



TECHNICAL MEMORANDUM

Atlanta Beltline Inc. (ABI) Northeast Trail (Task C)

TO: Nathan Currier, P.E., S.E., Senior Structural Engineer
Kimley-Horn & Associates (KHA)

FROM: Akli Hibouche, PhD and Prashanth Vaddu, P.E.
MC Squared, Inc.

DATE: October 22, 2021

SUBJECT: **Addendum to Task C WFI Report for Walls 101A, 101B and 101C**
Global and External Stability Analyses

This technical memorandum is in reference to your e-mail dated October 20, 2021, requesting additional evaluation and analyses for Walls 101A thru 101C (Task C) based on updated wall plans and change in wall design (strap length) to overcome ROW issues. This may serve as an addendum to our original Task C WFI report submittal (dated March 30, 2018).

Per your request we completed global stability and external stability analysis based on the following assumptions:

- Maximum wall height for Wall 101C is approximately 15 feet.
- Strap length at Wall 101C is equal to 70% height of the wall (**10 feet strap length** was assumed).
- Used updated wall plans and cross-sections, dated October 2021.
- Shoring will be used to construct the walls. It is assumed that wall excavations are stable and shoring system will be designed by others.
- Wall 101A has been removed and the design has been changed to a 2(H):1(V) slope as shown in the provided cross-sections. It is assumed that the 2(H):1(V) slope is stable.

Based on these assumptions, three (3) critical Wall Sections were selected for geotechnical engineering evaluations; Section 1 (Station 101+04 to 101+30), Section 2 (Station 101+30 to 101+80), and Section 3 (Station 101+80 to 102+15). Evaluations include global stability, sliding, overturning and bearing capacity.

Based on our analysis and the updated assumptions stated for this new model, the results satisfy the minimum required 1.5 factor of safety for global stability, in accordance with AASHTO Standard Specifications for Highway Bridges, 17th edition, 2002.

External stability analyses including sliding, overturning and bearing capacity were assessed for the new strap length for Wall 101C. These analyses were performed in accordance with AASHTO Standard Specifications for Highway Bridges, 17th edition, 2002. The results satisfy the minimum required factors of safety of 1.5, 2 and 3 for sliding, overturning and bearing capacity, respectively.



Internal stability calculations for MSE walls must be performed by the specialty wall designer in accordance with applicable standards. Internal stability analyses are not a part of our scope of services due to the proprietary nature of the wall system.

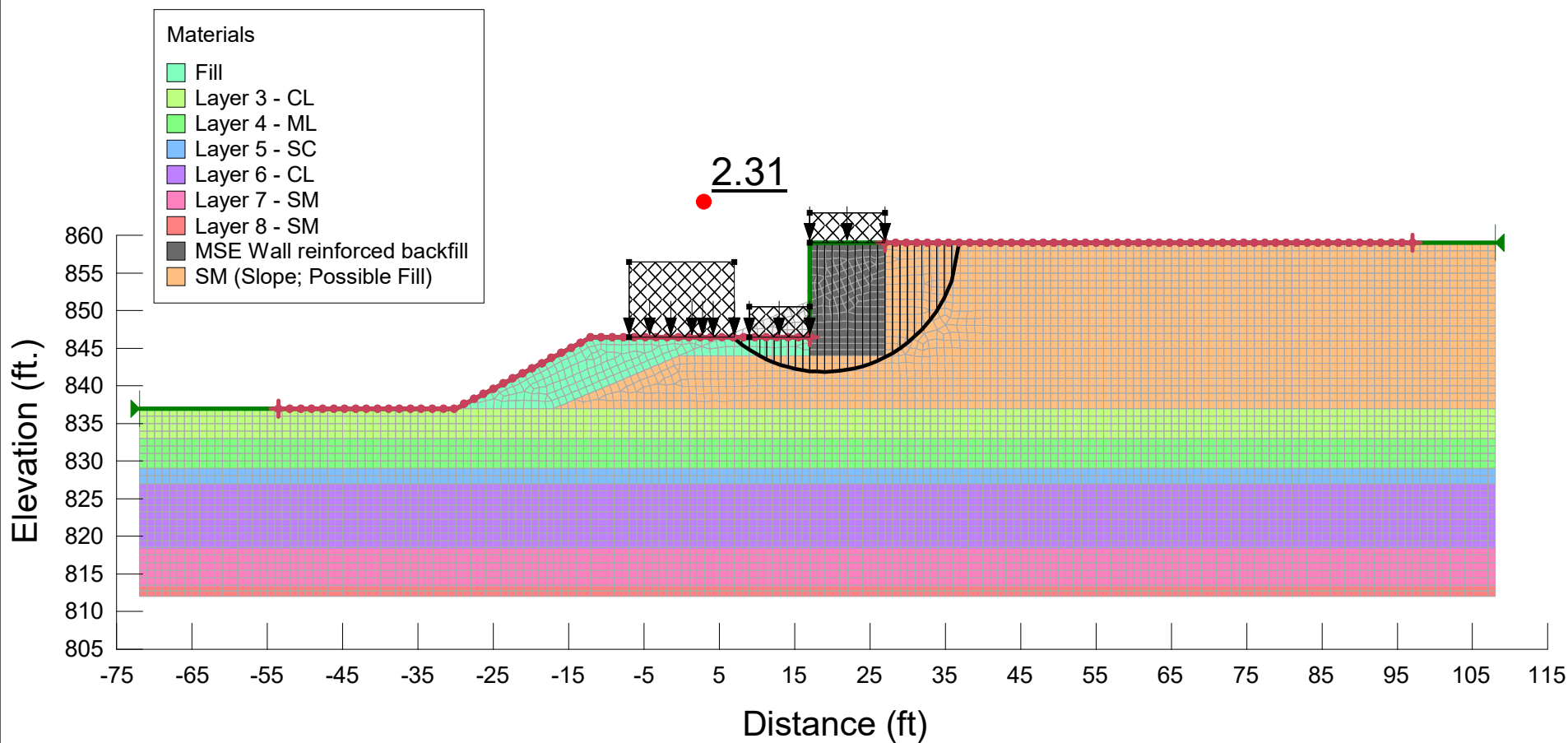
Attachments:

