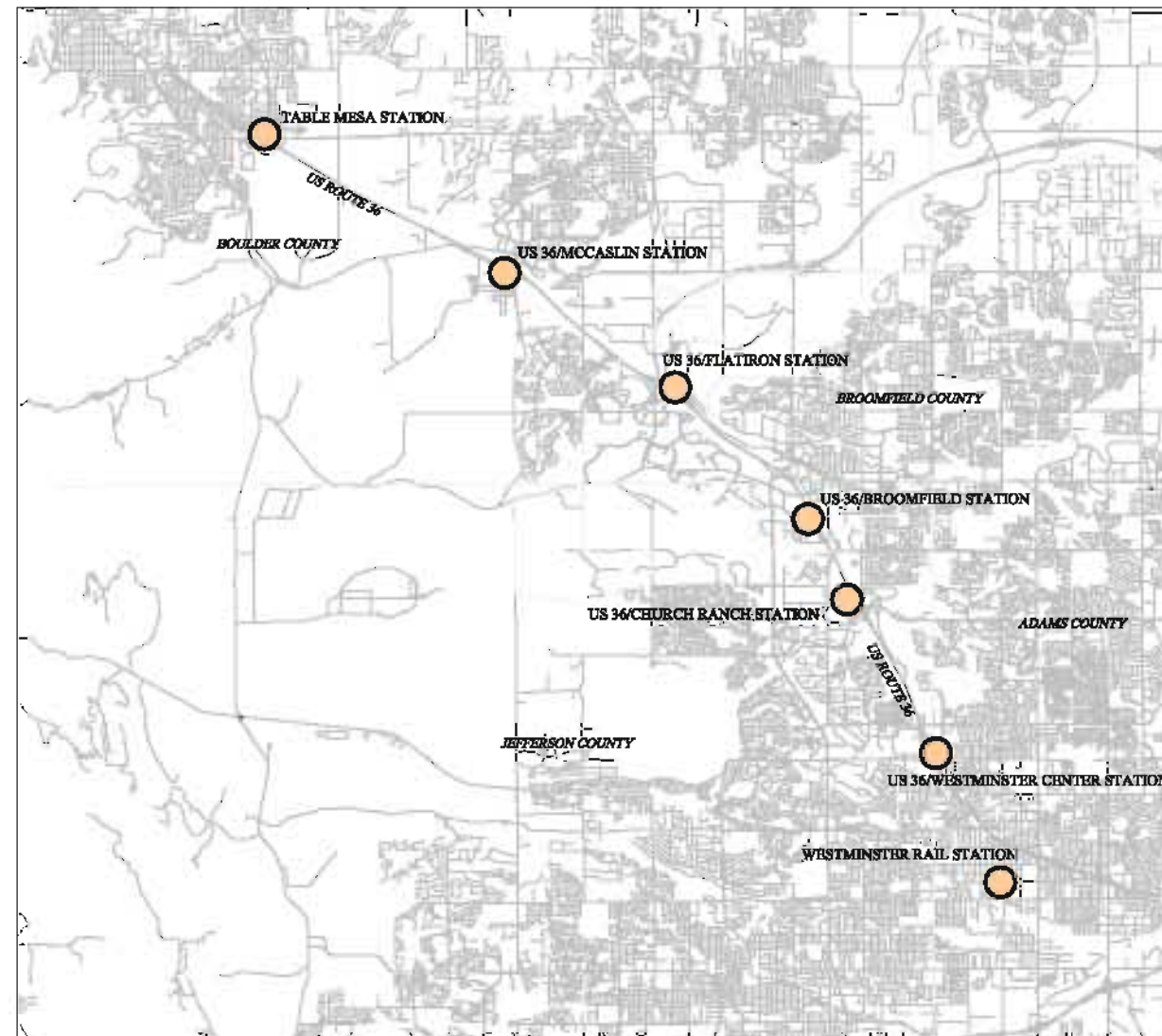


# Appendix B

## Attachment A: Connectivity Improvements

# NORTHWEST CORRIDOR BICYCLE/PEDESTRIAN ACCESSIBILITY STUDY



LOCUS PLAN  
NOT TO SCALE

## SHEET INDEX

1	COVER SHEET
2	GENERAL NOTES
3 - 4	DETAILS
5 - 7	TABLE MESA STATION
8 - 9	US 36/MCCASLIN STATION
10 - 14	US 36/FLATIRON STATION
15 - 17	US 36/BROOMFIELD STATION
18	US 36/CHURCH RANCH STATION
19	US 36/WESTMINSTER CENTER STATION
20 - 24	WESTMINSTER RAIL STATION



**PAVEMENT MARKINGS SPECIFICATIONS**

MATERIALS: ALL THERMOPLASTIC MARKING MATERIALS SHALL CONFORM TO THE CDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

APPLICATION METHOD: ALL PAVEMENT MARKING APPLICATION METHODS SHALL BE APPROVED BY PROJECT DESIGNER PRIOR TO START OF WORK.

- 1. PAINTED STRIPING FOR PATH
  - MATERIAL SPECIFICATIONS: SPRAYABLE NON TOXIC LEAD FREE WATER BOURNE PAVEMENT MARKING PER MDSHA SECTION 650 AT THICKNESS OF 18 ±1 MILS.
  - 4" / TRAFFIC YELLOW
  - STRIPE WIDTH / COLOR: CENTER OF PATHWAY
  - STRIPE POSITION: SMOOTH EDGE WITH CONSTANT ARC IN CURVES (NO WAVERING OR SERPENTINE APPEARANCE WILL BE ACCEPTED)
  - STRIPE CHARACTER: BEGINNING 180 FEET (OR PER MARKING PLANS) ON EACH SIDE OF A BRIDGE OR INTERSECTION THERE SHALL BE A SOLID LINE PATTERN IMPLEMENTED IN PLACE OF THE DASHED PATTERN.
  - SOLID LINE: 3' STRIPE / 9' BREAK. DASHED LINE SHALL END ONE FOOT BEFORE RUMBLE STRIPS, CROSSWALKS OR OTHER PAVEMENT MARKINGS.
  - DASHED:
- 2. THERMOPLASTIC RUMBLE STRIPS:
  - MATERIAL SPECIFICATIONS: 90 MILS BEADED
  - STRIPE WIDTH / COLOR: 2", 4", AND 6" WIDE / WHITE
  - PATTERN: THREE SEPARATE LINES BEGINNING AT 150' FROM THE CROSSING FOR THE FIRST LINE, THE NEXT TWO LINES SHALL BE PLACED 30' ON CENTER HEADING TOWARD THE INTERSECTION. EACH STRIP SHALL EXTEND THE ENTIRE WIDTH OF THE TRAIL.
- 3. PAINTED ADVANCE MARKINGS FOR PATH
  - MATERIAL SPECIFICATIONS: SPRAYABLE NON TOXIC LEAD FREE WATER BOURNE PAVEMENT MARKING PER MDSHA SECTION 650 AT THICKNESS OF 18 ±1 MILS.
  - SIZE / COLOR: 4" HEIGHT / WHITE
  - LETTER WIDTH / SPACING: 2" / 5" SPACING
  - LOCATION: MINIMUM 70' FROM CONCRETE THRESHOLD OR STOP SIGN
  - EXAMPLE: YIELD TO PEDS

**SIGN NOTES**

1. APPLICABLE SPECIFICATIONS AND STANDARDS: CDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM), AND ALL LOCAL JURISDICTIONAL SPECIFICATIONS. THE MOST STRINGENT SPECIFICATIONS SHALL GOVERN.

**2. PREPARATION:**

- A. IF SITE CONDITIONS VARY FROM PLAN, CONTRACTOR SHALL NOTIFY OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION
- B. DIMENSIONS FOR LEGEND SIZE AND ALL RELATED DIMENSIONS FOR SIGN LAYOUT, PANEL SIZES, POST SIZES, MOUNTING DIMENSIONS ARE AS SPECIFIED IN THE PLANS.
- C. ALL GRAPHIC FORMATS, USE OF TYPOGRAPHY, COLOR, DIRECTIONAL ARROW GRAPHICS, AND PICTOGRAMS ARE AS SPECIFIED IN THE PLANS. SHOP DRAWINGS OF PROPOSED SIGN LAYOUTS SHALL BE SUBMITTED AND APPROVED PRIOR TO SIGN PANEL FABRICATION.
- D. ALL STRUCTURES SHALL BE ENGINEERED TO MEET A VARIETY OF SITE CONDITIONS. SIGNS SHALL BE ENGINEERED FOR WIND LOADS, SOIL CONDITIONS, FROST DEPTH, AND STRUCTURAL INTEGRITY. SPECIAL CONDITIONS THAT ARE OUTSIDE THESE PARAMETERS ARE TO BE ENGINEERED ON A SITE-SPECIFIC BASIS. THE DESIGN OF THE STRUCTURAL REQUIREMENTS OF SPECIAL ONE-OF-A-KIND SIGNS SHALL CONFORM TO THE BASIC ASSEMBLY SPECIFICATIONS FOR SIMILAR SIGN TYPES. THE MODIFIED ASSEMBLY SHALL FULFILL THE REQUIREMENTS OF LOCAL CRITERIA FOR WIND PRESSURE, SOIL, AND FROST DEPTH. ALL SIGN ENGINEERING AND STRUCTURAL INTEGRITY WILL BE THE RESPONSIBILITY OF THE CONTRACTOR UNLESS OTHERWISE NOTED.
- E. ALL FINISHED SIGN PANELS SHALL BE PROVIDED WITH A 1-1/4" X 2-1/2" WEATHER RESISTANT IDENTIFICATION PLACED ON THE BACK OF THE SIGN INDICATING SIGN PLAN ID NUMBER, MANUFACTURER, DATE OF FABRICATION, AND INSTALLATION DATE.

