

X:\Projects\2024\2422\203400_CUY-14-12.12E\DESIGN\CT\ProjectData\13184\Design\Structures\Sheets\04_1212C_S0002.dgn 11/7/2024 4:28:14 PM skoch

FUNDING		ESTIMATED QUANTITIES					CALC. BY: ARE CHKD. BY: MDP			DATE: 9/6/2023 DATE: 10/6/2023	
01/S>2/10	DOMINION, 02/S>2/10	ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION	REAR ABUTMENT	FORWARD ABUTMENT	SUPER- STRUCTURE	GENERAL	REF. SHEET NUMBER
232		203	10000	232	CY	EXCAVATION				232	5/10-7/10
7		203	20000	7	CY	EMBANKMENT				7	8/10
LS		503	11101	LS		COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN					2/10, 5-7/10
12		503	21100	12	CY	UNCLASSIFIED EXCAVATION	7	5			
260		507	00400	260	FT	STEEL PILES, MISC.: HP14x89, FURNISHED, AS PER PLAN	140	120			2/10
260		507	92201	260	FT	PREBORED HOLES, AS PER PLAN (TEMPORARY STEEL ABUTMENTS)	140	120			2/10
409		507	92201	409	FT	PREBORED HOLES, AS PER PLAN (TEMPORARY RAMP SOLDIER PILE WALL)				409	2/10
LS		513	10001	LS		STRUCTURAL STEEL MEMBERS, LEVEL UF, AS PER PLAN					2/10
142		513	95000	142	FT	STRUCTURAL STEEL, MISC.: UTILITY SUPPORTS, SANITARY SEWER			142		10/10
LS		SPECIAL	53000200	LS		STRUCTURES: ASSEMBLY AND INSTALLATION OF PREFABRICATED TRUSS BRIDGE					2/10, 9/10
30,000		SPECIAL	53000400	30,000	EACH	STRUCTURES: REIMBURSEMENT FOR ACROW SERVICES, PART 1				30,000	3/10
	30	SPECIAL	53000400	30	EACH	STRUCTURES: 8" DOMINION GAS LINE ROLLER ASSEMBLY				30	9/10

REV NO.	DATE	REV. BY	DESCRIPTION
1	11-07-24	SRK	REVISED QUANTITY

ESTIMATED QUANTITIES

BRIDGE NO. CUY-14-12.12E - PART 1
TEMPORARY UTILITY BRIDGE OVER TINKERS CREEK

PID No. 13184

4 / 10

17
23

DESIGN AGENCY
PENNONI ASSOCIATES INC.
2 SUMMIT PARK DRIVE, SUITE 335
INDEPENDENCE, OHIO 44131

DATE
12/7/23
FILE NUMBER
N/A

REVIEWED
MDP
STRUCTURE
N/A

DRAWN
ARE
REVISED

DESIGNED
ARE
CHECKED
ARA

X:\Projects\2024\2422\203400_CUY-14-12\12E\DESIGN\CT\ProjectData\13184\Design\Roadway\Sheets\13184_GN002.dgn 11/8/2024 8:54:35 AM skoch

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.

CONTRACTION AND/OR EXPANSION JOINTS

ALTHOUGH SPECIFIC LOCATIONS OF CERTAIN CONTRACTION AND EXPANSION JOINTS HAVE BEEN DETAILED ON THIS PLAN, NO WAIVER OF THE SPECIFICATIONS IS INTENDED. IN ALL CASES, THE PROVISION OF EXPANSION JOINTS AT ALL MAJOR STRUCTURES INCLUDING THE MAXIMUM SPACING BETWEEN CONTRACTION JOINTS IS IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING BP-2.2 AND THE SPECIFICATIONS.

ITEM 606 - ANCHOR ASSEMBLY, MGS TYPE B

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.

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 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.

THE FACE OF THE TYPE B IMPACT HEAD SHALL BE COVERED WITH TYPE G REFLECTIVE SHEETING, PER CMS 730.19.

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

ITEM 606 - 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 A SHEET OF TYPE G REFLECTIVE SHEETING, PER CMS 730.19.

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 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.

CROSSINGS AND CONNECTIONS TO EXISTING PIPES AND UTILITIES

WHERE PLANS PROVIDE FOR A PROPOSED CONDUIT TO BE CONNECTED TO, OR CROSS OVER OR UNDER AN EXISTING SEWER OR UNDERGROUND UTILITY, THE CONTRACTOR SHALL LOCATE THE EXISTING PIPES OR UTILITIES BOTH AS TO LINE AND GRADE BEFORE STARTING TO LAY THE PROPOSED CONDUIT.

IF IT IS DETERMINED THAT THE ELEVATION OF THE EXISTING CONDUIT, OR EXISTING APPURTENANCE TO BE CONNECTED, DIFFERS FROM THE PLAN ELEVATION OR RESULTS IN A CHANGE IN THE PLAN CONDUIT SLOPE, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WILL BE AFFECTED BY THE VARIANCE IN THE EXISTING ELEVATIONS.

IF IT IS DETERMINED THAT THE PROPOSED CONDUIT WILL INTERSECT AN EXISTING SEWER OR UNDERGROUND UTILITY IF CONSTRUCTED AS SHOWN ON THE PLAN, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WOULD BE AFFECTED BY THE INTERFERENCE WITH AN EXISTING FACILITY.

PAYMENT FOR ALL THE OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 611 CONDUIT ITEM.

REVIEW OF DRAINAGE FACILITIES

BEFORE ANY WORK IS STARTED ON THE PROJECT AND AGAIN BEFORE FINAL ACCEPTANCE BY THE STATE, REPRESENTATIVES OF THE STATE AND THE CONTRACTOR, ALONG WITH LOCAL REPRESENTATIVES, SHALL MAKE AN INSPECTION OF ALL EXISTING SEWERS WHICH ARE TO REMAIN IN SERVICE AND WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDUITS AND THEIR APPURTENANCE SHALL BE DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTION SHALL BE KEPT IN WRITING BY THE STATE.

ALL NEW CONDUITS, INLETS, CATCH BASINS, AND MANHOLES CONSTRUCTED AS A PART OF THE PROJECT SHALL BE FREE OF ALL FOREIGN MATTER AND IN A CLEAN CONDITION BEFORE THE PROJECT WILL BE ACCEPTED BY THE STATE.

ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE MENTIONED PARTIES SHALL BE MAINTAINED AND LEFT IN A CONDITION REASONABLY COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. ANY CHANGE IN THE CONDITION RESULTING FROM THE CONTRACTORS OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER.

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 611 CONDUIT ITEMS.

ITEM SPECIAL - MISCELLANEOUS METAL

EXISTING CASTINGS MAY PROVE TO BE UNSUITABLE FOR REUSE, AS DETERMINED BY THE ENGINEER. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE CASTINGS OF THE REQUIRED TYPE, SIZE AND STRENGTH (HEAVY OR LIGHT DUTY) FOR THE PARTICULAR STRUCTURE IN QUESTION. ALL MATERIAL SHALL MEET ITEM 611 OF THE SPECIFICATIONS AND SHALL HAVE THE PRIOR APPROVAL OF THE ENGINEER.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER.

SPECIAL, MISCELLANEOUS METAL 1000 POUNDS

THE CONTRACTOR IS CAUTIONED TO USE EXTREME CARE IN THE REMOVAL, STORAGE AND REPLACEMENT OF ALL EXISTING CASTINGS. CASTINGS DAMAGED BY THE NEGLIGENCE OF THE CONTRACTOR, AS DETERMINED BY THE ENGINEER, SHALL BE REPLACED WITH THE PROPER NEW CASTINGS AT THE EXPENSE OF THE CONTRACTOR.

EXISTING SUBSURFACE DRAINAGE

PROVIDE UNOBSTRUCTED OUTLETS FOR ALL EXISTING UNDERDRAINS OR AGGREGATE DRAINS ENCOUNTERED DURING CONSTRUCTION.

PROVIDE AN OUTLET PER STANDARD CONSTRUCTION DRAWING DM-1.1 FOR ALL UNDERDRAINS THAT OUTLET TO A SLOPE. UNDERDRAINS THAT CAN BE CONNECTED TO THE NEW OR EXISTING UNDERDRAINS AT THE END OF THE PROJECT LIMITS AS WELL AS ALL NECESSARY BENDS OR BRANCHES REQUIRED FOR CONNECTION ARE INCLUDED IN THE BASIS OF PAYMENT FOR UNCLASSIFIED PIPE UNDERDRAINS.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE WORK NOTED ABOVE:

ITEM 601, TIED CONCRETE BLOCK MAT, TYPE 1 20 SQ. YD.
ITEM 605, AGGREGATE DRAINS 50 FT.
ITEM 611, 6" CONDUIT, TYPE F 20 FT.
ITEM 611, PRECAST REINFORCED CONCRETE OUTLET 1 EACH
ITEM 605, 6" UNCLASSIFIED PIPE UNDERDRAINS 20 FT.

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.

TEMPORARY ACCESS ROAD

THE FOLLOWING QUANTITY IS CARRIED TO THE GENERAL SUMMARY TO RESTORE THE AREA EXCAVATED FOR TEMPORARY ACCESS IN PART 1.

ITEM 203, EMBANKMENT 232 CY

REV NO.	DATE	REV. BY	DESCRIPTION
1	11-08-24	SRK	NOTE ADDITION

CALCULATED
CJK
CHECKED
JMZ

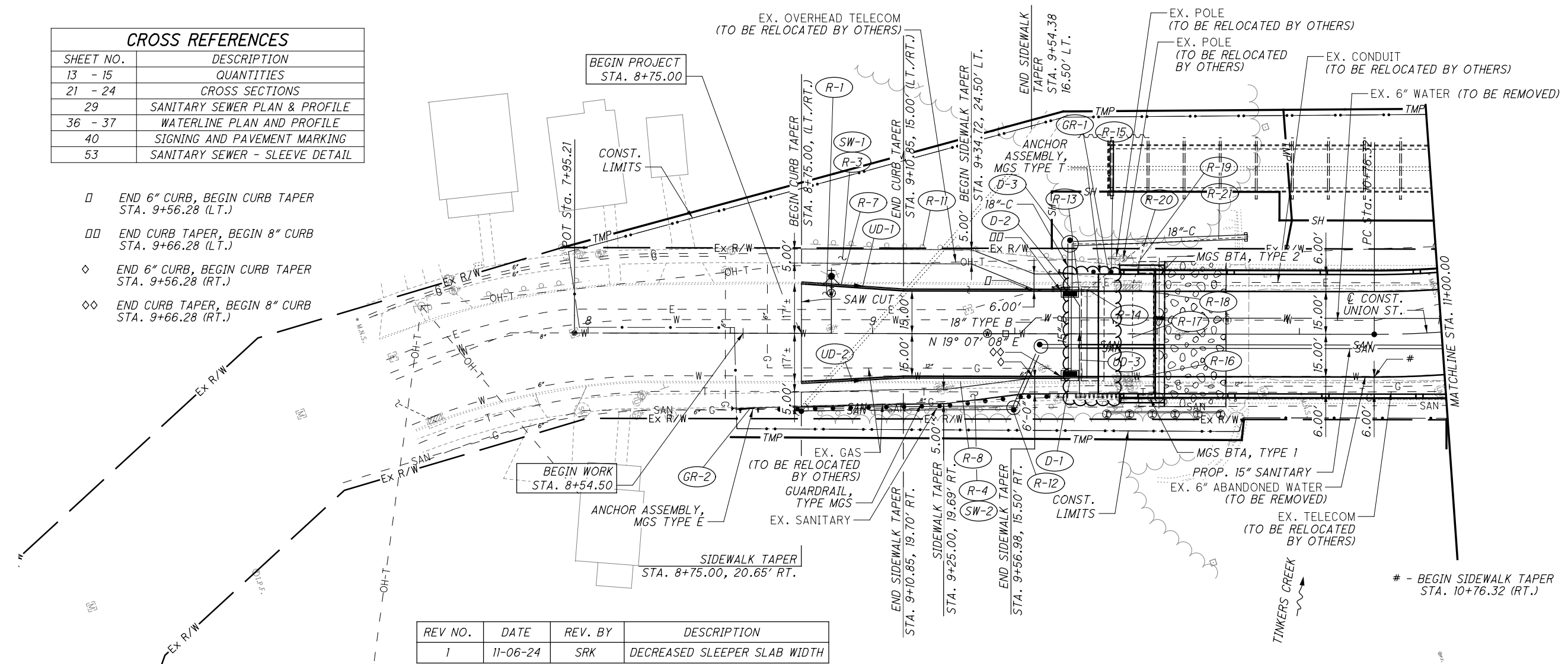
GENERAL NOTES

CUY-14-12.12E
PART 2

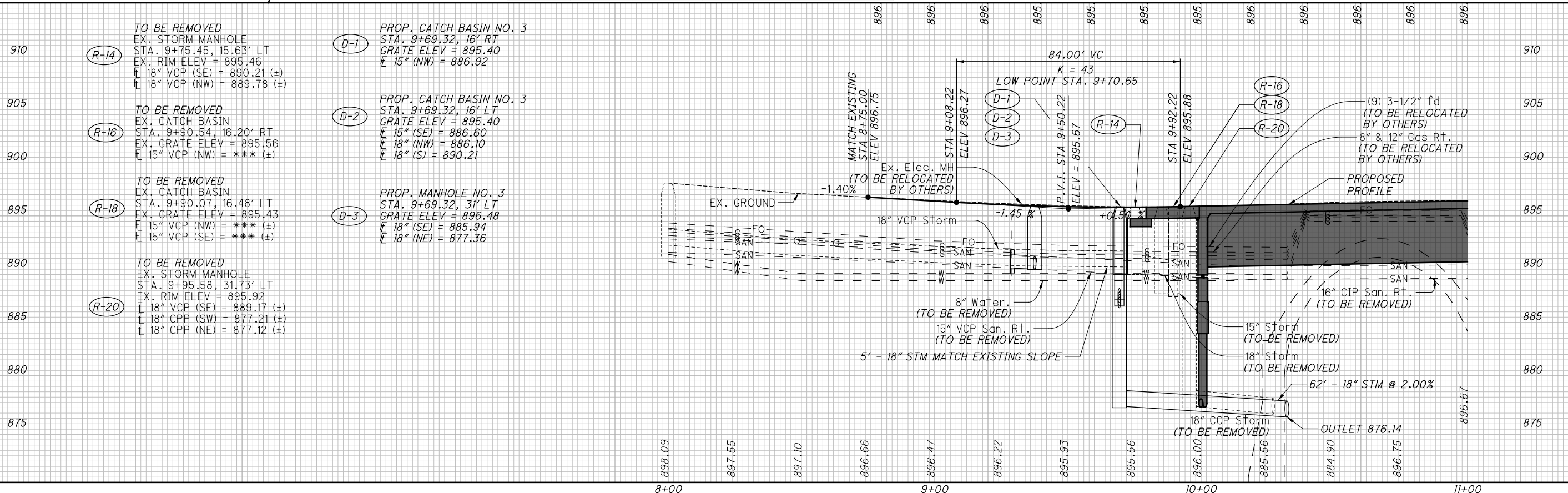
X:\Projects\2024\2422\203400_CUY-14-1212\DESIGN\CT\ProjectData\3184\Design\Roadway\Sheets\3184_GPO01.dgn 11/7/2024 12:26:23 PM aadk\ms

CROSS REFERENCES	
SHEET NO.	DESCRIPTION
13 - 15	QUANTITIES
21 - 24	CROSS SECTIONS
29	SANITARY SEWER PLAN & PROFILE
36 - 37	WATERLINE PLAN AND PROFILE
40	SIGNING AND PAVEMENT MARKING
53	SANITARY SEWER - SLEEVE DETAIL

- END 6" CURB, BEGIN CURB TAPER STA. 9+56.28 (LT.)
- ▢ END CURB TAPER, BEGIN 8" CURB STA. 9+66.28 (LT.)
- ◇ END 6" CURB, BEGIN CURB TAPER STA. 9+56.28 (RT.)
- ◊ END CURB TAPER, BEGIN 8" CURB STA. 9+66.28 (RT.)



