Proposed Raleigh Station and Track Configurations – DRAFT Feasibility Study

Passenger Rail Task Force
October 17, 2011

Raleigh Train Station Feasibility Study

- Evaluate feasibility of using former Dillon Supply "Viaduct Building" as new station
- Stakeholders: NCDOT, City of Raleigh, TTA, Amtrak, CSX Transportation, NCRR, Norfolk Southern
- Began study in June 2011
- Complete DRAFT report late October 2011
- Presentations to Stakeholders in Oct & Nov
- Receive stakeholder comments Nov & Dec
- Final Report to be issued January 2012

Why is a New Raleigh Station Needed?

- Current station was built by Southern Railway and opened in 1950
- Inadequate for current service
- Eight passenger trains per day
- 2,500 SF waiting room is smaller than Selma, Cary, High Point, and Charlotte
- Inadequate parking at 54 spaces when 150 or more are routinely needed
- Short platform requires double stops of the Silver Star (10 cars)

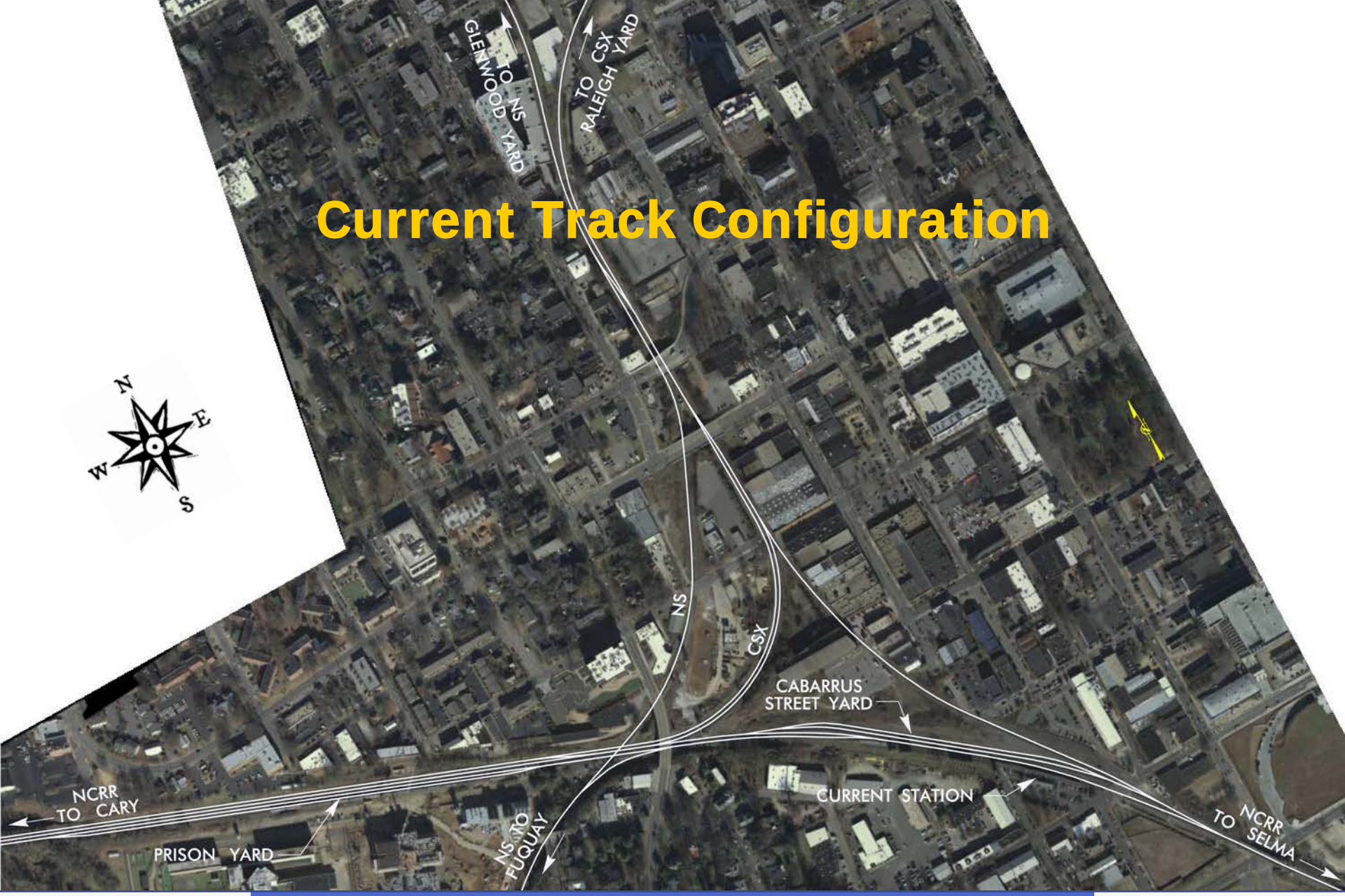
A Regional Comparison – 2010 Ridership

• Richmond	255,343	(20 trains)
• **Raleigh**	**164,745**	**(8 trains)**
• Charlotte	162,905	(8 trains)
• Orlando	159,533	(4 trains)
• Alexandria	139,837	(20 trains)
• Atlanta	112,364	(2 trains)
• Miami	90,561	(4 trains)
• Charleston	79,806	(4 trains)
• Jacksonville	70,728	(4 trains)
• Savannah	65,656	(6 trains)

Raleigh Station Project Goals

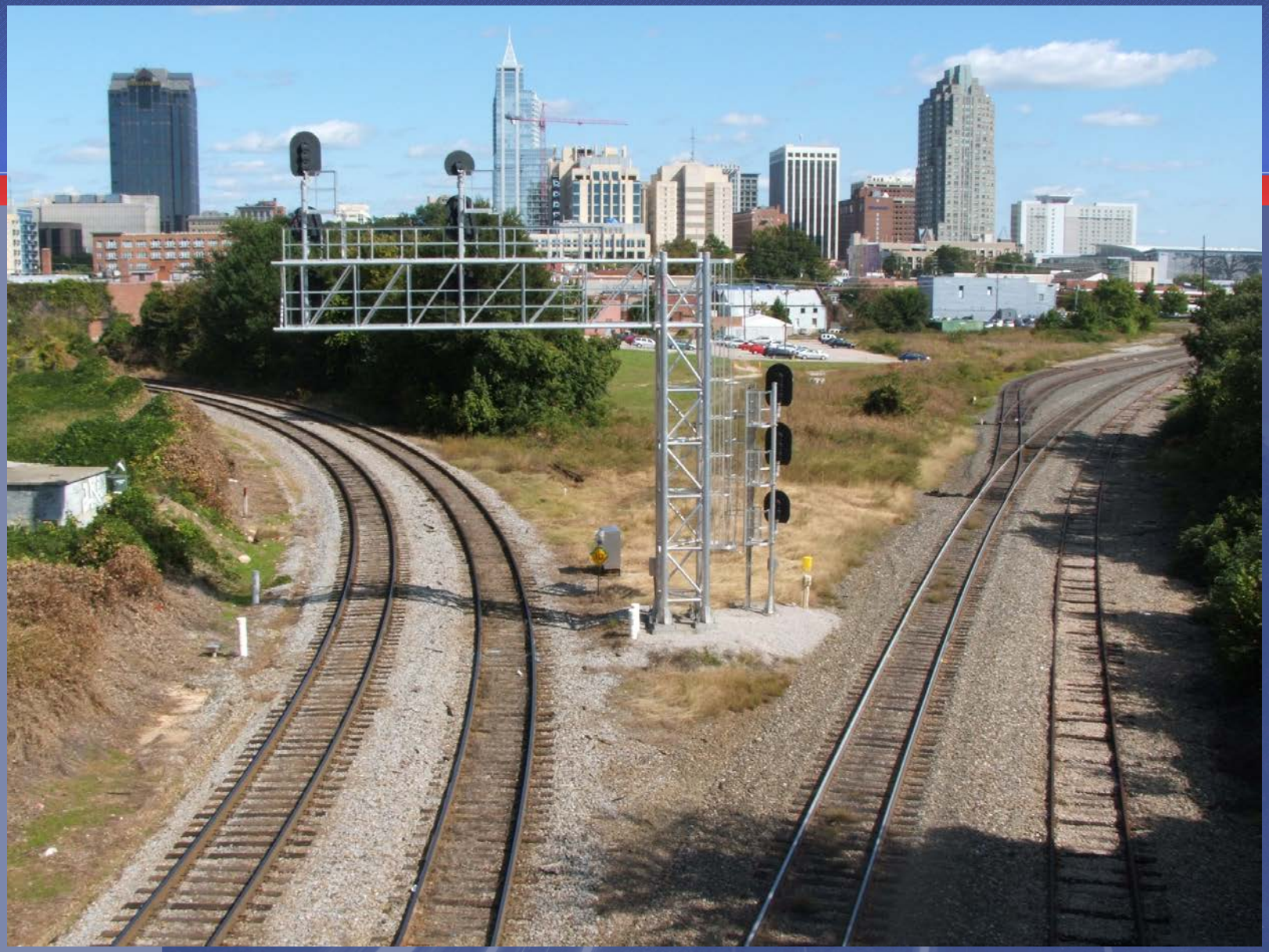
1. Do no harm to freight operations
2. Improve freight operations, including through and local freight
3. Provide capacity for current and future passenger traffic (intercity, commuter and SEHSR)
4. Improve velocity on all tracks
5. Minimize and/or eliminate at-grade crossings for trains, vehicles and pedestrians
6. Apply “Rule of Five”: Function, Inspire, Vision and Enhance
7. Accommodate Emergency Response

