



**LEGEND**

- 1 ITEM 441 - 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (449) PG 64-22
- 2 ITEM 441 - 1 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (449)
- 3 ITEM 301 - 7" ASPHALT CONCRETE BASE, (449), PG 64-22 (2 EQUAL LIFTS)
- 4 ITEM 304 - 6" AGGREGATE BASE
- 5 ITEM 407 - TACK COAT (0.1 GAL/ SY)
- 6 ITEM 605 - AGGREGATE DRAINS (SEE SHEET 9 FOR LOCATIONS.)
- 7 ITEM 606 - GUARAIL, TYPE MGS WITH LONG POSTS
- 8 ITEM 659 - SEEDING AND MULCHING
- 9 ITEM 204 - SUBGRADE COMPACTION
- 10 ITEM 254- PAVEMENT PLANING, ASPHALT CONCRETE (T=3")
- 11 ITEM 252- FULL DEPTH PAVEMENT SAWING (SEE NOTE 1.)

**EXISTING LEGEND**

- A ASPHALT (T=8"±)
- B AGGREGATE BASE (T=4"±)

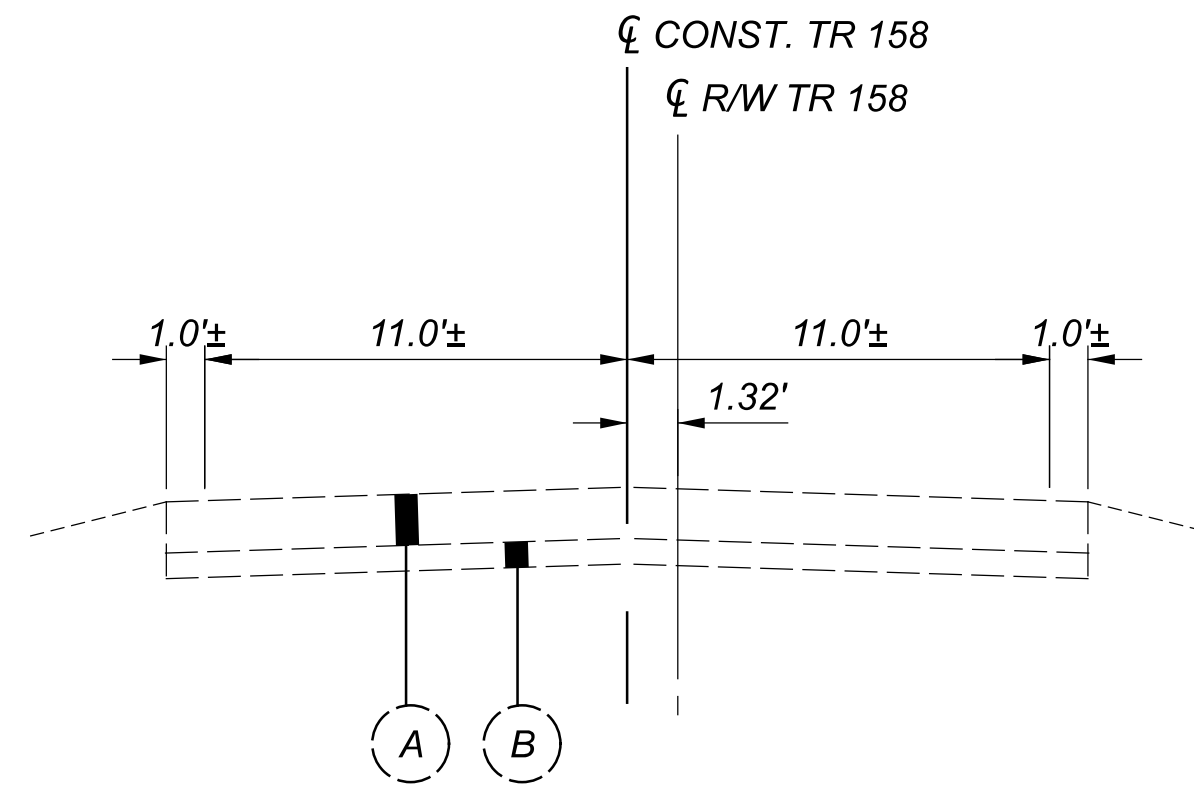
**A**  
 1.1' TO 4.0'  
 STA. 8+81.70 TO STA. 9+54.00

4.0' TO 1.5'  
 10+83.70 TO 10+45.59

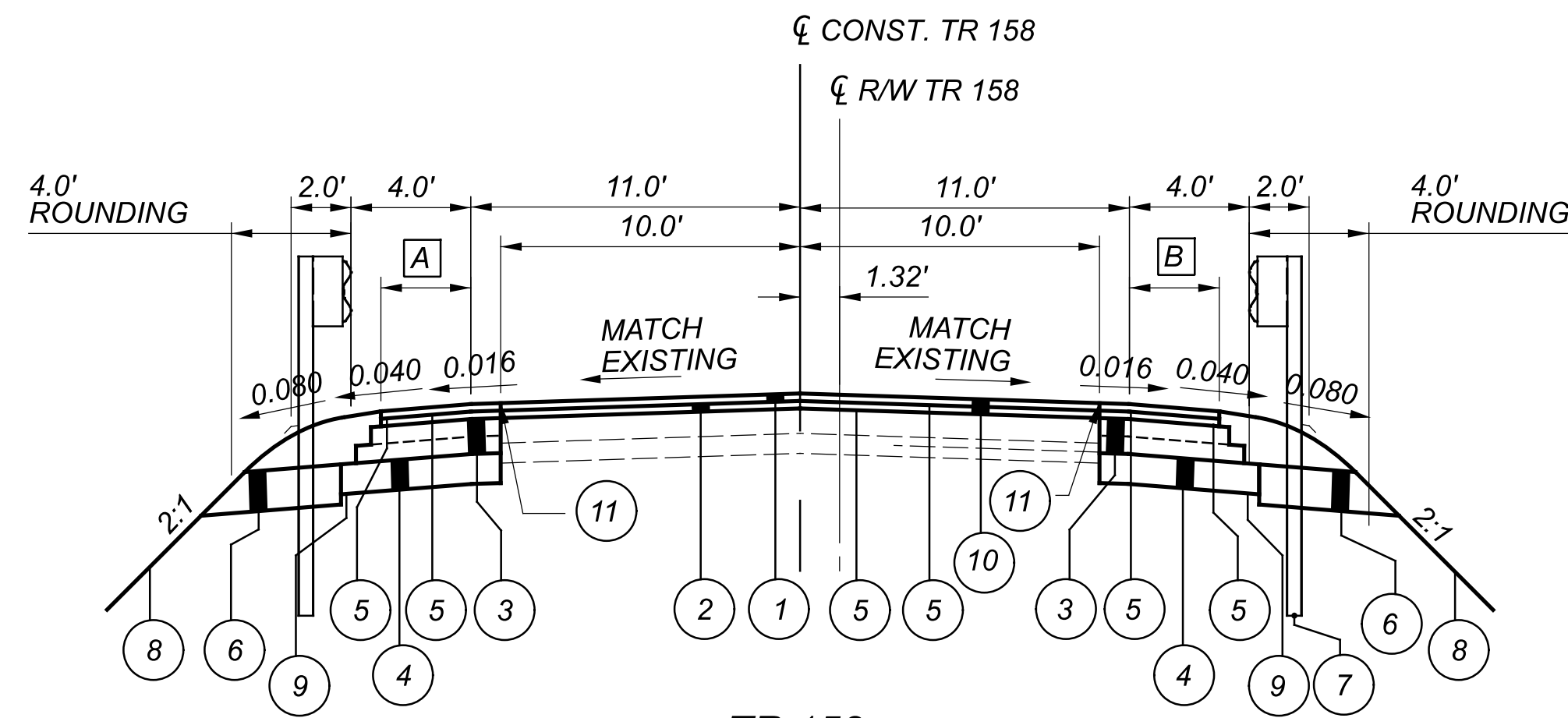
**B**  
 1.1' TO 4.0'  
 STA. 8+81.70 TO STA. 9+53.22

4.0' TO 1.5'  
 10+74.00 TO 10+45.59

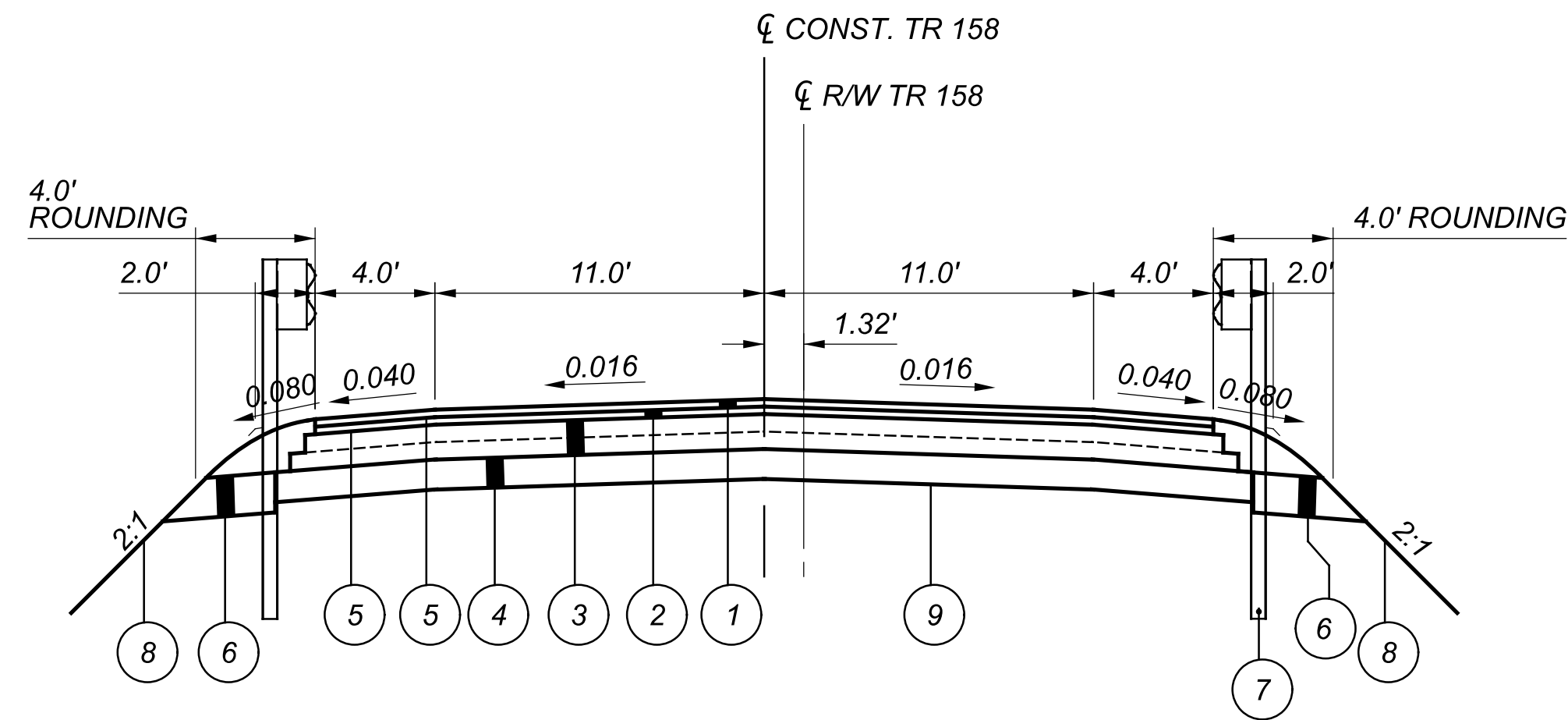
NOTE:  
 1. THE EXISTING PAVEMENT EDGES SHALL BE SAW CUT TO LOCATE A SOUND PAVEMENT EDGE OR 2'-0" MINIMUM PER SEC. 203.04 OF THE C&MS. FOR ESTIMATING PURPOSES, PAVEMENT QUANTITY CALCULATIONS INDICATE AN AVERAGE WIDTH OF 2 FT. OF EXISTING PAVEMENT BEING REPLACED.



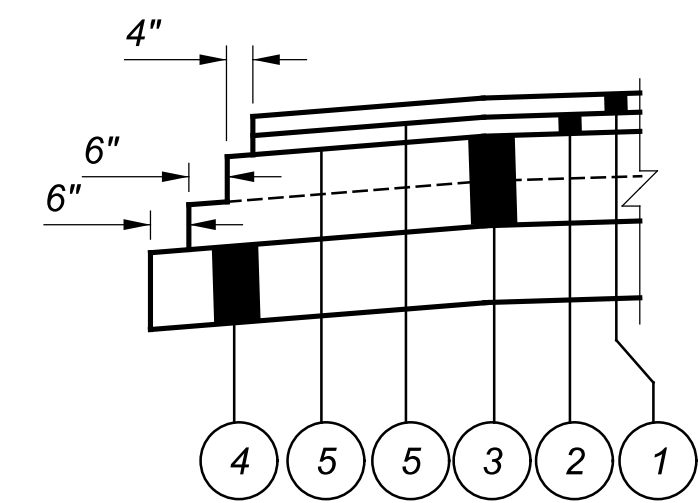
TR 158 EXISTING



TR 158  
 STA. 8+81.70 TO STA. 9+54.00  
 STA. 10+74.00 TO STA. 11+45.59



TR 158  
 STA. 9+54.00 TO STA. 10+74.00



PAVEMENT STEP DETAIL

TYPICAL SECTIONS

DESIGN AGENCY



DESIGNER

JLM

REVIEWER

DWS 11/13/23

PROJECT ID

117643

SHEET TOTAL

2 34

**UTILITIES**

LISTED BELOW ARE ALL UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS:

**ELECTRIC:**  
 DUKE ENERGY  
 7600 COLERAIN AVENUE  
 CINCINNATI, OH 45239  
 NICK HAMILTON  
 513-514-8214 (OFFICE)  
 513-240-8825 (CELL)  
 NICHOLAS.HAMILTON@DUKE-ENERGY.COM

**GAS:**  
 DUKE ENERGY  
 7600 COLERAIN AVE. (RM. 108-21)  
 CINCINNATI, OH 45239  
 JIM MARA  
 513-256-9041  
 JAMES.MARA@DUKE-ENERGY.COM

**WATER:**  
 WESTERN WATER  
 PAUL KILBURN  
 513-899-3211 (OFFICE)  
 513-490-1367 (CELL)

**WATER:**  
 WARREN COUNTY WATER AND SEWER DEPARTMENT  
 CHRIS WOJNICZ, P.E., LEED AP  
 DEPUTY SANITARY ENGINEER  
 513-695-1646  
 CHRISTOPHER.WOJNICZ@CO.WARREN.OH.US

**CABLE:**  
 SPECTRUM  
 10920 KENWOOD RD.  
 CINCINNATI, OH 45242  
 KENT RIEGER  
 513-386-5499

**COMMUNICATIONS:**  
 ALTA FIBER  
 NETWORK PLANNING, ENGINEERING AND CONSTRUCTION  
 221 E. FOURTH ST. 121-900  
 CINCINNATI, OH 45202  
 BEN OTTEN  
 SPECIALIST - OUTSIDE PLANT ENGINEER  
 513-565-1336

THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS AS REQUIRED BY SECTION 153.64 O.R.C.

**ROUNDING**

THE ROUNDING AT SLOPE BREAKPOINTS SHOWN ON THE TYPICAL SECTIONS APPLIES TO ALL CROSS-SECTIONS, EVEN THOUGH OTHERWISE SHOWN.

**WORK LIMITS**

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. PROVIDE THE INSTALLATION AND OPERATION OF ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

**CLEARING AND GRUBBING**

ALTHOUGH THERE ARE NO TREES OR STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE LIMITS OF THE PROJECT, A LUMP SUM QUANTITY IS INCLUDED IN THE GENERAL SUMMARY FOR ITEM 201, CLEARING AND GRUBBING. ALL PROVISIONS AS SET FORTH IN THE SPECIFICATIONS UNDER THIS ITEM ARE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING.

**FENCE LENGTHS**

THE LENGTHS OF FENCE SHOWN IN THE PLANS ARE HORIZONTAL DIMENSIONS. MEASUREMENTS OF THE FINAL QUANTITIES WILL BE IN ACCORDANCE WITH ITEM 607.

**SURVEYING PARAMETERS**

USE THE FOLLOWING PROJECT CONTROL, VERTICAL POSITIONING, AND HORIZONTAL POSITIONING PARAMETERS FOR ALL SURVEYING:

PROJECT CONTROL  
 POSITIONING METHOD: ODOT VRS  
 MONUMENT TYPE: VARIES (SEE TABLE)

VERTICAL POSITIONING  
 ORTHOMETRIC HEIGHT DATUM: NAVD88  
 GEOID: GEOID18 (CONUS)

HORIZONTAL POSITIONING  
 REFERENCE FRAME: NAD83 (2011)  
 ELLIPSOID: GRS80  
 MAP PROJECTION: LAMBERT CONFORMAL CONIC  
 COORDINATE SYSTEM: OHIO STATE PLANE, SOUTH ZONE (3402)  
 COMBINED SCALE FACTOR: 0.999902917  
 PROJECT SCALE FACTOR: 1.000097092  
 ORIGIN OF COORDINATE SYSTEM: 0,0

USE THE POSITIONING METHODS AND MONUMENT TYPE USED IN THE ORIGINAL SURVEY TO RESTORE ALL MONUMENTS RELATED TO PRIMARY PROJECT CONTROL THAT ARE DAMAGED OR DESTROYED BY CONSTRUCTION ACTIVITIES. RESTORE THE DAMAGED OR DESTROYED MONUMENTS IN ACCORDANCE WITH CMS 623.

UNITS ARE IN U.S. SURVEY FEET.

CONTROL TABLE						
NAME	GRID		GROUND		ELEVATION	DESCRIPTION
	NORTHING	EASTING	NORTHING	EASTING		
1	487745.86	1486194.00	487793.21	1486338.30	813.87	3" LJB PROJECT CTRL
2	487644.73	1486660.74	487692.08	1486805.08	800.91	3" LJB PROJECT CTRL
3	487628.01	1487221.32	487675.36	1487365.72	819.56	3" LJB PROJECT CTRL

**ITEM 607 - FENCE REBUILT**

CAREFULLY RECONDITION AND RE-ERECT FENCE AND COMPONENT PARTS AS DETAILED ON THE PLANS. DO NOT DAMAGE THE FENCE OR COMPONENT PARTS. ANY NEW PARTS WHICH ARE NEEDED, AS DETERMINED BY THE ENGINEER, WILL BE SUPPLIED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE STATE.

THE AMOUNT OF REBUILT FENCE TO BE PAID FOR WILL BE THE NUMBER OF FEET REBUILT, COMPLETE IN PLACE, AND MEASURED AS PROVIDED FOR IN SECTION 607.09 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS (C&MS)

PAYMENT FOR THE ABOVE WILL BE PAID FOR AT THE CONTRACT PRICE PER FOOT FOR ITEM 607, FENCE REBUILT.

**BENCHING OF FOUNDATION SLOPES**

ALTHOUGH CROSS-SECTIONS INDICATE SPECIFIC DIMENSIONS FOR PROPOSED BENCHING OF THE EMBANKMENT FOUNDATIONS IN CERTAIN AREAS, NO WAIVER OF THE SPECIFICATIONS IS INTENDED. BENCH ALL OTHER SLOPED EMBANKMENT AREAS AS SET FORTH IN SECTION 203.05 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS (C&MS). NO ADDITIONAL PAYMENT WILL BE MADE FOR BENCHING REQUIRED UNDER THE PROVISIONS OF SECTION 203.05.

**SEEDING AND MULCHING**

THE FOLLOWING QUANTITIES ARE PROVIDED TO PROMOTE GROWTH AND CARE OF PERMANENT SEEDED AREAS:

ITEM 659, TOPSOIL	92 CU. YD.
ITEM 659, SEEDING AND MULCHING	827 SQ. YD.
ITEM 659, REPAIR SEEDING AND MULCHING	41 SQ. YD.
ITEM 659, COMMERCIAL FERTILIZER	0.12 TON
ITEM 659, LIME	0.18 ACRES
ITEM 659, WATER	4.47 MGAL

APPLY SEEDING AND MULCHING TO ALL AREAS OF EXPOSED SOIL BETWEEN THE RIGHT-OF-WAY LINES AND WITHIN THE CONSTRUCTION LIMITS FOR AREAS OUTSIDE THE RIGHT-OF-WAY LINES COVERED BY WORK AGREEMENT OR SLOPE EASEMENT. QUANTITY CALCULATIONS FOR SEEDING AND MULCHING ARE BASED ON THESE LIMITS.

**ANCHOR ASSEMBLY, MGS TYPE E**

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ANY OF THE GUARDRAIL END TERMINALS FOR TYPE MGS GUARDRAIL AS LISTED ON ROADWAY ENGINEERING'S WEB PAGE UNDER ROADSIDE SAFETY DEVICES FOR APPROVED GUARDRAIL END TREATMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

THE FACE OF THE TYPE E IMPACT HEAD SHALL BE COVERED WITH REBOUNDABLE RETROREFLECTIVE SHEETING, PER CMS 730.191.

REFER TO THE MANUFACTURER'S INSTRUCTIONS REGARDING THE INSTALLATION OF, AND THE GRADING AROUND THE FOUNDATION TUBES AND GROUND STRUT. THE TOP OF ANY FOUNDATION TUBE SHOULD BE LESS THAN 4 INCHES ABOVE THE GROUND. THE PLACEMENT OF THE FOUNDATION TUBE SHOULD BE LESS THAN 4 INCHES ABOVE THE GROUND. THE PLACEMENT OF THE FOUNDATION TUBES SHOULD BE AN APPROPRIATE DEPTH BELOW THE LEVEL LINE IN ORDER TO MAINTAIN THE FINISHED GUARDRAIL HEIGHT OF 31 INCHES FROM THE EDGE OF THE SHOULDER.

ON-SITE GRADING IS REQUIRED IF THE TOP OF THE FOUNDATION TUBES OR TOP OF THE GROUND STRUT DOES PROJECT MORE THAN 4 INCHES ABOVE THE GROUND LINE.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, ANCHOR ASSEMBLY, MGS TYPE E, EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING ALL RELATED TRANSITIONS, REFLECTIVE SHEETING, HARDWARE, GRADING, EMBANKMENT AND EXCAVATION NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

**ENDANGERED BAT HABITAT REMOVAL**

THIS PROJECT IS LOCATED WITHIN THE KNOWN HABITAT RANGES OF THE FEDERALLY LISTED AND PROTECTED INDIANA BAT, AND NORTHERN LONG-EARED BAT. NO TREES SHALL BE REMOVED UNDER THIS PROJECT FROM APRIL 1 THROUGH SEPTEMBER 30. ALL NECESSARY TREE REMOVAL SHALL OCCUR FROM OCTOBER 1 THROUGH MARCH 31. THIS REQUIREMENT IS NECESSARY TO AVOID AND MINIMIZE IMPACTS TO THESE SPECIES AS REQUIRED BY THE ENDANGERED SPECIES ACT (ESA). FOR THE PURPOSES OF THIS NOTE, A TREE IS DEFINED AS: A LIVE, DYING, OR DEAD WOODY PLANT, WITH A TRUNK 3 INCHES OR GREATER IN DIAMETER AT A HEIGHT OF 4.5 FEET ABOVE THE GROUND SURFACE, AND WITH A MINIMUM HEIGHT OF 13 FEET.

DESIGN AGENCY



DESIGNER

JLM

REVIEWER

DWS 11/13/23

PROJECT ID

117643

SHEET TOTAL

3 | 34

**ITEM 614, MAINTAINING TRAFFIC**

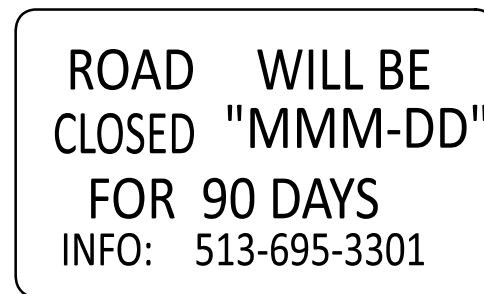
A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES, EXCEPT FOR A PERIOD NOT TO EXCEED 90 CONSECUTIVE CALENDAR DAYS, WHEN THROUGH TRAFFIC MAY BE DETOURED AS SHOWN ON SHEET 5. A DISINCENTIVE SHALL BE ASSESSED IN THE AMOUNT OF \$1,000 PER DAY FOR EACH CALENDAR DAY THE ROADWAY REMAINS CLOSED TO TRAFFIC BEYOND THE SPECIFIED LIMIT.

LENGTH AND DURATION OF LANE CLOSURES AND RESTRICTIONS SHALL BE AT THE APPROVAL OF THE ENGINEER. IT IS THE INTENT TO MINIMIZE THE IMPACT TO THE TRAVELING PUBLIC. LANE CLOSURES OR RESTRICTIONS OVER SEGMENTS OF THE PROJECT IN WHICH NO WORK IS ANTICIPATED WITHIN A REASONABLE TIME FRAME, AS DETERMINED BY THE ENGINEER, SHALL NOT BE PERMITTED. THE LEVEL OF UTILIZATION OF MAINTENANCE OF TRAFFIC DEVICES SHALL BE COMMENSURATE WITH THE WORK IN PROGRESS.

NOTICE OF CLOSURE SIGNS (W20-H13) SHALL BE ERECTED BY THE CONTRACTOR PRIOR TO THE SCHEDULED ROAD CLOSURE IN ACCORDANCE WITH THE NOTICE OF CLOSURE TIME TABLE BELOW. ACCESS TO DRIVEWAYS SHALL BE MAINTAINED AT ALL TIMES.

THE SIGNS SHALL BE ERECTED ON THE RIGHT-HAND SIDE OF THE ROAD FACING TRAFFIC. THEY SHALL BE PLACED SO AS NOT TO INTERFERE WITH THE VISIBILITY OF ANY OTHER TRAFFIC CONTROL SIGNS. ON ROADWAYS, THEY SHOULD BE ERECTED AT OR NEAR THE POINT OF CLOSURE.

ITEM	DURATION OF CLOSURE	SIGN DISPLAYED TO PUBLIC
ROAD CLOSURES	> 12 HOURS & < 2 WEEKS	7 CALENDAR DAYS PRIOR TO CLOSURE
	≤ 12 HOURS	2 BUSINESS DAYS PRIOR TO CLOSURE



W20-H13-60

THE SIGN SHALL DISPLAY THE DATE OF THE CLOSURE IN MMM-DD FORMAT AND THE NUMBER OF DAYS OF THE CLOSURE. THE LAST LINE OF THE W20-H13 SIGN LISTS A PHONE NUMBER WHICH A MOTORIST MAY CALL FOR ADDITIONAL INFORMATION. THE PHONE NUMBER SHALL BE "513-695-3301".

THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN STANDARD 48 X 30 INCH ROAD CLOSED SIGNS, SIGN SUPPORTS, BARRICADES AND LIGHTS, AS DETAILED IN TRAFFIC SCD MT-101.60 AT THE LOCATIONS SHOWN ON SHEET 5 DURING PERIODS IN WHICH THE AFFECTED ROADS ARE CLOSED TO TRAFFIC.

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH C&MS 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC UNLESS SEPARATELY ITEMIZED IN THE PLAN.

**NOTIFICATION OF TRAFFIC RESTRICTIONS**

THROUGHOUT THE DURATION OF THE PROJECT, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IN WRITING OF ALL TRAFFIC RESTRICTIONS AND UPCOMING MAINTENANCE OF TRAFFIC CHANGES. THE CONTRACTOR SHALL ENSURE THE WRITTEN NOTIFICATION IS SUBMITTED IN A TIMELY MANNER TO ALLOW THE PROJECT ENGINEER TO MEET THE REQUIRED TIME FRAMES SET FORTH IN THE TABLE BELOW TO INFORM THE SPECIAL HAULING PERMITS SECTION (HAULING.PERMITS@DOT.STATE.OHIO.GOV) AND THE DISTRICT PUBLIC INFORMATION OFFICE (PIO). THIS NOTIFICATION SHALL BE RECEIVED BY THE PROJECT ENGINEER PRIOR TO THE PHYSICAL SETUP OF ANY APPLICABLE SIGNS OR MESSAGE BOARDS.

INFORMATION SHOULD INCLUDE, BUT IS NOT LIMITED TO, ALL CONSTRUCTION ACTIVITIES THAT IMPACT OR INTERFERE WITH TRAFFIC AND SHALL LIST THE SPECIFIC LOCATION, TYPE OF WORK, ROAD STATUS, DATE AND TIME OF RESTRICTION, DURATION OF RESTRICTION, NUMBER OF LANES MAINTAINED, NUMBER OF LANES CLOSED, MINIMUM VERTICAL CLEARANCE, MINIMUM WIDTH OF DRIVABLE PAVEMENT, DETOUR ROUTES, IF APPLICABLE, AND ANY OTHER INFORMATION REQUESTED BY THE PROJECT ENGINEER.

**NOTIFICATION OF TRAFFIC RESTRICTIONS TIME TABLE**

ITEM	DURATION OF CLOSURE	NOTICE DUE TO PERMITS & PIO
ROAD CLOSURES	≥ 2 WEEKS	21 CALENDAR DAYS PRIOR TO CLOSURE
	> 12 HOURS & < 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
	≤ 12 HOURS	4 BUSINESS DAYS PRIOR TO CLOSURE
LANE CLOSURES & RESTRICTIONS	≥ 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
	< 2 WEEKS	5 BUSINESS DAYS PRIOR TO CLOSURE
START OF CONSTRUCTION AND TRAFFIC PATTERN CHANGES	N/A	14 CALENDAR DAYS PRIOR TO IMPLEMENTATION

ANY UNFORESEEN CONDITIONS NOT SPECIFIED IN THE PLANS REQUIRING TRAFFIC RESTRICTIONS SHALL ALSO BE REPORTED TO THE PROJECT ENGINEER USING THE NOTIFICATION TIME TABLE.

