

STATE OF OHIO DEPARTMENT OF TRANSPORTATION

CUY-14-6.93

RECONSTRUCTION OF THE EXISTING GRADE-SEPARATED
CROSSING WITH THE NORFOLK SOUTHERN RAILROAD
AND WHEELING AND LAKE ERIE RAILROAD

CITY OF GARFIELD HEIGHTS
CUYAHOGA COUNTY

FEDERAL PROJECT NUMBER

E190 (250)

RAILROAD INVOLVEMENT

NORFOLK SOUTHERN AND WHEELING AND LAKE ERIE

PROJECT DESCRIPTION

REPLACE THE WHITEHOUSE CROSSING BRIDGE (SR-14) OVER THE NORFOLK AND SOUTHERN RAILROAD ON A NEW ALIGNMENT. WORK INCLUDES NEW PAVEMENT, CURBS, WALKS, STORM DRAINAGE, 22'X7' AND 8'X4' CULVERTS, MSE WALLS, WATERLINE AND SANITARY RELOCATIONS, TRAFFIC SIGNAL, SIGNING AND PAVEMENT MARKINGS, AND LIGHTING.

EARTH DISTURBED AREAS

PROJECT EARTH DISTURBED AREA: 7.72 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA: 1.00 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA: 8.72 ACRES

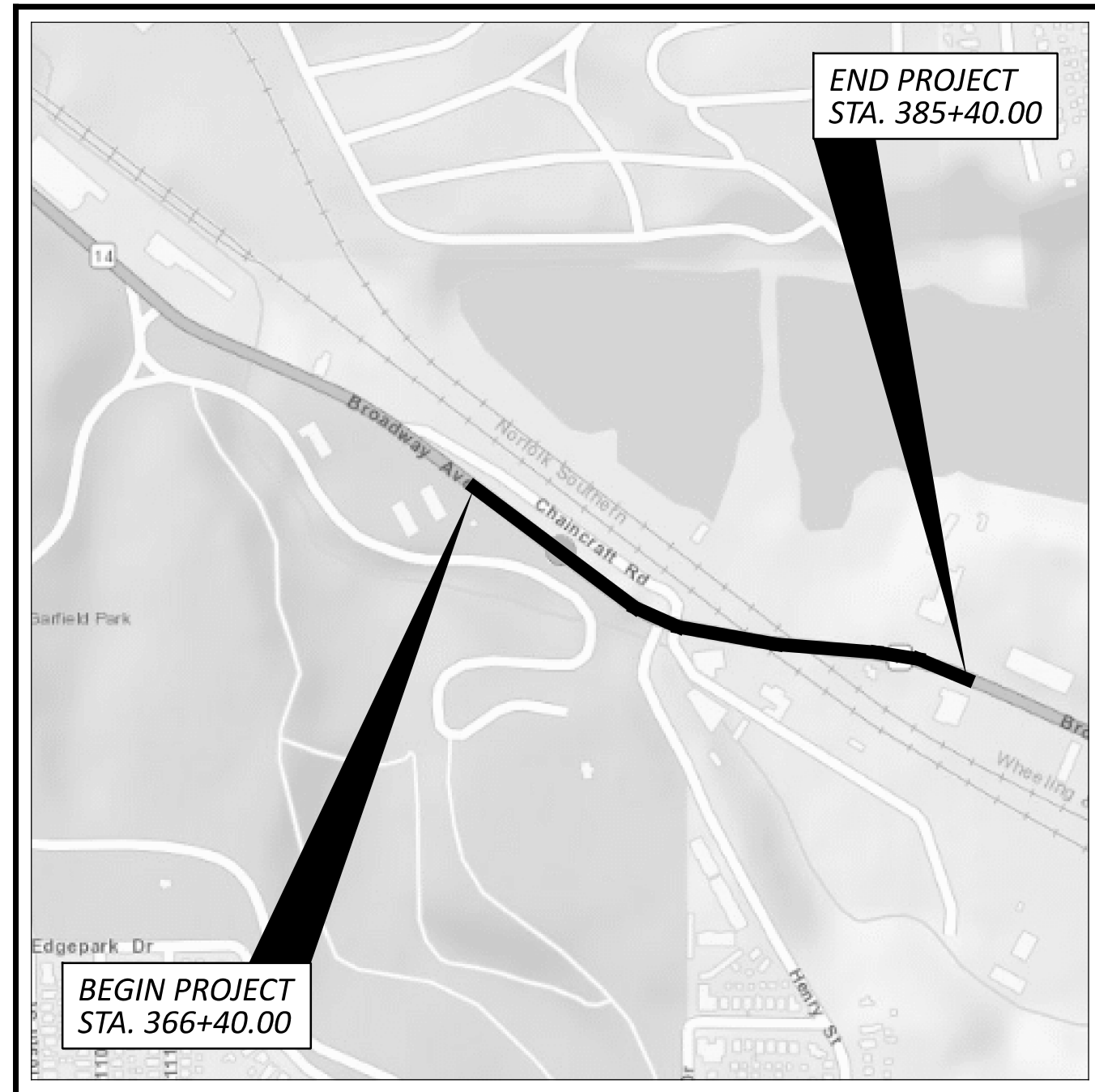
2023 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION, INCLUDING SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PLANS AND CHANGES LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY EXCEPT FOR THE SIDE ROADS AS DESCRIBED ON SHEET P.25 AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

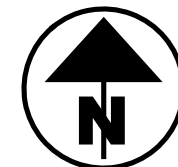

John Picuri, P.E., S.I.
District 12 Deputy Director


Pamela Boratyn
Director, Department of Transportation



LOCATION MAP

LATITUDE: N 41°25'50" LONGITUDE: W 81°36'10"



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

DESIGN DESIGNATION

ROUTE	ADT (2026)	ADTT (2026)	ADT (2046)	ADTT (2046)	D	DESIGN SPEED	LEGAL SPEED	DESIGN FUNC. CLASS	NHS ROUTE?
S.R. 14 (BROADWAY AVE.)	18500	1295	19000	1330	0.51	35	35	03 - PRINCIPAL ARTERIAL (URBAN)	Y
C.R. 240 (HENRY ST.)	7000	630	7500	675	0.54	25	25	07 - LOCAL (URBAN)	N
CHAINCRAFT RD.						25		07 - LOCAL (URBAN)	N


DESIGN EXCEPTIONS

NONE REQUIRED

ADA DESIGN WAIVERS

NONE REQUIRED

UNDERGROUND UTILITIES
Contact Two Working Days Before You Dig



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

PLAN PREPARED BY:

AECOM

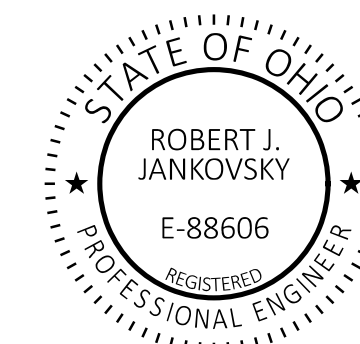
564 WHITE POND DRIVE AKRON, OHIO 44320-1100
(330) 836-9111

INDEX OF SHEETS:

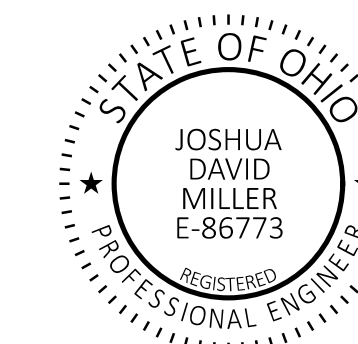
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STANDARD CONSTRUCTION DRAWINGS										SUPPLEMENTAL SPECIFICATIONS	SPECIAL PROVISIONS			
BP-2.2	1/15/21	CB-2-2B	7/19/24	WQ-1.2	1/15/16	TC-41.20	10/18/13	MT-95.31	7/19/19	AS-1-15	1/20/23	800	7/19/24	WATERWAY PERMIT
BP-3.1	1/19/24	CB-2-3	7/19/24			TC-41.30	4/21/23	MT-95.41	7/21/23	AS-2-15	1/20/23	809	7/19/24	08/15/2024
BP-3.2	1/18/19	CB-3	7/19/24	HL-10.11	7/21/23	TC-41.40	10/18/13	MT-95.50	7/21/17	BR-2-15	7/19/24	813	7/21/23	
BP-4.1	7/19/13	CB-3A	7/19/24	HL-10.12	7/21/23	TC-42.20	10/18/13	MT-96.11	7/21/23	EXJ-4-87	1/19/24	825	7/19/24	
BP-5.1	7/15/22			HL-10.13	1/20/23	TC-52.10	10/18/13	MT-96.20	7/21/23	GSD-1-19	7/19/24	832	7/19/24	
BP-7.1	7/19/24	DM-1.1	7/17/20	HL-20.11	7/21/23	TC-52.20	1/15/21	MT-97.10	4/19/19	PCB-91	7/17/20	836	1/19/24	
		DM-1.2	7/16/21	HL-20.14	4/17/20	TC-71.10	4/21/23	MT-97.11	1/20/17	VPF-1-24	7/19/24	840	7/19/24	
RM-1.1	1/20/23	DM-4.2	7/20/12	HL-30.11	7/21/23	TC-74.10	7/21/23	MT-101.60	4/21/23			867	4/15/22	
RM-4.2	4/17/20	DM-4.3	1/15/16	HL-30.21	4/17/20	TC-81.11	1/19/24	MT-101.70	7/19/24			895	4/18/14	
		DM-4.4	1/15/16	HL-30.22	1/15/21	TC-81.22	7/21/23	MT-101.75	7/21/23			909	7/19/24	
MH-1	7/15/22			HL-30.31	7/19/24	TC-83.10	1/17/20	MT-103.10	1/21/22			913	4/16/21	
MH-2	7/19/24	HW-2.1	7/15/22	HL-40.20	7/19/24	TC-83.20	7/19/24	MT-105.10	1/17/20			961	4/17/20	
MH-3	7/19/24	HW-2.2	7/20/18	HL-50.11	1/16/15	TC-85.10	1/19/24	MT-110.10	7/19/13			995	7/17/15	
MH-5	7/19/24			HL-50.21	7/15/22	TC-85.20	4/21/23							
				HL-60.11	7/21/17									
				HL-60.31	7/19/24									

ENGINEER'S SEAL
FOR SHEETS P.1 - P.208



ENGINEER'S SEAL
FOR SHEETS P.209 - P.399



TITLE SHEET

DESIGN AGENCY

AECOM

564 White Pond Drive
Akron, OH 44320
(330) 836-9111
www.aecom.com

DESIGNER

RJJ

REVIEWER

WFS 08/05/24

PROJECT ID

104132

SHEET

P.1

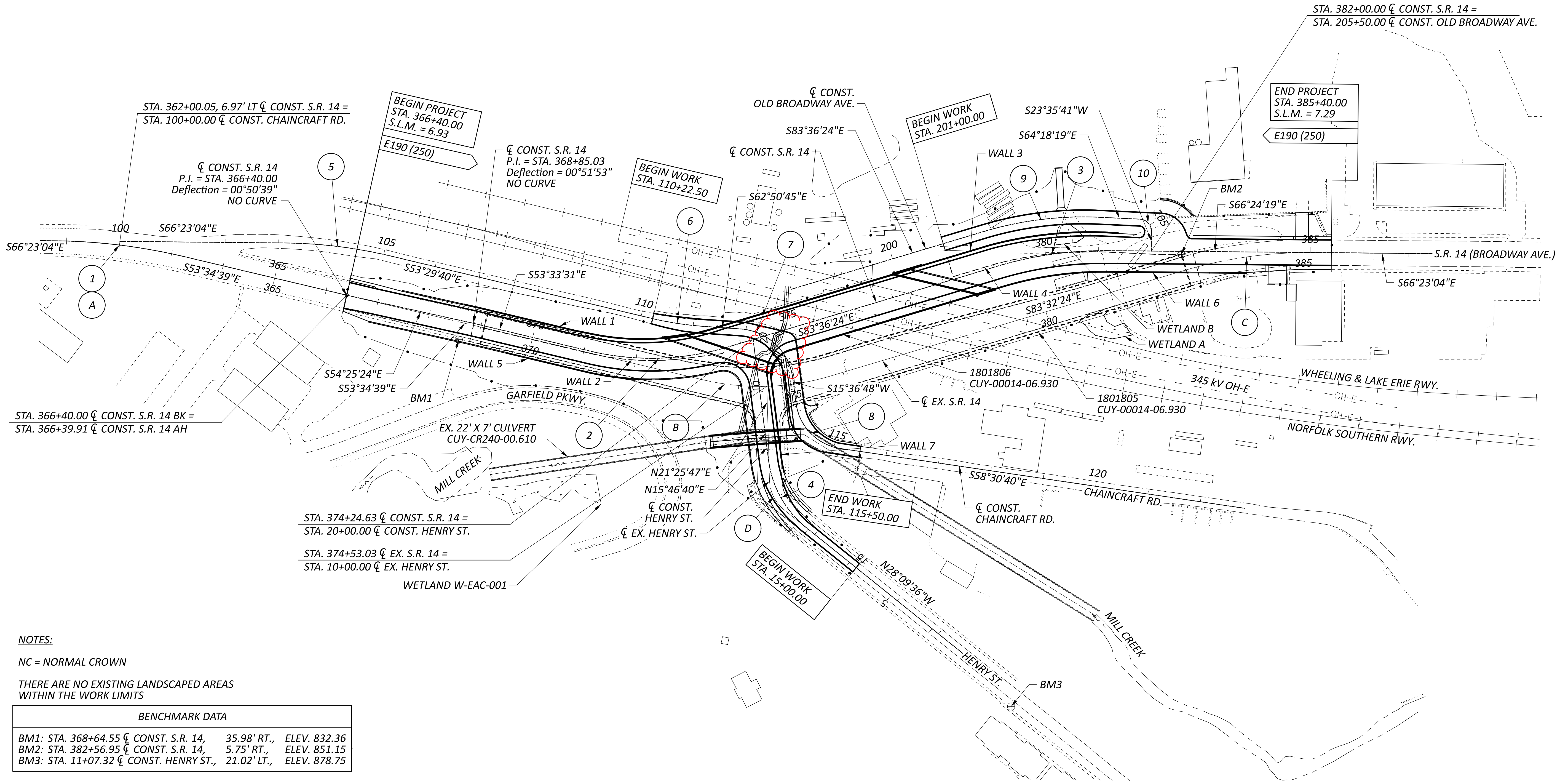
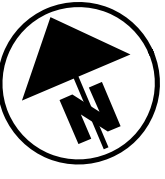
TOTAL

399

CUY-14-6.93

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A	C EX. S.R. 14 CURVE DATA P.I. = STA. 362+00.57 $\Delta = 12^\circ 48' 25''$ RT Dc = 05'09'34" R = 1,110.51' T = 124.63' L = 248.22' E = 6.97' e = NC	C	C EX. S.R. 14 CURVE DATA P.I. = STA. 383+94.32 $\Delta = 17^\circ 09' 20''$ RT Dc = 06'54'50" R = 828.70' T = 125.00' L = 248.13' E = 9.37' e = NC	1	C CONST. S.R. 14 CURVE DATA P.I. = STA. 362+00.57 $\Delta = 12^\circ 48' 25''$ RT Dc = 05'09'34" R = 1,110.51' T = 124.63' L = 248.22' E = 6.97' e = NC	3	C CONST. S.R. 14 CURVE DATA P.I. = STA. 383+94.32 $\Delta = 17^\circ 09' 20''$ RT Dc = 06'54'50" R = 828.70' T = 125' L = 248.13' E = 9.37' e = NC	5	C CONST. CHAINCRAFT RD. CURVE DATA P.I. = STA. 104+12.02 $\Delta = 12^\circ 53' 23''$ RT Dc = 06'26'18" R = 889.92' T = 100.53' L = 200.20' E = 5.66' e = NC	7	C CONST. CHAINCRAFT RD. CURVE DATA P.I. = STA. 112+77.19 $\Delta = 78^\circ 27' 33''$ RT Dc = 53'47'56" R = 106.50' T = 86.95' L = 145.84' E = 30.99' e = NC	9	C CONST. OLD BROADWAY AVE. CURVE DATA P.I. = STA. 202+91.54 $\Delta = 19^\circ 18' 05''$ RT Dc = 08'48'53" R = 650.00' T = 110.53' L = 218.97' E = 9.33' e = NC
B	C EX. S.R. 14 CURVE DATA P.I. = STA. 374+55.89 $\Delta = 29^\circ 57' 45''$ LT Dc = 12'16'54" R = 466.51' T = 124.84' L = 243.96' E = 16.41' e = NC	D	C EX. HENRY ST. CURVE DATA P.I. = STA. 7+92.45 $\Delta = 49^\circ 35' 24''$ RT Dc = 75'41'17" R = 75.70' T = 34.97' L = 65.52' E = 7.69' e = NC	2	C CONST. S.R. 14 CURVE DATA P.I. = STA. 374+55.89 $\Delta = 29^\circ 57' 45''$ LT Dc = 12'16'54" R = 466.51' T = 124.84' L = 243.96' E = 16.41' e = NC	4	C CONST. HENRY ST. CURVE DATA P.I. = STA. 16+98.99 $\Delta = 43^\circ 56' 16''$ RT Dc = 29'22'57" R = 195.00' T = 78.66' L = 149.54' E = 15.27' e = NC	6	C CONST. CHAINCRAFT RD. CURVE DATA P.I. = STA. 110+69.52 $\Delta = 09^\circ 21' 05''$ LT Dc = 09'22'20" R = 611.34' T = 50.00' L = 99.78' E = 2.04' e = NC	8	C CONST. CHAINCRAFT RD. CURVE DATA P.I. = STA. 114+59.45 $\Delta = 74^\circ 07' 28''$ LT Dc = 57'41'51" R = 99.30' T = 75.00' L = 128.47' E = 25.14' e = NC	10	C CONST. OLD BROADWAY AVE. CURVE DATA P.I. = STA. 204+99.82 $\Delta = 87^\circ 54' 00''$ RT Dc = 249'06'44" R = 23.00' T = 22.17' L = 35.29' E = 8.95' e = NC



NOTES:
 NC = NORMAL CROWN

THERE ARE NO EXISTING LANDSCAPED AREAS WITHIN THE WORK LIMITS

BENCHMARK DATA		
BM1: STA. 368+64.55	C CONST. S.R. 14,	35.98' RT., ELEV. 832.36
BM2: STA. 382+56.95	C CONST. S.R. 14,	5.75' RT., ELEV. 851.15
BM3: STA. 11+07.32	C CONST. HENRY ST.,	21.02' LT., ELEV. 878.75

SCHEMATIC PLAN

DESIGN AGENCY

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DESIGNER
 RJJ

REVIEWER
 WFS 08/05/24

PROJECT ID
 104132

SHEET TOTAL
 P.2 399

GENERAL (CONT.)

ITEM 619 – FIELD OFFICE, TYPE C, AS PER PLAN

ALL REQUIREMENTS OF C&MS 619 SHALL APPLY EXCEPT AS MODIFIED HEREIN:

THE FIELD OFFICE SHALL BE A SUITE TYPE OFFICE (NO TRAILER OR MODULAR OFFICE) WITH A MINIMUM OF 4,000 SQUARE FEET AND AT GROUND LEVEL WITH A MINIMUM CEILING HEIGHT OF EIGHT (8) FEET. PROVIDE TWO (2) OUTSIDE DOORS, LOCKABLE VANDAL PROOF CYLINDER TYPE DEAD BOLTS AND LOCKABLE WINDOWS. THE FLOOR SPACE WILL BE DIVIDED INTO TWO RESTROOMS, ONE GENERAL OFFICE AREA (MINIMUM 400 SQUARE FEET), NOT LESS THAN SIX INDIVIDUAL OFFICES (MINIMUM 300 SQUARE FEET EACH) AS SEPARATE ENCLOSED ROOMS (NO CUBICLE DIVIDERS WILL BE ACCEPTED), ONE KITCHEN SPACE INCLUDING SINK, REFRIGERATOR, AND MICROWAVE, AND ONE CONFERENCE ROOM (MINIMUM 1000 SQUARE FEET).

FURNISH NEAT, SANITARY, ENCLOSED TOILET ACCOMMODATIONS CONNECTED TO AN EXISTING SANITARY SEWER LINE FOR THE USE OF THE OCCUPANTS OF THE FIELD OFFICE, MEETING APPLICABLE STATE AND LOCAL CODES AND ORDINANCES. FURNISH ASSOCIATED LAVATORY AND SANITARY SUPPLIES. POTABLE HOT AND COLD RUNNING WATER WILL BE PROVIDED IN THE RESTROOM FOR SANITARY PURPOSES.

FURNISH TRASH COLLECTION SERVICE/DUMPSTER.

FURNISH PROFESSIONAL, BONDED, AND INSURED JANITORIAL SERVICE WITH A WEEKLY CLEANING OF THE ENTIRE OFFICE TO INCLUDE THE RESTROOM FACILITIES FOR THE DURATION OF THE PROJECT.

FURNISH BOTTLED DRINKING WATER SERVICE WITH A HOT AND COLD DISPENSER AND ASSOCIATED SUPPLIES.

FURNISH A BOX FOR STORING A NUCLEAR DENSITY GAUGE WITH REQUIREMENTS AS SET FORTH IN C&MS 619.02.

FURNISH AND MAINTAIN A BROADBAND INTERNET CONNECTION CAPABLE OF MINIMUM DOWNLOAD SPEEDS OF 1.0 GB/S. PROVIDE A WIRELESS ROUTER THAT SUPPORTS WI-FI STANDARD 802.11AX (WIFI 6) AND A MINIMUM WIRELESS DATA TRANSFER RATE OF 4000 MB/S. PROVIDE PRE-WIRED ETHERNET ACCESS FOR ALL INDIVIDUAL OFFICES AND THE CONFERENCE ROOM.

FURNISH EIGHT (8) DESK AND CHAIR SETS, THIRTY (30) STACKABLE CHAIRS, TEN (10) WORK TABLES (30"x72"), AND TWELVE (12) 24-QUART WASTE BASKETS WITH APPROPRIATE SIZED TRASH BAGS.

FURNISH AND INSTALL TWO (2) WALL-MOUNTED 8'x4' GLASS, MAGNETIC DRY ERASE BOARDS.

FURNISH ONE NEW TELEVISION WITH THE FOLLOWING SPECIFICATIONS:

- a) DIAGONAL SCREEN SIZE - 70" MINIMUM
- b) NATIVE RESOLUTION - 4K
- c) HDMI PORTS: 3
- d) ALL ACCESSORIES NECESSARY TO OPERATE
- e) ALL HARDWARE AND INSTALLATION NECESSARY TO HANG THE TELEVISION ON THE WALL IN THE CONFERENCE ROOM

THE FIELD OFFICE WILL BE APPROVED IN ADVANCE BY THE ENGINEER AND FULLY OPERATIONAL WITHIN 30 DAYS AFTER THE SIGNING AND EXECUTION OF THE PROJECT OR PRIOR TO THE START OF ANY CONSTRUCTION WORK, WHICHEVER COMES FIRST.

THE DEPARTMENT WILL MEASURE FIELD OFFICE, TYPE C, AS PER PLAN BY THE NUMBER OF MONTHS THE OFFICE IS MAINTAINED. A PARTIAL MONTH AT THE END OF THE PROJECT WILL BE PAID AS A FULL MONTH.

THE DEPARTMENT WILL PAY FOR ACCEPTED QUANTITIES AT THE CONTRACT PRICE AS FOLLOWS:

ITEM 619 – FIELD OFFICE, TYPE C, AS PER PLAN 36 MONTHS

STAGING AREAS

THERE ARE NO SPECIFIC AREAS GIVEN IN THE PLANS FOR THE CONTRACTOR TO USE AS A STAGING AREA(S). IF THE CONTRACTOR WANTS TO USE AN AREA(S) FOR STAGING, REGARDLESS IF IT FALLS WITHIN THE PROJECT LIMITS OR NOT, THE CONTRACTOR IS TO USE THE RIGHT OF WAY E-PERMITTING SYSTEM AT [HTTPS://ODHCP.BEMCORP.NET/ACCOUNTS/ACCOUNT/ACCOUNT](https://odhcp.bemcorp.net/accounts/account/account) IN ORDER TO APPLY FOR A PERMIT PER SECTION 107.02 OF THE CMS. FOR SPECIFIC PERMITTING QUESTIONS, THE CONTRACTOR CAN CONTACT THE DISTRICT PERMITTING OFFICE, (MELVIN SAFFORD) AT 216-584-2137 OR AT DISTRICT12PERMITS@DOT.OHIO.GOV.

IF A PERMIT IS GRANTED, ALL CONDITIONS OF THE PERMIT SHALL BE MET IN ADDITION TO THE REQUIREMENTS OF 104.04 OF THE CMS, AT NO ADDITIONAL COST TO THE STATE. IF THE PROJECT ENGINEER DEEMS THAT ALL THE CONDITIONS OF THE PERMIT WERE NOT MET, THEN 10% OF THE CONTRACT BID AMOUNT FOR MOBILIZATION SHALL BE WITHHELD UNTIL ALL THE CONDITIONS OF THE PERMIT ARE SATISFIED.

THE STAGING AREA IS NOT PERMITTED TO BE ON THE CLEVELAND METROPARK'S PARK PROPERTY.

NORFOLK SOUTHERN PN 151 - 07/21/2023 - RAILROAD FLAGGING SERVICE

FLAGGING FOR WORK ON RAILROAD RIGHT OF WAY SHALL BE COORDINATED, OBTAINED AND PAID FOR BY THE CONTRACTOR. FLAGGING SHALL BE PROVIDED BY THE CONTRACTOR WHENEVER REQUIRED BY THE NORFOLK SOUTHERN SPECIAL PROVISIONS FOR THE PROTECTION OF RAILWAY INTEREST. NORFOLK SOUTHERN SHALL APPROVE THE FLAGGING SERVICE PROVIDER AND THEIR STAFF

NORFOLK SOUTHERN HAS THE SOLE AUTHORITY TO DETERMINE THE NEED FOR PROTECTION SERVICES TO PROTECT ITS OPERATIONS IN GENERAL. THE REQUIREMENTS OF SUCH SERVICES WILL BE WHENEVER THE CONTRACTOR'S PERSONNEL OR EQUIPMENT ARE OR ARE LIKELY TO BE, WORKING ON THE RAILROAD'S RIGHT OF WAY, OR ACROSS, OVER, ADJACENT TO, OR UNDER A TRACK, OR WHEN SUCH WORK HAS DISTURBED OR IS LIKELY TO DISTURB A RAILROAD STRUCTURE OR THE RAILROAD ROADBED OR SURFACED AND ALIGNMENT OF ANY TRACK TO SUCH EXTENT THAT THE MOVEMENT OF TRAINS MUST BE CONTROLLED BY FLAGGING.

THE TOTAL DOLLARS IN THE ESTIMATED QUANTITIES IS BASED UPON AN ESTIMATE OF TOTAL FLAGGING DOLLARS NEEDED TO COMPLETE THE PLANNED WORK.

ONLY THE FOLLOWING CERTIFIED FLAGGING PROVIDES ARE ACCEPTABLE BY NORFOLK SOUTHERN:

NORTH CAROLINA RAILROAD COMPANY (RALEIGH, NC)
 GENERAL INQUIRES: TPP@NCR.COM
 JOHN GASS, SENIOR SAFETY & COMPLIANCE MANAGER
JGASS@NCR.COM
 (864) 504-0455
[HTTPS://WWW.NCRR.COM/](https://www.ncrr.com/)

RAILPROS (IRVING, TX)
 FIELD SUPPORT TEAM
 (877) 315-0513 (OPTION 1)
NS.INFO@RAILPROS.COM
 ADAM BROWN
 (334) 530-2861
ADAM.BROWN@RAILPROS.COM

R&R CONSULTING TEAM (HARRISBURG, PA)
 DAVID N. CRAFT, CO-OWNER & PRESIDENT
 R&R CONSULTING TEAM, LLC.
 (717) 497-4373 (CELL)
 (775) 521-2495 (E-FAX)
DCRAFT@RRCONSULTINGTEAM.COM
WWW.RRCONSULTINGTEAM.COM

PAYMENT FOR CERTIFIED FLAGGING PROVIDERS WILL BE MADE PER ITEM 900E00100 EACH - RAILROAD FLAGGING SERVICES BASED UPON THE INVOICES RECEIVED FROM THE FLAGGING SERVICE FOR THE DOLLARS USED, INCLUDING A FIVE PERCENT MARKUP FOR CONTRACTOR OVERHEAD FOR ADMINISTERING THE CONTRACT WITH THE FLAGGING SERVICE.

IN THE EVENT THE PROJECT IS DELAYED DUE TO RAILROAD FLAGGER AVAILABILITY, THE CONTRACTOR WILL PROVIDE DOCUMENTATION SUPPORTING THEIR EFFORTS TO SCHEDULE A FLAGGER FROM THE FLAGGING SERVICE.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE WORK NOTED ABOVE:

ITEM 900 - RAILROAD FLAGGING SERVICES 459,000 EACH

NORFOLK SOUTHERN DRAINAGE

ALL PROPOSED DRAINAGE DITCHES AND STRUCTURE DETAILS ON RAILROAD RIGHT-OF-WAY SHALL BE DEVELOPED IN ACCORDANCE WITH THE REQUIREMENTS OF AREMA CHAPTER 1 AND NORFOLK SOUTHERN TYPICAL DRAWING NO. 1 - OVERHEAD BRIDGE DETAILS - PERMANENT CLEARANCES.

ROADWAY

ITEM 203 – ROADWAY, MISC.: #4 WASHED LANDSCAPE GRAVEL, 4" THICK

PROVIDE #4 SIZE AGGREGATE IN ACCORDANCE WITH CMS 703 AND TABLE 703.01 THAT HAS BEEN WASHED TO REMOVE ALL DIRT AND DEBRIS. PLACE THE MATERIAL OVER THE FILTER FABRIC TO A DEPTH OF 4" THICK AND RAKE THE GRAVEL LEVEL TO ENSURE EVEN DEPTH.

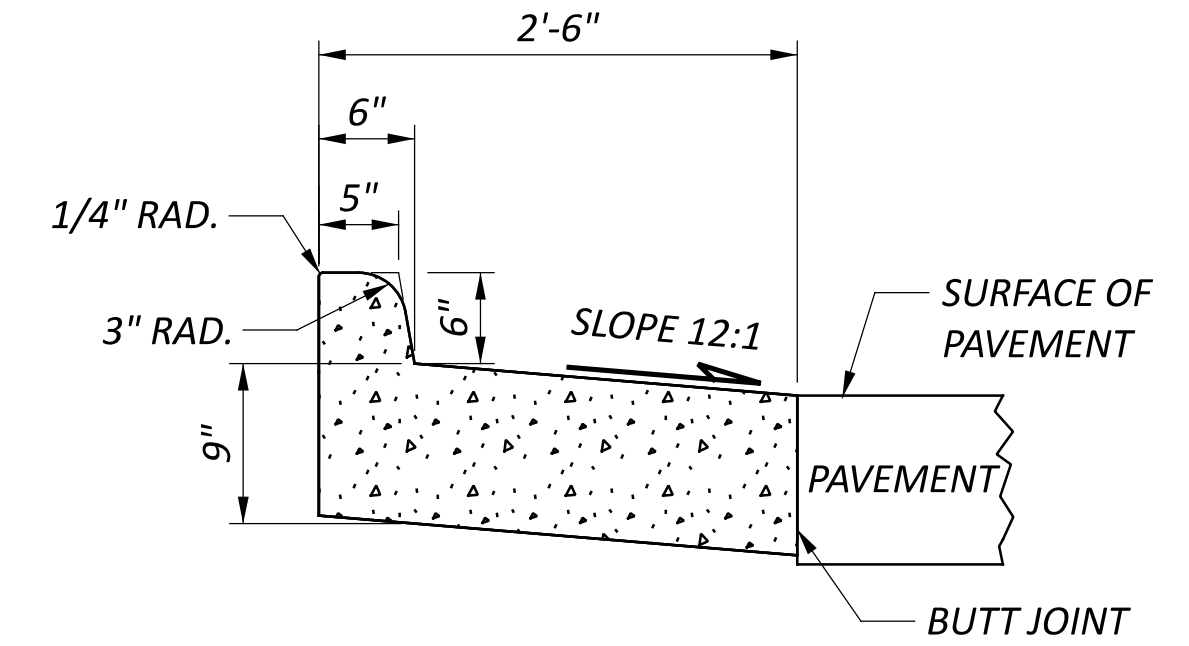
ITEM 606 - IMPACT ATTENUATOR, TYPE 1 (UNIDIRECTIONAL)

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ANY ONE OF THE TYPE 1 IMPACT ATTENUATORS AS LISTED ON THE OFFICE OF ROADWAY ENGINEERING'S WEB PAGE. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, IMPACT ATTENUATOR, TYPE 1 (UNIDIRECTIONAL), EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM, INCLUDING ALL RELATED TRANSITIONS, HARDWARE, REFLECTIVE SHEETING AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

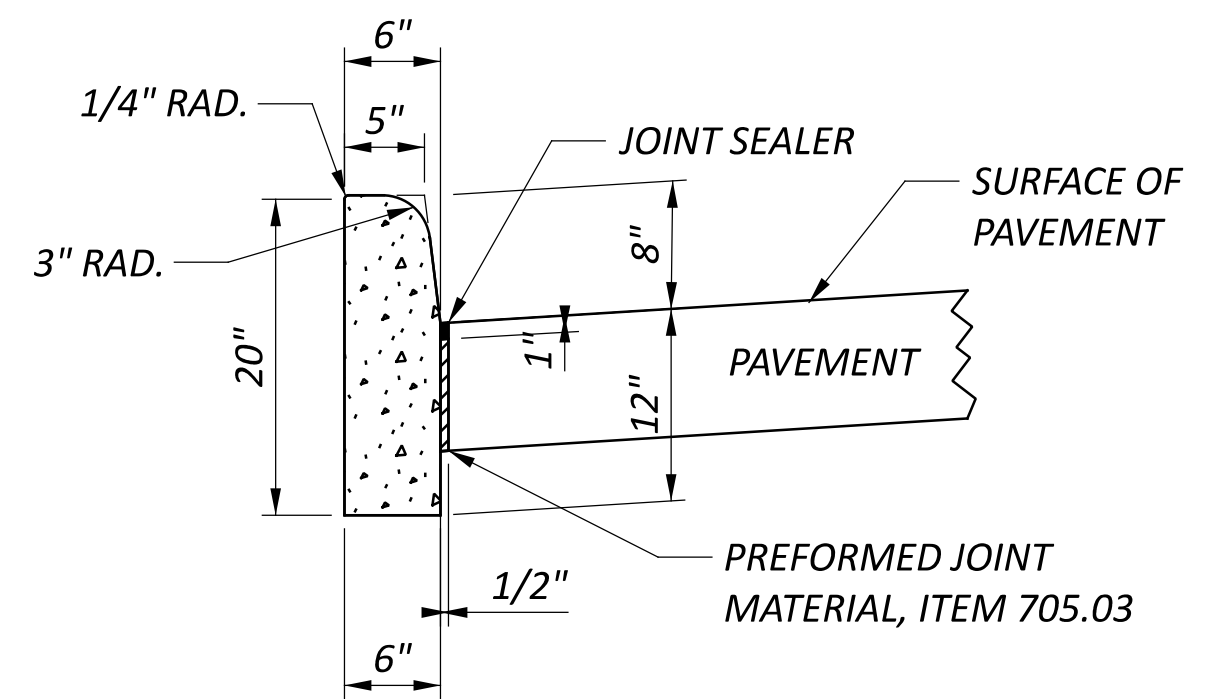
ITEM 609 - COMBINATION CURB AND GUTTER, TYPE 2, AS PER PLAN

TYPE 2 CURB AND GUTTER WITH REVERSED CROSS-SLOPE.



ITEM 609 - CURB, TYPE 6, AS PER PLAN

TYPE 6 CURB WITH 8" REVEAL.



ITEM 607 - FENCE, MISC.: TEMPORARY FENCING

THE FOLLOWING LUMP SUM HAS BEEN CARRIED TO THE GENERAL SUMMARY TO ACCOMMODATE THE LARGE QUANTITY OF FENCING REQUIRED DURING CONSTRUCTION

MATERIAL SHALL MEET ALL REQUIREMENTS OF ODOT CMS 607.

ITEM 607 - FENCE, MISC.: TEMPORARY FENCINGS LS

ITEM SPECIAL – FILTER FABRIC

MATERIAL SHALL MEET ALL REQUIREMENTS OF ODOT CMS 712.09, TYPE D.

PAVEMENT

PART-WIDTH CONSTRUCTION

BECAUSE OF THE NECESSITY TO BUILD THIS PROJECT UNDER TRAFFIC AND TO CONSTRUCT THE FULL PAVEMENT WIDTH IN STAGES, EXERCISE CARE TO PREVENT THE CONSTRUCTION OF A BUTT JOINT IN THE BASE COURSES. LAP LONGITUDINAL JOINTS AS SHOWN ON STANDARD CONSTRUCTION DRAWING BP-3.1.

DESIGN AGENCY

AECOM

564 White Pond Drive
 Akron, OH 44320
 (330) 836-9111
www.aecom.com

DESIGNER
 RJJ

REVIEWER
 WFS 08/05/24

PROJECT ID
 104132

SHEET TOTAL
 P.12 399

DRAINAGE

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, 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, NOTIFY THE ENGINEER 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, NOTIFY THE ENGINEER 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 IS INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 611 CONDUIT ITEM.

REVIEW OF DRAINAGE FACILITIES

PRIOR TO THE START OF WORK AND AGAIN BEFORE FINAL ACCEPTANCE, PERFORM AN INSPECTION WITH REPRESENTATIVES OF THE DEPARTMENT, CONTRACTOR AND LOCALS OF ALL EXISTING DRAINAGE FACILITIES THAT ARE TO REMAIN IN SERVICE WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDUITS AND THEIR APPURTENANCES IS DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTION ARE MAINTAINED BY THE DEPARTMENT.

CONFIRM ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE-MENTIONED PARTIES ARE MAINTAINED AND LEFT IN A CONDITION COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. THE CONTRACTOR IS RESPONSIBLE TO CORRECT ANY CHANGE IN THE CONDITION RESULTING FROM THEIR OPERATIONS AS DIRECTED AND APPROVED BY THE ENGINEER.

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE IS 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 15,000 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 PROPOER NEW CASTINGS AT THE EXPENSE OF THE CONTRACTOR.

TEMPORARY DRAINAGE ITEMS

TEMPORARY DRAINAGE ITEMS LABELED ON THE MAINTENANCE OF TRAFFIC PLAN ARE ITEMIZED ON THE MOT PLANS AND CARRIED TO THE GENERAL SUMMARY.

ITEM 611 - DRAINAGE STRUCTURE, MISC.: UTILITY TEST HOLE

WHERE PLANS INDICATE OTHER UTILITIES ARE IN CLOSE PROXIMITY OF A NEW DRAINAGE STRUCTURE, THE ENGINEER MAY DECIDE TO EXCAVATE TO CONFIRM THE STRUCTURE CAN BE PLACED WITHOUT INTERFERENCE. IF INTERFERENCE IS FOUND, THE STRUCTURE LOCATION OR TYPE IS TO BE REVISED, AS DIRECTED BY THE ENGINEER.

THE EXCAVATION CAN BE COMPLETED BY OPEN CUT OR HYDRO EXCAVATION.

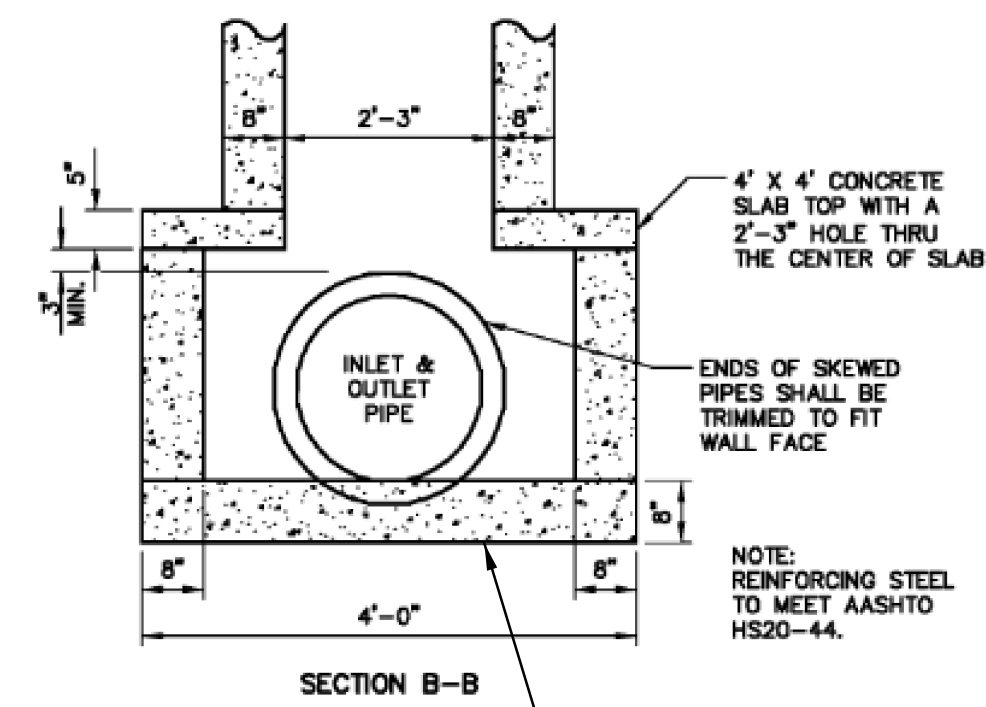
ONCE THE TEST HOLE IS COMPLETE, THE EXCAVATION SHALL BE BACKFILLED AND SURFACE RESTORED. NO PAYMENT FOR UTILITY TEST HOLE WILL BE GIVEN WITHOUT PRIOR APPROVAL FROM THE ENGINEER. PAYMENT FOR ALL LABOR, MATERIALS, EQUIPMENT AND OTHER INCIDENTALS, INCLUDING BACKFILL, COMPACTION AND SUBSURFACE RESTORATION SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR ITEM 611 - DRAINAGE STRUCTURE, MISC.: UTILITY TEST HOLE.

THE FOLLOWING ESTIMATE QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER FOR THE WORK NOTED ABOVE:

611, DRAINAGE STRUCTURE, MISC.: UTILITY TEST HOLE 8 EACH

ITEM 611 - CATCH BASIN, NO. 3A, AS PER PLAN

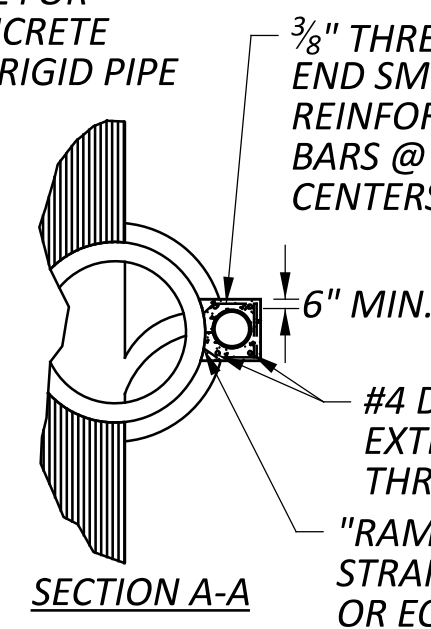
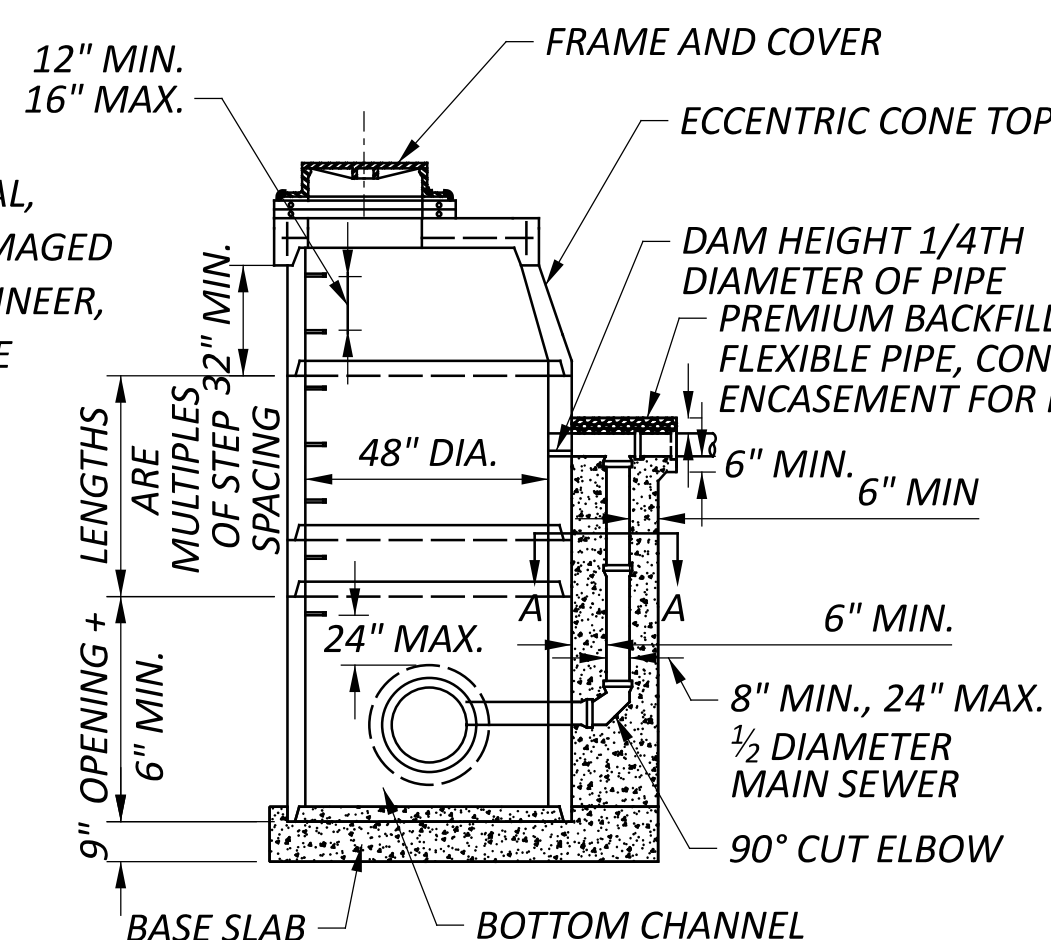
CATCH BASIN SHALL BE CONSTRUCTED IN CONFORMANCE WITH ITEM 611 AND ACCORDING TO THE STANDARD CONSTRUCTION DRAWINGS CB-3A, EXCEPT THAT SECTION B-B OF THE AFOREMENTIONED STANDARD DRAWING SHALL BE MODIFIED AS SHOWN BELOW AND THAT NO BRICK OR CONCRETE BLOCK CONSTRUCTION SHALL BE PERMITTED.



STEEL REINFORCING WITHIN THE LOWER BOX SECTION SHALL BE PER PRECAST MANUFACTURER'S SPECIFICATIONS

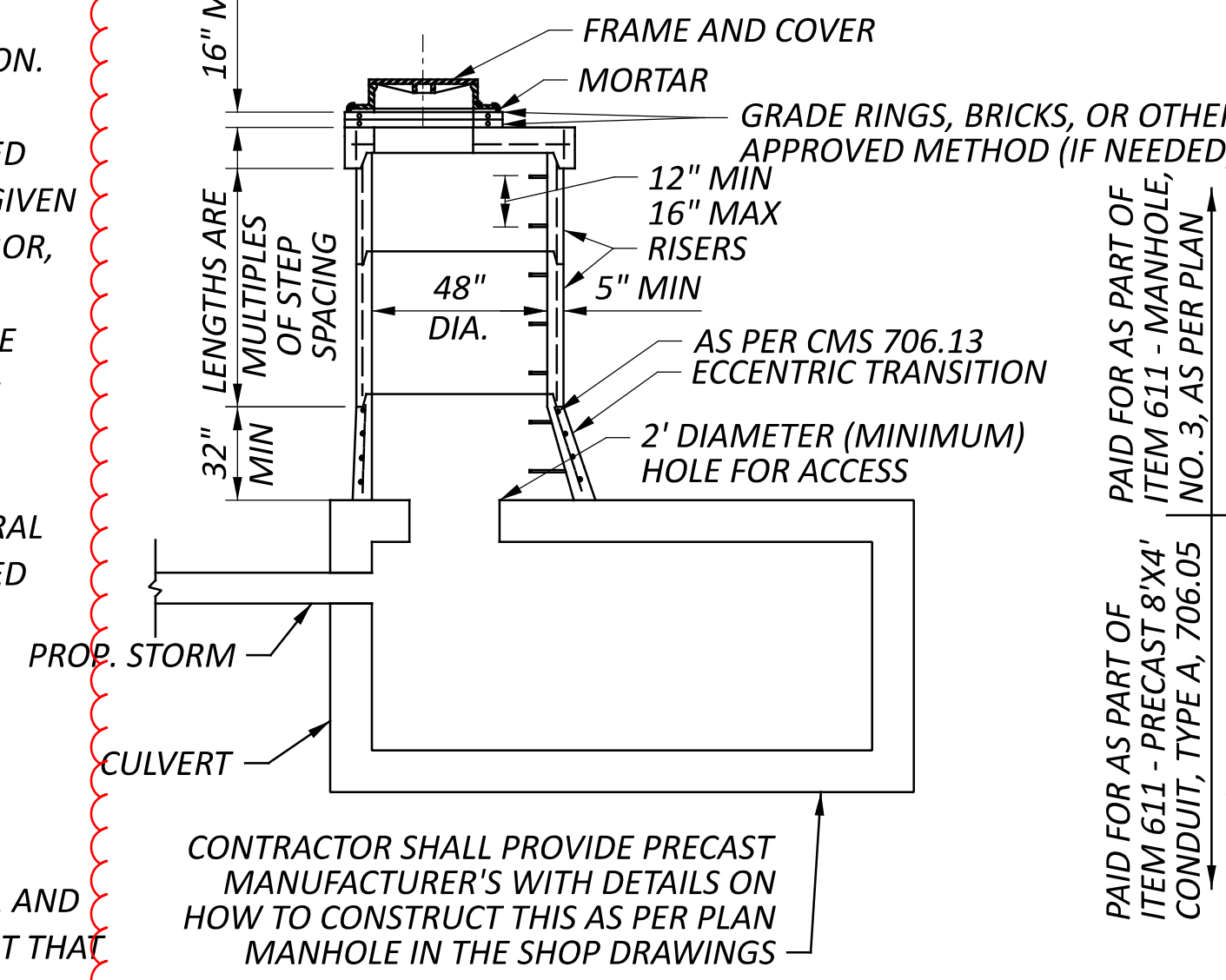
ITEM 611 - DRAINAGE STRUCTURE, MISC.: STORM DROP MANHOLE

ALL OTHER REQUIREMENTS OF THE STORM MANHOLE SHALL BE MET AS THE STANDARD SHOWS IN ODOT SCD MH-3.



ITEM 611 - MANHOLE, NO. 3, AS PER PLAN

MANHOLE SHALL BE CONSTRUCTED IN CONFORMANCE WITH ITEM 611 AND ACCORDING TO THE STANDARD CONSTRUCTION DRAWINGS MH-3, EXCEPT THAT THE AFOREMENTIONED STANDARD DRAWING SHALL BE MODIFIED AS SHOWN BELOW.



- ITEM 611 - 12" CONDUIT TYPE B, AS PER PLAN
- ITEM 611 - 18" CONDUIT TYPE B, AS PER PLAN
- ITEM 611 - 21" CONDUIT TYPE B, AS PER PLAN

WHERE STORM SEWER IS PLACED WITHIN MSE WALL BACKFILL LIMITS, USE REINFORCED CONCRETE PIPE PER C&MS 706.02 WITH PERMIUM JOINTS PER 706.11 AND WRAP THE JOINTS WITH GEOTEXTILE FABRIC TYPE A PER 712.09.

12" CONDUIT TYPE B, AS PER PLAN FOR TEMPORARY TRAFFIC CONTROL INCLUDES THE WORK TO BORE OR JACK THE CONDUIT UNDERNEATH ACTIVE TRAFFIC LANES AS SHOWN ON SHEET P.34.

ITEM 611 - CONDUIT, MISC.: 20" CONDUIT, TYPE C, 748.01

ALL REQUIREMENTS OF ODOT CMS 611 SHALL APPLY. THE PIPE SIZE SHALL BE 20" IN DIAMETER AND DUCTILE IRON PIPE (748.01).

