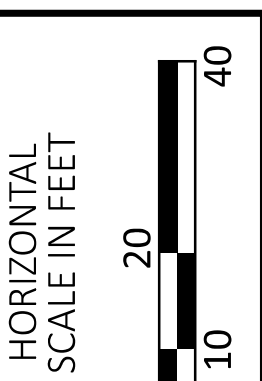
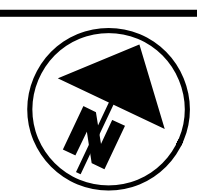
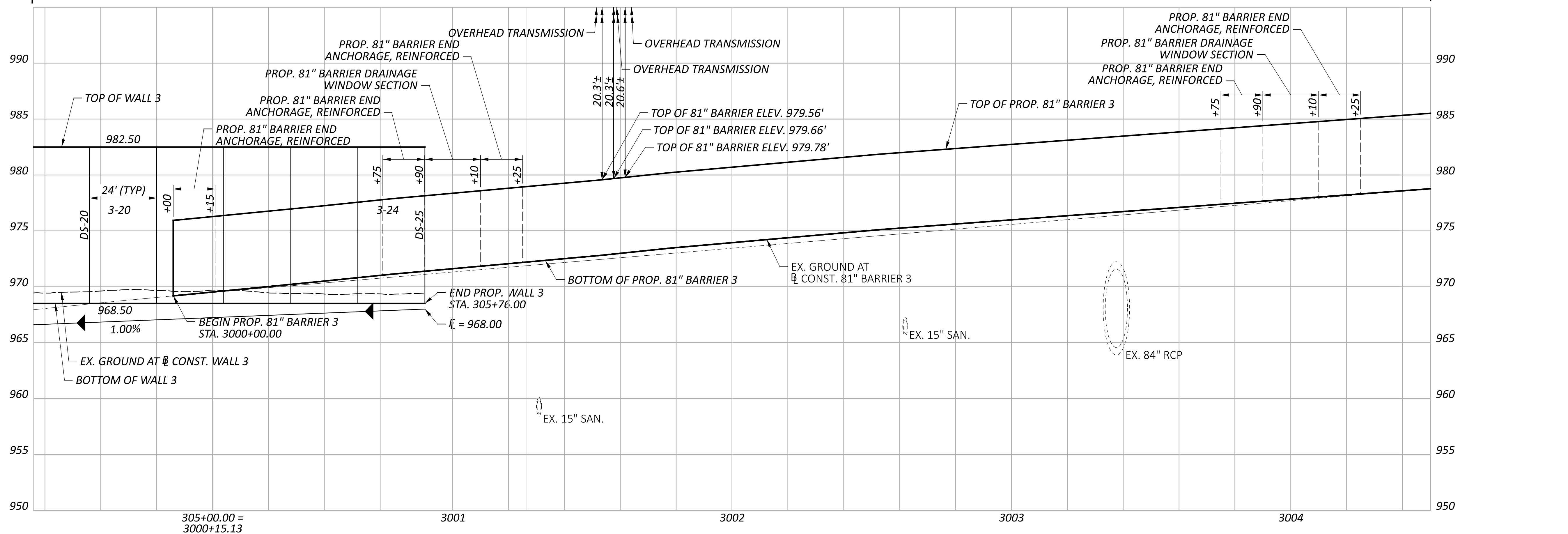
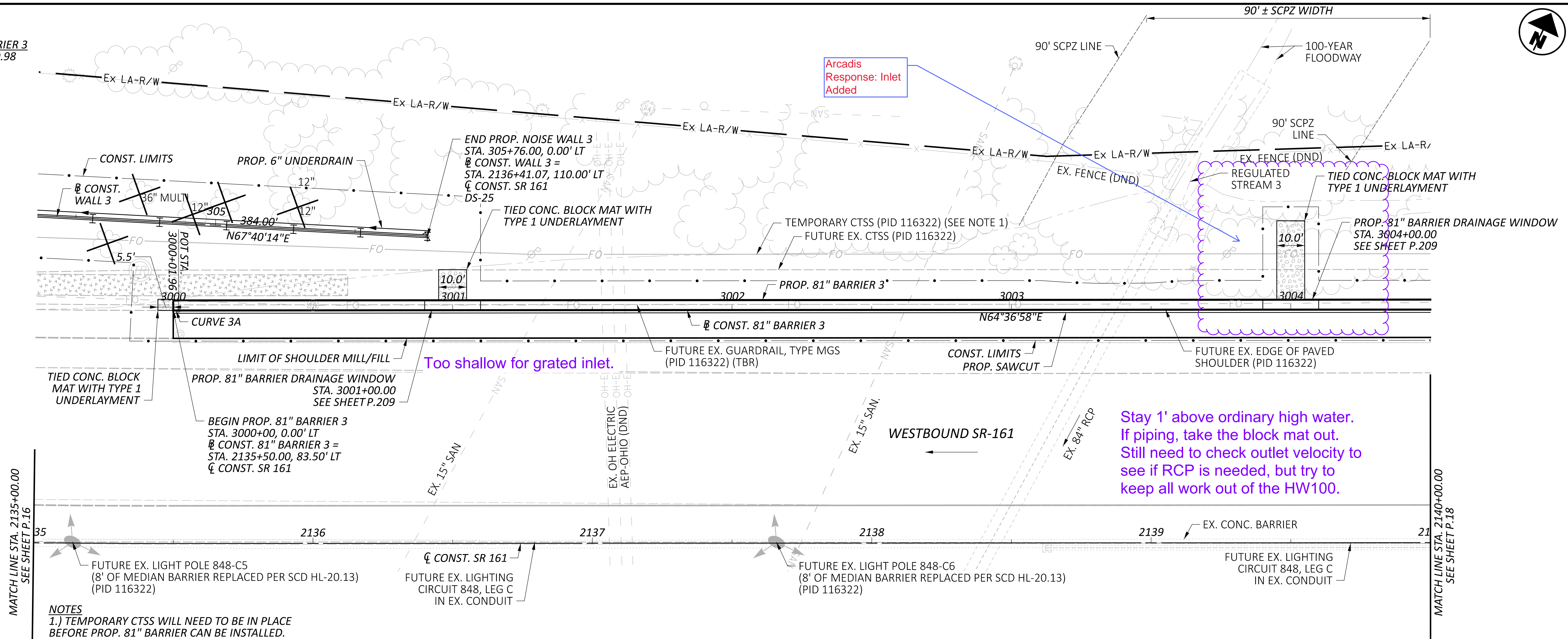
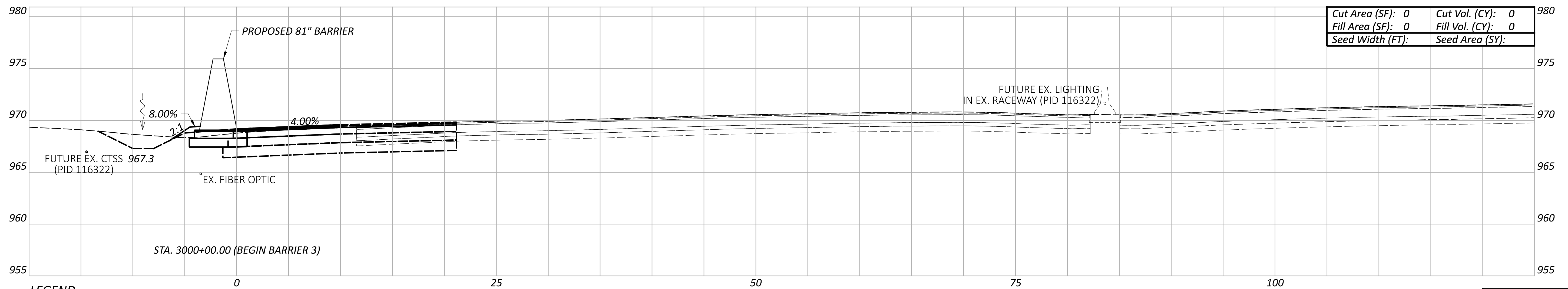
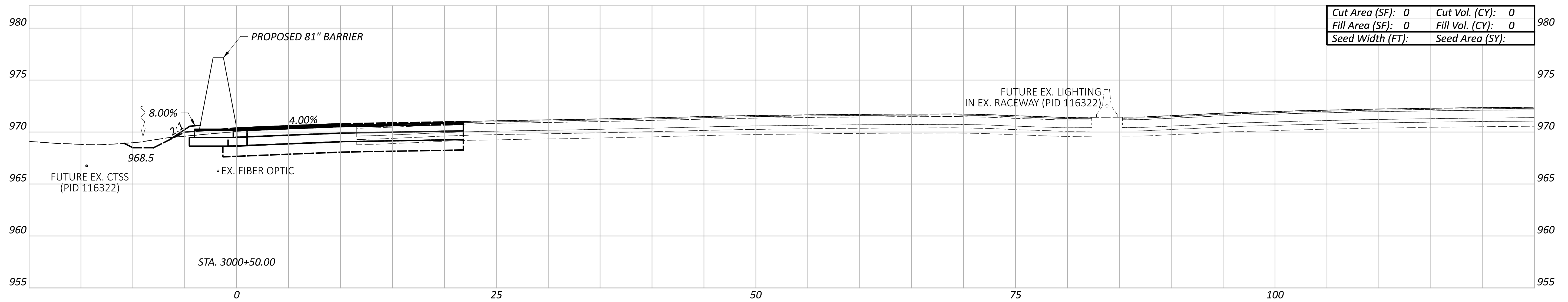
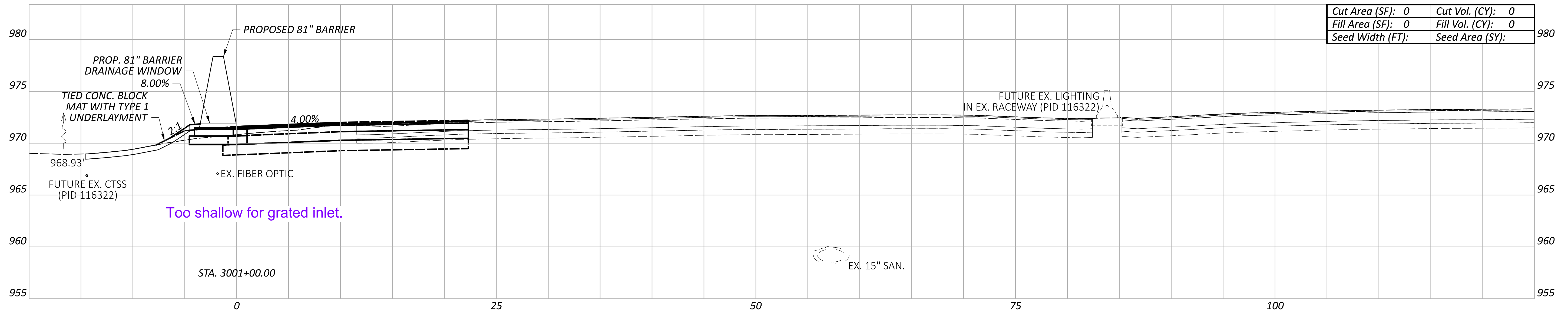


3A CURVE DATA
 Ø CONST. 81" BARRIER 3
 P.I. = STA. 3000+00.98
 $\Delta = 00^{\circ}01'46''$ LT
 $D_c = 01^{\circ}29'57''$
 $R = 3,822.15'$
 $T = 0.98'$
 $L = 1.96'$
 $E = 0.00'$



PLAN & PROFILE - WALL 3 / 81" BARRIER 3
 STA. 2135+00.00 TO STA. 2140+00.00

DESIGN AGENCY	ARCADIS
DESIGNER	JMK
REVIEWER	JDH
PROJECT ID	117607
SHEET	P.17
TOTAL	P.276



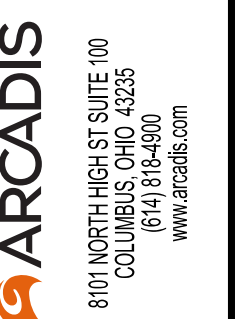
LEGEND

- - - EXISTING SR-161 PRIOR TO PID 116322
- - - FUTURE EXISTING SR-161 AFTER CONSTRUCTION OF PID 116322

Sheet Totals			117607	
Seeding	Cut	Fill	SHEET	TOTAL
			P.53	P.276

CROSS SECTIONS - 81" BARRIER 3
 STA. 3000+00.00 TO STA. 3001+00.00

DESIGN AGENCY



DESIGNER

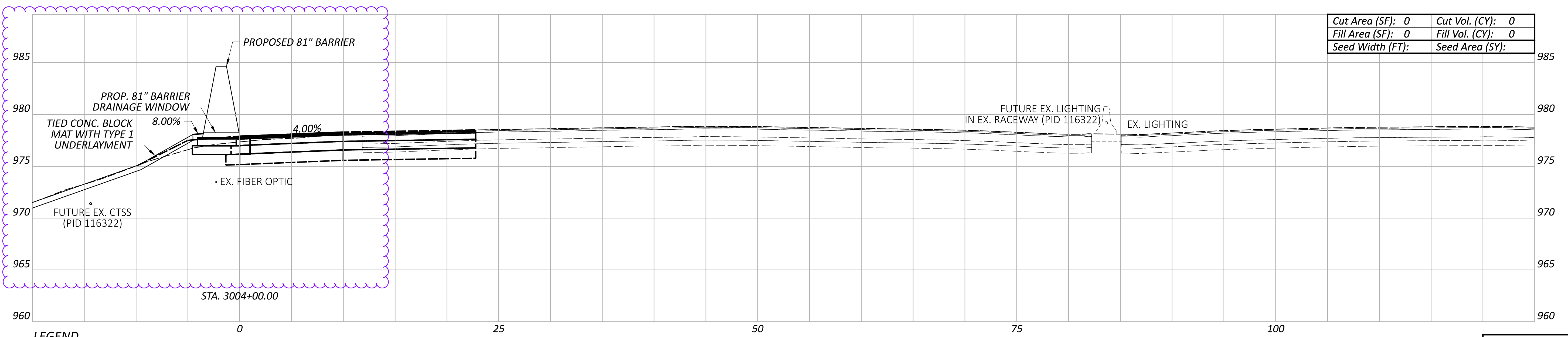
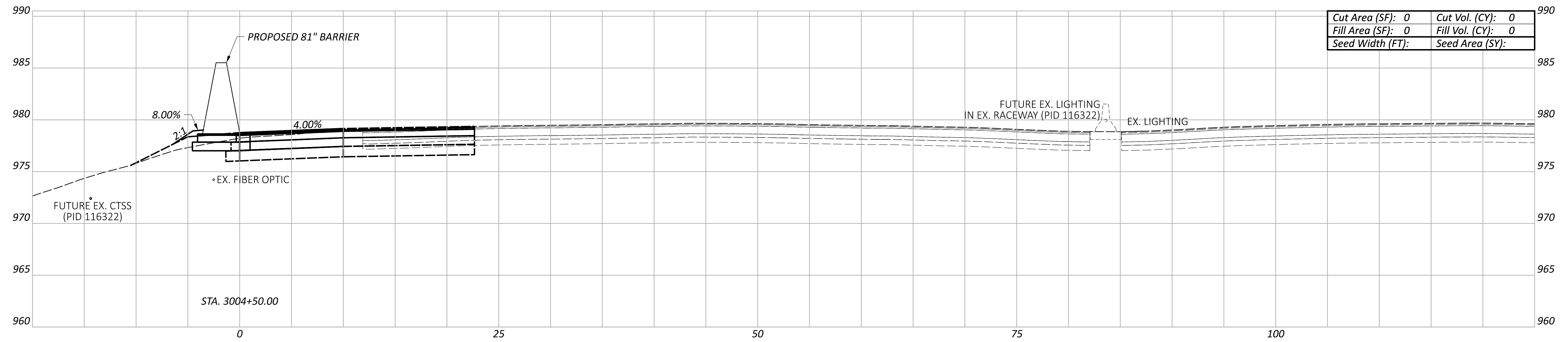
JMK