Global Stability Analyses Results
Client Provided Documents

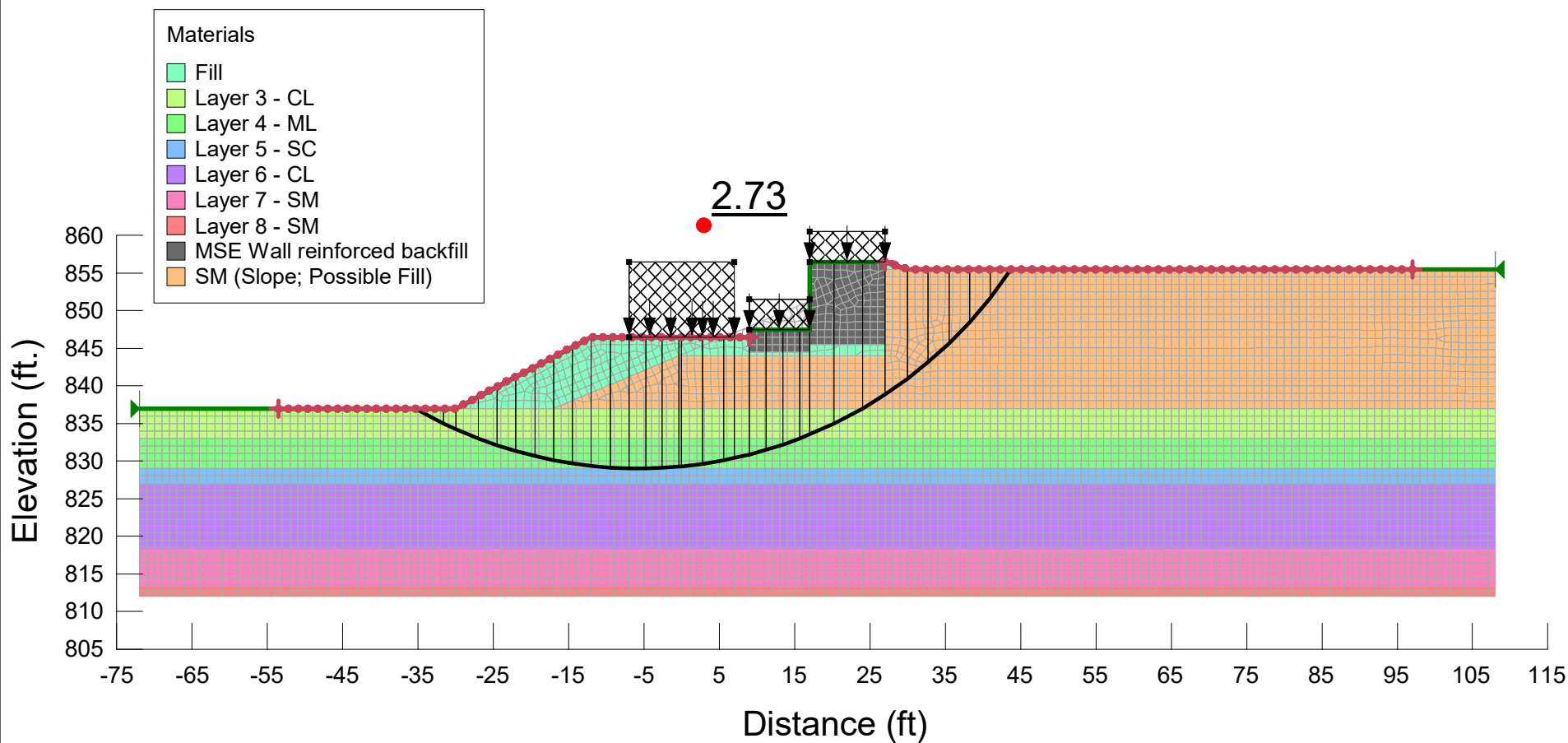
Copies to: KHA: Sean Johnston, P.E., Vice President. sean.johnston@kimley-horn.com

