

S:\COO\3500--3599\3599\018\Drawings\CAD\107822\mot\sheets\107822MN003A.dgn 5/1/2025 4:25:52 PM alexsch

MAINTAINING TRAFFIC (TIME LIMITATION ON A DETOUR)

A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES, EXCEPT FOR A PERIOD NOT TO EXCEED 165 CONSECUTIVE CALENDAR DAYS, WHEN THROUGH TRAFFIC MAY BE DETOURED AS SHOWN ON SHEET P.21. A DISINCENTIVE SHALL BE ASSESSED IN THE AMOUNT OF \$4,000 PER DAY FOR EACH CALENDAR DAY THE ROADWAY REMAINS CLOSED TO TRAFFIC BEYOND THE SPECIFIED LIMIT.

ACCESS TO PRIVATE PROPERTY

ACCESS TO DRIVES SHALL BE MAINTAINED VIA EXISTING PAVEMENT, TEMPORARY PAVEMENT, OR ITEM 410. ITEM 410, TRAFFIC COMPACTED SURFACE, TYPE A SHALL BE ITEMIZED SEPARATELY FOR AUTHORIZATION ONLY BY THE ENGINEER. IN THE EVENT THAT A DRIVE CANNOT BE MAINTAINED AND A CLOSURE IS NEEDED THE CONTRACTOR WILL COORDINATE WITH THE PROPERTY OWNER TO MINIMIZE THE IMPACT TO THE OWNER

COMMERCIAL PROPERTY WITH MULTIPLE DRIVES MAY HAVE ONE DRIVE CLOSED WHEN WORKING IN THE AREA OF THE DRIVE. COMMERCIAL PROPERTY WITH ONLY ONE DRIVEWAY OR DRIVEWAYS WITH ONE DIRECTION TRAFFIC USE WILL BE CONSTRUCTED PART WIDTH. THE CONTRACTOR WILL COORDINATE WITH THE PROPERTY OWNER TO MINIMIZE THE IMPACT TO THE OWNER.

MAINTAIN ACCESS TO RESIDENTIAL PROPERTIES AT ALL TIMES. WHEN A RESIDENTIAL DRIVE IS CLOSED FOR CONSTRUCTION, MAINTAIN ALTERNATE ACCESS TO THE PROPERTY. IT MAY BE REQUIRED FOR THE CONTRACTOR TO MAINTAIN ONE PASSABLE LANE WITHIN A CLOSURE IN ORDER FOR RESIDENTS TO ACCESS RESIDENCY WITH A VEHICLE.

UNLESS CALLED OUT IN THE PLANS THE CONTRACTOR WILL COORDINATE ANY CLOSURES WITH PROPERTY OWNERS AND BE RESPONSIBLE FOR ANY AND ALL PROPERTY USE AGREEMENTS FOR ALTERNATIVE ACCESS
SUCCESSFULLY NOTIFY THE OCCUPANTS/OWNERS OF COMMERCIAL OR RESIDENTIAL DRIVES TO BE CLOSED AND COORDINATE THE CLOSURE AT LEAST 48 HOURS BEFORE THE CLOSURE BEGINS (SIMPLY LEAVING A WRITTEN NOTICE OR PHONE MESSAGE IS NOT SUFFICIENT). COORDINATE ALTERNATE ACCESS TO RESIDENTIAL PROPERTIES WITH THE OWNER/OCCUPANT

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

ITEM 410 - TRAFFIC COMPACTED SURFACE, TYPE A
100 CUBIC YARDS

PAYMENT FOR ALL LABOR, EQUIPMENT, LAW ENFORCEMENT OFFICERS AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC UNLESS ITEMIZED SEPARATELY

WORK ZONE TRAFFIC SIGNAL

THE CONTRACTOR SHALL UTILIZE THE PERMANENT SIGNAL INSTALLATION INSTALLED IN PHASE 1 OF THE MAINTENANCE OF TRAFFIC PLAN AT US 42 AND INDUSTRIAL PARKWAY DURING THE SUBSEQUENT PHASES OF MAINTENANCE OF TRAFFIC. PROPOSED SIGNAL HEADS WILL BE UTILIZED AND ADJUSTED AS NECESSARY TO ACCOMMODATE EACH PHASE.

PAYMENT FOR ALL LABOR, EQUIPMENT, AND MATERIAL TO COVER AND ADJUST THE PROPOSED SIGNAL HEADS AS NEEDED SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC.

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGNS, AS PER PLAN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE, WHEN NO LONGER NEEDED, A CHANGEABLE MESSAGE SIGN. THE SIGN SHALL BE OF A TYPE SHOWN ON A LIST OF APPROVED PCMS UNITS AVAILABLE ON THE OFFICE OF MATERIALS MANAGEMENT WEB PAGE. THE LIST CONTAINS CLASS A AND B UNITS WITH MINIMUM LEGIBILITY DISTANCES OF 800 FEET AND 650 FEET, RESPECTIVELY.

EACH SIGN SHALL BE TRAILER-MOUNTED AND EQUIPPED WITH A FUNCTIONAL DIMMING MECHANISM, TO DIM THE SIGN DURING DARKNESS, AND A TAMPER AND VANDAL PROOF ENCLOSURE. EACH SIGN SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ON-SITE PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT. THE SIGN SHALL ALSO BE CAPABLE OF BEING POWERED BY AN ELECTRICAL SERVICE DROP FROM A LOCAL UTILITY COMPANY. THE PCMS SHALL BE DELINEATED IN ACCORDANCE WITH C&MS 614.03.

THE PROBABLE PCMS LOCATIONS AND WORK LIMITS FOR THOSE LOCATIONS ARE SHOWN ON SHEET(S) P.21 OF THE PLAN. PLACEMENT, OPERATION, MAINTENANCE AND ALL ACTIVATION OF THE SIGNS BY THE CONTRACTOR SHALL BE AS DIRECTED BY THE ENGINEER. THE PCMS SHALL BE LOCATED IN A HIGHLY VISIBLE POSITION YET PROTECTED FROM TRAFFIC. THE CONTRACTOR SHALL, AT THE DIRECTION OF THE ENGINEER, RELOCATE THE PCMS TO IMPROVE VISIBILITY OR ACCOMMODATE CHANGED CONDITIONS. WHEN NOT IN USE, THE PCMS SHALL BE TURNED OFF. ADDITIONALLY, WHEN NOT IN USE FOR EXTENDED PERIODS OF TIME, THE PCMS SHALL BE TURNED AWAY FROM ALL TRAFFIC.

THE ENGINEER SHALL BE PROVIDED ACCESS TO EACH SIGN UNIT AND SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ODOT PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT, AND TO REVISE SIGN MESSAGES, IF NECESSARY.

ALL MESSAGES TO BE DISPLAYED ON THE SIGN WILL BE PROVIDED BY THE ENGINEER. A LIST OF ALL REQUIRED PRE-PROGRAMMED MESSAGES WILL BE GIVEN TO THE CONTRACTOR AT THE PROJECT PRECONSTRUCTION CONFERENCE. THE SIGN SHALL HAVE THE CAPABILITY TO STORE UP TO 99 MESSAGES. MESSAGE MEMORY OR PRE-PROGRAMMED DISPLAYS SHALL NOT BE LOST AS A RESULT OF POWER FAILURES TO THE ON-BOARD COMPUTER. THE SIGN LEGEND SHALL BE CAPABLE OF BEING CHANGED IN THE FIELD. THREE-LINE PRESENTATION FORMATS WITH UP TO SIX MESSAGE PHASES SHALL BE SUPPORTED. PCMS FORMAT SHALL PERMIT THE COMPLETE MESSAGE FOR EACH PHASE TO BE READ AT LEAST TWICE.

THE PCMS SHALL CONTAIN AN ACCURATE CLOCK AND PROGRAMMING LOGIC WHICH WILL ALLOW THE SIGN TO BE ACTIVATED, DEACTIVATED OR MESSAGES CHANGED AUTOMATICALLY AT DIFFERENT TIMES OF THE DAY FOR DIFFERENT DAYS OF THE WEEK.

THE PCMS SHALL CONTAIN A CELLULAR TELEPHONE DATA LINK WHICH WILL (IN ACTIVE CELLULAR PHONE AREAS) ALLOW REMOTE SIGN ACTIVATION, MESSAGE CHANGES, MESSAGE ADDITIONS AND REVISIONS TO TIME OF DAY PROGRAMS. THE SYSTEM SHALL ALSO PERMIT VERIFICATION OF CURRENT AND PROGRAMMED MESSAGES. ONE REMOTE DATA INPUT DEVICE (LAPTOP COMPUTER PLUS MODEM OR EQUIVALENT) SHALL BE FURNISHED FOR USE BY THE DISTRICT TRAFFIC ENGINEER, OR EQUIVALENT, AND SHALL BE INSURED AGAINST THEFT.) THE PCMS UNIT SHALL BE MAINTAINED IN GOOD WORKING ORDER BY THE CONTRACTOR IN ACCORDANCE WITH THE PROVISIONS OF C&MS 614.07. THE CONTRACTOR SHALL, PRIOR TO ACTIVATING THE UNIT, MAKE ARRANGEMENTS, WITH AN AUTHORIZED SERVICE AGENT FOR THE PCMS, TO ASSURE PROMPT SERVICE IN THE EVENT OF FAILURE. ANY FAILURE SHALL NOT RESULT IN THE SIGN BEING OUT OF SERVICE FOR MORE THAN 12 HOURS, INCLUDING WEEKENDS. FAILURE TO COMPLY MAY RESULT IN AN ORDER TO STOP WORK AND OPEN ALL TRAFFIC LANES AND/OR IN THE DEPARTMENT TAKING APPROPRIATE ACTION TO SAFELY CONTROL TRAFFIC. THE ENTIRE COST TO CONTROL TRAFFIC, ACCRUED BY THE DEPARTMENT DUE TO THE CONTRACTOR'S NONCOMPLIANCE, WILL BE DEDUCTED FROM MONEYS DUE, OR TO BECOME DUE THE CONTRACTOR ON HIS CONTRACT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR 24-HOUR-PER-DAY OPERATION AND MAINTENANCE OF THESE SIGNS ON THE PROJECT FOR THE DURATION OF THE PHASES WHEN THE PLAN REQUIRES THEIR USE.

