruction of a segment of Cedar Lake Parkway to accommodate construction of a shallow LRT tunnel. These sheets include a plan and profile sheet showing Cedar Lake Parkway and another showing the Kenilworth Trail in this area, a sheet showing typical for Cedar Lake Parkway, and a sheet with the electrical site plan.

As we noted in our communication dated October 17, 2014, many of the areas included in the expanded APEs were previously surveyed for the Project. Within previously surveyed areas, three historic properties have been identified (Table 1) and are shown on the plan sheets. Your office has previously concurred with the eligibility of all three resources. Areas in the revised APEs that have not been previously surveyed for the project are in the process of being surveyed and the results will be included in a future consultation, as needed.

Table 1. Historic Properties in Expanded APE

Inventory #	Property Name (Historic)	Address	NRHP Status
HE-MPC-6068	Frieda & Henry J. Neils House	2801 Burnham Blvd., Minneapolis	Listed
HE-MPC-6766	Mahalia & Zacharia Saveland House	2405 W. 22 nd St., Minneapolis	Eligible
HE-MPC-6603	Frank & Julia Shaw House	2036 Queen Ave. S., Minneapolis	Eligible

- Photo Log of Historic Properties not included in the April 14, 2014 consultation package. As noted above, these are resources that have been identified in the expanded APE (see Table 1).
- Preliminary Determinations of Effects on Historic Properties table (November 12, 2014). This table includes all listed and eligible historic properties in the APE. Preliminary determinations are based on comments received in response to the April 2014 consultation and on the Preliminary Design Plans. Final determinations of effect will be made by the Federal Transit Administration (FTA). The table is divided into three sections, with properties in each section listed working roughly from west to east along the Project corridor. The first section includes historic properties where a determination of effect has been made and your office has concurred. No current consultation is required for properties in this section. The second section includes historic properties requiring additional consultation (Note: historic properties that may be impacted by the proposed new Kenilworth crossing are included in a separate third section). For properties in the second section, there is a preliminary determination of effect and, as needed, proposed actions for avoiding, minimizing, and mitigating adverse effects. As noted above, the third section includes properties where the primary effect from the Project will be from the proposed new crossing over the Kenilworth Lagoon. Determinations of effect for these properties will be made after continued consultation on the proposed new crossing. As in previous submittals, elements of the Grand Rounds Historic

District are listed separately in the table, due to their dispersed locations.

The following bullets summarize the various types of potential effects and preliminary determinations included in the table:

- Section 1: Based on the Preliminary Design Plans, we have determined, and your office has concurred, with the following:
 - Five historic properties will not be adversely affected and no further consultation is required for them unless continued plan development results in a change of effect and/or additional effects. These properties include: the Hopkins City Hall, Hoffman Callan Building; Minneapolis, St. Paul & Manitoba Railroad (MStP&M)/Great Northern Railway Historic District; Osseo Branch of the MStP&M Historic District; and the Minneapolis Warehouse Historic District.
 - Two archaeological properties, Archaeological Sites 21HE0436 (29) and 21HE0437 (30), will be adversely effected as they will be substantially disturbed for construction of the Royalston Station. These sites are eligible for the National Register based on their potential to contain important information, so disturbance will result in an adverse effect. To avoid the adverse effect, alternative station locations have been investigated in consultation with the City of Minneapolis, but have not been deemed feasible. Therefore, to mitigate the adverse effect of removing these sites, a stipulation will be included in the Section 106 agreement requiring a Phase III Archaeological Data Recovery.
 - Four properties are non-contributing elements of the Grand Rounds Historic District. Two elements, the Minneapolis & St. Louis Railway (M&StL) bridges over Kenilworth Lagoon/Channel, also known as Minneapolis Park Board (MPB) Bridge No. 5, will be removed. The other two elements, the MPB Bridge No. 6 (Burnham Road Bridge), and the Parade will be untouched. In all cases, we have determined and your office has concurred that there will be no adverse effect to these properties. No additional consultation is required for these properties.
- Section 2: Preliminary determinations of effect for properties requiring consultation due to reinstatement to the APE, a change of and/or additional effects, and/or consideration of advancement of Project design and /or construction:
 - Based on the Preliminary Design Plans, three historic properties will not be adversely effected and require no further consultation unless continued plan development results in a change of effect and/or additional effects. These properties include: the Chicago, Milwaukee & St. Paul Railroad St. Louis Park Depot, Mac Martin House, and Dunwoody Institute.
 - A small portion (less than 0.1%) of one property, the Minikahda Club, may be acquired for the Project. The intent is to avoid this adverse effect through continued consultation on project design to avoid the acquisition and through sensitive design of nearby project elements.
 - One historic property, the Hopkins Commercial Historic District, is located in an area around the Downtown Hopkins LRT Station. This station is expected to catalyze redevelopment activity, which is a primary goal of station area planning

efforts. Without incentives, historic buildings are often at risk during a redevelopment process. Preservation of historic buildings as part of this redevelopment (and avoidance of adverse effects) would be encouraged through completion of documentation that may be used by SHPO (at its discretion and working with City of Hopkins) to nominate the district to the National Register. This would qualify properties in the district for historic preservation tax incentives and other available preservation funding that would encourage preservation through economic viability. Therefore, we propose to continue consultation to consider effects to the historic district and to prepare National Register nomination to avoid adverse effects.

- Three properties may be effected by nearby construction. These properties include: the M&StL Hopkins Depot, Peavey-Haglin Experimental Concrete Grain Elevator, and Archaeological Site 21HE0409. Based on the Preliminary Plans, these properties will not be adversely affected, but additional consultation is required to ensure avoidance of adverse effects through sensitive design of nearby project elements and protection during construction. We expect to include of such measures in the Section 106 agreement.
- One property, Cedar Lake Parkway, will be impacted by reconstruction of an approximately 320 feet long segment to accommodate LRT tunnel construction. Based on the Preliminary Design Plans, this segment will be reconstructed in-kind, but with a minimal increase in elevation (less than 8 inches). As such, it will not result in an adverse effect; however we will continue to consultation on the design with the intent of achieving a final determination of no adverse effect.
- Eight historic properties may be impacted by station infrastructure and/or station access routes. These properties include: the Lake Calhoun Playing Fields, Frieda and Henry J. Neils House, Mahalia and Zacharia Saveland House, Kenwood Parkway Residential Historic District, Kenwood Parkway, Frank and Julia Shaw House, Kenwood Park, and the Kenwood Water Tower. Based on the Preliminary Plans, there will be no adverse effects on these properties from station development. However, since some elements are not fully developed, additional consultation is required to consider these effects with the intent of achieving a final determination of no adverse effect. Project elements requiring additional consultation include:
 - Lake Calhoun Playing Fields – effects of traffic and parking from operation of the West Lake Station.
 - Frieda and Henry J. Neils House – effects of station operation/access from 21st Street Station.
 - Mahalia and Zacharia Saveland House – effects of station operation/access from 21st Street Station.
 - Kenwood Parkway Residential Historic District – effects of development and station operation/access from 21st Street Station.
 - Kenwood Parkway – effects of station development and station operation/

access from both 21st Street and Penn stations.

- Frank and Julia Shaw House – effects of station operation/access from 21st Street Station.
 - Kenwood Park – effects of station development and station operation/access from Penn Station.
 - Kenwood Water Tower – effects of station development from Penn Station.
- Section 3: Historic properties with effects related to the new Kenilworth crossing. Seven historic properties may be impacted by the new bridges (freight rail and LRT/trail) across the Kenilworth Lagoon: the Grand Rounds Historic District, including the following contributing resources – the Kenilworth Lagoon itself, Cedar Lake, Lake of the Isles, Lake of the Isles Parkway, and Minneapolis Park Board Bridge No. 4 – as well as the Lake of the Isles Residential Historic District.
- We have made a preliminary determination that the construction of the crossing will result in an adverse effect to the Kenilworth Lagoon as construction will alter characteristics of the lagoon that qualify the lagoon for inclusion in the National Register in a manner that will, to varying degrees, diminish its integrity of design, setting, materials, workmanship, feeling, and association. Potential noise effects at this location also require further analysis. The intent is to minimize and mitigate the adverse effect through sensitive project design and incorporation of protective measures that would be stipulated in the Section 106 agreement.
 - We have made a preliminary determination that the Project will not result in an adverse effect Cedar Lake based on Preliminary Design Plans and continued consultation related to the design of the trail between it and the 21st Street Station to avoid any adverse effects. Although the new Kenilworth crossing will be visible from a small portion of the lake, its visual impact will be minimal due existing screening and by distance.
 - Based on the adverse effect finding for the Kenilworth Lagoon, we have made a preliminary determination that the construction of the new bridges will result in an adverse effect to the Grand Rounds. An overall determination of effect to the Grand Rounds Historic District, and the identification of any avoidance, minimizations and/or mitigation measures will be made once effects to all contributing elements to the historic district have been determined.
 - Four properties require continued consultation before a determination of effect can be made as the determination is contingent on the design of the new crossing over the Kenilworth Lagoon. These include Lake of the Isles, Lake of the Isles Parkway, MPB Bridge No. 4, and the Lake of the Isles Residential Historic District. The intent is to minimize or avoid adverse effects through sensitive project design. The determination of the level of effect will be made after further consultation with your office and the consulting parties on the design for the new crossing.
- Other attachments. As noted above, the second half of the upcoming consultation meeting will focus on the proposed new crossing over the Kenilworth Lagoon and related effects to historic properties. Therefore, we are providing the following materials to aid in your

preparation for this discussion:

- Kenilworth Lagoon study. This document, entitled: *Kenilworth Lagoon/Channel Context, History, and Physical Description*, provides a historic context and history of the lagoon, along with a detailed physical description of its landscape and features. The materials included in this study were presented at the consultation meeting on April 30, 2014; however, the report was not included in the April 18, 2014 consultation package since it was still in the process of being finalized.
- Plan sheets of the existing and proposed bridge across the Kenilworth Lagoon. These sheets show the length and width of both the existing and proposed structures, as well as the profile and height of the proposed structures. The proposed structures, as shown, depict only what is required from an engineering perspective to carry all of the transportation corridors (LRT, freight rail and Kenilworth Trail) over the lagoon. They do not depict any particular structure type or aesthetic. Design concepts for the bridge(s) will be presented at the consultation meeting on November 24, 2014.

Please provide any comments on the project effects determinations and the *Kenilworth Lagoon/Channel Context, History, and Physical Description* study within 30 days of this letter. If you have any questions or concerns about the enclosed materials, do not hesitate to contact me at (651) 366-4292.

Sincerely,



Greg Matthis
MnDOT Cultural Resources Unit

Enclosures: Plan set with APE and historic properties (34 sheets)
Photo log of historic properties (1 sheet)
Table with preliminary determinations of effects on historic properties (8 sheets)
Kenilworth Lagoon/Channel study (78 pages)
Plan set of existing and proposed Kenilworth crossing bridges (4 sheets)

cc: Bill Wheeler, Federal Transit Administration
Maya Sarna, Federal Transit Administration
Amy Zaref, Federal Transit Administration
Melissa Jenny, United States Army Corps of Engineers
Natascha Weiner, Minnesota State Historic Preservation Office
Nani Jacobson, Metropolitan Council
Regina Rojas, City of Eden Prairie
Nancy Anderson, City of Hopkins
Brian Schaffer, City of Minneapolis
John Byers, City of Minneapolis
Elise Durbin, City of Minnetonka
Meg McMonigal, City of St. Louis Park
Kathy Low, Kenwood Isles Area Association
Tamara Ludt, Preservation Design Works
Jennifer Ringold, Minneapolis Park and Recreation Board
Bill Walker, Three Rivers Park District
Katie Walker, Hennepin County

Redaction Note: Archaeological sites on the following plan set have been redacted to help preserve the identified resources.

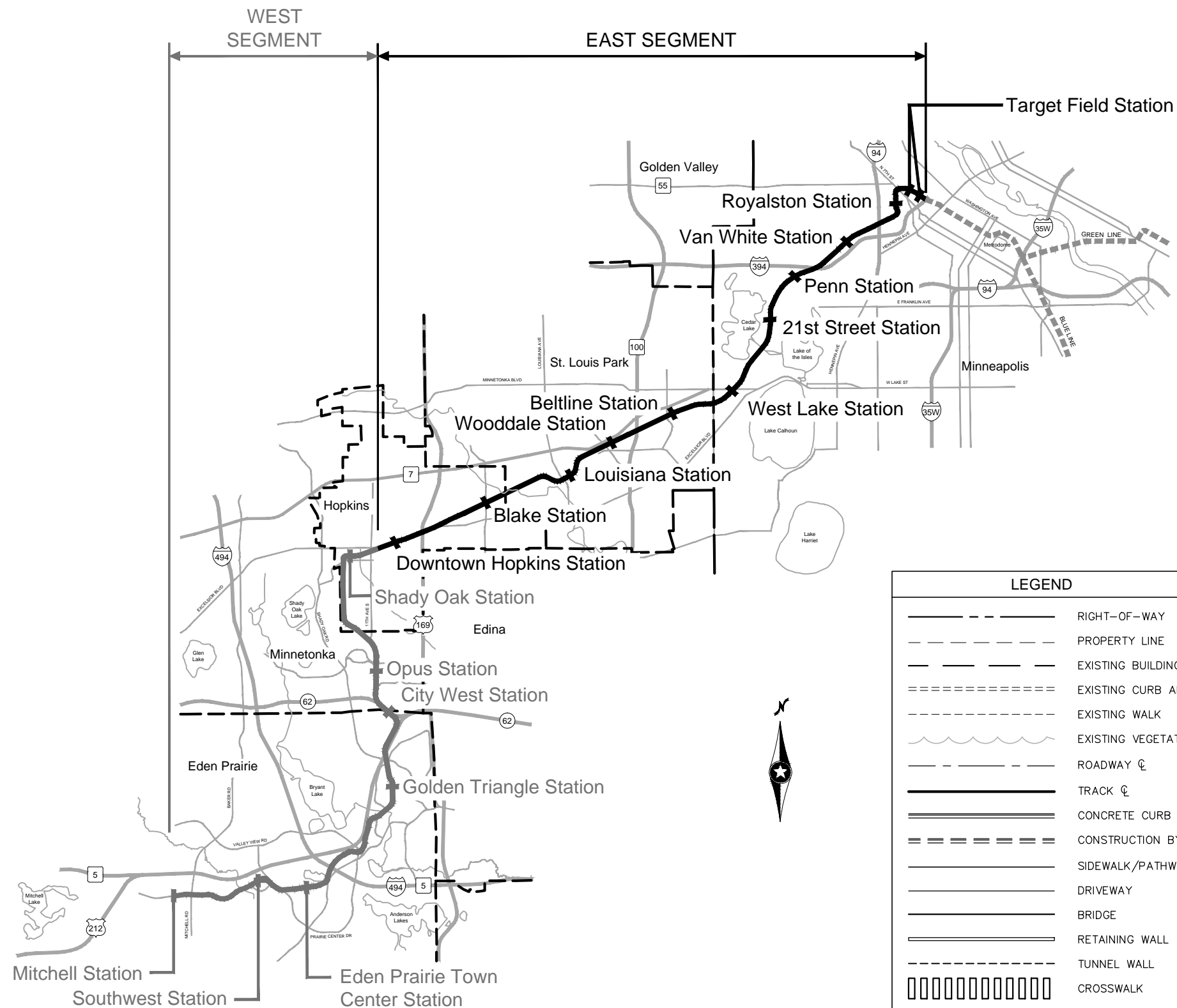
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EAST SEGMENTS 1-4