**3. FABRICATION:**

- A. PROVIDE SHOP AND FABRICATION DRAWINGS FOR REVIEW AND APPROVAL DETAILING THE PROPOSED FABRICATION OF ALL SIGNS AND STRUCTURES INDICATED IN PLAN DOCUMENTS.
- B. THE CONTRACTOR SHALL PREPARE, FOR REVIEW BY THE OWNER'S REPRESENTATION'S FABRICATION SHOP DRAWINGS. UPON REVIEW OF THE SHOP DRAWINGS THE CONTRACTOR SHALL MAKE ALL CORRECTIONS AND ADJUSTMENTS. AS INDICATED AND RESUBMIT FOR REVIEW AND APPROVAL. REVISIONS TO SHOP DRAWINGS SHALL INCLUDE A REVISION DATE. FABRICATION SHOP DRAWINGS SHALL INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- C. ALUMINUM PANEL, TUBULAR STEEL POSTS, MOUNTING HARDWARE AND MATERIAL FINISHES SHALL MEET OR EXCEED THE STANDARDS AND SPECIFICATIONS HEREIN OR BY REFERENCE. ALL MATERIALS SHALL COMPLY WITH THIS SPECIFICATION OR APPROVED EQUAL.
- D. ALL SIGN USED FOR TRAFFIC CONTROL SIGNS SHALL BE MOUNTED ON 2" GALVANIZED STEEL, PERFORATED (QUICK PUNCH), SQUARE TUBE POSTS (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL SQUARE TUBE SLEEVE (3" LONG). THE ANCHOR SHALL NOT EXTEND MORE THAN TWO QUICK PUNCH HOLES ABOVE GROUND LEVEL.

**4. INSTALLATION:**

- A. ALL TRAFFIC CONTROL SIGNS LOCATED WITHIN COUNTY RIGHTS-OF-WAY ARE TO BE STAKED AND BE FIELD APPROVED PRIOR TO INSTALLATION BY THE LOCAL REPRESENTATIVE.
- B. ALL TRAFFIC CONTROL DEVICES AND THEIR LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND COLORADO SUPPLEMENT.
- C. SIGN LOCATIONS SHALL BE MARKED WITH A STAKE AND SHALL HAVE THE SIGN TYPE CODE, AND LOCATION CODE, AND CORRESPOND TO THE SIGN LOCATION IN THE PLAN DRAWINGS.
- D. UNFORESEEN OBSTRUCTIONS MAY LIMIT THE DEPTH OF A STANDARD FOOTING OR REQUIRE SPECIAL MITIGATION TO PREVENT DAMAGE TO EXISTING TREE ROOTS. WHERE POSSIBLE, MOVE THE SIGN AS NEEDED TO ALLOW UNCONSTRAINED SUBSURFACE INSTALLATION. ADJUST SIGN INSTALLATION LOCATIONS TO KEEP THEM BEYOND THE DRIP LINE OF TREES WHEREVER POSSIBLE. NOTIFY THE PROJECT DESIGNER OF ANY PROPOSED SIGN LOCATIONS WITHIN THE DRIP LINE OF THE TREES. THE DRIP LINE SHALL BE DEFINED AS THE AREA BELOW THE FARTHEST-SPREADING BRANCHES OF A TREE. IF A SIGN PLACEMENT LOCATION MUST BE MOVED, THE CONTRACTOR SHALL GET APPROVAL OF THE PROJECT DESIGNER AND/OR COUNTY REPRESENTATIVE. IF THE SIGN CAN BE LOGICALLY MOVED, VERIFY SIGHT-LINES OF ADJUSTED LOCATIONS TO AFFIRM THAT SIGN IS STILL VISIBLE FROM THE DESIGNATED APPROACH.

5. TRAFFIC CONTROL SIGNS SHOULD BE INSTALLED AT A MINIMUM 7' HEIGHT WITH A MINIMUM CLEAR SPACE FROM EDGE OF TRAIL.

6. SIGN POSTS: 2-PUNCH SQUARE TUBULAR POSTS.

**DETAILS**

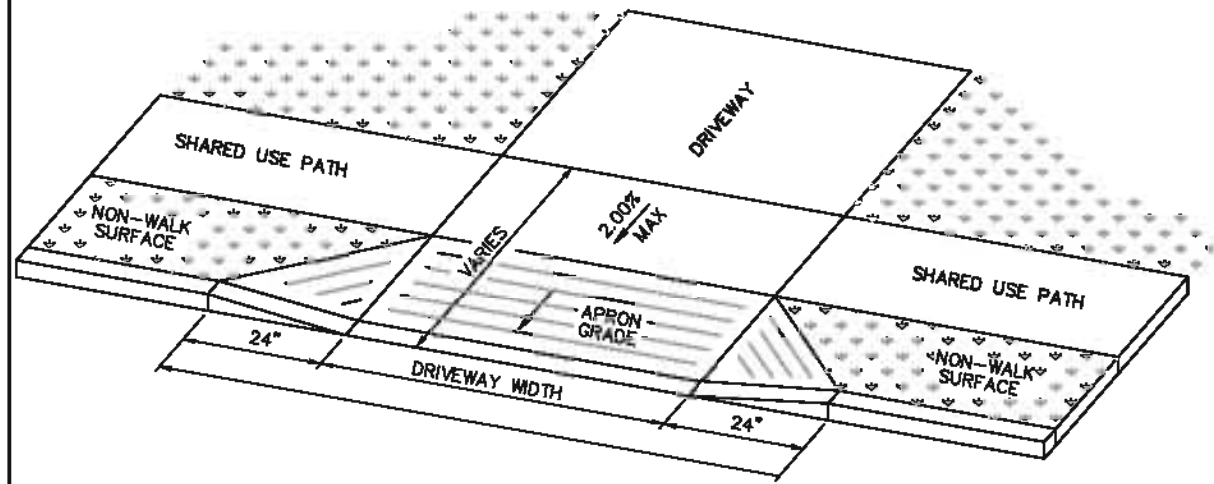
CONSTRUCTION DETAILS, OTHER THAN THOSE FOUND ON SHEETS 2 AND 3, ARE PROVIDED IN THE COLORADO DEPARTMENT OF TRANSPORTATION M&S STANDARD DRAWINGS DATED JULY 4, 2012, OR MOST CURRENT AS APPLICABLE.



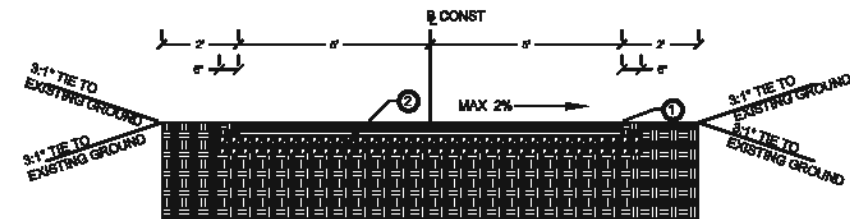
**NORTHWEST CORRIDOR BICYCLE/PEDESTRIAN ACCESSIBILITY STUDY**  
**PEDESTRIAN AND BICYCLE CONNECTIVITY**

REV. 1:  
REV. 2:  
REV. 3:  
DESIGNED: JD  
DRAWN: AP  
CHECKED: JC  
DATE: NOV 2014

SHEET NAME:  
GENERAL NOTES/  
DETAILS  
  
SHEET NUMBER  
**02** OF **24**



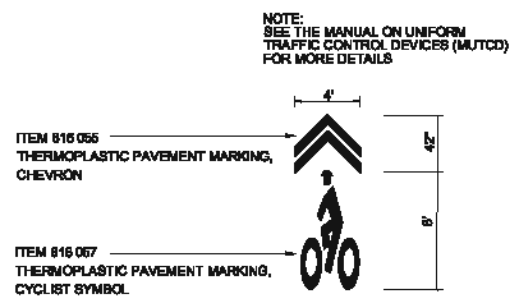
**A** DRIVEWAY APRON  
NTS



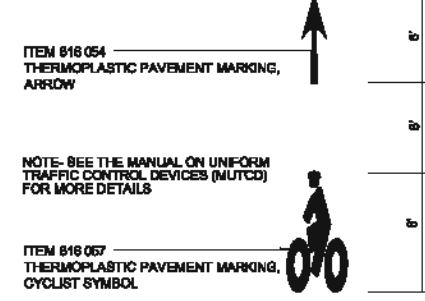
**B** TYPICAL TRAIL CROSS SECTION  
NTS

- ① 6" PORTLAND CEMENT CONCRETE PAVEMENT
- ② 6" AGGREGATE BASE COURSE ON 24" MOISTURE-TREATED SUBGRADE

TYPICAL TRAIL CROSS SECTION NOTES:  
\* MAXIMUM SLOPE 3:1 OR IN ACCORDANCE WITH LOCAL JURISDICTIONAL REQUIREMENTS, WHICHEVER IS LESS STEEP.