REV NO.	DATE	REV. BY	DESCRIPTION
1	11-06-24	SRK	DECREASED SLEEPER SLAB WIDTH





CALCULATED
 AJK
 CHECKED
 JMJ

PLAN AND PROFILE
STA. 11+00 TO STA. 13+00

CUY-14-1212E
PART 2
 20
 103

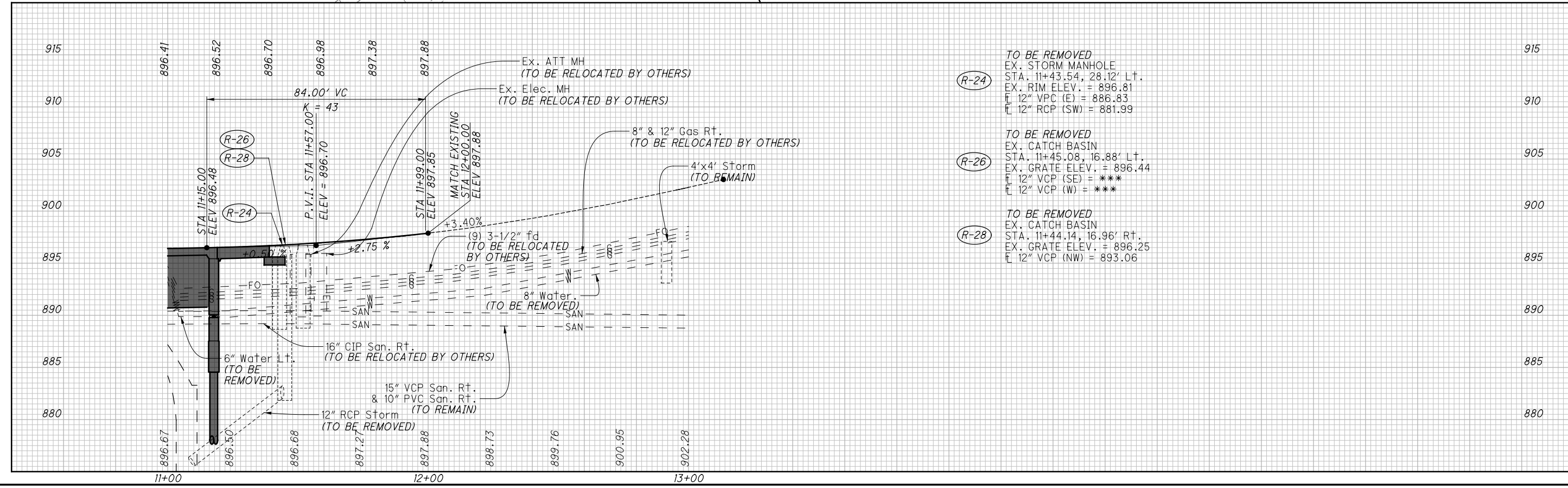
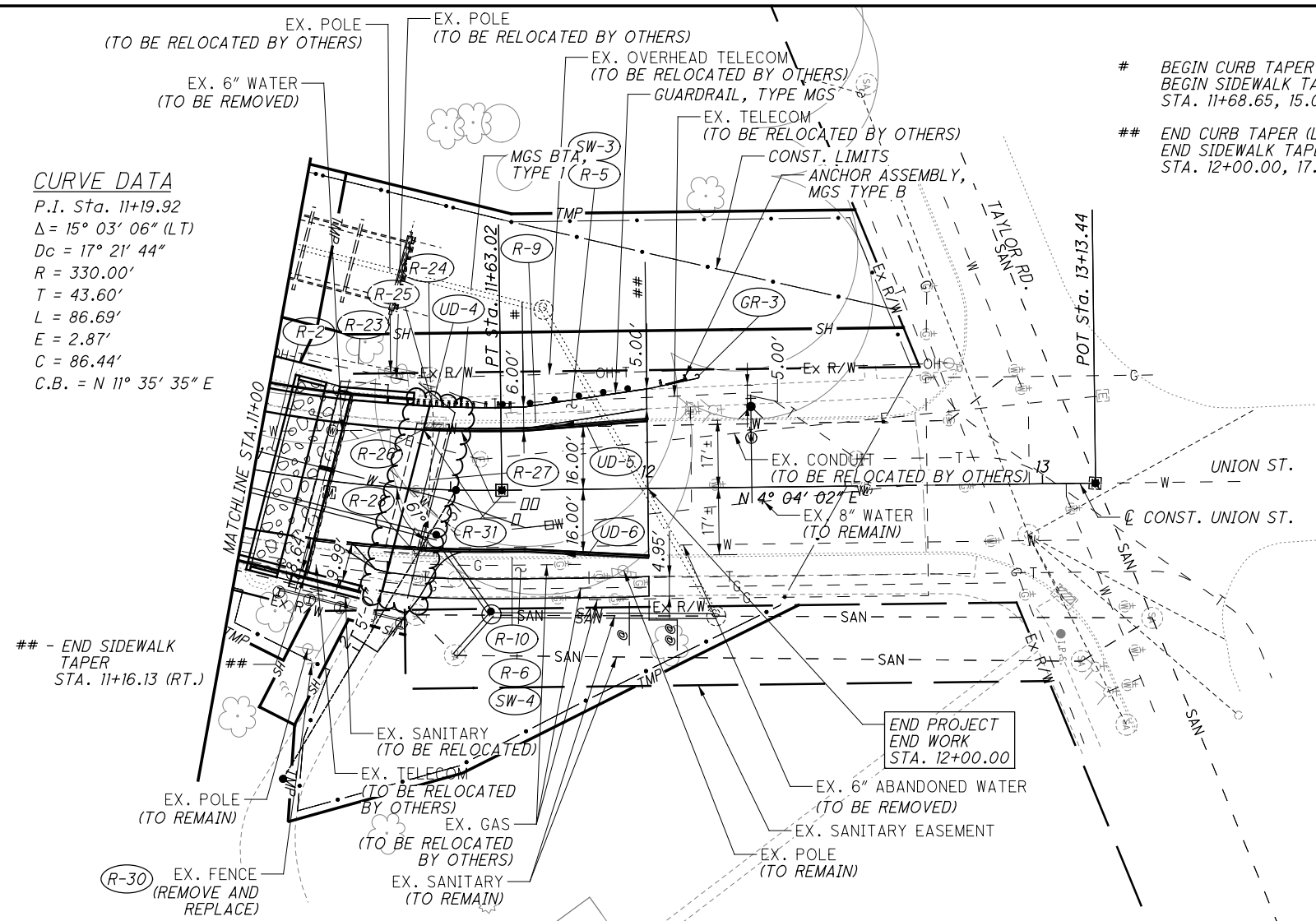
CURVE DATA
 P.I. Sta. 11+19.92
 $\Delta = 15^\circ 03' 06''$ (LT.)
 $D_c = 17^\circ 21' 44''$
 $R = 330.00'$
 $T = 43.60'$
 $L = 86.69'$
 $E = 2.87'$
 $C = 86.44'$
 $C.B. = N 11^\circ 35' 35'' E$

- # BEGIN CURB TAPER (LT./RT.)
 BEGIN SIDEWALK TAPER (LT.)
 STA. 11+68.65, 15.00' (LT.)
- ⊙ BEGIN SIDEWALK TAPER
 STA. 11+95.00, 22.45' (RT.)
- ⊞ END 8" CURB, BEGIN CURB TAPER
 STA. 11+42.45 (LT.)
- ## END CURB TAPER (LT./RT.)
 END SIDEWALK TAPER (LT.)
 STA. 12+00.00, 17.09' (LT.)
- ⊙⊙ END SIDEWALK TAPER
 STA. 12+00.00, 22.27' (RT.)
- ⊞⊞ END CURB TAPER, BEGIN 6" CURB
 STA. 11+52.45 (LT.)

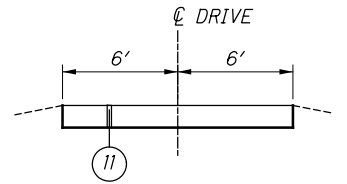
CROSS REFERENCES	
SHEET NO.	DESCRIPTION
13 - 15	QUANTITIES
21 - 24	CROSS SECTIONS
29	SANITARY SEWER PLAN & PROFILE
36 - 37	WATERLINE PLAN AND PROFILE
40	SIGNING AND PAVEMENT MARKING
53	SANITARY SEWER - SLEEVE DETAIL
78	RIGHT APPROACH SLAB SIDEWALK

REV NO.	DATE	REV. BY	DESCRIPTION
1	11-06-24	SRK	DECREASED SLEEPER SLAB WIDTH

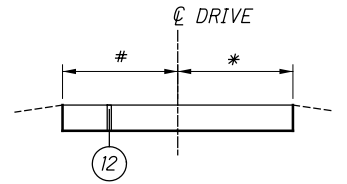
X:\Projects\2024\2422\203400 CUY-14-1212E\DESIGN\CT\ProjectData\3184\Design\Roadway\Sheet\3184_GPO02.dgn 11/7/2024 12:26:24 PM gadkins



X:\Projects\2024\2422\203400_CUY-14-1212E\DESIGN\CT\ProjectData\3184\Design\Roadway\Sheets\3184_GD001.dgn 11/7/2024 12:26:26 PM aadkins



DRIVE TYPICAL SECTION
STA. 1+70.12 TO STA. 1+82.90

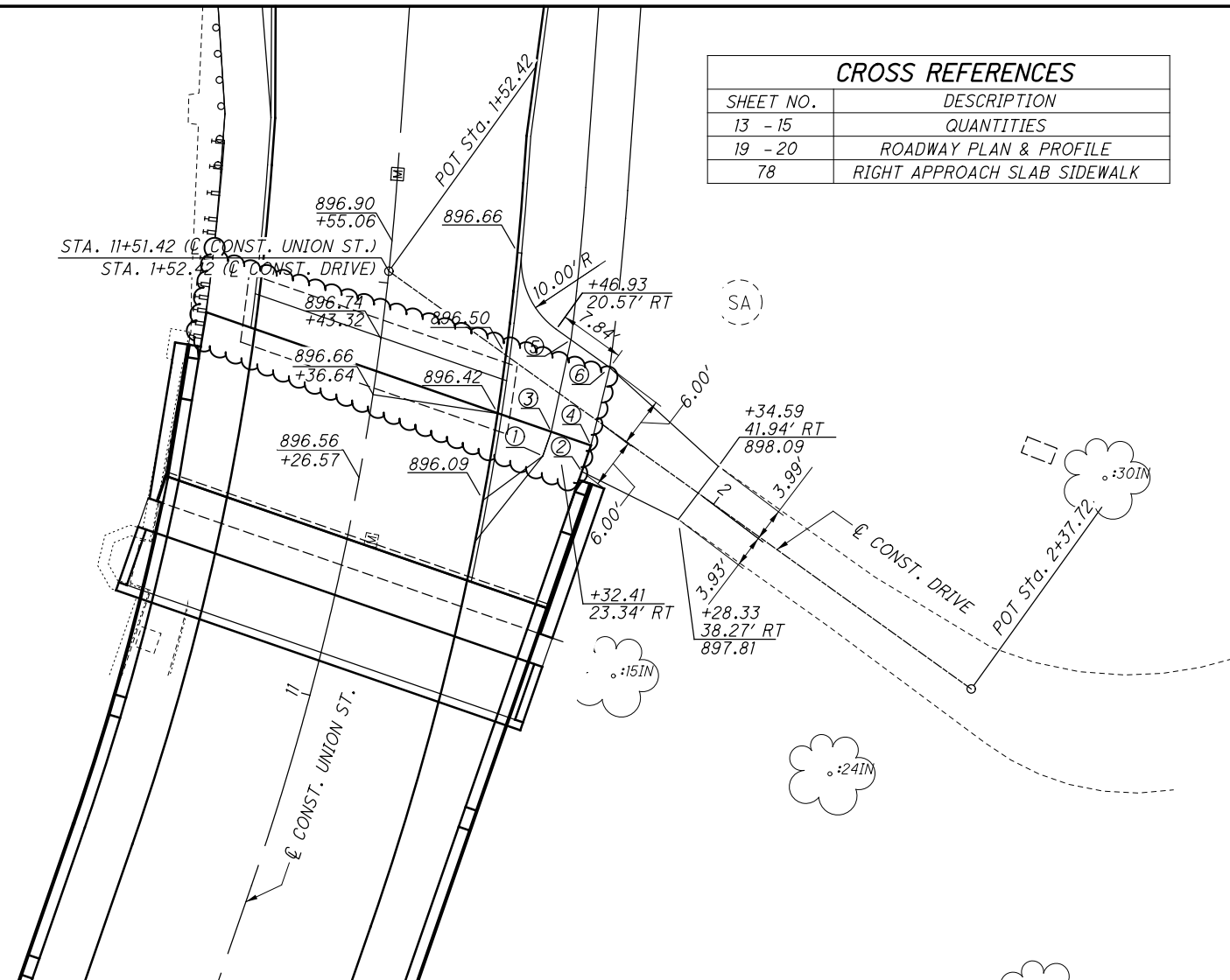


DRIVE TYPICAL SECTION
STA. 1+82.90 TO STA. 1+97.72
= VARIES 6.00' TO 3.93'
* = VARIES 6.00' TO 3.99'

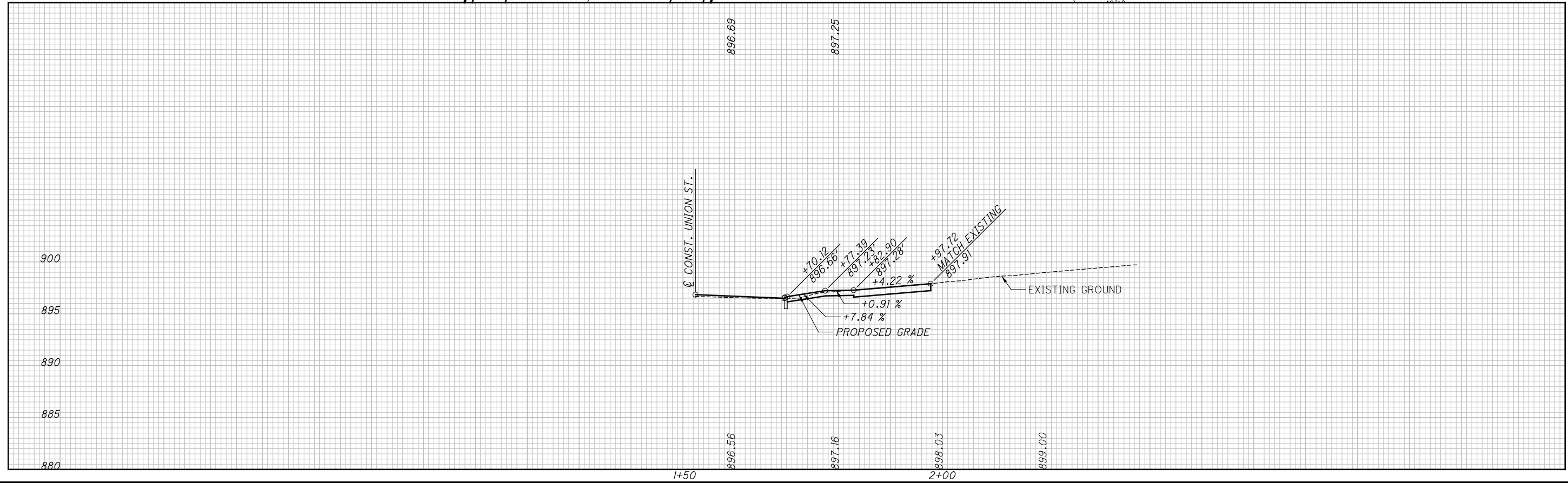
- ⑪ ITEM 452 - 6" NON-REINFORCED CONCRETE PAVEMENT
- ⑫ ITEM 304 - 8" AGGREGATE BASE

REV NO.	DATE	REV. BY	DESCRIPTION
1	11-06-24	SRK	DECREASED SLEEPER SLAB WIDTH

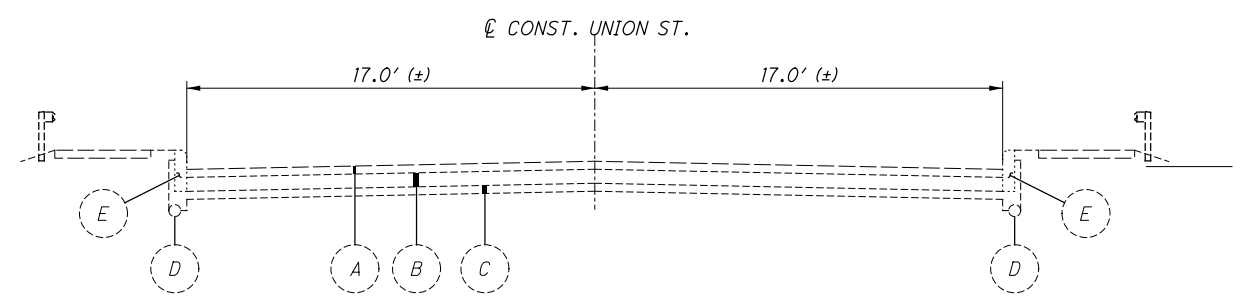
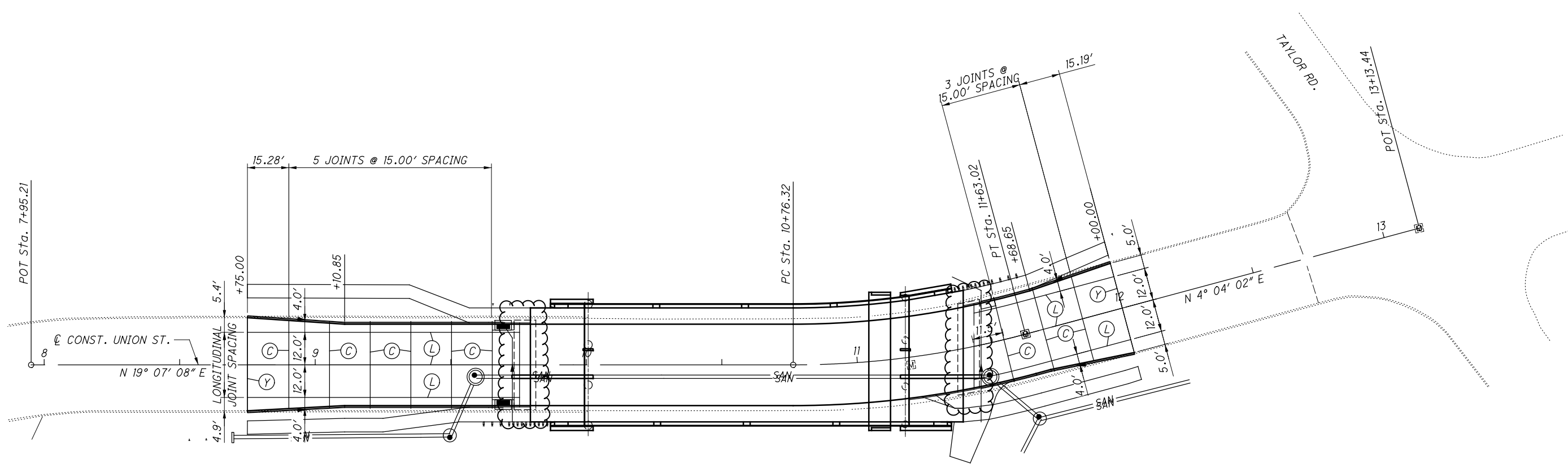
CROSS REFERENCES	
SHEET NO.	DESCRIPTION
13 - 15	QUANTITIES
19 - 20	ROADWAY PLAN & PROFILE
78	RIGHT APPROACH SLAB SIDEWALK



POINT	UNION ST. STATION	OFFSET	ELEVATION
1	11+32.67	21.10' RT	896.82
2	11+31.66	25.99' RT	897.12
3	11+35.49	21.64' RT	897.15
4	11+34.66	26.56' RT	897.22
5	11+45.96	22.46' RT	897.45
6	11+43.44	27.46' RT	897.50



X:\Projects\2024\2422\203400_CUY-14-12\12E\DESIGN\CT\ProjectData\3184\Design\Roadway\Sheets\3184_GA001.dgn 11/7/2024 12:26:27 PM aadk\ins



TYPICAL SECTION OF ADJOINING PAVEMENT
 STA. 8+75.00, UNION ST.
 STA. 12+00.00, UNION ST.