SECTION 106 REVIEW

OCTOBER 2014



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- - - -	PROPERTY LINE
— — — —	EXISTING BUILDING
=====	EXISTING CURB AND GUTTER
- - - - -	EXISTING WALK
~~~~~	EXISTING VEGETATION
— — — —	ROADWAY ☉
—————	TRACK ☉
=====	CONCRETE CURB AND GUTTER
=====	CONSTRUCTION BY OTHERS
—————	SIDEWALK/PATHWAY OR TRAIL
—————	DRIVEWAY
—————	BRIDGE
—————	RETAINING WALL
—————	TUNNEL WALL
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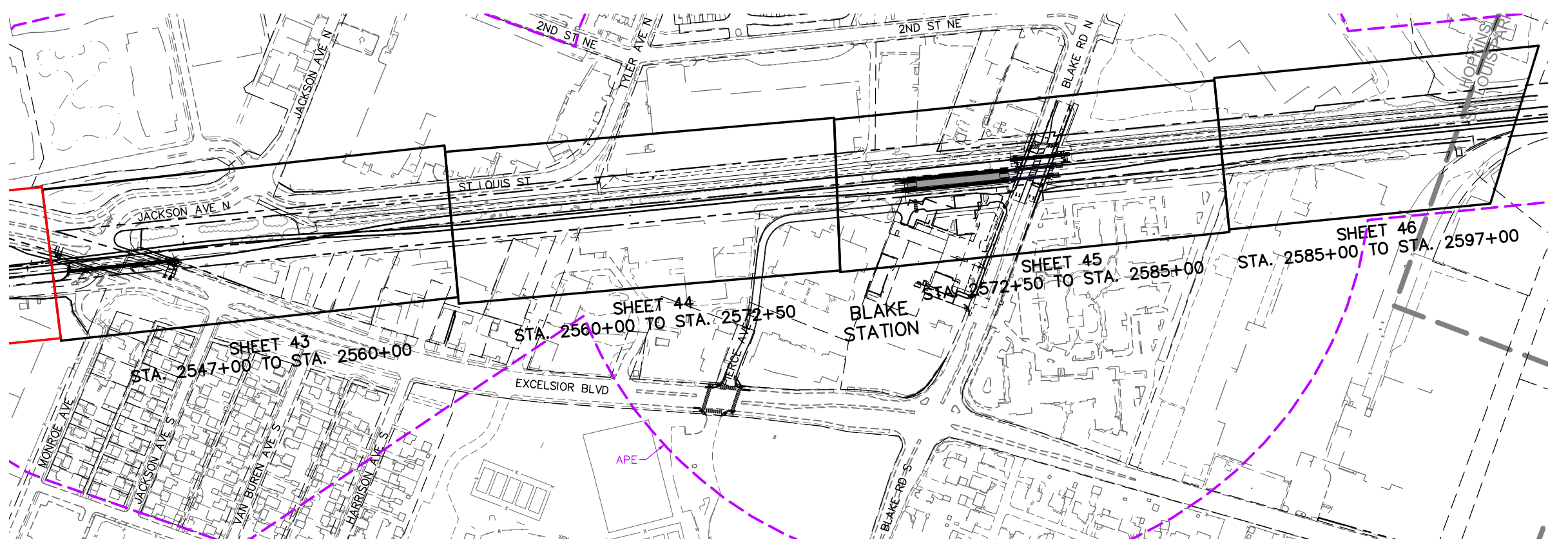
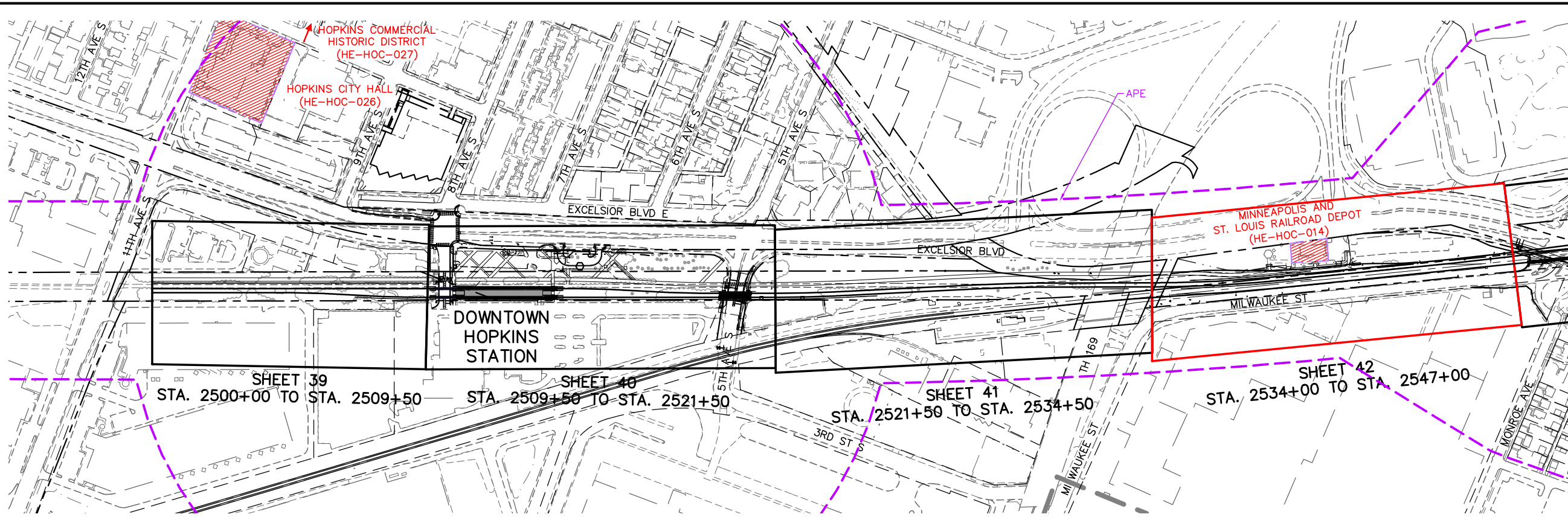
**NOTE: LOCATIONS OF ARCHAEOLOGICAL SITES HAVE BEEN REDACTED TO PROTECT THESE SENSITIVE RESOURCES.**



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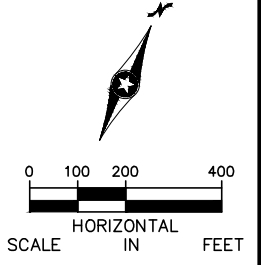


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Kimley»Horn

SYSTRA

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Green Line LRT Extension

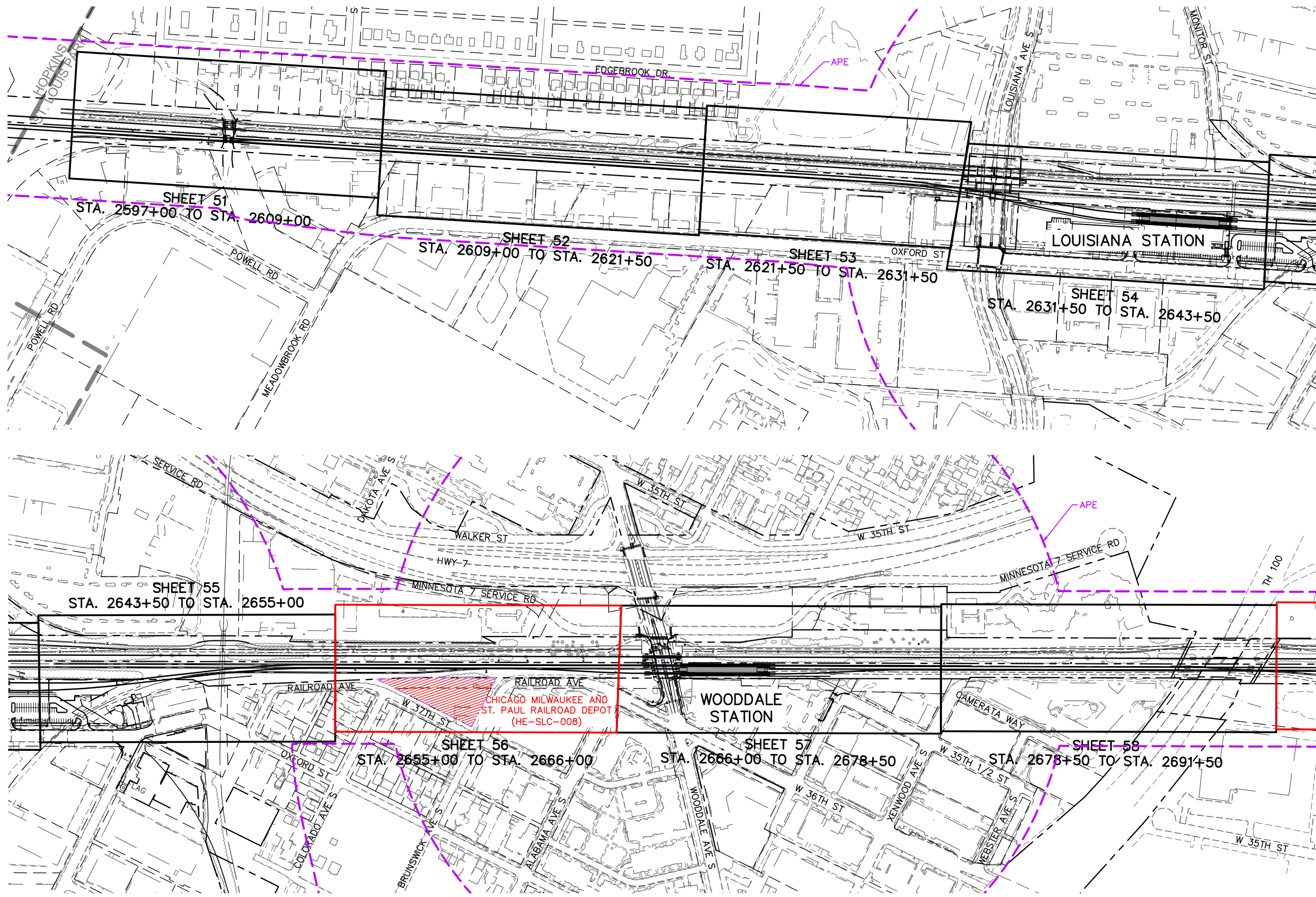
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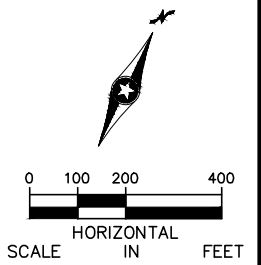


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**SYSTRA**  
PRELIMINARY ENGINEERING

  
**METROPOLITAN**  
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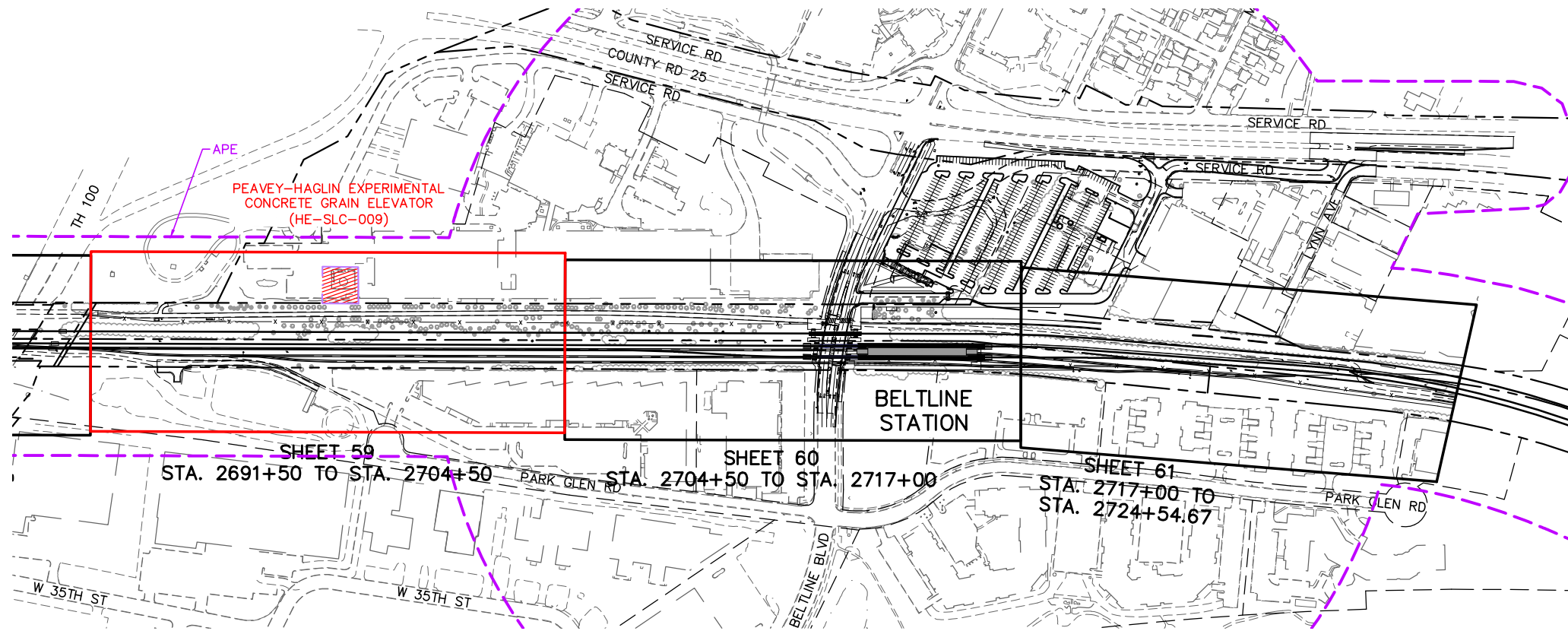
  
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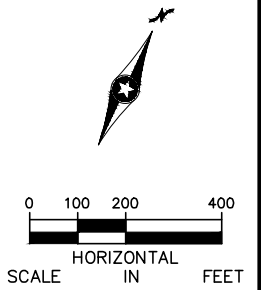
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**SOUTHWEST**  
 Green Line Light Rail Extension

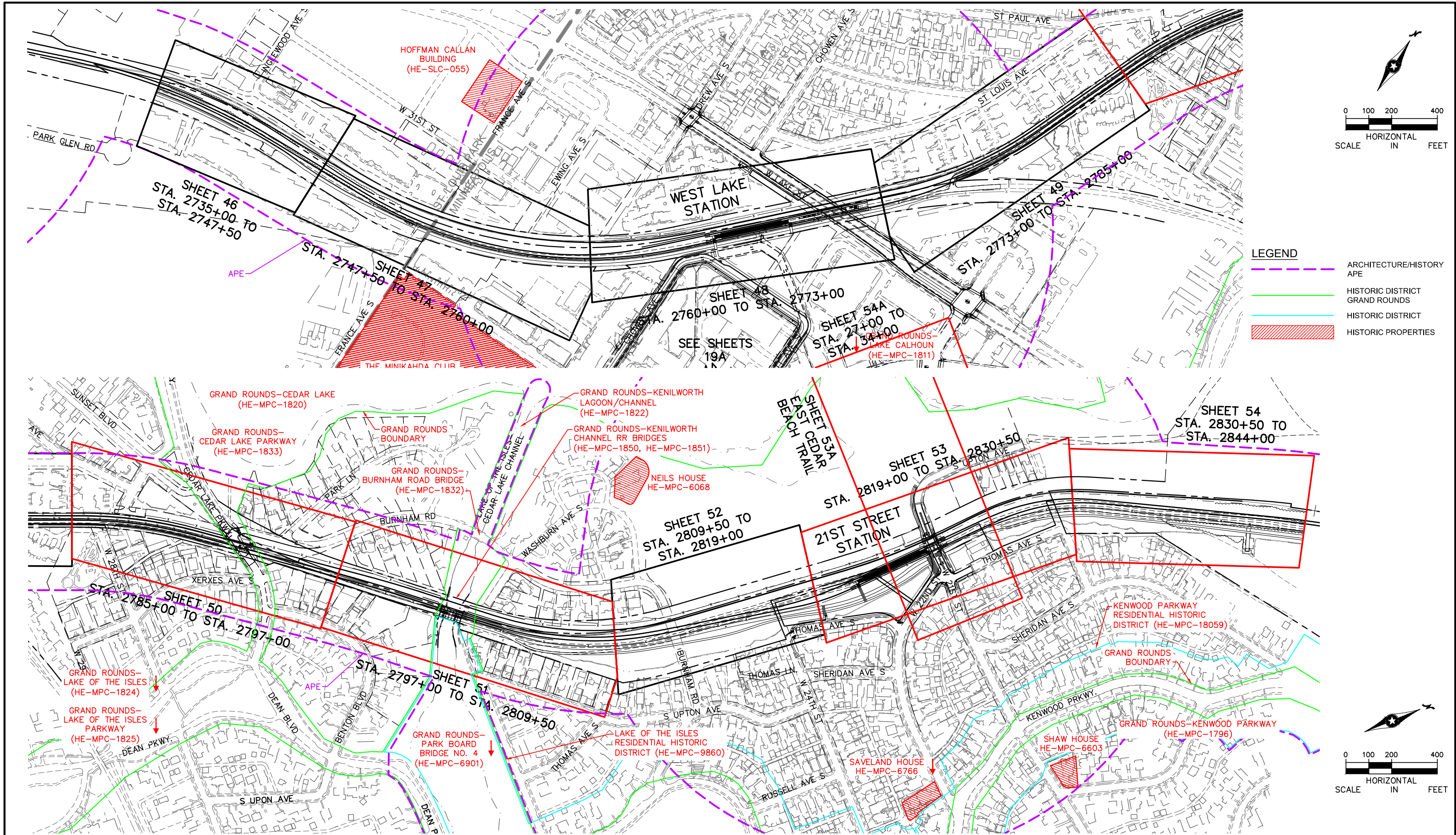
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**METROPOLITAN COUNCIL**  
**SOUTHWEST**  
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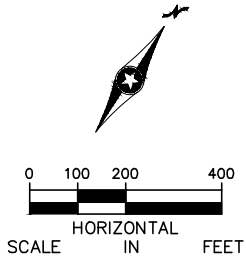
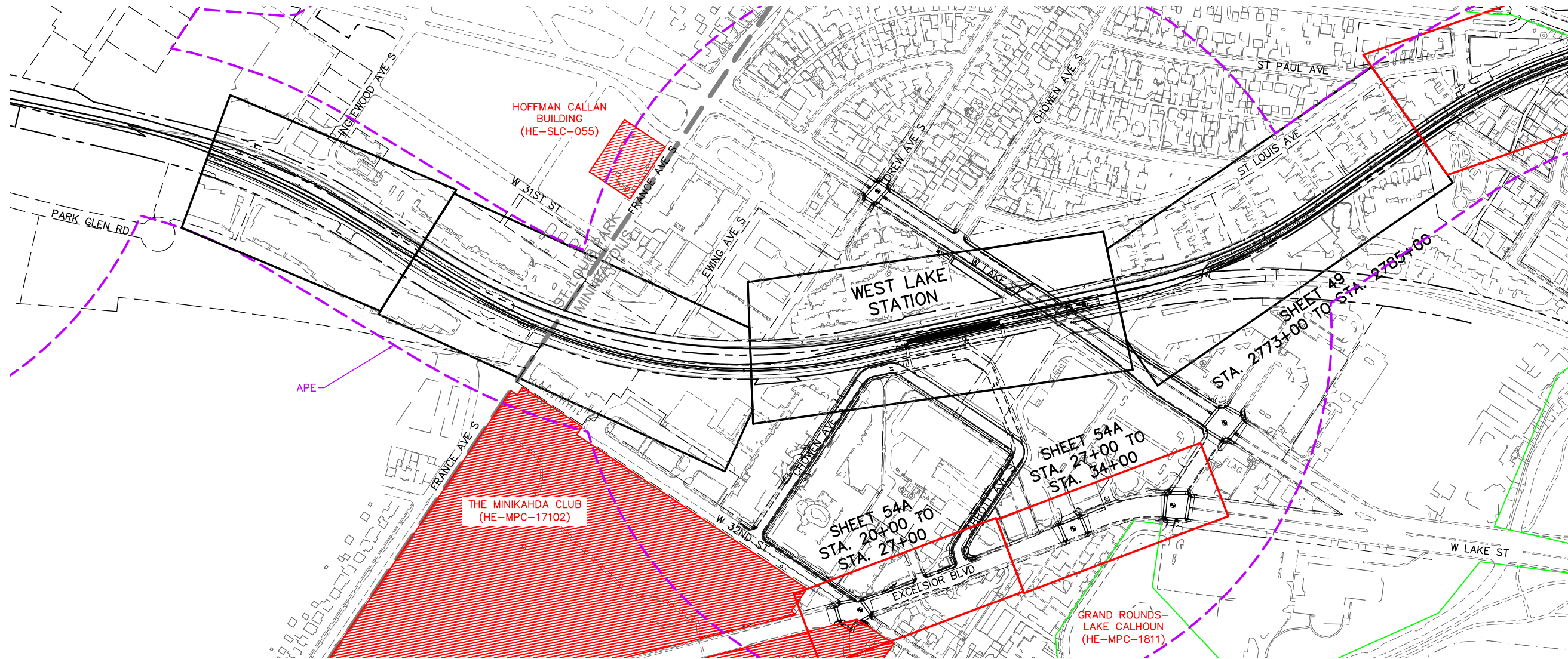
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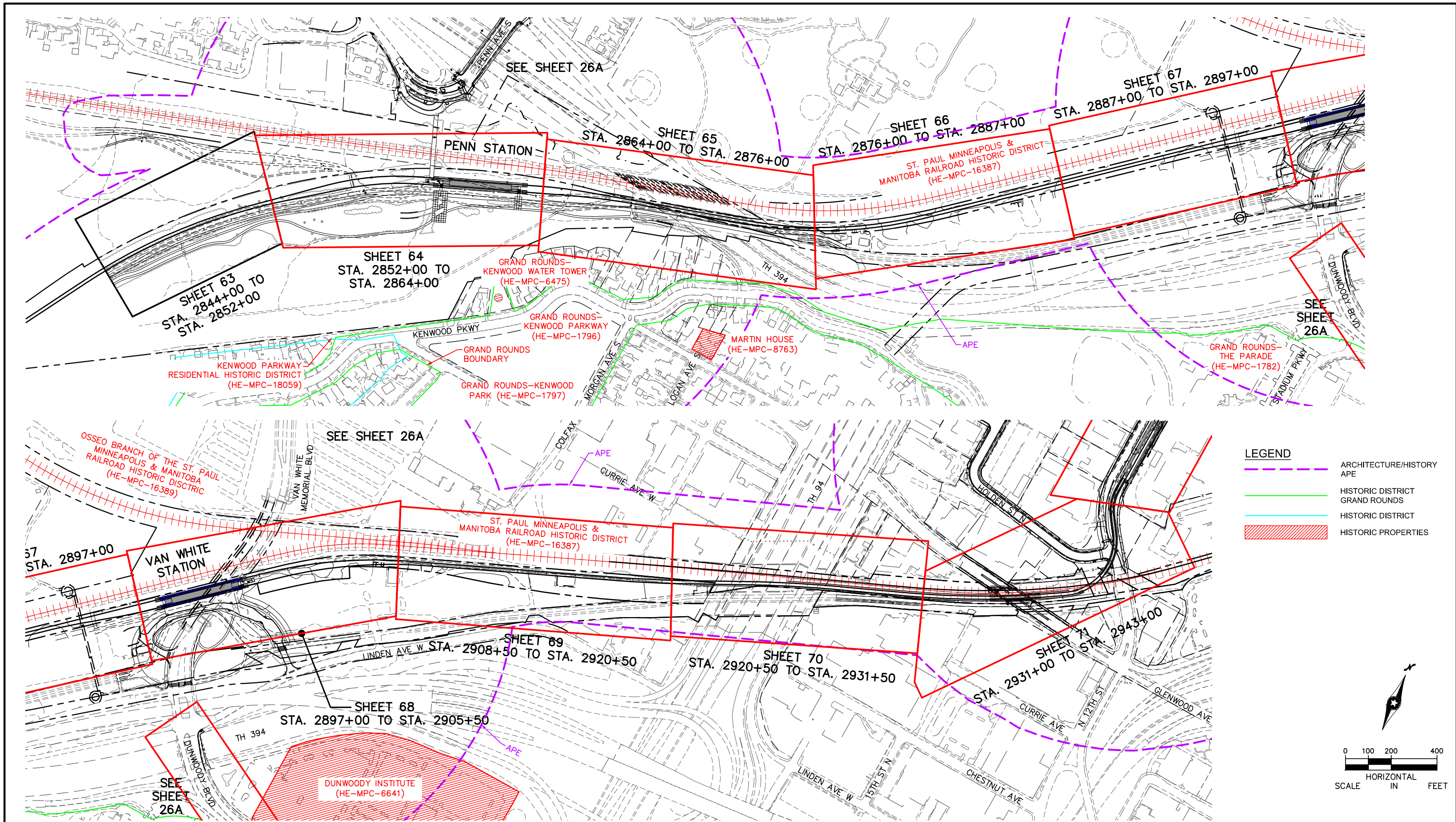
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**SOUTHWEST** Green Line LRT Extension

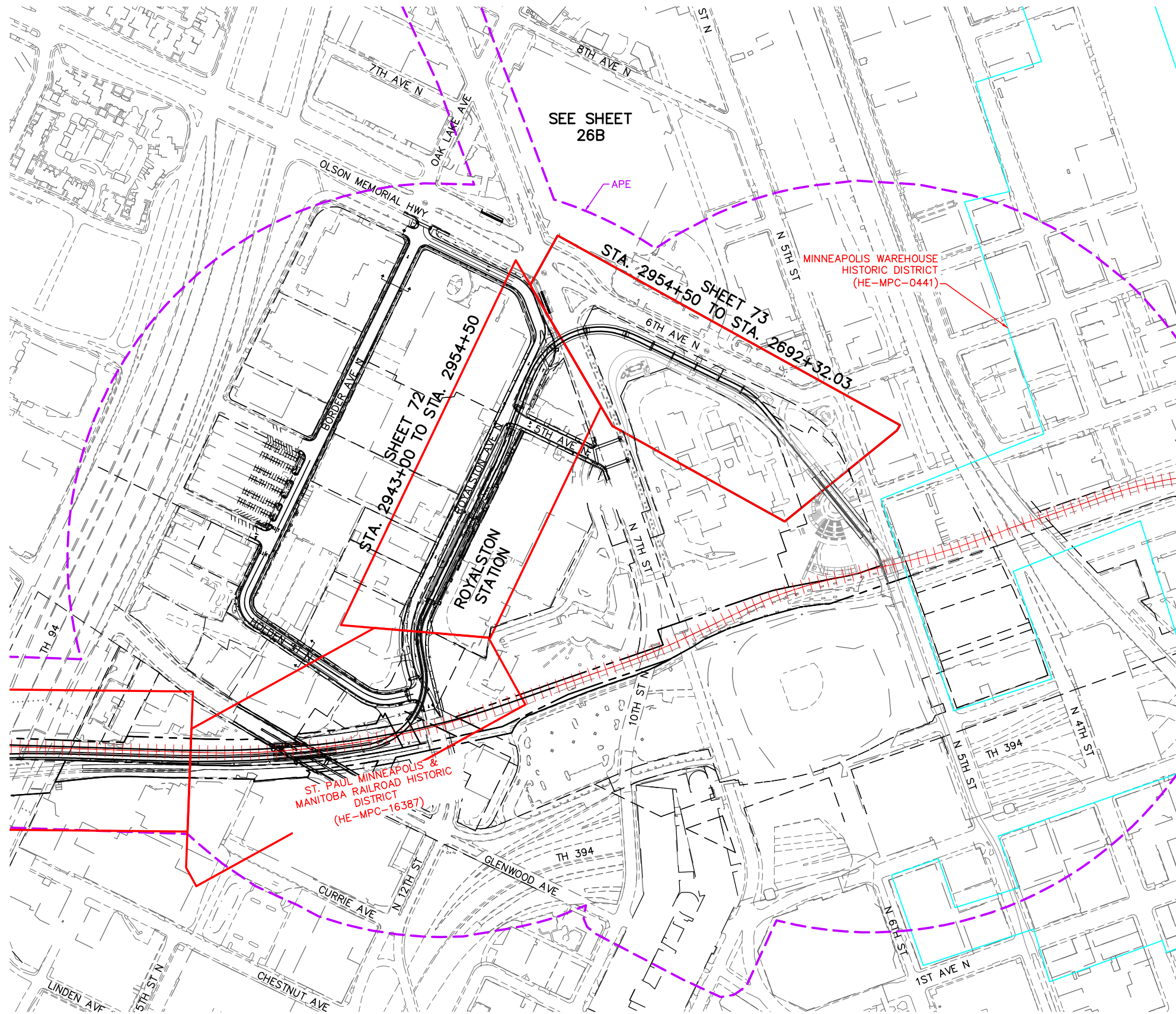
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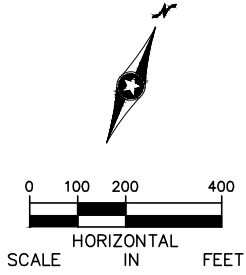


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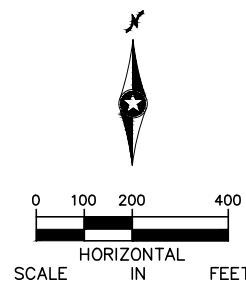
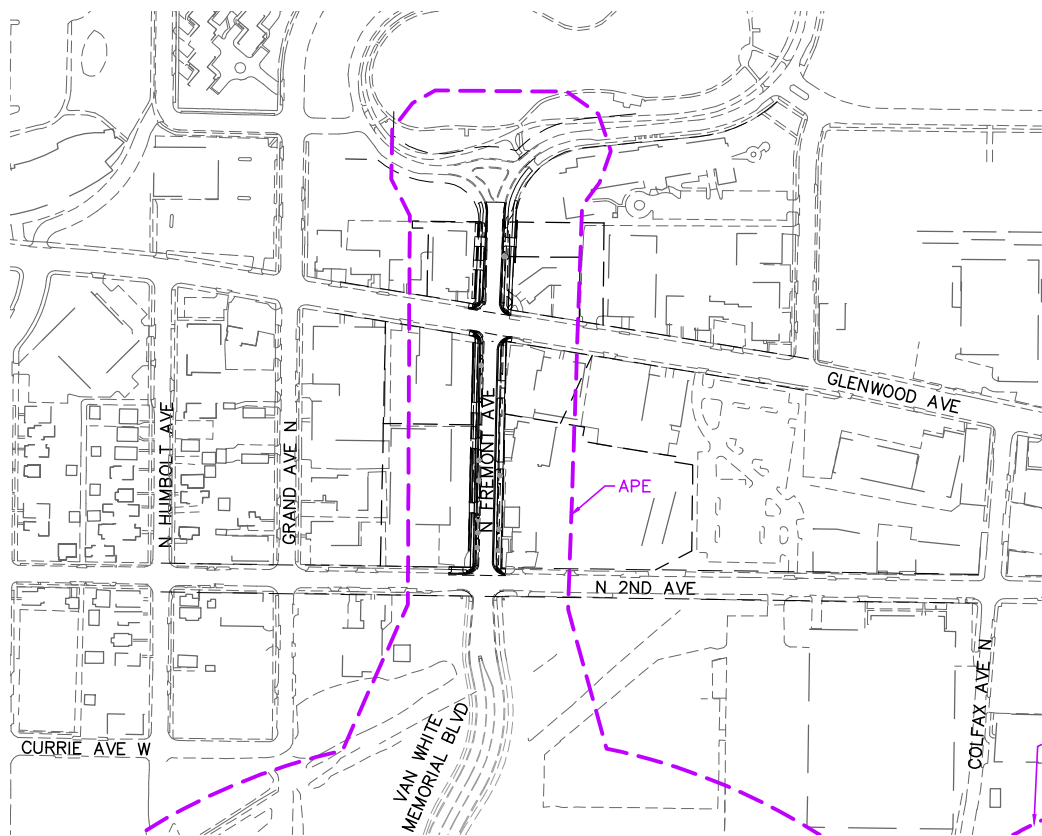
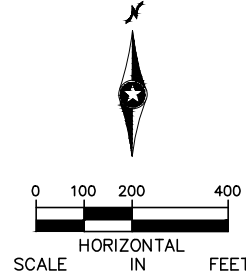
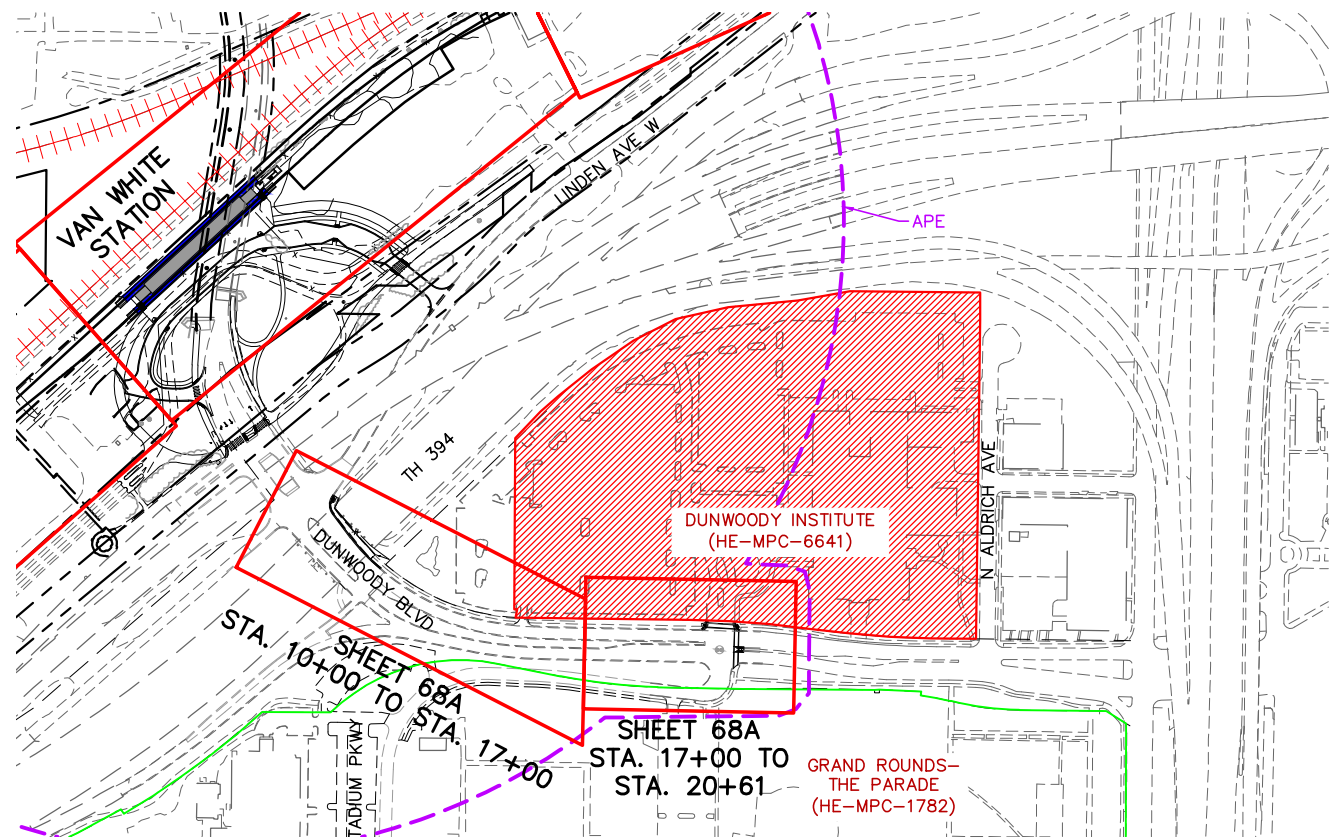
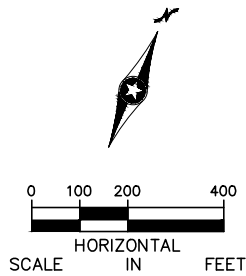
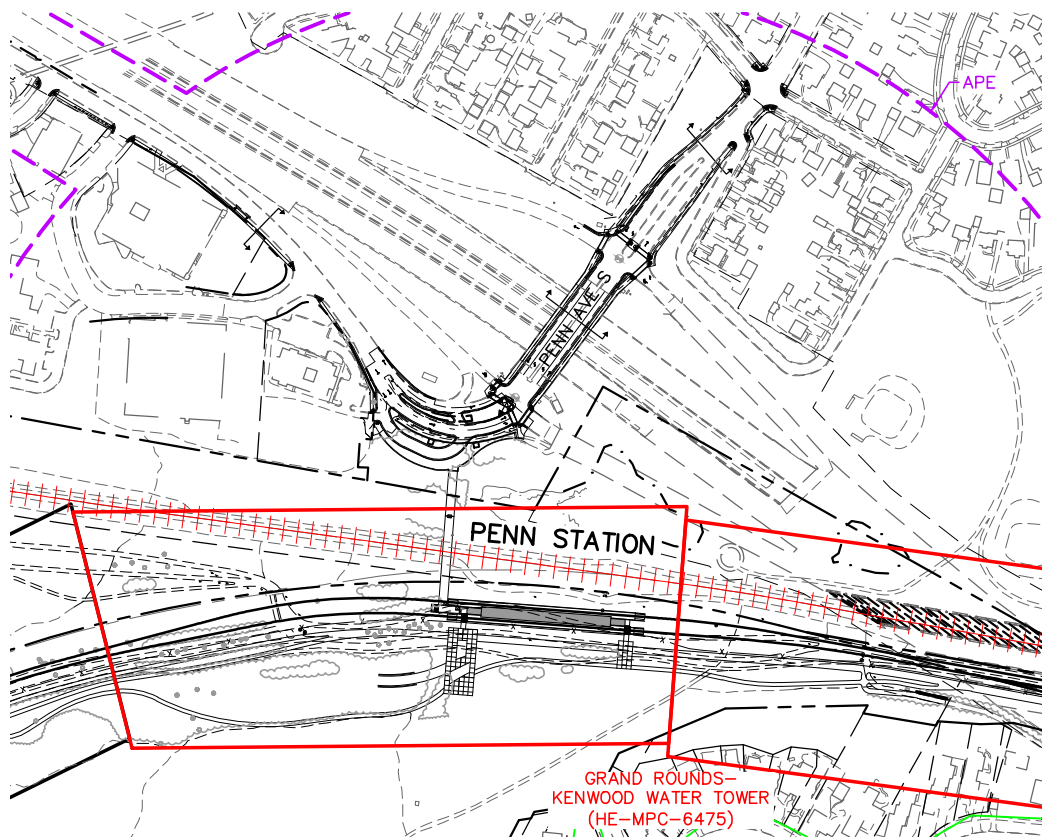
  
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**Kimley»Horn**  
**SYSTRA**  
PRELIMINARY ENGINEERING

**METROPOLITAN**  
COUNCIL

**SOUTHWEST**  
Green Line Light Extension

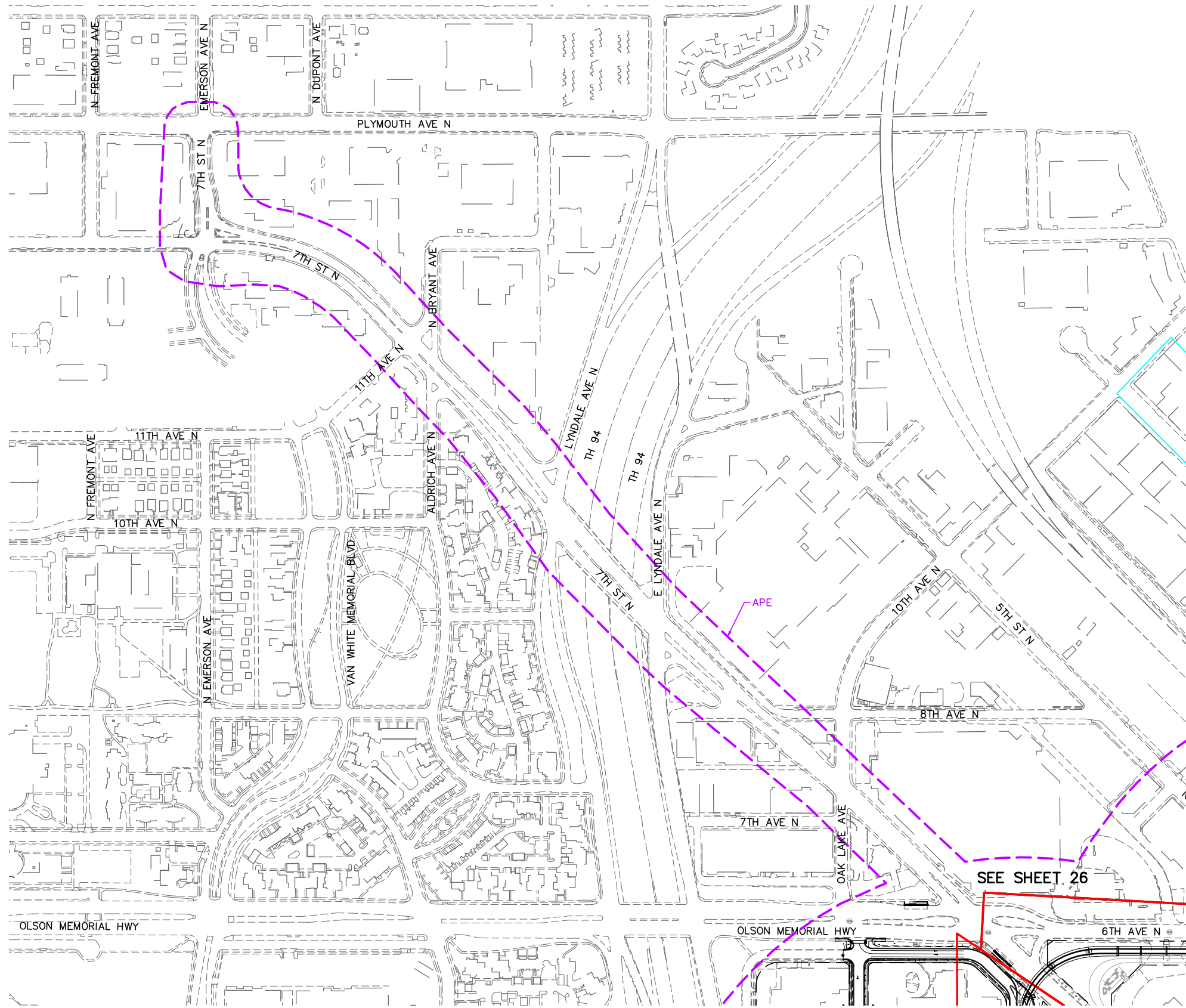
**EAST - VOLUME 1 (CIVIL) - SEGMENT 4**  
**CIVIL**  
**SHEET LAYOUT INDEX**





DISCIPLINE: CIVIL SHEET NAME: E4-TRK-IDX - 003

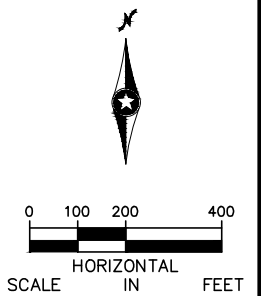
SHEET 26A OF 163



Nov. 07 2014 08:27 am v:\3300_PEC-E\CAD\SEGMENT E4\EXHIBITS\CIVIL\SHPO\E4-TRK-IDX.dwg By: hope.wedge



LEGEND	
	ARCHITECTURE/HISTORY APE
	HISTORIC DISTRICT GRAND ROUNDS
	HISTORIC DISTRICT
	HISTORIC PROPERTIES



NO.	DATE	BY	CHECK DESIGN	REVISION / SUBMITTAL
1	4/10/14			SECTION 106 REVIEW

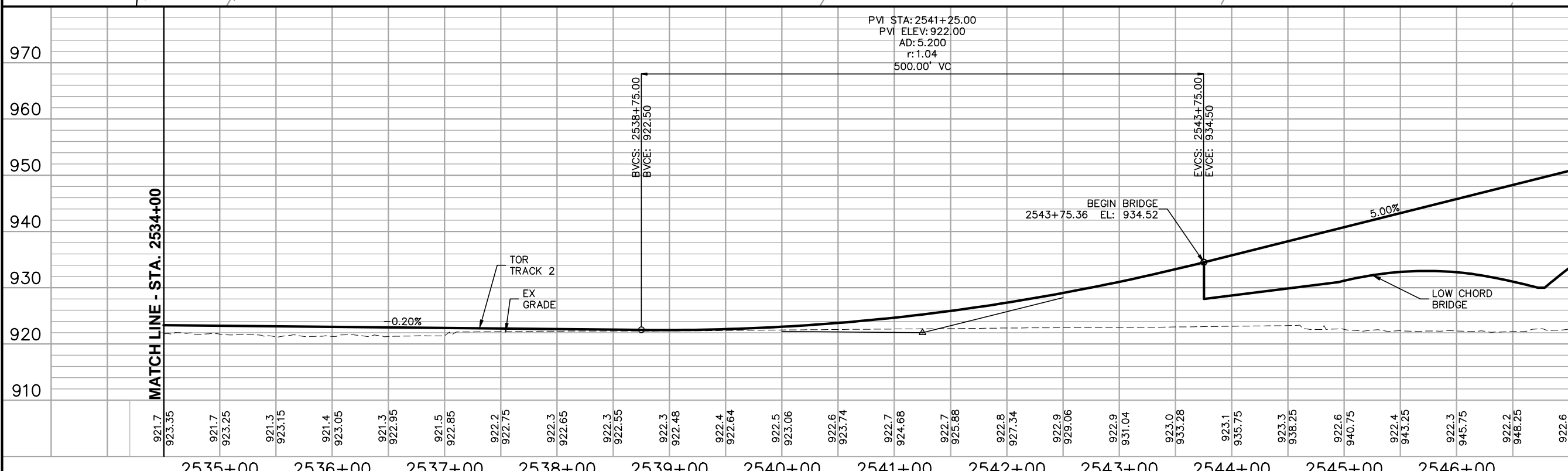
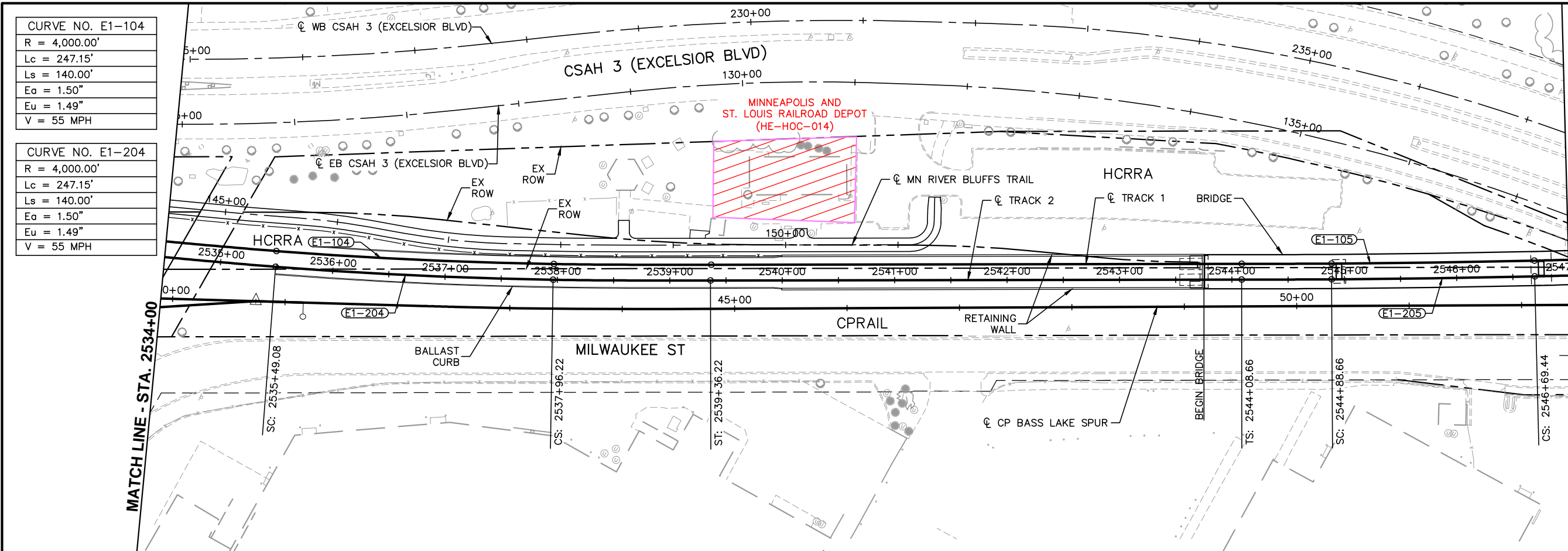
  
**SYSTRA**  
 PRELIMINARY ENGINEERING

  
**METROPOLITAN COUNCIL**  
  
**SOUTHWEST**  
 Green Line LRT Extension

**EAST - VOLUME 1 (CIVIL) - SEGMENT 4**  
**CIVIL**  
**SHEET LAYOUT INDEX**  
 DISCIPLINE: **CIVIL**  
 SHEET NAME: **E4-TRK-IDX - 004**

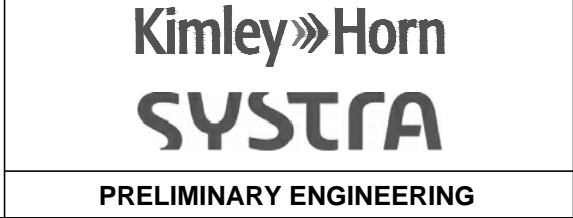
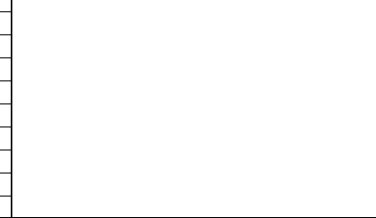
**SHEET**  
**26B**  
**OF**  
**163**

Nov. 07 2014 09:09 am V:\3300_PEC-E\CAD\SEGMENT E1\EXHIBITS\CIVIL\SHPO\E1-TRK-PPFL.dwg By: hope.wedge



921.7	923.35	921.7	923.25	921.3	923.15	921.4	923.05	921.3	922.95	921.5	922.85	922.2	922.75	922.3	922.65	922.3	922.55	922.3	922.48	922.4	922.64	922.5	923.06	922.6	923.74	922.7	924.68	922.7	925.88	922.8	927.34	922.9	929.06	922.9	931.04	923.0	933.28	923.1	935.75	923.3	938.25	922.6	940.75	922.4	943.25	922.3	945.75	922.2	948.25	922.6	950.75
2535+00		2536+00		2537+00		2538+00		2539+00		2540+00		2541+00		2542+00		2543+00		2544+00		2545+00		2546+00																													

NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL



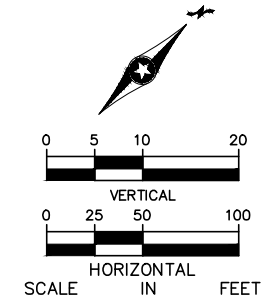
**EAST - VOLUME 1 (CIVIL) - SEGMENT 1**  
**TRACK**  
**PLAN AND PROFILE**  
**STA. 2534+00 TO STA. 2547+00**

DISCIPLINE:	TRACK	SHEET NAME:	E1-TRK-PPFL-004
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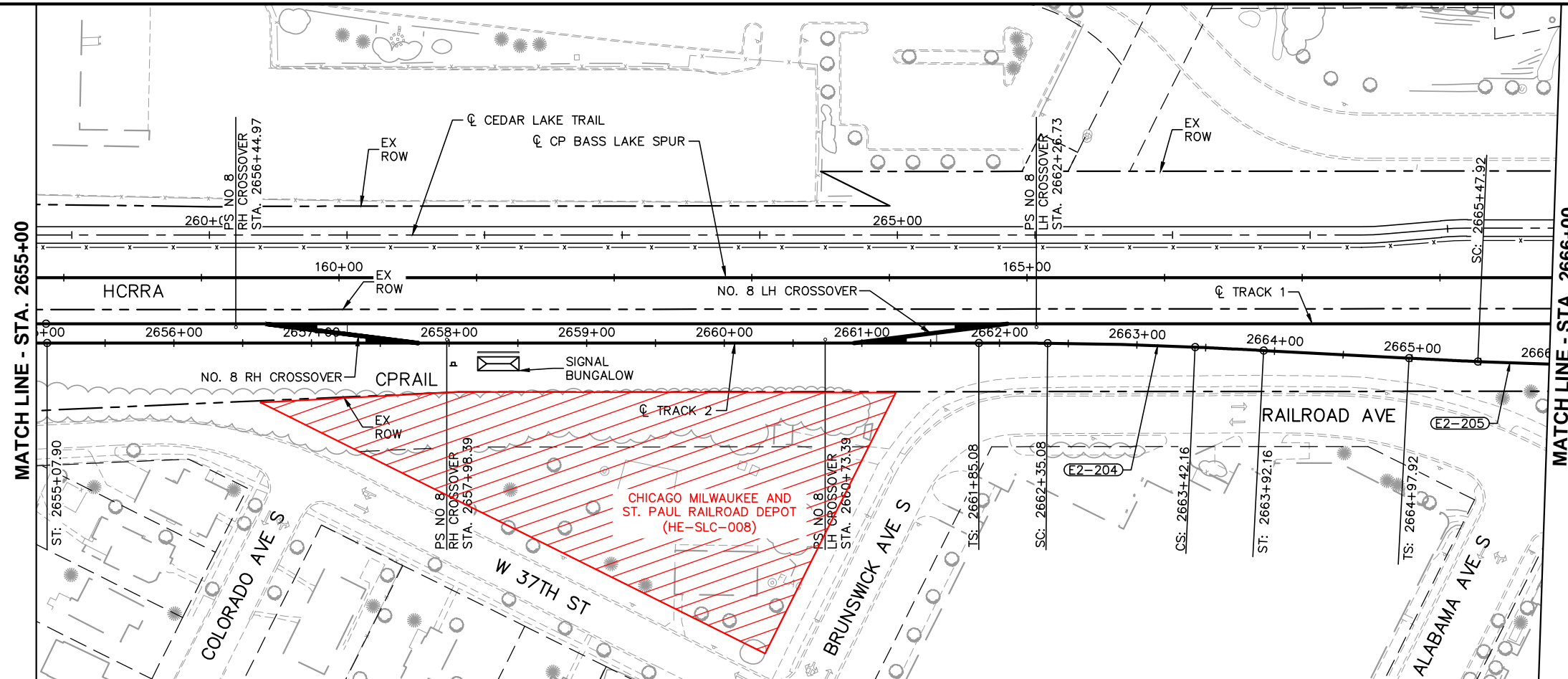
SHEET  
42  
OF  
113

CURVE NO. E1-105
R = 10,000.00'
Lc = 180.41'
Ls = 80.00'
Ea = 0.00"
Eu = 1.20"
V = 55 MPH

CURVE NO. E1-205
R = 10,014.00'
Lc = 180.78'
Ls = 80.00'
Ea = 0.00"
Eu = 1.20"
V = 55 MPH

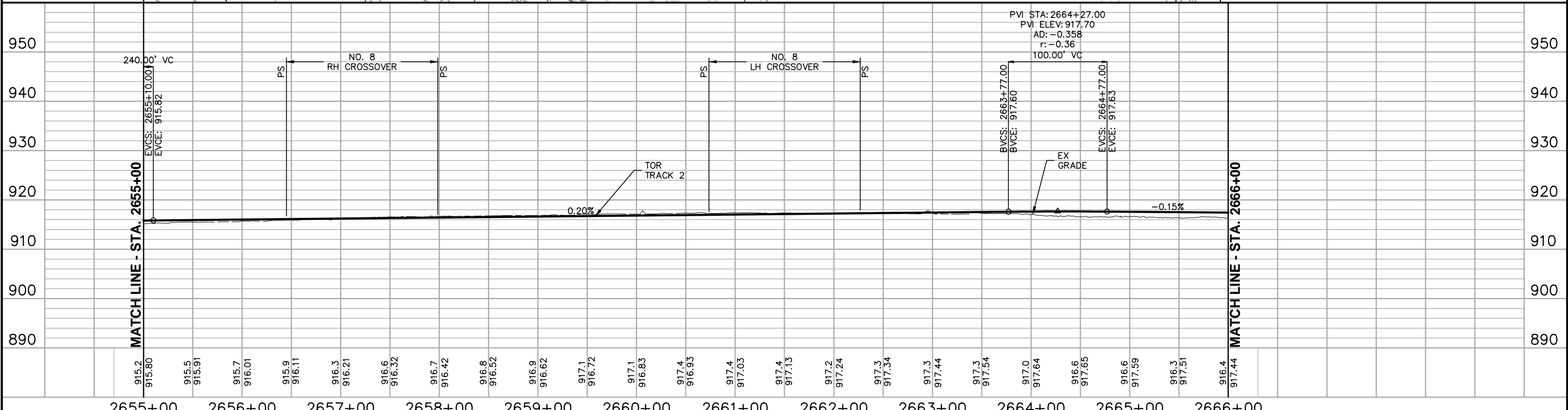
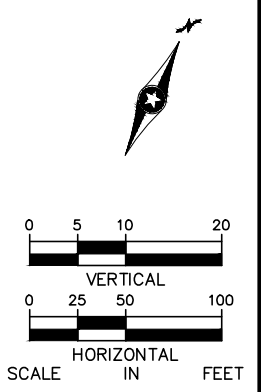


Nov. 07 2014 09:05 am V:\3300_PEC-E\CAD\SEGMENT E2\EXHIBITS\CIVIL\SHPO\E2-TRK-PPFL.dwg By: hope.wedge



CURVE NO. E2-204
R = 3,000.00'
Lc = 107.08'
Ls = 50.00'
Ea = 0.75"
Eu = 0.87"
V = 35 MPH

CURVE NO. E2-205
R = 3,000.00'
Lc = 107.08'
Ls = 50.00'
Ea = 0.75"
Eu = 0.87"
V = 35 MPH



NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

**Kimley-Horn**  
**SYSTRA**

PRELIMINARY ENGINEERING

**METROPOLITAN**  
COUNCIL

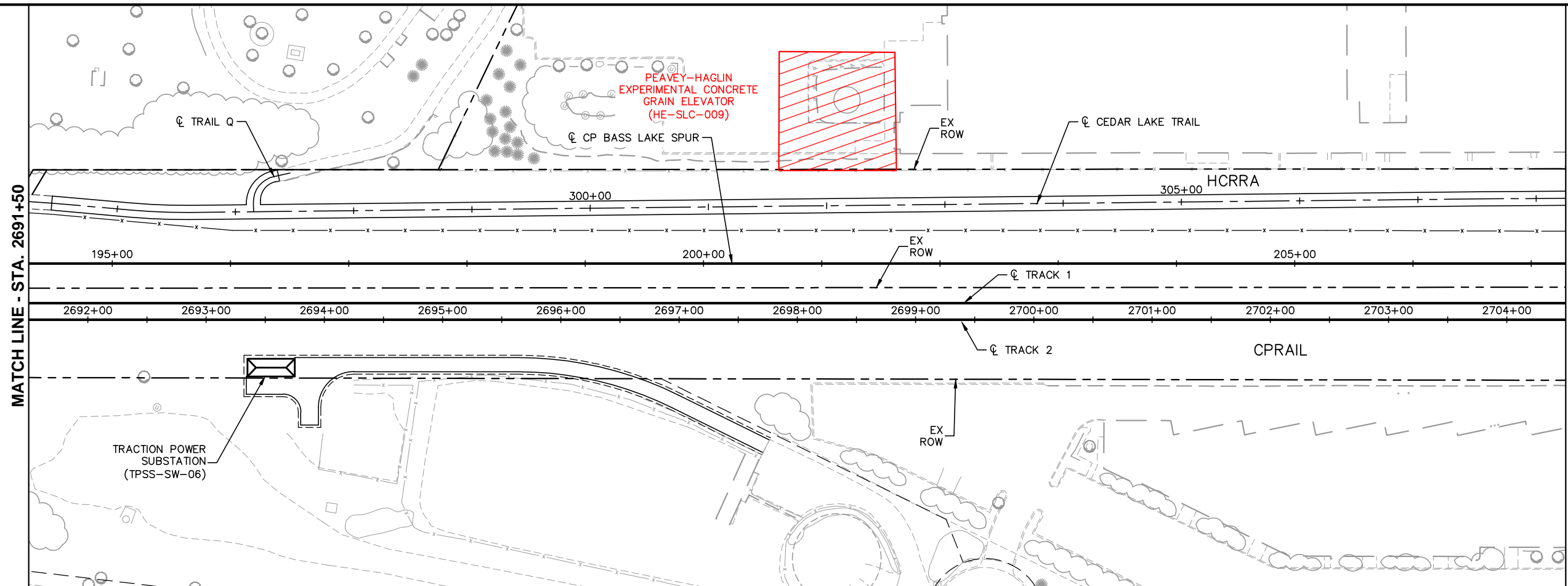
**SOUTHWEST**  
Green Line Light Extension

**EAST - VOLUME 1 (CIVIL) - SEGMENT 2**  
**TRACK**  
**PLAN AND PROFILE**  
**STA. 2655+00 TO STA. 2666+00**

DISCIPLINE: **TRACK**      SHEET NAME: **E2-TRK-PPFL - 006**

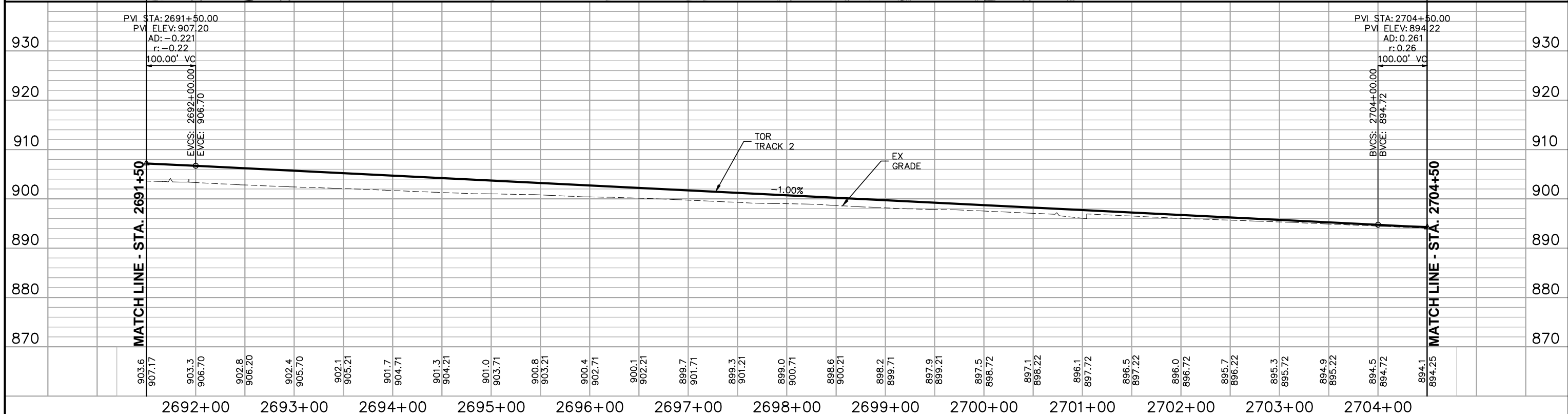
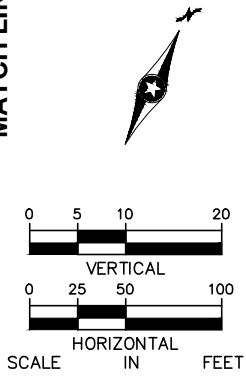
**SHEET**  
**56**  
**OF**  
**135**

Nov. 07 2014 09:06 am V:\3300_PEC-E\CAD\SEGMENT E2\EXHIBITS\CIVIL\SHPO\E2-TRK-PPFL.dwg By: hope.wedge



MATCH LINE - STA. 2704+50

MATCH LINE - STA. 2691+50



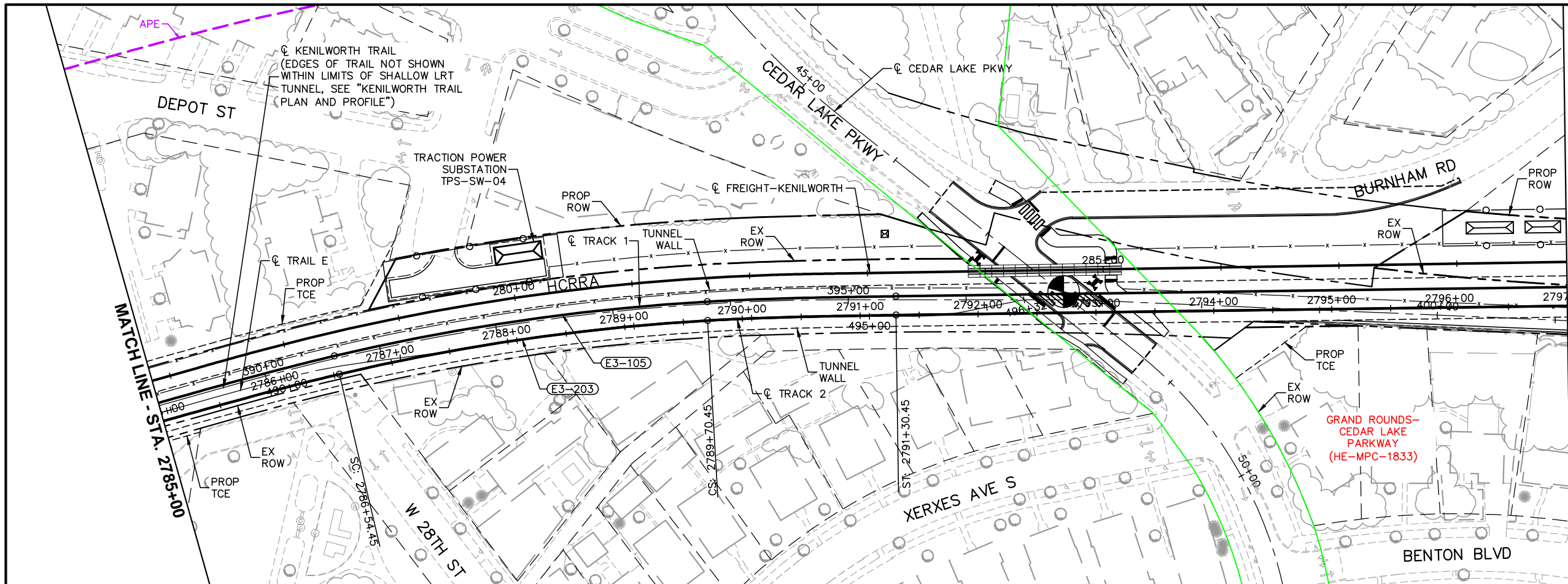
MATCH LINE - STA. 2704+50

MATCH LINE - STA. 2691+50

NO.	DATE	BY	CHECK DESIGN	REVISION / SUBMITTAL																				<b>EAST - VOLUME 1 (CIVIL) - SEGMENT 2</b> <b>TRACK</b> <b>PLAN AND PROFILE</b> <b>STA. 2691+50 TO STA. 2704+50</b>	<b>SHEET</b> <b>59</b> <b>OF</b> <b>135</b>
					<b>PRELIMINARY ENGINEERING</b>															<b>DISCIPLINE: TRACK</b>		<b>SHEET NAME: E2-TRK-PPFL - 009</b>			

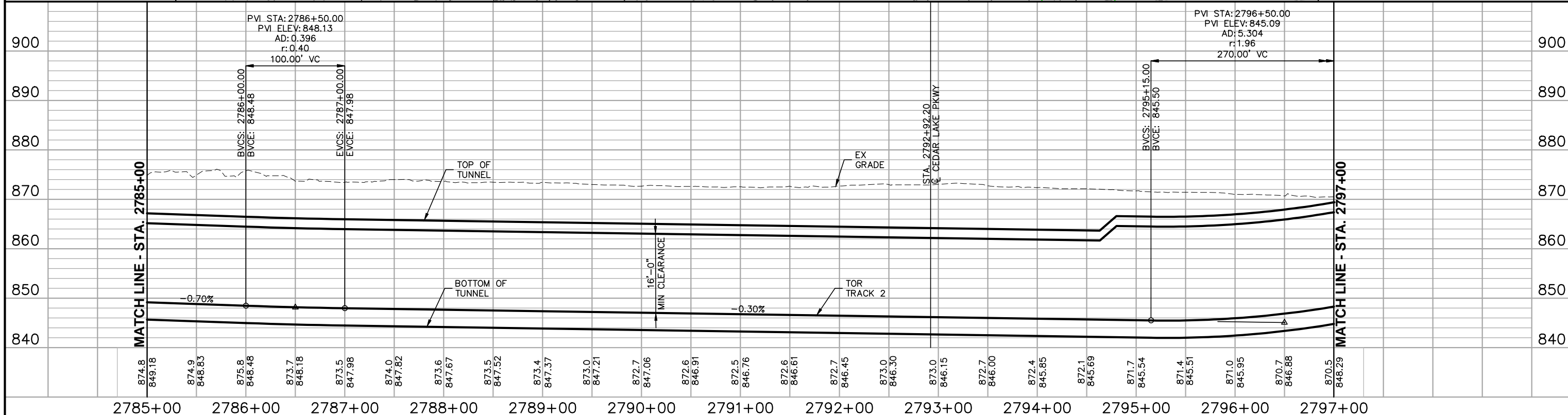
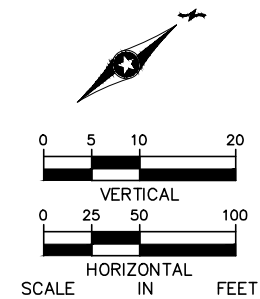


Nov. 07 2014 08:54 am V:\3300_PEC-E\CAD\SEGMENT E3\EXHIBITS\CIVIL\SPHO\E3-TRK-PPFL.dwg By: hope.wedge



CURVE NO. E3-105
R = 1,836.00'
Lc = 320.19'
Ls = 160.00'
Ea = 2.25"
Eu = 2.12"
V = 45 MPH

CURVE NO. E3-203
R = 1,820.00'
Lc = 316.00'
Ls = 160.00'
Ea = 2.25"
Eu = 2.16"
V = 45 MPH



NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL



**Kimley-Horn**  
**SYSTRA**  
PRELIMINARY ENGINEERING



**EAST - VOLUME 1 (CIVIL) - SEGMENT 3**  
**TRACK**  
**PLAN AND PROFILE**  
**STA. 2785+00 TO STA. 2797+00**  
DISCIPLINE: TRACK  
SHEET NAME: E3-TRK-PPFL - 005

SHEET  
50  
OF  
126

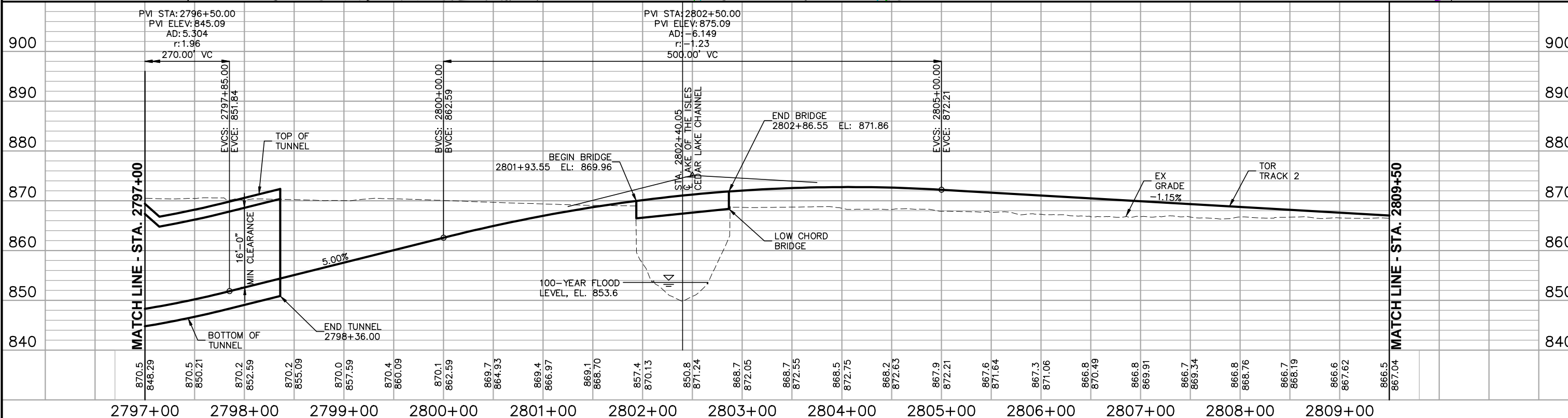
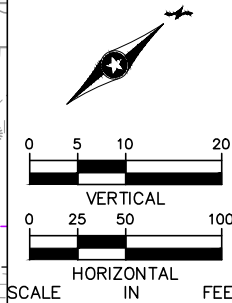
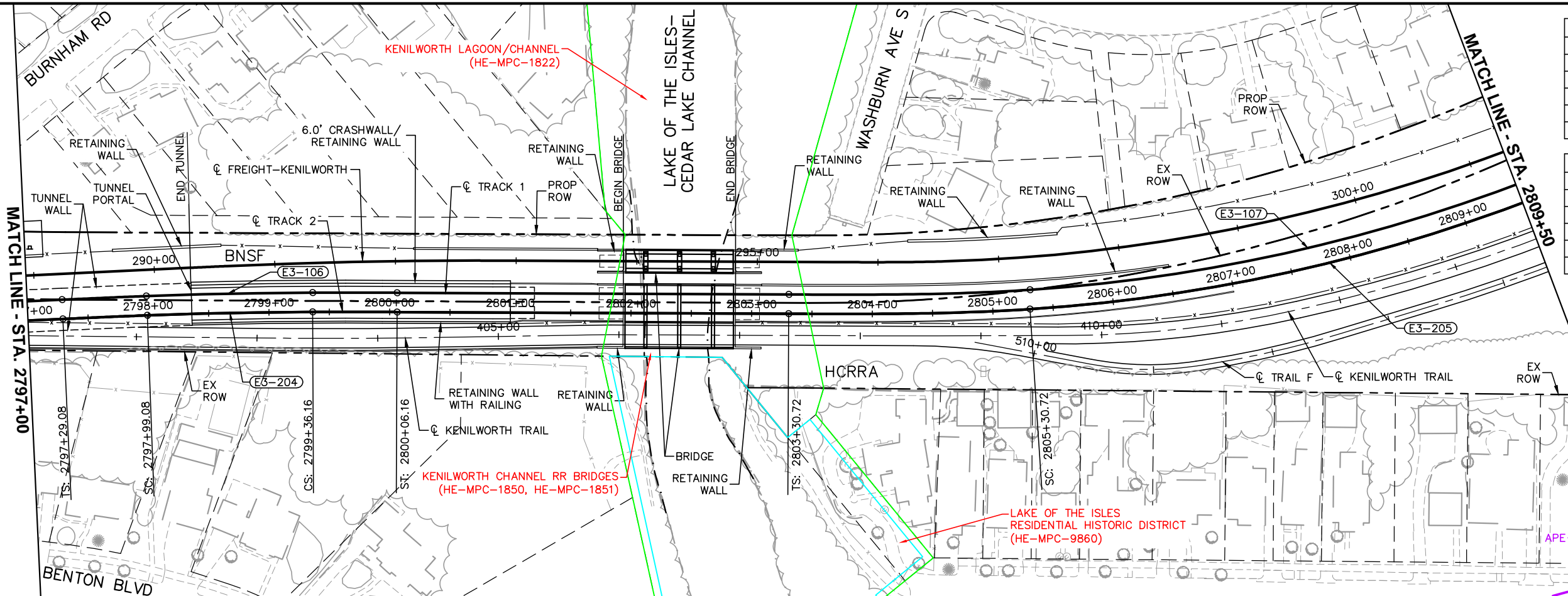
Nov. 07 2014 08:54 am V:\3300_PEC-E\CAD\SEGMENT E3\EXHIBITS\CIVIL\SPHO\E3-TRK-PPFL.dwg By: hope.wedge

CURVE NO. E3-106
R = 4,136.00'
Lc = 137.89'
Ls = 70.00'
Ea = 1.00"
Eu = 0.94"
V = 45 MPH

CURVE NO. E3-204
R = 4,120.00'
Lc = 137.08'
Ls = 70.00'
Ea = 1.00"
Eu = 0.95"
V = 45 MPH

CURVE NO. E3-107
R = 1,410.00'
Lc = 518.12'
Ls = 200.00'
Ea = 3.00"
Eu = 2.69"
V = 45 MPH

CURVE NO. E3-205
R = 1,426.00'
Lc = 526.27'
Ls = 200.00'
Ea = 3.00"
Eu = 2.62"
V = 45 MPH



NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL


**Kimley»Horn**  
**SYSTRA**

PRELIMINARY ENGINEERING

**METROPOLITAN**  
C O U N C I L

**SOUTHWEST**  
Green Line LRT Extension

**EAST - VOLUME 1 (CIVIL) - SEGMENT 3**  
**TRACK**  
**PLAN AND PROFILE**  
**STA. 2797+00 TO STA. 2809+50**

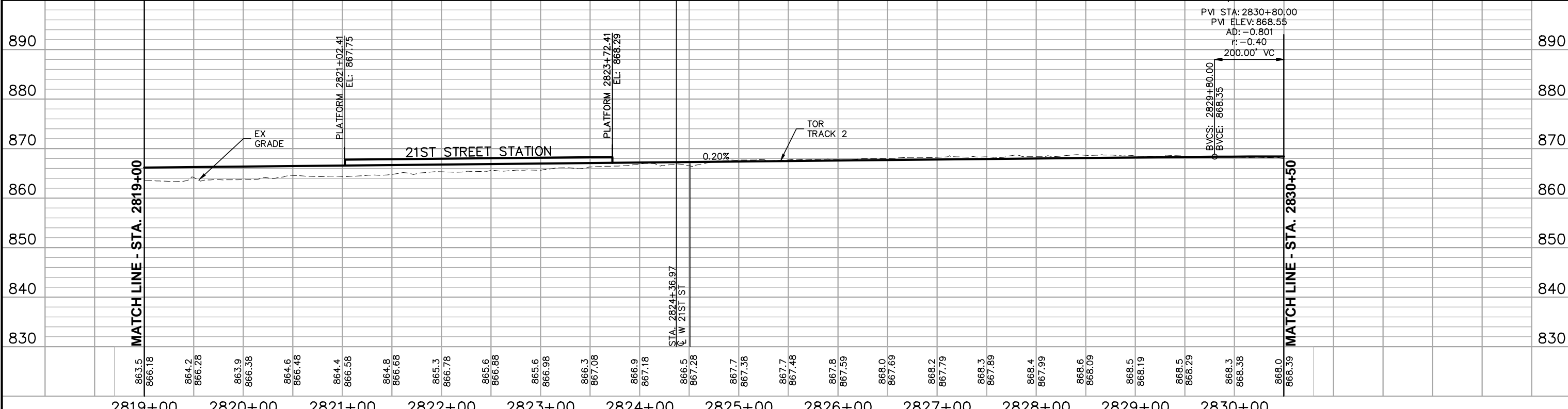
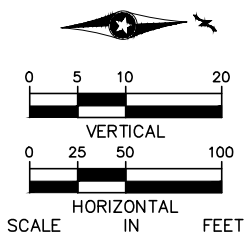
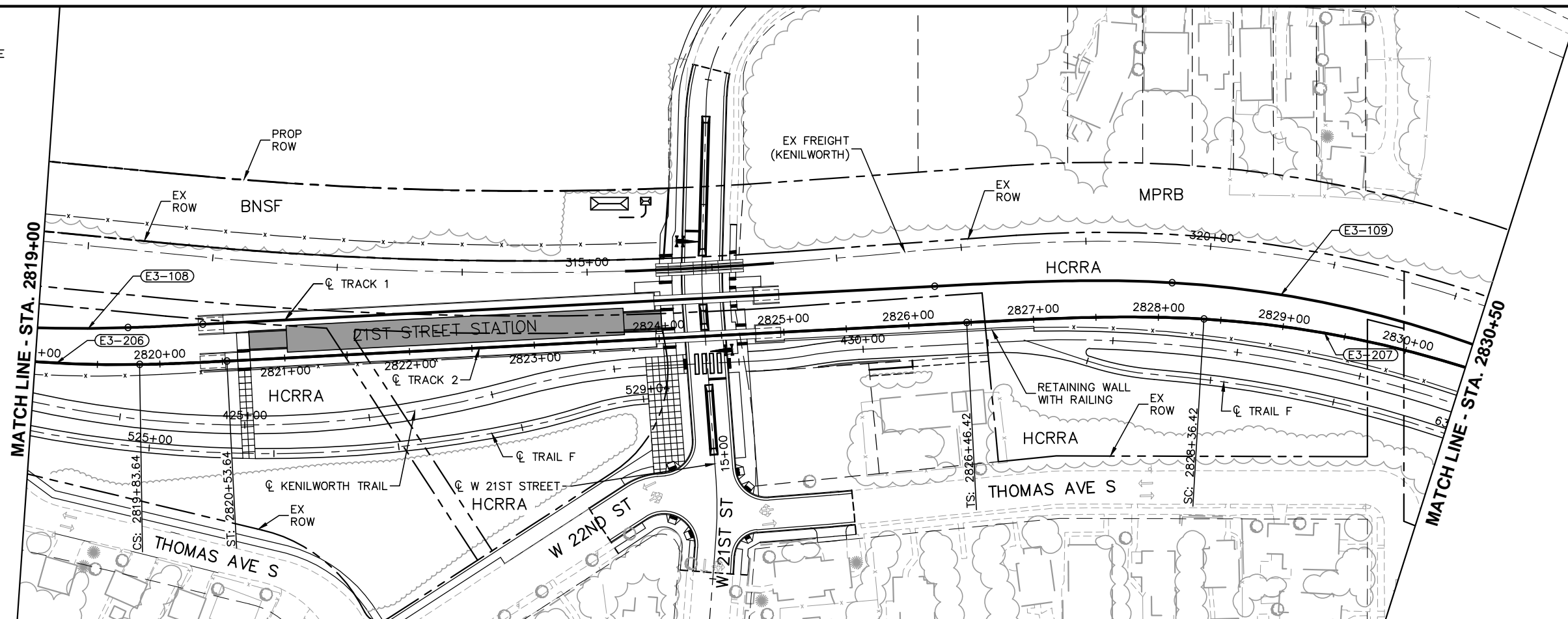
DISCIPLINE: **TRACK**      SHEET NAME: **E3-TRK-PPFL - 006**

SHEET  
51  
OF  
126

SEE SHEET 52 FOR  
CURVE 108 AND CURVE  
206 DATA

CURVE NO. E3-109
R = 860.00'
Lc = 266.96'
Ls = 190.00'
Ea = 3.50"
Eu = 3.87"
V = 40 MPH

CURVE NO. E3-207
R = 860.00'
Lc = 266.96'
Ls = 190.00'
Ea = 3.50"
Eu = 3.87"
V = 40 MPH



NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

**Kimley»Horn**  
**SYSTRA**  
PRELIMINARY ENGINEERING

**METROPOLITAN**  
COUNCIL  
**SOUTHWEST**  
Green Line Light Extension

**EAST - VOLUME 1 (CIVIL) - SEGMENT 3**  
**TRACK**  
**PLAN AND PROFILE**  
**STA. 2819+00 TO STA. 2830+50**

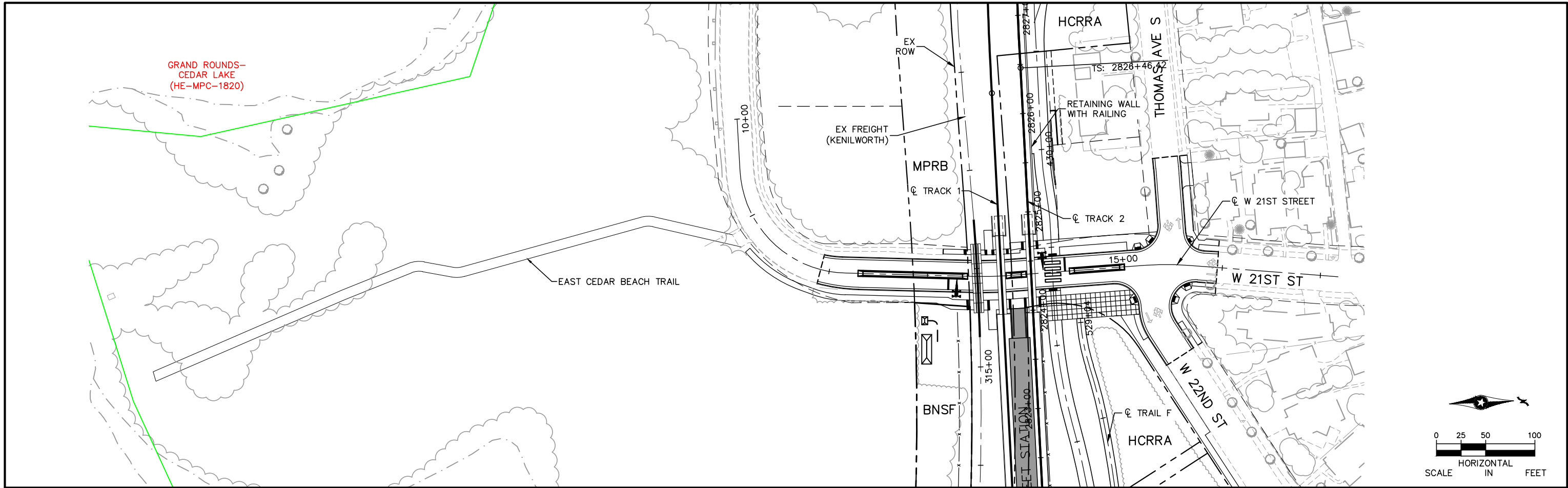
DISCIPLINE: TRACK      SHEET NAME: E3-TRK-PPFL - 008

SHEET  
53  
OF  
126

Nov. 07 2014 08:55 am V:\3300_PEC-E\CAD\SEGMENT E3\EXHIBITS\CIVIL\SPHO\E3-TRK-PPFL.dwg By: hope.wedge



Nov. 07 2014 08:55 am v:\3300_PEC-E\CAD\SEGMENT E3\EXHIBITS\CIVIL\SPHO\E3-TRK-PPFL.dwg By: hope.wedge



NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL



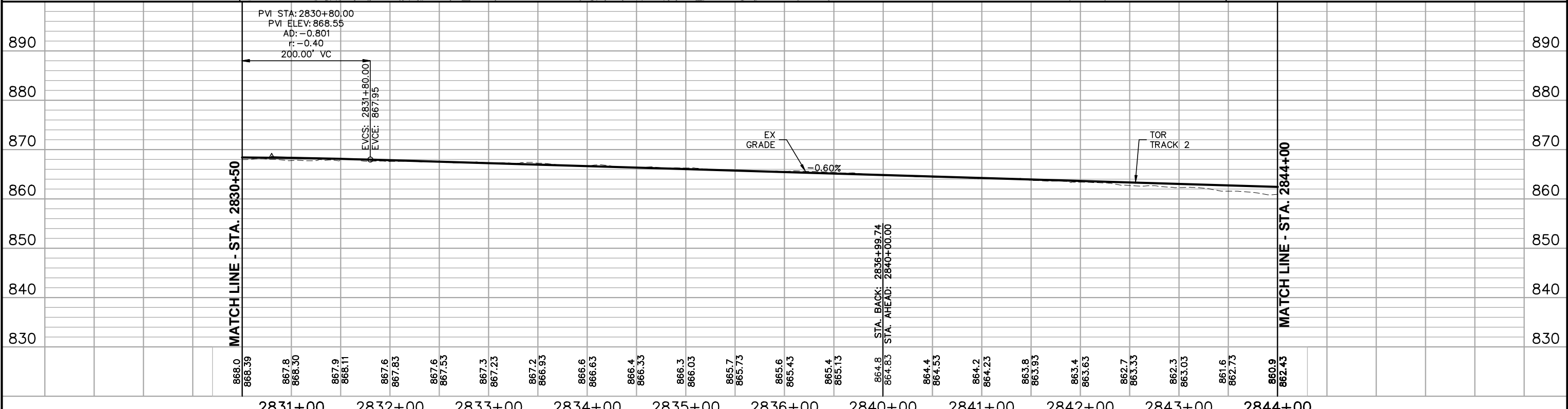
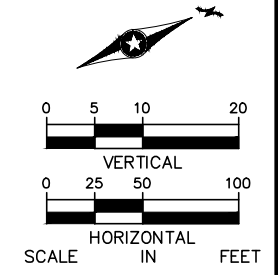
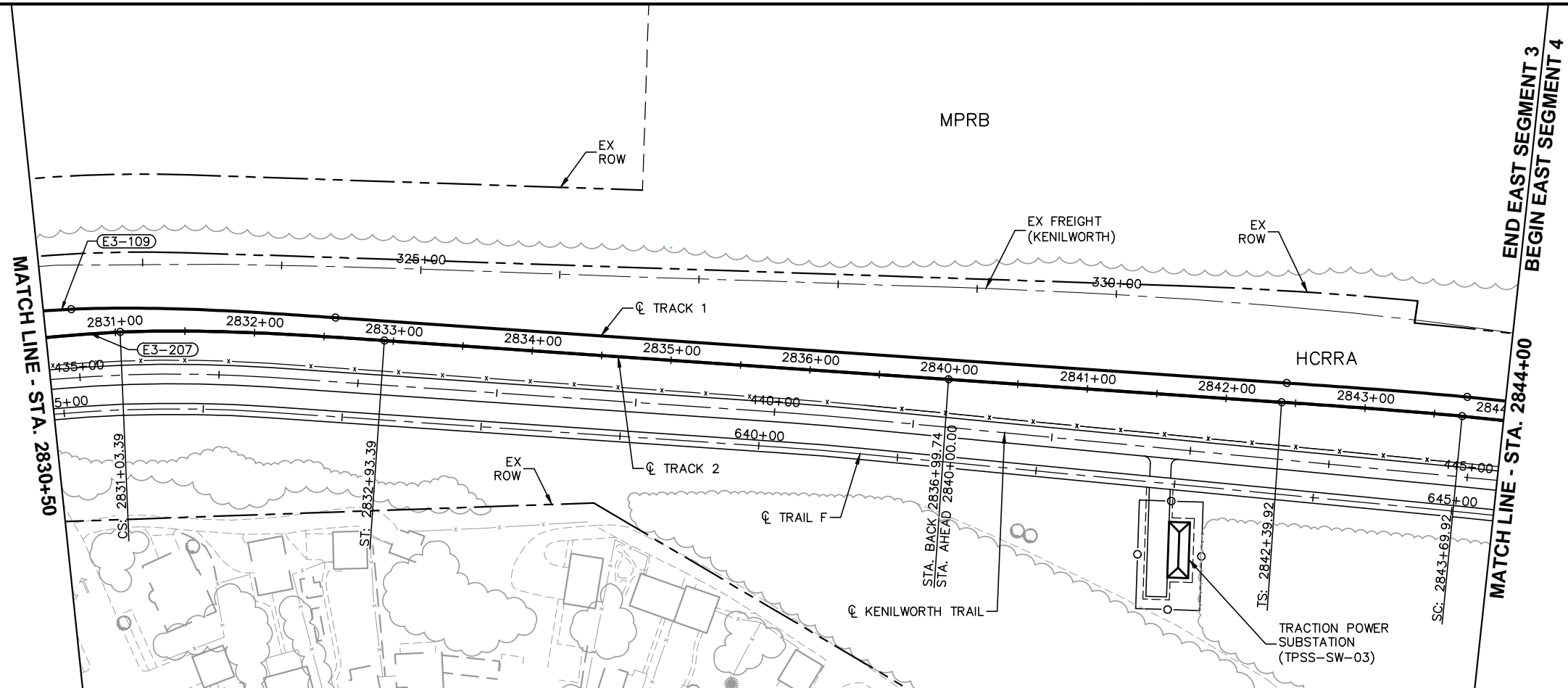
  
**SYSTRA**  
 PRELIMINARY ENGINEERING

  
**METROPOLITAN COUNCIL**  
  
**SOUTHWEST**  
 Green Line Light Extension

**EAST - VOLUME 1 (CIVIL) - SEGMENT 3**  
**CIVIL**  
**EAST CEDAR BEACH TRAIL**  
 DISCIPLINE: **CIVIL**  
 SHEET NAME: **E3-TRK-PPFL - 011**

**SHEET**  
 53A  
 OF  
 126

SEE SHEET 53 FOR  
CURVE 109 AND CURVE  
207 DATA



NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

**Kimley»Horn**  
**SYSTRA**  
PRELIMINARY ENGINEERING

**METROPOLITAN**  
C O U N C I L  
**SOUTHWEST**  
Green Line Light Extension

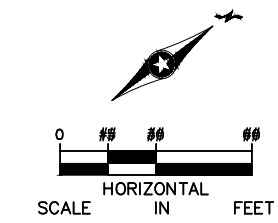
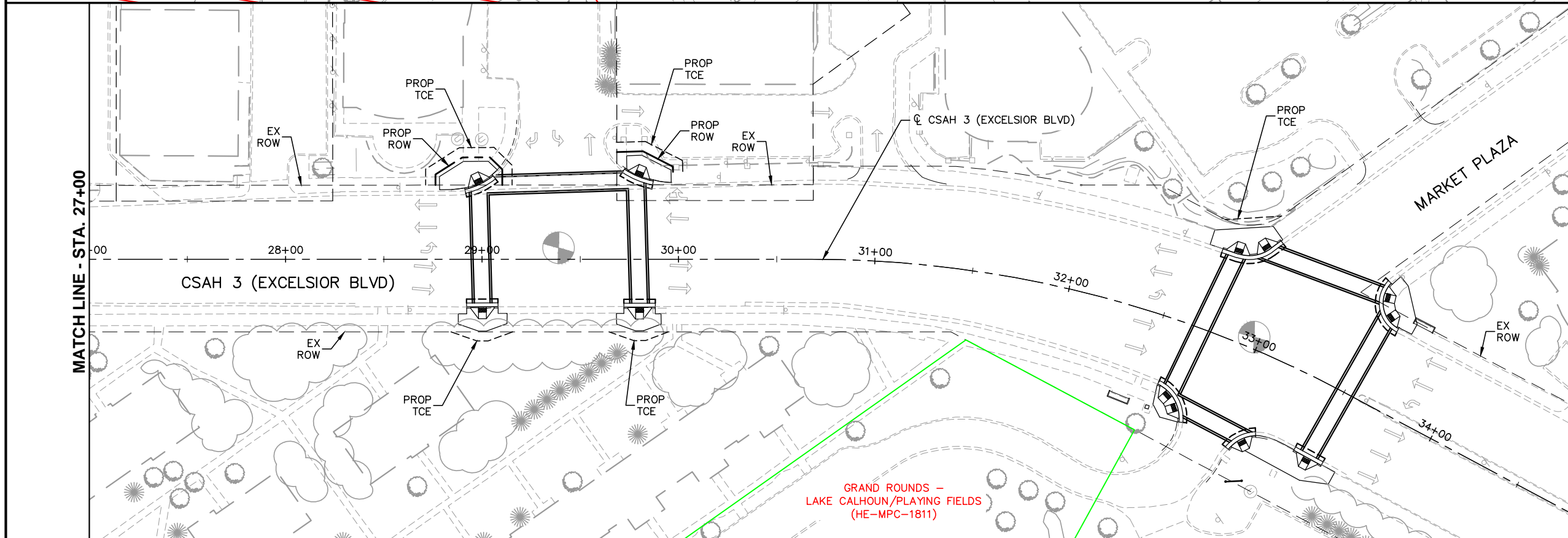
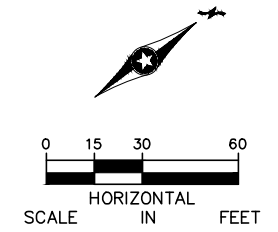
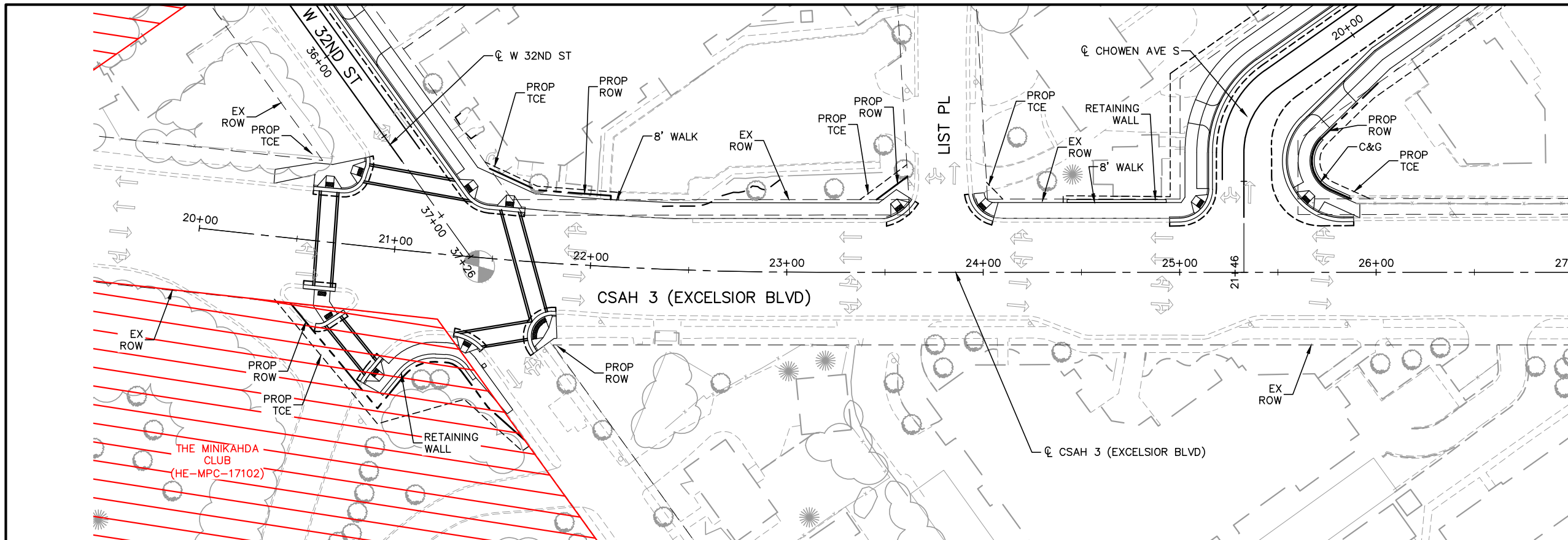
**EAST - VOLUME 1 (CIVIL) - SEGMENT 3**  
**TRACK**  
**PLAN AND PROFILE**  
**STA. 2830+50 TO STA. 2844+00**

DISCIPLINE: TRACK      SHEET NAME: E3-TRK-PPFL - 009

SHEET  
54  
OF  
126

Nov. 07 2014 08:56 am V:\3300_PEC-E\CAD\SEGMENT E3\EXHIBITS\CIVIL\SPHO\E3-TRK-PPFL.dwg By: hope.wedge

Nov. 07 2014 08:57 am v:\3300_PEC-E\CAD\SEGMENT E3\EXHIBITS\CIVIL\SPHO\E3-TRK-PPFL.dwg By: hope.wedge



NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

**Kimley»Horn**  
**SYSTRA**  
PRELIMINARY ENGINEERING

**METROPOLITAN**  
COUNCIL  
**SOUTHWEST**  
Green Line Light Extension

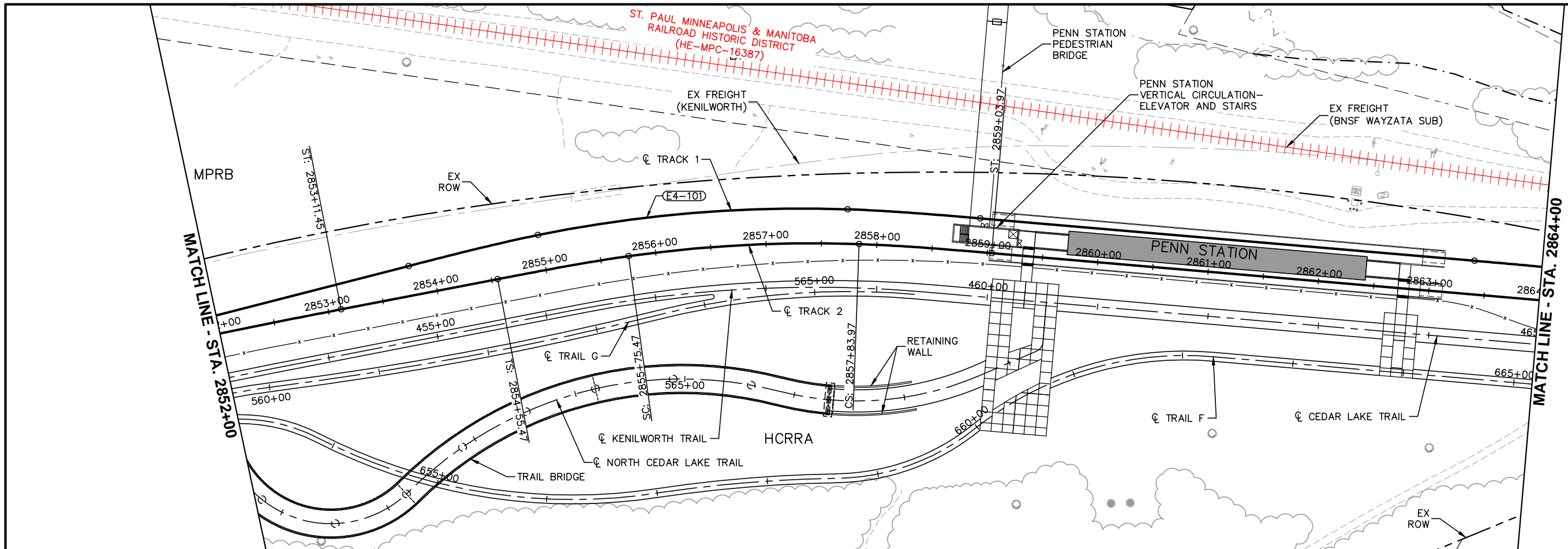
**EAST - VOLUME 1 (CIVIL) - SEGMENT 3**  
**CIVIL**  
**CSAH 3 (EXCELSIOR BLVD)**  
**STA. 20+00 TO STA. 34+00**

DISCIPLINE: **CIVIL** SHEET NAME: **E3-TRK-PPFL - 010**

SHEET  
54A  
OF  
126

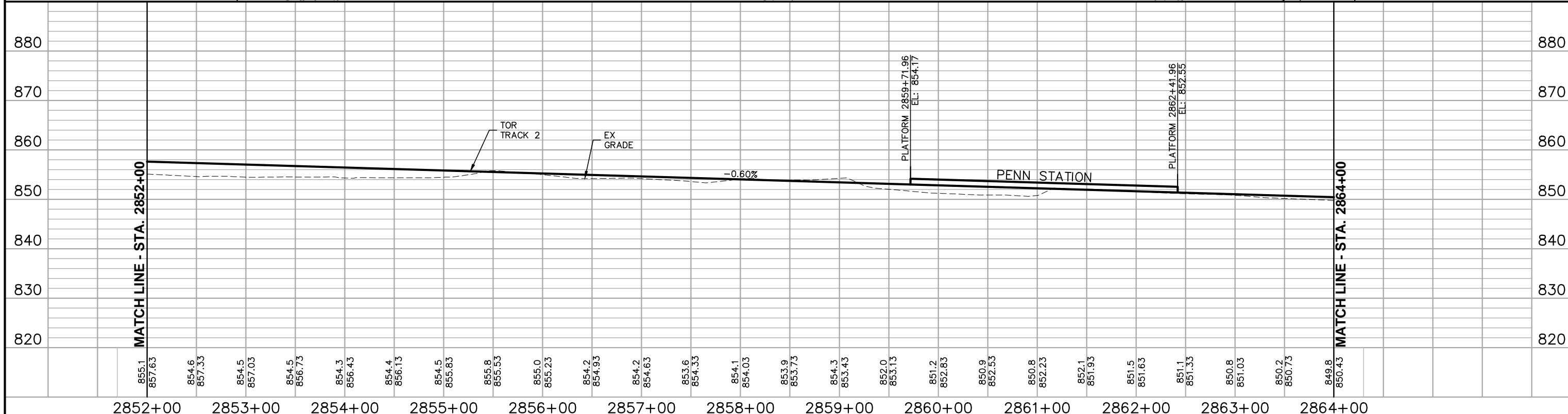
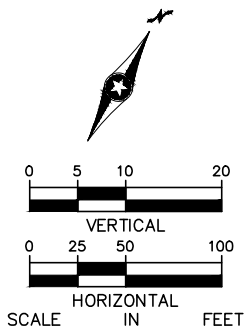


Nov. 07 2014 08:28 am V:\3300_PEC-E\CAD\SEGMENT E4\EXHIBITS\CIVIL\SHPO\E4-TRK-PPFL.dwg By: hope.wedge



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



NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

855.1 857.63	854.6 857.33	854.5 857.03	854.5 856.73	854.3 856.43	854.4 856.13	854.5 855.83	855.8 855.53	855.0 855.23	854.2 854.93	854.2 854.63	853.6 854.33	854.1 854.03	853.9 853.73	854.3 853.43	852.0 853.13	851.2 852.83	850.9 852.53	850.8 852.23	852.1 851.93	851.5 851.63	851.1 851.33	850.8 851.03	850.2 850.73	849.8 850.43
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**Kimley»Horn**  
**SYSTRA**

PRELIMINARY ENGINEERING

**METROPOLITAN**  
C O U N C I L

**SOUTHWEST**  
Green Line Light 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**

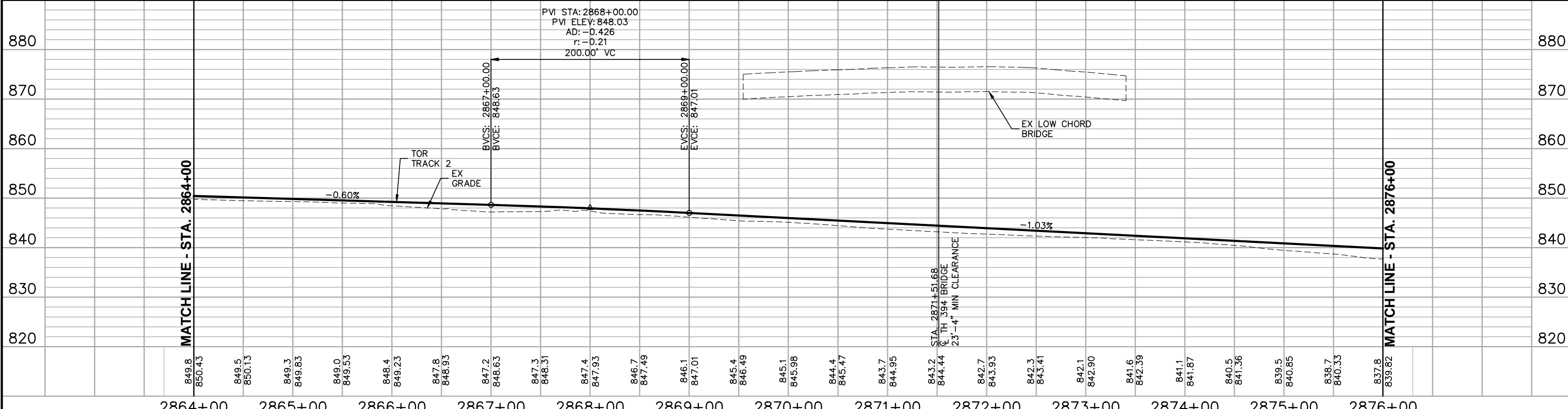
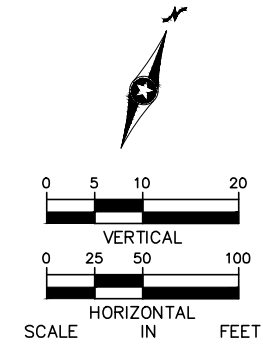
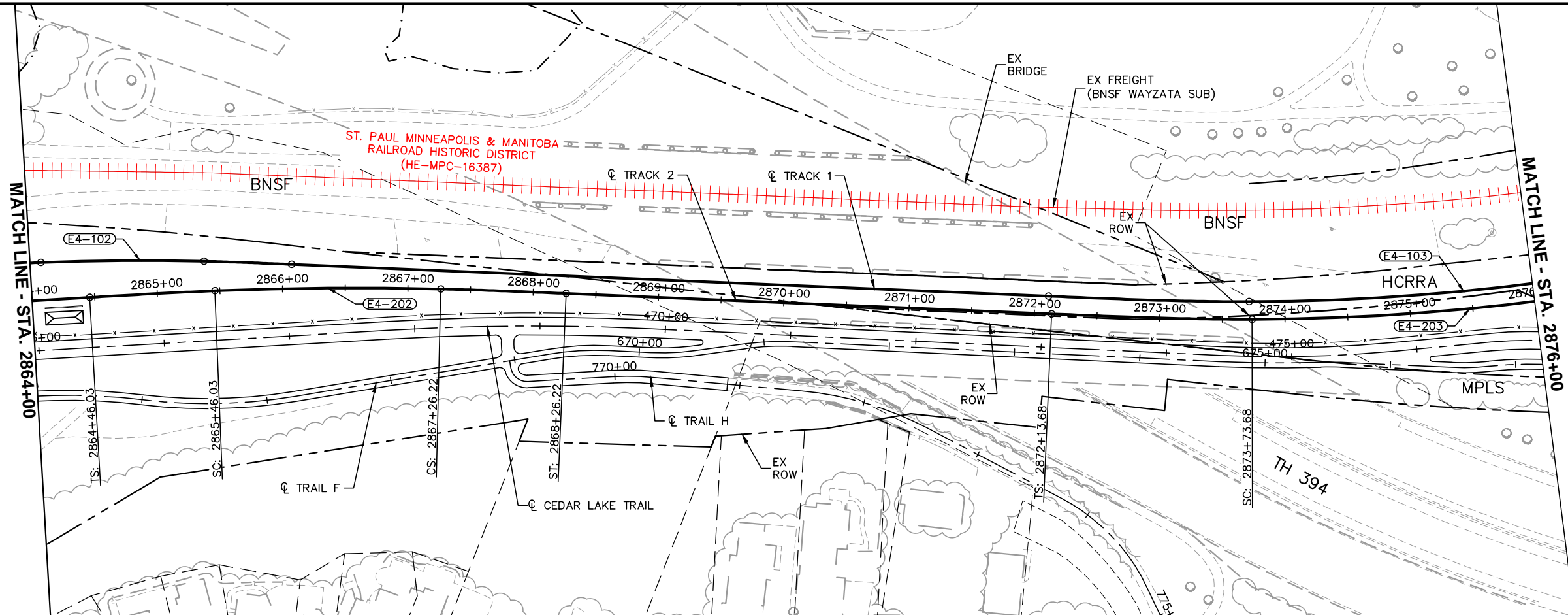
SHEET  
**64**  
OF  
**163**

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



NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

**Kimley»Horn**  
**SYSTRA**  
PRELIMINARY ENGINEERING

**METROPOLITAN**  
COUNCIL  
**SOUTHWEST**  
Green Line Light Extension

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

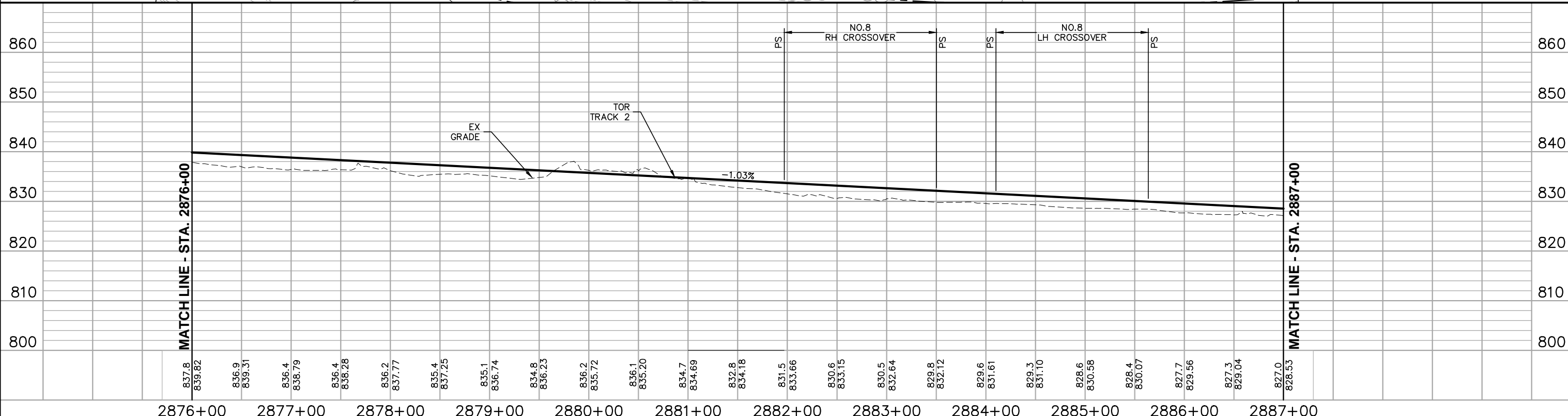
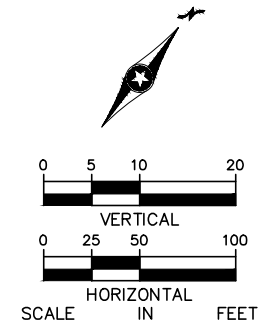
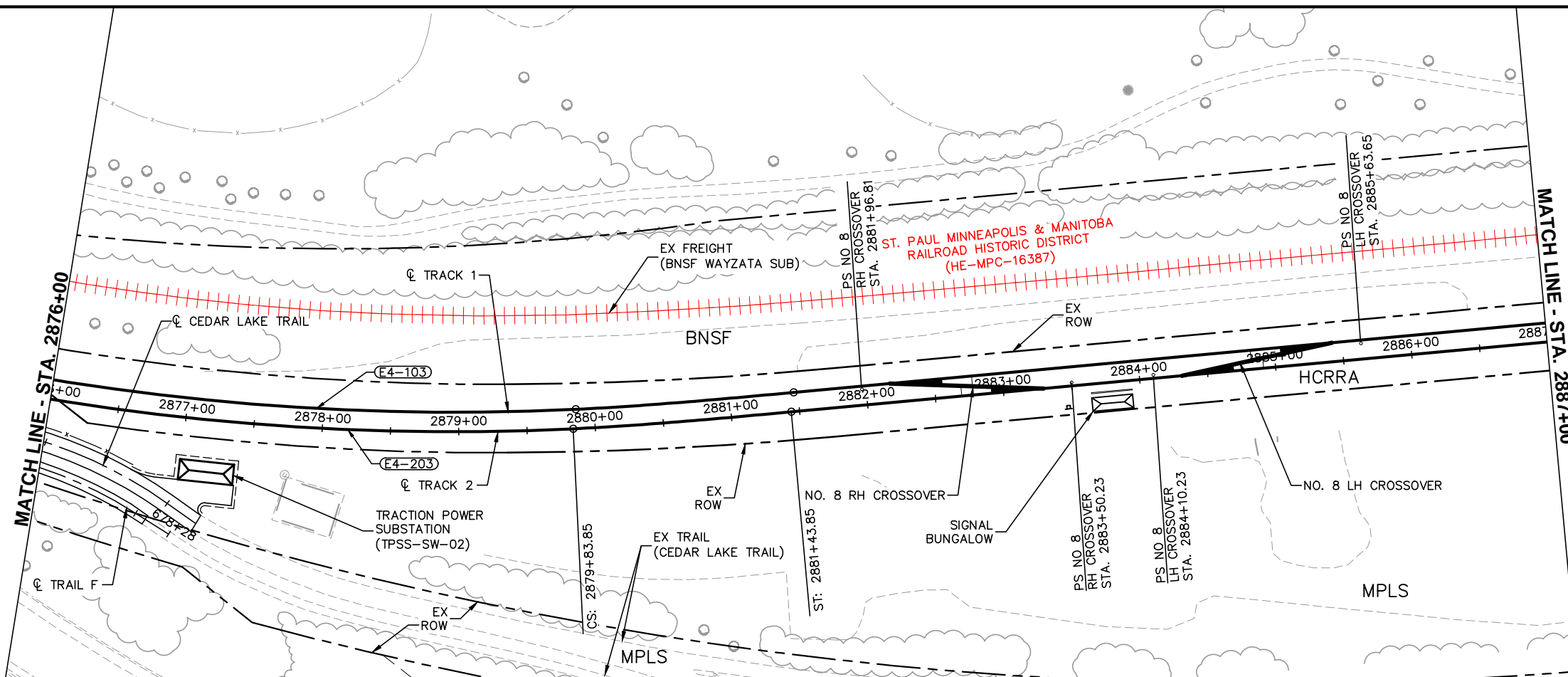
DISCIPLINE: **TRACK**      SHEET NAME: **E4-TRK-PPFL - 003**

SHEET  
**65**  
OF  
**163**


Nov. 07 2014 08:29 am V:\3300_PEC-E\CAD\SEGMENT E4\EXHIBITS\CIVIL\SHPO\E4-TRK-PPFL.dwg By: hope.wedge




SEE SHEET 65 FOR  
CURVE 103 AND CURVE  
203 DATA



NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL



**PRELIMINARY ENGINEERING**



**SOUTHWEST**  
Green Line Light Extension

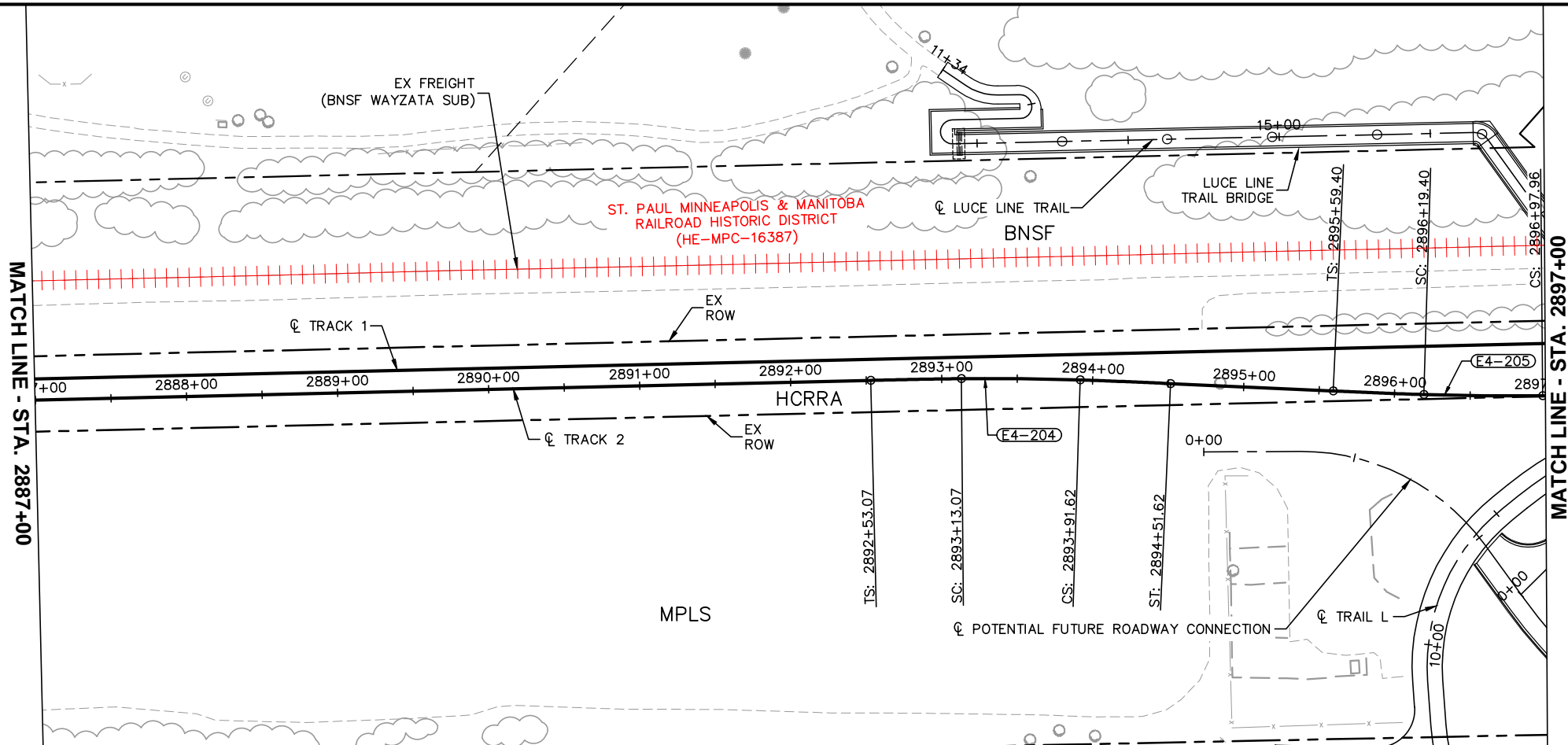
**EAST - VOLUME 1 (CIVIL) - SEGMENT 4**  
**TRACK**  
**PLAN AND PROFILE**  
**STA. 2876+00 TO STA. 2887+00**

DISCIPLINE: **TRACK**      SHEET NAME: **E4-TRK-PPFL - 004**

**SHEET**  
**66**  
**OF**  
**163**

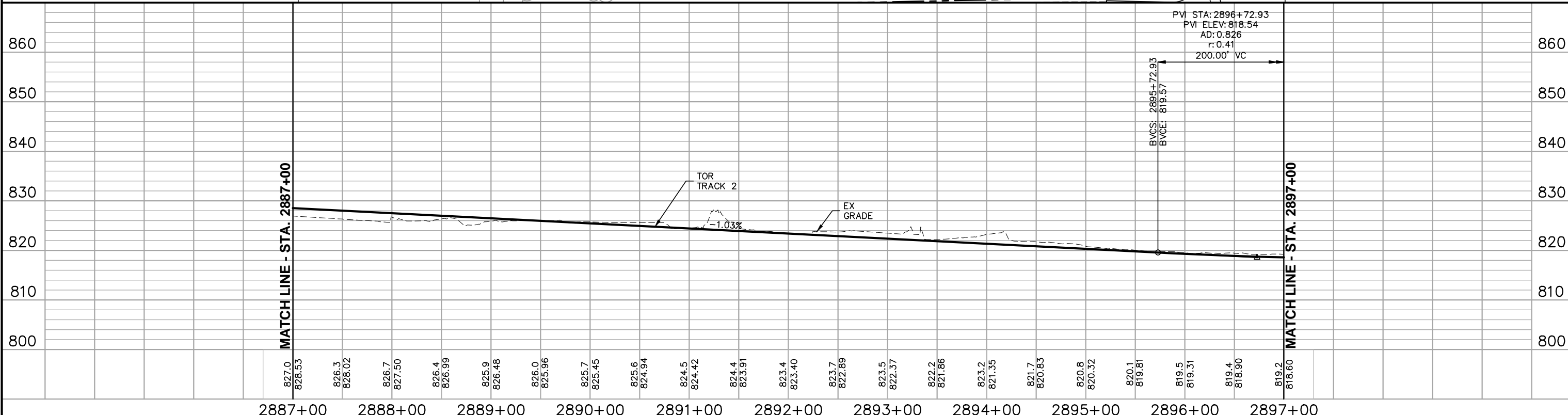
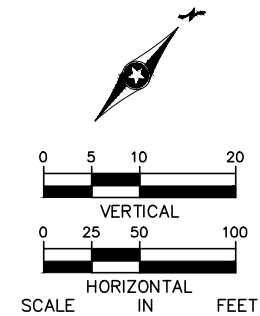
Nov. 07 2014 08:29 am V:\3300_PEC-E\CAD\SEGMENT E4\EXHIBITS\CIVIL\SHPO\E4-TRK-PPFL.dwg By: hope.wedge

Nov. 07 2014 08:30 am V:\3300_PEC-E\CAD\SEGMENT E4\EXHIBITS\CIVIL\SHPO\E4-TRK-PPFL.dwg By: hope.wedge



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



NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

2887+00
2888+00
2889+00
2890+00
2891+00
2892+00
2893+00
2894+00
2895+00
2896+00
2897+00

**Kimley»Horn**  
**SYSTRA**  
PRELIMINARY ENGINEERING

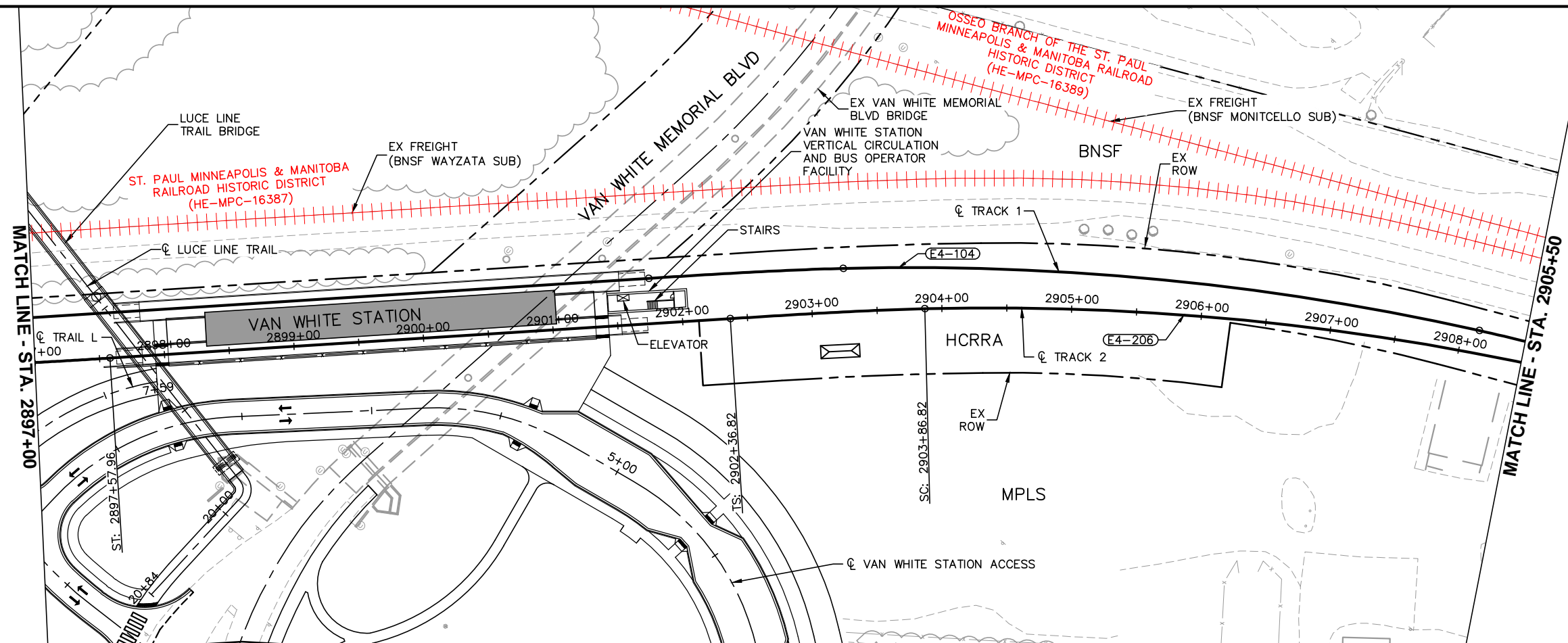
**METROPOLITAN**  
COUNCIL  
SOUTHWEST  
Green Line Light Extension

**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

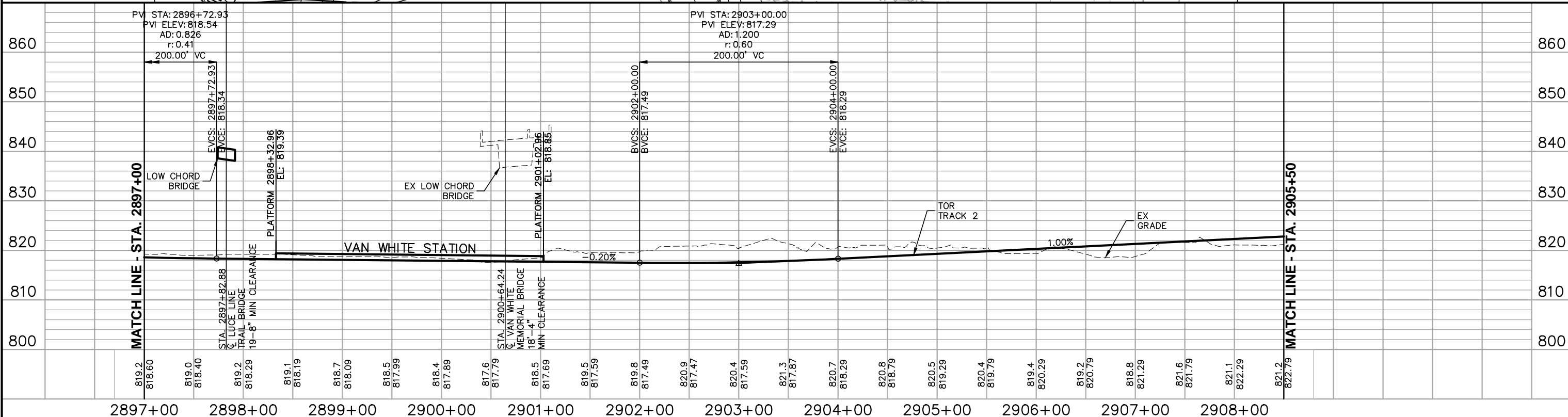
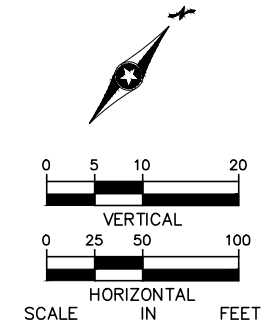
SHEET  
67  
OF  
163

Nov. 07 2014 08:30 am V:\3300_PEC-E\CAD\SEGMENT E4\EXHIBITS\CIVIL\SHPO\E4-TRK-PPFL.dwg By: hope.wedge



CURVE NO. E4-104
R = 2,000.00'
Lc = 493.67'
Ls = 150.00'
Ea = 2.00"
Eu = 2.01"
V = 45 MPH

CURVE NO. E4-206
R = 2,000.00'
Lc = 493.68'
Ls = 150.00'
Ea = 2.00"
Eu = 2.01"
V = 45 MPH



NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

**Kimley-Horn**  
**SYSTRA**

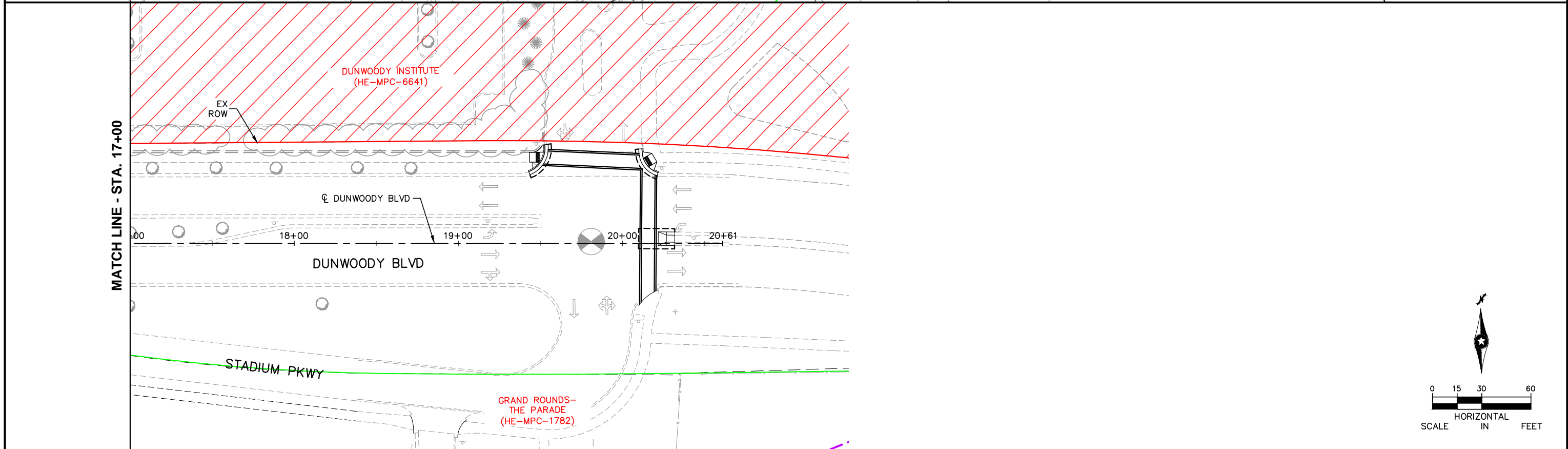
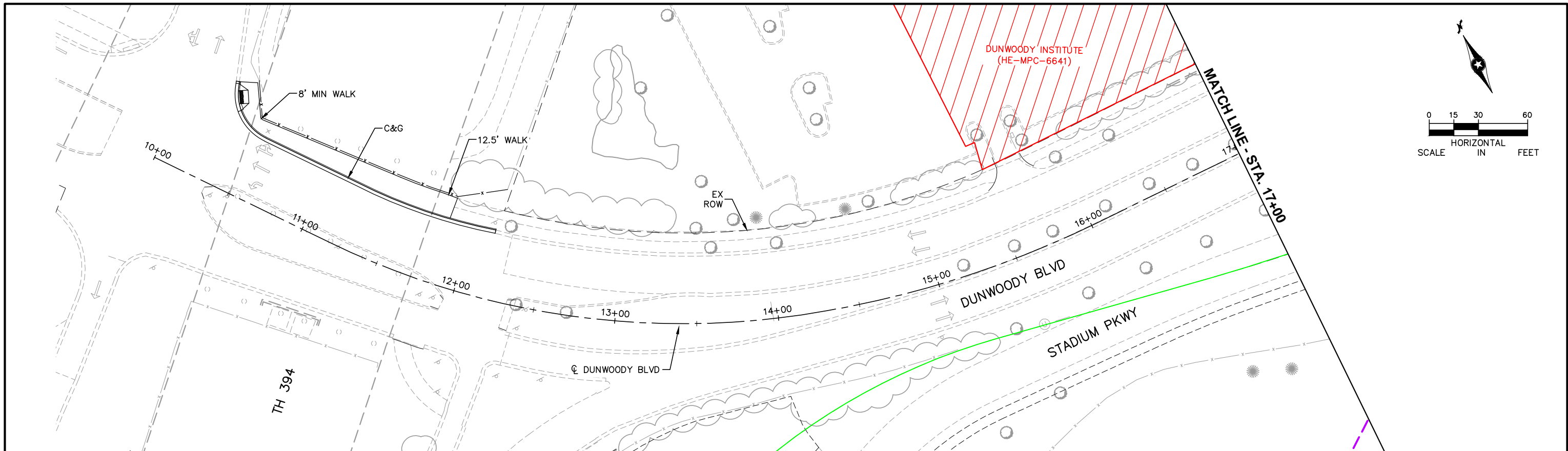
PRELIMINARY ENGINEERING

**METROPOLITAN**  
COUNCIL

**SOUTHWEST**  
Green Line LRT Extension

<b>EAST - VOLUME 1 (CIVIL) - SEGMENT 4</b>		<b>SHEET</b> 68 OF 163
<b>TRACK</b>		
<b>PLAN AND PROFILE</b>		
<b>STA. 2897+00 TO STA. 2905+50</b>		<b>DISCIPLINE:</b> TRACK
<b>SHEET NAME:</b> E4-TRK-PPFL - 006		

Nov. 07 2014 08:31 am v:\3300_PEC-E\CAD\SEGMENT E4\EXHIBITS\CIVIL\SHPO\E4-TRK-PPFL.dwg By: hope.wedge



NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

**Kimley»Horn**  
**SYSTRA**  
PRELIMINARY ENGINEERING

**METROPOLITAN**  
COUNCIL

**SOUTHWEST**  
Green Line Light Extension

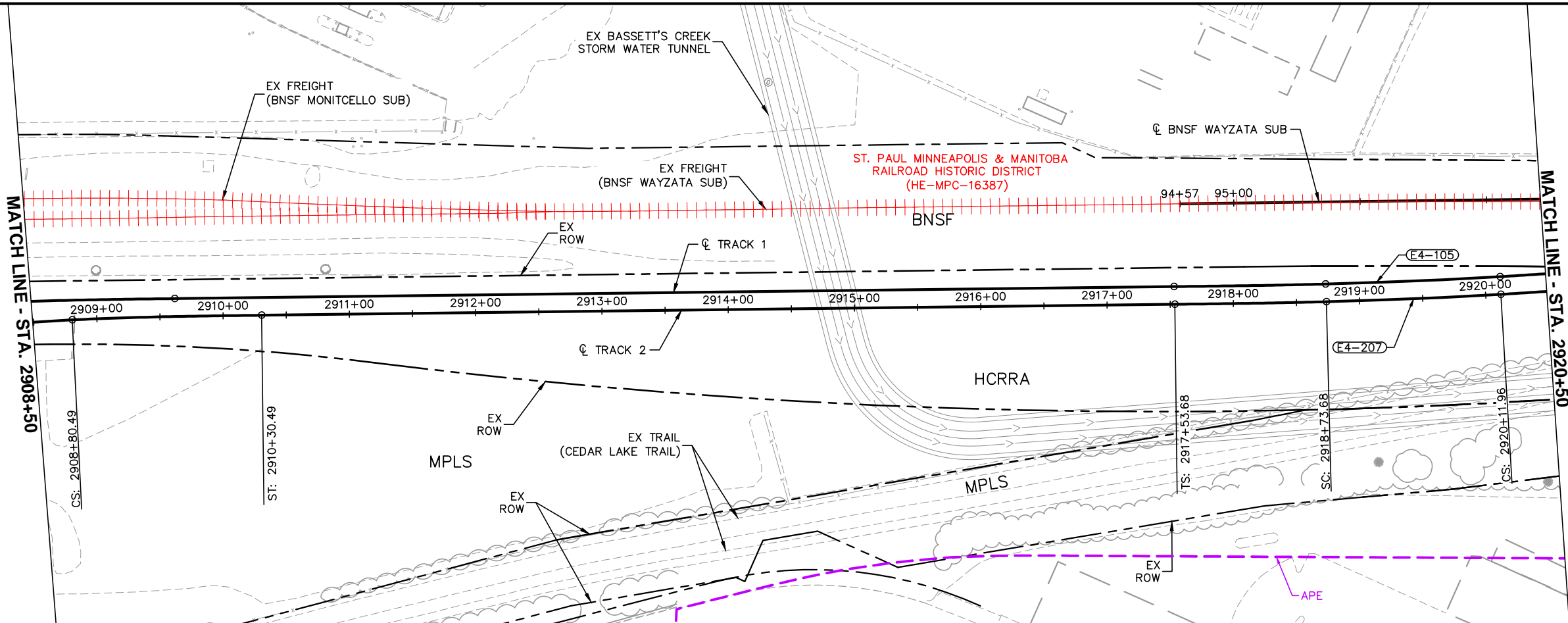
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**CIVIL**  
**DUNWOODY BLVD**  
**STA. 10+00 TO STA. 20+61**

DISCIPLINE: **TRACK**      SHEET NAME: **E4-TRK-PPFL - 012**

SHEET  
**68A**  
OF  
**163**

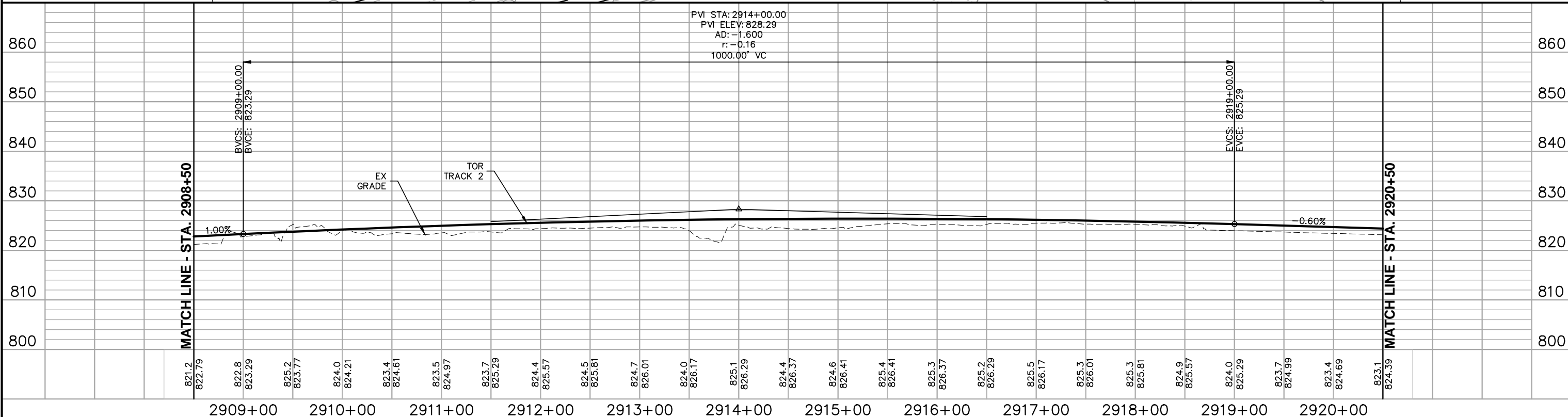
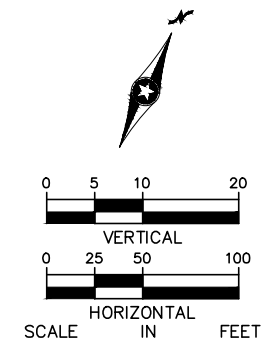


Nov. 07 2014 08:32 am V:\3300_PEC-E\CAD\SEGMENT E4\EXHIBITS\CIVIL\SHPO\E4-TRK-PPFL.dwg By: hope.wedge



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



NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

**Kimley»Horn**  
**SYSTRA**  
PRELIMINARY ENGINEERING

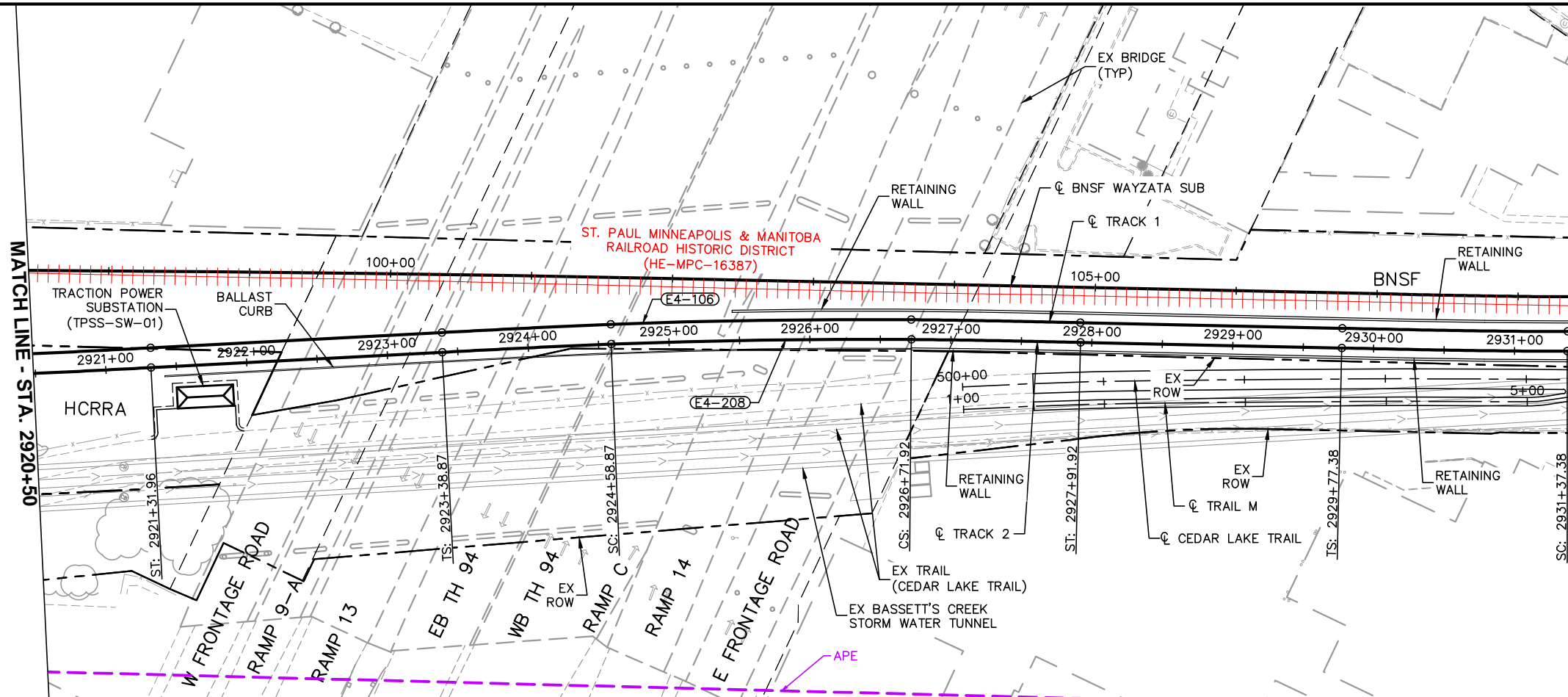
**METROPOLITAN**  
C O U N C I L  
**SOUTHWEST**  
Green Line LRT Extension

**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**

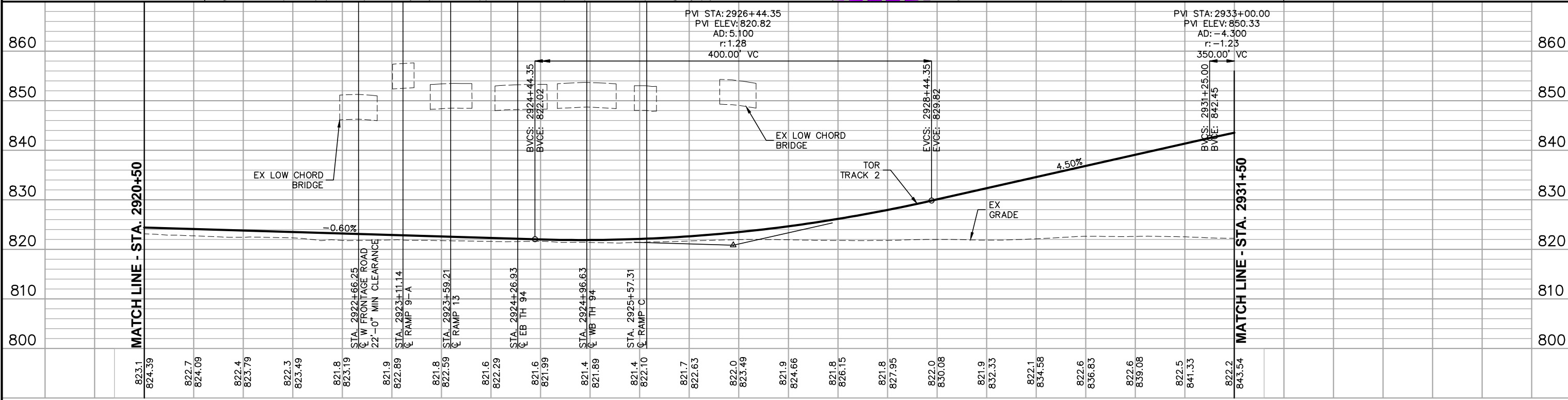
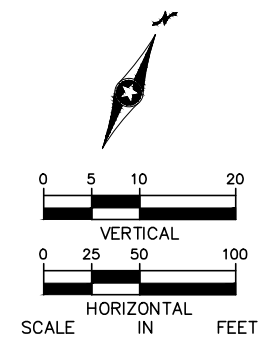
SHEET **69**  
OF  
**163**

Nov. 07 2014 08:32 am V:\3300_PEC-E\CAD\SEGMENT E4\EXHIBITS\CIVIL\SHPO\E4-TRK-PPFL.dwg By: hope.wedge



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



823.1	824.39	2921+00	822.7	824.09	2922+00	822.3	823.49	2923+00	821.6	822.29	2924+00	821.4	821.89	2925+00	821.7	822.63	2926+00	821.8	826.15	2927+00	821.9	824.66	2928+00	822.0	830.08	2929+00	822.1	834.58	2930+00	822.6	836.83	2931+00	822.5	841.33		822.2	843.54	
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NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

**Kimley»Horn**  
**SYSTRA**  
PRELIMINARY ENGINEERING

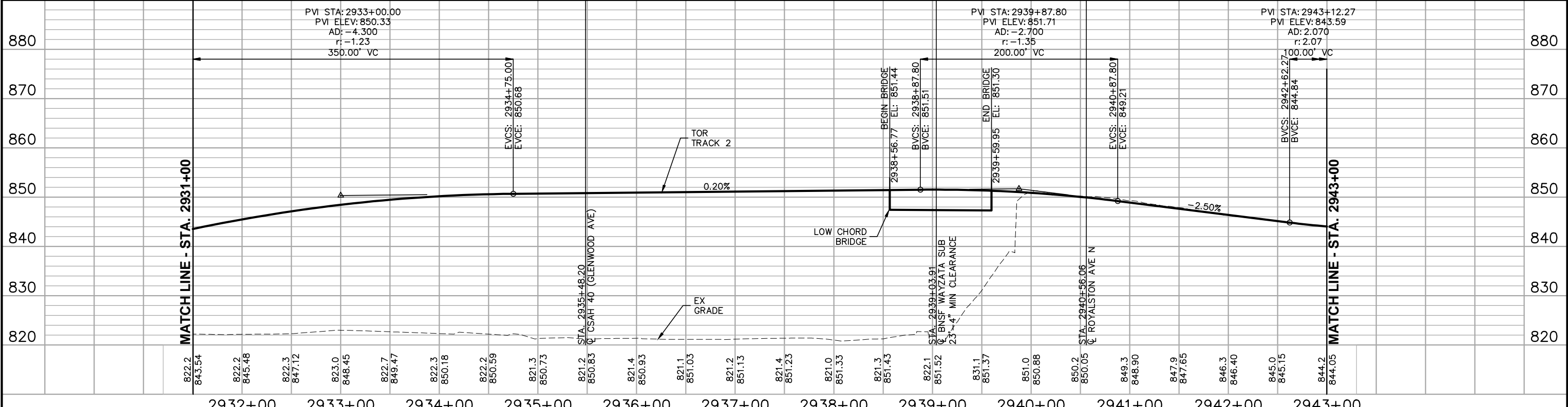
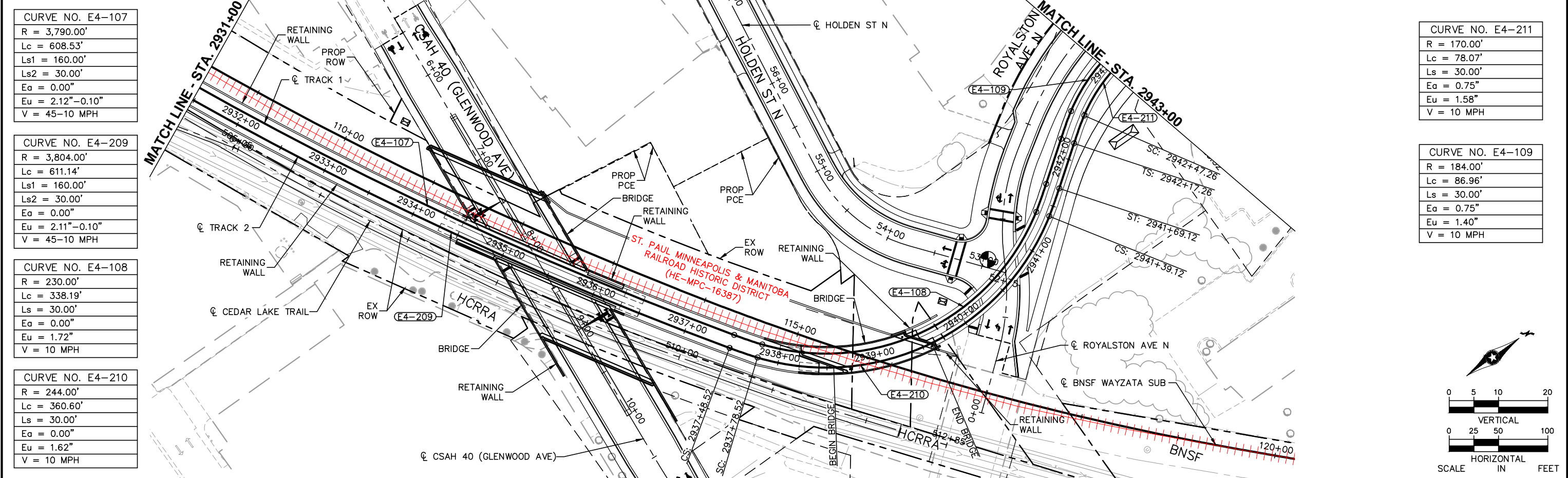
**METROPOLITAN**  
COUNCIL  
**SOUTHWEST**  
Green Line LRT Extension

**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**

SHEET  
70  
OF  
163

Nov. 07 2014 08:33 am V:\3300_PEC-E\CAD\SEGMENT E4\EXHIBITS\CIVIL\SHPO\E4-TRK-PPFL.dwg By: hope.wedge



NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

**PRELIMINARY ENGINEERING**

**SOUTHWEST**  
Green Line Light Extension

**EAST - VOLUME 1 (CIVIL) - SEGMENT 4**

**TRACK**

**PLAN AND PROFILE**

**STA. 2931+00 TO STA. 2943+00**

DISCIPLINE: **TRACK**

SHEET NAME: **E4-TRK-PPFL - 009**

**SHEET**

71

OF

163

<b>CURVE NO. E4-107</b>
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

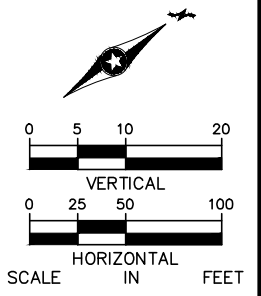
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R = 3,804.00'
Lc = 611.14'
Ls1 = 160.00'
Ls2 = 30.00'
Ea = 0.00"
Eu = 2.11" - 0.10"
V = 45-10 MPH

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

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

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

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



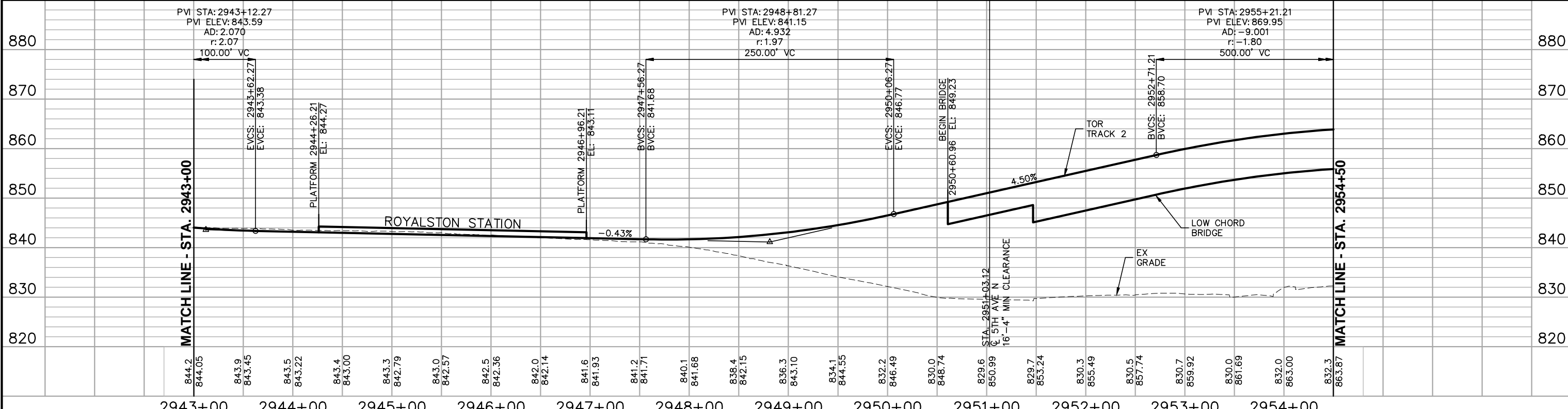
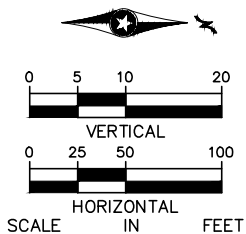
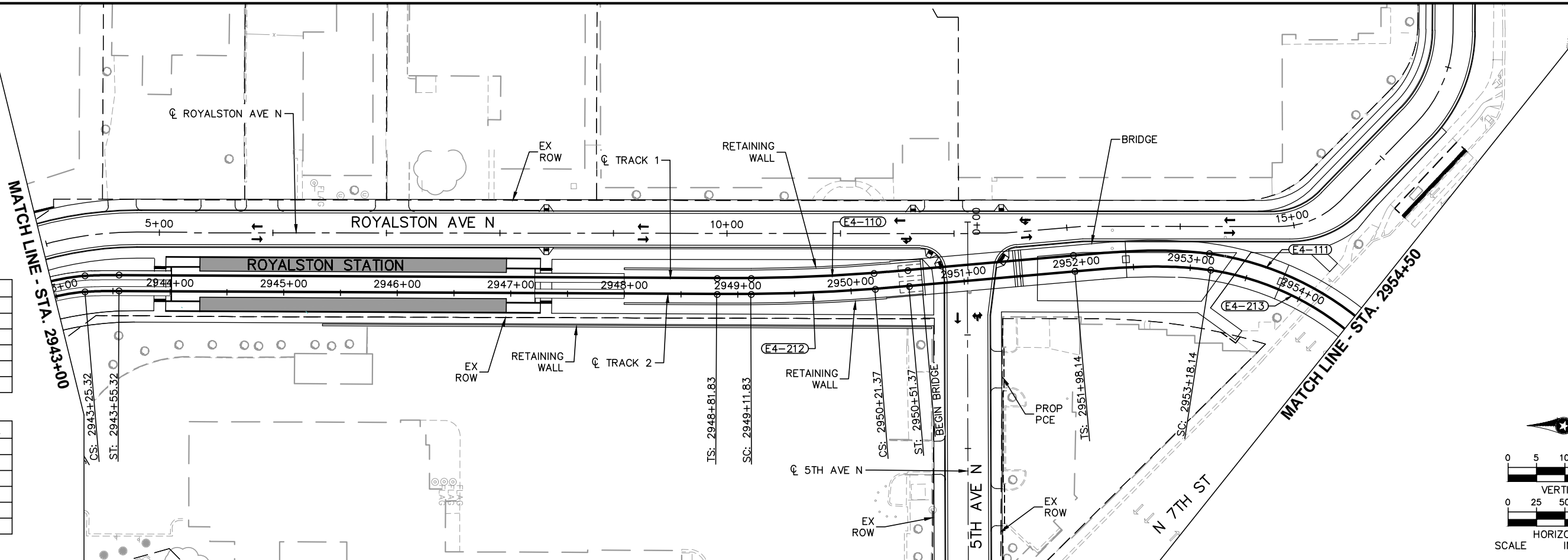


Nov. 07 2014 08:34 am V:\3300_PEC-E\CAD\SEGMENT E4\EXHIBITS\CIVIL\SHPO\E4-TRK-PPFL.dwg By: hope.wedge

SEE SHEET 73 FOR  
CURVE 111 AND CURVE  
213 DATA

CURVE NO. E4-110
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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



NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL

**Kimley»Horn**  
**SYSTRA**  
PRELIMINARY ENGINEERING

**METROPOLITAN**  
C O U N C I L  
**SOUTHWEST**  
Green Line LRT Extension

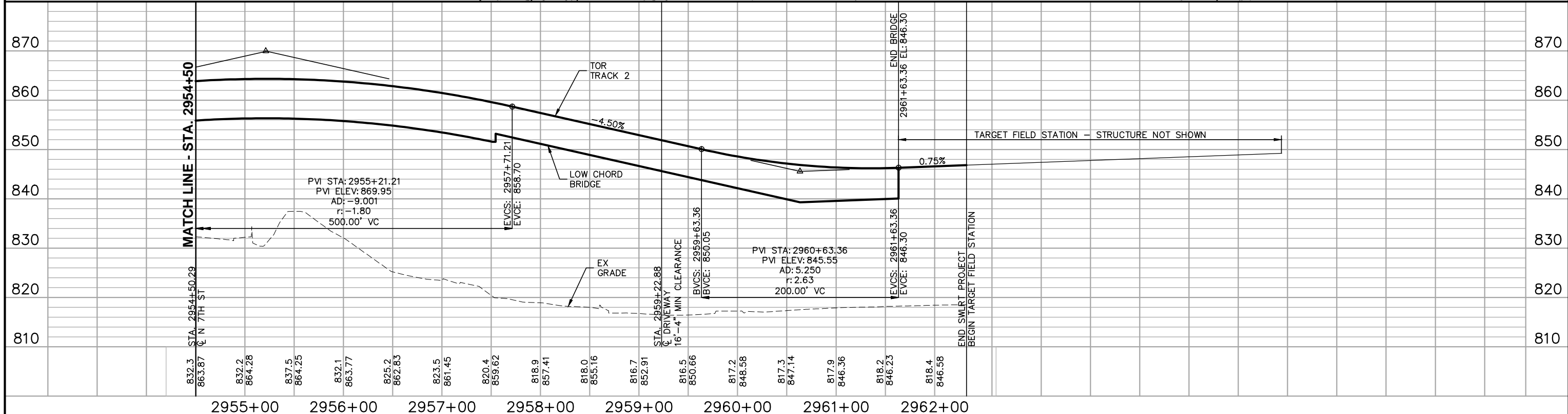
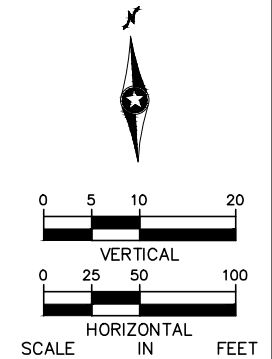
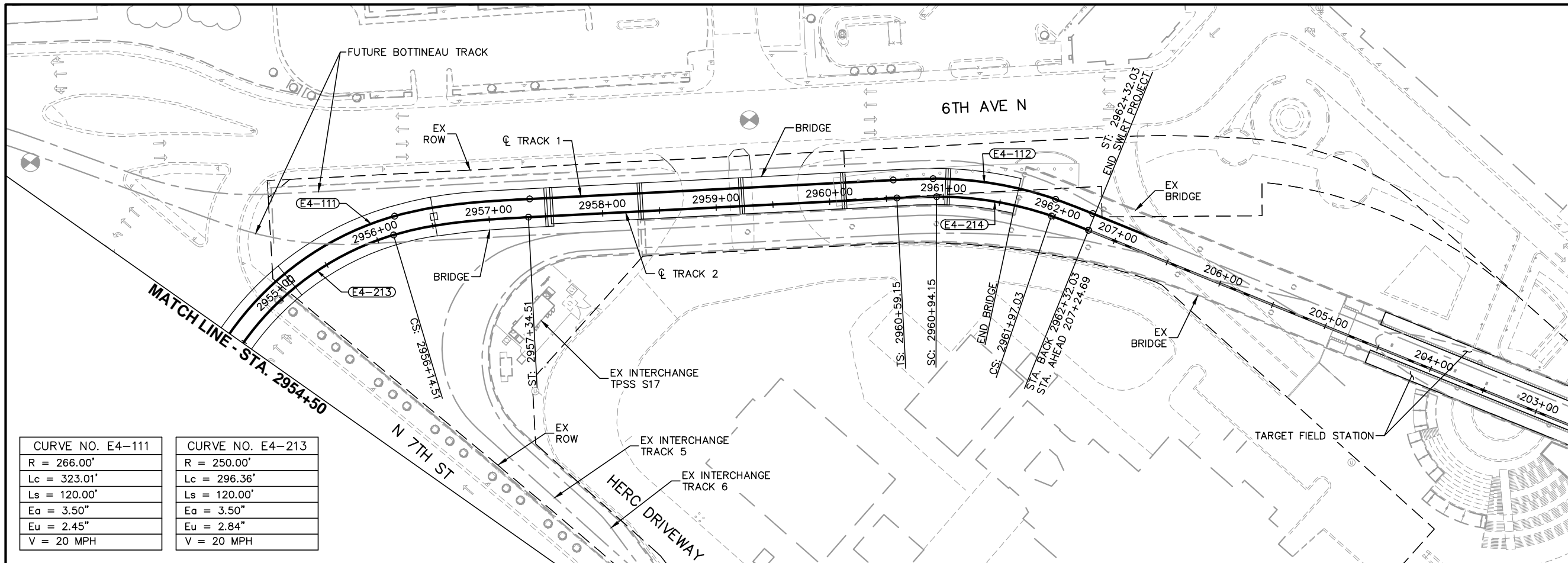
**EAST - VOLUME 1 (CIVIL) - SEGMENT 4**  
**TRACK**  
**PLAN AND PROFILE**  
**STA. 2943+00 TO STA. 2954+50**

DISCIPLINE: **TRACK**      SHEET NAME: **E4-TRK-PPFL - 010**


**SHEET**  
72  
**OF**  
163




Nov. 07 2014 08:34 am V:\3300_PEC-E\CAD\SEGMENT E4\EXHIBITS\CIVIL\SHPO\E4-TRK-PPFL.dwg By: hope.wedge




NO.	DATE	BY	CHECK	DESIGN	REVISION / SUBMITTAL



**PRELIMINARY ENGINEERING**








<b>EAST - VOLUME 1 (CIVIL) - SEGMENT 4</b> <b>TRACK</b> <b>PLAN AND PROFILE</b> <b>STA. 2954+50 TO STA. 2962+32.03</b>		<b>SHEET</b> 73 OF 163
DISCIPLINE: <b>TRACK</b>	SHEET NAME: <b>E4-TRK-PPFL - 011</b>	

Southwest Light Rail Transit Project  
Photo Log of Historic Properties reinstated  
as part of July 2014 amended project scope



Inventory #	Historic Property	Photograph
HE-MPC-6068	Freida and Henry J. Neils House (L) 2801 Burnham Blvd, Minneapolis	 A photograph of the Freida and Henry J. Neils House, a large, single-story stone and brick residence with a prominent chimney and a large tree in the foreground.
HE-MPC-6761	Saveland House (E) 2405 W 22 nd St, Minneapolis	 A photograph of the Saveland House, a two-story, light-colored house with a prominent portico supported by columns, set on a well-manicured lawn.
HE-MPC-6603	Shaw House (E) 2036 Queen Ave S, Minneapolis	 A photograph of the Shaw House, a two-story, dark blue house with a prominent portico supported by white columns, surrounded by lush landscaping and a flower bed in the foreground.

**Southwest Light Rail Transit Project**  
**Section 106 Review – Preliminary Determination of Effects on Historic Properties**  
**11/12/2014**

Property Name (Historic)	Property Address	Effects Analysis and Preliminary Determination of Effect ¹	Source ²
<b>Section 1:</b>			
<b>Historic Properties with Concurrence on Determination of Effect</b>			
Hopkins City Hall (eligible) HE-HOC-026	1010 1 st St. S. Hopkins	<p><b>Effects:</b> No work is proposed in the immediate vicinity of the Hopkins City Hall; however, it is located within ¼ mile radius of Hopkins Downtown Station, so the project may catalyze future redevelopment nearby.</p> <p><b>Determination:</b> NO ADVERSE EFFECT based on Preliminary Plans. SHPO and consulting parties have concurred.</p> <p><b>Action:</b> No additional consultation unless further plan development results in change of effect and/or additional effects.</p>	SWT/V1, pp. 40-49
Hoffman Callan Building (eligible) HE-SLC-055	3907 Hwy. 7 St. Louis Park	<p><b>Effects:</b> No work is proposed in the immediate vicinity of the Hoffman Callan Building; however, it is located within ¼ mile radius of West Lake Station, so the project may catalyze future redevelopment nearby.</p> <p><b>Determination:</b> NO ADVERSE EFFECT based on Preliminary Plans. SHPO and consulting parties have concurred.</p> <p><b>Action:</b> No additional consultation unless further plan development results in change of effect and/or additional effects.</p>	SWT/V1, pp. 111-116
M&StL RR bridges over Kenilworth Lagoon/Channel (GRHD) (eligible) HE-MPC-01850, HE-MPC-01851	Minneapolis	<p><b>Effects:</b> These bridges will be removed. Since they are non-contributing elements in the Grand Rounds Historic District, removal will not result in an adverse effect to these elements. Effects related to the replacement structure(s) is addressed in Section 3.</p> <p><b>Determination:</b> NO ADVERSE EFFECT. SHPO and consulting parties have concurred.</p> <p><b>Action:</b> No additional consultation required.</p>	NR-SHPO
Burnham Road Bridge (GRHD) (eligible) HE-MPC-1832	Minneapolis	<p><b>Effects:</b> This bridge a non-contributing element to the Grand Rounds Historic District and no work is proposed near the structure.</p> <p><b>Determination:</b> NO ADVERSE EFFECT. SHPO and consulting parties have concurred.</p> <p><b>Action:</b> No additional consultation required.</p>	NR-SHPO