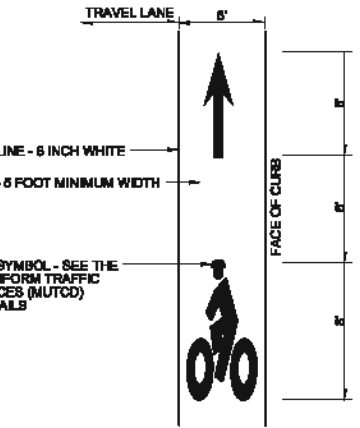


**C** SHARED LANE SYMBOL  
NTS

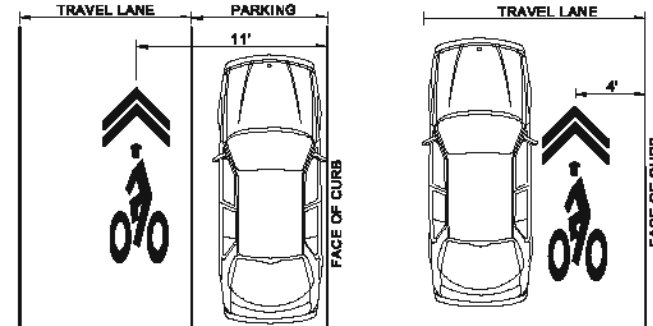


**E** BICYCLE LANE SYMBOL  
NTS

- BICYCLE LANE SYMBOL PLACEMENT NOTES:
- DO NOT PLACE SYMBOLS ON LANE LINES.
  - PLACE BICYCLE LANE SYMBOLS WITHIN CENTER OF BICYCLE LANE.
  - SEE PLAN SHEETS FOR SYMBOL LOCATIONS.

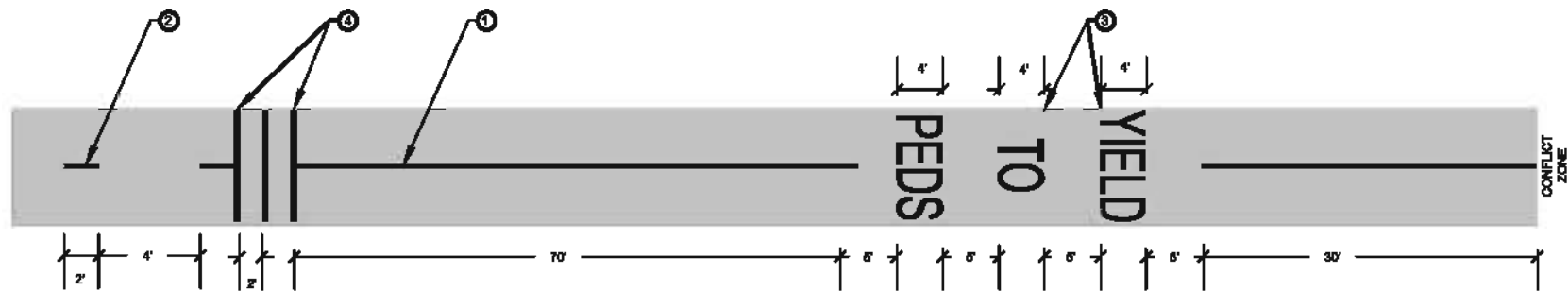


**F** BICYCLE LANE STRIPING  
NTS



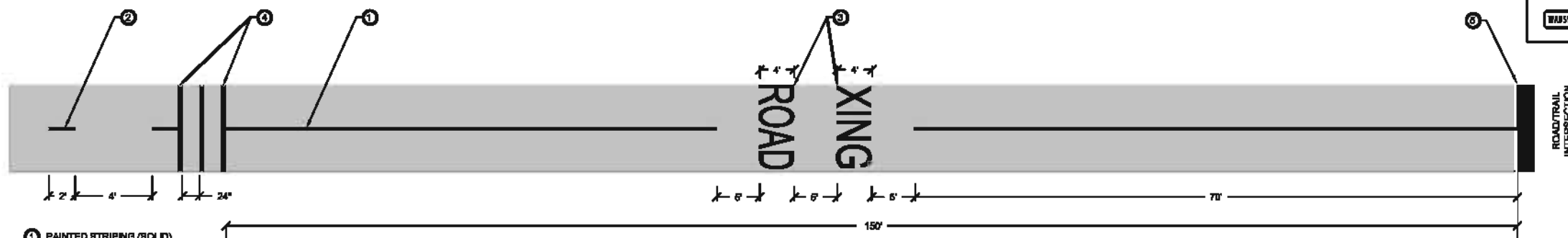
**D** SHARED LANE SYMBOL PLACEMENT  
NTS

- SHARED LANE SYMBOL PLACEMENT NOTES:
- IN LOCATIONS WITH ON-STREET PARKING, SHARED LANE MARKING SYMBOLS SHALL BE PLACED SO THAT THEIR CENTERS ARE A MINIMUM OF 11 FEET FROM THE ADJACENT FACE OF CURB, UNLESS SHOWN OTHERWISE ON THE PLAN SHEETS.
  - IN LOCATIONS WITHOUT PARKING, SHARED LANE MARKING SYMBOLS SHALL BE PLACED SO THAT THEIR CENTERS ARE 4 FEET FROM THE ADJACENT FACE OF CURB, UNLESS SHOWN OTHERWISE ON THE PLAN SHEETS.
  - IF LOCATED IN A TURN LANE, SHARED LANE MARKING SYMBOLS SHALL BE CENTERED IN THE LANE UNLESS OTHERWISE NOTED ON THE PLAN SHEETS.
  - DO NOT PLACE SYMBOLS ON LANE LINES.
  - SEE PLAN SHEETS FOR SYMBOL LOCATIONS.



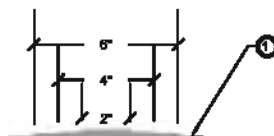
- 1 PAINTED STRIPING (SOLID)
- 2 PAINTED STRIPING (DASHED)
- 3 PAINTED "ROAD XING" PAVEMENT MARKING
- 4 (3) RUMBLE STRIPS 30" ON CENTER

**1 TRAIL PAVEMENT MARKING SYMBOL PLACEMENT**  
NTS



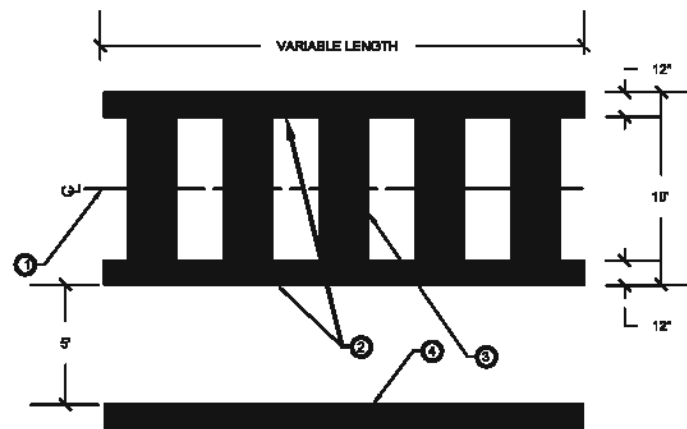
- 1 PAINTED STRIPING (SOLID)
- 2 PAINTED STRIPING (DASHED)
- 3 PAINTED "ROAD XING" PAVEMENT MARKING
- 4 (3) RUMBLE STRIPS 30" ON CENTER
- 5 12" STOP BAR (INC. "STOP" MARKING DEPENDING ON TRAFFIC CONTROL)

**2 TRAIL PAVEMENT MARKING SYMBOL PLACEMENT**  
NTS



- 1 WHITE THERMOPLASTIC PAVEMENT MARKING (EACH MARKING LAYER SHALL BE 80 TO 95 MILS EACH IN ORDER TO ACHIEVE AN OVERALL RUMBLE STRIP THICKNESS OF APPROXIMATELY 1/2". REFER TO PLAN FOR SPACING LAYOUT AND LOCATION.)