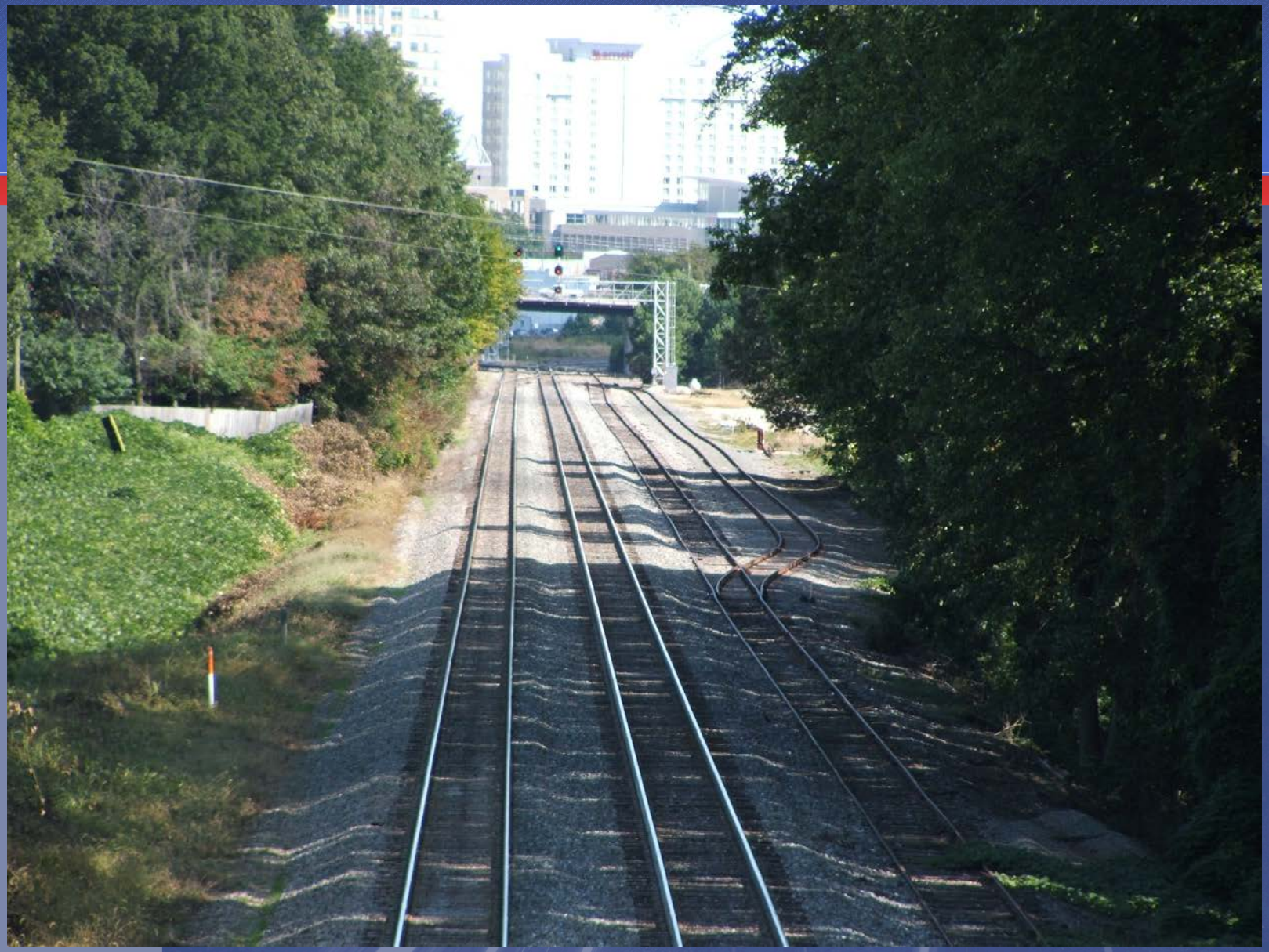
Current Track Configuration



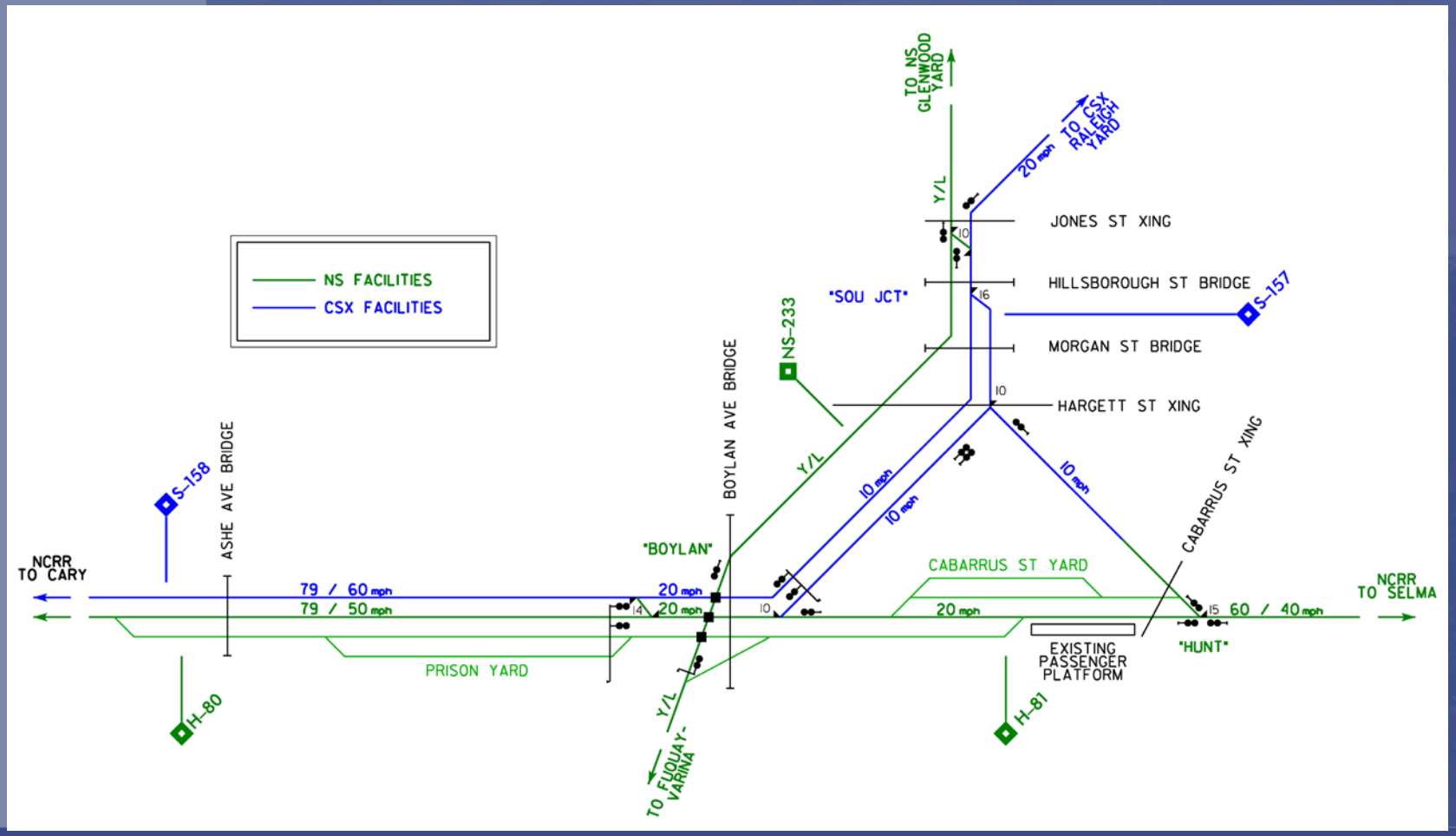
Current Track Configuration

- All passenger trains stop on single track H-line Main blocking freight movements
- Cabarrus Street Yard is separate from Prison Yard and is switched off main line
- 10 mph speed restriction on West and East legs of wye
- 20 mph speed restriction on H-line Main
- East leg of wye is “dark” (non-signaled) and not currently on CSXT or NS dispatch boards