St. Paul, Minneapolis & Manitoba R.R./ Great Northern Rwy. Historic District (eligible) HE-MPC-16387	Minneapolis	<p><b>Effects:</b> This rail line is located within the project corridor. Along a section of the line, from approximately I-94 to approximately Royalston Avenue (total length of 2,543 feet), the tracks will be shifted from 0 to 11 feet northward, but the continuity of the linear resource will be maintained within the historic right-of-way, resulting in a minor effect to the alignment. Through BNSF traffic will continue on the line. There will also be minor visual effects from the introduction of the LRT catenary along this section of the rail corridor.</p> <p><b>Determination:</b> NO ADVERSE EFFECT based on Preliminary Plans. SHPO and consulting parties have concurred.</p> <p><b>Action:</b> No additional consultation unless further plan development results in change of effect and/or additional effects.</p>	SWT/V3, pp. 61-64
Osseo Branch of the St. Paul, Minneapolis & Manitoba R.R. Historic District (eligible) XX-RRD-010, HE-MPC-16389	Minneapolis	<p><b>Effects:</b> This rail line is located partially within the project corridor and within ¼ mile radius of Van White Station. No changes will be made to the line, but there will be minor visual effects from the introduction of the LRT centenary to a section of the rail corridor.</p> <p><b>Determination:</b> NO ADVERSE EFFECT based on Preliminary Plans. SHPO and consulting parties have concurred.</p> <p><b>Action:</b> No additional consultation unless further plan development results in change of effect and/or additional effects.</p>	NR-SHPO

¹ The National Register eligible Grand Rounds Historic District (XX-PRK-001) will be impacted by Project construction and operation. Within the Grand Rounds Historic District there are ten discrete contributing resources and three discrete non-contributing resources that will be affected by the Project. Each resource has unique characteristics that qualify it for the NRHP, and each may be affected in different ways by construction and operation of the Project. Therefore, effects to the individual resources are being assessed at this time. Once all effects to individual resources are assessed, the resultant overall effect to the historic district will be determined.

² See key at the end of this document for complete source citations.



**Southwest Light Rail Transit Project**  
**Section 106 Review – Preliminary Determination of Effects on Historic Properties**  
**11/12/2014**

Property Name (Historic)	Property Address	Effects Analysis and Preliminary Determination of Effect ¹	Source ²
The Parade (GRHD) (eligible) HE-MPC-01782	Minneapolis	<p><b>Effects:</b> Pedestrian lights and ramps will be added to sidewalks along a portion Dunwoody Blvd. on the north edge of the Parade. The improvements will not touch the Parade and will have a negligible visual effect on this non-contributing element of the Grand Rounds Historic District.</p> <p><b>Determination:</b> NO ADVERSE EFFECT based on Preliminary Plans. SHPO and consulting parties have concurred.</p> <p><b>Action:</b> No additional consultation required.</p>	NR-SHPO
Site 21HE0436 (eligible)  Site 21HE0437 (eligible)	Minneapolis	<p><b>Effects:</b> These two archaeological sites will be substantially disturbed for the construction of Royalston Station. Alternative locations for this station were explored during preliminary engineering in consultation with the City of Minneapolis, and found not to be feasible.</p> <p><b>Determination:</b> ADVERSE EFFECT.</p> <p><b>Action:</b> Develop and implement agreement measures.</p> <ul style="list-style-type: none"> <li>• Completion and implementation of a Phase III Archaeological Data Recovery Plan to mitigate the adverse effect of destroying these sites. This plan would need to address the two sites as well as an adjacent related area under the existing street that was not investigated during the Phase II survey. The sites are eligible to the NRHP under criterion D based on their potential to yield important information about the Oak Lake neighborhood.</li> </ul>	SWT/ ArchaeoII, pp. 167-195
Minneapolis Warehouse Historic District (listed) HE-MPC-0441	Vicinity of 1 st Ave. N., N. 1 st St., 10 th Ave. N., and N. 6 th St. Minneapolis	<p><b>Effects:</b> A portion of the Minneapolis Warehouse Historic District is located within ¼ mile radius of the Target Field (aka Interchange) Station. However, the Target Field (aka Interchange) Station was recently reviewed under its own Section 106 review, and the new work to connect the Southwest LRT line with the station infrastructure occurs in the west part of the station site, away from the Warehouse District and its closest element, the Ford Building. The Section 106 Review for Interchange also assessed redevelopment around the district that would be catalyzed by the station, including when the Southwest LRT was put in operation.</p> <p><b>Determination:</b> NO ADVERSE EFFECT based on Preliminary Plans. SHPO and consulting parties have concurred.</p> <p><b>Action:</b> No additional consultation unless further plan development results in change of effect and/or additional effects.</p>	NR-SHPO
<b>Section 2</b>		<b>Historic Properties Requiring Continued Consultation (See Section 3 for properties potentially affected by the new Kenilworth Crossing)</b>	
Hopkins Commercial Historic District (eligible) HE-HOC-027	Mainstreet, 8 th Ave. to 11 th Ave. Hopkins	<p><b>Effects:</b> Station area planning for the Hopkins Downtown Station emphasizes links to downtown Hopkins, including the historic district, and economic revitalization of the area. Without incentives, historic buildings are often at risk during a redevelopment process.</p> <p><b>Preliminary Determination:</b> NO ADVERSE EFFECT based on Preliminary Plans and continued consultation to develop and implement measures to avoid adverse effects from redevelopment catalyzed by the Project.</p> <p><b>Action:</b> Develop and implement agreement measures.</p> <ul style="list-style-type: none"> <li>• Completion of a NRHP nomination form for the district. This documentation may be used by SHPO, at their discretion and in consultation with the City, to nominate the district to the NRHP. Listing on the NRHP would make available tax incentives and other financial resources for rehabilitation projects, and would encourage preservation of (and no adverse effect to) the district's historic character.</li> </ul>	SWT/V1, pp. 50-61
Minneapolis & St. Louis Rwy. Depot (eligible) HE-HOC-014	9451 Excelsior Blvd. Hopkins	<p><b>Effects:</b> The proposed LRT bridge over Excelsior Blvd. and the TC&amp;W (originally M&amp;StL) line will have an effect on the setting of the M&amp;StL Depot. The western approach to the LRT bridge has been shifted east to minimize impacts to the depot's setting. The western approach begins approximately 25 feet west of the depot, with the LRT tracks rising as they extend eastward past the depot towards Excelsior Blvd. At the east end of the depot the LRT tracks will be raised approximately 2 feet above the existing tracks. The recreational trail between the LRT tracks and the depot, and the paved plaza area adjacent to the depot, will remain.</p> <p><b>Preliminary Determination:</b> NO ADVERSE EFFECT based on Preliminary Plans and continued consultation on the design of the bridge and other project elements adjacent to the depot, and to develop and implement measures to protect the depot during construction.</p> <p><b>Action:</b> Develop and implement agreement measures.</p> <ul style="list-style-type: none"> <li>• Continued consultation with SHPO and identified consulting parties during the design of the bridge and other Project elements adjacent to the depot to minimize visual effects to the depot's setting.</li> <li>• Completion and implementation of a plan outlining measures to be taken during construction to protect the depot and ensure that it is not disturbed by any project related activities (including construction related vibration, storage yards, and staging areas).</li> </ul>	SWT/V3, pp. 35-39

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Property Name (Historic)	Property Address	Effects Analysis and Preliminary Determination of Effect ¹	Source ²
Chicago, Milwaukee & St. Paul R.R. Depot (listed) HE-SLC-008	6210 W. 37 th St. St. Louis Park	<p><b>Effects:</b></p> <ul style="list-style-type: none"> <li>The CM&amp;StP Depot is located within ¼ mile radius of Wooddale Station, which may catalyze future redevelopment nearby.</li> <li>The LRT guideway, which passes the depot, follows the rail corridor and does not infringe on the depot property and will have no effect on the depot.</li> <li>A signal bungalow is proposed just west of the depot on the same side of the alignment. The signal bungalow and LRT catenary will introduce new visual elements to the depot's setting. Visual effects will be minimized by existing vegetation between the depot and rail corridor that will screen views of these Project elements from views from the depot.</li> <li>The water main under Brunswick Avenue will be reconstructed and lowered, but will not impact the depot.</li> </ul> <p><b>Preliminary Determination: NO ADVERSE EFFECT</b> based on Preliminary Plans.</p> <p><b>Action: No additional consultation unless further plan development results in change of effect and/or additional effects.</b></p>	NR-SHPO
Peavey-Haglin Experimental Concrete Grain Elevator (listed) (also a <b>National Historic Landmark</b> ) HE-SLC-009	Hwys. 100 and 7 St. Louis Park	<p><b>Effects:</b></p> <ul style="list-style-type: none"> <li>Access to the elevator area from the recreational trail is maintained.</li> <li>The LRT guideway passes the property within the existing the rail corridor and does not infringe on the elevator property and will result in no effects that would impact the significance of the property. A traction power substation TPSS is also proposed to be located across the alignment, 500 feet southwest of the elevator, thus it will have a negligible visual effect on the elevator's setting.</li> </ul> <p><b>Preliminary Determination: NO ADVERSE EFFECT</b> based on Preliminary Plans and continued consultation related to the design and construction of the project.</p> <p><b>Action: Develop and implement agreement measures:</b></p> <ul style="list-style-type: none"> <li>Continued consultation with SHPO and identified consulting parties during design and construction to avoid adverse effects to the elevator to meet the special care requirement for National Historic Landmarks in 36 CFR 800.10.</li> </ul>	NR-SHPO
Minikahda Club (eligible) HE-MPC-17102	3205 Excelsior Blvd. Minneapolis	<p><b>Effects:</b></p> <ul style="list-style-type: none"> <li>The Minikahda Club is located within a ¼ mile radius of West Lake Station, which may spur redevelopment nearby.</li> <li>Acquisition of a very small portion of Minikahda Club property, 2,540 square feet (0.06 acres) near the club entrance for pedestrian improvements. This acquisition will affect the historic integrity of the club.</li> <li>Pedestrian and roadway improvements along north side of the Minikahda Club, near the club entrance, including new sidewalks and a retaining wall. These elements will have pronounced impact the design, materials, workmanship, and feeling of the club entrance, but will have a minor effect on the larger club property as a whole as a designed landscape.</li> </ul> <p><b>Preliminary Determination: ADVERSE EFFECT</b> based on the potential acquisition of a portion of the Minikahda Club for the project.</p> <p><b>Action: Develop and implement agreement measures.</b></p> <ul style="list-style-type: none"> <li>Continued consultation with SHPO and identified consulting parties during the design and siting of the pedestrian improvements to avoid adverse effects by avoiding acquisition of Minikahda Club property for the improvements, and through sensitive design of project elements near the club entrance, with the intent of achieving no adverse effect.</li> </ul>	SWT/V2, pp. 4.1-4 – 4.1-12
Lake Calhoun (GRHD) (eligible) HE-MPC-01811	Minneapolis	<p><b>Effects:</b></p> <ul style="list-style-type: none"> <li>Potential changes in traffic and parking near the Lake Calhoun Playing Fields, which need further assessment.</li> <li>Minor pedestrian improvements at intersection of Excelsior Blvd. Market Plaza. Improvements will have negligible visual effect on the setting of the Lake Calhoun Playing Fields.</li> </ul> <p><b>Preliminary Determination: NO ADVERSE EFFECT</b> based on Preliminary Plans and continued consultation related to traffic and parking impacts of the West Lake Street Station on the Lake Calhoun Playing Fields.</p> <p><b>Action: Develop and implement agreement measures.</b></p> <ul style="list-style-type: none"> <li>Continued consultation with SHPO and identified consulting parties to consider ways to avoid and minimize traffic and parking impacts of the West Lake Station on the Lake Calhoun Playing Fields, with the intent of achieving no adverse effect.</li> </ul>	NR-SHPO

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Property Name (Historic)	Property Address	Effects Analysis and Preliminary Determination of Effect ¹	Source ²
Cedar Lake Parkway (GRHD) (eligible) HE-MPC-01833	Minneapolis	<p><b>Effects:</b></p> <ul style="list-style-type: none"> <li>The LRT will pass under Cedar Lake Parkway in a shallow tunnel, requiring the reconstruction of approximately 320 feet of the parkway to accommodate tunnel construction. The parkway will be reconstructed restored to its existing width and configuration as it crosses the corridor over the LRT tunnel, with a slight increase in elevation (less than 8 inches). The current at-grade intersections of the parkway with the recreational trail and with the freight rail tracks will continue, with the freight rail tracks shifting approximately 3 feet to the west. This will impact the material integrity of the parkway and result in minor change in the design and setting of a short segment of the parkway.</li> <li>Potential operational auditory effects as LRT trains enter and exit the shallow tunnel, which need further assessment.</li> </ul> <p><b>Preliminary Determination: NO ADVERSE EFFECT</b> based on Preliminary Plans and continued consultation related to the design of Project elements across and adjacent to Cedar Lake Parkway.</p> <p><b>Action: Develop and implement agreement measures.</b></p> <ul style="list-style-type: none"> <li>Continued consultation with SHPO and identified consulting parties during the design of the tunnel and other project elements adjacent to Cedar Lake Parkway to avoid and/or minimize potential effects from construction and operation through sensitive design to avoid adverse effects on the parkway with the intent of achieving no adverse effect.</li> </ul>	NR-SHPO
Frieda & Henry J. Neils House (listed) HE-MPC-6068	2801 Burnham Blvd. Minneapolis	<p><b>Effects:</b> The Neils House is located within a ¼ mile of the 21st St. Station. While it will not be affected by station infrastructure, operation of the station may result in possible changes to traffic patterns and parking that require further assessment.</p> <p><b>Preliminary Determination: NO ADVERSE EFFECT</b> based on Preliminary Plans and continued consultation related to the planning and design of traffic, parking, and access improvements for the 21st St. Station.</p> <p><b>Action: Develop and implement agreement measures.</b></p> <ul style="list-style-type: none"> <li>Continued consultation with SHPO and identified consulting parties during the planning of new and/or improved access routes to the 21st St. Station, with the intent of achieving no adverse effect on the Neils House.</li> </ul>	NR-SHPO
Mahalia & Zacharia Saveland House (eligible) HE-MPC-6766	2405 W. 22 nd St. Minneapolis	<p><b>Effects:</b> The Saveland House is located within a ¼ mile of the 21st St. Station. While it will not be affected by station infrastructure, operation of the station may result in possible changes to traffic patterns and parking that require further assessment.</p> <p><b>Preliminary Determination: NO ADVERSE EFFECT</b> based on Preliminary Plans and continued consultation related to the planning and design of traffic, parking, and access improvements for the 21st St. Station.</p> <p><b>Action: Develop and implement agreement measures.</b></p> <ul style="list-style-type: none"> <li>Continued consultation with SHPO and identified consulting parties during the planning of new and/or improved access routes to the 21st St. Station, with the intent of achieving no adverse effect on the Saveland House.</li> </ul>	SWT/V5, pp. 35-54
Site 21HE0409 (eligible)	Minneapolis	<p><b>Effects:</b> No effect, as preliminary engineering plans avoid this archaeological site.</p> <p><b>Preliminary Determination: NO ADVERSE EFFECT</b> based on Preliminary Plans and continued consultation to develop and implement measures to protect the site area during construction.</p> <p style="text-align: center;">4</p> <p><b>Action: Develop and implement agreement measures.</b></p> <ul style="list-style-type: none"> <li>Completion and implementation of a protection plan outlining measures to be taken during construction to protect the site area and ensure that it is not disturbed by any project related activities (including storage yards and staging areas) to avoid any adverse effects to the site.</li> </ul>	SWT/ ArchaeoII, pp. 65-103



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Property Name (Historic)	Property Address	Effects Analysis and Preliminary Determination of Effect ¹	Source ²
Kenwood Parkway Residential Historic District (KPRHD) (eligible) HE-MPC-18059	1805-2216 Kenwood Pkwy. Minneapolis	<p><b>Effects:</b></p> <ul style="list-style-type: none"> <li>The historic district is located within a ¼ mi. of both the 21st St. and Penn Stations. The provision of access routes to Penn Station from Kenwood Parkway (including the existing trail from the foot of Kenwood Hill along the south side of I-394, and any additional routes as illustrated by the conceptual trail in the Southwest Corridor Investment Framework report) may result in potential minor direct effects from construction of access routes to connect with Kenwood Parkway and from visual effects of access route elements on the setting of the district.</li> <li>Potential changes to traffic and/or parking patterns along the parkway related to development and operation of the 21st St. and Penn stations, which need further assessment.</li> <li>Potential auditory effects on some houses in the northern part of the district, which need further assessment.</li> </ul> <p><b>Preliminary Determination: NO ADVERSE EFFECT</b> based on Preliminary Plans and continued consultation  <b>TO BE DETERMINED</b> through continued analysis of effects and consultation with the SHPO and identified consulting parties related to the planning and design of traffic, parking, and access improvements for the 21st St. and Penn stations.</p> <p><b>Action:</b> <i>Continued consultation, including further assessment of effects and the development and implementation of agreement measures.</i></p> <ul style="list-style-type: none"> <li>Continued consultation with SHPO and identified consulting parties during the planning and design of traffic, parking, and access improvements for the 21st St. and Penn stations, with the intent of achieving <b>no adverse effect</b> on the Kenwood Parkway Historic Residential Historic District through sensitive design, incorporation of avoidance and/or protective measures, and/or other measures identified through consultation.</li> </ul>	
Kenwood Parkway (GRHD, KPRHD) (eligible) HE-MPC-01796	Minneapolis	<p><b>Effects:</b></p> <ul style="list-style-type: none"> <li>The parkway is located within a ¼ mi. of the Penn Station. The provision of access routes to the station from Kenwood Parkway (including the existing trail from the foot of Kenwood Hill along the south side of I-394, and potential additional routes as illustrated by the conceptual trail in the Southwest Corridor Investment Framework report) may result in potential minor direct effects to the Parkway where the improvements connect to it, as well as indirect visual effects resulting from changes to its setting from these improvements.</li> <li>Potential changes to traffic and/or parking patterns along the parkway related to development and operation of the 21st St. and Penn stations, which need further assessment.</li> </ul> <p><b>Preliminary Determination: NO ADVERSE EFFECT</b> based on Preliminary Plans and continued consultation related to the planning and design of traffic, parking, and access improvements for the 21st St. and Penn stations.</p> <p><b>Action:</b> <i>Develop and implement agreement measures.</i></p> <ul style="list-style-type: none"> <li>Continued consultation with SHPO and identified consulting parties during the planning of new and/or improved access routes to the 21st St. Station, with the intent of achieving no adverse effect on Kenwood Parkway.</li> </ul>	NR-SHPO
Frank & Julia Shaw House (eligible) HE-MPC-6603	2036 Queen Ave. S. Minneapolis	<p><b>Effects:</b></p> <ul style="list-style-type: none"> <li>The Shaw House is located within a ¼ mile of the 21st St. Station. While it will not be affected by station infrastructure, operation of the station may result in possible changes to traffic patterns and parking that require further assessment.</li> </ul> <p><b>Preliminary Determination: NO ADVERSE EFFECT</b> based on Preliminary Plans and continued consultation related to the planning and design of traffic, parking, and access improvements for the 21st St. Station.</p> <p><b>Action:</b> <i>Develop and implement agreement measures.</i></p> <ul style="list-style-type: none"> <li>Continued consultation with SHPO and identified consulting parties during the planning of new and/or improved access routes to the 21st St. Station, with the intent of achieving no adverse effect on the Shaw House.</li> </ul>	SWT/V5, pp. 55-74