DESIGN AGENCY



DESIGNER

JLM

REVIEWER

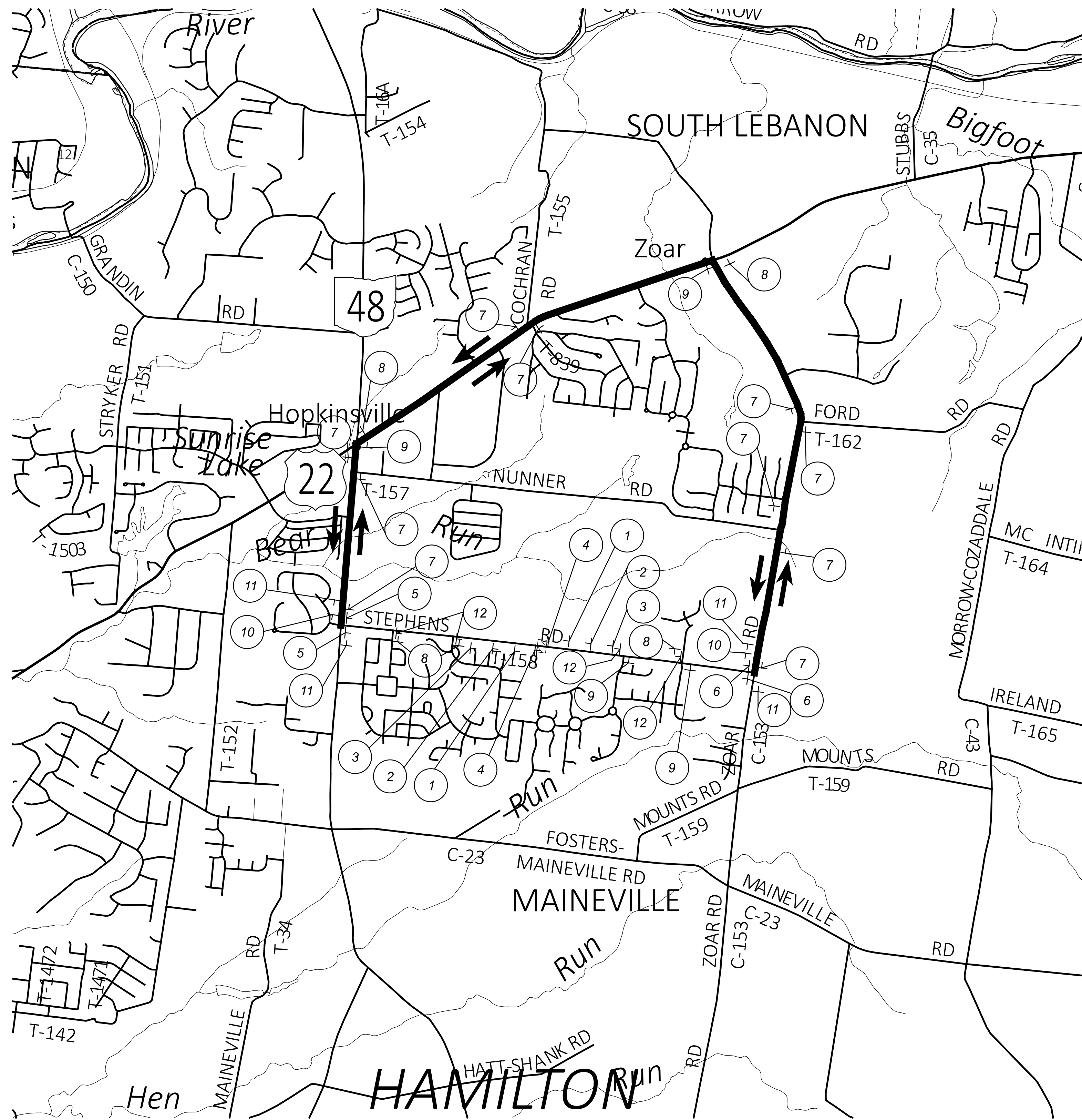
DWS 11/13/23

PROJECT ID

117643

SHEET TOTAL

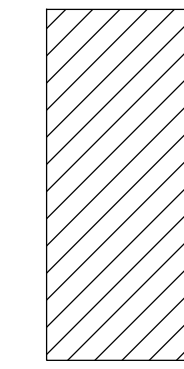
4 | 34



**LEGEND**



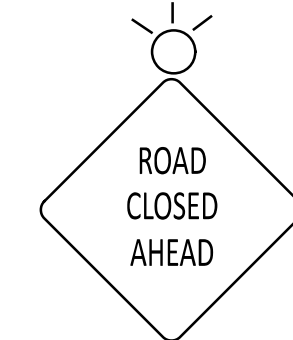
DETOUR ROUTE



WORK ZONE

**DETOUR SIGNS**

1  
TYPE A  
WARNING LIGHT



STEPHENS ROAD

500 FEET

W20-3-48  
D3-1  
(BLACK ON ORANGE)  
W16-2-30

5 OPEN TO ADDRESS 717

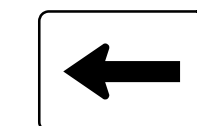
ROAD CLOSED  
3/4 MILES AHEAD  
LOCAL TRAFFIC ONLY



SPECIAL - 30" x 24" (BLACK/ ORANGE)  
R11-3A-60  
M4-10L-48  
(ON TYPE III BARRICADE)

8  
DETOUR

STEPHENS ROAD



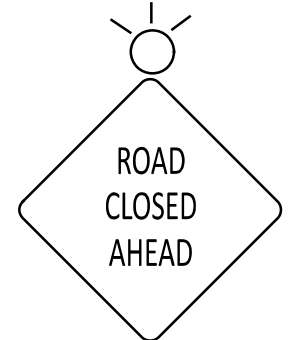
M4-8-12  
D3-1  
(BLACK ON ORANGE)  
M6-1\_L-12

12

ROAD  
CLOSED

R11-2-48  
(ON TYPE III BARRICADE)

2  
TYPE A  
WARNING LIGHT



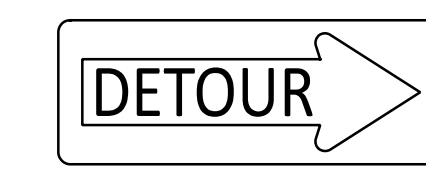
STEPHENS ROAD

1000 FEET

W20-3-48  
D3-1  
(BLACK ON ORANGE)  
W16-2-30

6 OPEN TO ADDRESS 838

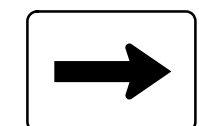
ROAD CLOSED  
3/4 MILES AHEAD  
LOCAL TRAFFIC ONLY



SPECIAL - 30" x 24" (BLACK/ ORANGE)  
R11-3A-60  
M4-10R-48  
(ON TYPE III BARRICADE)

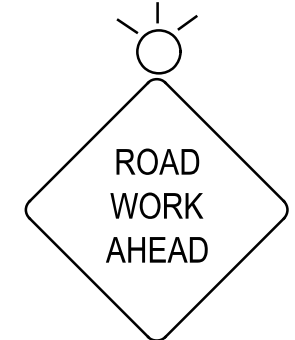
9  
DETOUR

STEPHENS ROAD



M4-8-12  
D3-1  
(BLACK ON ORANGE)  
M6-1\_R-12

3  
TYPE A  
WARNING LIGHT



W20-1-48

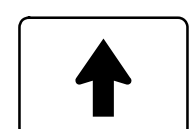
4

ROAD  
CLOSED

R11-2-48  
(ON 2 TYPE III BARRICADES)

7  
DETOUR

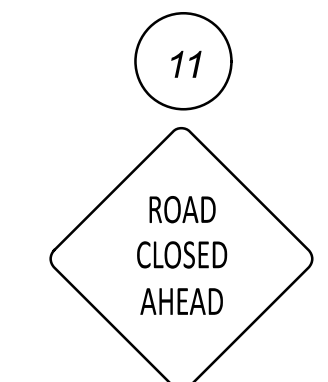
STEPHENS ROAD



M4-8-12  
D3-1  
(BLACK ON ORANGE)  
M6-3-12

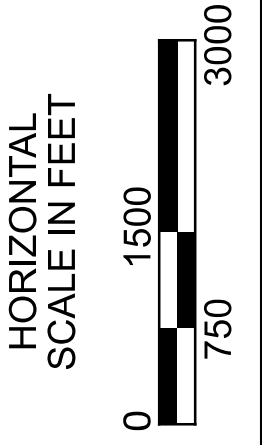
10  
END  
DETOUR

M4-8-24



STEPHENS ROAD

W20-3-48  
D3-1  
(BLACK ON ORANGE)



DETOUR PLAN

DESIGN AGENCY



DESIGNER  
JLM

REVIEWER  
DWS 11/13/23

PROJECT ID  
117643

SHEET TOTAL  
5 34


**NOTES:**

- FOR ADDITIONAL DETAILS, SEE STANDARD DRAWING MT-101.60.




STATION RANGE	TYPICAL SECTION	SIDE	DISTANCE (D)	AVERAGE WIDTH (W)	SURFACE AREA (A) A=DxW/9	CADD GENERATED AREA	204	204	252	254	301	304	407	441	441	605
			FT	FT	SQ YD	SQ YD	SY	HOUR	FT	SY	CY	CY	GAL	CY	CY	FT
8+81.70	TO	9+54.00	72.30	7.14	57.35	57.35	81.45	0.04	164.60	160.68	12.97	13.13	43.61	9.08	9.08	
9+54.00		10+74.00	120.00	30.00	399.99	399.99	439.99	0.22			80.80	72.59	80.00	16.67	16.67	
10+74.00		11+45.59	71.59	7.50	59.64	59.64	83.50	0.04	163.18	159.08	13.40	13.47	43.74	9.11	9.11	63.40
<b>SUBTOTALS</b>							604.94	0.30	327.78	319.76	107.17	99.19	167.35	34.86	34.86	63.40
<b>TOTALS CARRIED TO GENERAL SUMMARY</b>							605	0.30	328	320	108	100	168	35	35	64

PAVEMENT SUBSUMMARY

DESIGN AGENCY  
  
 DESIGNER: JLM  
 REVIEWER: JLM  
 PROJECT ID: 117643  
 SHEET: 7 TOTAL: 34

REF NO.	SHEET NO.	STATION TO STATION																																				
				202	202	202	202	601	601	602	611	606	606	607	607	626		660	836																			
			TO	PAVEMENT REMOVED	PIPE REMOVED, 24" AND UNDER	GUARDRAIL REMOVED	FENCE REMOVED	ROCK CHANNEL PROTECTION, TYPE B WITH GEOTEXTILE FABRIC	RIPRAP, TYPE D	CONCRETE MASONRY	8" CONDUIT, TYPE C	TYPE MGS WITH LONG POSTS	ANCHOR ASSEMBLY, MGS TYPE E	FENCE, TYPE 47	FENCE REBUILT	BARRIER REFLECTOR, TYPE 2		SODDING REINFORCED	SEEDING AND EROSION CONTROL WITH TURF REINFORCING MAT, TYPE 1																			
				SY	FT	FT	FT	CY	SY	CY	FT	FT	EACH	FT	FT	EACH		SY	SY																			
R-1	9, 10	9+07.96						38.47																														
R-2	9, 10	8+61.26						129.47																														
R-3	10	10+54.11						62.26																														
R-4	9, 10	8+81.70							17.99																													
R-5	9, 10	8+81.70							15.93																													
R-6	10	9+54.00							92.31																													
R-7	10	10+39.00							92.34																													
R-8	10	10+74.00							18.28																													
R-9	10	10+74.00							17.09																													
R-10	10	9+42.96																																				
R-11	10	10+39.00																																				
R-12	10	9+22.92																																				
R-13	10	10+39.00																																				
D-1	10	9+84.16							83.13																													
D-2	10	10+12.11								67.28																												
D-3	10	9+66.36																																				
D-4	10	10+28.87																																				
E-1	10	9+00.00																																				
E-2	10	8+75.00																																				
F-1	9, 10	9+07.96																																				
F-2	9, 10	8+61.26																																				
F-3	10	10+54.11																																				
GR-1	10	9+09.96																																				
GR-2	9, 10	8+60.49																																				
TOTALS CARRIED TO GENERAL SUMMARY				254	5	225	231	93	68	0.09	5	325	4	40	184	8		68	28																			

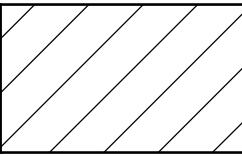
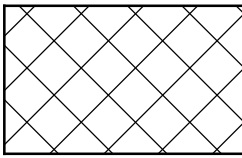
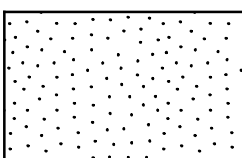
ROADWAY AND DRAINAGE SUBSUMMARY

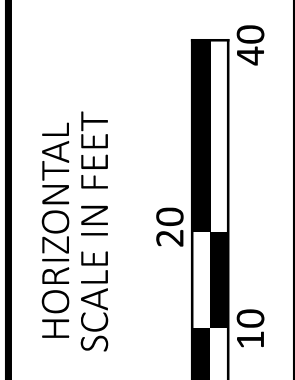
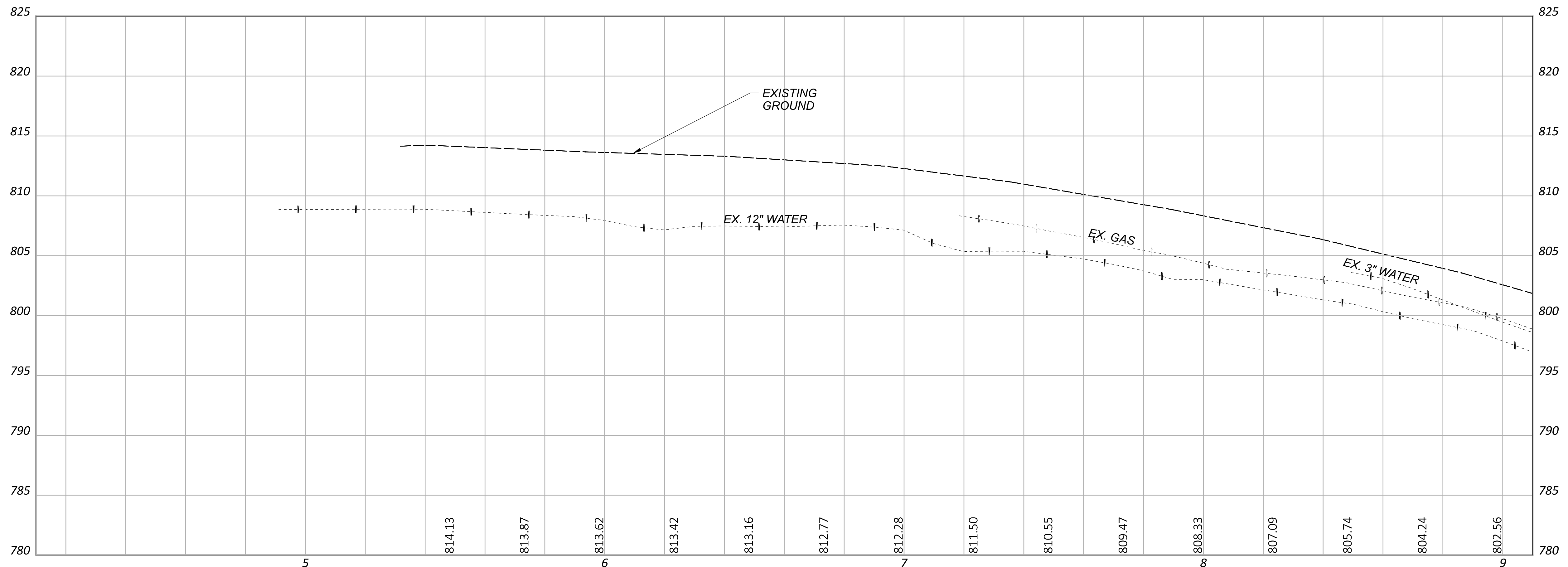
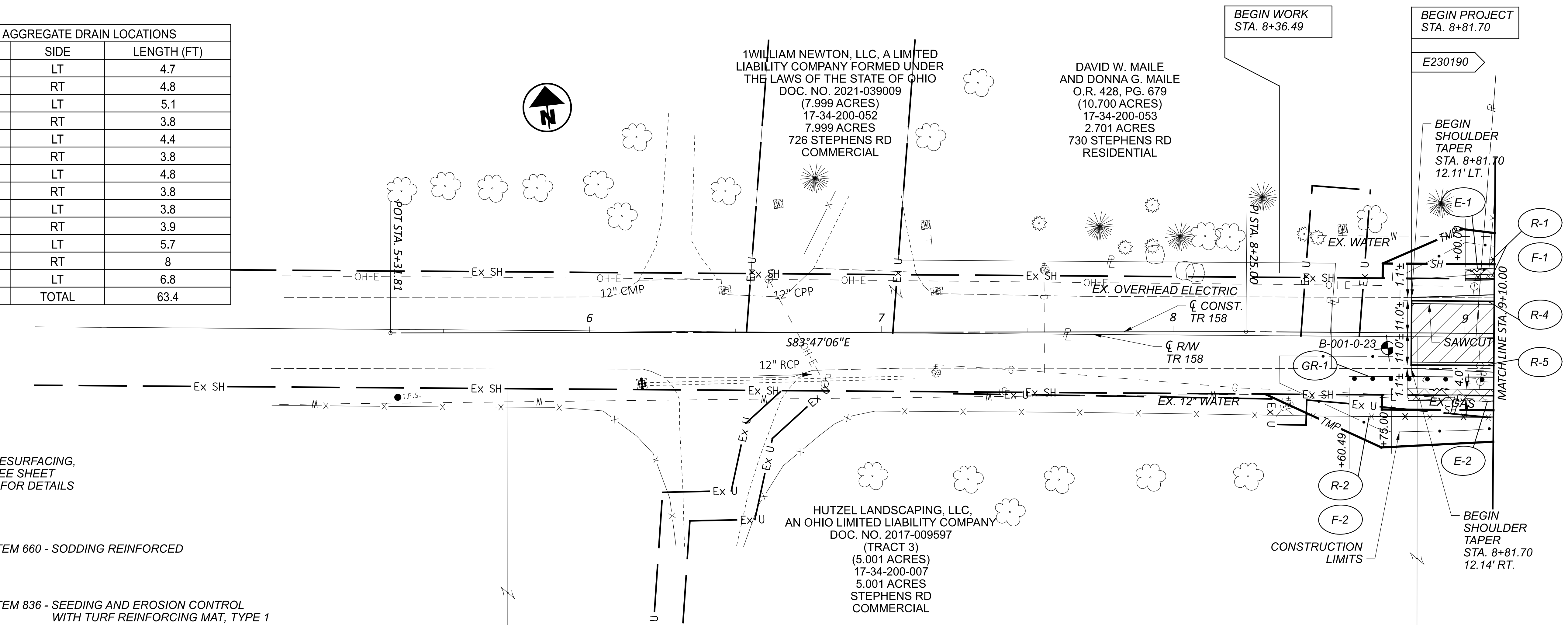
DESIGN AGENCY  
  
 DESIGNER  
 JLM  
 REVIEWER  
 DWS 11/13/23  
 PROJECT ID  
 117643  
 SHEET TOTAL  
 8 34



ITEM 605 - AGGREGATE DRAIN LOCATIONS		
STATION	SIDE	LENGTH (FT)
8+90.00	LT	4.7
9+15.00	RT	4.8
9+40.00	LT	5.1
9+65.00	RT	3.8
9+90.00	LT	4.4
10+15.00	RT	3.8
10+34.66	LT	4.8
10+34.66	RT	3.8
10+40.00	LT	3.8
10+65.00	RT	3.9
10+90.00	LT	5.7
11+15.00	RT	8
11+40.00	LT	6.8
TOTAL		63.4

LEGEND

-  RESURFACING, SEE SHEET 2 FOR DETAILS
-  ITEM 660 - SODDING REINFORCED
-  ITEM 836 - SEEDING AND EROSION CONTROL WITH TURF REINFORCING MAT, TYPE 1



PLAN AND PROFILE TR 158  
 STA. 5+31.81 TO STA. 9+10.00

DESIGN AGENCY

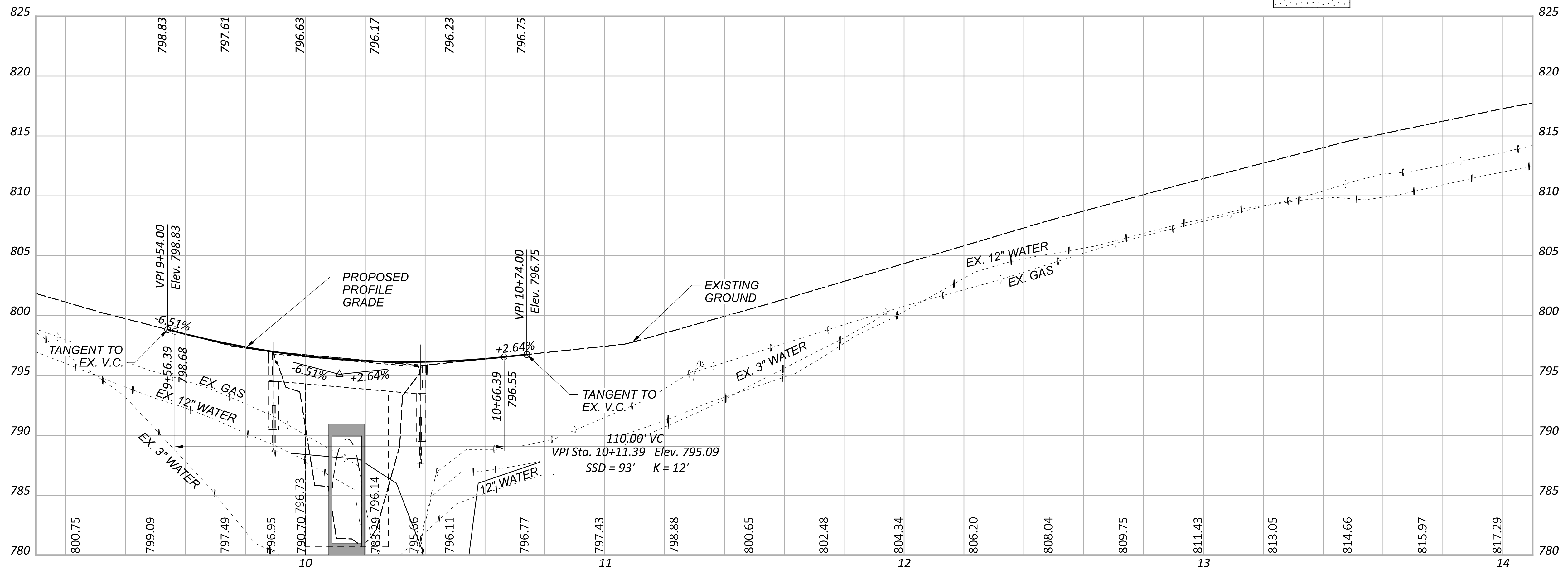
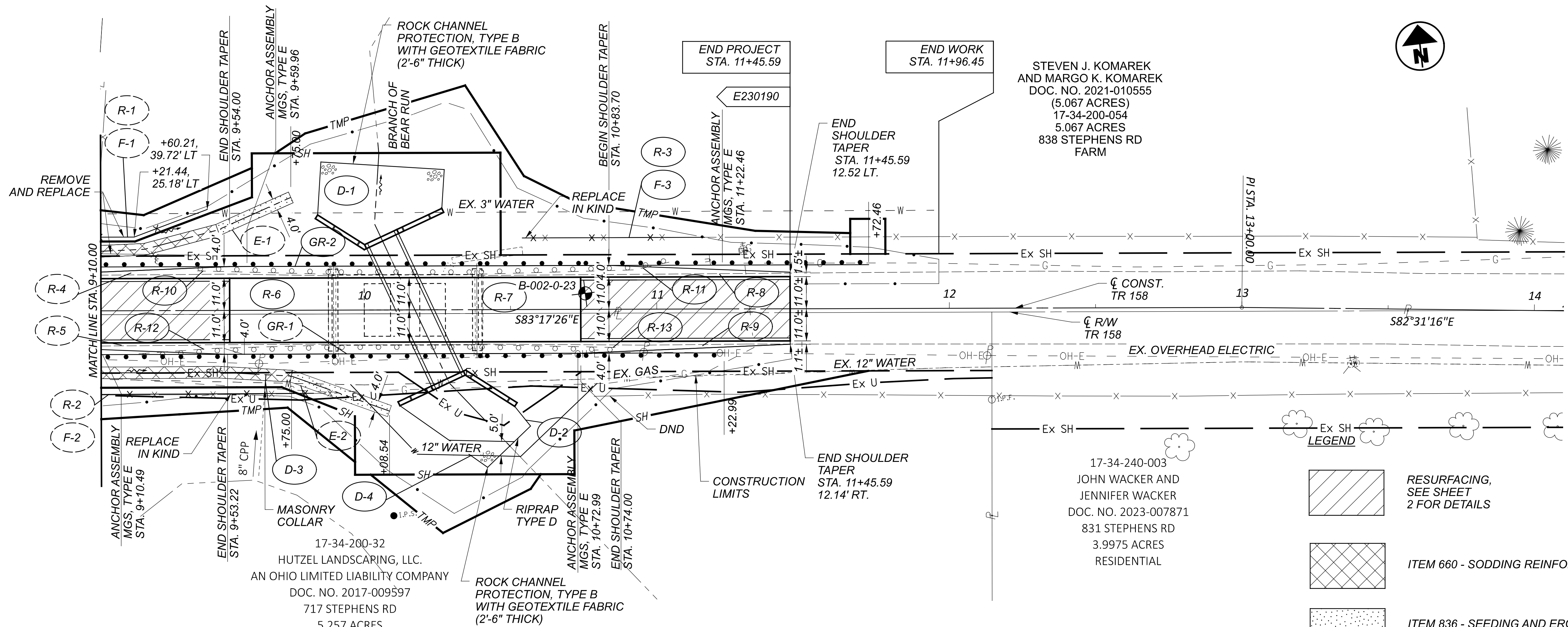


DESIGNER  
**JLM**

REVIEWER  
**DWS 11/13/23**

PROJECT ID  
**117643**

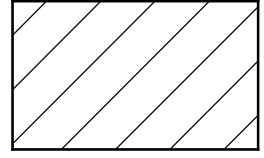
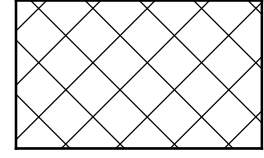
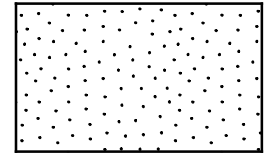
SHEET TOTAL  
 9 | 34

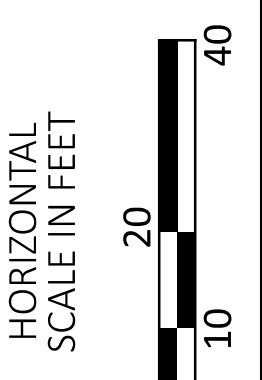
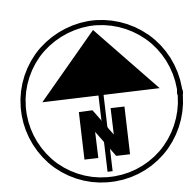


STEVEN J. KOMAREK  
AND MARGO K. KOMAREK  
DOC. NO. 2021-010555  
(5.067 ACRES)  
17-34-200-054  
5.067 ACRES  
838 STEPHENS RD  
FARM


17-34-200-32  
HUTZEL LANDSCAPING, LLC.  
AN OHIO LIMITED LIABILITY COMPANY  
DOC. NO. 2017-009597  
717 STEPHENS RD  
5.257 ACRES  
COMMERCIAL

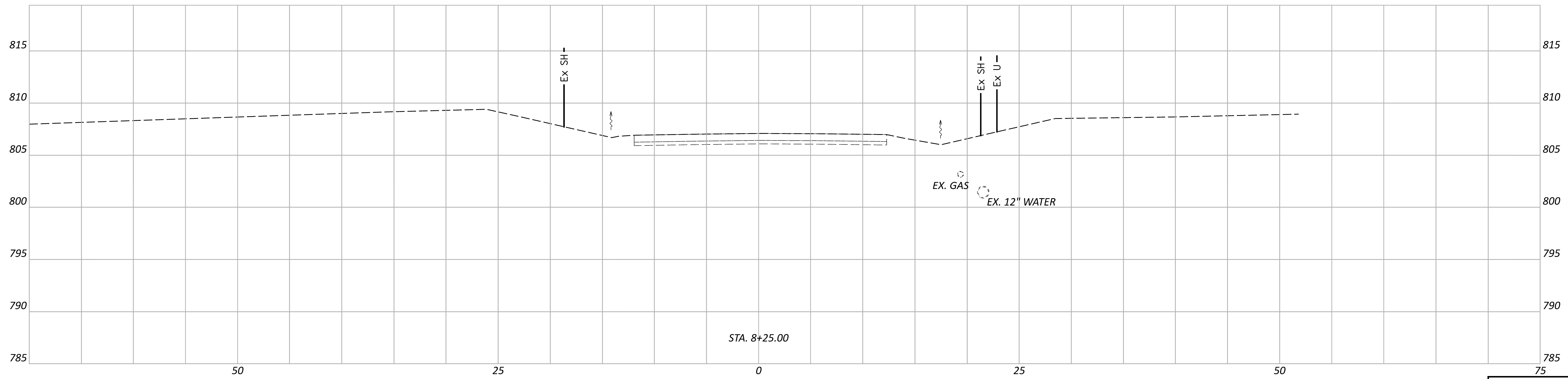
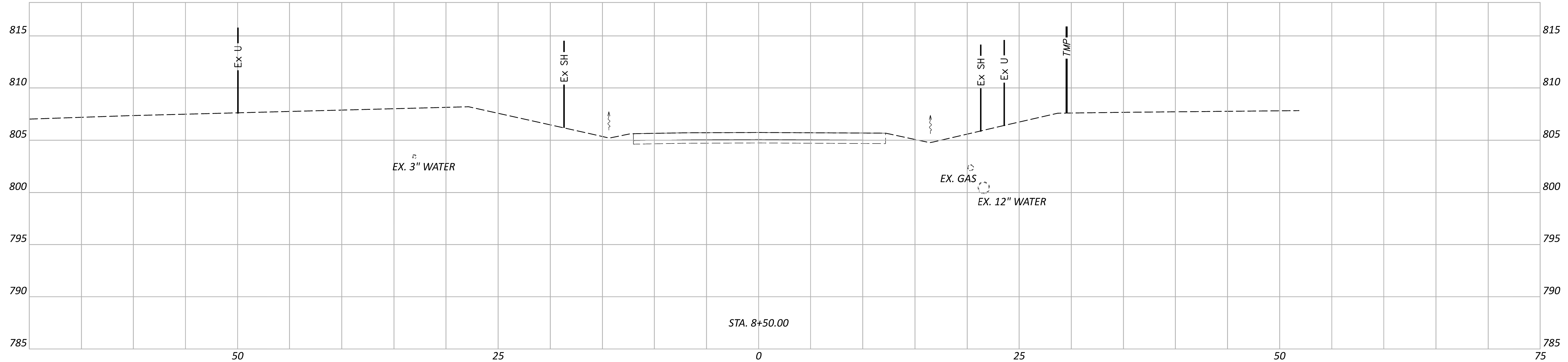
17-34-240-003  
JOHN WACKER AND  
JENNIFER WACKER  
DOC. NO. 2023-007871  
831 STEPHENS RD  
3.9975 ACRES  
RESIDENTIAL

- LEGEND**
-  RESURFACING, SEE SHEET 2 FOR DETAILS
  -  ITEM 660 - SODDING REINFORCED
  -  ITEM 836 - SEEDING AND EROSION CONTROL WITH TURF REINFORCING MAT, TYPE 1