PAYMENT FOR THE ABOVE DESCRIBED ITEM SHALL BE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, FUELS, LUBRICATING OILS, SOFTWARE, HARDWARE AND INCIDENTALS TO PERFORM THE ABOVE DESCRIBED WORK.

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN P.21
SIGN MONTH ASSUMING 4 PCMS SIGN(S) FOR 16 MONTH(S).

AGGREGATE WEDGE

WHERE THE CONTRACTOR CAN NOT FULLY MEET THE DROP OFF REQUIREMENTS AS SHOWN IN MOT-101.90, THE CONTRACTOR SHALL INSTALL AN AGGREGATE WEDGE (304 AGGREGATE) PLACED EACH NIGHT AT THE DROP OFF. THE AGGREGATE WEDGE WILL NEED TO BE INSTALLED AT THE TIME OF SUB-BASE CONSTRUCTION (BEFORE CURING) AND LEFT IN PLACE UNTIL THE CONTRACTOR IS READY TO INSTALL THE AGGREGATE BASE AND PAVEMENT. AFTER THE CURE TIME, IT CAN BE LEVELED AND USED IN PLACE.

ITEM 614, WORK ZONE PAVEMENT MARKINGS

THE FOLLOWING QUANTITIES ARE PROVIDED TO INSTALL WORK ZONE PAVEMENT MARKINGS AT PERMANENT LOCATIONS AT THE CONCLUSION OF EACH STAGE WHEN SURFACE COURSE IS INSTALLED. PERMANENT STRIPING QUANTITIES AS QUANTIFIED ON P.116 TO P.120 SHALL BE APPLIED OVER THE TOP OF CLASS III PAVEMENT MARKINGS SPECIFIED HERE.

ITEM 614, WORK ZONE EDGE LINE, CLASS III, 6", 642 PAINT	2.94 MILE
ITEM 614, WORK ZONE LANE LINE, CLASS III, 6", 642 PAINT	1.12 MILE
ITEM 614, WORK ZONE CENTER LINE, CLASS III, 642 PAINT	2.19 MILE
ITEM 614, WORK ZONE CHANNELIZING LINE, CLASS III, 8", 642 PAINT	4642 FT
ITEM 614, WORK ZONE DOTTED LINE, CLASS III, 6", 642 PAINT	1256 FT
ITEM 614, WORK ZONE STOP LINE, CLASS III, 642 PAINT	396 FT

S:\C00\3500--3599\018\Drawings\018\Drawings\CAD\107822\roadway\sheets\07822GG001.dgn 4/30/2025 6:44:17 PM alexsch

SHEET NUM.												PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.	CALCULATED ACS	CHECKED JDH
P.10	P.11	P.110A	P.111	P.112	P.114	P.115	P.237					01/STR/0 4	02/STR/0 4								
																		ROADWAY			
LS												LS		201	11000	LS		CLEARING AND GRUBBING			
						42,055.3						31,367.7	10,687.6	202	23000	42,055.3	SY	PAVEMENT REMOVED			
				99								50	49	202	35100	99	FT	PIPE REMOVED, 24" AND UNDER			
		737										574	163	202	38000	737	FT	GUARDRAIL REMOVED			
		8										8		SPECIAL	20252990	8	EACH	PARKING BLOCK REMOVED	P.11		
		1,094										1,094		202	75000	1,094	FT	FENCE REMOVED			
		1										1		202	98100	1	EACH	REMOVAL MISC.: BIRD BATH	P.11		
		3										3		202	98100	3	EACH	REMOVAL MISC.: FLAG	P.11		
		4,041										4,041		202	98400	4,041	SF	REMOVAL MISC.: LANDSCAPING REMOVAL	P.11		
16,829												12,338	4,491	203	10000	16,829	CY	EXCAVATION			
4,474												3,628	846	203	20000	4,474	CY	EMBANKMENT			
						46,240.1						34,629.1	11,611	204	10000	46,240.1	SY	SUBGRADE COMPACTION			
						380.6						310.5	70.1	204	13000	380.6	CY	EXCAVATION OF SUBGRADE			
23												17	6	204	45000	23	hour	PROOF ROLLING			
												1,001	338	206	10500	1,339	TON	CEMENT			
												33,697.4	11,400.8	206	11000	45,098.2	SY	CURING COAT			
												33,697.4	11,400.8	206	15010	45,098.2	SY	CEMENT STABILIZED SUBGRADE, 12 INCHES DEEP			
												LS		206	30000	LS		MIXTURE DESIGN FOR CHEMICALLY STABILIZED SOILS			
						3.23						2.34	0.89	209	72050	3.23	MILE	PREPARING SUBGRADE FOR SHOULDER PAVING			
		287.5										237.5	50	606	15050	287.5	FT	GUARDRAIL, TYPE MGS			
		100										50	50	606	17360	100	FT	GUARDRAIL, TYPE MGS, LONG-SPAN			
		4										3	1	606	26150	4	EACH	ANCHOR ASSEMBLY, MGS TYPE E (MASH 2016)			
		2										1	1	606	26550	2	EACH	ANCHOR ASSEMBLY, MGS TYPE T			
		4										3	1	SPECIAL	69050000	4	EACH	MAILBOX SUPPORT	P.11A		
												LS		878	25000	LS		INSPECTION AND COMPACTION TESTING OF UNBOUND MATERIALS			
																		EROSION CONTROL			
					39.6							27	12.6	601	21050	39.6	SY	TIED CONCRETE BLOCK MAT WITH TYPE 1 UNDERLAYMENT			
2,336												1,696	640	659	00300	2,336	CY	TOPSOIL			
21,040												15,276	5,764	659	10000	21,040	SY	SEEDING AND MULCHING			
1,052												764	288	659	14000	1,052	SY	REPAIR SEEDING AND MULCHING			
1,052												764	288	659	15000	1,052	SY	INTER-SEEDING			
2.84												2.06	0.78	659	20000	2.84	TON	COMMERCIAL FERTILIZER			
4.35												3.16	1.19	659	31000	4.35	ACRE	LIME			
57												41	16	659	35000	57	MGAL	WATER			
47												34	13	659	40000	47	MSF	MOWING			
				199								45	154	660	25000	199	SY	SODDING STAKED			
					3,233							3,233		670	00500	3,233	SY	SLOPE EROSION PROTECTION			
					1,172							1,172		670	00700	1,172	SY	DITCH EROSION PROTECTION			
					598							598		670	00720	598	SY	DITCH EROSION PROTECTION MAT, TYPE B			
												LS		832	15000	LS		STORM WATER POLLUTION PREVENTION PLAN			
												LS		832	15002	LS		STORM WATER POLLUTION PREVENTION INSPECTIONS			
												LS		832	15010	LS		STORM WATER POLLUTION PREVENTION INSPECTION SOFTWARE			
												147,000		832	30000	147,000	EACH	EROSION CONTROL			
																		DRAINAGE			
				24									24	601	32000	24	CY	ROCK CHANNEL PROTECTION, TYPE A WITH FILTER			
							34					34		601	32100	34	CY	ROCK CHANNEL PROTECTION, TYPE B WITH FILTER			
	10			175								48	137	601	32200	185	CY	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER			
							45					45		601	32004	45	CY	ROCK CHANNEL PROTECTION, TYPE A WITH GEOTEXTILE FABRIC			
				2									2	602	98300	2	EACH	MASONRY, MISC.: MASONRY COLLAR PER DM-1.1	P.1		
					11,950							11,507	443	605	05100	11,950	FT	4" SHALLOW PIPE UNDERDRAINS			
					12,211							12,211		605	06000	12,211	FT	4" BASE PIPE UNDERDRAINS			
					4,424								4,424	605	11100	4,424	FT	6" SHALLOW PIPE UNDERDRAINS			
	50											25	25	611	00400	50	FT	4" CONDUIT, TYPE E			
	50											25	25	611	00406	50	FT	4" CONDUIT, TYPE F			
												147	16	611	00410	163	FT	4" CONDUIT, TYPE F FOR UNDERDRAIN OUTLET			
					50								50	611	00510	50	FT	6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS			
			1,496									1,111	385	611	04400	1,496	FT	12" CONDUIT, TYPE B			
			20									20		611	04900	20	FT	12" CONDUIT, TYPE D			

GENERAL SUMMARY

UNI - 42 - 3.91

P.107
P.347

UNI-42-3.91

S:\C00\3500--3599\3599\018\Drawings\CAD\107822\roadway\sheets\07822GG003.dgn 5/1/2025 4:25:54 PM alexsch