ESTIMATED QUANTITIES

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER:

ITEM 611 - MANHOLE, NO. 3	1 EACH
ITEM 611 - 12" CONDUIT, TYPE B	30 FEET
ITEM 611 - 30" CONDUIT, TYPE B	30 FEET

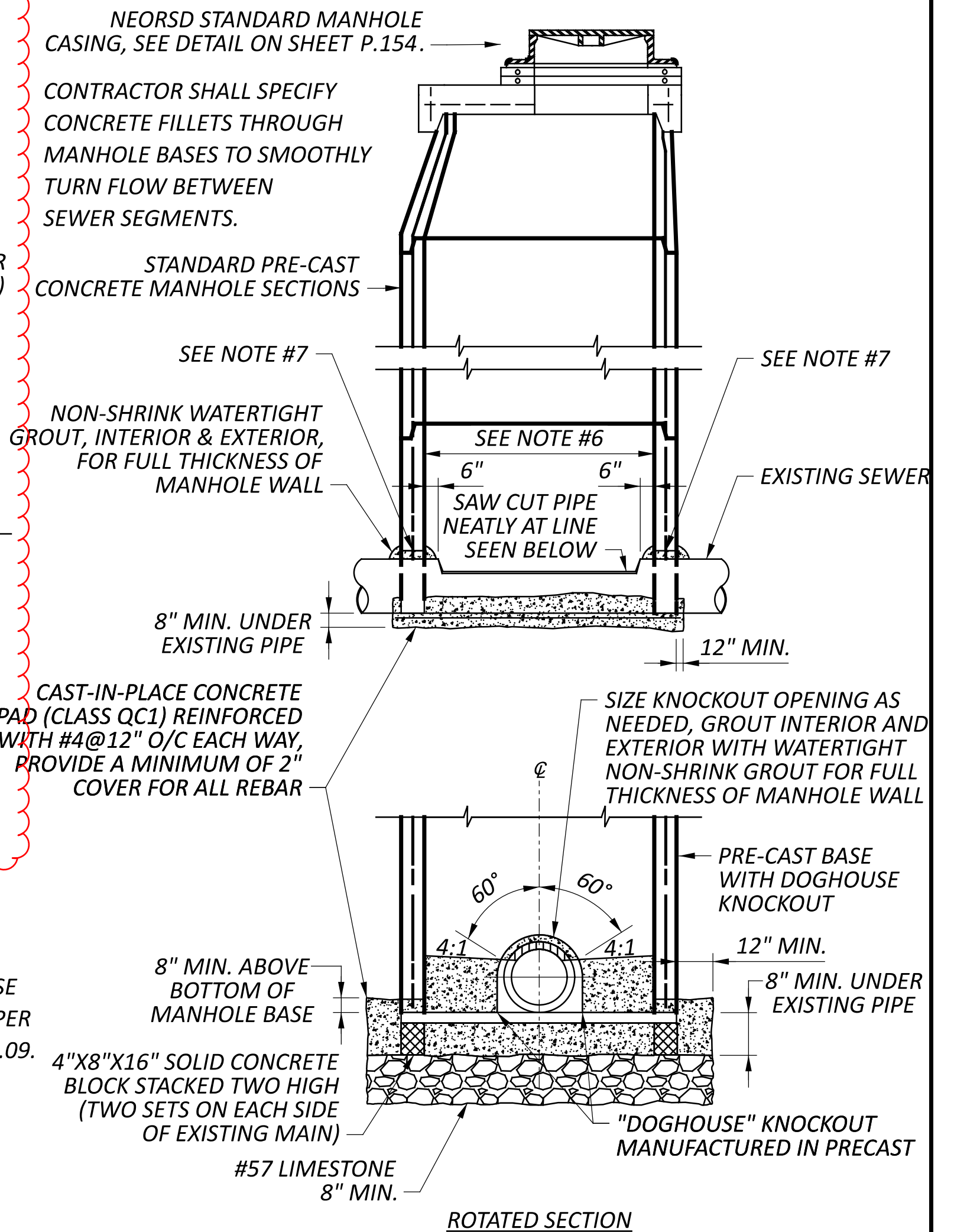
SANITARY

ITEM 611 - MANHOLE, NO. 3, AS PER PLAN

THIS ITEM IS PER ODOT SPEC 611 EXCEPT IT SHALL FOLLOW THE NORTHEAST OHIO REGIONAL SEWER DISTRICT DETAIL AS SHOWN ON SHEET P.154. PAYMENT FOR THIS WORK IS INCLUDED WITH THE "ITEM 611 - MANHOLE, NO. 3, AS PER PLAN."

ALL SANITARY MANHOLES SHALL MEET ASTM C-448. MANHOLE SEAL BETWEEN PRE CAST MANHOLE SECTIONS SHALL BE RESILIENT AND FLEXIBLE GASKET JOINTS MEETING ASTM C-443. MANHOLE TESTING AFTER INSTALLATION: ALL SANITARY MANHOLES SHALL BE VACUUM TESTED IN ACCORDANCE WITH ASTM C-1244. COST TO BE INCLUDED WITH "ITEM 611 - MANHOLE, NO. 3, SANITARY, AS PER PLAN."

ITEM 611 - DRAINAGE STRUCTURE, MISC.: DOGHOUSE MANHOLE



NOTES:

- SANITARY DOGHOUSE MANHOLES SHALL BE VACUUM TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE OEPA PRIOR TO CUTTING THE EXISTING SEWER. ALL SANITARY MANHOLES SHALL MEET ASTM C-448. MANHOLE SEAL BETWEEN PRE CAST MANHOLE SECTIONS SHALL BE RESILIENT AND FLEXIBLE GASKET JOINTS MEETING ASTM C-443. MANHOLE TESTING AFTER INSTALLATION: ALL SANITARY MANHOLES SHALL BE VACUUM TESTED IN ACCORDANCE WITH ASTM C-1244. COST TO BE INCLUDED WITH "ITEM 611 - DRAINAGE STRUCTURE, MISC.: DOGHOUSE MANHOLE." IF THE VACUUM TEST FAILS, THE CONTRACTOR SHALL DETERMINE WHETHER THE FAILURE WAS CAUSED BY ANY LEAK(S) IN THE EXISTING SEWER. THE CONTRACTOR WILL NOT BE RESPONSIBLE FOR FIXING ANY LEAK(S) IN THE EXISTING SEWER, BUT ANY OTHER LEAK(S) SHALL BE REPAIRED IN A MANNER SATISFACTORY TO THE ENGINEER AND RETESTED UNTIL LEAKAGE IS WITHIN THE ALLOWABLE LIMITS OR LIMITED SOLELY TO THE EXISTING SEWER.
- ALL NEW MANHOLES SHALL CONFORM TO THE REQUIREMENTS OF THE ODOT STANDARD CONSTRUCTION DRAWINGS.
- ALL NEW PIPING CONNECTED THROUGH THE MANHOLE WALLS SHALL BE SEALED WITH A GASKET EMBEDDED IN THE PRE-CAST, OR BY A NEOPRENE BOOT, OR BY ANOTHER METHOD FIRST APPROVED BY THE PROJECT ENGINEER.
- THE CENTERLINE OF THE MANHOLE SHALL BE LOCATED OVER THE CENTERLINE OF THE MAIN SEWER, WHENEVER POSSIBLE.
- A SIZE FOOT (6") DIAMETER MANHOLE BASE SHALL BE UTILIZED SINCE THE EXISTING SEWER IS A 42" DIAMETER PIPE AND THE PROPOSED IS A 48".
- THE EXISTING SEWER SHALL BE SUPPORTED FROM ABOVE THE SLINGS DURING ALL PHASES OF CONSTRUCTION. SLINGS ARE TO BE REMOVED ONLY AFTER CONCRETE BACKFILL WITHIN THE STRUCTURE HAS CURED.
- FOR SANITARY SEWERS, PRIOR TO THE PLACEMENT OF CONCRETE AND GROUT A HYDROTITE WATERSTOP SHALL BE INSTALLED BOTH AROUND THE EXISTING PIPE(S) AND ALONG THE PERIMETER OF THE KNOCKOUT OPENING(S) AT THE LOCATION(S) WHERE THE PIPE(S) WILL PENETRATE THE DOGHOUSE MANHOLE WALL. THE WATERSTOPS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

GENERAL NOTES

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RJJ

REVIEWER
WFS 08/05/24

PROJECT ID
104132

SHEET TOTAL
P.13 399

CUY-14-6-93

MODEL: General Notes - 3 PAPER SIZE: 34x22 (in.) DATE: 2/5/2025 TIME: 11:29:41 AM USER: Brittney.Crandall
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SANITARY (CONT.)

ITEM 611 - DRAINAGE STRUCTURE, MISC.: DOGHOUSE MANHOLE (CONT.)

NOTES CONT.:

8. DUE TO PROPOSED PIPE ORIENTATION AND ANGLES, THE PROPOSED INTERIOR INVERT SHALL SWEEP AND CURVE AT AN APPROXIMATE 120 DEGREE ANGLE. SEE PLAN VIEW. CONTRACTOR SHALL PREPARE AND SUBMIT A SHOP DRAWING SHOWING THE EXISTING DOWNSTREAM PIPE FILLING AND PLUGGING AND PIPE ORIENTATIONS FOR APPROVAL BY THE PROJECT ENGINEER. SUBMITTAL SHALL BE MADE 7 CALENDAR DAYS BEFORE MANHOLE CONSTRUCTION.

ITEM 611 - 48" CONDUIT, TYPE B, AS PER PLAN, 707.75
ITEM 611 - 48" CONDUIT, TYPE C, AS PER PLAN, 707.75

ALL REQUIREMENTS OF ODOT CMS 707.75 SHALL APPLY EXCEPT THAT THE MINIMUM PIPE STIFFNESS SHALL BE 36 PSI.

ITEM 202 - ABANDON MISC.: PLUG AND FILL 42" SANITARY CONDUIT

THIS ITEM CONSISTS OF THE CONSTRUCTION OF BULKHEADS IN AN EXISTING 42 INCH DIAMETER CONDUIT AND FILLING THE AREA SEALED OFF WITH ITEM 613, SAND OR OTHER MATERIAL APPROVED BY THE ENGINEER.

LOCATE THE BULKHEADS AT THE LIMITS OF THE AREA TO BE FILLED, AS INDICATED ON THE PLANS. THE BULKHEADS CONSIST OF BRICK OR CONCRETE MASONRY WITH A MINIMUM THICKNESS OF 12 INCHES.

PUMP THE FILL MATERIAL INTO PLACE OR BY OTHER MEANS APPROVED BY THE ENGINEER, SO THAT AFTER SETTLEMENT, AT LEAST 90 PERCENT OF THE CROSS-SECTIONAL AREA OF THE CONDUIT, FOR ITS ENTIRE LENGTH IS FILLED. THE LENGTH OF FILLED AND PLUGGED CONDUIT TO BE PAID FOR IS THE ACTUAL NUMBER OF FEET (MEASURED ALONG THE CENTERLINE OF EACH CONDUIT FROM OUTER FACE TO OUTER FACE OF BULKHEADS) FILLED AND PLUGGED AS DESCRIBED ABOVE.

IN LIEU OF FILLING AND PLUGGING THE EXISTING CONDUIT, THE PIPE MAY BE CRUSHED AND BACKFILLED PER 203, OR IT MAY BE REMOVED. THE LENGTH, MEASURED AS PROVIDED ABOVE, WILL BE PAID FOR AT THE CONTRACT PRICE PER FOOT FOR, ITEM ABANDON MISC.: PLUG AND FILL SANITARY CONDUIT.

EROSION CONTROL

SEEDING AND MULCHING

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

659, SOIL ANALYSIS TEST	2 EACH
659, TOPSOIL	1,430 CU. YD.
659, SEEDING AND MULCHING, CLASS 1	12,877 SQ. YD.
659, REPAIR SEEDING AND MULCHING	644 SQ. YD.
659, INTER-SEEDING	644 SQ. YD.
659, COMMERCIAL FERTILIZER	1.74 TON
659, LIME	2.67 ACRES
659, WATER	70 M. GAL.
659, MOWING	4 M. SQ. FT.

SEEDING AND MULCHING SHALL BE APPLIED 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 EASMENT. QUANTITY CALCULATIONS FOR SEEDING AND MULCHING ARE BASED ON THESE LIMITS.

WATER QUALITY

POST CONSTRUCTION STORM WATER TREATMENT

THIS PLAN UTILIZES STRUCTURAL BEST MANAGEMENT PRACTICES (BMP'S) FOR POST CONSTRUCTION STORM WATER TREATMENT

MANUFACTURED WATER QUALITY STRUCTURE

THIS PLAN UTILIZES MANUFACTURED WATER QUALITY STRUCTURES FOR WATER QUALITY TREATMENT. AREAS HAVE BEEN SHOWN IN THE PLANS FOR PLACEMENT OF AN OFF-LINE SYSTEM, PAYMENT FOR THESE DEVICES SHALL BE MADE AT THE CONTRACT UNIT PRICE FOR ITEM 895, MANUFACTURED WATER QUALITY STRUCTURE, TYPE 4.

ENVIRONMENTAL

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.

ENVIRONMENTAL COMMITMENTS

ENSURE IMPACTS TO THE FEDERALLY LISTED AND PROTECTED INDIANA BAT AND NORTHERN LONG-EARED BAT AND THE STATE LISTED AND PROTECTED LITTLE BROWN BAT AND TRICOLORED BAT ARE AVOIDED AND MINIMIZED. DO NOT REMOVE TREES FROM APRIL 1 THROUGH SEPTEMBER 30. PERFORM ALL NECESSARY TREE REMOVAL FROM OCTOBER 1 THROUGH MARCH 31. DEMARCAT CLEARING LIMITS IN THE FIELD TO AVOID ANY UNAUTHORIZED TREE CLEARING. FOR THE PURPOSES OF THIS NOTE, A TREE IS DEFINED AS A LIVE, DYING, OR DEAD WOODY PLANT, WITH A TRUNK THREE INCHES OR GREATER IN DIAMETER AT A HEIGHT OF 4.5 FEET ABOVE THE GROUND SURFACE, AND WITH A MINIMUM HEIGHT OF 13 FEET.

MAINTAIN SAFE PUBLIC ACCESS TO GARFIELD PARK RESERVATION AT ALL TIMES DURING CONSTRUCTION ACTIVITIES, WITH THE EXCEPTION OF THE AREA WITHIN THE PROPOSED CONSTRUCTION LIMITS, BETWEEN GARFIELD PARK BOULEVARD AND CHAINCRAFT ROAD.

INSTALL AND MAINTAIN TEMPORARY CONSTRUCTION FENCING ALONG THE KNOWN BOUNDARIES OF GARFIELD PARK RESERVATION WITHIN THE PROJECT CONSTRUCTION LIMITS PRIOR TO THE START OF CONSTRUCTION ACTIVITIES.

PRIOR TO THE START OF CONSTRUCTION ACTIVITIES, INSTALL SIGNAGE APPROVED BY THE ENGINEER TO ALERT GARFIELD PARK RESERVATION USERS OF CONSTRUCTION ACTIVITIES AND ACCESS RESTRICTIONS OR CLOSURES, AND TO DIRECT USERS TO SECONDARY ACCESS POINTS.

THE CONTRACTOR SHALL OBTAIN A CONSTRUCTION PERMIT FROM CLEVELAND METROPARKS PRIOR TO THE START OF CONSTRUCTION ACTIVITIES.

RESERVATOIN SHALL BE RESTORED TO A CONDITION WHICH IS ACCEPTED BY THE CLEVELAND METROPARKS.

PROVIDE THE CONSTRUCTION SCHEDULE TO THE DEPARTMENT, CLEVELAND METROPARKS, AND CITY OF CLEVELAND DEPARTMENT OF PUBLIC WORKS 30 DAYS PRIOR TO THE START OF CONSTRUCTION ACTIVITIES.

MAGNESIUM AND ALUMINUM DROSS

ENVIRONMENTAL STUDIES INDICATED THE PRESENCE OF MAGNESIUM AND ALUMINUM DROSS FROM THE FORMER GARFIELD METALS OPERATIONS. THIS MATERIAL IS LOCATED ON PARCELS 14 AND 17 OF THE PROJECT PLANS. THIS MATERIAL IS LOCATED UNDER THE CUY-14-6.93 BRIDGE AND IN A TRAILER ADJACENT TO THE BRIDGE. SEE RMR INVESTIGATION REPORTS IN THE REFERENCE FILES: CUY-104132-ENV-01-RMR, CUY-104132-ENV-02-ALUMINUM DROSS RMR REPORT, CUY-104132-ENV-03-PARCEL14 STOCKPILE AND CUY-104132-ENV-04-PARCEL 17 LEAD, ACM AND STOCKPILE

THE CONTRACTOR MUST DETERMINE APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT FOR THOSE WHO CONDUCT WORK WITH THE MAGNESIUM AND ALUMINUM DROSS. SUBMIT THE SITE-SPECIFIC HEALTH AND SAFETY PLAN TO THE ENGINEER PRIOR TO WORK.

THE MAGNESIUM AND ALUMINUM DROSS MAY BE EITHER RECYCLED OR DISPOSED. IF THE CONTRACTOR RECYCLES THIS MATERIAL. IT MAY BE RECYCLED AT ARDLEIGH MINERALS, INC., SUITE 380, 24100 CHAGRIN BOULEVARD, BEACHWOOD, OHIO 44122 OR CERTIFIED RECYCLING FACILITY. THE CONTRACTOR WILL PROVIDE COMPLETED LOG FORMS, CERTIFICATE OF RECYCLING AND MANIFESTS FOR TRANSPORT AND ACCEPTANCE BY THE RECYCLING FACILITY TO THE ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR ANY ADDITIONAL TESTING THAT THE RECYCLING FACILITY MAY REQUIRE FOR ACCEPTANCE. THE CONTRACTOR SHALL OBTAIN ALL THE NECESSARY PERMITS NEEDED TO TRANSPORT AND RECYCLE THE MAGNESIUM AND ALUMINUM DROSS IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.

IF THE CONTRACTOR DISPOSES OF THE MAGNESIUM AND ALUMINUM DROSS, IT IS TO BE DISPOSED OF AS A SOLID WASTE. MAGNESIUM AND ALUMINUM DROSS MUST BE TRANSPORTED BY DIRECT HAUL. NO MOVING OR STOCKPILING IS PERMITTED ON SITE. THE CONTRACTOR WILL DIRECT LOAD THE EXCAVATED SOLID WASTE INTO TRUCKS FOR TRANSPORT AND DISPOSAL AT A LICENSED LAND FILL. THE CONTRACTOR WILL PROVIDE COMPLETED LOG FORMS AND MANIFESTS FOR TRANSPORT AND DISPOSAL TO THE ENGINEER FOR SIGNATURE. THE CONTRACTOR IS RESPONSIBLE FOR ANY ADDITIONAL TESTING THAT THE LANDFILL MAY REQUIRE FOR DISPOSAL. THE CONTRACTOR SHALL OBTAIN ALL THE NECESSARY PERMITS NEEDED TO TRANSPORT AND DISPOSE OF THE MAGNESIUM AND ALUMINUM DROSS IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS. THE CONTRACTOR IS RESPONSIBLE FOR ANY ADDITIONAL TESTING REQUIRED FOR DISPOSAL.

THE CONTRACTOR SHALL FURNISH ALL THE LABOR, EQUIPMENT AND MATERIALS NECESSARY TO PROPERLY MANAGE, TEST FOR DISPOSAL OR RECYCLING, TRANSPORT AND DISPOSE OF OR RECYCLING OF MAGNESIUM AND ALUMINUM DROSS, INCLUDING ANY REQUIRED PERMITS OR FEES WITHIN THE IDENTIFIED LIMITS. PAYMENT FOR THIS WORK SHALL BE MADE AT THE CONTRACT PRICE BID. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY.

690E7002	WORK INVOLVING RECYCLED MATERIAL	400 TON
690E65010	WORK INVOLVING SOLID WASTE	400 TON
690E70000	LUMP SUM - SITE SPECIFIC HEALTH AND SAFETY PLAN	

LANDSCAPING

ITEM 661 - DECIDUOUS TREE, 2" CALIPER

THIS ITEM INCLUDES ALL SPECIFICATIONS PER C&MS SECTION 661. LOCATION OF PLANTING IS TO BE DIRECTED BY THE CLEVELAND METROPARKS.

ITEM 661 - DECIDUOUS TREE, 2" CALIPER	10 EACH
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DESIGN AGENCY



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DESIGNER

RJJ

REVIEWER

WFS 08/05/24

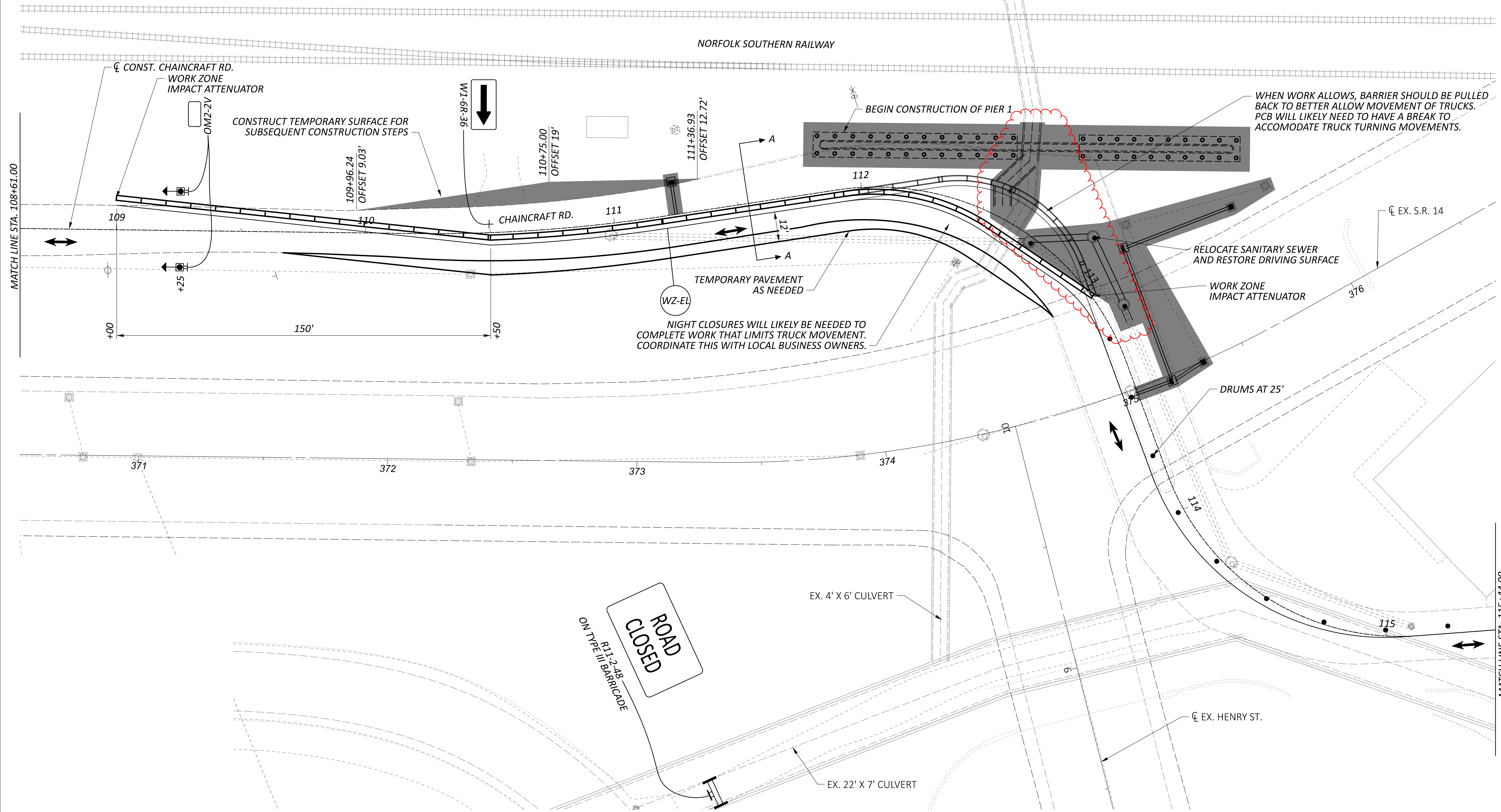
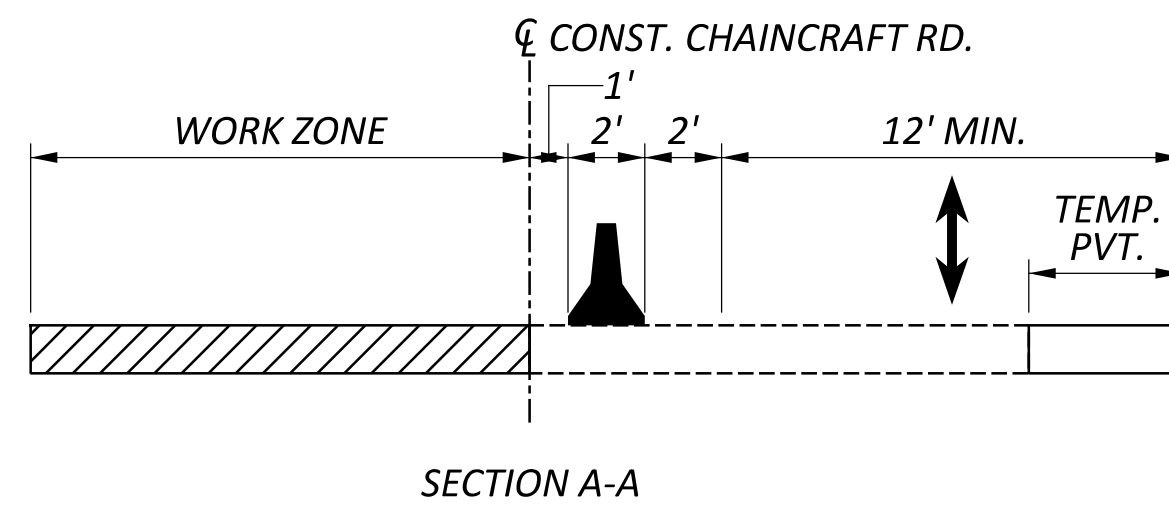
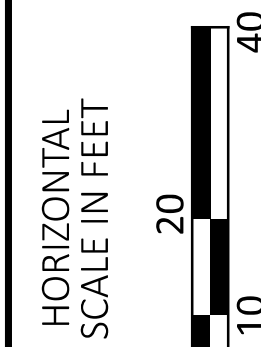
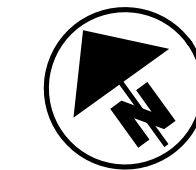
PROJECT ID

104132

SHEET TOTAL

P.14 | 399

NOTE:
FOR LEGEND, SEE SHEET P.27



NIGHT CLOSURES WILL LIKELY BE NEEDED TO COMPLETE WORK THAT LIMITS TRUCK MOVEMENT. COORDINATE THIS WITH LOCAL BUSINESS OWNERS.

WHEN WORK ALLOWS, BARRIER SHOULD BE PULLED BACK TO BETTER ALLOW MOVEMENT OF TRUCKS. PCB WILL LIKELY NEED TO HAVE A BREAK TO ACCOMMODATE TRUCK TURNING MOVEMENTS.

MAINTENANCE OF TRAFFIC - PHASE 1, STEP 1
CHAINCRAFT ROAD (STA. 108+61.00 TO STA. 115+44.00)

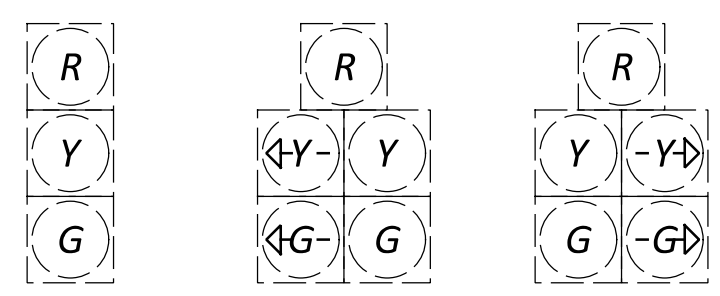
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SAW
REVIEWER
WFS 08/05/24
PROJECT ID
104132
SHEET TOTAL
P.28 399

MODEL: CLP_S014 - Plan 3 PAPER SIZE: 34x22 (in.) DATE: 2/5/2025 TIME: 9:33:27 AM USER: robert.jankovsky
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- LEGEND**
- EXISTING TRAFFIC SIGNAL, 3 UNIT HEAD
 - RELOCATED TRAFFIC SIGNAL, 3 UNIT HEAD
 - EXISTING TRAFFIC SIGNAL, 5 UNIT HEAD
 - RELOCATED TRAFFIC SIGNAL, 5 UNIT HEAD
 - EXISTING PEDESTRIAN SIGNAL HEAD
 - EXISTING SIGNAL STRAIN POLE
 - TEMPORARY WOOD POLE
 - EXISTING PEDESTAL SUPPORT
 - EXISTING POLE MOUNTED CONTROLLER

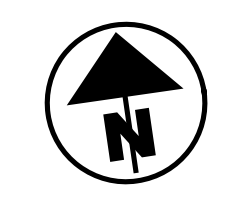
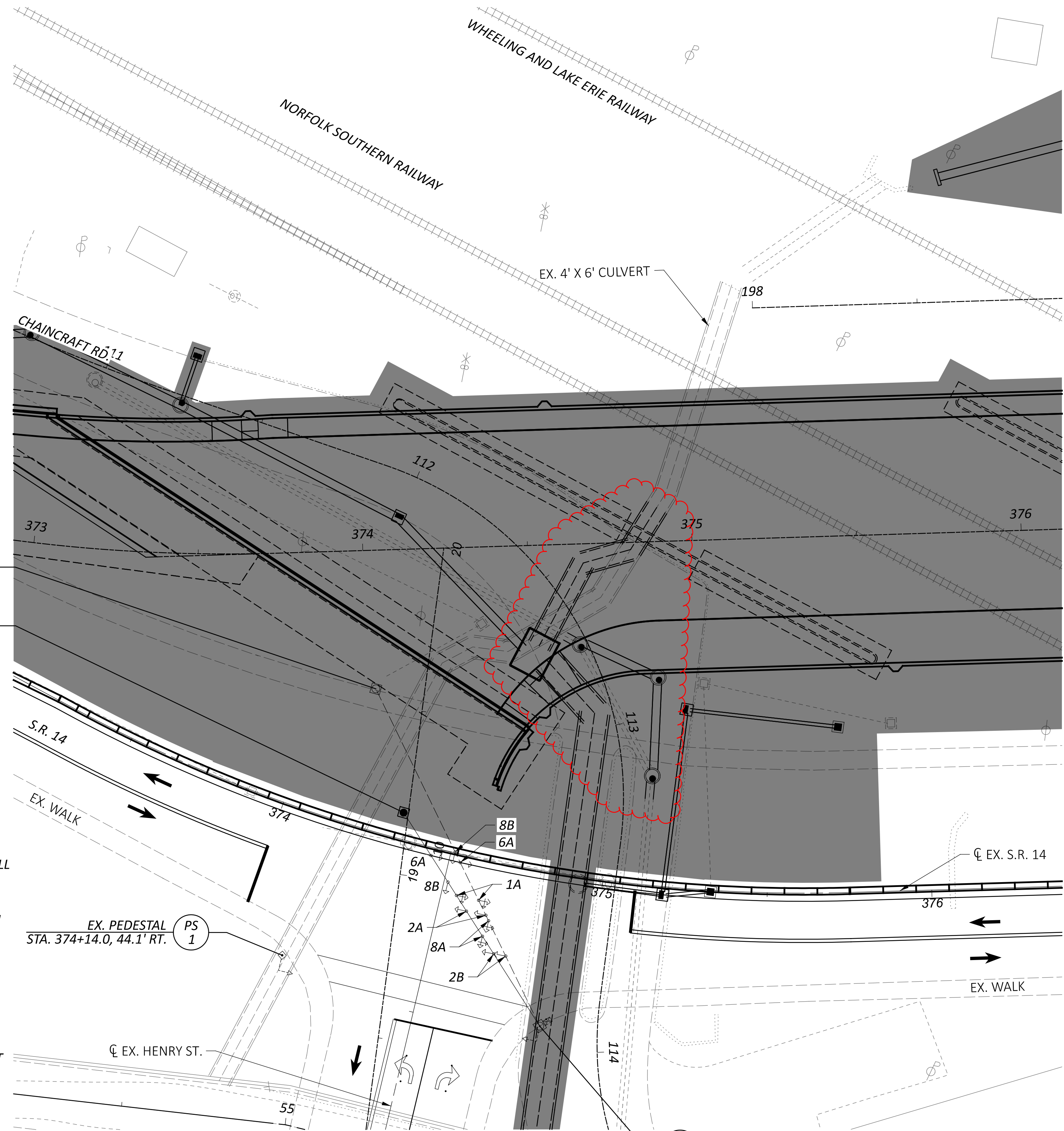
EXISTING SIGNAL HEADS



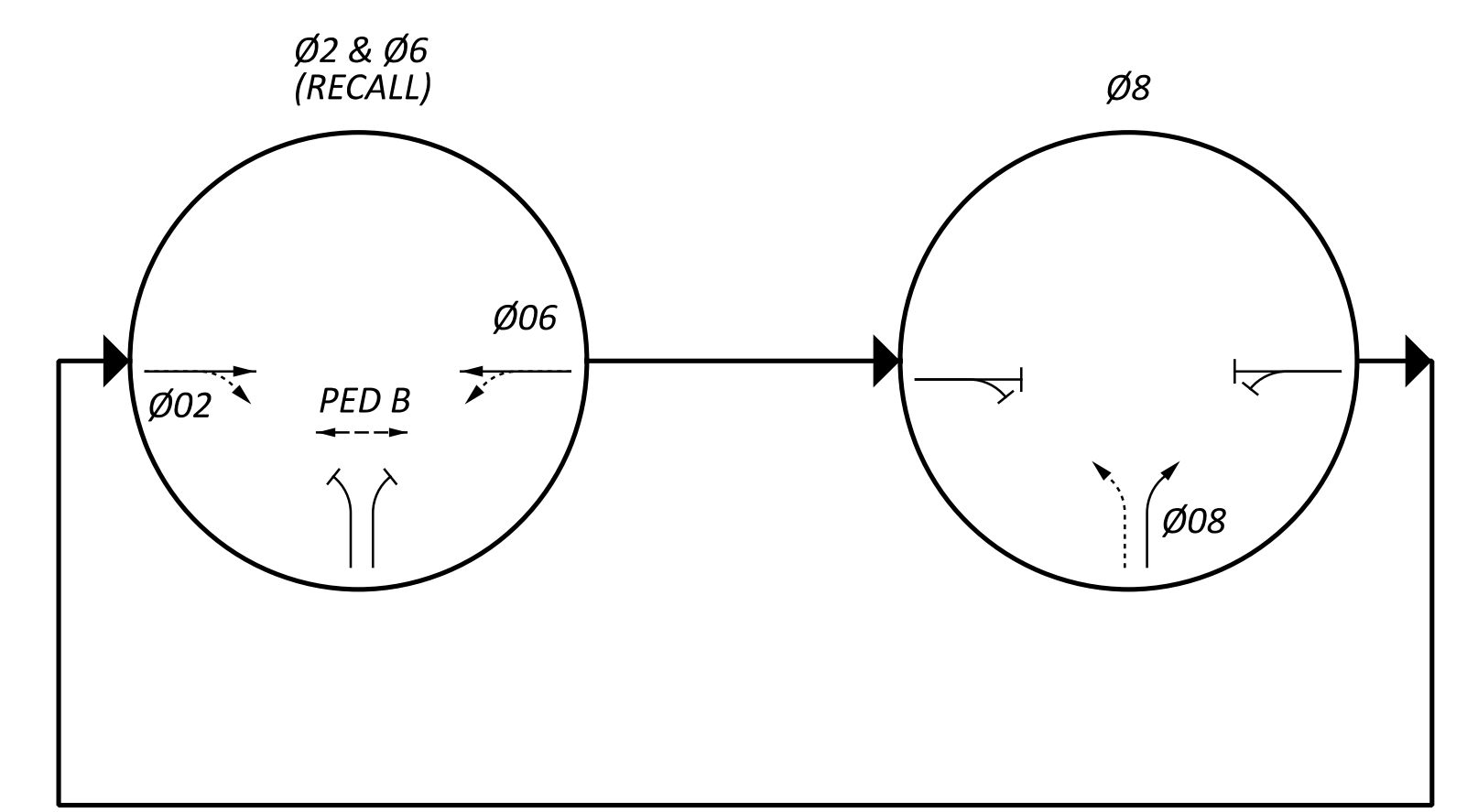
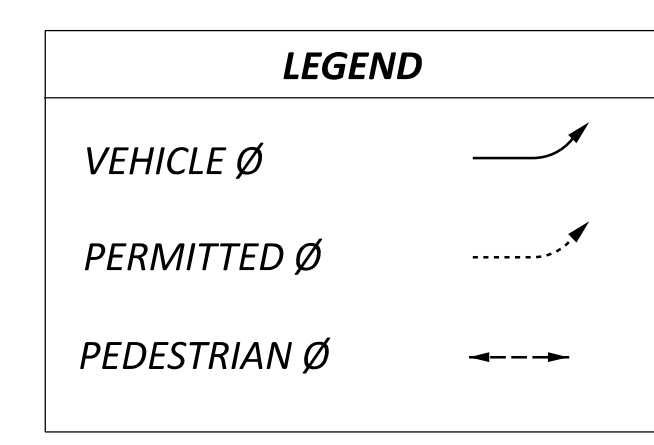
- EX. SIGNAL STRAIN POLE (TBR AFTER TEMP POLE HAS BEEN ERECTED)
STA. 374+16.1, 41.6' LT. SP 1
- TEMP. WOOD POLE, 70'
STA. 374+36.0, 8.0' LT. SP 2

NOTES:

1. INSTALL TWO ANCHORS ON THE 70-FOOT WOOD POLE (EMBEDDED IN GROUND 10 FEET) AT ATTACHMENT HEIGHT OF THE MESSENGER WIRE.
2. REUSE EXISTING MESSENGER WIRE WITH A 3% MINIMUM SAG. SIGNAL HEAD 2A SHALL BE MOUNTED NOT MORE THAN 17.5 FEET FROM THE BRIDGE DECK TO MEET THE OMTUCD FIGURE 4D-5.
3. REMOVE EXISTING SIGNAL CABLE AND REINSTALL IN MOVED HEAD, ALL EXCESS WIRE SHOULD BE COILED NEXT TO HEAD OR REMOVED.
4. CONTRACTOR WILL NEED TO SUPPLY NEW SPAN HANGERS WHEN MOVING EXISTING HEAD AND SHOULD BE INCIDENTAL TO THE MOVEMENT OF THE HEAD.
5. USE EXISTING POLE MOUNTED CONTROLLER/SERVICE ON THE SOUTHEAST CORNER.
6. GARFIELD HEIGHTS SERVICE DEPARTMENT AND SIGNAL SERVICES SHALL BE NOTIFIED WHEN THE TEMPORARY SIGNAL POLE IS INSTALLED TO ADJUST THE CONTROLLER/SIGNAL TIMING AS NEEDED.
7. INSTALLATION OF THE 70-FOOT WOOD POLE MUST TAKE PLACE AFTER THE PARTIAL REMOVAL OF THE EXISTING BRIDGE DECK.
8. ALL LABOR, MATERIALS, AND INCIDENTALS REQUIRED TO CONFIGURE OR RECONFIGURE, MAINTAIN, AND OPERATE THE TEMPORARY SIGNAL SHOWN HEREIN, INCLUDING THE INSTALLATION OF THE 70' WOODEN POLE AND THE ESTABLISHMENT OF SIGNAL TIMING, SHALL BE PAID FOR UNDER THE LUMP SUM UNIT PRICE BID FOR ITEM 614 - MAINTAINING TRAFFIC, MISC.: TEMPORARY SIGNALIZATION.

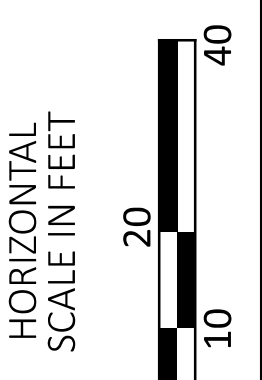
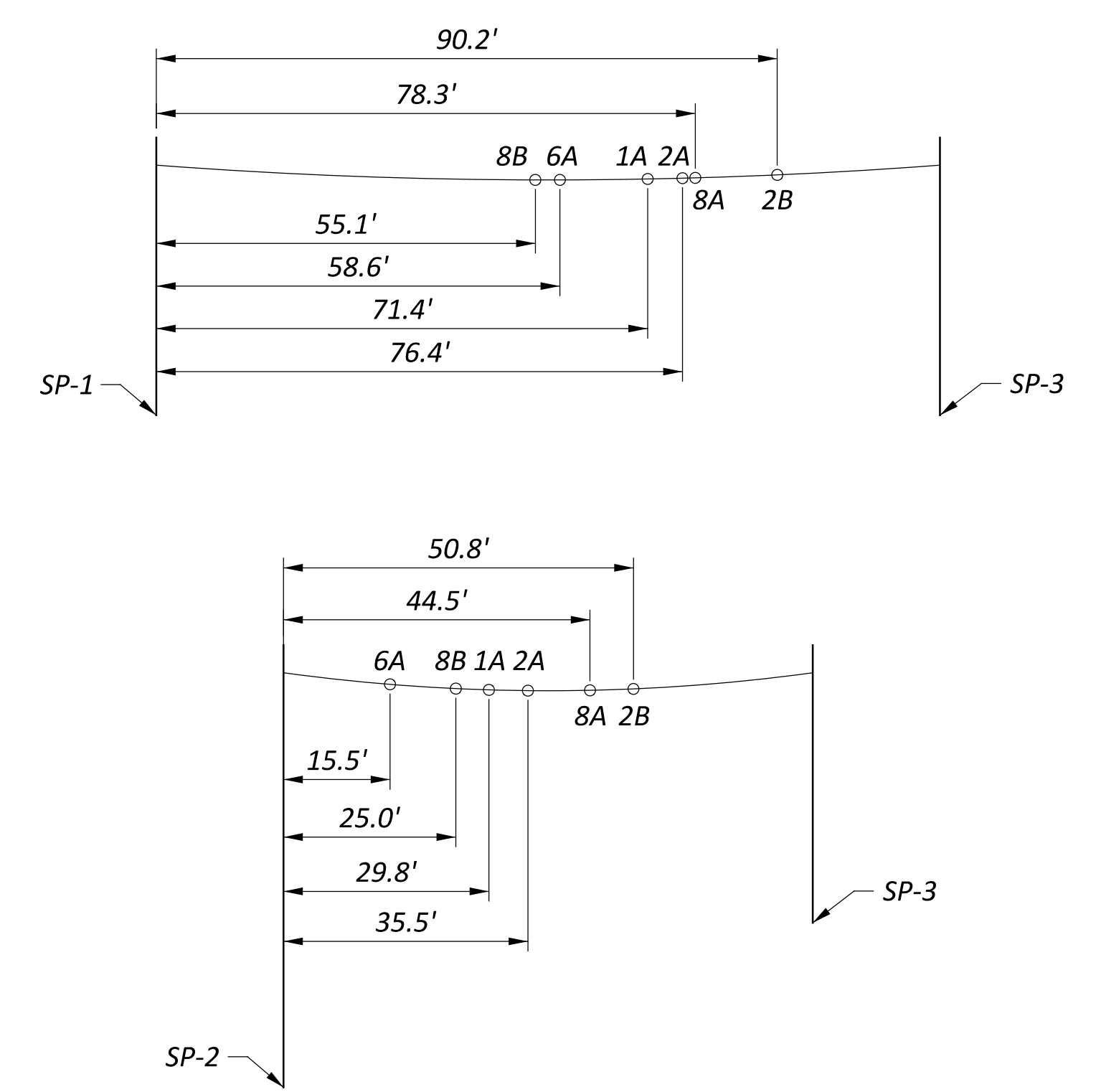


PHASING DIAGRAM



SIGNAL TIMING TO BE ADJUSTED IN THE FIELD.

APPROXIMATE DISTANCE OF SIGNAL HEADS



**MAINTENANCE OF TRAFFIC - PHASE 1, STEPS 3-5
 S.R. 14 & HENRY STREET - TEMPORARY SIGNAL PLAN**

DESIGN AGENCY

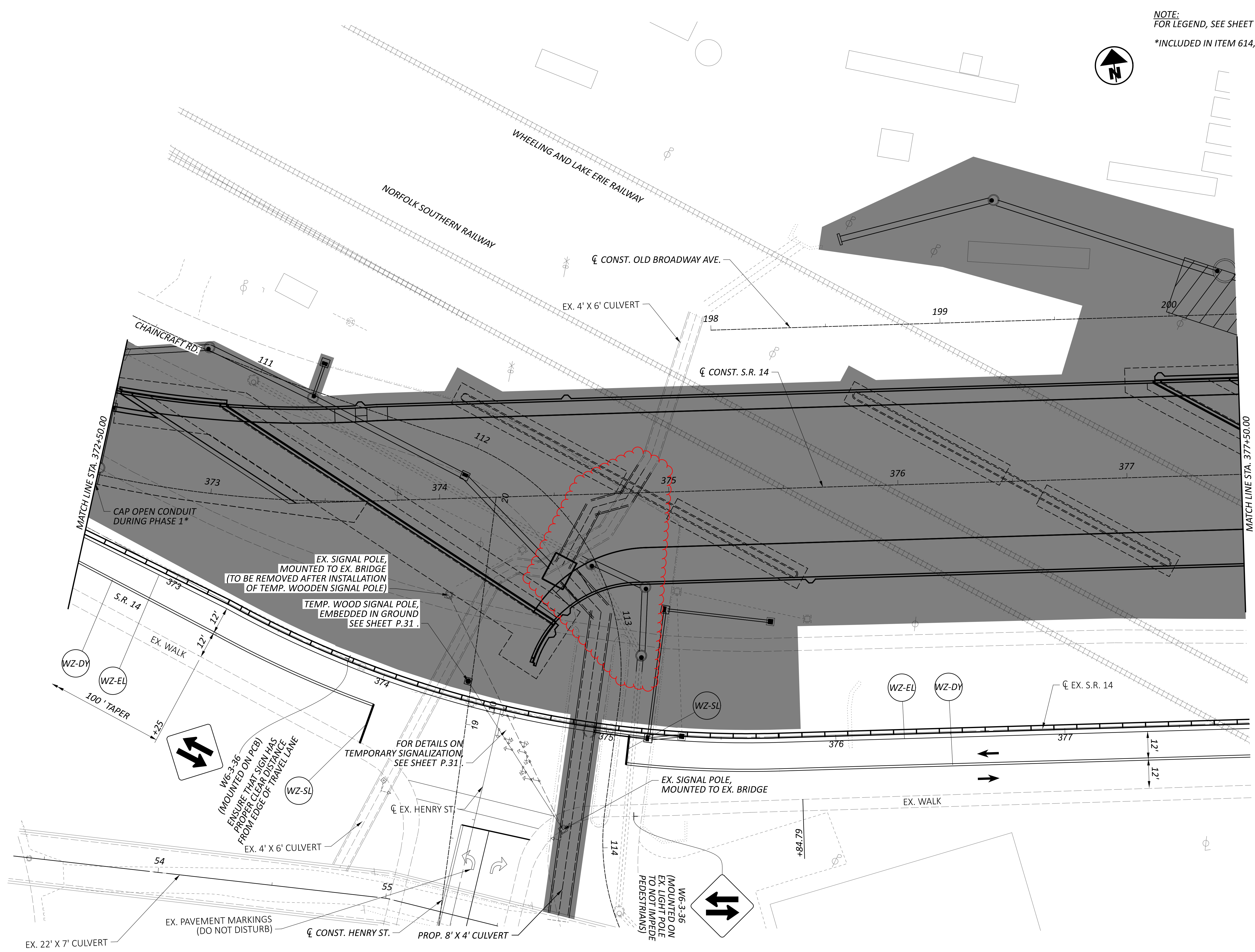
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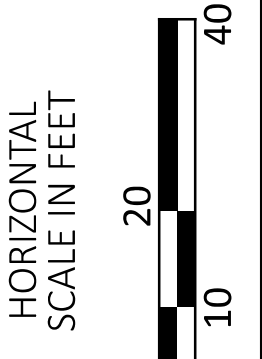
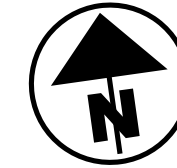
REVIEWER
 WFS 08/05/24

PROJECT ID
 104132

SHEET TOTAL
 P.31 399



NOTE:
 FOR LEGEND, SEE SHEET P.27
 *INCLUDED IN ITEM 614, MAINTAINING TRAFFIC



MAINTENANCE OF TRAFFIC - PHASE 1, STEPS 3 & 4
 S.R. 14 (STA. 372+50.00 TO STA. 377+50.00)

DESIGN AGENCY

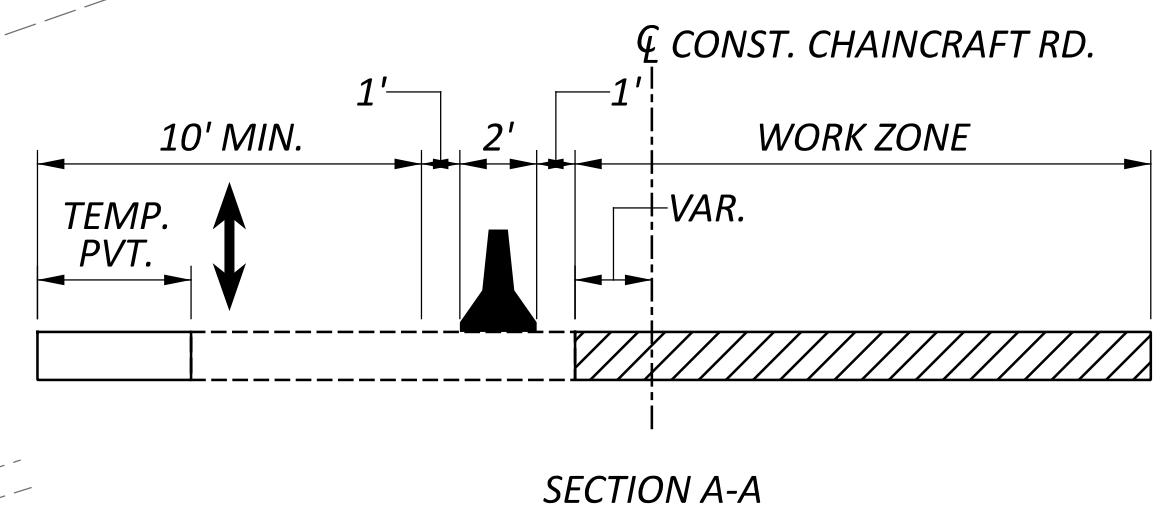
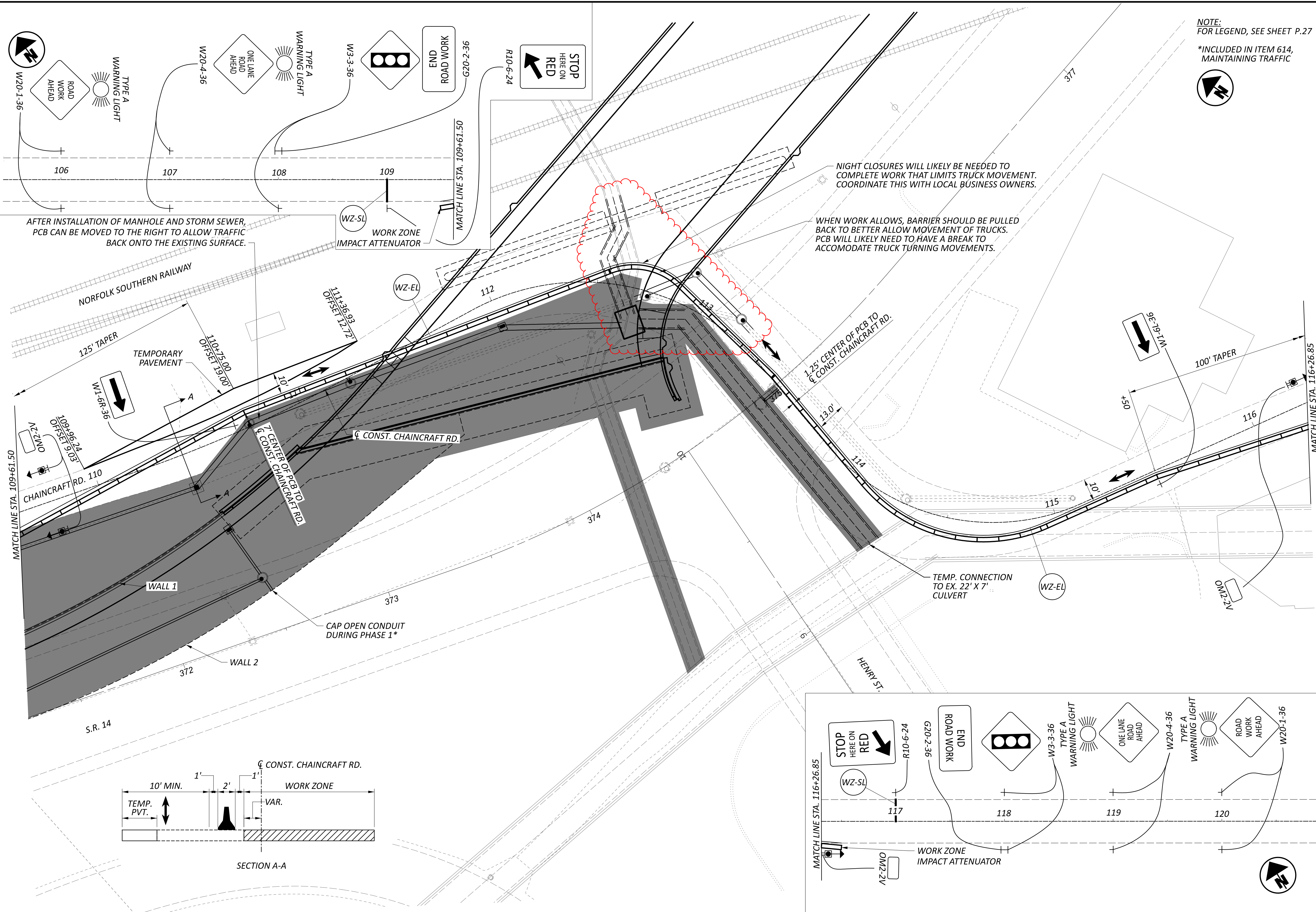
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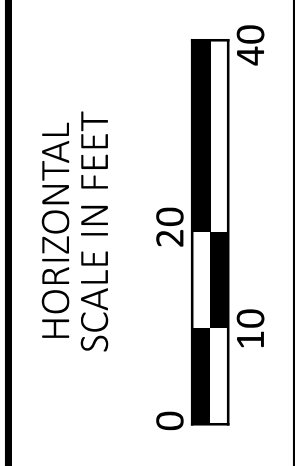
PROJECT ID
 104132