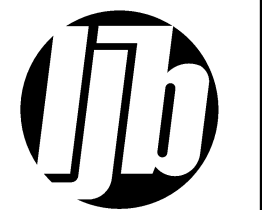
**PLAN AND PROFILE TR 158**  
**STA. 9+10.00 TO STA. 14+10.00**

DESIGN AGENCY	
	
DESIGNER	JLM
REVIEWER	DWS 11/13/23
PROJECT ID	117643
SHEET	TOTAL
10	34



CROSS SECTIONS  
 STA. 8+25.00 TO STA. 8+50.00

DESIGN AGENCY



DESIGNER

JLM

REVIEWER

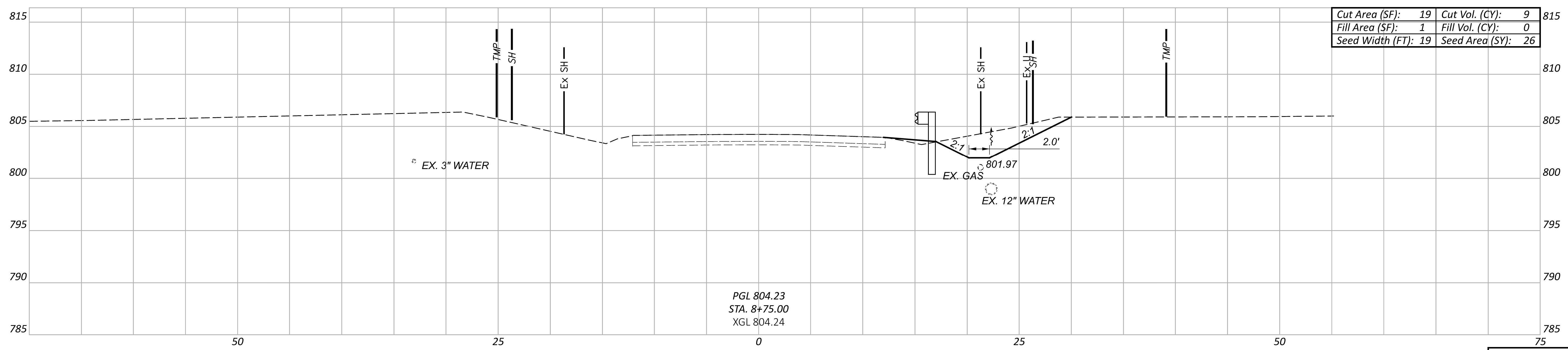
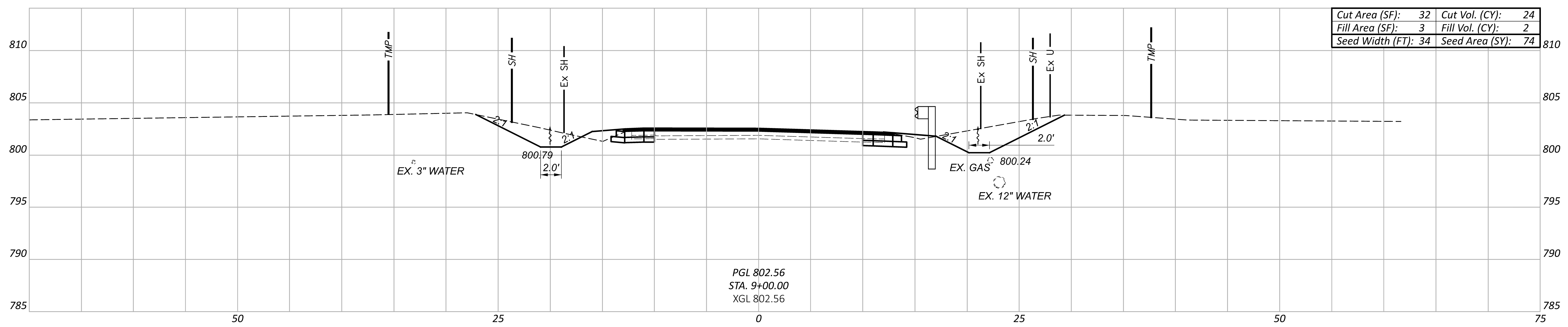
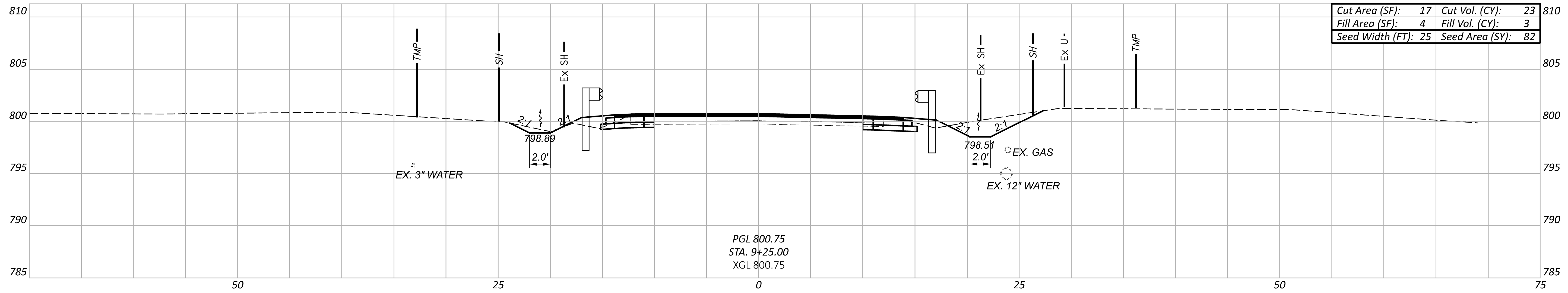
DWS 11/13/23

PROJECT ID


117643

Sheet Totals		
Seeding	Cut	Fill

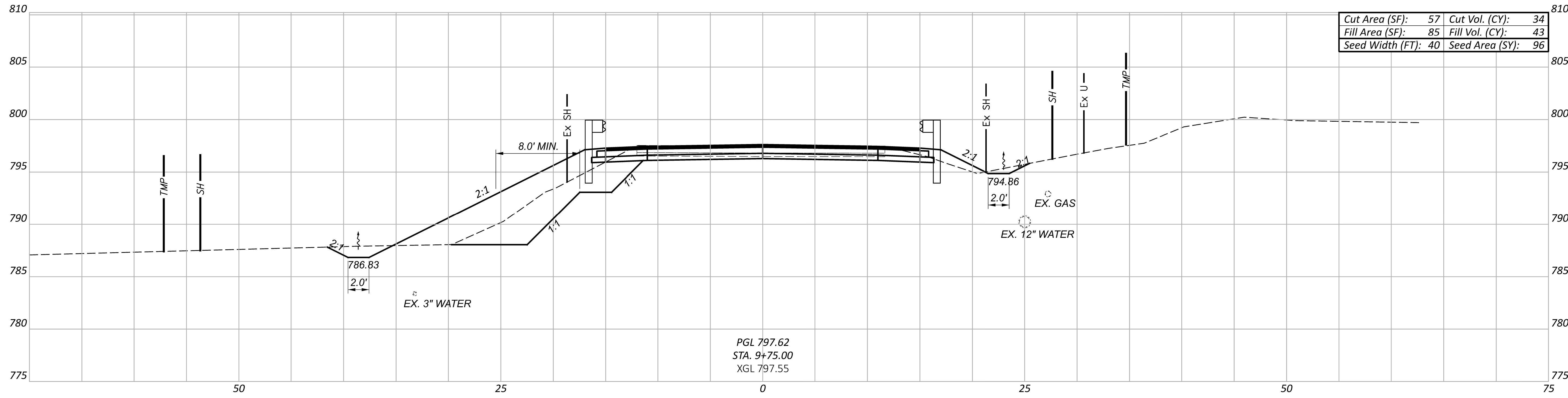
SHEET	TOTAL
11	34



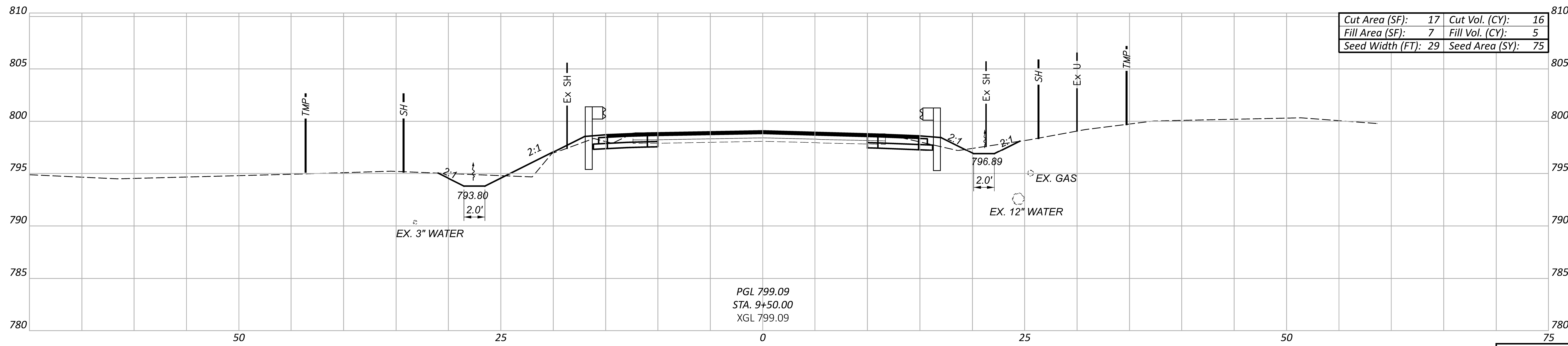
CROSS SECTIONS  
 STA. 8+75.00 TO STA. 9+25.00

DESIGN AGENCY  
  
 DESIGNER  
 JLM  
 REVIEWER  
 DWS 11/13/23  
 PROJECT ID  
 117643

Sheet Totals			117643
Seeding	Cut	Fill	TOTAL
182	56	5	12   34



PGL 797.62  
 STA. 9+75.00  
 XGL 797.55



PGL 799.09  
 STA. 9+50.00  
 XGL 799.09

CROSS SECTIONS  
 STA. 9+50.00 TO STA. 9+75.00

DESIGN AGENCY



DESIGNER

JLM

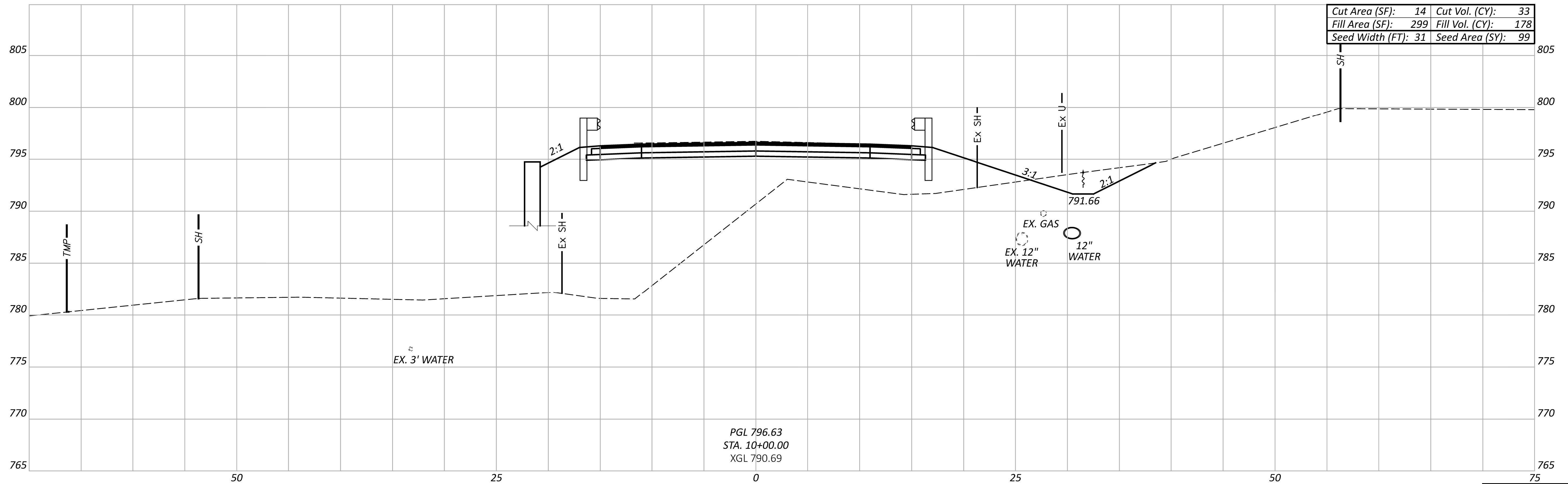
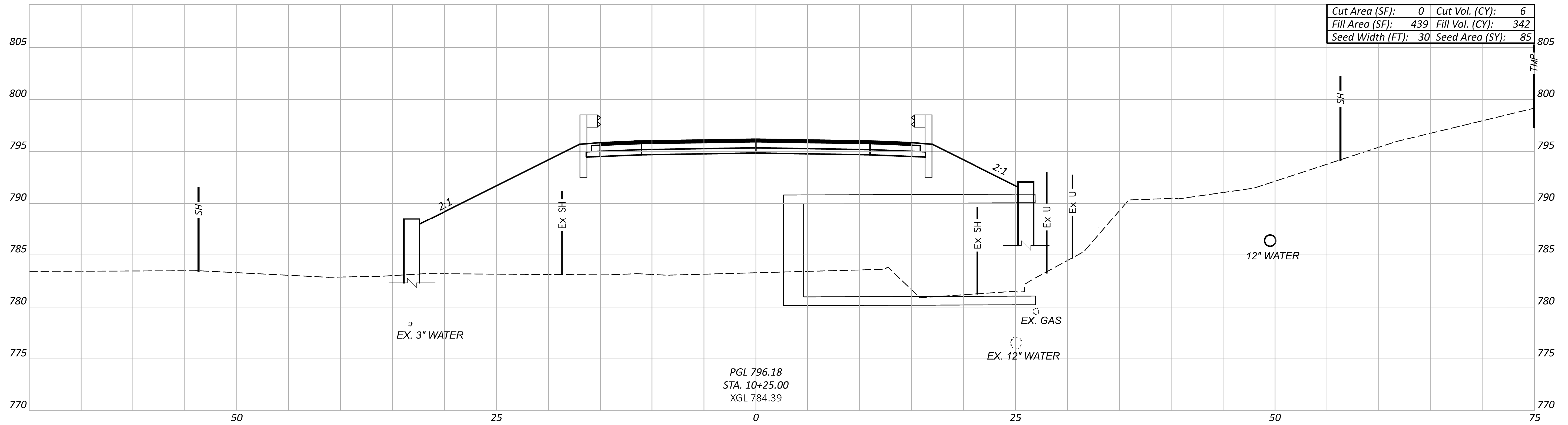
REVIEWER

DWS 11/13/23

PROJECT ID

117643

Sheet Totals			TOTAL	
Seeding	Cut	Fill	SHEET	TOTAL
171	50	48	13	34



CROSS SECTIONS  
STA. 10+00.00 TO STA. 10+25.00

DESIGN AGENCY



DESIGNER

JLM

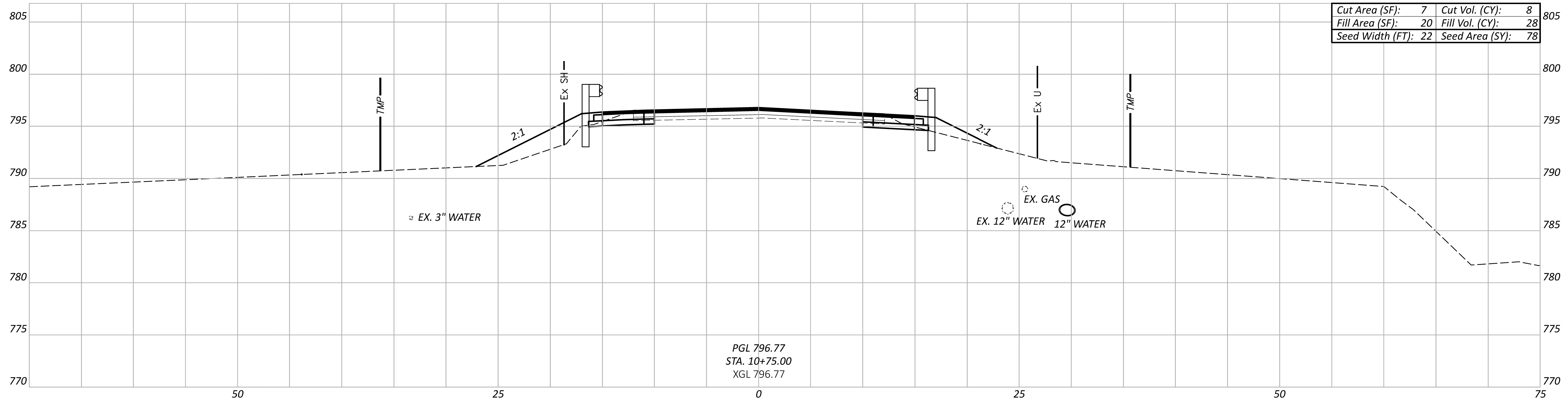
REVIEWER

DWS 11/13/23

PROJECT ID

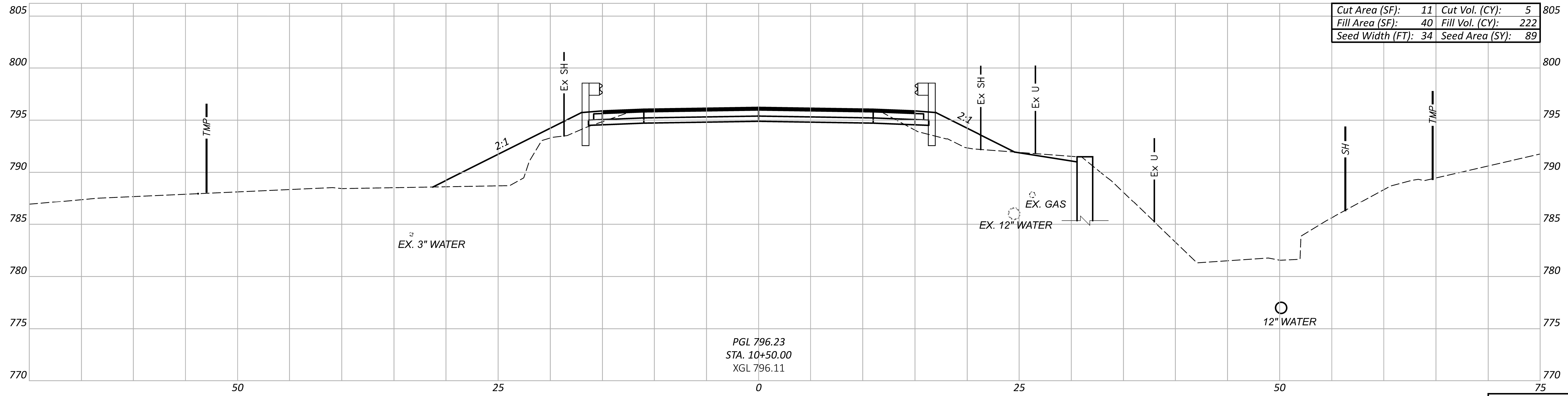
117643

Sheet Totals			TOTAL	
Seeding	Cut	Fill	SHEET	TOTAL
184	39	520	14	34



Cut Area (SF):	7	Cut Vol. (CY):	8
Fill Area (SF):	20	Fill Vol. (CY):	28
Seed Width (FT):	22	Seed Area (SY):	78

PGL 796.77  
 STA. 10+75.00  
 XGL 796.77

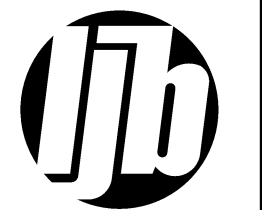


Cut Area (SF):	11	Cut Vol. (CY):	5
Fill Area (SF):	40	Fill Vol. (CY):	222
Seed Width (FT):	34	Seed Area (SY):	89

PGL 796.23  
 STA. 10+50.00  
 XGL 796.11

CROSS SECTIONS  
 STA. 10+50.00 TO STA. 10+75.00

DESIGN AGENCY



DESIGNER

JLM

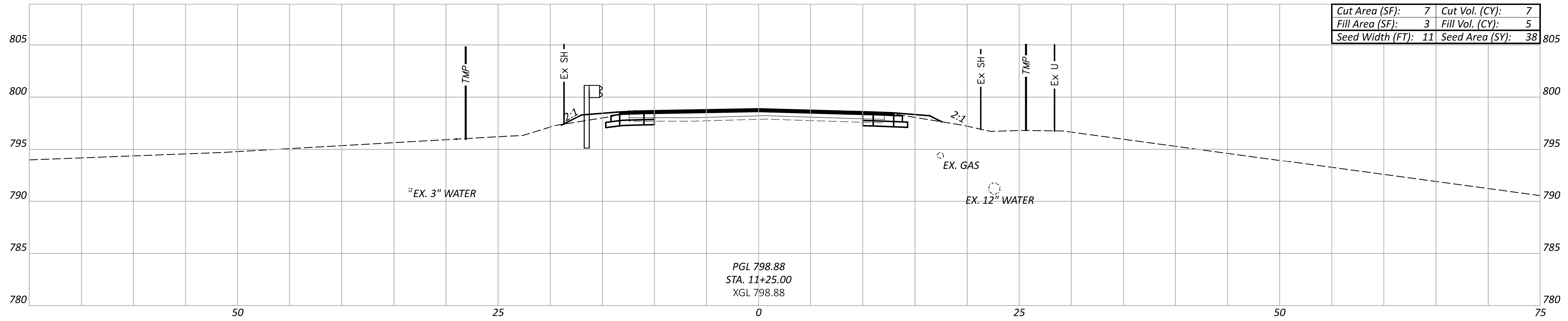
REVIEWER

DWS 11/13/23

PROJECT ID

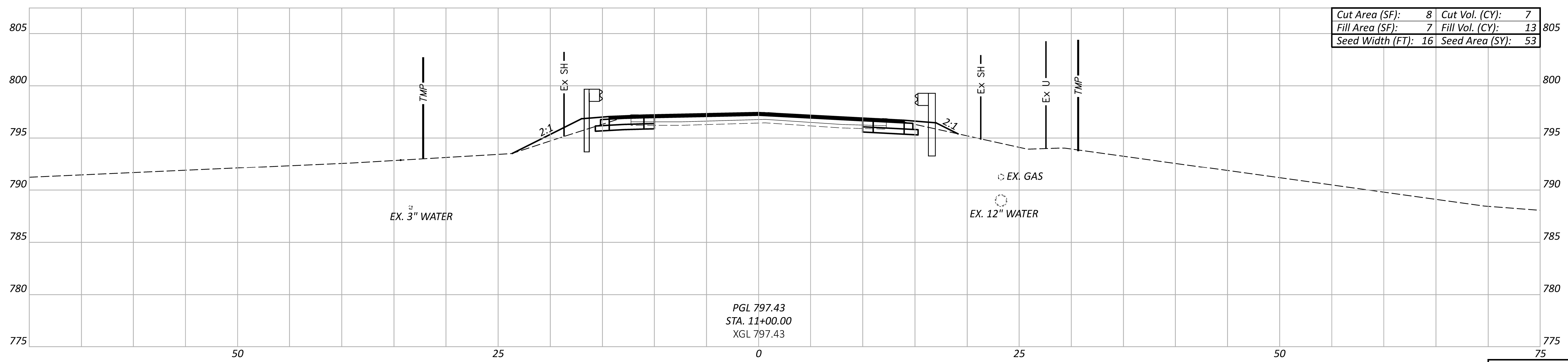
117643

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Seeding	Cut	Fill	SHEET	TOTAL
167	13	250	15	34



Cut Area (SF):	7	Cut Vol. (CY):	7
Fill Area (SF):	3	Fill Vol. (CY):	5
Seed Width (FT):	11	Seed Area (SY):	38

PGL 798.88  
 STA. 11+25.00  
 XGL 798.88



Cut Area (SF):	8	Cut Vol. (CY):	7
Fill Area (SF):	7	Fill Vol. (CY):	13
Seed Width (FT):	16	Seed Area (SY):	53

PGL 797.43  
 STA. 11+00.00  
 XGL 797.43

CROSS SECTIONS  
 STA. 11+00.00 TO STA. 11+25.00

DESIGN AGENCY



DESIGNER

JLM

REVIEWER

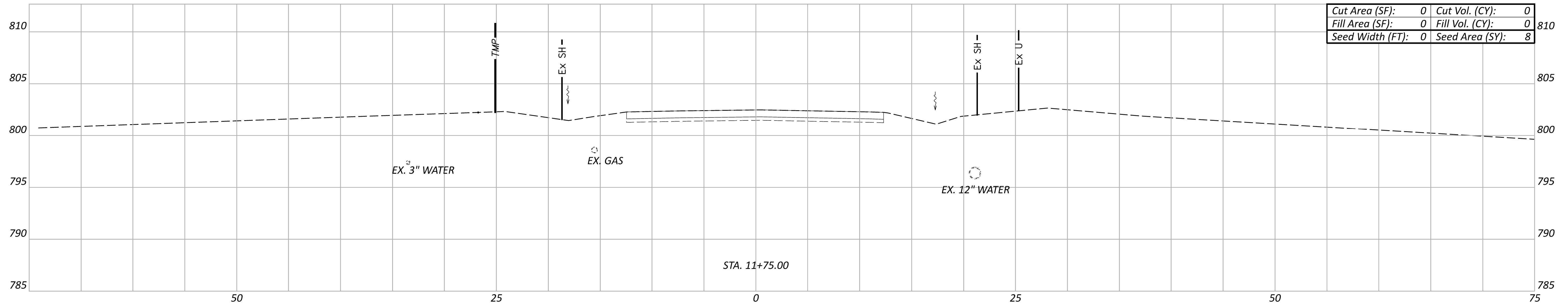
DWS 11/13/23

PROJECT ID

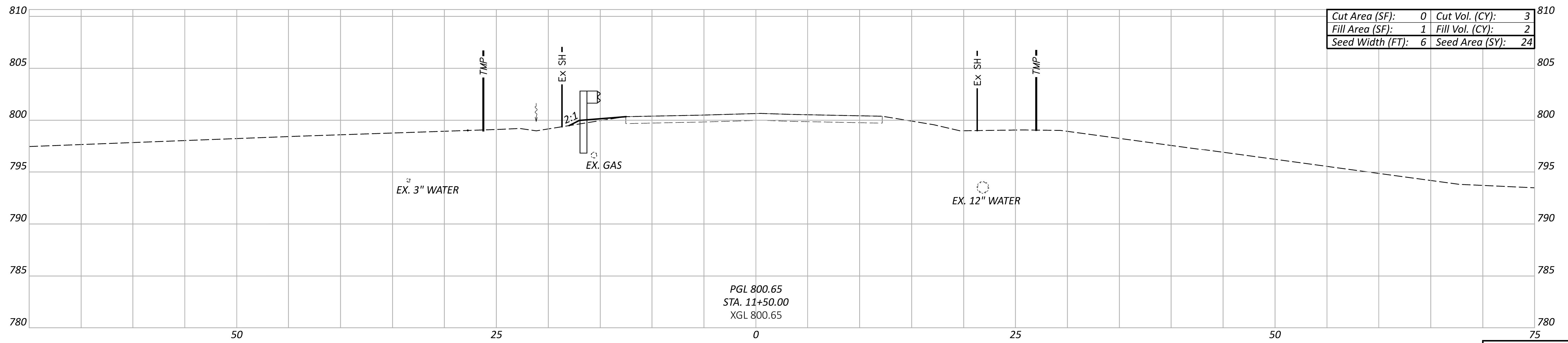
117643

Sheet Totals			117643	
Seeding	Cut	Fill	SHEET	TOTAL
91	14	18	16	34





Cut Area (SF):	0	Cut Vol. (CY):	0
Fill Area (SF):	0	Fill Vol. (CY):	0
Seed Width (FT):	0	Seed Area (SY):	8



Cut Area (SF):	0	Cut Vol. (CY):	3
Fill Area (SF):	1	Fill Vol. (CY):	2
Seed Width (FT):	6	Seed Area (SY):	24