Project Folder: A051707.058

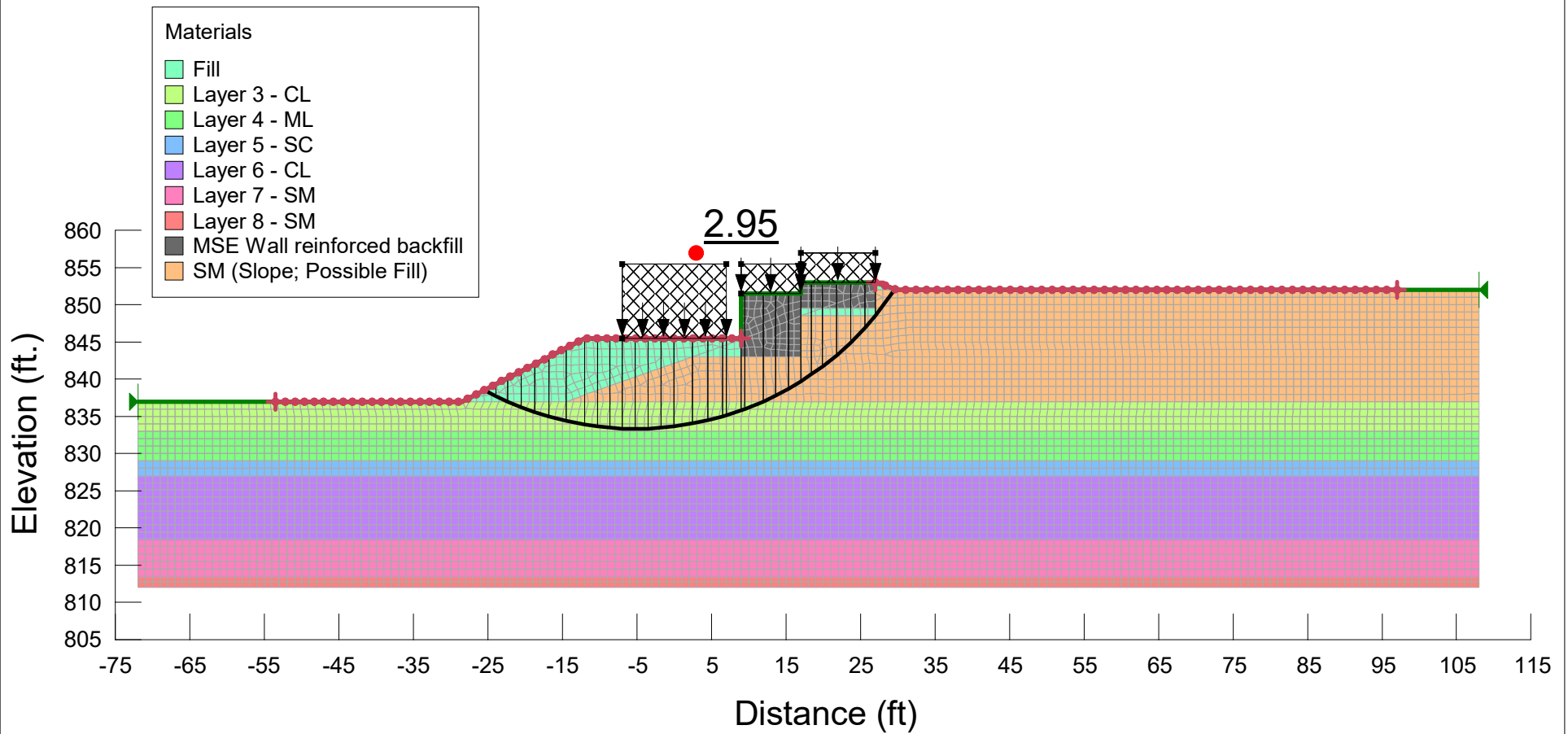
Global Stability Analysis
 Project: ABI Northeast (Task C)
 Section 1: Station 101+04 to 101+30
 MSE Wall 101C Strap Length: 10 feet
 Surcharge Loads:
 - Vehicles: 250 psf
 - Pedestrian: 100 psf