SHEET TOTAL
 P.35 399



NOTE:
FOR LEGEND, SEE SHEET P.27

*INCLUDED IN ITEM 614,
MAINTAINING TRAFFIC



MAINTENANCE OF TRAFFIC - PHASE 1, STEPS 2 & 3
CHAINCRAFT ROAD

DESIGN AGENCY

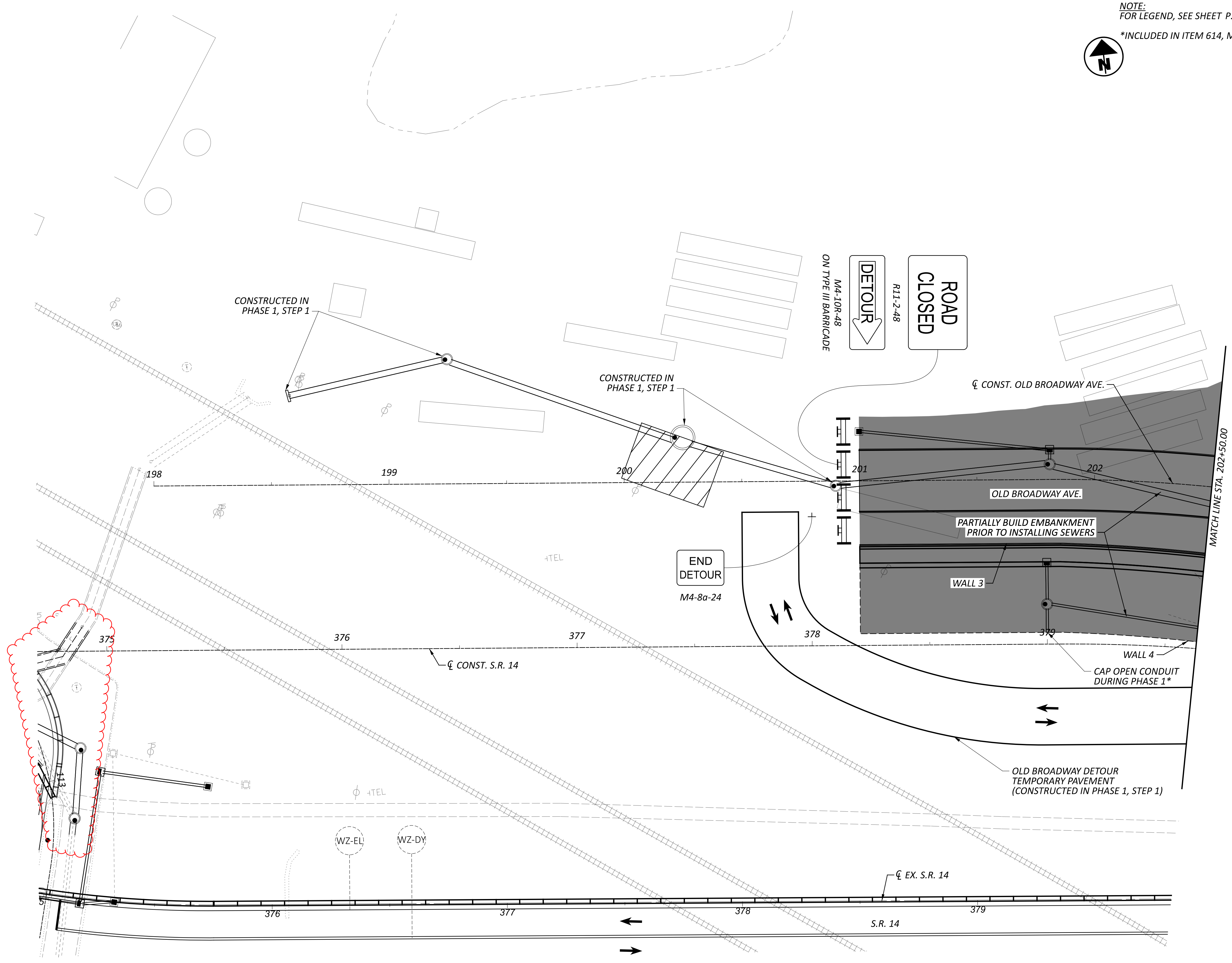
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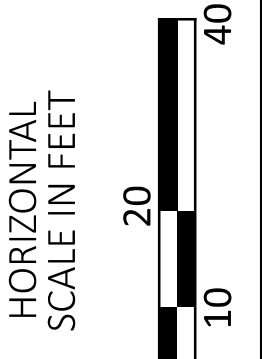
REVIEWER
WFS 08/05/24

PROJECT ID
104132

SHEET TOTAL
P.39 399



NOTE:
FOR LEGEND, SEE SHEET P.27
*INCLUDED IN ITEM 614, MAINTAINING TRAFFIC



MAINTENANCE OF TRAFFIC - PHASE 1, STEP 2
OLD BROADWAY AVENUE (BEGIN TO STA. 202+50.00)

DESIGN AGENCY

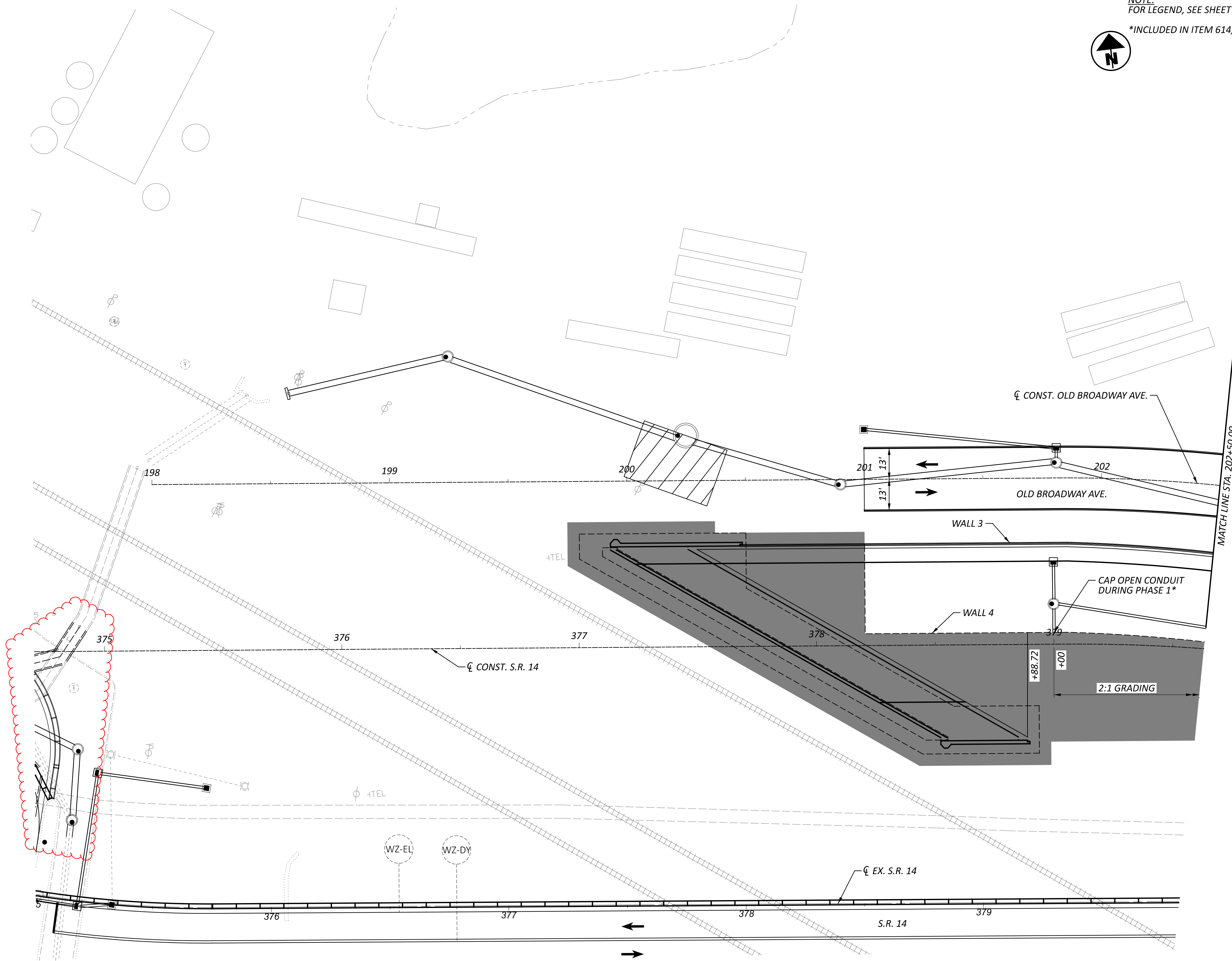
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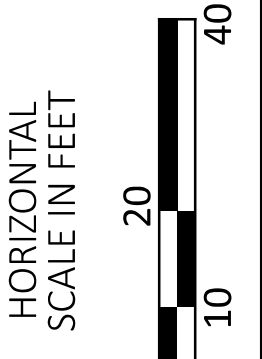
REVIEWER
WFS 08/05/24

PROJECT ID
104132

SHEET TOTAL
P.40 399



NOTE:
FOR LEGEND, SEE SHEET P.27
*INCLUDED IN ITEM 614, MAINTAINING TRAFFIC



MAINTENANCE OF TRAFFIC - PHASE 1, STEPS 3-5
OLD BROADWAY AVENUE (BEGIN TO STA. 202+50.00)

DESIGN AGENCY

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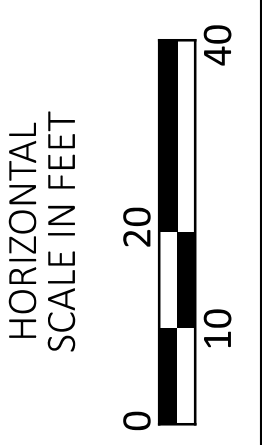
DESIGNER
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REVIEWER
WFS 08/05/24

PROJECT ID
104132

SHEET	TOTAL
P.42	399

NOTE:
FOR LEGEND, SEE SHEET P.27



MAINTENANCE OF TRAFFIC - PHASE 2, ALL STEPS
S.R. 14 (STA. 372+50.00 TO STA. 377+50.00)

DESIGN AGENCY

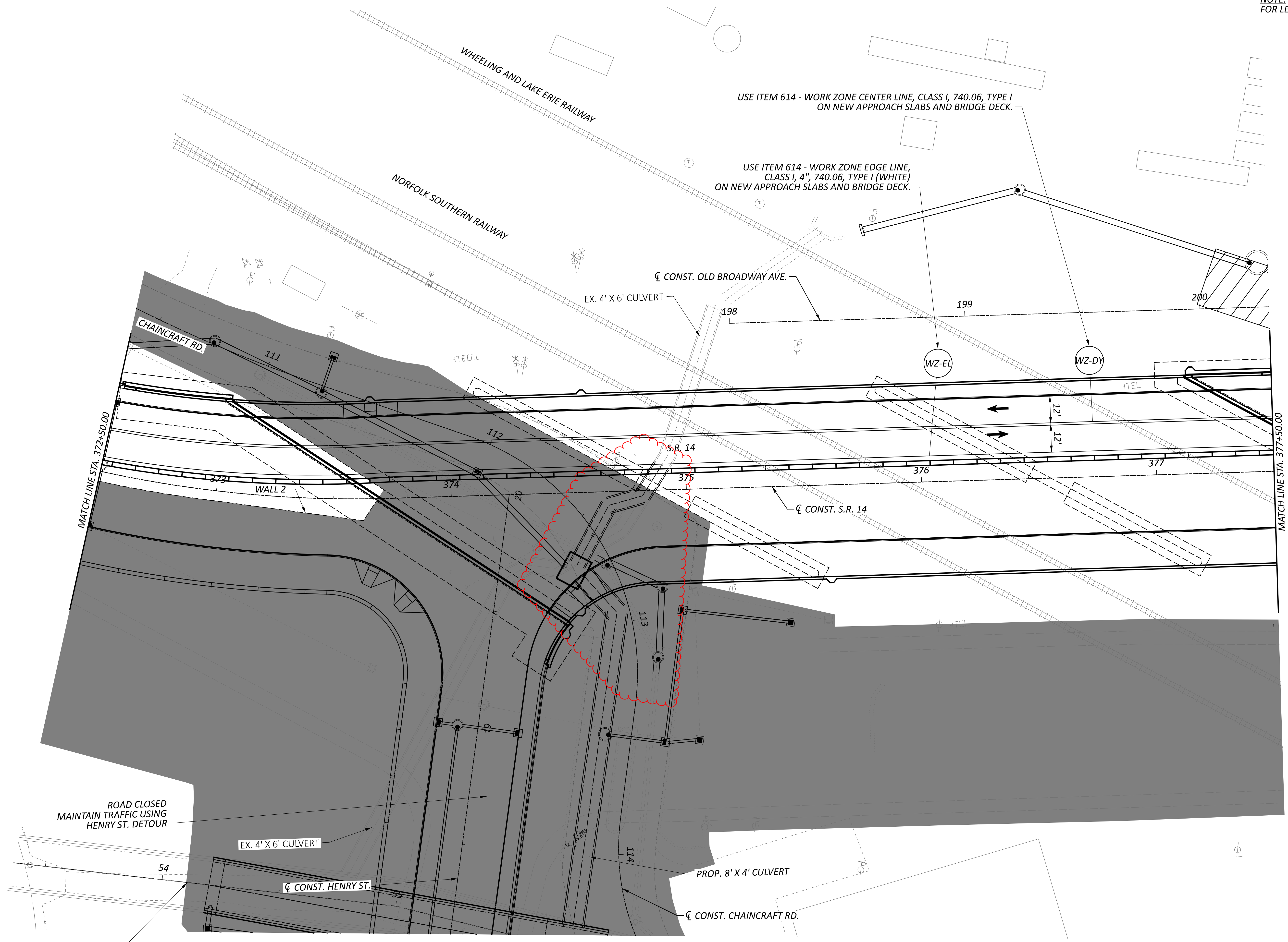
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PROJECT ID
104132

SHEET TOTAL
P.47 399



ROAD CLOSED
MAINTAIN TRAFFIC USING
HENRY ST. DETOUR

EX. 4' X 6' CULVERT

☉ CONST. HENRY ST.

PROP. 8' X 4' CULVERT

☉ CONST. CHAINCRAFT RD.

USE ITEM 614 - WORK ZONE CENTER LINE, CLASS I, 740.06, TYPE I
ON NEW APPROACH SLABS AND BRIDGE DECK.

USE ITEM 614 - WORK ZONE EDGE LINE,
CLASS I, 4", 740.06, TYPE I (WHITE)
ON NEW APPROACH SLABS AND BRIDGE DECK.

☉ CONST. OLD BROADWAY AVE.

EX. 4' X 6' CULVERT

S.R. 14

☉ CONST. S.R. 14

MATCH LINE STA. 372+50.00

MATCH LINE STA. 377+50.00

CHAINCRAFT RD.

WHEELING AND LAKE ERIE RAILWAY

NORFOLK SOUTHERN RAILWAY

111

112

113

114

373

374

375

376

377

198

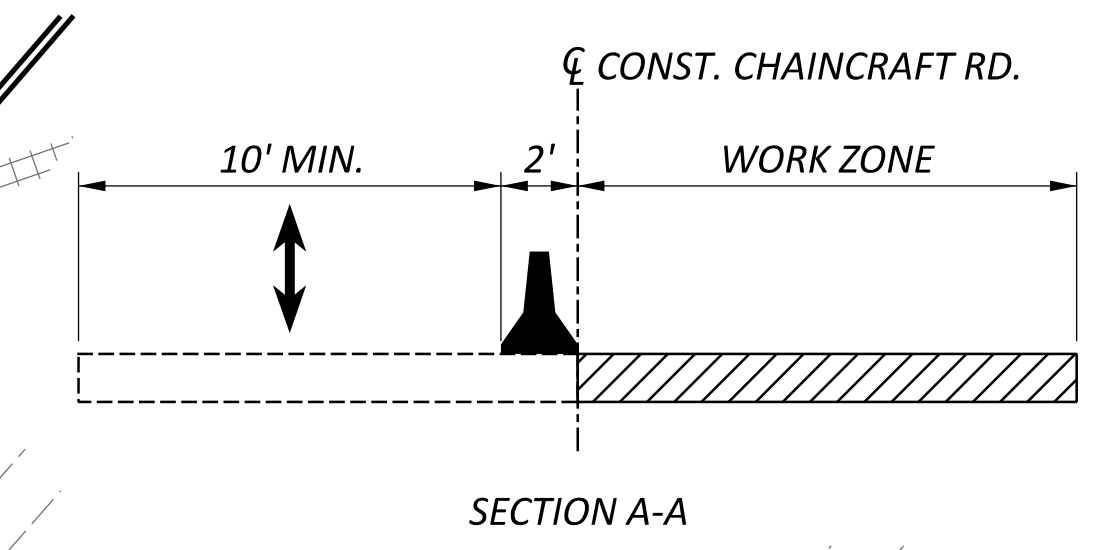
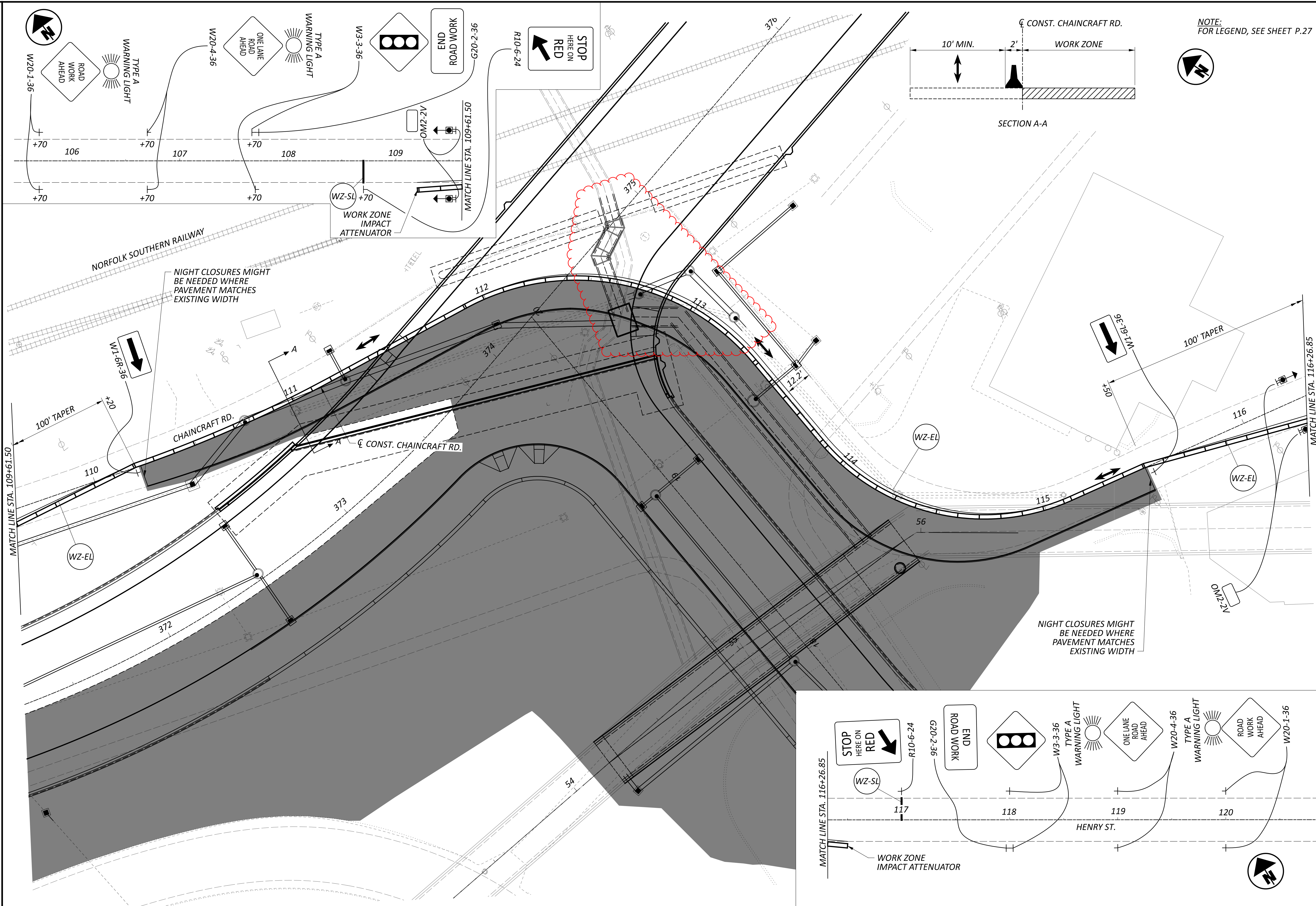
199

200

WALL 2

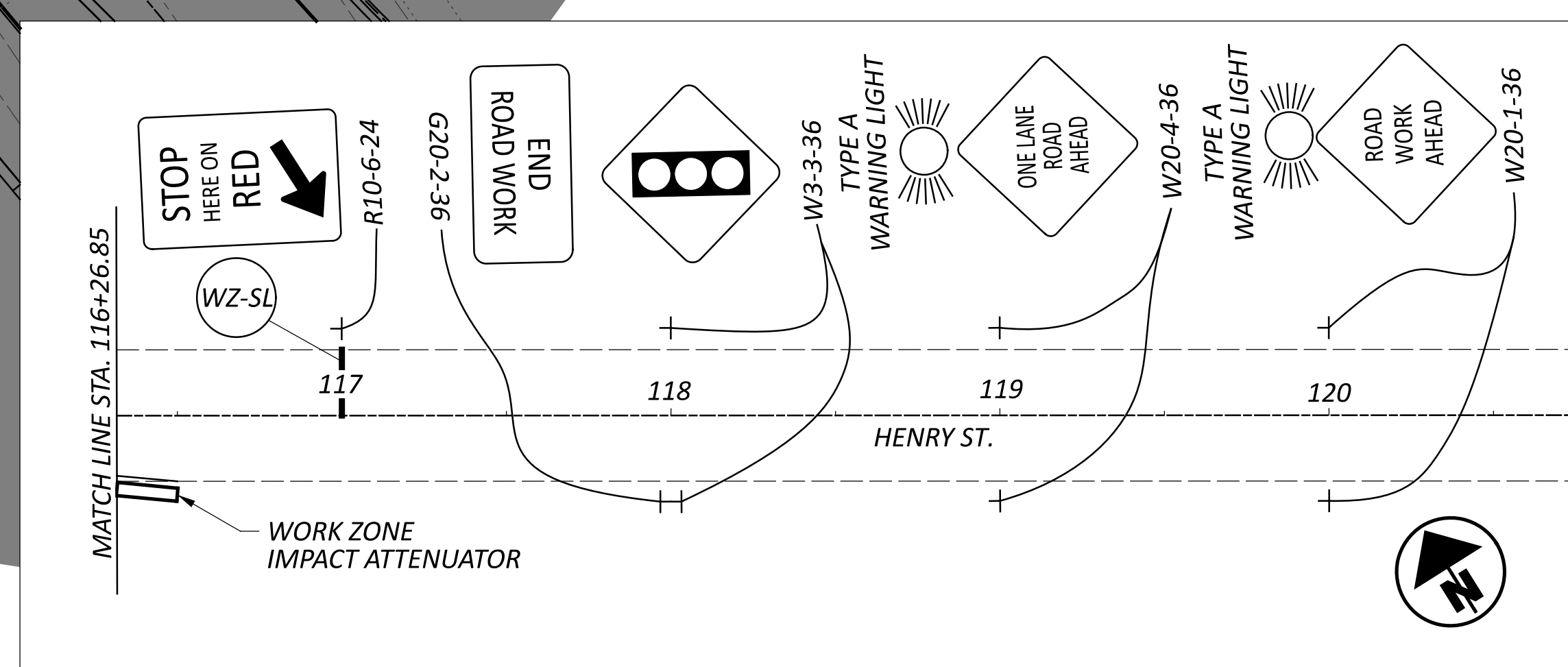
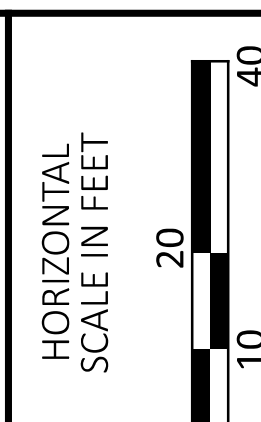
54

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NOTE:
FOR LEGEND, SEE SHEET P.27

MAINTENANCE OF TRAFFIC - PHASE 2, ALL STEPS
CHAINCRAFT ROAD



DESIGN AGENCY

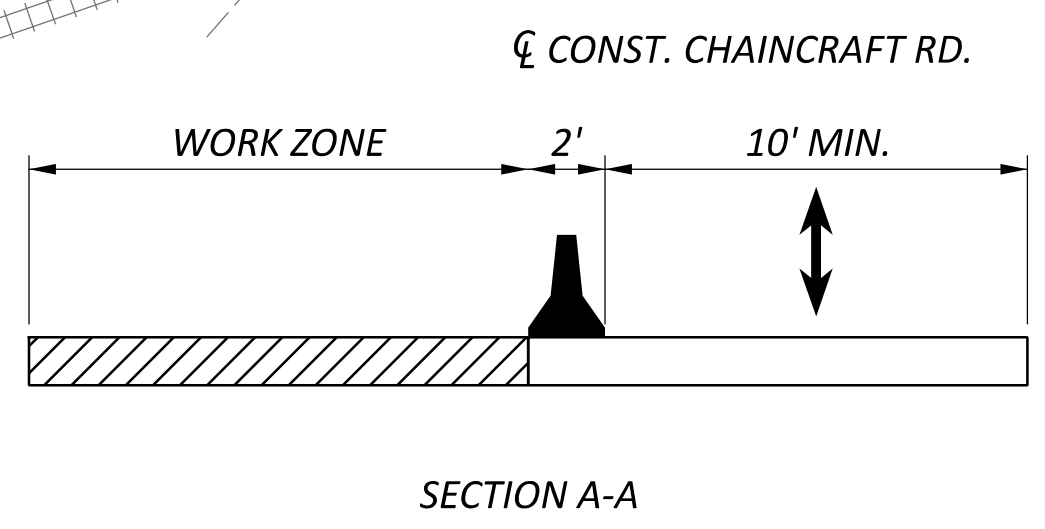
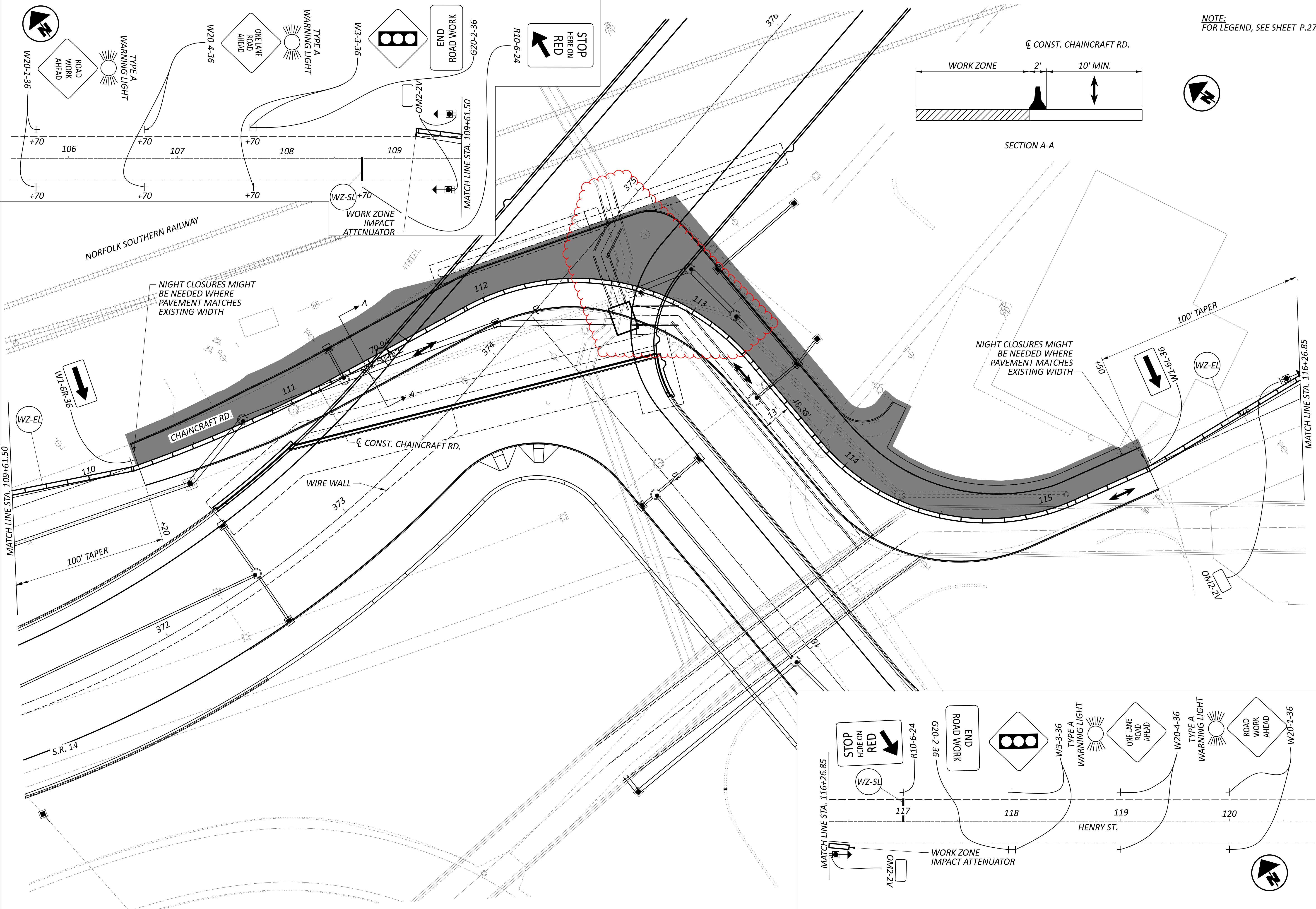
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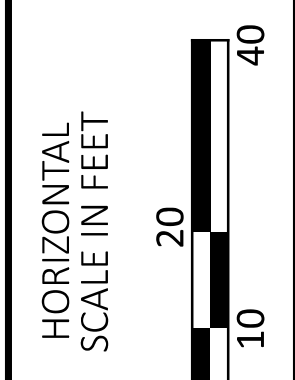
REVIEWER
WFS 08/05/24

PROJECT ID
104132

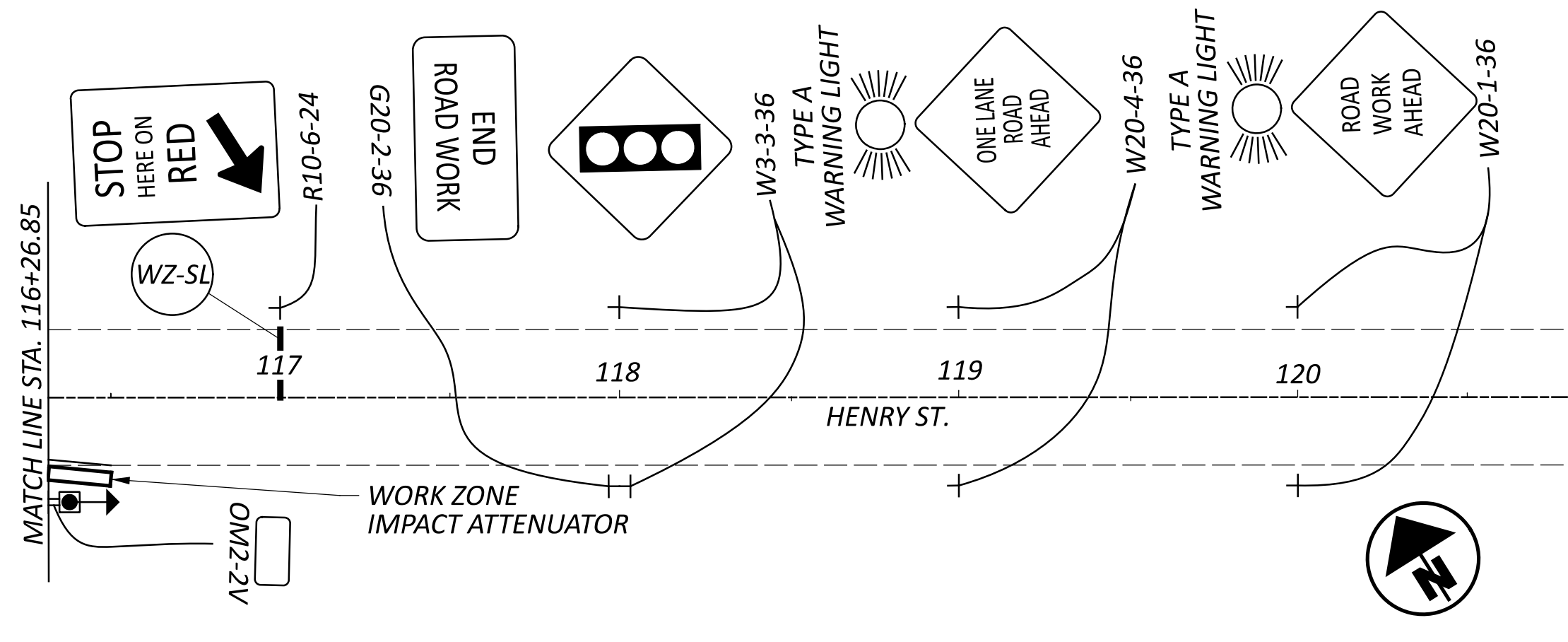
SHEET TOTAL
P.51 399



NOTE:
FOR LEGEND, SEE SHEET P.27



MAINTENANCE OF TRAFFIC - PHASE 3, STEP 1
CHAINCRAFT ROAD



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PROJECT ID
104132
SHEET TOTAL
P.52 399

SHEET NUM.																		PART.	ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE SHEET NO.		
P.11	P.12	P.14	P.61	P.62	P.63	P.64	P.66	P.67	P.68	P.69	P.70	P.71	P.72	P.73	P.74	P.75	P.215	P.327	01/BRO/10	EXT	TOTAL					
LS																			LS	201	11000	LS		ROADWAY		
				LS															LS	202	11000	LS		STRUCTURE REMOVED (EX. CONC. BLOCK WALL)		
				LS															LS	202	11200	LS		PORTIONS OF STRUCTURE REMOVED (EX. WALL)		
													5,992						5,992	202	23000	5,992	SY		PAVEMENT REMOVED	
													6,418						6,418	202	30000	6,418	SF		WALK REMOVED	
				LS															LS	202	30204	LS		STEPS REMOVED		
													2,068						2,068	202	32000	2,068	FT		CURB REMOVED	
					1,114	1,008		1,465											3,587	202	35100	3,587	FT		PIPE REMOVED, 24" AND UNDER	
							52												52	202	35200	52	FT		PIPE REMOVED, OVER 24"	
				376															376	202	38000	376	FT		GUARDRAIL REMOVED	
					2	4	3												9	202	58000	9	EACH		MANHOLE REMOVED	
						7	8												15	202	58100	15	EACH		CATCH BASIN REMOVED	
				6															6	202	60010	6	EACH		MONUMENT ASSEMBLY REMOVED	
				111															111	202	75000	111	FT		FENCE REMOVED	
				1															1	202	75250	1	EACH		GATE REMOVED	
								12											12	202	75610	12	EACH		VALVE BOX REMOVED	P.158
							258												258	202	98700	258	FT		ABANDON MISC.: PLUG AND FILL 42" SANITARY CONDUIT	P.14
														8,175	5,697	3,465			17,337	203	10000	17,337	CY		EXCAVATION	
														54,541	9,722	17,374			81,637	203	20000	81,637	CY		EMBANKMENT	
												5,232							5,232	203	98100	5,232	SY		ROADWAY, MISC.: #4 WASHED LANDSCAPE GRAVEL, 4" THICK	P.12
								404	5,252	5,770	2,010								13,436	204	10000	13,436	SY		SUBGRADE COMPACTION	P.11
										454									454	204	13000	454	CY		EXCAVATION OF SUBGRADE	
										454									454	204	30010	454	CY		GRANULAR MATERIAL, TYPE B	
7											1								8	204	45000	8	hour		PROOF ROLLING	P.11
											1,360								1,360	204	50000	1,360	SY		GEOTEXTILE FABRIC	
			1																1	606	60002	1	EACH		IMPACT ATTENUATOR, TYPE 1 (UNIDIRECTIONAL)	P.12
	LS																951	1,616	2,567	607	39901	2,567	FT		VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC, AS PER PLAN	P.213
																			LS	607	98200	LS			FENCE, MISC.: TEMPORARY FENCING	P.12
										12,254	4,144								16,398	608	10000	16,398	SF		4" CONCRETE WALK	
			315																315	608	52000	315	SF		CURB RAMP	
			868																868	622	10160	868	FT		CONCRETE BARRIER, SINGLE SLOPE, TYPE D	
26																			26	623	38500	26	EACH		MONUMENT ASSEMBLY, TYPE C	
23																			23	623	40520	23	EACH		RIGHT-OF-WAY MONUMENT, TYPE B	
													5,232						5,232	SPECIAL	69012000	5,232	SY		FILTER FABRIC	P.12
			400																400	SPECIAL	69065010	400	TON		WORK INVOLVING SOLID WASTE	P.14
			LS																LS	SPECIAL	69070000	LS			ENVIRONMENTAL, SITE SPECIFIC HEALTH AND SAFETY PLAN	P.14
			400																400	SPECIAL	69070020	400	TON		ENVIRONMENTAL, WORK INVOLVING SOLID WASTE	P.14

GENERAL SUMMARY

DESIGN AGENCY



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WFS 08/05/24

PROJECT ID
104132

SHEET TOTAL
P.53 399

SHEET NUM.													PART.	ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE SHEET NO.
P.13	P.63	P.64	P.66	P.67	P.68	P.69	P.70	P.71	P.72	P.158	P.160	01/BRO/10	EXT	TOTAL					
DRAINAGE CONT.																			
15,000												15,000	SPECIAL	61199820	15,000	LB	MISCELLANEOUS METAL	P.13	
8												8	611	99900	8	EACH	DRAINAGE STRUCTURE, MISC.: UTILITY TEST HOLE	P.13	
	1											1	611	99900	1	EACH	DRAINAGE STRUCTURE, MISC.: STORM DROP MANHOLE	P.13	
		1										1	895	10040	1	EACH	MANUFACTURED WATER QUALITY STRUCTURE, TYPE 4		
PAVEMENT																			
									353			353	252	01500	353	FT	FULL DEPTH PAVEMENT SAWING		
						1,086	1,182					2,268	302	56000	2,268	CY	ASPHALT CONCRETE BASE, PG64-22, (449)		
					32	965	1,031	335				2,363	304	20000	2,363	CY	AGGREGATE BASE		
						522	568					1,090	407	20000	1,090	GAL	NON-TRACKING TACK COAT		
							729					729	411	10000	729	CY	STABILIZED CRUSHED AGGREGATE		
						218	237					455	442	10000	455	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446)		
						254	276					530	442	20170	530	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, 12.5 MM, TYPE A (448)		
					311							311	452	12010	311	SY	8" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC 1P		
							1,848					1,848	452	13070	1,848	SY	9.5" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC 1P WITH QC/QA		
							70					70	609	12001	70	FT	COMBINATION CURB AND GUTTER, TYPE 2, AS PER PLAN	P.12	
								951				951	609	14000	951	FT	CURB, TYPE 2-A		
						630	1,338					1,968	609	26000	1,968	FT	CURB, TYPE 6		
						775	146					921	609	26001	921	FT	CURB, TYPE 6, AS PER PLAN	P.12	
WATER WORK																			
				16								16	638	06500	16	FT	12" STEEL PIPE ENCASEMENT, OPEN CUT		
				169								169	638	06704	169	FT	20" STEEL PIPE ENCASEMENT, OPEN CUT		
				4								4	638	09200	4	EACH	12" CUTTING-IN SLEEVE, VALVE AND VALVE BOX, CWD STD-005	P.158	
				4								4	638	10700	4	EACH	FIRE HYDRANT REMOVED AND DISPOSED OF	P.158	
				4								4	638	10800	4	EACH	VALVE BOX ADJUSTED TO GRADE	P.158	
				1,581								1,581	SPECIAL	63820174	1,581	FT	12" WATER MAIN DIP CLASS 52 PUSH ON JOINTS AND FITTINGS (CWD STD-001)	P.158	
											1,600	1,600	SPECIAL	63820496	1,600	FT	TEMPORARY BY PASS COMPLETE WITH JOINTS AND FITTINGS (CWD STD-H14 AND CWD STD-H16)	P.159	
				3								3	SPECIAL	63820586	3	EACH	12" GATE VALVE WITH VALVE BOX (CWD STD-005)	P.159	
				3								3	638	98000	3	EACH	WATER WORK, MISC.: FURNISHING AND SETTING 6" HYDRANT, COMPLETE, STRAIGHT, CWD STD-H13	P.158	
				1								1	638	98000	1	EACH	WATER WORK, MISC.: REPLACE 1 1/2" & SMALLER WATER SERVICE CONNECTIONS, LONG SIDE, COMPLETE	P.159	
				2								2	638	98000	2	EACH	WATER WORK, MISC.: REPLACE 2" & SMALLER WATER SERVICE CONNECTIONS, LONG SIDE, COMPLETE	P.159	
										LS		LS	638	98100	LS		WATER WORK, MISC.: CLEVELAND WATER DEPARTMENT CHARGES	P.158	
				482								482	638	98600	482	FT	WATER WORK, MISC.: FILL AND PLUG EXISTING CONDUIT	P.158	
											LS	LS	638	98100	LS		WATER WORK, MISC.: TEMPORARY BY PASS FOR WATER SERVICE CONNECTIONS	P.160	
SANITARY SEWER																			
				58								58	611	13400	58	FT	30" CONDUIT, TYPE B		
				163								163	611	20901	163	FT	48" CONDUIT, TYPE B, AS PER PLAN, 707.75	P.14	
				158								158	611	21101	158	FT	48" CONDUIT, TYPE C, AS PER PLAN, 707.75	P.14	
				1								1	611	98630	1	EACH	CATCH BASIN ADJUSTED TO GRADE		
				5								5	611	99575	5	EACH	MANHOLE, NO. 3, AS PER PLAN	P.13	
				4								4	611	99654	4	EACH	MANHOLE ADJUSTED TO GRADE		
				2								2	611	99900	2	EACH	DRAINAGE STRUCTURE, MISC.: DOGHOUSE MANHOLE	P.13	

GENERAL SUMMARY

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WFS 08/05/24

PROJECT ID
104132

SHEET TOTAL
P.55 | 399

SHEET NUM.								PART.	ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE SHEET NO.
						P.215	P.311	01/BRO/10	EXT	TOTAL				
STRUCTURE OVER 20 FOOT SPAN (CUY-00014-06.930) CONT.														
						4,581	4,581	512	10100	4,581	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)		
							1,163	1,163	512	33001	SY	TYPE 2 WATERPROOFING, AS PER PLAN	P.310	
							254	254	512	33010	SY	TYPE 3 WATERPROOFING		
						1,531,993	1,531,993	513	10280	1,531,993	LB	STRUCTURAL STEEL MEMBERS, LEVEL 4		
						15,350	15,350	513	20000	15,350	EACH	WELDED STUD SHEAR CONNECTORS		
						11,778	11,778	514	00060	11,778	SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT		
						11,778	11,778	514	00066	11,778	SF	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT		
						7	7	514	10000	7	EACH	FINAL INSPECTION REPAIR		
						374	374	516	10010	374	FT	ARMORLESS PREFORMED JOINT SEAL		
						330	330	516	11210	330	FT	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL		
						337	337	516	13600	337	SF	1" PREFORMED EXPANSION JOINT FILLER		
						445	445	516	13900	445	SF	2" PREFORMED EXPANSION JOINT FILLER		
						11	11	516	44200	11	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) 18" X 18" X 2.31" WITH 19" X 19" X 1.5" LOAD PLATE		
						9	9	516	44200	9	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) 18" X 18" X 5.94" WITH 19" X 19" X 1.5" LOAD PLATE		
						9	9	516	44200	9	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) 19" X 26" X 3.94" WITH 20" X 17" X 1.5" LOAD PLATE		
						9	9	516	44200	9	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) 19" X 26" X 3.94" WITH 20" X 38" X 1.5" LOAD PLATE		
						LS	LS	516	47000	LS		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE	P.213	
						69	69	518	21200	69	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC		
						455	455	518	40000	455	FT	6" PERFORATED CORRUGATED PLASTIC PIPE		
						70	70	518	40010	70	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS		
						3	3	523	20000	3	EACH	DYNAMIC LOAD TESTING		
						727	727	526	30001	727	SY	REINFORCED CONCRETE APPROACH SLABS (T=17"), AS PER PLAN	P.288	
						374	374	526	90030	374	FT	TYPE C INSTALLATION		
						156	156	611	94800	156	FT	8' X 4' CONDUIT, TYPE A, 706.05		
						55	55	611	97400	55	FT	CONDUIT, MISC.: PRECAST 4'x6' CONDUIT, TYPE A, 706.05	P.310	
						140	140	611	97400	140	FT	CONDUIT, MISC.: 22'x7', TYPE A, PRECAST REINFORCED CONCRETE BOX CULVERT, 706.05, 2'-0" ESTIMATED SLAB THICKNESS, AS PER PLAN	P.310	
						1	1	611	99621	1	EACH	MANHOLE, NO. 5, AS PER PLAN	P.310	
						1	1	611	99731	1	EACH	JUNCTION CHAMBER, AS PER PLAN	P.310	
						LS	LS	867	00100	LS		TEMPORARY WIRE FACED MECHANICALLY STABILIZED EARTH WALL		

GENERAL SUMMARY

DESIGN AGENCY
AECOM
 564 White Pond Drive
 Akron, OH 44320
 (330) 836-9111
 www.aecom.com

DESIGNER
BNC
 REVIEWER
WFS 08/05/24
 PROJECT ID
104132
 SHEET TOTAL
P.59 | 399

REF NO.	SHEET NO.	STATION TO STATION				202	202	202	611	611	611	611	611	611	611	611	611	611	611	611
						PIPE REMOVED, OVER 24"	MANHOLE REMOVED	ABANDON MISC.: PLUG AND FILL 42" SANITARY CONDUIT	30" CONDUIT, TYPE B	48" CONDUIT, TYPE B, AS PER PLAN, 707.75	48" CONDUIT, TYPE C, AS PER PLAN, 707.75	CATCH BASIN ADJUSTED TO GRADE	MANHOLE, NO. 3, AS PER PLAN	MANHOLE ADJUSTED TO GRADE	DRAINAGE STRUCTURE, MISC.: DOGHOUSE MANHOLE					
					FT	EACH	FT	FT	FT	FT	EACH	EACH	EACH	EACH						
CHAINCRAFT ROAD																				
S1	P.90	110+98.00	RT																	
S2	P.90	112+73.03	RT		5	1		5				1	1							
S3	P.90	112+90.00	LT	TO	112+73.03	RT		22				1								
S4	P.90	113+16.13	LT	TO	112+90.00	LT	47	31				1								
S5	P.90	114+29.00	LT										1							
S6	P.90	115+10.00	LT								1									
OLD BROADWAY AVENUE																				
S7	P.155	201+00.00	LT											1						
S8	P.155	201+80.00	RT													1				
S9	P.155	202+60.00	LT	TO	201+80.00	RT		90				1								
S10	P.156	204+15.00	LT	TO	202+60.00	LT			158			1								
S11	P.156	204+50.00	LT	TO	204+15.00	LT		73								1				
S12	P.156	205+38.16	LT				1	258								1				
TOTALS CARRIED TO GENERAL SUMMARY					52	3	258	58	163	158	1	5	4	2						

SANITARY SUBSUMMARY

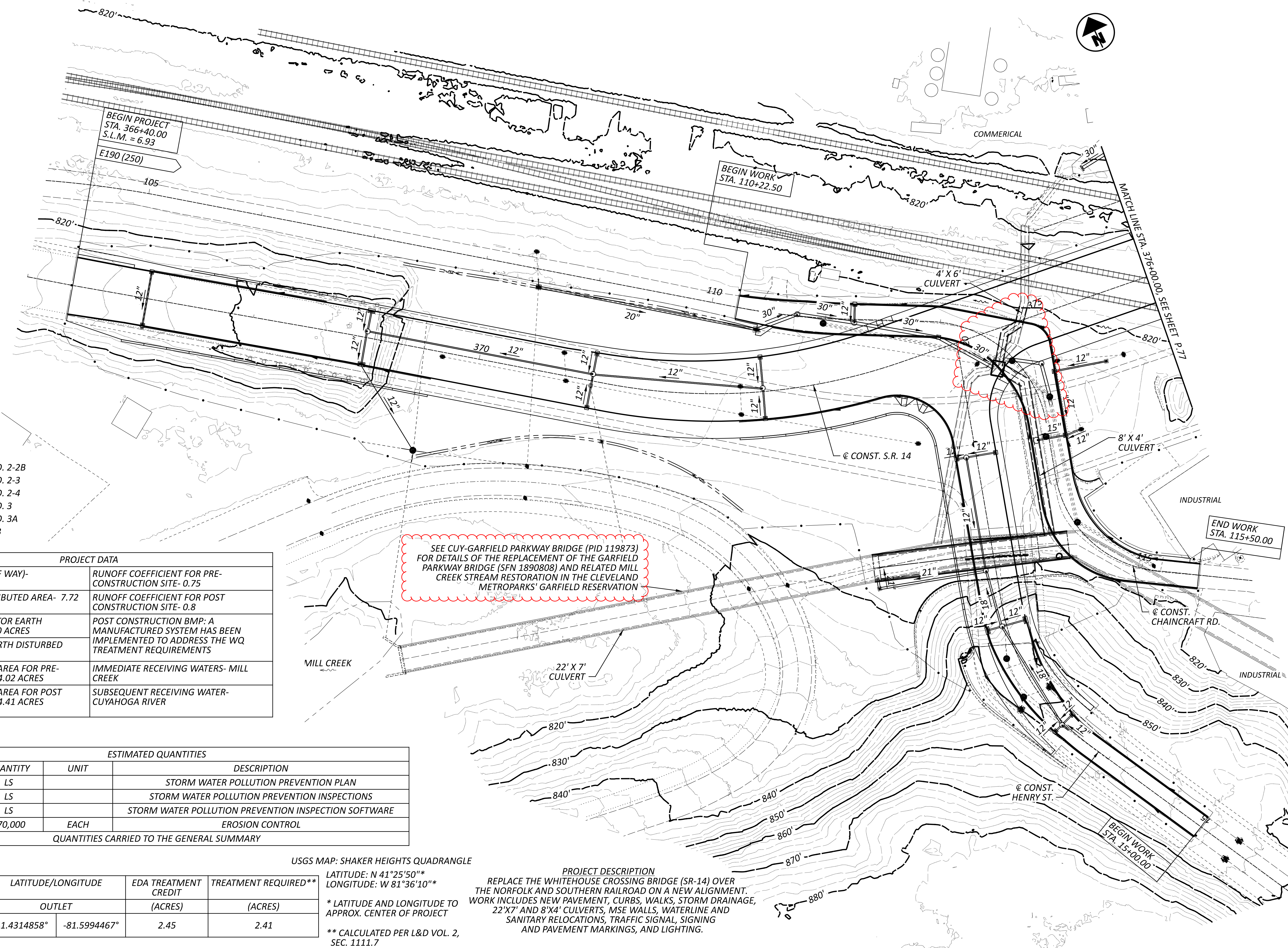
DESIGN AGENCY
AECOM
 564 White Pond Drive
 Akron, OH 44320
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 BNC

REVIEWER
 WFS 08/05/24

PROJECT ID
 104132

SHEET TOTAL
 P.66 399



LEGEND

- CATCH BASIN, NO. 2-2B
- CATCH BASIN, NO. 2-3
- CATCH BASIN, NO. 2-4
- CATCH BASIN, NO. 3
- CATCH BASIN, NO. 3A
- ⊙ MANHOLE, NO. 3
- HEADWALL

PROJECT DATA	
TOTAL AREA (RIGHT OF WAY)- 10.69 ACRES	RUNOFF COEFFICIENT FOR PRE-CONSTRUCTION SITE- 0.75
PROJECT EARTH DISTRIBUTED AREA- 7.72 ACRES	RUNOFF COEFFICIENT FOR POST CONSTRUCTION SITE- 0.8
ESTIMATED CONTRACTOR EARTH DISTURBED AREA- 1.00 ACRES	POST CONSTRUCTION BMP: A MANUFACTURED SYSTEM HAS BEEN IMPLEMENTED TO ADDRESS THE WQ TREATMENT REQUIREMENTS
NOTICE OF INTENT EARTH DISTURBED AREA- 8.72 ACRES	
IMPERVIOUS (PAVED) AREA FOR PRE-CONSTRUCTION SITE- 4.02 ACRES	IMMEDIATE RECEIVING WATERS- MILL CREEK
IMPERVIOUS (PAVED) AREA FOR POST CONSTRUCTION SITE- 4.41 ACRES	SUBSEQUENT RECEIVING WATER- CUYAHOGA RIVER

ESTIMATED QUANTITIES			
ITEM	QUANTITY	UNIT	DESCRIPTION
832	LS		STORM WATER POLLUTION PREVENTION PLAN
832	LS		STORM WATER POLLUTION PREVENTION INSPECTIONS
832	LS		STORM WATER POLLUTION PREVENTION INSPECTION SOFTWARE
832	470,000	EACH	EROSION CONTROL
QUANTITIES CARRIED TO THE GENERAL SUMMARY			

BMP TYPE	LATITUDE/LONGITUDE		EDA TREATMENT CREDIT (ACRES)	TREATMENT REQUIRED** (ACRES)
		OUTLET		
MANUFACTURED SYSTEM	41.4314858°	-81.5994467°	2.45	2.41

SEE CUY-GARFIELD PARKWAY BRIDGE (PID 119873) FOR DETAILS OF THE REPLACEMENT OF THE GARFIELD PARKWAY BRIDGE (SFN 1890808) AND RELATED MILL CREEK STREAM RESTORATION IN THE CLEVELAND METROPARKS' GARFIELD RESERVATION

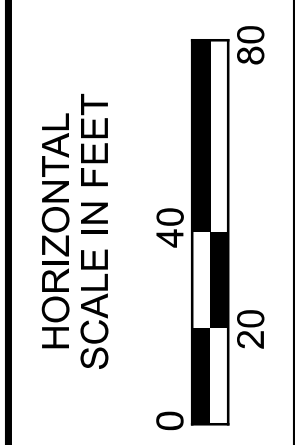
USGS MAP: SHAKER HEIGHTS QUADRANGLE

LATITUDE: N 41°25'50"***
 LONGITUDE: W 81°36'10"***

* LATITUDE AND LONGITUDE TO APPROX. CENTER OF PROJECT

** CALCULATED PER L&D VOL. 2, SEC. 1111.7

PROJECT DESCRIPTION
 REPLACE THE WHITEHOUSE CROSSING BRIDGE (SR-14) OVER THE NORFOLK AND SOUTHERN RAILROAD ON A NEW ALIGNMENT. WORK INCLUDES NEW PAVEMENT, CURBS, WALKS, STORM DRAINAGE, 22'X7' AND 8'X4' CULVERTS, MSE WALLS, WATERLINE AND SANITARY RELOCATIONS, TRAFFIC SIGNAL, SIGNING AND PAVEMENT MARKINGS, AND LIGHTING.