LEGEND

- (L) STANDARD LONGITUDINAL JOINT AS PER BP-2.1
- (S) STANDARD LONGITUDINAL JOINT AS PER BP-2.1 WITHOUT TIE BARS
- (C) CONTRACTION JOINT AS PER BP-2.2
- (Y) BUTT JOINT BETWEEN EXISTING PAVEMENT AND PROPOSED PAVEMENT, A DOWELLED TYPE Y JOINT AS PER BP-2.5 SHALL BE PROVIDED. GROUTING AND DRILING REQUIREMENTS SHALL BE PER SPECIFICATION 255 AND BP-2.5 EXCEPT THE REQUIREMENT THAT THE DRILLING DEVICE SHALL BE CAPABLE OF DRILLING THREE HOLES AT ONE TIME SHALL BE WAIVED.
- (A) 4" (±) ASPHALT
- (B) 9" (±) REINFORCED CONCRETE
- (C) 4" (±) AGGREGATE BASE
- (D) UNDERDRAIN
- (E) CURB

REV NO.	DATE	REV. BY	DESCRIPTION
1	11-06-24	SRK	DECREASED SLEEPER SLAB WIDTH

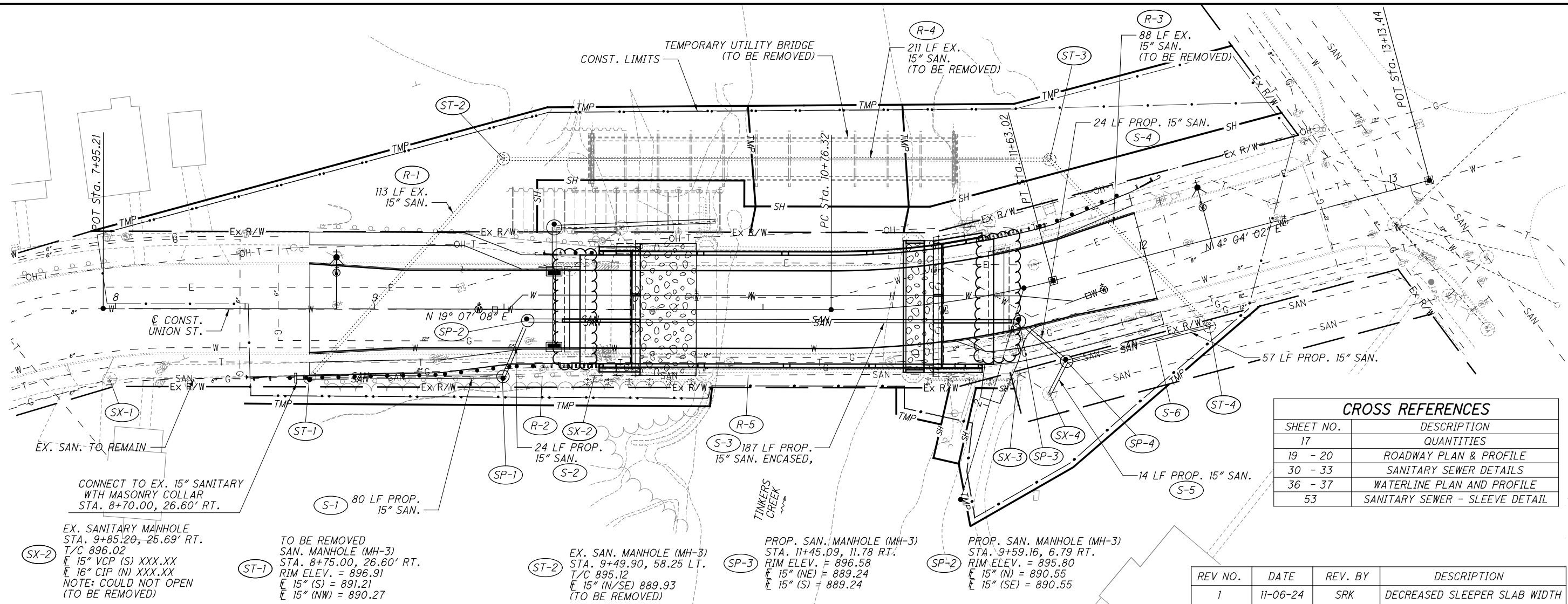
CALCULATED
 CJK
 CHECKED
 JMZ

0 20 40
 HORIZONTAL SCALE IN FEET

PAVEMENT JOINT DETAIL UNION ST.

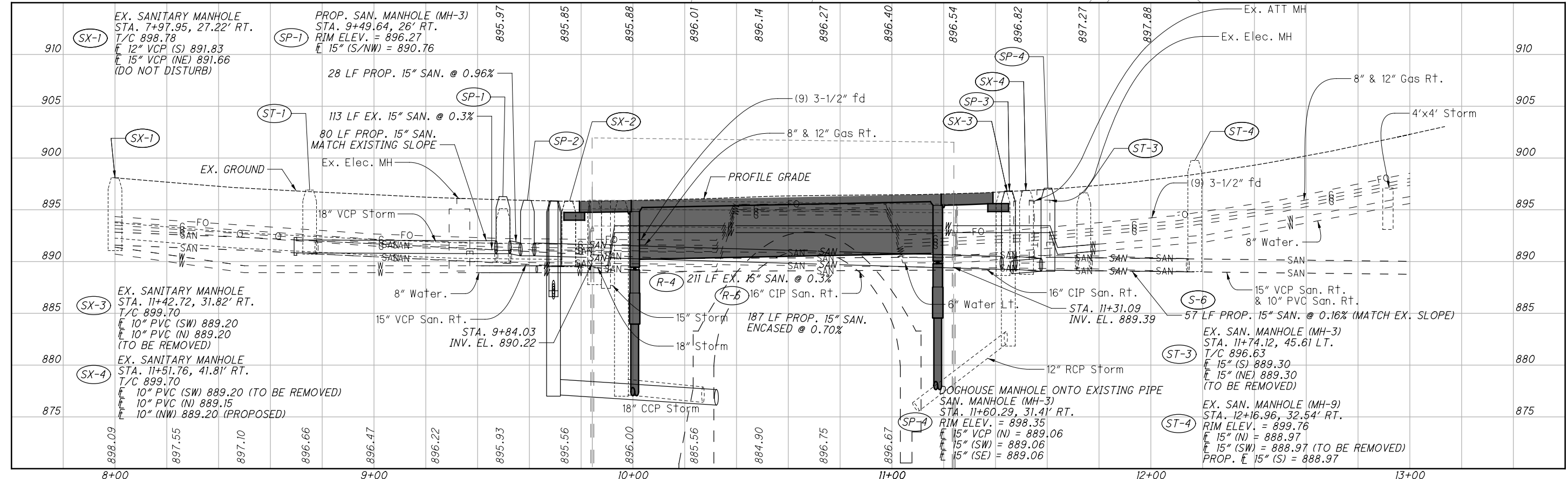
CUY-14-12.12E PART 2

X:\Projects\2024\2422\203400_CUY-14-1212E\DESIGN\CT\ProjectData\3184\Design\Utilities\Sheets\3184_LP040.dgn 11/7/2024 12:26:29 PM aadkins

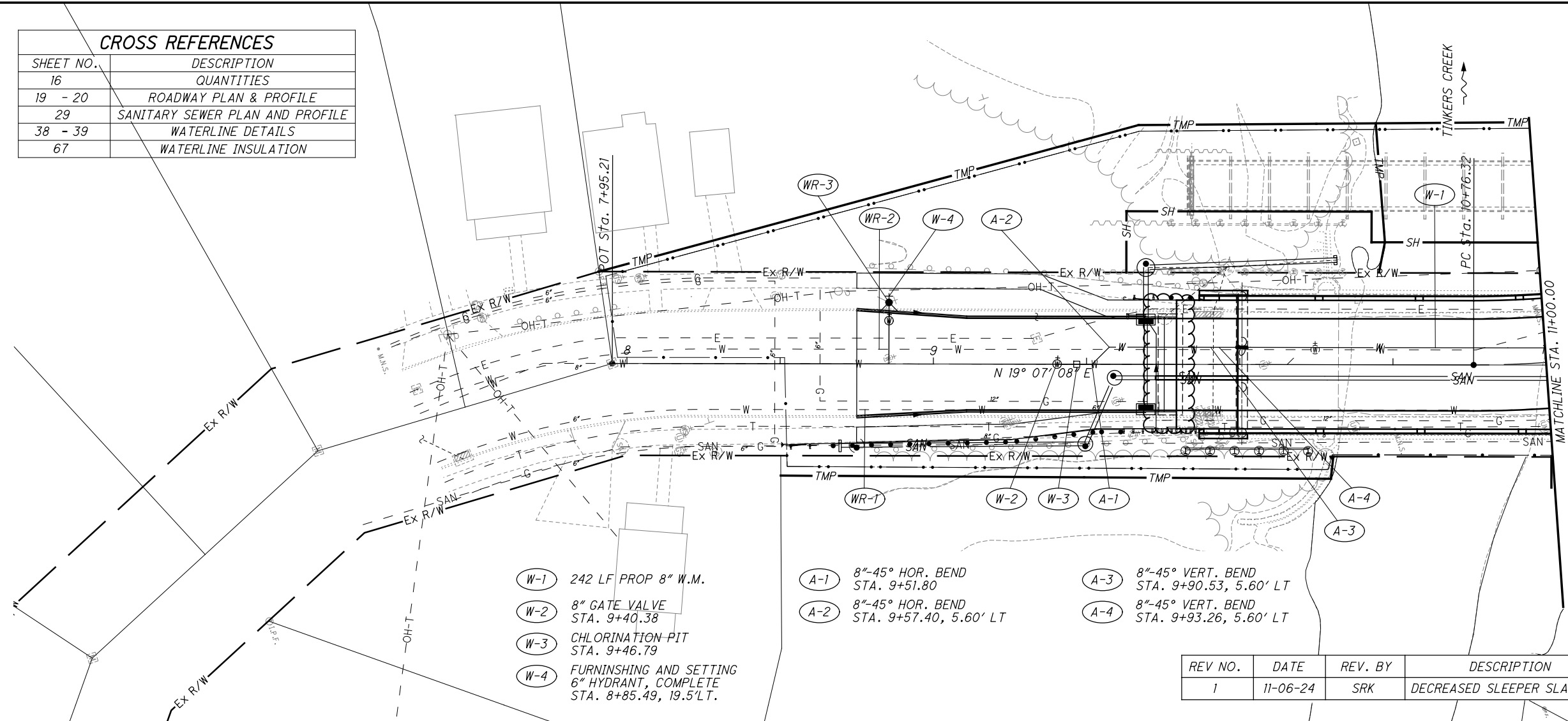


CROSS REFERENCES	
SHEET NO.	DESCRIPTION
17	QUANTITIES
19 - 20	ROADWAY PLAN & PROFILE
30 - 33	SANITARY SEWER DETAILS
36 - 37	WATERLINE PLAN AND PROFILE
53	SANITARY SEWER - SLEEVE DETAIL

REV NO.	DATE	REV. BY	DESCRIPTION
1	11-06-24	SRK	DECREASED SLEEPER SLAB WIDTH



CROSS REFERENCES	
SHEET NO.	DESCRIPTION
16	QUANTITIES
19 - 20	ROADWAY PLAN & PROFILE
29	SANITARY SEWER PLAN AND PROFILE
38 - 39	WATERLINE DETAILS
67	WATERLINE INSULATION

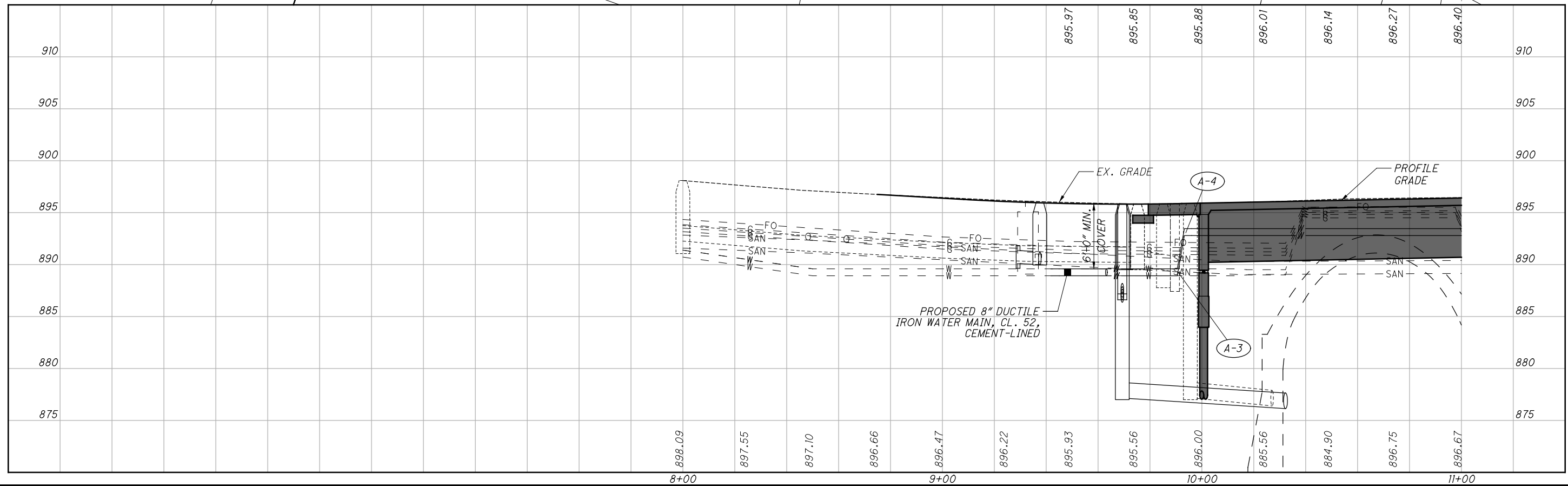


- (W-1) 242 LF PROP 8" W.M.
- (W-2) 8" GATE VALVE
STA. 9+40.38
- (W-3) CHLORINATION PIT
STA. 9+46.79
- (W-4) FURNISHING AND SETTING
6" HYDRANT, COMPLETE
STA. 8+85.49, 19.5' LT.

- (A-1) 8"-45° HOR. BEND
STA. 9+51.80
- (A-2) 8"-45° HOR. BEND
STA. 9+57.40, 5.60' LT

- (A-3) 8"-45° VERT. BEND
STA. 9+90.53, 5.60' LT
- (A-4) 8"-45° VERT. BEND
STA. 9+93.26, 5.60' LT

REV NO.	DATE	REV. BY	DESCRIPTION
1	11-06-24	SRK	DECREASED SLEEPER SLAB WIDTH



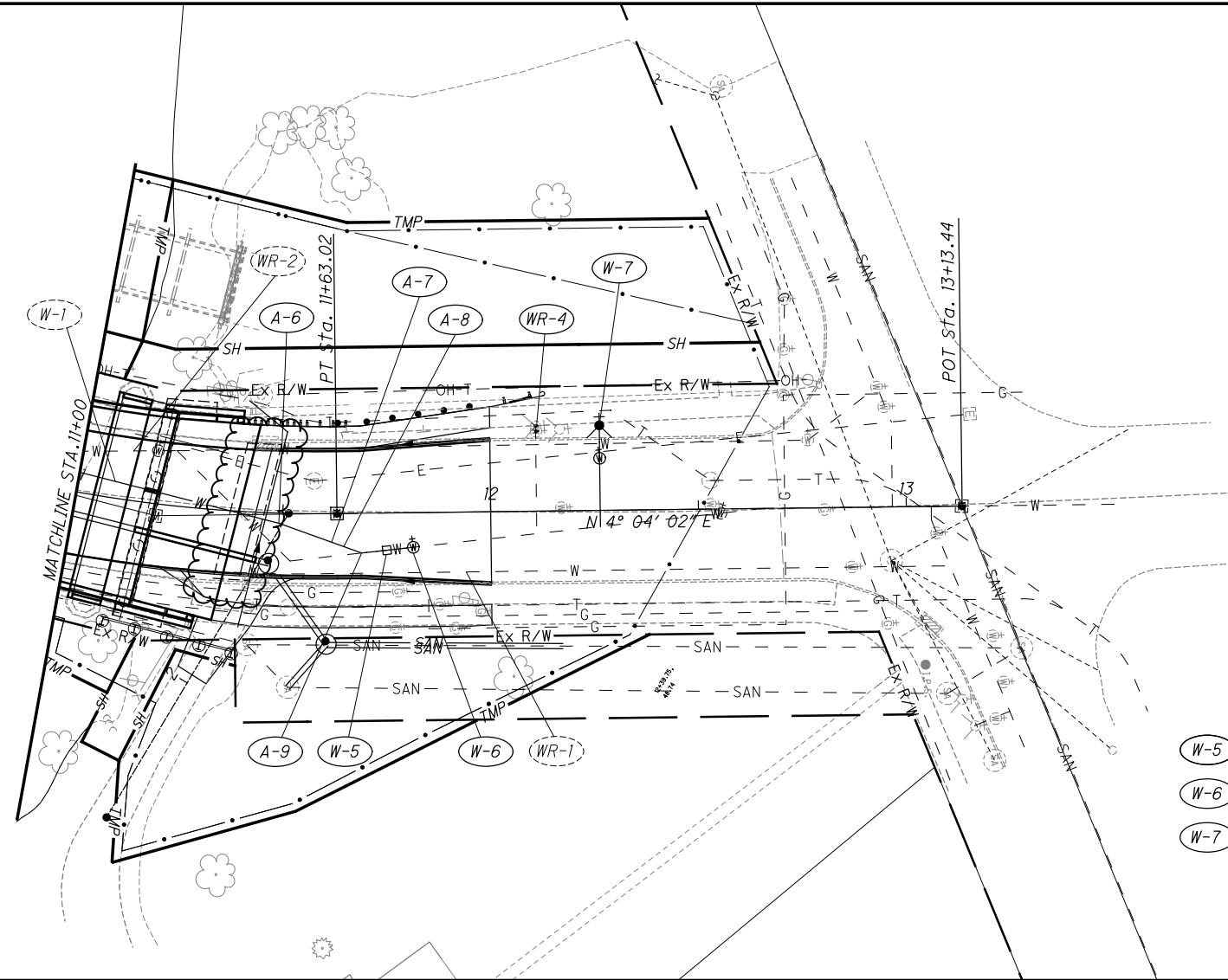
CALCULATED
TDB
CHECKED
ARA

**WATERLINE PLAN AND PROFILE
STA. 8+00 TO STA. 11+00**

**CUY-14-1212E
PART 2**

X:\Projects\2024\2422\203400 CUY-14-1212E\DESIGN\CT\ProjectData\3184\Design\Utilities\Sheets\3184_LP001.dgn 11/7/2024 1:26:31PM aadk:ins