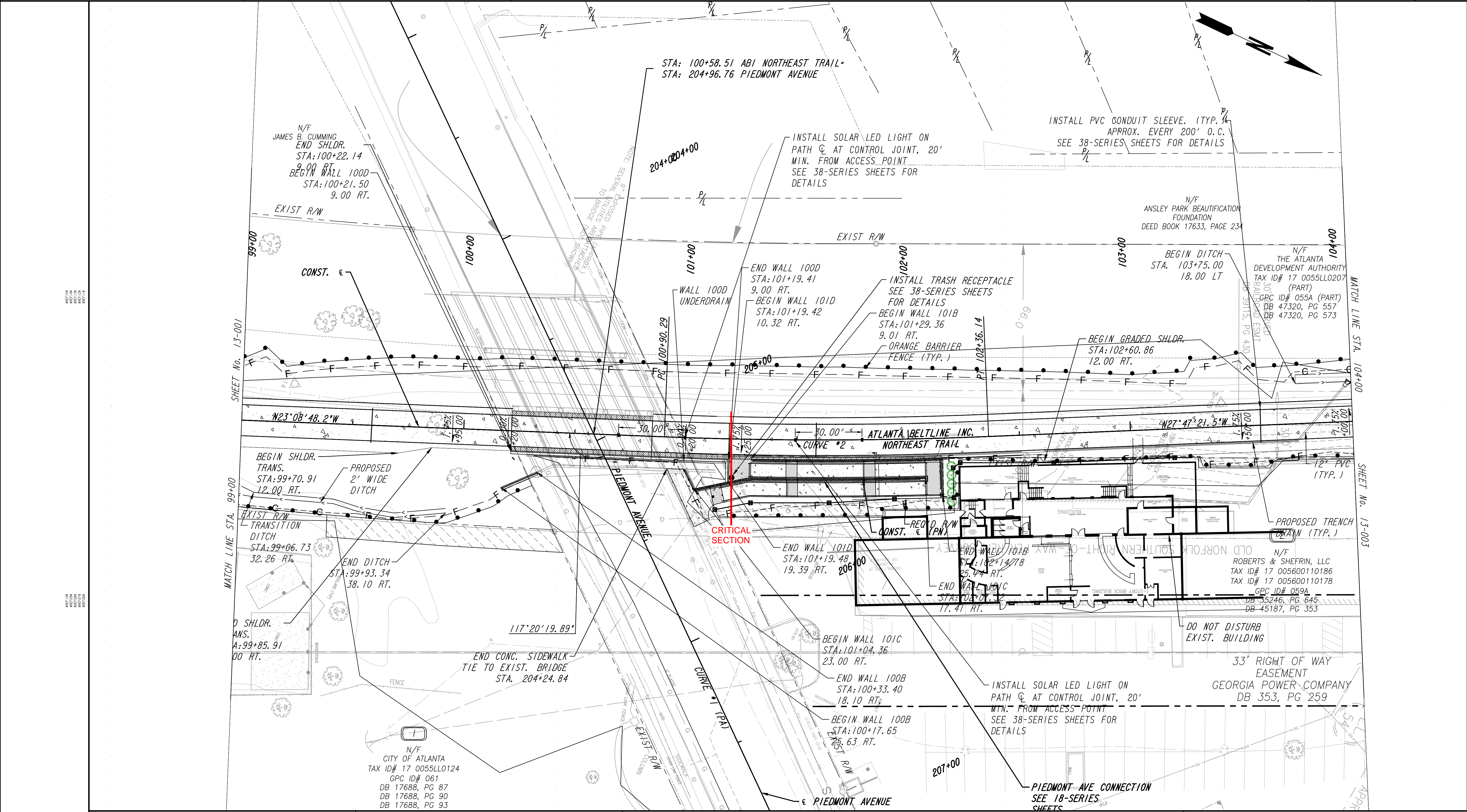


Global Stability Analysis
 Project: ABI Northeast (Task C)
 Section 2: Station 101+30 to 101+80
 MSE Wall 101C Strap Length: 10 feet
 Surcharge Loads:
 - Vehicles: 250 psf
 - Pedestrian: 100 psf



Global Stability Analysis
 Project: ABI Northeast (Task C)
 Section 3: Station 101+80 to 102+15
 MSE Wall 101C Strap Length: 10 feet
 Surcharge Loads:
 - Vehicles: 250 psf
 - Pedestrian: 100 psf



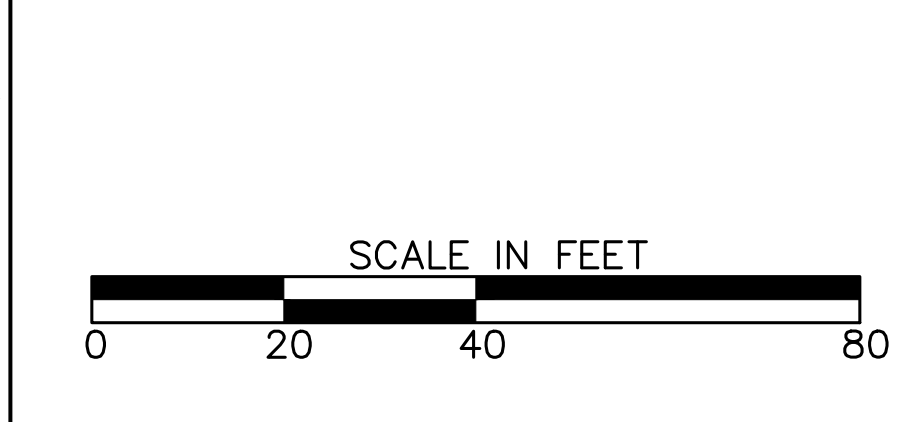


PROPERTY AND EXISTING R/W LINE	---
REQUIRED R/W LINE	---
CONSTRUCTION LIMITS	---E---F---
PERMANENT EASEMENT FOR CONST. & MAINTENANCE OF SLOPES	[Hatched Pattern]
TEMPORARY EASEMENT FOR CONST. OF SLOPES	[Cross-hatched Pattern]
TEMPORARY EASEMENT FOR CONST. OF DRIVES	[Diagonal-hatched Pattern]

REVISION DATES	
CHECKED:	DATE:
BACKCHECKED:	DATE:
CORRECTED:	DATE:
VERIFIED:	DATE:

Atlanta BeltLine
ATLANTA BELTLINE, INC.
100 PEACHTREE STREET, NW
SUITE 2300
ATLANTA, GA 30303
TEL: (404) 477-3003
FAX: (404) 477-3606