SHEET NUM.												PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.	CALCULATED ACS	CHECKED JDH
P.12	P.13	P.14	P.14A	P.112	P.121	P.124	P.127	P.237	P.243A			01/STR/0 4	02/STR/0 4								
					103							103		632	68300	103	FT	POWER CABLE, 3 CONDUCTOR, NO. 6 AWG			
					134							134		632	69800	134	FT	SERVICE CABLE, 3 CONDUCTOR, NO. 6 AWG			
					1							1		632	70000	1	EACH	POWER SERVICE			
					2							2		632	70400	2	EACH	CONDUIT RISER, 2" DIAMETER			
					2							2		632	86150	2	EACH	STRAIN POLE, TYPE TC-81.11, DESIGN 13			
					2							2		632	87150	2	EACH	COMBINATION STRAIN POLE, TYPE TC-81.11, DESIGN 13			
					1							1		632	90100	1	EACH	REMOVAL OF TRAFFIC SIGNAL INSTALLATION			
					1							1		632	90400	1	EACH	SIGNALIZATION, MISC.: CDMA MODEM, FURNISH ONLY	P.267		
					1							1		633	65511	1	EACH	CABINET, TYPE TS-2, AS PER PLAN	P.265		
					1							1		633	67100	1	EACH	CABINET FOUNDATION			
					1							1		633	67200	1	EACH	CONTROLLER WORK PAD			
					1							1		633	75001	1	EACH	UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN	P.265		
					1							1		633	99000	1	EACH	CONTROLLER ITEM, MISC.: ETHERNET RADIO (UBIQUITY)	P.265		
					1							1		633	99000	1	EACH	CONTROLLER ITEM, MISC.: UNMANAGED ETHERNET SWITCH	P.272		
					30							30		809	64550	30	FT	ETHERNET CABLE, OUTDOOR-RATED			
					4							4		809	69001	4	EACH	ADVANCE RADAR DETECTION, AS PER PLAN	P.267		
					4							4		809	69101	4	EACH	STOP LINE RADAR DETECTION, AS PER PLAN	P.267		
					1							1		809	69123	1	EACH	ATC CONTROLLER, AS PER PLAN	P.265		
																		MISCELLANEOUS STRUCTURE			
								LS				LS		202	11000	LS		STRUCTURE REMOVED			
									LS			LS		202	11201	LS		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	P.243A		
								LS				LS		503	11100	LS		COFFERDAMS AND EXCAVATION BRACING			
								LS				LS		503	21300	LS		UNCLASSIFIED EXCAVATION (WINGWALL FOOTING)			
								3,534	2,166			3,534	2,166	509	10000	5,700	LB	EPOXY COATED STEEL REINFORCEMENT			
								9.4	8			9.4	8	511	46012	17.4	CY	CLASS QC1 CONCRETE WITH QC/QA, RETAINING/WINGWALL NOT INCLUDING FOOTING			
								26	17			26	17	511	46510	43	CY	CLASS QC1 CONCRETE, FOOTING			
				2.4				1.2				2.4	1.2	511	46610	3.6	CY	CLASS QC1 CONCRETE, HEADWALL			
								40	21			40	21	512	10100	61	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)			
								163				163		512	33000	163	SY	TYPE 2 WATERPROOFING			
								28				28		516	13600	28	SF	1" PREFORMED EXPANSION JOINT FILLER			
								LS	LS			LS		518	21230	LS		POROUS BACKFILL WITH GEOTEXTILE FABRIC			
																		MAINTENANCE OF TRAFFIC			
			100									50	50	410	10001	100	CY	TRAFFIC COMPACTED SURFACE, TYPE A, AS PER PLAN	P.14A		
	100											50	50	614	11110	100	hour	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE			
						5	10					10	5	614	12384	15	EACH	WORK ZONE IMPACT ATTENUATOR, 24" WIDE HAZARDS, (BIDIRECTIONAL)			
		LS										LS		614	12420	LS		DETOUR SIGNING			
5												3	2	614	12500	5	EACH	REPLACEMENT SIGN			
50												25	25	614	12600	50	EACH	REPLACEMENT DRUM			
80												61	19	614	13310	80	EACH	BARRIER REFLECTOR, TYPE 1, BIDIRECTIONAL			
80												61	19	614	13360	80	EACH	OBJECT MARKER, TWO WAY			
						0.48						0.48		614	20000	0.48	MILE	WORK ZONE LANE LINE, CLASS I, 4"			
					1.12							1.12		614	20560	1.12	MILE	WORK ZONE LANE LINE, CLASS III, 6", 642 PAINT	P.14A		
						1.97	1.38					3	0.35	614	21000	3.35	MILE	WORK ZONE CENTER LINE, CLASS I			
					2.19							1.62	0.57	614	21550	2.19	MILE	WORK ZONE CENTER LINE, CLASS III, 642 PAINT	P.14A		
						9.16	3.65					9.44	3.37	614	22000	12.81	MILE	WORK ZONE EDGE LINE, CLASS I, 4"			
					2.94							1.16	1.78	614	22360	2.94	MILE	WORK ZONE EDGE LINE, CLASS III, 6", 642 PAINT	P.14A		
							971					971		614	23000	971	FT	WORK ZONE CHANNELIZING LINE, CLASS I, 8"			
					4,642							2,945	1,697	614	23680	4,642	FT	WORK ZONE CHANNELIZING LINE, CLASS III, 8", 642 PAINT	P.14A		
						1,364	370					952	782	614	24000	1,734	FT	WORK ZONE DOTTED LINE, CLASS I			
					1,256							1,256		614	24612	1,256	FT	WORK ZONE DOTTED LINE, CLASS III, 6", 642 PAINT	P.14A		
						309	114					358	65	614	26000	423	FT	WORK ZONE STOP LINE, CLASS I			
					396							314	82	614	26610	396	FT	WORK ZONE STOP LINE, CLASS III, 642 PAINT	P.14A		
						8						8		614	30000	8	EACH	WORK ZONE ARROW, CLASS I			
												LS		615	10000	LS		ROADS FOR MAINTAINING TRAFFIC			
						11,138.5	1,148.4					10,308.6	1,978.3	615	20000	12,286.9	SY	PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A			
						677	3,160					3,007	830	622	41100	3,837	FT	PORTABLE BARRIER, UNANCHORED			
																		INCIDENTALS			
												LS		614	11000	LS		MAINTAINING TRAFFIC			
												6		619	16010	6	MNTH	FIELD OFFICE, TYPE B			

GENERAL SUMMARY

UNI - 42 - 3.91

P.109
P.347

S:\C000\3500--3599\3599\018\Drawings\CAD\107822\drainage\sheets\07822DS003.dgn 4/30/2025 5:07:45 PM alexsch

REF. NO.	SHEET NO.	LOCATION			DRAINAGE SUBSUMMARY																	CALCULATED			ACS		JDH																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
					HEADWALL REMOVED	PIPE REMOVED, 24" AND UNDER	EPOXY COATED REINFORCING STEEL	CLASS QC1 CONCRETE, HEADWALL	ROCK CHANNEL PROTECTION, TYPE A WITH FILTER	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	CONCRETE MASONRY	CONCRETE MISC, MASONRY COLLAR PER DM-1.1	MANHOLE RECONSTRUCTED TO GRADE	SODDING STAKED	SLOPE EROSION PROTECTION	DITCH EROSION PROTECTION	DITCH EROSION PROTECTION MAT, TYPE B																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													

DRAINAGE SUBSUMMARY

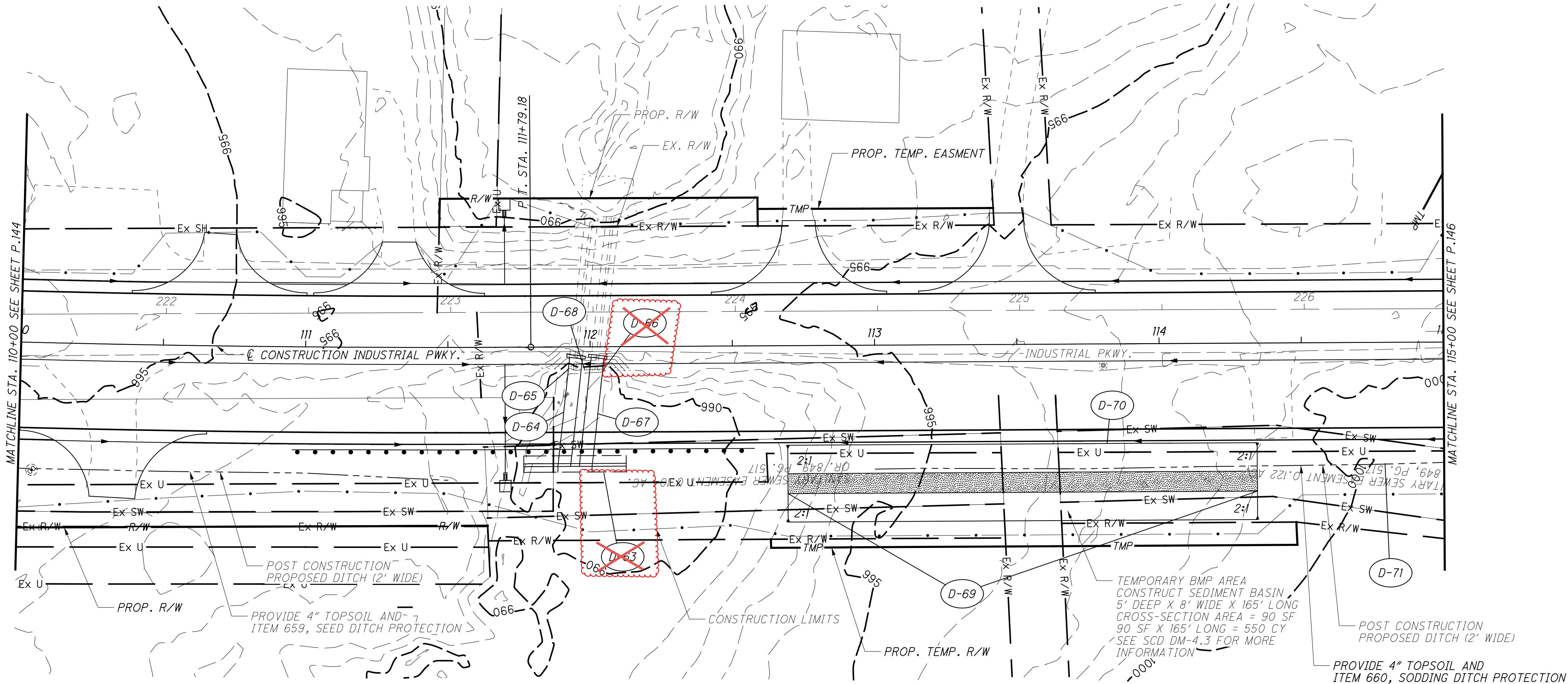
UNI - 42 - 3.91

P.112
P.347

CALCULATED
ACS
CHECKED
JDH

S:\COO\3500--3599\3599\018\Drawings\CAD\107822\drainage\sheets\107822DP015.dgn 4/30/2025 5:07:59 PM alexsch

