Community Advisory Committee

August 3, 2015

Today's Topics

- Outreach Update
- TI #2 and 3: TH 55/Olson Memorial Highway
- Bass Lake Road Station Configuration
- Transmission Line Update
- Systems Introduction
- Municipal Consent Process Overview and Roadmap

Outreach Update

July 27 Crystal Open House

July 28 Robbinsdale Open House

July 29 Minneapolis Open House

Upcoming Open Houses

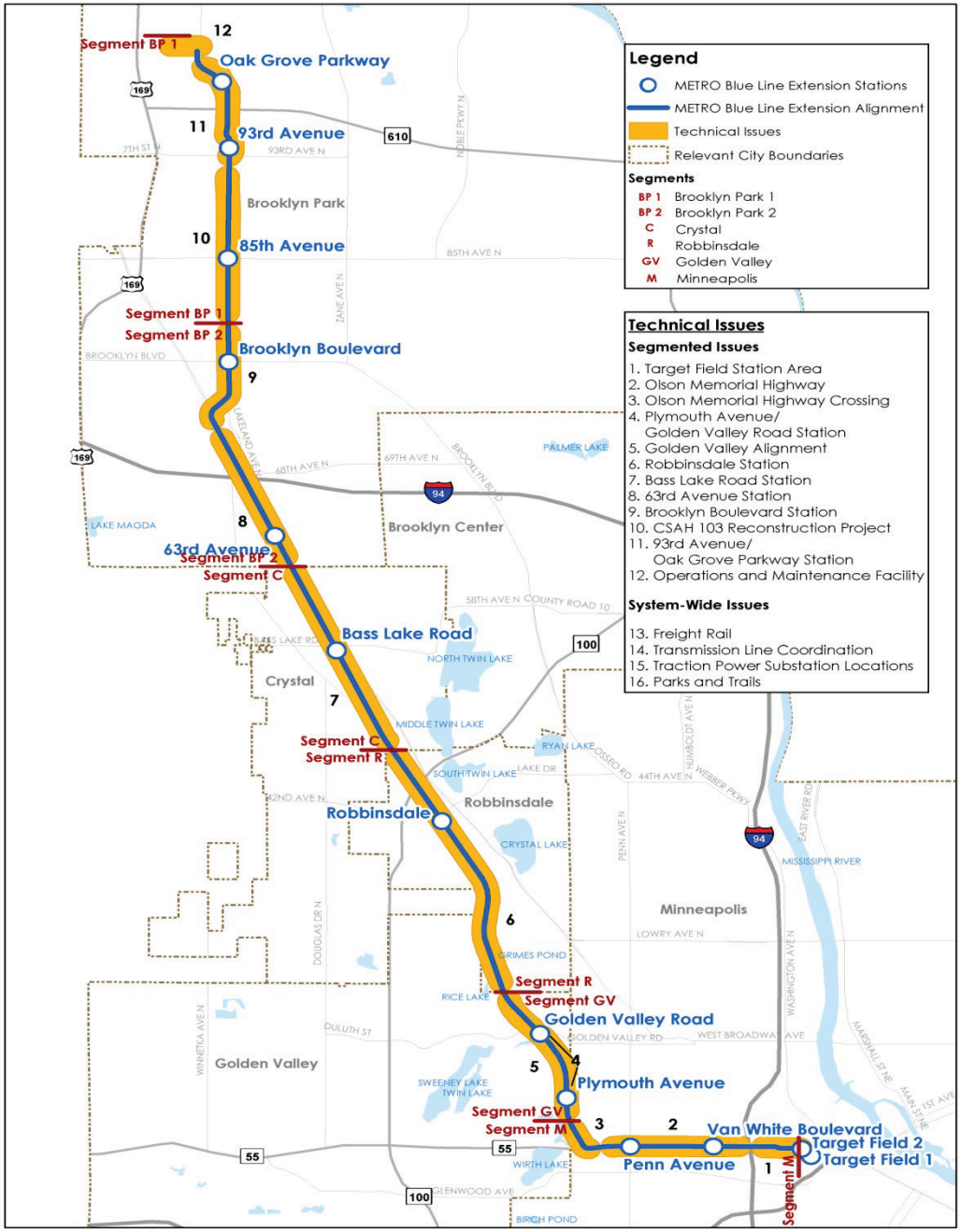
- August 11: Brooklyn Park (at North Hennepin Community College)
  - Includes EAW West Broadway Avenue
- August 12: Golden Valley

Upcoming Committee Meetings

- August 3: Community Advisory Committee
- August 4: Business Advisory Committee
- August 13: Corridor Management Committee

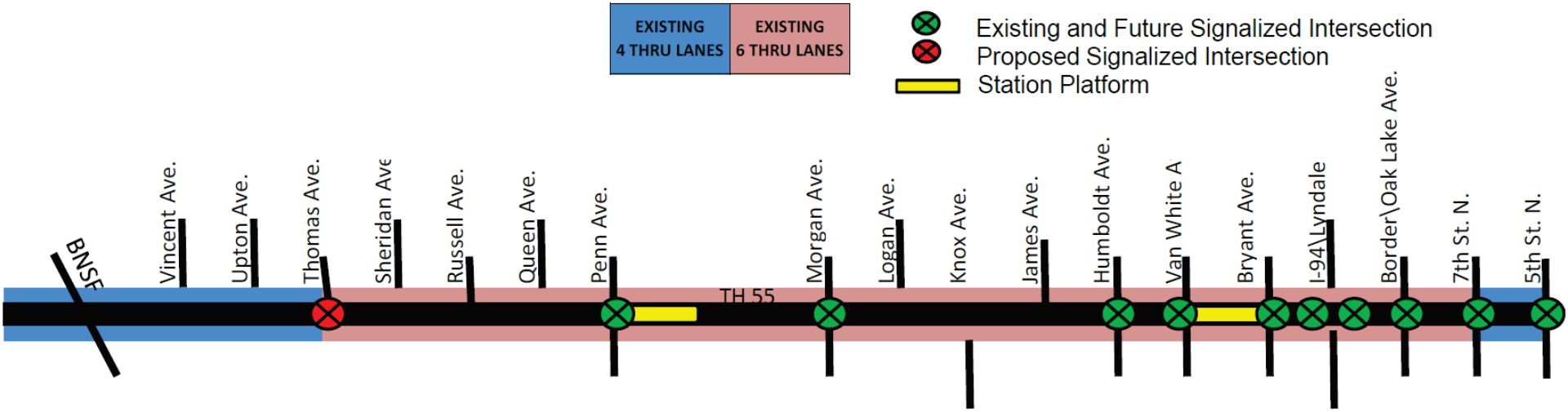
Technical Issues Update

Technical Issues



Technical Issue #2:
TH 55/Olson Memorial Highway

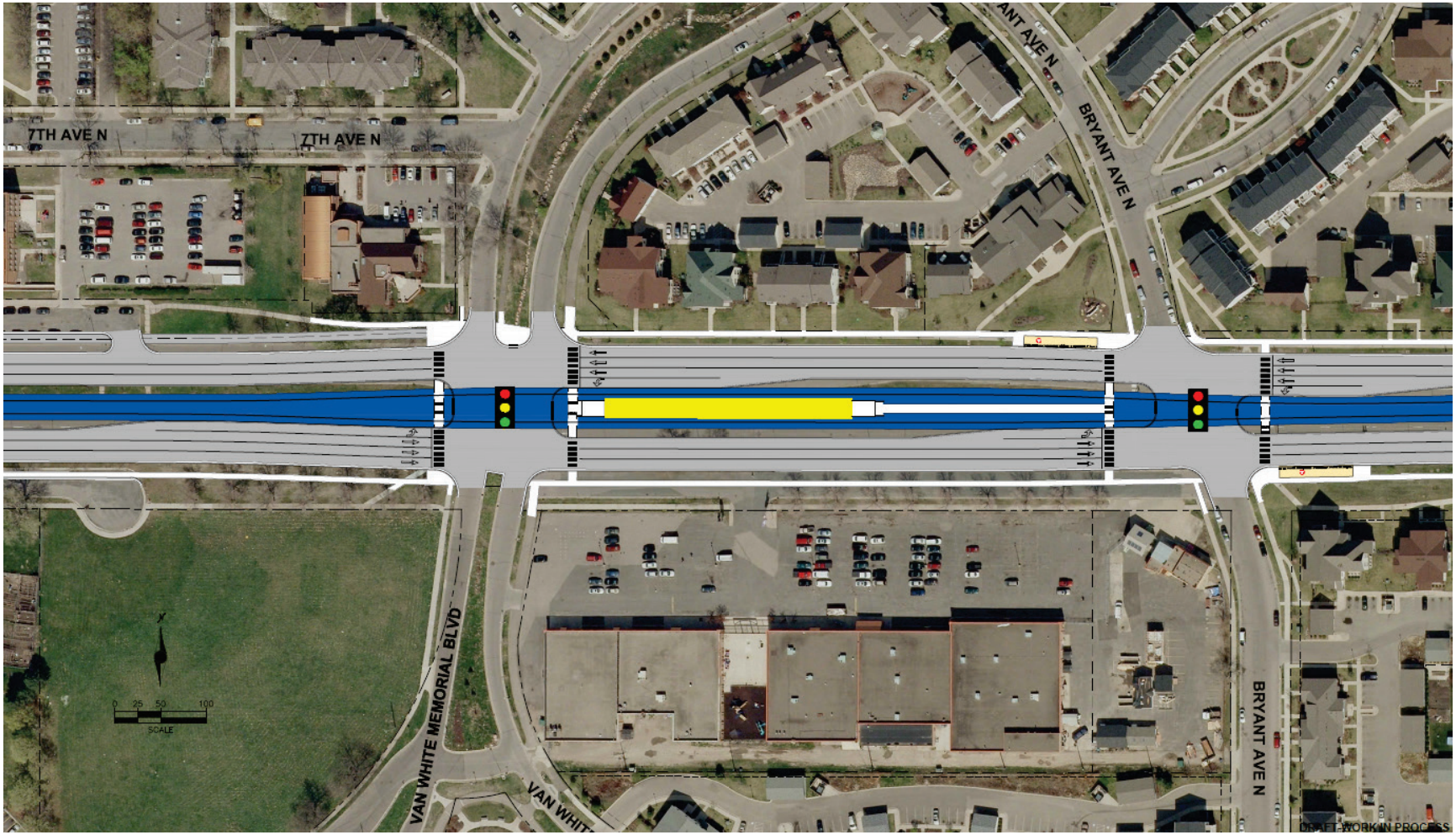
Technical Issue #2:
TH 55/Olson Memorial Highway