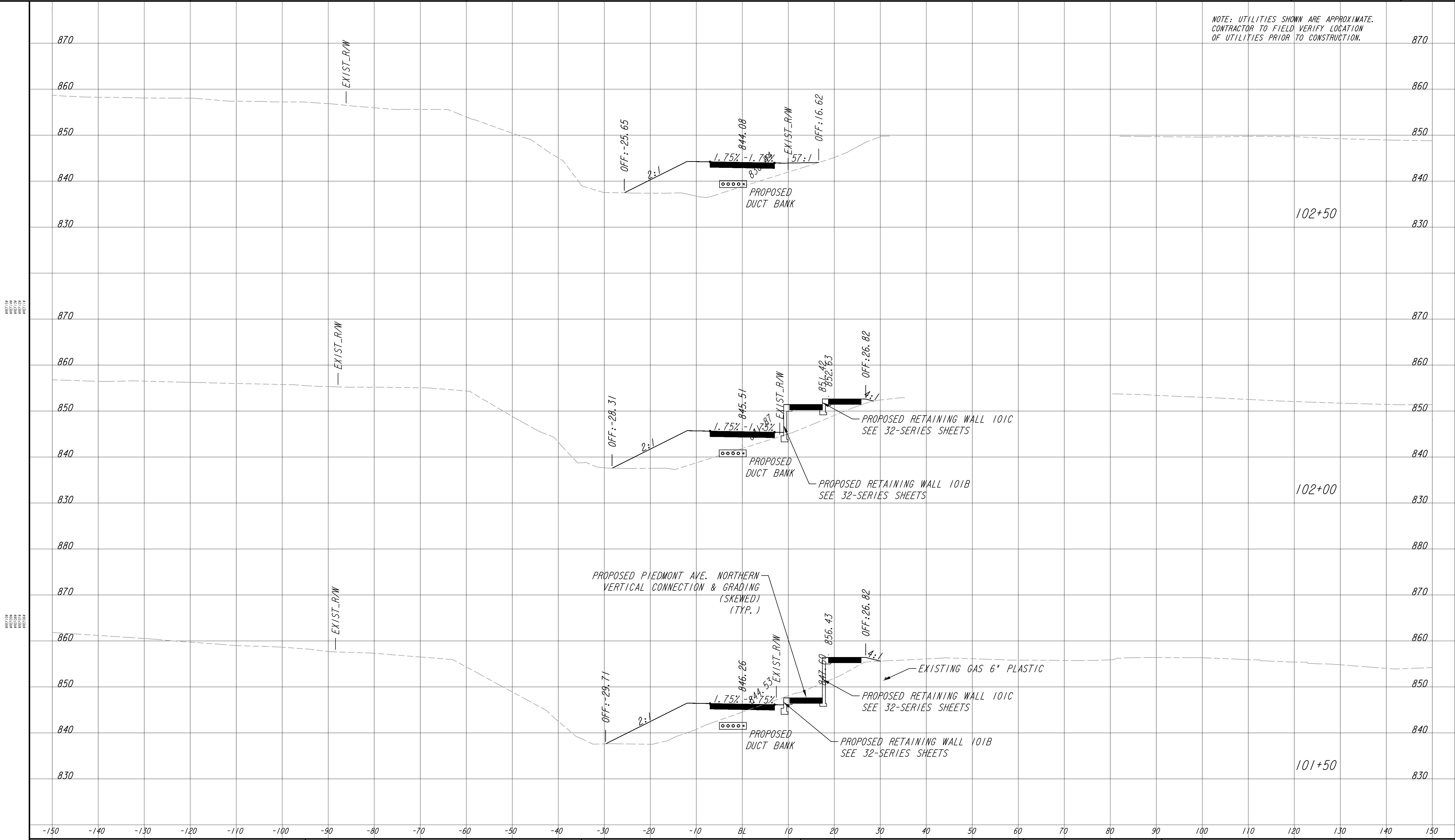
Kimley»Horn
KIMLEY-HORN AND ASSOCIATES, INC.
THE BILTMORE, SUITE 601
817 WEST PEACHTREE STREET, NW
ATLANTA, GEORGIA 30308
TEL: (404) 419-8700



CONSTRUCTION PLAN
ATLANTA BELTLINE NORTHEAST TRAIL

DRAWING No. 13-002

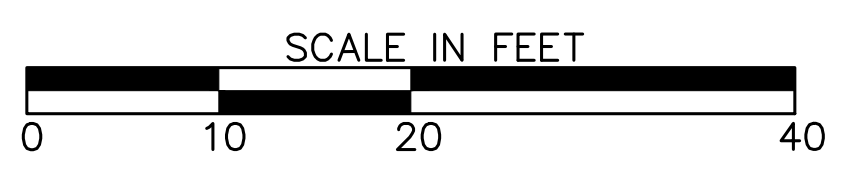
NOTE: UTILITIES SHOWN ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY LOCATION OF UTILITIES PRIOR TO CONSTRUCTION.



PROPERTY AND EXISTING R/W LINE	
REQUIRED R/W LINE	
CONSTRUCTION LIMITS	
PERMANENT EASEMENT FOR CONST. & MAINTENANCE OF SLOPES	
TEMPORARY EASEMENT FOR CONST. OF SLOPES	
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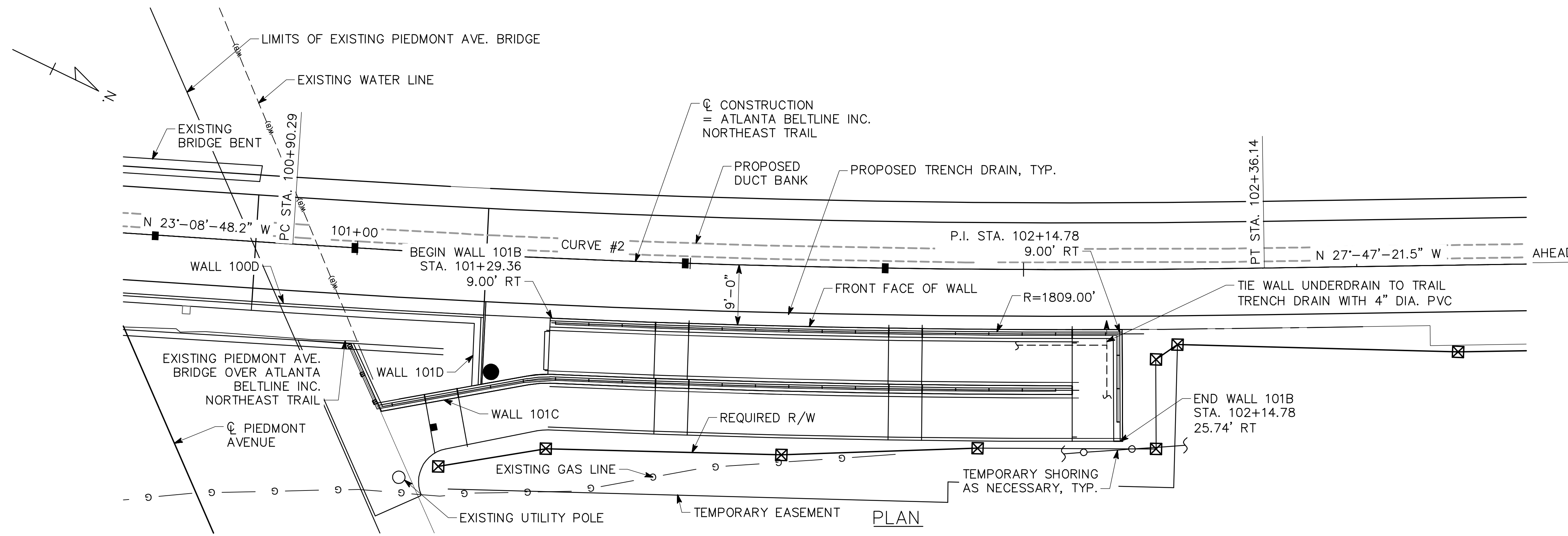
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REVISION DATES	