X:\Projects\2024\2422\203400_CUY-14-12\12\DESIGN\CT\ProjectData\3184\Design\Utilities\Sheets\3184_LP002.dgn 11/7/2024 12:26:33 PM aadkins

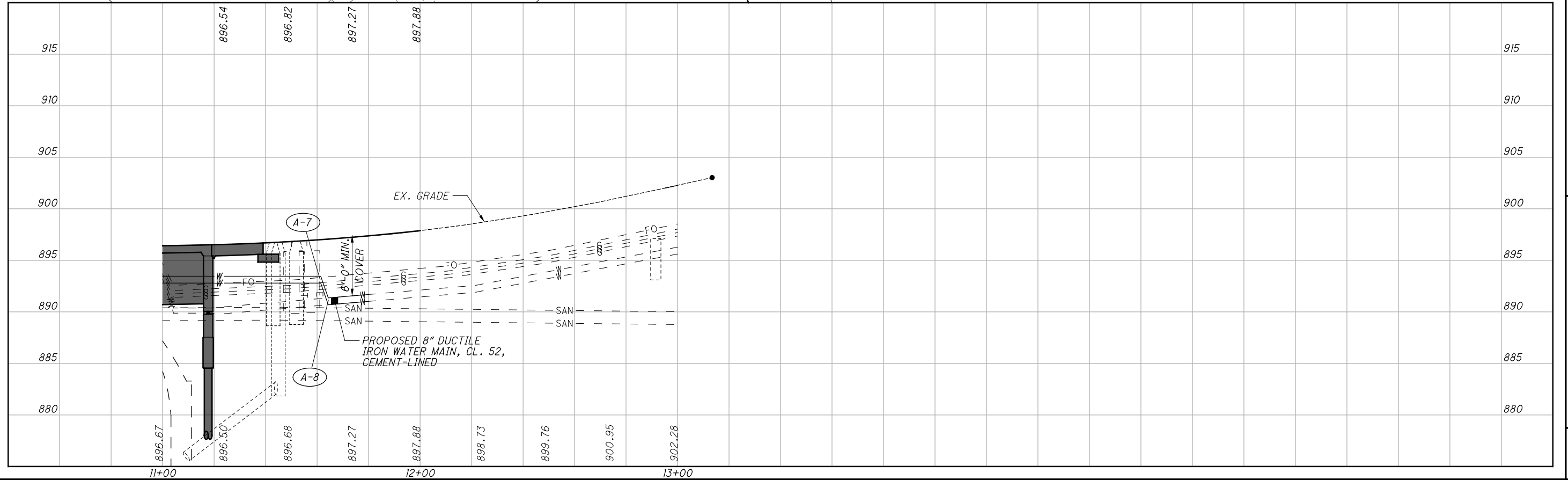


- (W-5) CHLORINATION PIT
STA. 11+74.93, 8.99' RT.
- (W-6) 8" GATE VALVE
STA. 11+81.30, 8.33' RT.
- (W-7) FURNISHING AND SETTING
6" HYDRANT, COMPLETE
STA. 12+26.37, 20.48' LT.

- (A-6) 8"-22.5° HOR. BEND
STA. 11+49.10, 2.45' LT.
- (A-7) 8"-45° VERT. BEND
STA. 11+61.41, 6.88' LT.
- (A-8) 8"-22.5° VERT. BEND
STA. 11+64.33, 7.96' LT.
- (A-9) 8"-45° HOR. BEND
STA. 11+68.84, 9.56' RT.

CROSS REFERENCES	
SHEET NO.	DESCRIPTION
16	QUANTITIES
19 - 20	ROADWAY PLAN & PROFILE
29	SANITARY SEWER PLAN AND PROFILE
38 - 39	WATERLINE DETAILS
67	WATERLINE INSULATION

REV NO.	DATE	REV. BY	DESCRIPTION
1	11-06-24	SRK	DECREASED SLEEPER SLAB WIDTH

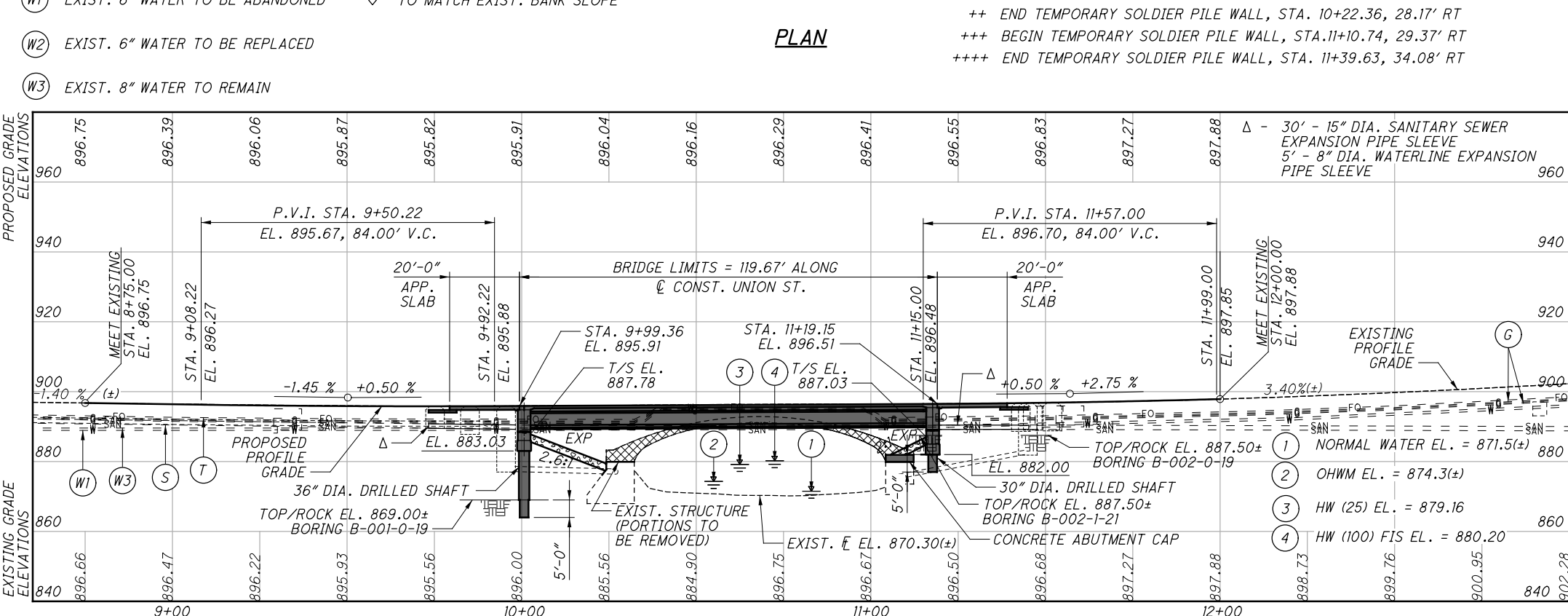
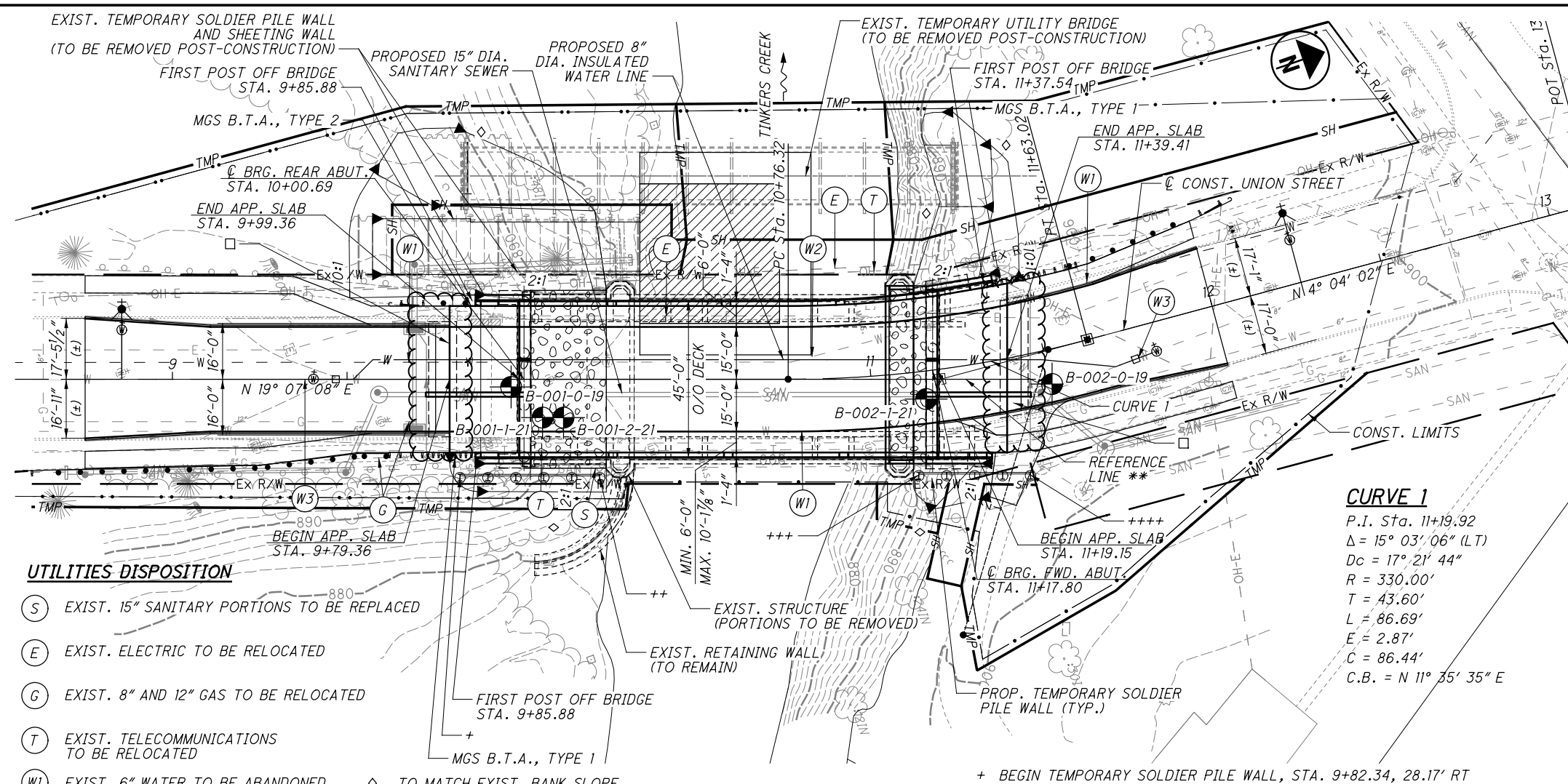


CALCULATED
TDB
CHECKED
ARA

**WATERLINE PLAN AND PROFILE
STA. 11+00 TO STA. 13+00**

**CUY-14-1212E
PART 2**

X:\Projects\2024\2422\203400_CUY-14-12\12E\DESIGN\CT\ProjectData\13184\Design\Structures\Sheets\04_1212C_SP001.dgn 11/7/2024 1:26:35 PM aadkins



REV NO.	DATE	REV. BY	DESCRIPTION
1	11-06-24	SRK	DECREASED SLEEPER SLAB WIDTH

PROFILE ALONG C CONSTRUCTION UNION STREET

BENCHMARK DATA	
BM #1 STA. 8+96.98,	ELEV. 921.46, OFFSET 623.84, LT
BM #2 STA. 13+04.27,	ELEV. 902.01, OFFSET 38.08, RT

- NOTES**
- EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.
 - ALL EXISTING OVERHEAD AND UNDERGROUND UTILITIES ARE TO REMAIN UNLESS NOTED OTHERWISE.

DESIGN TRAFFIC

2022 ADT = 9000	2022 ADTT = 270
2042 ADT = 9500	2042 ADTT = 285

DIRECTIONAL DISTRIBUTION = 0.60

- LEGEND**
- BORING LOCATION
 - ROCK CHANNEL PROTECTION, TYPE B WITH GEOTEXTILE FABRIC, 2'-6" THICK
 - REFERENCE LINE IS AN EXTENSION OF THE TANGENT IN THE C CONST. UNION STREET
 - PRESSURE RELIEF JOINT, TYPE A
 - TEMPORARY ACCESS FILL EL. 875.30 PLACED IN CUY-14-12.12E - PART 1

HYDRAULIC DATA

DRAINAGE AREA = 84.4 SQ. MILES	
Q (25) = 4930 CFS	V (25) = 8.45 FT/S
Q (100) = 6200 CFS (FIS)	V (100) = 9.40 FT/S (FIS)

STRUCTURE CLEARS THE 25 YEAR DESIGN HW BY 10.64 FEET.
 STRUCTURE CLEARS THE 100 YEAR FIS FLOOD HW BY 9.60 FEET.

EXISTING STRUCTURE

TYPE: REINFORCED CONCRETE SPANDREL FILLED ARCH ON REINFORCED CONCRETE ABUTMENTS FOUNDED ON ROCK

SPAN: 72'-0"(±) CLEAR SPAN

ROADWAY: 34'-0"(±) TOE/TOE CURB, 6'-0"(±) SIDEWALKS EACH SIDE

LOADING: H15

SKREW: NONE WITH RESPECT TO REFERENCE LINE

WEARING SURFACE: 4" ASPHALT

APPROACH SLABS: NONE

ALIGNMENT: TANGENT, 18°54'48" CURVE LEFT

CROWN: 0.0156(±)

STRUCTURAL FILE NUMBER: 1801929

DATE BUILT: 1910, WIDENED: 1933

DISPOSITION: TO BE REPLACED

PROPOSED STRUCTURE

PROPOSED WORK: REMOVE PORTIONS OF THE EXISTING STRUCTURE AND CONSTRUCT NEW STRUCTURE

TYPE: PRESTRESSED CONCRETE I-BEAM SUPERSTRUCTURE WITH SEMI-INTEGRAL ABUTMENTS AND TURNBACK WINGWALLS FOUNDED ON DRILLED SHAFTS

SPAN: 117'-0" c/c BEARINGS ALONG REFERENCE LINE

ROADWAY: 30'-0" TOE/TOE CURB, 6'-0" SIDEWALK LEFT SIDE, VARYING SIDEWALK WIDTH RIGHT SIDE

LOADING: HL93, FUTURE WEARING SURFACE = 60 PSF

SKREW: NONE WITH RESPECT TO REFERENCE LINE

APPROACH SLABS: 20'-0" LONG (AS-1-15)

CROWN: 0.016 FT/FT

DECK AREA: 5,449 SF

COORDINATES: LATITUDE 41°23'10.28" N
 LONGITUDE 81°31'51.64" W

DESIGN AGENCY PENNONI ASSOCIATES INC.
 2 SUMMIT PARK DRIVE, SUITE 335
 INDEPENDENCE, OHIO 44131

DATE 11/9/23
STRUCTURE FILE NUMBER 1801930

REVIEWED MDP
DESIGNED A/JK

CUYAHOGA COUNTY
 STA. 9+99.36
 STA. 11+19.15

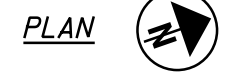
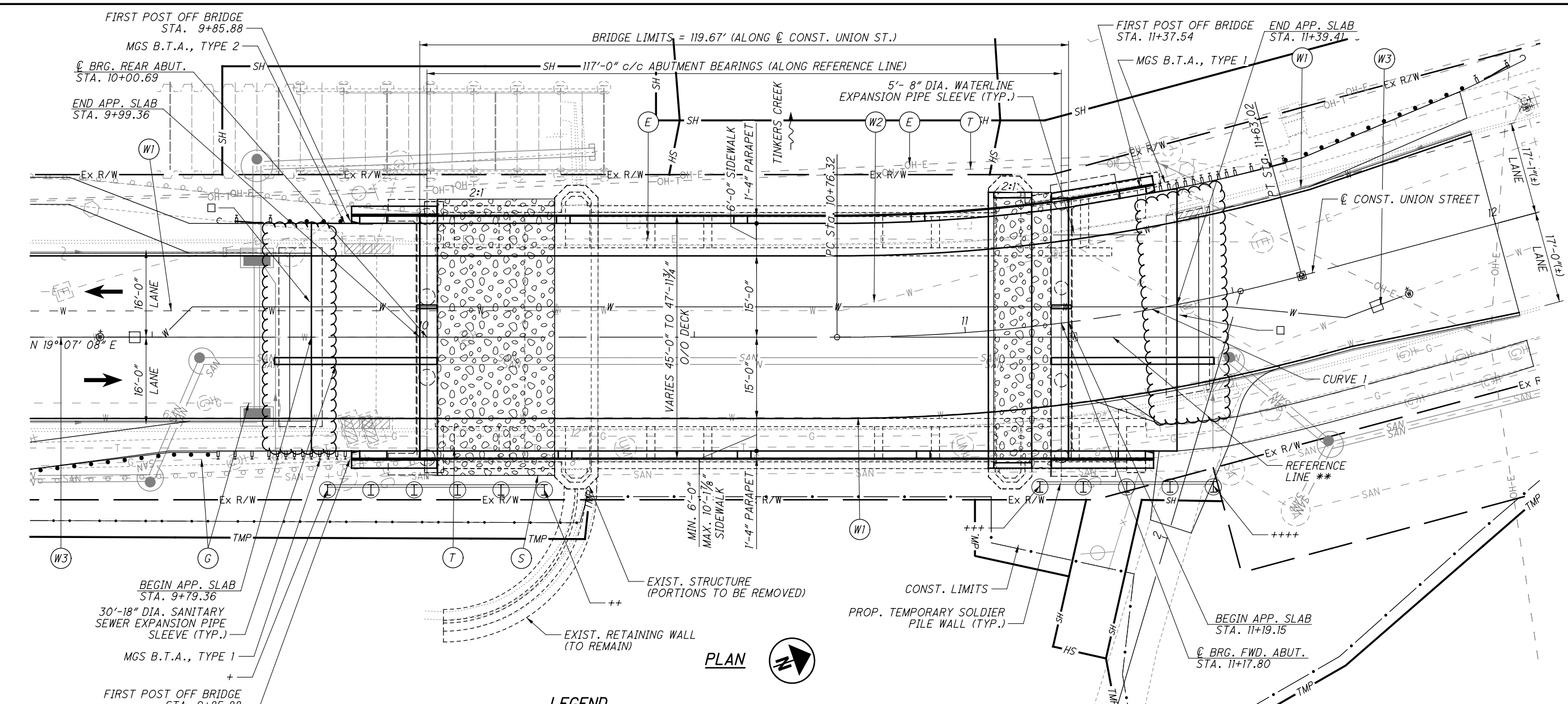
SITE PLAN
 BRIDGE NO. CUY-14-1212E
 UNION ST. OVER TINKERS CREEK