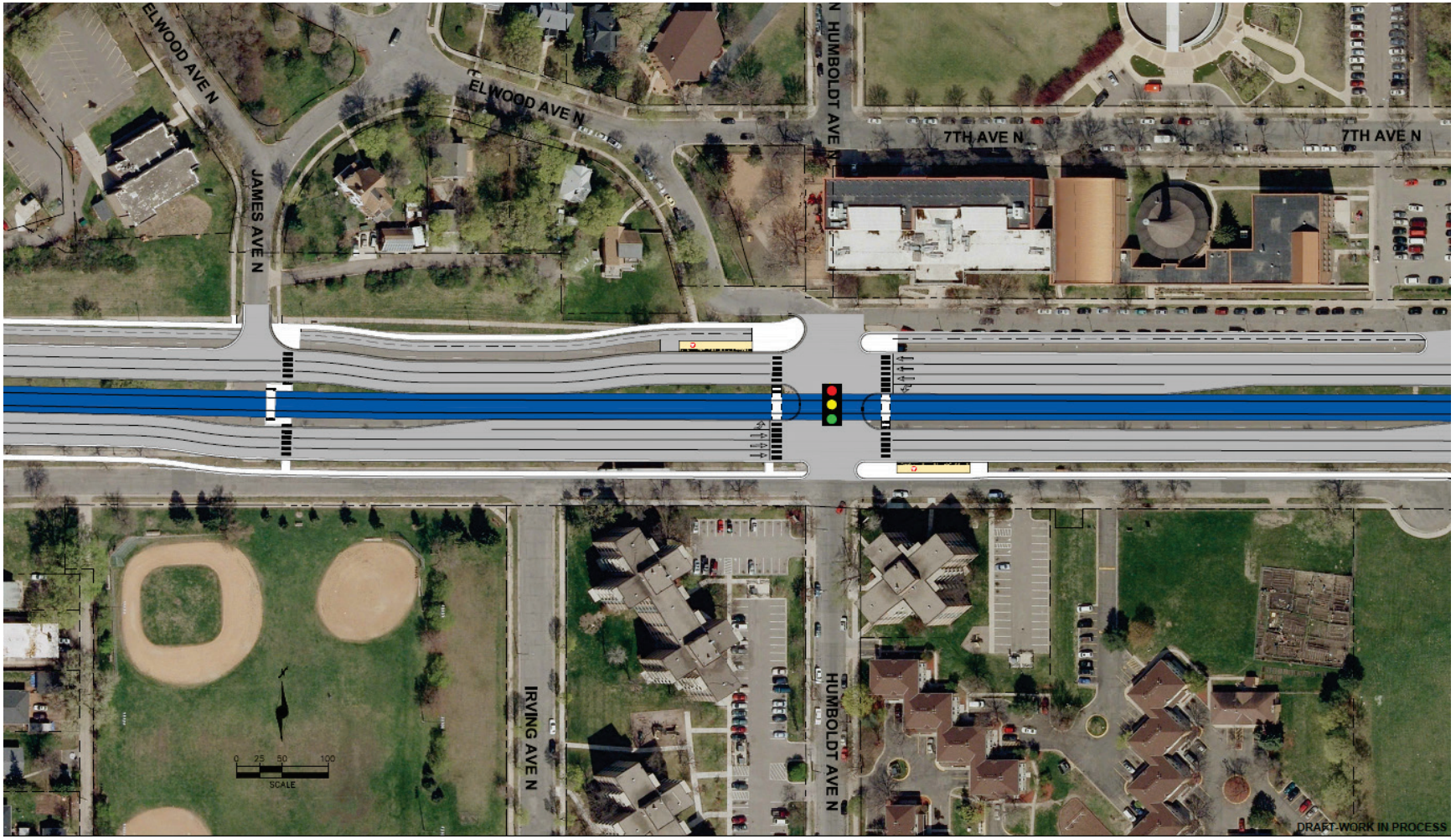
4 lane and 6 lane locations along Olson Memorial Highway

TH 55/Olson Memorial Highway From I-94

TH 55/Olson Memorial Highway
Van White Station



TH 55/Olson Memorial Highway
Humboldt Ave



TH 55/Olson Memorial Highway
Morgan Ave

TH 55/Olson Memorial Highway
Penn Ave

TH 55/Olson Memorial Highway
Thomas Ave

TH 55/Olson Memorial Highway: Key Issues

- Designated principal arterial
- Posted 40 MPH speed limit
- 3 lanes eastbound and westbound (6 total)
- Reliever route for I-394
- Existing lanes are 12’-17’
- Alignment is continuous and straight
- Pedestrian crossings are in poor condition
- No bicycle facilities

Technical Issue #2:
TH 55/Olson Memorial Highway

Penn Avenue and Olson Memorial Highway – Looking Northeast

TH 55/Olson Memorial Highway: Proposed Improved Conditions

- Continue as a principal arterial and reliever
- 3 lanes eastbound and westbound (6 total)
- Design and post for 35 MPH speed limit
- Provide for pedestrian connections and safety
- Accommodate for two-way cycle track
- Reduce lane widths to 11’
- Introduce lane shifts
- Enhance lighting along corridor

Technical Issue #2:
TH 55/Olson Memorial Highway

Penn Avenue and Olson Memorial Highway – Looking Northeast

Draft – Work in Process

Technical Issue #2:
TH 55/Olson Memorial Highway

Penn Avenue and Olson Memorial Highway - View from Southeast corner looking north

Technical Issue #2:
TH 55/Olson Memorial Highway

Penn Avenue and Olson Memorial Highway - View from Southeast corner looking north

Draft – Work in Process

Technical Issue #2:
TH 55/Olson Memorial Highway

Penn Avenue and Olson Memorial Highway - View from existing crosswalk looking north

Technical Issue #2:
TH 55/Olson Memorial Highway

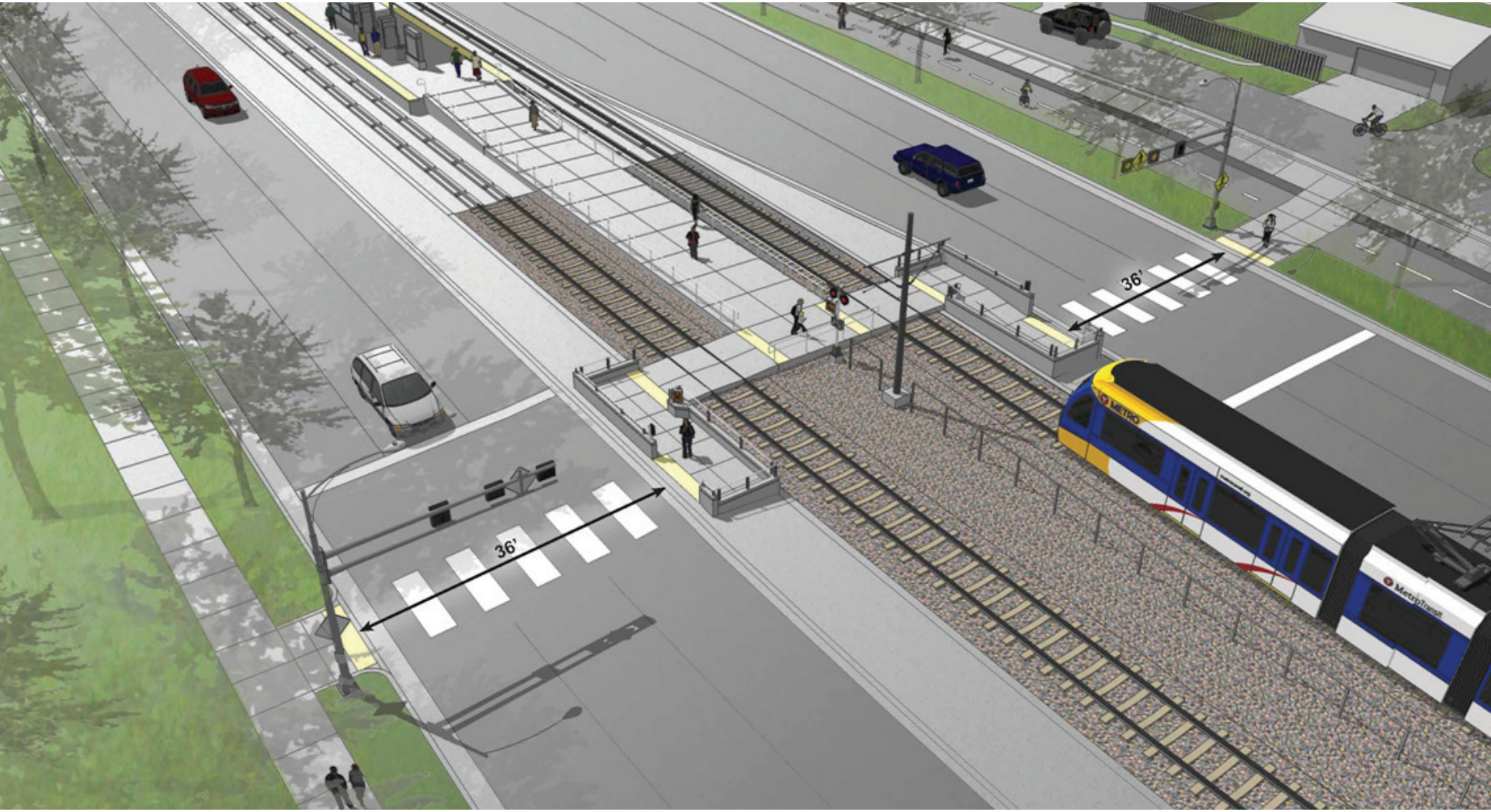
Penn Avenue and Olson Memorial Highway - View from crosswalk looking north

Draft – Work in Process

Technical Issue #2:
TH 55/Olson Memorial Highway

Olson Memorial Highway between Newton Avenue and Oliver Avenue – Looking Northwest

Technical Issue #2:
TH 55/Olson Memorial Highway



Olson Memorial Highway between Newton Avenue and Oliver Avenue – Looking Northwest

Draft – Work in Process

Technical Issue #2:
TH 55/Olson Memorial Highway

Olson Memorial Highway between Newton Avenue and Oliver Avenue – Mid-block view looking North

Technical Issue #2:
TH 55/Olson Memorial Highway

Olson Memorial Highway between Newton Avenue and Oliver Avenue – Mid-block view looking North

Draft – Work in Process

Technical Issue #2:
TH 55/Olson Memorial Highway

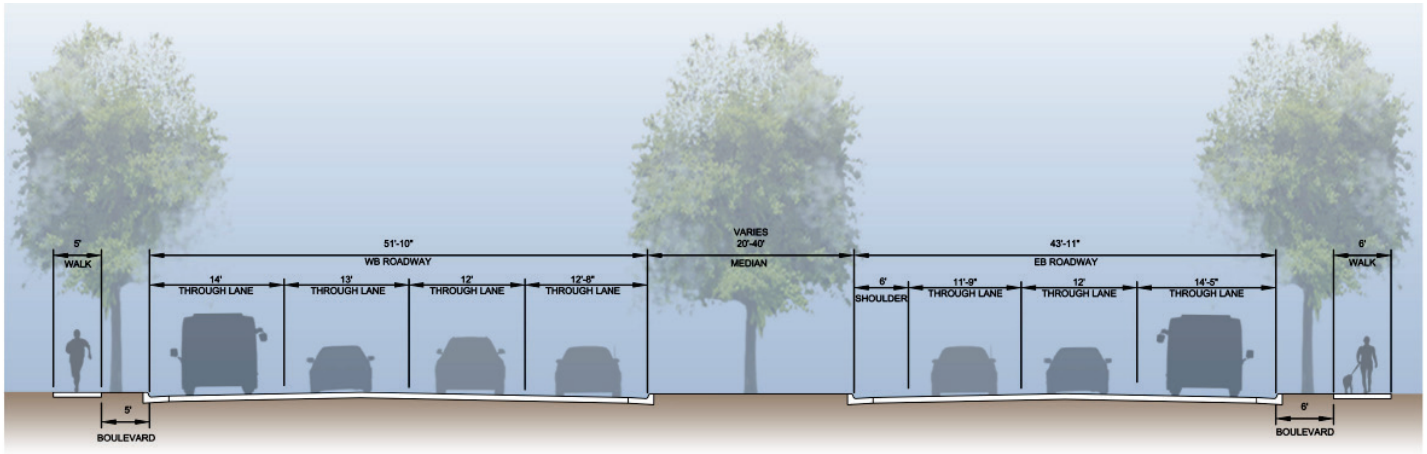
Olson Memorial Highway between Newton Avenue and Oliver Avenue – View from existing median looking East