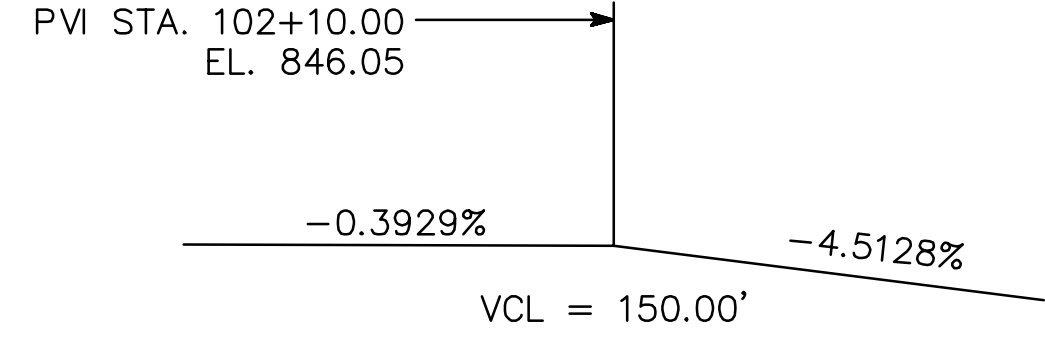
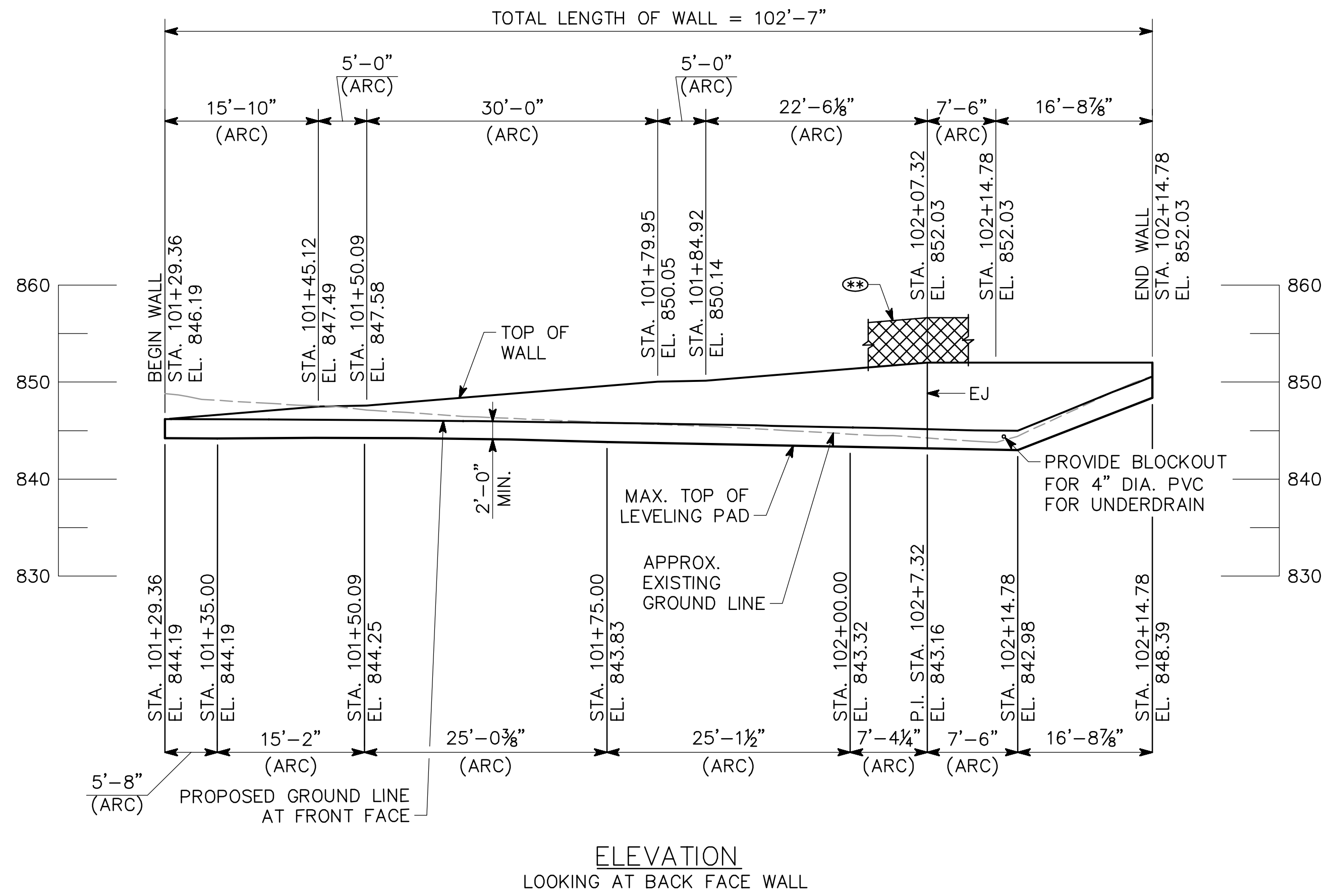
EARTHWORK CROSS SECTIONS
 ATLANTA BELTLINE NORTHEAST TRAIL