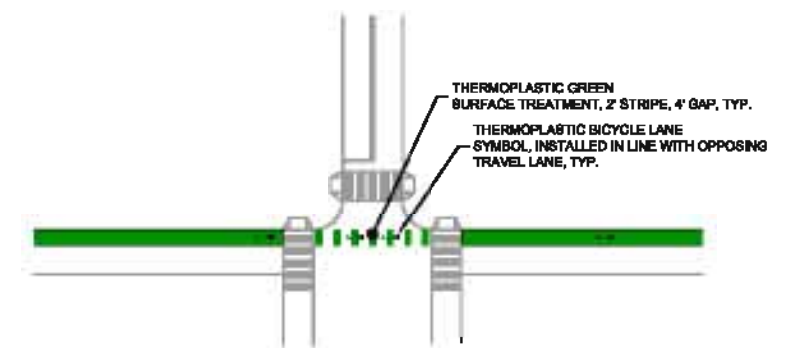
**3 RUMBLE STRIP DETAIL**  
1"=1'



**4 CROSSWALK DETAIL**  
1/2"=1'

- 1 CENTERLINE OF CROSSWALK TO BE AT CENTERLINE OF PEDESTRIAN RAMP(S) UNLESS OTHERWISE NOTED
- 2 12" SOLID WHITE THERMOPLASTIC MARKING
- 3 24" SOLID WHITE THERMOPLASTIC MARKING
- 4 24" SOLID WHITE THERMOPLASTIC STOP BAR (MOTOR VEHICLE)

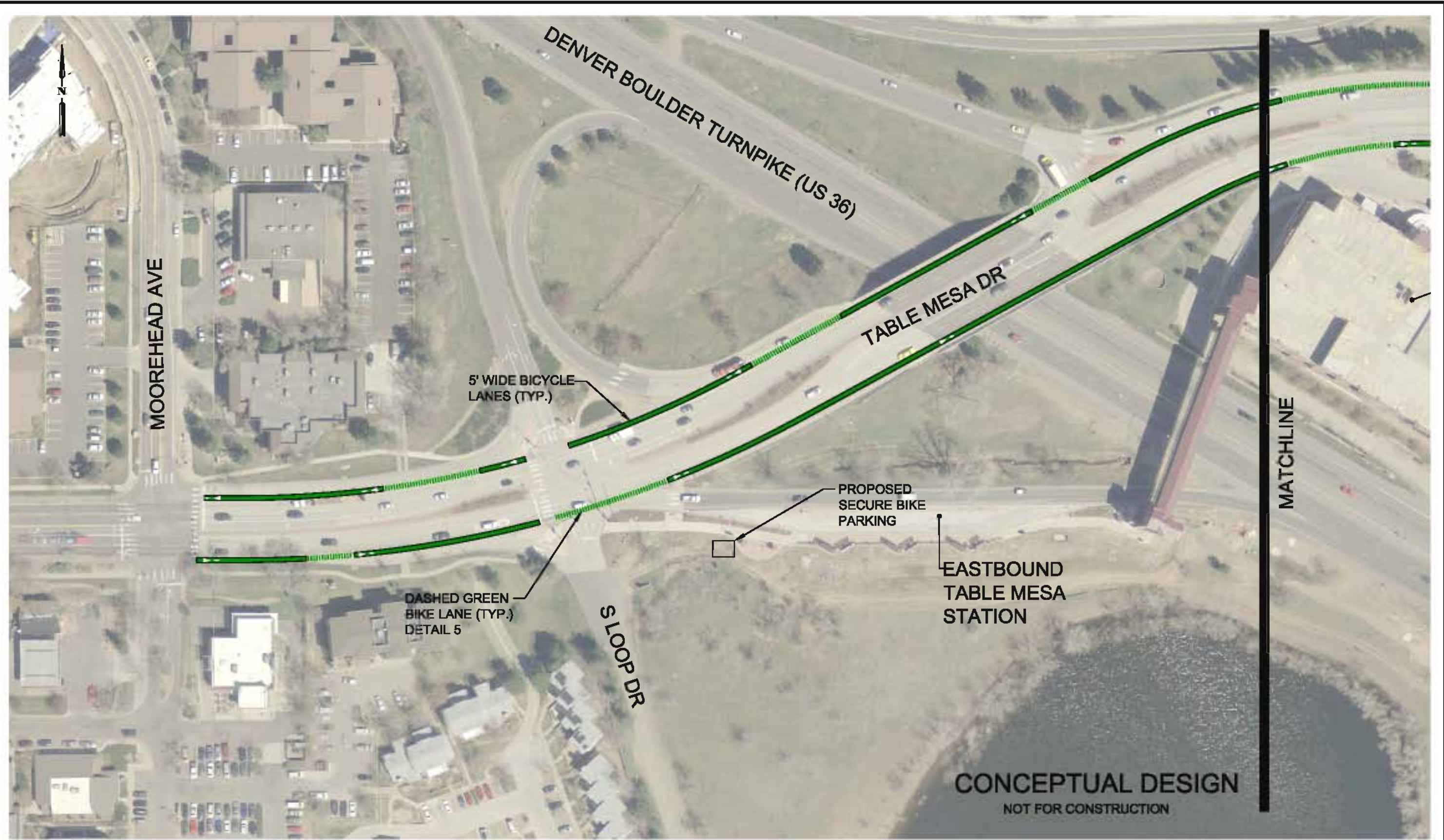
NOTES:  
 1. PEDESTRIAN CROSSWALK - TEN FEET WIDE, UNLESS OTHERWISE NOTED.  
 A. MAKE STRIPES PARALLEL TO CURB LINE OF STREET.  
 B. ALL HANDICAP RAMPS MUST BE LOCATED WITHIN A CROSSWALK, INCLUDING SIDE FLARES OF RAMPS. ONE SIDE FLARE MUST ALIGN WITH BACK EDGE OF CROSSWALK IF CROSSWALK WIDTH IS GREATER THAN FIFTEEN FEET.  
 C. CROSSWALK MARKINGS SHALL BE INSTALLED WITH PREFORMED HEAT APPLIED THERMOPLASTIC OR LIQUID THERMOPLASTIC.

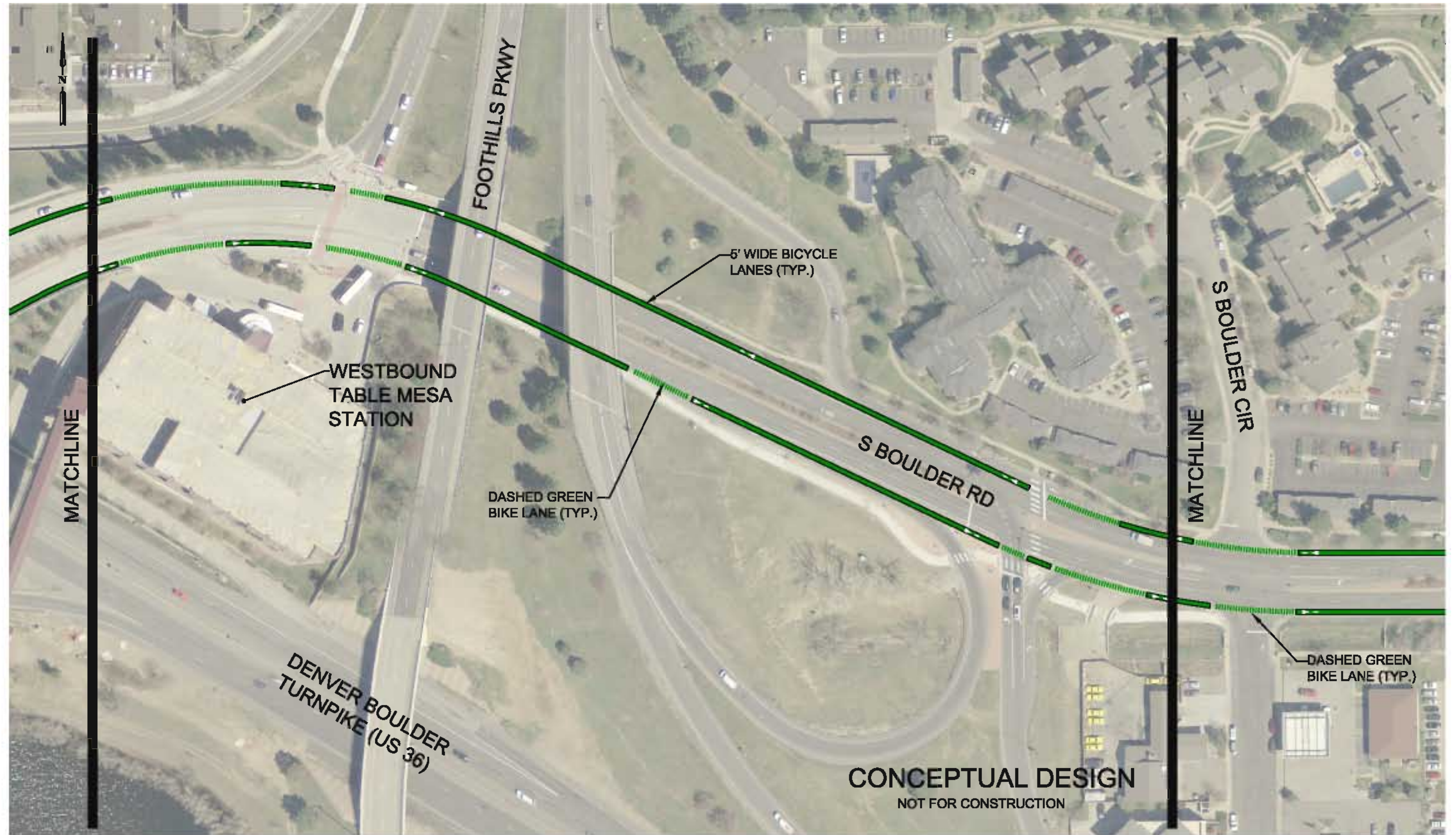


**4 BIKE LANE CROSSWALK DETAIL**  
NTS

SIGN SCHEDULE	SIGN NAME	QTY
	R8-8	1
	W11-15	6
	W3-1	1
	W3-3	1
	W16-7P	6
	W16-5	1

	R1-1	3
	R4-1	1
	R1-2	2
	W11-1	6
	W6-1	6
	R3-17	4
	R3-17bP	2







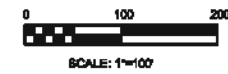
**CONCEPTUAL DESIGN**  
NOT FOR CONSTRUCTION