REVIEWER

JDH 01-22-24

PROJECT ID

117607

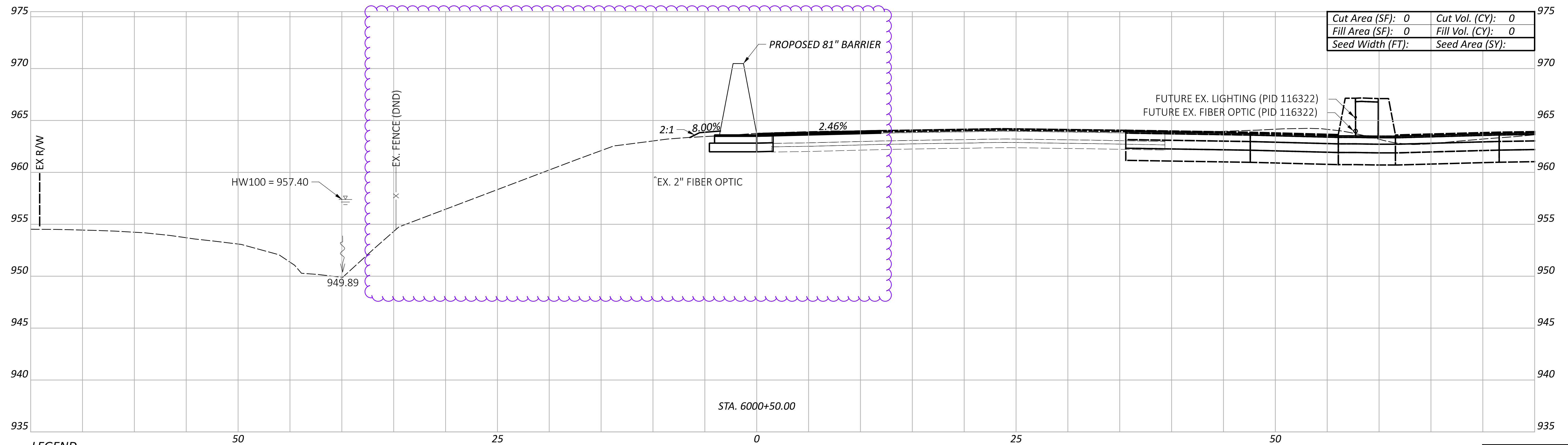
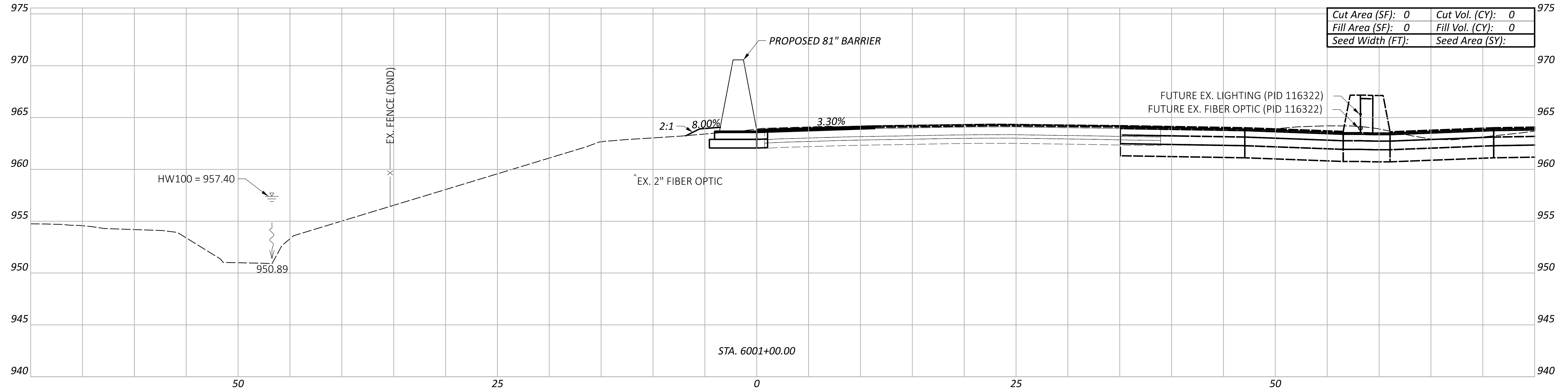


LEGEND

- - - EXISTING SR-161 PRIOR TO PID 116322
- - - FUTURE EXISTING SR-161 AFTER CONSTRUCTION OF PID 116322

Sheet Totals			117607	
Seeding	Cut	Fill	SHEET	TOTAL
			P.56	P.276

CROSS SECTIONS - 81" BARRIER 3
 STA. 3004+00.00 TO STA. 3004+50.00



LEGEND

- - - EXISTING SR-161 PRIOR TO PID 116322
- - - FUTURE EXISTING SR-161 AFTER CONSTRUCTION OF PID 116322

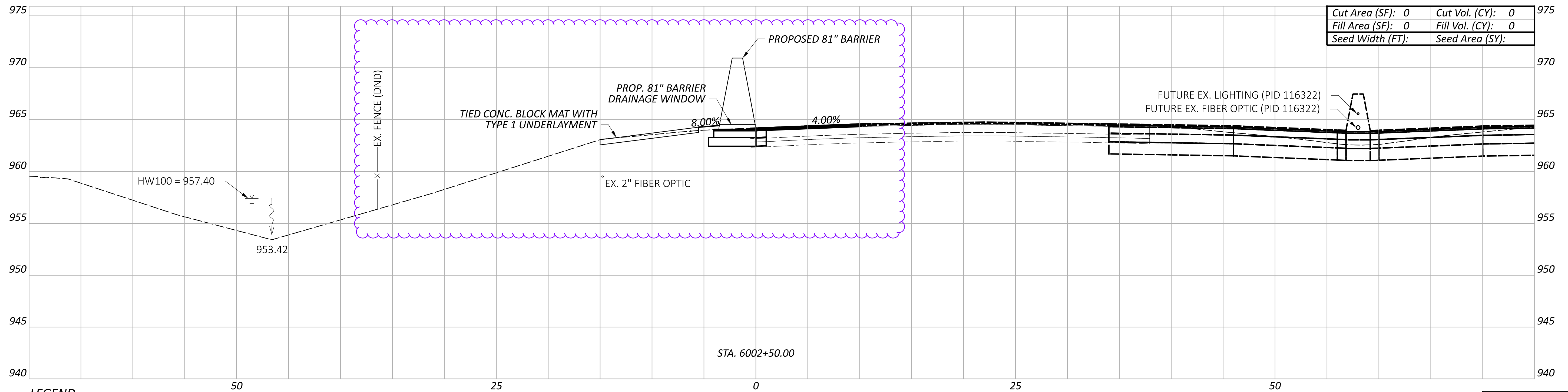
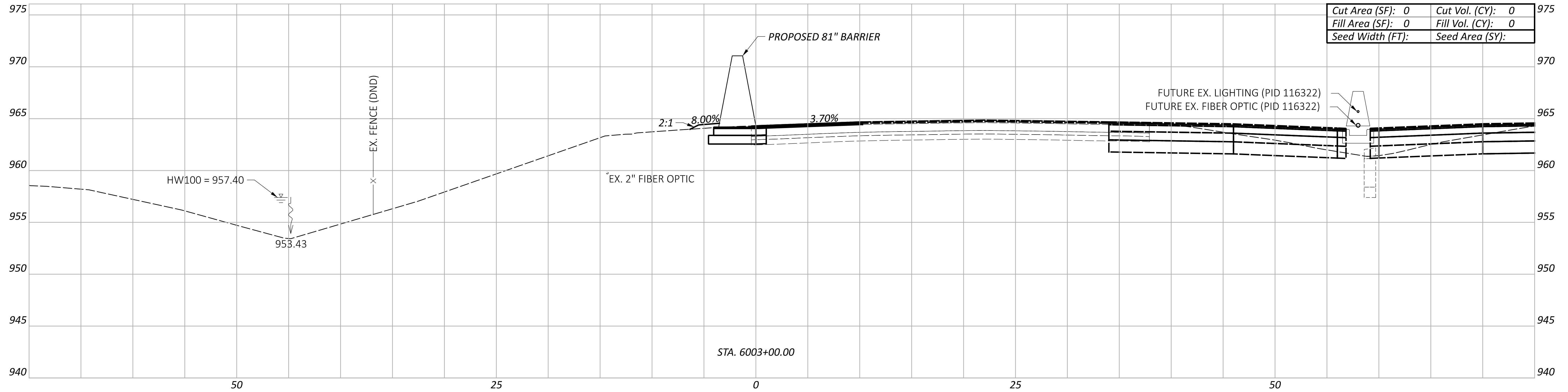
Sheet Totals			117607	
Seeding	Cut	Fill	SHEET	TOTAL
			P.60	P.276

CROSS SECTIONS - 81" BARRIER 6
 STA. 6000+50.00 TO STA. 6001+00.00

DESIGN AGENCY
ARCADIS
 8101 NORTH HIGHWAY 130 SUITE 100
 COLUMBIA, MO 65203
 PH: (646) 914-4900
 www.arcadis.com

DESIGNER
JMK
 REVIEWER
JDH 01-22-24

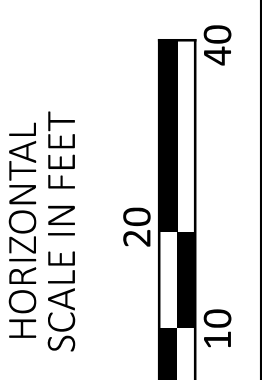
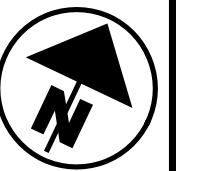
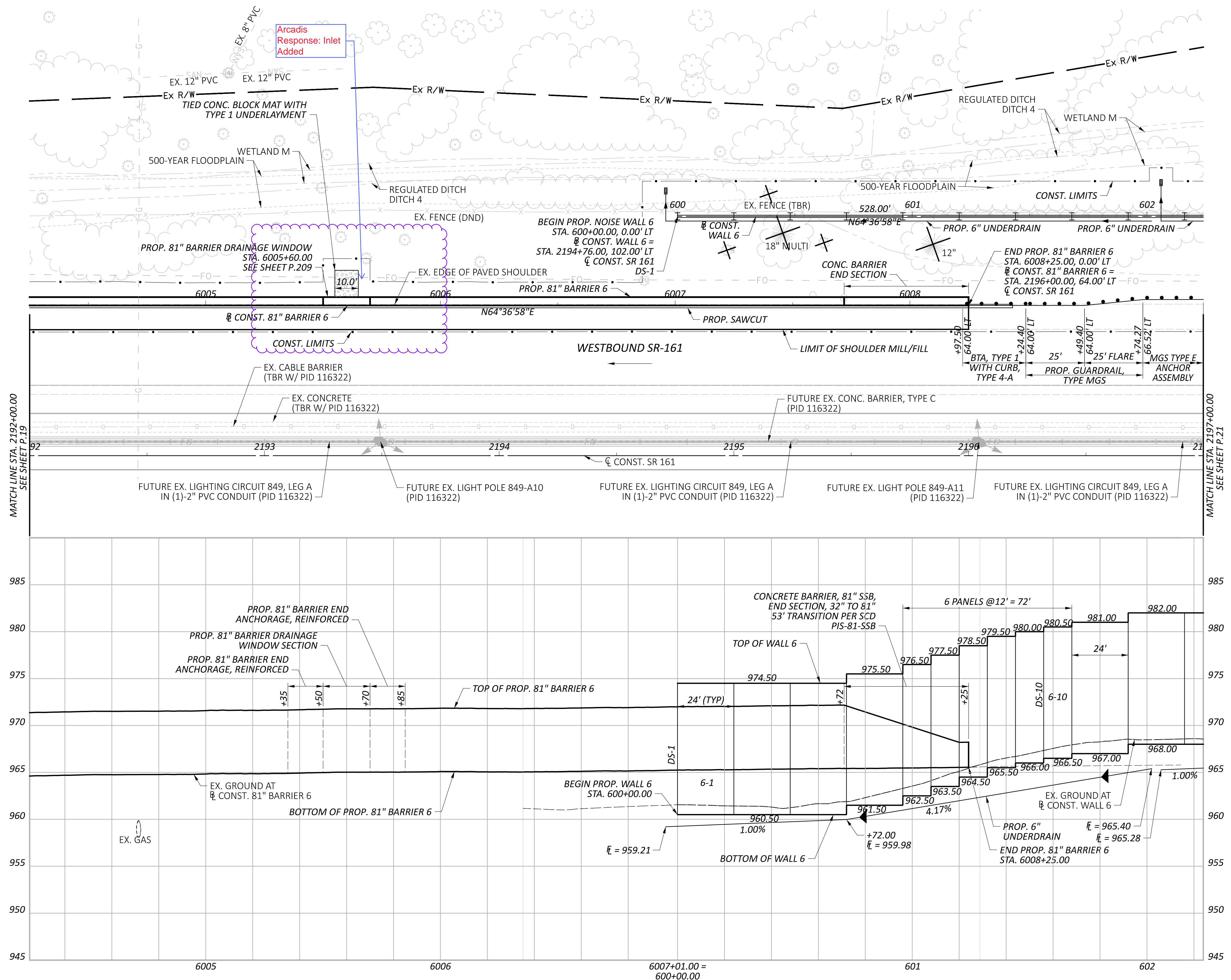
PROJECT ID
117607



LEGEND

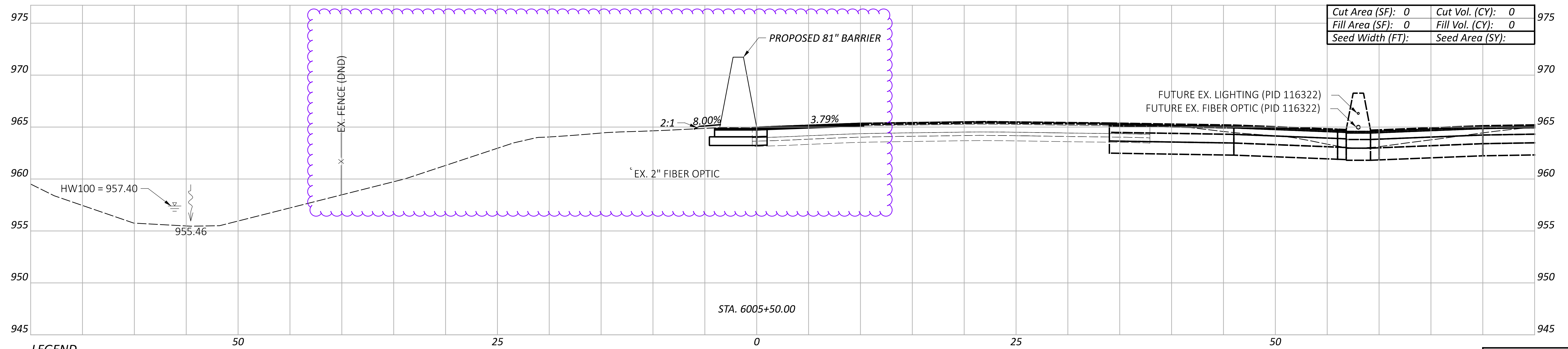
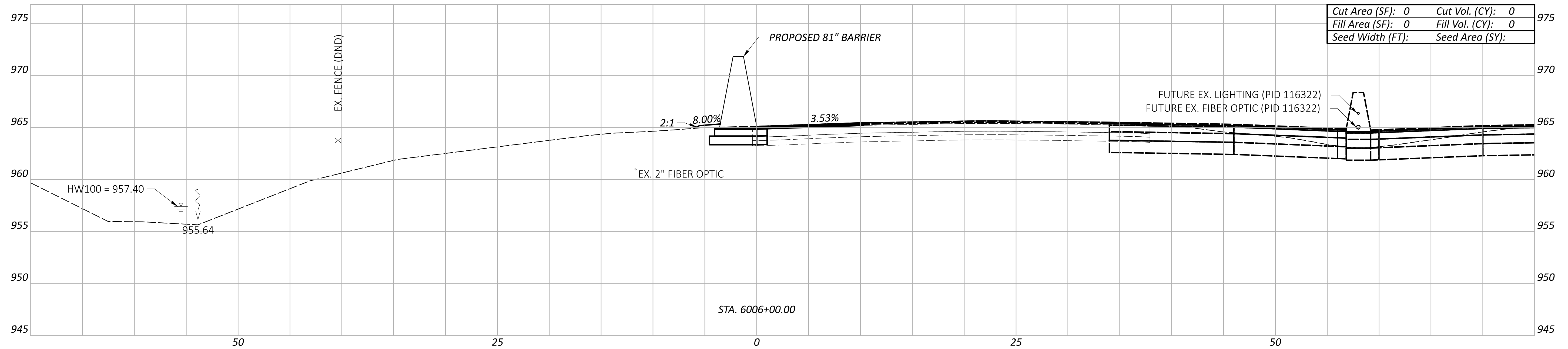
- - - EXISTING SR-161 PRIOR TO PID 116322
- - - FUTURE EXISTING SR-161 AFTER CONSTRUCTION OF PID 116322