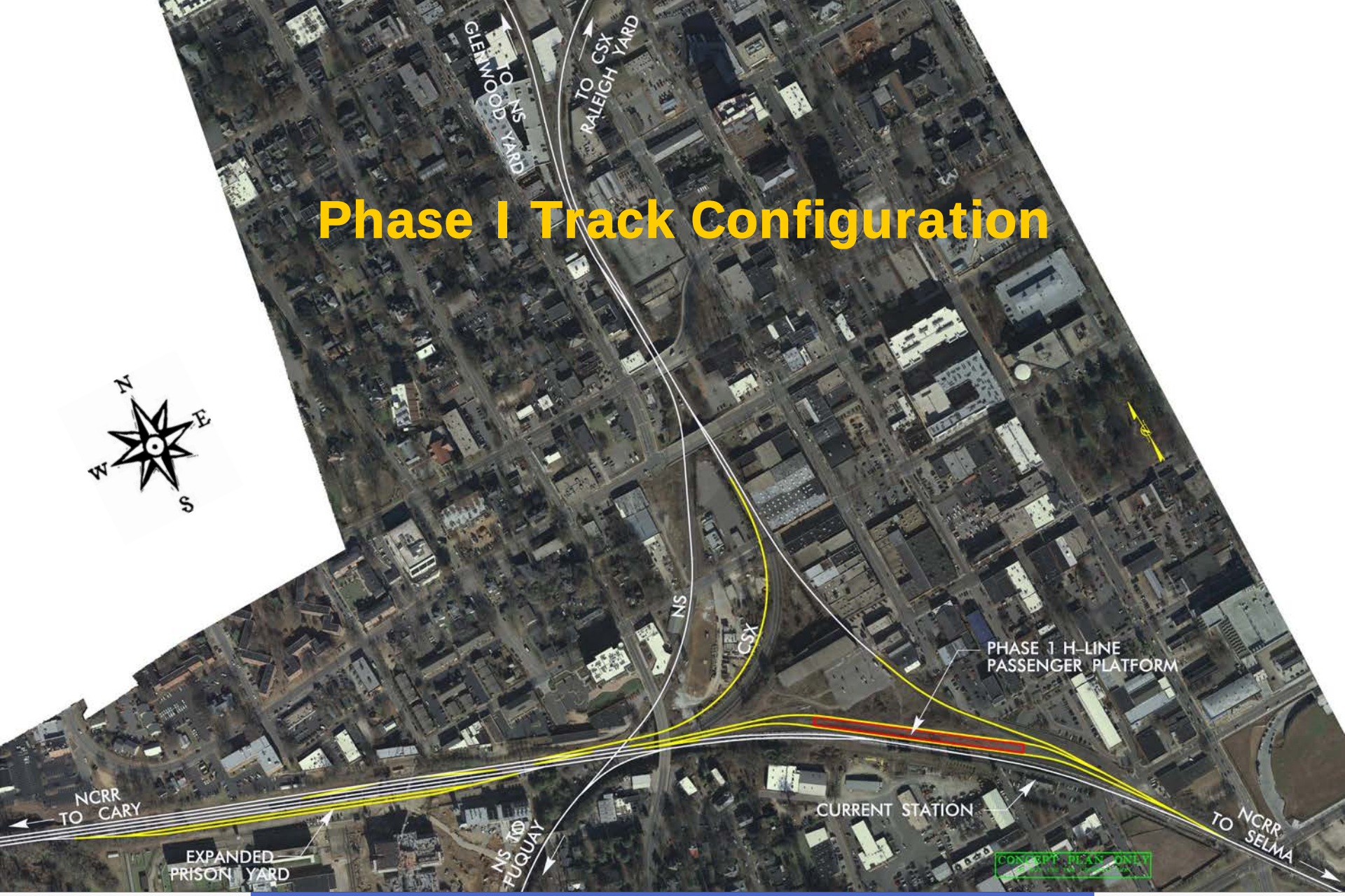




Current Track Configuration



Phase I Track Configuration



Phase I Track Configuration

Cabarrus Yard Relocation

- Move Cabarrus Yard operation to Prison Yard
  - Two additional tracks at Prison Yard replace the track storage capacity at Cabarrus Yard; future additional yard tracks possible
  - Moves switching of Cabarrus Yard off H-line Main and east leg of wye to the Prison Yard lead track; provides opportunity for other moves to occur on the mains while switching
  - Combines operations of both yards for increased efficiency

Phase I Track Configuration

Dedicated H-line Station Tracks

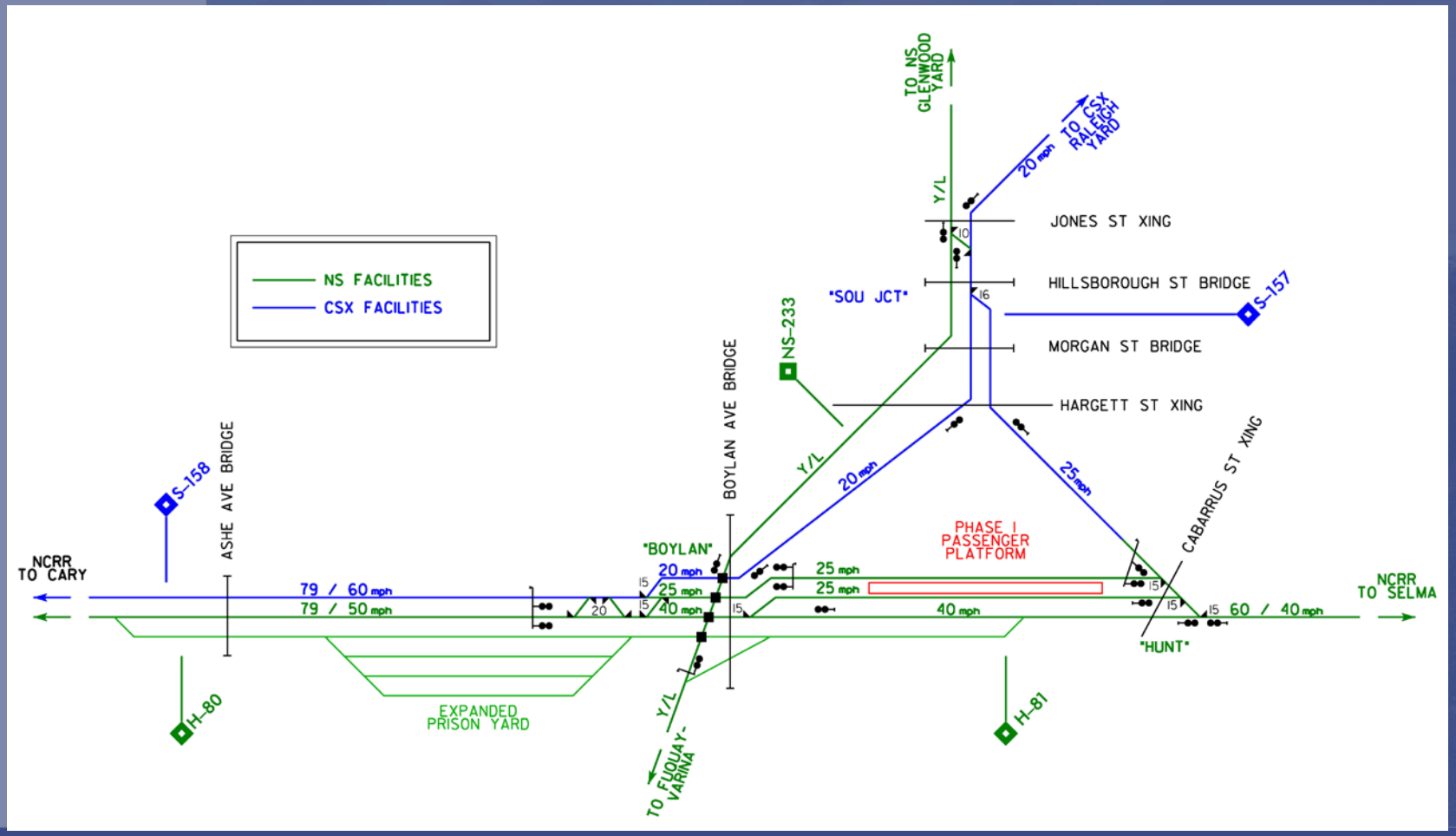
- Allows staging of passenger trains off H-line Main Track
- Freight movements can by-pass passenger trains stopped at station via dedicated H-line Main, east leg of wye, and west leg of wye
- Meets between Piedmonts/Carolinian/Silver Star trains possible at station; currently a train must hold west of Boylan or east of Raleigh until other train clears

Phase I Track Configuration

Velocity improvement

- West and east legs of wye improved to 20/25 mph from 10 mph
- Proposed station tracks 25 mph
- H-line Main improved to 40 mph from 20 mph through Boylan
- Allows for future second mainline track on the H-Line

Phase I Track Configuration

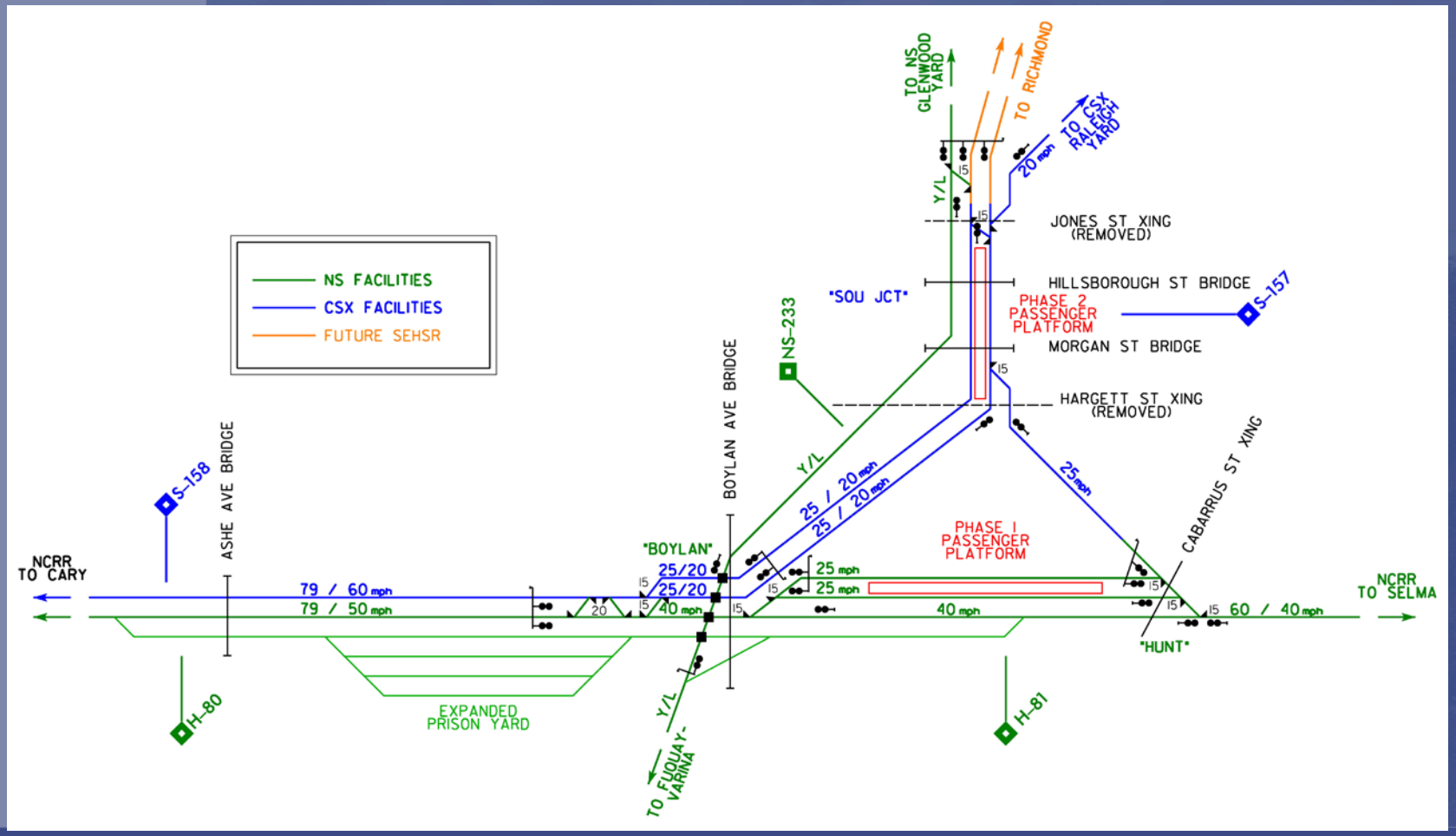


Phase II Track Configuration

- Implemented in future with SEHSR Raleigh to Richmond line
- S-line platform
  - Allows flexibility to spot passenger trains on multiple tracks and platforms
  - Note: Piedmonts become Push-Pull; no longer need to use wye or back through Boylan
- Velocity through Southern Junction and Boylan improved to minimum of 20 mph freight/25 mph passenger