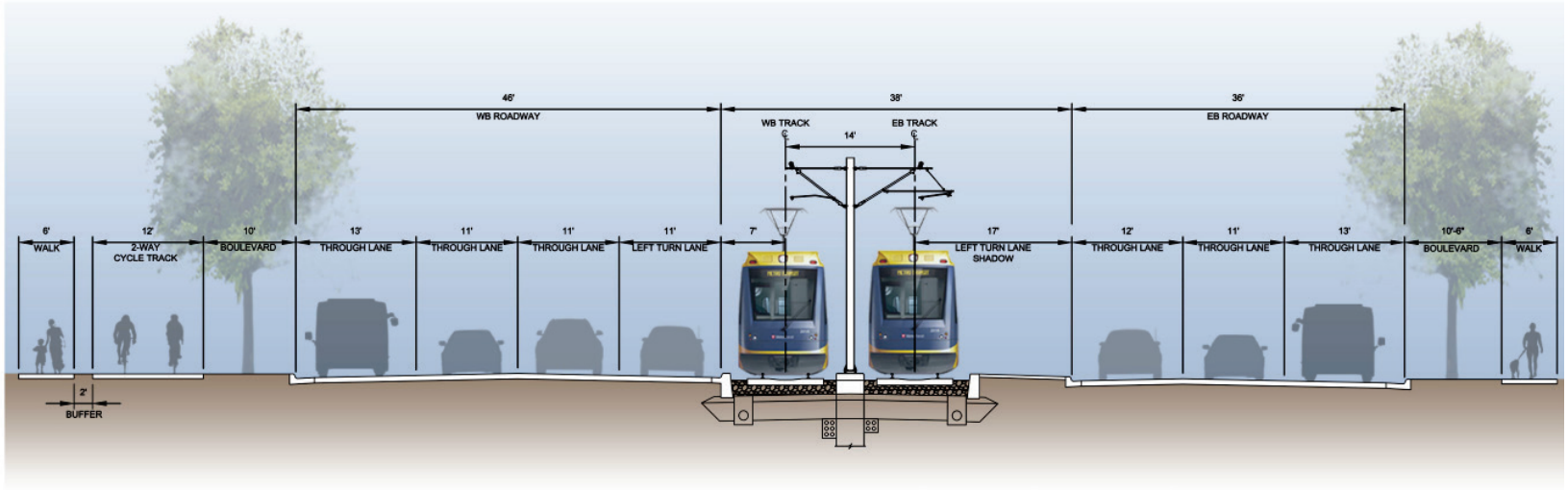
Technical Issue #2:
TH 55/Olson Memorial Highway

Olson Memorial Highway between Newton Avenue and Oliver Avenue – View from platform ramp looking East

Draft – Work in Process

Technical Issue #2:
TH 55/Olson Memorial Highway





Olson Memorial Highway with 2-Way Cycle Track

Technical Issue #2: TH 55/Olson Memorial Highway Recommendations

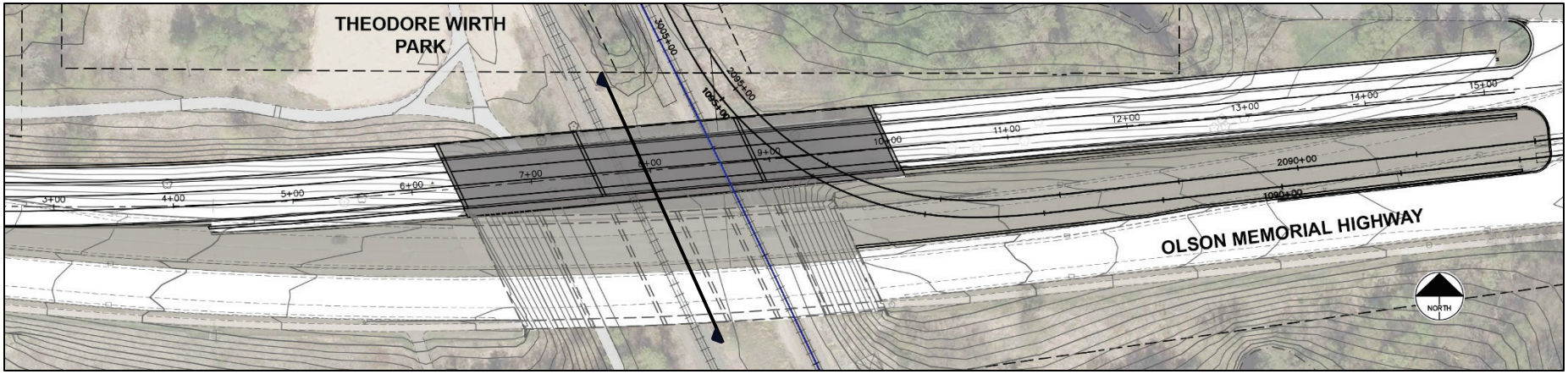
- Advance design for 6-lane principal arterial
- Center running LRT
- 10’ boulevards
- 6’ sidewalk on south side
- 3 mid-block pedestrian crossings
- Accommodate for 12’ cycle track and 6’ sidewalk on north side
- Continue design coordination with MnDOT, Hennepin County and Minneapolis

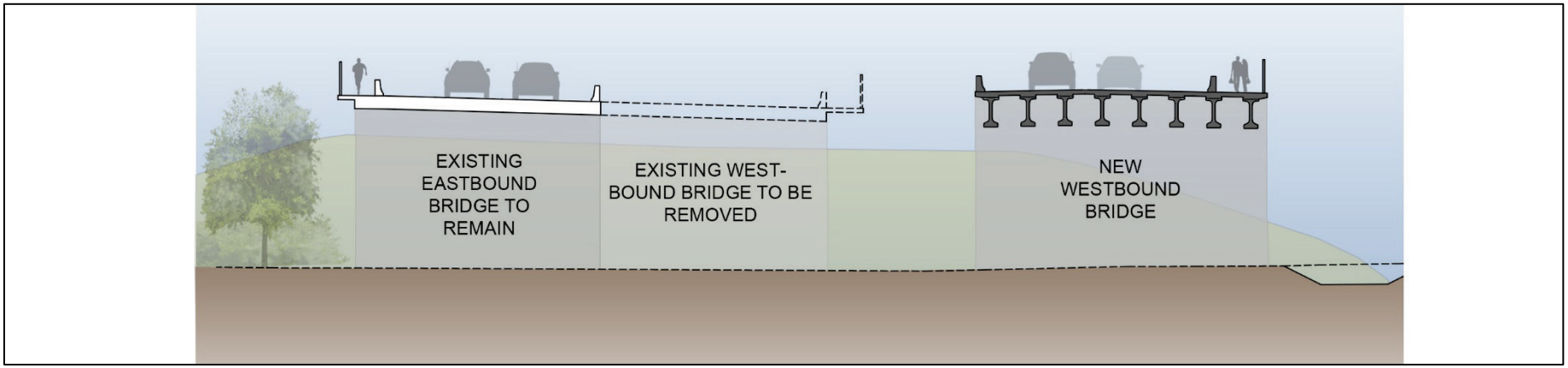
Technical Issue #3:
Olson Memorial Highway Crossing

Technical Issue #3:
Olson Memorial Highway Crossing Key issues

- LRT is center running on OMH
- Need to connect to freight rail corridor
- Existing OMH bridge structure