Sheet Totals			117607	
Seeding	Cut	Fill	SHEET	TOTAL
			P.62	P.276



PLAN & PROFILE - 81" BARRIER 6 / WALL 6
 STA. 2192+00.00 TO STA. 2197+00.00

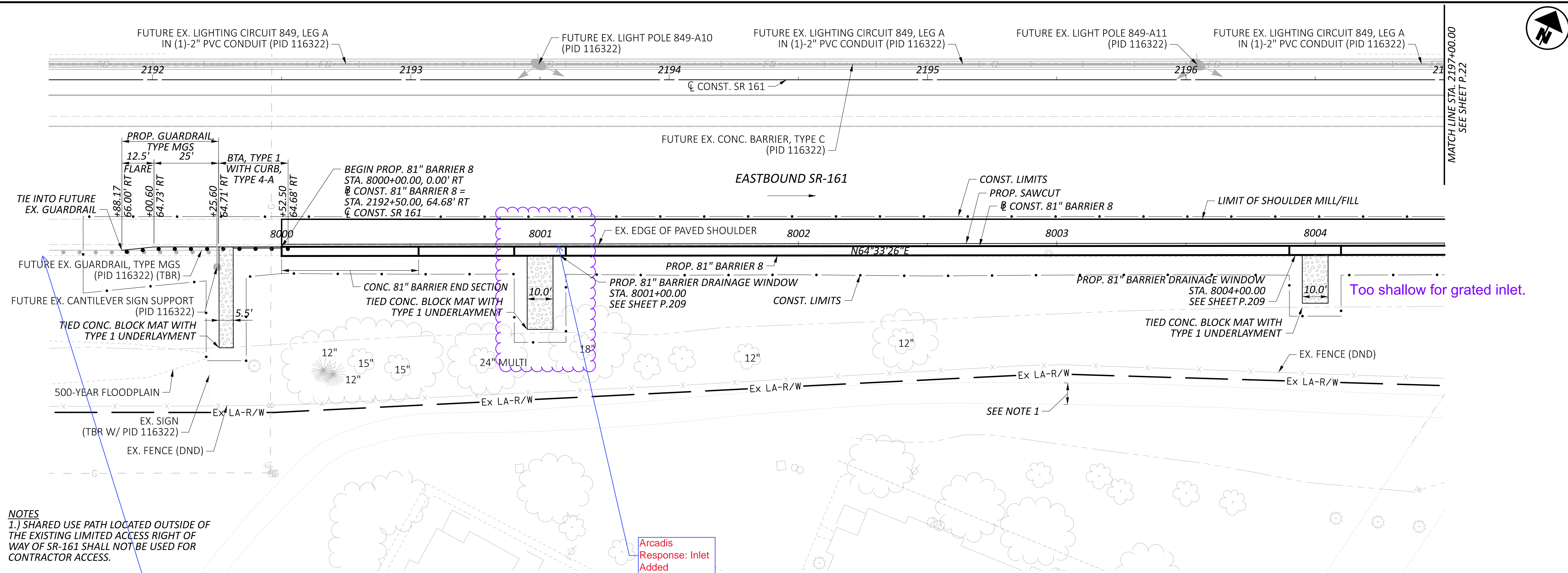
DESIGN AGENCY	
ARCADIS	8101 NORTH HIGGINS AVE SUITE 100 COLUMBIA, MD 21046-4900 www.arcadis.com
DESIGNER	
JMK	
REVIEWER	
JDH 01-22-24	
PROJECT ID	
117607	
SHEET	TOTAL
P.20	P.276



LEGEND

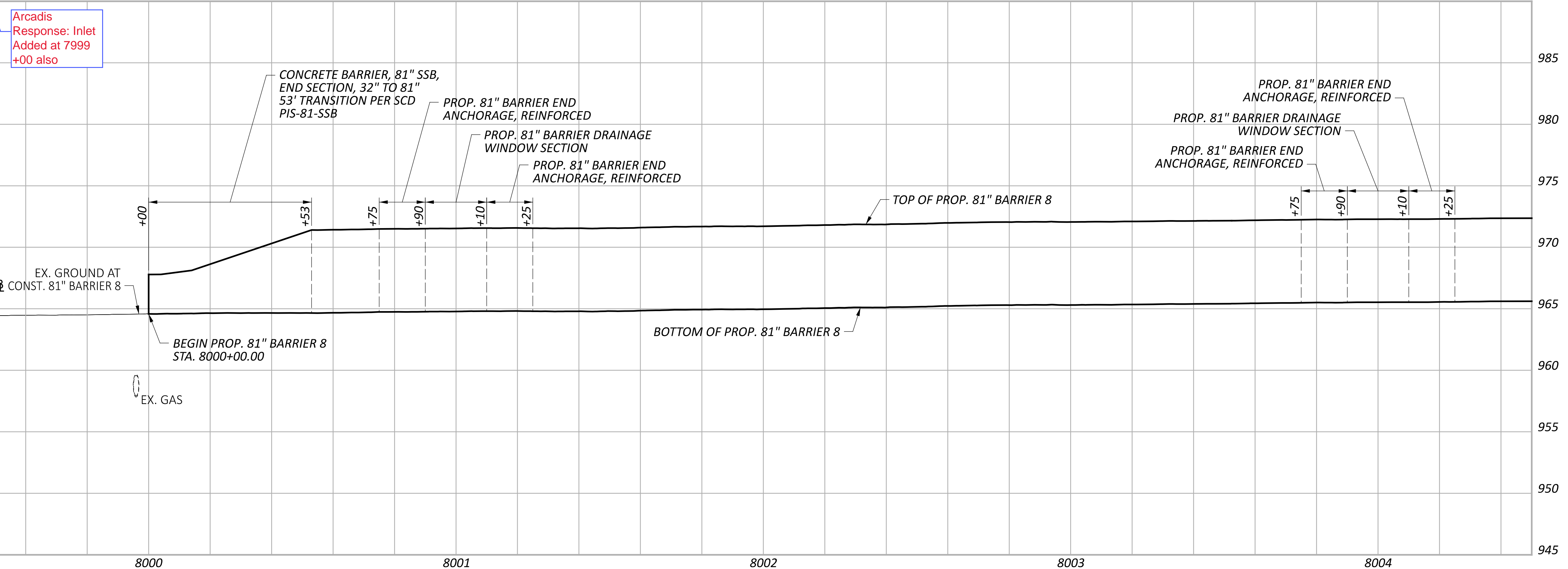
- - - EXISTING SR-161 PRIOR TO PID 116322
- - - FUTURE EXISTING SR-161 AFTER CONSTRUCTION OF PID 116322

Sheet Totals			117607	
Seeding	Cut	Fill	SHEET	TOTAL
			P.65	P.276

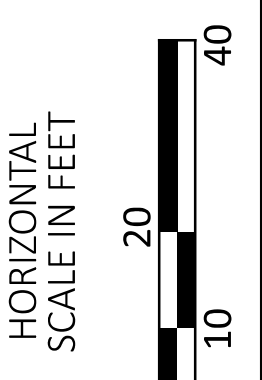
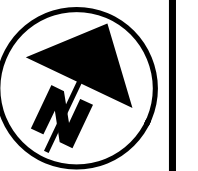


NOTES
 1.) SHARED USE PATH LOCATED OUTSIDE OF THE EXISTING LIMITED ACCESS RIGHT OF WAY OF SR-161 SHALL NOT BE USED FOR CONTRACTOR ACCESS.

Arcadis
 Response: Inlet
 Added



Arcadis
 Response: Inlet
 Added at 7999
 +00 also

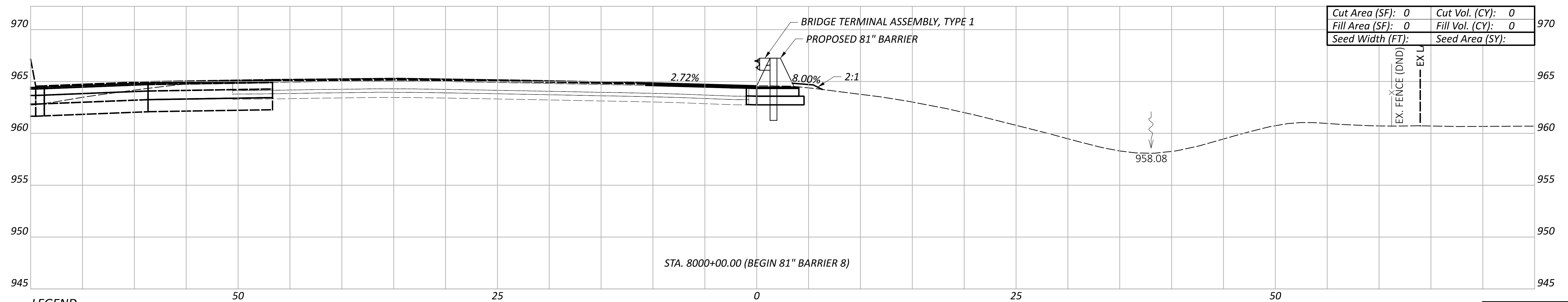
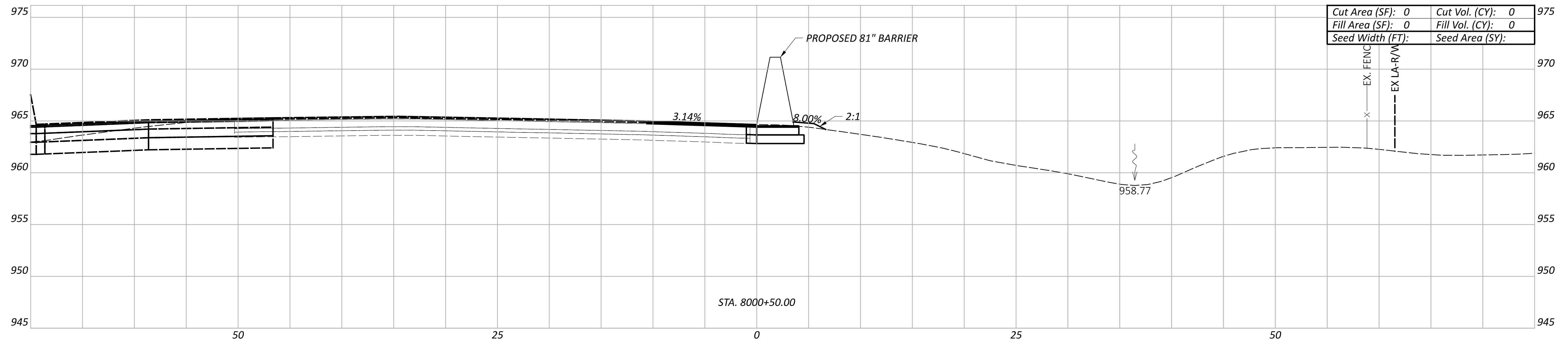
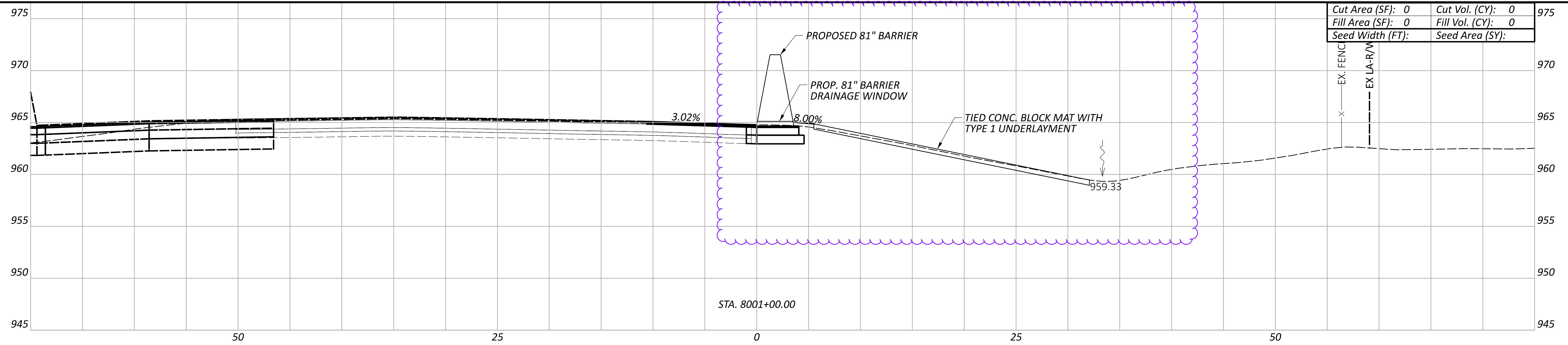


**PLAN & PROFILE - 81" BARRIER 8
 STA. 2192+00.00 TO STA. 2197+00.00**

DESIGN AGENCY	
ARCADIS <small>8101 NORTH HIGGINS AVE SUITE 100 COLUMBIA, MO 65203 (646) 441-4900 www.arcadis.com</small>	
DESIGNER	
JMK	
REVIEWER	
JDH 01-22-24	
PROJECT ID	
117607	
SHEET	TOTAL
P.22	P.276

FRA-161-15.80 NOISE WALLS

MODEL: BLP_BARRIER8 - 8000+00.00 [Sheet] PAPER SIZE: 34x22 (in.) DATE: 2024-01-18 TIME: 7:11:18 PM USER: jennifer.kelley
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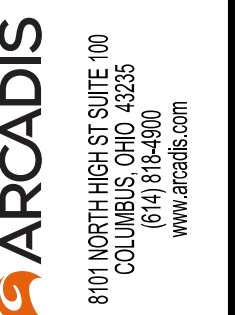
LEGEND

- EXISTING SR-161 PRIOR TO PID 116322
- FUTURE EXISTING SR-161 AFTER CONSTRUCTION OF PID 116322

Sheet Totals			117607	
Seeding	Cut	Fill	SHEET	TOTAL
			P.77	P.276

**CROSS SECTIONS - 81" BARRIER 8
 STA. 8000+00.00 TO STA. 8001+00.00**

DESIGN AGENCY



DESIGNER

JMK

REVIEWER

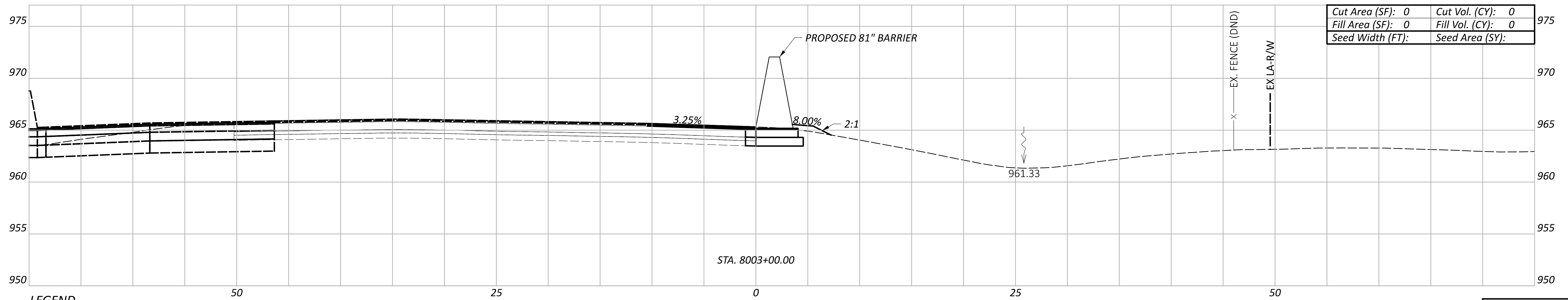
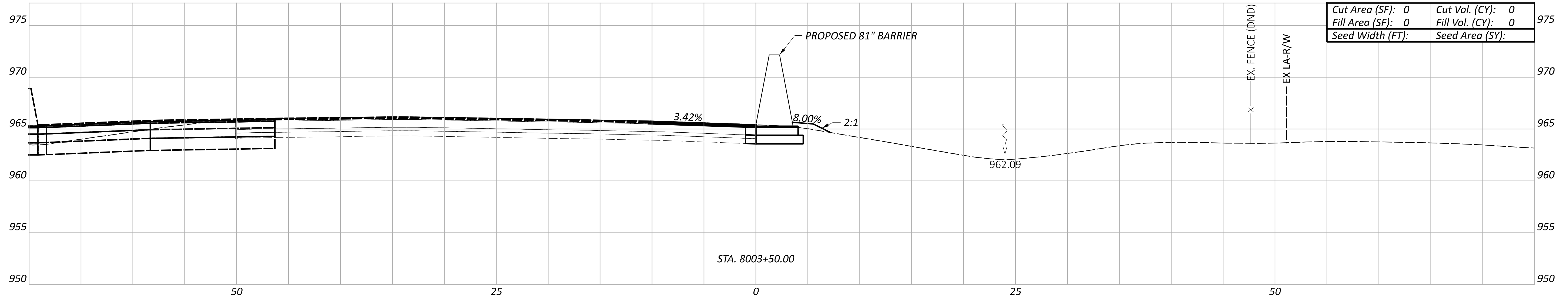
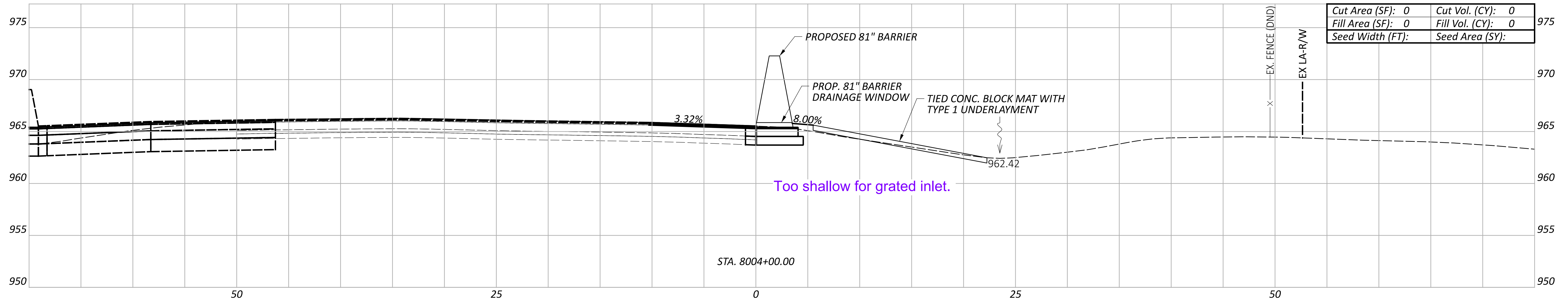
JDH 01-22-24