Phase II Track Configuration

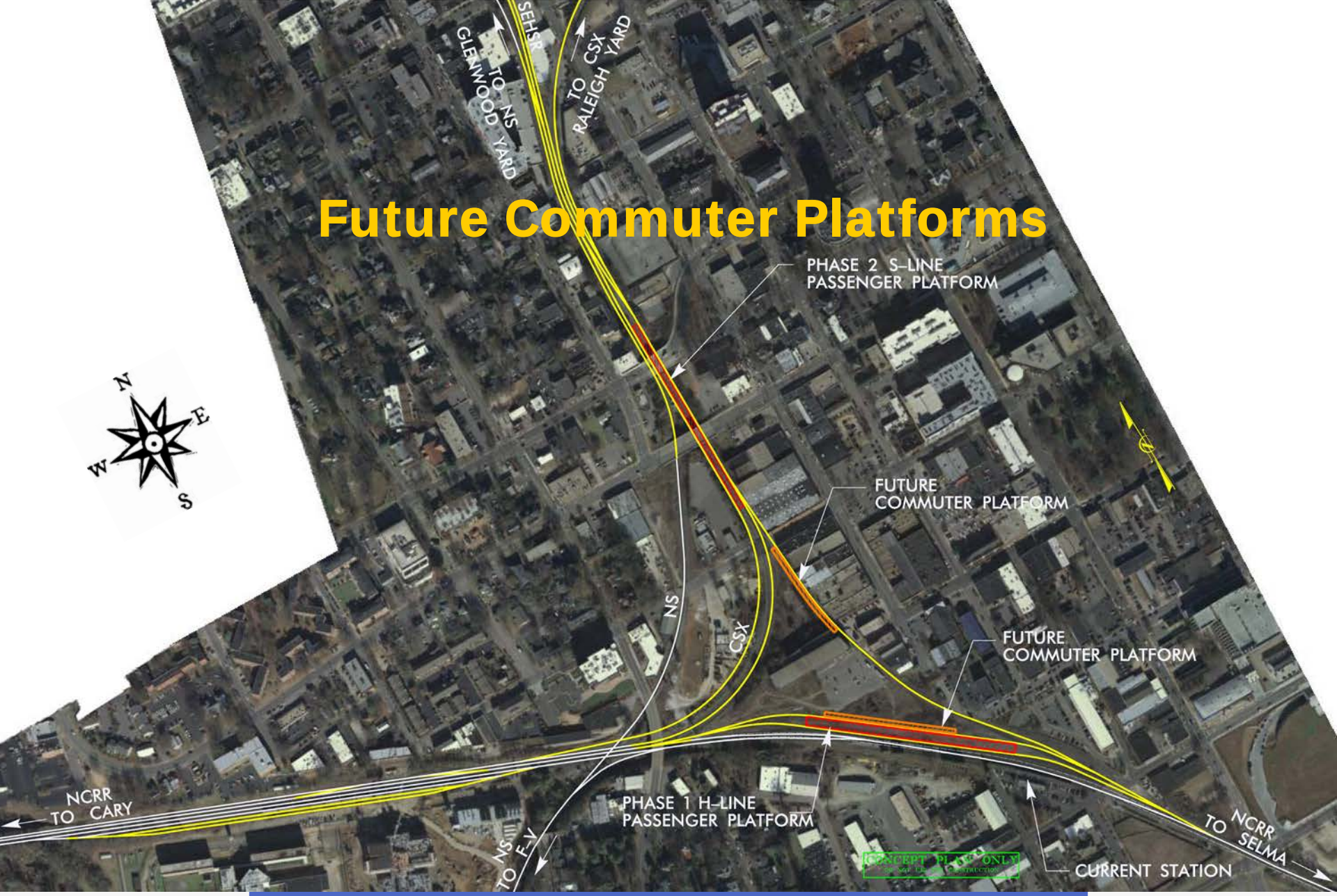
Phase II Track Configuration

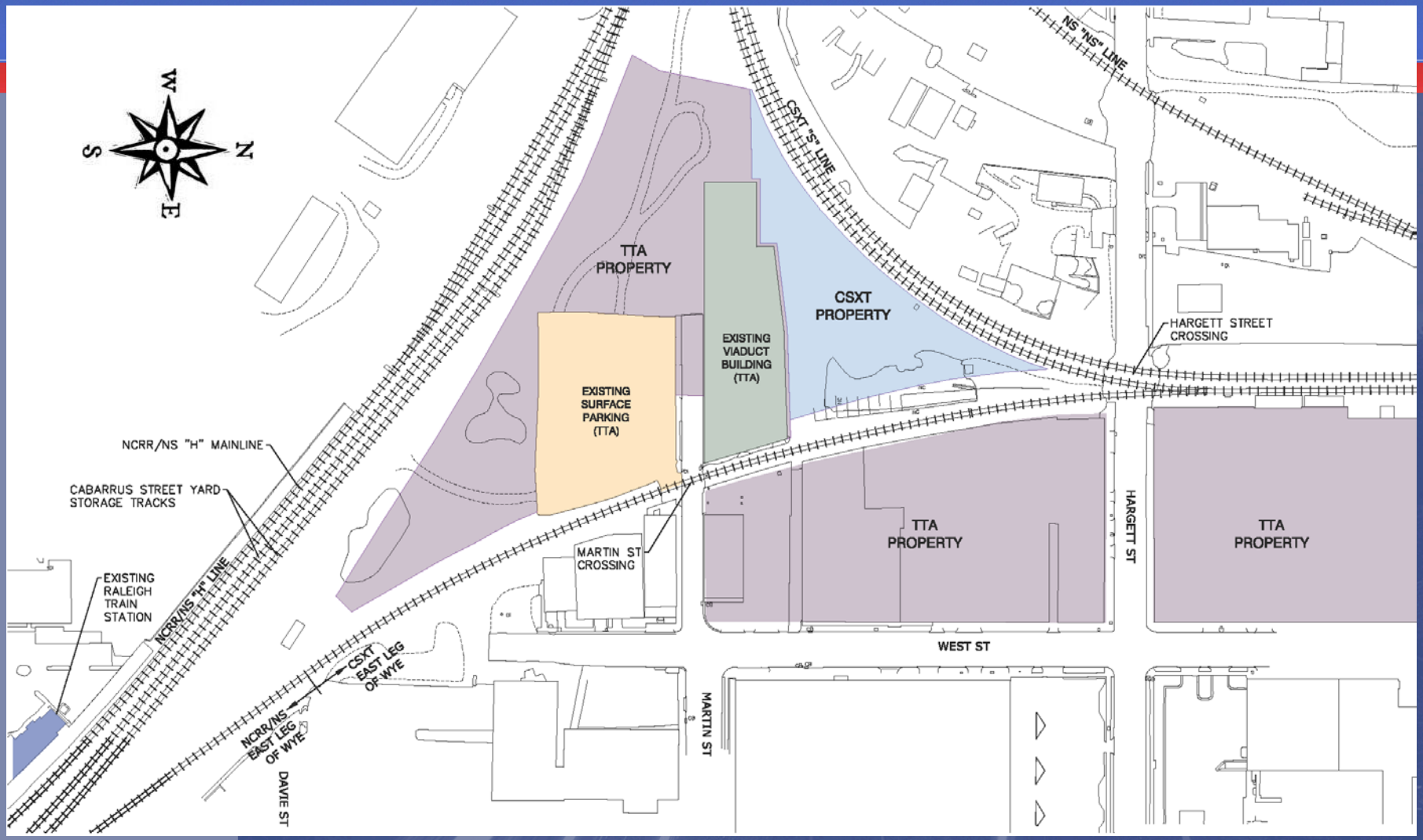


Future Commuter Platforms

- Allows for heavy rail commuter train staging off of CSXT and NS main lines
- Possible Commuter Corridors
  - Goldsboro/Selma/Clayton
  - Hillsborough/Durham/Cary
  - Sanford/Apex/Cary
  - Henderson/Wake Forest
  - Greenville/Wilson/Zebulon