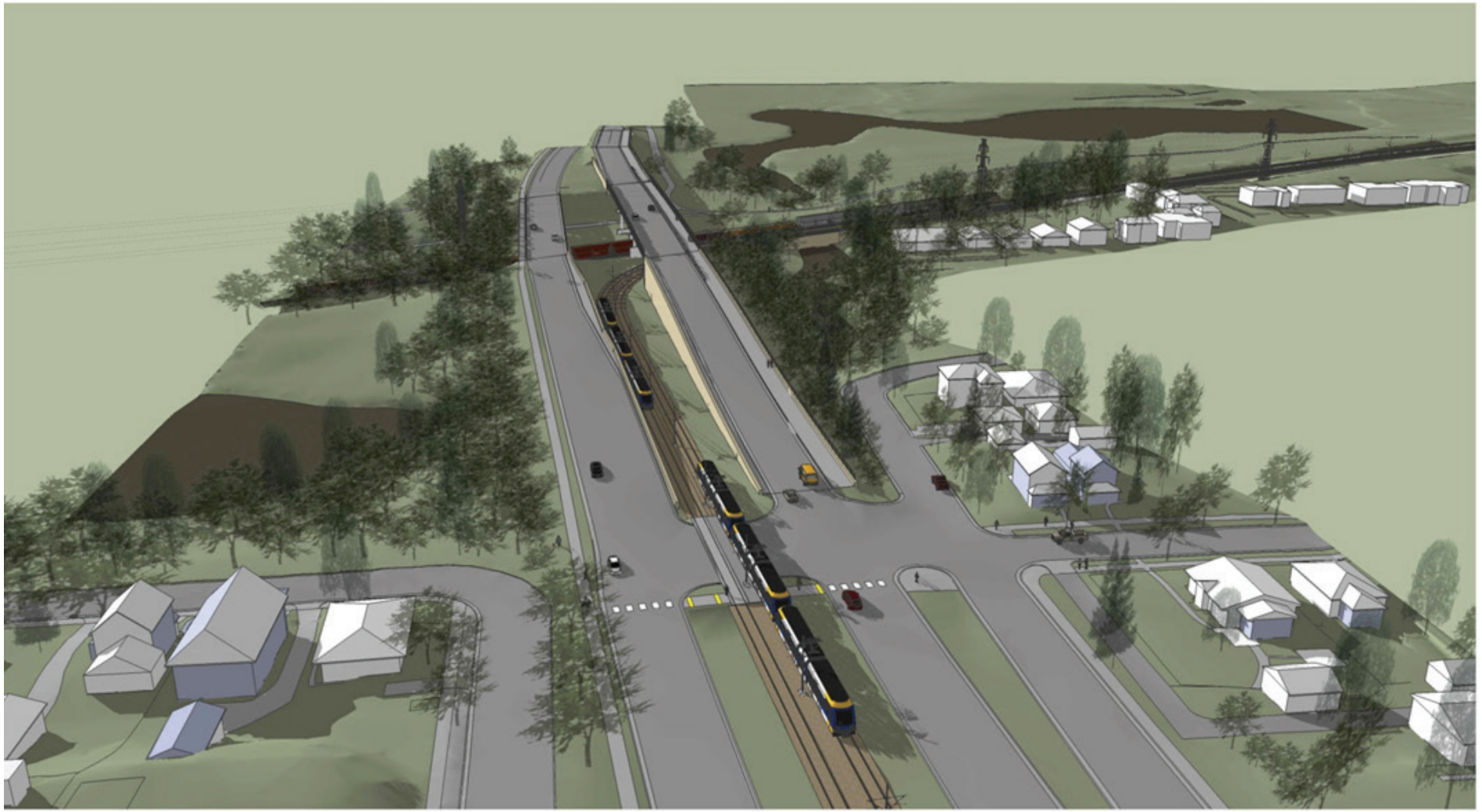
Technical Issue #3 OMH Crossing





Cross section at center of bridges, looking west

Technical Issue #3:
Olson Memorial Highway Crossing



Aerial view looking West along Olson Memorial Highway

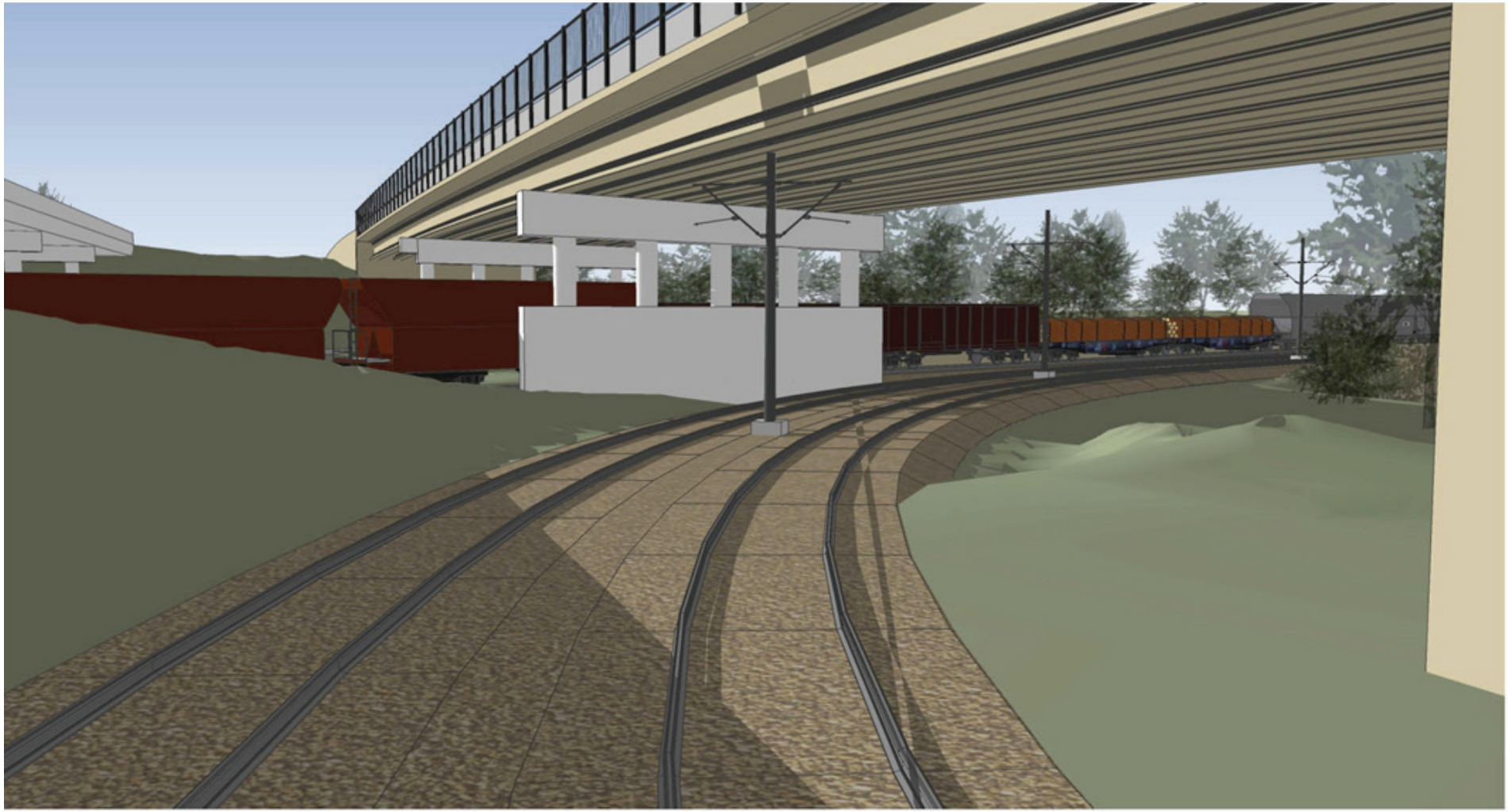
DRAFT-WORK IN PROCESS

Technical Issue #3:
Olson Memorial Highway Crossing

View West at Thomas Ave

DRAFT-WORK IN PROCESS

Technical Issue #3:
Olson Memorial Highway Crossing



Northwest view at Olson Memorial Highway Bridge

DRAFT-WORK IN PROCESS

Technical Issue #3:
Olson Memorial Highway Crossing

View from LRT vehicle looking South

DRAFT-WORK IN PROCESS

Technical Issue #3:
Olson Memorial Highway Crossing

View looking South from Eastbound LRT vehicle

DRAFT-WORK IN PROCESS

Technical Issue #3: Olson Memorial Highway Crossing Recommendations

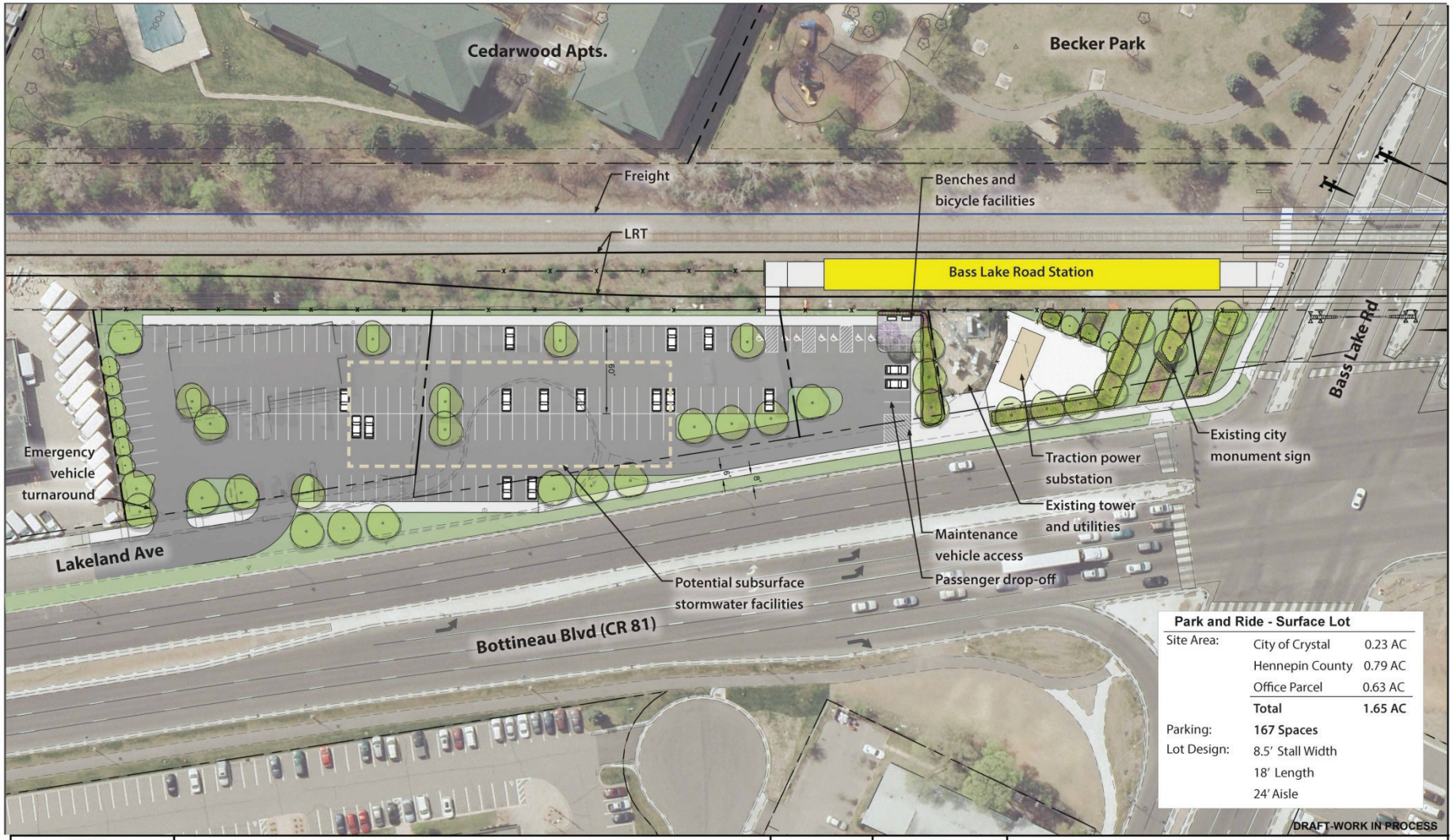
- LRT center running on OMH
- Reconstruct westbound OMH span
- Eastbound OMH span remains in place
- Connect to freight rail corridor north of OMH bridge
- Continue to work with MnDOT, Hennepin County and Minneapolis on design

Bass Lake Road Station Configuration

Issues to be Resolved

- Bass Lake Road station park and ride
  - Community input from May and July open houses: support addition of park and ride
- Traffic Operations at Bass Lake Rd
  - Conduct traffic modeling
  - Analyze grade separation at Bass Lake Rd

Station Park and Ride



Traffic Operations at Bass Lake Rd

- Conduct traffic modeling
- Analyze grade separation at Bass Lake Rd

Bass Lake Road Analysis

- At-grade LRT crossing
- 170-space park-and-ride
  - 94 trips in AM peak, 87 trips in PM peak
- CSAH 81/Bass Lake Road AM/PM Peak Hour Operations
  - Existing intersection operates with 25-35 seconds of average intersection delay
  - 2040 without LRT and park-and-ride operates with 30-40 seconds of average intersection delay
  - 2040 with LRT and park-and-ride operations with 35-45 seconds of average intersection delay
- No significant change in intersection delay due to LRT and park-and-ride