PROJECT ID

117607

FRA-161-15.80 NOISE WALLS

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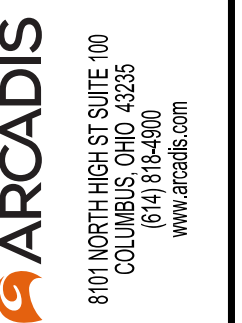
LEGEND

- - - EXISTING SR-161 PRIOR TO PID 116322
- - - FUTURE EXISTING SR-161 AFTER CONSTRUCTION OF PID 116322

Sheet Totals			117607	
Seeding	Cut	Fill	SHEET	TOTAL
			P.79	P.276

**CROSS SECTIONS - 81" BARRIER 8
 STA. 8003+00.00 TO STA. 8004+00.00**

DESIGN AGENCY



DESIGNER

JMK

REVIEWER

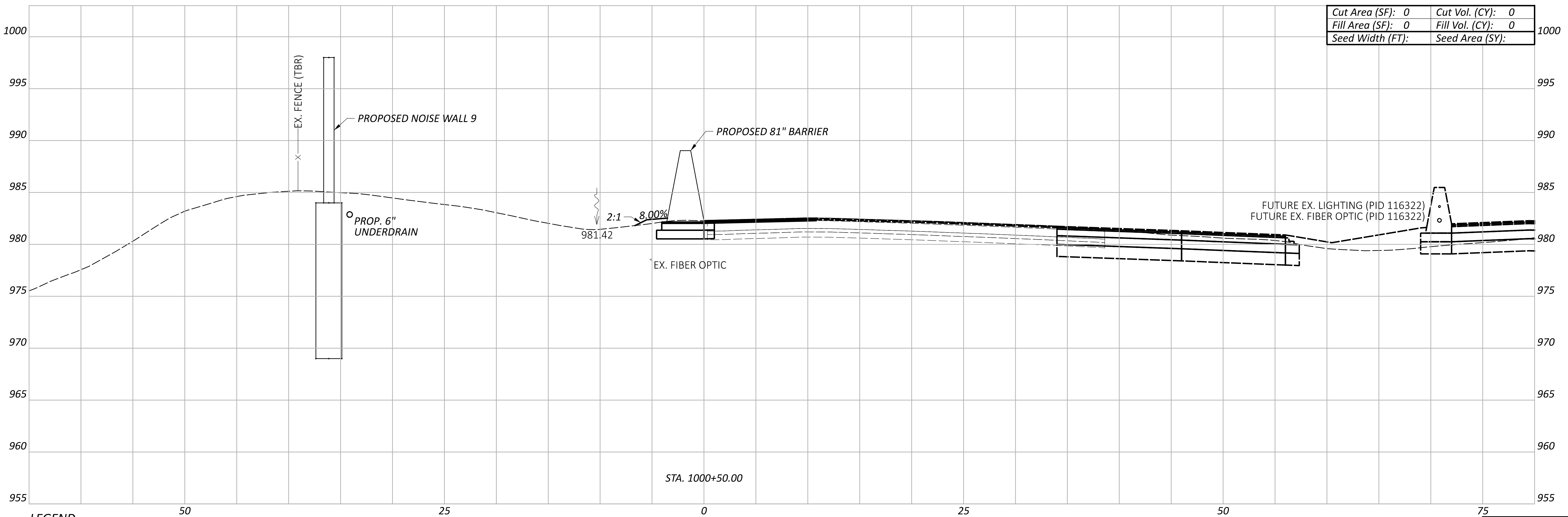
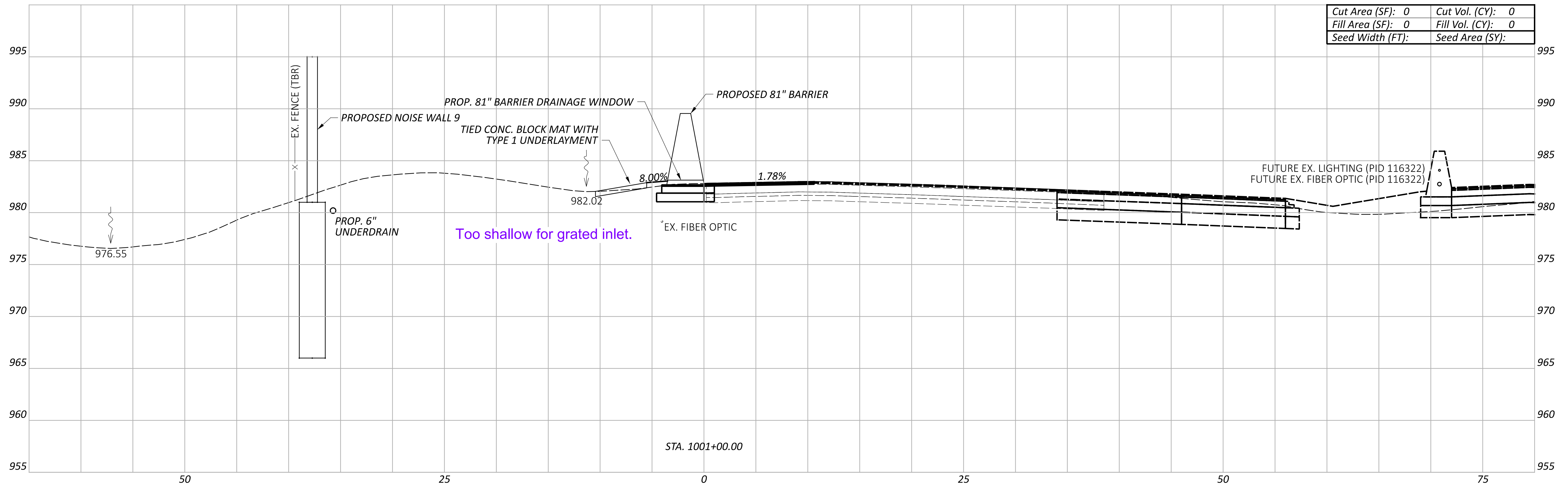
JDH 01-22-24

PROJECT ID

117607

FRA-161-15.80 NOISE WALLS

MODEL: BLP_BARRIER11 - 1000+50.00 [Sheet] PAPER SIZE: 34x22 (in.) DATE: 2024-01-18 TIME: 7:28:51 PM USER: jennifer.kelley
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LEGEND

- - - EXISTING SR-161 PRIOR TO PID 116322
- - - FUTURE EXISTING SR-161 AFTER CONSTRUCTION OF PID 116322

Sheet Totals			117607	
Seeding	Cut	Fill	SHEET	TOTAL
			P.122	P.276

**CROSS SECTIONS - 81" BARRIER 10
 STA. 1000+50.00 TO STA. 1001+00.00**

DESIGN AGENCY
ARCADIS
 8101 NORTH HIGGINS AVE SUITE 100
 COLUMBIANA, OH 43085
 (614) 891-4900
 www.arcadis.com

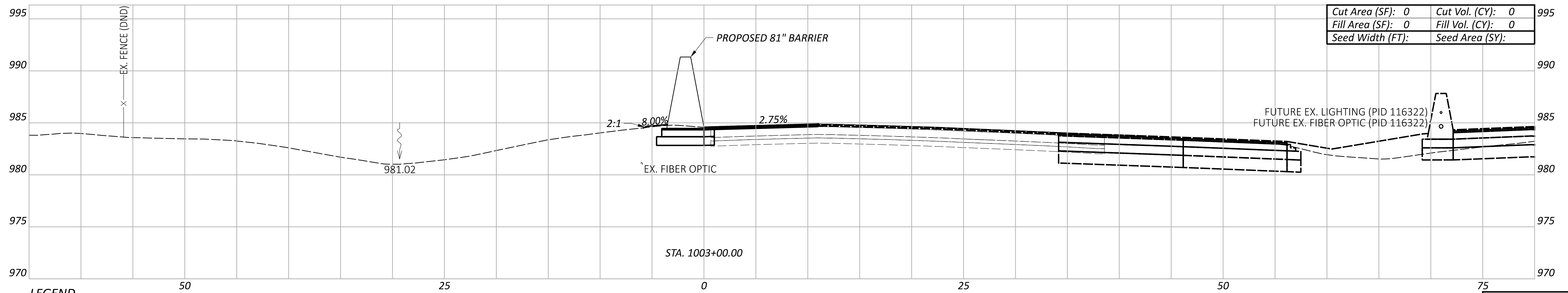
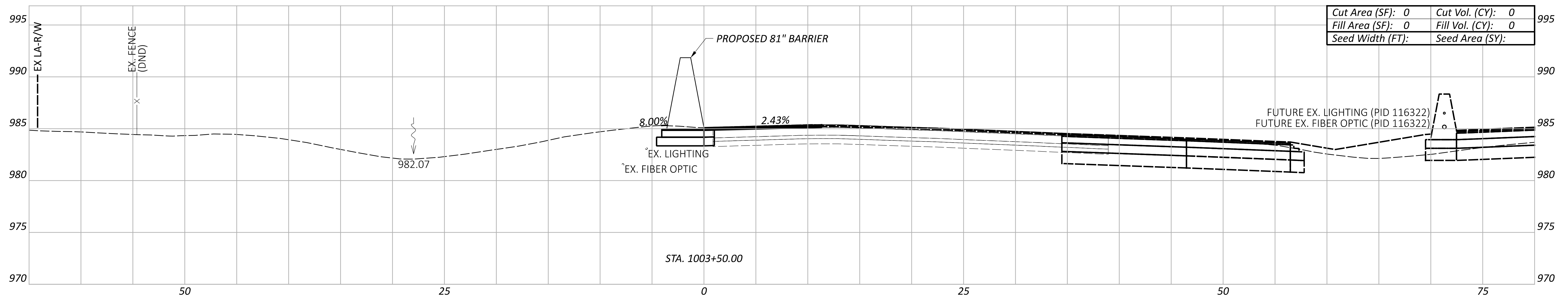
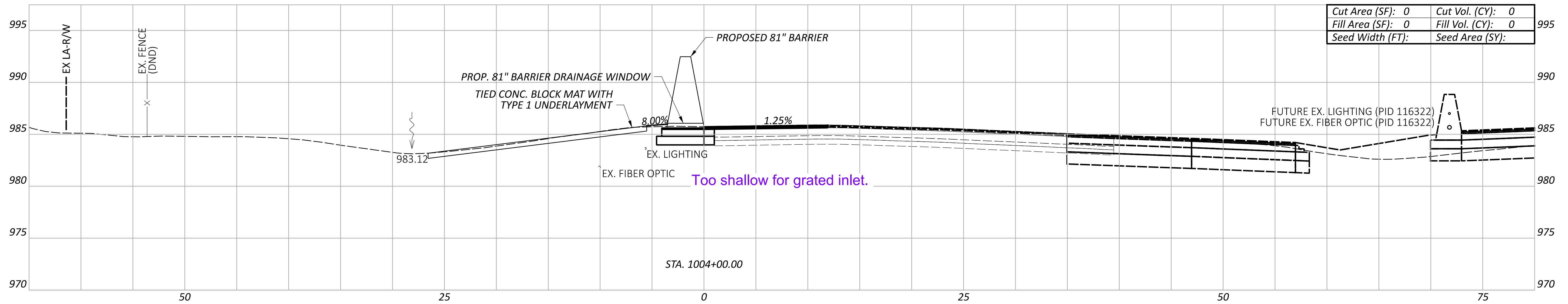
DESIGNER
JMK

REVIEWER
JDH 01-22-24

PROJECT ID
117607

FRA-161-15.80 NOISE WALLS

MODEL: BLP_BARRIER11 - 1003+00.00 [Sheet] PAPER SIZE: 34x22 (in.) DATE: 2024-01-18 TIME: 7:29:49 PM USER: jennifer.kelley
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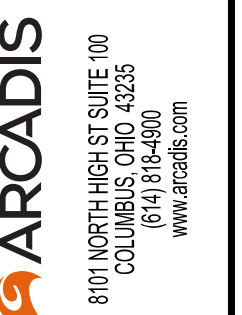
LEGEND

- - - EXISTING SR-161 PRIOR TO PID 116322
- - - FUTURE EXISTING SR-161 AFTER CONSTRUCTION OF PID 116322

Sheet Totals			117607	
Seeding	Cut	Fill	SHEET	TOTAL
			P.124	P.276

**CROSS SECTIONS - 81" BARRIER 10
 STA. 1003+00.00 TO STA. 1004+00.00**

DESIGN AGENCY



DESIGNER

JMK

REVIEWER

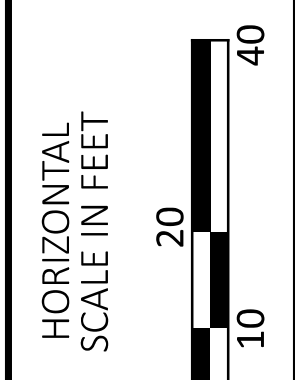
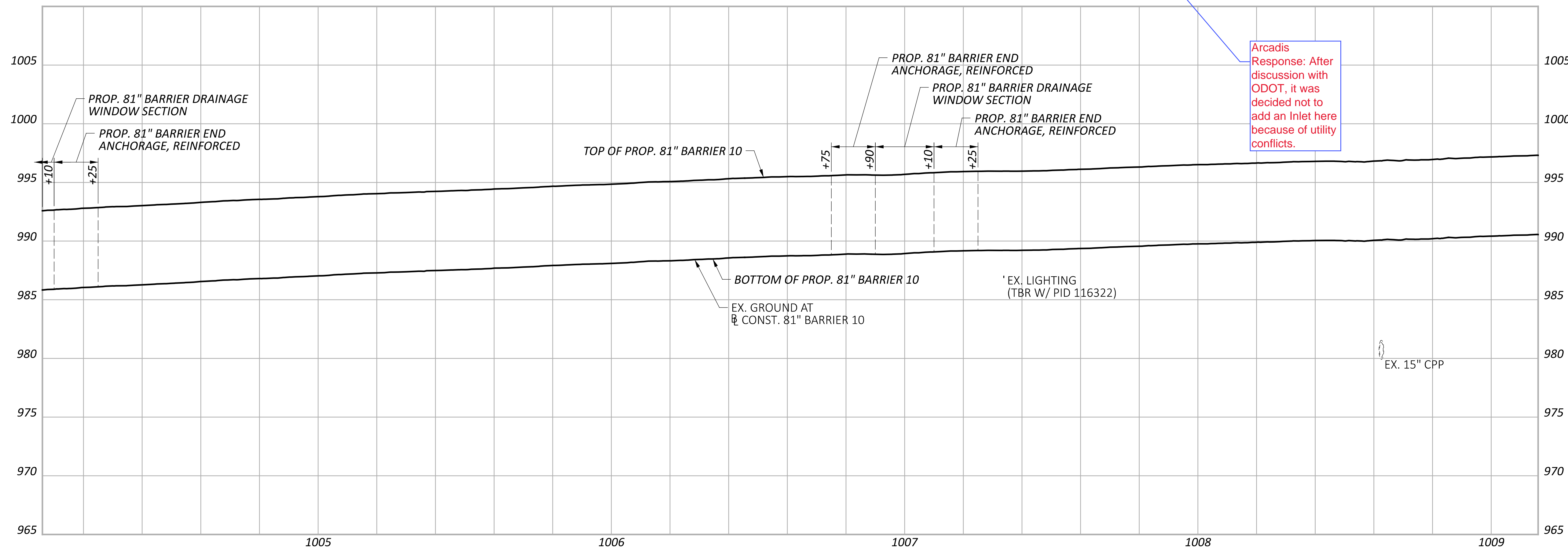
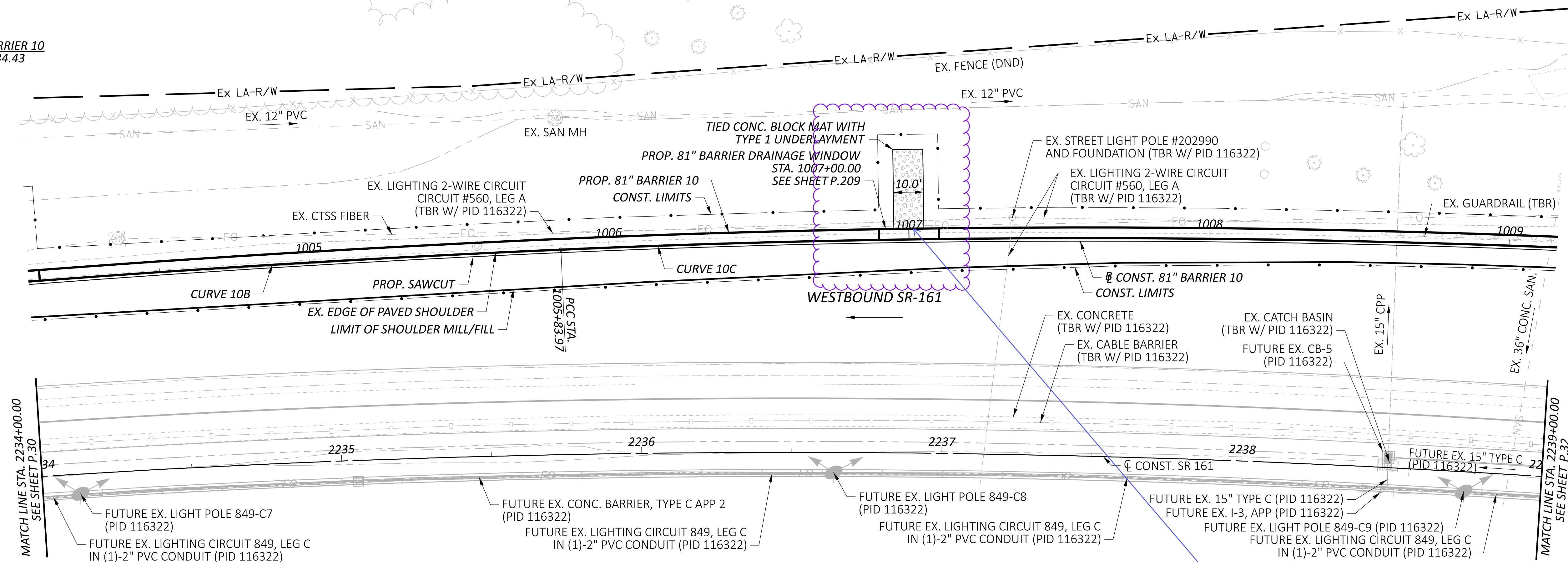
JDH 01-22-24