Kenwood Park (GRHD) (eligible) HE-MPC-01797	Minneapolis	<p><b>Effects:</b> Kenwood Park located within a ¼ mi. of the Penn Station. The provision of access routes to the station from Kenwood Parkway (including the existing trail from the foot of Kenwood Hill along the south side of I-394, and potential additional routes as illustrated by the conceptual trail in the Southwest Corridor Investment Framework report) may result in potential changes to traffic and/or parking patterns, which need further assessment.</p> <p><b>Preliminary Determination: NO ADVERSE EFFECT</b> based on Preliminary Plans and continued consultation related to the planning and design of traffic, parking, and access improvements for the Penn Station.</p> <p><b>Action:</b> <i>Develop and implement agreement measures.</i></p> <ul style="list-style-type: none"> <li>Continued consultation with SHPO and identified consulting parties during the planning of new and/or improved access routes to the Penn Station, with the intent of achieving no adverse effect on Kenwood Park.</li> </ul>	

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Property Name (Historic)	Property Address	Effects Analysis and Preliminary Determination of Effect ¹	Source ²
Kenwood Water Tower (GRHD) (eligible) HE-MPC-06475	1724 Kenwood Pkwy. Minneapolis	<p><b>Effects:</b></p> <ul style="list-style-type: none"> <li>• Kenwood Park located within a ¼ mi. of the Penn Station. The provision of access routes to the station from Kenwood Parkway (including the existing trail from the foot of Kenwood Hill along the south side of I-394, and potential additional routes as illustrated by the conceptual trail in the Southwest Corridor Investment Framework report) may result in potential changes to the setting of the water tower.</li> <li>• The potential access routes may also result in potential changes to traffic and/or parking patterns, but this would not impact the significance or use of the water tower.</li> </ul> <p><b>Preliminary Determination: NO ADVERSE EFFECT</b> based on Preliminary Plans and continued consultation related to the planning and design of potential access routes from Penn Station up the side of Kenwood Hill to Kenwood Parkway.</p> <p><b>Action: Develop and implement agreement measures.</b></p> <ul style="list-style-type: none"> <li>• Continued consultation with SHPO and identified consulting parties during the design of any new and/or improved access routes between Penn Station and Kenwood Parkway, with the intent of achieving <b>no adverse effect</b> on the Kenwood Water Tower through sensitive design.</li> </ul>	
Mac Martin House (eligible) HE-MPC-8763	1828 Mt. Curve Ave. Minneapolis	<p><b>Effects:</b> Negligible change to the resource’s setting from lighting and signage improvements along trail connection between Cedar Lake Trail and Kenwood Parkway that may be seasonally visible from the Mac Martin House.</p> <p><b>Preliminary Determination: NO ADVERSE EFFECT</b> based on Preliminary Plans.</p> <p><b>Action: No additional consultation unless further plan development results in change of effect and/or additional effects.</b></p>	SWT/V2, pp. 4.1-94 – 4.1-97
Dunwoody Institute (eligible) HE-MPC-6641	818 Dunwoody Blvd. Minneapolis	<p><b>Effects:</b> Pedestrian lights and ramps will be added to sidewalks along a portion Dunwoody Blvd. on the south side of the Institute’s parking lot and at its driveway. The center median (island) in the street in front of the building will also be modified. All of these elements will have a negligible visual impact on the property’s setting.</p> <p><b>Preliminary Determination: NO ADVERSE EFFECT</b> based on Preliminary Plans.</p> <p><b>Action: No additional consultation unless further plan development results in change of effect and/or additional effects.</b></p>	SWT/V2, pp. 4.4-3 – 4.4-14
<b>Section 3</b>		<b>Historic Properties Requiring Continued Consultation – Potentially Affected by the New Kenilworth Crossing</b>	
Kenilworth Lagoon (GRHD, LIRHD) (eligible) HE-MPC-1822	Minneapolis	<p><b>Effects:</b></p> <ul style="list-style-type: none"> <li>• Changes to the resource and its setting, including: <ul style="list-style-type: none"> <li>○ Removal of the existing non-contributing railroad bridges (HE-MPC-1850 and HE-MPC-1851 [non-contributing based on association, not age, design, or integrity]) across the lagoon.</li> <li>○ Replacement of the existing railroad bridges with new light rail, freight rail, and trail bridges over the lagoon. <ul style="list-style-type: none"> <li>▪ Design and visibility of the new bridge structure across the lagoon.</li> <li>▪ Impact of the width of the new crossing on the character and feeling of the middle section of the Kenilworth Lagoon and on the experience of using the waterway when passing under the new structure.</li> </ul> </li> <li>○ Partial removal and/or alterations of contributing WPA retaining walls.</li> <li>○ Removal and/or replacement of some existing vegetation on a portion of the lagoon banks.</li> <li>○ Reconstruction of portions of the lagoon banks.</li> </ul> </li> <li>• Potential operational noise.</li> </ul> <p><b>Preliminary Determination: ADVERSE EFFECT.</b></p> <p><b>Action: Continued consultation, including the development and implementation of agreement measures.</b></p> <ul style="list-style-type: none"> <li>• Continued consultation with SHPO and consulting parties during the design of the new bridges and related work on the lagoon to avoid, minimize, and/or mitigate adverse effect(s) from construction and operation of the project through sensitive design and incorporation of protective measures.</li> <li>• Further assessment of effects on the lagoon from operations.</li> </ul>	NR-SHPO

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Cedar Lake (GRHD) (eligible) HE-MPC-1820	Minneapolis	<p><b>Effects:</b></p> <ul style="list-style-type: none"> <li>• The new bridge(s) over the Kenilworth Lagoon will introduce a new visual element to the lagoon channel, which is part of the setting of the Cedar Lake; however, the visual effect will be negligible as the new structure(s) will be located more than 900 feet from the lake and sight lines to the new bridge(s) from Cedar Lake are quite narrow and are substantially blocked by the intervening Burnham Road Bridge.</li> <li>• An existing trail from 21st St. to East Cedar Beach will be improved with paving and pedestrian lighting. These improvements will introduce minor changes to the parkland around the lake, although this area is heavily forested, so the visibility of these improvements will be limited, thereby minimizing visual effect. The improvements will occur on fill that was placed when the lake lowered when it was developed as a park, so it will not affect any archaeological material.</li> </ul> <p><b>Preliminary Determination: NO ADVERSE EFFECT</b> based on Preliminary Plans and continued consultation related to the planning and design of the trail.</p> <p><b>Action: Develop and implement agreement measures.</b></p> <ul style="list-style-type: none"> <li>• Continued consultation with SHPO and identified consulting parties during the design of the trail improvements to avoid adverse effects to Cedar Lake through sensitive design, with the intent of achieving no adverse effect on the lake.</li> </ul>	NR-SHPO
Park Board Bridge #4 (GRHD, LIRHD) (eligible) HE-MPC-6901	Minneapolis	<p><b>Effects:</b> Change in the bridge's setting due to the design, visibility, and visual prominence of the new bridge structures across the Kenilworth Lagoon</p> <p><b>Preliminary Determination: TO BE DETERMINED</b> through continued consultation with the SHPO and identified consulting parties related to the design of the new bridges over Kenilworth Lagoon.</p> <p><b>Action:</b> Continued consultation on with SHPO and identified consulting parties during the design of the new bridges over the Kenilworth Lagoon to avoid, minimize, and/or mitigate adverse effect(s) from the new crossing on Bridge #4 through sensitive design and, if needed, to develop and implement agreement measures to avoid, minimize, and/or mitigate adverse effect(s).</p>	NR-SHPO
Lake of the Isles Parkway (GRHD, LIRHD) (eligible) HE-MPC-1825	Minneapolis	<p><b>Effects:</b> Change in the parkway's setting due to the design, visibility, and visual prominence of the new bridge structures across the Kenilworth Lagoon.</p> <p><b>Preliminary Determination: TO BE DETERMINED</b> through continued consultation with the SHPO and identified consulting parties related to the design of the new bridges over Kenilworth Lagoon.</p> <p><b>Action:</b> Continued consultation on with SHPO and identified consulting parties during the design of the new bridges over the Kenilworth Lagoon to avoid, minimize, and/or mitigate adverse effect(s) from the new crossing on Lake of the Isles Parkway through sensitive design and, if needed, to develop and implement agreement measures to avoid, minimize, and/or mitigate adverse effect(s).</p>	NR-SHPO
Lake of the Isles (GRHD, LIRHD) (eligible) HE-MPC-1824	Minneapolis	<p><b>Effects:</b> Change in the lake's setting due to the design, visibility, and visual prominence of the new bridge structures across the Kenilworth Lagoon.</p> <p><b>Preliminary Determination: TO BE DETERMINED</b> through continued consultation with the SHPO and identified consulting parties related to the design of the new bridges over Kenilworth Lagoon.</p> <p><b>Action:</b> Continued consultation on with SHPO and identified consulting parties during the design of the new bridges over the Kenilworth Lagoon to avoid, minimize, and/or mitigate adverse effect(s) from the new crossing on Lake of the Isles through sensitive design and, if needed, to develop and implement agreement measures to avoid, minimize, and/or mitigate adverse effect(s).</p>	NR-SHPO
Lake of the Isles Residential Historic District (LIRHD) (eligible) HE-MPC-9860	Vicinity of E./W. Lake of the Isles Pkways. Minneapolis	<p><b>Effects:</b></p> <ul style="list-style-type: none"> <li>• Changes to the historic district's visual character and setting due to the design, visibility, and visual prominence of the new bridge structures across the Kenilworth Lagoon, which is partially located within the district.</li> <li>• Potential changes in noise and traffic patterns in the district.</li> </ul> <p><b>Preliminary Determination: TO BE DETERMINED</b> through continued consultation with the SHPO and identified consulting parties related to the design of the new bridges over Kenilworth Lagoon.</p> <p><b>Action:</b> Continued consultation with SHPO and identified consulting parties during the design of the new bridges and related work on the Kenilworth Lagoon to avoid, minimize, and/or mitigate adverse effect(s) from the new crossing and from operations on the Lake of the Isles Residential Historic District through sensitive design and incorporation of protective measures, and, if needed, to develop and implement agreement measures to avoid, minimize, and/or mitigate adverse effect(s).</p>	NR-SHPO



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**Key:**

NR-SHPO = National Register of Historic Places files at the Minnesota State Historic Preservation Office

SWT/V1 = survey report: *Phase I/Phase II Architecture History Investigation for the Proposed Southwest Transitway Project, Hennepin County, Minnesota, Volume One* (Mead & Hunt, September 2010)

SWT/V2 = survey report: *Phase I/Phase II Architecture History Investigation for the Proposed Southwest Transitway Project, Hennepin County, Minnesota, Volume Two* (Hess, Roise and Company, 2012)

SWT/V3 = survey report: *Phase I/Phase II Architecture History Investigation for the Proposed Southwest Transitway Project, Hennepin County, Minnesota, Volume Three* (Summit Envirosolutions, October 2010)

SWT/V4 = survey report: *Phase I/Phase II Architecture History Investigation for the Proposed Southwest Transitway Project, Hennepin County, Minnesota, Volume Four* (Mead & Hunt, April 2012)

SWT/V5 = survey report: *Phase I/Phase II Architecture History Investigation for the Proposed Southwest Transitway Project, Hennepin County, Minnesota, Volume Five* (Mead & Hunt, February 2014)

SWT/ArchaeoII = survey report: *Phase II Archaeological Survey for the Southwest Light Rail Transit Project* (10,000 Lakes Archaeology, Archaeological Research Services, Archaeo-Physics, and Merjent, February 2014)

Listed = listed in the National Register of Historic Places

Eligible = determined eligible for the National Register of Historic Places

GRHD = Grand Rounds Historic District

KPRHD = Kenwood Parkway Residential Historic District

LIRHD = Lake of the Isles Residential Historic District



# **Kenilworth Lagoon/Channel Context, History, and Physical Description**

**Southwest LRT Project**

Hennepin County, Minnesota

CH2M HILL, Inc.—Project No. 474576

November 2014

**KENILWORTH LAGOON/CHANNEL CONTEXT,  
HISTORY, AND PHYSICAL DESCRIPTION  
FOR THE  
PROPOSED SOUTHWEST LRT PROJECT,  
HENNEPIN COUNTY, MINNESOTA**

**CH2M Hill, Inc. Project No. 474576  
SHPO File No. 2009-0080  
106 Group Project No. 1695**

**Authorized and Sponsored by:  
Metropolitan Council**

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**November 2014**



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## **1 Introduction**

The purpose of this document is to provide a historical context and physical description of the features of the Kenilworth Lagoon/Channel, which is a component of the Chain of Lakes Segment of the Grand Rounds Parkway System in Minneapolis. The lagoon/channel, which connects Lake of the Isles and Cedar Lake, is a contributing element of the Grand Rounds Historic District, which has been determined eligible for listing on the National Register of Historic Places (NRHP). This documentation will serve as a reference when considering the design of a new crossing structure for the Southwest Light Rail Transit (Southwest LRT) project.

This document is divided into two parts: 1) context and history and, 2) a physical description of the features of the Kenilworth Lagoon/Channel.

## 2 Context and History

### 2.1 The Early Development of the Minneapolis Parks System

In 1883, a series of events occurred that were critical to the creation of the present-day park system in Minneapolis. The first occurred in February, when the Minnesota Legislature approved enabling legislation for the creation of an independent park board. The second was in April, when Minneapolis voters approved a referendum, the Park Act, to establish an independent board of park commissioners to oversee the development of parks in the city. The Minneapolis Board of Park Commissioners (MBPC) was authorized to obtain land for park development, issue bonds to pay for land acquisition and park development, and to levy a citywide tax to repay the bonds (MPRB 2014a). Another major event occurred shortly thereafter, when noted landscape architect Horace William Shaler (H.W.S.) Cleveland came to Minneapolis and presented his “Suggestions for a System of Parks and Parkways for the City of Minneapolis” (Roise et al. 2012a). Cleveland’s vision called for the creation of an interconnected park system that featured a system of landscaped parkways to link the Mississippi River, Minnehaha Falls, Minnehaha Creek, and the numerous lakes in the City (Cleveland 1883).

Enamored with Cleveland’s vision, the MBPC set about with its implementation. The MBPC first acquired land for Central Park (now Loring Park), followed by a 20-acre track on the Mississippi River. Over the next few years, additional lands were acquired and boulevards developed. In 1887, the MBPC began to develop the Chain of Lakes. In 1890, the MBPC established a Special Committee on Park Engagement. This committee looked at the park system, as developed along Cleveland’s ideas, and in 1891 made recommendations for expanding the system throughout the city. It was at this time that the phrase “Grand Rounds” was first used to describe a parkway system that would form a loop around the entire city and pass through several large parks. The proposal was thoroughly endorsed by the MBPC, who continued to support it through the 1890s. However, aggressive implementation did not move forward until 1906, when Theodore Wirth became the new superintendent of Minneapolis parks. During Wirth’s 30-year tenure, the Minneapolis parks system nearly tripled in size, growing from 1,800 acres to around 5,200 acres (Roise et al. 2012a).

The modern-day Grand Rounds is an approximately 50-mile long, interconnected system of parks and parkways that encircles most of Minneapolis. Encompassing an approximately 4,662 acres, small portions of the system also extend into the adjacent cities of Golden Valley, Robbinsdale, Saint Anthony, and Saint Louis Park. The Grand Rounds is organized into seven segments: Kenwood, Chain of Lakes, Minnehaha, Mississippi River, Northeast, Victory Memorial, and Theodore Wirth. Each segment is further divided into sub-segments that include parkways, boulevards, and the parks they connect (Roise et al. 2012a). Kenwood is the segment closest to downtown Minneapolis. It begins at Loring Park and extends to Lake of the Isles Parkway, which is in the Chain of Lakes segment. Kenwood includes the following sub-segments: Loring Park, the Parade, and Kenwood Parkway, which includes Kenwood Park (Roise et al. 2012a).

The Chain of Lakes encompasses the major lakes within the Grand Rounds system. It extends from the parkway bridge over Interstate 394 to the start of Minnehaha Parkway on the southeast side of Lake Harriet. The Chain of Lakes includes the following sub-segments: Cedar Lake, including Brownie Lake, Lake of the Isles, Dean Parkway, the Mall, Lake Calhoun, William Berry Park, originally Interlachen Park, Linden Hills Boulevard, Lake Harriet; Lyndale Park; Kings Highway, and Lyndale Farmstead (Roise et al. 2012a).

Minnehaha, which is the southernmost segment in the system, extends in an easterly direction across the southern part of Minneapolis, from the southeast side of Lake Harriet, to Godfrey Parkway on the north edge of Minnehaha Park. It includes the following sub-segments: Minnehaha Parkway, Lake Nokomis, Lake Hiawatha, and Minnehaha Park (Roise et al. 2012a).

Mississippi, which includes areas on both sides of the Mississippi River, extends from Minnehaha Park, north along the river gorge, to Franklin Avenue. It includes the following sub-segments: West River Parkway, Riverside Park, and East River Parkway (Roise et al. 2012a).

Northeast extends through the northeast side of the city, from the border with the Village of Saint Anthony on the east, to Columbia Heights on the north, and the Mississippi River on the west and includes the Camden Bridge. It includes the following sub-segments: Stinson Parkway, Ridgway Parkway, Gross Golf Course, Saint Antony Parkway, and Columbia Park (Roise et al. 2012a).

Victory Memorial is located in North Minneapolis. It extends from the intersection of Lyndale Avenue and Webber Parkway, at the west end of the Camden Bridge, west to the city border with Robbinsdale, and south to Lowry Avenue. It includes two sub-segments: Webber Parkway and Victory Memorial Parkway (Roise et al. 2012a).

Theodore Wirth, which connects the Victory Memorial and Chain of Lake segments, extends from the intersection of Lowry Avenue and Theodore Wirth Parkway on the north, to the parkway bridge over Interstate 394 on the south. It includes the following sub-segment: Theodore Wirth Park, which is both the largest park and segment in the system (Roise et al. 2012a).

The park system that evolved into the Grand Rounds has experienced several significant periods of development over the last 130 years. They include: initial development following H.W.S. Cleveland's recommendations; the early 1890s, when the vision for the system was expanded and it became known as the Grand Rounds; the Theodore Wirth period between 1906 and 1935, when the system was greatly expanded and improved; the 1970s when a substantial reworking of the system occurred following the recommendations of San Francisco landscape architects Eckbo, Dean, Austin and Williams, as modified by the Citizen Parkway Committee, and implemented by the landscape architecture firm InterDesign and the engineering firm BRW; and finally after 1998, when the Grand Rounds was designated by the Federal Highway Administration as the first urban National Scenic Byway and new layer of signage and other elements were installed (Roise et al. 2012a).

## 2.2 The Chain of Lakes

The Chain of Lakes is but one segment of the Grand Rounds system. It begins at an overpass over Interstate 394 that connects Theodore Wirth Parkway to Cedar Lake Parkway, and extends in a southeasterly direction to the outlet from Lake Harriet to Minnehaha Creek. As described above, the Chain of Lakes includes Brownie Lake, Cedar Lake, Lake of the Isles, Lake Calhoun, and Lake Harriet, as well as the channels that connect them.

Portions of the Chain of Lakes were included in H.W.S. Cleveland's original 1883 plan for the Minneapolis park system (Figure 1). The plan included boulevards around Lake Calhoun and Lake Harriet, a boulevard to connect the two lakes, as well as a park on the west side of Lake Harriet (Cleveland 1883). Cleveland's overall vision became a guiding light for the MBPC. When the Minneapolis City Council annexed a large swath of land around the south and west side of the city in 1883, all of the lands now encompassed by the Chain of Lakes were brought into the city, paving the way for their development by the MBPC in a manner consistent with Cleveland's original plan.