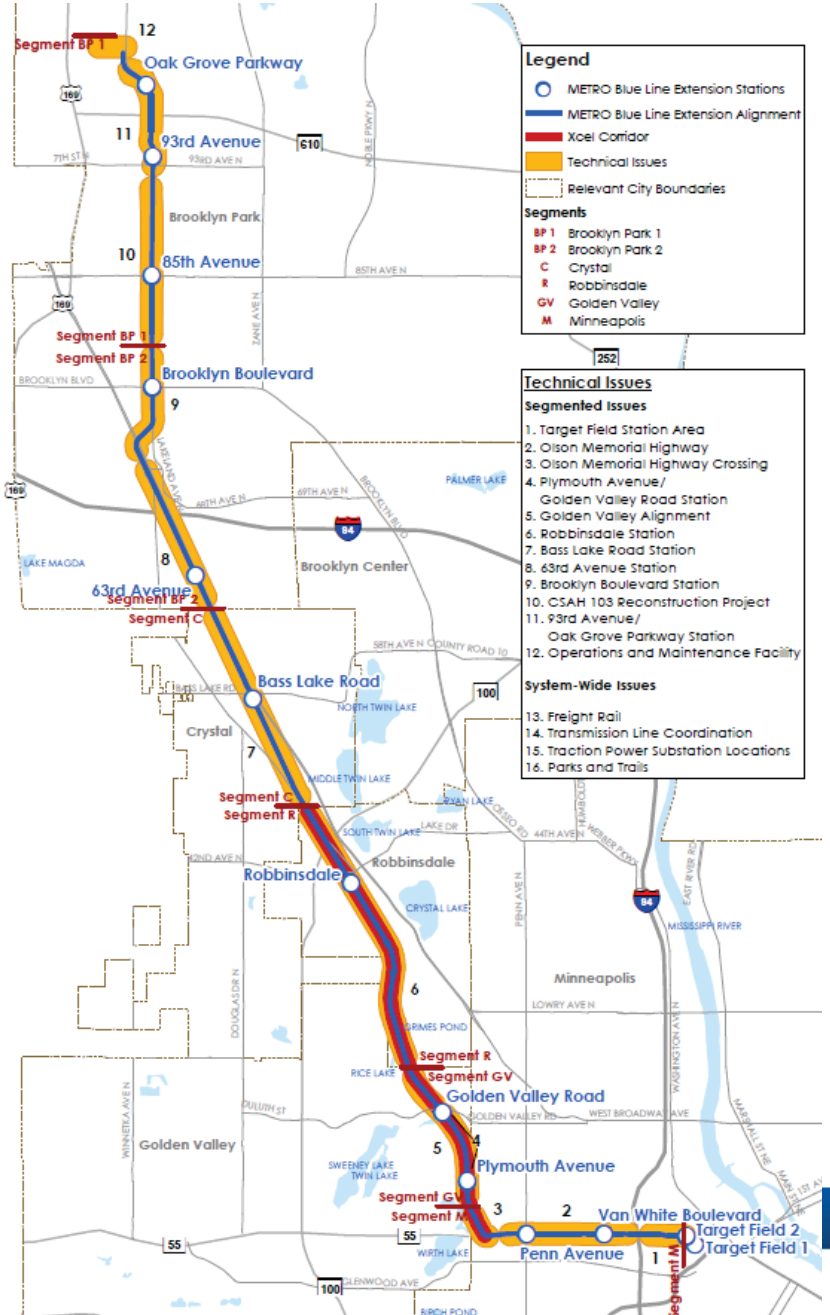
Bass Lake Road Station Recommendation

- Station
  - Advance park and ride of 167 spaces
  - Property acquisition and construction costs not included in DEIS cost estimate

- Traffic Operations at Bass Lake Rd
  - Acceptable intersection operations in 2040 with LRT
  - At-grade intersection at Bass Lake Rd

Transmission Line Coordination Update

Xcel Energy Transmission Line Corridor



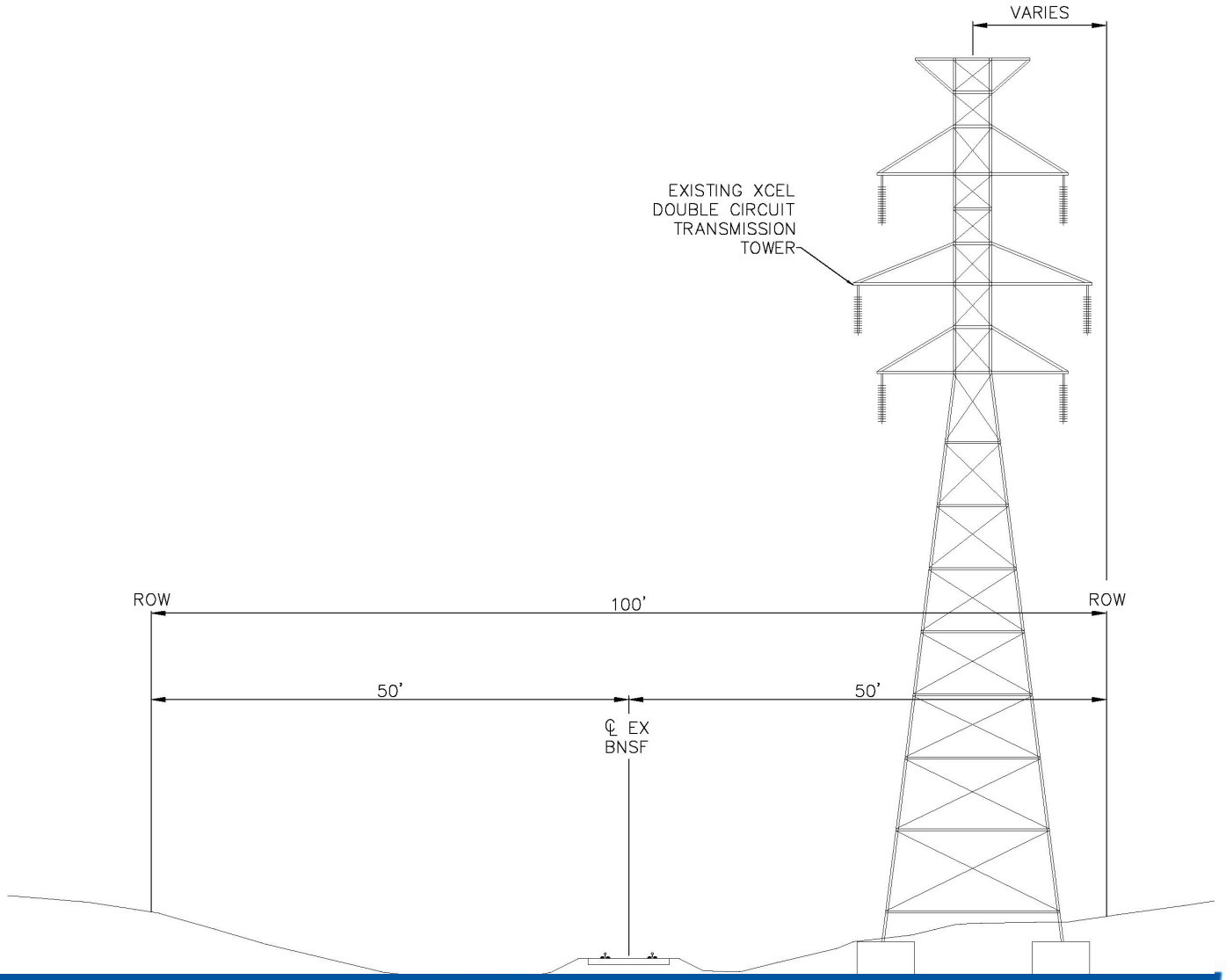
Xcel Energy Transmission Line Corridor

- BPO has held regular meetings with Xcel Energy
- Xcel feedback to BPO:
  - Xcel intends to own and maintain a transmission line in this corridor
  - Protect Xcel's ability to access and maintain transmission line structures as necessary
  - Accommodate Xcel's ability to replace transmission line structures in the future if not replaced at this time

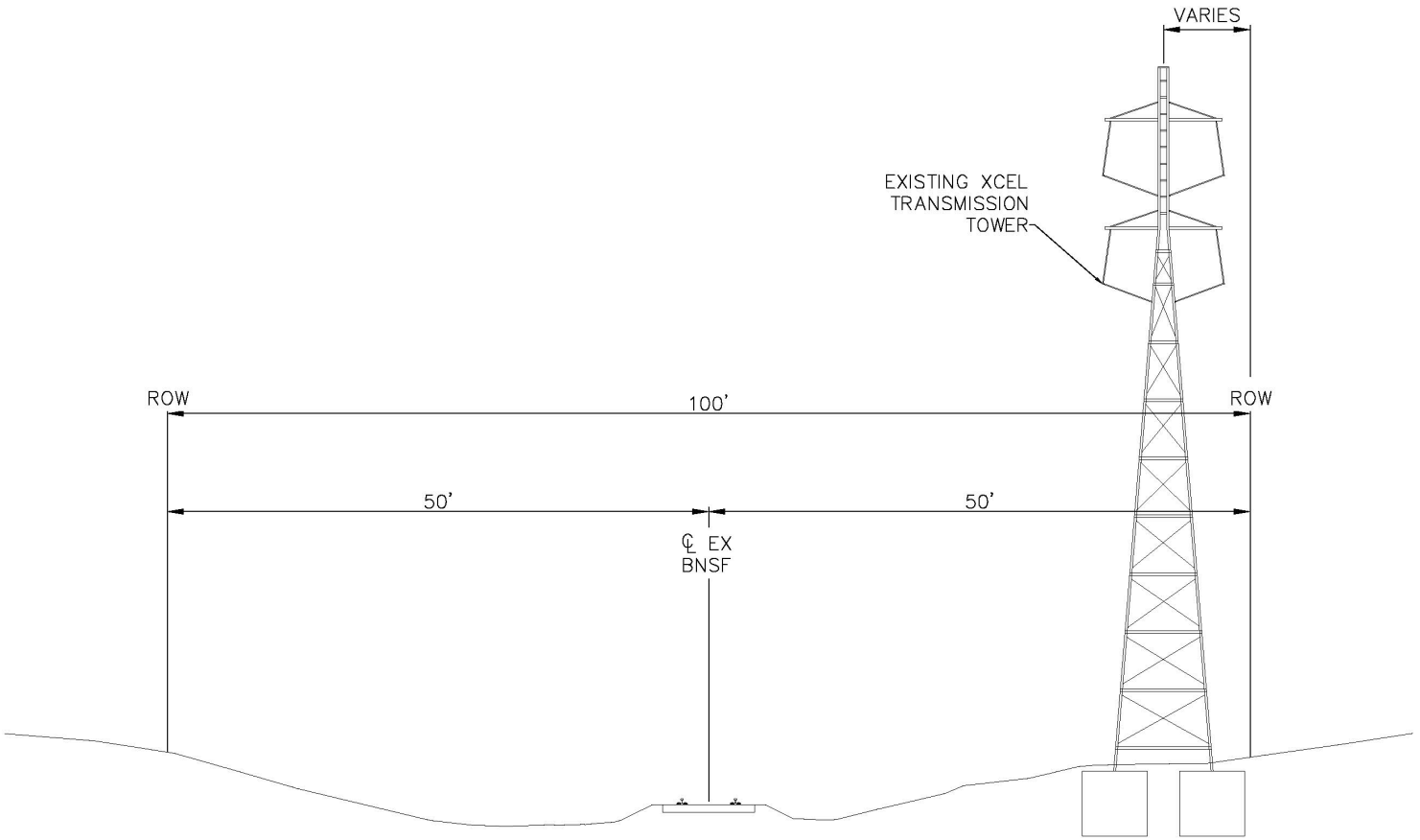
Xcel Energy Transmission Line Corridor

- 115 kV transmission line on BNSF ROW by permit
- Existing transmission line feeds Xcel's Indiana Substation at 33rd Ave North & Indiana Ave North
- Transmission line characteristics:
  - Double circuit steel lattice structures (4)
  - Single circuit steel lattice structures (35)
  - Single circuit wood poles (36)