PROJECT ID

117607

10B CURVE DATA
 Ø CONST. 81" BARRIER 10
 P.I. = STA. 1004+09.87
 $\Delta = 03^{\circ}37'43"$ RT
 $D_c = 01^{\circ}02'30"$
 $R = 5,500.00'$
 $T = 174.22'$
 $L = 348.32'$
 $E = 2.76'$

10C CURVE DATA
 Ø CONST. 81" BARRIER 10
 P.I. = STA. 1008+34.43
 $\Delta = 07^{\circ}09'57"$ RT
 $D_c = 01^{\circ}25'57"$
 $R = 4,000.00'$
 $T = 250.46'$
 $L = 500.27'$
 $E = 7.83'$

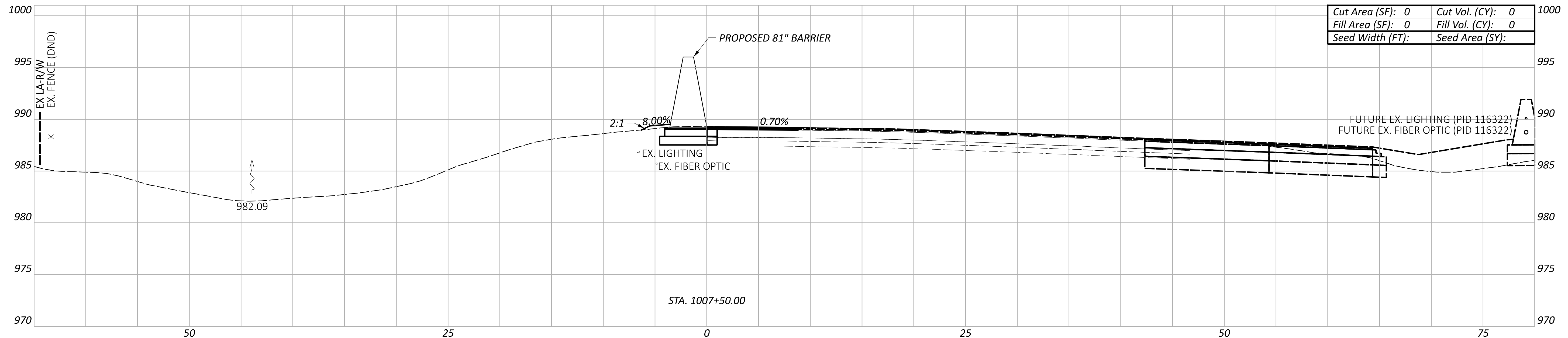


PLAN & PROFILE - 81" BARRIER 10
 STA. 2234+00.00 TO STA. 2239+00.00

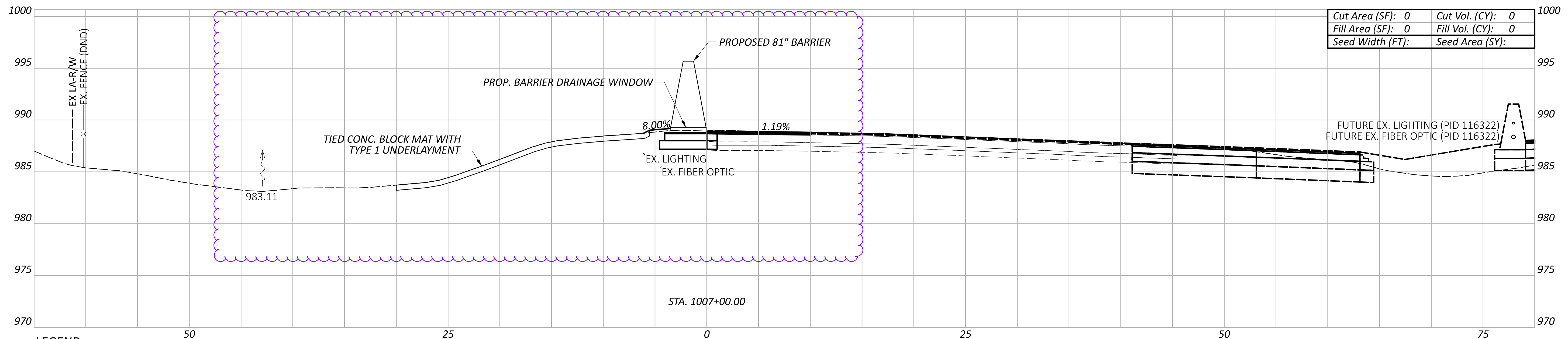
DESIGN AGENCY	
ARCADIS	8101 NORTH HIGHTS DRIVE SUITE 100 COLUMBIA, MO 65203 616.449.4900 www.arcadis.com
DESIGNER	
JMK	
REVIEWER	
JDH 01-22-24	
PROJECT ID	
117607	
SHEET	TOTAL
P.31	P.276

FRA-161-15.80 NOISE WALLS

MODEL: BLP_BARRIER11 - 1007+00.00 [Sheet] PAPER SIZE: 34x22 (in.) DATE: 2024-01-18 TIME: 7:31:10 PM USER: jennifer.kelley
 pw:\arcadis-us-pw.bentley.com\arcadis-us-01\Documents\01 Active Projects\143720\400_CAD\400-Engineering\Roadway\Sheets\117607_XS010.dgn



Cut Area (SF):	0	Cut Vol. (CY):	0
Fill Area (SF):	0	Fill Vol. (CY):	0
Seed Width (FT):		Seed Area (SY):	



Cut Area (SF):	0	Cut Vol. (CY):	0
Fill Area (SF):	0	Fill Vol. (CY):	0
Seed Width (FT):		Seed Area (SY):	

LEGEND

- - - EXISTING SR-161 PRIOR TO PID 116322
- - - FUTURE EXISTING SR-161 AFTER CONSTRUCTION OF PID 116322

Sheet Totals			117607	
Seeding	Cut	Fill	SHEET	TOTAL
			P.127	P.276

**CROSS SECTIONS - 81" BARRIER 10
 STA. 1007+00.00 TO STA. 1007+50.00**

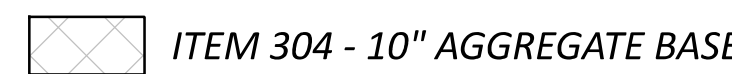

DESIGN AGENCY
ARCADIS
 8101 NORTH HIGGINS SUITE 100
 COLUMBIANA, OH 43085
 (614) 810-4900
 www.arcadis.com

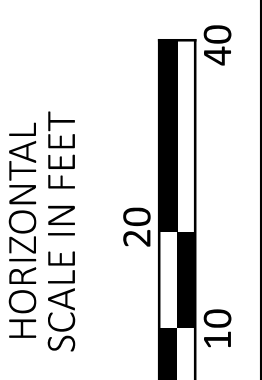
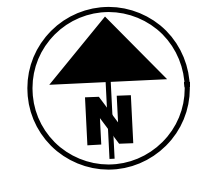
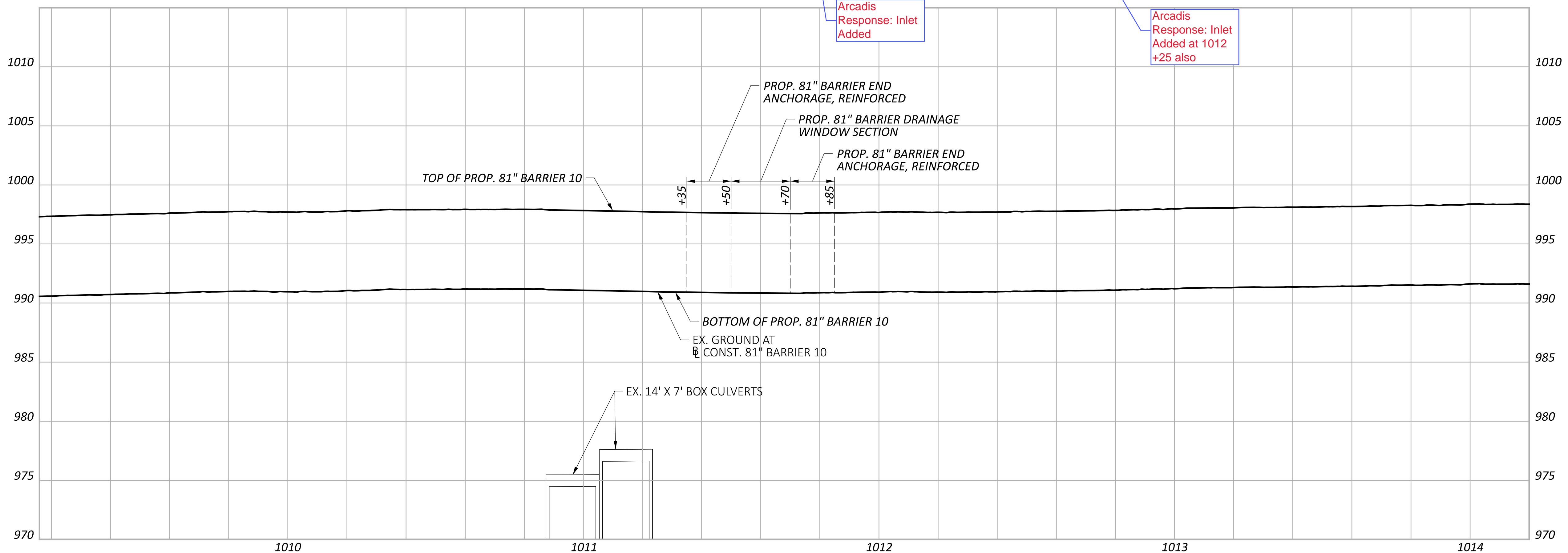
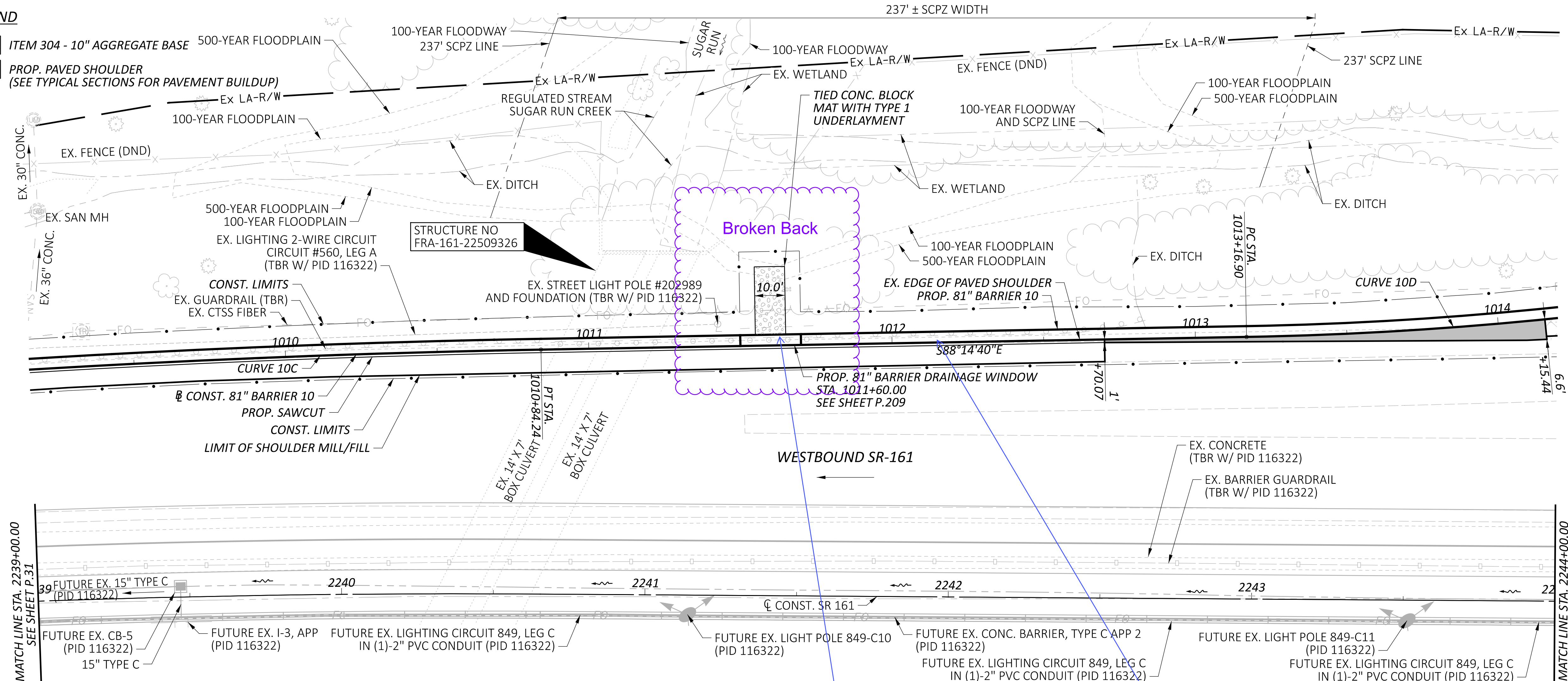
DESIGNER
JMK

REVIEWER
 JDH 01-22-24

PROJECT ID
117607

LEGEND

-  ITEM 304 - 10" AGGREGATE BASE
-  PROP. PAVED SHOULDER (SEE TYPICAL SECTIONS FOR PAVEMENT BUILDUP)