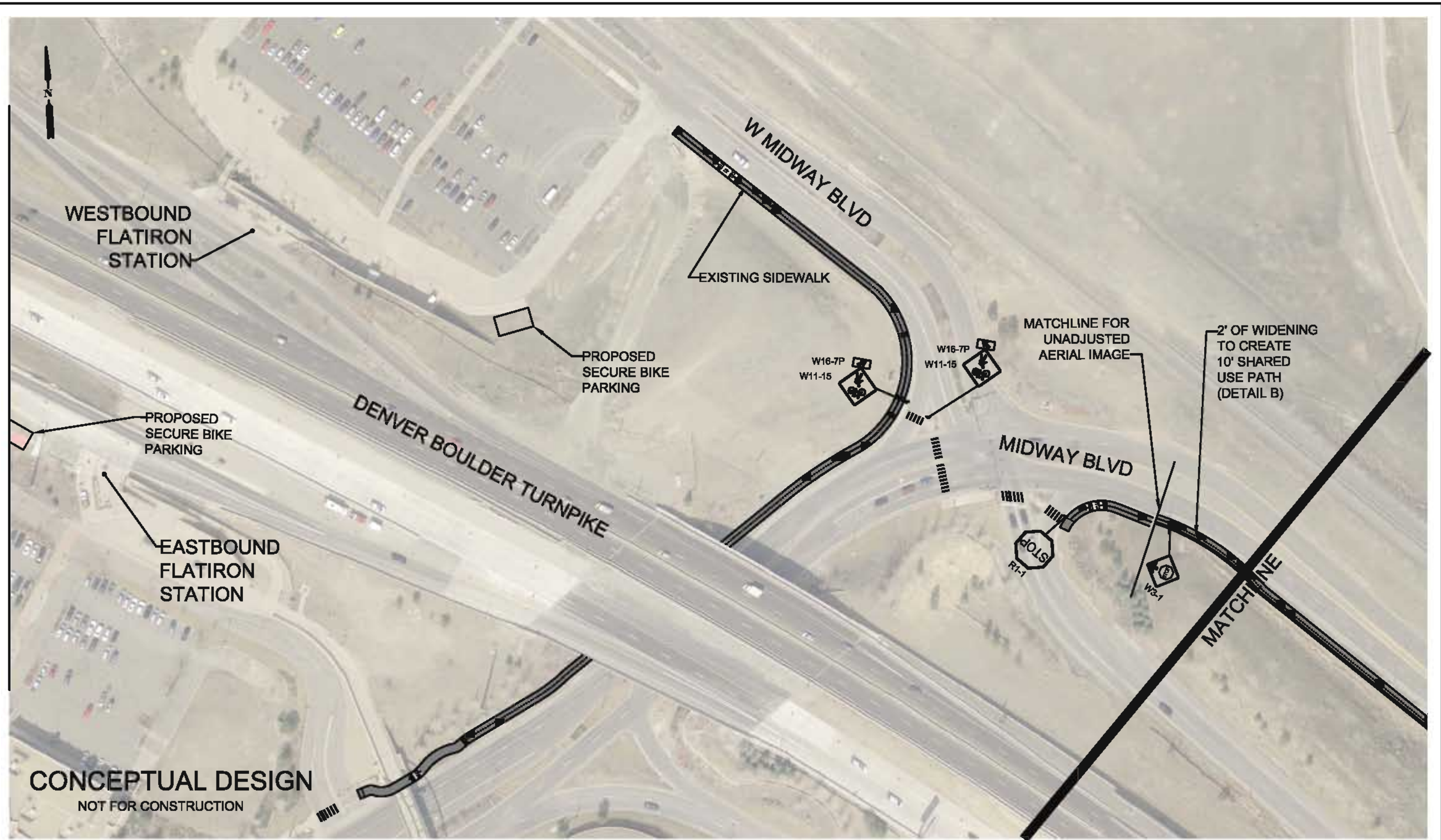




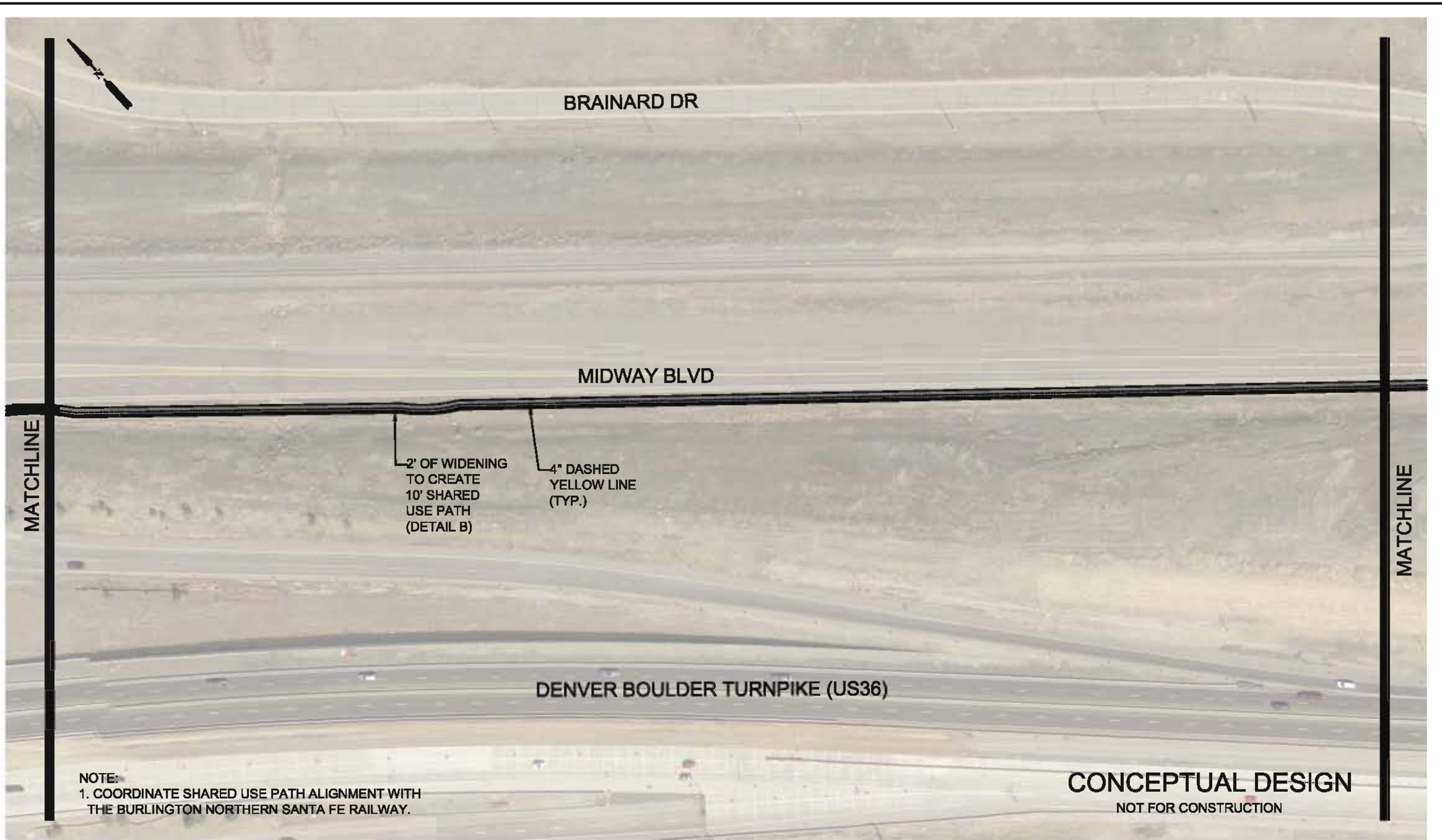


**CONCEPTUAL DESIGN**  
NOT FOR CONSTRUCTION





**CONCEPTUAL DESIGN**  
NOT FOR CONSTRUCTION



BRAINARD DR

MIDWAY BLVD

2' OF WIDENING  
TO CREATE  
10' SHARED  
USE PATH  
(DETAIL B)

4" DASHED  
YELLOW LINE  
(TYP.)