Future Commuter Platforms




W
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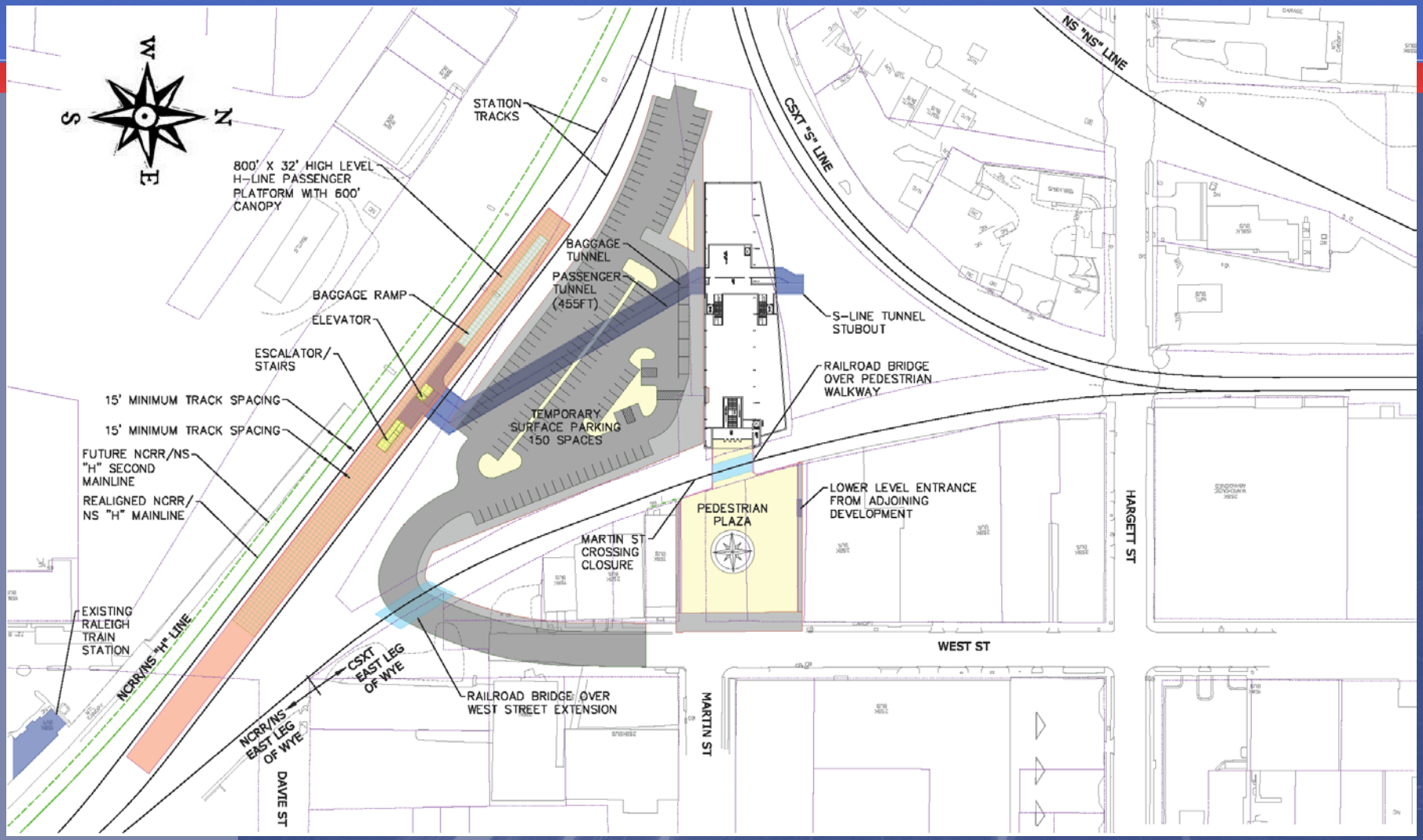
TTA PROPERTY
EXISTING SURFACE PARKING (TTA)
EXISTING VIADUCT BUILDING (TTA)
CSXT PROPERTY
CSXT "S" LINE
NS "NS" LINE
HARGETT STREET CROSSING
NCRR/NS "H" MAINLINE
CABARRUS STREET YARD STORAGE TRACKS
EXISTING RALEIGH TRAIN STATION
NCRR/NS "H" LINE
MARTIN ST CROSSING
TTA PROPERTY
HARGETT ST
TTA PROPERTY
WEST ST
CSXT EAST LEG OF WYE
NCRR/NS EAST LEG OF WYE
MARTIN ST
DAVIE ST

NO PARKING
ANY
TIME

Dawson

Phase I-A


W
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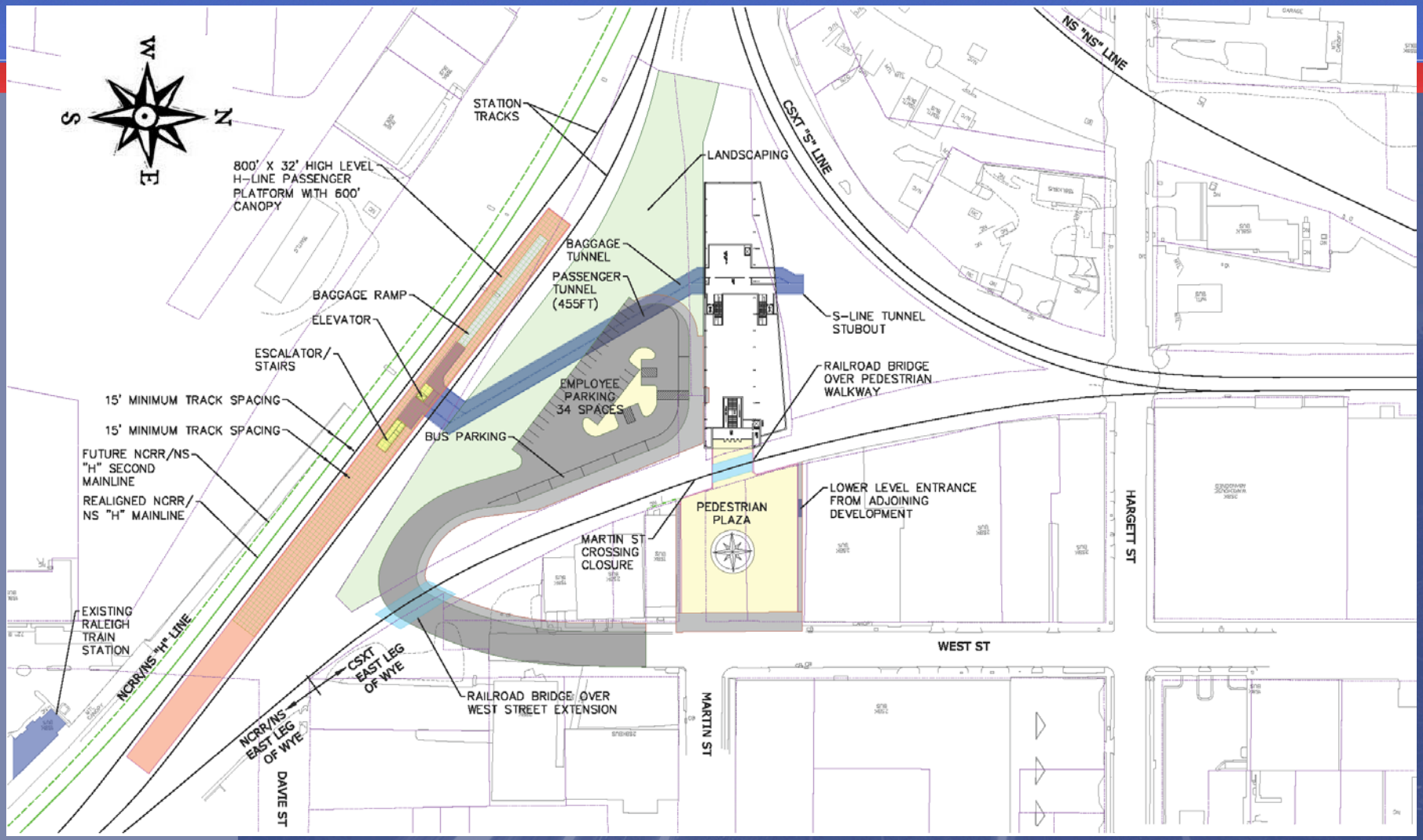
STATION TRACKS
800' X 32' HIGH LEVEL H-LINE PASSENGER PLATFORM WITH 600' CANOPY
BAGGAGE TUNNEL
PASSENGER TUNNEL (455FT)
BAGGAGE RAMP
ELEVATOR
ESCALATOR/ STAIRS
15' MINIMUM TRACK SPACING
15' MINIMUM TRACK SPACING
FUTURE NCRR/NS "H" SECOND MAINLINE
REALIGNED NCRR/ NS "H" MAINLINE
TEMPORARY SURFACE PARKING 150 SPACES
S-LINE TUNNEL STUBOUT
RAILROAD BRIDGE OVER PEDESTRIAN WALKWAY
CSXT "S" LINE
NS "NS" LINE
LOWER LEVEL ENTRANCE FROM ADJOINING DEVELOPMENT
PEDESTRIAN PLAZA
MARTIN ST CROSSING CLOSURE
HARGETT ST
WEST ST
EXISTING RALEIGH TRAIN STATION
NCRR/NS "H" LINE
CSXT EAST LEG OF WYE
NCRR/NS EAST LEG OF WYE
RAILROAD BRIDGE OVER WEST STREET EXTENSION
MARTIN ST
DAVIE ST