CHECKED:	DATE:	DRAWING No. 23-006
BACKCHECKED:	DATE:	
CORRECTED:	DATE:	
VERIFIED:	DATE:	



CURVE # 2 (C CONSTRUCTION)
 PI STA. = 101+63.25
 N = 1380705.70
 E = 2234522.98
 DELTA = 4'-38'-33"
 D = 3'-10'-59.16"
 T = 72.97 FT
 L = 145.85 FT
 R = 1800.00 FT
 E = 1.48 FT

HORIZONTAL CURVE DATA



VERTICAL CURVE DATA

- NOTES**
- STATIONS ARE MEASURED ALONG C CONSTRUCTION. OFFSETS ARE MEASURED TO FRONT FACE OF WALL.
 - LENGTHS ARE MEASURED ALONG FRONT FACE OF WALL AND INCLUDE GRANITE VENEER.
 - PROVIDE TEMPORARY SHORING AS NECESSARY FOR WALL CONSTRUCTION.
 - FOR WALL NOTES, DESIGN DATA, AND SUMMARY OF QUANTITIES, SEE "GENERAL NOTES".
 - FOR TYPICAL SECTIONS AND DETAILS, SEE "WALL DETAILS".
 - ELEVATIONS SHOWN ARE AT THE TOP OF CAPSTONE AT THE FRONT FACE OF WALL.
 - GRANITE VENEER NOT SHOWN FOR CLARITY, SEE 38 SERIES.
 - EJ INDICATES EXPANSION JOINT IN WALL AND VENEER.
 - JOINT SPACINGS SHOWN ARE APPROXIMATE. EXACT LOCATIONS TO BE COORDINATED WITH STONE VENEER JOINT SPACING BY THE CONTRACTOR.
 - 42" INDICATES 42" METAL SAFETY RAIL.
- ARC - ARC DIMENSION

WALL NO. 101B

Kimley»Horn

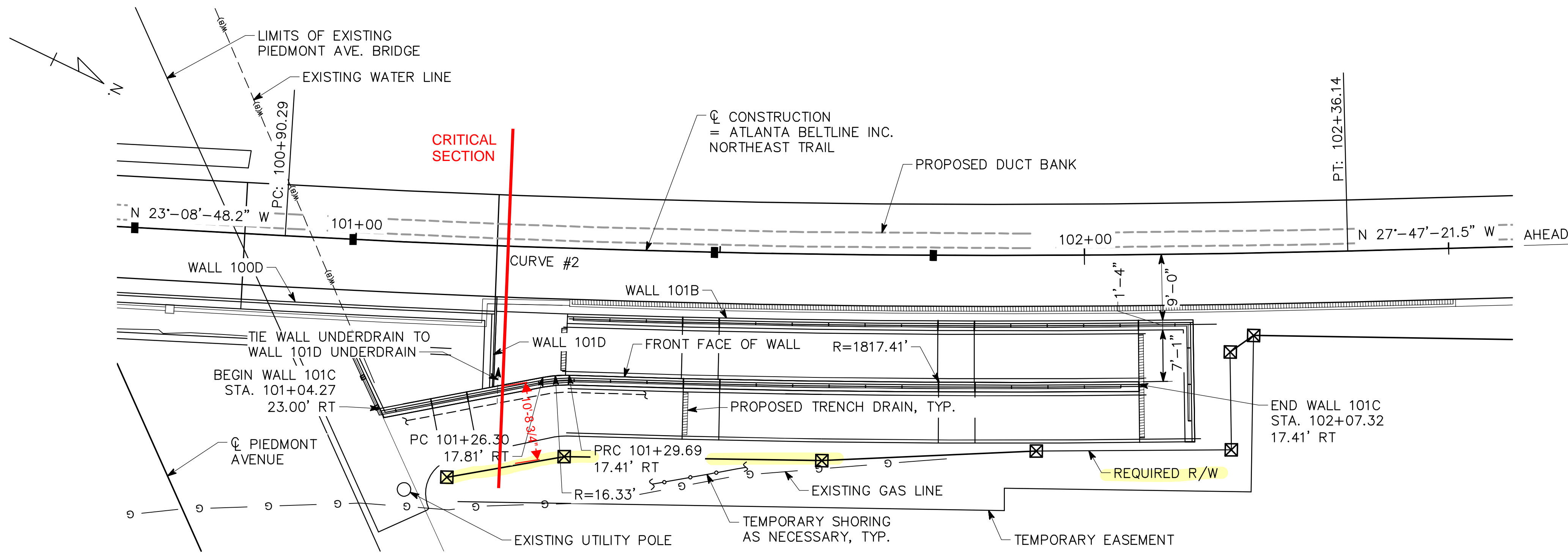
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ATLANTA BELTLINE

PLAN AND ELEVATION
 WALL NO. 101B (MSE)
 ATLANTA BELTLINE NORTHEAST TRAIL
 FULTON COUNTY

DRAWING NO. 32-0005		SCALE: 1" = 10'-0"	OCTOBER 2021
WALL SHEET 5 OF 18	DESIGNED <u>ASG</u> DRAWN <u>DDL/JIK</u>	CHECKED <u>NMC</u> DESIGN GROUP	REVIEWED APPROVED