DENVER BOULDER TURNPIKE (US36)

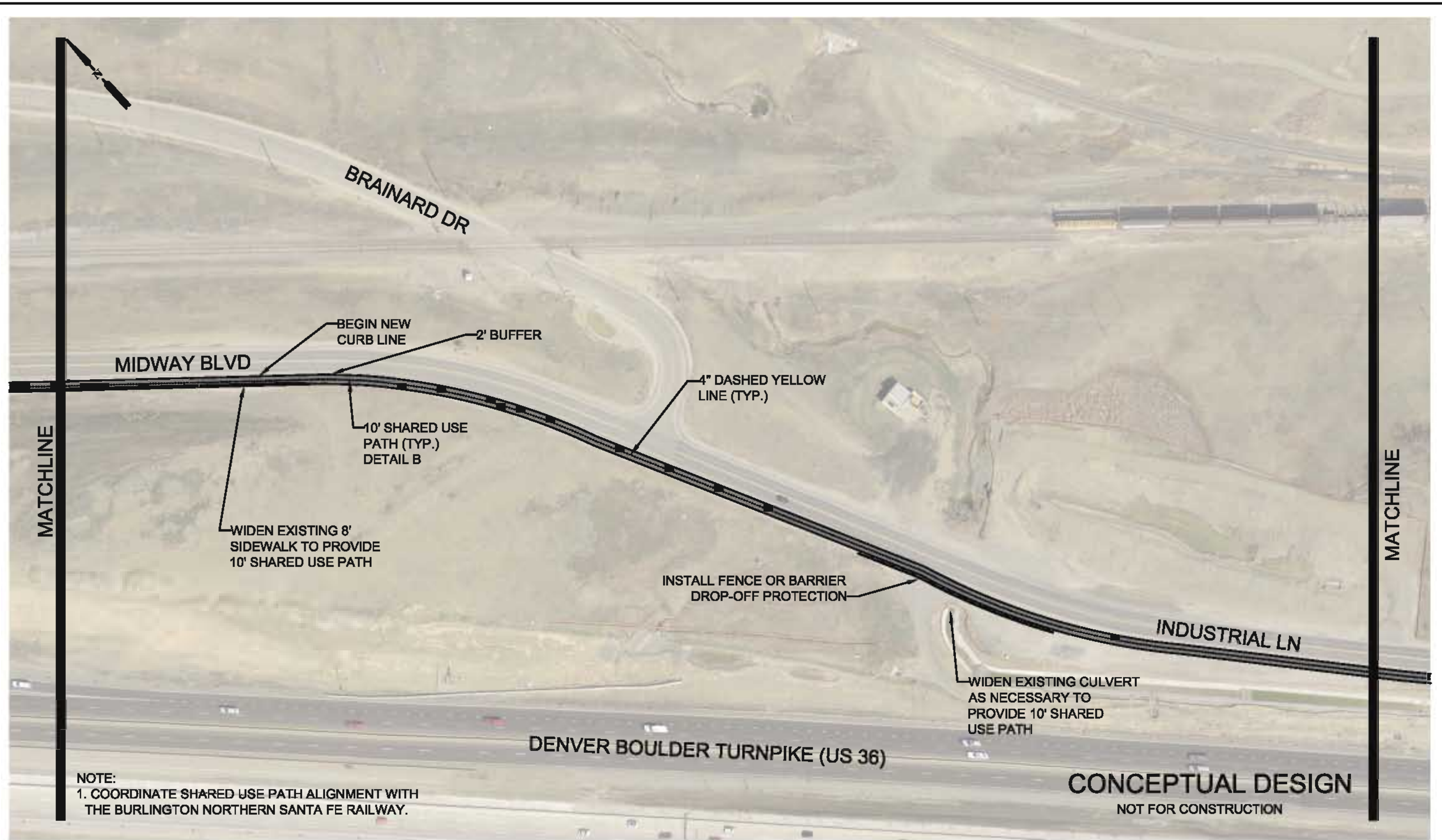
MATCHLINE

MATCHLINE

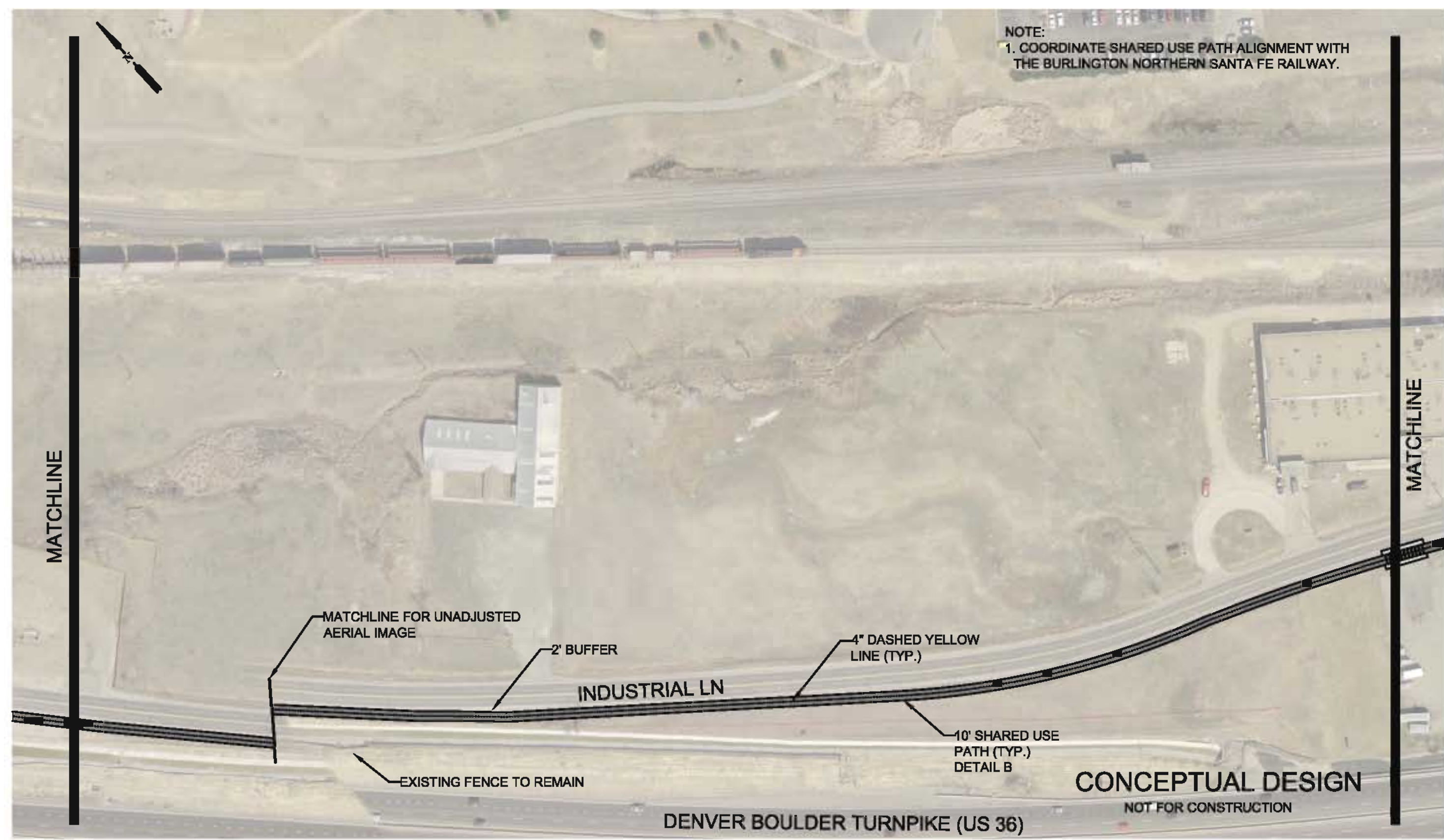
NOTE:  
1. COORDINATE SHARED USE PATH ALIGNMENT WITH  
THE BURLINGTON NORTHERN SANTA FE RAILWAY.