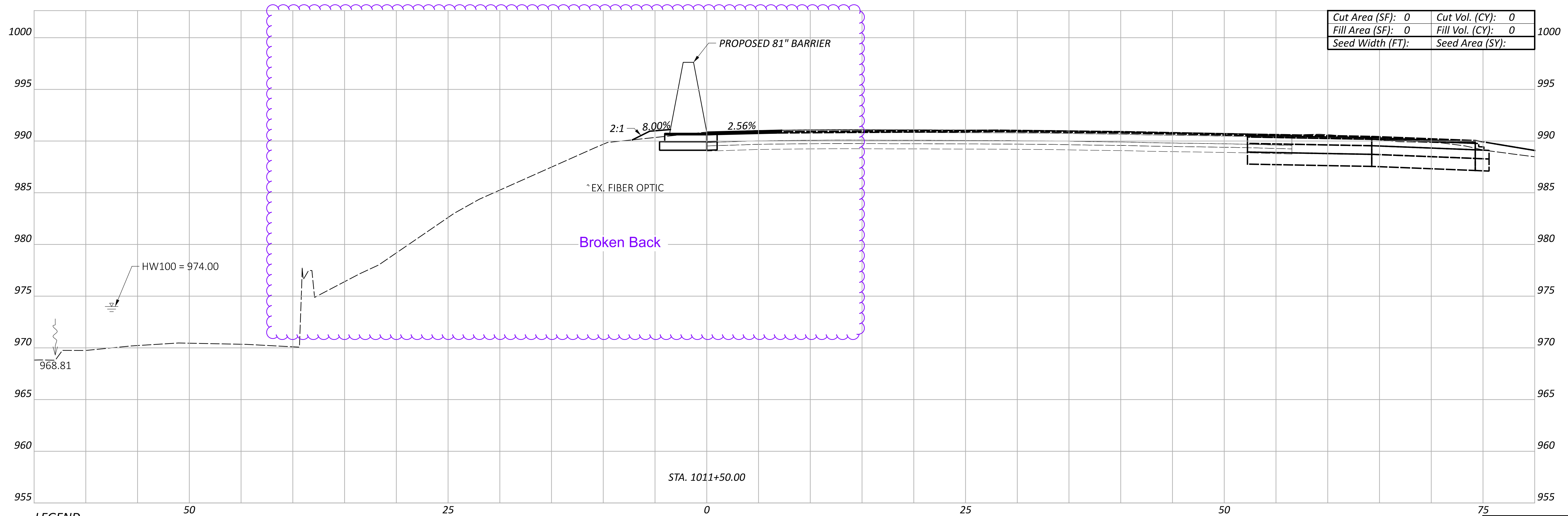
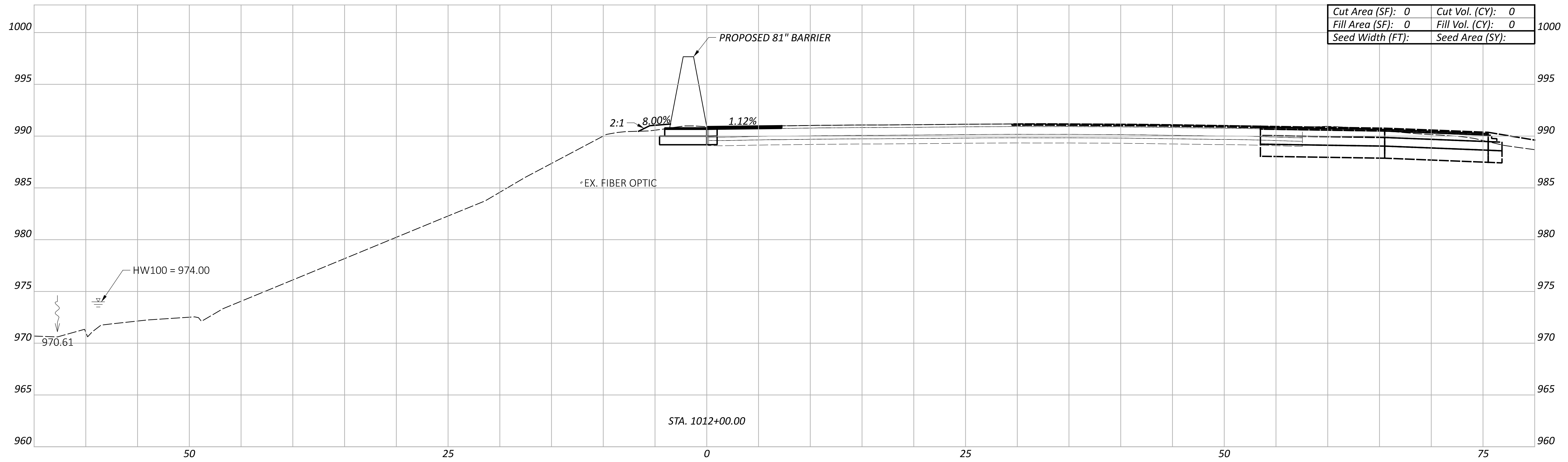


**PLAN & PROFILE - 81" BARRIER 10
 STA. 2239+00.00 TO STA. 2244+00.00**

DESIGN AGENCY	
	8101 NORTH HIGHWAY 200 SUITE 100 COLUMBIA, MO 65203 www.arcadis.com
DESIGNER	
JMK	
REVIEWER	
JDH 01-22-24	
PROJECT ID	
117607	
SHEET	TOTAL
P.32	P.276

FRA-161-15.80 NOISE WALLS

MODEL: BLP_BARRIER11 - 1011+50.00 [Sheet] PAPER SIZE: 34x22 (in.) DATE: 2024-01-18 TIME: 7:32:22 PM USER: jennifer.kelley
 pw:\arcadis-us-pw.bentley.com\arcadis-us-01\Documents\01 Active Projects\143720\400_CAD\400-Engineering\Roadway\Sheets\117607_XS010.dgn



LEGEND

- - - EXISTING SR-161 PRIOR TO PID 116322
- - - FUTURE EXISTING SR-161 AFTER CONSTRUCTION OF PID 116322

Sheet Totals			117607	
Seeding	Cut	Fill	SHEET	TOTAL
			P.132	P.276

DESIGN AGENCY
ARCADIS
 8101 NORTH HIGGINS SUITE 100
 COLUMBIANA, OH 43085
 (614) 819-4900
 www.arcadis.com

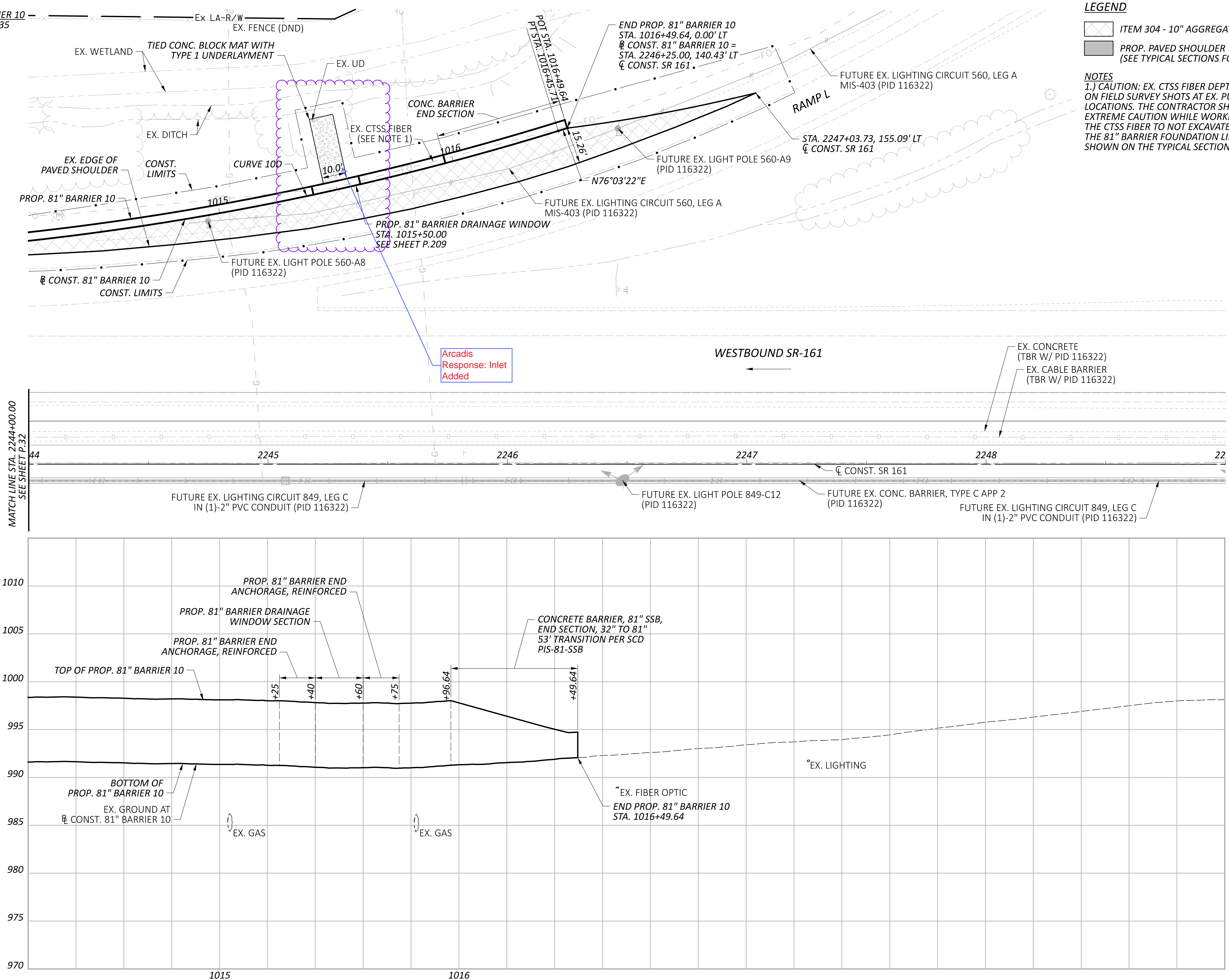
DESIGNER
JMK

REVIEWER
 JDH 01-22-24

PROJECT ID
 117607

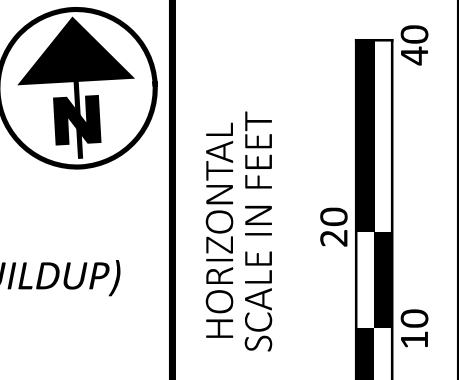
**CROSS SECTIONS - 81" BARRIER 10
 STA. 1011+50.00 TO STA. 1012+00.00**

10D CURVE DATA
 CONST. 81" BARRIER 10
 P.I. = STA. 1014+82.35
 $\Delta = 15^{\circ}41'58''$ LT
 $D_c = 04^{\circ}46'29''$
 $R = 1,200.00'$
 $T = 165.44'$
 $L = 328.81'$
 $E = 11.35'$



LEGEND

NOTES
 1.) CAUTION: EX. CTSS FIBER DEPTH BASED ON FIELD SURVEY SHOTS AT EX. PULL BOX LOCATIONS. THE CONTRACTOR SHALL USE EXTREME CAUTION WHILE WORKING NEAR THE CTSS FIBER TO NOT EXCAVATE BELOW THE 81" BARRIER FOUNDATION LIMITS SHOWN ON THE TYPICAL SECTIONS.

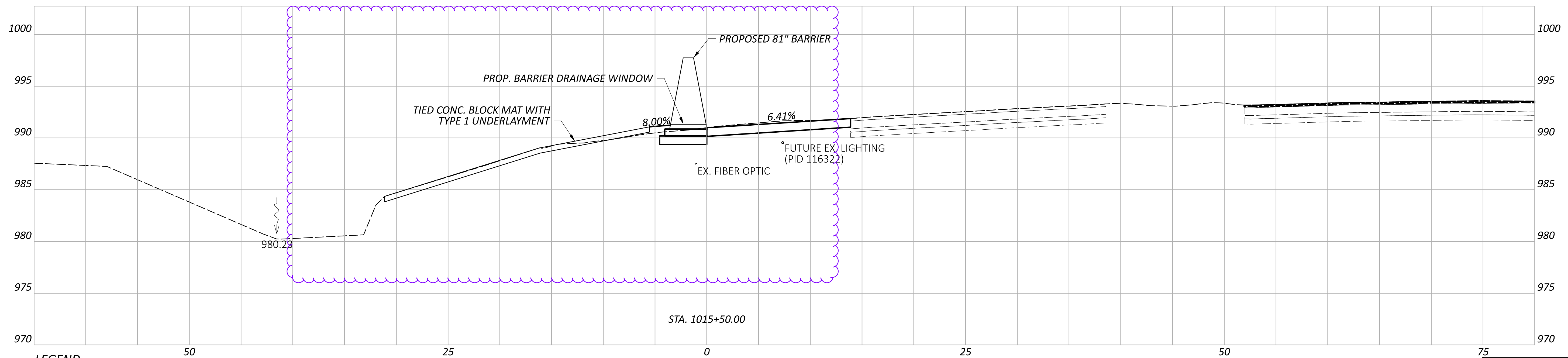
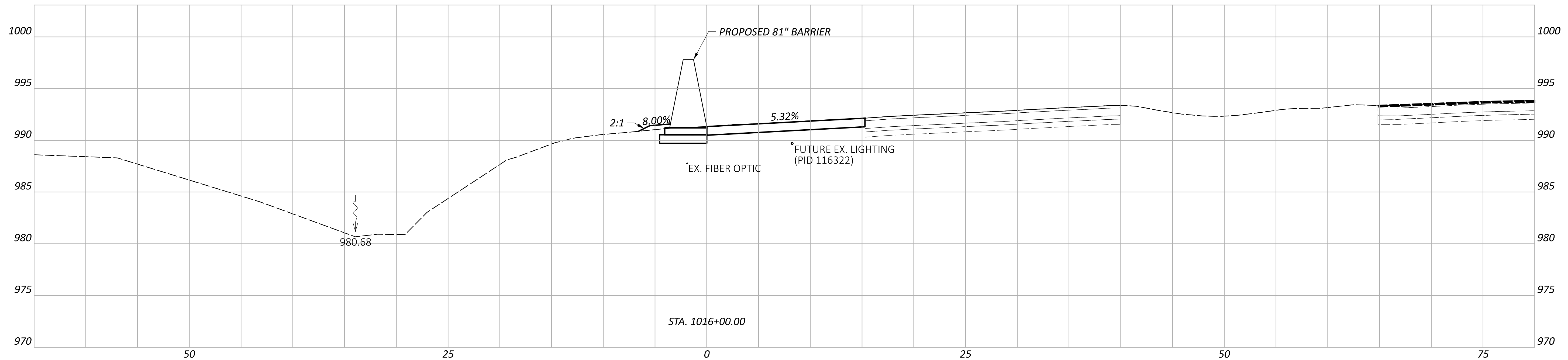


PLAN & PROFILE - 81" BARRIER 10
 STA. 2244+00.00 TO STA. 2249+00.00

DESIGN AGENCY	
	8101 NORTH HIGHWAY 36, SUITE 100 COLUMBIA, MD 21046-3225 410.318.4900 www.arcadis.com
DESIGNER	
JMK	
REVIEWER	
JDH 01-22-24	
PROJECT ID	
117607	
SHEET	TOTAL
P.33	P.276

FRA-161-15.80 NOISE WALLS

MODEL: BLP_BARRIER11 - 1015+50.00 [Sheet] PAPER SIZE: 34x22 (in.) DATE: 2024-01-18 TIME: 7:33:24 PM USER: jennifer.kelley
 pw:\arcadis-us-pw.bentley.com\arcadis-us-01\Documents\01 Active Projects\143720\400_CAD\400-Engineering\Roadway\Sheets\117607_XS010.dgn



LEGEND

- - - EXISTING SR-161 PRIOR TO PID 116322
- FUTURE EXISTING SR-161 AFTER CONSTRUCTION OF PID 116322

Sheet Totals			117607	
Seeding	Cut	Fill	SHEET	TOTAL
			P.136	P.276

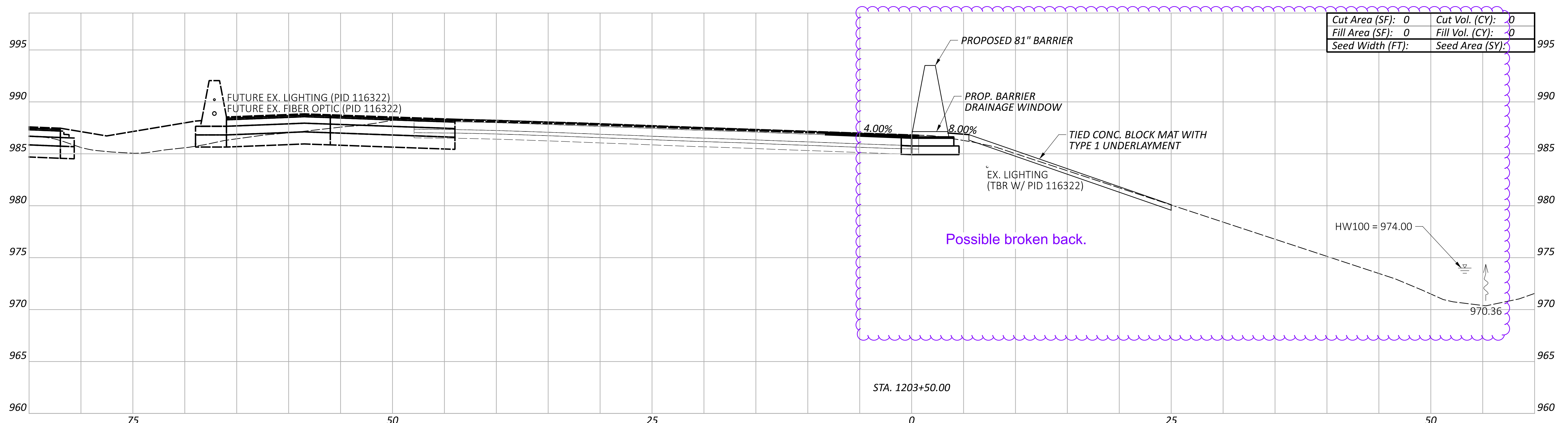
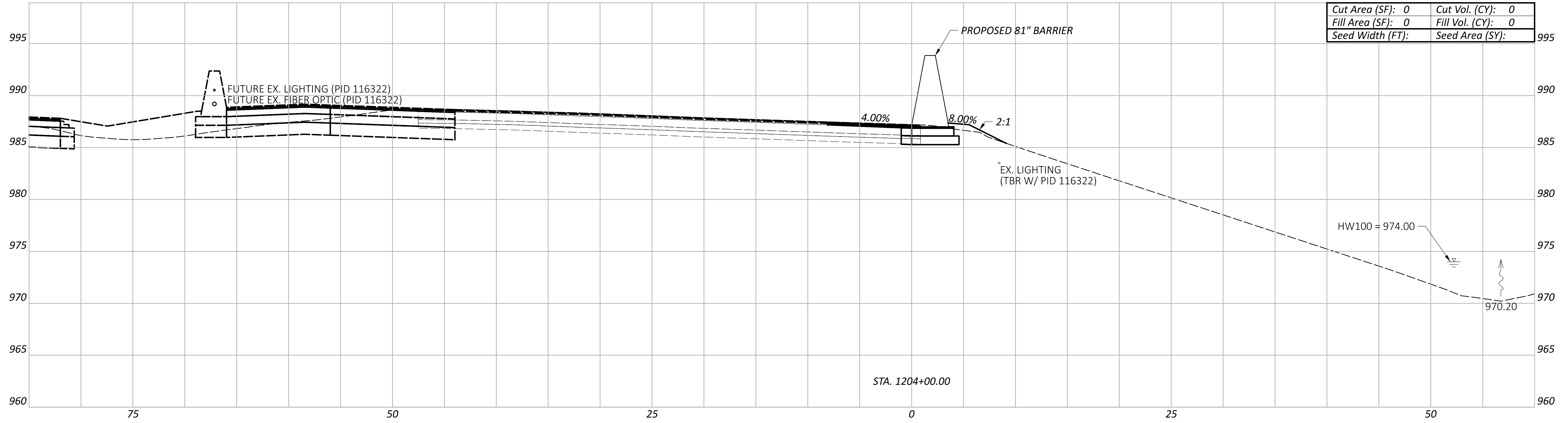
DESIGN AGENCY
ARCADIS
 8101 NORTH HIGGINS AVE. SUITE 100
 COLUMBIANA, OH 43085
 (614) 819-4900
 www.arcadis.com