The MBPC began to develop these portions of the park system, as well as a parkway around Lake of the Isles, beginning in 1887, and they soon became popular destinations (Roise et al. 2012a). Other elements of the Chain of Lakes were developed later, under the supervision of Theodore Wirth. Given the popularity of the Chain of Lakes, one of Theodore Wirth's first initiatives after becoming



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Superintendent of Parks in 1906 was to undertake a massive effort to develop this area. Starting in 1907, Wirth set about on a series of projects to dredge the lakes, build and rebuild shorelines, construct channels to connect the lakes, and enhance the scenic beauty and recreational opportunities of the lakes (Roise et al. 2012a). This monumental undertaking took a decade to complete, although the MBPC continued to expend large sums of money on improving the Chain of Lakes through 1931 (Roise et al. 2012b). As is discussed in more detail below, due to an overwhelming public desire for a navigable waterway to connect the Chain of Lakes, the linking of the lakes was among the most important projects completed during this period (Smith 2008:28; Wirth 2006:91-92; MBPC 1910:77).

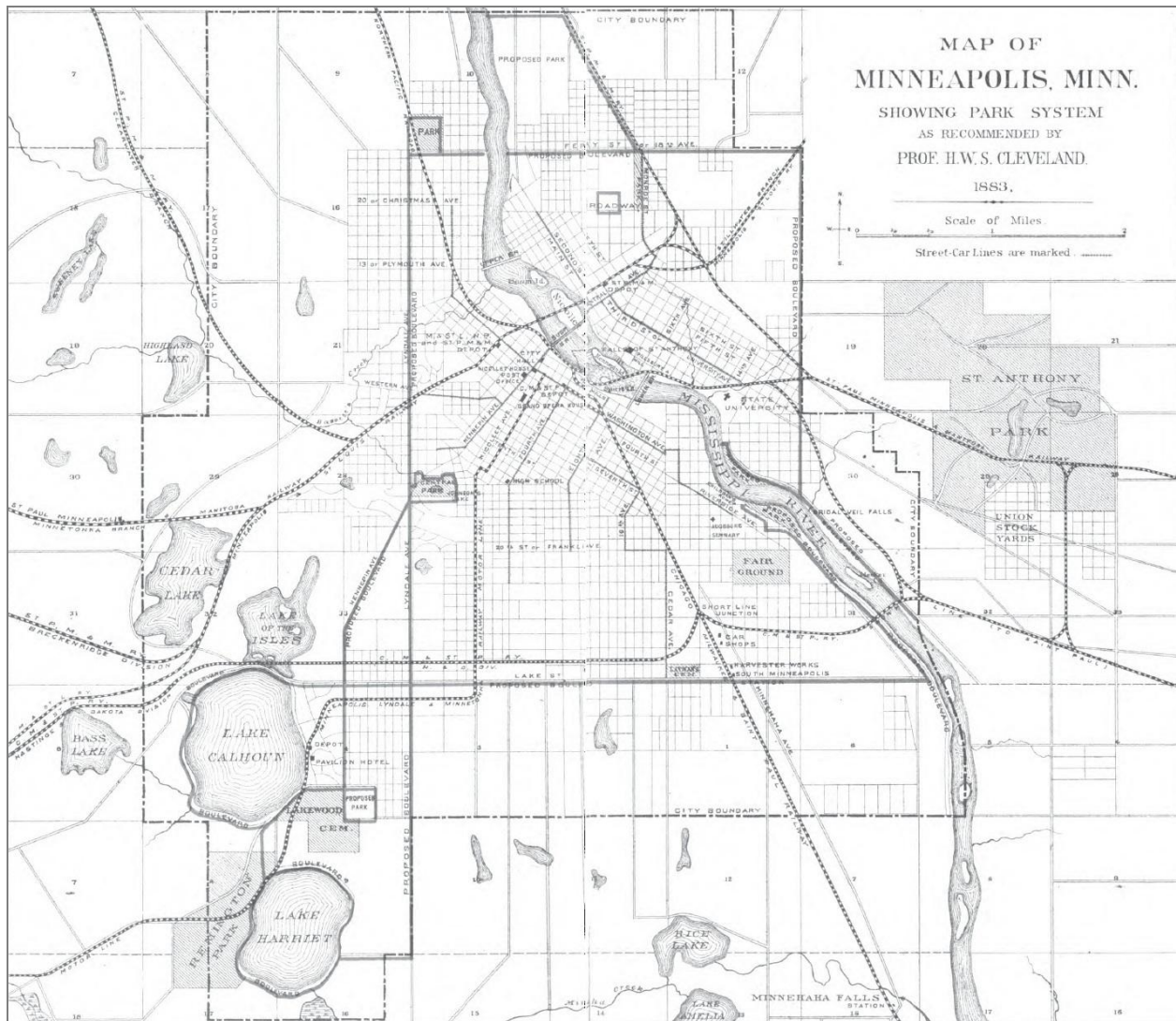


Figure 1. H.W.S. Cleveland's 1883 Plan for the Minneapolis Park System (Wirth 2006)

### 2.2.1 Lake of the Isles

In its original, natural state, Lake of the Isles was mostly a swamp with four islands. It largely retained this character into the late nineteenth century. In 1884, the Chicago, Milwaukee, St. Paul & Pacific (Milwaukee Railroad) filled the swampy area between the lake and Lake Calhoun to build a

rail line (Roise et al. 2012b). Prior to H.W.S. Cleveland coming to Minneapolis in June 1883, Lake of the Isles, with its marshy wetlands, had not been considered for inclusion in the park system. However, within a year and a half of Cleveland presenting his vision, the acquisition of Lake of the Isles became a top priority of the MBPC (Smith 2008:115). Between 1885 and 1886, the MBPC acquired the lake and nearly all the land around it, officially designating it “Lake of the Isles Park” on November 6, 1886. In 1887, the MBPC purchased the two islands in the lake and began laying out a parkway around the lake. In 1888, work on the parkway began, along with landscaping improvements that consisted of sloping and seeding the banks, and planting trees. In 1889, dredging of the northern arm of the lake began and the narrow channel between the northern-most island and the shore was filled to make the island into a peninsula (Smith 2008:115-116; Roise et al. 2012b; Roise et al. 2012c). Gaslights were also installed along the parkway at some point prior to 1905 (MBPC 1906:51).

Wirth’s plans for major improvements to Lake of the Isles, including dredging the lake, increasing the water area, and raising the parkway, were formally outlined in his annual report for 1906 (MBPC 1907a:33). Beginning in July 1907, the lake was dredged to an average depth of eight feet, and new shorelines were established. The spoil was used to raise low areas around the lake and increase the size of the southern island. After the project was completed, the original 100-acre lake, which had consisted of 67 acres of swamp and 33 acres of dry land, was transformed into a 120-acre lake with no marshes and 80 acres of dry land. Between 1911 and 1913, Lake of the Isles was linked with Lake Calhoun and Cedar Lake by navigable waterways. Corresponding with these improvements, the parkway was also improved and the flood prone segment along the west side of the lake was raised 10 feet. Landscaping included extending sod down to the water and the planting of evergreen and deciduous trees (Figure 2). The \$400,000 project was completed in 1914 (Smith 2008:116-117; Roise et al. 2012b; Roise et al. 2012c; MBPC 1914a:18, 48).

### **2.2.2 Cedar Lake**

Originally known as Lake Leavenworth, Cedar Lake was later renamed after the red cedar trees that historically lined its shores (Roise et al. 2012d). No other lake in Minneapolis was considered for so long for acquisition by the MBPC, or took so long to actually acquire. Given its long, complex history, the following context focuses primarily on the east side of the lake, which is where it outlets into the Kenilworth Channel/Lagoon.

In 1865, the St. Paul & Pacific Railroad (StP&P), later the St. Paul, Minneapolis & Manitoba Railway (StPM&M), graded a mainline southwest from downtown Minneapolis that extended along the east and south sides of Cedar Lake; however, rails were not laid until 1867, when the railroad completed a bridge over the Mississippi River (Luecke 1997:7, 11; Prosser 1966:222). This line crossed over the eastern bay of Cedar Lake on a causeway constructed by the railroad through the bay. The Minneapolis & St. Louis Railway (M&StL) constructed a parallel line in 1871 (Prosser 1966:222). In 1882-1883, the StPM&M rerouted its mainline to a new, more direct alignment along the north shore of the lake (StPM&M 1882:12; StPM&M 1883:7; Prosser 1966:224). Afterwards, the line along the east side of the lake appears to have been used as a spur for a few years, with the land south and west of the lake being sold off to adjacent landowners in 1886, while the rails on the east side of the lake were removed sometime between 1888 and 1890 (Warner & Foote 1886; Lowry 1888; Foote 1890). By 1888, the railroads had filled the portion of the bay located east of the tracks and partially filled a bay further south (Lowry 1888).

Soon after the MBPC was created, it considered acquiring the eastern shore of Cedar Lake for a parkway that would loop from Central (Loring) Park to Farview Park. The reason for this was that land owners were offering to donate much of the land. However, this plan had largely died by the mid-1880s, as it was not included as part of Cleveland’s original vision for the park system and also

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due to concerns about how far it was from the city. The plan was revived in 1891 and again in 1899, both times at the urging of William Folwell, a parks commissioner and MBPC president from 1895-1903. Folwell recommended constructing a parkway around Cedar Lake to connect the Chain of Lakes with Glenwood Park (now Wirth Park), however, no action was taken (Smith 2008:27-28).

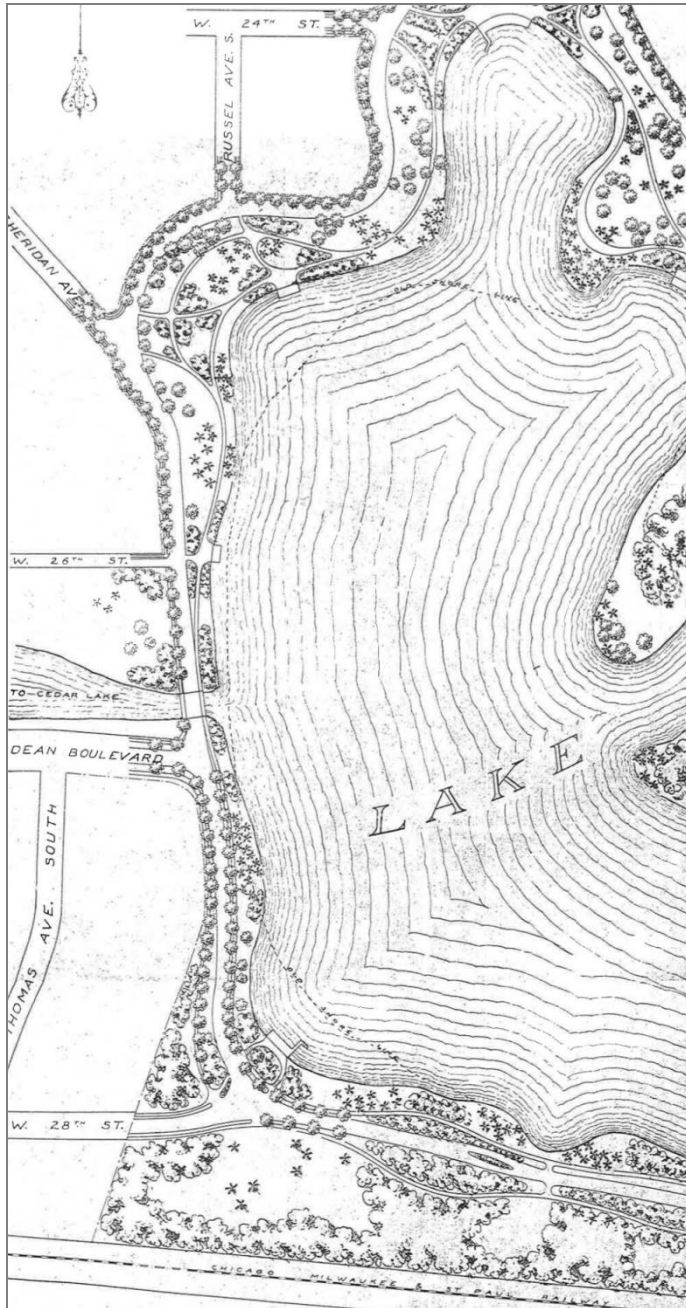


Figure 2. General Plan Showing the Improvements at Lake of the Isles Park (MBPC 1911:102a)

As Minneapolisians fell in love with their parks and demanded more, the MBPC began a formal effort to bring Cedar Lake into the park system starting in 1905. In that year, the MBPC received two petitions. One requested that it acquire the west shore of Cedar Lake for a parkway to connect the



Chain of Lakes with Glenwood Park. The other asked the MBPC to link the lakes with a navigable channel since canoeing on the lakes was a wildly popular leisure activity during this period (Smith 2008:28; Smith 2012). The MBPC subsequently acquired a sliver of land on the west side of the lake to construct a parkway to connect with Glenwood Park. Later that summer, Anna Lewis donated land extending eastward from Cedar Lake towards Lake of the Isles, for the purpose of constructing a channel to link the two lakes (Smith 2008:28).

While the MBPC saw Cedar Lake as a link between the lakes it was developing to the south and a proposed extension to Glenwood Park, it was not until Wirth began improving the Chain of Lakes in 1907 that Cedar Lake was given further consideration. In 1908, the MBPC completed a topographic survey of the lake and began to purchase land. Between 1911 and 1917, the MBPC undertook a massive project to dredge the lake to make it navigable. They also began construction of a parkway around the south and west sides of Cedar Lake in 1913.

### 2.2.3 Linking the Lakes

Connecting the Chain of Lakes was one of the most important improvements undertaken by the MBPC in the early period of Theodore Wirth's tenure. As previously noted, by the early twentieth century there was widespread interest in water sports on the lakes and streams in Minneapolis, which resulted in a strong public desire to create a continuous navigable waterway to connect the Chain of Lakes (Wirth 2006:92). While the idea of linking the lakes had started to be discussed as early as 1892 and 1893, no formal efforts appear to have begun until 1905, when the MBPC accepted a petition requesting that the Board link the lakes with a navigable channel (Smith 2008:28; Wirth 2006:91-92). Theodore Wirth regularly proclaimed the importance of this undertaking as exemplified in his annual report from 1909, where he wrote that "of the many different improvements now under way, the most important is undoubtedly the waterway connections between Lake Calhoun, Lake of the Isles, and Cedar Lake" (MBPC 1910:77).

In 1907, Wirth laid out his plan for connecting Lake of the Isles and Lake Calhoun, and the purpose of the various water features of the waterway, providing some context for the plans he subsequently prepared for the connection between Lake of the Isles and Cedar Lake. In the report, Wirth states:

I have made a careful study of connecting Lake of the Isles and Lake Calhoun and have prepared a plan hereto attached, showing a waterway 50 feet wide. There is a small lagoon north of the railroad track and a larger one between the railroad and Lake Street. As we come from Lake of the Isles under the bridge towards Lake Calhoun, I have designed a landing station and boathouse to the left fronting the boulevard to the east; the idea being that small power boats would navigate between the north end of Lake of the Isles and the south end of Lake Calhoun, with several landing places between the two ends. This lagoon would also serve as a kind of safe harbor for row boats, while the general irregular shore lines with their wooded banks would give the whole a natural picturesque appearance (MBPC 1910:42).

The goal of Wirth and the MBPC was not only to connect the lakes, which would have been a simple engineering exercise, rather they also sought to further their overall vision for the Chain of Lakes and create highly picturesque settings in which to recreate. This is exemplified in MBPC President Jesse Northrup's annual report for the year 1908, where he refers to the work being done to transform Lake of the Isles "from a marsh into our most picturesque park, and which, when connected with Lakes Cedar and Calhoun with their beautiful drive and bridges" would make it the "Venice of America" (MBPC 1909:8).

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Dredging of the Calhoun-Isles Channel commenced in 1908 and opened with considerable fanfare in 1911. The Isles-Cedar (Kenilworth) Lagoon/Channel was completed in 1913 and a third channel between Cedar and Brownie Lakes followed in 1917.

### 2.3 The Kenilworth Lagoon/Channel

The first step in realizing the connection between Lake of the Isles and Cedar Lake was to acquire the land. As noted above, in the summer of 1905, Anna Lewis donated a strip of land to the MBPC specifically for the purpose of creating a channel between the two lakes. The land was donated on the condition that the MBPC complete the channel in a timely manner (Smith 2008:28). Mrs. Lewis and her husband Theodore owned the land between the two lakes between 24th and 26th streets, so this condition was likely included as part of the donation in an attempt to increase the value of their land and increase their profits when they developed it. However, due to delays in completing the channel, the MBPC later paid Mrs. Lewis \$1,000 for the land (Smith 2008:28). In 1908, Anna and Theodore Lewis platted the Burnham Wood Addition, which included in its design a corridor for the portion of the proposed channel from Cedar Lake to the M&StL corridor. It appears that the placement of fill on the east shore of Cedar Lake to create what became part of Burnham Wood left an inlet between the plat, on the north, and a preexisting shoreline of a partially filled bay on the south. It also appears that this inlet, plus the rest of the donated strip of land, would come to comprise the portion of the channel west of the M&StL corridor (Figure 3).



Figure 3. Atlas Minneapolis, Minnesota, 1903 (as Updated) (MREB, 1903)

In 1909, the Walton Hills Land Company platted the Walton Hills Second Addition to Minneapolis that included a large, irregularly shaped block, Block 5, which would become the site of the Kenilworth Lagoon (Figure 4) (Corr 1909). This parcel would complete the connection from the Lewis land at the M&StL corridor to Lake of the Isles. Also in 1909, the MBPC completed surveys and descriptions for the acquisition of land adjoining Cedar Lake and Lake of the Isles Park, and prepared plans for the connection (Figure 4) (MBPC 1910:72-74). Both the plat for the Walton Hills Second Addition and the MBPC plan show that nearly the entirety of the proposed lagoon site was wetland, as was the area between the railroad corridor and Cedar Lake Avenue/Burnham Road (which had been part of the Lewis land) (Corr 1909; MBPC 1910:86a). Historical photographs of dredging of the lagoon show the area was an open, lowland swamp, bounded by higher ground lined with deciduous and evergreen trees (MBPC 1910:35; MBPC 1915a:65).

Construction of the Kenilworth Lagoon/Channel began in 1911 and was completed in late 1913, although Bridge No. 6 was not completed until 1914 (Figures 5-7). The project was originally scheduled to be completed about the same time as the waterway between Lake of the Isles and Lake Calhoun, which opened with a weeklong celebration in 1911. However, due to unexpected difficulties with the larger dredging effort on Lake of the Isles and faulty engineering of the bridge over the lagoon, the project was not completed until November 1913 (Roise et al. 2012d; Smith 2008:28,117). The following is a synopsis of the apparent sequence of construction

- 1911: Dredging began. It appears that work started on the south side of the lagoon and then moved to the north side of the lagoon. It appears that excavation was completed to the M&StL Railroad corridor (see Figure 5) (MBPC 1911, Roise et al. 2012d).
- 1912: Dredging continued within the lagoon and continued along the channel, from the west side of the M&StL corridor towards Cedar Lake. Based on a comparison of the plat for Walton Hills Second Addition, Wirth's original plan for the lagoon/channel, and historical atlases, it appears that some of the dredging spoil was used to raise the shores along the lagoon and channel, both in parkland and on private land, to enable the development of parcels along the lagoon/channel (see Figure 7).
- 1913: Dredging neared completion in early in the year. Later that year, the bridge that carries West Lake of the Isles Boulevard over the lagoon and the railroad trestles over the channel were constructed. In June and July, 1913, the MBPC reached an agreement with the M&StL regarding the construction of "temporary" railroad trestles, which were completed in the late summer/early fall (MBPC 1914b:86-87, 97). Due to faulty engineering, soon after the Lake of the Isles bridge was constructed, it began to settle, necessitating that it be partially demolished and rebuilt. This further delayed the completion of the lagoon/channel from the spring of 1913 until November of that year. Although the channel appears to have been passable by early August, it was not completed until early November, when the bridge was finished (Smith 2008:116-117; Roise et al. 2012d; MBPC 1914a). The waterway officially opened on November 8, 1913 (MBPC 1914a:147).



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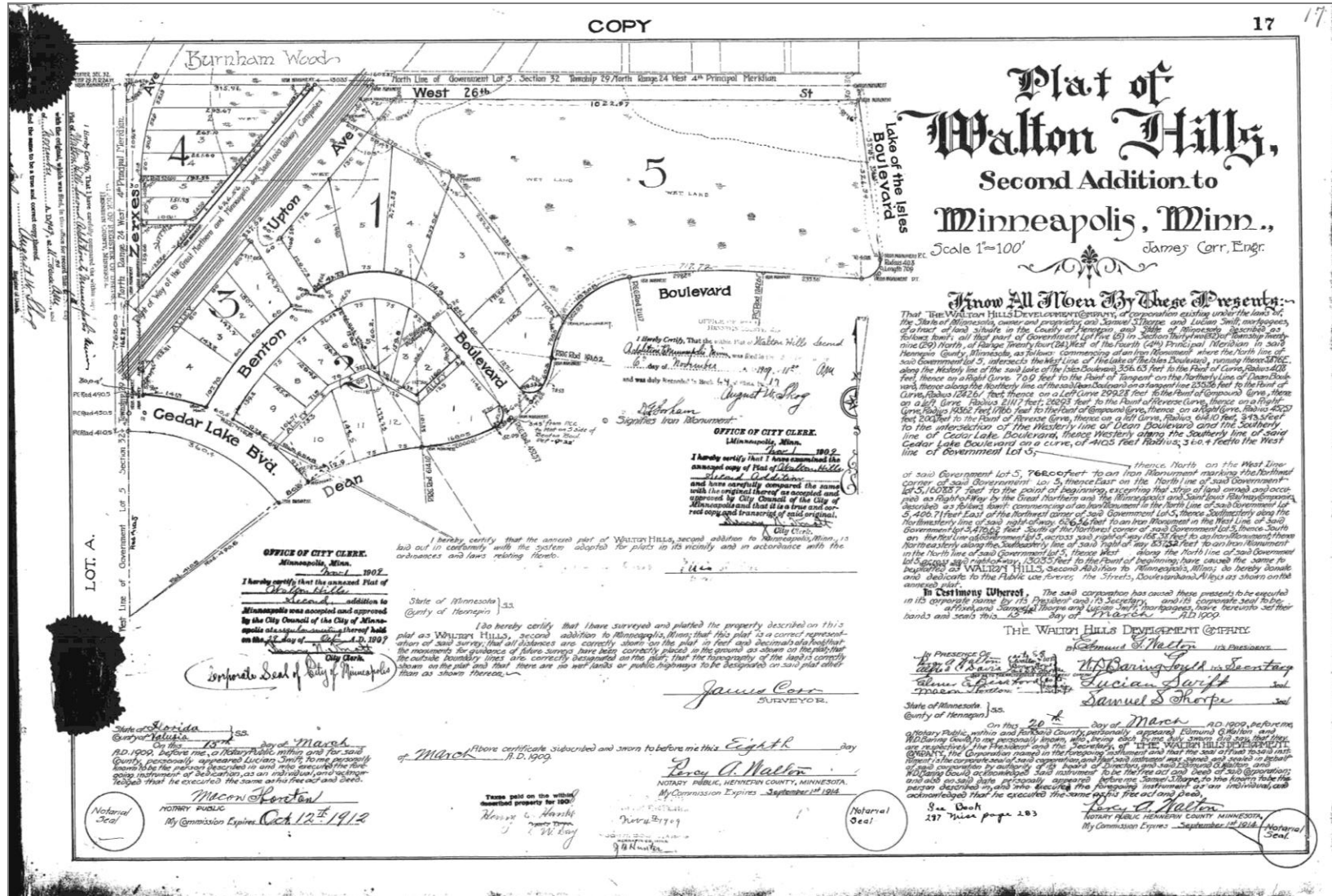


Figure 4. Plat of Walton Hills Second Addition to Minneapolis, Minn. (Corr, 1909)





Figure 5. Hydraulic and Orange Peel Dredges at Work in the Lagoon between Lake of the Isles and Cedar Lake (MBPC 1910:35)

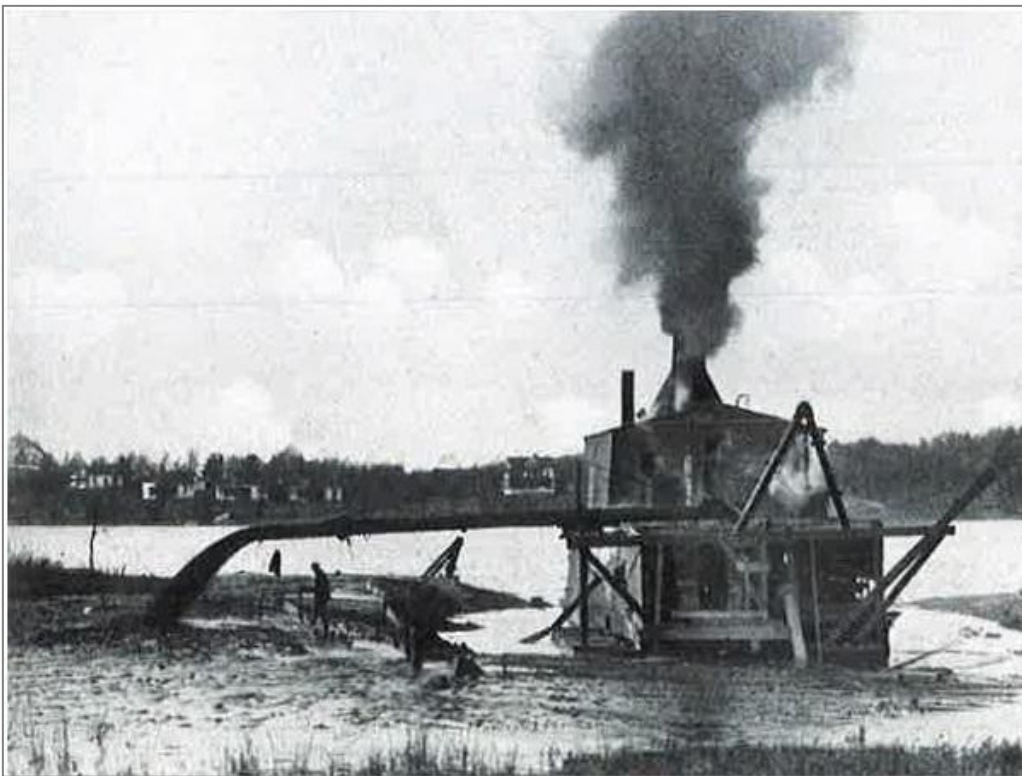


Figure 6. Hydraulic Dredge Commencing Excavation of Cedar Lake Channel (MBPC 1913:65)

- Fall/Winter of 1913-1914: The grounds along the north side of the lagoon and on both sides of the channel between the M&StL trestles and Cedar Lake were graded, covered with loam, and seeded. Walks twelve feet in width were constructed along both sides of the lagoon, from Lake of the Isles Boulevard to Cedar Lake Avenue (now Burnham Road). "Pipe rails were erected along the walks where they come close to the narrow channel under the railroad bridge. During the winter season the grounds along the south shore of the lagoon, between Bridge No. 4 [Lake of the Isles Parkway over the Kenilworth Lagoon] and the railroad, were graded, and in the spring seeded and planted." (MBPC 1914a:43, 50, 87; MBPC 1914b:86; Roise et al. 2012d). On December 17, 1914, the MBPC approved a resolution authorizing the construction of "a

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temporary bridge over the Cedar Lake canal at Burnham Road...as soon as the ice is sufficiently frozen at an expenditure of \$350,000" (MBPC 1914b:170). It is believed this temporary bridge was completed in early 1914.

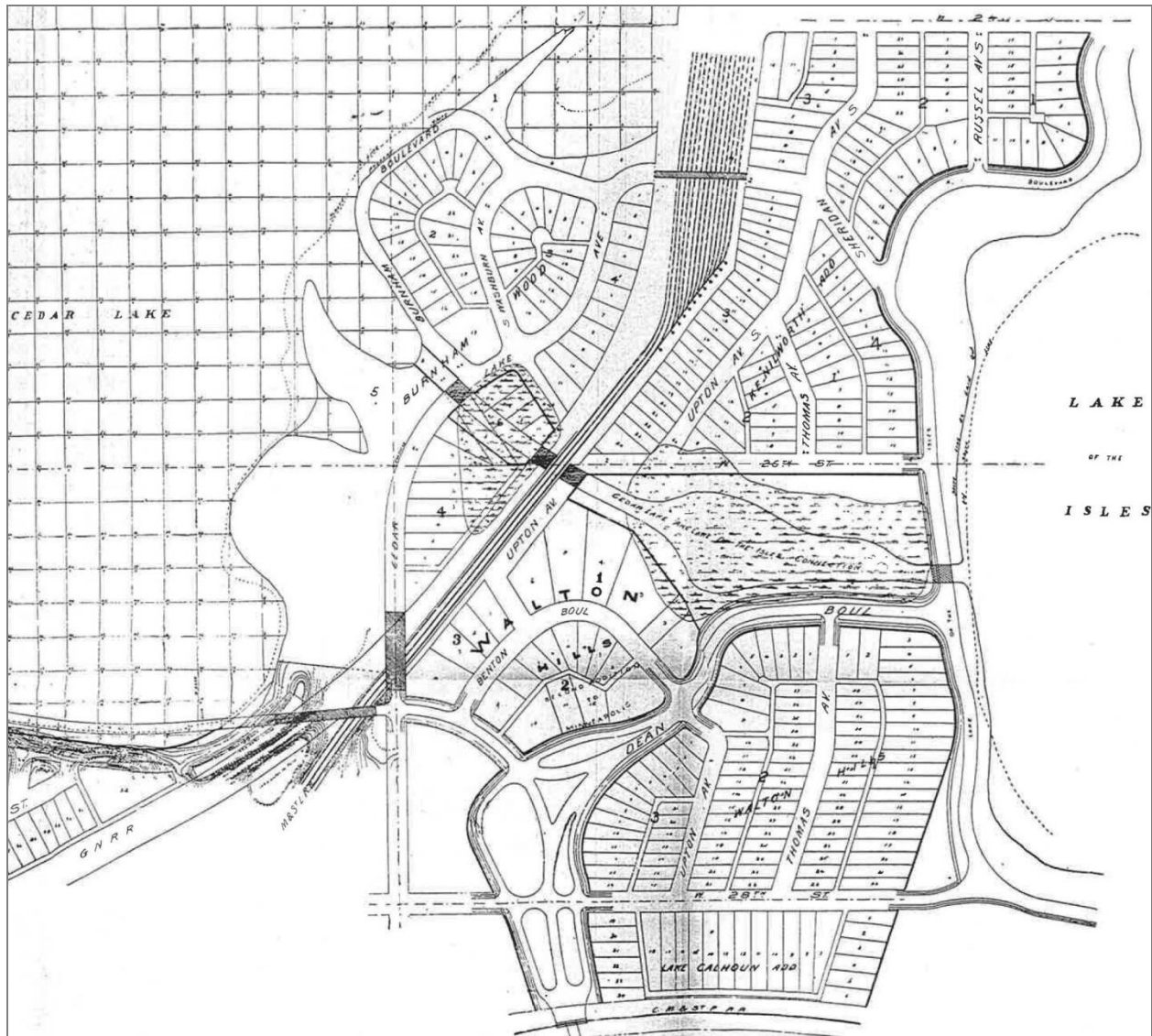


Figure 7. General Plan for Cedar Lake Boulevard Shown in Connection with Lake of the Isles and Dean Boulevards. Note: Dotted line shows existing shorelines and solid lines show shorelines after water level is lowered (MBPC 1910)

One of the planning challenges that had to be dealt with when the MBPC set about connecting the lakes was the different water levels in each lake. While Lake Calhoun and Lake of the Isles were at approximately the same level, Cedar Lake was approximately five feet higher than Lake of the Isles. Therefore, to avoid the need for a lock, Cedar Lake had to be lowered to the same level as Lake of the Isles so the two lakes could be connected (see Figure 7) (Smith 2008:117; MBPC 1910:77, 86a). Similarly, since Lake Harriet was nearly seven feet lower than Lake Calhoun, it was not connected to the other lakes due to how much the other lakes would have had to been lowered to establish a link. After the Kenilworth Lagoon/Channel opened and Cedar Lake dropped five feet, between 1913

and 1916, the MBPC dredged the lake to deepen it, with the fill being used for the construction of the parkway on the south and west shores.

When it came to actually constructing the waterways between Calhoun, Isles, Cedar, and Brownie, the connections themselves do not appear to have been much of a concern, as MBPC records spending little time on the subject. Wirth even notes in his annual report for 1909 that that “the dredging of the waterways and lagoons in itself is an easy and simple undertaking” (MBPC 1910:77). In comparison, the dredging the lakes proved to be a much more difficult undertaking due to the extensive depth of the peat beds at the bottom of the lakes.

Perhaps the greatest challenge associated with connecting the lakes was the design of the bridges that were to go over the new channels. A total of six crossings were required over the two channels that connected Calhoun, Isles, and Cedar. The bridges were numbered sequentially, proceeding upstream from Lake Calhoun to Cedar Lake (Figure 8). One was a combined boulevard/highway bridge (Bridge No. 1), two were railroad bridges (Bridges Nos. 2 and 5), two were parkway bridges (Bridges Nos. 3 and 4), and one was a street bridge (Bridge No. 6) (Wirth 2006:92). Across the Calhoun-Isles Channel, Bridge No. 1 carried Lake Street, Bridge No. 2 carried the Chicago, Milwaukee, St. Paul & Pacific Railway (Milwaukee Road), and Bridge No. 3 carried East Lake of the Isles Boulevard. Across the Kenilworth Lagoon/Channel, Bridge No. 4 carried West Lake of the Isles Boulevard, Bridge No. 5 carried the M&StL, and Bridge No. 6 carried Cedar Lake Avenue (now Burnham Road).

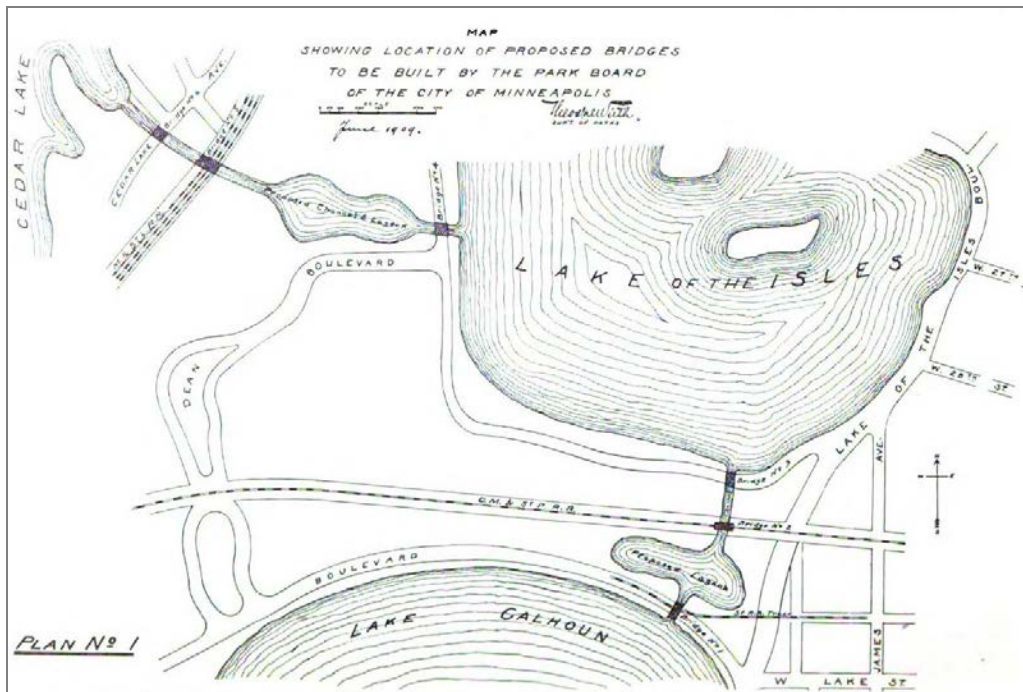


Figure 8. Map Showing Location of Proposed Bridges (MBPC 1910:80)

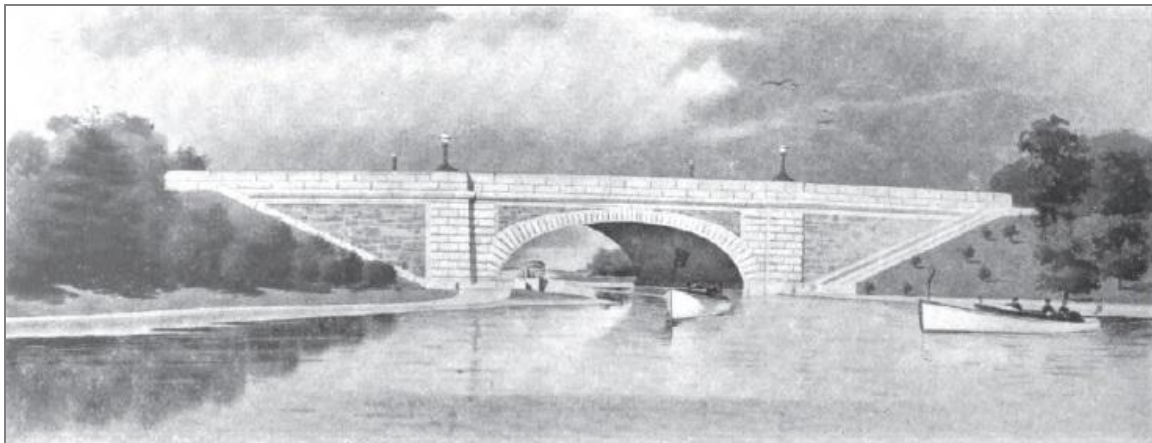
The MBPC placed a great emphasis on building attractive, durable bridges over the new waterways, requiring that “these bridges must be of a permanent, modern and durable construction, preferably reinforced concrete with attractive facing. They should be ornamental in design and in keeping and harmony with the landscape” (MBPC 1907b). However, neither Wirth nor the MBPC realized the challenge this goal would pose.



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In 1909, the MBPC sponsored a bridge design competition, offering three prizes of \$800, \$500, and \$200 (MBPC 1909:77). Although the MBPC was concerned about the appearance of all six bridges, it appears that the competition was intended to be only for the four MBPC-owned bridges and not the two railroad bridges. Twenty-five submissions were received; however the “designs submitted were not of the high-class character which it was thought the competition would bring forth” (MBPC 1909:77). Wirth conceded that “the building of six appropriate bridges offers many difficulties which were not fully recognized from the beginning” (MBPC 1910:77). The winning design was used for Bridge No. 1 (1911), which carries Lake Street over the Calhoun-Isles Channel (Figure 9). Second place was used for Bridge No. 3 (1911; Figure 10), East Lake of the Isles Parkway over the Calhoun-Isles Channel, and the almost identical Bridge No. 4 (1913; Figure 11), West Lake of the Isles Parkway over the Kenilworth Lagoon/Channel. No third place was awarded; however, the MBPC did purchase the design submitted by Mr. Federick Bigelow of Newark, N. J., with the intent of using it for Bridge No. 6 (Figure 12), but instead a temporary structure was built in 1913-1914 (MBPC 1909:77). The designs selected for Bridges 1, 3, 4, and 6 (all roadway) all met the MBPC design criteria in that they were reinforced concrete structures with granite or limestone facing, in the Classical Revival style representing the “City Beautiful” ideals of the period. A number of other bridges were also constructed in this style elsewhere in the Grand Rounds.