PGL 800.65  
 STA. 11+50.00  
 XGL 800.65

CROSS SECTIONS  
 STA. 11+50.00 TO STA. 11+75.00

DESIGN AGENCY



DESIGNER

JLM

REVIEWER

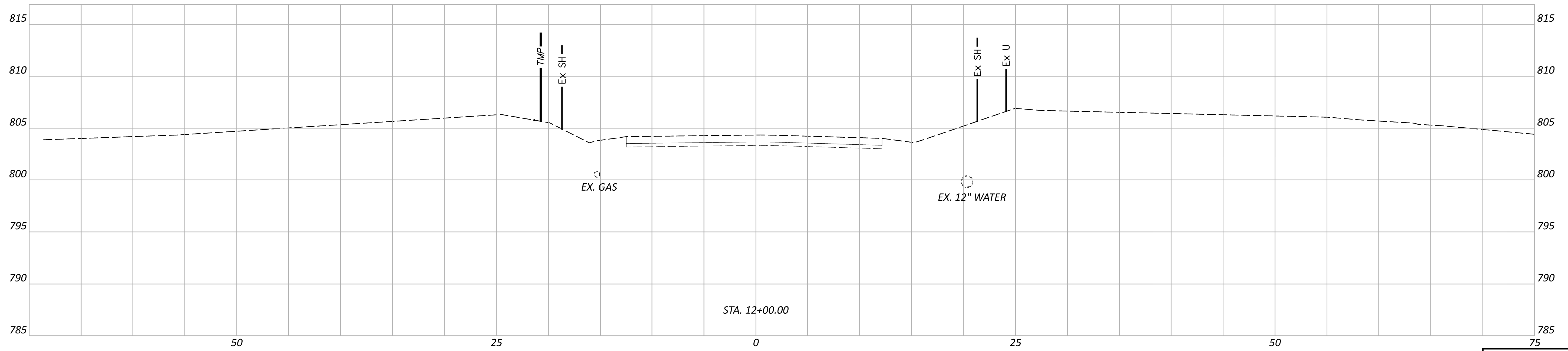
DWS 11/13/23

PROJECT ID

117643

Sheet Totals		
Seeding	Cut	Fill
32	3	2

SHEET	TOTAL
17	34



CROSS SECTIONS  
STA. 12+00.00

DESIGN AGENCY



DESIGNER

JLM

REVIEWER

DWS 11/13/23

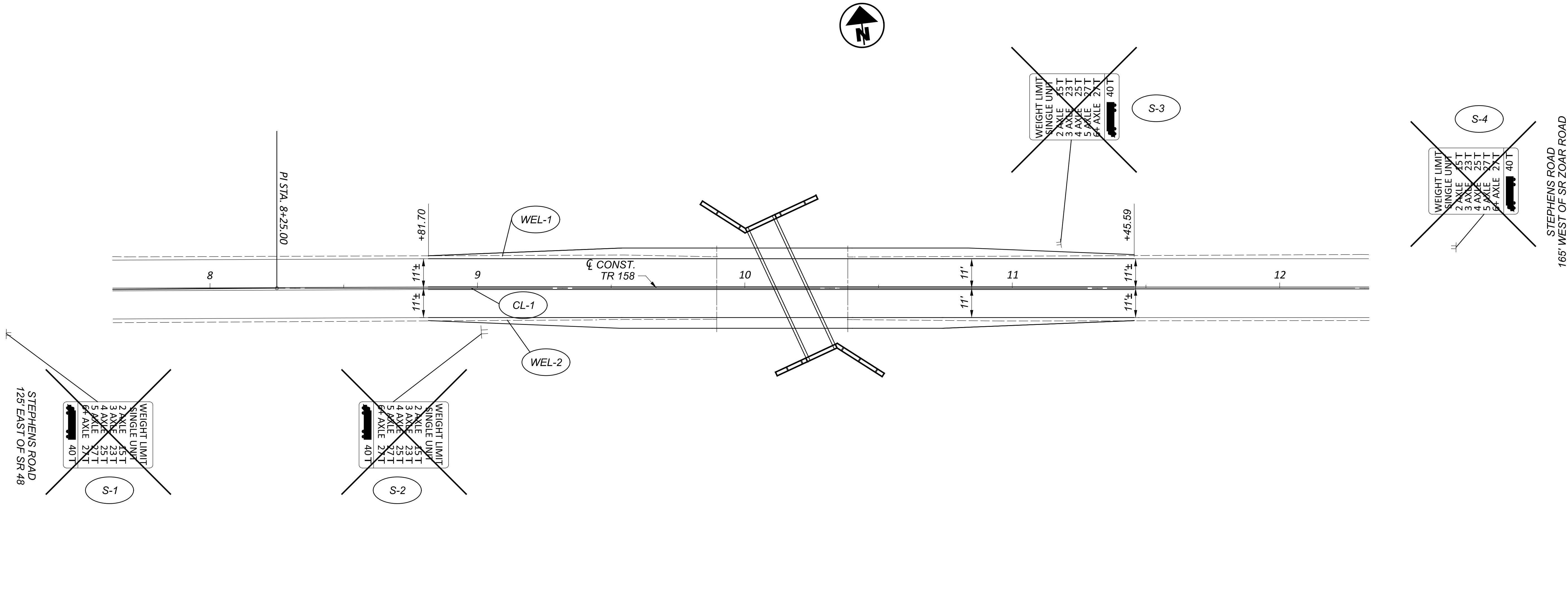
PROJECT ID

117643

Sheet Totals		
Seeding	Cut	Fill

SHEET	TOTAL
18	34





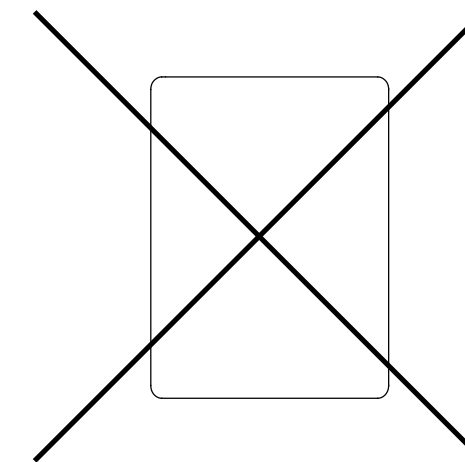
LEGEND



ITEM 644 - CENTERLINE, DOUBLE YELLOW



ITEM 644 - WHITE EDGE LINE, 4"



REMOVE EXISTING SIGN AND STORE FOR WCEO

TRAFFIC CONTROL PLAN

DESIGN AGENCY



DESIGNER

JLM

REVIEWER

DWS 11/13/23

PROJECT ID

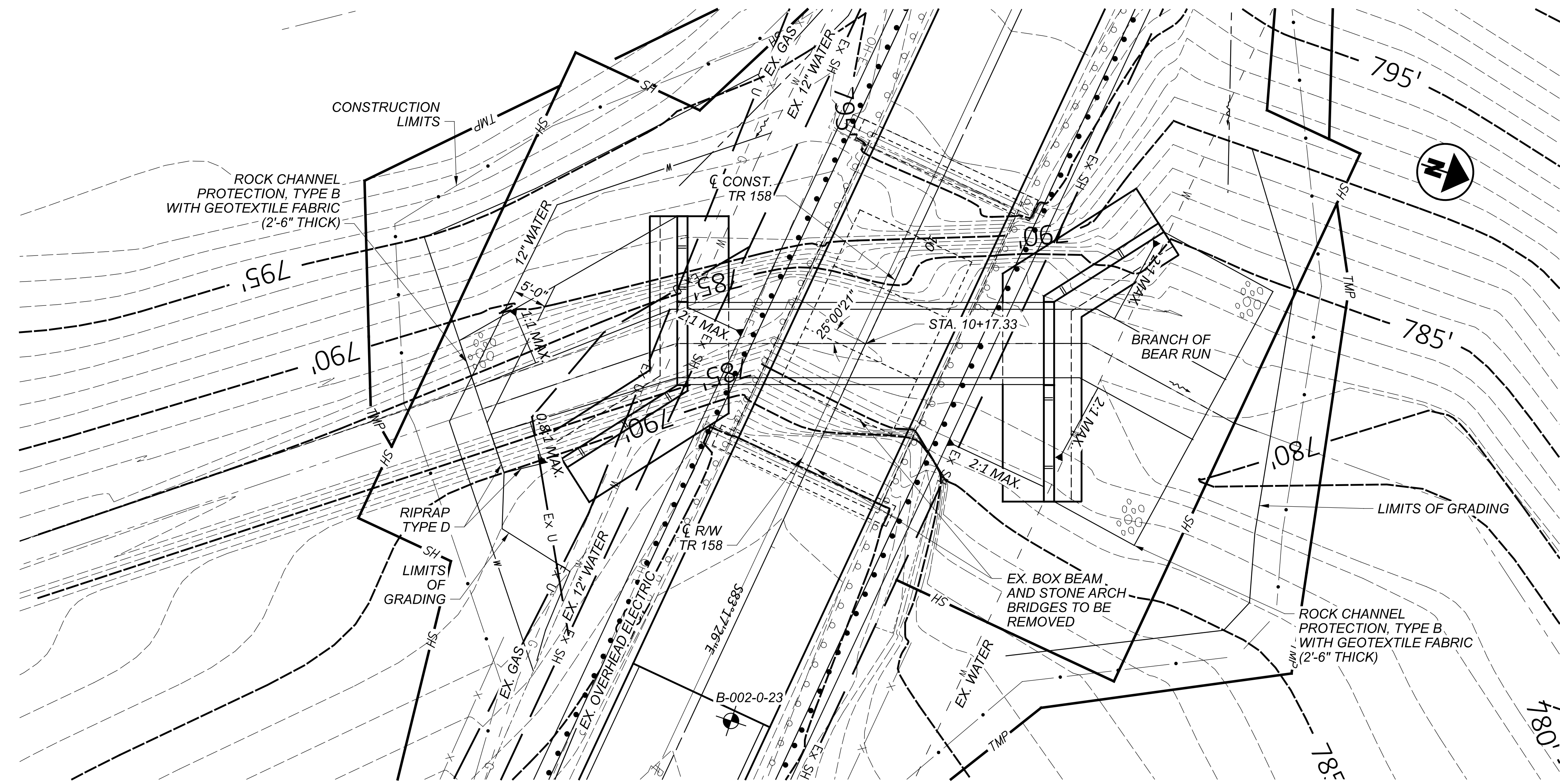
117643

SHEET

20

TOTAL

34



BENCHMARK DATA				
BM #1 STA.	5+34.27,	ELEV.	813.87,	OFFSET 22.05', RT.
BM #2 STA.	10+09.92,	ELEV.	800.91,	OFFSET 70.37', RT.

FOR ADDITIONAL BENCHMARK INFORMATION. SEE ROADWAY PLAN SHEET 3.

**NOTES**

EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.

DESIGN TRAFFIC:

2023 ADT = 4,000  
 2043 ADT = 5,950

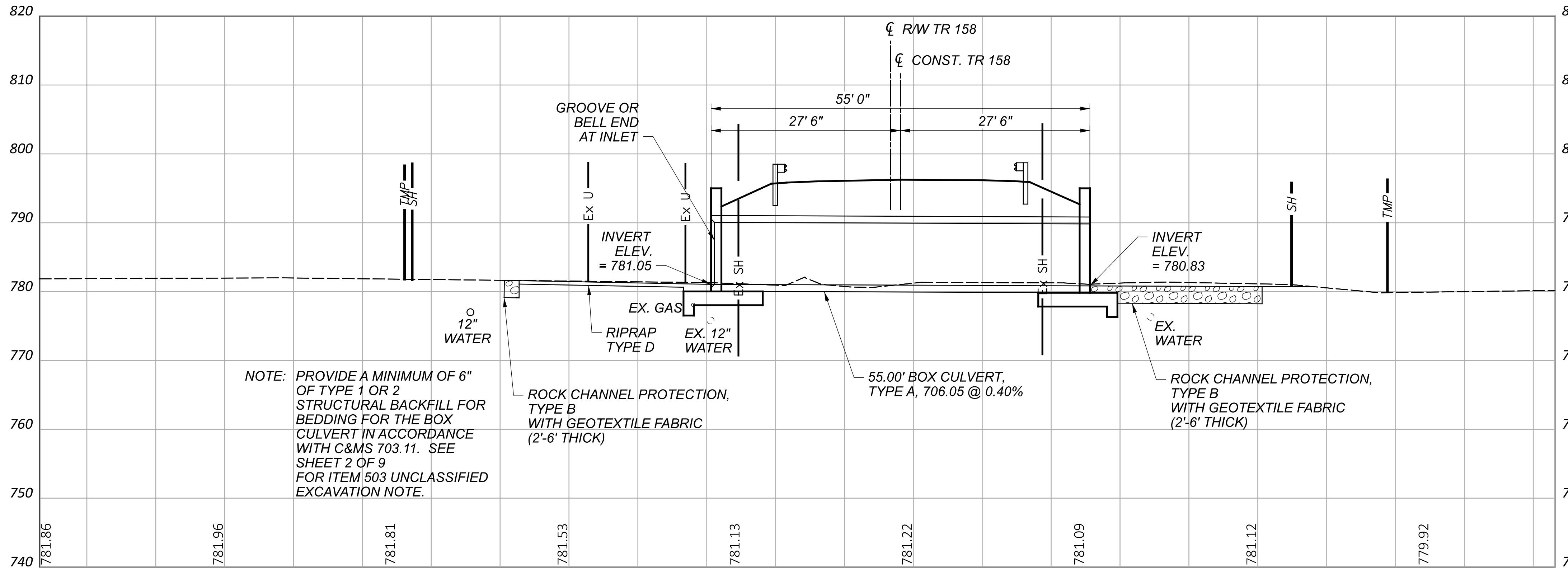
**LEGEND**

⊕ BORING LOCATION



HYDRAULIC DATA		
DRAINAGE AREA =	275.2 ACRES	
Q (25) =	312 CFS	V (25) = 6.51 FT/S
Q (100) =	458 CFS	V (100) = 6.71 FT/S
ORDINARY HIGH WATER MARK:	783.25 FT	
DESIGN SERVICE LIFE:	75 YEARS	
ABRASION LEVEL:	4	
pH:		

EXISTING STRUCTURE	
TYPE:	STONE ARCH AND BOX BEAM BRIDGE ON INTEGRAL ABUTMENTS
SIZE AND SPAN:	10' ARCH AND 49' SPAN BOX BEAM BRIDGE
ROADWAY:	24'-0" F/F RAIL
LOADING:	HS20-44
SKEW:	NONE
WEARING SURFACE:	ASPHALT
APPROACH SLABS:	NONE
ALIGNMENT:	TANGENT
CROWN:	0.016 FT/FT
STRUCTURE FILE NUMBER:	8333459
DATE BUILT:	ARCH: UNKNOWN, BOX BEAM: 1993
CONDITION:	POOR
DISPOSITION:	TO BE REPLACED



PROPOSED STRUCTURE	
TYPE:	PRECAST REINFORCED CONCRETE BOX CULVERT
SIZE:	10'-0" SPAN X 9'-0" RISE
ROADWAY:	30'-0" F/F RAIL
LOADING:	HL93 AND 60 PSF FUTURE WEARING SURFACE
SKEW:	25°00'21"
WEARING SURFACE:	N/A
APPROACH SLABS:	N/A
ALIGNMENT:	TANGENT
CROWN:	0.016 FT/FT
DECK AREA:	N/A
STRUCTURE FILE NUMBER:	8333460
COORDINATES:	LATITUDE 39°19'35.77" LONGITUDE 84°12'12.24"

CULVERT SITE PLAN  
 TR 158 OVER BRANCH OF BEAR RUN

DESIGN AGENCY

DESIGNER  
JLM

REVIEWER  
DWS 11/13/23

PROJECT ID  
117643

SUBSET	TOTAL
1	9
SHEET	TOTAL
21	34

**GENERAL NOTES:**

**DESIGN SPECIFICATIONS**

THIS STRUCTURE CONFORMS TO THE 9TH EDITION OF THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2020 AND THE ODOT BRIDGE DESIGN MANUAL, 2020.

**OPERATIONAL IMPORTANCE**

A LOAD MODIFIER OF 1.0 HAS BEEN ASSUMED FOR THE DESIGN OF THIS STRUCTURE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, ARTICLE 1.3.5 AND THE ODOT BRIDGE DESIGN MANUAL, 2020.

**DESIGN DATA**

CONCRETE CLASS QC1 - COMPRESSIVE STRENGTH 4.0 KSI (SUBSTRUCTURE)  
 REINFORCING STEEL - MINIMUM YIELD STRENGTH 60 KSI

**FOUNDATION BEARING RESISTANCE:**

WINGWALL FOOTINGS, AS DESIGNED, PRODUCE A MAXIMUM SERVICE LOAD PRESSURE OF 3.4 KIPS PER SQUARE FOOT AND A MAXIMUM STRENGTH LOAD PRESSURE OF 6.5 KIPS PER SQUARE FOOT. THE FACTORED BEARING RESISTANCE IS 15.75 KIPS PER SQUARE FOOT.

**FOOTINGS**

FOOTINGS SHALL EXTEND A MINIMUM OF 3 INCHES INTO BEDROCK OR TO THE ELEVATION SHOWN, WHICHEVER IS LOWER. NOTIFY ENGINEER IF TOP OF ROCK ELEVATION IS ENCOUNTERED BELOW FOOTING ELEVATION.

**FORESLOPE WALL ANCHOR DOWELS**

ANCHOR PER CMS 510 WITH NONSHRINK, NONMETALLIC GROUT CONFORMING TO CMS 705.20 AND TO A DEPTH OF 9 INCHES. PAYMENT FOR DOWEL HOLES, GROUT AND INSTALLATION SHALL BE INCLUDED WITH ITEM 511.

AS AN ALTERNATIVE TO RESIN BONDING, THREADED INSERTS OR NONPROTRUDING MECHANICAL CONNECTORS CAST INTO THE CULVERT BY THE MANUFACTURER MAY BE USED PROVIDED THEY CAN RESIST AN ULTIMATE PULL-OUT STRENGTH OF 12 KIPS AND MAINTAIN A MINIMUM COVER OF 3 INCHES AT THE BOTTOM OF THE CULVERT SLAB. MECHANICAL CONNECTORS MUST PROVIDE AN "L-SHAPED" BAR INSIDE THE CULVERT WITH A MINIMUM HORIZONTAL LENGTH OF 12 INCHES. PAYMENT FOR INSERTS OR MECHANICAL CONNECTORS SHALL BE INCLUDED WITH ITEM 611.

SEE SHEETS 5 OF 9 AND 6 OF 9 FOR LOCATIONS.

**ITEM 511 - CLASS QC1 CONCRETE, RETAINING/ WINGWALL NOT INCLUDING FOOTING, AS PER PLAN**

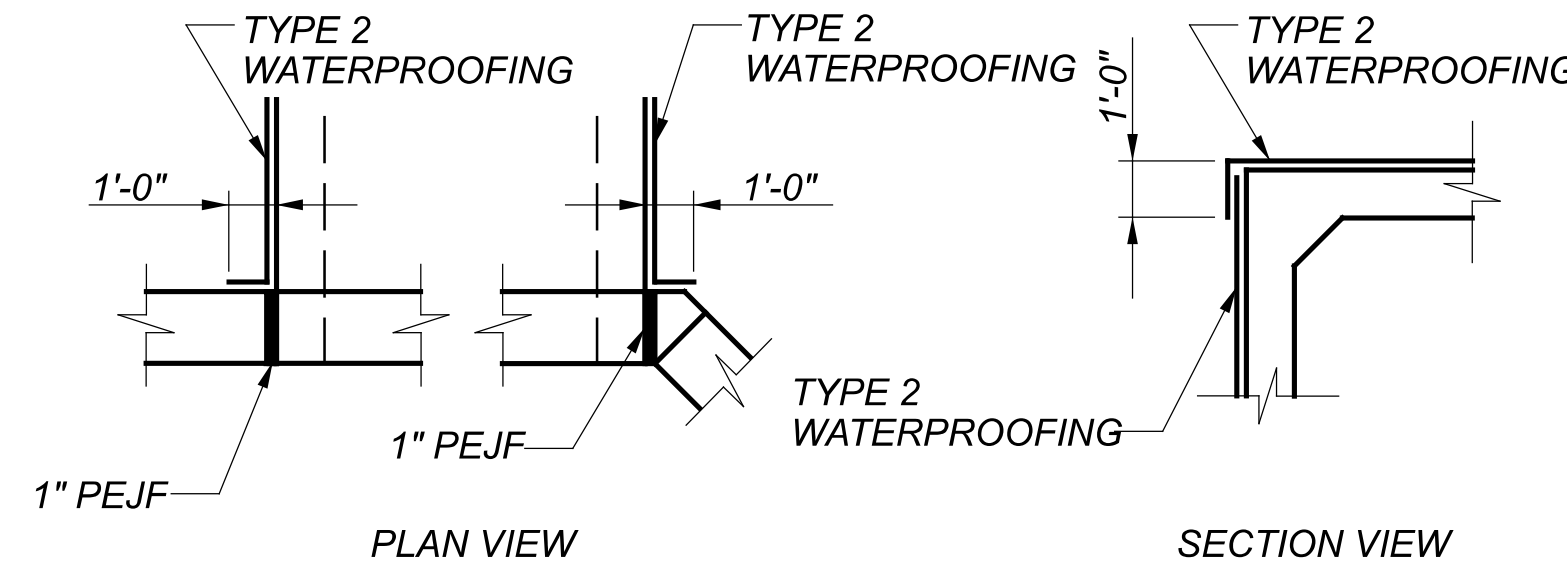
THE DEPARTMENT WILL PERMIT THE USE OF PRECAST CONCRETE IN LIEU OF CAST-IN-PLACE CONCRETE FOR HEADWALLS AND WINGWALLS IN ACCORDANCE WITH CMS 602.03. THE DEPARTMENT WILL PAY FOR THE WINGWALL AND HEADWALL CONCRETE IN SQUARE YARDS AS DETERMINED FROM PLAN DIMENSIONS USING THE WALL HEIGHTS ABOVE THE FOOTING AND LENGTH ALONG THE EXTERIOR FACES OF THE WALLS. THE DEPARTMENT WILL CONSIDER THE REINFORCING STEEL IN THE WINGWALLS AND HEADWALLS, INCLUDING THE REINFORCEMENT THAT EXTENDS INTO THE FOOTINGS, AS INCIDENTAL TO THE RETAINING/ WINGWALL CONCRETE. THE TOTAL QUANTITY OF CAST-IN-PLACE WINGWALL AND HEADWALL CONCRETE IS 55 CU YD. THE TOTAL QUANTITY OF CAST-IN-PLACE WINGWALL AND HEADWALL REINFORCING STEEL IS 15,294 LBS.

**ITEM 503 UNCLASSIFIED EXCAVATION**

ITEM 503 UNCLASSIFIED EXCAVATION INCLUDES EXCAVATION ASSOCIATED WITH STRUCTURE REMOVAL AND EXCAVATION FOR THE HEADWALLS, WINGWALLS, FOOTINGS, AND CULVERT. PAYMENT FOR ANY ROCK EXCAVATION NECESSARY FOR THE BOX CULVERT BEDDING SHALL BE INCLUDED IN ITEM 503 UNCLASSIFIED EXCAVATION. PAYMENT FOR A MINIMUM OF 6 INCHES OF GRANULAR BEDDING FOR THE BOX CULVERT SHALL BE INCLUDED IN ITEM 611 10' X 9' CONDUIT, TYPE A 706.05.

**WATERPROOFING**

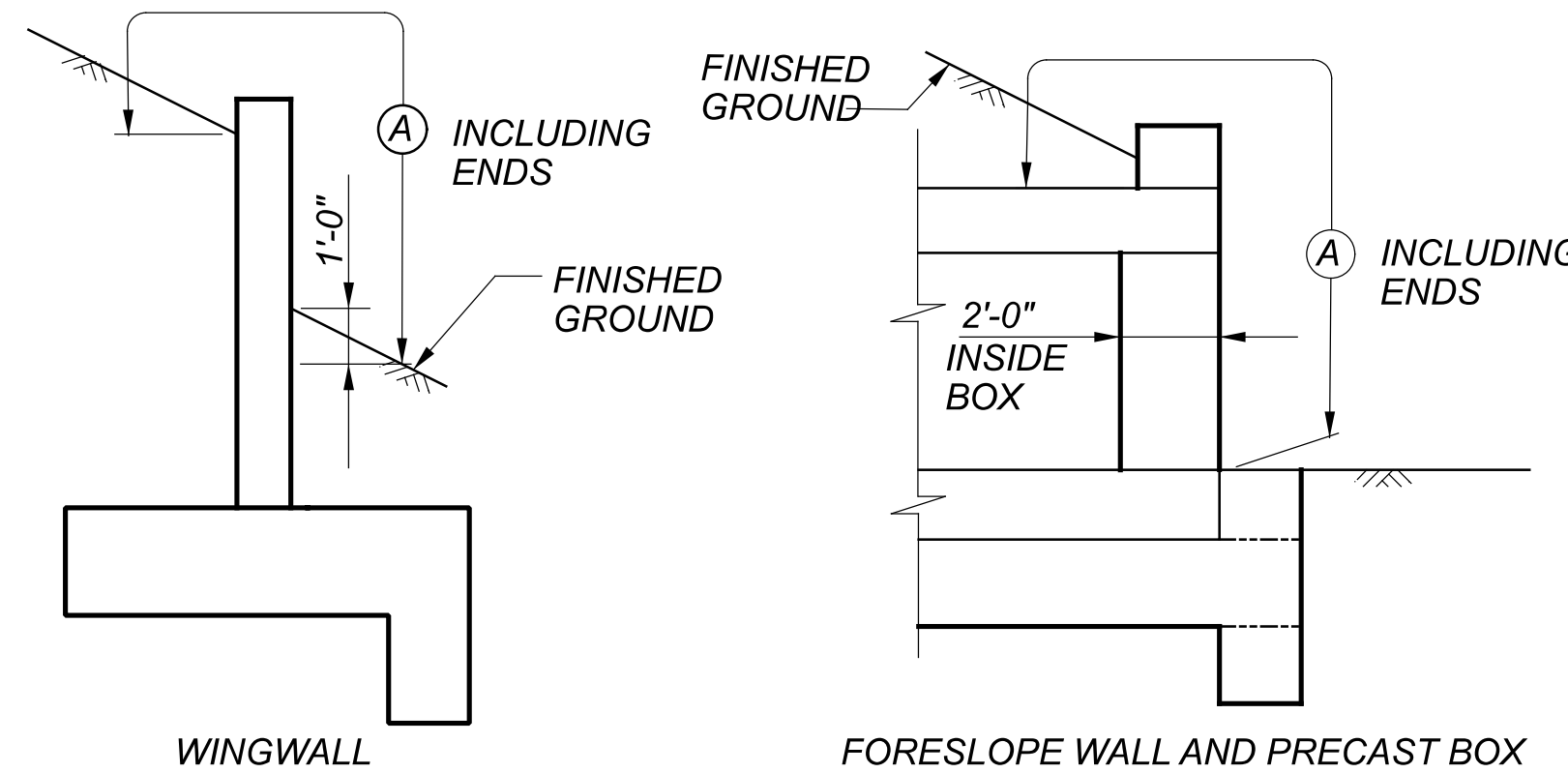
TYPE 2 WATERPROOFING, PER CMS 512.08 AND 711.25, SHALL EXTEND VERTICALLY DOWN THE ENTIRE SIDES OF THE PRECAST CULVERT SECTIONS FOR ALL PORTIONS OF THE CULVERT WHICH SHALL BE IN CONTACT WITH THE BACKFILL. PAYMENT FOR THE MEMBRANE WATERPROOFING SHALL BE AT THE CONTRACT PRICE BID PER SQUARE YARD FOR ITEM 512 - TYPE 2 WATERPROOFING.



**WATERPROOFING DETAILS**

**SEALING OF FORESLOPE WALL AND WINGWALLS**

ALL EXPOSED FORESLOPE WALL AND WINGWALL CONCRETE SHALL BE SEALED WITH EPOXY-URETHANE SEALER. THE LIMITS SHALL BE AS SHOWN IN THE DIAGRAMS BELOW. PAYMENT FOR THE EPOXY-URETHANE SEALER SHALL BE PER ITEM 512 - SEALING OF CONCRETE SURFACES. THE COLOR SHALL BE LIGHT NEUTRAL, FEDERAL COLOR NUMBER 17778.



**LIMITS OF ITEM 512-SEALING CONCRETE SURFACES**

(A) - SEAL ENTIRE CONCRETE SURFACE AREA

**ABBREVIATIONS:**

- ABUT. = ABUTMENT
- ADT = AVERAGE DAILY TRAFFIC
- ADTT = AVERAGE DAILY TRUCK TRAFFIC
- A.S. = APPROACH SLAB
- APPR. = APPROACH
- ℄ = BASELINE
- BRG. = BEARING
- C/C = CENTER TO CENTER
- CLR. = CLEAR
- C.J. = CONSTRUCTION JOINT
- C.I.P. = CAST-IN-PLACE
- ℄ = CENTERLINE
- CLR. = CLEAR
- CMS = CONSTRUCTION AND MATERIAL SPECIFICATIONS
- CONC. = CONCRETE
- CONSTR. = CONSTRUCTION
- DIA. = DIAMETER
- EF = EACH FACE
- EL. = ELEVATION
- EQ. = EQUAL
- EX. = EXISTING
- EXP. = EXPANSION
- F.A. = FORWARD ABUTMENT
- FF = FAR FACE
- F/F = FACE TO FACE
- FT. = FEET
- FWD. = FORWARD
- HWE = HIGH WATER ELEVATION
- IN. = INCHES
- IN-BET. = IN-BETWEEN
- INCR. = INCREMENT
- JT. = JOINT
- L.F. = LEFT FORWARD
- LT. = LEFT
- MID. = MIDDLE
- MIN. = MINIMUM
- NF = NEAR FACE
- NB = NORTHBOUND
- NO. = NUMBER
- NPCPP = NON-PERFORATED CORRUGATED PLASTIC PIPE
- O/O = OUT TO OUT
- OHWM = ORDINARY HIGH WATER MARK
- PCB = PORTABLE CONCRETE BARRIER
- PCPP = PERFORATED CORRUGATED PLASTIC PIPE
- PEJF = PREFORMED EXPANSION JOINT FILLER
- ℄ = PLATE
- PRESS. = PRESSURE
- PROP. = PROPOSED
- PVI = POINT OF VERTICAL INTERSECTION
- R.A. = REAR ABUTMENT
- RAD. = RADIUS
- RD. = ROAD
- REF. = REFERENCE
- REQ'D = REQUIRED
- RT. = RIGHT
- SB = SOUTHBOUND
- SER. = SERIES
- SHLDR. = SHOULDER
- SPA. = SPACES
- SQ. = SQUARE
- STA. = STATION
- STR. = STRAIGHT
- SUPER. = SUPERSTRUCTURE
- TEMP. = TEMPORARY
- T&B = TOP AND BOTTOM
- T/T = TOE TO TOE
- TYP. = TYPICAL
- U.N.O. = UNLESS NOTED OTHERWISE
- VAR. = VARIES
- VERT. = VERTICAL
- W/ = WITH

SFN	8333460
DESIGN AGENCY	
DESIGNER	CHECKER
SS	JLM
REVIEWER	
DWS	11/13/23
PROJECT ID	117643
SUBSET	TOTAL
2	9
SHEET	TOTAL
22	34

STRUCTURE ESTIMATED QUANTITIES						
ITEM	ITEM EXTENSION	QUANTITY	UNIT	DESCRIPTION	GEN.	SEE SHEET NO.
202	11004	LUMP		STRUCTURE REMOVED	LUMP	
202	23500	133	SQ YD	WEARING COURSE REMOVED	133	
503	11100	LUMP		COFFERDAMS AND EXCAVATION BRACING	LUMP	
503	21300	LUMP		UNCLASSIFIED EXCAVATION	LUMP	
509	10000	29014	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60	29014	
511	46510	90	CU YD	CLASS QC1 CONCRETE, FOOTING	90	
511	46610	55	CU YD	CLASS QC1 CONCRETE, HEADWALL	55	
512	33000	241	SQ YD	TYPE 2 WATERPROOFING	241	
512	10100	120	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	120	
516	13600	90	SQ FT	1" PREFORMED EXPANSION JOINT FILLER	90	
518	21200	27	CU YD	POROUS BACKFILL WITH GEOTEXTILE FABRIC	27	
611	95520	55	FOOT	10' X 9' CONDUIT, TYPE A, 706.05	55	