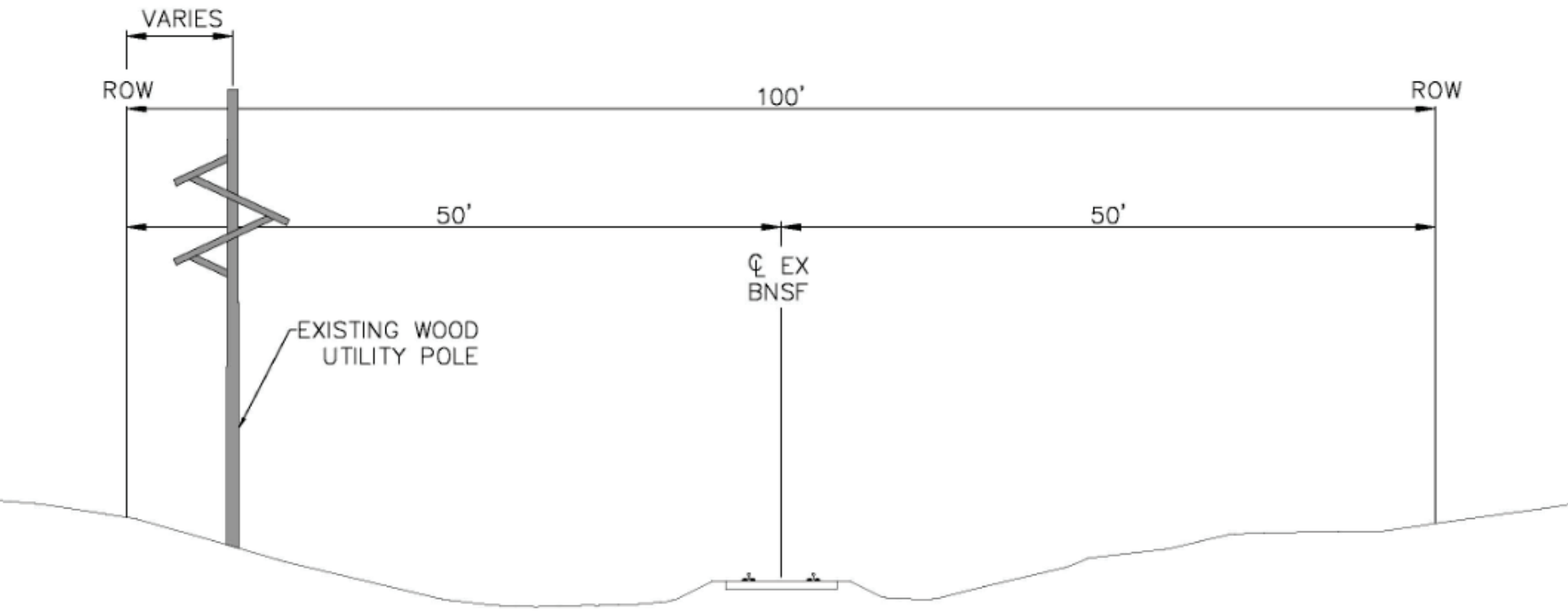
Xcel Energy Transmission Line: Double circuit 115 kV steel lattice structures



Xcel Energy Transmission Line: Single circuit 115 kV steel lattice structures



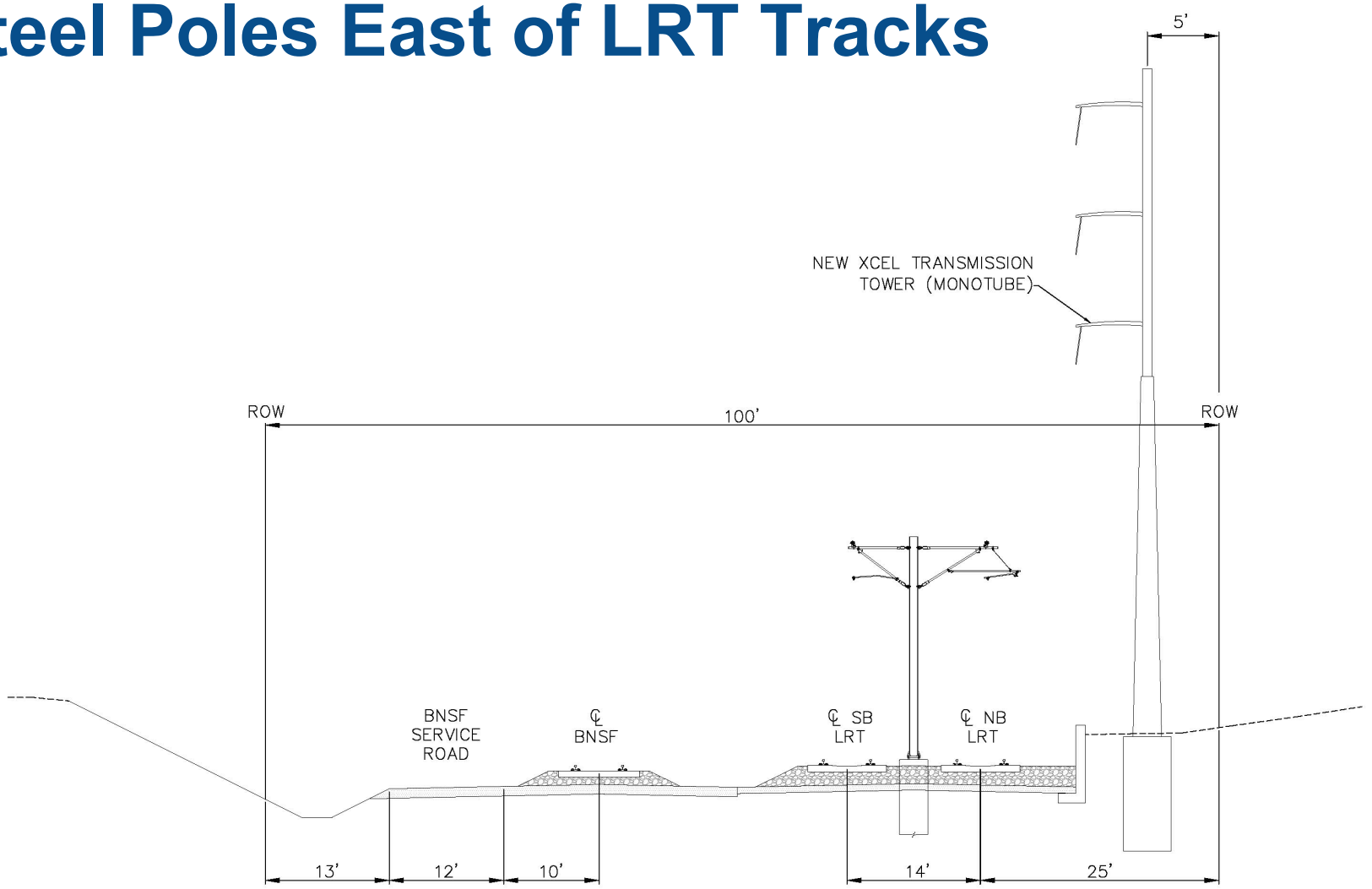
Existing Xcel Energy Transmission Line: Single circuit 115 kV wood poles



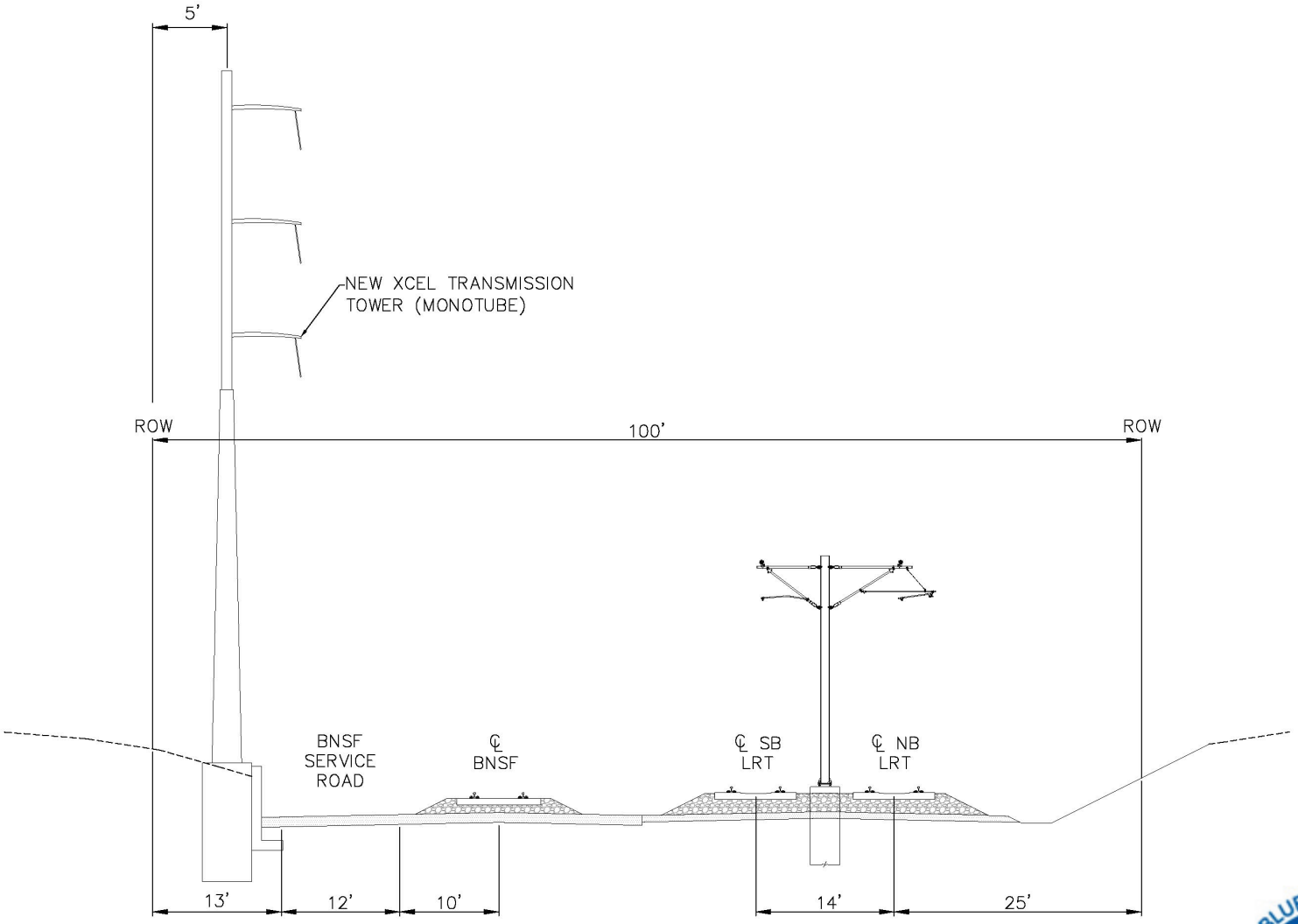
Xcel Energy Transmission Corridor

- Potential Xcel Energy transmission line accommodations:
  - Remain in current location
  - Steel poles east of LRT tracks
  - Steel poles west of BNSF tracks
  - Steel poles between LRT tracks
- Other issues:
  - Compatibility with freight rail improvements
  - Constructability
  - Electrical clearances