*Figure 9. First Prize Design (Bridge No. 1) by H. Lincoln Rogers and Guy Vroman (MBPC 1910:78)*

In 1910, Wirth pointed out that the four roadway crossings were the most conspicuous, and even allowed that the two railroad bridges could be ordinary steel girders if fiscal constraints required it (MBPC 1910:84). However, his subsequent work with the Milwaukee Road and M&StL demonstrate the strong desire of the MBPC to create a uniform, picturesque aesthetic for the waterways of which the railroad bridges were a part. To this end, the MBPC worked with the Milwaukee Road on the design for Bridge No. 2 (1911; Figure 13), which was adapted from the design for Bridge No. 3. The MBPC also attempted to work with the M&StL to design an aesthetically pleasing design for Bridge No. 5, but was not successful. The timber trestle constructed by the M&StL in 1913 for Bridge No. 5 was intended to be temporary (Roise et al. 2012d; MBPC 1914a:50; MBPC 1914b:86, 97). In its resolution authorizing the construction of the bridge, the MBPC even went so far as to reserve “its right to require the construction of a different bridge within a reasonable period of time with two openings for the canal, each in width twenty-five feet, less half the width of thickness of the center support of the bridge, and two clear openings of twelve feet for sidewalks, and with the elevation above specified” (MBPC 1914b:86). At the time of its construction, Wirth declared that “after permanent ornamental bridges have been established to replace the present unsightly wooden structures, this waterway between the two lakes will be one of the most attractive features of the



entire park system” (MBPC 1914a:50). However, Wirth was never able to convince the M&StL to construct a more aesthetically pleasing bridge at this crossing. This fact was bemoaned by the MBPC in 1913 and by Wirth until his retirement (Roise et al. 2012d; MBPC 1935). The MBPC was also unsuccessful with achieving this goal when the M&StL rebuilt its trestles in the 1950s. Similarly, when a new structure was built in 1961 to replace Bridge No. 6, it utilized a standard girder design rather than a more aesthetically pleasing design that would be more in keeping with Wirth’s vision.

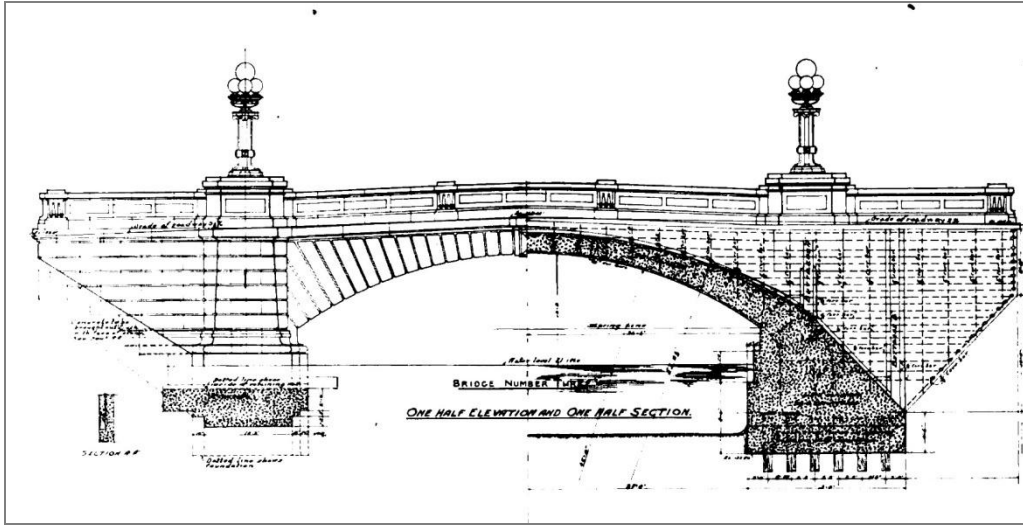


Figure 10. Second Prize Design (Bridge No. 3) by Wm. Pierce Cowles and Cecil Bayless Chapman (MBPC 1910:79)

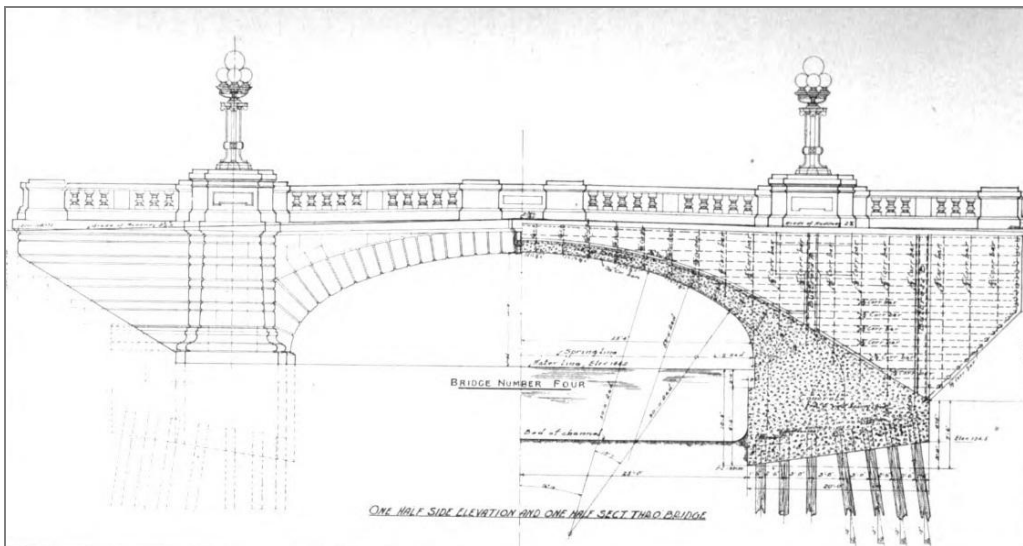


Figure 11. Second Prize Design (Bridge No. 4) by Wm. Pierce Cowles and Cecil Bayless Chapman (MBPC 1910:83)

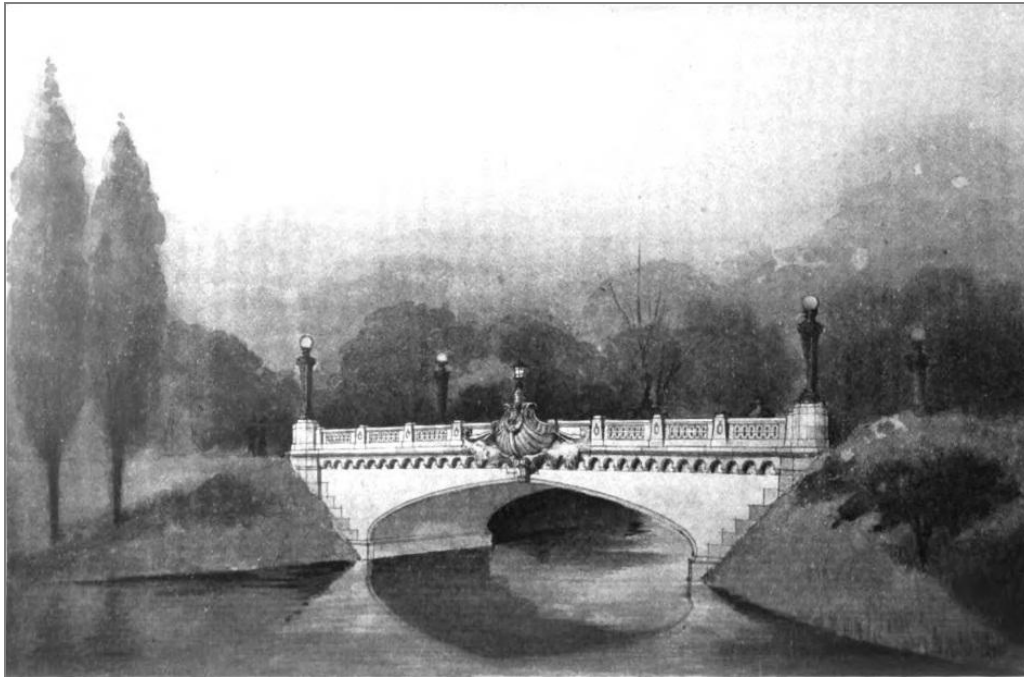


Figure 12. Competition Design (Bridge No. 6) by Frederick Bigelow (not built) (MBPC 1910:82)

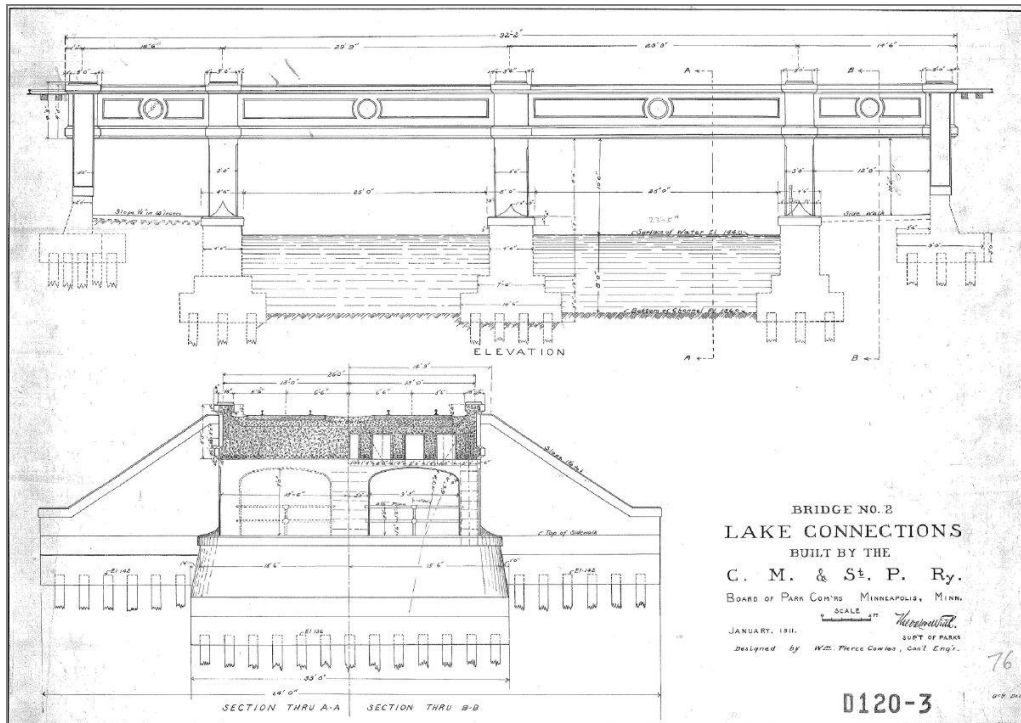


Figure 13. Bridge No. 2 (1912-1913) built to carry the Milwaukee Road over the Calhoun-Isles Channel (Cowles 1911)

As originally planned, the Kenilworth Channel had unlined shores. It is not entirely clear if sod was planted down to the waterline, or if sand or another material was placed along the edge of the

shore, but shortly after its opening, the shores of the channel began to erode from exposure to wake from motorboats using the channel. Therefore, in 1915, wood sheet pile was installed along the sides of the channel. Riprap may also have been placed along the shores of the channel. Other than these early improvements, no other major changes were made to the Kenilworth Lagoon/Channel until the 1930s. Upon its completion in 1913, the appearance of the Kenwood Lagoon/Channel was largely achieved. While no detailed plans exist to document its original plantings, a picture of the general character of the Kenilworth Lagoon/Channel can be gained through historical photographs and the 1910 plan of general improvements to Lake of the Isles (Figures 14-17; also Figure 2). Collectively, they illustrate a clearly manicured area around most of the lagoon, with sod and trees carefully placed to create a picturesque setting within the lagoon grounds, which was bounded on three sides by boulevard trees, most densely planted along Dean Parkway. Photos show that the gaslights that were in place along Lake of the Isles Boulevard and Dean Parkway by 1905 were apparently replaced with electric lights by the late 1920s. According to historical photographs, the electric lights appear to be a standard Minneapolis fixture rather than one designed specifically for the park system. Photographs also show a naturalistic, wooded character between Bridge Nos. 5 and 6.



Figure 14. Kenilworth Lagoon facing east, undated (Minneapolis Collection, Hennepin County Library)

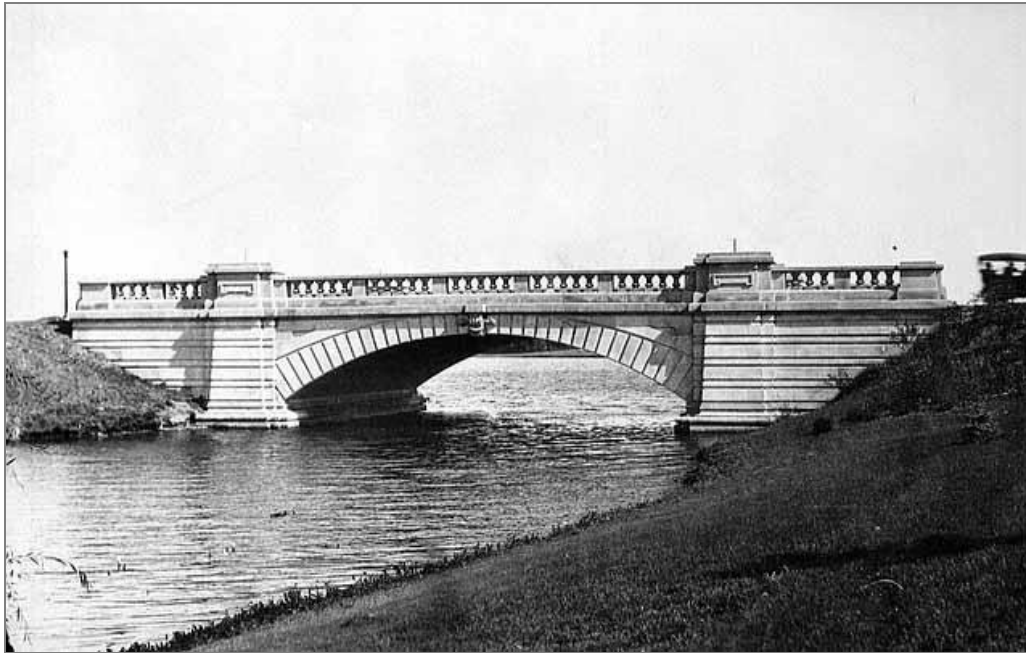


Figure 15. Bridge No. 4, ca. 1915 (Minneapolis Collection, Hennepin County Library)



Figure 16. Bridge No. 5, 1913 (MPRB, Minnesota Historical Society Collection)





*Figure 17. Aerial View of Cedar Lake and Lake of the Isles c. 1928, facing east (Minnesota Historical Society Collection)*

While the lagoon/channel between Cedar Lake and Lake of the Isles was under development, it was referred to in MBPC materials to as the connection or waterway between Cedar Lake and Lake of the Isles, and as the “Cedar Lake Canal.” As the project neared completion, on November 19, 1913, the MBPC received a petition from H.F. Newall and George N. Hoaglin, who suggested the name “Kenilworth” for the lagoon between Lake of the Isles and Cedar Lake (MBPC 1914b:155). Wirth subsequently recommended that the two bridges that carried Lake of the Isles Boulevard over the waterways that linked Isles to Cedar Lake and Lake Calhoun be named, as well as the new “lagoons or channels” (MBPC 1914a:87). On February 18, 1914, the MBPC officially adopted the name “Kenilworth Lagoon” for the new lagoon/channel that connected Lake of the Isles with Cedar Lake (MBPC 1915b:26; Roise et al. 2012d).

During most of the 1930s, the MBPC was strapped for funds and maintenance was deferred. However, two projects completed during this decade affected the Kenilworth Lagoon/Channel. The first was the lowering of water in the lakes, including in the Kenilworth Lagoon/Channel, in 1935. Water levels in the lakes were lowered six inches in an effort to control flooding, which was causing reoccurring damage to shorelines (Smith 2008:117; Roise et al. 2012c). As a result of the water lowering, the sandy shoreline became much more prominent (Figure 18). The other major project was a rehabilitation of Lake of the Isles, including the Kenilworth Lagoon/Channel by the Works Progress Administration (WPA) in 1936 (Roise et al. 2012d). As part of this larger project, the WPA installed sheeting along the lagoon/channel; placed rip-rap around the bridges; and resurfaced, sodded, and seeded the banks of the lagoon/channel (Dahlberg 1937:28-31). The sheeting and rip-rap “walls” constructed by the WPA resulted in a total of 2,400 cubic feet of retaining wall (Roise et al. 2012d). Based on historical photographs, the WPA appears to have, as part of this project, built the limestone retaining walls that frame all four corners of the opening under Bridge No. 4. These walls, constructed of cut limestone set in mortar and laid in ashlar, clearly reflect the Classical Revival character of the bridge. The WPA also placed riprap along the shore and constructed Rustic shoreline retaining walls at the west end of the lagoon, leading up to the Bridge No. 5, and continuing to Bridge No. 6 (Figure 19). In addition, the WPA constructed new timber breakwaters along both sides of the channel, between Bridge No. 6 and Cedar Lake (Figure 20). Within a decade of the water being lowered, sod had again worked its way closer to the waterline (Figures 21-22).



*Figure 18. Kenilworth Lagoon/Channel, 1938 Aerial Photograph (Agricultural Stabilization and Conservation Service)*

As the area along, and west of, Burnham Road began to develop, and corresponding with a larger City of Minneapolis effort to separate wastewater and stormwater runoff within its sewer system, in 1941 the City constructed a sewage pump house (lift station) just below the southeast abutment of Bridge No. 6.



*Figure 19. Kenilworth Lagoon and Bridge No. 5, 1936 (Minnesota Historical Society Collection)*



*Figure 20. Sheet piling installed by WPA along Kenilworth Lagoon near Cedar Lake Avenue, 1936 (Minnesota Historical Society Collection)*





Figure 21. Kenilworth Lagoon, 1944 (Norton & Peel, Minnesota Historical Society Collection)



Figure 22. Kenilworth Lagoon, 1944 (Norton & Peel, Minnesota Historical Society Collection)

In 1961, the City of Minneapolis built a new span at the Bridge No. 6 location. The original, “temporary” single-lane, 18-foot wide structure was replaced with the current, two-lane, single



span, 44-foot wide, rolled steel beam bridge. This somewhat changed the visual character of the section of the waterway between Cedar Lake and Bridge No. 5. Its slightly modernist aesthetic, wide clear span, and much wider deck introduced a more modern and different scaled element to these otherwise rustic portions of the waterway. At the same time, the City constructed a new water main under the waterway. As part of its November 15, 1961, approval for the new main, the MBPC required that the top elevation of the new pipe “not be above elevation 136 City datum, which will be approximately 3 feet below the bottom of the channel of Kenilworth Lagoon” (Roy Clabo, MBPC, personal communication, T.B. Corblett Jr., Minneapolis Water Works [MWS], 16 November 1961).

Following a system-wide study of the Grand Rounds by the San Francisco firm Eckbo, Dean, Austin, and Williams that was completed in 1971, the Minneapolis Park and Recreation Board (MPRB) completed improvements to Lake of the Isles and Dean Parkways between 1977-1978.¹ These improvements included rose-colored paving, cube-shaped streetlights, and signage. While technically not considered as improvements to the Kenilworth Lagoon/Channel, they did slightly change the aesthetics of the lagoon property, as the modernist style lighting was quite different from the more traditional circa 1920s streetlights that had previously existed around the edges of the lagoon.

In the late twentieth century, many trees along the lagoon were lost and additional trees planted, although not necessarily in the same location. As a result many of the evergreen trees planted during initial development, including some of those planted in distinctive clusters on the north shore of the lagoon, were replaced with deciduous trees. Specifically, in 1998, major flooding severely damaged shoreline vegetation and paths around Lake of the Isles. The next year, in the summer of 1998 a major windstorm resulted in significant tree loss. Many of these were large, mature trees planted as part of earlier improvements (MPRB 2001). In the 2000s, a multi-year Lake of the Isles renovation MPRB project included work around the Kenilworth Lagoon. The project was done to repair deteriorated shoreline, address flooding and water quality issues, and to replace/restore vegetation. Along the Kenilworth Lagoon, the most noticeable change was the planting of 146 shrubs along the northern shore of the lagoon, and 40 more on the northeast corner where the waterway narrows to pass under Bridge No. 4. Water plants, including cattails were also planted near the shoreline along the northeastern and southwestern corners of the lagoon. In addition, stone slabs to provide lake access were placed on both the north and south shores of the lagoon, and a bench was installed on the south shore along the walk that roughly parallels Dean Parkway (SWB 2007). In the mid-2000s, the cube-shaped lighting along Lake of the Isles Boulevard was replaced with current MPRB standard lighting, and a current standard parks sign was installed in the southeast corner of the Kenilworth Lagoon Grounds, on the northwest corner of the intersection of Lake of the Isles Boulevard and Dean Parkway.

## 2.4 Development of the Area Surrounding the Kenilworth Lagoon/Channel

The area between Lake of the Isles and Cedar Lake, south of West 24th Street remained largely undeveloped until the early twentieth century. The only exceptions were the construction of rail lines through this area and initial development of Lake of the Isles by the MBPC (Foote 1898; City Engineers Office 1899; Minneapolis Real Estate Board [MREB] 1903). In 1867, the StP&P (later the StPM&M and the Great Northern Railway (GN) began constructing a mainline westward from Minneapolis to Breckenridge, Minnesota. This line began on the west side of downtown Minneapolis, and extended in a south-southwesterly direction, crossing over the eastern bay of Cedar Lake and then between Cedar Lake and Lake of the Isles, before curving to the west, south of

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¹ The Minneapolis Board of Park Commissioners (MBPC) changed its name to the Minneapolis Park and Recreation Board (MPRB) in 1969, as a result of a recommendation from the Brightbill study (MPRB 2014c)

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Cedar Lake. In 1871, the M&StL constructed a mainline southwest from downtown Minneapolis towards Sioux City, Iowa that paralleled the StP&P line from downtown Minneapolis, then between the lakes, before diverging from the StP&P near the southeast shore of Cedar Lake (Figure 23)(Prosser 1966:222; Andreas 1874). In 1883, the StPM&M completed a more direct route that skirted the north side of Cedar Lake and removed its tracks around the south sides of the lake in 1886 and along the east side of the lake 1888 and 1890 (StPM&M 1882; StPM&M 1883; Prosser 1966:224; Warner and Foote 1886; Lowry 1888; Foote 1890) By 1888, the railroads had filled the portion of Cedar Lake east of their tracks, and partially filled a bay further to the south (Figure 24) (Lowry 1888; Foote 1890:224; Foote 1892). In the mid-1890s, the M&StL constructed a small yard, known as the Cedar Lake Yard, with three sidings along its right-of-way, roughly between 22nd and 26th streets (Figure 25). The only other development to occur in this area before the start of the twentieth century was the construction of a parkway around Lake of the Isles and another one (now Dean Parkway) to connect it to Lake Calhoun. The MBPC began construction on these parkways in 1887. Work on the initial development of these parkways and initial improvements to Lake of the Isles were completed in the 1890s (Roise et al. 2012a).



Figure 23. Plan of the City of Minneapolis and Vicinity, 1874 (Andreas 1874)

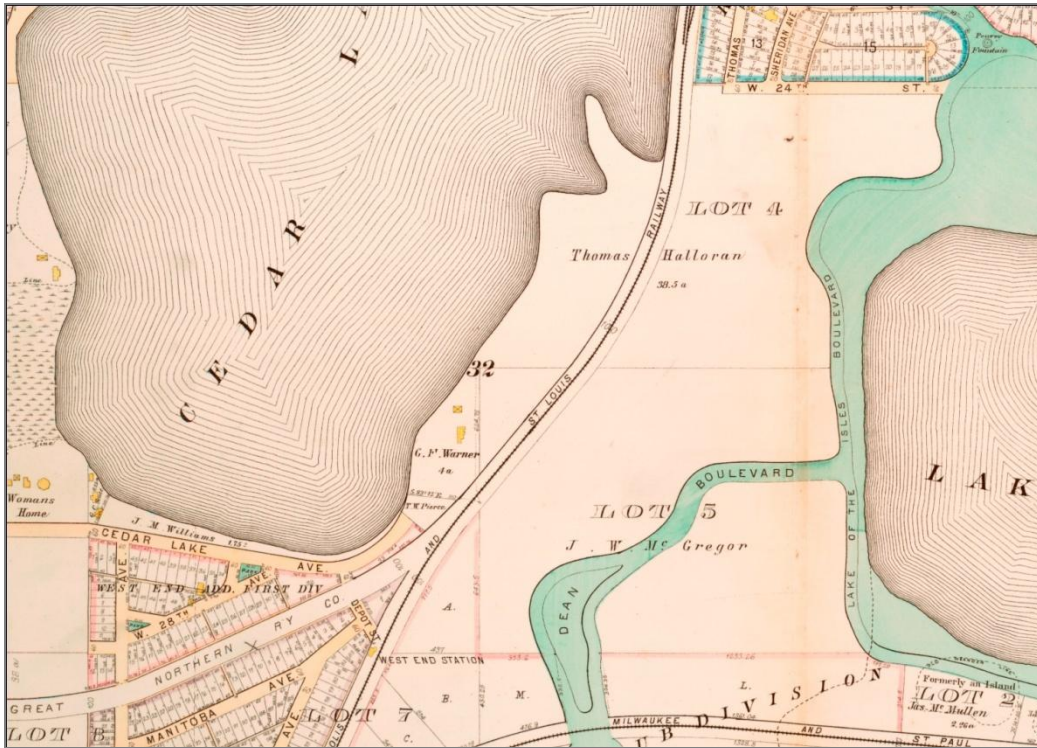


Figure 24. Atlas of the City of Minneapolis, Minnesota (C.M. Foote 1892)



Figure 25. Atlas of the City of Minneapolis, Minnesota (C.M. Foote 1898)

With the extensive improvements being made to the Chain of Lakes by the MBPC under the direction of Theodore Wirth starting in 1907, real estate development in the area boomed. As Wirth noted in his 1907 annual report, the MBPC's success with dredging efforts, mostly on the west and

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south shores of Lake of the Isles, was raising real estate values near the lake (Smith 2008:116; MBPC 1908). Reflecting this trend, all of the land between Lake of the Isles and Cedar Lake, south of 24th Street and north of 28th Street, was platted between 1907 and 1910, although a few small areas were later replatted (Table 1).

*Table 1. Kenilworth Lagoon Area Plats*

Addition Name	Submitted By	Date Application Signed	Date Recorded
Kenilworth Addition to Minneapolis	Anna B. and Theodore Lewis (wife and husband)	March 19, 1907	April 10, 1907
Kenilworth Second Addition to Minneapolis	Anna B. and Theodore Lewis (wife and husband)	June 3, 1907	August 20, 1907
Burnham Wood Addition to Minneapolis	Anna B. and Theodore Lewis (wife and husband)	March 4, 1908	April 2, 1908
Walton Hills Addition to Minneapolis	The Walton Hills Development Co., Edmund Walton (president)	January 28, 1909	February 3, 1909
Walton Hills Second Addition to Minneapolis	The Walton Hills Development Co., Edmund Walton (president)	March, 20, 1909	October 29, 1909

A 1903 atlas of Minneapolis that was regularly updated with pasteovers provides some insight in to the transformation that occurred in the area between Lake of the Isles and Cedar Lake between 1903 and 1914, when the Kenilworth Lagoon/Channel was completed (Figures 26 and 27). The base layer shows the undeveloped state of the area in 1903, and documents each plat, as well as changes to the shoreline of Cedar Lake and the development of the Kenilworth Lagoon/Channel; including the conscientious efforts to accommodate its construction even before the MBPC approved plans for it. The map includes a pasteover of Burnham Wood (platted in 1908), which shows that the peninsula jutting into the northeastern bay of Cedar Lake was modified and additional fill was placed in the bay to the south. A later pasteover showing the Lewis Rearrangement of Block 2 Burnham Wood, a predecessor to what was later platted in a modified arrangement as the Cedar Lake View Addition, indicates that more of the southern bay on Cedar Lake appears to have been filled. This left only a small, narrow inlet on the east side of Cedar Lake, which appears to be the beginnings of the present-day west end of the Kenilworth Lagoon/Channel. Also, hand drawn in over the pasteovers, is an extension of the inlet along the entire present-day alignment of the channel and an outline of the proposed lagoon, including a channel under Lake of the Isles Boulevard to connect with Lake of the Isles. This map also confirms that Block 5 of the Walton Hills Second Addition was platted to accommodate the development of the Kenilworth Lagoon, as the large, irregularly shaped block is one large parcel that aligns with the present-day boundaries of the MPRB property (MREB 1903).

While the first land south of 24th Street was platted in the spring of 1907, housing construction came a few years later. Lots facing Kenilworth Lagoon were largely developed between 1910 and the mid-1920s. However, a couple lots remained undeveloped until the 1930s and 1940s. Although it was initially platted in 1908, the area west of the M&StL corridor was developed much later due to its relatively isolated location. The lots in the area were largely developed between 1939 and 1953; however a few lots were developed after that time (Hennepin County Assessor 2014).





Figure 26. Atlas Minneapolis, Minnesota, 1903 (as Updated) (MBRE, 1903)

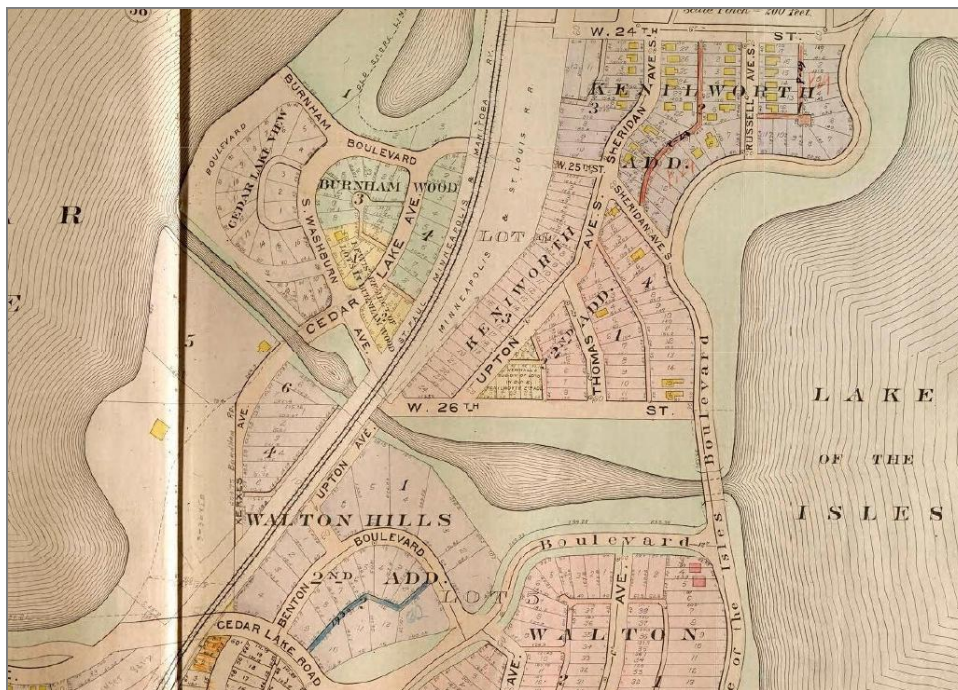


Figure 27. Atlas, Minneapolis Minnesota, 1914 (MBRE, 1914)

## 3 Physical Description

### 3.1 Summary and Overview

The Kenilworth Lagoon/Channel is a sub-segment of the Chain of Lakes segment of the Grand Rounds. It is comprised of a series of features, both natural and man-made, and functions that collectively constitute a designed landscape.

According to the National Park Service, the features and functions of a designed landscape can include:

- existing topography and grading;
- natural features;
- land uses;
- circulation system of roads, paths, trails, etc.;
- spatial relationships and orientations, such as symmetry, asymmetry and axial alignment;
- views and vistas into and out of the landscape;
- vegetation such as trees, plants, and shrubs;
- landscape dividers such as walls, fences, and hedges;
- drainage and engineering structures;
- site furnishings and small scale elements such as benches;
- bodies of water;
- lighting such as street lights as well as the use of both natural and artificial lighting as design elements (i.e., intensity, color);
- signs delineating entrances, street names, and other features;
- buildings contained within the landscape;
- structures such as bridges, roads, and dams; and
- sculpture and other works of art (Keller and Keller 1994:3-4)

The Kenilworth Lagoon/Channel includes many, but not all of these features and functions. Its two main features are its waterway and topography, which are relatively static in nature. The primary characteristics of the waterway are the shape of the body of water and its shoreline, including the way in which the water interacts with the shoreline, water level, depth, and to a lesser extent surface appearance (e.g. is the water static, with a smooth, clear surface, or opaque and fast moving with rapids). The topography is characterized by the natural and man-made contours of the ground, such as flat plains, terraces, steep grades, rolling hills, or valleys; as well as its surface material (e.g. soil or exposed rock outcrops). While vegetation also plays a strong role in characterizing its landscape, as living organisms plant materials have a limited lifespan, so by its nature it will inevitably change over time as original vegetation dies and is replaced by new material, either volunteer or by material planted as part of a formal effort by humans. Therefore, vegetation is considered a secondary feature of the Kenilworth Lagoon/Channel landscape.