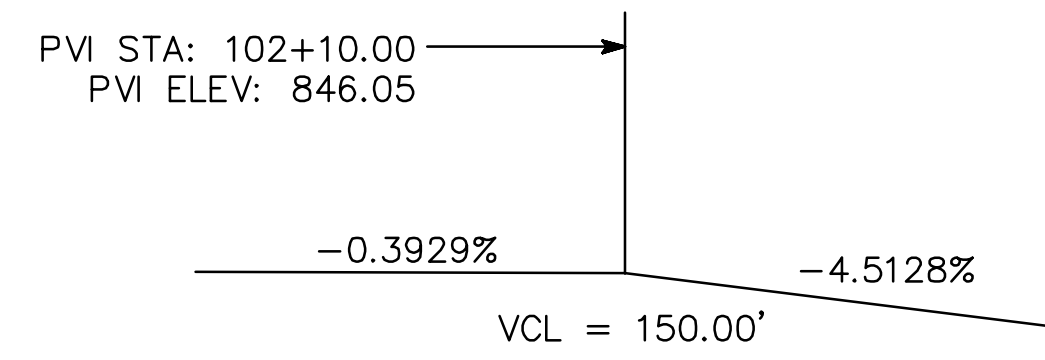
DATE: Oct 19, 2021 TIME: 10:02am USER: kellyglynn



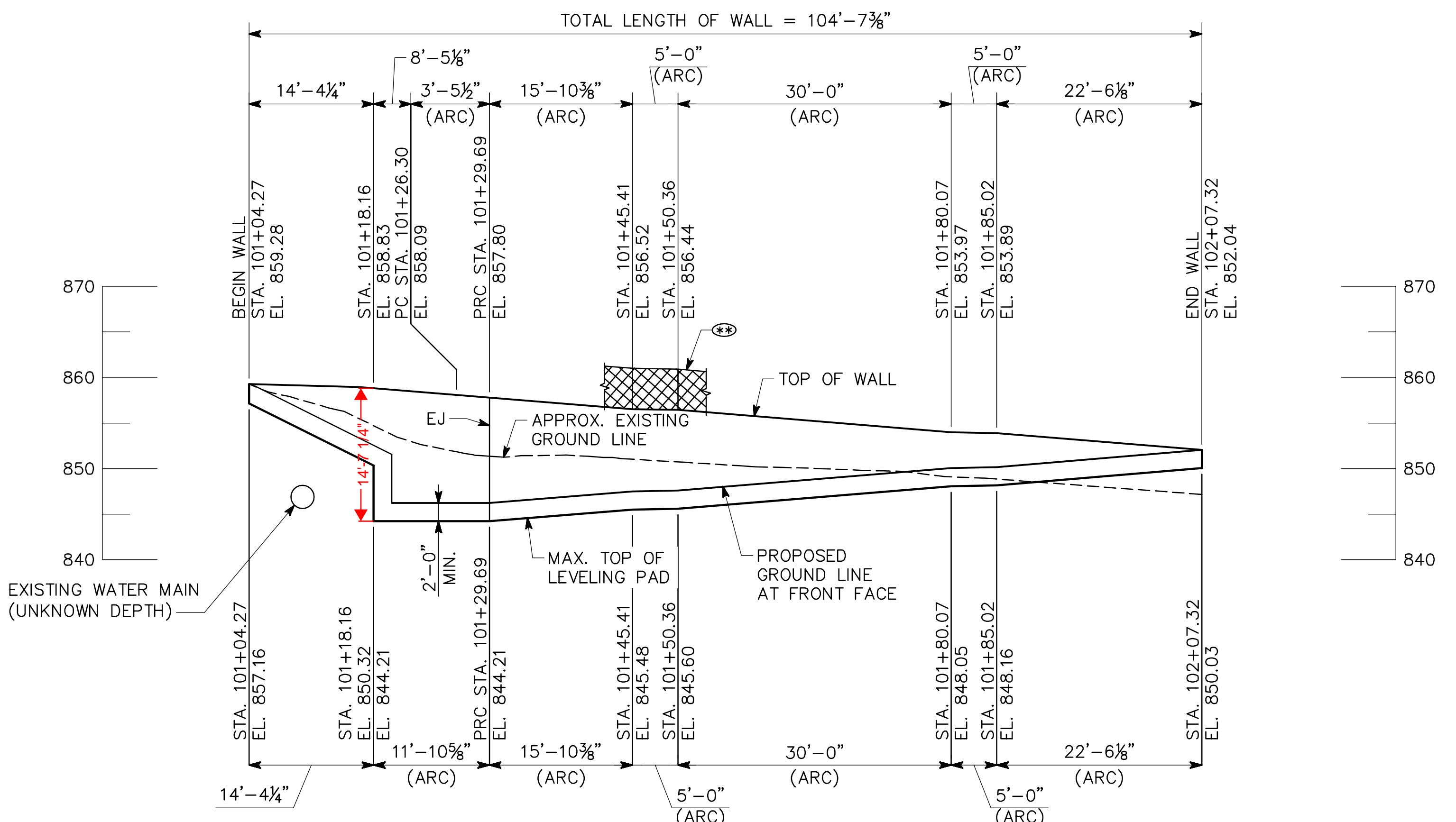
PLAN

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 E = 1.48 FT

HORIZONTAL CURVE DATA



VERTICAL CURVE DATA



ELEVATION
 LOOKING AT BACK FACE WALL

NOTES

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- ARC - ARC DIMENSION

WALL NO. 101C

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ATLANTA BELTLINE

PLAN AND ELEVATION
 WALL NO. 101C (MSE)
 ATLANTA BELTLINE NORTHEAST TRAIL
 FULTON COUNTY

SCALE: 1" = 10'-0" OCTOBER 2021

DESIGNED ASG CHECKED NMC REVIEWED
 DRAWN DDL/JIK DESIGN GROUP APPROVED

DRAWING NO.
 32-0006

WALL SHEET
 6 OF 18

DATE	REVISIONS