BMP Type	Latitude/Longitude				BMP Width	EDA Treatment Credit
	Begin		End		(Feet)	(Acres)
Vegetative Biofilter 1	40.153448	-83.239536	40.155005	-83.238067	4	0.85
Vegetative Biofilter 2	40.158609	-83.234495	40.159735	-83.233464	4	0.86
Vegetative Biofilter 3	40.162764	-83.230369	40.163139	-83.229834	4	0.37
Vegetative Filter Strip 1	40.156494	-83.236481	40.158504	-83.234521	63	0.23
Vegetative Filter Strip 2	40.163241	-83.229501	40.163859	-83.228937	40	1.32
Treatment Provided						3.63
Treatment Required*						3.31



PROJECT DATA			
TOTAL AREA (RIGHT-OF-WAY)	14.7 AC	RUNOFF COEFFICIENT FOR PRE-CONSTRUCTION SITE	0.70
PROJECT EARTH DISTURBED AREA	13.1 AC	RUNOFF COEFFICIENT FOR POST-CONSTRUCTION SITE	0.75
ESTIMATED CONTRACTOR EARTH DISTURBED AREA	1.0 AC	POST CONSTRUCTION BMP(S): VEGETATED FILTER STRIP & VEGETATED BIOFILTER	
NOTICE OF INTENT EARTH DISTURBED AREA	14.1 AC	IMMEDIATE RECEIVING WATERS	SUGAR RUN
IMPERVIOUS (PAVED) AREA FOR PRE-CONSTRUCTION SITE	8.2 AC	SUBSEQUENT RECEIVING WATERS	THREE MILE CREEK
IMPERVIOUS (PAVED) AREA FOR POST CONSTRUCTION SITE	9.8 AC		

PROJECT DESCRIPTION

THIS PROJECT CONSISTS OF THE WIDENING OF 1.18 MILES OF U.S. 42 AND INDUSTRIAL PARKWAY. PROJECT INCLUDES TURN LANES AND AN UPGRADED SIGNAL AT THE INTERSECTION OF U.S. 42 AND INDUSTRIAL PARKWAY. PROJECT INCLUDES FULL DEPTH REPLACEMENT, MILL AND OVERLAY, PAVEMENT MARKINGS, AND TRAFFIC SIGNAL REPLACEMENTS.



02040

HORIZONTAL SCALE IN FEET

CALCULATED

ACS

CHECKED

JDH

PROJECT SITE PLAN

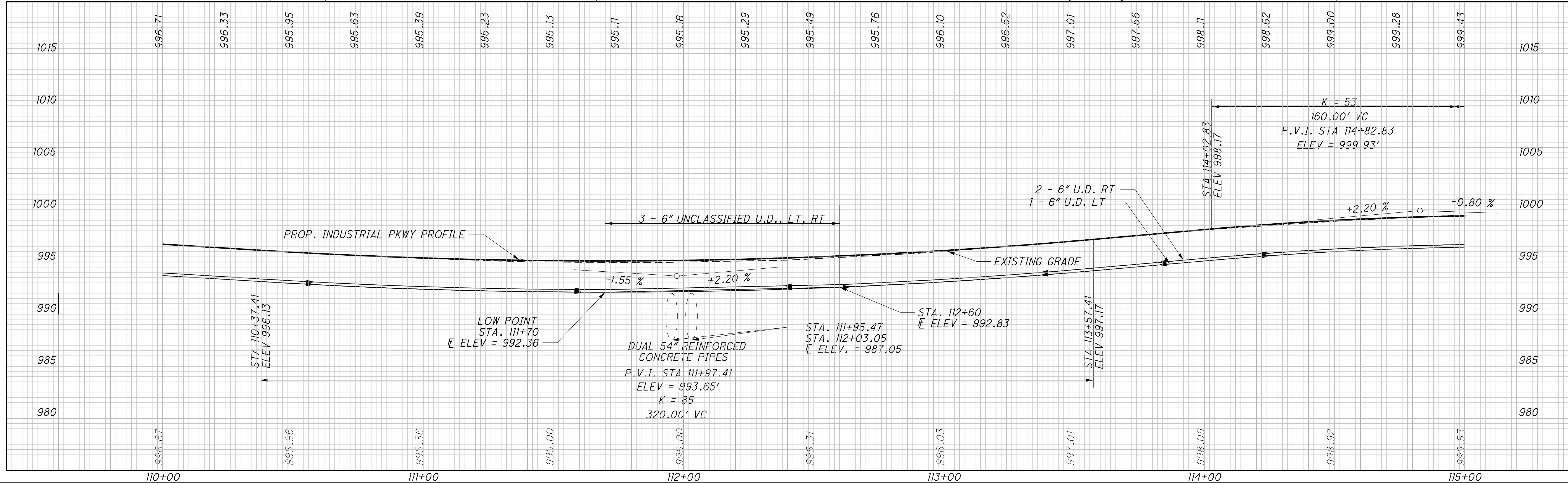
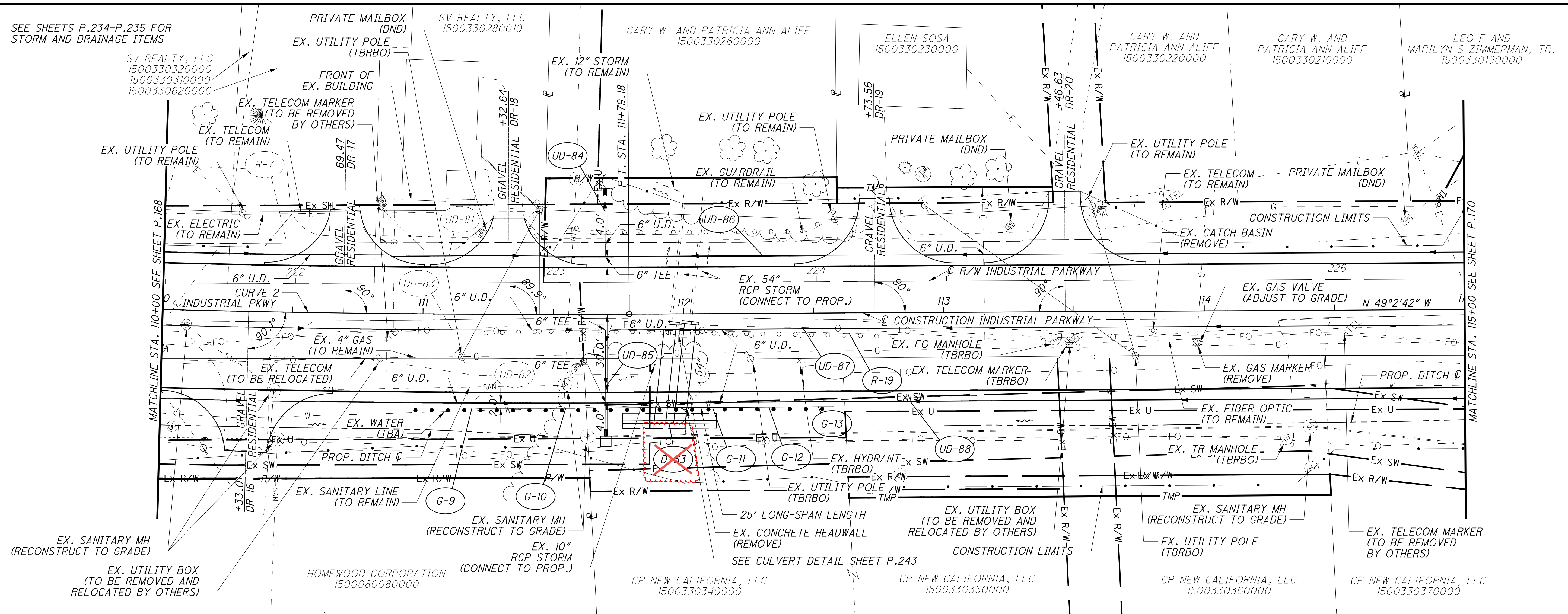
STA. 110+00 TO 115+00 INDUSTRIAL PARKWAY

UNI-42-3.91

P.145

P.347

S:\B\COB\3500--3599\B\3599\B\018\Drawings\CAD\107822\roadway\sheet\107822GP013.dgn 4/30/2025 5:08:00 PM alexsch