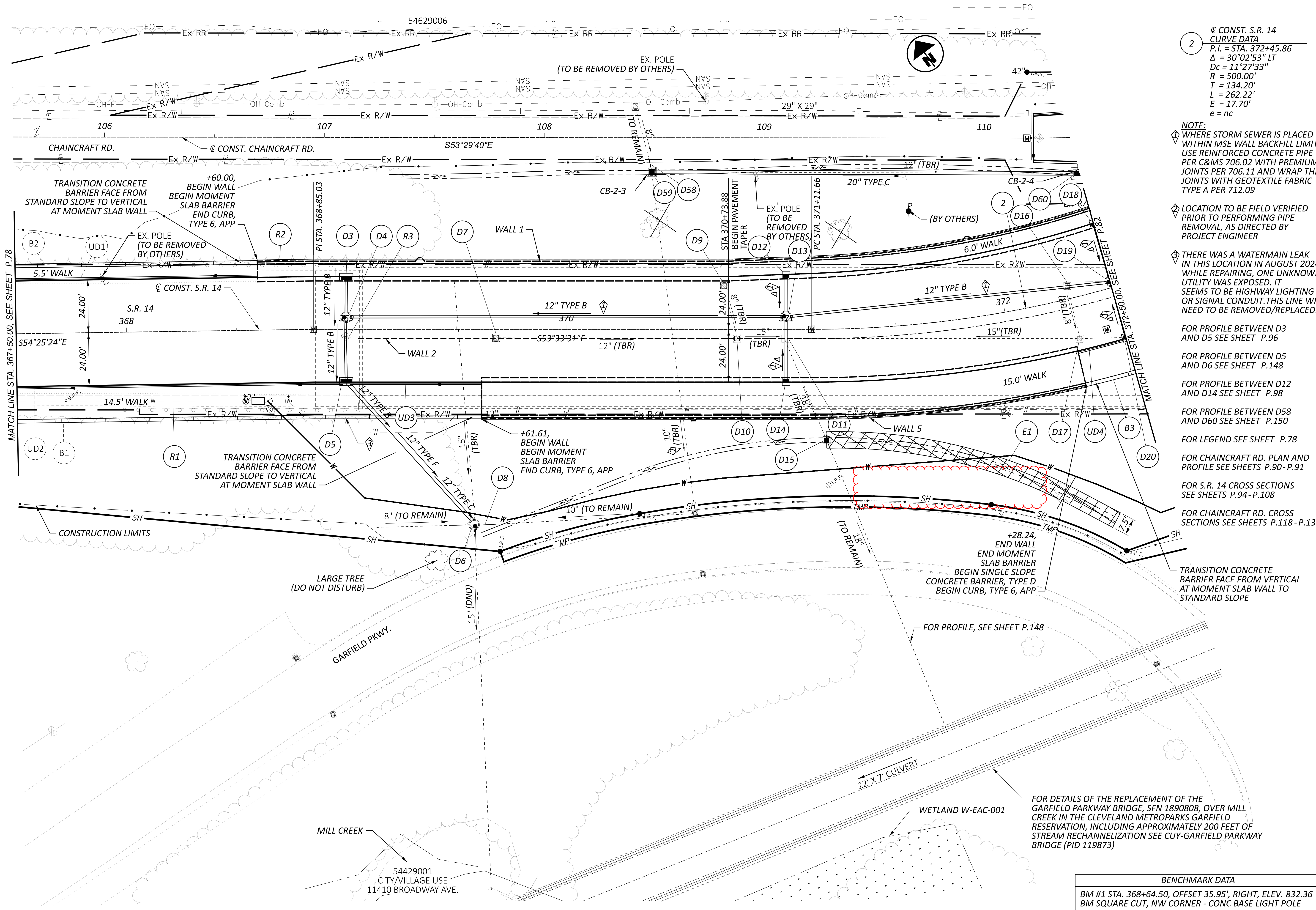


PROJECT SITE PLAN

DESIGN AGENCY

AECOM
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 Akron, OH 44320
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DESIGNER	BNC
REVIEWER	WFS
PROJECT ID	104132
SHEET	P.76
TOTAL	399



2 @ CONST. S.R. 14
 CURVE DATA
 P.I. = STA. 372+45.86
 $\Delta = 30^{\circ}02'53''$ LT
 $D_c = 11^{\circ}27'33''$
 $R = 500.00'$
 $T = 134.20'$
 $L = 262.22'$
 $E = 17.70'$
 $e = nc$

NOTE:
 WHERE STORM SEWER IS PLACED WITHIN MSE WALL BACKFILL LIMITS, USE REINFORCED CONCRETE PIPE PER C&MS 706.02 WITH PREMIUM JOINTS PER 706.11 AND WRAP THE JOINTS WITH GEOTEXTILE FABRIC TYPE A PER 712.09

LOCATION TO BE FIELD VERIFIED PRIOR TO PERFORMING PIPE REMOVAL, AS DIRECTED BY PROJECT ENGINEER

THERE WAS A WATERMAIN LEAK IN THIS LOCATION IN AUGUST 2024, WHILE REPAIRING, ONE UNKNOWN UTILITY WAS EXPOSED. IT SEEMS TO BE HIGHWAY LIGHTING OR SIGNAL CONDUIT. THIS LINE WILL NEED TO BE REMOVED/REPLACED.

FOR PROFILE BETWEEN D3 AND D5 SEE SHEET P.96

FOR PROFILE BETWEEN D5 AND D6 SEE SHEET P.148

FOR PROFILE BETWEEN D12 AND D14 SEE SHEET P.98

FOR PROFILE BETWEEN D58 AND D60 SEE SHEET P.150

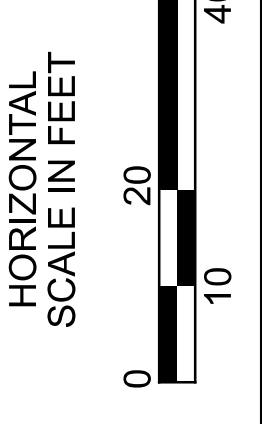
FOR LEGEND SEE SHEET P.78

FOR CHAINCRAFT RD. PLAN AND PROFILE SEE SHEETS P.90 - P.91

FOR S.R. 14 CROSS SECTIONS SEE SHEETS P.94 - P.108

FOR CHAINCRAFT RD. CROSS SECTIONS SEE SHEETS P.118 - P.131

TRANSITION CONCRETE BARRIER FACE FROM VERTICAL AT MOMENT SLAB WALL TO STANDARD SLOPE



PLAN - S.R. 14
 STA. 367+50.00 TO STA. 372+50.00

DESIGN AGENCY

AECOM
 564 White Pond Drive
 Akron, OH 44320
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DESIGNER
 RJJ

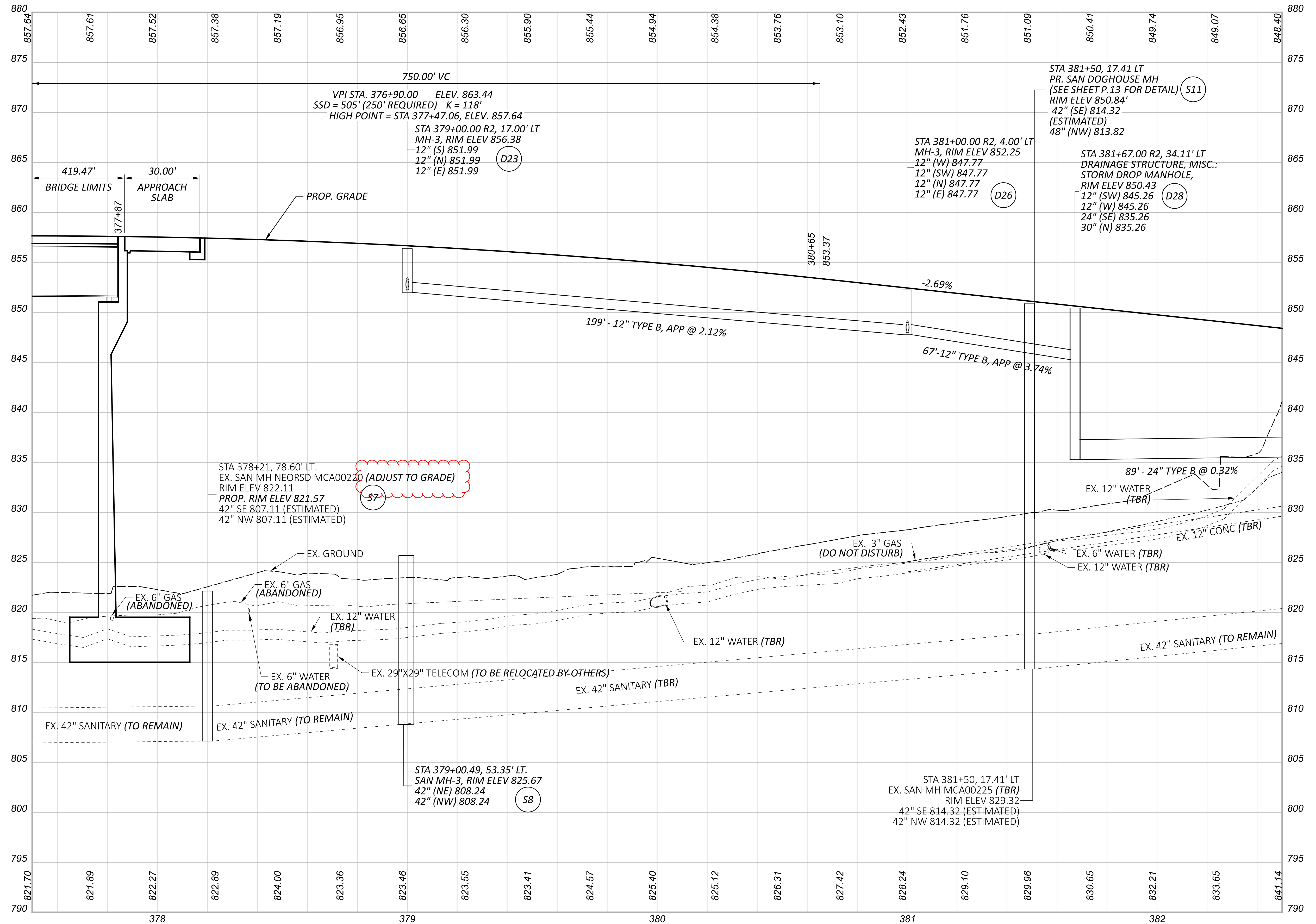
REVIEWER
 WFS 08/05/24

PROJECT ID
 104132

SHEET TOTAL
 P.80 399

BENCHMARK DATA
 BM #1 STA. 368+64.50, OFFSET 35.95', RIGHT, ELEV. 832.36
 BM SQUARE CUT, NW CORNER - CONC BASE LIGHT POLE

FOR DETAILS OF THE REPLACEMENT OF THE GARFIELD PARKWAY BRIDGE, SFN 1890808, OVER MILL CREEK IN THE CLEVELAND METROPARKS GARFIELD RESERVATION, INCLUDING APPROXIMATELY 200 FEET OF STREAM RECHANNELIZATION SEE CUY-GARFIELD PARKWAY BRIDGE (PID 119873)



PROFILE - S.R. 14
STA. 377+50.00 TO STA. 382+50.00

DESIGN AGENCY

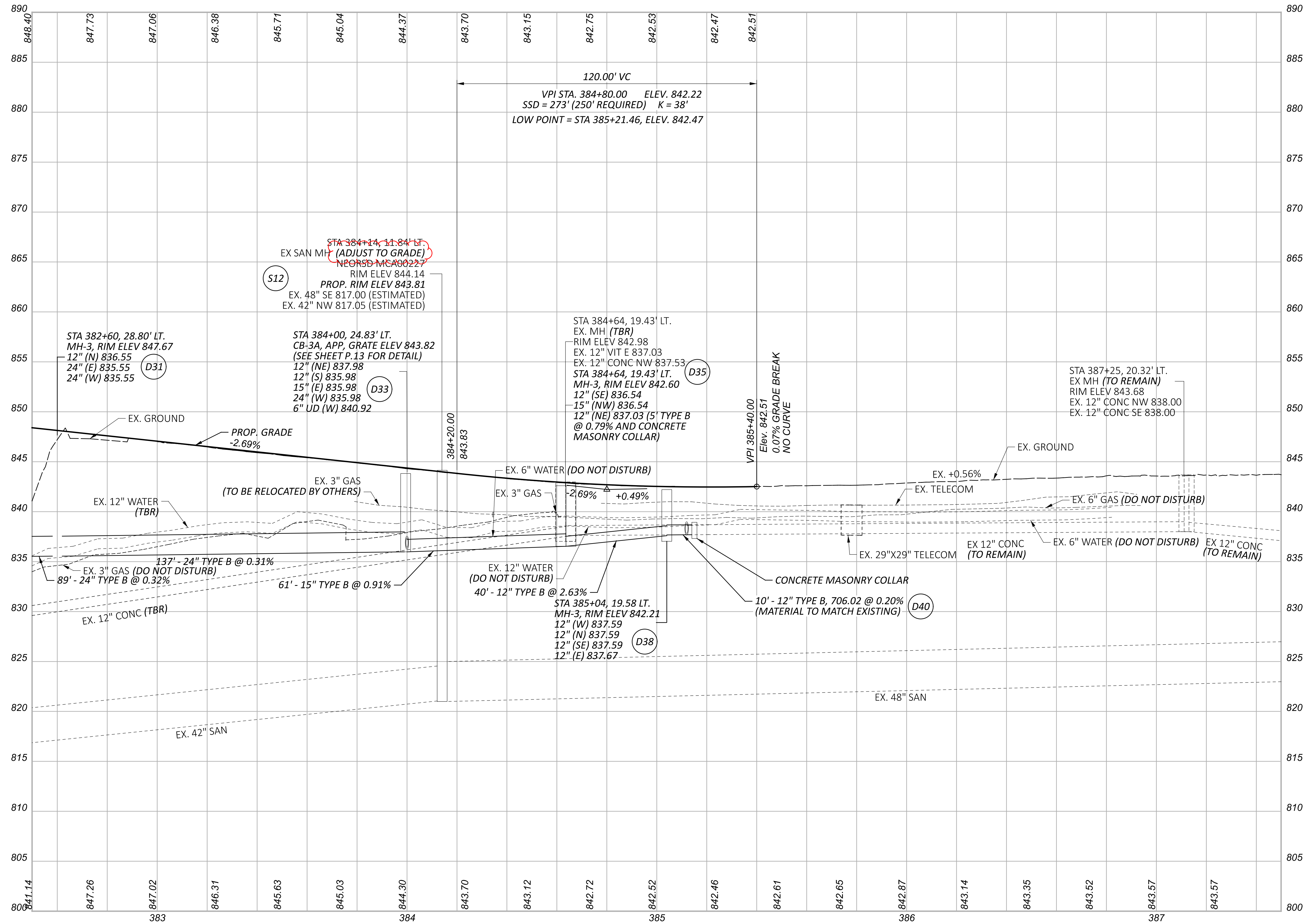
AECOM
564 White Pond Drive
Akron, OH 44320
(330) 836-9111
www.aecom.com

DESIGNER
RJJ

REVIEWER
WFS 08/05/24

PROJECT ID
104132

SHEET TOTAL
P.85 399



DESIGN AGENCY



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DESIGNER

RJJ

REVIEWER

WFS 08/05/24

PROJECT ID

104132

SHEET TOTAL

P.87 399

4 @ CONST. HENRY ST.
CURVE DATA
P.I. = STA. 16+98.99
 $\Delta = 43^{\circ}56'16''$ LT
 $D_c = 29^{\circ}22'57''$
 $R = 195.00'$
 $T = 78.66'$
 $L = 149.54'$
 $E = 15.27'$

NOTE:
WHERE STORM SEWER IS PLACED WITHIN MSE WALL BACKFILL LIMITS, USE REINFORCED CONCRETE PIPE PER C&MS 706.02 WITH PREMIUM JOINTS PER 706.11 AND WRAP THE JOINTS WITH GEOTEXTILE FABRIC TYPE A PER 712.09

FOR WATER WORK PLANS SEE SHEETS P.171 - P.174

FOR PROFILE BETWEEN D43 AND D45 SEE SHEET P.114

FOR PROFILE BETWEEN D50 AND D52 SEE SHEET P.115

FOR PROFILE BETWEEN D53 AND D54 SEE SHEET P.116

FOR PROFILE BETWEEN D55 AND D57 SEE SHEET P.117

FOR LEGEND SEE SHEET P.78

FOR S.R. 14 PLAN AND PROFILE SEE SHEETS P.78 - P.87

FOR CHAINCRAFT RD. PLAN AND PROFILE SEE SHEETS P.90 - P.91

FOR OLD BROADWAY AVE. PLAN AND PROFILE SEE SHEETS P.92 - P.93

FOR S.R. 14 CROSS SECTIONS SEE SHEETS P.94 - P.108

FOR HENRY ST. CROSS SECTIONS SEE SHEETS P.109 - P.117

FOR CHAINCRAFT RD. CROSS SECTIONS SEE SHEETS P.118 - P.131

FOR OLD BROADWAY AVE. CROSS SECTIONS SEE SHEETS P.132 - P.141

FOR INTERSECTION DETAILS SEE SHEET P.145

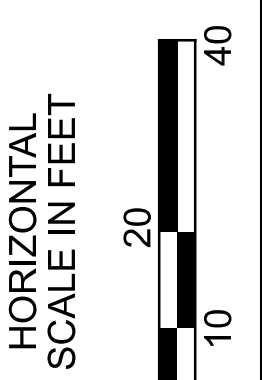
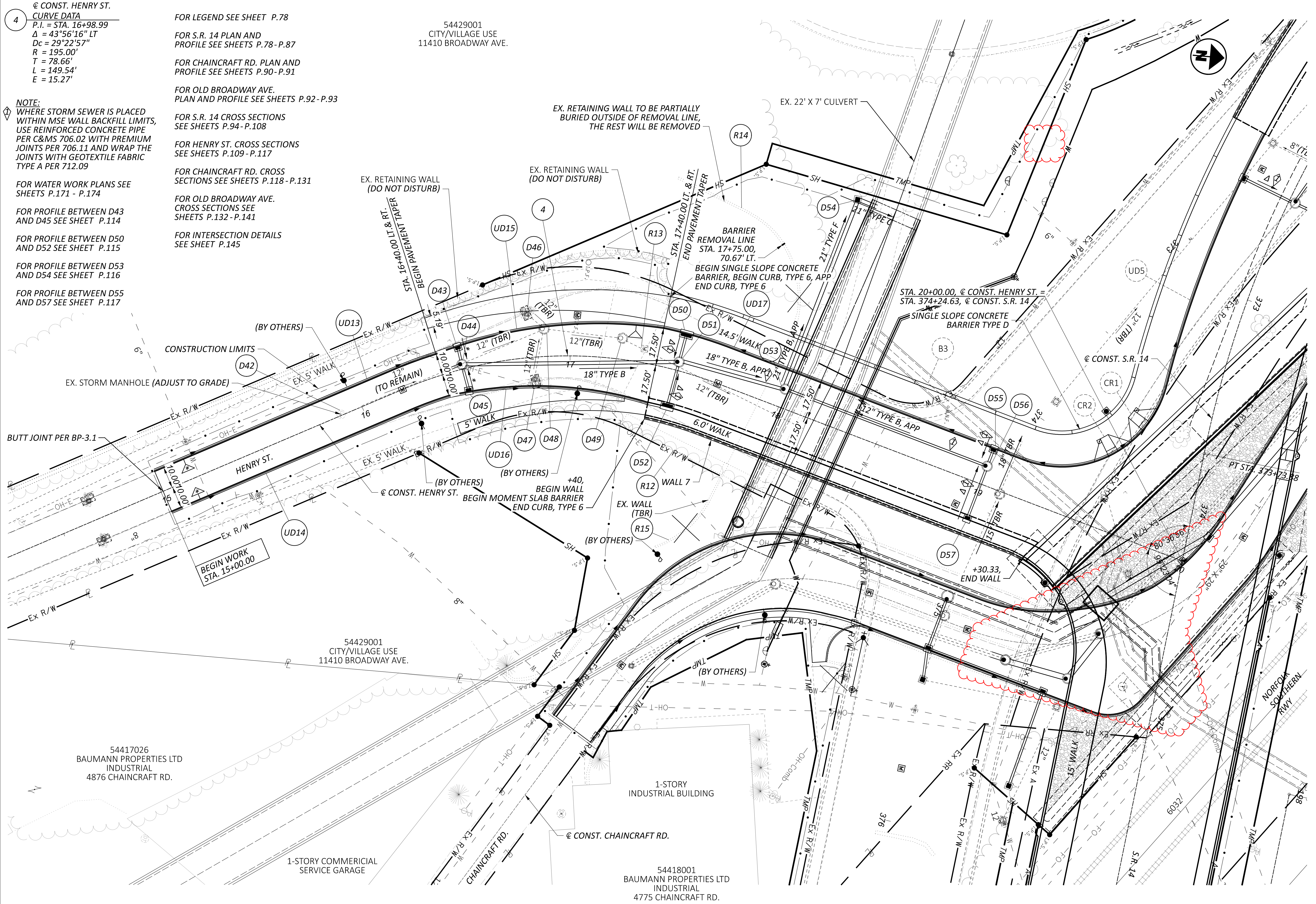
54429001
CITY/VILLAGE USE
11410 BROADWAY AVE.

54417026
BAUMANN PROPERTIES LTD
INDUSTRIAL
4876 CHAINCRAFT RD.

1-STORY COMMERCIAL
SERVICE GARAGE

1-STORY
INDUSTRIAL BUILDING

54418001
BAUMANN PROPERTIES LTD
INDUSTRIAL
4775 CHAINCRAFT RD.



PLAN - HENRY STREET
STA. 15+00.00 TO STA. 20+00.00

DESIGN AGENCY

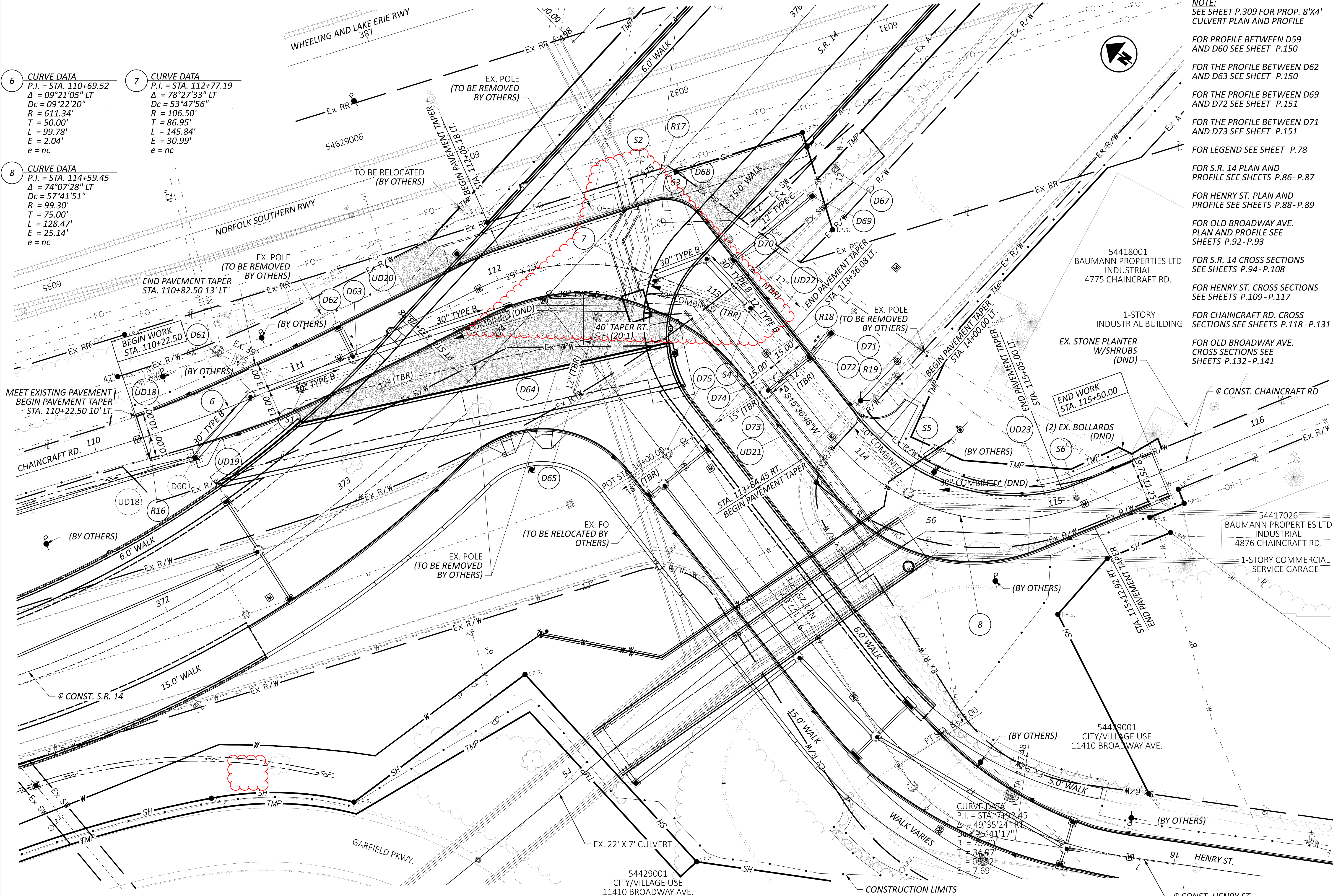
AECOM
564 White Pond Drive
Akron, OH 44320
(330) 836-9111
www.aecom.com

DESIGNER
RJJ

REVIEWER
WFS 08/05/24

PROJECT ID
104132

SHEET TOTAL
P.88 399



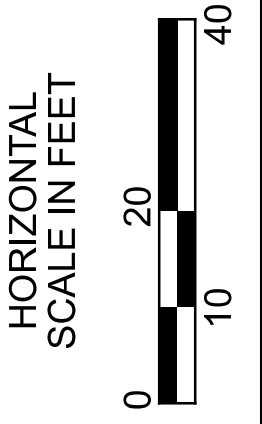
6 CURVE DATA
 P.I. = STA. 110+69.52
 $\Delta = 09^{\circ}21'05''$ LT
 $D_c = 09^{\circ}22'20''$
 $R = 611.34'$
 $T = 50.00'$
 $L = 99.78'$
 $E = 2.04'$
 $e = nc$

7 CURVE DATA
 P.I. = STA. 112+77.19
 $\Delta = 78^{\circ}27'33''$ LT
 $D_c = 53^{\circ}47'56''$
 $R = 106.50'$
 $T = 86.95'$
 $L = 145.84'$
 $E = 30.99'$
 $e = nc$

8 CURVE DATA
 P.I. = STA. 114+59.45
 $\Delta = 74^{\circ}07'28''$ LT
 $D_c = 57^{\circ}41'51''$
 $R = 99.30'$
 $T = 75.00'$
 $L = 128.47'$
 $E = 25.14'$
 $e = nc$

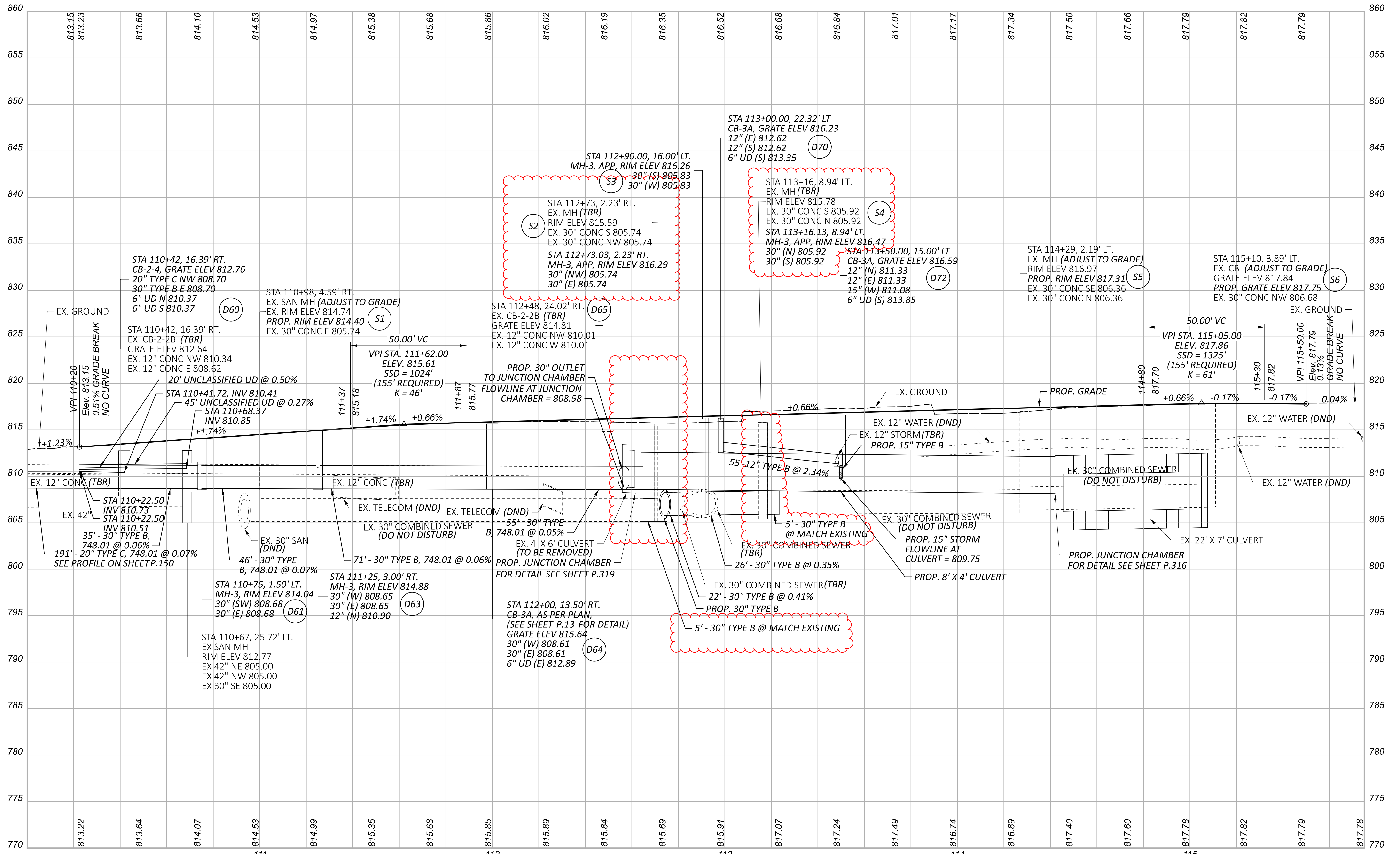
CURVE DATA
 P.I. = STA. 115+02.45
 $\Delta = 49^{\circ}35'24''$ RT
 $D_c = 75^{\circ}41'17''$
 $R = 75.70'$
 $T = 34.97'$
 $L = 65.82'$
 $E = 7.69'$

NOTE:
 SEE SHEET P.309 FOR PROP. 8'X4' CULVERT PLAN AND PROFILE
 FOR PROFILE BETWEEN D59 AND D60 SEE SHEET P.150
 FOR THE PROFILE BETWEEN D62 AND D63 SEE SHEET P.150
 FOR THE PROFILE BETWEEN D69 AND D72 SEE SHEET P.151
 FOR THE PROFILE BETWEEN D71 AND D73 SEE SHEET P.151
 FOR LEGEND SEE SHEET P.78
 FOR S.R. 14 PLAN AND PROFILE SEE SHEETS P.86-P.87
 FOR HENRY ST. PLAN AND PROFILE SEE SHEETS P.88-P.89
 FOR OLD BROADWAY AVE. PLAN AND PROFILE SEE SHEETS P.92-P.93
 FOR S.R. 14 CROSS SECTIONS SEE SHEETS P.94-P.108
 FOR HENRY ST. CROSS SECTIONS SEE SHEETS P.109-P.117
 FOR CHAINCRAFT RD. CROSS SECTIONS SEE SHEETS P.118-P.131
 FOR OLD BROADWAY AVE. CROSS SECTIONS SEE SHEETS P.132-P.141



PLAN - CHAINCRAFT ROAD
 STA. 110+20.00 TO STA. 115+50.00

DESIGN AGENCY	AECOM
564 White Pond Drive Akron, OH 44320 (330) 836-9111 www.aecom.com	
DESIGNER	RJJ
REVIEWER	WFS
PROJECT ID	104132
SHEET	P.90
TOTAL	399



PROFILE - CHAINCRAFT ROAD
STA. 110+20.00 TO STA. 115+50.00

DESIGN AGENCY



DESIGNER
RJJ

REVIEWER
WFS 08/05/24

PROJECT ID
104132

SHEET	TOTAL
P.91	399

9 CURVE DATA
P.I. = STA. 202+91.54
 $\Delta = 19^{\circ}18'05''$ LT
 $D_c = 08^{\circ}48'53''$
 $R = 650.00'$
 $T = 110.53'$
 $L = 218.97'$
 $E = 9.33'$
 $e = nc$

NOTE:
FOR PROFILE BETWEEN D76
AND D82 SEE SHEET P.153

FOR PROFILE BETWEEN D81
AND D82 SEE SHEET P.102

FOR LEGEND SEE SHEET P.78

FOR S.R. 14 PLAN AND
PROFILE SEE SHEETS P.78-P.87

FOR HENRY ST. PLAN AND
PROFILE SEE SHEETS P.88-P.89

FOR CHAINCRAFT RD. PLAN
AND PROFILE SEE
SHEETS P.90-P.91

FOR S.R. 14 CROSS SECTIONS
SEE SHEETS P.94-P.108

FOR HENRY ST. CROSS
SECTIONS SEE
SHEETS P.109-P.117

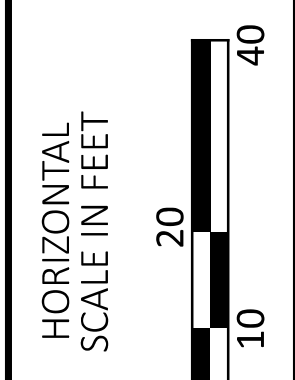
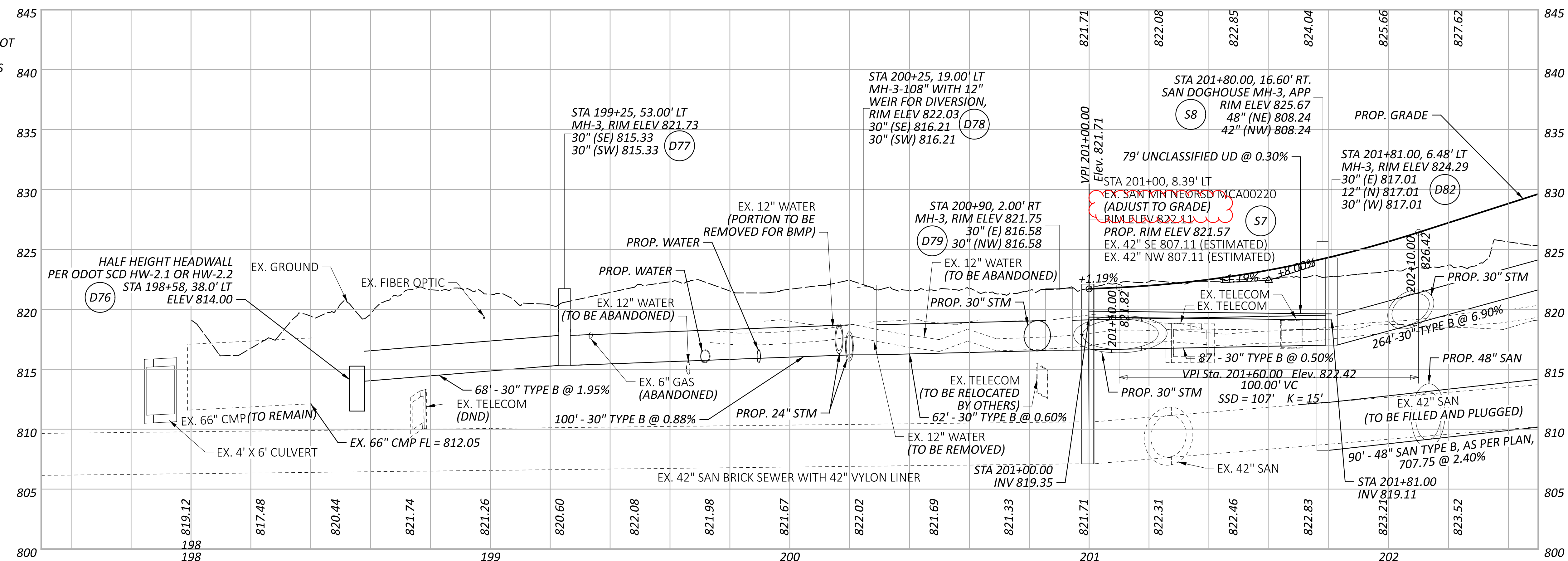
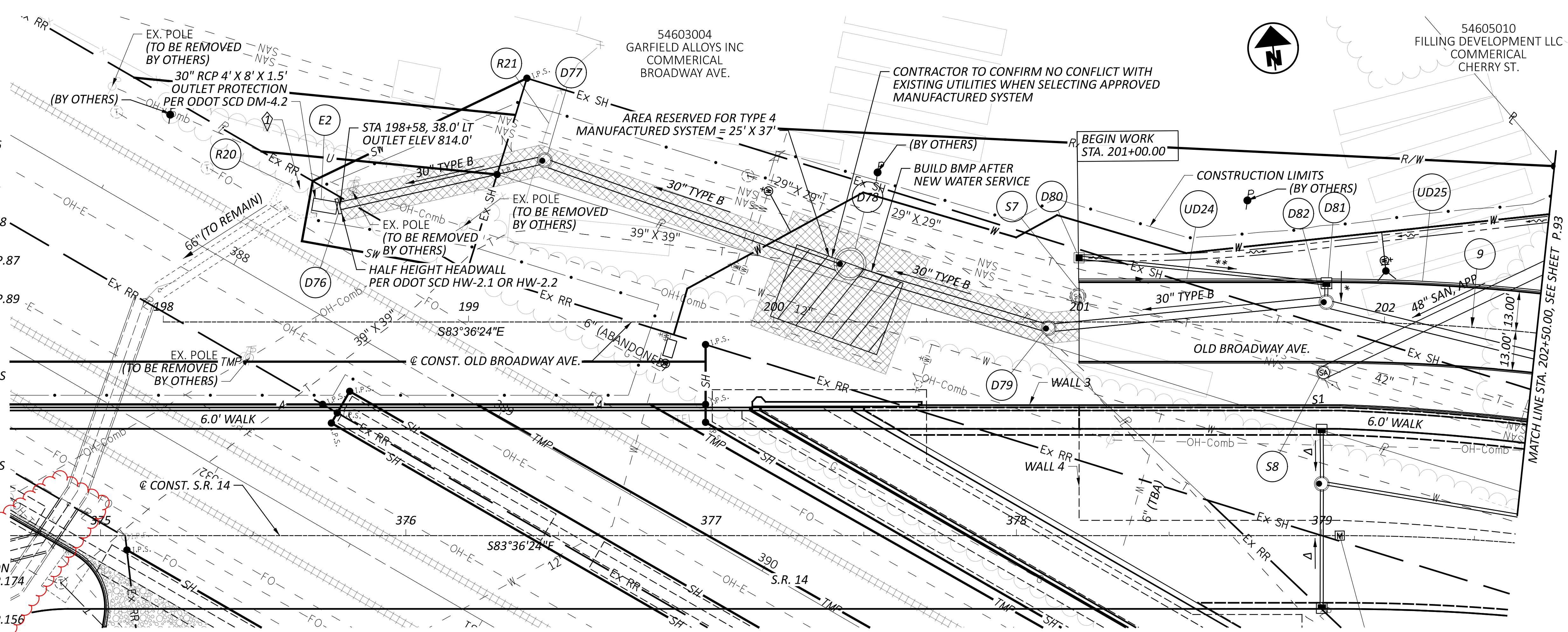
FOR CHAINCRAFT RD. CROSS
SECTIONS SEE SHEETS
P.118-P.131

FOR OLD BROADWAY AVE.
CROSS SECTIONS SEE
SHEETS P.132-P.141

FOR WATERLINE RELOCATION
PLANS SEE SHEETS P.173-P.174

FOR SANITARY RELOCATION
PLANS SEE SHEETS P.155-P.156

FIELD VISITS SHOW THERE
IS A PIPE WHICH OUTLETS
INTO THE EXISTING
HEADWALL AND AN
EXISTING WALL. THIS
PIPE AND WALL WAS
NOT SURVEYED. DO NOT
DISTURB THIS PIPE.
REMOVE THE WALL AS
NEEDED FOR
CONSTRUCTION.



PLAN AND PROFILE - OLD BROADWAY AVENUE
STA. 197+50.00 TO STA. 202+50.00

DESIGN AGENCY

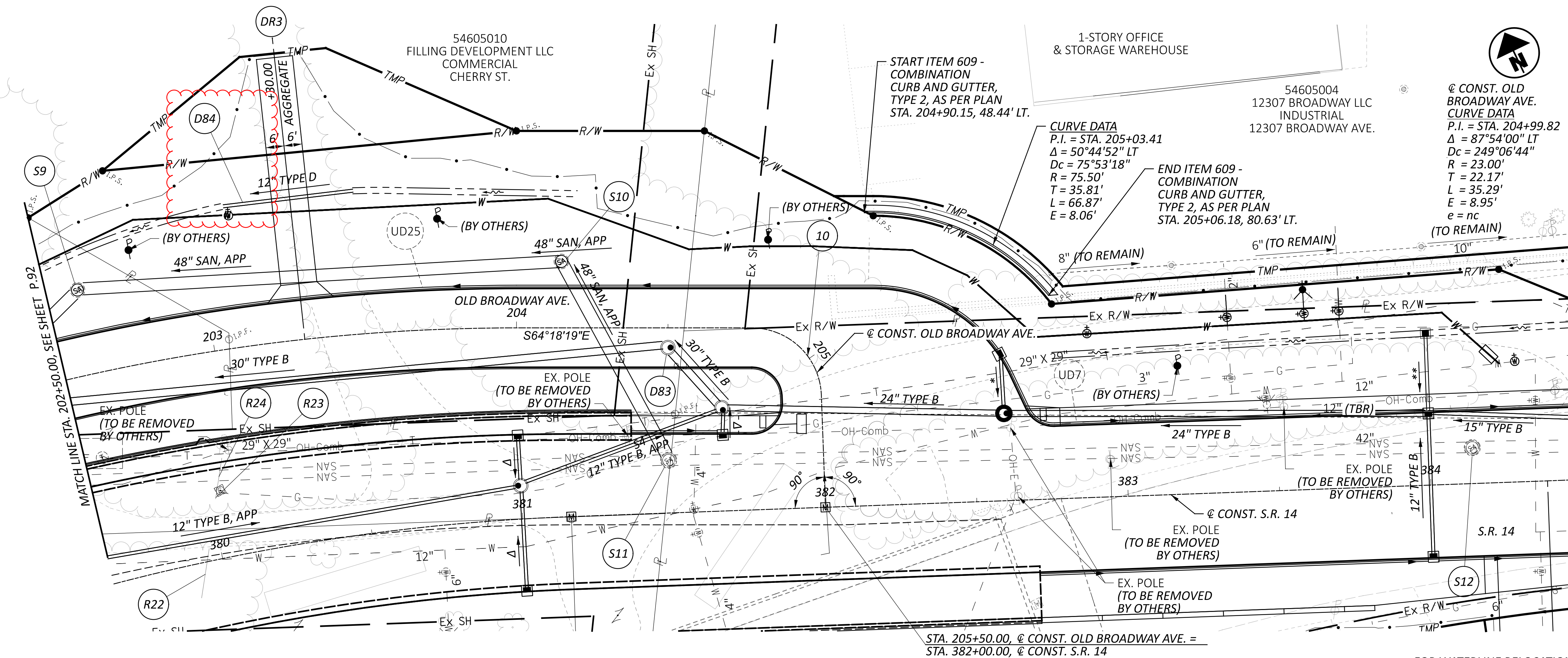
AECOM
564 White Pond Drive
Akron, OH 44320
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DESIGNER
RJJ

REVIEWER
WFS 08/05/24

PROJECT ID
104132

SHEET TOTAL
P.92 399



NOTE:
FOR LEGEND SEE SHEET P.78

FOR S.R. 14 PLAN AND PROFILE SEE SHEETS P.78-P.87

FOR S.R. 14 CROSS SECTIONS SEE SHEETS P.94-P.108

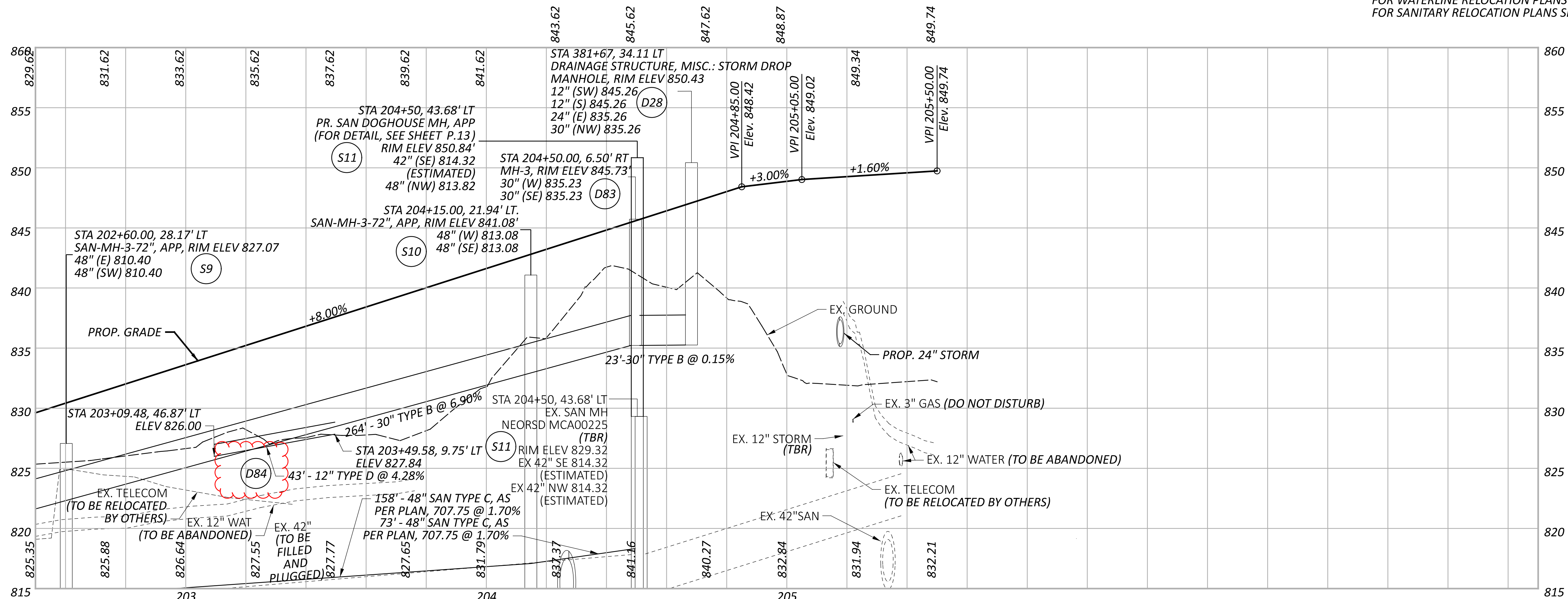
FOR OLD BROADWAY AVE. CROSS SECTIONS SEE SHEETS P.132-P.141

FOR WATERLINE RELOCATION PLANS SEE SHEETS P.173-P.174

FOR SANITARY RELOCATION PLANS SEE SHEETS P.155-P.156

FOR INTERSECTION DETAILS SEE SHEET P.146

**PLAN AND PROFILE - OLD BROADWAY AVENUE
STA. 202+50.00 TO STA. 205+50.00**



FOR WATERLINE RELOCATION PLANS SEE P.171
FOR SANITARY RELOCATION PLANS SEE P.155

DESIGN AGENCY

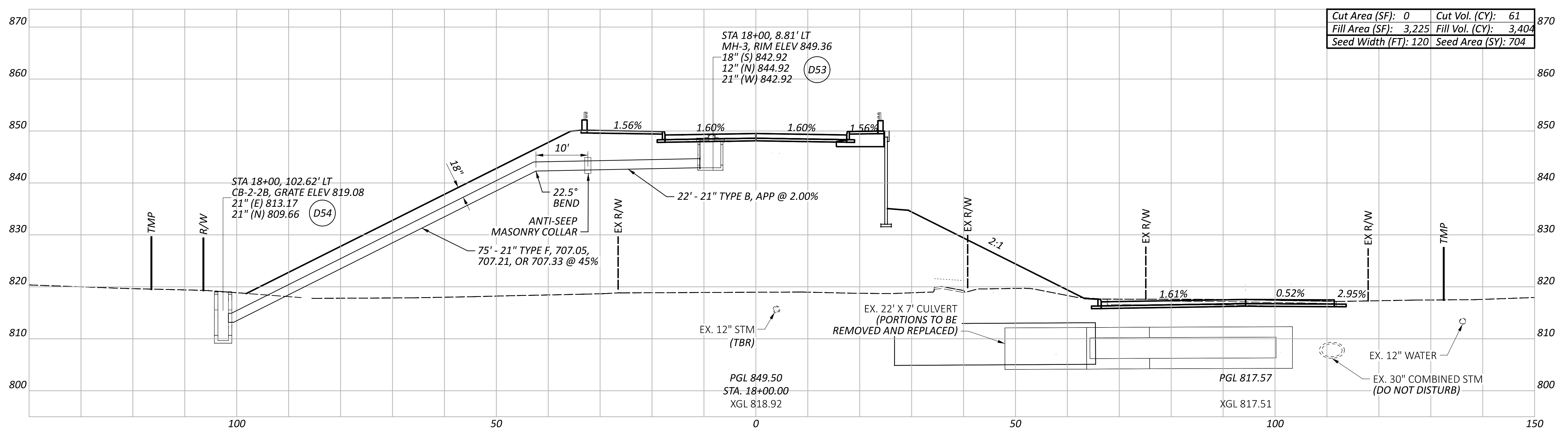
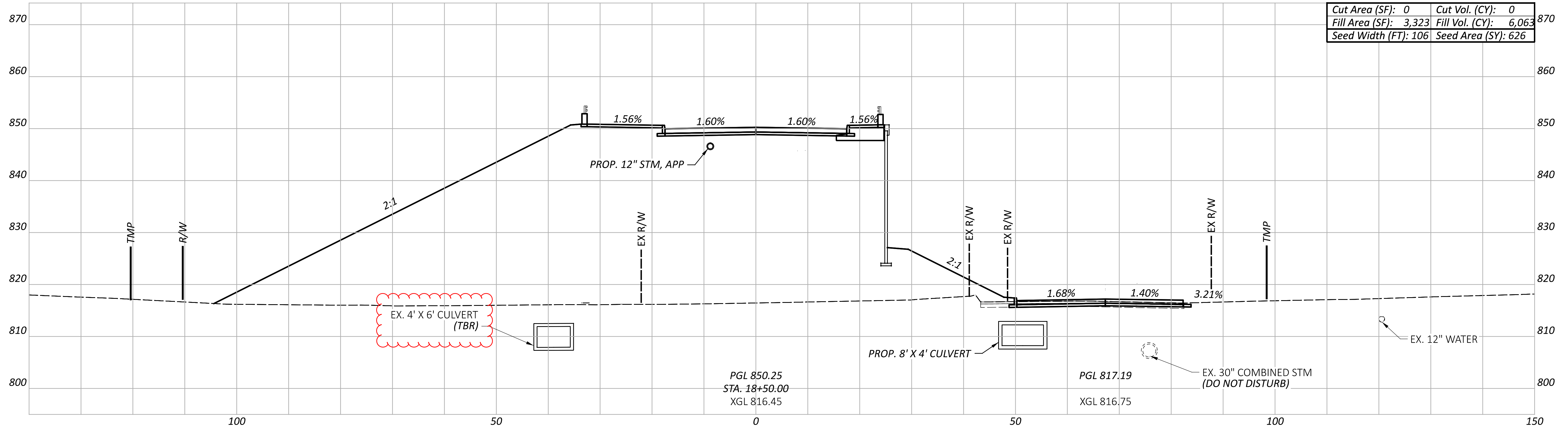
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DESIGNER
RJJ