Phase I-B


W
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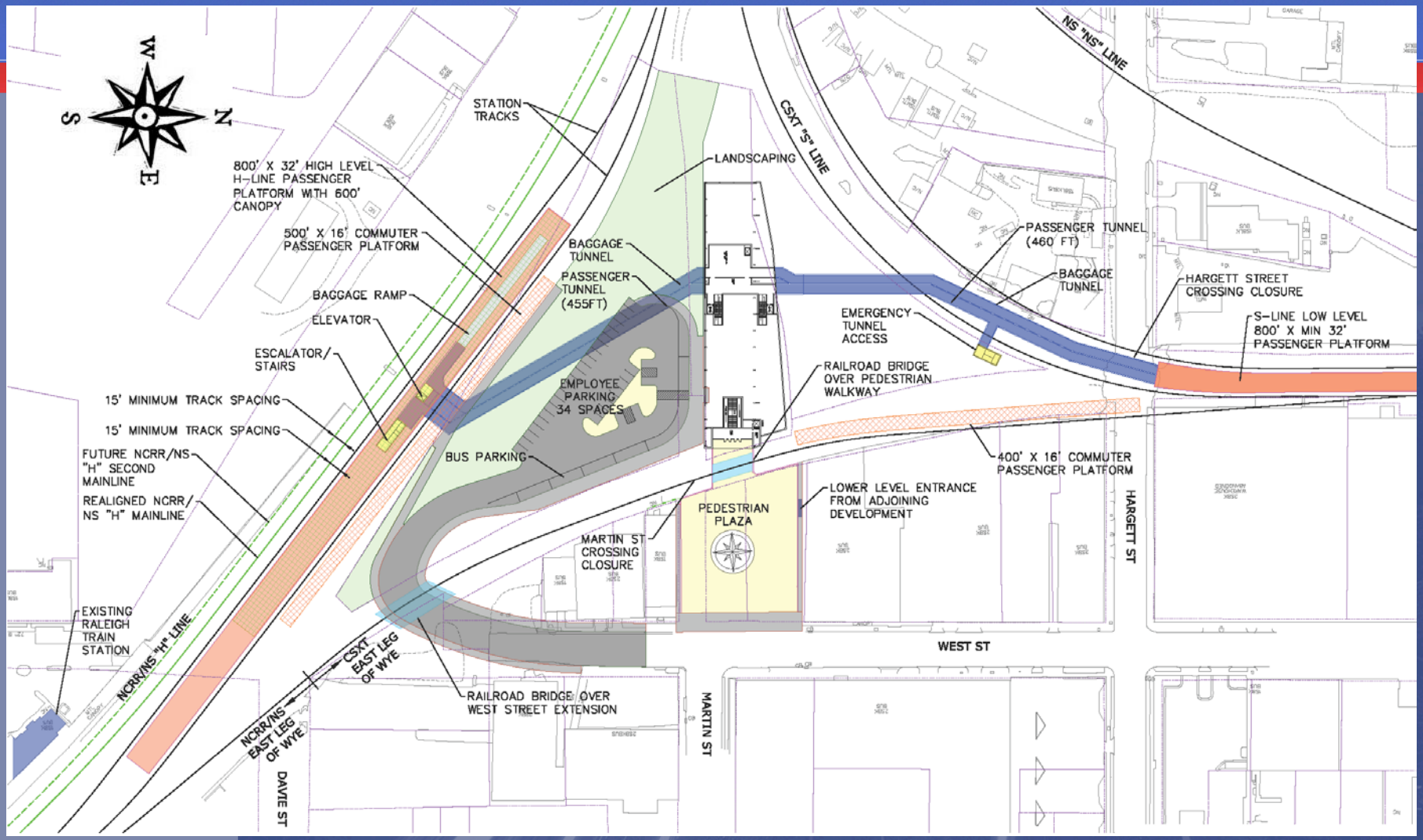
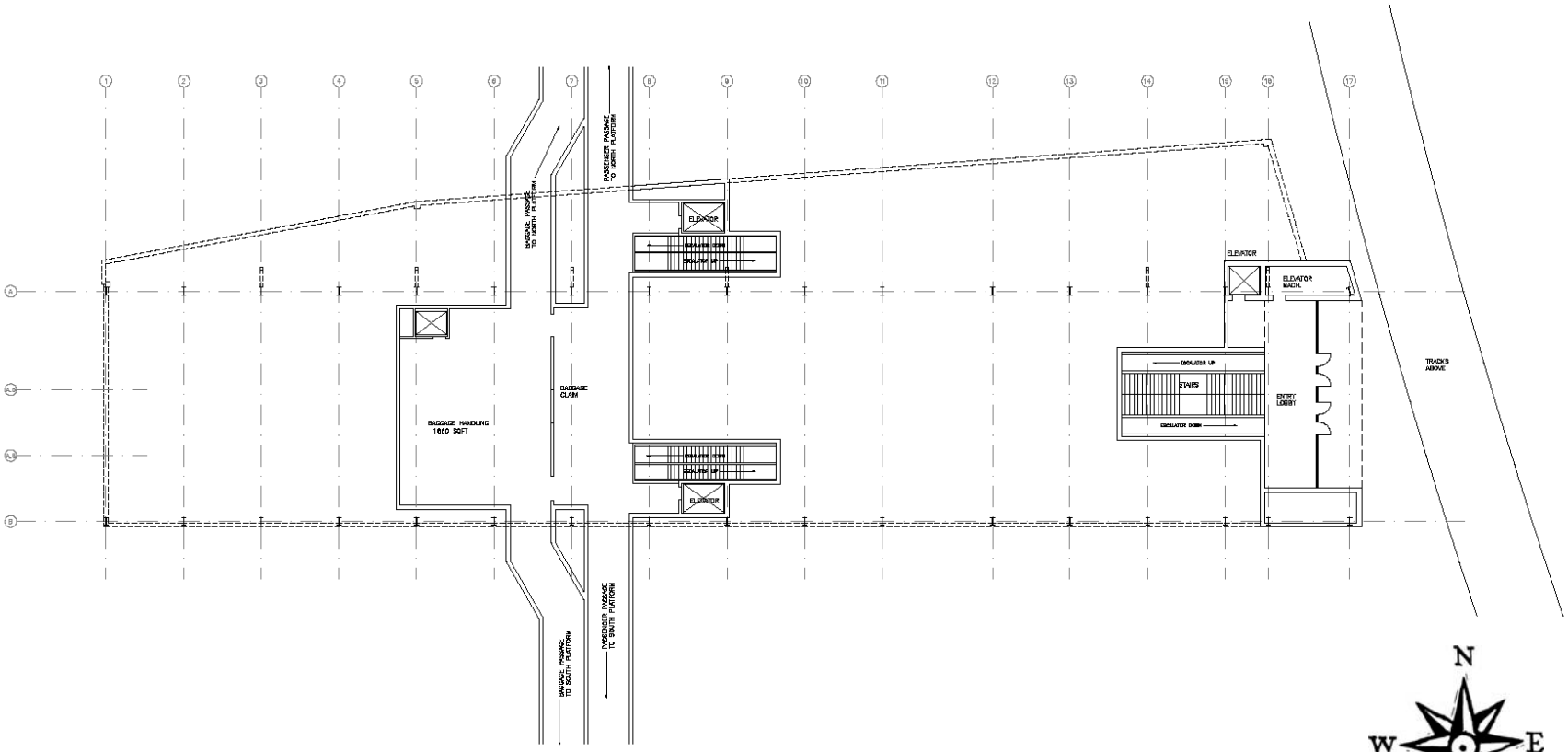
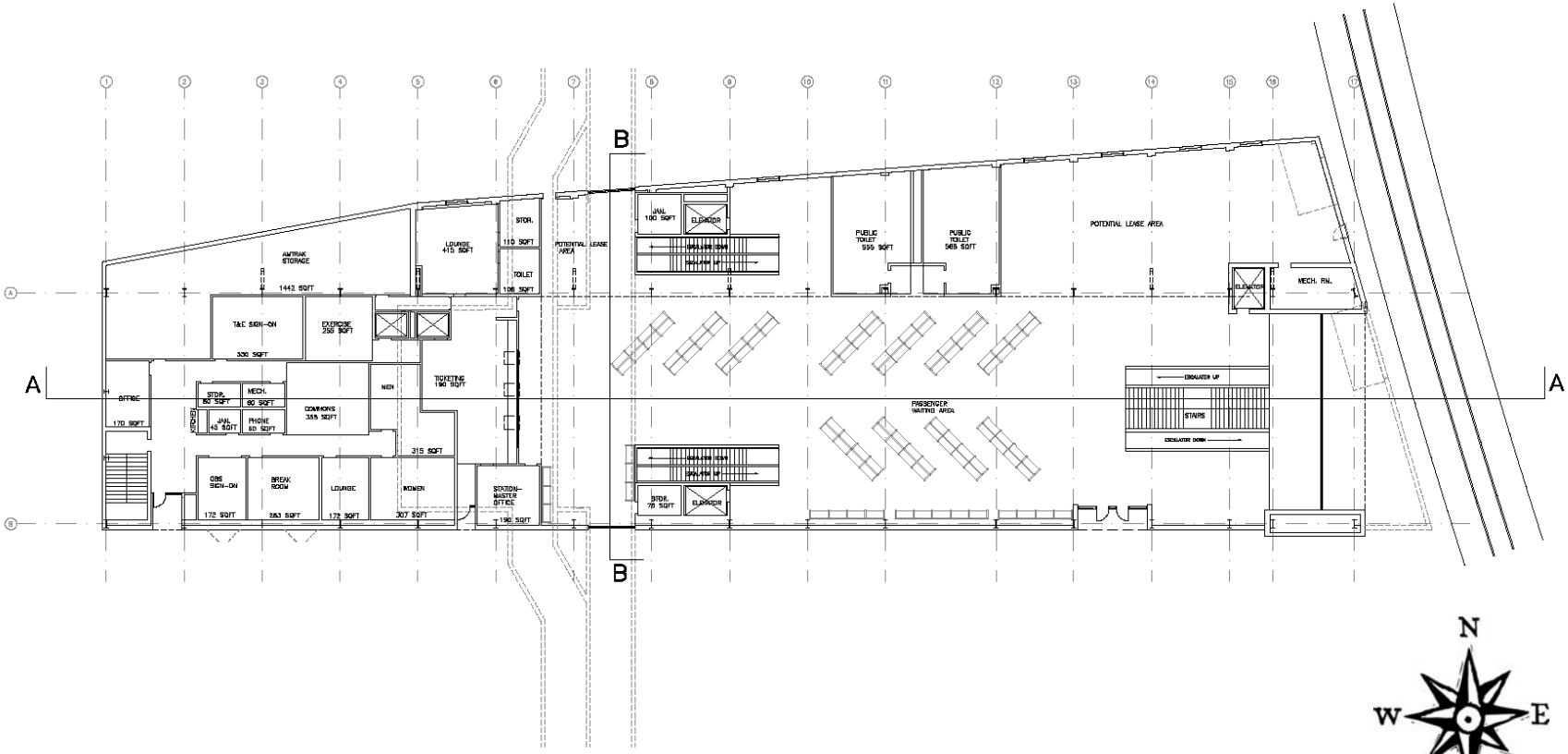
STATION TRACKS
800' X 32' HIGH LEVEL H-LINE PASSENGER PLATFORM WITH 600' CANOPY
LANDSCAPING
CSXT "S" LINE
NS "NS" LINE
BAGGAGE TUNNEL
PASSENGER TUNNEL (455FT)
BAGGAGE RAMP
ELEVATOR
ESCALATOR/ STAIRS
S-LINE TUNNEL STUBOUT
RAILROAD BRIDGE OVER PEDESTRIAN WALKWAY
EMPLOYEE PARKING 34 SPACES
15' MINIMUM TRACK SPACING
15' MINIMUM TRACK SPACING
BUS PARKING
FUTURE NCRR/NS "H" SECOND MAINLINE
REALIGNED NCRR/ NS "H" MAINLINE
PEDESTRIAN PLAZA
LOWER LEVEL ENTRANCE FROM ADJOINING DEVELOPMENT
HARGETT ST
MARTIN ST CROSSING CLOSURE
EXISTING RALEIGH TRAIN STATION
NCRR/NS "H" LINE
CSXT EAST LEG OF WYE
WEST ST
RAILROAD BRIDGE OVER WEST STREET EXTENSION
MARTIN ST
NCRR/NS EAST LEG OF WYE
DAVIE ST