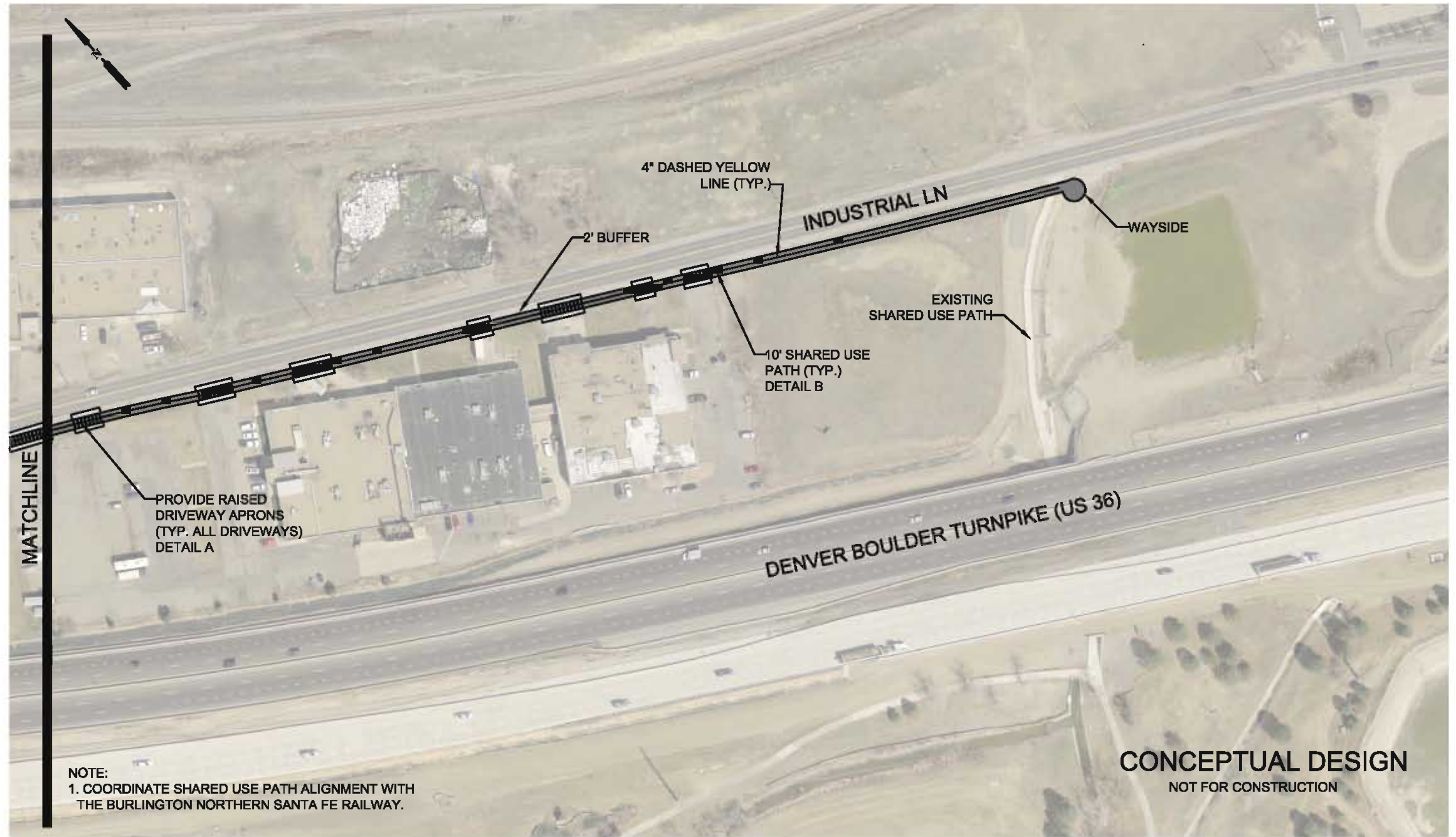
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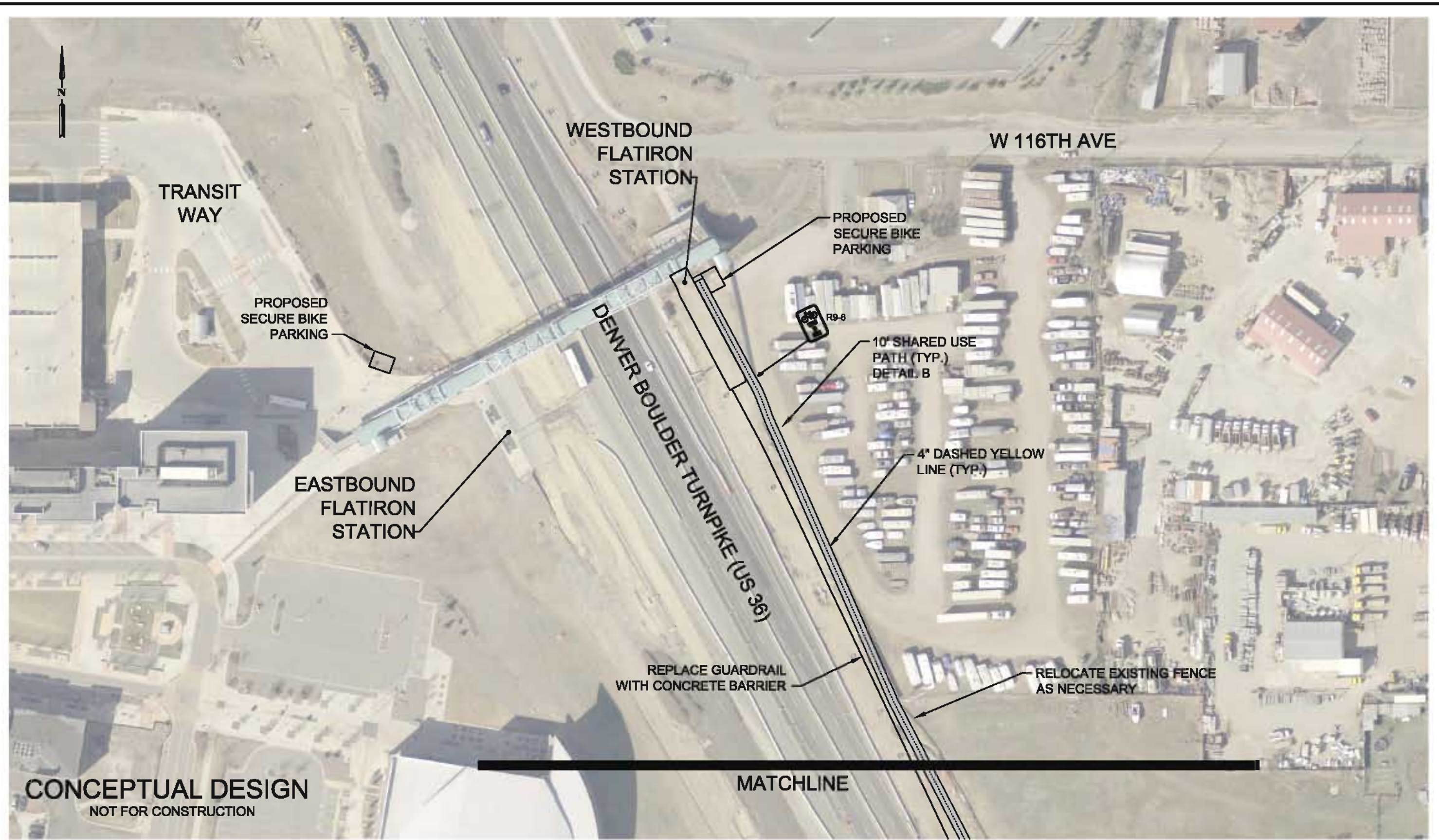




NOTE:  
 1. COORDINATE SHARED USE PATH ALIGNMENT WITH THE BURLINGTON NORTHERN SANTA FE RAILWAY.