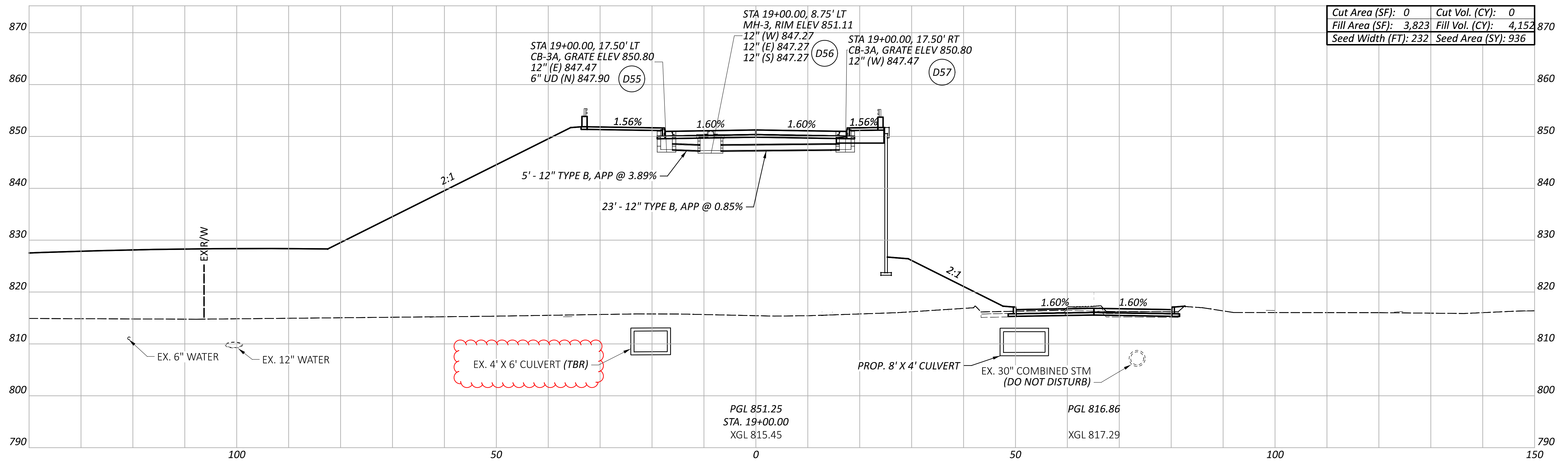
REVIEWER
WFS 08/05/24

PROJECT ID
104132

SHEET	TOTAL
P.93	399



CROSS SECTIONS - HENRY STREET
 STA. 18+00.00 TO STA. 18+50.00



Cut Area (SF): 0	Cut Vol. (CY): 0
Fill Area (SF): 3,823	Fill Vol. (CY): 4,152
Seed Width (FT): 232	Seed Area (SY): 936

CROSS SECTIONS - HENRY STREET
 STA. 19+00.00 TO STA. 19+50.00

DESIGN AGENCY

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DESIGNER

RJJ

REVIEWER

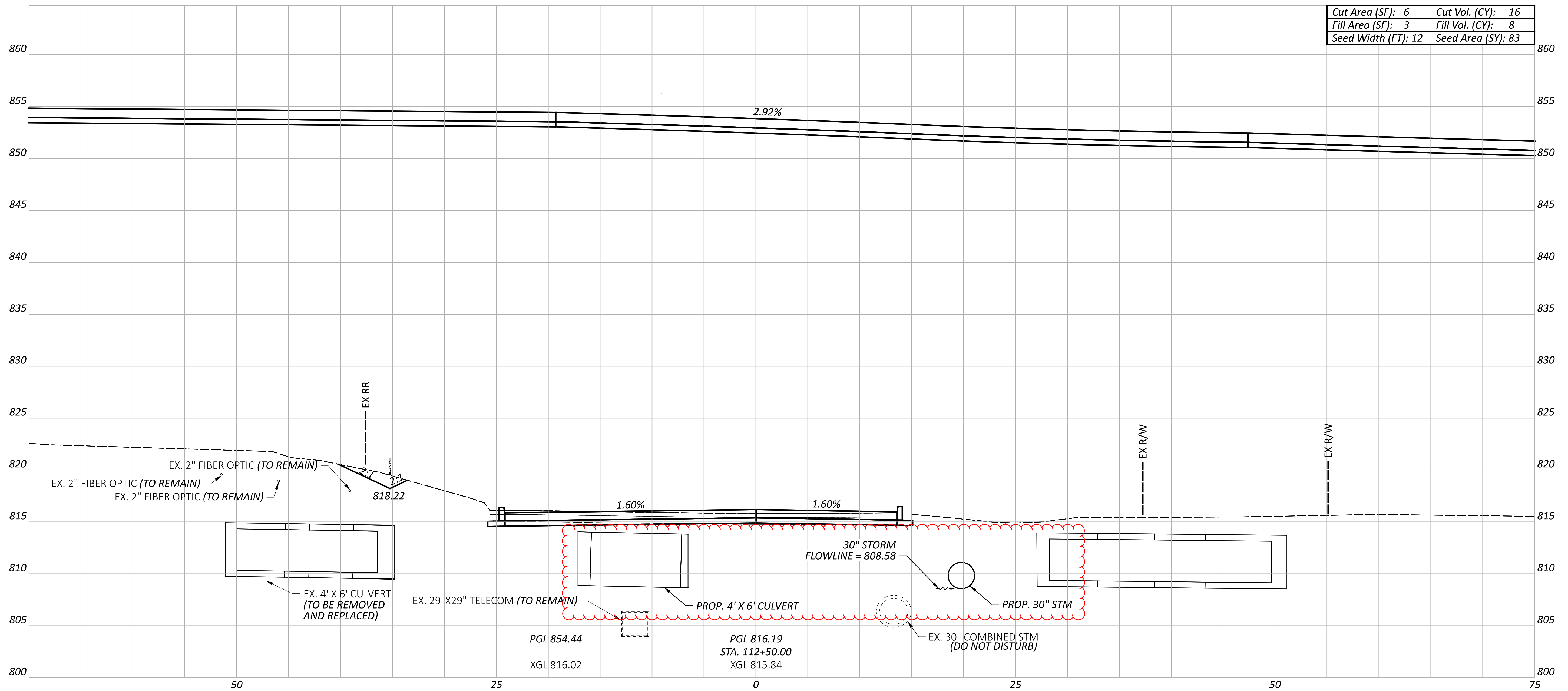
WFS 08/05/24

PROJECT ID

104132

SHEET TOTAL

P.117 399



CROSS SECTIONS - CHAINCRAFT ROAD
 STA. 112+50.00

DESIGN AGENCY

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REVIEWER
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PROJECT ID
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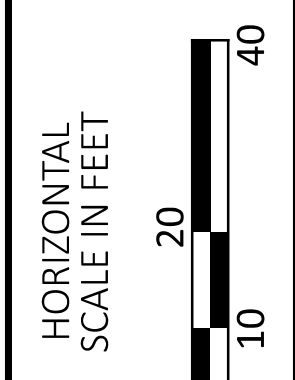
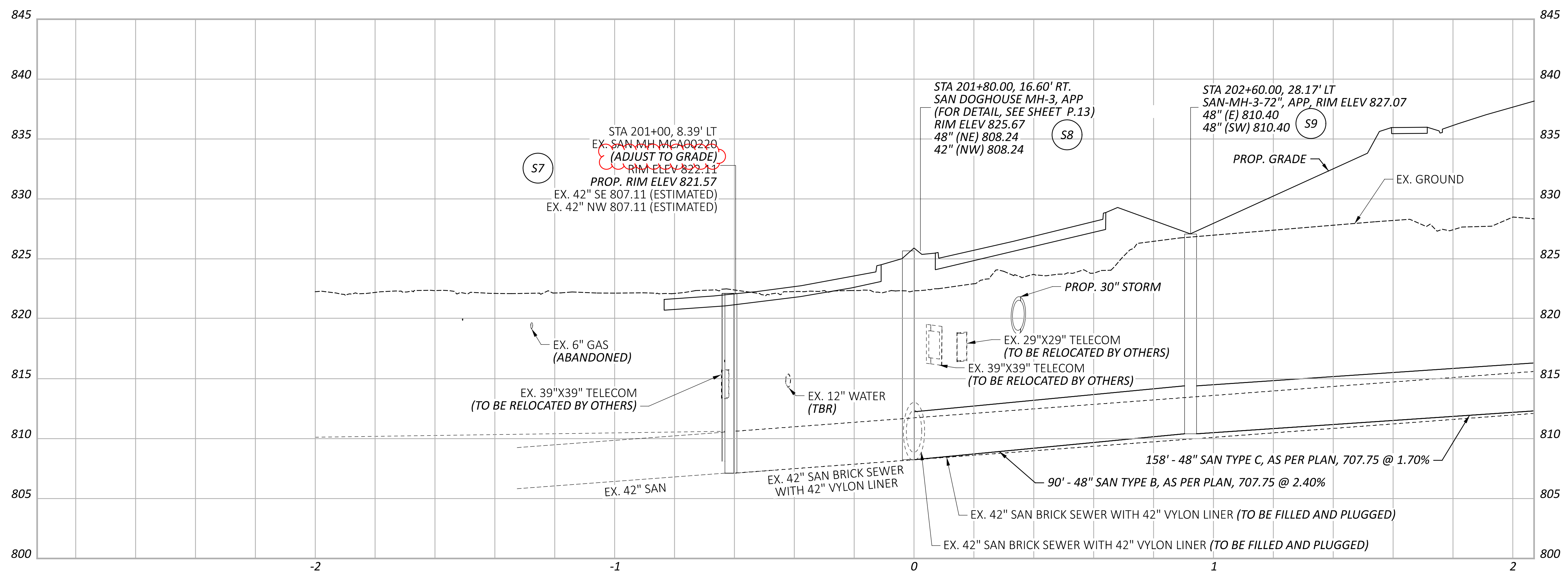
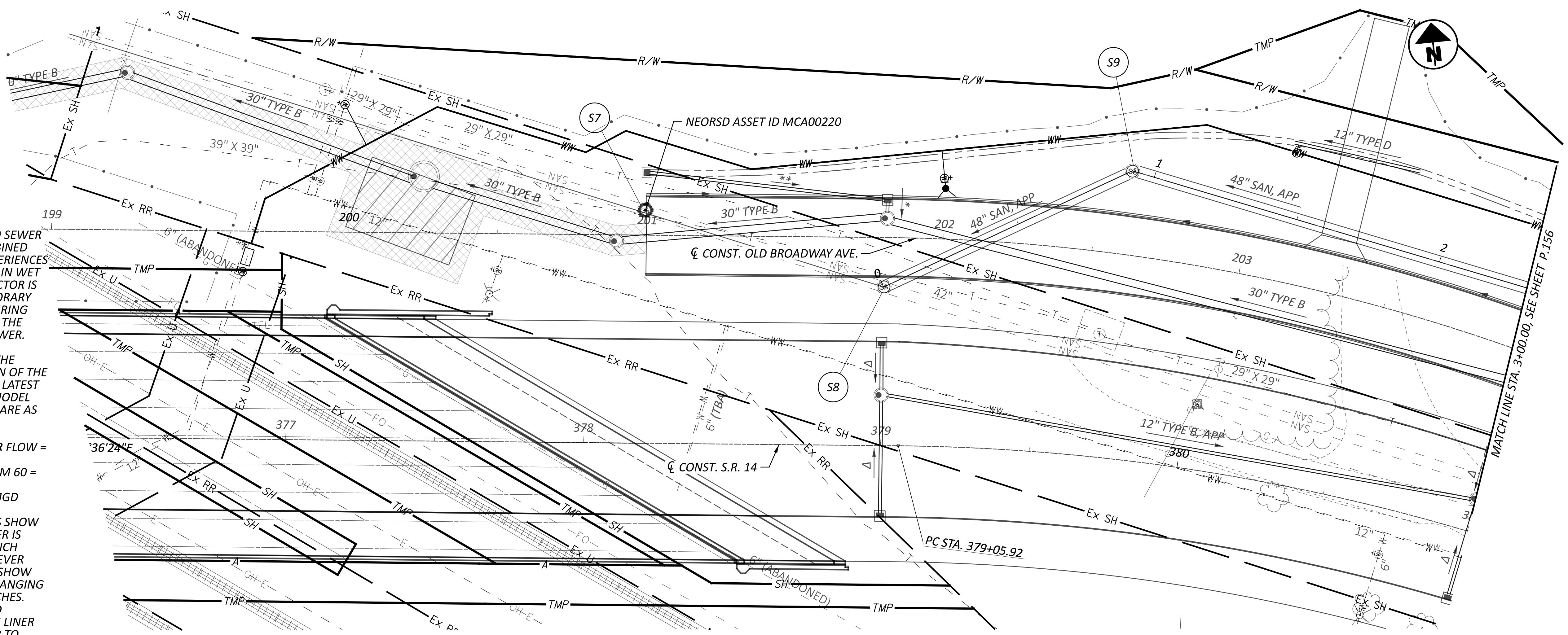
SHEET TOTAL
 P.125 399

NOTE:
 THE MILL CREEK INTERCEPTOR (MCI) SEWER IS AN ACTIVE COMBINED SEWER WHICH EXPERIENCES SIGNIFICANT FLOW IN WET WEATHER. CONTRACTOR IS TO PROVIDE TEMPORARY FLOW CONTROL DURING CONSTRUCTION OF THE RELOCATED MCI SEWER.

FLows THROUGH THE RELOCATED SECTION OF THE MCI BASED ON THE LATEST NEORS D MASTER MODEL (MCBL202311MM) ARE AS FOLLOWS:

PEAK DRY WEATHER FLOW = 3.1 MGD
 TYPICAL YEAR STORM 60 = 33.8 MGD
 5-YR, 6-HR = 39.0 MGD

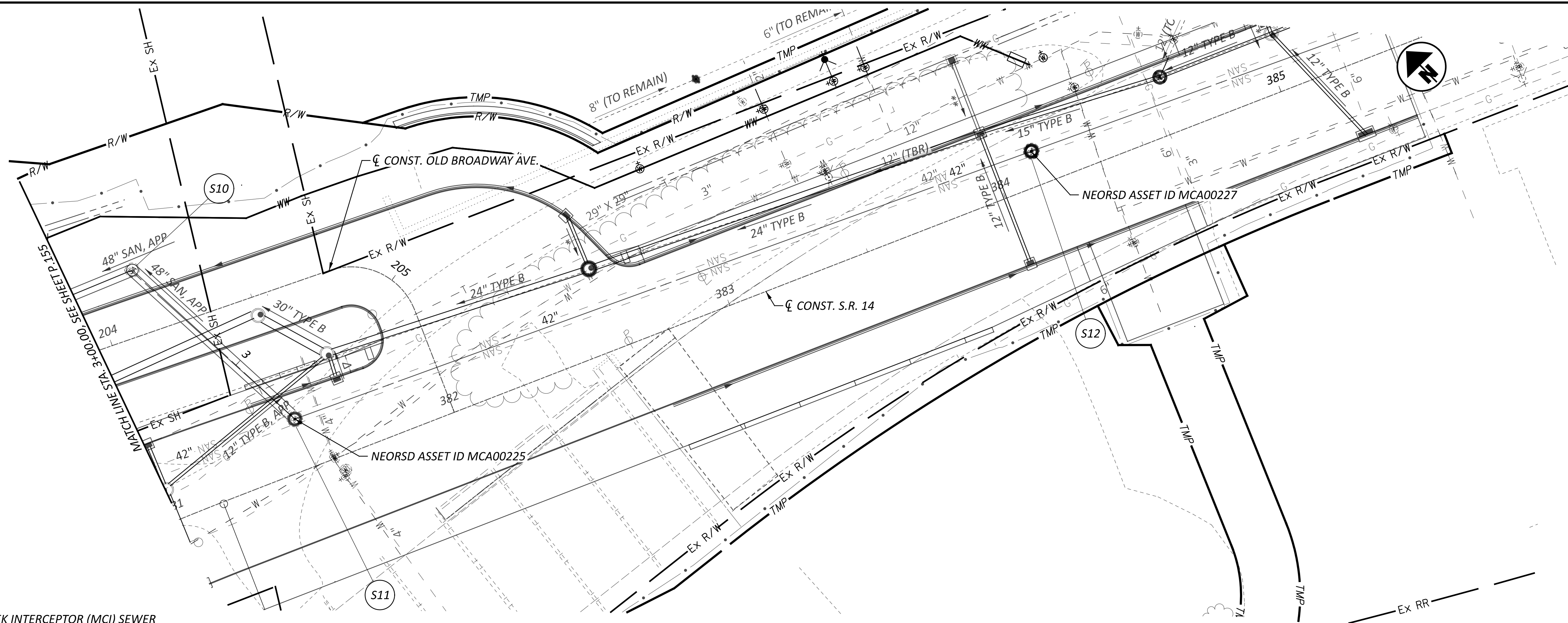
NEORS D'S RECORDS SHOW THE EXISTING SEWER IS LINED WITH A 42-INCH VYLON LINER HOWEVER PROJECT RECORDS SHOW THE VYLON LINER RANGING FROM 30 TO 42-INCHES. RECOMMEND FIELD VERIFYING THE MCI LINER DIMENSIONS PRIOR TO STARTING WORK AND ORDERING MATERIALS.



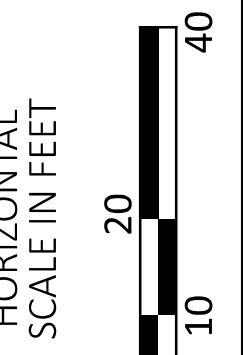
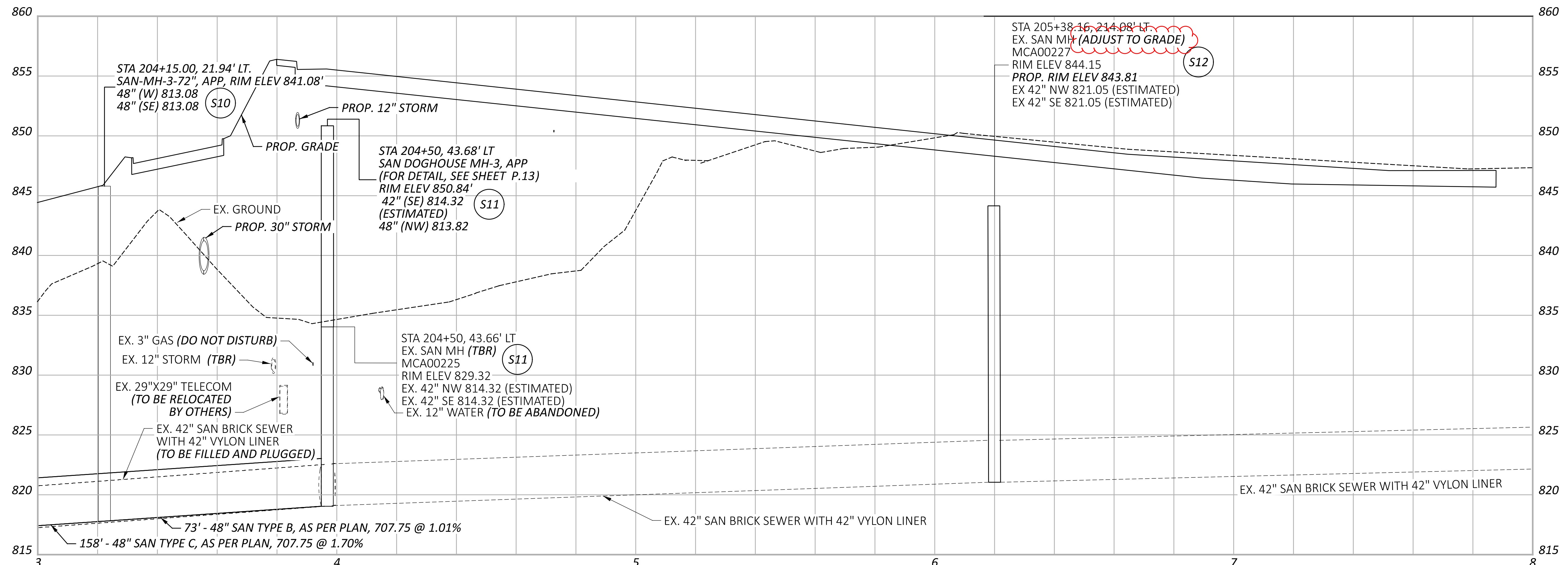
SANITARY WORK PLAN AND PROFILE
 BEGIN TO STA. 2+30.00

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REVIEWER	WFS
PROJECT ID	08/05/24
SHEET	104132
TOTAL	399
P.155	



NOTE:
 THE MILL CREEK INTERCEPTOR (MCI) SEWER IS AN ACTIVE COMBINED SEWER WHICH EXPERIENCES SIGNIFICANT FLOW IN WET WEATHER. CONTRACTOR IS TO PROVIDE TEMPORARY FLOW CONTROL DURING CONSTRUCTION OF THE RELOCATED MCI SEWER.



SANITARY WORK PLAN AND PROFILE
 STA. 2+30.00 TO END

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WATER WORK GENERAL NOTES

SPECIFICATIONS

CONTRACTOR TO CONFORM TO THE CURRENT VERSION OF THE CITY OF CLEVELAND, DIVISION OF WATER (CWD) DESIGN AND CONSTRUCTION SPECIFICATIONS AND STANDARD DETAILS. THE CURRENT VERSION IS LOCATED ON THE CWD WEBSITE. IF THERE IS A DISCREPANCY BETWEEN THE SPECIFICATIONS AND THE DRAWINGS, THE OWNER SHALL MAKE THE FINAL DETERMINATION REGARDING ACTION TO BE TAKEN.

UTILITIES SHOWN ON PLANS

THE LOCATION OF EXISTING UNDERGROUND UTILITIES SHOWN ON THE PLANS WERE OBTAINED FROM THE UTILITY OWNERS AS REQUIRED BY SECTION 153.64 O.R.C. NO GUARANTEE IS MADE RELATIVE TO THE COMPLETENESS OR ACCURACY AND THE CONTRACTOR IS REQUIRED TO CONTACT THE REGISTERED UTILITY PROTECTION SERVICE AND THE OWNERS OF EACH UNDERGROUND UTILITY FACILITY SHOWN ON THE PLANS AT LEAST TWO WORKING DAY PRIOR TO COMMENCING CONSTRUCTION IN ANY AREA.

STORM SEWER LATERAL AND SANITARY SEWER LATERAL LOCATION AND DEPTHS ARE UNKNOWN. CONTRACTOR SHALL ADJUST WATER LINE VERTICALLY TO PROVIDE SANITARY/STORM MINIMUM 18" CLEARANCE BETWEEN WATER MAIN AND SANITARY SEWERS, REFER TO CWD STANDARD DETAILS.

ABANDONMENTS

ABANDONMENT DETAILS ARE SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL BE PERMITTED TO USE CONCRETE OR LSM FOR PLUGGING AS SHOWN IN THE DRAWINGS. PAYMENT FOR ABANDONING WATER MAINS AND SERVICE CONNECTIONS SHALL BE INCIDENTAL TO THE PRICE PER LINEAR FOOT OF WATER MAIN INSTALLED.

FLOWABLE FILL - BACKFILL

FLOWABLE FILL, ALSO KNOWN AS "LOW STRENGTH MORTAR BACKFILL", SHALL BE OF A MIX DESIGNATED BY THE CITY, AND MAY VARY FROM SUBURB TO SUBURB AND EVEN FROM EXCAVATION TO EXCAVATION. IT IS ANTICIPATED THAT THE O.D.O.T 613 TYPE 2 MODIFIED MIX WITHOUT FLY ASH WILL BE THE MIX TO BE USED IN THE CITY OF CLEVELAND. FLOWABLE FILL USED SHALL ACHIEVE AN ELECTRICAL RESISTIVITY OF AT LEAST 2500 OHM - CM WHEN TESTED AT LEAST 13% MOISTURE CONTENT BOTH PRIOR TO AND FOLLOWING A 24-HOUR SATURATION. ALL FLOWABLE FILL USED SHALL ALSO PASS THE TEN POINT SOIL EVALUATION TEST.

THE FOLLOWING PROCEDURES SHALL BE USED WHEN PLACING FLOWABLE FILL:

A. ADEQUATELY SUPPORT, SHORE UP, OR OTHERWISE PROTECT UNDERGROUND UTILITIES WHENEVER EXPOSED IN THE TRENCH. EXTEND SUPPORTS A MINIMUM OF 12 INCHES ON EACH SIDE OF THE TRENCH. BAND OR TIE EACH UTILITY TO BRIDGE FOR ITS FULL LENGTH. WHERE BRIDGING CANNOT BE SUPPORTED BY A FIRM FOUNDATION, PROVIDE VERTICAL SUPPORT, INCLUDING ANY LATERAL BRACING NECESSARY TO PROVIDE FIRM SUPPORT. USE NATIVE HARDWOOD FOR TIMBER SUPPORTS AND BRACING, UTILIZING TIMBER THAT IS A MINIMUM 6 INCHES SQUARE. IF THE UTILITY ENCOUNTERED IS A FERROUS METAL PRODUCT, THE EXPOSED SECTIONS OF THE UTILITY SHALL BE POLYETHYLENE WRAPPED USING AWWA C105, METHOD C.

B. MAINTAIN ADEQUATE CLEARANCE BETWEEN THE CUTTING EDGE OF THE EXCAVATING EQUIPMENT AND EACH UNDERGROUND UTILITY TO AVOID DAMAGE TO UTILITY.

C. PLACE POLYETHYLENE WRAP AROUND ANY EXPOSED WATER MAIN PIPE, VALVES, AND FITTINGS IN ACCORDANCE WITH AWWA C105 METHOD C. AWWA C105, METHOD A MAY BE FOLLOWED IF A NEW SECTION OF WATER MAIN PIPE IS REQUIRED AND INSTALLED IN THE COURSE OF THE WORK.

D. MAKE ANY REPAIRS TO DAMAGED SECTIONS OF THE POLYETHYLENE WRAP PER AWWA C105 PRIOR TO THE INITIATION OF THE BACKFILLING OPERATION.

E. PLACE THE PIPE BEDDING MATERIAL FROM THE BOTTOM OF THE TRENCH TO 12 INCHES ABOVE THE TOP OF THE PIPE. ALSO BRING THE BEDDING MATERIAL 6 INCHES ABOVE THE BOTTOM OF THE BOTTOM HALF VALVE BOX. REFER TO THE STANDARD DETAILS PROVIDED IN THE DRAWINGS.

F. PLACE BEDDING MATERIAL IN 6-INCH LAYERS, LOOSE MEASUREMENTS, AND COMPACT BY HAND OR MECHANICAL TAMPING TO NOT LESS THAN 95 PERCENT OF MAXIMUM DENSITY AS DETERMINED IN ACCORDANCE WITH ASTM D698 (STANDARD PROCTOR).

G. CAREFULLY PLACE AND TAMP SO AS NOT TO DAMAGE OR DISPLACE JOINTS OR PIPE. DO NOT DROP MATERIAL DIRECTLY ON PIPE.

H. BLOCK CRACKS OR OTHER OPENINGS IN ADJACENT EXPOSED UTILITIES TO PREVENT ENTERANCE OF FLOWABLE FILL. SEAL OR TAPE JOINTS OF WATER BOX EXTENSIONS TO PREVENT ENTRANCE OF FLOWABLE FILL.

I. DISCHARGE THE FLOWABLE FILL MATERIAL FROM THE MIXER AND BRING IT UP UNIFORMLY TO THE TOP OF THE EXISTING GRADE. EXISTING GRADE IN AN EMBANKMENT AREA AND SUBGRADE ELEVATION IN A PAVED AREA.

J. PLACE STEEL PLATES OVER THE REPAIR AREA FOR A MINIMUM OF 12 HOURS.

TESTING MAINS AND DISINFECTION FOR MAIN REPLACEMENT

ALL PIPES, VALVES, FITTINGS, ECT., SHALL BE LAID IN SUCH A MANNER AS TO LEAVE ALL JOINTS WATERTIGHT. AFTER THE PIPE IS LAID, SUCH LENGTHS OF THE WATER MAIN AS THE ENGINEER/DESIGN ENGINEER, OR HIS DESIGNATE MAY DETERMINE, SHALL BE TESTED UNDER HYDROSTATIC PRESSURE AS SPECIFIED HEREIN.

THE HYDROSTATIC TEST SHALL BE UNDER THE DIRECTION OF THE DIRECTOR OF PUBLIC UTILITIES OR HIS DESIGNATE. THE CONTRACTOR SHALL OBTAIN WATER FOR TESTING BY OBTAINING A PERMIT FROM CLEVELAND WATER. THE CITY WILL FURNISH A PRESSURE GAUGE FOR MEASURING THE PRESSURE ON THE WATER MAIN, BUT THE CONTRACTOR SHALL FURNISH ALL SUITABLE PUMP, PIPES, TEST HEADS, AND ALL APPLIANCES, LABOR, FUEL AND OTHER APPURTENANCES NECESSARY TO MAKE THESE TESTS.

BEFORE THE HYDROSTATIC PRESSURE TEST, DURING THE PRELIMINARY FLUSHING OF THE WATER MAIN, THE CONTRACTOR SHALL OPERATE ALL VALVES (GATE, AIR RELIEF, DRAIN, ETC.) TO ENSURE THAT EACH VALVE IS OPERATING CORRECTLY. ANY VALVE(S) FOUND LEAKING, NOT WATERTIGHT, OR NOT OPERATING PROPERLY SHALL BE SATISFACTORILY REPAIRED OR REPLACED BY THE CONTRACTOR AT HIS OWN EXPENSE.

DURING THE TEST PRESSURE PROCEDURE THE CONTRACTOR SHALL PROVIDE PROPER RESTRAINT OF ALL BLIND FLANGES, PLUGS OR CAPS TO PREVENT BLOWOFF, AND IN THE CASE OF DEAD END MAINS CONCRETE PIERS WILL BE REQUIRED.

IN PRESSURE TESTING NEW MAINS, THE CONTRACTOR SHALL NOT BE PERMITTED TO USE ANY PART OF THE EXISTING MAINS IN HIS TEST UNLESS OTHERWISE SHOWN ON THE CONTRACT DRAWINGS OR AS ORDERED BY THE ENGINEER/DESIGN ENGINEER. THE CONTRACTOR SHALL PROVIDE ALL BLIND FLANGES, PLUGS OR CAPS, AT THE TEST POINTS OF THE PROPOSED MAIN SO THAT THE TESTED SECTION WILL BE COMPLETELY INDEPENDENT OF EXISTING MAINS.

THE HYDROSTATIC TEST SHALL BE UNDER THE DIRECTION OF THE DIRECTOR OF PUBLIC UTILITIES OR HIS DESIGNATE. THE CONTRACTOR SHALL OBTAIN WATER FOR TESTING BY OBTAINING A PERMIT FROM CLEVELAND WATER. THE CITY WILL FURNISH A PRESSURE GAUGE FOR MEASURING THE PRESSURE ON THE WATER MAIN, BUT THE THE HYDROSTATIC TEST PRESSURE PROCEDURE SHALL BE FOR A DURATION OF A MINIMUM OF TWO (2) HOURS WILL ALL VALVES CLOSED DURING WHICH TIME THE INTERNAL PRESSURE SHALL REMAIN WITHIN FIVE (5) PSI OF THE SPECIFIED TEST PRESSURE. SHOULD THE TEST PRESSURE DROP MORE THAN FIVE (5) PSI, THE CONTRACTOR SHALL RECHARGE THE WATER MAIN TO THE SPECIFIED TEST PRESSURE AND LOCATE AND REPAIR THE LEAK, AT HIS EXPENSE, TO THE SATISFACTION OF THE ENGINEER/DESIGN ENGINEER. ANY DAMAGED OR DEFECTIVE PIPE, PIPE JOINTS, FITTINGS, VALVES, HYDRANTS OR APPURTENANCES SHALL BE REPAIRED OR REPLACED WITH SOUND MATERIAL AND THE HYDROSTATIC TEST PRESSURE PROCEDURE REPEATED.

AFTER A SECTION OF THE WATER MAIN HAS BEEN TESTED, THE CONTRACTOR SHALL FLUSH THE SAME. WHERE DRAIN VAULTS ARE CONNECTED TO DRAIN VALVES OR VALVES, THE CONTRACTOR SHALL, WITHIN A REASONABLE TIME AFTER THE TEST HAS BEEN COMPLETED, PUMP ALL WATER OUT OF THE DRAIN VAULTS AND VALVE VAULTS. FLUSHING SHALL BE DONE IN ACCORDANCE WITH THESE SPECIFICATIONS.

IN COLD WEATHER IMMEDIATELY AFTER TESTING A SECTION OF THE WATER MAIN, THE CONTRACTOR SHALL OPEN ALL VALVES AND ALL AIR RELIEF VALVES IN THE SECTION(S) OF THE WATER MAIN, AND TAKE ALL OTHER PRECAUTIONS NECESSARY TO PREVENT INJURY TO WATER MAIN, VALVES, AND APPURTENANCES DUE TO FREEZING.

NO EXTRA PAYMENT WILL BE MADE TO THE CONTRACTOR FOR TESTING, FLUSHING, DRAINING, PROTECTING, LOCATING AND REPAIRING LEAKS, REPLACING DAMAGED OR DEFECTIVE PIPE, VALVES OR OTHER APPURTENANCES, RETESTING, OR TO PROVIDE APPURTENANCES AT TEST POINTS PROPER RESTRAINTS, BUT THE ENTIRE COST THEREOF SHALL BE DEEMED TO BE INCLUDED IN THE PRICE BID PER LINEAL FOOT OF WATER MAIN FURNISHED AND INSTALLED UNDER THIS CONTRACT.

WATER MAIN DISINFECTION

WATER MAIN DISINFECTION SHALL CONSIST OF: (A) PRELIMINARY FLUSHING OF WATER MAINS AFTER THE HYDROSTATIC TEST AND PRIOR TO THE CHLORINATION PROCEDURE; (B) THE CHLORINATION PROCEDURE; (C) THE FINAL FLUSHING; AND (D) SAMPLING. ALL CONTRACTOR LABOR, MATERIAL, EQUIPMENT AND INCIDENTALS REQUIRED TO ASSIST THE CITY IN THE DISINFECTION OF WATER MAINS SHALL BE DEEMED TO BE INCLUDED IN THE PRICE BID PER LINEAL FOOT OF WATER MAIN FURNISHED AND INSTALLED UNDER THIS CONTRACT.

A. PRELIMINARY FLUSHING:

BEFORE DISINFECTION ALL DIRT AND FOREIGN MATTER SHALL BE REMOVED FROM THE NEW WATER MAIN, OR EXTENSIONS TO EXISTING MAINS, BY A THOROUGH FLUSHING THROUGH BLOWOFFS, OR BY OTHER APPROVED MEANS, BY THE CONTRACTOR. EACH VALVE SECTION OF THE NEWLY LAID PIPE SHALL BE FLUSHED INDEPENDENTLY. THIS SHALL BE DONE AFTER THE PRESSURE TEST. FLUSHING SHALL BE IN ACCORDANCE WITH ANSI/AWWA C-651 STANDARD FOR DISINFECTING WATER MAINS. WHERE THE FLUSHING VELOCITY SPECIFIED THEREIN CANNOT BE ATTAINED, FLUSHING RATES AS DETERMINED BY THE CITY TO BE SUFFICIENT SHALL BE PERMITTED. IF IN THE OPINION OF THE CITY THE FLUSHING PRIOR TO THE CHLORINATION PROCEDURE DOES NOT REMOVE DIRT OR OTHER ACCUMULATIONS IN THE PIPE, THE PIPE SHALL BE CLEANED BY MECHANICAL MEANS BY THE CONTRACTOR AND THE FLUSHING SHALL BE REPEATED.

B. CHLORINATION PROCEDURE

SUCH LENGTHS OF THE WATER MAIN AS THE CITY MAY DETERMINE, SHALL BE CHLORINATED; HOWEVER, IN NO CASE SHALL THE LENGTH EXCEED THAT WHICH CAN BE CHLORINATED SATISFACTORILY IN ONE (1) WORK DAY. SUCH MAXIMUM LENGTH IS GENERALLY UP TO THREE (3) MILE TOTAL, INCLUDING BRANCHES AND CONNECTING WATER MAIN(S), FOR SIXTEEN INCH (16") AND SMALLER; AND THREE (3) VALVE SECTIONS, OR TWO (2) MILES, FOR TWENTY INCH (20") OR LARGER WATER MAINS.

THE CONTRACTOR SHALL COOPERATE WITH THE CITY BY OPERATING, ONLY WHEN DIRECTED, ANY REQUIRED WATER MAIN APPURTENANCES TO ASSIST IN THE DISINFECTION OF SUCH APPURTENANCES AND OF ANY PIPE BRANCHES AND TO ASSURE THAT THE CHLORINATION SOLUTION IS CONFINED TO WATER MAIN BEING DISINFECTED. THE CITY WILL DETERMINE THE LENGTH OF TIME THE CHLORINE SOLUTION IS TO BE HELD IN THE WATER MAIN BEING DISINFECTED.

C. FINAL FLUSHING

THE FLUSHING OF THE CHLORINATION SOLUTION SHALL BE DONE BY THE CONTRACTOR UNTIL THE CHLORINE SOLUTION IS TOTALLY FLUSHED OUT OF THE SYSTEM BEING DISINFECTED. ALL FLUSHING SHALL BE UNDER THE CONTROL OF THE DIRECTOR OF PUBLIC UTILITIES, OR HIS DESIGNATE. THE CONTRACTOR SHALL OBTAIN WATER FOR FLUSHING IN THE SAME MANNER AS FOR PRESSURE TEST PROCEDURE.

IN FLUSHING, THE CONTRACTOR SHALL PROPERLY DISPOSE OF THE CHLORINATION SOLUTION. ONLY POINTS OF DISCHARGE APPROVED BY THE CITY SHALL BE UTILIZED WITHOUT ANY TREATMENT TO CHEMICALLY NEUTRALIZE THE SOLUTION. IN CASES WHERE DIRECT DISPOSAL IS NOT APPROVED, THE CONTRACTOR SHALL NEUTRALIZE THE CHLORINE SOLUTION AS PROVIDED IN APPENDIX B OF AWWA C_651. THE CONTRACTOR SHALL OBTAIN APPROVAL, IN WRITING, OF THE LOCAL MUNICIPALITY, OR OF THOSE HAVING JURISDICTION OVER THE LOCAL SEWERS, BEFORE DISPOSING TO A SANITARY SEWER. A COPY OF SUCH WRITTEN APPROVAL SHALL BE PROVIDED TO THE CITY BEFORE ANY FLUSHING IS BEGUN.

THE CITY WILL DETERMINE WHEN THE DISINFECTION SOLUTION HAS BEEN SATISFACTORILY FLUSHED FROM THE MAIN AND BRANCHES.

D. SAMPLING

A TIME PERIOD AS DETERMINED BY THE CITY SHALL ELAPSE BEFORE WATER SAMPLES ARE TAKEN FROM THE WATER MAIN(S) AND BRANCH(ES) TO DETERMINE THE BACTERIOLOGICAL QUALITY OF THE WATER THEREIN. IN NO CASE, SHALL THE TIME PERIOD BE LESS THAN TWENTY-FOUR (24) HOURS.

NO SAMPLES SHALL BE TAKEN FROM FIRE HYDRANTS. THE CONTRACTOR SHALL ASSIST THE CITY IN OBTAINING SAMPLES. THE CITY WILL FURNISH ALL CONTAINERS AND CONTROL PROCEDURES FOR OBTAINING SAMPLES. THE CITY WILL DETERMINE THE NUMBER AND LOCATIONS OF SAMPLES TO BE TAKEN FROM THE DISINFECTED SECTIONS.

THE CITY WILL DETERMINE THE BACTERIOLOGICALLY QUALITY OF THE WATER SAMPLES. IF SAMPLING RESULTS IN TWO (2) CONSECUTIVE POSITIVE SAMPLES, THE PROCEDURE OF CHLORINATION, FLUSHING AND SAMPLING SHALL BE REPEATED. SEE SUGGESTED COMBINATION AND SAMPLING TAP IN AWWA C_651 FOR DETAILS.

IN CASES WHERE THE LENGTH OF WATER MAIN IS LESS THAN 350 FEET, AFTER HYDROSTATIC TESTING, ONLY PRELIMINARY FLUSHING AND SAMPLING WILL BE DONE. HOWEVER, IF THERE ARE TWO (2) POSITIVE SAMPLES, AFTER THE PRELIMINARY FLUSHING AND SAMPLING, THE ENTIRE PROCEDURE OF PRELIMINARY FLUSHING, CHLORINATION, FINAL FLUSHING AND SAMPLING SHALL BE REQUIRED. THE CITY WILL COMPLETE AND DISTRIBUTE THE CHLORINATION APPROVAL FORM.

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WATER WORK GENERAL NOTES CONT.:

CONTRACTOR'S LABOR

DURING THE ENTIRE DISINFECTION PROCEDURE, THE CONTRACTOR SHALL FURNISH AT LEAST TWO (2) TRAINED WORKMEN TO PERFORM ALL LABOR UNDER THE SUPERVISION AND DIRECTION OF THE CITY. THE CONTRACTOR'S LABORERS SHALL ASSIST THE CITY IN THE DUTIES DESCRIBED ABOVE. THE CONTRACTOR SHALL PROVIDE PROPER EQUIPMENT AND PROTECTIVE CLOTHING AS MAY BE REQUIRED BY THE LABORERS IN PERFORMING THE WORK REQUIRED FOR THE DISINFECTION OF WATER MAINS.

NO EXTRA PAYMENT WILL BE MADE TO THE CONTRACTOR FOR PROVIDING LABOR TO ASSIST THE CITY DURING THE DISINFECTION PROCEDURE, OR FOR PROVIDING PROPER EQUIPMENT AND PROTECTIVE CLOTHING REQUIRED THEREFOR, BUT THE COST THEREOF SHALL BE DEEMED TO BE INCLUDED IN THE PRICE BID PER LINEAL FOOT OF WATER MAIN FURNISHED AND INSTALLED UNDER THIS CONTRACT.

ACCESS PITS FOR CHLORINATION

AT LOCATIONS DETERMINED BY THE CITY, THE CONTRACTOR SHALL PROVIDE TIGHTLY WOOD SHEETED ACCESS PITS FOR ACCESS TO ALL WATER MAIN APPURTENANCES TO BE UTILIZED IN DISINFECTING WATER MAINS. THESE ACCESS PITS SHALL CONFORM TO THE LATEST REQUIREMENTS OF THE SPECIFIC SAFETY REQUIREMENTS SET FORTH IN 29 CODE OF FEDERAL REGULATIONS PART 1926 (CFR 1926), AND WITH ALL APPLICABLE RULES AND REGULATIONS OF OSHA.

THE CONTRACTOR SHALL HAVE ON HAND, READY TO USE, PUMPING EQUIPMENT TO DEWATER ANY AND ALL ACCESS PITS USED FOR DISINFECTION WATER MAINS AND SHALL DEWATER THE ACCESS PITS WHEN ORDERED BY THE ENGINEER/DESIGN ENGINEER.

UPON COMPLETION OF THE CHLORINATION PROCEDURE, WHEN ACCESS PITS ARE NO LONGER REQUIRED FOR USE, THE CONTRACTOR SHALL REMOVE ALL SHEETED ACCESS PITS AND BACKFILL THE EXCAVATIONS IN ACCORDANCE WITH THESE SPECIFICATIONS.

NO EXTRA PAYMENT WILL BE MADE TO THE CONTRACTOR PROVIDING ACCESS PITS, PUMPING EQUIPMENT AND THE DEWATERING OF ACCESS PITS, OR FOR THE REMOVAL OF THE SHEETED ACCESS PITS AND BACKFILLING OF THE EXCAVATIONS, BUT THE COST THEREOF SHALL BE DEEMED TO BE INCLUDED IN THE PRICE BID PER LINEAL FOOT OF WATER MAIN FURNISHED AND INSTALLED UNDER THIS CONTRACT.

WATER WORK PAY ITEMS:

ITEM 202 - VALVE BOX REMOVED

ON THE PLANS WHERE VALVE BOXES ARE INDICATED TO BE REMOVED, SHALL BE REMOVED IN ACCORDANCE WITH ITEM 202.

ITEM 202 - PIPE REMOVED, 24" AND UNDER

ON THE PLANS WHERE PIPE IS INDICATED TO BE REMOVED, SHALL BE REMOVED IN ACCORDANCE WITH ITEM 202.

ITEM 638 - VALVE BOX ADJUSTED TO GRADE

ON THE PLANS WHERE VALVE BOXES ARE INDICATED TO BE ADJUSTED TO GRADES, SHALL BE ADJUSTED TO GRADE IN ACCORDANCE WITH ITEM 638.

ITEM 638 - FIRE HYDRANT REMOVED AND DISPOSED OF

ON THE PLANS WHERE FIRE HYDRANTS ARE INDICATED TO BE REMOVED AND DISPOSED OF, SHALL BE REMOVED AND DISPOSED OF IN ACCORDANCE WITH ITEM 638.

ITEM 638 - 12" CUTTING-IN SLEEVE, VALVE AND VALVE BOX CWD STD-005

THE CONTRACTOR SHALL FURNISH AND INSTALL ALL NEW VALVES AND VALVE BOXES COMPLETE; NO RECONDITIONED VALVES SHALL BE ALLOWED. THE VALVES SHALL BE THE SAME SIZE AS THE MAIN IT WILL FUNCTION ON, REGARDLESS OF THE SIZE OF THE OLD VALVE THAT WAS REMOVED. THE VALVES SHALL BE APPROVED GATE VALVES WITH MECHANICAL-JOINT BELL ENDS, CONFORMING TO ANSI/AWWA C11/A21.11-80, LEAD JOINTS WILL NO LONGER BE PERMITTED. THE CITY'S VALVE REQUIREMENTS ARE ON FILE AT THE DIVISION OF WATER, PUBLIC UTILIZES BUILDING, 1201 LAKESIDE AVENUE, CLEVELAND, OHIO 44114.

THE NIPPLES SHALL BE OF NEW CLASS 52 DUCTILE IRON CEMENT LINED PIPE. THE NIPPLES SHALL BE ATTACHED TO THE VALVE WITH APPROVED RESTRAINED MECHANICAL JOINTS AS SPECIFIED IN THE PRECEDING PARAGRAPH. THE NIPPLES SHALL BE ATTACHED TO THE EXISTING WATER MAIN WITH EITHER SOLID DUCTILE IRON MECHANICAL JOINT SLEEVES OR COMPRESSION COUPLINGS PER THE STANDARD DETAILS, AS ORDERED BY THE CITY, AND IN ACCORDANCE WITH THE STDs COVERING DRESSER COUPLINGS.

THE VALVES SHALL BE SET ACCURATELY AND CAREFULLY AT THE REQUIRED LOCATIONS, IN A MANNER APPROVED BY ODOT. AFTER THE VALVES HAVE BEEN SET IN PLACE AND READY TO OPERATE, THE CONTRACTOR SHALL TEST THEM UNDER WORKING PRESSURE AND CONDITIONS. ANY VALVE OR JOINT FOUND TO LEAK SHALL BE MADE WATER-TIGHT BY THE CONTRACTOR. IF THE VALVE IS FOUND TO BE OF FAULTY CONSTRUCTION, THE CONTRACTOR SHALL REPAIR OR REPLACE IT.

AT LOCATIONS NOT INDICATED ON THE CONTRACT DRAWINGS, BUT WHERE ORDERED BY ODOT OR WHERE REQUIRED TO REPLACE A LEAKING EXISTING SIDE LINE VALVE, THE CONTRACTOR SHALL REMOVE AND REPLACE EXISTING VALVES WITH NEW VALVES, OR CUT IN NEW VALVES IF NONE NOW EXIST. THE CONTRACTOR SHALL BE PAID AT THE BID PRICE.

THE CONTRACTOR SUBMITS FOR NEW VALVES. THE QUANTITY OF NEW VALVES SHOWN ON THE BID - SCHEDULE OF ITEMS INCLUDES THE VALVES INDICATED IN THE CONTRACT DRAWINGS.

THE COST OF WORK SHALL INCLUDE ALL VALVES AND FITTINGS, EXCAVATION AND BACKFILL, TESTING, DISINFECTION, POLYETHYLENE ENCASUREMENT, AND PAVEMENT REPLACEMENT, EXCEPT FOR ASPHALT INTERMEDIATE AND SURFACE COURSES.

ITEM 638 - WATER WORK, MISC.: FILL AND PLUG EXISTING CONDUIT

THIS ITEM SHALL CONSIST OF THE CONSTRUCTION OF BULK HEADS IN AN EXISTING CONDUIT AND FILLING THE AREA THUS SEALED OFF WITH LEAN GROUT, ITEM 613, SAND OR OTHER MATERIAL APPROVED BY THE ENGINEER.

BULKHEADS SHALL BE LOCATED AT THE LIMITS OF THE AREA TO BE FILLED AS DIRECTED BY THE ENGINEER. THE BULKHEADS SHALL BE IN ACCORDANCE WITH STD-004.

THE FILL MATERIAL SHALL BE PUMPED INTO PLACE, OR PLACED BY OTHER MEANS APPROVED BY THE ENGINEER, SO THAT, AFTER SETTLEMENT, AT LEAST 90 PERCENT OF THE CROSS-SECTIONAL AREA OF THE CONDUIT, FOR ITS ENTIRE LENGTH, SHALL BE FILLED. THE LENGTH OF FILLED AND PLUGGED CONDUIT TO BE PAID FOR SHALL BE THE ACTUAL NUMBER OF FEET MEASURED ALONG THE CENTERLINE OF EACH CONDUIT FROM OUTER FACE OF BULKHEADS FILLED AND PLUGGED AS DESCRIBED ABOVE.