Phase 2 – North Platform

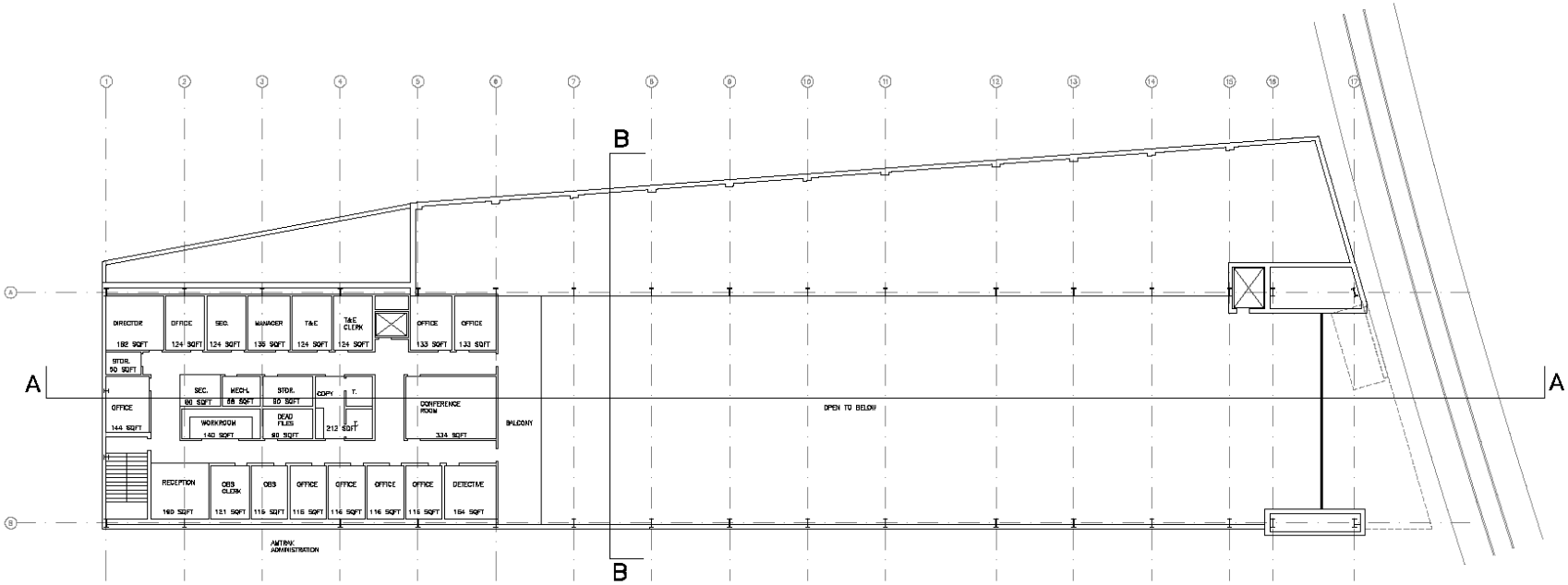




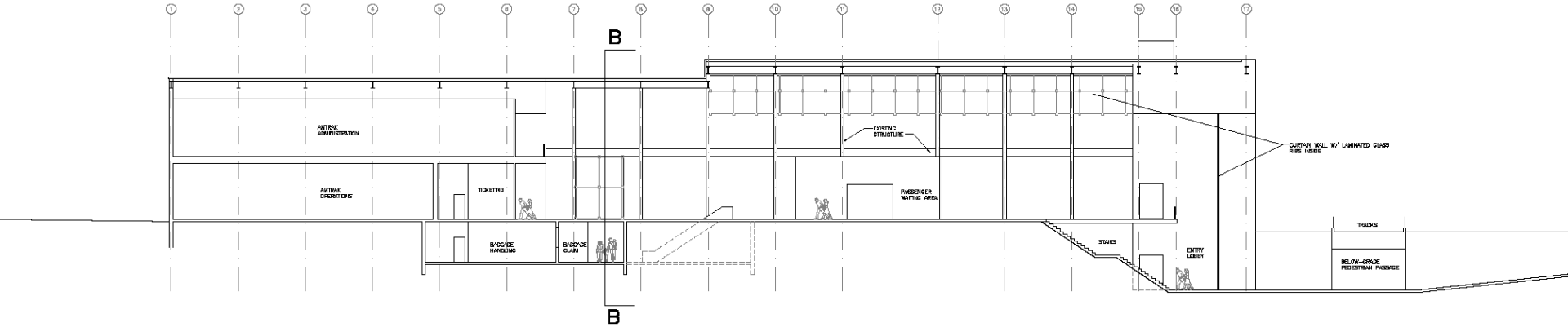
1 LOWER LEVEL FLOOR PLAN



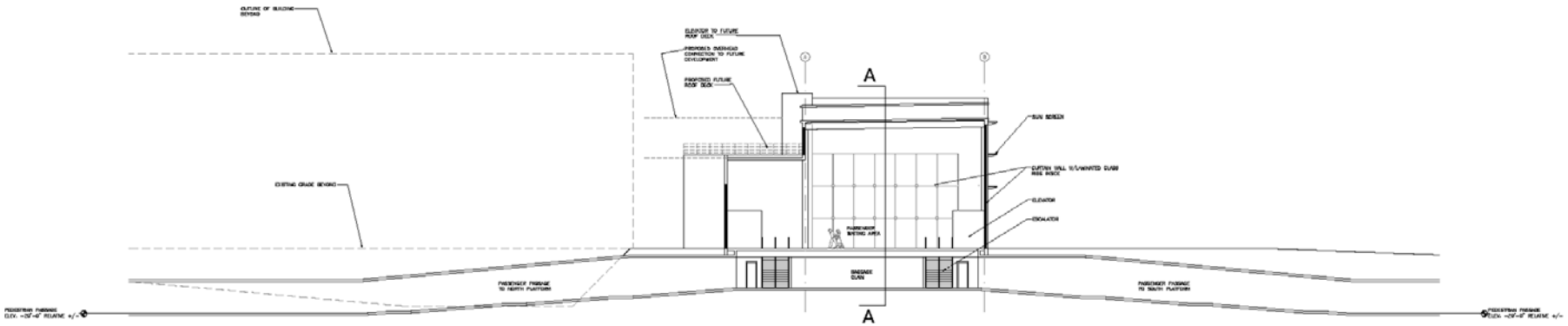
1 FIRST FLOOR PLAN



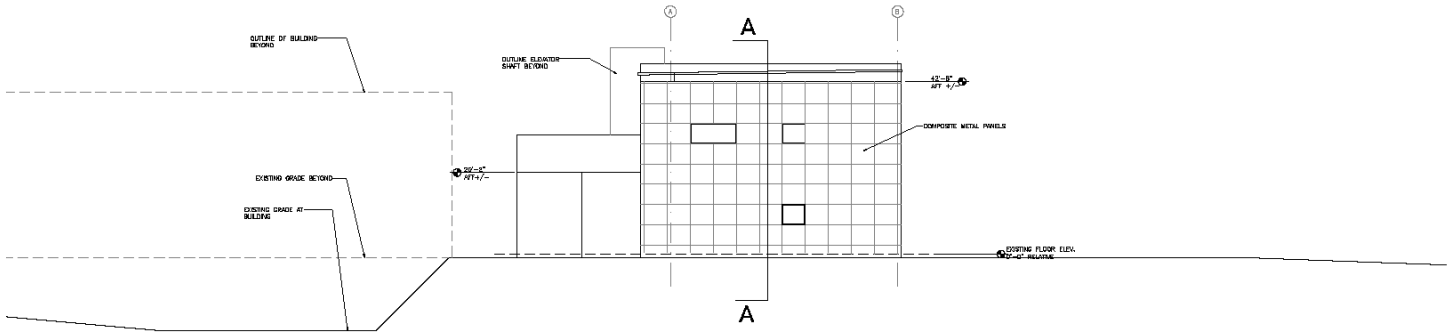
1 SECOND FLOOR PLAN



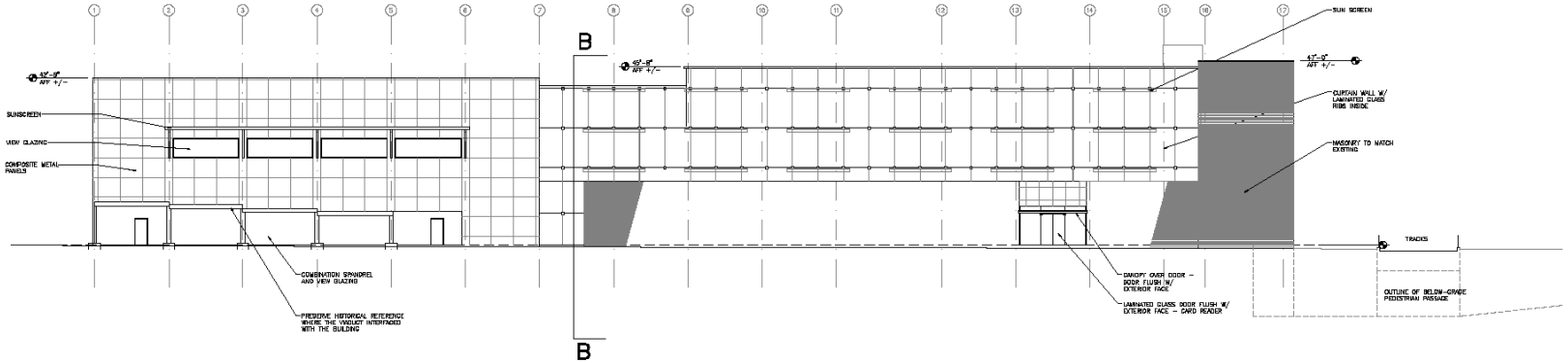
1 BUILDING LONGITUDINAL CROSS-SECTION A-A



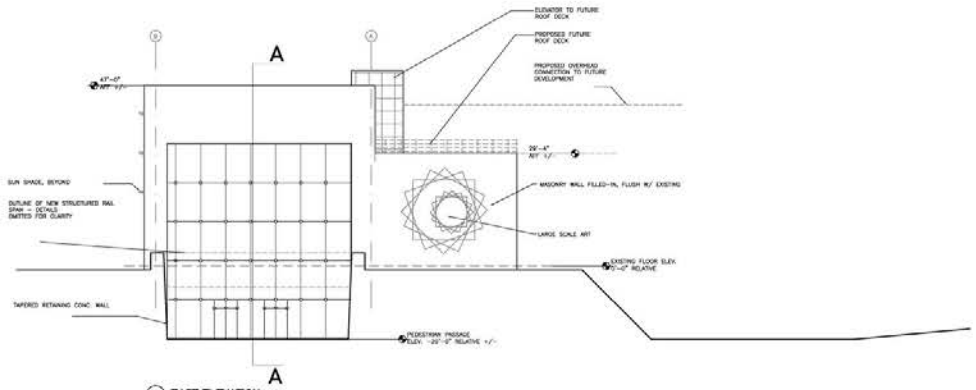
1 BUILDING TRANSVERSE CROSS-SECTION B-B



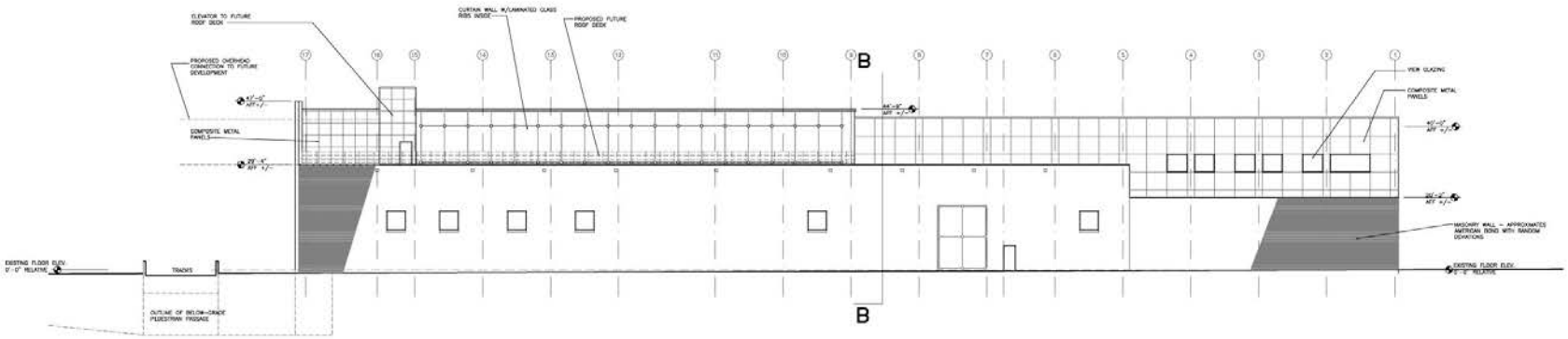
1 WEST ELEVATION



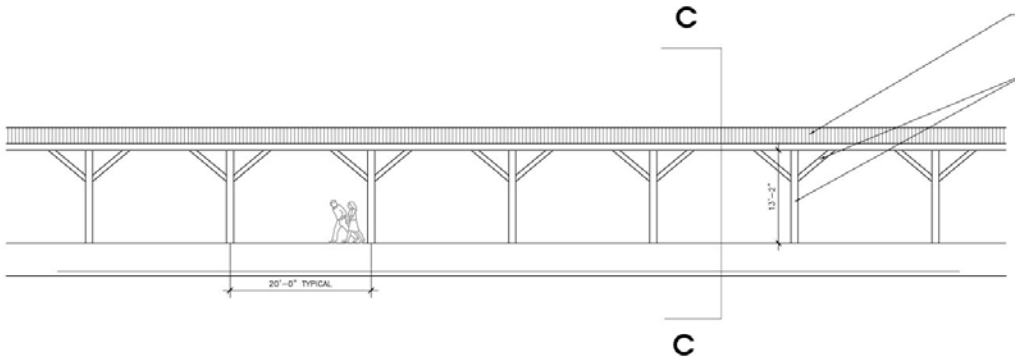
2 SOUTH ELEVATION



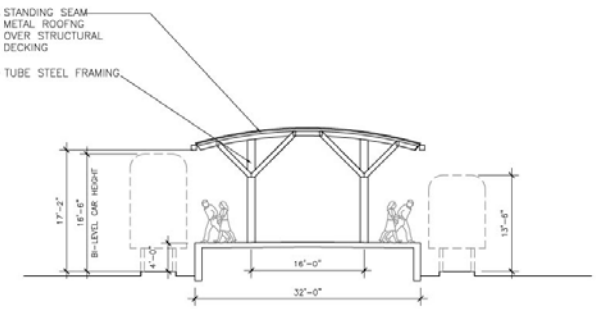
3 EAST ELEVATION



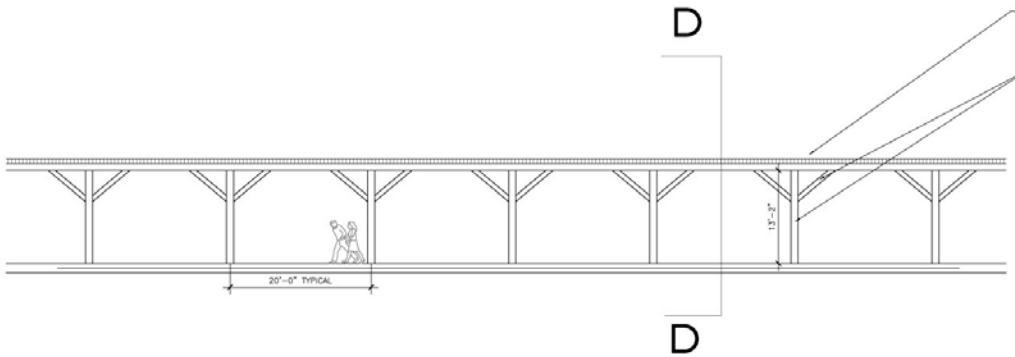
4 NORTH ELEVATION