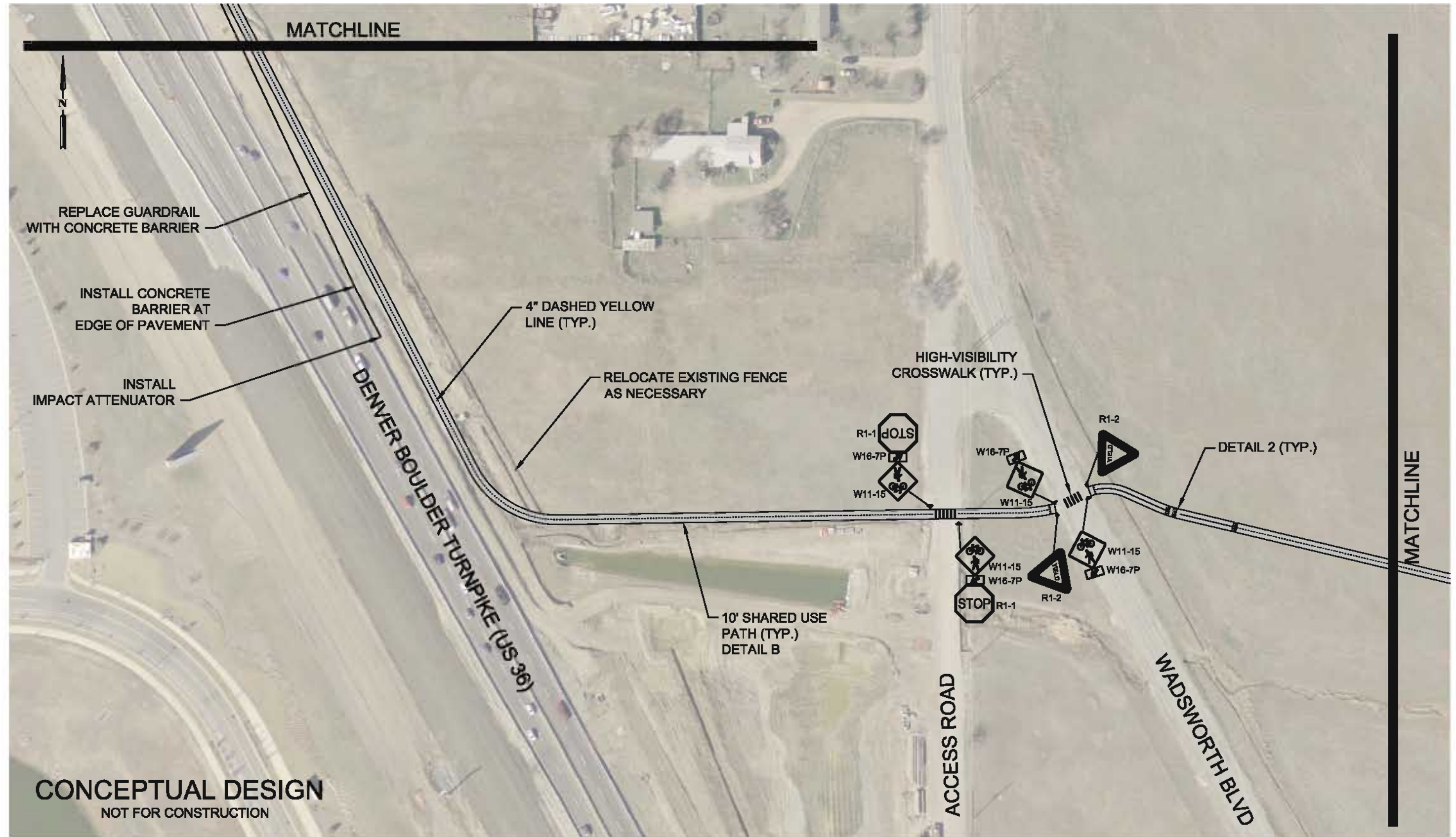




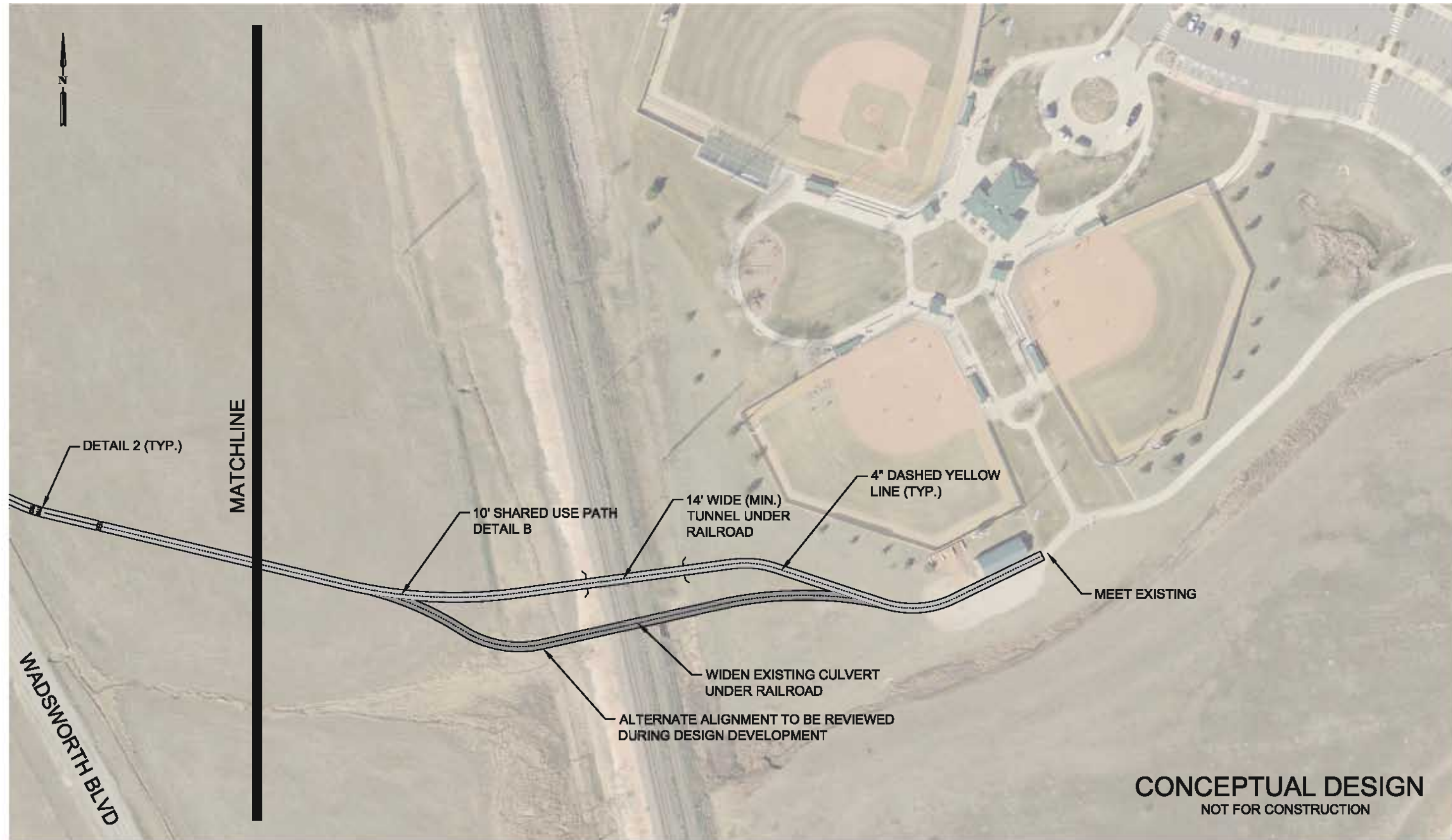
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MATCHLINE

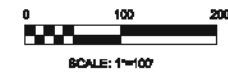


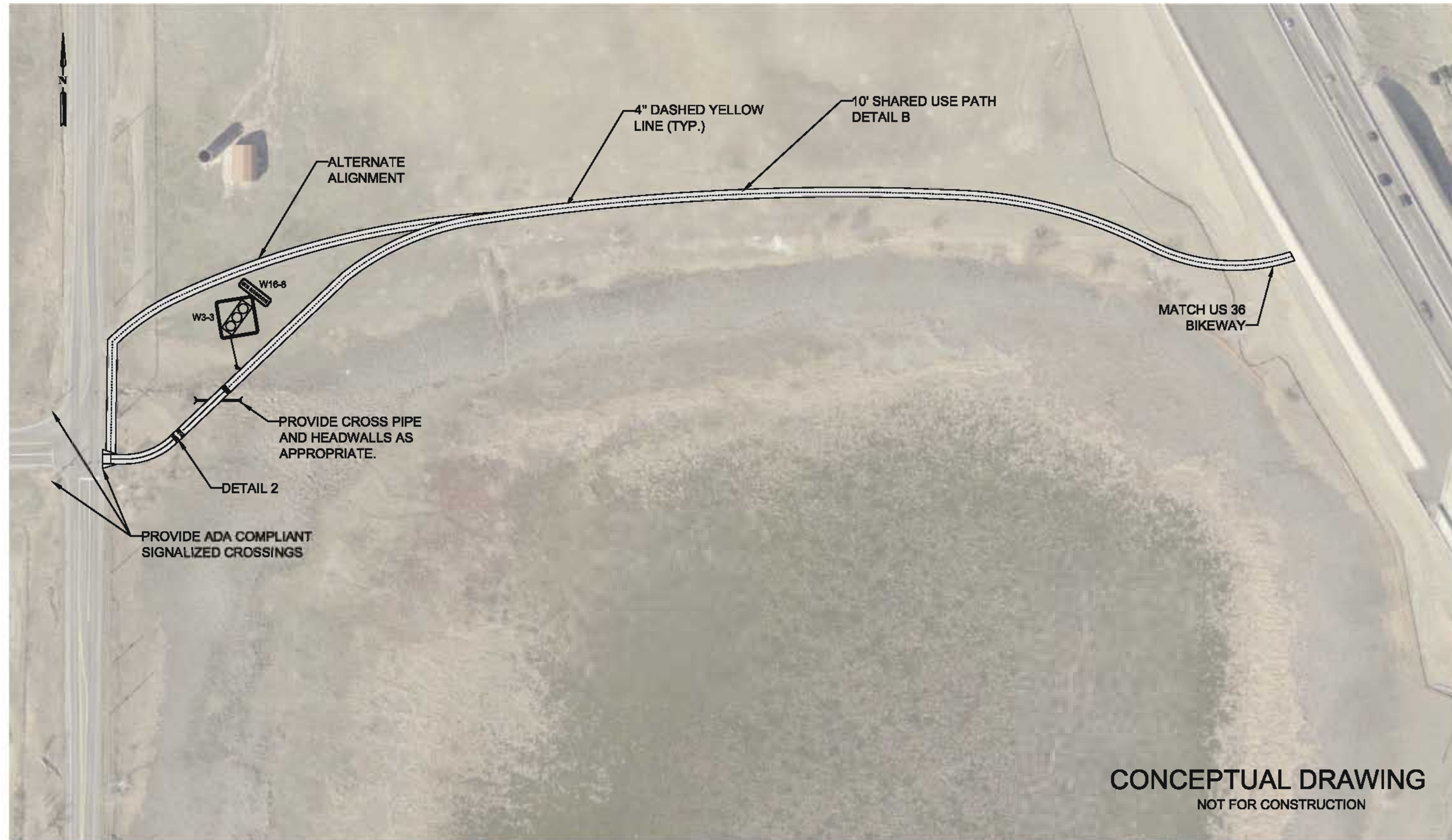


**CONCEPTUAL DESIGN**  
NOT FOR CONSTRUCTION



**CONCEPTUAL DESIGN**  
NOT FOR CONSTRUCTION





**CONCEPTUAL DRAWING**  
NOT FOR CONSTRUCTION