IN LIEU OF FILLING AND PLUGGING THE EXISTING CONDUIT, THE PIPE MAY BE REMOVED. THE LENGTH, MEASURED AS PROVIDED ABOVE, SHALL BE PAID FOR AT THE CONTRACT PRICE PER FOOT FOR, ITEM 638 - WATER WORK, MISC.: FILL AND PLUG EXISTING CONDUIT.

ITEM 638 - WATER WORK MISC.: FURNISHING AND SETTING 6" HYDRANT, COMPLETE, STRAIGHT

ON THE PLANS WHERE HYDRANT ASSEMBLIES ARE INDICATED, SHALL BE FURNISHED AND SET, COMPLETE, IN ACCORDANCE WITH STD-H08, STD-H09, AND STD-H13. HYDRANTS SHALL BE INSTALLED OFFSET OR STRAIGHT AS INDICATED ON THE CONTRACT DRAWINGS AND SHALL BE PAID PER EACH AS SEPARATE BID ITEMS.

THE 6-INCH HYDRANTS SHALL BE CITY OF CLEVELAND STANDARD AND SHALL CONFORM TO THE DIVISION OF WATER'S SPECIFICATIONS AND APPROVED HYDRANT DRAWINGS INCLUDED. WHEN PLACED BEHIND THE CURB, THE HYDRANT BARREL SHALL BE SET SO THAT THE CENTER OF THE BARREL SHALL BE NO LESS THAN THREE FEET FROM THE GUTTER FACE OF THE CURB. WHEN SET IN THE LAWN SPACE BETWEEN THE CURB AND THE SIDEWALK, OR BETWEEN THE SIDEWALK AND THE PROPERTY LINE, NO PORTION OF THE NOZZLE OR HYDRANT CAP SHALL BE WITHIN 6 INCHES OF THE SIDEWALK.

THE HYDRANT SHALL STAND PLUMB, WITH THE 4-INCH STEAMER NOZZLE POINTING TOWARD THE CURB, WHERE HYDRANT BRANCH PIPING IS PARALLEL WITH, OR NOT AT RIGHT ANGLES TO THE CURB, THE CONTRACTOR SHALL RELEASE THE SWIVEL HEAD BOLTS AND ADJUST HYDRANT 4-INCH STEAMER NOZZLE TO FACE THE CURB AT THE PROPER ANGLE. HYDRANTS WITHOUT SWIVEL HEADS SHALL BE ADJUSTED TO CORRECT THE POSITION OF THE 4-INCH STEAMER NOZZLE TO FACE THE CURB. THE HEIGHT OF THE HYDRANT SHALL CONFORM TO THE ESTABLISHED GRADE WITH THE TOP OF THE FROST CASING TO BE LOCATED AT LEAST FOUR INCHES ABOVE GRADE.

DRAINAGE SHALL BE PROVIDED AT THE BASE OF THE HYDRANT BY FILLING AROUND THE ELBOW WITH COARSE GRAVEL OR CRUSHED STONE TO AT LEAST SIX INCHES ABOVE THE WASTE OPENING. WHEREVER THE HYDRANT IS SET IN ROCK, CLAY, OR OTHER IMPERVIOUS SOIL, THE TRENCH SHALL BE WIDENED AND DEEPEMED ON EACH SIDE OF THE HYDRANT BASE, WHICH SPACE SHALL BE FILLED WITH COARSE GRAVEL, CRUSHED STONE, OR BROKEN STONE AND MIXED WITH COARSE AND OF SUFFICIENT QUANTITY TO ABSORB ALL WATER TO BE DRAINED FROM THE HYDRANT WHEN BRANCH VALVE IS CLOSED.

THE HYDRANT SHALL BE SET ON A STONE SLAB OR SIMILAR FOUNDATION AND THE BASE OF THE HYDRANT SHALL BE WELL BRACED AGAINST UNEXCAVATED EARTH TO THE END OF THE TRENCH WITH CONCRETE BACKING, AND IT SHALL BE RESTRAINED TO THE BRANCH PIPING WITH SWIVEL JOINTS OR RETAINED MECHANICAL JOINTS, OR BE TIED TO THE BRANCH PIPE WITH SUITABLE RODS, CLAMPS, OR OTHER APPROVED RESTRAINT AS APPROVED OR DIRECTED BY THE CITY. THE INTERIOR OF THE HYDRANT SHALL BE THOROUGHLY CLEANED OF ALL DIRT AND FOREIGN MATTER BEFORE SETTING.

PAYMENT FOR THIS ITEM SHALL INCLUDE BUT NOT LIMITED TO: INSTALLATION OF THE NEW HYDRANT, EXCAVATION, BACKFILL, REMOVAL AND DISPOSAL OF EXISTING HYDRANT/PIPING, BRANCH PIPING, TEE, GATE VALVE, VALVE BOX, THRUST BLOCKING, APPURTENANCES AND OTHER MATERIALS OR WORK REQUIRED TO INSTALL ACCORDANCE WITH STD-H08, STD-H09, AND STD-H13.

ITEM SPECIAL - 12" WATER MAIN DIP CLASS 52 PUSH ON JOINTS AND FITTINGS

THE CONTRACTOR, UNDER THIS ITEM, SHALL FURNISH ALL THE MATERIALS, LABOR, TOOLS, EQUIPMENT, AND INCIDENTALS FOR AND SHALL PROPERLY CONSTRUCT AND CONNECT IN PLACE, AS SHOWN ON THE CONTRACT DRAWINGS AND AS SPECIFIED HEREIN, ALL DUCTILE IRON PIPE, FITTINGS, AND VALVES; V-BIO ENHANCED POLYETHYLENE WRAP; CUTTING INTO AND REMOVAL OF EXISTING PIPE, VALVES, AND FITTINGS; EXISTING CONCRETE THRUST BLOCKS, EXISTING PLUGS/CAPS; ABANDONMENT/PLUGGING OF EXISTING WATER MAINS AND SERVICE CONNECTIONS; CONNECTING, FURNISHING AND INSTALLING RESTRAINED JOINTS, VICTAULIC JOINTS AND COMPRESSION COUPLINGS; COATINGS; WATER TRENCH EXCAVATION; SEWER AND/OR UTILITY TRENCHES; SHEETING AND SHORING INCLUDING USE OF TRENCH BOX; THE FURNISHING AND INSTALLING OF ALL APPROVED MATERIALS AS HEREIN SPECIFIED AND AS REQUIRED TO COMPLETE THE WORK; SAND BEDDING BACKFILL; BACKFILL AND/OR PREMIUM BACKFILL; HYDROSTATIC PRESSURE TESTING OF THE WATER MAIN AND ALL APPURTENANCES AND THE REPAIR AND/OR REPLACEMENT OF MATERIALS DUE TO LEAKAGE OR DEFECTS; ASSISTING IN THE CHLORINATION AND FLUSHING PROCEDURES; PAVEMENT REPLACEMENT, EXCEPT FOR SUCH WORK THAT IS COVERED UNDER THE VARIOUS PAVEMENT WORK BID ITEMS; REMOVAL AND RESTORATION OF MISCELLANEOUS ITEMS.

THIS ITEM SHALL ALSO INCLUDE INSTALLATION OF ALL HORIZONTAL BENDS OR DEFLECTIONS; REDUCERS; BENDS FOR WATER MAIN LOWERING UNDER OBSTRUCTION IN ACCORDANCE WITH STD-L04 AND STD-L05; ANY VERTICAL BENDS THAT MAKE THE PIPE LESS THAN 6-FEET IN BURY DEPTH AND ALL WORK ASSOCIATED WITH FROST PROOFING SUCH PIPING AND APPURTENANCES; AND THE FURNISHING OF ALL LABOR, MATERIALS, TOOLS, EQUIPMENT, AND OTHER INCIDENTALS REQUIRED TO COMPLETE THE WORK SHOWN ON THE CONTRACT DRAWINGS AND AS SPECIFIED, OR AS ORDERED, ALL FOR THE PROPER COMPLETION OF THE WORK INCLUDED UNDER THIS CONTRACT.

ALL WORK HEREIN CONTEMPLATED, UNDER THIS ITEM CLASSIFIED AS TO SIZE AND TYPE, SHALL BE DEEMED TO BE INCLUDED IN THE PRICE BID PER LINEAL FOOT OF WATER MAIN FURNISHED AND INSTALLED UNDER THIS CONTRACT MEASURE FROM INSTALLED PIPE END TO PIPE END INCLUDING ANY FITTINGS, BENDS, ETC.

ITEM 638 - WATER WORK MISC.: CLEVELAND WATER DEPARTMENT CHARGES

THIS ITEM SHALL INCLUDE FEES PAID BY THE CONTRACTOR TO THE CITY OF CLEVELAND DEPARTMENT OF PUBLIC UTILITIES, DIVISION OF WATER FOR THEIR SERVICES RELATING TO THE DISINFECTION OF THE WATER MAIN AND THE TAPPING OR RETAPPING OF SERVICE CONNECTIONS.

THE CITY, DIVISION OF WATER, WILL CHARGE TO THE CONTRACTOR CERTAIN CHARGES PURSUANT TO SECTION 521.03(A) OF THE CODIFIED ORDINANCES OF THE DIVISION OF WATER, AS AMENDED BY ORDINANCE 1043-75 AND ADOPTED BY THE CITY OF CLEVELAND BOARD OF CONTROL RESOLUTION NO: 003-82, AND PER ORDINANCE NO:266-81, FOR DIVISION OF WATER LABOR REQUIRED IN THE WORK, PAYABLE TO THE PERMITS AND SALES SECTIONS OF THE DIVISION OF WATER BEFORE ANY WORK IS PERFORMED. THE CURRENT DIVISION OF WATER PERMITS AND SALES FEES MAY BE OBTAINED FROM THE CLEVELAND WATER DEPARTMENT'S WEBSITE.

THE PAY ITEM FOR THIS WORK SHALL BE LUMP SUM AND SHALL INCLUDE ALL CITY OF CLEVELAND, DIVISION OF WATER, LABOR CHARGED FOR WORK REQUIRED TO BE PERFORMED BY THE DIVISION

OF WATER. THE TOTAL LUM SUM COST FOR THIS WORK SHALL BE \$24,385.00.

DESIGN AGENCY



564 White Pond Drive
Akron, OH 44320
(330) 836-9111
www.aecom.com

DESIGNER

STO

REVIEWER

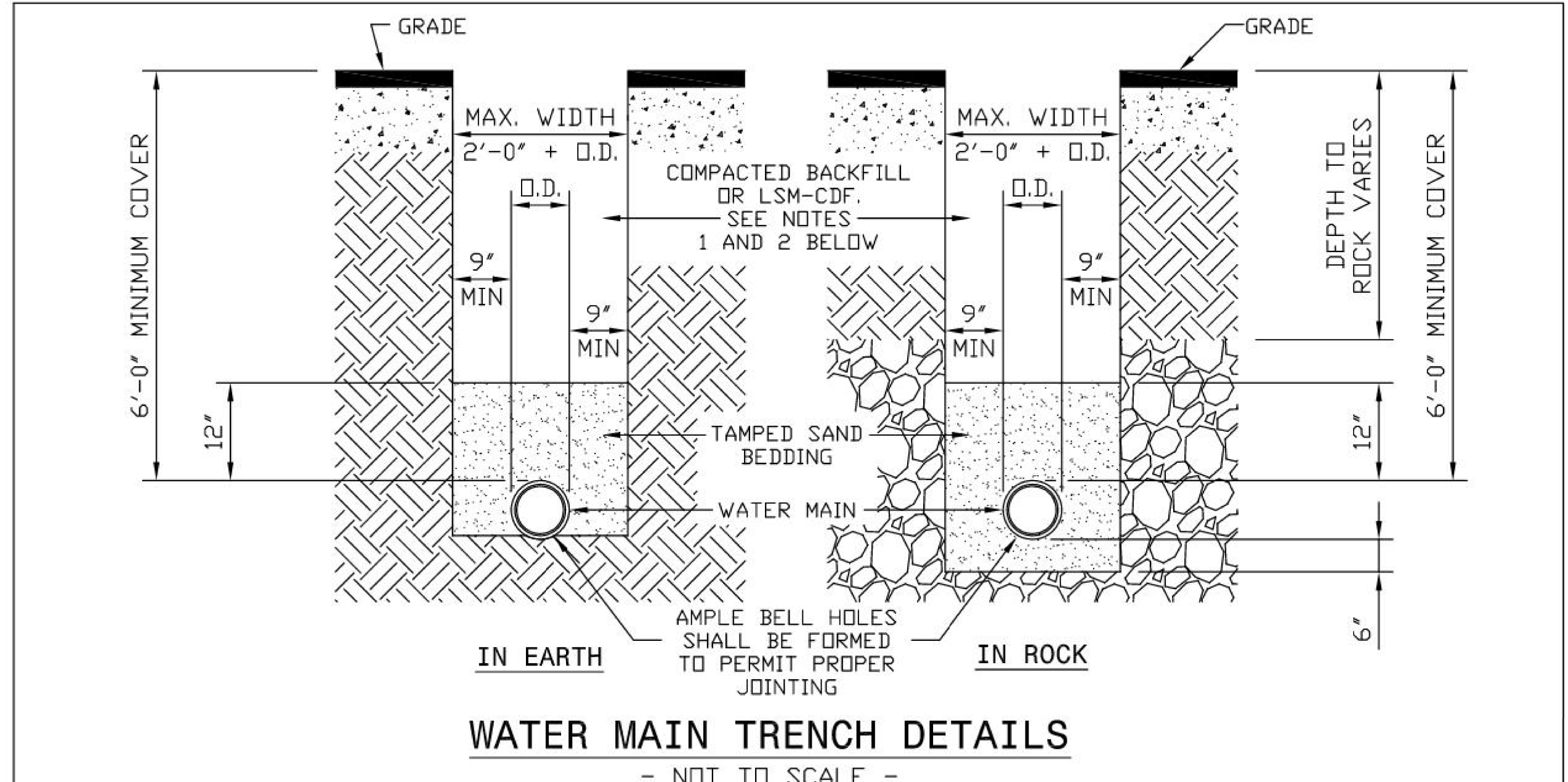
WFS 08/05/24

PROJECT ID

104132

SHEET TOTAL

P.158 399



NOTES:

- 1) PREMIUM BACKFILL CONSISTING OF LOW STRENGTH MORTAR - CONTROLLED DENSITY FILL (LSM-CDF) "FLOWABLE FILL" IS REQUIRED:
 - A) UNDER ALL EXISTING OR FUTURE PAVEMENTS, SIDEWALKS AND DRIVES WITHIN THE CITY OF CLEVELAND CORPORATION LIMITS.
 - B) AS SPECIFIED IN LOCAL MUNICIPALITIES SERVED BY CWD (SEE LOCAL REQUIREMENTS)
- 2) WHEN PREMIUM BACKFILL IS REQUIRED BY THE LOCAL MUNICIPALITY FOR CASES OTHER THAN THOSE LISTED IN NOTE 1 ABOVE, IT SHALL BE LIMESTONE GRADED PER ODOT 304.02 OR ODOT 411. NO SLAG IS PERMITTED.
- 3) CONTRACTOR SHALL USE SPECIAL CARE IN PLACING THE SAND BEDDING, SO AS TO AVOID SCRAPING OF THE EXTERIOR COATING, INJURING THE PIPE, DISTORTING OR MOVING THE PIPE WHEN COMPACTING THE SAME. THE SAND BEDDING SHALL BE TAMPED IN SIX (6) INCH LAYERS, SIMULTANEOUSLY ON EACH SIDE OF THE PIPE, AND THOROUGHLY COMPACTED SO AS TO PROVIDE A SOLID BACKING AGAINST THE EXTERNAL SURFACE OF THE PIPE.
- 4) MINIMUM COMPACTION FOR ALL SAND BEDDING, BACKFILL AND PREMIUM BACKFILL SHALL BE 95% STANDARD PROCTOR.
- 5) PAVEMENT, SIDEWALK OR DRIVES TO BE INSTALLED IN ACCORDANCE WITH LOCAL MUNICIPALITY'S SPECIFICATIONS.

STD-001

DATE: 6-21-2012

NOTE:
 LOW STRENGTH MORTAR - CONTROLLED DENSITY FILL (LSM-CDF) "FLOWABLE FILL" IS REQUIRED UNDER ALL EXISTING OR FUTURE PAVEMENTS, SIDEWALKS AND DRIVES. LOW STRENGTH MORTAR - CONTROLLED DENSITY FILL (LSM-CDF) "FLOWABLE FILL" OR COMPACTED BACKFILL IS PERMITTED ELSEWHERE, HOWEVER NO RECYCLED 304 OR ANY OTHER RECYCLED MATERIAL IS PERMITTED.

*CONNECTION SHALL BE MADE WITH RETAINED MECHANICAL JOINT SOLID SLEEVES (SHORT OR LONG PATTERN) DUCTILE IRON CLASS 350 OR CAST IRON CLASS 250 OR COMPRESSION COUPLINGS.

COMPRESSION COUPLINGS SHALL BE OF A GASKETED, SLEEVE TYPE WITH DIAMETERS TO PROPERLY FIT PLAIN END IRON PIPE. EACH COUPLING SHALL CONSIST OF ONE (1) MIDDLE RING, WITHOUT STOPS; TWO (2) FOLLOWER GLANDS; TWO (2) RUBBER-COMPOUND BUNA-N BLEND, WEDGE SECTION GASKETS; AND SUFFICIENT TRACKHEAD STAINLESS STEEL BOLTS AND NUTS (ASTM A276/A193/194, TYPE 304, EXTRA HEAVY HEX) TO PROPERLY COMPRESS THE GASKETS.

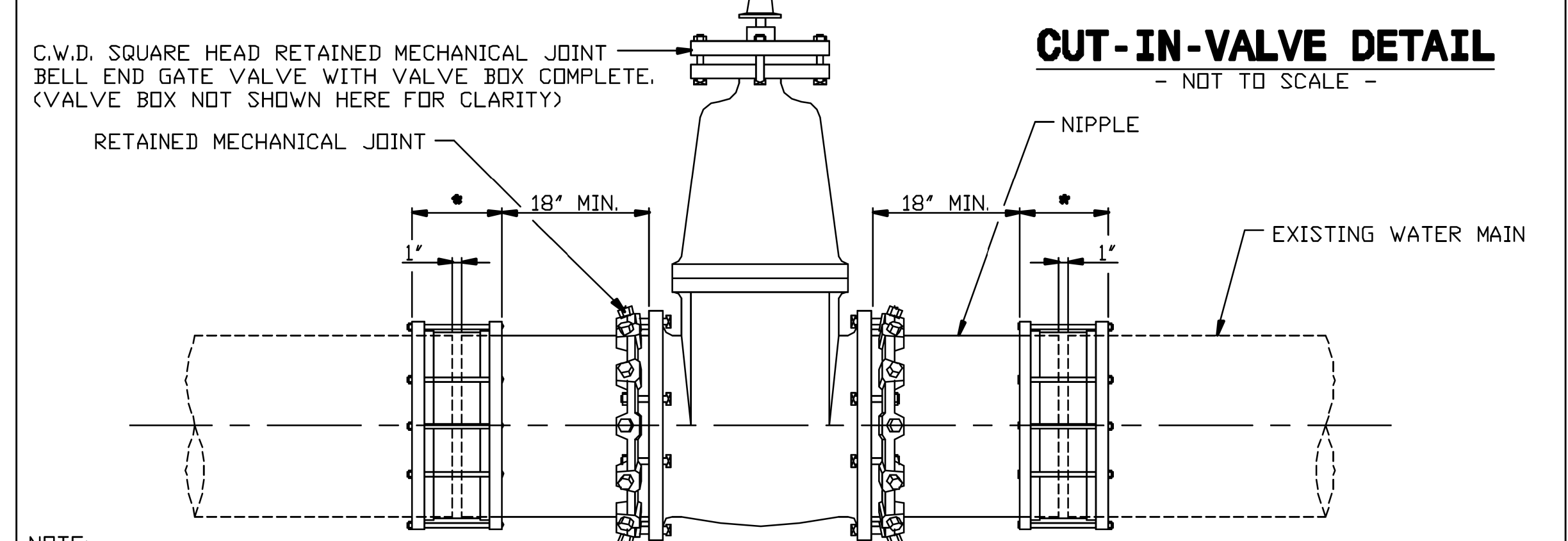
MIDDLE RING AND FOLLOWER GLANDS SHALL BE OF EITHER STEEL OR DUCTILE IRON (ASTM-A536).

THE COMPRESSION COUPLING SHALL BE WITHOUT STOPS AND BE RATED FOR A MINIMUM WORKING PRESSURE OF 250 PSI AND SHALL BE EQUAL TO THE DRESSER STYLE No's 38, 138 OR 162 (TRANSITION TYPE), OR SMITH-BLAIR 441 STRAIGHT AND TRANSITION COUPLINGS.

ALL BOLTS AND NUTS ON ALL MECHANICAL JOINTS, INCLUDING THOSE ON THE 'RETAINED' TYPE, SHALL HAVE FIELD APPLIED ONE (1) COAT OF BITUMASTIC PAINTING FOLLOWED BY AN ENCASMENT OF POLYETHYLENE WRAPPING IN ACCORDANCE WITH ANSI/AWWA C-105/A21.5-88, CLASS 'C', METHOD 'B'.

THE DIVISION OF WATER WILL DETERMINE THE FIELD LOCATION OF THE CUT-IN-VALVE ASSEMBLY. THE DIVISION OF WATER WILL ALSO SET THE TIME OF INSTALLATION OF THE CUT-IN-VALVE ASSEMBLY.

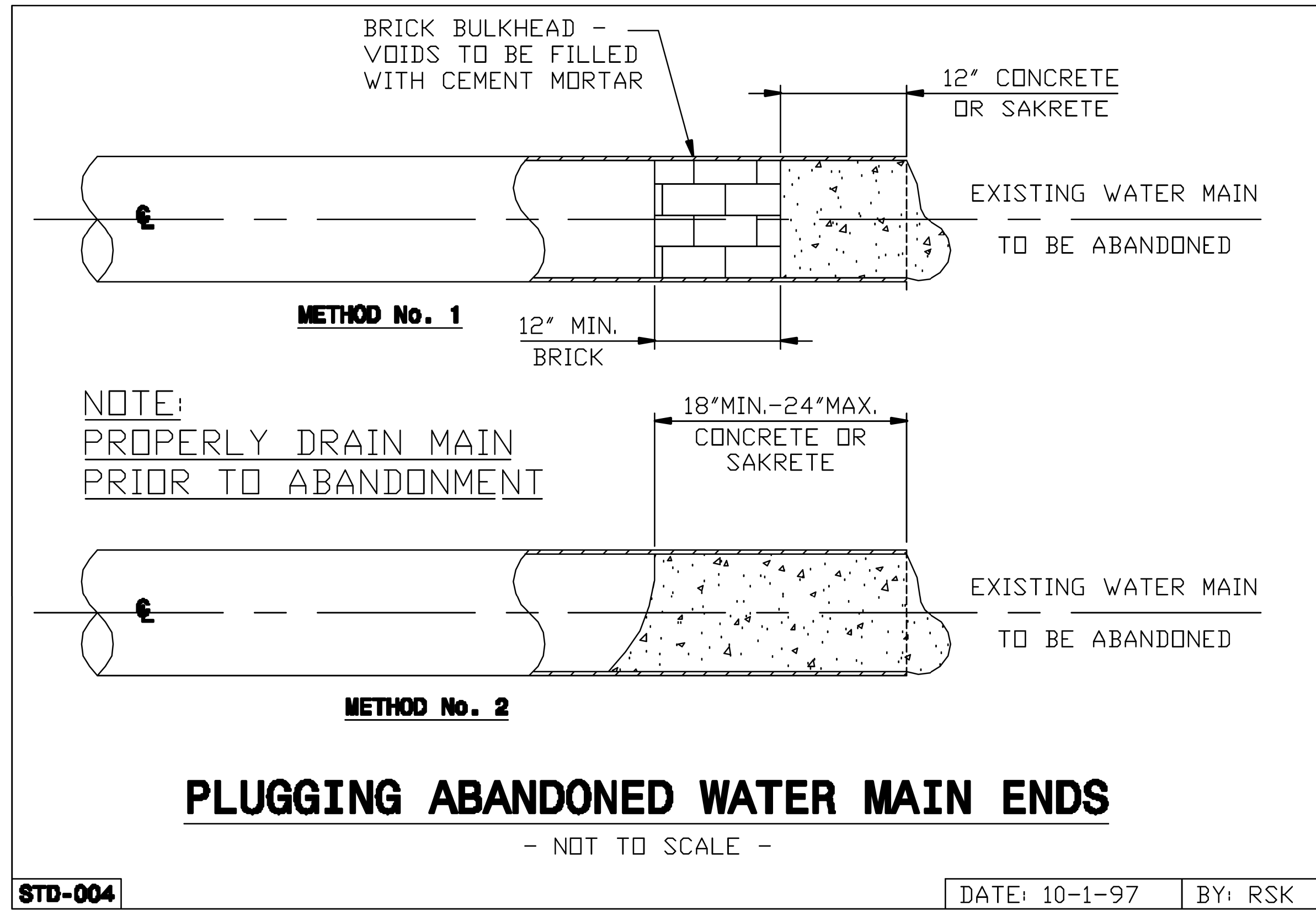
THE CONTRACTOR SHALL DO ALL PIPE CUTTING AND INSTALLATION. HOWEVER, THE INSTALLATION OF THE CUT-IN-VALVE ASSEMBLY SHALL BE DONE UNDER THE SUPERVISION OF THE DIVISION OF WATER.



NOTE:
 BEFORE CUTTING EXISTING WATER MAIN, THE NIPPLES SHALL BE CONNECTED TO THE MECHANICAL JOINT BELL END GATE VALVE. AFTER CUTTING PIPE, FINAL CONNECTIONS SHALL BE MADE WITH COUPLINGS/SOLID SLEEVES AS SPECIFIED.

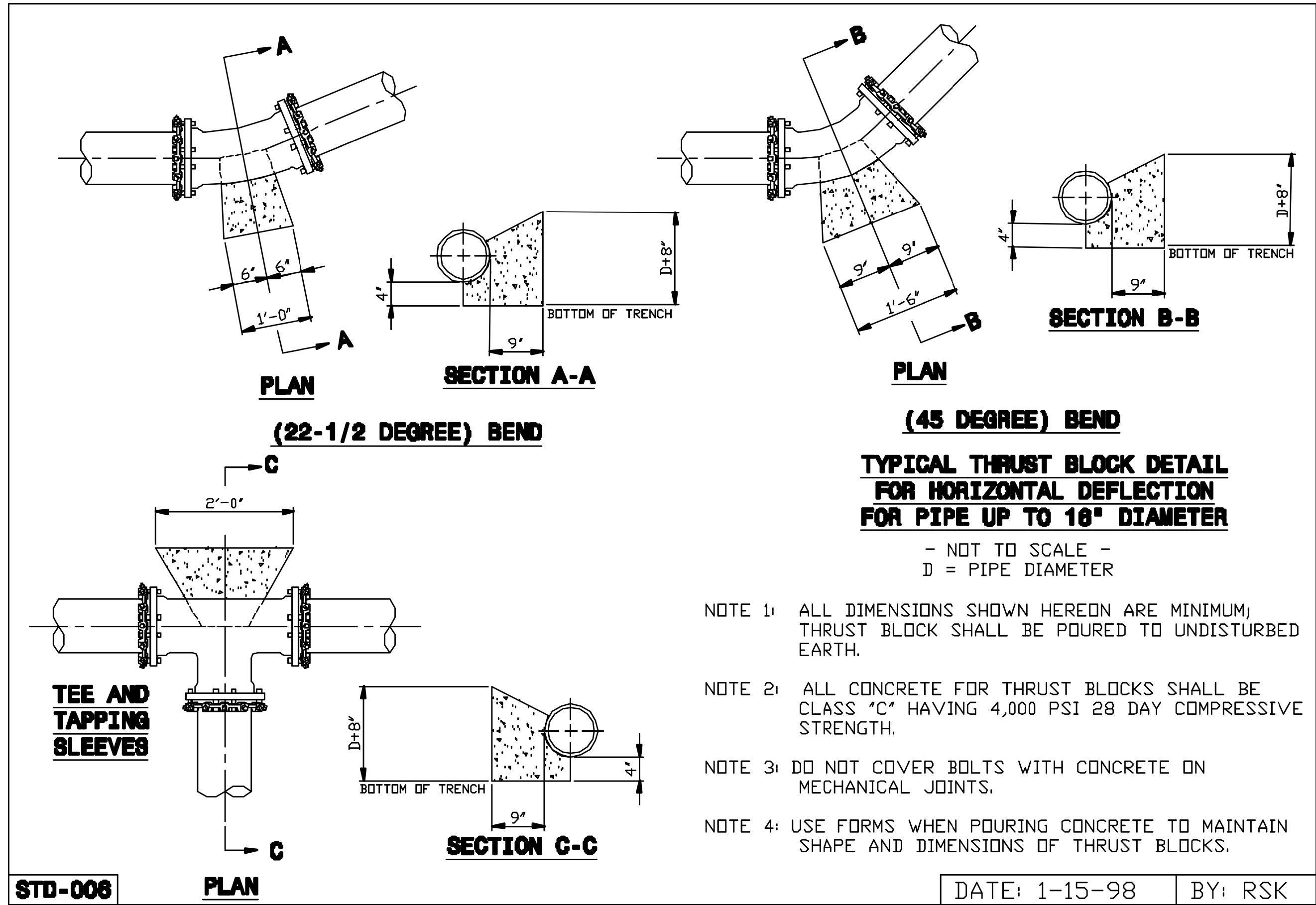
STD-006

DATE: 10-1-97 BY: RSK



STD-004

DATE: 10-1-97 BY: RSK



STD-006

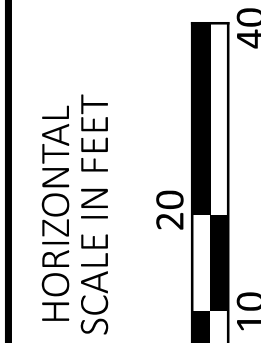
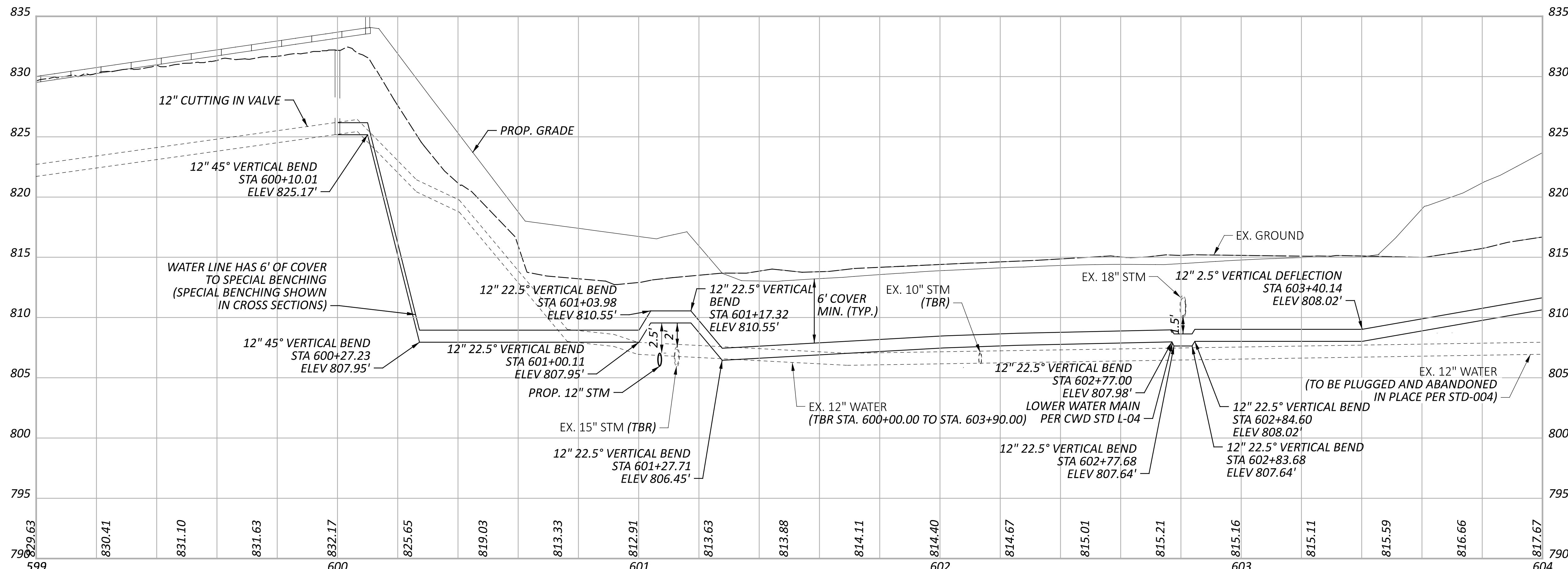
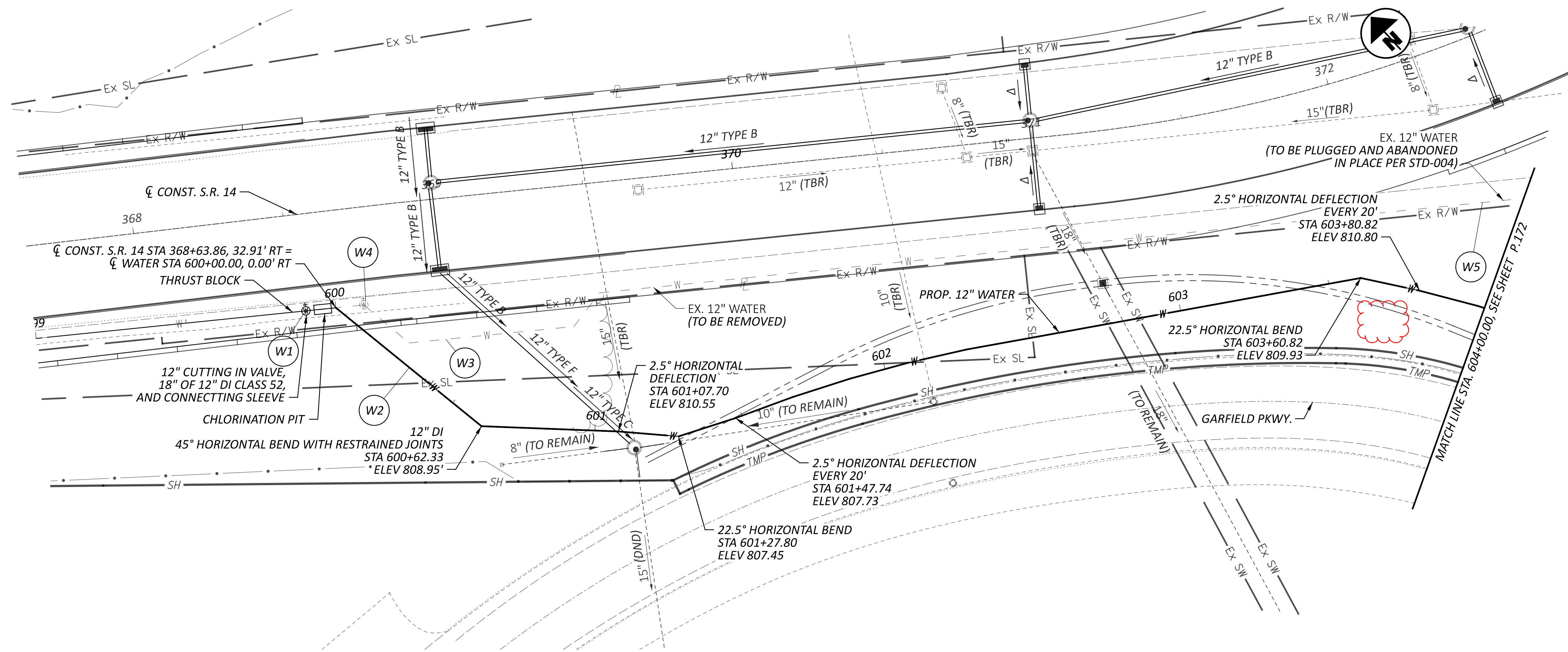
DATE: 1-15-98 BY: RSK

NOTE 1: ALL DIMENSIONS SHOWN HEREON ARE MINIMUM; THRUST BLOCK SHALL BE POURED TO UNDISTURBED EARTH.

NOTE 2: ALL CONCRETE FOR THRUST BLOCKS SHALL BE CLASS "C" HAVING 4,000 PSI 28 DAY COMPRESSIVE STRENGTH.

NOTE 3: DO NOT COVER BOLTS WITH CONCRETE ON MECHANICAL JOINTS.

NOTE 4: USE FORMS WHEN POURING CONCRETE TO MAINTAIN SHAPE AND DIMENSIONS OF THRUST BLOCKS.



**WATER WORK PLAN AND PROFILE
 BEGIN TO STA. 604+00.00**

DESIGN AGENCY

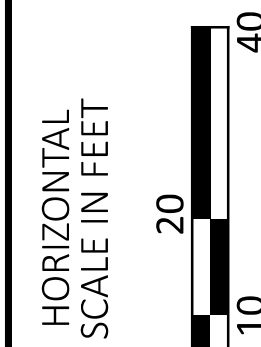
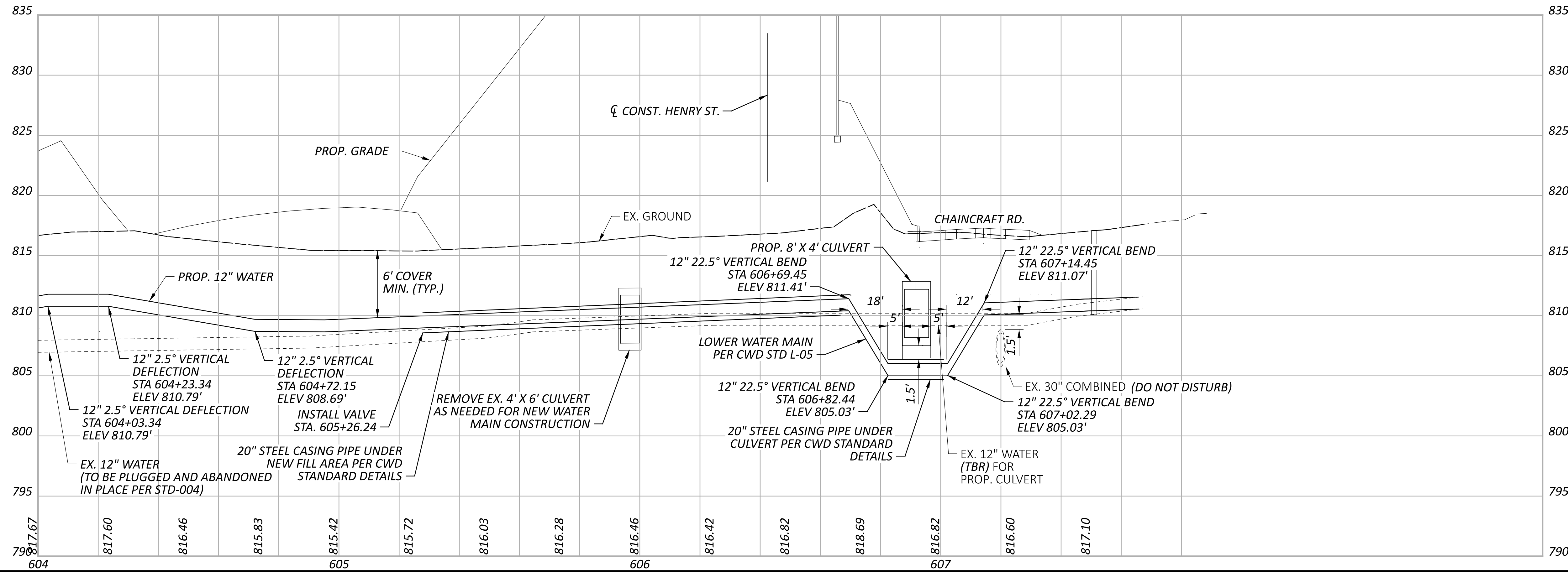
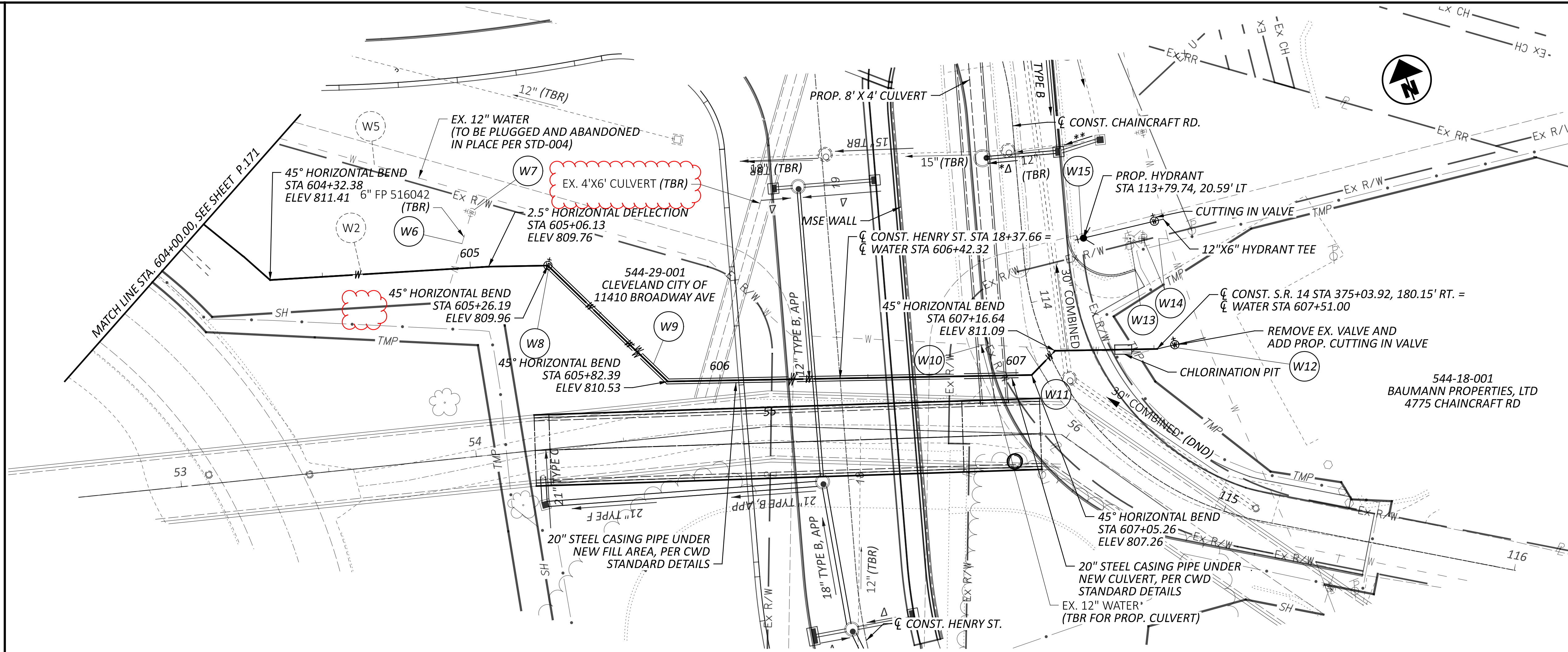
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DESIGNER
BNC

REVIEWER
WFS 08/05/24

PROJECT ID
104132

SHEET TOTAL
 P.171 399



WATER WORK PLAN AND PROFILE
STA. 604+00.00 TO END

DESIGN AGENCY

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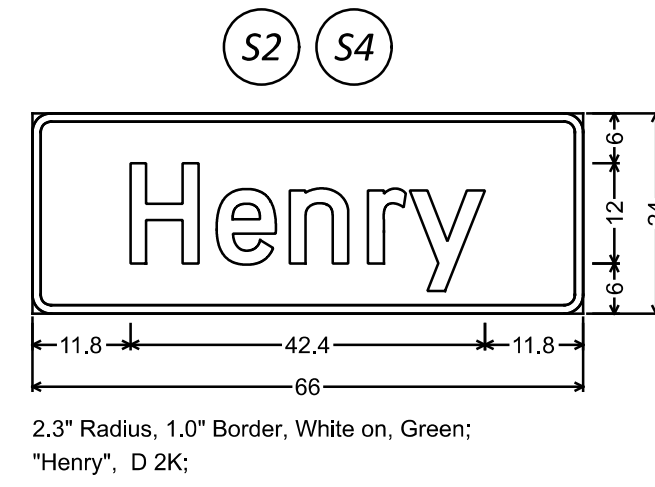
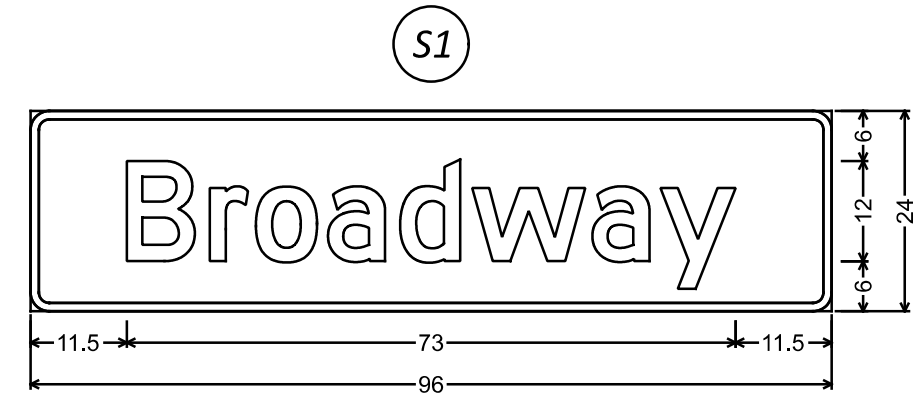
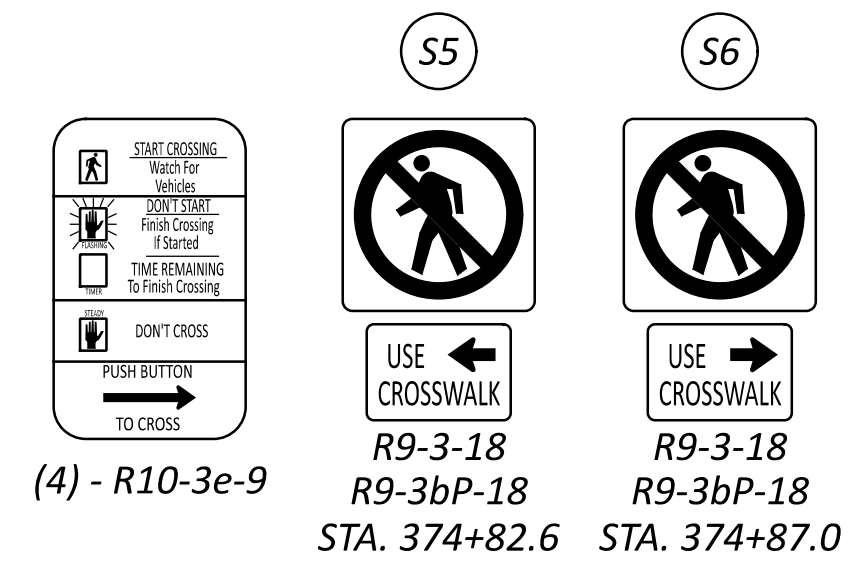
REVIEWER
WFS 08/05/24

PROJECT ID
104132

SHEET TOTAL
P.172 399

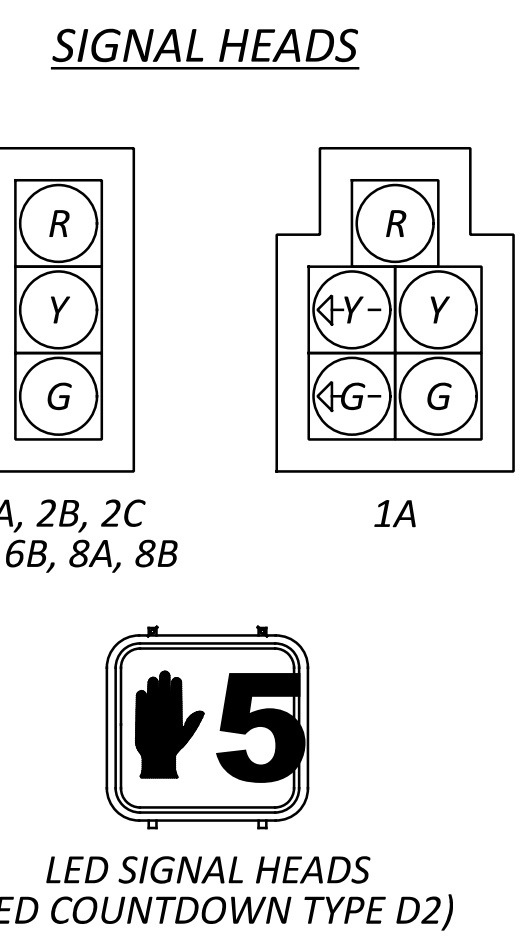
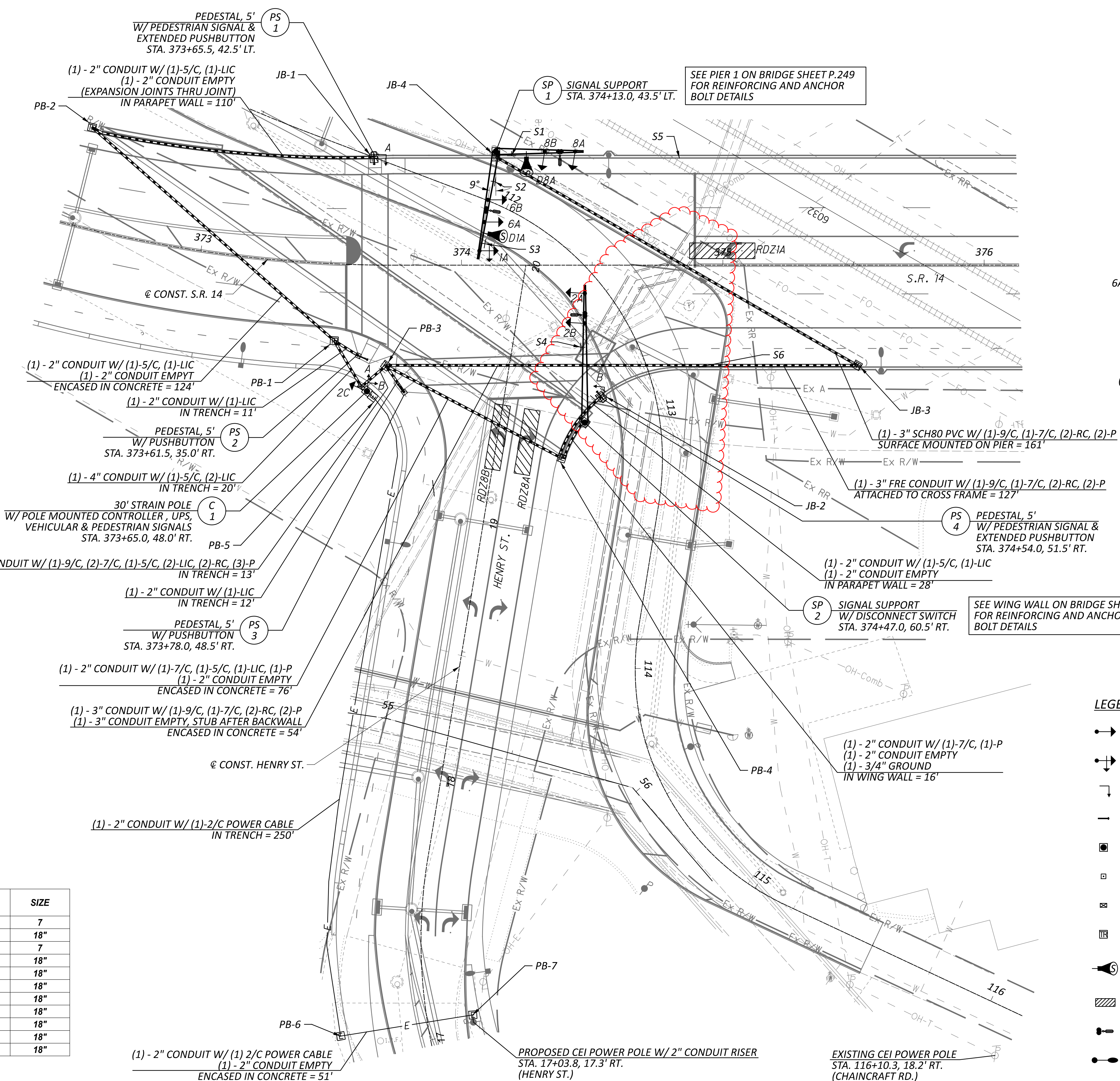
NOTE:
ALL CONDUITS SHALL BE 725.051
POLYVINYL CHLORIDE EXCEPT AS NOTED.