CUY-14-12.12E - PART 2
PID No. 13184

1 / 42



41
 103

X:\Projects\2024\2422\203400_CUY-14-12\12E\DESIGN\CT\ProjectData\13184\Design\Structures\Sheets\04_1212C_SG001.dgn 11/7/2024 1:26:38 PM aadkins



PLAN

LEGEND

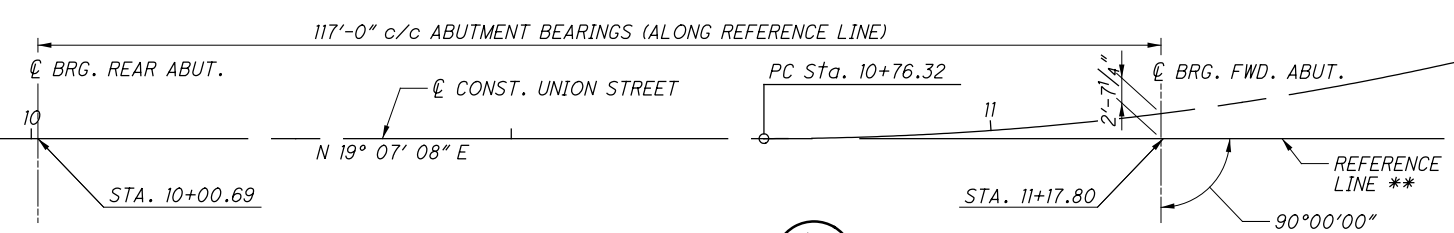
-  ROCK CHANNEL PROTECTION, TYPE B WITH GEOTEXTILE FABRIC, 2'-6" THICK
- ** REFERENCE LINE IS AN EXTENSION OF THE TANGENT IN THE \hat{C} CONST. UNION STREET
- + BEGIN TEMPORARY SOLDIER PILE WALL, STA. 9+82.34, 28.17' RT
- ++ END TEMPORARY SOLDIER PILE WALL, STA. 10+22.36, 28.17' RT
- +++ BEGIN TEMPORARY SOLDIER PILE WALL, STA. 11+10.74, 29.37' RT
- ++++ END TEMPORARY SOLDIER PILE WALL, STA. 11+39.63, 34.08' RT
-  PRESSURE RELIEF JOINT, TYPE A

UTILITIES DISPOSITION

- (S) EXIST. 15" SANITARY PORTIONS TO BE REPLACED
- (E) EXIST. ELECTRIC TO BE RELOCATED
- (G) EXIST. 8" AND 12" GAS TO BE RELOCATED
- (T) EXIST. TELECOMMUNICATIONS TO BE RELOCATED
- (W1) EXIST. 6" WATER TO BE ABANDONED
- (W2) EXIST. 6" WATER TO BE REPLACED
- (W3) EXIST. 8" WATER TO REMAIN

CURVE 1

P.I. Sta. 11+19.92
 $\Delta = 15^\circ 03' 06''$ (LT)
 $D_c = 17^\circ 21' 44''$
 $R = 330.00'$
 $T = 43.60'$
 $L = 86.69'$
 $E = 2.87'$
 $C = 86.44'$
 $C.B. = N 11^\circ 35' 35'' E$



REFERENCE LINE DIAGRAM



REV NO.	DATE	REV. BY	DESCRIPTION
1	11-06-24	SRK	DECREASED SLEEPER SLAB WIDTH

GENERAL PLAN
 BRIDGE NO. CUY-14-12.12E
 UNION ST. OVER TINKERS CREEK

DESIGN AGENCY: PENNONI ASSOCIATES INC.
 2 SUMMIT PARK DRIVE, SUITE 335
 INDEPENDENCE, OHIO 44131

DATE: 11/9/23
 REVIEWED: MDP
 STRUCTURE FILE NUMBER: 1801930

DRAWN: CJK
 CHECKED: ARA

DESIGNED: TDB

CUY-14-12.12E - PART 2
 PID No. 13184

2 / 42

42
 103

X:\Projects\2024\2422\203400_CUY-14-12.12E\DESIGN\CTV\ProjectData\3184\Design\Structures\Sheets\04_1212C_SNO01.dgn 11/7/2024 1:26:39 PM aadkins

STANDARD DRAWINGS AND SPECIFICATIONS

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWINGS:

AS-1-15	DATED (REVISED)	01/20/2023
AS-2-15	DATED (REVISED)	07/21/2023
BR-2-15	DATED	01/21/2022
GSD-1-19	DATED	01/15/2021
PSID-1-13	DATED (REVISED)	01/20/2023
SICD-1-21	DATED	01/21/2022
SICD-2-14	DATED	01/15/2021

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATION(S):

800	DATED	01/19/2024
894	DATED	04/16/2021

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 1.00 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 LOADING

DESIGN LOADING: HL-93
FUTURE WEARING SURFACE (FWS) OF 0.06 KSF.

DESIGN DATA

CONCRETE CLASS QC2 - COMPRESSIVE STRENGTH 4.5 KSI (SUPERSTRUCTURE)
CONCRETE CLASS QC1 - COMPRESSIVE STRENGTH 4.0 KSI (SUBSTRUCTURE)
CONCRETE CLASS QC5, WITH 1-IN. MAX. AGGREGATE SIZE - COMPRESSIVE STRENGTH 4.5 KSI (DRILLED SHAFT)

REINFORCING STEEL - MINIMUM YIELD STRENGTH 60 KSI

STRUCTURAL STEEL - ASTM A709 GRADE 50, MINIMUM YIELD STRENGTH 50 KSI (CROSS FRAMES, BEARING SUPPORT STEEL, AND UTILITY SUPPORTS)

STEEL H-PILES - ASTM A572: YIELD STRENGTH 50 KSI

CONCRETE FOR PRESTRESSED BEAMS:
COMPRESSIVE STRENGTH (FINAL) - 8.0 KSI
COMPRESSIVE STRENGTH (RELEASE) - 6.2 KSI

WELDED WIRE FABRIC:
YIELD STRENGTH - 70 KSI

PRESTRESSING STRAND:
AREA = 0.217 SQ.IN.
ULTIMATE STRENGTH = 270 KSI
INITIAL STRESS = 202.5 KSI (LOW RELAXATION STRANDS)

DECK PROTECTION METHOD

EPOXY COATED REINFORCING STEEL
2 1/2" CONCRETE COVER

MONOLITHIC WEARING SURFACE

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 1 INCH THICK.

ITEM 524 - DRILLED SHAFTS, 30" DIAMETER, INTO BEDROCK WITH QC/QA

THE MAXIMUM FACTORED LOAD TO BE SUPPORTED BY EACH DRILLED SHAFT IS 700 KIPS AT THE ABUTMENTS. THIS LOAD IS RESISTED BY TIP RESISTANCE AT THE BOTTOM OF THE BEDROCK SOCKET. AT THE ABUTMENTS, THE FACTORED TIP RESISTANCE IS 1878 KIPS.

DECK PLACEMENT DESIGN ASSUMPTIONS

THE FOLLOWING ASSUMPTIONS OF CONSTRUCTION MEANS AND METHODS WERE MADE FOR THE ANALYSIS AND DESIGN OF THE SUPERSTRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF THE FALSEWORK SUPPORT SYSTEM WITHIN THESE PARAMETERS AND WILL ASSUME RESPONSIBILITY FOR SUPERSTRUCTURE ANALYSIS FOR DEVIATION FROM THESE DESIGN ASSUMPTIONS.

AN EIGHT WHEEL FINISHING MACHINE WITH A MAXIMUM WHEEL LOAD OF 2.35 KIPS.

A MINIMUM OUT-TO-OUT WHEEL SPACING AT EACH END OF THE MACHINE OF 103 INCHES.

A MAXIMUM SPACING OF OVERHANG FALSEWORK BRACKETS OF 48 INCHES.

A MAXIMUM DISTANCE FROM THE CENTERLINE OF THE FASCIA GIRDER TO THE FACE OF THE SAFETY HANDRAIL OF 65 INCHES.

MAINTENANCE OF TRAFFIC

MAINTENANCE OF TRAFFIC FOR THE STRUCTURE WORK SHALL BE COORDINATED WITH THE OVERALL PROJECT. REFER TO THE MAINTENANCE OF TRAFFIC NOTES AND DETAILS ELSEWHERE IN THE PLANS.

EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO C&MS SECTIONS 102.05 AND 105.02.

BASE CONTRACT BID PRICES UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE. HOWEVER, THE DEPARTMENT WILL PAY FOR ALL PROJECT WORK BASED UPON ACTUAL DETAILS AND DIMENSIONS THAT HAVE BEEN VERIFIED IN THE FIELD.

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

THIS ITEM SHALL INCLUDE REMOVAL OF PORTIONS OF THE STONE ARCH, FILL BETWEEN THE ARCH AND CONCRETE PAVEMENT INCLUDING THE ABANDONED UTILITIES, CONCRETE DECK, ASPHALT PAVEMENT, CONCRETE SIDEWALK, PARAPETS, DECK JOINTS AND OTHER APPURTENANCES FROM THE ARCH, INCLUDING THE EXISTING SANITARY SEWER ATTACHED TO THE ARCH. REMOVAL ALSO INCLUDES CONCRETE APPROACH SIDEWALK MOUNTED ON EXISTING BRIDGE STRUTS. THE PROVISIONS OF ITEM 202 APPLY EXCEPT AS SPECIFIED BY THE FOLLOWING NOTES. PERFORM ALL WORK CAREFULLY DURING ARCH REMOVAL TO PROTECT PORTIONS OF ARCH TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. THE USE OF EXPLOSIVES, HEADACHE BALLS, AND/OR HOE RAM TYPE OF EQUIPMENT IS PROHIBITED. SUBMIT CONSTRUCTION PLANS IN ACCORDANCE WITH CMS 501.05.

ALL CONCRETE REINFORCING STEEL, ASPHALT, STONE, ETC. REMOVED FROM THE STRUCTURE AND NOT REUSED SHALL, UNLESS OTHERWISE SPECIFIED, BECOME THE PROPERTY OF THE CONTRACTOR TO AND SHALL BE REMOVED BY HIM/HER FROM THE SITE. THE MATERIALS SHALL NOT BE PERMITTED TO REMAIN ON SITE, WITHIN THE RIGHT-OF-WAY OR ELSEWHERE UNLESS SPECIFIED BY THE ENGINEER.

ITEM 503 - COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN

THE DESIGN SHOWN ON THE PLANS FOR TEMPORARY SUPPORT OF EXCAVATION IS ONE REPRESENTATIVE DESIGN THAT MAY BE USED TO CONSTRUCT THE PROJECT. THE CONTRACTOR MAY CONSTRUCT THE DESIGN SHOWN ON THE PLANS OR PREPARE AN ALTERNATE DESIGN TO SUPPORT THE SIDES OF EXCAVATIONS. IF CONSTRUCTING AN ALTERNATE DESIGN FOR TEMPORARY SUPPORT OF EXCAVATION, PREPARE AND PROVIDE PLANS IN ACCORDANCE WITH C&MS 501.05. THE DEPARTMENT WILL PAY FOR THE TEMPORARY SUPPORT OF EXCAVATION AT THE CONTRACT LUMP SUM PRICE FOR COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN. NO ADDITIONAL PAYMENT WILL BE MADE FOR PROVIDING AN ALTERNATE DESIGN.

ITEM 509 - UNCOATED REINFORCING STEEL, AS PER PLAN

DESCRIPTION: THIS ITEM SHALL CONSIST OF FURNISHING AND PLACING REINFORCING STEEL IN ACCORDANCE WITH C&MS 509 AND MODIFIED BY THE FOLLOWING REQUIREMENTS:

MATERIALS: FOR THE DOWEL BARS AT THE FORWARD ABUTMENT CONCRETE CAP LOCATIONS. FURNISH NON-COATED, BLACK REINFORCING STEEL IN ACCORDANCE WITH CMS 709.01. THE REQUIREMENTS OF CMS 509.09 & CMS 709.00 DO NOT APPLY TO THE DOWEL BARS AT THE ABUTMENT LOCATIONS.

METHOD OF MEASUREMENT: THE QUANTITY MEASURED WILL BE THE NUMBER OF POUNDS SHOWN ON THE PLANS.

BASIS OF PAYMENT: ACCEPTED QUANTITIES WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER POUNDS. THIS PRICE SHALL INCLUDE FULL COMPENSATION FOR ALL MATERIALS, LABOR, EQUIPMENT, AND INCIDENTALS. PAYMENT WILL BE MADE UNDER ITEM 509 - REINFORCING STEEL, AS PER PLAN.

ITEM 510 - DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN:

DESCRIPTION: THIS ITEM SHALL CONSIST OF DRILLING HOLES INTO CONCRETE AND FURNISHING AND PLACING GROUT INTO THE HOLES IN ACCORDANCE WITH CMS 510 AND MODIFIED BY THE FOLLOWING REQUIREMENTS.

MATERIALS: FURNISH AN ADHESIVE ANCHOR SYSTEM THAT MEETS THE REQUIREMENTS OF ACI 355.4-11, SUCH AS SIMPSON STRONG TIE SET-3G HIGH STRENGTH EPOXY ADHESIVE, HILTI HIT HY 200, OR APPROVED EQUAL.

PLACING HOLES: PRIOR TO DRILLING HOLES, LOCATE ALL EXISTING REINFORCING STEEL BARS IN THE AREA OF THE HOLE WITH THE AIDE OF A REINFORCING STEEL BAR LOCATOR (PACHOMETER). IF AN EXISTING BAR IS ENCOUNTERED AT THE SAME LOCATION AS A PROPOSED DOWEL HOLE, MOVE THE DOWEL HOLE TO EITHER SIDE OF THE EXISTING BAR.

METHOD OF MEASUREMENT: THE QUANTITY MEASURED WILL BE THE NUMBER OF DOWEL HOLES COMPLETE IN PLACE.

BASIS OF PAYMENT: ACCEPTED QUANTITIES WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER EACH DOWEL HOLE COMPLETE IN PLACE. THIS PRICE SHALL INCLUDE FULL COMPENSATION FOR ALL MATERIALS, LABOR, EQUIPMENT, AND INCIDENTALS INCLUDING LOCATING THE EXISTING REINFORCING STEEL, DRILLING DOWEL HOLES, AND AN ADHESIVE ANCHOR SYSTEM. PAYMENT WILL BE MADE UNDER ITEM 510 - DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN.

ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

THE SURFACE PAY AREA QUANTITY FOR THE PORTIONS OF THIS ITEM LOCATED ON FORM-LINED SURFACES IS BASED ON A TWO-DIMENSIONAL FLAT SURFACE. INCLUDE THE COST OF ANY ADDITIONAL SEALING REQUIRED FOR FORM-LINED SURFACES IN THE UNIT COST BID FOR THIS ITEM.

ITEM 513 - STRUCTURAL STEEL, MISC.: UTILITY SUPPORTS, LEVEL UP

FURNISH GALVANIZED STEEL UTILITY SUPPORTS IN ACCORDANCE WITH THE DETAILS SHOWN IN THE PLANS, STANDARD DRAWING PSID-1-13, AND C&MS 513 AND 515. ACCEPTED QUANTITIES WILL BE PAID FOR AT THE UNIT PRICE BID PER EACH LOCATION, COMPLETE IN PLACE.

ITEM 515 - INTERMEDIATE DIAPHRAGMS, AS PER PLAN

FURNISH GALVANIZED STEEL INTERMEDIATE DIAPHRAGMS IN ACCORDANCE WITH THE DETAILS SHOWN IN THE PLANS, STANDARD DRAWING PSID-1-13, AND C&MS 513 AND 515. ACCEPTED QUANTITIES WILL BE PAID FOR AT THE UNIT PRICE BID PER EACH LOCATION, COMPLETE IN PLACE.