QUANTITIES CALCULATED BY: JLM 11-23

QUANTITIES CHECKED BY: SS 11-23

STRUCTURE ESTIMATED QUANTITIES  
 BRIDGE NO. WAR-TR 158-092  
 TR 158 OVER BRANCH OF BEAR RUN

SFN

8333460

DESIGN AGENCY



DESIGNER

JLM

CHECKER

SS

REVIEWER

DWS 11/13/23

PROJECT ID

117643

SUBSET

3

TOTAL

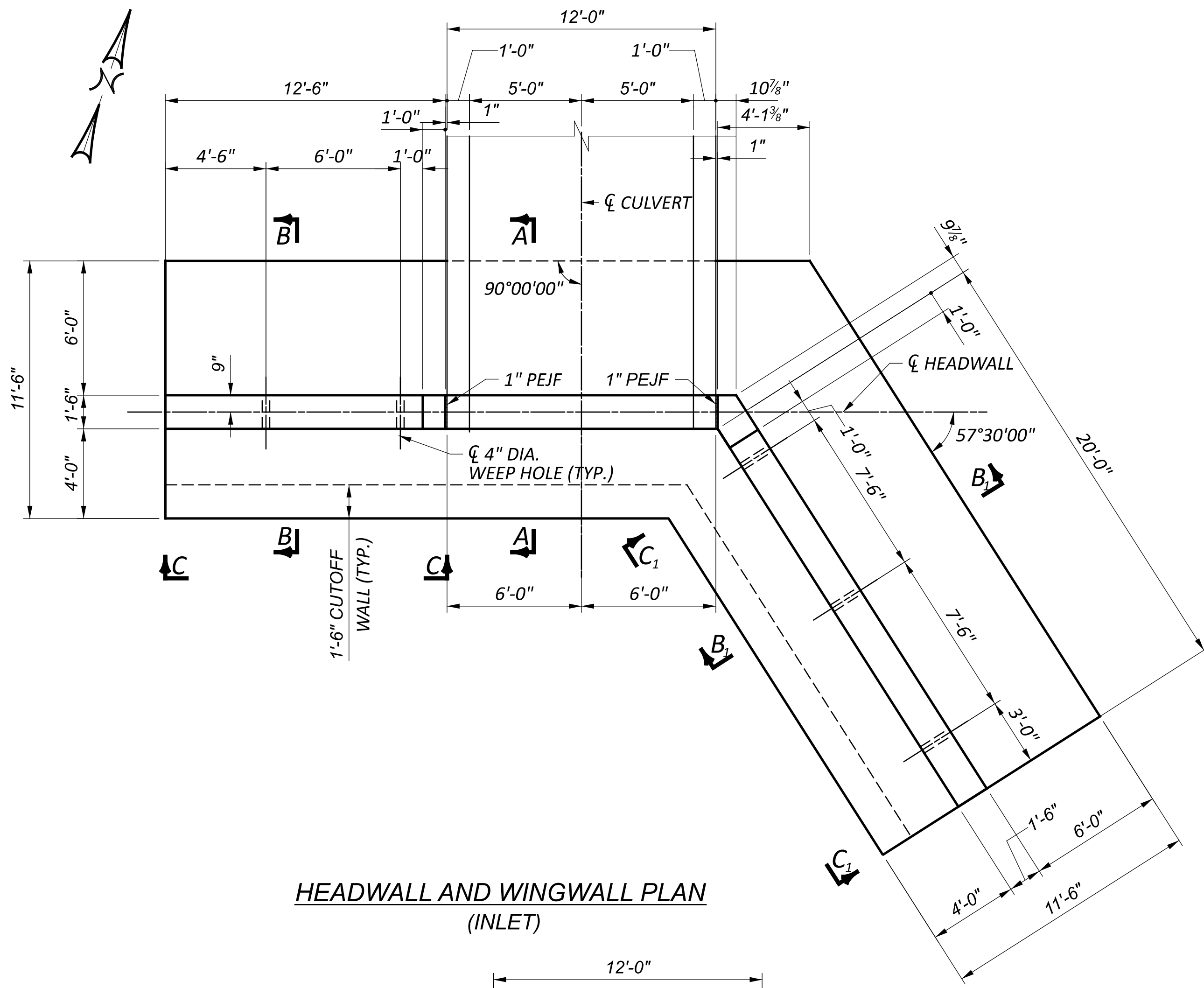
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SHEET

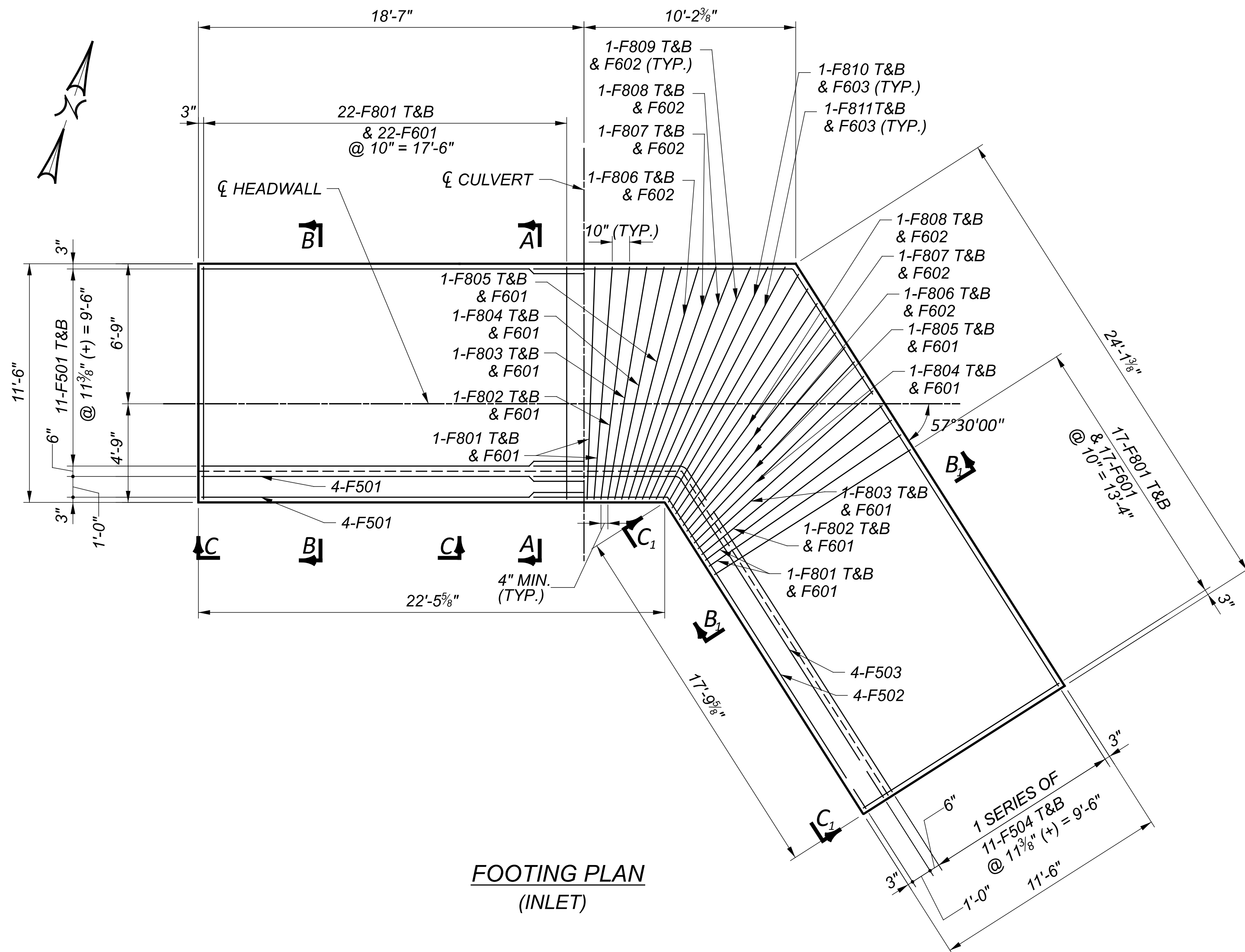
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TOTAL

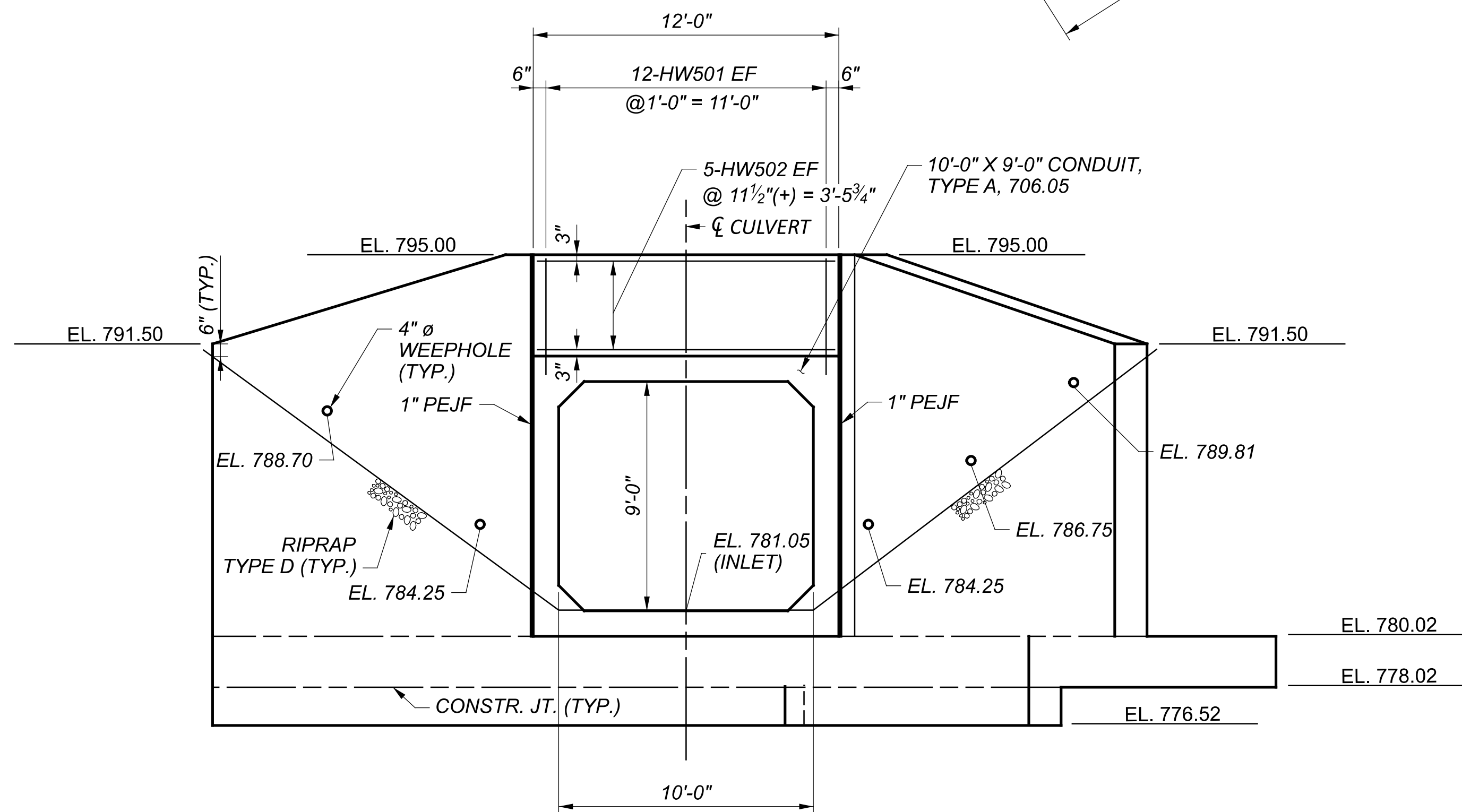
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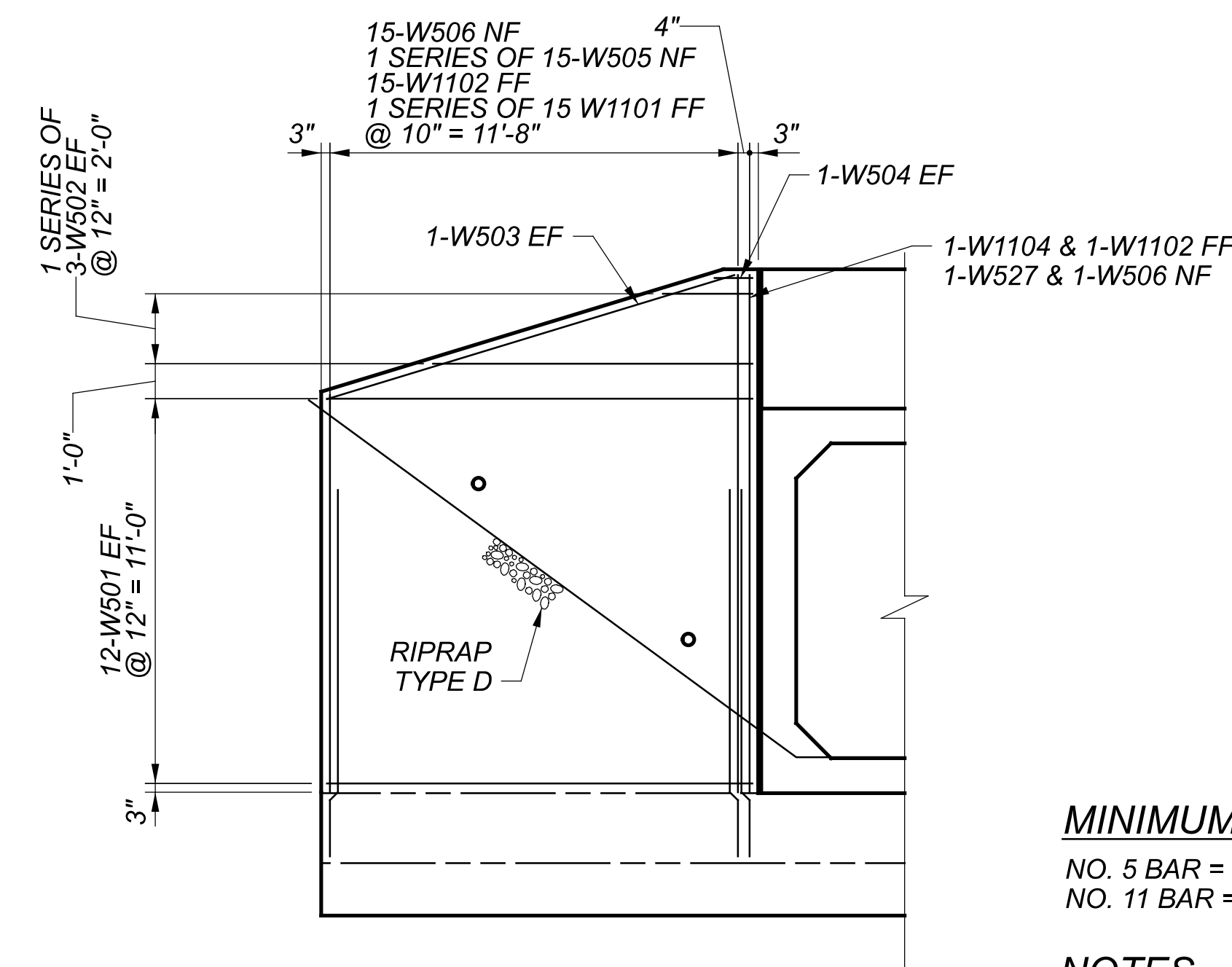
HEADWALL AND WINGWALL PLAN  
(INLET)



FOOTING PLAN  
(INLET)



HEADWALL AND WINGWALL ELEVATION  
(INLET)



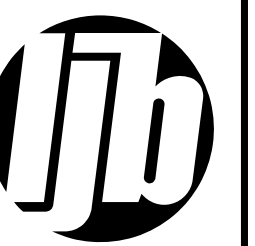
WINGWALL VIEW C-C  
(ELEVATION ALONG FRONT FACE)  
(INLET)

**MINIMUM LAP LENGTHS**

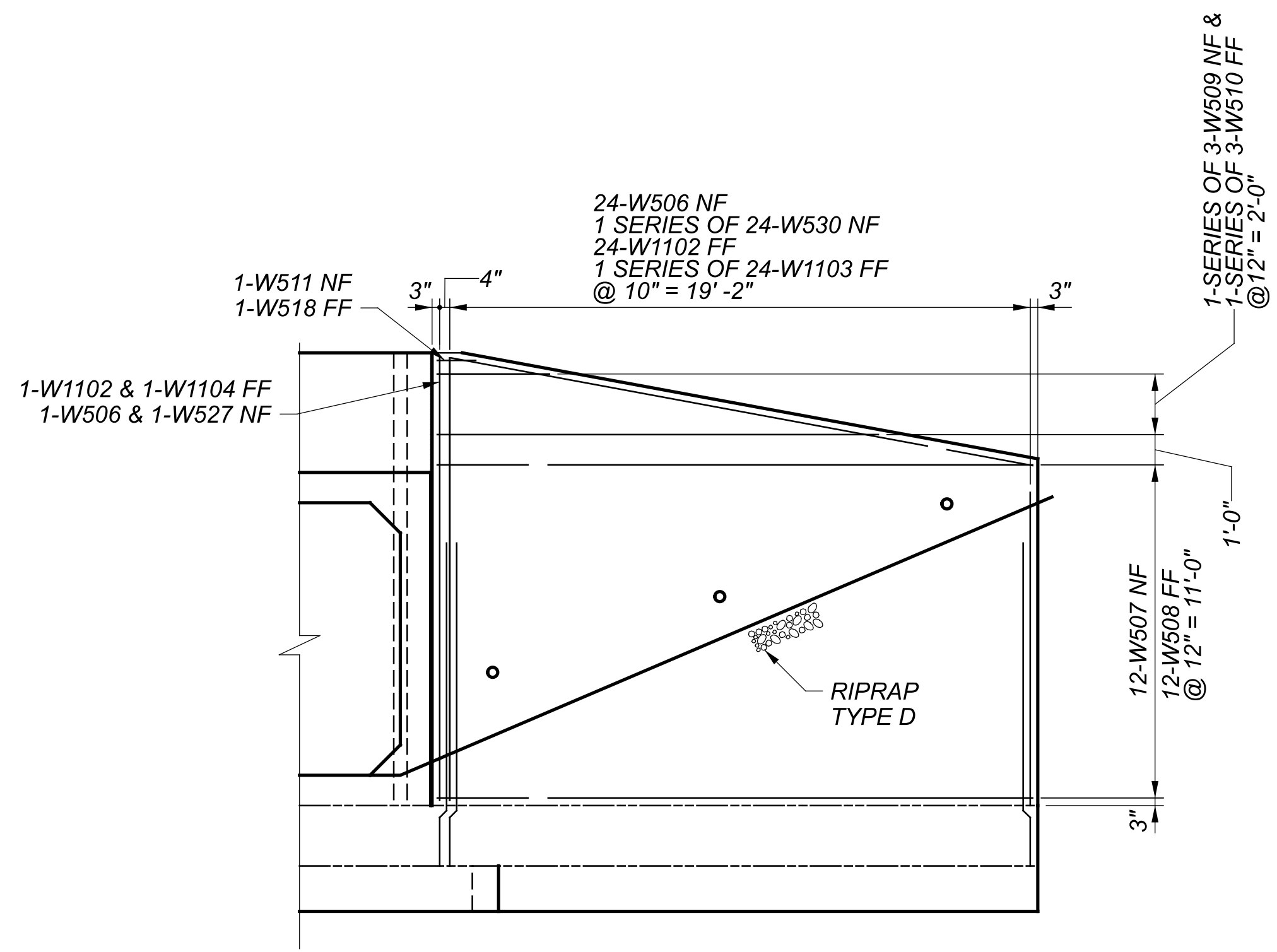
NO. 5 BAR = 2' - 5"  
 NO. 11 BAR = 8' - 8"

**NOTES**

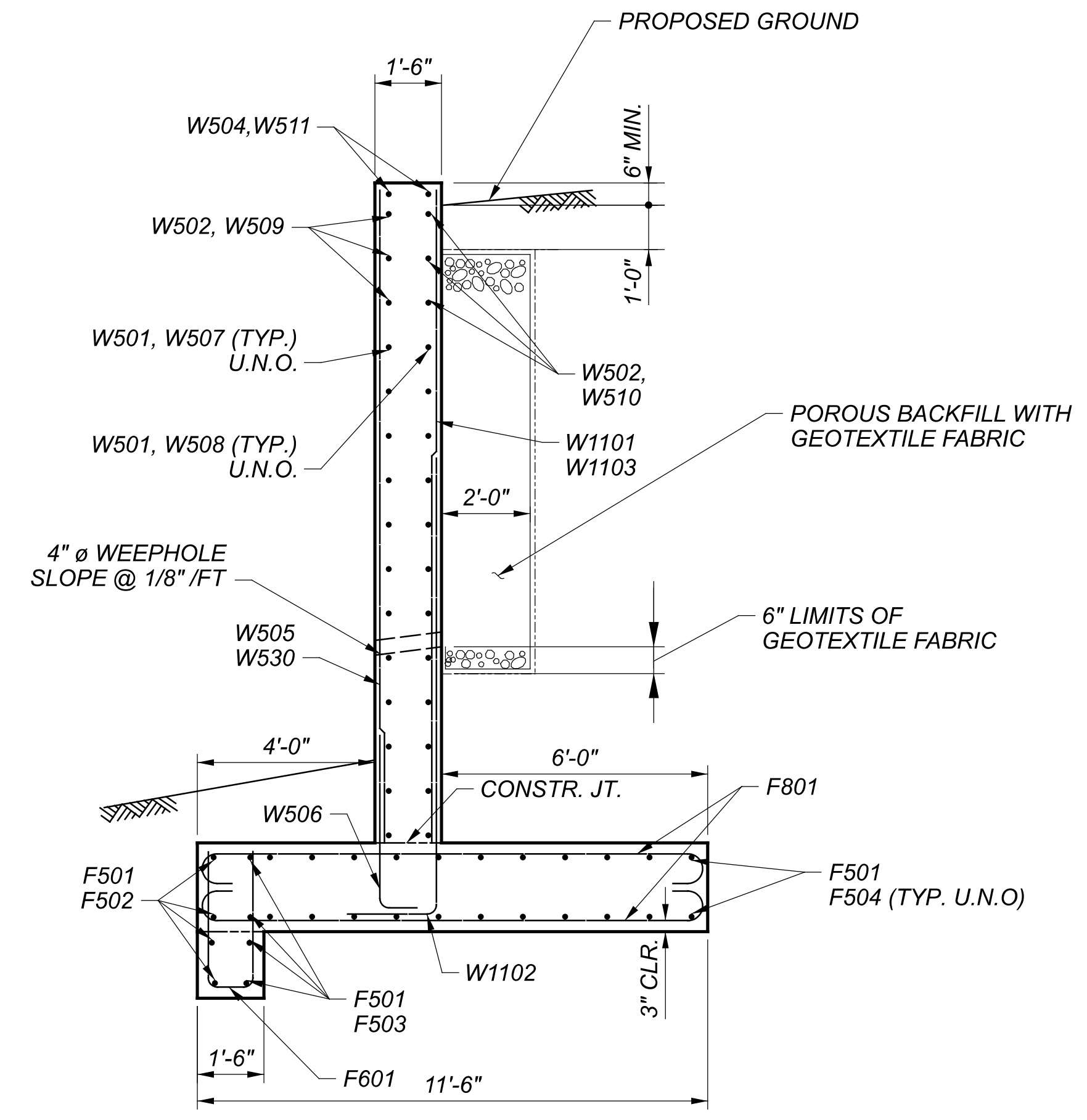
- FOR GENERAL NOTES, SEE SHEET 2 OF 9.
- FOR REINFORCING STEEL LIST, SEE SHEETS 8 OF 9 THROUGH 9 OF 9.
- FOR SECTIONS A-A, B-B, AND B<sub>1</sub>-B<sub>1</sub>, AND VIEW C<sub>1</sub>-C<sub>1</sub>, SEE SHEET 5 OF 9.
- ADJUST REINFORCING BARS AROUND WEEPHOLES AS NEEDED. PROVIDE A MINIMUM COVER OF 2" IN SUCH CASES.



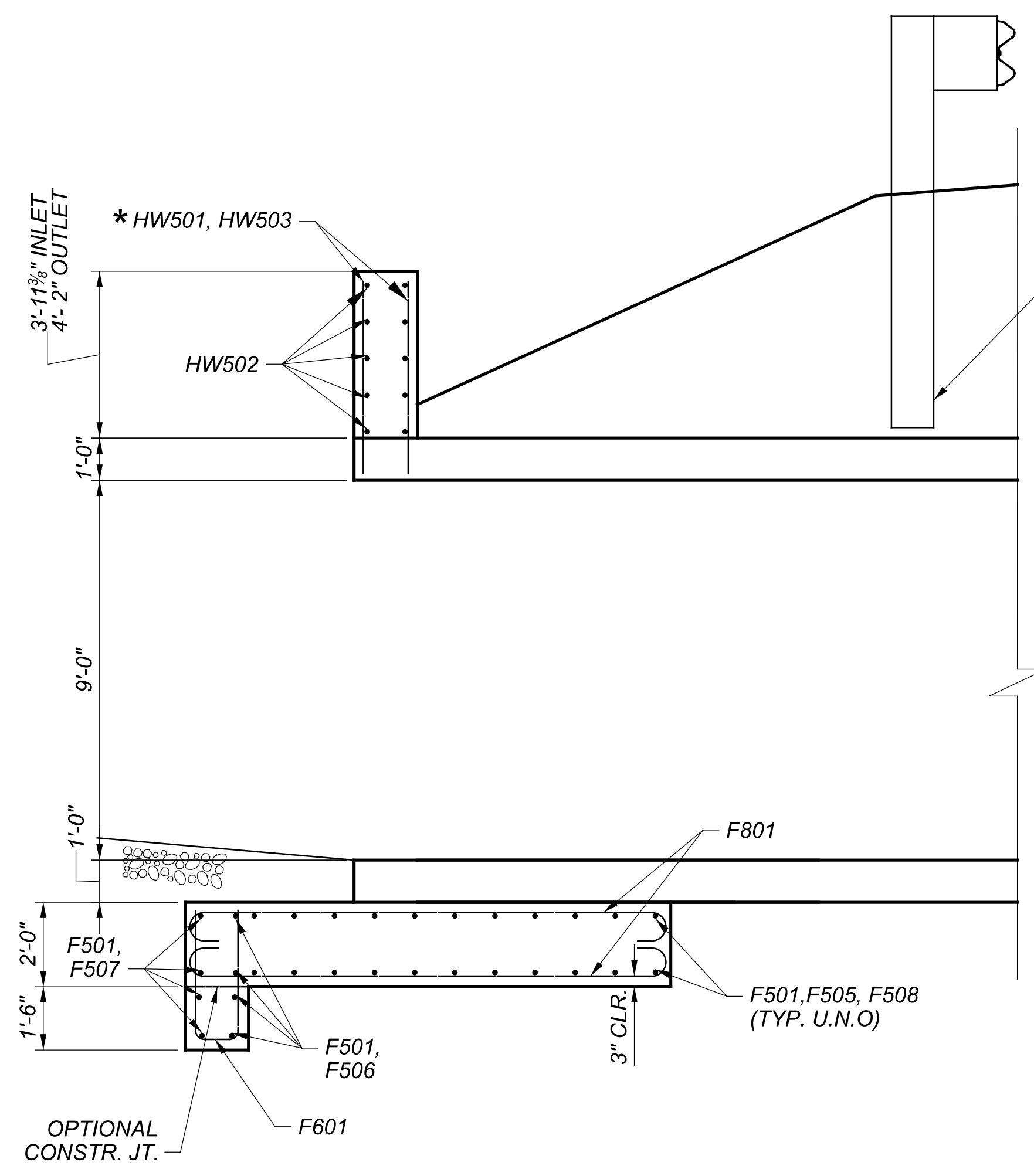




**WINGWALL VIEW C<sub>1</sub>-C<sub>1</sub>**  
 (ELEVATION ALONG FRONT FACE)  
 (INLET)



**SECTION B - B**  
 NOTE: SECTION B<sub>1</sub> - B<sub>1</sub> SIMILAR  
 (INLET)



**SECTION A - A**  
 NOTE: SECTION A<sub>1</sub> - A<sub>1</sub> SIMILAR  
 (INLET AND OUTLET)

SEE NOTE 4.

\* SEE FORESLOPE WALL ANCHOR DOWELS NOTE ON SHEET 2 OF 9.