0

20

40

10

HORIZONTAL

SCALE IN FEET

CALCULATED

JTO

CHECKED

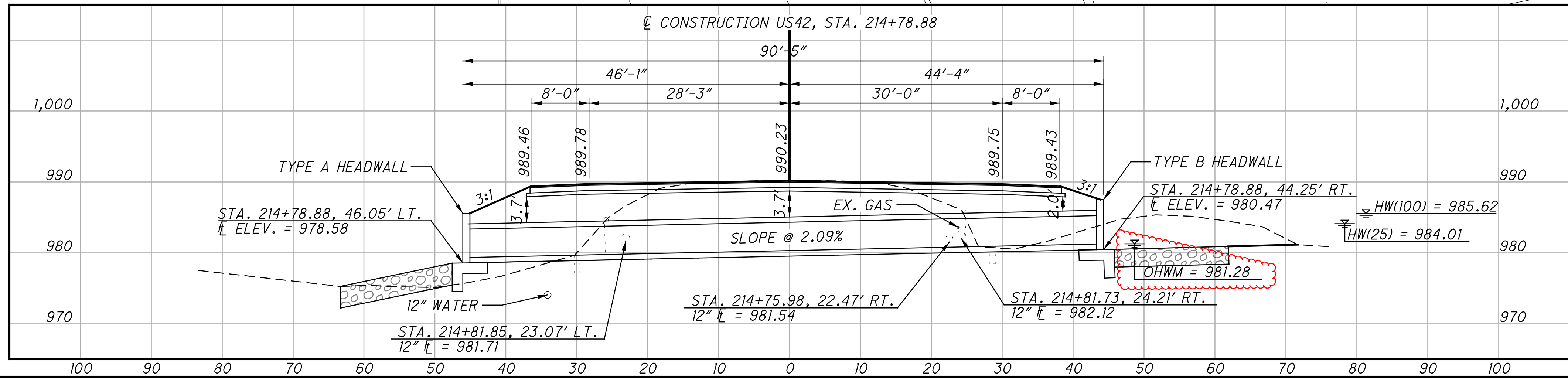
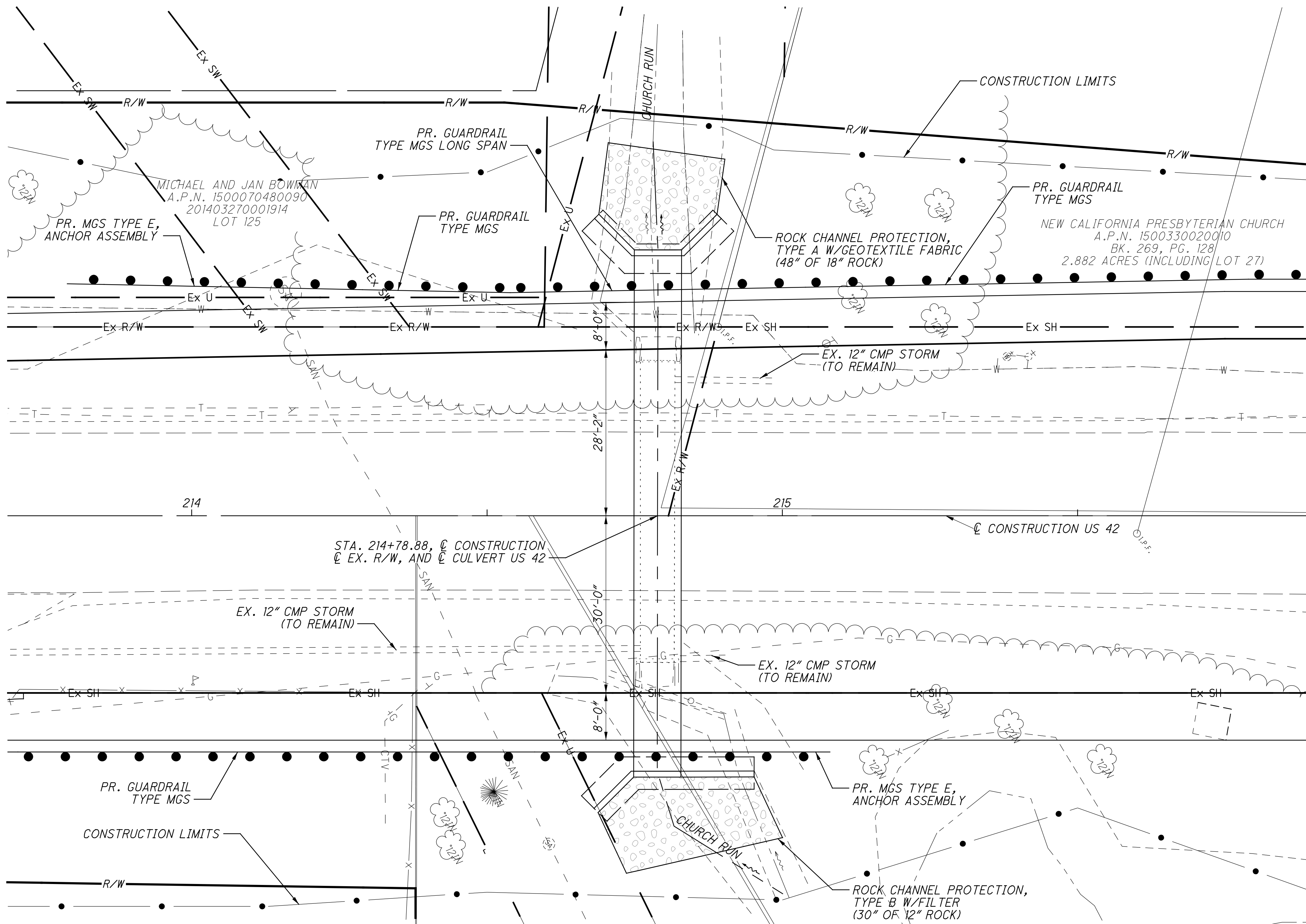
JDH

PLAN AND PROFILE - INDUSTRIAL PARKWAY
STA. 110+00.00 TO STA. 115+00.00

UNI-42-3.91

P.169

P.347



NOTES

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

HYDRAULIC DATA

DRAINAGE AREA = 154 ACRES

$$Q(25) = 144 \text{ CFS} \quad V(25) = 16.27 \text{ FT/S} \quad HW(25) = 984.01 \text{ FT}$$

$Q(100) = 220 \text{ CFS}$ $V(100) = 18.76 \text{ FT/S}$ $HW(100) = 985.62 \text{ FT}$

ORDINARY HIGH WATER MARK: 981.28

DESIGN SERVICE LIFE: 75 YRS

pH: 7.8

ABRASION LEVEL: 4

CFN: 1884222



CALCULATED	
KCS	
CHECKED	
IDU	

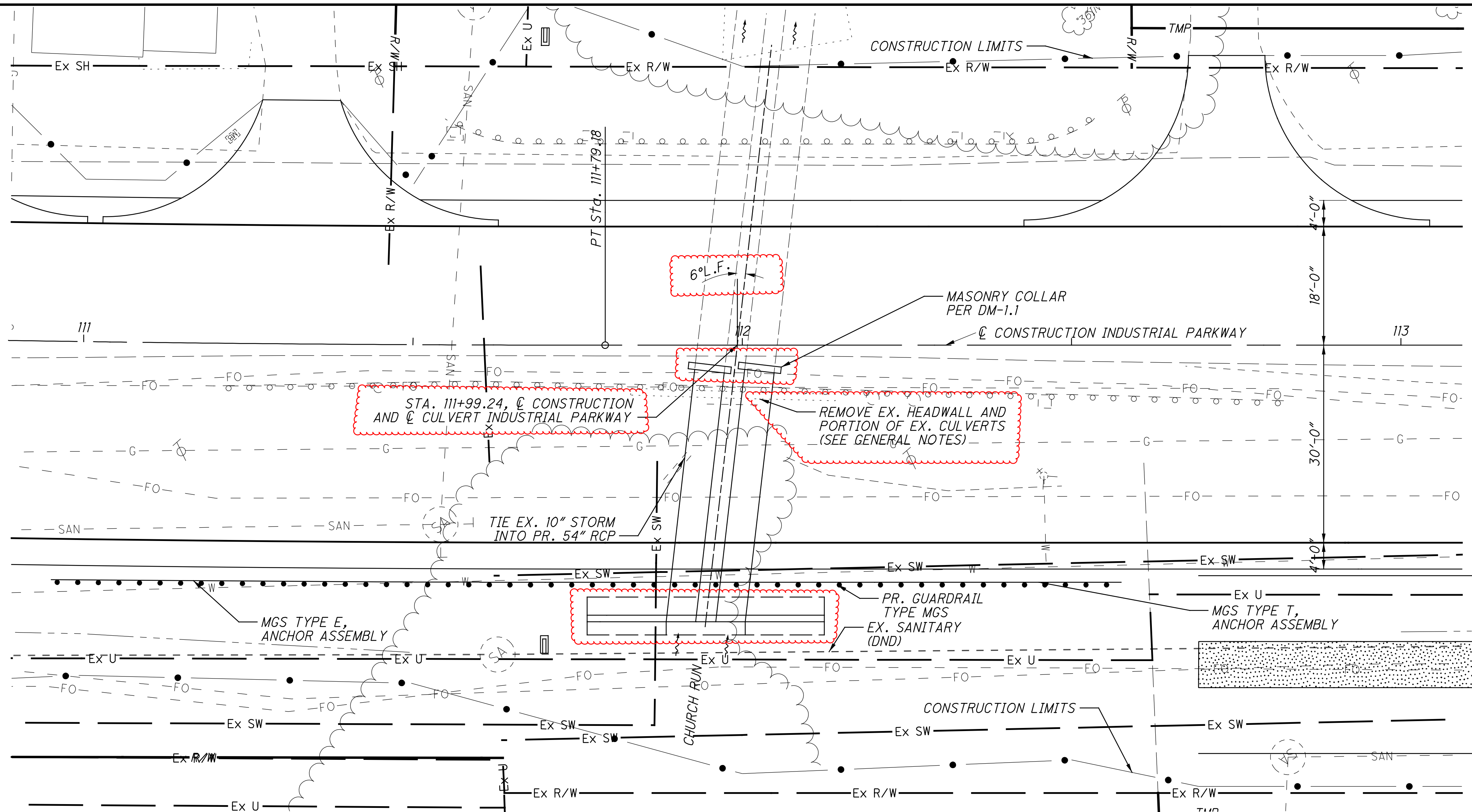
CULVERT DETAIL (US-42-4.061)

STA. 214+78.88

UNI-42-3.91

P.236
P.347

S:\COO\3500--3599\018\Drawings\CAD\107822\drainage\sheet\107822DC003.dgn 4/30/2025 6:44:36 PM alexsch