ITEM 517 - RAILING (CONCRETE PARAPET WITH TWIN STEEL TUBE RAILING), AS PER PLAN

THIS ITEM CONSISTS OF CONSTRUCTING REINFORCED CONCRETE BRIDGE SIDEWALK RAILINGS WITH GALVANIZED STEEL TUBE RAILING IN ACCORDANCE WITH THE DETAILS SHOWN IN THE PLANS AND STANDARD DRAWING BR-2-15. ALL WORK SHALL CONFORM TO C&MS 517. REFER TO THE GENERAL NOTES ON STANDARD DRAWING BR-2-15 FOR MATERIAL REQUIREMENTS, METHOD OF MEASUREMENT, AND BASIS OF PAYMENT. FORM LINER AND SEALING OF CONCRETE SURFACES WILL BE PAID SEPARATELY.

REV NO.	DATE	REV. BY	DESCRIPTION
1	11-06-24	SRK	REVISED NOTE CONTENTS

DESIGN AGENCY	PENNONI ASSOCIATES INC.
DATE	11/9/23
REVIEWED	MDP
STRUCTURE FILE NUMBER	1801930
DRAWN	ARE
ARE	REVISED
DESIGNED	ARE
CHECKED	ARA
GENERAL NOTES	BRIDGE NO. CUY-14-12.12E UNION ST. OVER TINKERS CREEK
CUY-14-12.12E - PART 2	PID No. 13184
3 / 42	
43	
103	

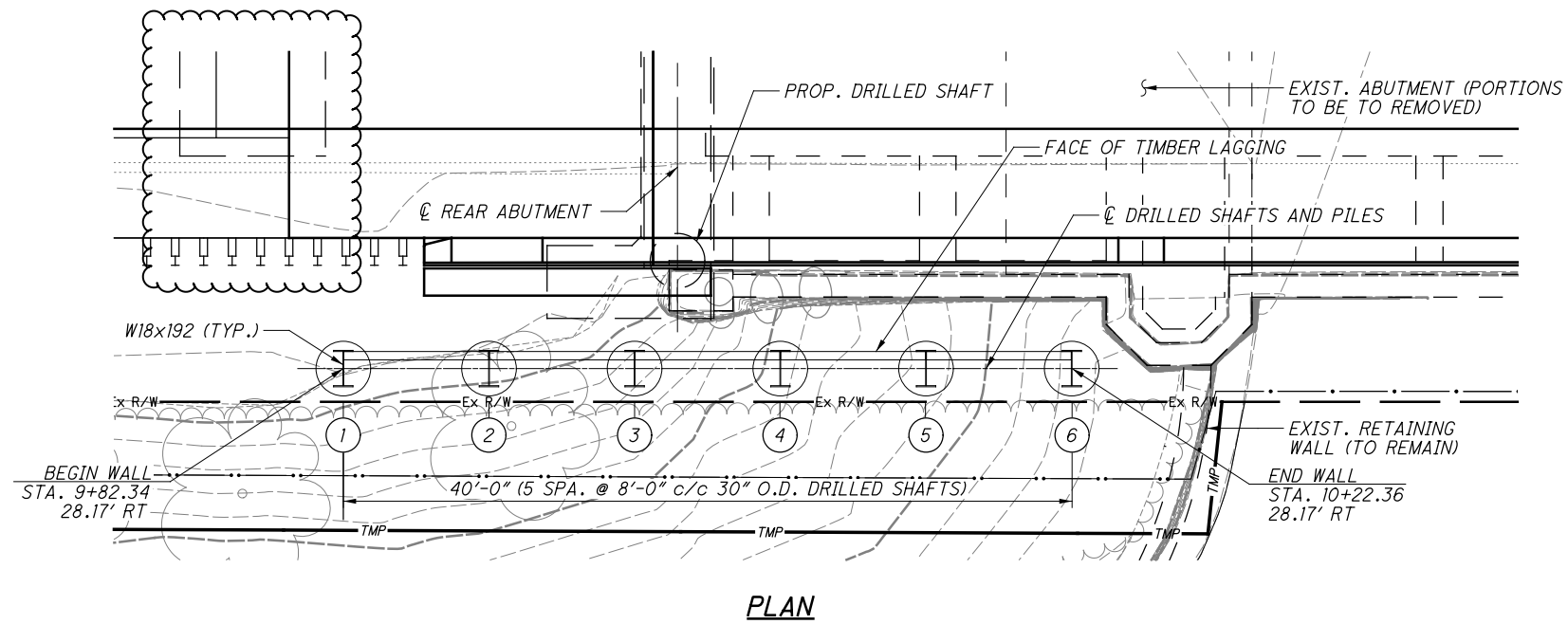
X:\Projects\2024\2422\203400_CUY-14-12E\DESIGN\CT\ProjectData\3184\Design\Structures\Sheets\04_122C_S000.dgn 11/7/2024 1:26:41 PM aadkins

FUNDING		ESTIMATED QUANTITIES							CALC. BY: ARE CHKD. BY: ARA		DATE: 11/16/2023 DATE: 11/22/2023	
03/S>2/10	DOMINION, 04/S>2/10	ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION	REAR ABUTMENT	FORWARD ABUTMENT	SUPER- STRUCTURE	GENERAL	REF. SHEET NUMBER	
LS		202	11203	LS		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN					3	
LS		503	11101	LS		COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN					3	
1158		503	21100	1158	CY	UNCLASSIFIED EXCAVATION	724	434				
146		503	31100	146	CY	ROCK EXCAVATION		146				
77,558		509	10000	77,558	LB	EPOXY COATED REINFORCING STEEL	8,479	14,681	54,398			
81		509	25001	81	LB	UNCOATED REINFORCING STEEL, AS PER PLAN		81			3	
26		510	10001	26	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN		26			3	
2		511	33501	2	EACH	SEMI-INTEGRAL DIAPHRAGM GUIDE, AS PER PLAN	1	1			13	
310		511	34446	310	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK			310			
170		511	43511	170	CY	CLASS QC1 CONCRETE, ABUTMENT INCLUDING FOOTING, AS PER PLAN				170	16	
250		512	10050	250	SY	SEALING OF CONCRETE SURFACES (NON-EPOXY)			182	68	3	
709		512	10100	709	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	69	79	516	45		
43		512	33000	43	SY	TYPE 2 WATERPROOFING	17	18		8		
117		513	95000	117	FT	STRUCTURAL STEEL, MISC.: SANITARY SEWER HANGERS AND INSULATION			117		27	
117		513	95000	117	FT	STRUCTURAL STEEL, MISC.: WATERLINE CRADLES AND INSULATION			117		27	
16		513	95030	16	EACH	STRUCTURAL STEEL, MISC.: UTILITY SUPPORTS, LEVEL UF			16		3, 23 - 26	
5		515	15120	5	EACH	DRAPED STRAND PRESTRESSED CONCRETE BRIDGE I-BEAM MEMBERS, LEVEL 3, TYPE WF66-49 (118'-8")			5			
12		515	20001	12	EACH	INTERMEDIATE DIAPHRAGMS, AS PER PLAN			12		3, 23 - 26	
32		516	13600	32	SF	1" PREFORMED EXPANSION JOINT FILLER			32			
109		516	13900	109	SF	2" PREFORMED EXPANSION JOINT FILLER	54	55				
131		516	14020	131	FT	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL			131			
10		516	44101	10	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN (LOAD PLATE 13"x28"x1.75", NEOPRENE 12"x27"x3.1276")	5	5			19	
297		517	75121	297	FT	RAILING (CONCRETE PARAPET WITH TWIN STEEL TUBE RAILING), AS PER PLAN			240	57	3	
139		518	21200	139	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	61	78				
149		518	40000	149	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	70	79				
132		518	40010	132	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	63	69				
57		524	94702	57	FT	DRILLED SHAFTS, 36" DIAMETER, ABOVE BEDROCK	57					
40		524	94604	40	FT	DRILLED SHAFTS, 30" DIAMETER, INTO BEDROCK	20	20				
205		526	15001	205	SY	REINFORCED CONCRETE APPROACH SLABS (T=13"), AS PER PLAN				205	4	
970		SPECIAL	5300400	970	EACH	STRUCTURES: 8" DOMINION GAS LINE ROLLER ASSEMBLY				14	26	
152		SPECIAL	53013000	152	SF	FORM LINER			854	116	4	
65		601	32104	65	CY	ROCK CHANNEL PROTECTION, TYPE B WITH GEOTEXTILE FABRIC	103	49			36	
1		SPECIAL	45130000	1	FT	PRESSURE RELIEF JOINT, TYPE A	32	33				
1		894	10000	1	EACH	THERMAL INTEGRITY PROFILER (T.I.P.) TEST				1	4	
LS		SPECIAL	53000200	LS		STRUCTURES: REMOVAL AND DISASSEMBLY OF PREFABRICATED TRUSS BRIDGE					5	
20,000		SPECIAL	53000400	20,000	EACH	STRUCTURES: REIMBURSEMENT FOR ACROW SERVICES, PART 2				20,000	4	

REV NO.	DATE	REV. BY	DESCRIPTION
1	11-06-24	SRK	REVISED QUANTITY

ESTIMATED QUANTITIES
 BRIDGE NO. CUY-14-12-12E
 UNION ST. OVER TINKERS CREEK
 DESIGN AGENCY: PENNONI ASSOCIATES INC.
 2 SUMMIT PARK DRIVE, SUITE 335
 INDEPENDENCE, OHIO 44131
 DATE: 11/9/23
 REVIEWED: MDP
 STRUCTURE FILE NUMBER: 1801930
 DRAWN: ARE
 CHECKED: ARA
 CUY-14-12-12E - PART 2
 PID No. 13184
 6 / 42
 46
 103

X:\Projects\2024\2422\203400_CUY-14-12.12E\DESIGN\CT\ProjectData\13184\Design\Structures\Sheets\04_1212C_SM002.dgn 11/7/2024 1:26:43 PM aadkins

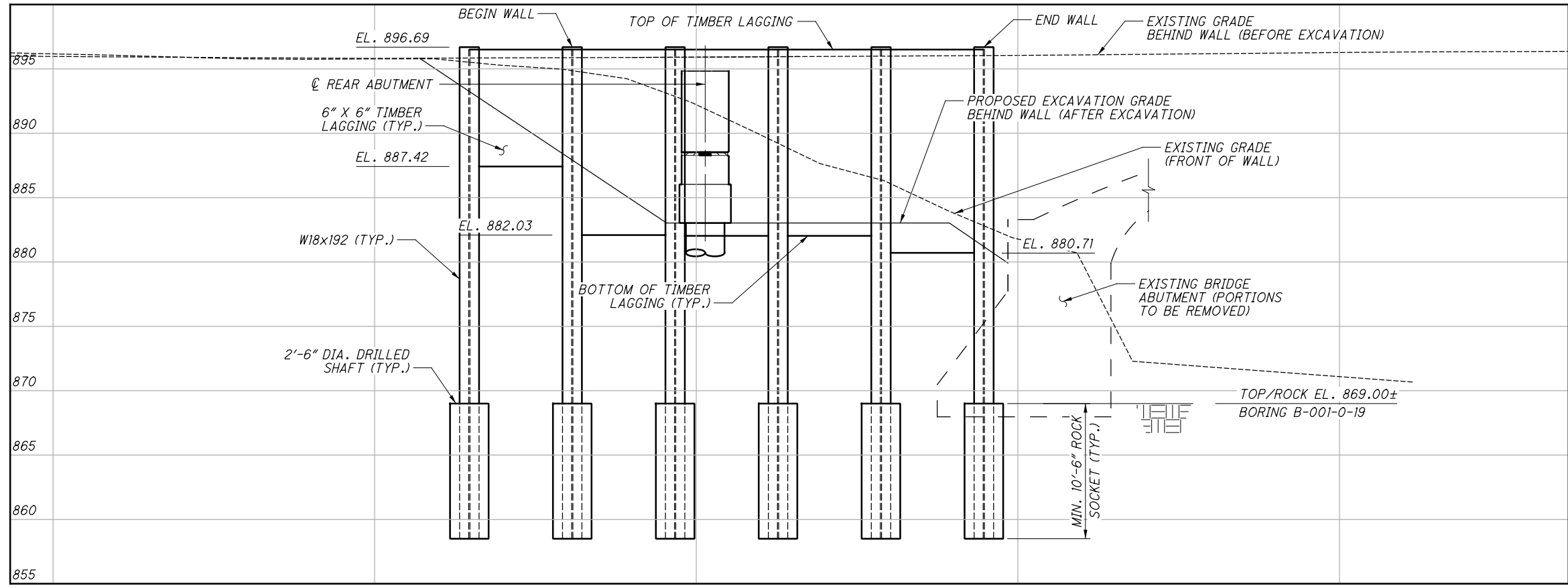


PLAN



NOTES

- TEMPORARY SOLDIER PILES SHALL BE CUT OFF 1'-0" MINIMUM ABOVE PROPOSED GROUND BEFORE PERFORMING FINAL GRADING.
- FURNISH STRUCTURAL STEEL FOR SOLDIER PILES PER ASTM A709 WITH A MINIMUM YIELD STRENGTH OF 50 KSI. INSTALL STEEL SOLDIER PILES IN PREDRILLED HOLES FILLED TO THE ELEVATIONS SHOWN WITH CLASS QC1 CONCRETE.
- STEEL SECTIONS OTHER THAN THOSE SHOWN MAY BE PROVIDED AT THE OPTION OF THE CONTRACTOR. PILES SHALL HAVE A MINIMUM SECTION MODULUS OF 344 IN³.
- IF OTHER STEEL SECTIONS ARE SELECTED BY THE CONTRACTOR, PREDRILLED HOLES FOR SOLDIER PILES SHALL HAVE A DIAMETER AT LEAST 6" LARGER THAN THE DIAGONAL DIMENSION OF THE PILE AND SHALL BE BACKFILLED PER NOTE 2.
- 6"x6" TIMBER LAGGING SHALL HAVE A MINIMUM ALLOWABLE BENDING STRENGTH OF 1500 PSI, A MODULUS OF ELASTICITY OF 1500 KSI AND A MINIMUM ALLOWABLE SHEAR STRENGTH PARALLEL TO THE GRAIN OF 175 PSI.
- ALL MATERIALS, EQUIPMENT, LABOR, AND INCIDENTALS NECESSARY TO INSTALL, MAINTAIN, AND REMOVE THE TEMPORARY SOLDIER PILE WALLS, SHEET PILE WALLS, AND OTHER TEMPORARY SHORING REQUIRED SHALL BE INCLUDED FOR PAYMENT WITH ITEM 503 COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN. INSTALLATION OF PREBORED HOLES SHALL BE PAID FOR UNDER ITEM 507-PREBORED HOLES, AS PER PLAN (TEMPORARY RAMP SOLDIER PILE WALL).