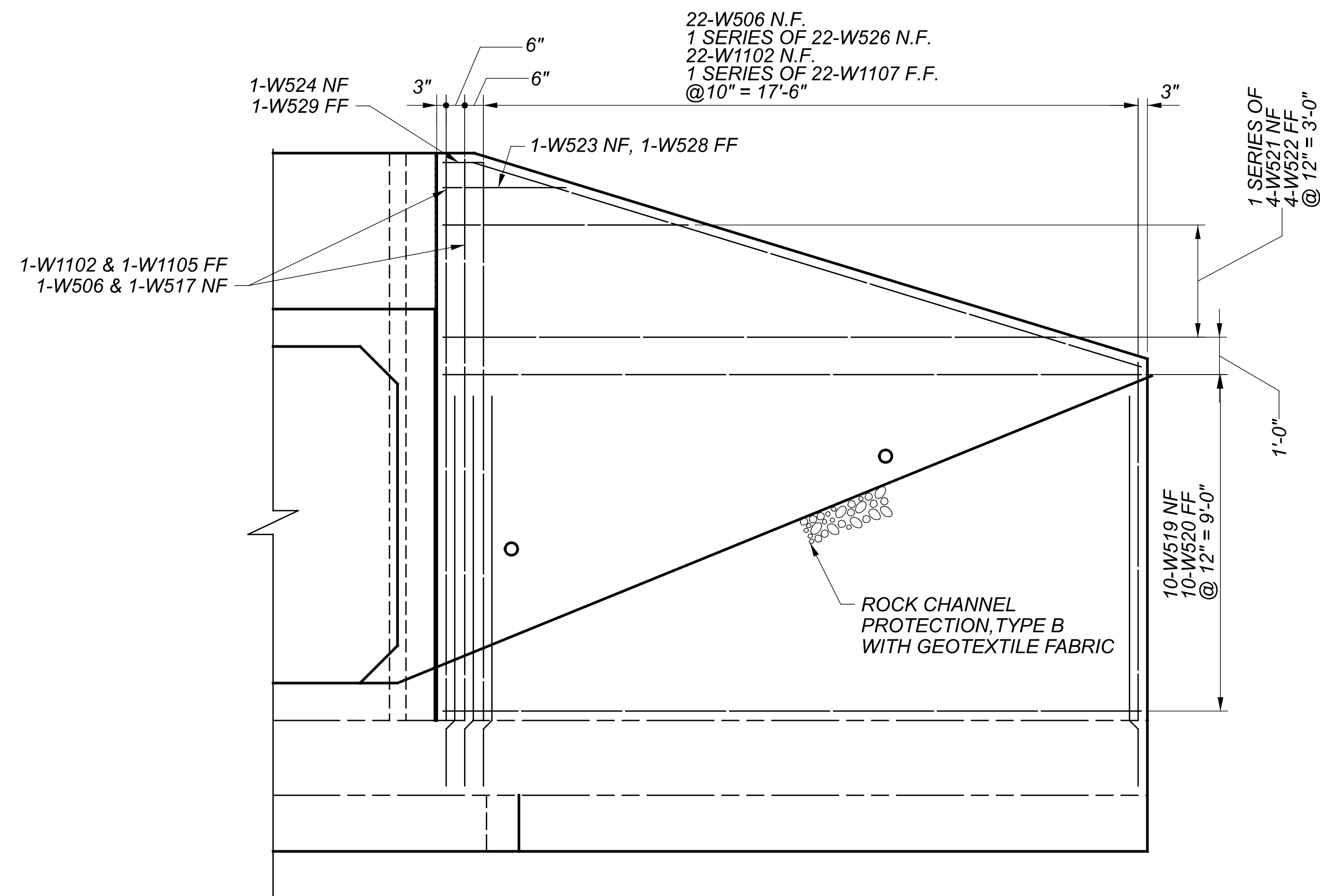
**MINIMUM LAP LENGTHS**  
 NO. 5 BAR = 2' - 5"  
 NO. 11 BAR = 8' - 8"

**NOTES**

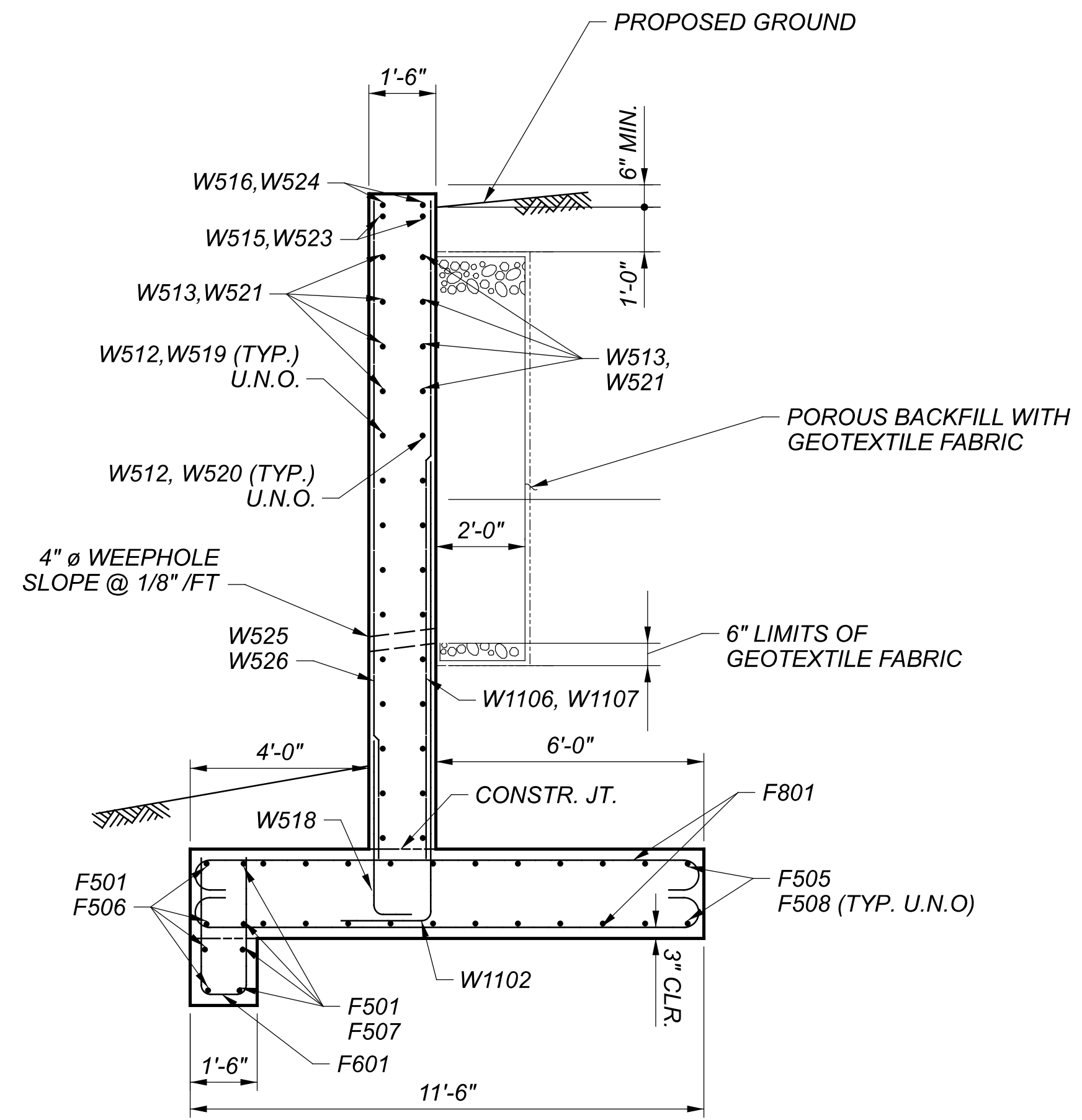
- FOR GENERAL NOTES, SEE SHEET 2 OF 9.
- FOR REINFORCING STEEL LIST, SEE SHEETS 8 OF 9 THROUGH 9 OF 9.
- ADJUST REINFORCING BARS AROUND WEEPHOLES AS NEEDED. PROVIDE A MINIMUM COVER OF 2" IN SUCH CASES.
- GUARDRAIL POSTS LOCATED OVERTOP OF THE PRECAST CULVERT SHALL BE CUT AS NECESSARY TO AVOID CONFLICT WITH THE CULVERT. DO NOT DRIVE POSTS LOCATED OVER THE CULVERT, INSTEAD SET IN DRILLED OR DUG HOLES. COSTS SHALL BE INCLUDED FOR PAYMENT WITH ITEM 606-GUARDRAIL, TYPE MGS WITH LONG POSTS.

SFN	8333460
DESIGN AGENCY	
DESIGNER	SS
CHECKER	JLM
REVIEWER	DWS
PROJECT ID	117643
SUBSET	5
TOTAL	9
SHEET	25
TOTAL	34





**WINGWALL VIEW E<sub>1</sub>-E<sub>1</sub>**  
 (ELEVATION ALONG FRONT FACE)  
 (OUTLET)



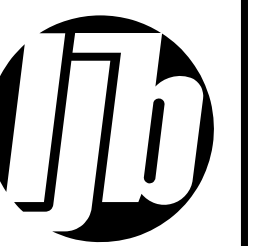
**SECTION F - F**  
 NOTE: SECTION F<sub>1</sub> - F<sub>1</sub> SIMILAR  
 (OUTLET)

**MINIMUM LAP LENGTHS**

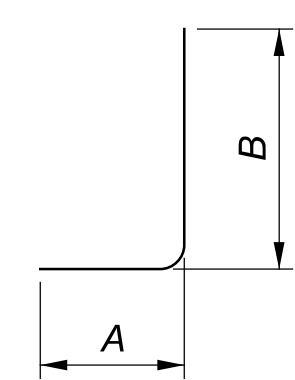
NO. 5 BAR = 2' - 5"  
 NO. 11 BAR = 8' - 8"

**NOTES**

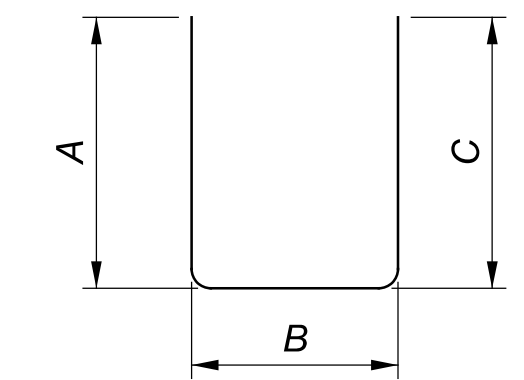
1. FOR GENERAL NOTES, SEE SHEET 2 OF 9.
2. FOR REINFORCING STEEL LIST, SEE SHEETS 8 OF 9 THROUGH 9 OF 9.
3. ADJUST REINFORCING BARS AROUND WEEPHOLES AS NEEDED. PROVIDE A MINIMUM COVER OF 2" IN SUCH CASES.



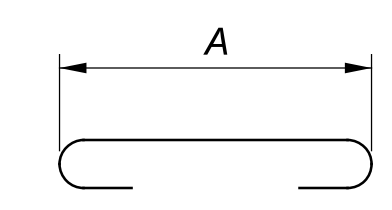
MARK	NUMBER		LENGTH	WEIGHT	TYPE	DIMENSIONS											
	INLET	OUTLET				TOTAL	A	B	C	D	E	R	INC				
F501	30		30	18'-5"	576	STR.											
F502	4		4	24'-3"	101	19	6'-6"	9'-6 5/8"	15'-0"								
F503	4		4	25'-3"	105	19	7'-0"	9'-10 1/8"	15'-5 1/2"								
F504	2		2	25'-11"			7'-4"	10'-0"	15'-8 1/4"								
F504	SER. OF		22	TO	713	19	TO	TO	TO								1'-0 3/8"
F504	11		11	36'-3"			12'-6"	12'-9 1/2"	20'-1"								
F505		30	30	22'-11"	717	STR.											
F506		4	4	23'-4"	97	19	6'-6"	9'-0 3/4"	14'-2 5/8"								
F507		4	4	24'-4"	102	19	7'-0"	9'-4 1/4"	14'-8 1/8"								
F508		2	2	25'-0"			7'-4"	9'-6"	14'-11"								
F508	SER. OF		22	TO	692	19	TO	TO	TO								1'-0 3/8"
F508	11		11	35'-4"			12'-6"	12'-3 3/8"	19'-3 3/4"								
F601	51	56	107	7'-0"	1125	2	3'-1"	1'-2"	3'-1"								
F602	8	8	16	7'-1"	170	2	3'-1"	1'-3"	3'-1"								
F603	4	4	8	7'-2"	86	2	3'-1"	1'-4"	3'-1"								
F801	86	96	182	13'-0"	6317	17	11'-2"										
F802	4	4	8	13'-1"	279	17	11'-3"										
F803	4	4	8	13'-2"	281	17	11'-4"										
F804	4	4	8	13'-3"	283	17	11'-5"										
F805	4	4	8	13'-4"	285	17	11'-6"										
F806	4	4	8	13'-6"	288	17	11'-8"										
F807	4	4	8	13'-8"	292	17	11'-10"										
F808	4	4	8	13'-10"	295	17	12'-0"										
F809	4	4	8	14'-0"	299	17	12'-2 1/4"										
F810	4	4	8	14'-3"	304	17	12'-4 3/4"										
F811	4	4	8	14'-6"	310	17	12'-7 1/2"										
HW501	24		24	4'-6"	113	STR											
HW502	10	10	20	11'-8"	243	STR											
HW503		24	24	4'-9"	119	STR											
W501	24		24	12'-2"	305	STR											
W502	2		2	2'-6"													
W502	SER. OF		6	TO	36	STR											3'-3 1/2"
W502	3		3	9'-1"													
W503	2		2	12'-2"	25	STR.											
W504	2		2	1'-0"	2	STR.											
W505	1		1	11'-3"													
W505	SER. OF		15	TO	203	STR.											3"
W505	15		15	14'-9"													
W506	41	45	86	4'-10"	434	1	10"	4'-1"									
W507	12		12	19'-9"	247	STR.											
W508	12		12	21'-0"	263	19	20'-6"	3 5/8"	5 3/4"								
W509	1		1	3'-8"													
W509	SER. OF		3	TO	28	STR.											5'-5"
W509	3		3	14'-6"													
W509	1		1	4'-11"			4'-5"										
W510	SER. OF		3	TO	32	19	TO	3 5/8"	5 3/4"								5'-5"
W510	3		3	15'-9"			15'-3"										
W511	1		1	1'-3"	1	STR											
W512		20	20	16'-8"	348	STR											
W512		2	2	5'-10"													
W513		SER OF	8	TO	85	STR											2'-11"
W513		4	4	14'-7"													
W514		2	2	17'-0"	35	STR											
W515		2	2	3'-2"	7	STR											
W516		2	2	1'-0"	2	STR											
W517		3	3	15'-0"	47												
W518	1		1	2'-6"	3	19	2'-0"	3 5/8"	5 3/4"								
W519		10	10	18'-9"	196	STR											
W520		10	10	20'-0"	209	19	19'-6"	3 5/8"	5 3/4"								
W521		1	1	6'-6"													
W521	SER OF		4	TO	48	STR											3 5/16"
W521	4		4	16'-4"													
W521	1		1	7'-9"			7'-3"										
W522		SER OF	4	TO	53	19	TO	3 5/8"	5 3/4"								3 5/16"
W522		4	4	17'-7"			17'-1"										
W523		1	1	3'-3"	3	STR											
W524		1	1	1'-0"	1	STR											



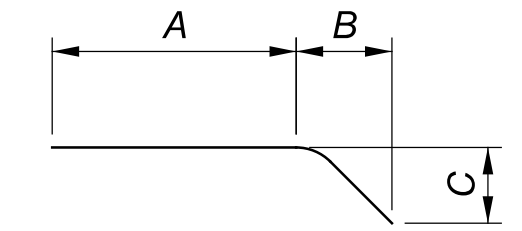
TYPE-1



TYPE-2



TYPE-17



TYPE-19

NOTES:

1. ALL REINFORCING STEEL BARS SHALL BE EPOXY COATED.
2. ALL DIMENSIONS ARE OUT TO OUT OF BAR.
3. RADIUS DIMENSION "R" IS TO THE OUTSIDE OF THE BAR.
4. THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATES THE BAR SIZE NUMBER.
5. ALL REINFORCING CLEARANCES ARE 2" UNLESS OTHERWISE NOTED IN THE PLANS.

REINFORCING LIST  
 BRIDGE NO. WAR-TR 158-092  
 TR 158 OVER BRANCH OF BEAR RUN

SFN	
8333460	
DESIGN AGENCY	
DESIGNER	CHECKER
JLM	SS
REVIEWER	
DWS 11/13/23	
PROJECT ID	
117643	
SUBSET	TOTAL
8	9
SHEET	TOTAL
28	34



**PROJECT DESCRIPTION**

THE PROJECT IS A BRIDGE REPLACEMENT ON STEPHENS ROAD WITH A CULVERT APPROXIMATELY 0.92 MILES EAST FROM THE INTERSECTION WITH SR 48. THE PROJECT WILL CONSTRUCT A CULVERT TO CARRY TR158 OVER A BRANCH OF BEAR RUN AND PERFORM RELATED ROADWAY WORK.

**HISTORIC RECORDS**

HISTORICAL GEOTECHNICAL RECORDS WERE NOT AVAILABLE FROM ODOT'S TRANSPORTATION INFORMATION MAPPING SYSTEM (TIMS) FOR WAR-TR158-092.

**GEOLOGY**

THE PROJECT IS LOCATED WITHIN THE ILLINOIAN TILL PLAIN PHYSIOGRAPHIC REGION WHICH IS CHARACTERIZED BY MODERATELY LOW RELIEF AND ROLLING GROUND MORAINES OF OLDER TILLS. SILT-LOAM, HIGH-LIME, ILLINOIAN AGE TILL WITH LOESS CAP; SOILS LEACHED SEVERAL FEET. THE CURRENT PROJECT AREA IS CHARACTERIZED BY LOW RELIEF WITH THIN OVERBURDENED SOILS. THE OVERBURDEN SOILS ARE PREDOMINATELY COHESIVE AND ARE UNDERLAIN BY SHALE AND LIMESTONE OF ORDOVICIAN AGE.

**RECONNAISSANCE**

THE FIELD RECONNAISSANCE WAS PERFORMED ON APRIL 7, 2023 BY TERRACON PERSONNEL. THE BRIDGE IS COMPOSED OF A PRETENSION-REINFORCED CONCRETE BRIDGE CONSTRUCTED OVER AN ABANDONED STONE ARCHED BRIDGE. THE EXISTING BRIDGE HAS STEEL GUARDRAILS AND THE HEIGHT FROM THE ROADWAY SURFACE TO THE STREAM IS APPROXIMATELY 12 FEET. THE PAVEMENT CONSISTS OF 8 INCHES OF ASPHALT OVER 4 INCHES OF BASE, WHICH IS IN A GOOD CONDITION. WITH AN INTERMEDIATE AND SURFACE LAYER OVER THE BRIDGE DECK. EACH ABUTMENT IS COMPOSED OF A REINFORCED CONCRETE FOUNDATION. THE HEADWALLS ARE COMPOSED OF A GRAVITY LIMESTONE RETAINING WALL ON THE WESTERN BANK AND A GABION BASKET WALL ON THE EASTERN BANK.

**SUBSURFACE EXPLORATION**

TEST BORINGS WERE DRILLED BY TERRACON WITH A TRACK-MOUNTED CME-55LCS DRILL RIG TO DEPTHS OF 19.0 AND 24.5 FEET FROM BELOW THE TOP OF THE PAVEMENT. THE TEST BORINGS WERE ADVANCED USING HOLLOW-STEM AUGERS TO PERMIT SPLIT-SPOON SAMPLING OF THE OVERBURDEN SOILS. SPLIT-SPOON INTERVALS WERE TAKEN AT 2.5-FOOT INTERVALS. TO THE TOP OF THE BEDROCK. THE ROCK CORE WAS SAMPLED USING NQ2-SIZE CORING TOOLS. THE DRILL RIG ENERGY RATIO (ER) FOR THE CME 55 WAS 92 PERCENT (CALIBRATION DATE 11/30/2022). FOR THE PURPOSE OF SPT N-VALUES CORRECTION, THE DRILL RIG ENERGY RATIO (ER) OF 90% WAS UTILIZED, AS RECOMMENDED IN ODOT SGE 404.3 FOR DRILL RIGS WITH AN ENERGY RATIO OF OVER 90%.

**EXPLORATION FINDINGS**

THE SUBSURFACE PROFILE IN THE TEST BORINGS CONSISTS OF EXISTING FILL SOILS (A-6B AND A-1-B) AND NATURAL COHESIVE SOILS (A-6A, A-6B, AND A-7-6) OVERLYING SHALE AND LIMESTONE BEDROCK. THE CONSISTENCY OF THE NATIVE COHESIVE SOILS RANGED FROM STIFF TO HARD. THE GRANULAR FILL SOILS ENCOUNTERED IN THE TEST BORING WERE VERY DENSE IN TERMS OF RELATIVE DENSITY. BORING B-001-0-23 ENCOUNTERED BEDROCK AT A DEPTH OF 6 FEET BGS (CORRESPONDING EL. 798.7 FEET) AND B-002-0-23 ENCOUNTERED BEDROCK AT A DEPTH OF 13.5 FEET BGS (CORRESPONDING EL. 783.1 FEET). 10-FOOT-LONG ROCK CORES WERE SAMPLED USING NQ2 ROCK CORING TOOLS AT EACH BORING LOCATION TO DELINEATE BEDROCK COMPOSITION. THE SHORT-TERM GROUNDWATER LEVEL WAS ENCOUNTERED IN BORING B-002-0-23 AT A DEPTH OF 14 FEET BGS WHILE DRILLING. NO WATER WAS ENCOUNTERED AFTER DRILLING.

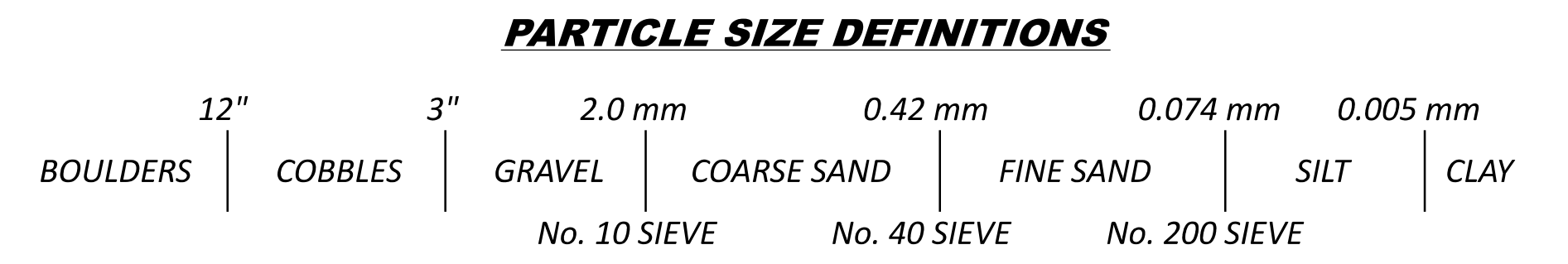
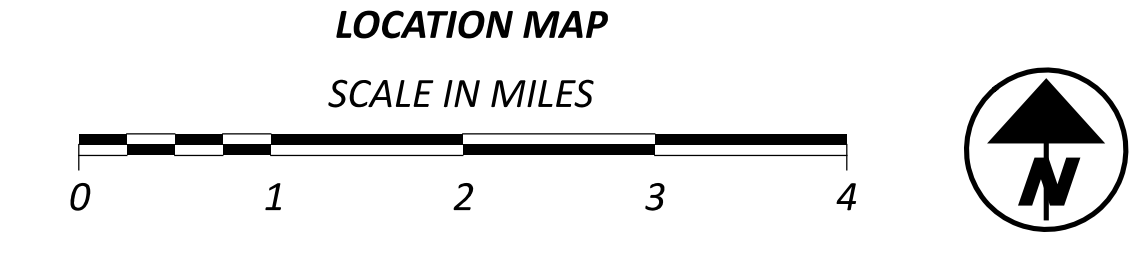
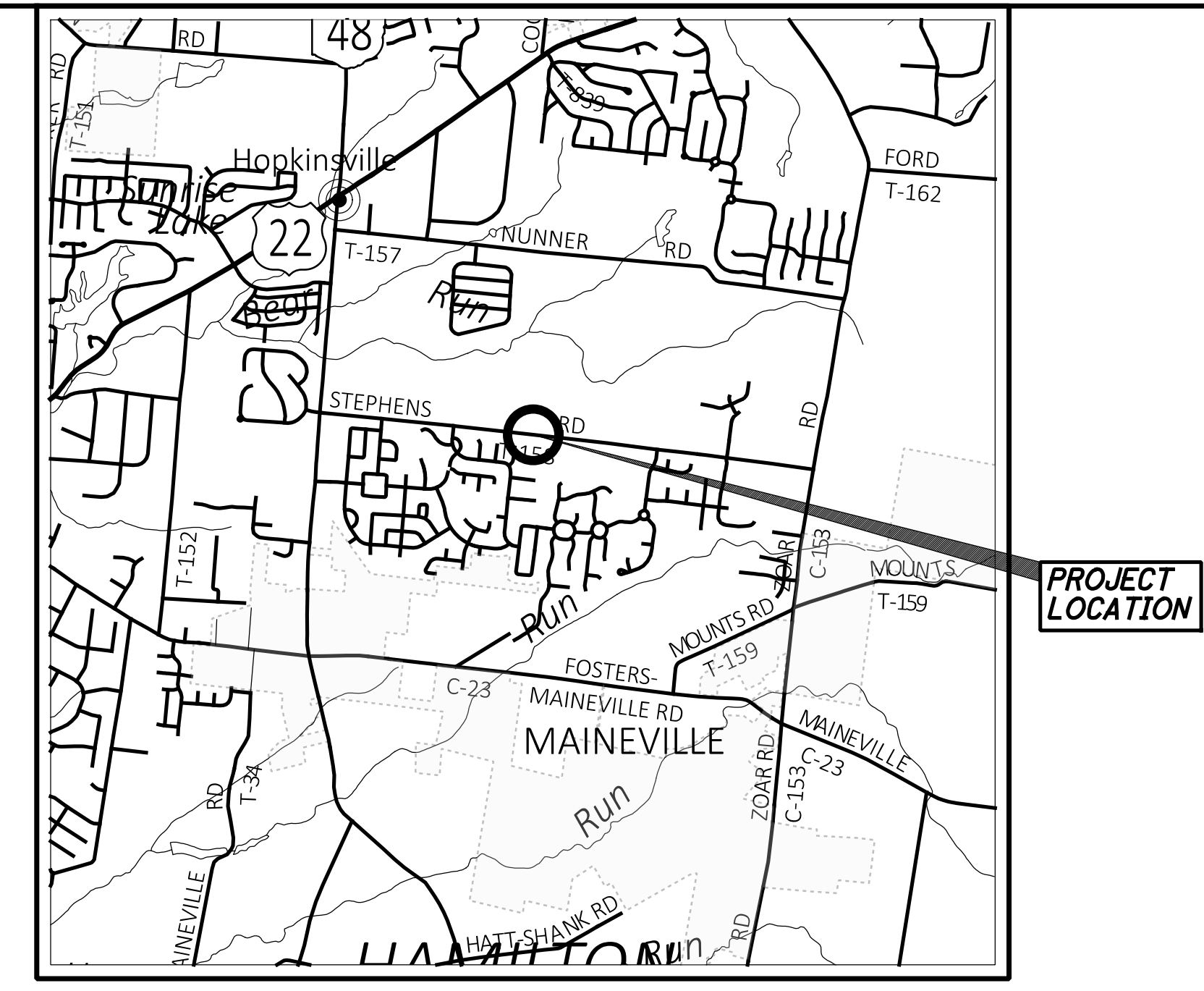
**SPECIFICATIONS**

THIS GEOTECHNICAL EXPLORATION WAS PERFORMED IN ACCORDANCE WITH THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, OFFICE OF GEOTECHNICAL ENGINEERING, SPECIFICATIONS OF GEOTECHNICAL EXPLORATIONS, DATED JANUARY 2019.

**AVAILABLE INFORMATION**

THE SOIL, BEDROCK, AND GROUNDWATER INFORMATION COLLECTED FOR THIS SUBSURFACE EXPLORATION THAT CAN BE CONVENIENTLY DISPLAYED ON THE SOIL PROFILE SHEETS HAS BEEN PRESENTED. GEOTECHNICAL REPORTS, IF PREPARED, ARE AVAILABLE FOR REVIEW ON THE OFFICE OF CONTRACT SALES WEBSITE.

<b>LEGEND</b>		<b>ODOT CLASS</b>	<b>CLASSIFIED MECH./VISUAL</b>	
<b>DESCRIPTION</b>				
	GRAVEL/STONE FRAGMENTS W/SAND	A-1-b	1	0
	SILT AND CLAY	A-6a	1	0
	SILTY CLAY	A-6b	2	1
	SILTY CLAY	A-7-6	1	1
		TOTAL	5	2
	SHALE	VISUAL		
	INTERBEDDED SHALE AND LIMESTONE	VISUAL		
	PAVEMENT OR BASE = X = APPROXIMATE THICKNESS	VISUAL		
	BORING LOCATION - PLAN VIEW.			
	DRIVE SAMPLE AND/OR ROCK CORE BORING PLOTTED TO VERTICAL SCALE ONLY. HORIZONTAL BAR INDICATES A CHANGE IN STRATIGRAPHY.			
WC	INDICATES WATER CONTENT IN PERCENT.			
N <sub>60</sub>	INDICATES STANDARD PENETRATION RESISTANCE NORMALIZED TO 60% DRILL ROD ENERGY RATIO.			
X/Y/Z	NUMBER OF BLOWS FOR STANDARD PENETRATION TEST (SPT): X= NUMBER OF BLOWS FOR FIRST 6 INCHES. Y= NUMBER OF BLOWS FOR SECOND 6 INCHES. Z= NUMBER OF BLOWS FOR THIRD 6 INCHES.			
W	INDICATES FREE WATER ELEVATION.			
SS	INDICATES A SPLIT SPOON SAMPLE.			
TR	INDICATES TOP OF ROCK			
Qu	INDICATES ROCK COMPRESSION TEST, ASTM D7012, METHOD C, RESULTS			
NQ	"N" SERIES ROCK CORE BARREL			

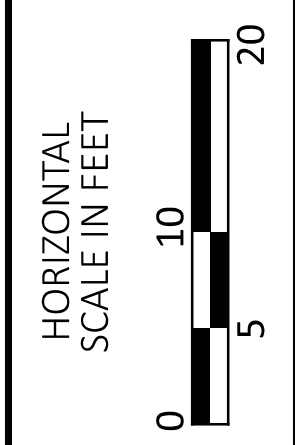
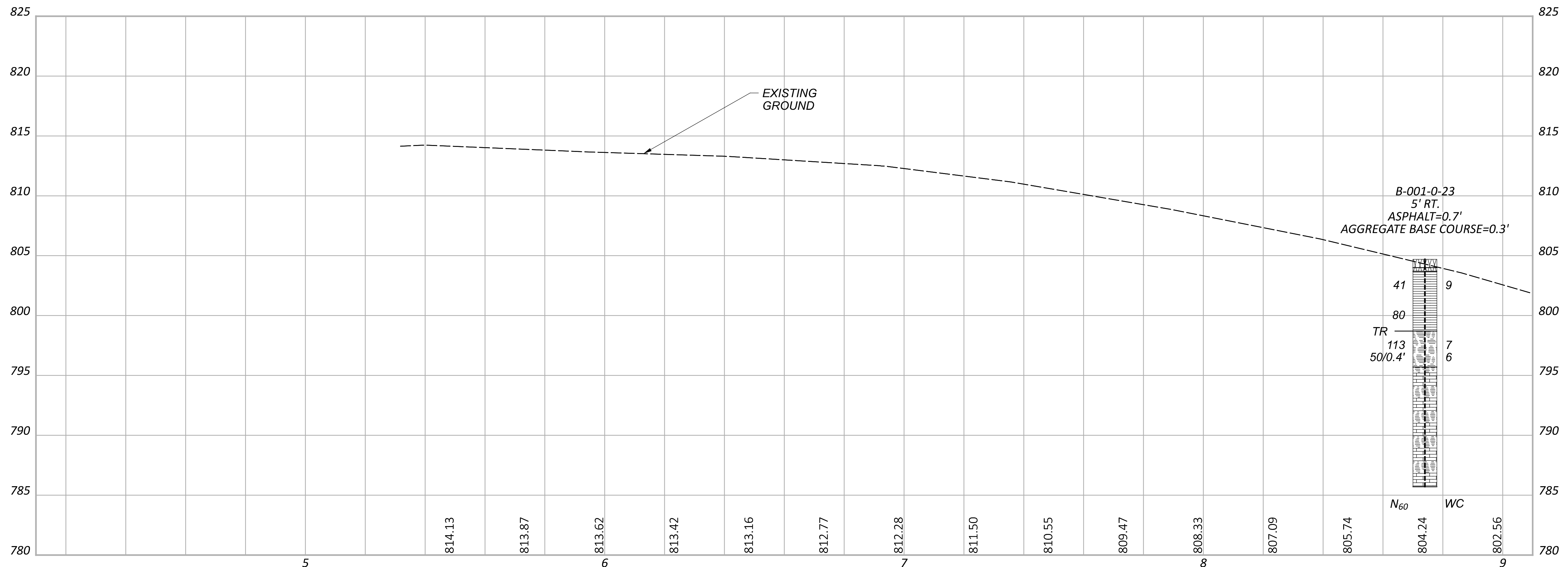
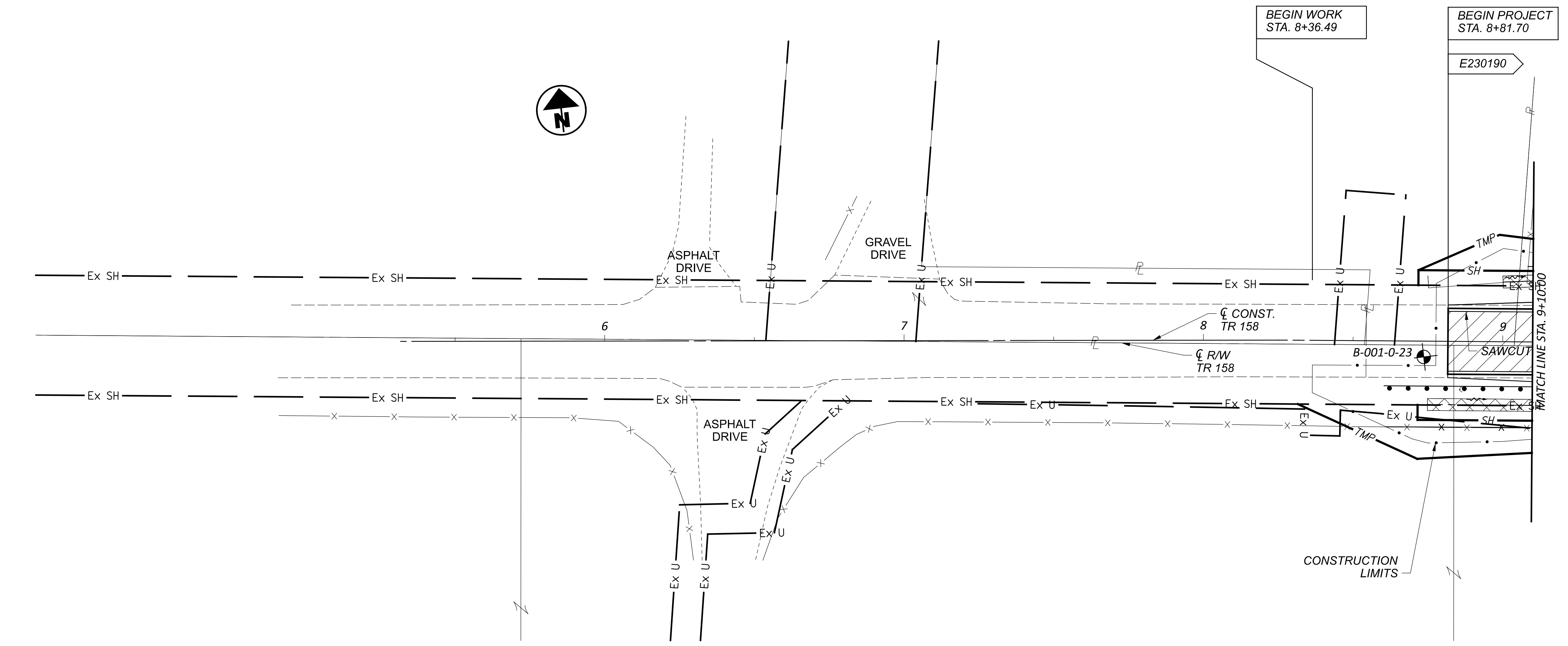