The Kenilworth Lagoon/Channel is a single property that is bounded on both ends by two lakes that are part of the Chain of Lakes segment of the Grand Rounds: Cedar Lake on the west and Lake of the Isles on the east (Figure 28). Neither lake remains in its original natural state: both have been dredged, filled, and their banks stabilized to otherwise make them more visually attractive and suitable for recreational purposes (Roise et al. 2012a). The Kenilworth Lagoon/Channel is an irregularly shaped resource that is approximately 2,246 feet in length, and encompasses approximately 14.11 acres, including approximately 5.91 acres of water and 8.2 acres of land. It has three uniquely different segments. The physical characteristics of each segment vary

in terms of the nature of the waterway, topography, vegetation, width, and in the types of manmade features found within it. As a result, each segment has a somewhat distinct aesthetic character and feeling. These segments can roughly be defined from east to west as the “lagoon,” the “area between the bridges,” and the “channel.” These segments are generally delineated by the transportation corridors that bisect/cross the lagoon/channel property. Since the lagoon/channel was designed to be a navigable waterway, there are grade separations that elevate and carry these corridors over the water. The clear spaces under the bridges that carry these corridors over the water provide for some means of visual connection between waterway segments. However, at each end of the bridges, the approaches are placed atop earthen fill that creates a visual barrier between waterway segments, creating a visual separation between each segment of the Kenilworth Lagoon/Channel.

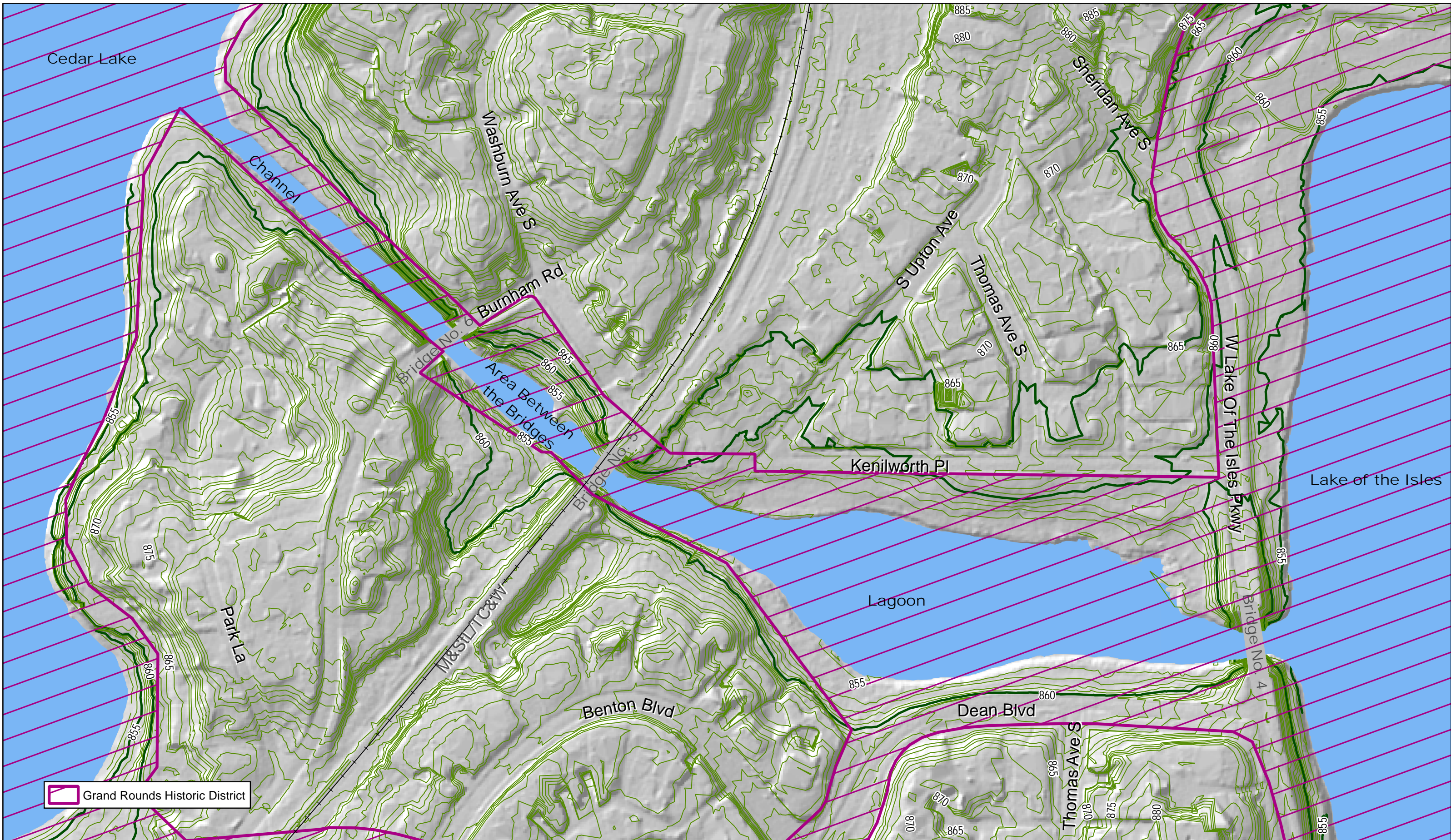
The eastern-most segment of the Kenilworth Lagoon/Channel, the lagoon, encompasses the portion of the waterway and its adjacent grounds from Bridge No. 5 on the west to its outlet to Lake of the Isles on the east. The area between the bridges is the midsection, bounded by Bridge No. 5 on the east and Bridge No. 6 on the west. The western-most segment, the channel, extends from Cedar Lake on the west to Bridge No. 6 on the east. While this order is opposite of the flow of water in the lagoon/channel, it is most appropriate for describing the hierarchy of the designed landscapes within the waterway corridor. This order also corresponds with their changing scale from grand to small, and the changing feeling from public to private through the corridor. The following sections provide a general description of each segment of the Kenilworth Lagoon/Channel, followed by more detailed descriptions of the various features found within the property.


### **3.1.1 The Lagoon: Lake of the Isles to Bridge No.5**

The eastern-most segment of the Kenilworth Lagoon/Channel, the lagoon, encompasses the portion of the waterway and its adjacent grounds between its outlet to Lake of the Isles on the east, just east of Bridge No. 4 (West Lake of the Isles Parkway), to Bridge No. 5 (M&StL, now the Twin Cities & Western Railroad [TC&W]/Kenilworth Trail) on the west (Figures 29-36). The lagoon segment is approximately 1,315 feet in length and ranges in overall width (encompassing land and water features) from approximately 128 feet to 466 feet. The lagoon is characterized by the wide expanse of the waterway, which ranges from approximately 50 feet in width where it passes under Bridge Nos. 4 and 5, to approximately 300 feet. The waterway has the feeling of a small lake, bounded by a wide-open landscape that slowly rises from the shoreline to the north and south, with steeper edges on the east and west formed by the earthen embankments that form the approaches to Bridge Nos. 4 and 5. The landscape of the lagoon is the most highly manicured of the three waterway segments and is characterized by mowed sod/turf, interspersed with individual trees, as well as groupings of trees to create a highly picturesque setting. On the north and south, this space is further defined by the large, stately houses, mostly dating from the first three decades of the twentieth century, which face the streets that bound the lagoon on these sides. However, the far western end of the lagoon begins to take on a more natural setting as it both narrows and bends to pass under Bridge No. 5. Since the trestle is skewed to the lagoon, it visually implies a more solid edge to the lagoon that does not open a visual connection to the next segment of the waterway until one nears the structure. While this trestle creates somewhat of a visual terminus from many viewpoints within and around the lagoon, its material and color serve to integrate it well with the surrounding vegetation. As such, it does not stand out as a man-made feature; rather it reinforces and accentuates the dense vegetation that characterizes the west end of the lagoon.

In terms of vegetation, the lagoon grounds include sodded yards interspersed with deciduous, as well as a few evergreen, trees of varying ages, some shrubs along the south side of the lagoon, and water plants along parts of the shoreline. As part of the 2007 improvements to the Lake of the Isles, aquatic vegetation was planted in the water near the northeastern and southwestern shores of the lagoon, introducing a new aspect to the landscape (Sanders Wacker Bergly Inc [SWB] 2007).



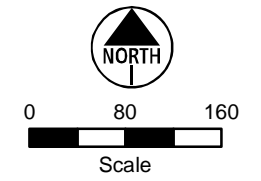


 Grand Rounds Historic District

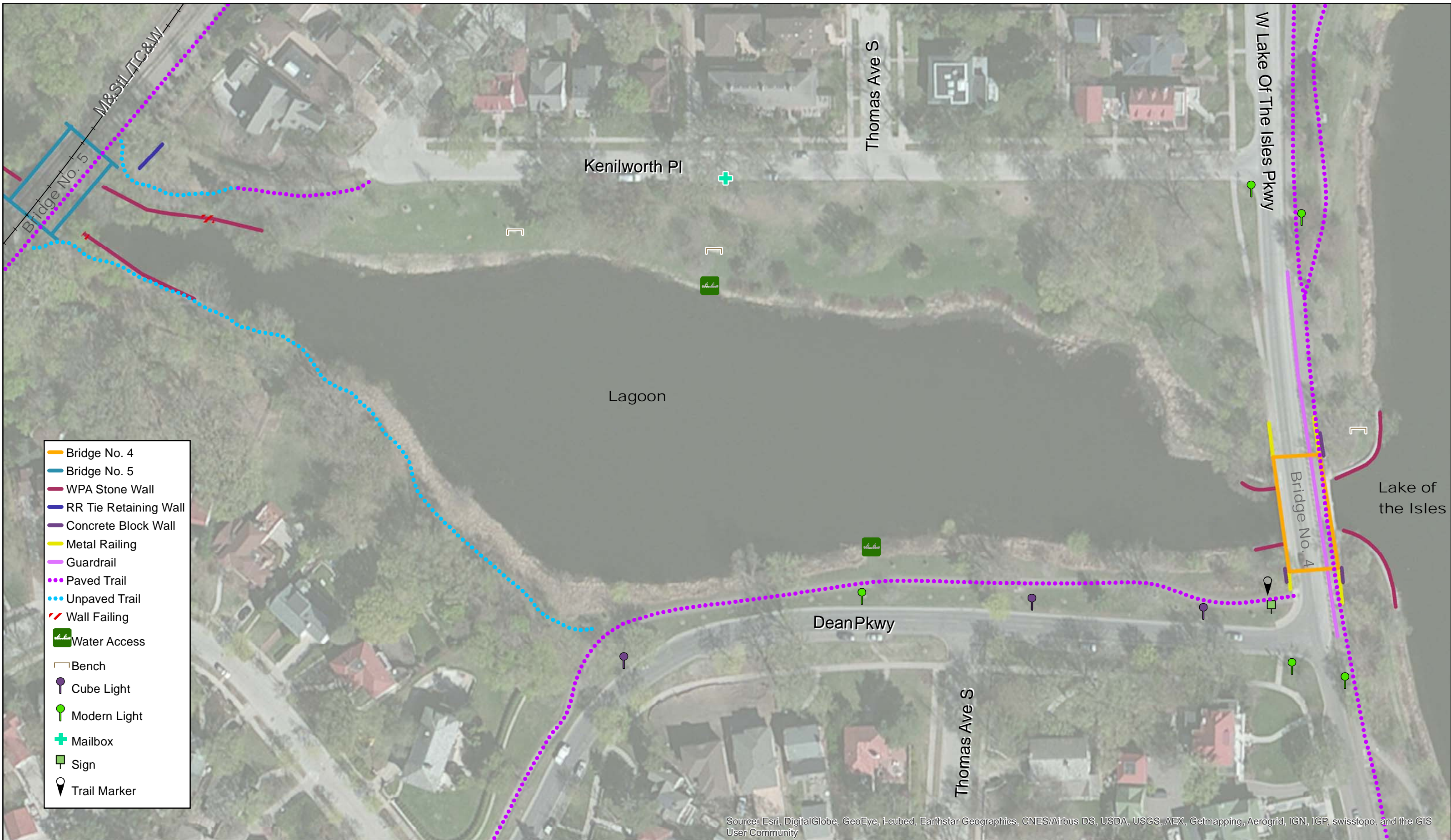
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Kenilworth Lagoon / Channel  
Figure 28 - Landscape

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- Bridge No. 4
- Bridge No. 5
- WPA Stone Wall
- RR Tie Retaining Wall
- Concrete Block Wall
- Metal Railing
- Guardrail
- Paved Trail
- Unpaved Trail
- Wall Failing
- Water Access
- Bench
- Cube Light
- Modern Light
- Mailbox
- Sign
- Trail Marker

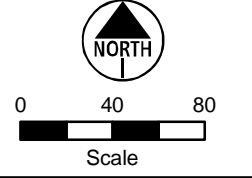
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# SOUTHWEST LRT

Kenilworth Lagoon / Channel  
Figure 29 - Lagoon Segment

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*Figure 30. Lagoon, facing west from Bridge No. 4*



*Figure 31. Lagoon, facing northwest from intersection of West Lake of the Isles and Dean Parkways*



*Figure 32. Lagoon, facing northwest from intersection of West Lake of the Isles and Dean Parkways*



*Figure 33. North side of lagoon, facing northwest*





*Figure 34. Lagoon and Bridge No. 4, facing east*



*Figure 35. Lagoon and south shore, facing east*



*Figure 36. Lagoon with south shore in distance, facing southwest*

There are a number of circulation networks within the lagoon area (Figure 29). There are streets on the north, east, and south sides of the lagoon, with the M&StL corridor on west. There is bituminous surfaced trail on the south, paralleling Dean Parkway, and sidewalks along Lake of the Isles Parkway. At the west end of the lagoon, there are unpaved footpaths on both sides of the lagoon that extend to Bridge No. 5, where they connect with the Kenilworth Trail. Bridge No. 5 carries both the Kenilworth Trail, a combination pedestrian and bike trail, and the former M&StL mainline (now the TC&W) over the lagoon.

There are two structures within the lagoon segment of the Kenilworth Lagoon/Channel: Bridge No. 4, a Classical Revival style concrete arch structure, and Bridge No. 5, a wood trestle (Figure 29). Other man-made elements along this segment of the waterway include a number of retaining walls, bollards and railings, streetlights, signage, and other small-scale elements, such as benches and lake accesses. Retaining walls include both those along the shoreline, as well as ones lining bridge approaches.

### **3.1.2 The Area Between the Bridges: Bridge No. 5 to Bridge No. 6**

The mid-section of the Kenilworth Lagoon/Channel, the area between Bridge No. 5 (M&StL [TC&W]/Kenilworth Trail) and Bridge No. 6 (Burnham Road), can best be described as the transition between the lagoon and channel, and has much the feeling of a river (Figures 37-43). It is bounded on the east by Bridge No. 5 and on the west by Bridge No. 6. Both bridges are set perpendicular to this segment of the waterway, thus providing a visual connection to the waterway segments beyond. However, this segment also has the feeling of being very isolated as it is set in what is essentially a man-made valley created by the fill placed around its edges to elevate streets and the M&StL railroad tracks. This segment of the Kenilworth Lagoon/Channel is characterized by a gently sloping plane rising from the waterline, which transitions to steep slopes that rise 15 to 20 feet above the water. The area between the bridges measures approximately 375 feet in length and ranges in overall width (encompassing land and water features) from approximately 142 feet to 235 feet. The waterway ranges from approximately 50 to 90 feet in width. This segment of the waterway has a rustic aesthetic that is created by the WPA Rustic style retaining walls that line much of its south shore, and by the dense, unmaintained volunteer tree growth that covers most of the land surrounding the water. There is one specimen tree, a cottonwood, located on the north shore, midway along this segment, which is also part of the MPRB Heritage Tree Program for its size (MPRB 2014b). A small, one-story brick pump house with a gable roof is located at the southwest corner of this segment, adjacent to Bride No. 6.

There is a modern concrete stairway, which leads down the embankment from Burnham Road to the pump house.

### **3.1.3 The Channel: Bridge No. 6 to Cedar Lake**

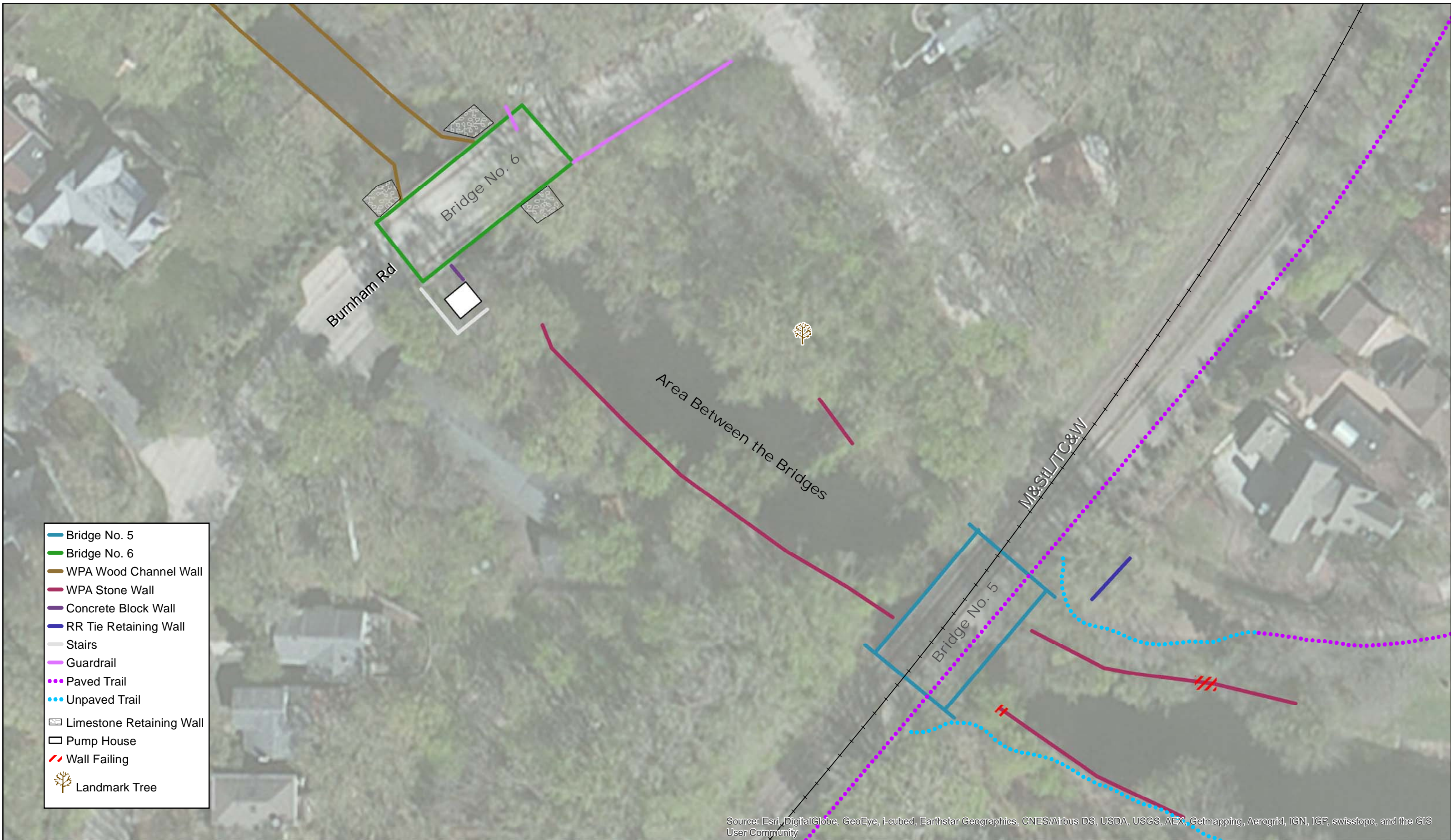
The channel is the segment of the Kenilworth Lagoon/Channel between Bridge No. 5 (Burnham Road) and Cedar Lake (Figures 44-49). It is set within a relatively long, narrow linear corridor that is approximately 600 feet long and 90 feet in width. The primary feature of this landscape is the channel, which is a straight, 35-foot wide body of water aligned down the center axis of the channel corridor. The channel is lined on both sides by wood pile retaining walls/breakwaters constructed by the WPA in 1936. At both ends of the channel, these walls flare out (see below for a description of these walls). Behind the walls, the topography rises steeply near Bridge No. 6, but starts to flatten out towards Cedar Lake on the west. Within the channel corridor, the shoreline is largely lined with volunteer deciduous trees of varying age. There are two specimen cottonwood trees on the south shore, near the midpoint of the channel. Towards the west end of the channel, there are some sodded areas where adjacent property owners have manicured the channel property as a continuation of their private yards. The properties fronting the channel were developed in the 1940s and early 1950s, with backyards facing the channel. Due to the narrowness of the corridor, the hard edges formed by the breakwaters, the lack of any other circulation systems, and the backyards that face it, the channel feels as though it is passing through private spaces, and that users must stay within the waterway. Along the channel there are several instances where owners of adjacent properties have encroached onto the parkland, extending their backyards across park property to give their properties direct access to the water.















## **3.2 Features**

### **3.2.1 Circulation Systems**

There are a number of circulation systems associated with the Kenilworth Lagoon/Channel property. These systems include parkways and streets that are used by automobiles and trucks; pedestrian and bicycle trails, both developed and undeveloped; a railroad line used by trains; and most importantly, the waterway itself, which is used for navigation during the spring, summer and fall, and as a cross-country ski trail in the winter when it is frozen over with ice. The systems interact with the Kenilworth Lagoon/Channel property in different ways, as they pass around, through, and across it.





-  Bridge No. 5
-  Bridge No. 6
-  WPA Wood Channel Wall
-  WPA Stone Wall
-  Concrete Block Wall
-  RR Tie Retaining Wall
-  Stairs
-  Guardrail
-  Paved Trail
-  Unpaved Trail
-  Limestone Retaining Wall
-  Pump House
-  Wall Failing
-  Landmark Tree

Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community





*Figure 38. Area between the bridges, with Bridge No. 6 in the distance, facing northwest*



*Figure 39. Area between the bridges, with Bridge No. 6 in the distance, facing northwest*





*Figure 40. Area between the bridges, with Bridge No. 5 in the distance, facing east*



*Figure 41. Area between the bridges, with Bridge No. 5 in the distance, facing southeast*





*Figure 42. Between the bridges, facing southeast from Bridge No. 6*



*Figure 43. Between the bridges, facing southeast from Bridge No. 6*



Cedar Lake

Burnham Blvd












Washburn Ave S

Channel

Park La

Burnham Rd

Bridge No 6

-  Bridge No. 6
-  WPA Wood Channel Wall
-  Concrete Block Wall
-  Stairs
-  Guardrail
-  Limestone Retaining Wall
-  Pump House
-  Wall Failing
-  Ladder
-  Stone Wall
-  Landmark Tree

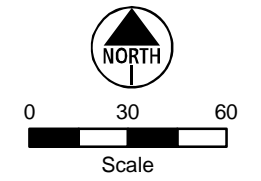
Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



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Kenilworth Lagoon / Channel  
Figure 44 - Channel Segment

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*Figure 45. Channel, facing northwest from Bridge No. 6*



*Figure 46. Channel from south shore with Bridge No. 6 in the mid-ground, facing northeast*





*Figure 47. Channel from south shore, facing northeast*



*Figure 48. West end of channel at Cedar Lake, facing southwest*



Figure 49 a and b. Channel facing northwest and southeast (from left to right)

There are several roadways that interact with the Kenilworth Lagoon/Channel. All are paved, two-lane roads, typically with parallel parking along one or both sides of the traffic lanes. These roads are paved with concrete or bituminous, typically with concrete curbs. Extending along an east-west alignment, 26th Street West forms the northern boundary of the lagoon segment of the Kenilworth Lagoon/Channel property (Figure 50). The lagoon side of the street is lined with boulevard trees, while the north side of the street is lined with boulevard trees, a sidewalk, and fronted by large single-family dwellings. West Lake of the Isles Parkway extends through the far east end of the lagoon segment of the Kenilworth Lagoon/Channel on a raised roadbed, in a north-south alignment. It passes over the waterway on Bridge No. 4 (Figures 51-52). This parkway is lined with MPRB's current standard streetlights and a bituminous trail on its east side. Dean Parkway, which extends along an east-west alignment, forms the southern boundary of the lagoon segment of the Kenilworth Lagoon/Channel property (Figure 53). On the lagoon side of the roadway, there are cube lights and on the south side, there are boulevard trees, a sidewalk, private property fronting the street with large single-family dwellings on them. The next street to interact with the Kenilworth Lagoon/Channel property is Burnham Road. This road extends across the Kenilworth Lagoon/Channel property on a grade separation composed of a raised roadbed and Bridge No. 6, which carries the road over the waterway (Figure 54). This road serves as a divider between the area between the bridges and the channel sections of the Kenilworth Lagoon/Channel. Similarly, Washburn Avenue South forms the northern edge of the waterway between the bridges.

There are several trails that pass through and around Kenilworth Lagoon/Channel. These include wide, bituminous-surfaced trails that parallel West Lake of the Isles and Dean parkways (see Figures 51-53), as well as the Kenilworth Trail that passes over the Kenilworth Lagoon/Channel property on Bridge No. 5 (Figure 55).





Figure 50. 26th Street West at West Lake of the Isles Parkway, facing west



Figure 51. West Lake of the Isles Parkway and trail at 26th Street, facing south





*Figure 52. West Lake of the Isles Parkway over Bridge No. 4, facing north*



*Figure 53. Dean Parkway and trail, facing east*





Figure 54. Burnham Road as it passed over the Kenilworth Lagoon/Channel, facing southwest



Figure 55. Kenilworth Trail and the M&StL/TC&W railroad line passing over Bridge No. 5, facing southwest

There are also two undeveloped trails that extend along the waterway at the west end of the lagoon. On the north side of the lagoon there is a trail that extends in a westerly direction from the intersection of 26th Street and Upton Avenue to Bridge No. 5, where it connects with the Kenilworth Trail (Figures 56-57). The eastern half of this path is bituminous surfaced and the western half has had mulch placed on it. On the south side of the lagoon, there is a longer unmaintained trail. This packed earth trail extends in a northwesterly direction from Dean Parkway to Bridge No. 5, where it connects with the Kenilworth Trail (Figures 57-58).





Figure 56. Trail on north side of lagoon between Upton Avenue and Bridge No. 5, facing east



Figure 57. Trail on north side of lagoon between Upton Avenue and Bridge No. 5, facing west





Figure 58 a and b. Trail on south side of lagoon between Dean Parkway and Bridge No. 5, facing northwest and southeast (from left to right)

After the Kenilworth Lagoon/Channel was constructed, three sets of M&StL tracks crossed over the property on Bridge No. 5. The eastern two sets were sidetracks that were part of the railroad's Cedar Lake Yard. These tracks have been removed and replaced by the Kenilworth Trail. The western-most track was the M&StL mainline, which is still in place and active (now operated by the TC&W). This line is composed of steel rails resting on wood ties set in a bed of ballast, crossing over the waterway on the open deck Bridge No. 5 (see Figure 55).

The most significant circulation system associated with the Kenilworth Lagoon/Channel property is the waterway itself, whose primary purpose at the time of its construction was to be a means for navigation between the lakes within the Chain of Lakes system. The shape of the waterway along each segment of the Kenilworth Lagoon/Channel varies greatly, from the large, wide-open body of water that characterizes the lagoon; to the rustic feeling of a scenic river with meandering shores between the bridges; to a formal, straight-line canal with hard edges along the channel. However, since it was designed to be navigable, the waterway maintains a fairly consistent depth throughout. It also remains a year-round transportation route. During the spring, summer, and fall, the waterway is used for canoeing and boating (Figure 59). During the winter, when the waterway is covered with a thick layer of ice, it is used as a cross-country skiing trail (Figure 60).

### 3.2.2 Vegetation

There is a wide-ranging palette of trees located along the entirety of the Kenilworth Lagoon/ Channel (see Figures 29-49). Trees vary in type, species, size, and age. The vast majority are deciduous, although some evergreen species can be found along the lagoon and channel segments. Deciduous species include ash, aspen, basswood, box elder, cottonwood, willow, and walnut. Evergreen species include spruce and cedar (Metropolitan Council Southwest Light Rail Project Office 2014).



Figure 59. A canoe on the lagoon in the spring, facing northeast

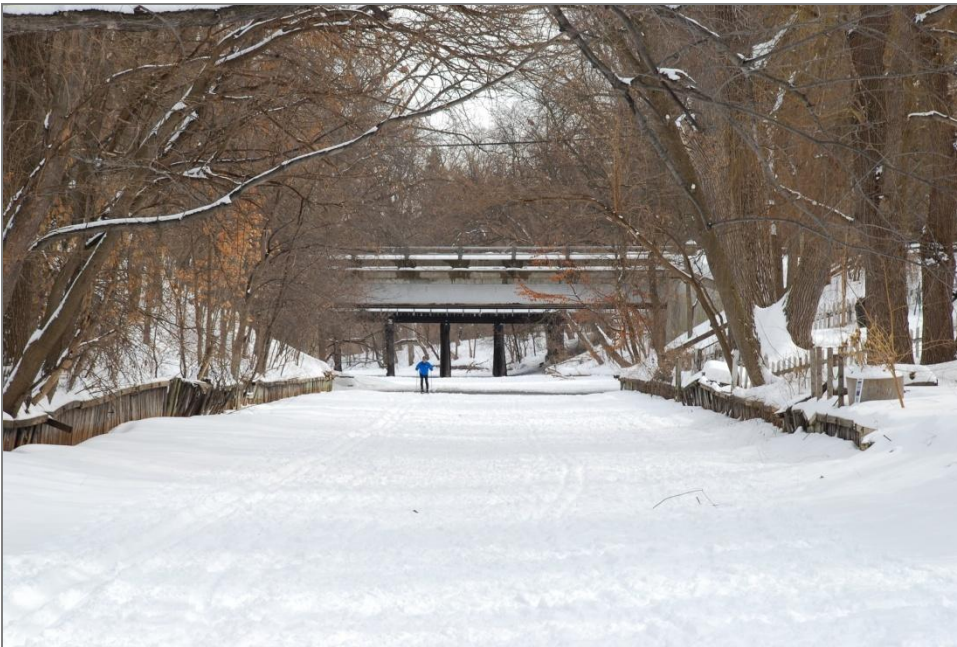


Figure 60. A cross-country skier skiing on the channel in winter, facing southeast

### Shrubs

A number of shrubs of various species and age can be found throughout the Kenilworth Lagoon/Channel property (see Figures 29-49). The greatest concentration has historically been located along the south shore of the lagoon (see Figures 30-35). As part of the renovations made to Lake of the Isles in 2007, 146 shrubs were also planted along the north shore of the lagoon (SWB 2007).

### Sod (lawns)

Historically, sodded lawns were limited to the lagoon, which is still mostly the case today. Sodded lawns are located along the north and east shores of the lagoon, with the sod extending nearly to the waterline (see Figures 32-33, 36). They also exist along the south shore of the lagoon, where they are limited to the slopes



that rise upwards towards Dean Parkway (see Figure 53). Sodded yards also exist at the far west end of the channel section of the Kenilworth Lagoon/Channel (see Figure 48). However, these are relatively modern and were created by the owners of the adjacent private property to create extensions of their yards across the Kenilworth Lagoon/Canal parkland to the waterway of the channel.

*Water plants*

Water plants historically did not exist within the Kenilworth Lagoon/Channel waterway, as they were not in keeping with Theodore Wirth's vision for the lakes, which included removing all traces of wetlands, deepening the lakes, and creating a picturesque aesthetic. However, in an effort to address the greatly diminished water quality in the lakes, which was a result of Wirth's effort to remove wetlands, thus eliminating the natural purification, water plants were introduced to the lagoon in the 2000s. These plants, which include cattails and other aquatic species, are generally found along the northeastern and southwestern corners of the lagoon (see Figures 30, 32, 34-36).