ELEVATION

REV NO.	DATE	REV. BY	DESCRIPTION
1	11-06-24	SRK	DECREASED SLEEPER SLAB WIDTH, NOTE REVISION

DESIGN AGENCY: PENNONI ASSOCIATES INC. 2 SUMMIT PARK DRIVE, SUITE 335 INDEPENDENCE, OHIO 44131

DATE: 11/9/23

REVIEWED: MDP

STRUCTURE FILE NUMBER: 1801930

DRAWN: TDB

CHECKED: ARA

DESIGNED: ARA

RIGHT REAR TEMPORARY SOLDIER PILE WALL PLAN AND ELEVATION

BRIDGE NO. CUY-14-12.12E

UNION ST. OVER TINKERS CREEK

CUY-14-12.12E - PART 2

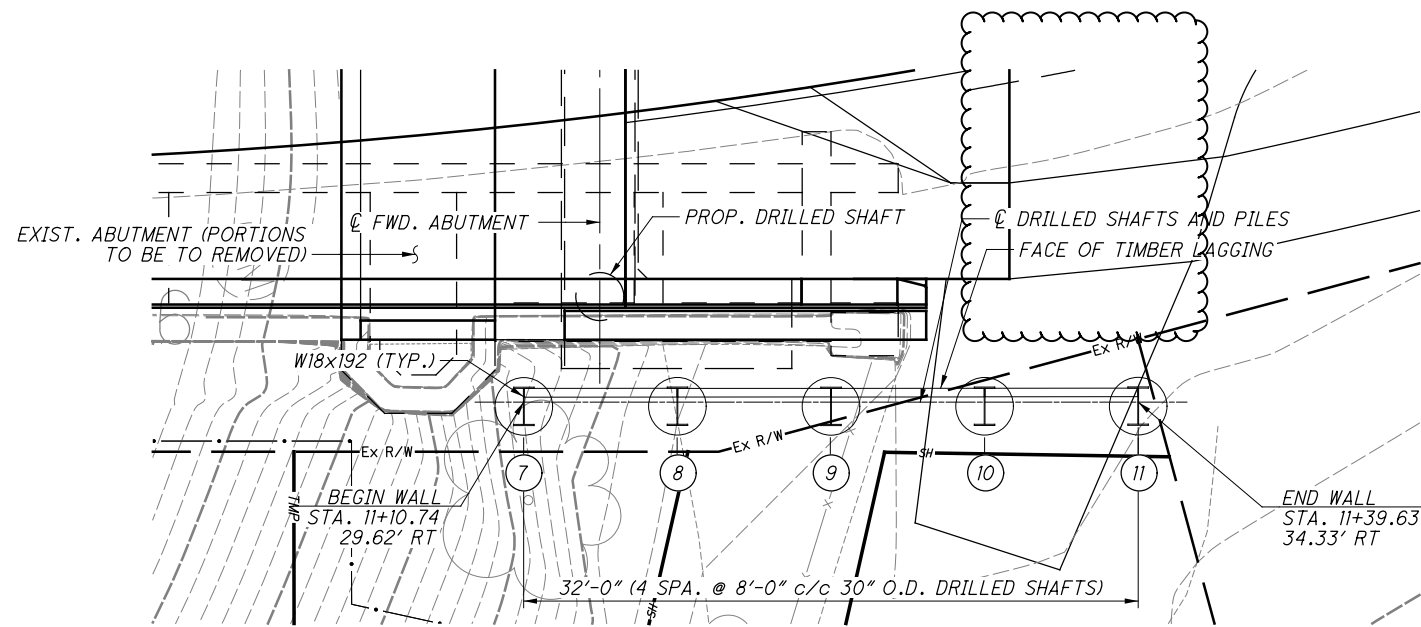
PID No. 13184

8/42

48

103

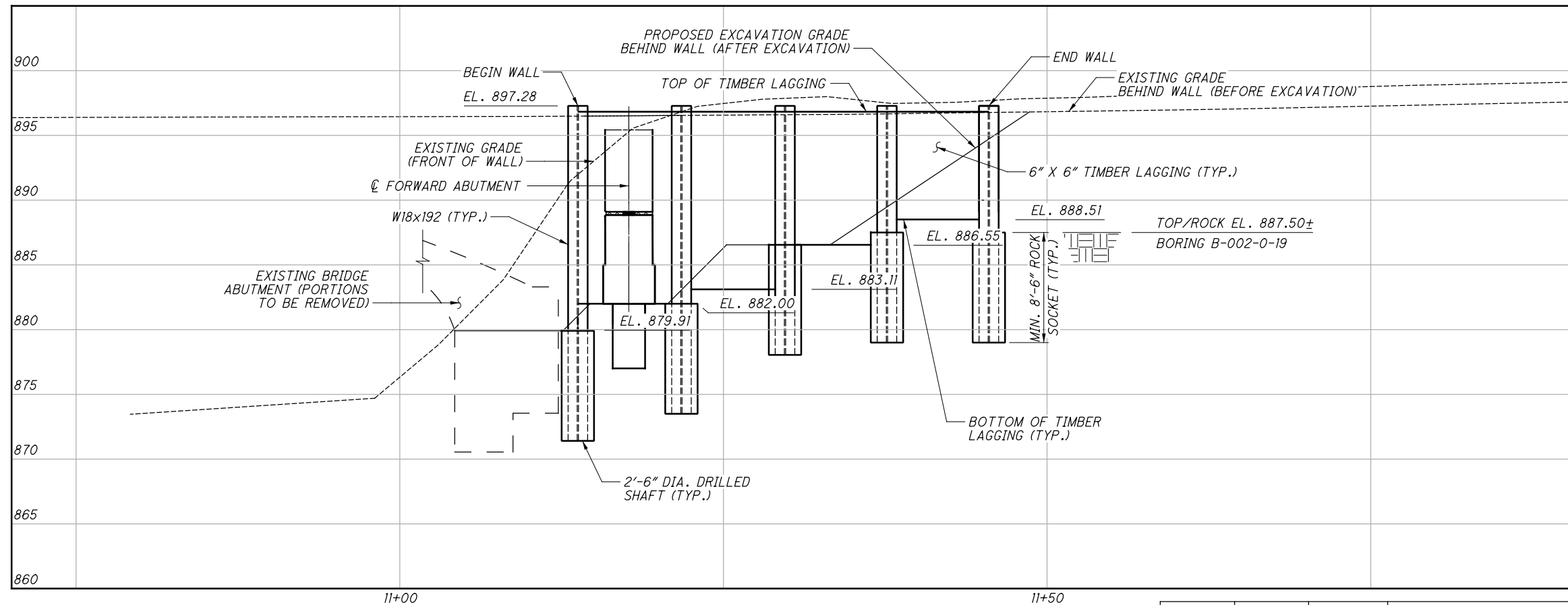
X:\Projects\2024\2422\203400_CUY-14-12.12E\DESIGN\CT\ProjectData\13184\Design\Structures\Sheets\04_12\2C_SM003.dgn 11/7/2024 1:26:45 PM aadkins



PLAN

NOTES

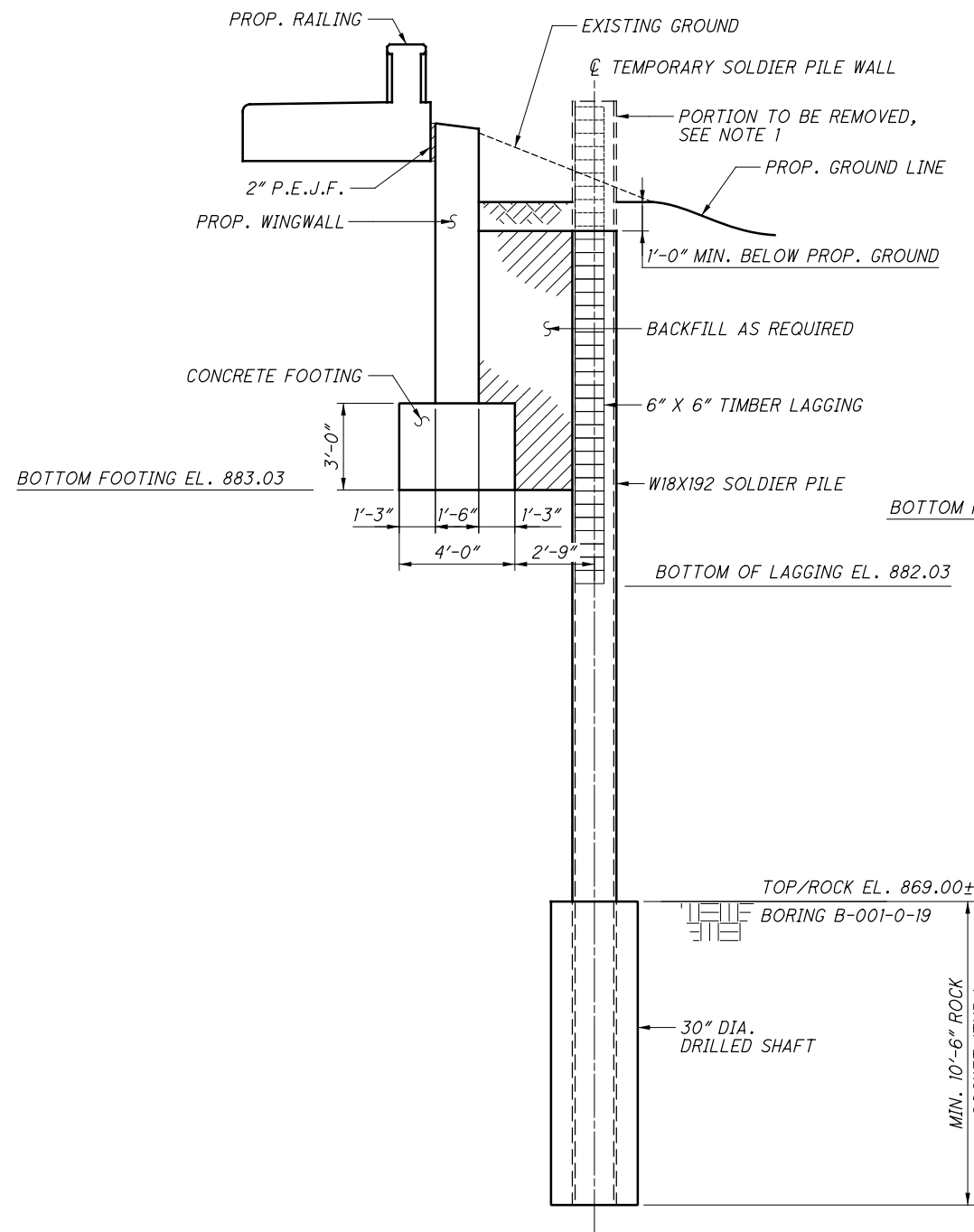
1. TEMPORARY SOLDIER PILES SHALL BE CUT OFF 1'-0" MINIMUM ABOVE PROPOSED GROUND BEFORE PERFORMING FINAL GRADING.
2. FURNISH STRUCTURAL STEEL FOR SOLDIER PILES PER ASTM A709 WITH A MINIMUM YIELD STRENGTH OF 50 KSI. INSTALL STEEL SOLDIER PILES IN PREDRILLED HOLES FILLED TO THE ELEVATIONS SHOWN WITH CLASS QC1 CONCRETE.
3. STEEL SECTIONS OTHER THAN THOSE SHOWN MAY BE PROVIDED AT THE OPTION OF THE CONTRACTOR. PILES SHALL HAVE A MINIMUM SECTION MODULUS OF 269 IN³.
4. IF OTHER STEEL SECTIONS ARE SELECTED BY THE CONTRACTOR, PREDRILLED HOLES FOR SOLDIER PILES SHALL HAVE A DIAMETER AT LEAST 6" LARGER THAN THE DIAGONAL DIMENSION OF THE PILE AND SHALL BE BACKFILLED PER NOTE 2.
5. 6"x6" TIMBER LAGGING SHALL HAVE A MINIMUM ALLOWABLE BENDING STRENGTH OF 1500 PSI, A MODULUS OF ELASTICITY OF 1500 KSI AND A MINIMUM ALLOWABLE SHEAR STRENGTH PARALLEL TO THE GRAIN OF 175 PSI.
6. ALL MATERIALS, EQUIPMENT, LABOR, AND INCIDENTALS NECESSARY TO INSTALL, MAINTAIN, AND REMOVE THE TEMPORARY SOLDIER PILE WALLS, SHEET PILE WALLS, AND OTHER TEMPORARY SHORING REQUIRED SHALL BE INCLUDED FOR PAYMENT WITH ITEM 503 COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN. INSTALLATION OF PREBORED HOLES SHALL BE PAID FOR UNDER ITEM 507-PREBORED HOLES, AS PER PLAN (TEMPORARY RAMP SOLDIER PILE WALL).



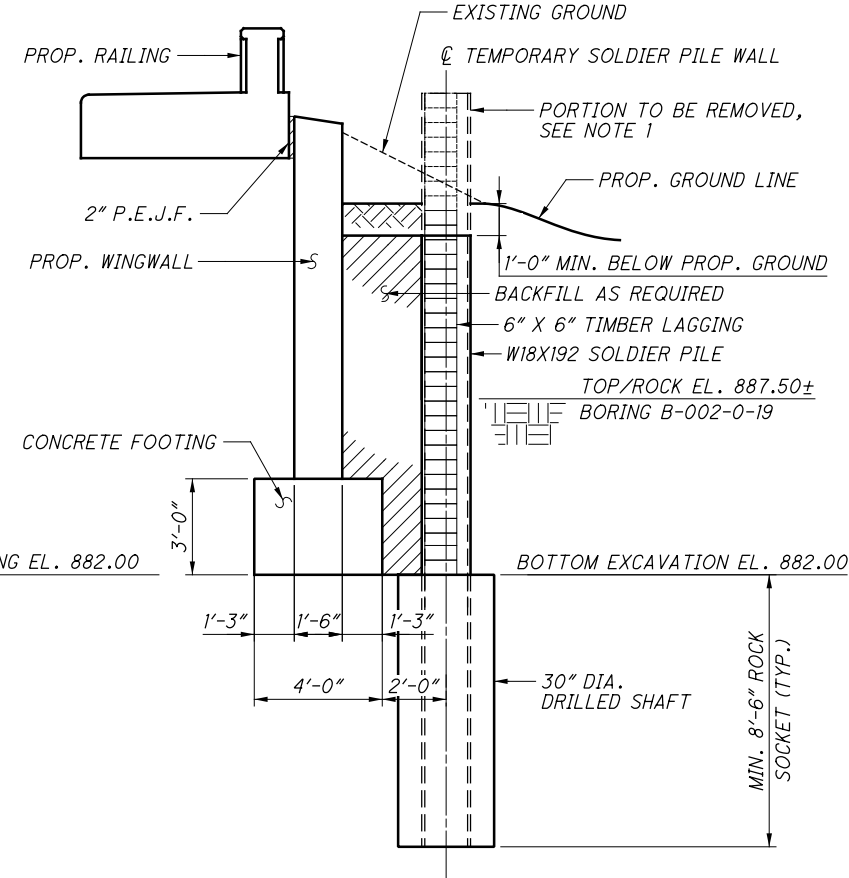
ELEVATION

REV NO.	DATE	REV. BY	DESCRIPTION
1	11-06-24	SRK	DECREASED SLEEPER SLAB WIDTH, NOTE REVISION

X:\Projects\2024\2422\203400_CUY-14-12.12E\DESIGN\CT\ProjectData\13184\Design\Structures\Sheets\04_1212C_SM004.dgn 11/7/2024 1:26:47 PM aadkins



TYPICAL WALL SECTION
RIGHT REAR TEMPORARY SOLDIER PILE WALL



TYPICAL WALL SECTION
RIGHT FORWARD TEMPORARY SOLDIER PILE WALL

NOTES

- TEMPORARY SOLDIER PILES SHALL BE CUT OFF 1'-0" MINIMUM BELOW PROPOSED GROUND BEFORE PERFORMING FINAL GRADING.
- FURNISH STRUCTURAL STEEL FOR SOLDIER PILES PER ASTM A709 WITH A MINIMUM YIELD STRENGTH OF 50 KSI. INSTALL STEEL SOLDIER PILES IN PREDRILLED HOLES FILLED TO THE ELEVATIONS SHOWN WITH CLASS QCI CONCRETE.
- STEEL SECTIONS OTHER THAN THOSE SHOWN MAY BE PROVIDED AT THE OPTION OF THE CONTRACTOR. RIGHT REAR SOLDIER PILES SHALL HAVE A MINIMUM SECTION MODULUS OF 344 IN³. RIGHT FORWARD SOLDIER PILES SHALL HAVE A MINIMUM SECTION MODULUS OF 269 IN³.
- IF OTHER STEEL SECTIONS ARE SELECTED BY THE CONTRACTOR, PREDRILLED HOLES FOR SOLDIER PILES SHALL HAVE A MINIMUM DIAMETER OF 24" AND PROVIDE A MINIMUM OF 3" CONCRETE COVER ALL AROUND INSTALLED SOLDIER PILES.
- TIMBER LAGGING SHALL BE 6"x6" TIMBERS WITH A MINIMUM ALLOWABLE BENDING STRENGTH OF 1500 PSI.
- ALL MATERIALS, EQUIPMENT, LABOR, AND INCIDENTALS NECESSARY TO INSTALL, MAINTAIN, AND REMOVE/ABANDON THE TEMPORARY SOLDIER PILE WALL AND OTHER TEMPORARY SHORING REQUIRED SHALL BE INCLUDED FOR PAYMENT WITH ITEM 503 - COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN.

SOLDIER PILE LENGTHS AND ELEVATIONS												
REAR ABUTMENT												
SOLDIER PILE NUMBER	STATION	OFFSET	PILE SIZE	GROUND ELEVATION	TOP OF SHAFT ELEVATION	ESTIMATED TOP OF ROCK ELEVATION	MINIMUM SHAFT ROCK SOCKET (FT)	TOP OF WALL ELEVATION	ESTIMATED TIP ELEVATION	ESTIMATED PILE LENGTH	ESTIMATED SHAFT LENGTH	FURNISHED PILE LENGTH
1	9+82.34	28.17' RT	W18x192	895.85	869.00	869.00±	10.50	896.69	858.50	38.19	10.50	44.00
2	9+90.34	28.17' RT	W18x192	895.48	869.00	869.00±	10.50	896.69	858.50	38.19	10.50	44.00
3	9+98.34	28.17' RT	W18x192	893.53	869.00	869.00±	10.50	896.69	858.50	38.19	10.50	44.00
4	10+06.34	28.17' RT	W18x192	889.46	869.00	869.00±	10.50	896.69	858.50	38.19	10.50	44.00
5	10+14.34	28.17' RT	W18x192	886.60	869.00	869.00±	10.50	896.69	858.50	38.19	10.50	44.00
6	10+22.34	28.17' RT	W18x192	882.67	869.00	869.00±	10.50	896.69	858.50	38.19	10.50	44.00
FORWARD ABUTMENT												
7	11+10.74	29.37' RT	W18x192	892.02	879.91	887.50±	8.50	897.28	871.41	25.87	8.50	31.00
8	11+18.03	30.28' RT	W18x192	896.88	882.00	887.50±	8.50	897.28	873.50	23.78	8.50	29.00
9	11+25.28	31.38' RT	W18x192	897.84	886.55	887.50±	8.50	897.28	878.05	19.23	8.50	25.00
10	11+32.43	31.19' RT	W18x192	897.42	887.50	887.50±	8.50	897.28	879.00	18.28	8.50	24.00
11	11+39.74	31.19' RT	W18x192	897.51	887.50	887.50±	8.50	897.28	879.00	18.28	8.50	24.00