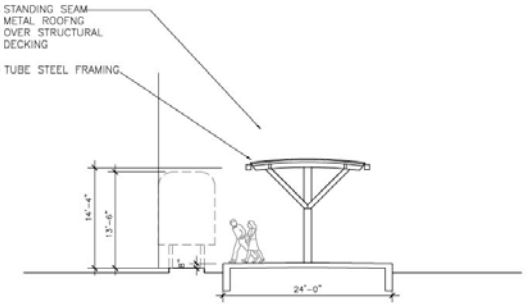
1 H-LINE PLATFORM/CANOPY PARTIAL ELEVATION



2 H-LINE PLATFORM/CANOPY SECTION C-C



3 S-LINE PLATFORM/CANOPY PARTIAL ELEVATION



4 S-LINE PLATFORM/CANOPY SECTION D-D

Preliminary Cost Estimates

Phase I

- Station & Station Tracks $35.2 million
- H-Line Track & Signals $12.2 million

Phase II

- S-Line Tunnel & Platform $ 6.5 million
- S-Line Track & Signals (part of SEHSR)

Estimated Total $53.9 million

Next Steps

- Complete DRAFT report late October 2011
- Presentations to Stakeholders in Oct & Nov
- Receive stakeholder comments Nov & Dec
- Final Report to be issued January 2012
- Geotechnical investigation
- Property appraisals
- Identify funding

Questions?