DESIGNER
JMK

REVIEWER
JDH 01-22-24

PROJECT ID
117607

**CROSS SECTIONS - 81" BARRIER 10
 STA. 1015+50.00 TO STA. 1016+00.00**



LEGEND
 - - - EXISTING SR-161 PRIOR TO PID 116322
 - - - FUTURE EXISTING SR-161 AFTER CONSTRUCTION OF PID 116322

Sheet Totals			117607	
Seeding	Cut	Fill	SHEET	TOTAL
			P.158	P.276

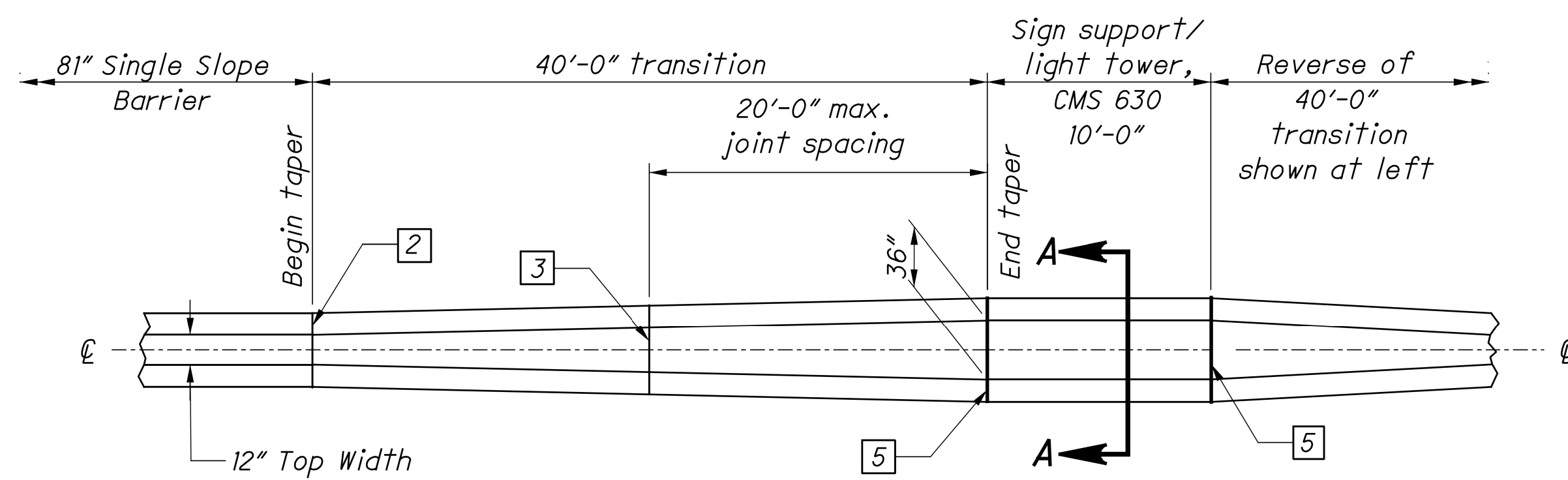
CROSS SECTIONS - 81" BARRIER 12
 STA. 1203+50.00 TO STA. 1204+00.00

DESIGN AGENCY
ARCADIS
 8101 NORTH HIGGINS AVE SUITE 100
 COLUMBIANA, OH 43085
 (614) 810-4900
 www.arcadis.com

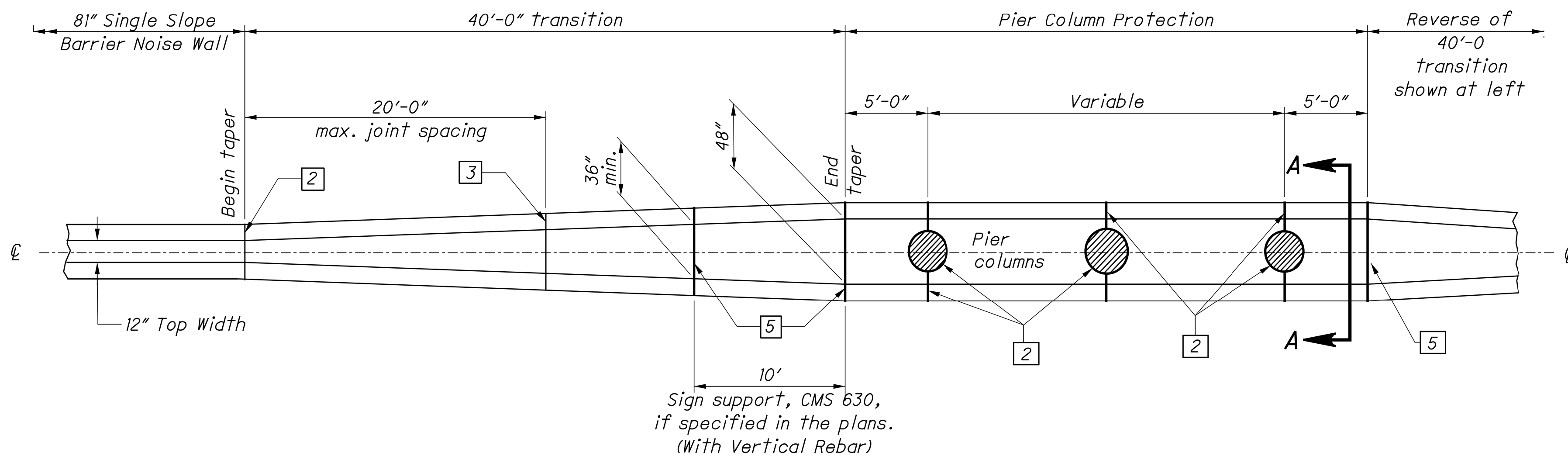
DESIGNER
JMK

REVIEWER
 JDH 01-22-24

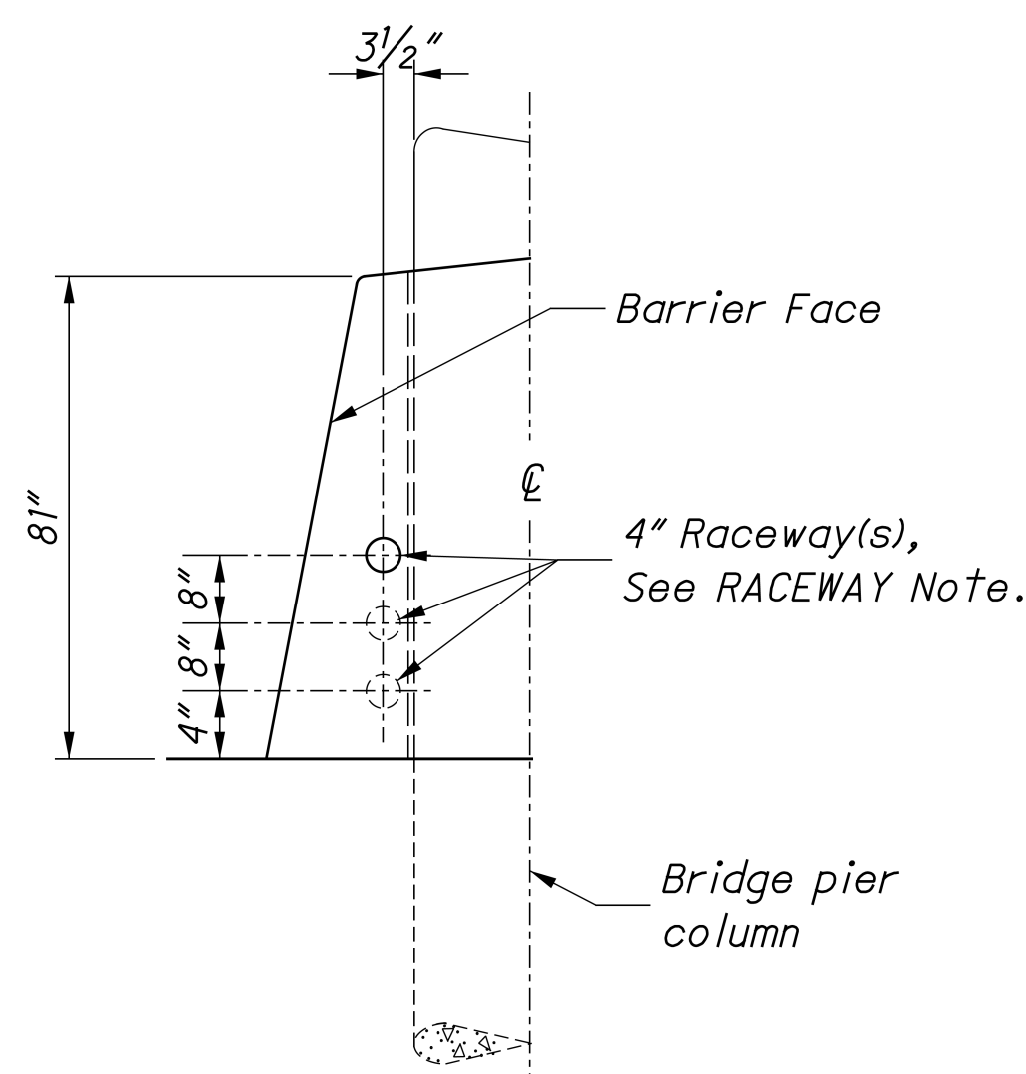
PROJECT ID
 117607



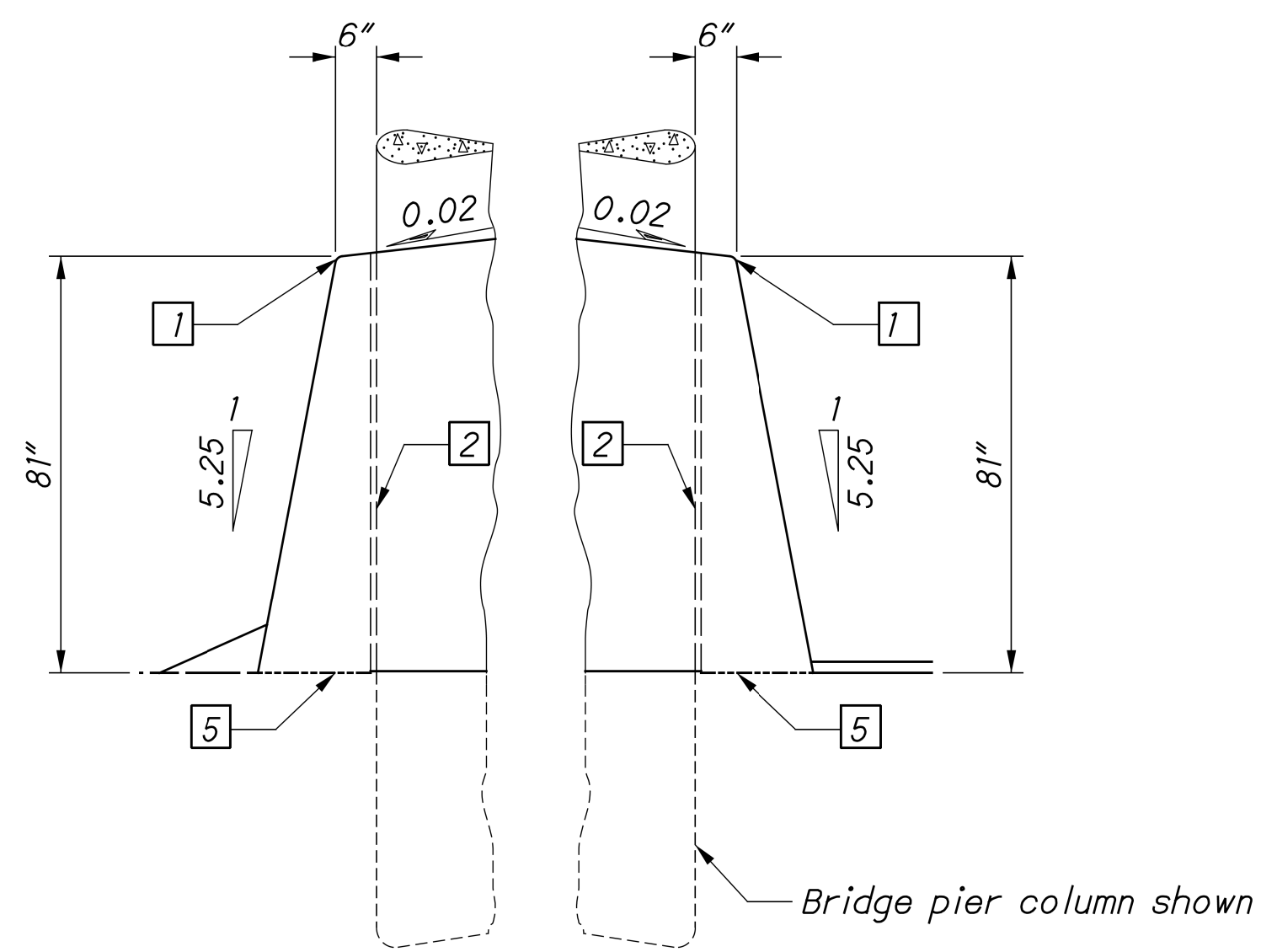
PLAN VIEW - SIGN SUPPORT TRANSITION / LIGHT TOWER HIGHWAY LIGHTING HL-20.24



PLAN VIEW - BRIDGE PIER TRANSITION (With Sign Support)



RACEWAY PLACEMENT



SECTION A-A

NOTES

STANDARD BARRIERS: Construct 81" Single Slope Barrier as shown on 1/8 For barrier information not shown on this drawing, see CMS 622.

CONCRETE: Use concrete with a minimum design strength of 4000 psi conforming to the requirements of CMS 499. Construct top and end edges with either a 1" radius or 3/4" chamfer, except at light pole foundations. The area between barrier faces shall be completely filled with concrete.

CONTRACTION JOINTS: Maximum allowable spacing of unsealed joints is 20' throughout the run of the barrier. Construct joints by using metal inserts inside the forms, preformed full width joint filler, a grooving tool, or by sawing. Inserts, tooled, or sawed joints will have a 3" depth. Construct all joints for the full height of the barrier. Saw as soon as curing will allow to prevent spalling. When used in conjunction with concrete pavement, match joints to those in the concrete pavement but not exceeding the maximum allowable spacing.

CONSTRUCTION JOINTS: Barrier runs with abutting vertical surfaces at either required or permissible construction joints are to be doweled to each other by use of 3/4" dia. by 18" long epoxy coated deformed dowel bars as per CMS 622.02. Bars are to be placed as shown on the RACEWAY and DOWEL BAR PLACEMENT detail on 1/4.

EXPANSION JOINTS: Construct 3/4" joint with CMS 705.03 filler at indicated positions.

Reinforced end anchorage sections, as shown on 1/4 are required only at the expansion joint between the normal barrier section and the start of the transition, not at expansion joints within the limits of the pier column protection.

RACEWAY: Locate as shown on in RACEWAY PLACEMENT Detail, unless otherwise directed by the Engineer. Keep raceway clear of obstructions. Gradually adjust the raceway height to match placement in abutting barrier.

Cost of the 4" polyvinyl chloride raceway is included where shown on the plans. The cost for additional raceways and No. 10 AWG copper-clad or aluminum-clad wire is also included where shown on the plans for future installation of circuits.

PAYMENT will be made at the unit price bid per Foot for ITEM 622 - Concrete Barrier, 81" SSB, and include all materials, labor, raceways and other incidentals necessary to construct the barrier transition.