**3.2.3 Buildings and Structures**

Within the Kenilworth Lagoon/Channel property there is one building, a pump house, and three bridges: two vehicular and one railroad/pedestrian, all of which cross the lagoon/channel. They include one concrete arch span (Bridge No. 4), two trestles comprising one crossing (Bridge No. 5), and one steel stringer span (Bridge No. 6). These crossings serve to delineate the boundaries of the different segments of the lagoon/channel. As conceived by Theodore Wirth and the MBPC, Bridge No. 4, which carries Lake of the Isles Parkway over Kenilworth Lagoon, was intended to be one of the three grand bridges constructed as part of the effort to connect the Chain of Lakes. Bridge No. 6 (Burnham Road) was intended to be of a comparable design and similar cost to Bridge Nos. 3 and 4, but it was not considered as important as those two bridges to the image of the parks.

*Pump House*

There is one building located within the boundaries of the Kenilworth Lagoon/Channel, a sewer pump house (lift station) located at the west end of the area between the bridges, just below Bridge No. 6. Constructed in 1941, this one-story, 13 feet by 18 feet, Tudoresque, buff colored brick building has a steeply pitched gable roof (Figure 61). There are corbelled brackets at the corners to support the roof, and small, tall, and narrow vents in the gable ends. A single leaf steel door is located on the east elevation and a four-over-four steel sash steel window on the north elevation.





Figure 61. Pump House, facing southwest

*Bridge No. 4 (Bridge L5722, West Lake of the Isles Parkway)*

Constructed in 1912, Bridge No. 4 is a single-span, reinforced concrete, filled-spandrel, barrel-vaulted, elliptical arch bridge structure that carries West Lake of the Isles Parkway over Kenilworth Lagoon (Figure 62). Aligned in a north-south axis, the bridge has an overall length of 59.0 feet, a span length of 56.2 feet, and an out-and-out width of 48.0 feet. It has a 24.0 feet wide roadway with sidewalks on both sides. The result of the MBPC's 1909 design competition, this bridge was specifically designed to enhance the aesthetics of its surroundings (Roise et al. 2012). As such, the Classical Revival style bridge is faced with smooth faced limestone ashlar and features an arch ring with false voussoirs, a keystone faced with a scrolled bracket with garland, paneled spandrel walls, rusticated pilasters at the abutments, rusticated abutment walls, a finished soffit arch, and an open balustrade with turned balusters.

*Bridge No. 5 (M&StL, [now TC&W] /Bridge 27A43 [Kenilworth Trail])*

Bridge No. 5 is actually composed of two timber trestles. Both were originally built as temporary structures by the M&StL in 1913, when the Kenilworth Lagoon/Channel was under construction, and rebuilt in-kind by the railroad in the 1950s (Roise et al. 2012g; Roise et al. 2012i).

The western-most structure is a seven-span timber trestle that historically carried the M&StL's single-track mainline, now the TC&W, over the Kenilworth Lagoon/Channel (Figure 63, see Figure 55). Constructed of creosoted timber, the bridge has an overall length of 95.8 feet and a deck width of 22.0 feet. Located immediately east of Bridge 27A43, the bridge is oriented along a northeast-southwest alignment that is perpendicular to the waterway to the west, but skewed to the lagoon to the east. The substructure is comprised of timber abutments, consisting of horizontal planks held in place by wood piles, and six heavy timber bents with diagonal cross bracing and timber pier caps. Several of the piles in the bents have been replaced with steel beam piles. The superstructure consists of seven 12.6-foot-long timber spans. The bridge has a heavy timber deck that carries a single set of tracks comprised of steel rails resting on wood ties set atop the stringers. There are wood plank walkways on both sides of the tracks, resting on the ties. There are simple railings comprised of angle iron posts and a two-cable railing.



Figure 62. Bridge No. 4, facing northwest



Figure 63. Bridge No. 5 (M&StL, now TW&C), facing southeast

The eastern-most bridge, also known by its National Bridge Inventory number as Bridge 27A43, is a seven-span timber trestle that historically carried two M&StL sidings that were a part of the railroad's Cedar Lake Yard, over the Kenilworth Lagoon/Channel (Figure 66, see Figure 55). Constructed of creosoted timber, the bridge has an overall length of 95.8 feet and a deck with of 22.0 feet. The bridge is oriented along a northeast-southwest alignment that is perpendicular to the waterway to the west, but skewed to the lagoon to the east. The substructure is comprised of timber abutments, consisting of horizontal planks held in place by wood piles, and six heavy timber bents with diagonal cross bracing and timber pier caps. Several of the piles in the bents have been replaced with steel beam piles. The superstructure consists of seven 12.6-foot-



long timber spans. The spans carry a wood plank deck with a bituminous wearing course that was placed in 1997 when the bridge was converted to pedestrian use. The deck has ornamental metal railings along both sides, added in 1997 to replace older railings. The current railings have H-channel posts. In the railing panels, there is bi-directional, downward arching detailing.



Figure 64. Bridge No. 5 (Bridge 27A43, M&StL, now Kenilworth Trail), facing west

#### *Bridge No. 6 (Bridge 27508, Burnham Road)*

Bridge No. 6 is a two-lane, single-span rolled steel beam bridge constructed in 1961 to replace an earlier, single-lane bridge (Figure 65, see Figures 46 and 54). The bridge has an overall structural length of 63.7 feet, a span length of 59.0 feet, and an out-and-out width of 44.1 feet. The substructure consists of reinforced-concrete abutments with perpendicular wingwalls that face the approaches. The superstructure consists of eight rolled steel stringers that carry a cast-in-place concrete deck that has a 32.0 feet wide roadway with a 5.0 feet wide sidewalk on both sides. The bridge has an open concrete railing with a steel tube two-pipe handrail.

### **3.2.4 Small Scale Elements**

#### *Retaining Walls*

There are a number of retaining walls located throughout the Kenilworth Lagoon/Channel property. Retaining walls can be found along all three segments of the property, and they vary greatly in age, design, and purpose. In terms of purpose, they can be broken down into two categories. The first are those that were constructed along the shoreline of the waterway, whose purpose is to protect the shoreline from erosion. The second group consists of those located well above the waterline, which are associated with the embankments of the grade separations of the transportation corridors that cross the lagoon/channel. The purpose of these walls is to hold in place the steep slopes of the earthen embankments (roadbeds) upon which the transportation corridors are constructed.





*Figure 65. Bridge No. 6, facing northwest*

#### *Shoreline Retaining Walls/WPA Walls*

Retaining walls that protect the shoreline of the waterway can be found along all three segments of the Kenilworth Lagoon/Channel. All of these walls appear to have been constructed by the WPA in 1936; however, the design varies between waterway segments.

The first type of WPA shoreline retaining wall consists of Classical Revival walls located at all four corners of the water passage under Bridge No. 4 (Figure 66). These walls, which curve back from the opening under the bridge, are constructed of square cut, Platteville limestone ashlar with a heavy concrete coping that has been repaired at some point. There is also a concrete parge coat on the back face of these walls.

The second type of WPA shoreline retaining walls are Rustic Style stone retaining walls constructed of random coursed granite and limestone fieldstone set in mortar, roughly bracketing Bridge No. 5 (Figures 67-69). These types of walls are located on both the north and south shores of the waterway; begin at the west end of the lagoon where it begins to narrow. These walls end at Bridge No. 5. There are additional walls along the waterway segment between the bridges. On the south shore, the wall begins at Bridge No. 5 and extends approximately two-thirds of the way to Bridge No. 6. On the north shore of the waterway between the bridges there is a remnant of what appears to be a WPA Rustic Style retaining wall. This remnant, approximately 30 feet in length, is located roughly midway between Bridge Nos. 5 and 6.



*Figure 66. Classical Revival Limestone Shoreline Retaining Wall on NW side of Bridge No. 4, facing north*



*Figure 67. Detail of WPA Rustic Style Retaining Wall, facing north*





Figure 68. WPA Rustic Style Retaining Wall, north shore of lagoon, facing north



Figure 69. WPA Rustic Style Retaining Wall, south shore between the bridges facing southwest

The third type of WPA shoreline retaining wall consists of the wood piling retaining walls/breakwaters that line both sides of the channel between the channel inlet from Cedar Lake to Bridge No. 6 (Figures 70-72). These walls are constructed of wood sheet piles that are vertically driven into the ground, with a wood coping. These walls are anchored to the shore land behind them with steel anchor rods. These walls are parallel to each other for the length of the channel segment of the Kenilworth Lagoon/Channel, except at the ends where they flare out. In some locations, behind these walls, there is evidence of another row of sheet piles (Figure 72). It is not clear if these are from an earlier wall, if they are part of the design of the current walls, or if they are the WPA wall and the current wall is a later repair.





*Figure 70. WPA Wood Pile Channel Walls/Breakwaters, from Bridge No. 6, facing northwest*



*Figure 71. WPA Wood Pile Channel Walls/Breakwaters, facing northwest*





*Figure 72. Detail of WPA Wood Pile Channel Wall/Breakwater, showing anchor rod and piles remnants behind current wall, facing southwest*

There are several modern, brown colored, rock face concrete block retaining walls located within the Kenilworth Lagoon/Channel property. Examples are located at the northeast, southeast, and southwest ends of Bridge No. 4 (Figure 73). Two additional examples are located along the area between the bridges segment of the waterway. These two walls, which are terraced, are located on the south side of the waterway, between the pump house and the abutment and southeast wingwall of Bridge No. 6 (Figure 74).

Just northeast of Bridge No. 5 there is a retaining wall that supports the roadbed of the M&StL yard tracks (now the Kenilworth Trail). This retaining wall, which parallels the roadbed, is constructed of stacked railroad ties held together by steel anchor bolts (Figure 75).

Two types of retaining walls are located along the approaches to Bridge No. 6. The first type is located adjacent to the northeast, northwest, and southwest wingwalls of Bridge No. 6. These walls are comprised of dry set, rough-cut limestone that follows the contours of the embankments (Figure 76). The date of these walls is unknown, but they appear to be post 1961 based on how they integrate with Bridge No. 6. The second type is found only on the east side of the north end of Bridge No. 6. This wall is composed of terraced, heavy timber cribbing that is held in place by rectangular timber piles (Figure 77). This wall also appears to be relatively modern.

#### *Stone Lake Accesses*

There are two stone lake accesses, one on the north shore of the lagoon, and the other on its south shore. Both were installed in the mid-2000s as part of the implementation of Lake of the Isles Renovation Project. The accesses are constructed of large, rough-cut, dry-laid limestone. They consist of stone steps leading to a small landing that extends slightly beyond the shoreline. The top of the landing is just above the datum waterline for the lagoon (Figures 78-79).



Figure 73. Concrete block retaining wall located on the east side of the south end of Bridge No. 4, facing southwest



Figure 74. Concrete block retaining wall between the pump house and Bridge No. 5, facing south





*Figure 75. Railroad tie retaining wall, facing northwest*



*Figure 76. Stone retaining wall located on the northwest corner of Bridge No. 6, facing northeast*





Figure 77. Terraced timber cribbing located at the northeast corner of Bridge No. 6, facing west



Figure 78. Stone Lake Access located on the north side of the lagoon, facing southeast



Figure 79. Stone Lake Access on the north side of the lagoon (access is submerged due to high water), facing west

### Guardrails

Scattered around the Kenilworth Lagoon/Channel property are a number of guardrails. Some are integral to bridges, e.g. bridge railings, while others are not. Descriptions of those that are actual bridge railings are included in the description of the bridge. The following is a description of other types of guardrails.

There is a bollard and chain guardrail that extends along the east side of West Lake of the Isles Parkway, north from Dean Parkway, over Bridge No. 4, to just south of 26th Street, to separate the roadway from the adjacent pedestrian/bike path. It consists of equally spaced, rectangular, heavy timber bollards, possibly railroad ties, with a single heavy steel chain in between (Figure 80; see Figures 51-52). Based on its design, it may have been installed as part of the 1977-1978 improvements to Lake of the Isles Parkway.

Beyond the ends of Bridge No. 4, on all four corners, there are modern tube steel railings. These railings have tube steel posts, and top and bottom rails, with slender vertical pickets in the panels (Figure 81)

On the north side of Bridge No. 6, there are guardrails on both sides of Burnham Road that extend to the limits of the Kenilworth Lagoon/Channel property. On the east side of Burnham Road, the guardrail extends from Bridge No. 6 to the intersection of Burnham Road and Washburn Avenue. Extending north from Bridge No. 6 there is a short section comprised of square, concrete bollards with flat tops, connected by a single steel cable tops (Figure 82). The rest of the guardrail is comprised of round, heavy timber bollards (Figure 83).





Figure 80. Guardrail along West Lake of the Isles Parkway, facing southwest



Figure 81. Tube Steel Railing located at the west side of the south end of Bridge No. 4, facing northwest





Figure 82. Guardrail on the east side of Burnham Road, north of Bridge No. 6, facing southeast



Figure 83. Guardrail on the east side of Burnham Road, north of Bridge No. 6, facing northeast



On the west side of Burnham Road there is a wood bollard and cable guardrail that extends at an angle from the northwest corner of Bridge No. 6. It consists of round, heavy timber bollards with rounded tops that are connected by a single cable (Figure 84).



*Figure 84. Guardrail on the west side of Burnham Road, north of Bridge No. 6, facing southeast*

### *Benches*

There are three benches located within the Kenilworth Lagoon/Channel segment of the Grand Rounds. All are located within the lagoon segment, two on the north shore of the lagoon, and one facing Lake of the Isles, just below the northeast corner of Bridge No. 4. These benches are of the style introduced by the MBPC in the 1930s and still produced in-house by the MPRB. They have washed (exposed-aggregate) concrete supports with wood slat (plank) seats and backs. The bench on the northwest side of the lagoon is older as its concrete has a more aged appearance (Figure 85). The other two appear to be more modern as the concrete is still bright. All are placed on concrete pads.

### *Other Small-Scale Elements*

Within the boundaries of the lagoon segment of the Kenilworth Lagoon/Channel property, there are a number of other small-scale elements, both permanent (fixed) and moveable. Included in this group is a United States Postal Service mail storage mailbox located along 26th Street on the north side of the lagoon. Of typical mailbox design, it is of steel construction, painted dark green, and mounted on a concrete pad (Figure 86). Located throughout the lagoon segment there are a number of trashcans. These are standard 55-gallon oil drums with lids. All are painted dark green (see Figure 85).





Figure 85. Bench and Trash Can



Figure 86. Mailbox

### Lighting

There are two types of light fixtures found within the boundaries of the Kenilworth Lagoon/Channel. The MBPC began experimenting with installing electric lighting instead of gaslights along its parkways in the 1910s. The benefit of electric lighting over gas lamps was that it produced more light and was cheaper to operate. In 1925, the MBPC adopted its own standard model for electric streetlights along parkways, a standard that remained in place for more than a half century. The lights, manufactured by the Crown Iron

Works of Minneapolis, were between 18 and 23 feet tall, with a 5-foot long projecting arm that supported a pendant style lamp that produced 600 candlepower. The MBPC began installing these lights in parks and along parkways beginning in 1927. In 1972, the MPRB adopted a new light standard as part of its implementation of recommendations for the Minneapolis parks system prepared by well-known San Francisco based landscape architect Garrett Eckbo. These were designed by Alfred French of InterDesign. These lights feature a slender, approximately 10-foot tall standard atop which is mounted a single transparent cube containing an electric lamp. The second version of this light, utilized at intersections, has a taller standard with a cross arm that supports two cube lamps. These lights were installed en masse throughout the park system between 1972 and 1978. Due to increasing maintenance costs, the MPRB adopted a new light in the early 2000s. This new standard has a faux historic appearance and is characterized by a tall, fluted standard with a curvilinear cross arm that supports a bell-shaped cover with a modern globe (Roise et al. 2012a).

All lights are located within the lagoon segment of the Kenilworth Lagoon/Channel. Historical photographs confirm that 1925 standard lights were installed at some point along Lake of the Isles and Dean Parkways. These lights have been removed and/or replaced. Currently, there are four cube lights within the boundaries of the Kenilworth Lagoon/Channel; all are located along the north side of Dean Parkway (Figure 87). In addition, there are four modern standard lights located along Lake of the Isles Parkway, two of which were installed within the last few years to replace cube lights (Figure 88).



*Figure 87. Cube Light, facing southeast*



*Figure 88. Modern Light, facing southwest*

### *Signs*

Historically, there is no record of park identification signage within the Grand Rounds until the early 1970s, when a uniform standard for signage, designed by Peter Seitz, was introduced. This package of signage included low, rustic wood signs with routed lettering installed at park and parkway entrances and other major access points to the Grand Rounds. These signs were typically brown with white lettering. In 1999, the MPRB adopted the Grand Rounds Scenic Byway Interpretative Master Plan that introduced a new palette of signage to replace the 1970s era signage. This package of materials includes horizontal wood identification signs, wood-frame information kiosks, and painted metal information signposts at major intersections. These materials have a vibrant, polychromatic color scheme (Roise et al. 2012a).



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As part of the implementation of the 1970s improvements, an identification sign was placed at the intersection of Lake of the Isles Parkway and Dean Parkway. This sign was replaced by the current identification sign for Dean Parkway that follows the 1999 master plan. Just to the north of this sign, there is information sign to mark the bicycle trail between the lagoon and Dean Parkway. In addition, along the parkways and street that bound the lagoon, there are a number of standard metal traffic signs (Figure 89).



*Figure 89. Signage at the intersection of West Lake of the Isles and Dean Parkways, facing northwest*

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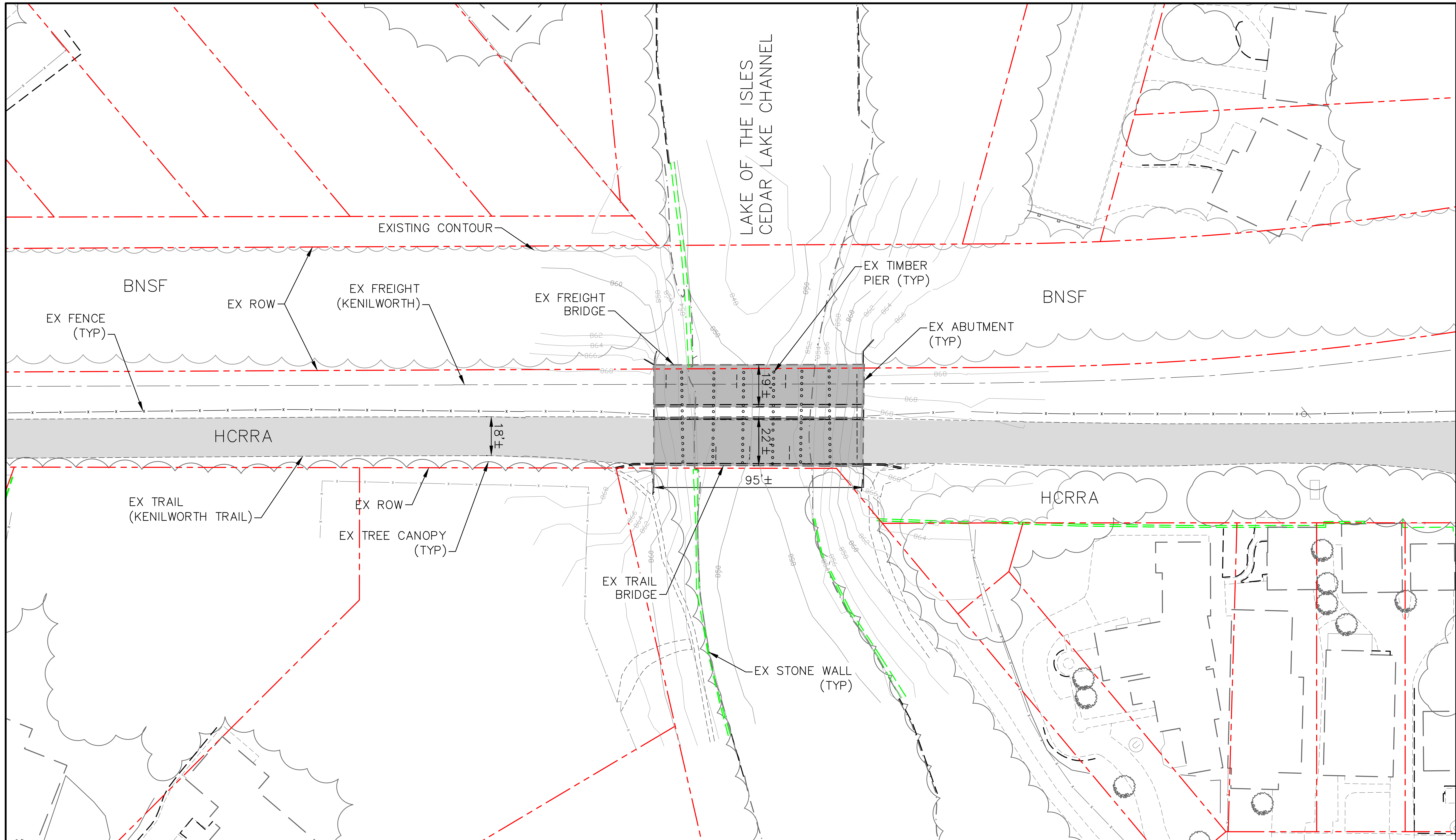
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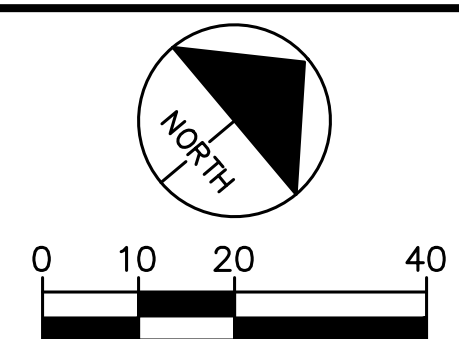
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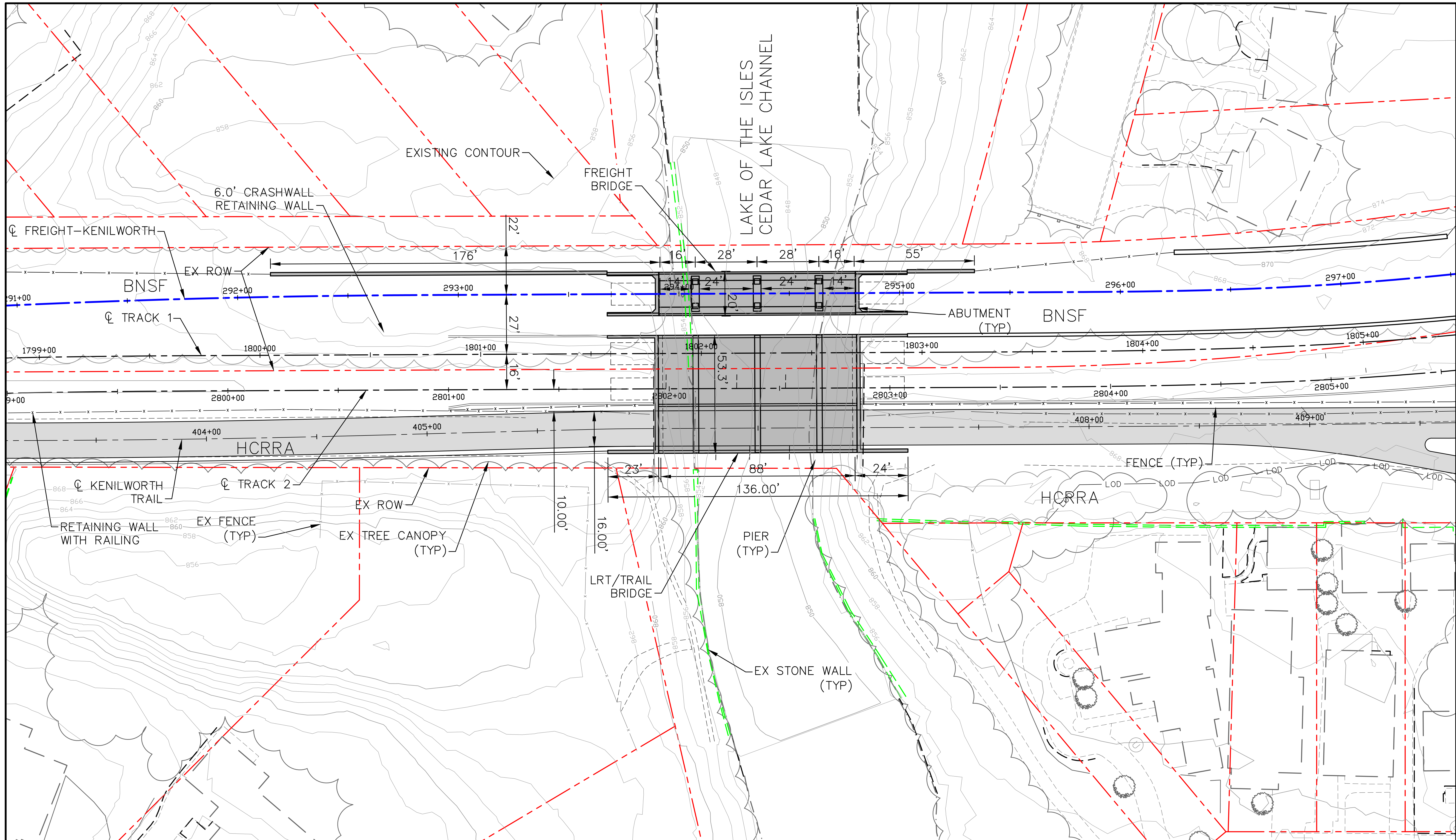


**EXISTING LAKE OF THE ISLES  
CEDAR LAKE CHANNEL BRIDGE**

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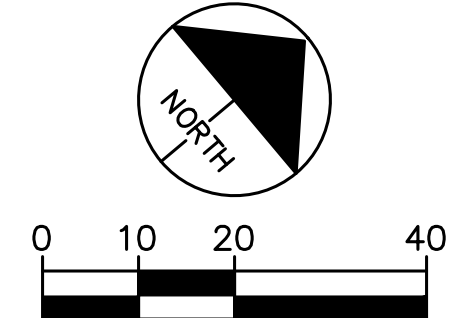






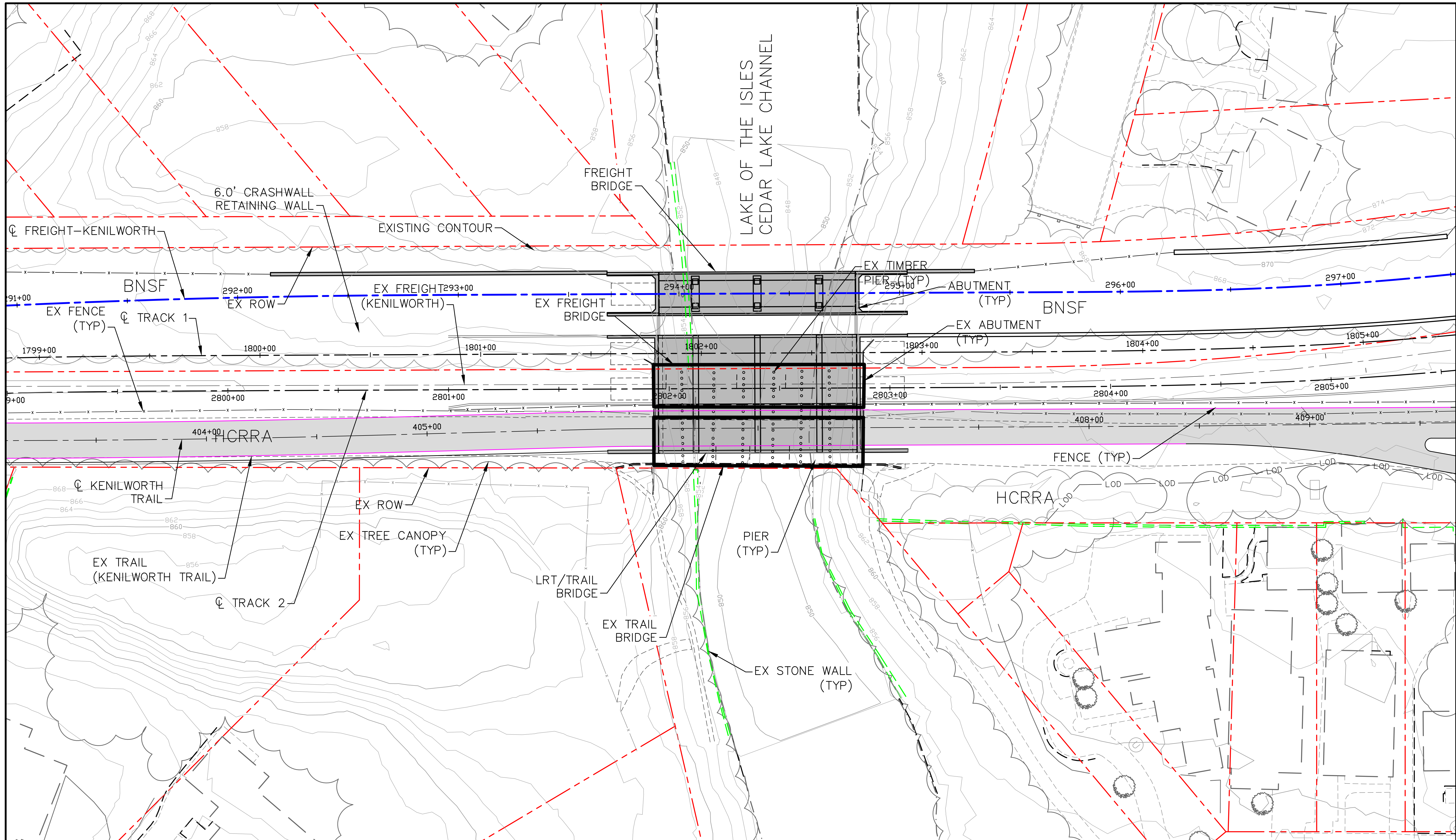
**PROPOSED LAKE OF THE ISLES  
CEDAR LAKE CHANNEL BRIDGE**

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Rev 3  
04/22/2014



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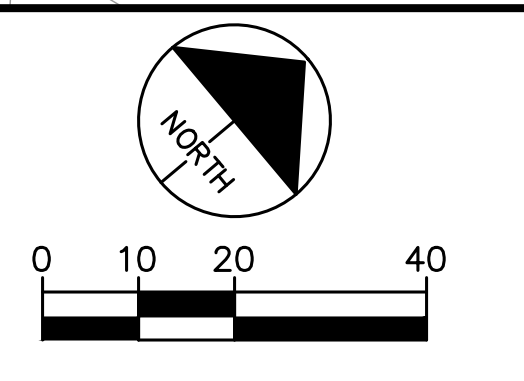


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 TIME: 10:00 AM  
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 SHEET: 18-03  
 DRAWN BY: J. HORN  
 CHECKED BY: M. HORN  
 APPROVED BY: M. HORN



# PROPOSED LAKE OF THE ISLES CEDAR LAKE CHANNEL BRIDGE

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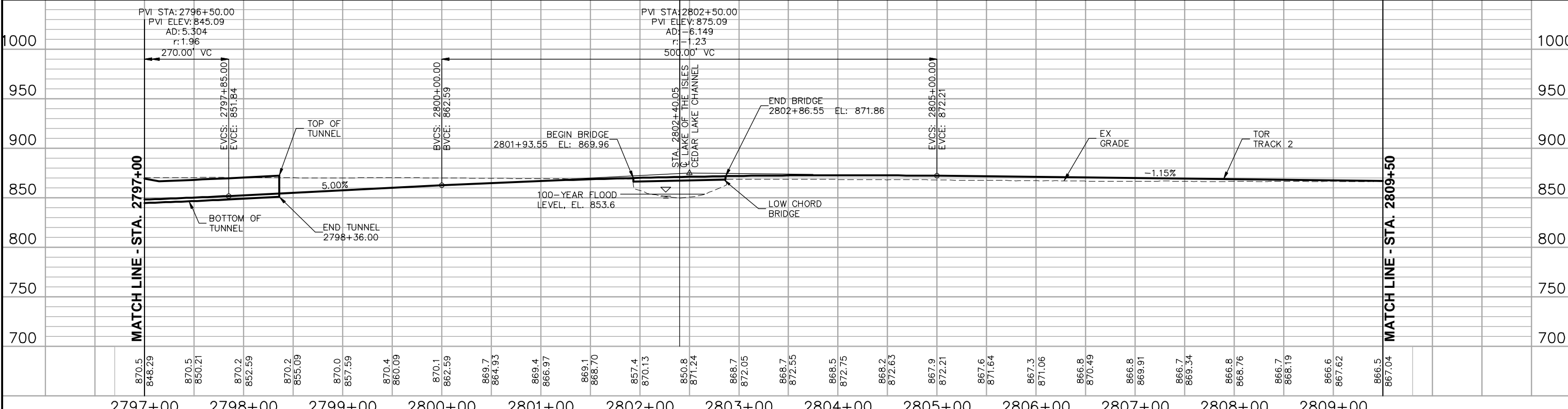
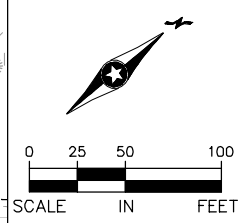
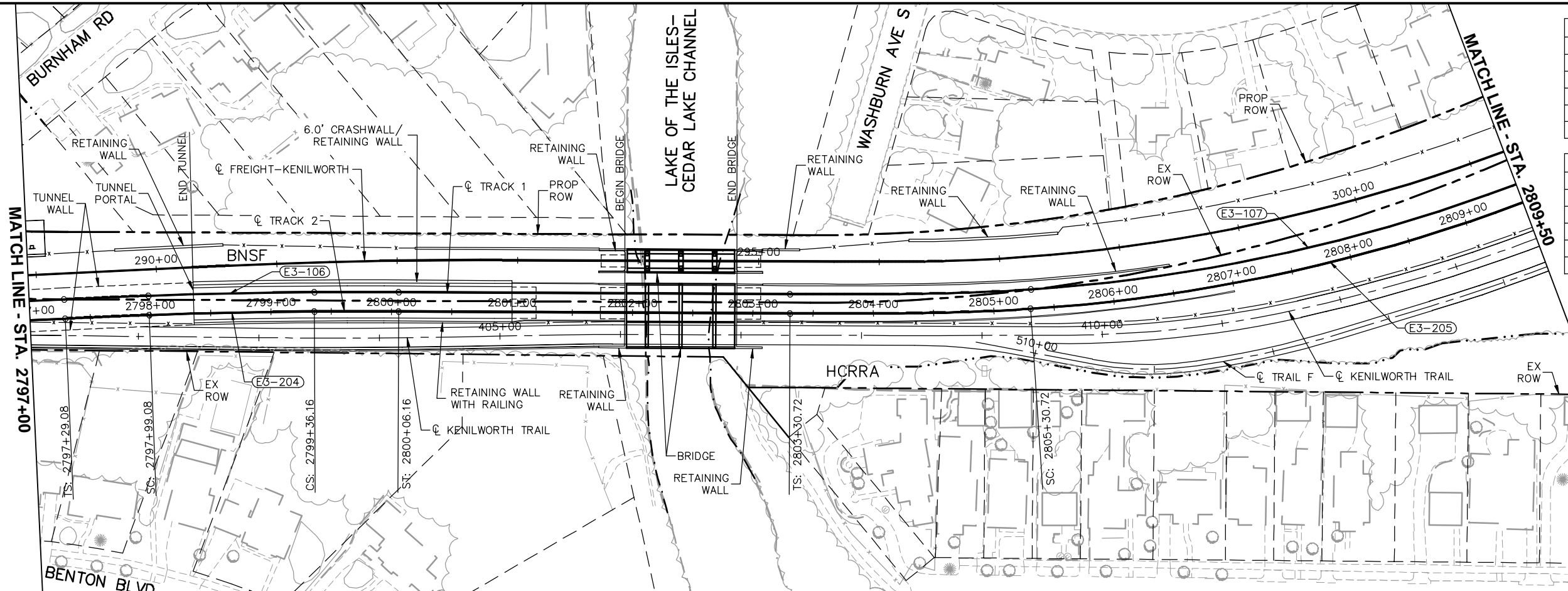


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Lc = 137.08'
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**Kimley»Horn**  
**SYSTRA**  
PRELIMINARY ENGINEERING

**METROPOLITAN**  
COUNCIL

**SOUTHWEST**  
Green Line LRT Extension

**EAST - VOLUME 1 (CIVIL) - SEGMENT 3**  
**TRACK**  
**PLAN AND PROFILE**  
**STA. 2797+00 TO STA. 2809+50**

DISCIPLINE: **TRACK**      SHEET NAME: **E3-TRK-PPFL-006**

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