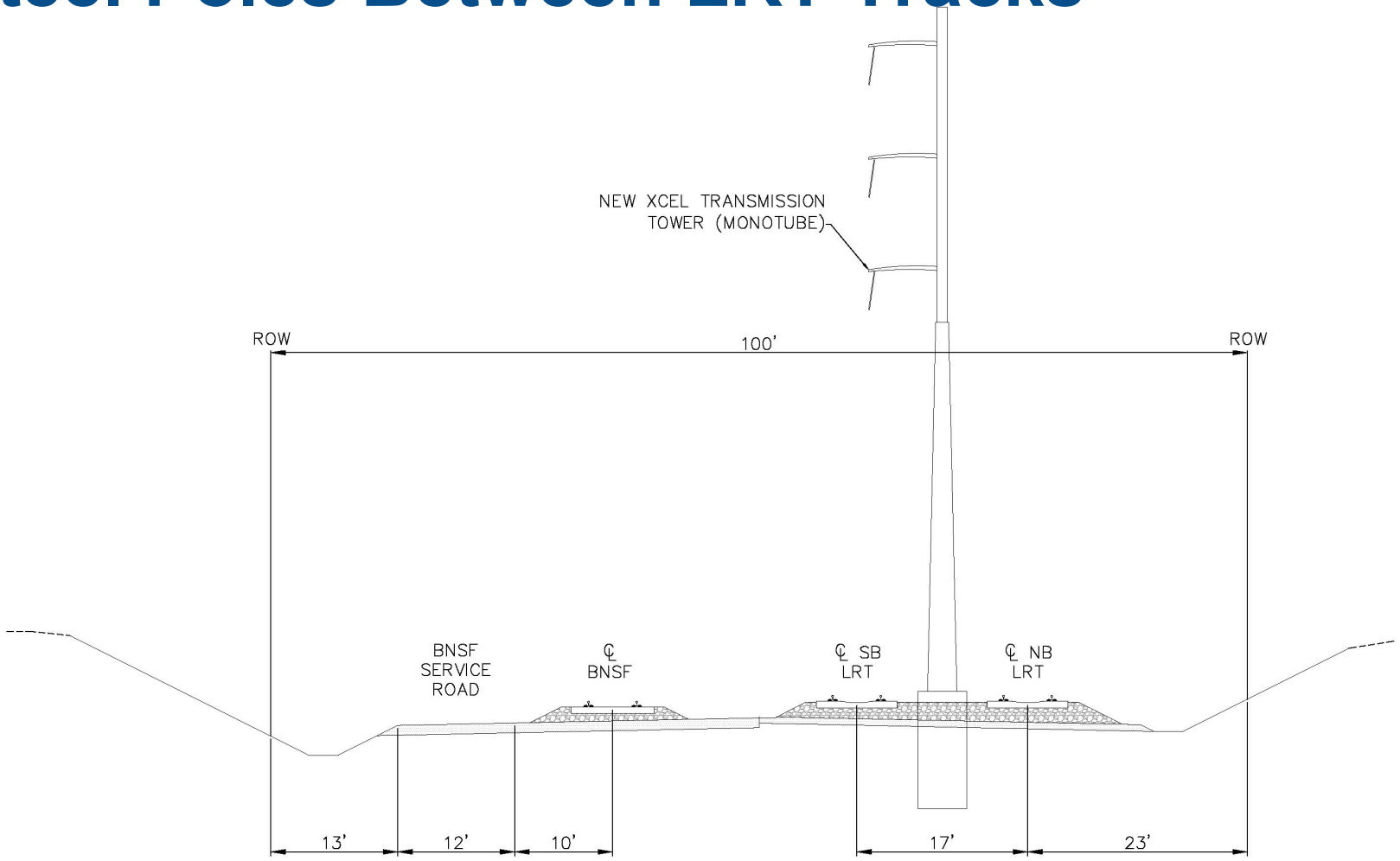
Potential Xcel Energy Accommodation: Steel Poles East of LRT Tracks



Potential Xcel Energy Accommodation: Steel Poles West of BNSF Track



Potential Xcel Energy Accommodation: Steel Poles Between LRT Tracks



Transmission Line Coordination Next Steps

- Continue regular coordination meetings with Xcel
- Advance improvements necessary for BLRT
- Ensure improvements covered in FEIS
- Ensure improvements are compatible with BNSF freight rail improvements and any necessary ground improvements or structures

Systems Introduction

Traction Power Sub Station (TPSS)

- Converts electrical power (AC to DC) to operate trains
- Requires climate controlled environment
- Placement criteria
  - Located within 500’ of track preferred
  - Spacing of approximately 5000’ between substations preferred to maintain continuous power to trains
  - Requires closer spacing for steeper track grades
  - Located at-grade to minimize cost and provide adequate access for maintenance

TPSS Site Features

- Requires 40’ by 80’ footprint
  - TPSS enclosure
  - 10’ minimum clear zone around TPSS enclosure
  - Maintenance vehicle parking space
- Requires fencing and access gate
  - Grounded architectural or chain link
- Includes porous asphalt pavement
  - Electrical safety
  - Stormwater management
  - Maintain moisture content of soil (assists with conductivity)

Standard TPSS: Blue Line

TPSS Example: Green Line

TPSS – CC03 at 25th and U of M Transitway

Signal Bungalows

- Contains communications, signal and switching controls
- Requires climate controlled environment
- Placement criteria:
  - Located near special trackwork
  - Located within line of site of special trackwork and equipment testing
  - Requires access for maintenance
  - Located at-grade

Signal Bungalow

Signal Bungalow: Interior View

Overhead Contact System (OCS)

- Transmits electrical power from TPSS to the Light Rail Vehicle via pantograph
- Divided into sections, one per TPSS
- Pole and assembly details:
  - Two wires: contact wire and messenger wire
  - Brackets
  - Insulators
  - Tensioning weights

Standard OCS Pole and Assembly

Rail Signals

- Interlocking Signals
  - Located at LRT interlockings
  - Convey route direction and authority to LRT trains
- Bar Signals
  - Integrated into traffic signals
  - Operate as an independent or concurrent phase of the traffic signal

Rail Signals

Interlocking Signal

Bar Signal

METRO BLUE LINE EXTENSION
Bottineau LRT

Municipal Consent Process Overview and Roadmap

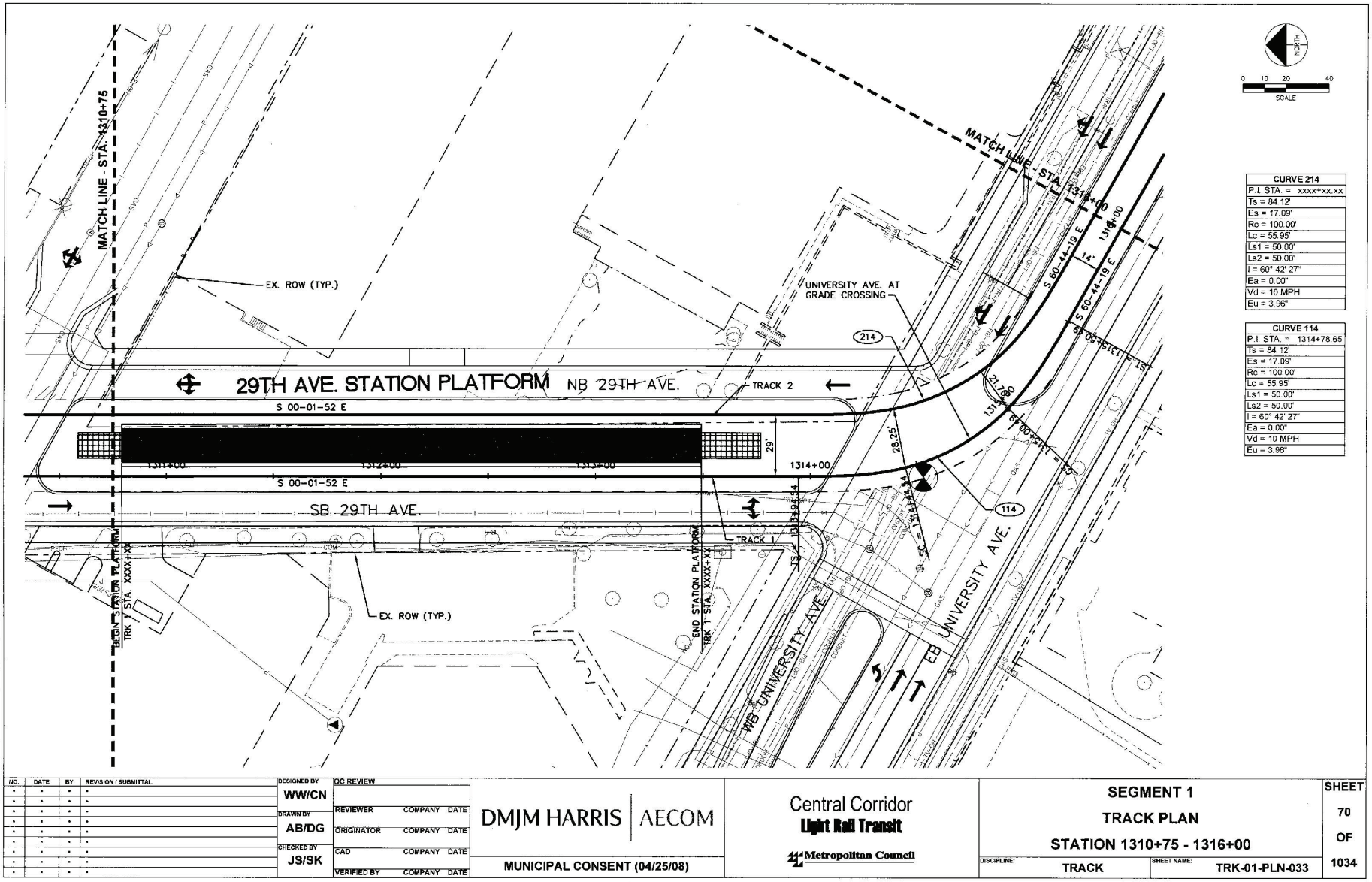
Municipal Consent Process

- Minnesota Statute 473.3994
- Local jurisdictional review and approval of physical design component of preliminary design plans

Physical Design Components

- LRT track location
- Station location and layout
- Roadway features
  - Turn lanes
  - Lane widths
  - Traffic signals
- Sidewalks
- Pedestrian crossings
- Operations and Maintenance Facility (OMF) location
- Freight track location
- System elements

CCLRT Municipal Consent Examples



CURVE 214
P.I. STA. = xxxx+xx.xx
Ts = 84.12'
Es = 17.09'
Rc = 100.00'
Lc = 55.95'
Ls1 = 50.00'
Ls2 = 50.00'
I = 60° 42' 27"
Ea = 0.00"
Vd = 10 MPH
Eu = 3.96"

CURVE 114
P.I. STA. = 1314+78.65
Ts = 84.12'
Es = 17.09'
Rc = 100.00'
Lc = 55.95'
Ls1 = 50.00'
Ls2 = 50.00'
I = 60° 42' 27"
Ea = 0.00"
Vd = 10 MPH
Eu = 3.96"

NO.	DATE	BY	REVISION / SUBMITTAL
.	.	.	.