<b>BEDROCK TEST SUMMARY</b>		
BORING NO.	DEPTH	QU (PSI)
B-001-0-20	9.0' - 14.0'	71
B-002-0-20	14.5' - 19.5'	7,127

RECON. - MH 04/07/23  
 DRILLING - CK 04/10/23  
 DRAWN - KM 06/28/23  
 REVIEWED - DWW 06/30/23

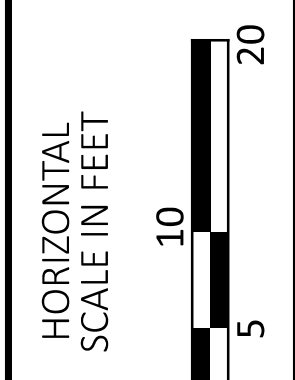
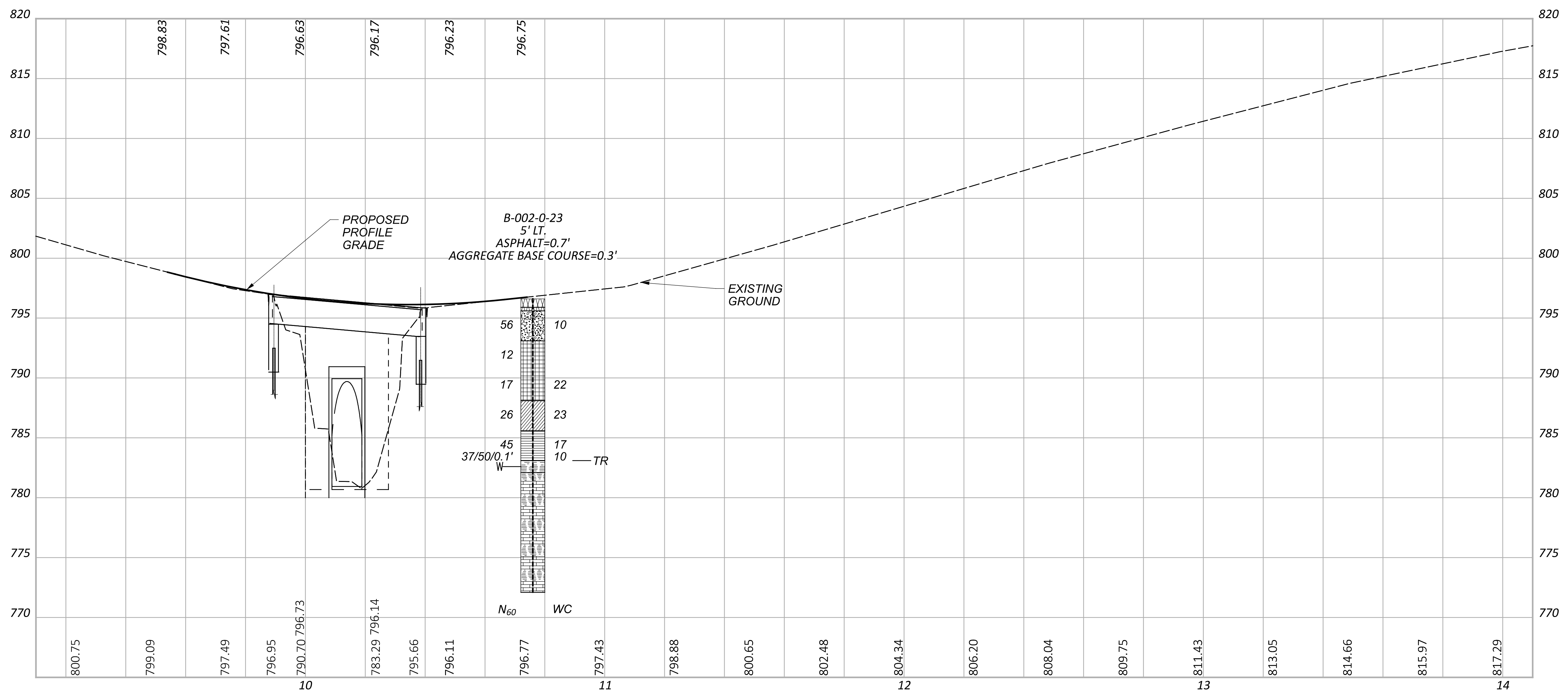
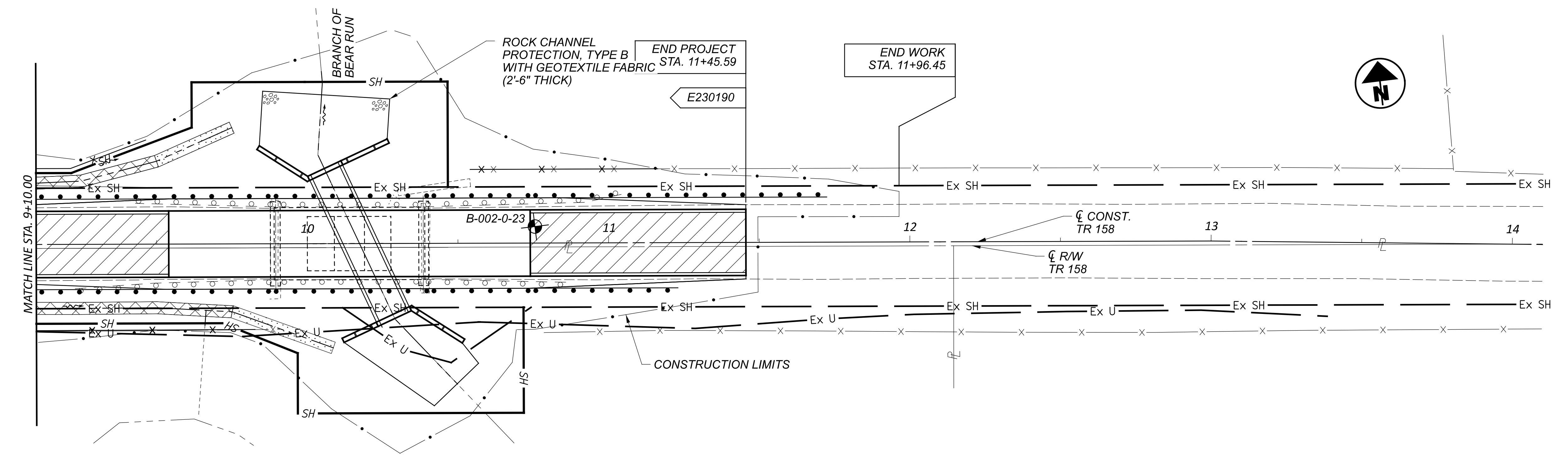
GEOTECHNICAL PROFILE - CULVERT

DESIGN AGENCY  
  
 DESIGNER: JH  
 REVIEWER: DWW  
 PROJECT ID: 117643  
 SHEET: 30 TOTAL: 34



GEOTECHNICAL PROFILE - CULVERT  
 STA. 5+31.81 TO STA. 9+10.00

DESIGN AGENCY	
<b>Terracon</b> Consulting Engineers and Scientists	
DESIGNER	JH
REVIEWER	DWW 06-30-23
PROJECT ID	117643
SHEET	TOTAL
31	34



GEOTECHNICAL PROFILE - CULVERT  
 STA. 9+10.00 TO STA. 14+10.00

DESIGN AGENCY  
**Terracon**  
 Consulting Engineers and Scientists

DESIGNER  
 JH

REVIEWER  
 DWW 06-30-23

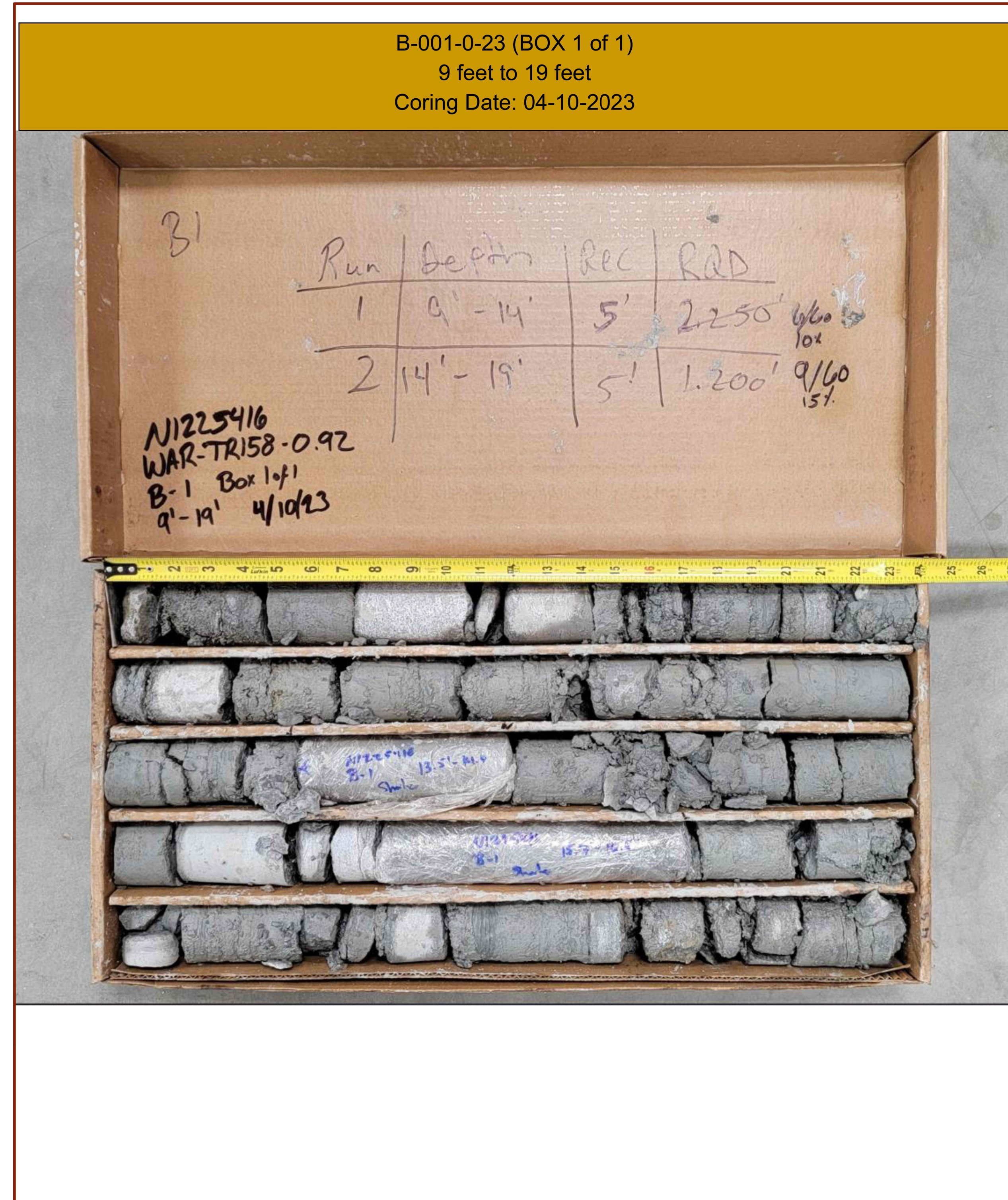
PROJECT ID  
 117643

SHEET TOTAL  
 32 34



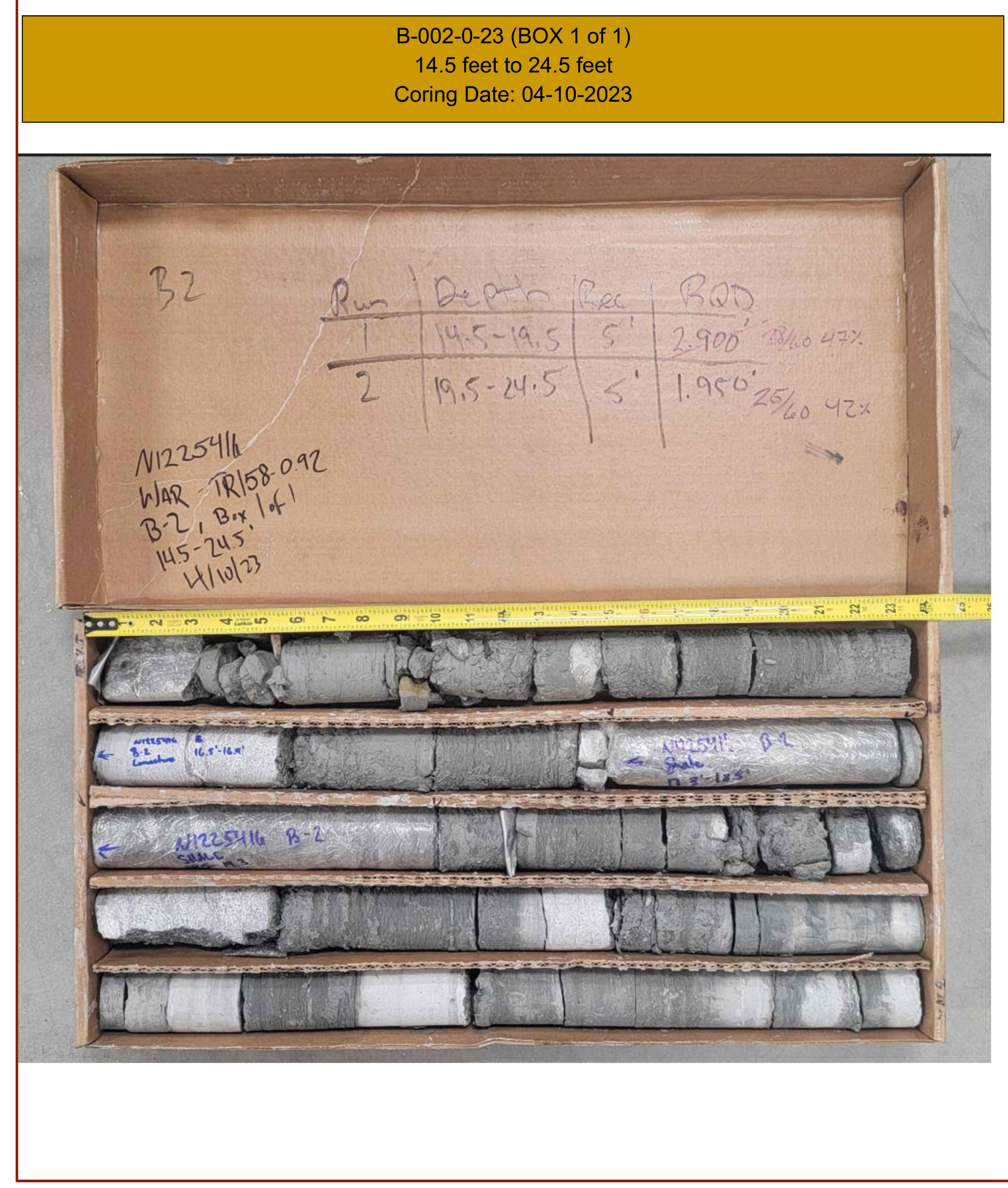
**ROCK CORE PHOTOGRAPH**

WAR-TR158-0.92 ■ Stephens Road, Warren County, Ohio  
 Terracon Project No. N1225416



**ROCK CORE PHOTOGRAPH**

WAR-TR158-0.92 ■ Stephens Road, Warren County, Ohio  
 Terracon Project No. N1225416



WAR-TR 158-092

MODEL: COVER SHEET PAPER SIZE: 34x22 (in.) DATE: 12/11/2023 TIME: 1:54:43 PM USER: bcmilner  
 C:\Users\bcmilner\OneDrive - Terracon Consultants Inc\Desktop\CAD\CINCINATT\117643 plan and profile sheets\117643\_Z1001.dgn

PROJECT: STEPHENS RD TYPE: CULVERT	DRILLING FIRM / OPERATOR: SAMPLING FIRM / LOGGER: DRILLING METHOD: SAMPLING METHOD:	ODOT / CK ODOT / JF	DEPTHS	ELEV.	SPT / ROD	REC SAMPLE ID (%)	HP (tsf)	STATION / OFFSET: 8+74.5 RT. TR 158											EXPLORATION ID B-001-0-23
								GR	CS	FS	SI	CL	LL	PL	PI	WC			
PID: 117643 SFN: 4/10/23	3.25" HSA / NQ2		1	804.7	8	41	4.50	-	-	-	43	19	24	9	A-6b (V)				
START: 4/10/23 END: 4/10/23	3.25" HSA / NQ2		2	803.7	16														
			3																
			4		18	80	4.50	14	27	9	21	29	13	16	A-6b (S)				
			5		30														
			6	798.7	23	113	-	-	-	-	30	15	15	7	Rock (V)				
			7		42														
			8																
			9	795.7	50/5"	100	-	-	-	-	-	-	-	6	Rock (V)				
			10																
			11		10	100	NQ2-1								CORE				
			12																
			13																
			14																
			15																
			16		15	100	NQ2-2								CORE				
			17																
			18																
			19																
			20																
			21																
			22		42	100	NQ2-2								CORE				
			23																
			24	772.1															

NOTES: NONE  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED ASPHALT PATCH; AUGER CUTTINGS MIXED WITH BENTONITE CHIPS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 6/14/23 11:16 - N:\PROJECTS\2022\1225416\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\1225416-ODOT LOGS

PROJECT: STEPHENS RD TYPE: CULVERT	DRILLING FIRM / OPERATOR: SAMPLING FIRM / LOGGER: DRILLING METHOD: SAMPLING METHOD:	ODOT / CK ODOT / JF	DEPTHS	ELEV.	SPT / ROD	REC SAMPLE ID (%)	HP (tsf)	STATION / OFFSET: 10+76.5 LT. TR 158											EXPLORATION ID B-002-0-23
								GR	CS	FS	SI	CL	LL	PL	PI	WC			
PID: 117643 SFN: 4/10/23	3.25" HSA / NQ2		1	796.6	4	56	83	37	28	12	16	7	20	14	6	10	A-1-b (0)		
START: 4/10/23 END: 4/10/23	3.25" HSA / NQ2		2	795.6	14	23													
			3																
			4	793.1	4	12	83	1.50	-	-	-	-	-	-	-	-	A-7-6 (V)		
			5		4														
			6		3	17	83	3.50	14	3	29	52	51	25	26	22	A-7-6 (17)		
			7		4	7													
			8																
			9	788.1	4	26	100	3.00	28	9	23	31	37	25	12	23	A-6a (S)		
			10		8	9													
			11		4	45	100	3.00	43	7	3	24	23	34	18	17	A-6b (4)		
			12		11	19													
			13																
			14	783.1	37		86	SS-6								10	Rock (V)		
			15	782.1	30/1"														
			16																
			17		47	100	NQ2-1										CORE		
			18																
			19																
			20																
			21																
			22																
			23																
			24																

NOTES: NONE  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED ASPHALT PATCH; AUGER CUTTINGS MIXED WITH BENTONITE CHIPS



PRELIMINARY ACCESS APPROVAL  
 NOT APPLICABLE GRANTED

STATE JOB NUMBER  
481373




NEIL F. TUNISON, P.E., P.S.  
 WARREN COUNTY ENGINEER

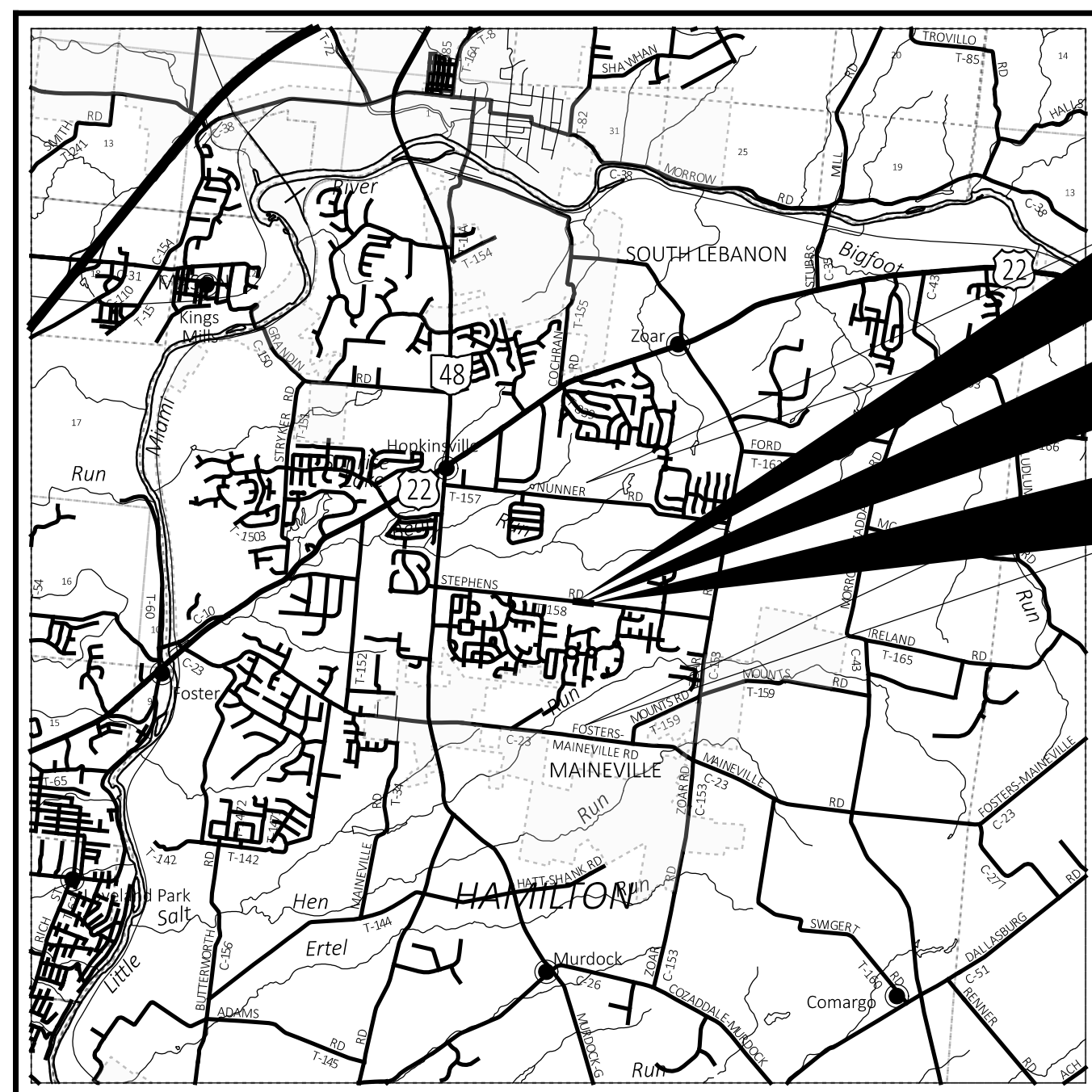
PROJECT DESCRIPTION  
 Replacement of Bridge WAR-TR 158-0.92  
 (SFN: 8333459) which carries Stephens  
 Road over a tributary to Bear Run.

PROJECT CONTROL  
 OHIO STATE PLANE SOUTH NAD83 (2011)  
 PROJECT ADJUSTMENT FACTOR 1.0000970929

TYPES OF TITLE LEGEND:  
 T = TEMPORARY EASEMENT  
 SH = STANDARD HIGHWAY EASEMENT

STRUCTURE KEY

-  RESIDENTIAL
-  COMMERCIAL
-  OUT-BUILDING



LOCATION MAP

LATITUDE: 39°19'35.77" LONGITUDE: 84°12'12.24"



PORTION TO BE IMPROVED	
INTERSTATE HIGHWAY	
FEDERAL ROUTES	
STATE ROUTES	
COUNTY & TOWNSHIP ROADS	
OTHER ROADS	

UTILITY OWNERS

TELECOMMUNICATIONS / CABLE TV

Alta Fiber  
 Network Planning, Engineering  
 and Construction  
 Ben Otten  
 221 E. Fourth St. 121-900  
 Cincinnati, OH 45202  
 Phone: (513) 565-1336

Spectrum  
 Kent Rieger  
 10920 Kenwood Rd.  
 Cincinnati, Ohio 45242  
 Phone: (513) 386-5499

GAS

Duke Energy  
 Jim Mara  
 7600 Colerain Ave. (RM. 108-21)  
 Cincinnati, OH 45239  
 Phone: (513) 256-9041  
 James.Mara@duke-energy.com

POWER

Duke Energy  
 Nick Hamilton  
 2010 Dana Ave.  
 Room EF 324  
 Cincinnati, Ohio 45207  
 Phone: (513) 514-8214 (Office)  
 Phone: (513) 240-8825 (Cell)  
 Nicholas.Hamilton@duke-energy.com

WATER AND SANITARY

Western Water  
 Paul Kilburn  
 Phone: (513) 899-3211 (Office)  
 Phone: (513) 490-1367 (Cell)

Warren County Water and Sewer Dept.  
 Chris Wojnicz, P.E., LEED AP  
 (Deputy Sanitary Engineer)  
 Phone: (513) 695-1646  
 Christopher.Wojnicz@co.warren.oh.us

# RIGHT OF WAY LEGEND SHEET














## WAR-TR158-0.92 (STEPHENS ROAD)

### MILITARY SURVEY No. 3334 HAMILTON TOWNSHIP WARREN COUNTY


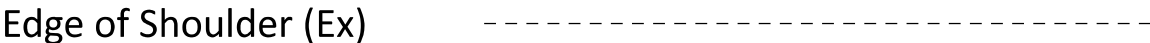
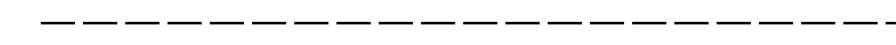
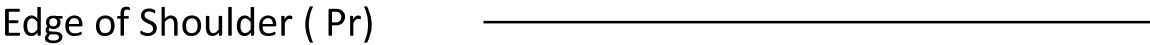
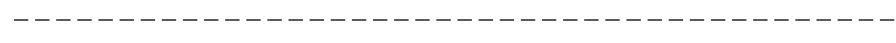
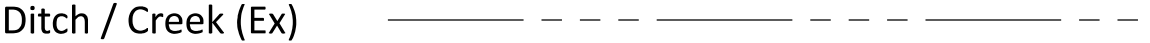
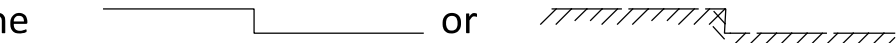
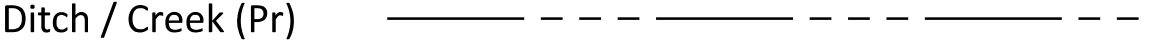


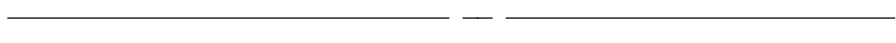

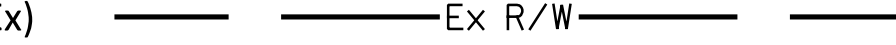

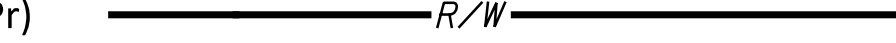



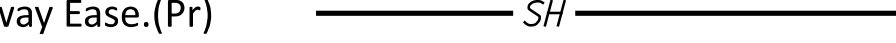
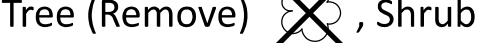

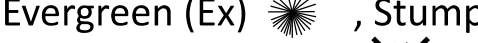
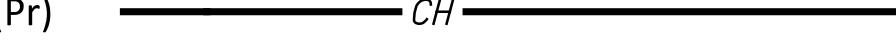

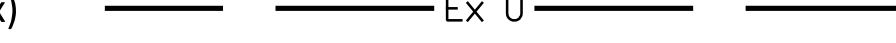
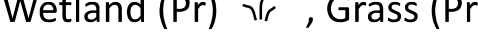
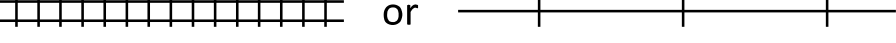

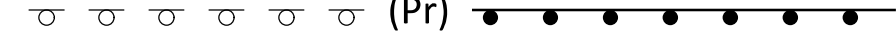

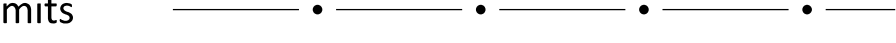
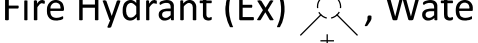
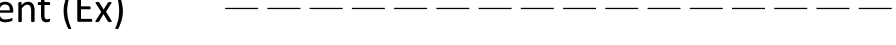
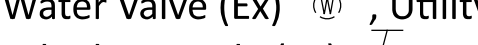

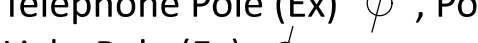
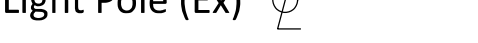







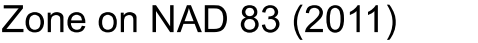



INDEX OF SHEETS:

LEGEND SHEET	RW.01
CENTERLINE PLAT	RW.02
PROPERTY MAP	RW.03
SUMMARY OF ADDITIONAL R/W	RW.04
DETAIL SHEET	RW.05

MONUMENT LEGEND

-  EXISTING R/W MONUMENT BOX
-  PROPOSED R/W MONUMENT BOX
-  EXISTING CONCRETE MONUMENT
-  PROPOSED CONCRETE MONUMENT
-  RAILROAD SPIKE FOUND
-  RAILROAD SPIKE SET
-  IRON PIN FOUND
-  IRON PIN FOUND W/ ID CAP
-  IRON PIN SET W/ ID CAP
-  IRON PIPE FOUND
-  IRON PIPE SET
-  P.K. NAIL FOUND
-  P.K. NAIL SET

CONVENTIONAL SYMBOLS

County Line		Edge of Shoulder (Ex)	
Township Line		Edge of Shoulder (Pr)	
Section Line		Ditch / Creek (Ex)	
Corporation Line		Ditch / Creek (Pr)	
Fence Line (Ex)		Tree Line (Ex)	
Center Line		Ownership Hook Symbol	 Example
Right of Way (Ex)		Property Line Symbol	 Example
Right of Way (Pr)		Break Line Symbol	 Example
Standard Highway Ease.(Ex)		Tree (Pr)	
Standard Highway Ease.(Pr)		Shrub (Ex)	
Temporary Right of Way		Tree (Remove)	
Channel Ease. (Pr)		Shrub (Remove)	
Utility Ease. (Ex)		Evergreen (Ex)	
Railroad		Stump	
Guardrail (Ex)		Evergreen (Remove)	
Construction Limits		Stump (Remove)	
Edge of Pavement (Ex)		Wetland (Pr)	
Edge of Pavement (Pr)		Grass (Pr)	
		Aerial Target	
		Post (Ex)	
		Mailbox (Ex)	
		Telephone Marker (Ex)	
		Light (Ex)	
		Fire Hydrant (Ex)	
		Water Meter (Ex)	
		Water Valve (Ex)	
		Utility Valve Unknown (Ex.)	
		Telephone Pole (Ex)	
		Power Pole (Ex)	
		Light Pole (Ex)	

NOTES: THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE OBTAINED FROM THE OWNER OF THE UTILITIES AS REQUIRED BY SECTION 153.64 O.R.C.