REV NO.	DATE	REV. BY	DESCRIPTION
1	11-06-24	SRK	NOTE REVISION

DESIGN AGENCY: PENNONI ASSOCIATES INC. 2 SUMMIT PARK DRIVE, SUITE 335 INDEPENDENCE, OHIO 44131

DATE: 11/9/23

REVIEWED: MDP

STRUCTURE FILE NUMBER: 1801930

DESIGNED: ARE

CHECKED: ARA

TEMPORARY SOLDIER PILE WALL SECTIONS AND DETAILS

BRIDGE NO. CUY-14-12.12E

UNION ST. OVER TINKERS CREEK

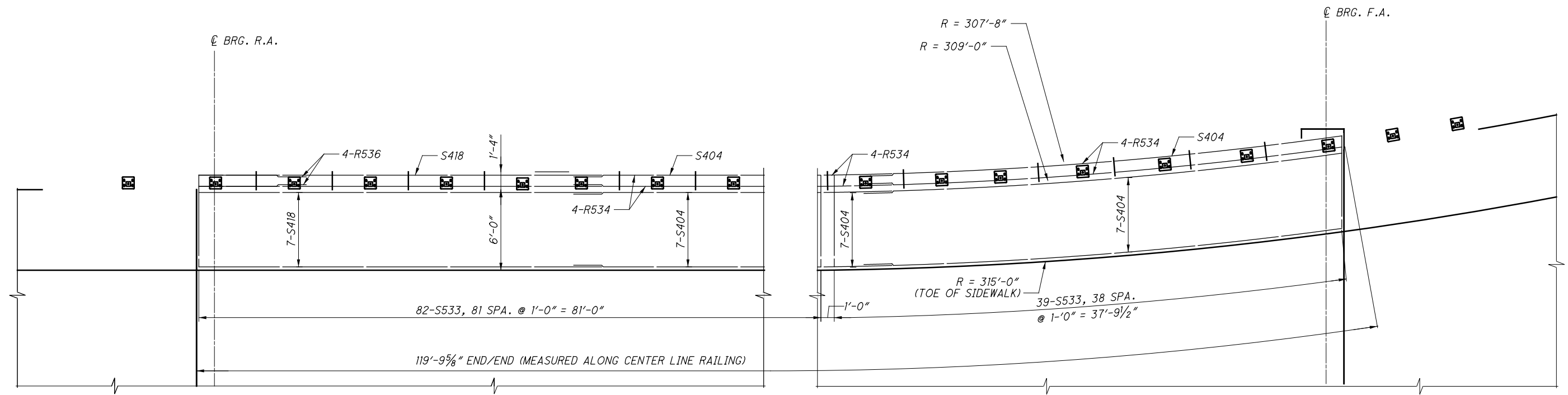
CUY-14-12.12E - PART 2

PID No. 13184

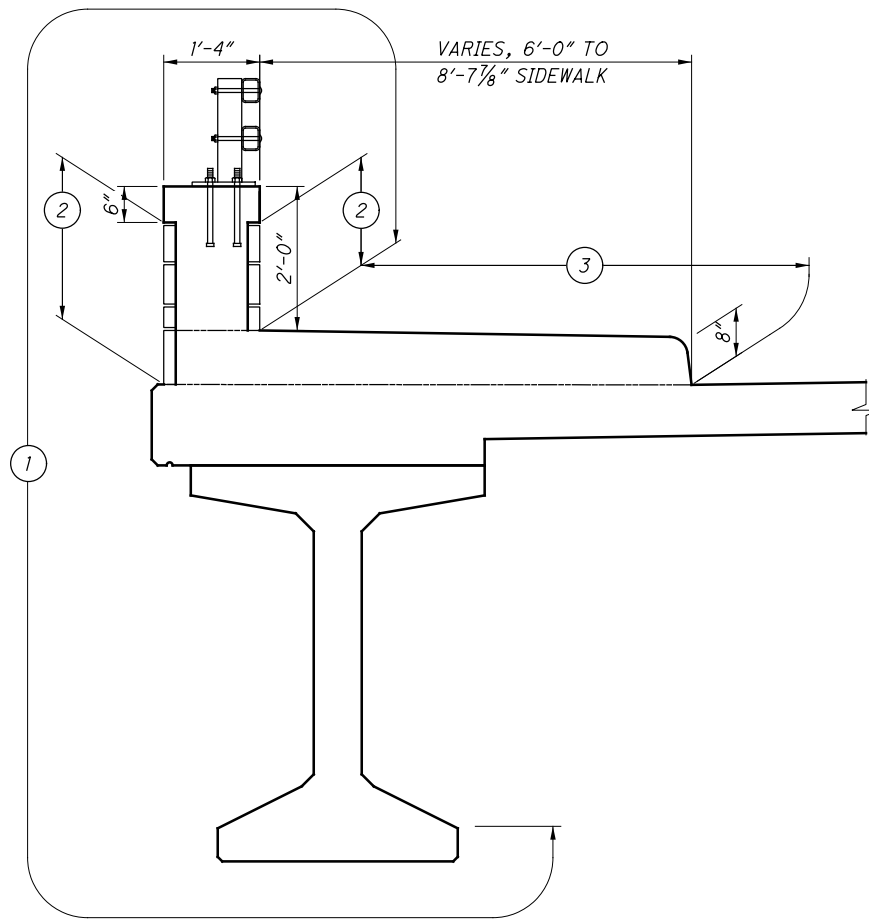
10/42

50/103

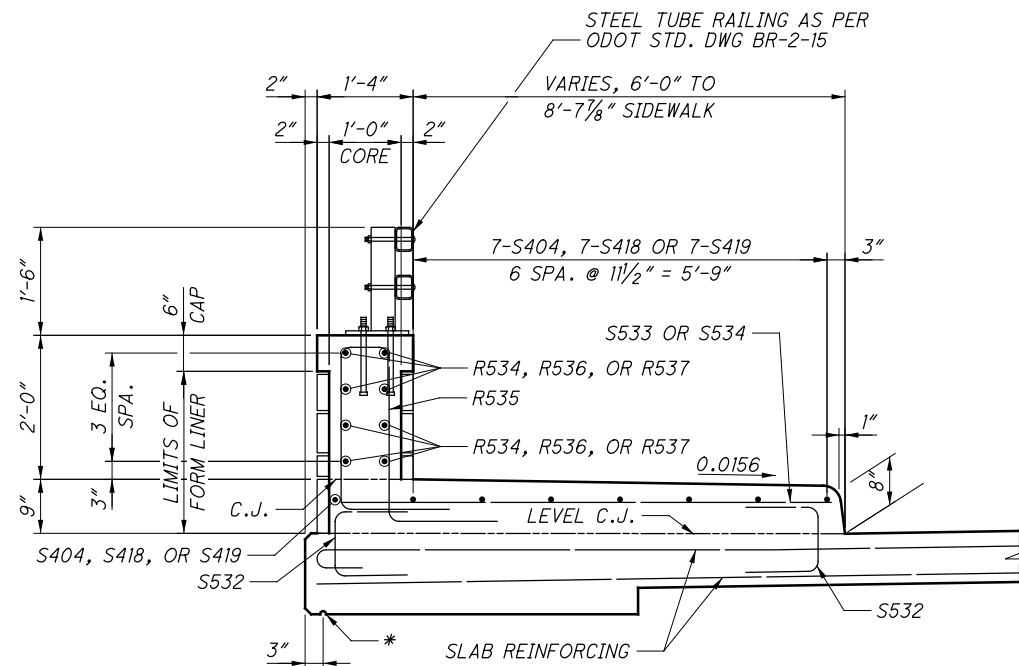
X:\Projects\2024\2422\203400_CUY-14-12.12E\DESIGN\CT\ProjectData\13184\DesignStructures\Sheets\04_1212C_SA002.dgn 11/7/2024 1:26:49 PM aadkins



PART PLAN - LEFT SIDEWALK



TYPICAL SEALING DETAIL



TYPICAL SIDEWALK AND PARAPET DETAIL
LONGITUDINAL SLAB REINFORCING NOT SHOWN, SEE TRANSVERSE SECTION.

LEGEND

* - 1" DIA. HALF-ROUND DRIP GROOVE

- ① LIMITS OF SEALING CONCRETE SURFACES (EPOXY URETHANE)
- ② LIMITS OF ITEM SPECIAL - FORM LINER (USE A CLEAR EPOXY-URETHANE)
- ③ LIMITS OF SEALING CONCRETE SURFACES (NON-EPOXY)

NOTES

1. FOR ADDITIONAL DETAILS, SEE ODOT STANDARD DRAWING BR-2-15.
2. THE MINIMUM LAP LENGTH FOR SIDEWALK & PARAPET REINFORCING STEEL IS 2'-1" FOR #4 AND #5 LONGITUDINAL BARS.
3. FOR FINAL DECK ELEVATION DIAGRAM, SEE SHEET [31/42].
4. FOR DECK SLAB PLAN, SEE SHEET [28/42].
5. FOR TRANSVERSE SECTION, SEE SHEET [22/42].
6. FOR ADDITIONAL SIDEWALK AND PARAPET DETAILS, SEE SHEETS [33/42] & [35/42].

REV NO.	DATE	REV. BY	DESCRIPTION
1	11-06-24	SRK	REVISED DESCRIPTION

SIDEWALK & PARAPET DETAILS - 2

BRIDGE NO. CUY-14-12.12E
UNION ST. OVER TINKERS CREEK

CUY-14-12.12E - PART 2
PID No. 13184

34 / 42

74
103

DESIGN AGENCY
PENNONI ASSOCIATES INC.
2 SUMMIT PARK DRIVE, SUITE 335
INDEPENDENCE, OHIO 44131

DATE
11/9/23

REVIEWED
MDP

DRAWN
CJK

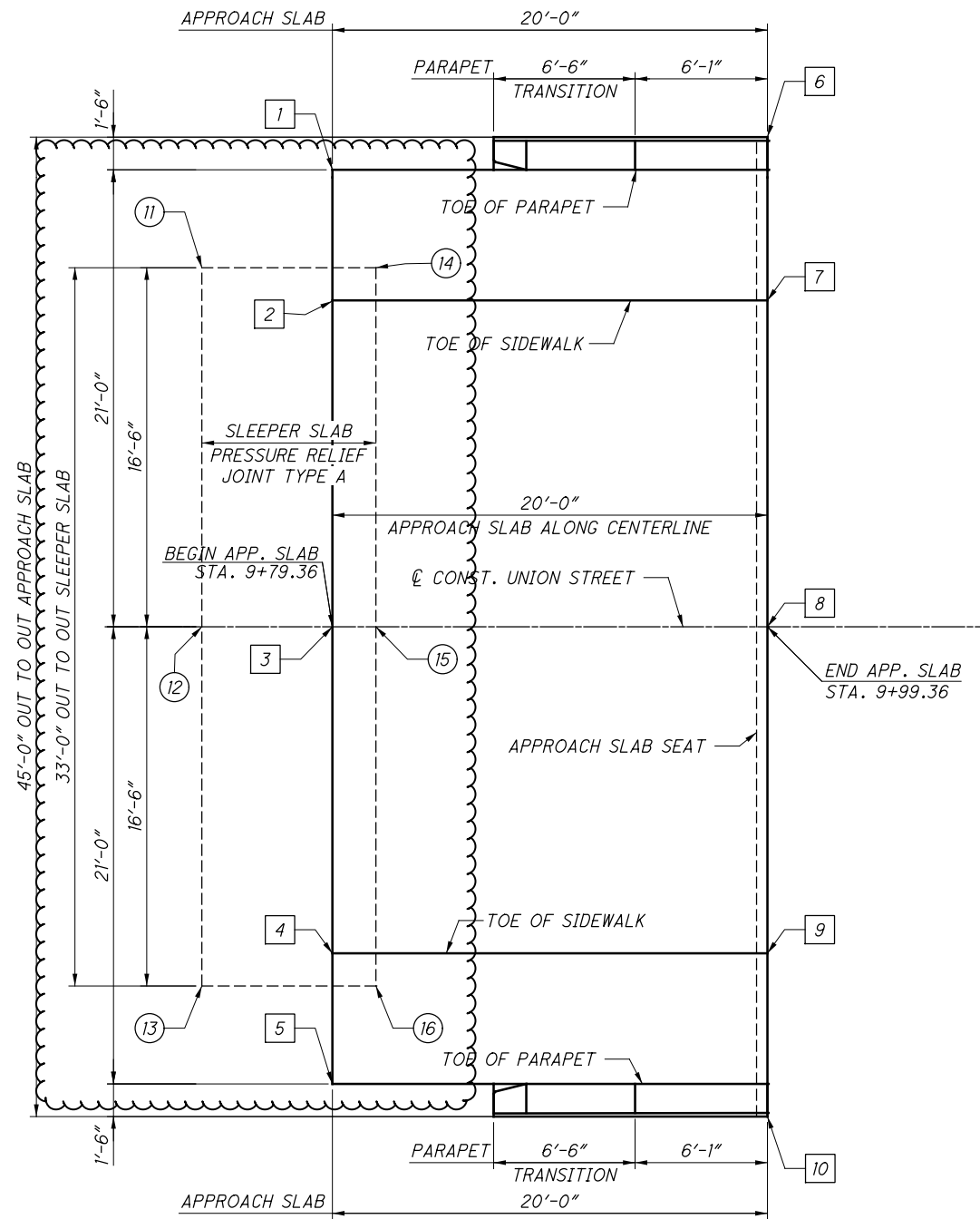
DESIGNED
CJK

STRUCTURE FILE NUMBER
1801930

REVISED
ARA

CHECKED
ARA

X:\Projects\2024\2422\203400_CUY-14-12.12E\DESIGN\CT\ProjectData\13184\Design\Structures\Sheets\04_1212C_SM001.dgn 11/7/2024 1:26:51PM cadkins

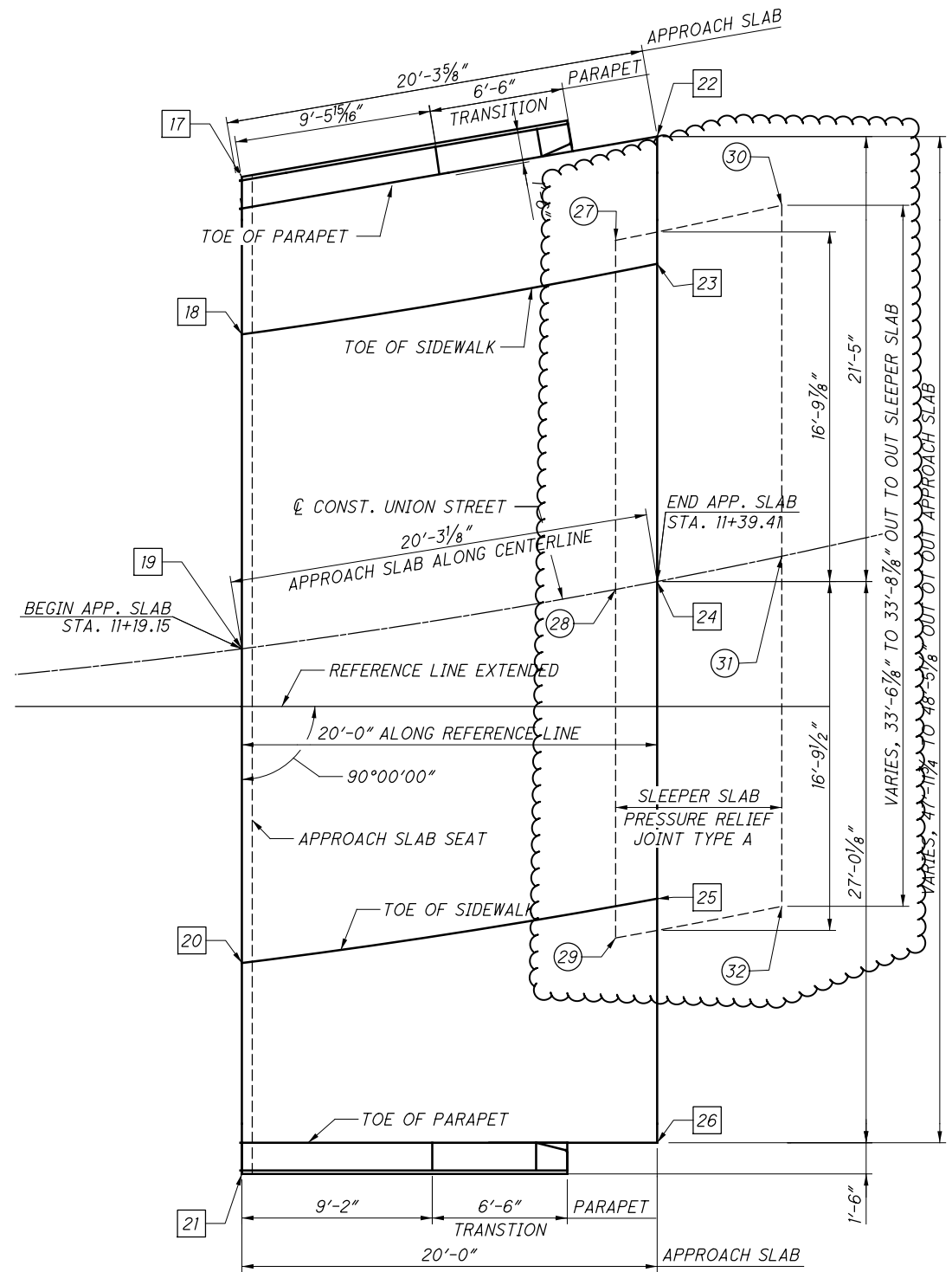


REAR APPROACH SLAB PLAN



SURFACE ELEVATIONS		
LOCATION	REAR APPROACH SLAB	REAR SLEEPER SLAB ◇
1	895.57	-
2	895.57	-
3	895.83	-
4	895.57	-
5	895.57	-
6	895.67	-
7	895.67	-
8	895.91	-
9	895.67	-
10	895.67	-
11	-	894.48
12	-	894.74
13	-	894.48
14	-	894.50
15	-	894.75
16	-	894.50

SURFACE ELEVATIONS		
LOCATION	FORWARD APPROACH SLAB	FORWARD SLEEPER SLAB ◇
17	896.29	-
18	896.29	-
19	896.51	-
20	896.26	-
21	896.25	-
22	896.49	-
23	896.47	-
24	896.69	-
25	896.40	-
26	896.38	-
27	-	895.37
28	-	895.58
29	-	895.30
30	-	895.48
31	-	895.68
32	-	895.38



FORWARD APPROACH SLAB PLAN



LEGEND

◇ ELEVATIONS LISTED FOR THESE POINTS ARE LOCATED AT THE TOP SURFACE OF SLEEPER SLAB BELOW THE APPROACH SLAB

NOTES

- THIS DRAWING PROVIDES DETAILS TO SUPPLEMENT THE STANDARD DRAWING. FOR APPROACH SLAB REINFORCING STEEL AND DETAILS NOT SHOWN SEE ODOT STANDARD DRAWING AS-1-15 AND AS-2-15. FOR PARAPET DETAILS AND REINFORCING STEEL, SEE SHEETS 37/42 THRU 39/42.

REV NO.	DATE	REV. BY	DESCRIPTION
1	11-06-24	SRK	DECREASED SLEEPER SLAB WIDTH

DESIGN AGENCY
PENNONI ASSOCIATES INC.
2 SUMMIT PARK DRIVE, SUITE 335
INDEPENDENCE, OHIO 44131

DATE 11/9/23
REVIEWED MDP
STRUCTURE FILE NUMBER 1801930

DESIGNED CJK
CHECKED ARA

REAR & FORWARD APPROACH SLAB DETAILS
BRIDGE NO. CUY-14-12.12E
UNION ST. OVER TINKERS CREEK

CUY-14-12.12E - PART 2
PID No. 13184

36/42

76
103