NOTES

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

HYDRAULIC DATA

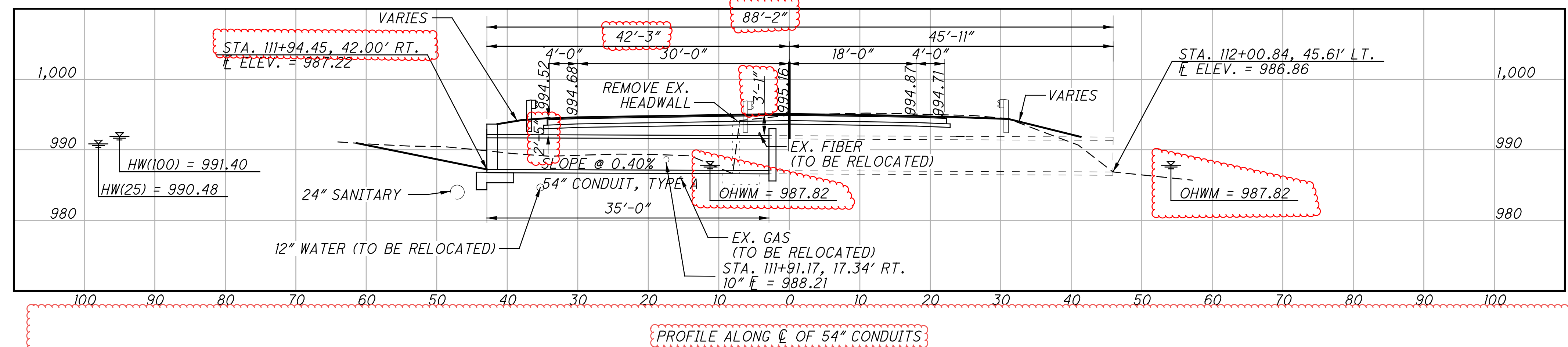
DRAINAGE AREA = 128 ACRES
Q (25) = 124 CFS V (25) = 7.63 FT/S HW (25) = 990.48 FT
Q (100) = 190 CFS V (100) = 9.23 FT/S HW (100) = 991.40 FT
ORDINARY HIGH WATER MARK: 987.82
DESIGN SERVICE LIFE: 75 YRS
pH: 7.8
ABRASION LEVEL: 4
SFN: 8045860

EXISTING STRUCTURE

TYPE: DUAL 54" REINFORCED CONCRETE PIPES WITH FULL HEIGHT HEADWALL
SKEW: 6° L.F.
ALIGNMENT: TANGENT
SFN: 8045860

PROPOSED STRUCTURE

TYPE: DUAL 54" REINFORCED CONCRETE PIPES WITH FULL HEIGHT HEADWALL (EXTENSION OF PIPES)
SKEW: 6° L.F.
ALIGNMENT: TANGENT
SFN: 8045860



S:\COO\3500--3599\3599\018\Drawings\CAD\107822\drainage\sheets\107822DC003_A.dgn 4/30/2025 7:12:24 PM olexsch

DESIGN SPECIFICATIONS

THIS STANDARD DRAWING CONFORMS TO "LRFD BRIDGE DESIGN SPECIFICATION" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS AND THE BRIDGE DESIGN MANUAL.

DESIGN DATA

THE FOLLOWING DESIGN DATA IS ASSUMED:

INTERNAL ANGLE OF FRICTION OF BACKFILL SOIL, $\phi_{bf} = 30^\circ$
TOTAL UNIT WEIGHT OF BACKFILL SOIL = 120 PCF
INTERNAL ANGLE OF FRICTION (DRAINED), FOUNDATION SOIL, $\phi_f = 28^\circ$
UNDRAINED SHEAR STRENGTH (COHESIVE), FOUNDATION SOIL, $S_{uf} = 1500$ PSF
UNIT WEIGHT OF CONCRETE = 150 PCF
HEIGHT OF LIVE LOAD SURCHARGE = 2 FT

CONCRETE - COMPRESSIVE STRENGTH 4000 PSI
(FOOTING AND WINGWALL)

REINFORCING STEEL - ASTM A615, A616, OR A617
GRADE 60 MINIMUM YIELD STRENGTH
60,000 PSI (ALL REINFORCING SHALL BE
EPOXY COATED)

BASED ON THE ASSUMED DESIGN DATA, THE WINGWALLS ACHIEVE FACTORED BEARING RESISTANCES THAT ARE GREATER THAN THEIR RESPECTIVE BEARING PRESSURES. IF A BACKFILL MATERIAL WITH A HIGHER INTERNAL ANGLE OF FRICTION OR A LIGHTER TOTAL UNIT WEIGHT IS USED; OR IF A FOUNDATION SOIL WITH A HIGHER DRAINED INTERNAL ANGLE OF FRICTION OR A HIGHER UNDRAINED SHEAR STRENGTH IS ENCOUNTERED; THEN THE STABILITY OF THE WINGWALLS IS SATISFACTORY.

PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

COMPLETELY REMOVE THE EXISTING HEADWALL AND EXISTING CULVERTS TO THE FIRST JOINT BEHIND THE EXISTING HEADWALL.

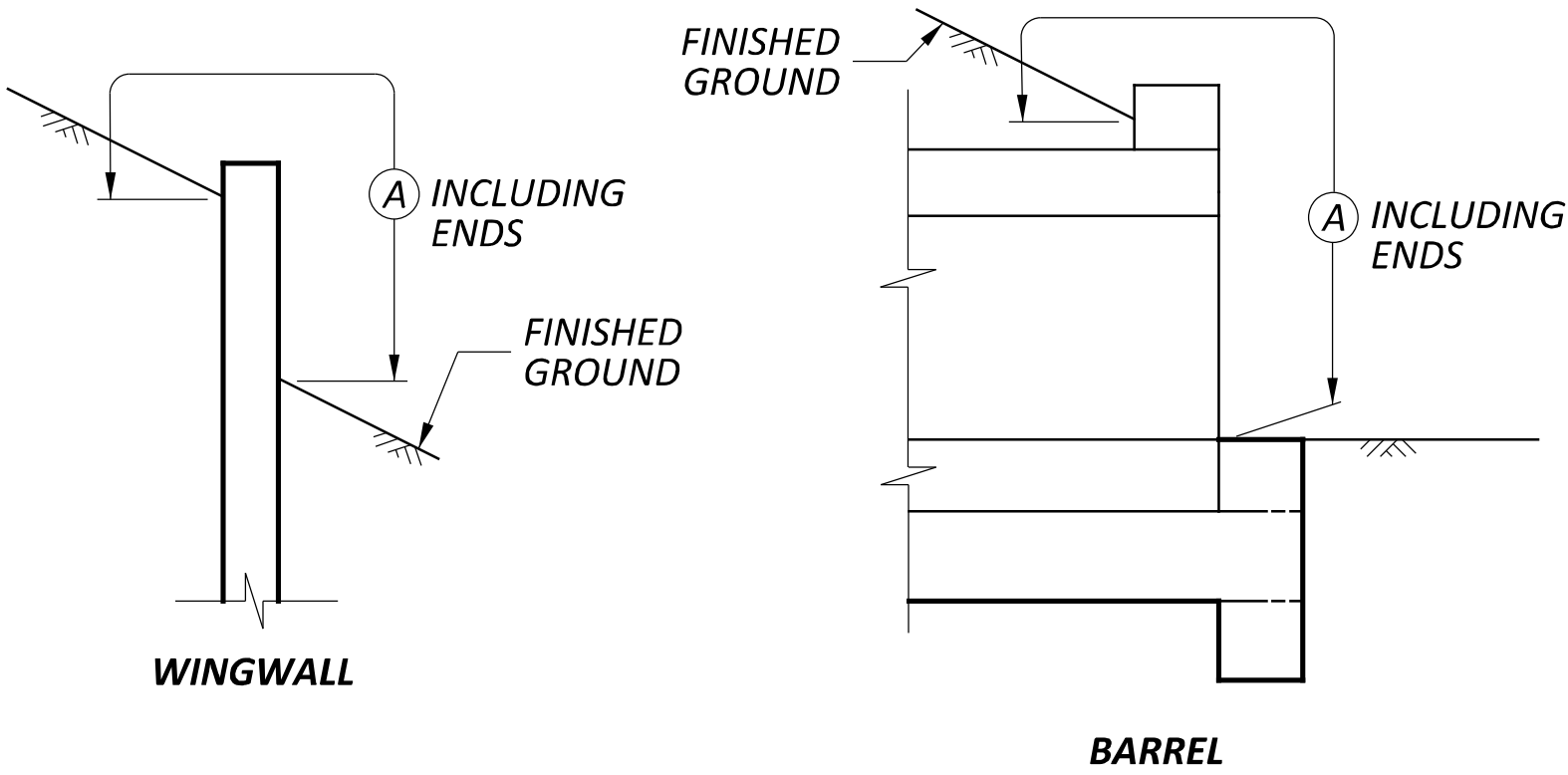
GENERAL NOTES

POROUS BACKFILL WITH FILTER FABRIC

POROUS BACKFILL WITH FILTER FABRIC 1'-6" THICK SHALL BE PLACED BEHIND THE WING-WALLS ONLY AND SHALL EXTEND TO 12" BELOW THE EMBANKMENT SURFACE. GEOTEXTILE FABRIC SHALL BE PLACED BETWEEN THE POROUS BACKFILL AND REPLACED EXCAVATION ADJACENT TO THE STRUCTURE. IT SHALL TURN UNDER THE BOTTOM OF THE POROUS BACKFILL AND RETURN 6" ABOVE THE TOP ELEVATION OF THE WEEPHOLE. WEEPHOLES SHALL BE PLACED 6" TO 12" ABOVE THE NORMAL WATER ELEVATION OR GROUND LINE AND SHALL HAVE A MAXIMUM SPACING OF 10'-0". A MINIMUM OF ONE WEEPHOLE SHALL BE PROVIDED PER WINGWALL.