UTILITIES ARE SHOWN AS FOUND ON THESE SITES IN RESPONSE TO OUPS TICKET #B301200872-00B DATED 1/12/23

PLANS PREPARED BY:

FIRM NAME : LJB, Inc.  
 R/W DESIGNER: Harry G. Herbst, P.S., P.E.  
 R/W REVIEWER: David A. Hulsmeyer, P.S.  
 FIELD REVIEWER: David A. Hulsmeyer, P.S.  
 PRELIMINARY FIELD REVIEW DATE: 05/03/23  
 OWNERSHIP UPDATED BY: David A. Hulsmeyer, P.S.  
 DATE COMPLETED: 07/06/23  
 FIELD REVIEWER: David A. Hulsmeyer, P.S.  
 FINAL FIELD REVIEW DATE: 07/13/23  
 FINAL R/W PLAN DATE: 09/25/23

I, David Hulsmeyer, P. S. have conducted a survey of the existing conditions for the Warren County Engineer's Office in March 2023. The results of that survey are contained herein.

The horizontal coordinates expressed herein are based on the Ohio State Plane Coordinate System, South Zone on NAD 83 (2011) datum. The Project Coordinates (US Survey feet) are relative to State Plane Grid Coordinates (US Survey feet) by a Project Adjustment Factor multiplier of 1.0000970929

As a part of this project I have reestablished the locations of the existing property lines and centerline of existing Right of Way for property takes contained herein. As part of this I have established the proposed property lines, calculated the Gross Take, Present Roadway Occupied (PRO), Net Take and Net Residue; as well as prepared the legal descriptions necessary to acquire these parcels as shown herein.

All of my work contained herein was conducted in accordance with Ohio Administrative Code 4733-37 commonly known as "A Minimum Standards for Boundary Surveys in the State of Ohio" unless noted. The words I and my as used herein are to mean either myself or someone working under my direct supervision.

David Hulsmeyer, Professional Land Surveyor No. 8548,

Date: \_\_\_\_\_

WAR-TR158-0.92

MODEL: Sheet\_SurvFt\_PAPER SIZE: 34x22 (in.) DATE: 12/1/2023 TIME: 10:03:20 AM USER: jmfellman  
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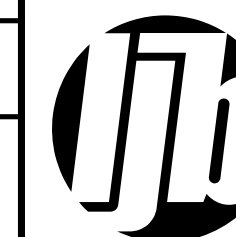
UNDERGROUND UTILITIES

Contact Two Working Days  
 Before You Dig



OHIO811, 8-1-1, or 1-800-362-2764  
 (Non members must be called directly)

DESIGN AGENCY



DESIGNER

HGH

REVIEWER

DAH 08/18/23

PROJECT ID

117643

SUBSET

RW.01

TOTAL

5

SURVEYOR'S SEAL

LJB, INC.

RIGHT OF WAY  
 LEGEND SHEET

**SURVEYING PARAMETERS**

USE THE FOLLOWING PROJECT CONTROL, VERTICAL POSITIONING, AND HORIZONTAL POSITIONING PARAMETERS FOR ALL SURVEYING:

PROJECT CONTROL  
 POSITIONING METHOD: ODOT VRS  
 MONUMENT TYPE: VARIES (SEE TABLE)

VERTICAL POSITIONING  
 ORTHOMETRIC HEIGHT DATUM: NAVD88  
 GEOID: GEOID18 (CONUS)

HORIZONTAL POSITIONING  
 REFERENCE FRAME: NAD83 (2011)  
 ELLIPSOID: GRS80  
 MAP PROJECTION: LAMBERT CONFORMAL CONIC  
 COORDINATE SYSTEM: OHIO STATE PLANE, SOUTH ZONE (3402)  
 COMBINED SCALE FACTOR: 0.999902917  
 PROJECT SCALE FACTOR: 1.000097092  
 ORIGIN OF COORDINATE SYSTEM: 0,0

USE THE POSITIONING METHODS AND MONUMENT TYPE USED IN THE ORIGINAL SURVEY TO RESTORE ALL MONUMENTS RELATED TO PRIMARY PROJECT CONTROL THAT ARE DAMAGED OR DESTROYED BY CONSTRUCTION ACTIVITIES. RESTORE THE DAMAGED OR DESTROYED MONUMENTS IN ACCORDANCE WITH CMS 623.

UNITS ARE IN U.S. SURVEY FEET.

**BASIS FOR BEARINGS**  
 OHIO STATE PLANE COORDINATES  
 SOUTH ZONE (3402), NAD83 (2011)

**BASIS FOR  $\zeta$  EX. R/W**  
 SURVEY RECORD 50-99, WCEO

REGENCY PARK ESTATES, SEC. 2  
 P.B. 73, PG. 77-79

SETTING OF ALL MONUMENTS SHALL BE PERFORMED BY A SURVEYOR REGISTERED IN THE STATE OF OHIO. THE MONUMENT ASSEMBLIES AND REFERENCE MONUMENTS WILL BE INSTALLED BY THE CONTRACTOR AT THE TIME OF CONSTRUCTION. THE IRON PIN AND CAP (WHEN REQUIRED) ARE TO BE INSTALLED BY THE CONTRACTOR'S SURVEYOR.

CHANGES OR ALTERATIONS TO THE LOCATION OF ANY MONUMENTS SHOWN IN THIS TABLE, REQUIRE PRIOR APPROVAL FROM THE DISTRICT REAL ESTATE ADMINISTRATOR OF THE OHIO DEPARTMENT OF TRANSPORTATION, IN THE EVENT THAT CHANGES OR ALTERATIONS ARE APPROVED, A REVISED CENTERLINE PLAT WITH THE NEW LOCATIONS SHALL BE RECORDED IN THE APPLICABLE COUNTY RECORDS AND THE OHIO DEPARTMENT OF TRANSPORTATION. SPECIFICATIONS FOR MONUMENT ASSEMBLIES, REFERENCE MONUMENTS AND RIGHT OF WAY MONUMENTS ARE SHOWN ON STANDARD CONSTRUCTION DRAWING RM-1.1.

I, David Hulsmeyer, P. S. have conducted a survey of the existing conditions for the Warren County Engineer's Office in March 2023. The results of that survey are contained herein.

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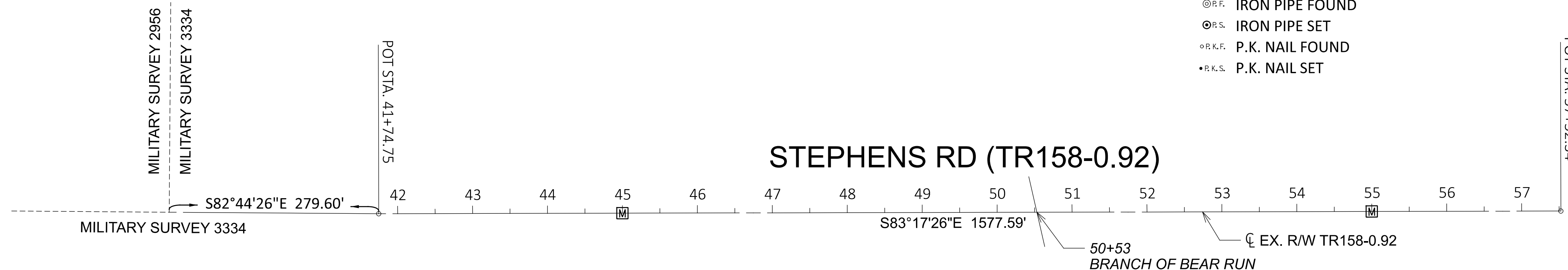
David Hulsmeyer, Professional Land Surveyor No. 8548, Date: \_\_\_\_\_

**WAR-TR158-0.92  
 (STEPHENS ROAD)  
 MILITARY SURVEY No. 3334  
 HAMILTON TOWNSHIP  
 WARREN COUNTY**



**MONUMENT LEGEND**

- ◻ EXISTING R/W MONUMENT BOX
- ◻ PROPOSED R/W MONUMENT BOX
- ⊙ EXISTING CONCRETE MONUMENT
- PROPOSED CONCRETE MONUMENT
- ⊗ RAILROAD SPIKE FOUND
- ✱ RAILROAD SPIKE SET
- I.R.F. IRON PIN FOUND
- ⊙ I.R.F. IRON PIN FOUND W/ ID CAP
- I.R.S. IRON PIN SET W/ ID CAP
- ⊙ R.F. IRON PIPE FOUND
- R.S. IRON PIPE SET
- P.K.F. P.K. NAIL FOUND
- P.K.S. P.K. NAIL SET



**MONUMENT TABLE**

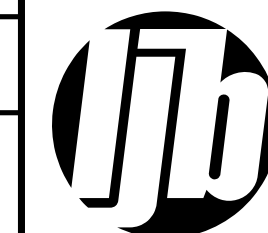
$\zeta$ of RIGHT OF WAY TR 158		PROJECT COORDINATES SEE SURVEY CERTIFICATION		MONUMENTS TO BE SET DURING CONSTRUCTION		R/W MON. EXPECTED TO BE DISTURBED	
STATION	OFFSET	NORTH (Y)	EAST (X)	MON. ASSY.	REF. MON.	R/W MON.	DESCRIPTION
45+00.00	0.00	487824.703	1486268.736	1			MONUMENT ASSY.
55+00.00	0.00	487707.868	1487261.887	1			MONUMENT ASSY.
TOTAL CARRIED TO GENERAL SUMMARY SHEET				2			

CENTERLINE PLAT

**SURVEYOR'S SEAL**

LJB, INC.

DESIGN AGENCY



DESIGNER

HGH

REVIEWER

DAH 08/18/23

PROJECT ID

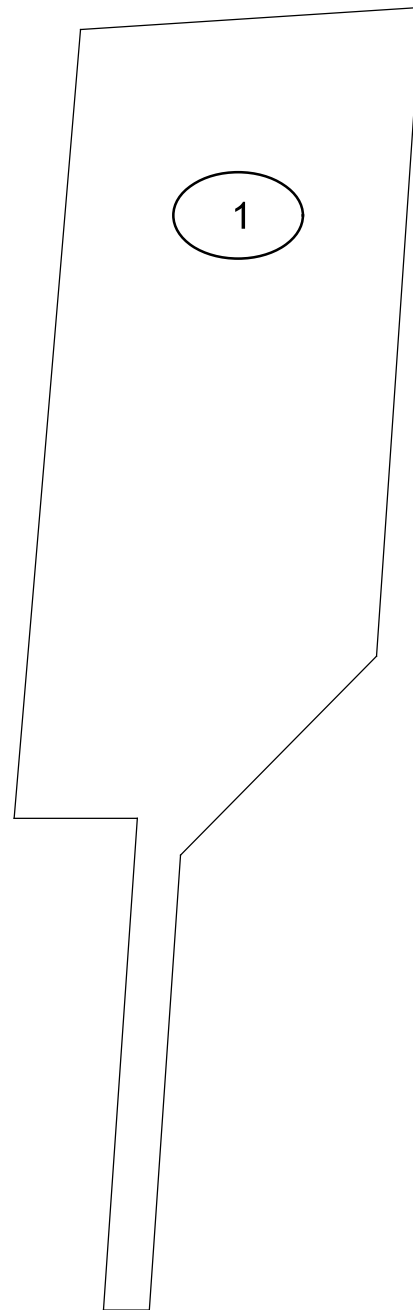
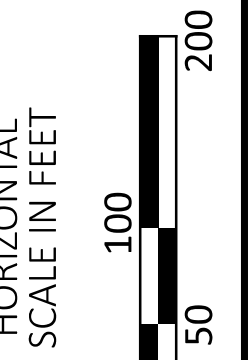
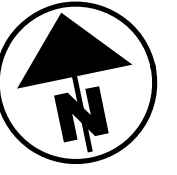
117643

SUBSET TOTAL

RW.02 5

# WAR-TR158-0.92 (STEPHENS ROAD)

MILITARY SURVEY No. 3334  
 HAMILTON TOWNSHIP  
 WARREN COUNTY

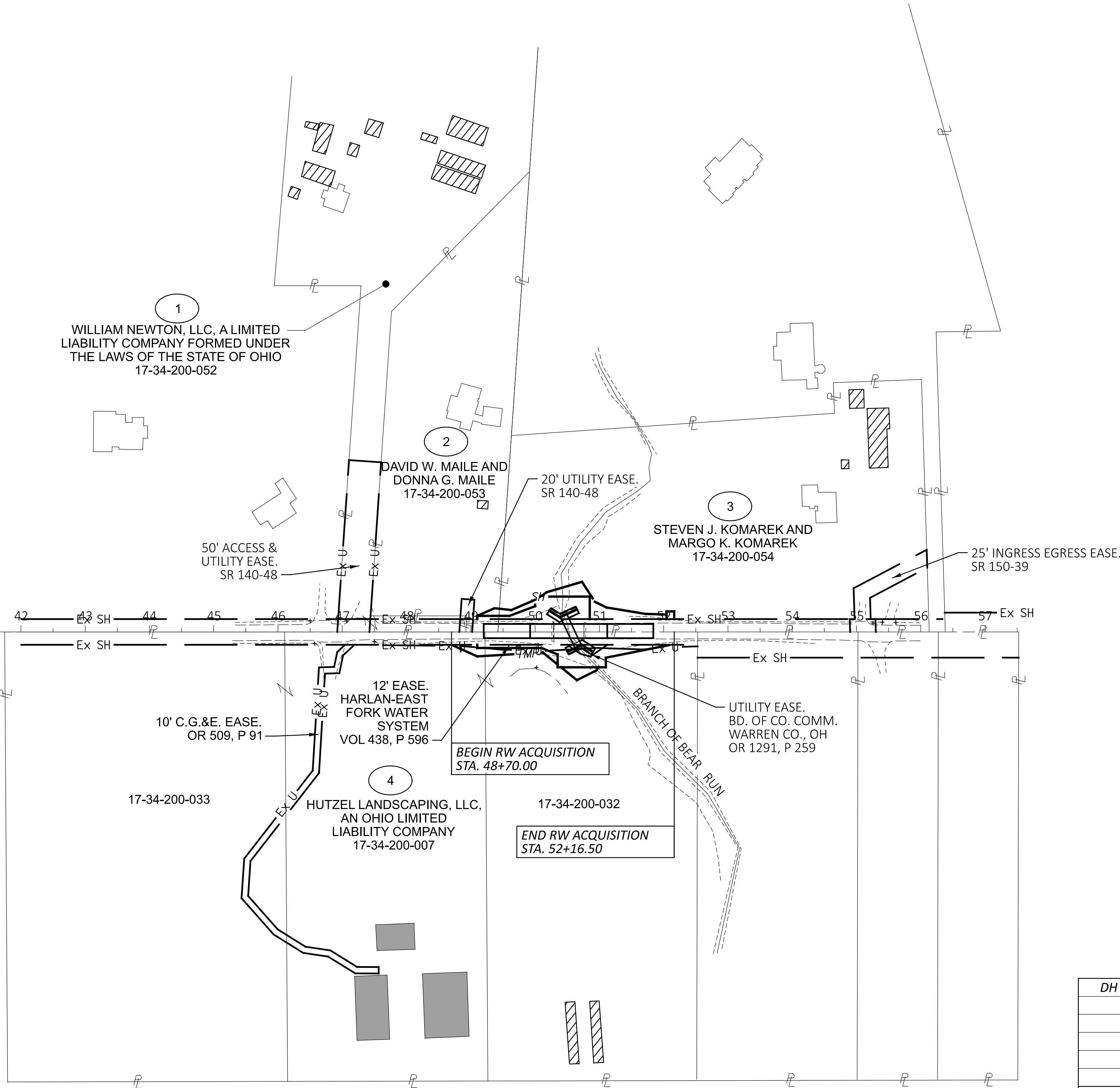


INSET

MILITARY SURVEY 2956  
 MILITARY SURVEY 3334

MILITARY SURVEY 3334

REGENCY PARK ESTATES, SEC. 2  
 P.B. 73, PG. 77-79



PROPERTY MAP

DESIGN AGENCY



DESIGNER

HGH

REVIEWER

DAH 09/27/23

PROJECT ID

117643

SUBSET TOTAL

RW.03 5

REV. BY	DATE	DESCRIPTION
DATE COMPLETED		

TOTAL NUMBER OF:  
 3 OWNERSHIPS  
 9 PARCELS  
 0 TOTAL TAKES

0 OWNERSHIPS WITH STRUCTURES INVOLVED RECORD AREA-TOTAL PRO-NET TAKE=NET RESIDUE  
 GROSS TAKE-PRO IN TAKE=NET TAKE  
 ALL AREAS IN ACRES

GRANTEE: ALL RIGHT OF WAY ACQUIRED IN THE NAME OF THE WARREN COUNTY BOARD OF COUNTY COMMISSIONERS UNLESS OTHERWISE SHOWN  
 \* DENOTES RIGHT OF WAY ENCROACHMENT

PARCEL NO.	OWNER	SHEET NO.	OWNERS RECORD		AUDITOR'S PARCEL	RECORD AREA	TOTAL P.R.O.	GROSS TAKE	P.R.O. IN TAKE	NET TAKE	STRUC-TURE	NET RESIDUE		TYPE FUND	REMARKS	AS ACQUIRED	
			BOOK	PAGE								LEFT	RIGHT			BOOK	PAGE
1	WILLIAM NEWTON, LLC, A LIMITED LIABILITY COMPANY FORMED UNDER THE LAWS OF THE STATE OF OHIO	5	2021-039009		17-34-200-052	7.999	0.0920								NO ADDITIONAL RW REQUIRED		
2-SH	DAVID W. MAILE AND DONNA G. MAILE	5	OR 428	679	17-34-200-053	2.701	0.0230	0.0039	0.0000	0.0039		2.6741			OVERLAPS UTILITY EASE. 12 SF		
2-T		5						0.0056	0.0000	0.0056					PERFORM GRADING OVERLAPS UTILITY EASE 40 SF		
3-SH1	STEVEN J. KOMAREK	5	2021-010555		17-34-200-054	5.067	0.3080	0.0816	0.0000	0.0816							
3-SH2	MARGO K. KOMAREK	5						0.0033	0.0000	0.0033							
							TOTAL	0.0849	0.0000	0.0849		4.6741					
3-T1		5						0.0119	0.0000	0.0119					PERFORM GRADING 47 LF FENCE REPLACE IN KIND		
3-T2		5						0.0625	0.0000	0.0625					PERFORM GRADING 47 LF FENCE REPLACE IN KIND		
4-SH	HUTZEL LANDSCAPING, LLC, AN OHIO LIMITED LIABILITY COMPANY	5	2017-009597		17-34-200-033	6.997	0.2000	0.0000	0.0000	0.0000					OVERLAPS UTILITY EASE 637 SF (OR1290 P259) OVERLAPS UTILITY EASE 1530 SF (OR438 P596)		
					17-34-200-007	5.001	0.1430	0.0014	0.0000	0.0014							
					17-34-200-032	5.257	0.1520	0.0993	0.0000	0.0993							
					TOTAL	17.255	0.4950	0.1007	0.0000	0.1007							
4-T1		5			17-34-200-007			0.0118	0.0000	0.0118					PERFORM GRADING 140 LF FENCE REPLACE IN KIND OVERLAPS UTILITY EASE 122 SF (OR438 P596)		
					17-34-200-032			0.0256	0.0000	0.0256							
					TOTAL			0.0374	0.0000	0.0374							
4-T2		5			17-34-200-032			0.0145	0.0000	0.0145					PERFORM GRADING		

100% LOCAL

SUMMARY OF ADDITIONAL RIGHT OF WAY

WAR-TR158-0.92

MODEL: Sheet\_SurvFt\_PAPER SIZE: 34x22 (in.) DATE: 12/1/2023 TIME: 10:03:28 AM USER: jmelman  
 C:\Warren City\_Eng\0125223A.00 - WAR-TR158-0092 Bridge Replcmt\117643\400-Engineering\RW\Sheets\117643\_RS001.dgn


NOTE: ALL TEMPORARY PARCELS TO BE OF 24 MONTHS DURATION.

NOTE: UNDER NO CIRCUMSTANCES ARE TEMPORARY EASEMENTS TO BE USED FOR STORAGE OF MATERIAL OR EQUIPMENT BY THE CONTRACTOR UNLESS NOTED OTHERWISE.

PARCEL IDENTIFIER LEGEND  
 SH = STANDARD HIGHWAY EASEMENT  
 T = TEMPORARY EASEMENT

DH	9/21/23	PARCELS 3-T2, 3-SH2, 4-SH
REV. BY	DATE	DESCRIPTION
FIELD REVIEW BY	DATE:	
OWNERSHIP VERIFIED BY	DATE:	
DATE COMPLETED		

DESIGN AGENCY



DESIGNER  
HGH

REVIEWER  
DAH 09/25/23

PROJECT ID  
117643

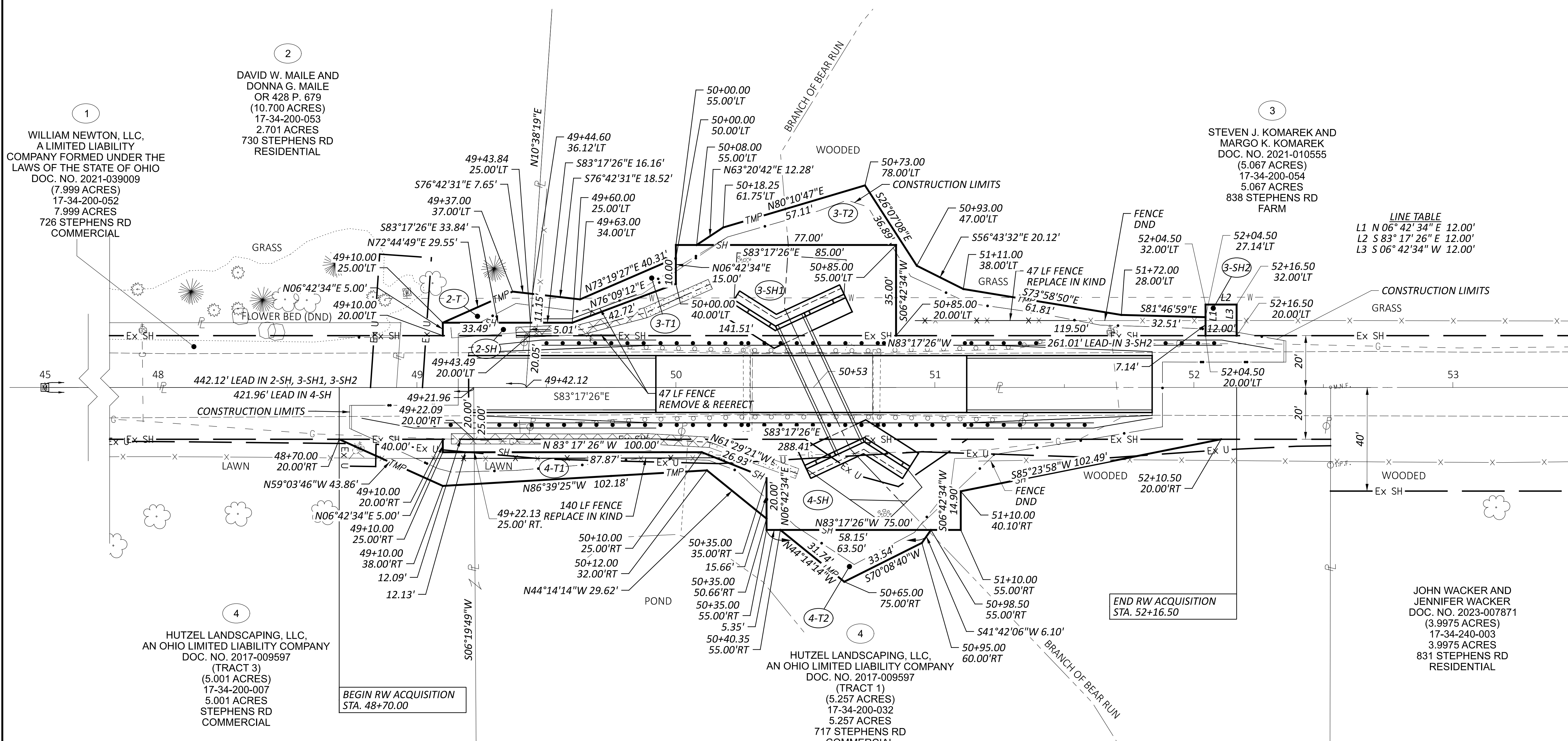
SUBSET TOTAL  
RW.04 | 5

# WAR-TR158-0.92 (STEPHENS ROAD)

MILITARY SURVEY No. 3334

HAMILTON TOWNSHIP

WARREN COUNTY



1  
WILLIAM NEWTON, LLC,  
A LIMITED LIABILITY  
COMPANY FORMED UNDER THE  
LAWS OF THE STATE OF OHIO  
DOC. NO. 2021-039009  
(7.999 ACRES)  
17-34-200-052  
7.999 ACRES  
726 STEPHENS RD  
COMMERCIAL

2  
DAVID W. MAILE AND  
DONNA G. MAILE  
OR 428 P. 679  
(10.700 ACRES)  
17-34-200-053  
2.701 ACRES  
730 STEPHENS RD  
RESIDENTIAL

3  
STEVEN J. KOMAREK AND  
MARGO K. KOMAREK  
DOC. NO. 2021-010555  
(5.067 ACRES)  
17-34-200-054  
5.067 ACRES  
838 STEPHENS RD  
FARM

4  
HUTZEL LANDSCAPING, LLC,  
AN OHIO LIMITED LIABILITY COMPANY  
DOC. NO. 2017-009597  
(TRACT 3)  
(5.001 ACRES)  
17-34-200-007  
5.001 ACRES  
STEPHENS RD  
COMMERCIAL

4  
HUTZEL LANDSCAPING, LLC,  
AN OHIO LIMITED LIABILITY COMPANY  
DOC. NO. 2017-009597  
(TRACT 1)  
(5.257 ACRES)  
17-34-200-032  
5.257 ACRES  
717 STEPHENS RD  
COMMERCIAL

JOHN WACKER AND  
JENNIFER WACKER  
DOC. NO. 2023-007871  
(3.9975 ACRES)  
17-34-240-003  
3.9975 ACRES  
831 STEPHENS RD  
RESIDENTIAL

LINE TABLE  
L1 N 06° 42' 34" E 12.00'  
L2 S 83° 17' 26" E 12.00'  
L3 S 06° 42' 34" W 12.00'

END RW ACQUISITION  
STA. 52+16.50

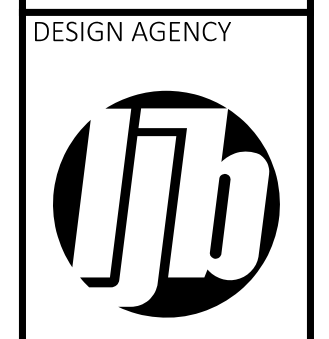
BEGIN RW ACQUISITION  
STA. 48+70.00

RIGHT OF WAY DETAIL SHEET  
WAR-TR158-0.92

WAR-TR158-0.92

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DH	9/21/23	PARCELS 3-T2, 3-SH2, 4-SH
DESIGNER	GHG	
REVIEWER	DAH 09/25/23	
PROJECT ID	117643	
SUBSET	TOTAL	
RW.05	5	
REV. BY	DATE	DESCRIPTION
DATE COMPLETED		



DESIGN AGENCY  
DESIGNER  
REVIEWER  
PROJECT ID  
SUBSET TOTAL  
RW.05 5