SIGNS

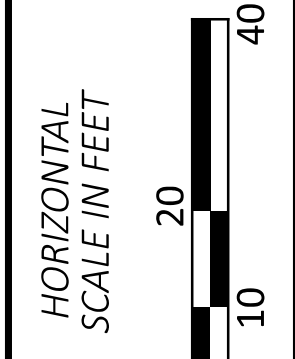


PULLBOX TABLE

PULL BOX # JUNCTION BOX #	STATION	SIDE	OFFSET	SIZE
PB 1	373+52.5	RT	29.5'	7
PB 2	372+48.0	LT	38.0'	18"
PB 3	373+71.5	RT	38.5'	7
PB 4	374+38.5	RT	74.0'	18"
PB 5	373+66.5	RT	50.5'	18"
PB 6	17+07.0	LT	33.5'	18"
PB 7	17+07.0	RT	17.5'	18"
JB 1	373+66.0	LT	41.0'	18"
JB 2	374+53.5	RT	50.0'	18"
JB 3	375+51.5	RT	38.5'	18"
JB 4	374+13.0	LT	41.5'	18"



- LEGEND**
- TRAFFIC SIGNAL, 3 UNIT HEAD, 12"
 - TRAFFIC SIGNAL, 5 UNIT HEAD, 12"
 - ↓ PEDESTRIAN SIGNAL HEAD
 - PEDESTRIAN PUSHBUTTON
 - MAST ARM SIGNAL SUPPORT
 - PEDESTAL SUPPORT
 - ⊠ POLE MOUNTED CONTROLLER
 - ▣ TRAFFIC PULL BOX
 - ⊙ STOP-LINE RADAR DETECTION UNIT
 - ▨ DETECTION ZONE
 - CONFIRMATION LIGHT
 - LUMINAIRE



**TRAFFIC SIGNAL PLAN
S.R. 14 AND HENRY STREET**

DESIGN AGENCY
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DESIGNER
GM

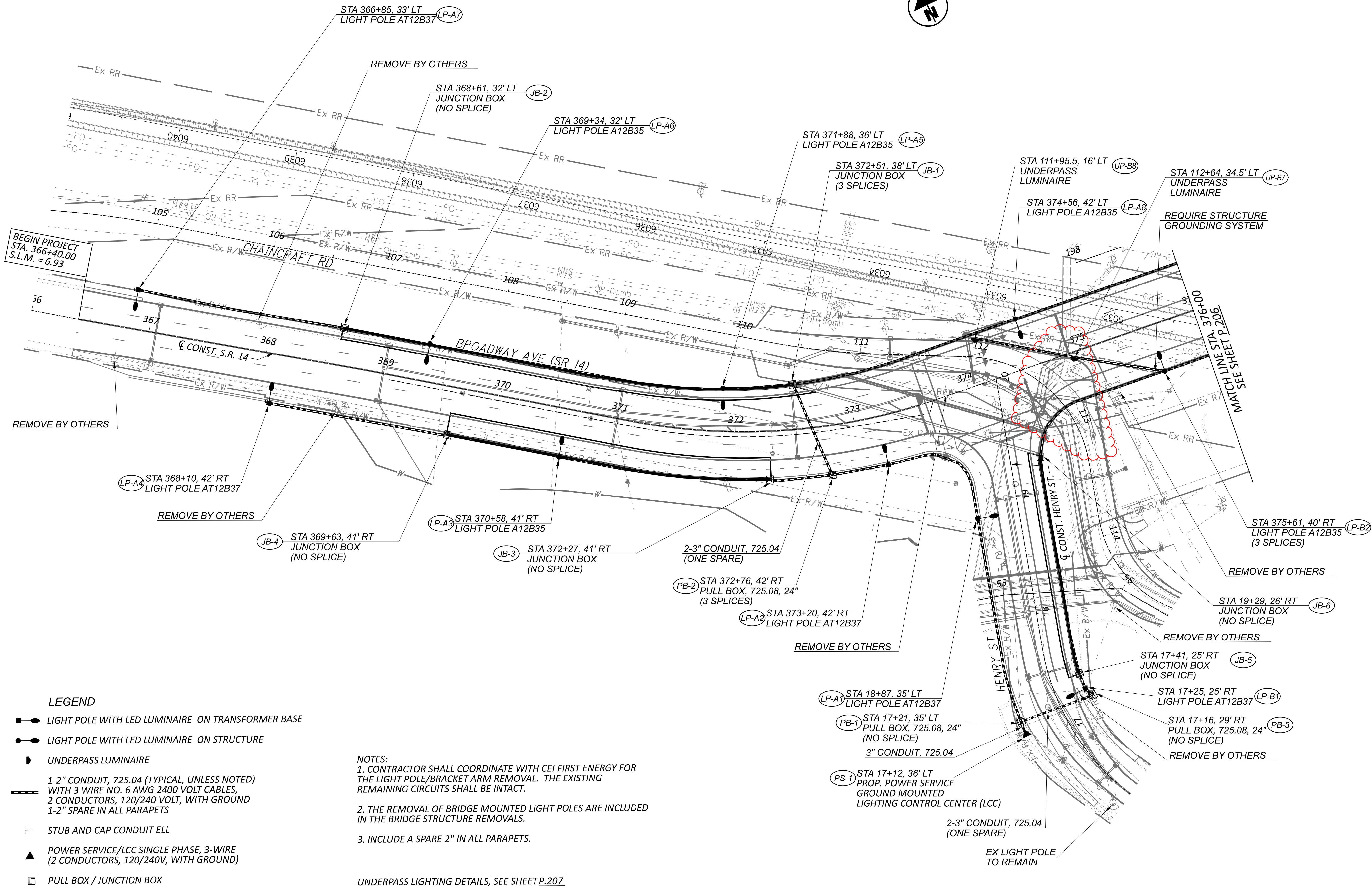
REVIEWER
VMN 08/05/24

PROJECT ID
104132

SHEET TOTAL
P.194 399

CUY-14-6.93

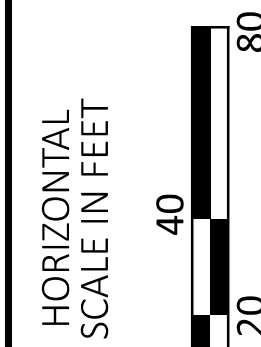
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pw:\aecom-na-pw-bentley.com\AECOM_D520_NA_2019\Documents\60581903-CUY-14-6.93\104132\400-Engineering\Signals\104132_CP001.dgn



- LEGEND**
- LIGHT POLE WITH LED LUMINAIRE ON TRANSFORMER BASE
 - LIGHT POLE WITH LED LUMINAIRE ON STRUCTURE
 - ▾ UNDERPASS LUMINAIRE
 - 1-2" CONDUIT, 725.04 (TYPICAL, UNLESS NOTED) WITH 3 WIRE NO. 6 AWG 2400 VOLT CABLES, 2 CONDUCTORS, 120/240 VOLT, WITH GROUND 1-2" SPARE IN ALL PARAPETS
 - ┆ STUB AND CAP CONDUIT ELL
 - ▲ POWER SERVICE/LCC SINGLE PHASE, 3-WIRE (2 CONDUCTORS, 120/240V, WITH GROUND)
 - PULL BOX / JUNCTION BOX

- NOTES:**
1. CONTRACTOR SHALL COORDINATE WITH CEI FIRST ENERGY FOR THE LIGHT POLE/BRACKET ARM REMOVAL. THE EXISTING REMAINING CIRCUITS SHALL BE INTACT.
 2. THE REMOVAL OF BRIDGE MOUNTED LIGHT POLES ARE INCLUDED IN THE BRIDGE STRUCTURE REMOVALS.
 3. INCLUDE A SPARE 2" IN ALL PARAPETS.

UNDERPASS LIGHTING DETAILS, SEE SHEET P.207



LIGHTING PLAN
BEGIN PROJECT TO STA. 376+00

DESIGN AGENCY

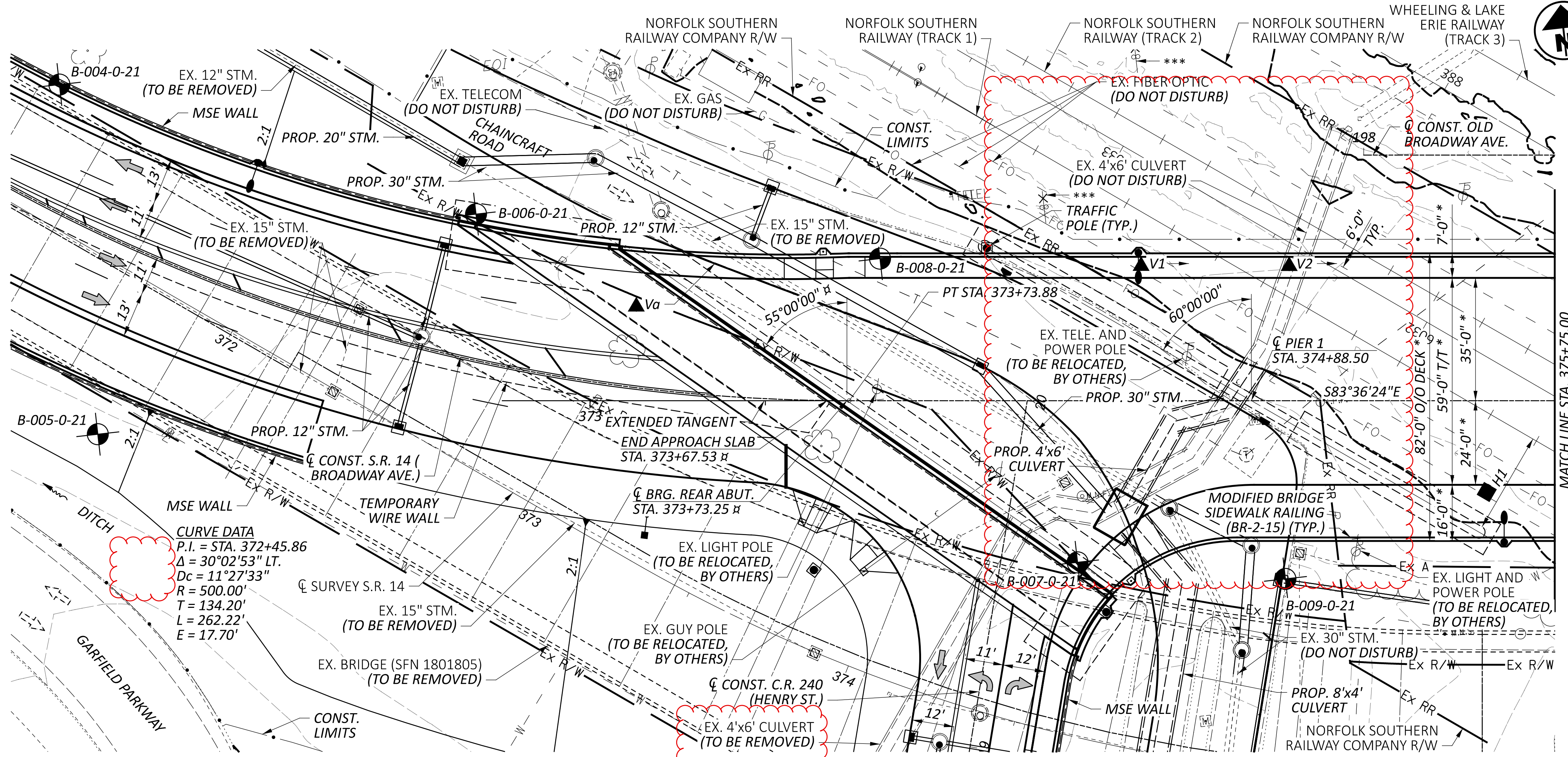
AECOM
564 White Pond Drive
Akron, OH 44320
(330) 836-9111
www.aecom.com

DESIGNER
CX

REVIEWER
VNM 08/05/24

PROJECT ID
104132

SHEET	TOTAL
P.205	399



BENCHMARK DATA

BM1 STA.	368+64.50	ELEV.	253.70	OFFSET	35.95'	RT.
BM2 STA.	382+56.95	ELEV.	259.43	OFFSET	5.75'	RT.

FOR ADDITIONAL BENCHMARK INFORMATION, SEE SHEET [P.3 | 399].

DESIGN TRAFFIC:
 2026 ADT = 18,500 2026 ADTT = 1,295
 2046 ADT = 19,000 2046 ADTT = 1,330
 DIRECTIONAL DISTRIBUTION = 0.51

- NOTES
- EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.
 - FOR ESTIMATED PILE LENGTHS, SEE SHEETS [16 | 99] & [17 | 99].

LEGEND

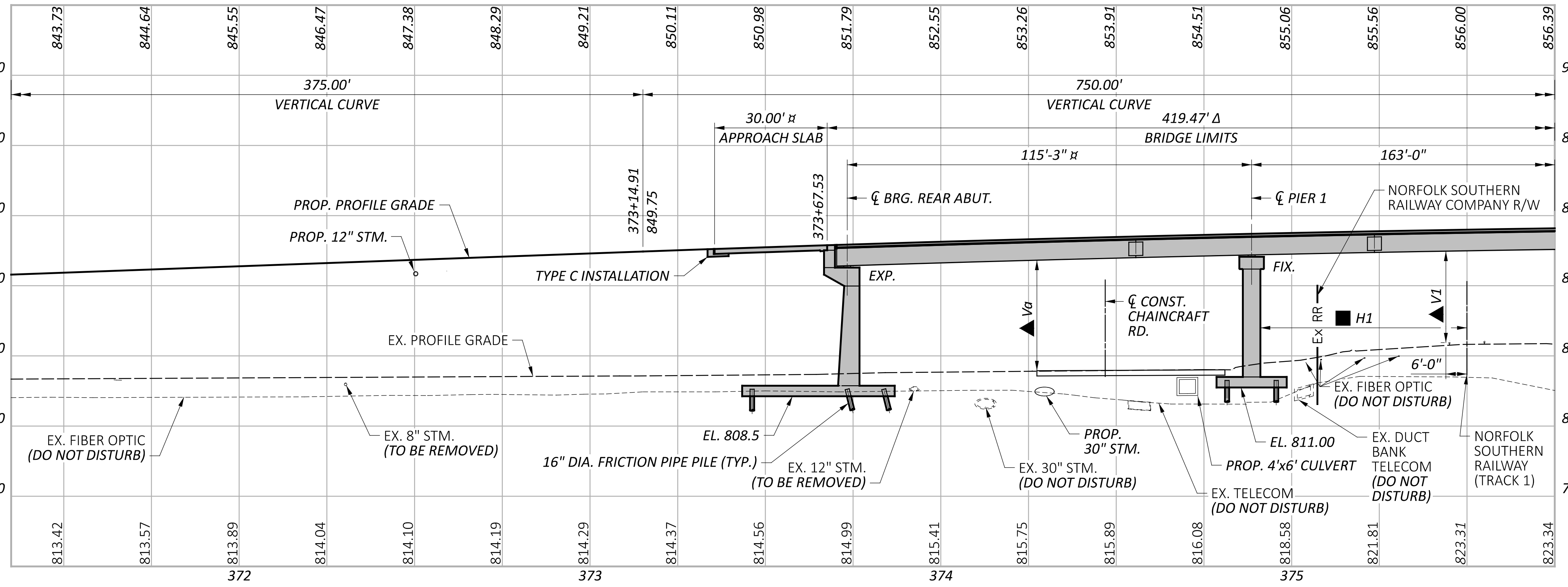
- * PHASE 1B CONSTRUCTION
- ** PHASE 2 REMOVAL
- *** EX. TRACK SIGNAL (TO BE RELOCATED, BY OTHERS)
- Δ MEASURED ALONG C/C CONST. S.R. 14
- ⊕ MEASURED IN REFERENCE TO THE EXTENDED TANGENT
- ⊙ BORING LOCATION

ROADWAY MINIMUM VERTICAL CLEARANCE		
EXISTING	PROPOSED	MIN. REQUIRED
Va = 28'-9 1/2" ±	28'-11"	14'-6"

RAILWAY MINIMUM VERTICAL CLEARANCE		
EXISTING	PROPOSED	MIN. REQUIRED
V1 = 21'-0 3/8" ±	23'-11 1/2"	23'-6"
V2 = 21'-10 3/4" ±	25'-0 1/2"	23'-6"
V3 = 25'-1 1/8" ±	28'-2"	23'-0"

RAILWAY MINIMUM HORIZONTAL CLEARANCE		
EXISTING	PROPOSED	MIN. REQUIRED
H1 = 9'-4 7/8" ±	28'-11 1/8"	22'-0"
H2 = 8'-5 1/2" ±	27'-1 3/8"	22'-0"
H3a = 9'-1 1/2" ±	35'-4"	22'-0"
H3b = 9'-1 1/2" ±	23'-8 7/8"	22'-0"

(RAILWAY AAR/DOT CROSSING NUMBER IS 524231G AT MILEPOST RD-113.89)



EXISTING STRUCTURE

TYPE: CONTINUOUS REINFORCED CONCRETE BEAMS, STEEL STRINGERS AND FLOOR BEAMS WITH CONCRETE REINFORCED DECK AND SUBSTRUCTURE.

SPANS: CONCRETE BEAMS = 35 @ 24' ± AND 11 WITH 6' ± CANTILEVERS
 STEEL STRINGERS = 6 @ 47' ±, 7 @ 20' ± AND 2 @ 28'-11 9/16" ±

ROADWAY: VARIES (52' ± TO 64' ±) F/F SAFETY CURB

LOADING: HS20-44, CASE II AND ALTERNATE MILITARY LOADING

SKEW: 0°0'0" (CONCRETE BEAMS) OR 60°0'0" RF (STEEL BEAMS)

WEARING SURFACE: 1 1/4" ± LATEX MODIFIED CONC. OR HMWM RESIN

APPROACH SLABS: 20'-0" (AS-1-81)

ALIGNMENT: TANGENT

CROWN: VARIES

STRUCTURE FILE NUMBER: 1801805

DATE BUILT: 1929 (1964 REHABILITATION, 1978 REHABILITATION, 1988 MAJOR RECONSTRUCTION, 2010 REHABILITATION)

DISPOSITION: TO BE REMOVED

PROPOSED STRUCTURE

TYPE: 3 SPAN WEATHERING STEEL PLATE GIRDERS WITH COMPOSITE REINFORCED CONCRETE DECK ON WALL TYPE ABUTMENTS ON FRICTION PIPE PILES AND SPREAD FOOTINGS, AND WALL TYPE PIERS ON FRICTION PIPE PILES.

SPANS: 115'-3" ±, 163'-0", 129'-0" (C/C BEARING)
 MEASURED ALONG EXTENDED TANGENT

ROADWAY: 59'-0" TOE/TOE CURB (80'-0" TOE/TOE PARAPET)

LOADING: HL93 AND 0.06 KIPS/FT² FUTURE WEARING SURFACE

SKEW: VARIES RF (55°0'0", 60°0'0", 60°0'0", 60°0'0")

WEARING SURFACE: 1" MONOLITHIC CONCRETE

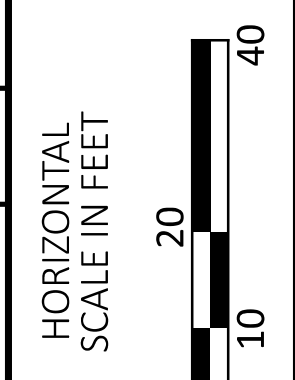
APPROACH SLABS: 30'-0" ± LONG (AS-1-15, MODIFIED) INSTALLATION TYPE C (AS-2-15)

ALIGNMENT: TANGENT (ALONG EXTENDED TANGENT)

CROWN: 1.65%

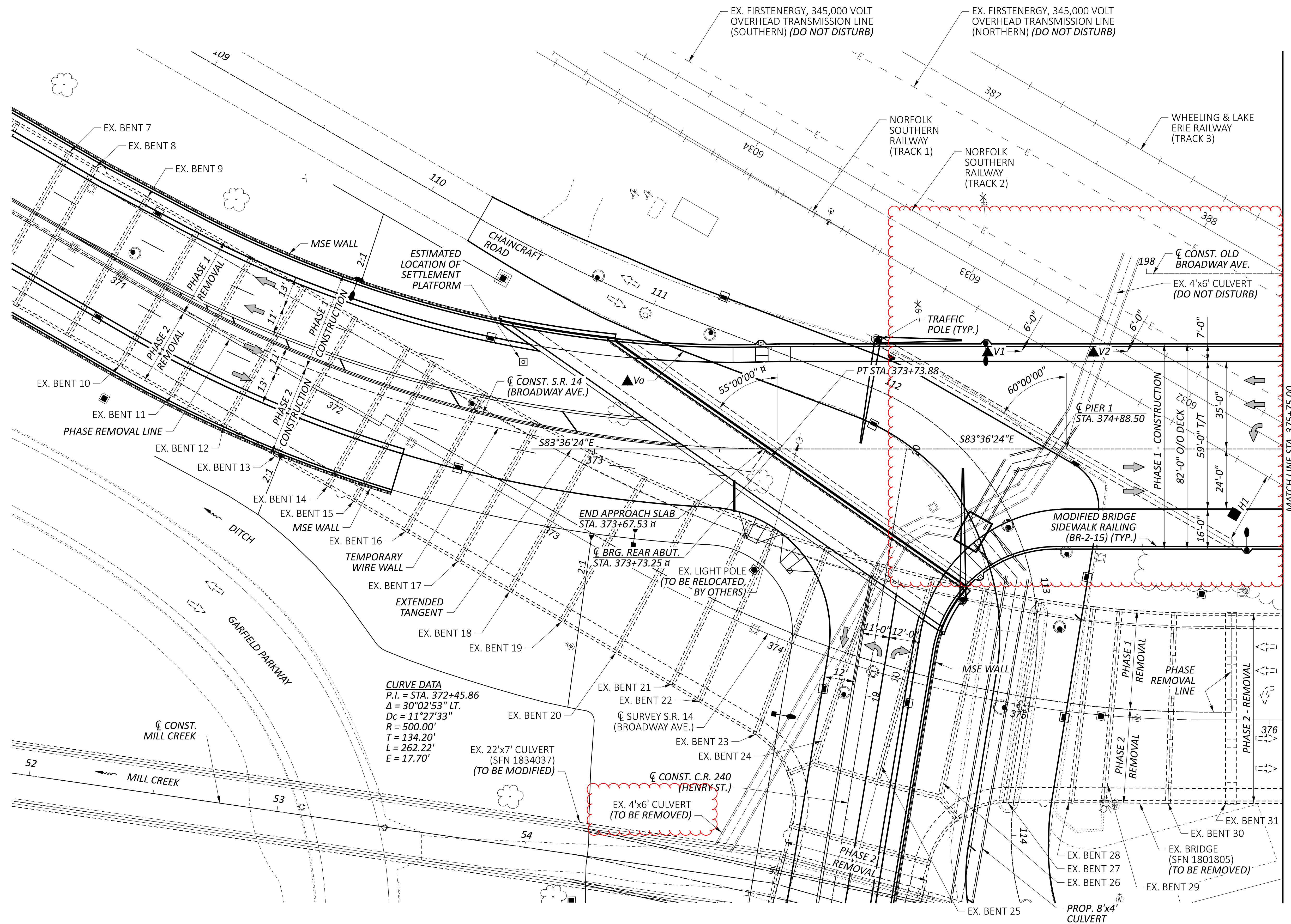
DECK AREA: 34,057 SF

COORDINATES: LATITUDE N 41° 25' 52.95"
 LONGITUDE W 81° 36' 03.03"



SITE PLAN 1 OF 2
 BRIDGE NO. CUY-00014-06.930
 BROADWAY AVE. (S.R. 14) OVER CHAINCRAFT RD., W&LE AND NS RAILWAYS

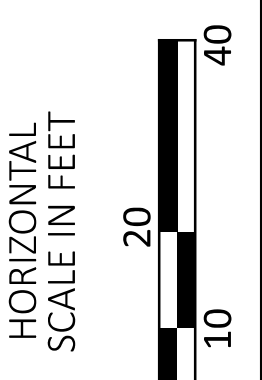
SFN	1801806
DESIGN AGENCY	AECOM
DESIGNER	JDM
CHECKER	GAD
REVIEWER	
PROJECT ID	104132
SUBSET	1
TOTAL	99
SHEET	P.209
TOTAL	399



GENERAL PLAN

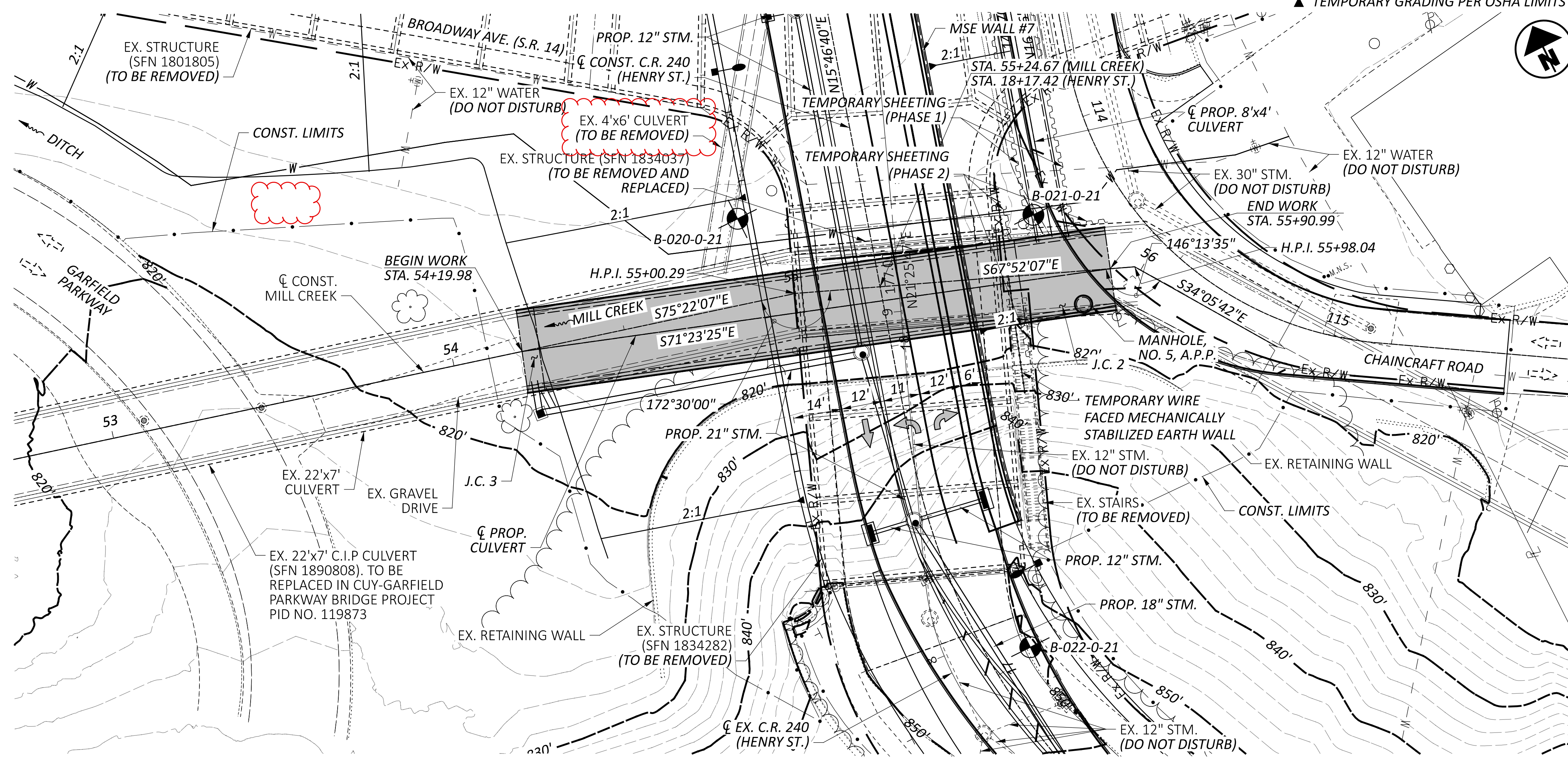
NOTE:

- FOR NOTES, LEGEND AND STRUCTURE BOXES, SEE SHEET [1 | 99].



GENERAL PLAN 1 OF 2
 BRIDGE NO. CUY-00014-06.930
 BROADWAY AVE. (S.R. 14) OVER CHAINCRAFT RD., W&LE AND NS RAILWAYS

SFN	1801806
DESIGN AGENCY	AECOM
DESIGNER	JDM
CHECKER	GAD
REVIEWER	MRW
PROJECT ID	104132
SUBSET	3
TOTAL	99
SHEET	P.211
TOTAL	399



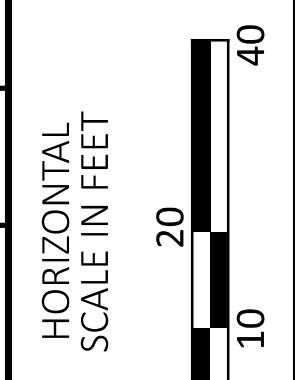
LEGEND
 ◉ BORING LOCATION
 ▲ TEMPORARY GRADING PER OSHA LIMITS

BENCHMARK DATA

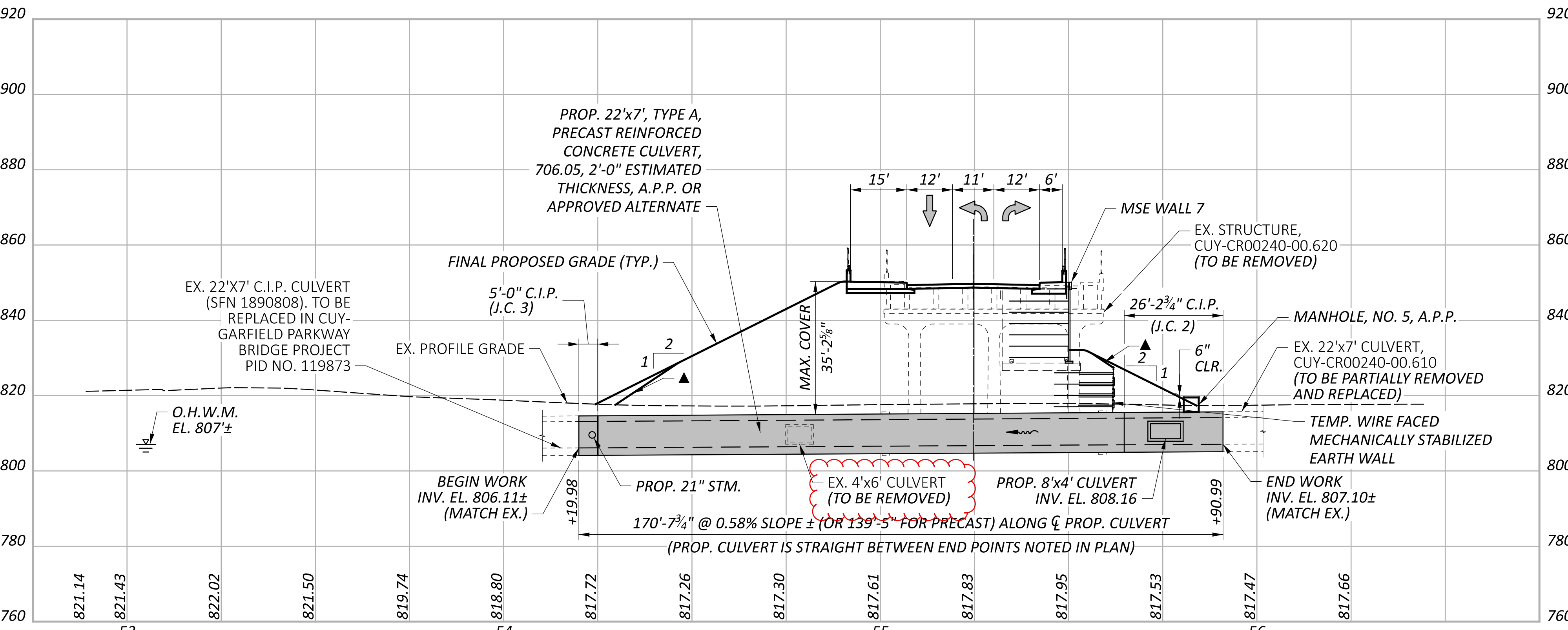
BM1 STA.	368+64.50,	ELEV.	253.70,	OFFSET	35.95',	RT.
BM2 STA.	382+56.95,	ELEV.	259.43	OFFSET	5.75',	RT.

FOR ADDITIONAL BENCHMARK INFORMATION, SEE ROADWAY PLAN SHEET [P.3 | 399].
 DESIGN TRAFFIC:
 2026 ADT = 7,000 2026 ADTT = 630
 2046 ADT = 7,500 2046 ADTT = 675
 DIRECTIONAL DISTRIBUTION = 0.54

- NOTES**
- EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.
 - HYDRAULIC DATA NOT DETERMINED BECAUSE PROJECT SIMPLY REPLACES A SECTION OF EXISTING BOX CULVERT WITH HYDRAULICALLY EQUIVALENT CULVERT.
 - THE CONTRACTOR IS ONLY PERMITTED TO REPLACE THE CULVERT AND MAINTAIN THE FLOW UTILIZING BYPASS PUMPING. THE MINIMUM FLOW RATE OR STANDARD TEMPORARY DISCHARGE TO BE MAINTAINED BY THE CONTRACTOR SHALL BE APPROXIMATELY 50 CFS.
 - THE CONTRACTORS THAT ARE CONSTRUCTING SFN 1834038 (PID 104132) AND SFN 1890808 (PID 119873) SHALL COORDINATE CULVERT BYPASSING AND INSTALLATION TIMING AS NECESSARY. REFER TO PID 119873 SHEET [42 | 43] FOR ADDITIONAL SEQUENCE OF CONSTRUCTION INFORMATION.
 - FOR TEMPORARY GRADING PER OSHA'S LIMITS, SEE PLACEMENT OF OF THE 22'x7', TYPE A, BOX CULVERT NOTE ON SHEET [3 | 14].



SITE PLAN 1 OF 2
 BRIDGE NO. CUY-CR00240-00.610
 HENRY STREET (C.R. 240) OVER MILL CREEK



EXISTING STRUCTURE

TYPE: CONTINUOUS REINFORCED CONCRETE BEAMS WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
 SPANS: 4 SPANS AT 24'-0"±
 ROADWAY: 46'-0"± F/F SAFETY CURB (5'-0"± SIDEWALK)
 LOADING: HS20-44 AND ALTERNATE MILITARY
 SKEW: 0°0'0"±
 APPROACH SLABS: 20'-0"±
 ALIGNMENT: TANGENT
 CROWN: VARIES
 STRUCTURE FILE NUMBER: 1834282
 DATE BUILT: 1929 (1988 MAJOR RECONSTRUCTION)
 DISPOSITION: TO BE REMOVED

EXISTING STRUCTURE

TYPE: 22'x7' CAST-IN-PLACE, 4 SIDED REINFORCED CONCRETE CULVERT
 SPANS: 22'-0"± CLEAR SPAN
 ROADWAY: 46'-0"± TOE/TOE CURB (56'-0"± TOE/TOE PARAPET)
 LOADING: HS15
 SKEW: 0°0'0"±
 WEARING SURFACE: NONE
 APPROACH SLABS: NONE
 ALIGNMENT: TANGENT
 CROWN: NONE
 STRUCTURE FILE NUMBER: 1834037
 DATE BUILT: 1928
 DISPOSITION: TO BE PARTIALLY REMOVED AND REPLACED

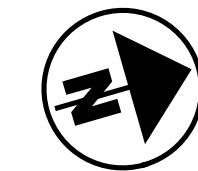
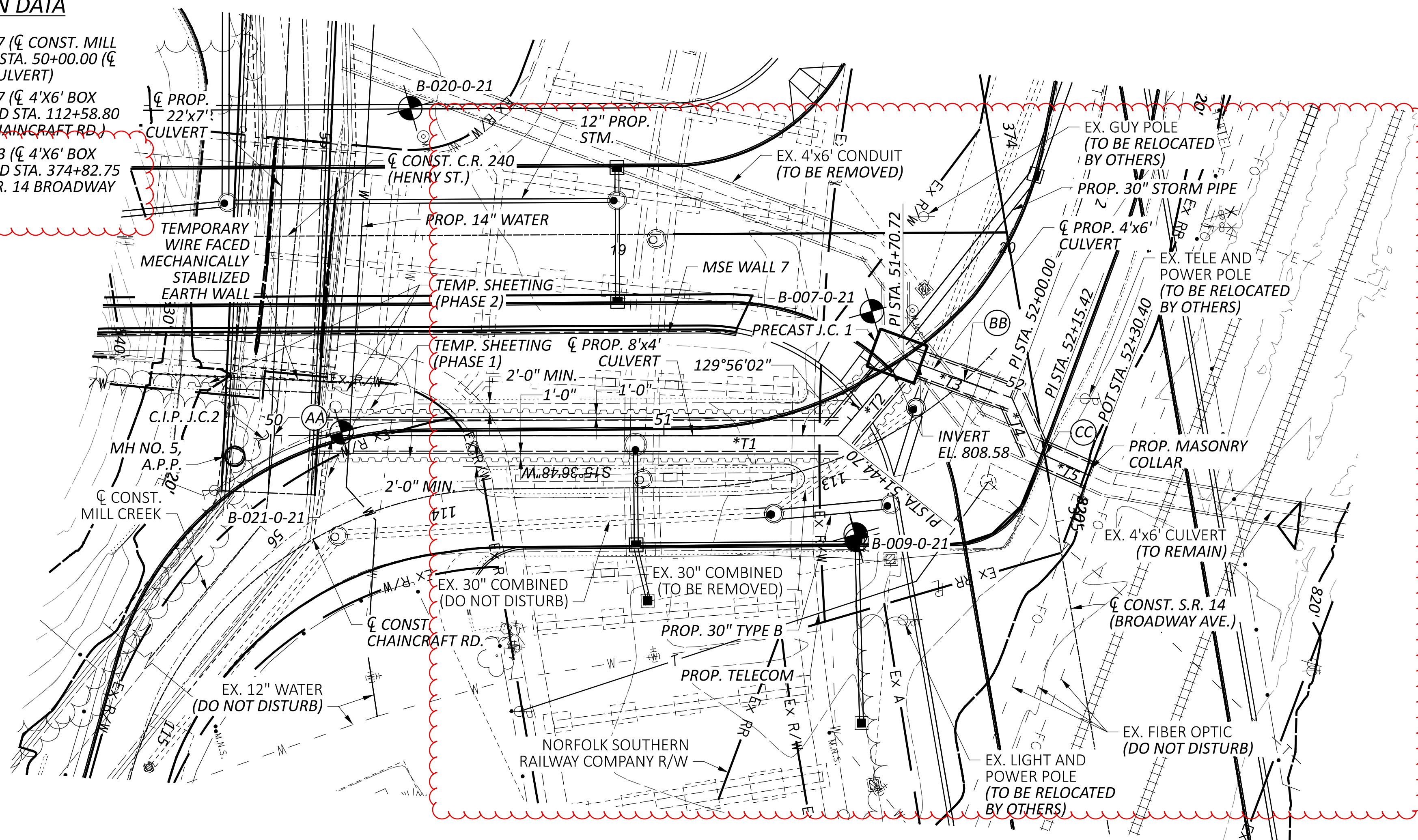
PROPOSED STRUCTURE

TYPE: 22' x 7', TYPE A, PRECAST REINFORCED CONCRETE BOX CULVERT, 706.05, ESTIMATED 2'-0", AS PER PLAN
 SPANS: CLEAR SPAN 22'-0"
 ROADWAY: 35'-0" TOE/TOE CURB (56'-0" TOE/TOE PARAPET)
 LOADING: HL93 AND 60 PSF FUTURE WEARING SURFACE
 SKEW: 0°0'0"±
 WEARING SURFACE: NONE
 APPROACH SLABS: NONE
 ALIGNMENT: TANGENT
 CROWN: 0.58%
 STRUCTURE FILE NUMBER: 1834038
 COORDINATES: LATITUDE N 41°25'51.06"
 LONGITUDE W 81°36'02.99"

SFN	1834038
DESIGN AGENCY	AECOM
DESIGNER	HER
CHECKER	JTH
REVIEWER	MRW
DATE	08/05/24
PROJECT ID	104132
SUBSET	1
TOTAL	14
SHEET	P.308
TOTAL	399

INTERSECTION DATA

- (AA) STA. 55+76.17 (C. CONST. MILL CREEK) AND STA. 50+00.00 (C. PROP. 8'x4' CULVERT)
- (BB) STA. 51+87.47 (C. 4'x6' BOX CULVERT) AND STA. 112+58.80 (C. CONST. CHAINCRAFT RD.)
- (CC) STA. 52+18.03 (C. 4'x6' BOX CULVERT) AND STA. 374+82.75 (C. CONST. S.R. 14 BROADWAY AVE.)



BENCHMARK DATA

BM1 STA.	368+64.50,	ELEV.	253.70,	OFFSET	35.95',	RT.
BM2 STA.	382+56.95,	ELEV.	259.43	OFFSET	5.75',	RT.

FOR ADDITIONAL BENCHMARK INFORMATION. SEE ROADWAY PLAN SHEET P.3 [399].

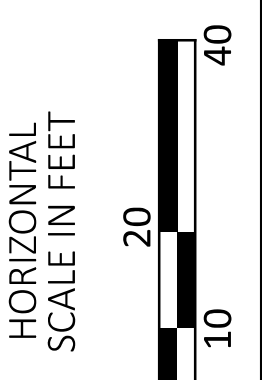
DESIGN TRAFFIC:
 2026 ADT = 7,000 2026 ADTT = 630
 2046 ADT = 7,500 2046 ADTT = 675
 DIRECTIONAL DISTRIBUTION = 0.54

NOTES

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

LEGEND

- BORING LOCATION
- * BEARING ALONG TANGENT
 - T1 = N16°06'49"E
 - T2 = N33°55'53"W
 - T3 = N36°10'19"E
 - T4 = N82°13'12"E
 - T5 = N40°05'15"E
- ▲ INVERT ELEVATION = 808.58
- INVERT ELEVATION = 810.15



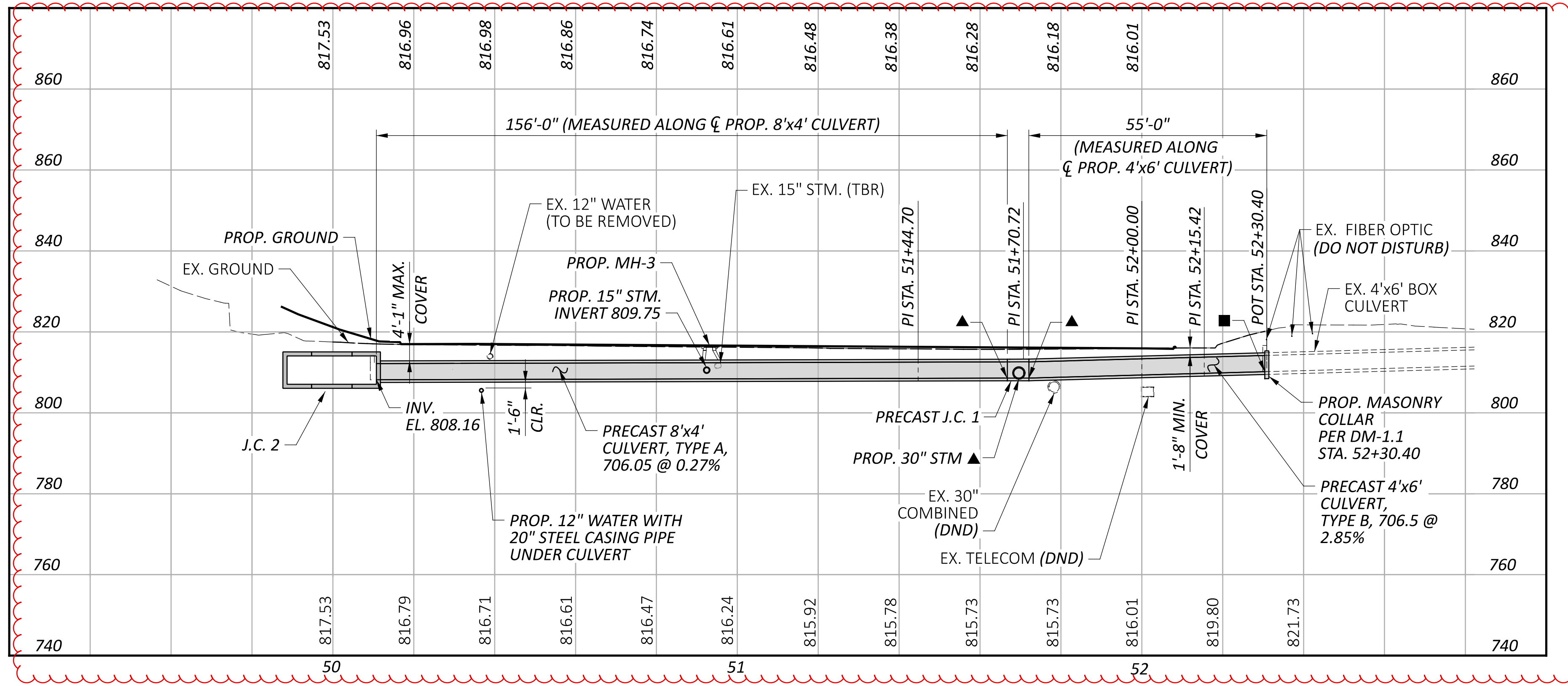
SITE PLAN 2 OF 2
 BRIDGE NO. CUY-CR00240-00.610
 HENRY STREET (C.R. 240) OVER MILL CREEK

EXISTING STRUCTURE

TYPE: 4'x6' CONCRETE CULVERT
 SPANS: 6'-0" CLEAR SPAN
 ROADWAY: VARIES
 LOADING: UNKNOWN
 SKEW: VARIES
 WEARING SURFACE: NONE
 APPROACH SLABS: NONE
 ALIGNMENT: VARIES
 CROWN: NONE
 STRUCTURE FILE NUMBER: NONE
 DATE BUILT: UNKNOWN
 DISPOSITION: 4'x6' TO BE PARTIALLY REMOVED AND REPLACED

PROPOSED STRUCTURE

TYPE: 8'x4' PRECAST 4 SIDED BOX CULVERT, TYPE A, 706.05
 4'x6' PRECAST 4 SIDED BOX CULVERT, TYPE A, 706.05
 PRECAST JUNCTION CHAMBER 1, CAST IN PLACE JUNCTION CHAMBER 2 AND 3
 SPANS: 8'-0" CLEAR SPAN
 6'-0" CLEAR SPAN
 ROADWAY: NONE
 LOADING: HL93 AND 60 PSF FUTURE WEARING SURFACE
 SKEW: VARIES
 APPROACH SLABS: NONE
 ALIGNMENT: AS SHOWN
 CROWN: NONE
 COORDINATES: LATITUDE N 41°25'51.04"
 LONGITUDE W 81°36'02.34"



CUY-14-6.93

MODEL: CLP_CULVERT SHEET PAPER SIZE: 34x22 (in.) DATE: 2/5/2025 TIME: 3:05:15 PM USER: hiba.elfrassi
 pw:\aecom-na-pw-bentley.com\AECOM_D520_NA_2019\Documents\60581903-CUY-14-6.93\104132\400-Engineering\Structures\SFN_1834037_Sheets\104132_SFN_1834037_SP002.dgn

SFN	1834038
DESIGN AGENCY	AECOM
DESIGNER	HER
CHECKER	JTH
REVIEWER	MRW
PROJECT ID	104132
SUBSET	2
TOTAL	14
SHEET	P.309
TOTAL	399

SUPPLEMENTAL SPECIFICATIONS:

REFER TO THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS:

SS800	DATED	7-15-22
SS840	DATED	4-15-22

DESIGN SPECIFICATIONS:

THE STRUCTURES CONFORM TO THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2020 EDITION, AND THE ODOT BRIDGE DESIGN MANUAL, 2020 AND CURRENT UPDATES.

DESIGN LOADING:

HL-93 LOADING (TRUCK AND TANDEM) WITH A 0.06 KSF FUTURE WEARING SURFACE.

DESIGN DATA:

THE FOLLOWING DESIGN DATA IS ASSUMED:

INTERNAL ANGLE OF FRICTION OF BACKFILL SOIL = 30°
 UNIT WEIGHT OF SOIL = 120 PCF
 SLOPE OF BACKFILL: 2:1 (MAX)
 UNIT WEIGHT OF CONCRETE = 150 PCF

THE FOLLOWING DESIGN DATA IS ASSUMED FOR THE CAST-IN-PLACE SECTIONS:

CLASS QC2 CONCRETE - COMPRESSIVE STRENGTH 4.5 KSI
 REINFORCING STEEL - ASTM A615, A616, OR A617
 GRADE 60 MINIMUM YIELD STRENGTH 60,000 PSI

THE FOLLOWING DESIGN DATA IS ASSUMED FOR THE PRECAST SECTIONS UNLESS SPECIFIED OTHERWISE:

CONCRETE - COMPRESSIVE STRENGTH 7 KSI
 REINFORCING STEEL - GRADE 60 MINIMUM YIELD
 STRENGTH 60,000 PSI

BEARING RESISTANCE:

AS STATED IN THE PROJECT STRUCTURE FOUNDATION EXPLORATION REPORT, THE FACTORED BEARING RESISTANCE IS 16.4 KSF. THE CONTRACTOR SHALL REPORT ANY POOR SOIL CONDITIONS EXPERIENCED IN THE FIELD PRIOR TO THE PLACEMENT OF THE PRECAST BOX CULVERT OR FORMING OF THE CAST-IN-PLACE TRANSITIONS. IF POOR SOIL IS OBSERVED, THE CONTRACTOR SHALL TAKE APPROPRIATE MEASURES TO IMPROVE THE SOIL SO THAT THE REQUIRED BEARING RESISTANCE MAY BE ACHIEVED. SEE ITEM 503-UNCLASSIFIED EXCAVATION, AS PER PLAN NOTE.

UTILITY LINES:

ALL EXPENSE INVOLVED IN RELOCATING (INSTALLING) THE AFFECTED UTILITY LINES SHALL BE BORNE BY THE UTILITY(IES). THE CONTRACTOR AN UTILITY(IES) ARE TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM. SEE ROADWAY GENERAL NOTES FOR A LISTING OF UTILITY OWNERS AND CONTACT INFORMATION.

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.

SEQUENCE OF CONSTRUCTION:

REFER TO SHEET P.19|399 FOR SEQUENCE OF CONSTRUCTION.

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN:

THIS ITEM SHALL INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES AND THAT ARE NOT SEPARATELY LISTED FOR PAYMENT. ITEMS TO BE REMOVED INCLUDE ALL EXISTING MATERIALS BEING REPLACED BY NEW CONSTRUCTION AND MISCELLANEOUS ITEMS THAT ARE NOT SHOWN TO BE INCORPORATED INTO THE FINAL CONSTRUCTION AND ARE DIRECTED TO BE REMOVED BY THE ENGINEER. THE DEPARTMENT WILL NOT PERMIT THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE-RAMS. DO NOT BEGIN WORK UNTIL THE ENGINEER APPROVES THE METHOD OF REMOVAL AND THE WEIGHT OF HAMMER. PERFORM ALL WORK IN A MANNER THAT WILL NOT CUT, ELONGATE OR DAMAGE THE EXISTING CONCRETE REINFORCEMENT TO BE PRESERVED. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NOMINAL 90-POUND CLASS. PNEUMATIC HAMMERS SHALL NOT BE PLACED IN DIRECT CONTACT WITH CONCRETE REINFORCEMENT THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE. SUBMIT CONSTRUCTION PLANS ACCORDING TO C&MS 501.05.

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (CONT.):

CARE SHOULD BE EXERCISED IN REMOVING PORTIONS OF THE EXISTING ELEMENTS SO THAT NO DAMAGE IS DONE TO THE PORTIONS WHICH ARE TO REMAIN. ANY RESULTING DAMAGE CONTRACTOR MUST REPLACE AT NO ADDITIONAL COST TO THE PROJECT.

PAYMENT: THIS WORK WILL BE PAID FOR THE CONTRACT LUMP SUM PRICE BID.