SEALING OF FORESLOPE WALL AND WINGWALLS

ALL EXPOSED WINGWALL CONCRETE SHALL BE SEALED WITH EPOXY-URETHANE SEALER. THE LIMITS SHALL BE AS SHOWN IN THE DIAGRAMS BELOW. PAYMENT FOR THE EPOXY-URETHANE SEALER SHALL BE PER ITEM 512 - SEALING OF CONCRETE SURFACES.



(A) - SEAL ENTIRE CONCRETE SURFACE AREA

LIMITS OF ITEM 512-SEALING CONCRETE SURFACES DETAILS

BASIS OF PAYMENT

ALL LABOR, EQUIPMENT AND INCIDENTALS REQUIRED TO CONSTRUCT THE FOOTING, CUTOFF WALL AND WINGWALLS SHALL BE INCLUDED WITH ITEM 511 - CLASS QC1 CONCRETE WITH QC/QA, RETAINING/WINGWALL, NOT INCLUDING FOOTING AND ITEM 511 - CLASS QC1 CONCRETE, FOOTING. PAYMENT FOR REINFORCING STEEL SHALL BE INCLUDED WITH ITEM 509 - EPOXY COATED STEEL REINFORCEMENT.

ESTIMATED QUANTITIES				
ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION
202	11201	LUMP		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN
503	21100	LUMP		UNCLASSIFIED EXCAVATION (WINGWALL FOOTING)
509	10000	2,166	LB.	EPOXY COATED STEEL REINFORCING
511	46012	8.0	CU. YD.	CLASS QC1 CONCRETE WITH QC/QA, RETAINING/WINGWALL, NOT INCLUDING FOOTING
511	46510	17.0	CU. YD.	CLASS QC1 CONCRETE, FOOTING
512	10100	21.0	SQ. YD.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)
518	21230	LUMP		POROUS BACKFILL WITH GEOTEXTILE FABRIC

NOTE: TOTALS CARRIED TO GENERAL SUMMARY SHEET

OFFICE OF
STRUCTURAL
ENGINEERING

DESIGNED
KCS
REVIEWED
JDH
ADW

CULVERT DETAILS (US-42-8.471)
GENERAL NOTES

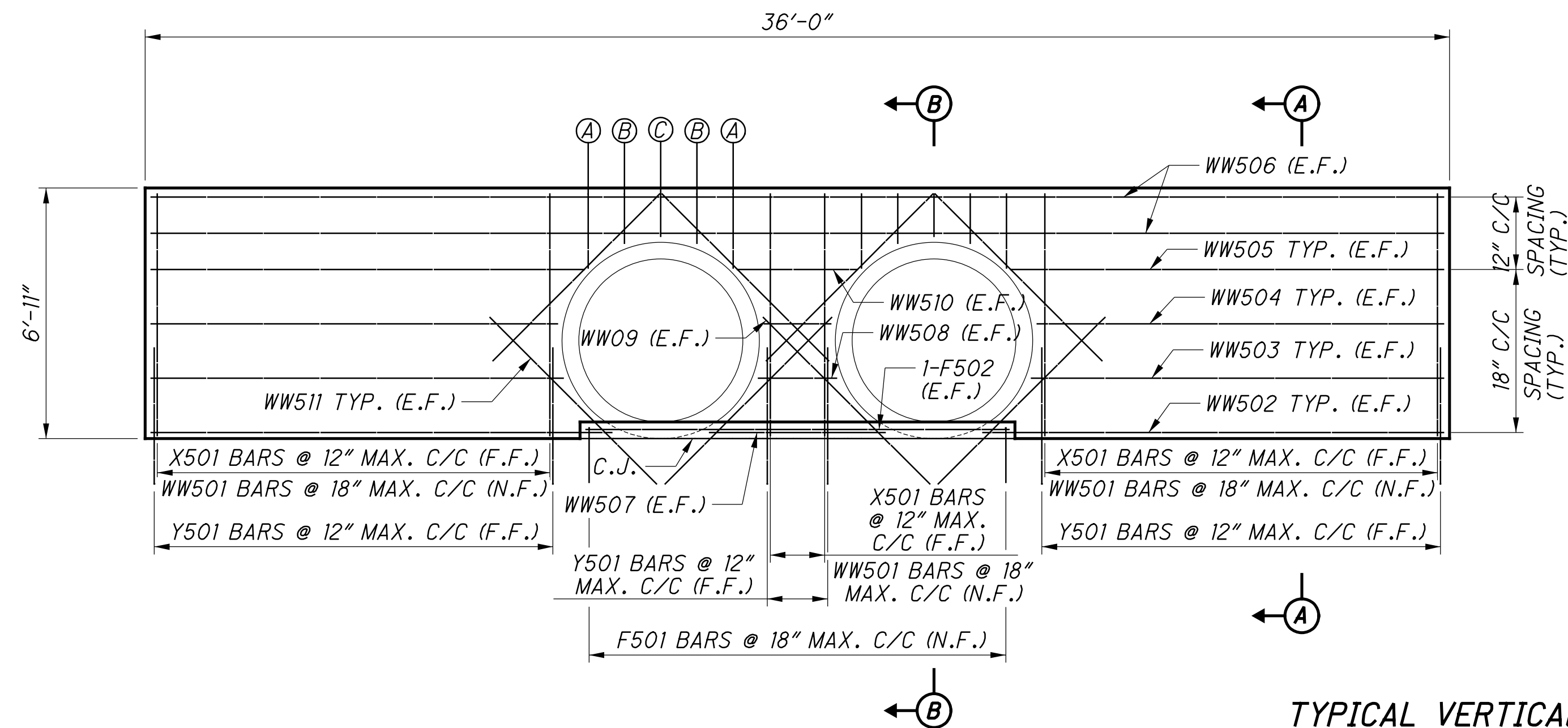
UNI-42-3.91

P.243A
P.347

C.J.	CONSTRUCTION JOINT
CLR.	CLEAR
DIA.	DIAMETER
E.F.	EACH FACE
F.F.	FAR FACE
MAX.	MAXIMUM
MIN.	MINIMUM
PEJF	PREFORMED EXPANSION JOINT FILLER
N.F.	NEAR FACE
SER.	SERIES
STR.	STRAIGHT
(T)	TOP
(B)	BOTTOM
T&B	TOP AND BOTTOM
TYP.	TYPICAL
INC.	INCREMENT



S:\C000\3500--3599\018\Drawings\CAD\107822\drainage\sheets\107822DC003_C.dgn 4/30/2025 6:44:37 PM alexsch

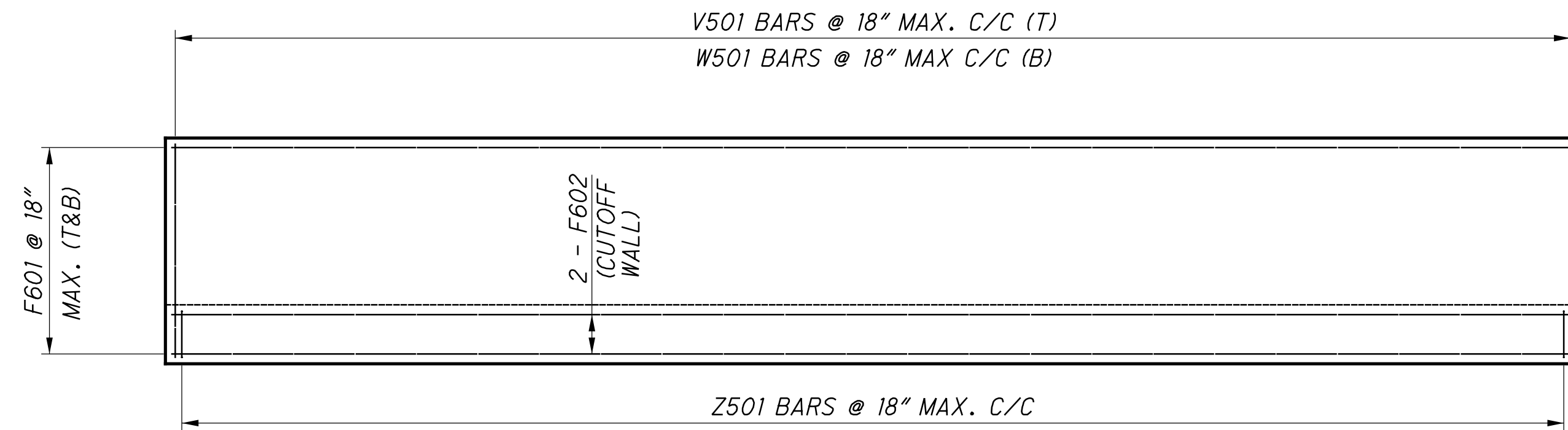


ELEVATION
(FOOTING NOT SHOWN)

**TYPICAL VERTICAL REINFORCEMENT
OVER CULVERTS***

- Ⓐ — FS501 (E.F.)
Ⓑ — FS502 (E.F.)
Ⓒ — FS503 (E.F.)

*BARS ARE SPACED AT 12" C/C MAX.