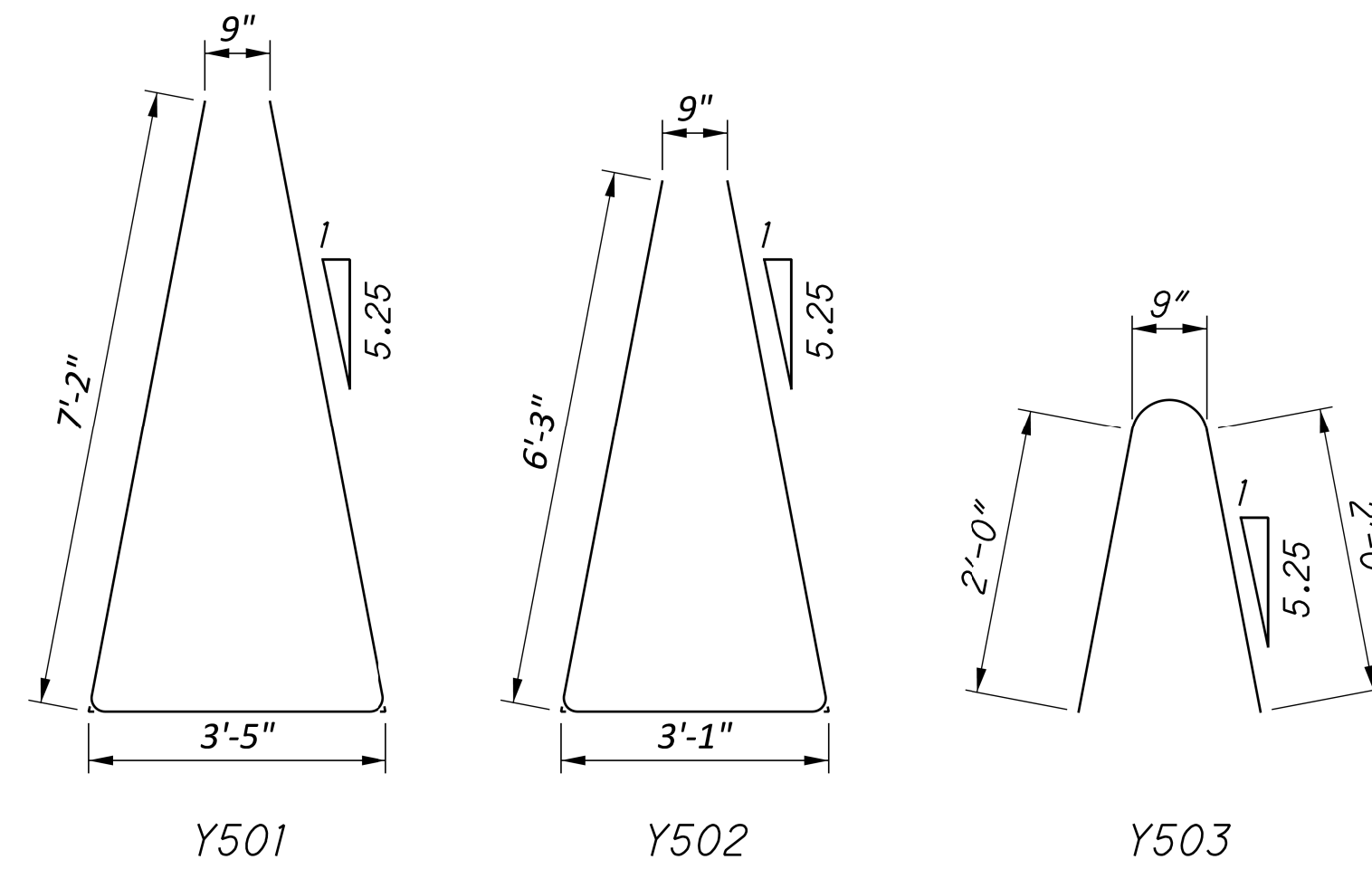
Payment for the reinforced end anchors, will be made at the unit price bid per Each for ITEM 622 - Concrete Barrier, 81" SSB, End Anchorage, Reinforced. This includes all materials, labor, and other incidentals necessary to construct this anchor.

Remove - doesn't pertain to this specific job.

LEGEND

- 1 1" radius or 3/4" chamfer.
- 2 Expansion joint, 3/4" min. PreFormed Filler, CMS 705.03 (See NOTES).
- 3 Contraction joint (see NOTES).
- 4 See 1/8 for adjoining pavement details.
- 5 PCJ: Permissible construction joint.

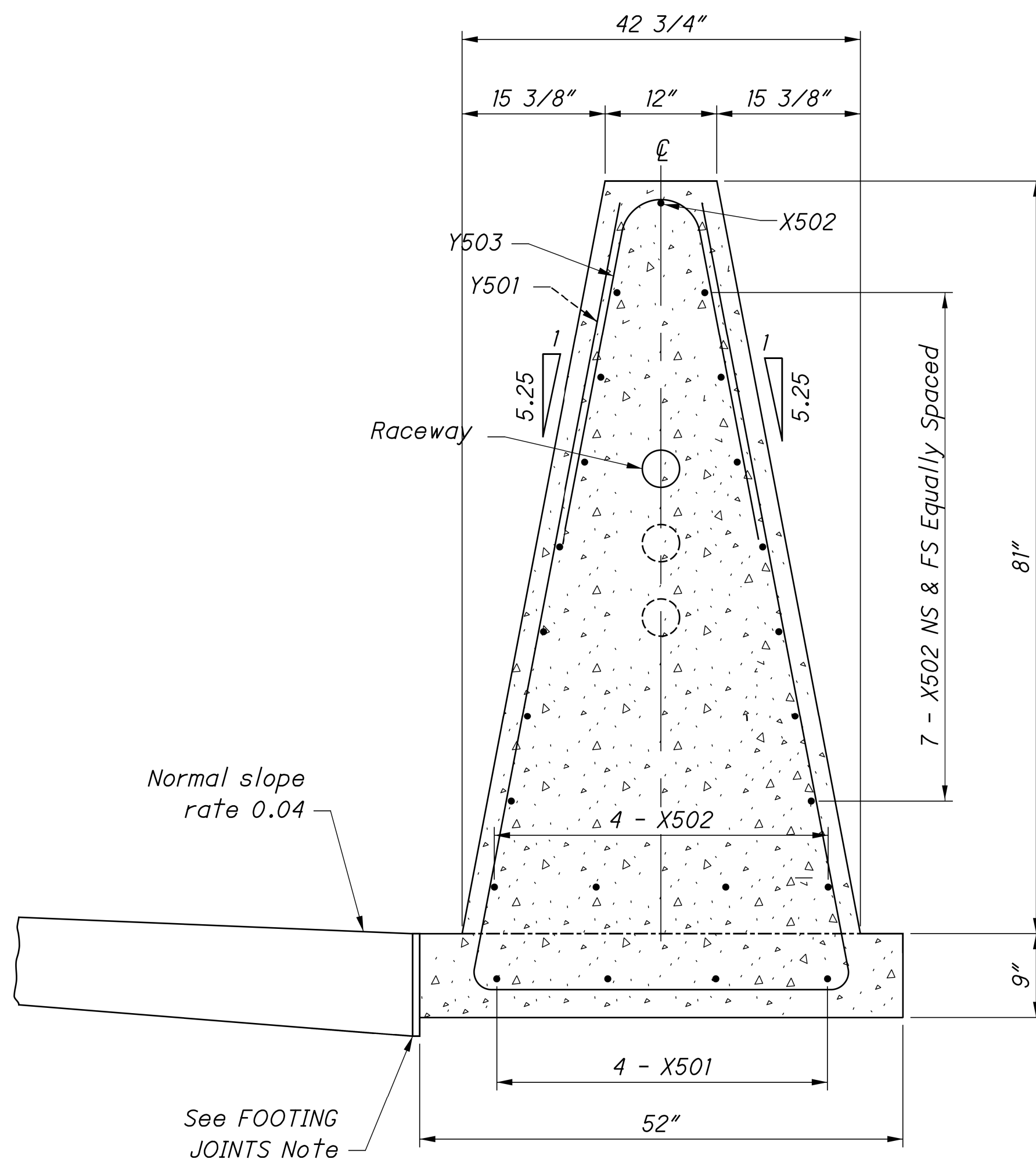
STEEL LIST (For Estimating Purposes Only)											
X501		X502		X503		Y501		Y502		Y503	
#5 Bar		#5 Bar		#5 Bar		#5 Bar		#5 Bar		#5 Bar	
Straight		Straight		Straight		Bent		Bent		Bent	
No.	Length	No.	Length	No.	Length	No.	Length	No.	Length	No.	Length
4	19'-8"	19	19'-6"	5	4'-0"	8	17'-6"	5	15'-4"	13	5'-2"



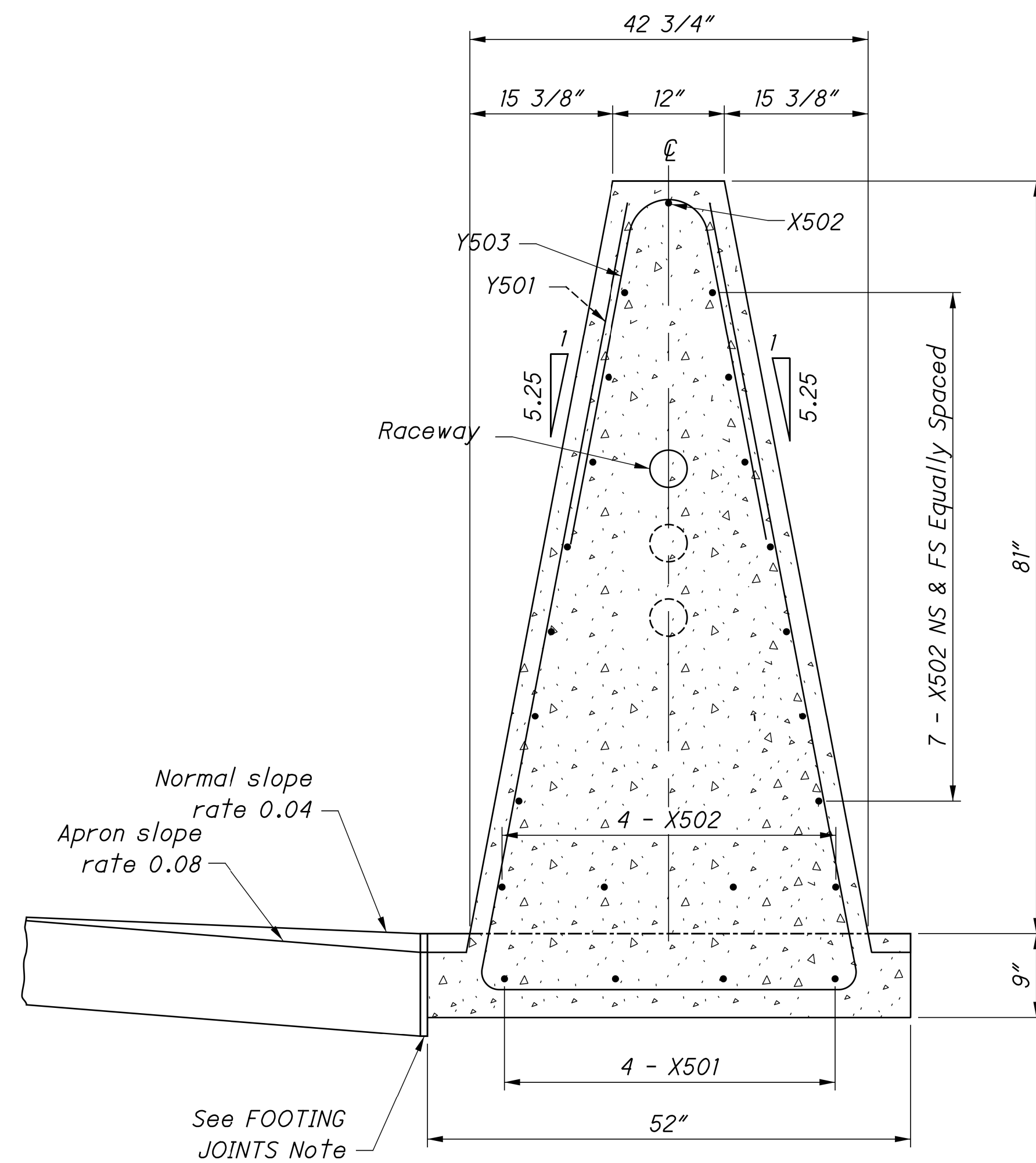
BENDING DIAGRAMS

NOTES

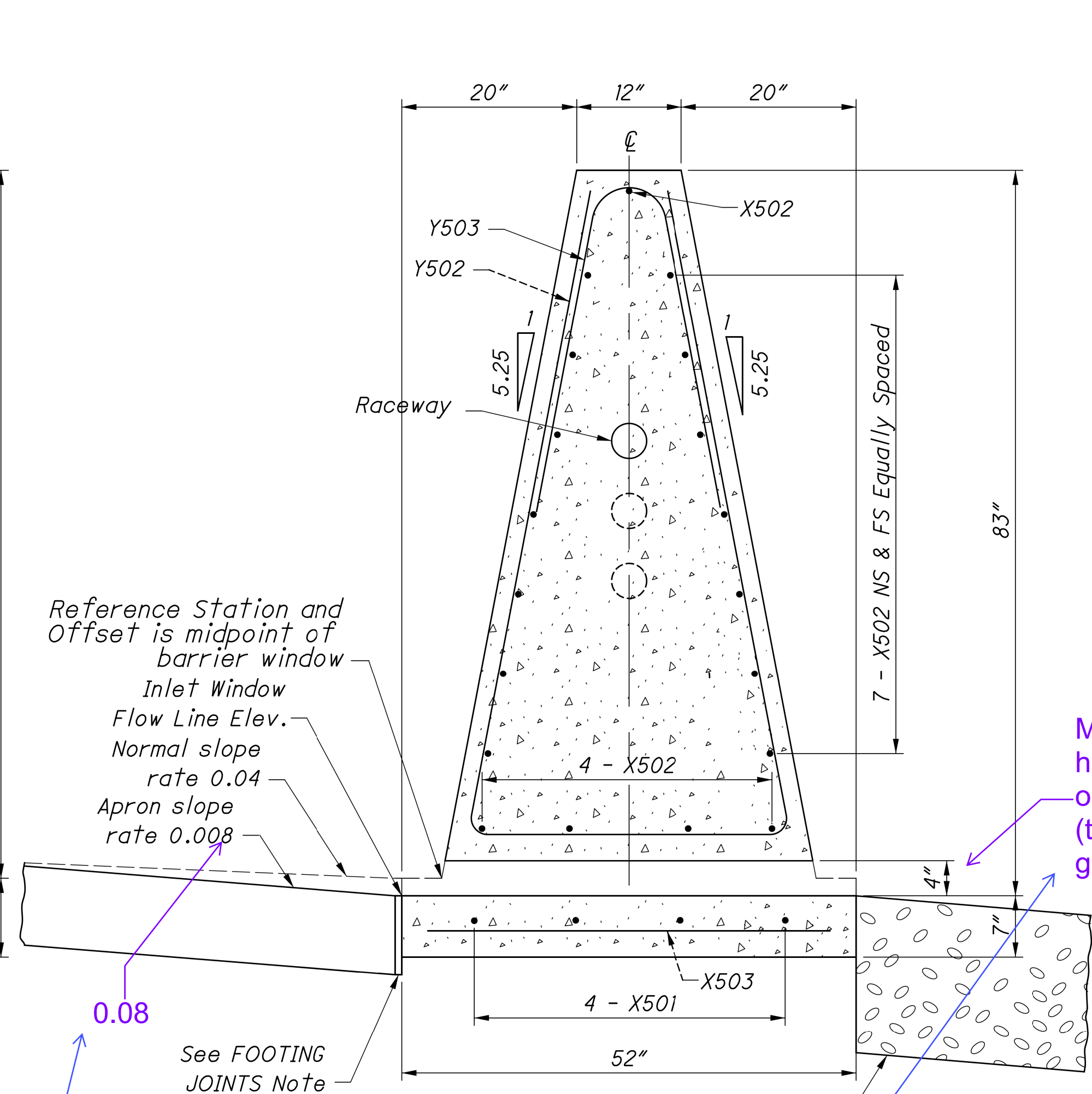
- For additional notes and details, see SCD I-3B.
 - For location of sections A-A, B-B & C-C, see sheet 7/8.
 - Reinforcing Steel: Provide epoxy coated reinforcing steel in accordance with CMS 509.09.
- FOOTING JOINTS:** Provide a sealed joint with the vertical walls between the barrier footing and a concrete pavement or concrete base as detailed on SCD RM-4.3.



SECTION B-B



SECTION C-C



SECTION D-D

Make this 6" high at window only sections (those with no grated inlets).

Tied Concrete Block mat with Type 1 Underlayment. Flume installation shall be per DM-4.1

Arcadis Response: Complied

Arcadis Response: Complied