DESIGNED BY: WW/CN
DRAWN BY: AB/DG
CHECKED BY: JS/SK
QC REVIEW
REVIEWER COMPANY DATE
ORIGINATOR COMPANY DATE
CAD COMPANY DATE
VERIFIED BY COMPANY DATE

DMJM HARRIS | AECOM

MUNICIPAL CONSENT (04/25/08)

Central Corridor
Light Rail Transit
Metropolitan Council

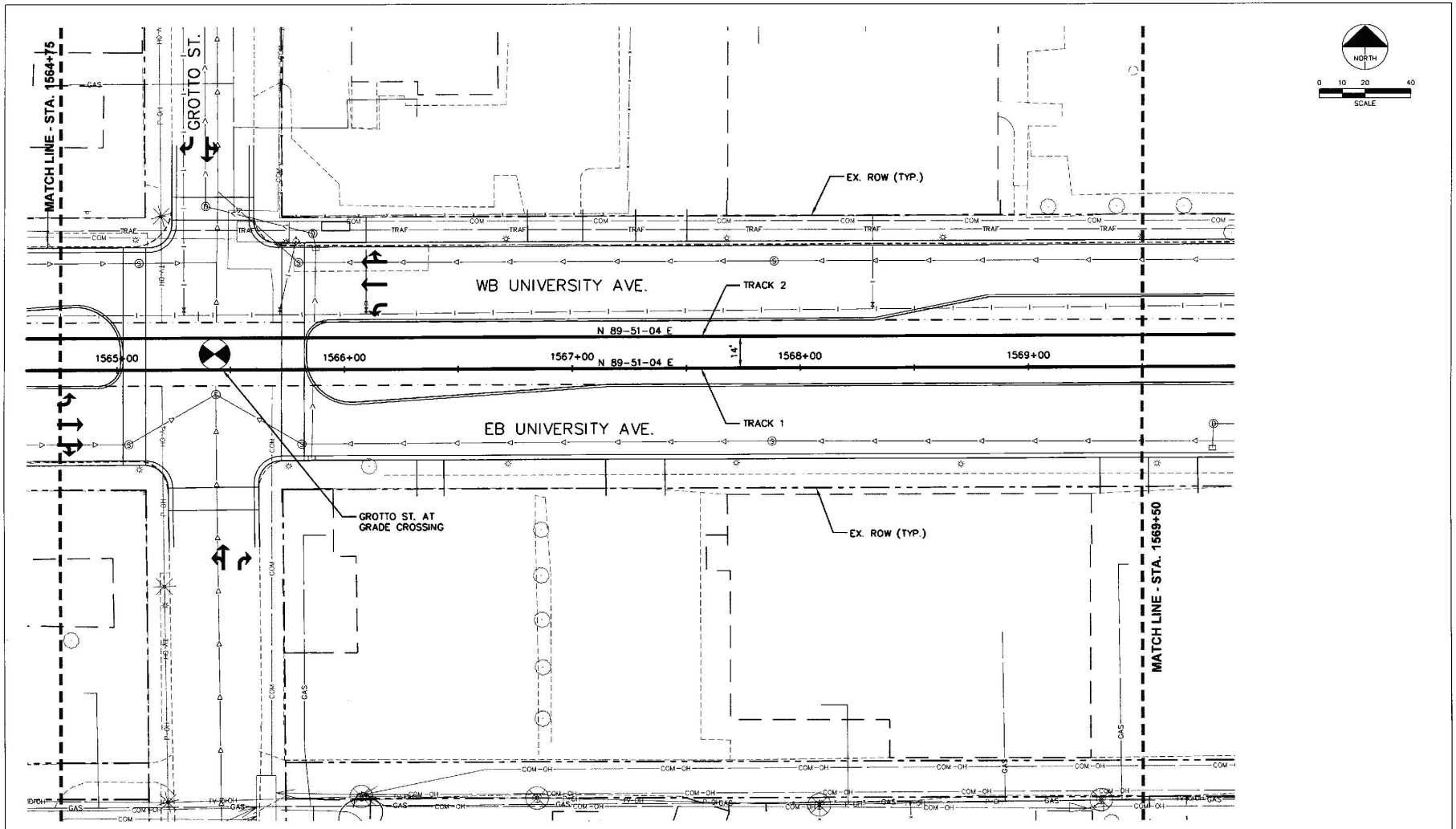
SEGMENT 1
TRACK PLAN
STATION 1310+75 - 1316+00

DISCIPLINE: TRACK
SHEET NAME: TRK-01-PLN-033

SHEET 70 OF 1034

Apr. 25 2008 12:02 pm n:\900_CAD\SEGMENT-01 (MPLS)\SHEET\RAIL\TRACK PLAN\01-TRK-PLN-033.dwg By: bsacho

CCLRT Municipal Consent Examples



NO.	DATE	BY	REVISION / SUBMITTAL

DESIGNED BY: WW/CN
DRAWN BY: AB/DG
CHECKED BY: JS/SK
QC REVIEW
REVIEWER COMPANY DATE
ORIGINATOR COMPANY DATE
CAD COMPANY DATE
VERIFIED COMPANY DATE

DMJM HARRIS | AECOM

MUNICIPAL CONSENT (04/25/08)

Central Corridor
Light Rail Transit
Metropolitan Council

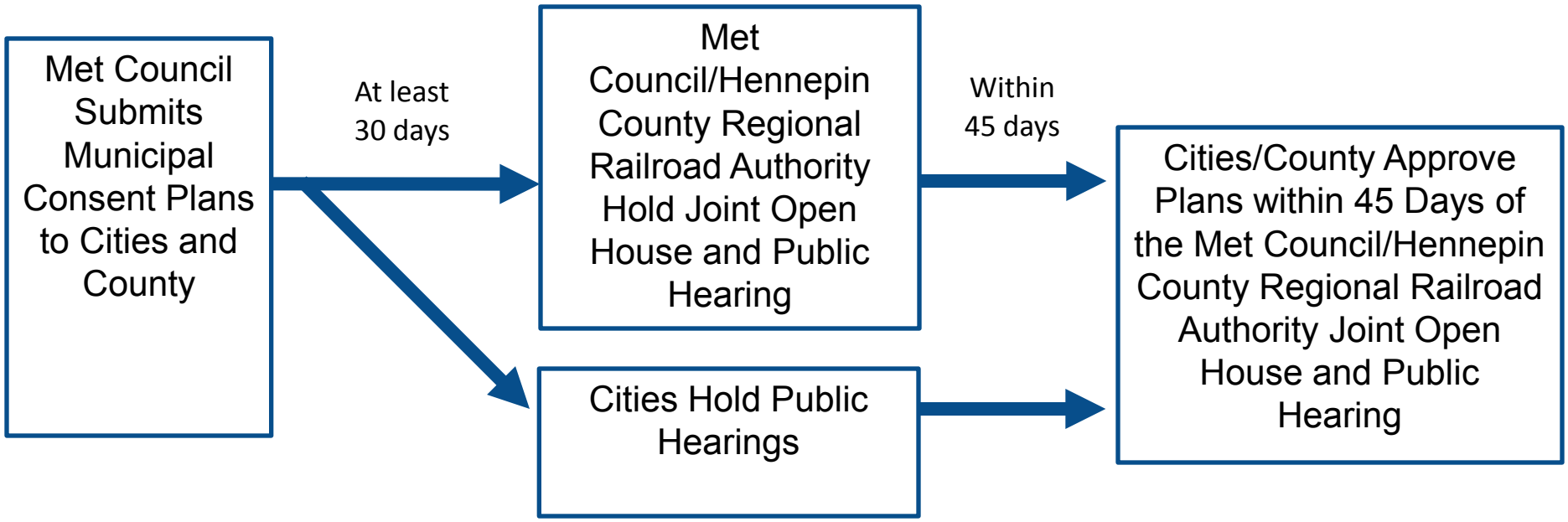
SEGMENT 3
TRACK PLAN
STATION 1564+75 - 1569+50

DISCIPLINE: TRACK
SHEET NAME: TRK-03-PLN-018

SHEET 570 OF 1034

Apr. 25, 2008 12:18 pm I:\900_CAD\SEGMENT-03\SHEET\RAIL\TRACK PLAN\03-TRK-PLN-018.dwg By: boscho

Municipal Consent



Next Steps After Municipal Consent

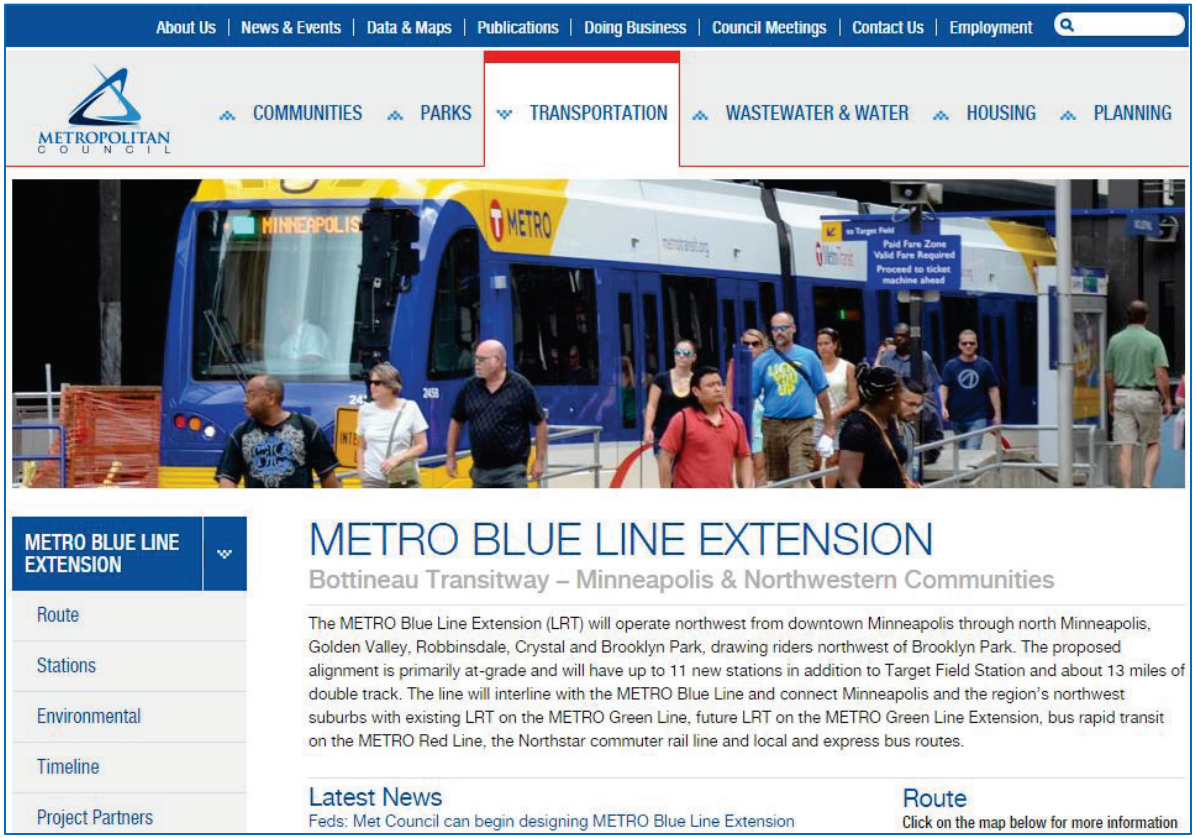
- Station design and public art
- Streetscape design
- Utility relocation design
- Design advancement:
  - LRT track features
  - Roadway details
  - OMF features
  - Bridges and tunnels
  - System elements
  - Freight rail features

Roadmap to Municipal Consent:
Schedule of Activities

CMC Recommendation on Project Scope	Nov 2015
Met Council Approves Project Scope and Issues Municipal Consent Packages	Dec 2015
Met Council & Hennepin County Regional Railroad Authority Joint Public Hearing	Jan 2016
Individual City Public Hearings	Feb/Mar 2016
Municipal Consent Completion	Mar 2016
30% Plan Completion	Q3 2016
Publish FEIS/ROD	Q3 2016
For Entry to Engineering Applications to the FTA	Q3 2016

Next Meeting: September 8, 2015

More Information



Website: BlueLineExt.org

Email: BlueLineExt@metrotransit.org

Twitter: @BlueLineExt