ITEM 503 - COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN:

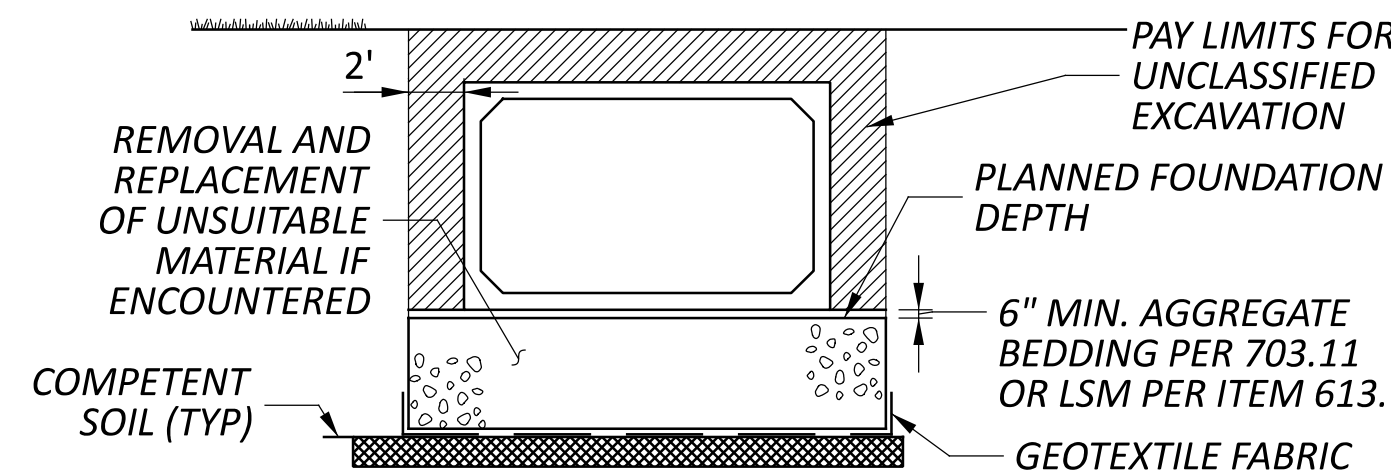
TEMPORARY SHEETING PILING SHALL BE PLACED IN ACCORDANCE WITH ITEM 503.03 AND DRIVEN TO SUPPORT THE EXISTING OR NEW ROADWAY EMBANKMENT ABOVE THE CULVERT EXCAVATION. THE DESIGN EXCAVATION DEPTH IS APPROXIMATELY 11'. PHASE 1 SHEET PILING WILL BE DRIVEN TO A MINIMUM DEPTH OF 17.5 FEET BELOW THE BOTTOM OF EXCAVATION. THE TOP ELEVATION OF SHEET PILE SHALL BE 818± AND MINIMUM BOTTOM ELEVATION SHALL BE 789.5. THE SHEET PILING WILL HAVE A MINIMUM SECTION MODULUS OF 20.6 CUBIC INCHES PER FOOT OF WALL. PHASE 2 SHEET PILING WILL BE DRIVEN TO A MINIMUM DEPTH OF 21.56 FEET BELOW BOTTOM OF EXCAVATION. THE TOP ELEVATION OF SHEET PILE SHALL BE 818± AND MINIMUM BOTTOM ELEVATION SHALL BE 785.4. THE SHEET PILING WILL HAVE A MINIMUM SECTION MODULUS OF 31.6 CUBIC INCHES PER FOOT OF WALL.

SHEET PILING WILL BE REMOVED AFTER THE CULVERT HAS BEEN INSTALLED AND BACKFILL PLACED UP TO THE SUBGRADE ELEVATION. ALL WORK ASSOCIATED WITH THE PLACEMENT AND REMOVAL OF THE SHEET PILING WILL BE INCLUDED FOR PAYMENT WITH THE LUMP SUM ITEM BID FOR 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 ALTERNATIVE DESIGN TO SUPPORT THE SIDES OF EXCAVATIONS. IF CONSTRUCTING AN ALTERNATIVE 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 ALTERNATIVE DESIGN.

ITEM 503 - UNCLASSIFIED EXCAVATION, AS PER PLAN:

UNCLASSIFIED EXCAVATION SHALL BE IN ACCORDANCE WITH 503. THE FOUNDATION FOR THE CONDUIT BED SHALL BE FIRM FOR ITS FULL LENGTH. UNSUITABLE MATERIAL ENCOUNTERED BELOW THE PLAN FOUNDATION SHALL BE REMOVED TO THE DEPTH DIRECTED BY THE ENGINEER UNDER THE CONDUIT AND TO THE WIDTH OF THE TRENCH AND REPLACED WITH COMPACTED BEDDING MATERIAL CONFORMING TO 703.11, PLACED OVER GEOTEXTILE FABRIC. EXCAVATION OF UNSUITABLE MATERIAL, REPLACEMENT WITH COMPACTED BEDDING MATERIAL AND GEOTEXTILE FABRIC, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 503, UNCLASSIFIED EXCAVATION, AS PER PLAN.



LSM MAY BE PROVIDED IN ACCORDANCE WITH 611.06 HOWEVER NO SEPERATE PAYMENT WILL BE MADE AND THE COST WILL BE INCLUDED IN THE PRICE BID FOR ITEM 503 UNCLASSIFIED EXCAVATION, AS PER PLAN.

REMOVAL OF UNSUITABLE MATERIAL AND REPLACEMENT WITH COMPACTED BEDDING MATERIAL 703.11, IS INCLUDED WITH ITEM 503, UNCLASSIFIED EXCAVATION, AS PER PLAN. A DEPTH OF 1'-0" SHALL BE ASSUMED FOR ESTABLISHING PAY QUANTITY.

ITEM 511 - CLASS QC2 CONCRETE, MISC.: CAST-IN-PLACE SECTIONS:

BASIS OF PAYMENT: ALL LABOR, EQUIPMENT AND INCIDENTALS REQUIRED TO CONSTRUCT CAST-IN-PLACE JUNCTION CHAMBERS 2 AND 3 SHALL BE INCLUDED WITH ITEM 511 - CLASS QC2 CONCRETE, MISC.: CAST-IN-PLACE SECTIONS. PAYMENT FOR REINFORCING STEEL SHALL BE INCLUDED WITH ITEM WITH ITEM 509 - EPOXY COATED REINFORCING STEEL.

ITEM 512 - TYPE 2 WATERPROOFING, AS PER PLAN:

APPLY TYPE 2 WATERPROOFING PER C&MS 512.08 AND 711.29 TO VERTICAL EXTERIOR SIDES OF PRECAST CULVERT SECTIONS. IN ADDITION, IF PAVEMENT IS NOT PLACED DIRECTLY ON TOP OF THE CULVERT, APPLY TYPE 2 WATERPROOFING, PER C&MS 512.08 AND 711.25 SHALL BE APPLIED TO THE ENTIRE TOP SURFACE OF THE PRECAST CULVERT SECTIONS AND SHALL EXTEND ONE FOOT VERTICALLY DOWN THE SIDES FOR ALL PORTIONS OF THE CULVERT WHICH SHALL BE IN CONTACT WITH THE BACKFILL. PAYMENT FOR THE MEMBRANE WATERPROOFING SHALL BE AT THE CONTRACT BID PRICE PER SQUARE YARD FOR ITEM 512 - TYPE 2 WATERPROOFING.

IN ADDITION TO ALL APPLICABLE REQUIREMENTS OF C&MS 512, PROVIDE SELF ADHERING TYPE 2 MEMBRANE WATERPROOFING AS AVAILABLE FROM:

MEL-ROL
 W.R. MEADOWS, INC.
 P.O. BOX 338
 HAMPSHIRE, IL 60140-0338
 PHONE: (800) 342-5976
 FAX: (847) 683-4544
 WWW.WRMEADOWS.COM

CCW MIRADRI 860/861
 CARLISLE COATINGS & WATERPROOFING
 900 HENSLEY LANE
 WYLLIE, TX 75098
 PHONE: (800) 527-7092
 FAX: (972) 442-0076

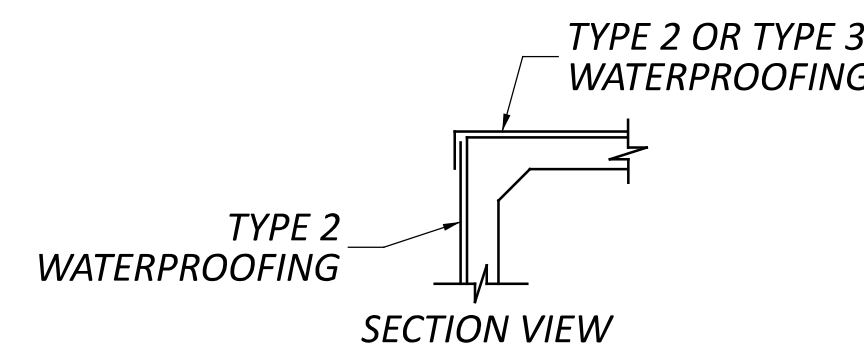
CONSEAL CS-212
 CONCRETE SEALANTS, INC.
 9325 STATE ROUTE 201
 TIPP CITY, OH 45371
 PHONE: (800) 332-7325
 FAX: (937) 845-3587
 WWW.CONSEAL.COM

PRIMER MATERIAL REQUIRED FOR THE PROPER APPLICATION OF THE MEMBRANE WATERPROOFING MUST BE COMPATIBLE WITH THE SELECTED MEMBRANE. FOR PRECAST CONCRETE SECTIONS, APPLY THE PRIMER ONLY AFTER THE SECTIONS HAVE BEEN PROPERLY PLACED AND JOINED PER C&MS 611.

PAYMENT SHALL BE PAID AT THE CONTRACT UNIT PRICE BID FOR THE ACTUALLY COMPLETED AND ACCEPTED QUANTITY OF: ITEM 512 - TYPE 2 WATERPROOFING, AS PER PLAN.

ITEM 512 - TYPE 3 WATERPROOFING:

IF PAVEMENT IS TO BE USED DIRECTLY ON TOP OF THE CULVERT, APPLY TYPE 3 WATERPROOFING, PER C&MS 512.08 AND 711.29 SHALL BE APPLIED TO THE ENTIRE TOP SURFACE OF THE PRECAST CULVERT SECTIONS AND EXTEND ONE FOOT VERTICALLY DOWN THE SIDES 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 3 WATERPROOFING.



ITEM 611- JUNCTION CHAMBER, AS PER PLAN:

PRECAST JUNCTION CHAMBER 1 SIZE AND SHAPE TO ACCOMMODATE A 4'x6' CULVERT, AN 8'x4' CULVERT, AND A 30" STORM PIPE. JUNCTION CHAMBER SHALL BE DESIGNED PER C&MS 706.05.

ITEM 611 - MANHOLE, NO. 5, AS PER PLAN:

OMIT THE BASE AND SET MANHOLE IN A BED OF MORTAR AND AS SHOWN IN THESE PLANS. EXTEND STEPS TO THE BOTTOM OF J.C. 2. FOR MORE NOTES AND DETAILS, REFER TO ODOT HYDRAULIC STANDARD CONSTRUCTION DRAWING MH-5.

PAYMENT FOR ALL THE ABOVE DESCRIBED LABOR AND MATERIALS WILL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 611 - MANHOLE, NO. 5, AS PER PLAN.

ITEM 611 - CONDUIT, MISC.: 22' x 7', TYPE A, PRECAST REINFORCED CONCRETE BOX CULVERT, 706.05, 2'-0" ESTIMATED SLAB THICKNESS, AS PER PLAN:

THIS ITEM SHALL CONSIST OF REPLACING THE EXISTING STRUCTURE WITH A PRECAST CONCRETE BOX CULVERT STRUCTURE. ALL APPLICABLE REQUIREMENTS OF C&MS 611 AND C&MS 706.05 SHALL BE MET EXCEPT AS DETAILED IN THE PLANS AND/OR NOTED HEREIN.

DESIGN OF THE PRECAST REINFORCED CONCRETE SECTIONS IS THE RESPONSIBILITY OF THE CONTRACTOR. DESIGN THE STRUCTURE FOR 35 FEET OF COVER AND FOR HL-93 LOADING AND ALL OTHER APPLICABLE PROVISIONS OF THE CURRENT AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

ITEM 611 - CONDUIT, MISC.: 22' x 7', TYPE A, PRECAST REINFORCED CONCRETE BOX CULVERT, 706.05, 2'-0" ESTIMATED SLAB THICKNESS, AS PER PLAN (CONT.):

AS THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF THE PRECAST CONCRETE BOX CULVERT STRUCTURE, THE CONTRACTOR OR THE CONTRACTOR'S FABRICATOR SHALL PERFORM A LOAD RATING OF THE PROPOSED STRUCTURE. ALL OHIO LEGAL LOADS ARE TO BE RATED, INCLUDING TYPE 3, TYPE 3-3, TYPE 3S2, EV2 AND EV3. A BR-100 LOAD RATING SUMMARY REPORT, SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF OHIO, ALONG WITH ASSOCIATED INPUT FILES SHALL ALSO BE SUBMITTED TO THE ENGINEER. FOR THE PURPOSES OF LOAD RATING, THE DEPTH OF COVER SHALL BE CONSIDERED TO BE 35 FEET.

TWO (2) HARD COPIES AND ONE (1) ELECTRONIC COPY OF THE SHOP DRAWINGS INCLUDING ALL ASSOCIATED DESIGN CALCULATIONS FOR REBAR SIZE, SPACING, CLEARANCE, CONCRETE THICKNESSES, ETC., MUST BE SUBMITTED TO THE ENGINEER FOR ACCEPTANCE. ALL SHOP DRAWINGS AND SUPPORTING CALCULATIONS MUST BEAR THE SIGNATURE AND SEAL OF A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF OHIO PER C&MS 611.04.A. MANUFACTURING OF THE PRECAST SECTIONS SHALL NOT BEGIN UNTIL AFTER WRITTEN ACCEPTANCE OF THE SHOP DRAWINGS HAS BEEN RECEIVED FROM THE CUYAHOGA COUNTY ENGINEER. THE CONTRACTOR IS REFERRED TO SECTIONS 102.05 AND 105.02 OF THE CUYAHOGA COUNTY ENGINEER'S GENERAL PROVISIONS FOR ADDITIONAL INFORMATION IN THIS REGARD.

THE CONTRACTOR MUST SUBMIT AN INSTALLATION PLAN TO THE ENGINEER FOR ACCEPTANCE PER C&MS 611.04.B. IN ADDITION TO THE REQUIRED INFORMATION LISTED IN THIS SPECIFICATION, THE CONTRACTOR MUST INCLUDE INFORMATION IN REGARD TO SUPPORTING AND MAINTAINING ALL EXISTING UTILITIES DESIGNATED TO REMAIN IN PLACE AND POSSIBLY EXPOSED AS A RESULT OF REMOVING THE EXISTING STRUCTURE AND EXCAVATING FOR PLACEMENT OF THE PROPOSED STRUCTURE.

WHERE OPENINGS IN THE BOX CULVERT ARE REQUIRED FOR PROPOSED UNDERDRAINS OR SEWERS, THE OPENING SHALL BE LOCATED COMPLETELY BETWEEN SUCCESSIVE JOINTS OF THE CULVERT STRUCTURE, IF POSSIBLE. THE DIAMETER OF THE OPENING SHALL BE THE OUTSIDE DIAMETER OF THE PIPE BEING CONNECTED PLUS SIX INCHES (6") WHEN FABRICATED OR FIELD CUT. THE INTERSTITIAL SPACE SHALL BE FILLED WITH CLASS QC 1 CONCRETE PER CMS 511, NON-SHRINK MORTAR PER CMS 705.22, OR OTHER MATERIAL ACCEPTED BY THE ENGINEER. ALL COSTS FOR MATERIAL AND LABOR ASSOCIATED WITH THE PIPE OPENINGS SHALL BE CONSIDERED INCIDENTAL TO THE CULVERT BID ITEM.

STRUCTURAL BACKFILL (703.11) AND GRANULAR EMBANKMENT (703.16.B AND 703.16.C) MATERIALS FURNISHED FOR BEDDING AND BACKFILL OPERATIONS SHALL BE LIMITED TO LIMESTONE. PER 611.06, ALL BEDDING AND BACKFILL MATERIALS SHALL BE PLACED AND COMPACTED AS DESCRIBED IN THE ACCEPTED INSTALLATION PLAN.

PLACE AND JOIN ALL PRECAST CONCRETE SECTIONS PER 611.07, 611.08 AND AS DESCRIBED IN THE ACCEPTED INSTALLATION PLAN. JOINTS BETWEEN ADJACENT PRECAST CONCRETE SECTIONS SHALL BE TREATED PER THE APPROPRIATE METHOD DESCRIBED IN 611.08.B.3 FOR THE TYPE OF SECTIONS BEING JOINED. JOINT WRAP PRIMER MATERIAL SHALL ONLY BE APPLIED AFTER ALL PRECAST SECTIONS HAVE BEEN PROPERLY PLACED AND JOINED IN THE FIELD.

AFTER ALL PRECAST SECTIONS HAVE BEEN PROPERLY JOINED, APPLY TYPE 2 MEMBRANE WATERPROOFING TO ALL EXTERNAL SURFACES OF THE PRECAST CONCRETE BOX SECTIONS AS PER 611.09 AND AS DETAILED IN THE PLANS. PRIMER REQUIRED FOR THE MEMBRANE MATERIAL SHALL ONLY BE APPLIED AFTER ALL PRECAST SECTIONS HAVE BEEN PROPERLY PLACED AND JOINED IN THE FIELD.

IN ADDITION TO 611.01, THIS WORK SHALL INCLUDE FURNISHING ALL MATERIALS, LABOR, TOOLS AND EQUIPMENT NECESSARY TO INSTALL ALL SECTIONS OF THE PROPOSED CONCRETE STRUCTURE.

PAYMENT FOR ALL WORK DESCRIBED ABOVE SHALL BE MADE IN ACCORDANCE WITH 611.17 AT THE CONTRACT UNIT PRICE BID FOR THE ACTUALLY COMPLETED AND ACCEPTED QUANTITY OF: ITEM 611 CONDUIT, MISC.: 22'x7', TYPE A, PRECAST REINFORCED CONCRETE BOX CULVERT, 706.05, 2'-0" ESTIMATED SLAB THICKNESS, AS PER PLAN.

ITEM 611 - CONDUIT, MISC.: 22' x 7', TYPE A, PRECAST REINFORCED CONCRETE BOX CULVERT, 706.05, 2'-0" ESTIMATED SLAB THICKNESS, AS PER PLAN:

AFTER PLACING THE PRECAST SECTIONS, THE CONTRACTOR SHALL NOT CONSTRUCT THE CAST IN PLACE SECTIONS UNTIL THE EMBANKMENT ON TOP OF THE PRECAST HAS BEEN PLACED. FURTHERMORE, AS SHOWN ON THE PROFILE ON SHEET P.14|14, THE TOE OF THE WEST EMBANKMENT MAY BE TEMPORARILY SLOPED AT 1.5:1 TO FACILITATE WITH THE CONSTRUCTION OF THE CAST IN PLACE SECTION. AFTER THE CAST IN PLACE HAS BEEN CONSTRUCTED, THE CONTRACTOR SHALL RE-GRADE THE EMBANKMENT TO THE FINAL PROPOSED GRADE OF 2:1.

CULVERT GENERAL NOTES (PRECAST AND CAST-IN-PLACE)
 BRIDGE NO. CUY-CR00240-00.610
 HENRY STREET (C.R. 240) OVER MILL CREEK

SFN	1834038
DESIGN AGENCY	AECOM
DESIGNER	HER
CHECKER	JTH
REVIEWER	
MRW	08/05/24
PROJECT ID	104132
SUBSET	TOTAL
3	14
SHEET	TOTAL
P.310	399

ITEM 611 - CONDUIT, MISC.: PRECAST 4'x6' CONDUIT, TYPE A, 706.05

THE MASONRY COLLAR USED TO JOIN THE END OF THE EXISTING 4'X6' CULVERT TO THE PROPOSED 4'X6' CULVERT SHALL BE INCLUDED IN THE UNIT PRICE FOR ITEM 611 - CONDUIT, MISC.: PRECAST 4'x6' CONDUIT, TYPE A, 706.05.

REFER TO ODOT STANDARD DM 1.1 FOR MORE DETAILS ABOUT THE MASONRY COLLAR.

ABBREVIATIONS:

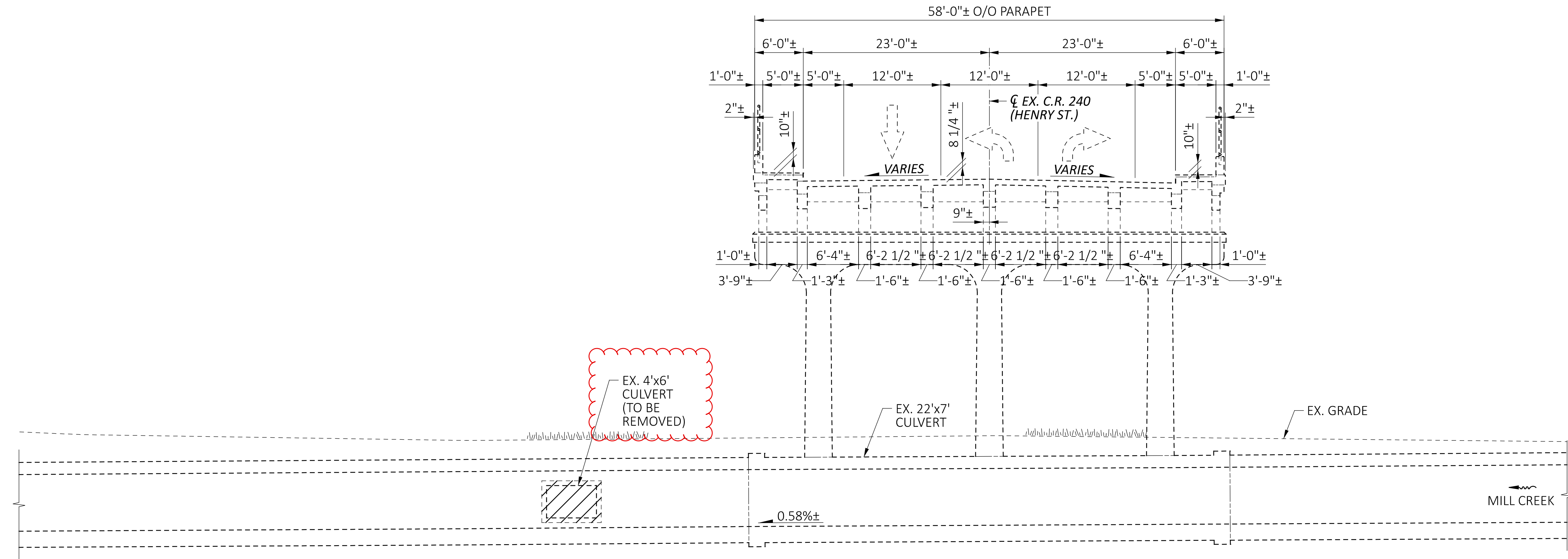
THE FOLLOWING ABBREVIATIONS HAVE BEEN USED THROUGHOUT THE CULVERT DETAILS:

- A.P.P. - AS PER PLAN
- BTM. - BOTTOM
- C.I.P. - CAST IN PLACE
- C - CENTERLINE
- CLR. - CLEAR
- CONST. JT. - CONSTRUCTION JOINT
- DND - DO NOT DISTURB
- E.F. - EACH FACE
- EX. - EXISTING
- EL. - ELEVATION
- F.F. - FAR FACE
- INV. - INVERT
- J.C. - JUNCTION CHAMBER
- LSM - LOW STRENGTH MORTAR
- MAX. - MAXIMUM
- MH - MANHOLE
- MIN. - MINIMUM
- N.F. - NEAR FACE
- PROP. - PROPOSED
- REF. - REFERENCE
- SPA. - SPACE(D) OR SPACING
- STA. - STATION
- TEMP. - TEMPORARY
- TYP. - TYPICAL
- U.N.O. - UNLESS NOTED OTHERWISE

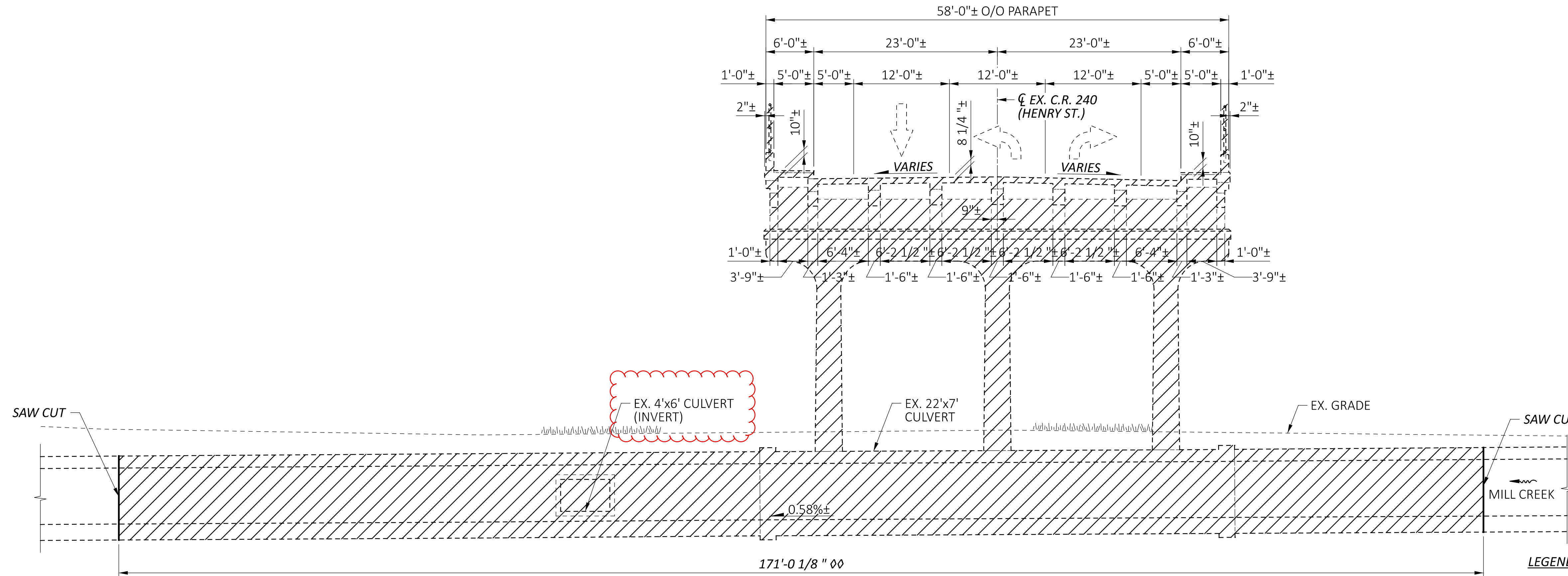
CULVERT GENERAL NOTES AND ESTIMATED QUANTITIES (PRECAST AND CAST-IN-PLACE)
 BRIDGE NO. CUY-CR00240-00.610
 HENRY STREET (C.R. 240) OVER MILL CREEK

ESTIMATED QUANTITIES						CALCULATED BY: HER
						CHECKED BY: JTH
ITEM ODOT	EXT.	PARTICIPATION	TOTAL	UNIT	DESCRIPTION	REF. SHEET
202	11201	LS	LS	LS	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	3 14, 5 14, 7 14
503	11100	LS	LS	LS	COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN	3 14
503	21301	2,824	2,824	CY	UNCLASSIFIED EXCAVATION, AS PER PLAN	3 14, 9 14
509	10000	30,281	30,281	LB	EPOXY COATED STEEL REINFORCEMENT	
510	10000	136	136	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT	
511	53100	92	92	CU. YD.	CLASS QC2 CONCRETE, MISC.: CAST IN PLACE SECTIONS	
512	33000	1,163	1,163	SQ. YD.	TYPE 2 WATERPROOFING, AS PER PLAN	3 14
512	33010	254	254	SQ. YD.	TYPE 3 WATERPROOFING	
611	97400	55	55	FT	CONDUIT, MISC.: PRECAST 4'x6' CONDUIT, TYPE A, 706.05	4 14
611	94800	156	156	FT	8' X 4' CONDUIT, TYPE A, 706.05	
611	99731	1	1	EACH	JUNCTION CHAMBER, AS PER PLAN	3 14, 8 14
611	97400	140	140	FT	CONDUIT, MISC.: 22'x7', TYPE A, PRECAST REINFORCED CONCRETE BOX CULVERT, 706.05, 2'-0" ESTIMATED SLAB THICKNESS, AS PER PLAN OR APPROVED ALTERNATIVE	3 14, 9 14
611	99621	1	1	EACH	MANHOLE, NO. 5, AS PER PLAN	3 14, 11 14
867	00100	1	1	LS	TEMPORARY WIRE FACED MECHANICALLY STABILIZED EARTH WALL	

SFN 1834038
 DESIGN AGENCY
AECOM
 564 White Pond Drive
 Akron, OH 44320
 (330) 836-9111
 www.aecom.com
 DESIGNER: HER CHECKER: JTH
 REVIEWER: MRW 08/05/24
 PROJECT ID: 104132
 SUBSET TOTAL: 4 14
 SHEET TOTAL: P.311 399



EXISTING CONDITION & PHASE 1



PHASE 2 - REMOVAL

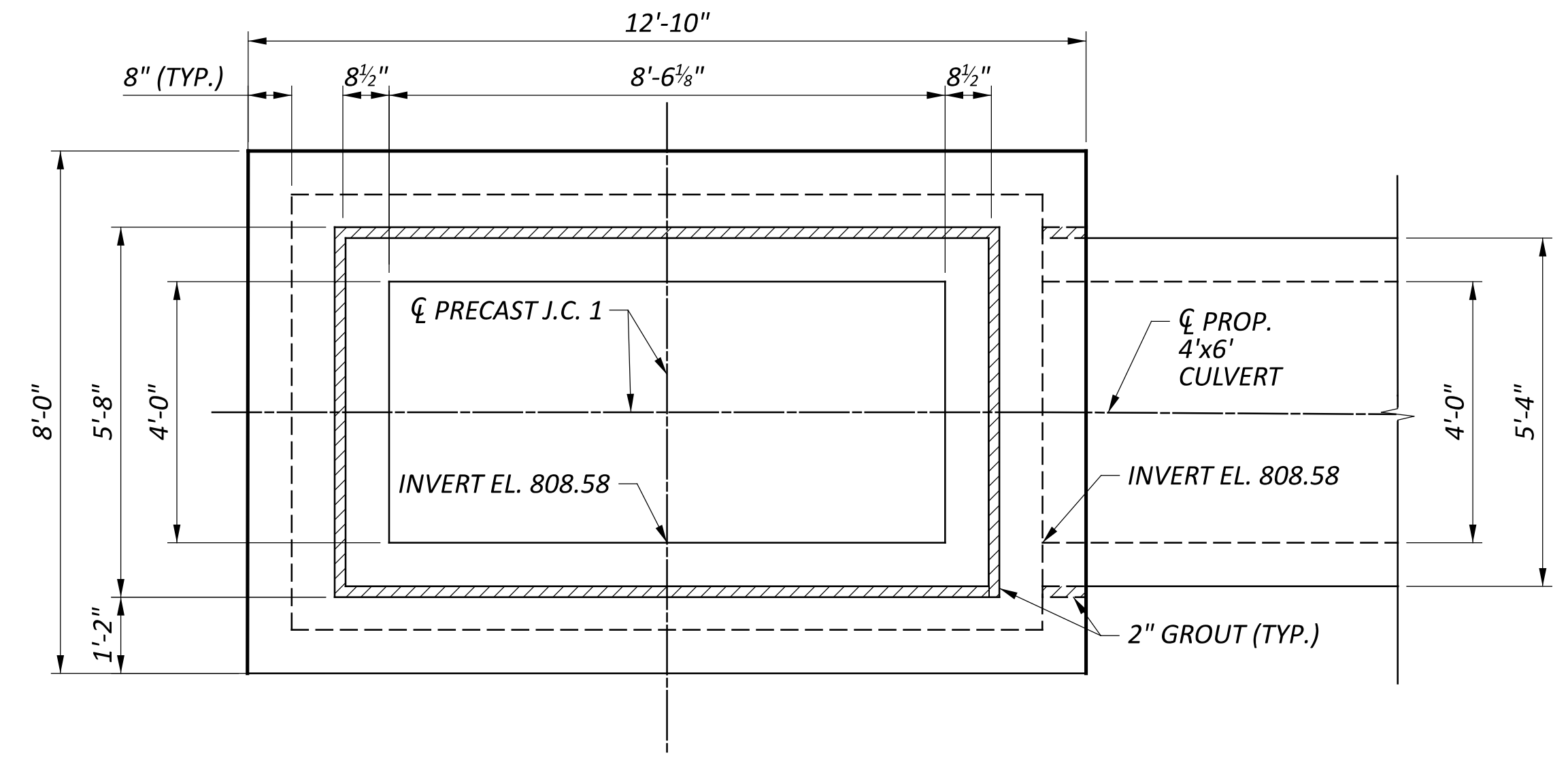
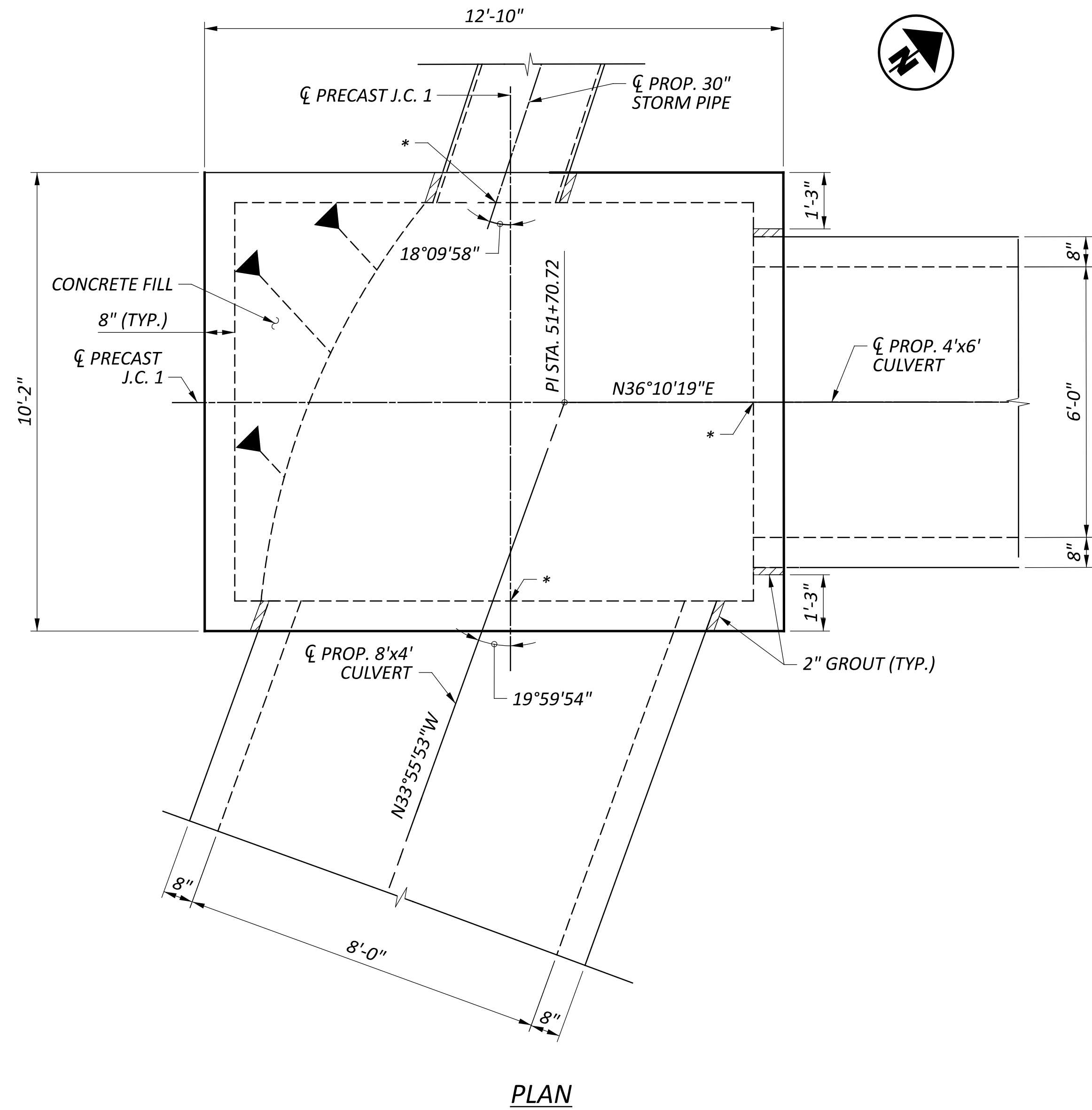
LEGEND:

∅∅

MEASURED ALONG C
CONST. MILL CREEK



ITEM 202 - PORTIONS OF
STRUCTURE REMOVED,
A.P.P.



ELEVATION
 (30" PROP. STORM PIPE IS NOT SHOWN FOR CLARITY)

LEGEND:
 * INVERT ELEVATION 808.58

- NOTES:**
1. THE SIZE AND SHAPE FOR THE JUNCTION CHAMBER MAY DIFFER FROM WHAT IS SHOWN. THE FINAL STRUCTURE SHALL ACCOMMODATE A 4'X6' CULVERT, 8'X4' CULVERT, AND A 30" STORM PIPE. REFER TO THE GENERAL NOTES ON SHEET 3 | 14 FOR DESIGN LOADING AND DESIGN DATA.
 2. IF THE JUNCTION CHAMBER FLOOR AND BARREL ARE SHIPPED SEPARATELY, THE BARREL SHALL BE SET IN A BED OF MORTAR ON THE BASE WHEN INSTALLING.
 3. PROVIDE MATERIALS FOR PRECAST SECTIONS, INCLUDING REINFORCEMENT, THAT MEET THE REQUIREMENTS OF C&MS 706.13.
 4. PROVIDE GROUT TO FILL VOID PER C&MS 611.

JUNCTION CHAMBER 1 - PRECAST DETAILS
 BRIDGE NO. CUY-CR00240-00.610
 HENRY STREET (C.R. 240) OVER MILL CREEK

SFN	1834038
DESIGN AGENCY	AECOM
DESIGNER	CHECKER
HER	JTH
REVIEWER	
MRW	08/05/24
PROJECT ID	104132
SUBSET	TOTAL
8	14
SHEET	TOTAL
P.315	399

ITEM 203 - ROADWAY, MISC.: COLUMN-SUPPORTED EMBANKMENTS AND WALLS CONT.

7.8. GEOSYNTHETIC REINFORCEMENT PLACEMENT AND QC/QA REQUIREMENTS

- A. PLACE GEOSYNTHETIC REINFORCEMENT AT THE LOCATIONS AND ELEVATION SHOWN ON THE CONTRACTOR'S ENGINEERED DRAWINGS. NO CHANGES TO THE GEOSYNTHETIC REINFORCEMENT LAYOUT, INCLUDING, BUT NOT LIMITED TO LENGTH, REINFORCEMENT TYPE, REINFORCEMENT STRENGTH, DIRECTION OF REINFORCEMENT, OR ELEVATION SHALL BE MADE WITHOUT THE EXPLICIT WRITTEN APPROVAL OF THE DESIGNER. THE CONTRACTOR SHALL SUBMIT THE CHANGES TO THE ENGINEER FOR ACCEPTANCE.
- B. CONSTRUCTION EQUIPMENT SHALL NOT BE OPERATED DIRECTLY ON THE GEOSYNTHETIC REINFORCEMENT. A MINIMUM FILL THICKNESS OF 6 INCHES IS REQUIRED FOR OPERATION OF VEHICLES OVER THE GEOSYNTHETIC REINFORCEMENT. TURNING OF VEHICLES ON THE FILL SHALL BE KEPT TO A MINIMUM TO PREVENT TRACKS OR TIRES FROM DISPLACING THE FILL AND GEOSYNTHETIC REINFORCEMENT.
- C. MINIMUM OVERLAP OF ADJACENT ROLLS OF GEOSYNTHETIC REINFORCEMENT SHALL BE AS INDICATED BY THE DESIGNER OF THE ENGINEERED DRAWINGS.
- D. EACH ROLL OF GEOSYNTHETIC REINFORCEMENT SHALL BE INSPECTED BY THE CONTRACTOR TO ENSURE THAT IT IS UNDAMAGED PRIOR TO COVERING WITH FILL MATERIAL.
- E. PREVENT EXCESSIVE MUD, WET CONCRETE, EPOXY, OR OTHER DELETERIOUS MATERIALS FROM COMING IN CONTACT WITH AND AFFIXING TO THE GEOGRID MATERIALS.
- F. GEOSYNTHETIC REINFORCEMENT SHALL BE STORED AT TEMPERATURES RECOMMENDED BY THE MANUFACTURER.
- G. GEOSYNTHETIC REINFORCEMENT SHALL NOT BE LEFT DIRECTLY EXPOSED TO SUNLIGHT FOR A PERIOD LONGER THAN RECOMMENDED BY THE MANUFACTURER OR ONE MONTH WHICHEVER IS SHORTER.
- H. ANY ROLL OR PORTION OF A ROLL OF GEOSYNTHETIC REINFORCEMENT DAMAGED BEFORE, DURING, OR AFTER INSTALLATION SHALL BE REPLACED BY THE CONTRACTOR.
- I. STOCKPILES OF FILL MATERIAL SHALL NOT BE PLACED ON THE GEOSYNTHETIC REINFORCEMENT.
- J. IF GEOTEXTILE SEAMS ARE SPECIFIED, THE SEAMS SHALL BE PLACED UP AND EVERY STITCH SHALL BE INSPECTED.
- K. THE CONTRACTOR SHALL REMOVE SLACK AND WRINKLES FROM THE GEOSYNTHETIC REINFORCEMENT PRIOR TO PLACING FILL.
- L. THE CONTRACTOR SHALL SUBMIT THE LOT NUMBERS AND ROLL NUMBERS ALONG WITH THEIR LOCATIONS WITHIN THE EMBANKMENT FOR ALL GEOSYNTHETIC REINFORCEMENT.

PART 8 POST-INSTALLATION PERFORMANCE MONITORING INSTRUMENTATION

- 8.1. POST-INSTALLATION PERFORMANCE MONITORING INSTRUMENTATION: TEN (10) SETS OF CSEW PERFORMANCE MONITORING INSTRUMENTATION SHALL BE INSTALLED. THIS INSTRUMENTATION WILL BE PLACED TO MONITOR THE PERFORMANCE OF THE CSEW SYSTEM AFTER IT HAS BEEN SUCCESSFULLY CONSTRUCTED AND IS SUBJECT TO CONSTRUCTION LOADING AND SUBSEQUENT SERVICE LOADING. THE INSTALLATION MAY BE PERFORMED BY THE PRIME CONTRACTOR, CSEW CONTRACTOR, AN INSTRUMENTATION SUBCONTRACTOR, OR CONSULTANT (OR IN WHOLE OR IN PART BY COMBINATIONS THEREOF). IMPORTANT NOTE: IN THE EVENT THAT THIS QA MONITORING WORK IS NOT TO BE COORDINATED OR PERFORMED BY THE CSEW CONTRACTOR, THE CSEW CONTRACTOR SHALL SPECIFICALLY COORDINATE THIS WORK AND SUBMIT A WORK PLAN TO THE ENGINEER PRIOR TO INITIATING THE CSEW WORK.
 - A. THE INSTRUMENT SHALL BE INSTALLED AS DESCRIBED IN THE FOLLOWING SUBSECTIONS, IN AREAS TO BE DETERMINED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER SUCH THAT CONSTRUCTION INTERFERENCE AND THE POTENTIAL FOR DAMAGE IS MINIMIZED. THE INSTALLATIONS SHALL ALSO BE PLACED SUCH THAT DATA MAY CONTINUE TO BE ACQUIRED ONCE THE FACILITY HAS BEEN PLACED IN SERVICE. DETAILS OF THE EXACT INSTALLATION LOCATIONS WILL BE DETERMINED AT THE PRE-CONSTRUCTION MEETING.
 - B. MINIMUM INSTRUMENTATION PROVIDED BY THE CONTRACTOR IS TO CONSIST OF SETTLEMENT PLATES, TO BE INSTALLED ON TOP OF THE LTP.

- C. RECORD INSTRUMENTATION DATA FROM THE TIME OF INSTALLATION (END OF CSEW CONSTRUCTION) UNTIL 30-DAYS AFTER THE WALLS REACH THEIR FINAL PLAN ELEVATION (LESS COPING AND PAVEMENTS). READINGS SHALL BE TAKEN TWICE WEEKLY DURING WALL AND EMBANKMENT FILL PLACEMENT AND AT INTERVALS NOT TO EXCEED 15 CALENDAR DAYS AT OTHER TIMES. DATA FROM ALL SENSORS SHALL BE READ IN A UNIFORM MANNER, SUCH THAT ALL DATA IS TAKEN WITHIN A 2-DAY PERIOD AT THE PRESCRIBED INTERVALS TO AID IN THE EVALUATION OF THE DATA AND SUBSEQUENT PRESENTATION OF RESULTS.
- D. IF THE WALLS SUPPORTED OVER THE CSEW COLUMNS HAVE COMPLETED SETTLEMENT IN ACCORDANCE WITH THE PERFORMANCE CRITERIA (AS DEFINED IN 1.1.A.6) WITHIN 30-DAYS OF SUBSTANTIAL WALL COMPLETION, THE CONTRACTOR MAY TURN OVER FURTHER MONITORING OF THE DATA TO THE DEPARTMENT. IF THE WALLS HAVE NOT COMPLETED SETTLEMENT IN ACCORDANCE WITH THE PERFORMANCE CRITERIA, THE CONTRACTOR SHALL CONTINUE MONITORING EFFORTS (AT NO ADDITIONAL COST TO THE DEPARTMENT) AS DIRECTED BY THE ENGINEER.
- E. INSTRUMENTATION SHALL BE INSTALLED AFTER THE CONSTRUCTION OF THE CSEW COLUMNS AND PRIOR TO WALL CONSTRUCTION OR EMBANKMENT FILL PLACEMENT. A MINIMUM OF 2 SETS OF BASELINE READINGS SHALL BE TAKEN AND CONFIRMED PRIOR TO THE CONSTRUCTION OF WALLS OR EMBANKMENTS ABOVE THE INSTALLED CSEW CONSTRUCTION.
- F. INSTRUMENTATION SHALL BE ELECTRONIC AND SELF-RECORDING, WHERE PRACTICAL. READINGS FROM SENSORS SHALL BE TAKEN WITH AUTOMATED DATA COLLECTION SYSTEMS. ANY PARTICULAR INSTRUMENT TYPE SHALL BE OBTAINED FROM THE SAME MANUFACTURER TO MINIMIZE POTENTIAL INCOMPATIBILITIES AND ERRORS. DATA ACQUISITION DEVICES (DATA LOGGERS) SHALL BE OF A TYPE COMPATIBLE WITH EACH TYPE OF INSTRUMENTATION AND RECOMMENDED BY THE MANUFACTURER.
- G. INSTRUMENTATION SHALL BE PROVIDED WITH CALIBRATION CERTIFICATES FROM THE MANUFACTURER, AS APPROPRIATE.
- H. ALL INSTRUMENTATION AND ASSOCIATED MONITORING AND DATA COLLECTION DEVICES (PROBES, CABLES, DATA COLLECTORS, ETC.) BECOME THE PROPERTY OF THE DEPARTMENT AT THE END OF THE MONITORING PERIOD. ELECTRONIC FILES AND ALL DATA REPORTS SHALL BE PROVIDED TO THE DEPARTMENT AT THE END OF THE MONITORING PERIOD.
- I. THE DEPARTMENT RESERVES THE RIGHT TO PUBLISH THE INFORMATION FROM THE MONITORING INVESTIGATION IN INTERNAL AND EXTERNAL TECHNICAL PUBLICATIONS.
- J. THE ENGINEER MAY USE THE PERFORMANCE MONITORING INSTRUMENTATION AND ASSOCIATED DATA COLLECTION AND ANALYSIS AS A BASIS OF MEASUREMENT OF PERFORMANCE CRITERIA FOR THE DETERMINATION OF SUCCESSFUL INSTALLATION OF THE CSEW APPLICATION.
- K. INSTRUMENTS SHALL MEET ACCEPTED INDUSTRY STANDARDS AND HAVE AN ACCURACY OF +/- 0.5% WITH A MINIMUM PRECISION OF +/- 0.5% OF FULL SCALE (SPAN).
- L. INSTRUMENTS SHALL HAVE APPROPRIATE RUGGEDNESS TO SURVIVE INSTALLATION AND CONSTRUCTION PROCESSES SUCH THAT THEY READ WITH THE MINIMUM PRECISION AND ACCURACY OVER THE DURATION OF CONSTRUCTION AND A MINIMUM OF EIGHTEEN (18) MONTHS OF SERVICE FOLLOWING CONSTRUCTION.
- M. INSTRUMENTATION SHALL HAVE AN OPERATING TEMPERATURE RANGE AS APPROPRIATE FOR CONDITIONS ANTICIPATED WHERE INSTALLED (I.E. WITHIN OR ABOVE A CSEW COLUMN).
- N. CABLING TO EACH SENSOR (REQUIRING CABLING) SHALL BE INCLUDED SUCH THAT DATA MAY BE OBTAINED AT ALL PHASES OF CONSTRUCTION AND WHEN THE NEW CONSTRUCTION IS IN SERVICE. THE DISTANCE FROM THE DATA ACQUISITION SYSTEM TO ANY GIVEN SENSOR SHALL BE A MINIMUM HORIZONTAL DISTANCE FROM THE SENSOR TO THE OUTSIDE OF THE NEAREST RETAINING WALL OR ABUTMENT FACE, PLUS A MINIMUM CABLING AMOUNT TO PROVIDE FOR ANY NECESSARY VERTICAL TRAVEL TO THE GROUND SURFACE, PLUS 6 FT.
- O. THE INSTRUMENTATION INSTALLATIONS SHALL BE ADEQUATELY PROTECTED FROM CONSTRUCTION IMPACTS, DURING CONSTRUCTION, AS WELL AS WEATHER EFFECTS, AND VANDALISM. APPROPRIATE LOCKED CASINGS OR REMOVABLE CABLING AND PLASTIC CONNECTOR CAPS AND RELATED PROTECTIVE DEVICES SHALL BE PROVIDED TO ENSURE THE INTEGRITY OF THE INSTRUMENTATION OVER THE PROPOSED MONITORING DURATION.
- P. THE PLAN FOR INSTALLATION OF INSTRUMENTATION SHALL BE APPROVED BY THE DESIGNER AND SUBMITTED TO THE ENGINEER FOR ACCEPTANCE PRIOR TO PLACEMENT.

PART 9 ACCEPTANCE CRITERIA AND METHOD OF MEASUREMENT

THE CSEW IS CONSIDERED ACCEPTABLE WHEN THE EMBANKMENT CONSTRUCTION AND QC/QA REQUIREMENTS ARE COMPLETED IN ACCORDANCE WITH SECTION 7, COMPLIANCE WITH THE PERFORMANCE CRITERIA FROM PARAGRAPH 1.1 IS DEMONSTRATED, AND NO DAMAGE TO ADJACENT FACILITIES IS FOUND. COMPENSATION IS MADE FOR DAMAGE CAUSED, OR DAMAGE IS REPAIRED AT CONTRACTOR'S EXPENSE.

THE DEPARTMENT WILL MEASURE ITEM 203 - ROADWAY, MISC.: COLUMN-SUPPORTED EMBANKMENTS AND WALLS BY LUMP SUM (LS), SATISFACTORILY COMPLETED IN-PLACE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND AS DIRECTED BY THE ENGINEER.

PART 10 BASIS OF PAYMENT

- 10.1. ALL COSTS IN CONNECTION WITH MOBILIZATION AND DEMOBILIZATION OF MATERIALS, EQUIPMENT, AND LABOR FOR THE CONSTRUCTION OF CSEW, LTP, AND WP AS REQUIRED IN THIS SPECIFICATION SHALL BE IN PAID FOR UNDER ITEM 203 - ROADWAY, MISC.: COLUMN-SUPPORTED EMBANKMENTS AND WALLS.
- 10.2. ALL COSTS IN CONNECTION WITH DESIGN, EQUIPMENT, MATERIAL, AND LABOR FOR THE INSTALLATION OF CSEW, INCLUDING COLUMN MATERIALS AND CONSTRUCTION, QC MONITORING, INSTRUMENTATION, LTP AND WP MATERIALS, WICK DRAINS IF NECESSARY TO MEET SETTLEMENT REQUIREMENTS, AND GEOSYNTHETIC REINFORCEMENTS AS REQUIRED IN THIS SPECIFICATION SHALL BE INCIDENTAL TO ITEM - 203, ROADWAY, MISC.: COLUMN-SUPPORTED EMBANKMENTS AND WALLS. SEPARATE PAYMENT WILL NOT BE MADE FOR SITE PREPARATION, DEWATERING, TEMPORARY WORKS TO FACILITATE CONSTRUCTION, ETC. INCLUDE ALL THE ANTICIPATED COSTS IN THE PRICE BID FOR ITEM 203 - ROADWAY, MISC.: COLUMN-SUPPORTED EMBANKMENTS AND WALLS. THE GROUND IMPROVEMENT AREA HAS BEEN DEFINED IN THE PLANS FOR BIDDING PURPOSES. ADDITIONAL COLUMN SUPPORTS SHALL BE PROVIDED AS NECESSARY BEYOND THE DEFINED AREA TO SATISFY GLOBAL STABILITY AND SHALL BE INCIDENTAL TO THIS ITEM.
- 10.3. ALL COSTS ASSOCIATED WITH THE INSTALLATION OF DEMONSTRATION AND TEST COLUMNS, REACTION FRAMES, INSTRUMENTATION, PERFORMANCE, ANALYSIS, AND REPORTING OF TEST RESULTS TO THE ENGINEER SHALL BE INCLUDED IN THE PRICE BID FOR ITEM - 203, ROADWAY, MISC.: COLUMN-SUPPORTED EMBANKMENTS AND WALLS.

SFN

DESIGN AGENCY

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 564 White Pond Drive
 Akron, OH 44320
 (330) 836-9111
 www.aecom.com

DESIGNER CHECKER

REVIEWER

PROJECT ID

104132

SUBSET TOTAL

5 25

SHEET TOTAL

P.326 399