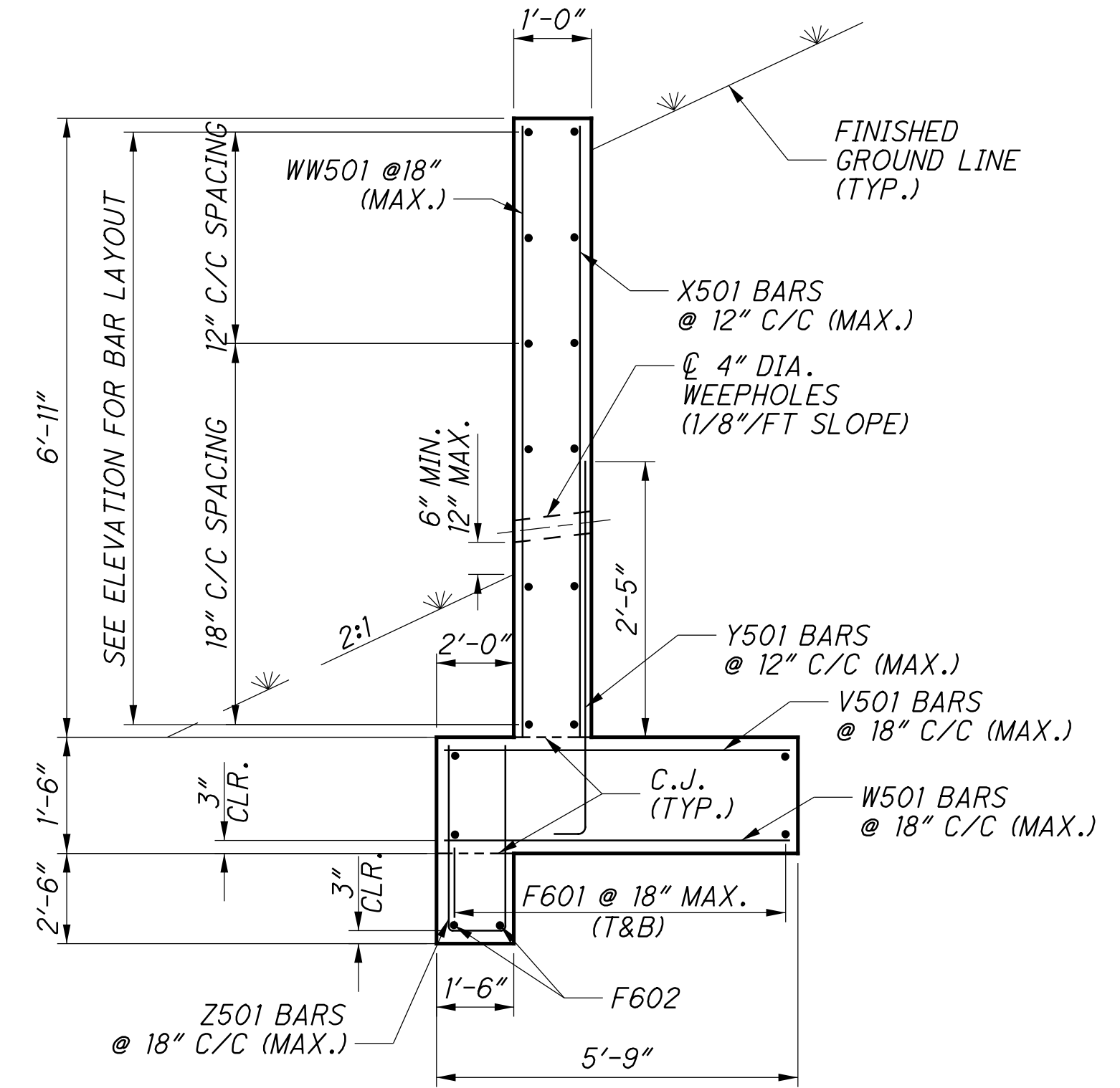
FOOTING PLAN

NOTES

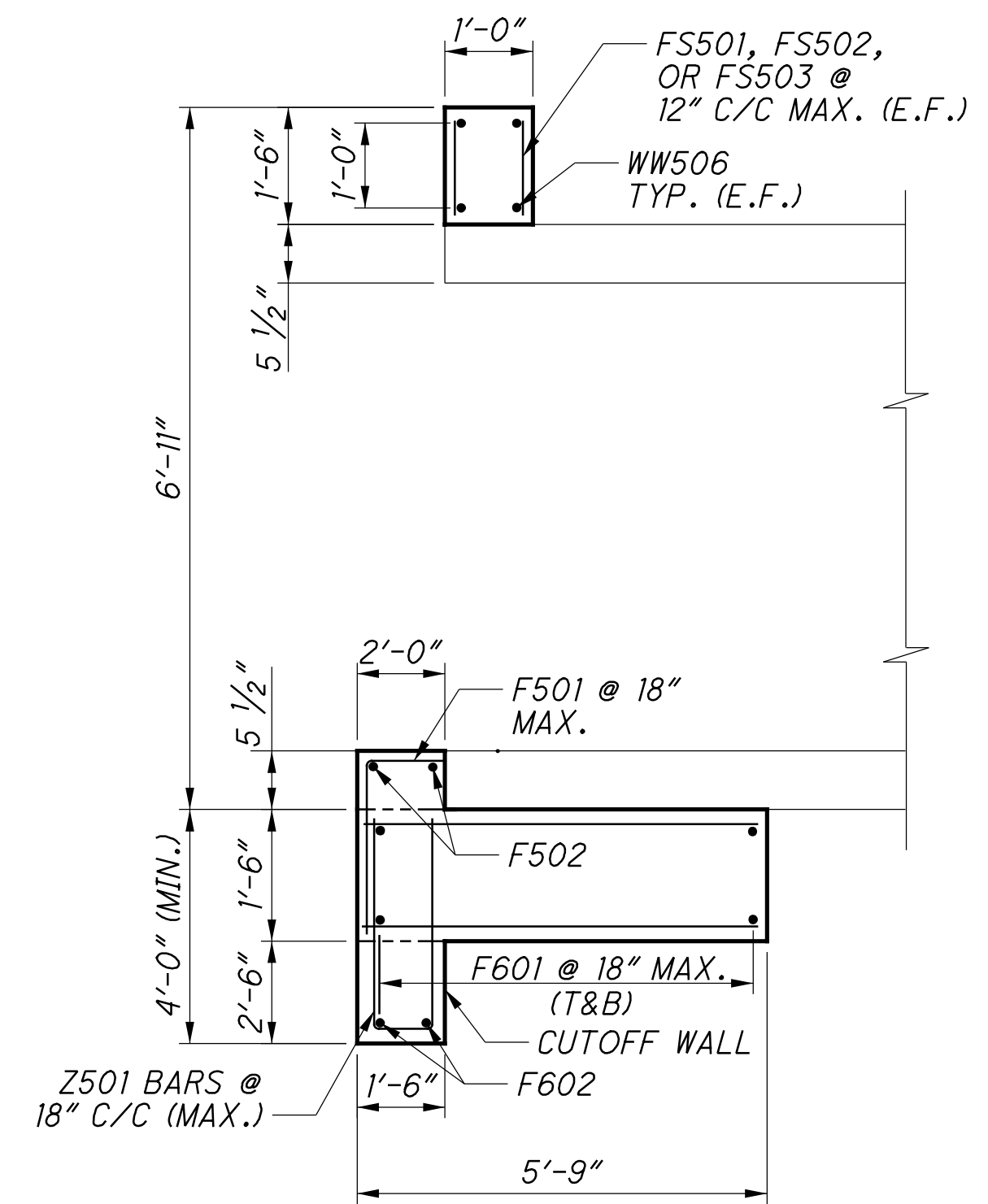
- FOR CULVERT LOCATION PLAN, SEE SHEET 243.
- THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, WW501 IS A NO.5 BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT. ALL REINFORCING STEEL SHALL BE EPOXY COATED.
- THE LAP SPLICE LENGTHS USED IN THESE DETAILS ARE AS FOLLOWS: 2'-5" FOR #5 BARS; 2'-11" FOR #6 BARS.

LEGEND:

C.J.	CONSTRUCTION JOINT	N.F.	NEAR FACE
CLR.	CLEAR	SER.	SERIES
DIA.	DIAMETER	STR.	STRAIGHT
E.F.	EACH FACE	(T)	TOP
F.F.	FAR FACE	(B)	BOTTOM
MAX.	MAXIMUM	T&B	TOP AND BOTTOM
MIN.	MINIMUM	TYP.	TYPICAL
PEJF	PREFORMED EXPANSION JOINT FILLER	INC.	INCREMENT



SECTION A-A
(POROUS BACKFILL NOT SHOWN FOR CLARITY)



SECTION B-B

S:\C000\3500--3599\3599\018\Drawings\CAD\107822\drainage\sheets\107822DC003_D.dgn 4/30/2025 6:44:38 PM alexsch

INLET HEADWALL REINFORCING SCHEDULE										
BAR MARK	NUMBER	LENGTH		WEIGHT (LBS.)	E P L	BAR TYPE DIMENSIONS				
						A		B		C
WINGWALLS										
X501	27	6'- 9"		191	STR.					
Y501	27	4'- 5"		125	1	0'- 10"		3'- 8"		
WW501	20	6'- 9"		141	STR.					
WW502	4	12'- 5"		52	STR.					
WW503	4	11'- 2"		47	STR.					
WW504	4	11'- 0"		46	STR.					
WW505	4	11'- 9"		50	STR.					
WW506	4	35'- 8"		149	STR.					
WW507	2	4'- 6"		10	STR.					
WW508	2	2'- 0"		5	STR.					
WW509	2	1'- 8"		4	STR.					
WW510	2	3'- 1"		7	STR.					
WW511	16	6'- 6"		109	STR.					
FOOTING & CUTOFF WALL										
V501	25	5'- 5"		142	STR.					
W501	25	5'- 5"		142	STR.					
Z501	25	8'- 1"		211	5	3'- 7"		1'- 2"		
F501	9	3'- 4"		32	1	1'- 8"		1'- 9"		
F502	2	11'- 8"		25	STR.					
F601	10	35'- 8"		536	STR.					
F602	2	35'- 8"		108	STR.					
FORESLOPE WALL										
FS501	8	2'- 0"		17	STR.					
FS502	8	1'- 4"		12	STR.					
FS503	4	1'- 2"		5	STR.					
		TOTAL		2,166						

