

ITEM 204 - SUBGRADE COMPACTION AND PROOF ROLLING

CONSTRUCT THE SUBGRADE AS FOLLOWS AND IN THE FOLLOWING SEQUENCE:

- SHAPE THE SUBGRADE TO WITHIN 0.2 FEET OF THE PLAN SUBGRADE ELEVATION.
- EXCAVATE AND REPLACE UNSUITABLE SUBGRADE BEFORE PROOF ROLLING. THE EXCAVATION LIMITS ARE SHOWN AND LABELED ON THE CROSS SECTIONS AS UNSUITABLE SUBGRADE. UNSUITABLE SUBGRADE INCLUDES UNSUITABLE SOIL (A-4B, A-2-5, A-5, A-7-5, AND SOIL WITH A LIQUID LIMIT GREATER THAN 65) AND ANY COAL, SHALE, OR ROCK WHICH NEEDS TO BE REMOVED ACCORDING TO 204.05.
- COMPACT THE SUBGRADE ACCORDING TO 204.03.
- APPROXIMATE LIMITS FOR EXCAVATION OF UNSTABLE SUBGRADE ARE SHOWN AND LABELED ON THE CROSS SECTIONS AS UNSTABLE SUBGRADE. THE ENGINEER WILL IDENTIFY THE ACTUAL LIMITS OF EXCAVATION FOR UNSTABLE SUBGRADE BASED ON THE PROOF ROLLING RESULTS AND VISUAL OBSERVATIONS.

IF THERE IS UNSUITABLE SUBGRADE IN A SHALLOW FILL LOCATION, EXCAVATE AND REPLACE THE UNSUITABLE SUBGRADE BEFORE CONSTRUCTING THE SHALLOW FILL AND SHAPING THE SUBGRADE.

PROOF ROLL THE COMPACTED SUBGRADE ACCORDING TO 204.06.

- EXCAVATE UNSTABLE SUBGRADE AS DIRECTED BY THE ENGINEER AND STABILIZE BY REPLACING WITH THE SPECIFIED MATERIALS ACCORDING TO 204.07. EXCAVATIONS WILL EXTEND 18 INCHES BEYOND THE EDGE OF THE SURFACE OF THE PAVEMENT, PAVED SHOULDERS, OR PAVED MEDIANS.
- PROOF ROLL THE STABILIZED AREAS ACCORDING TO 204.06 TO VERIFY STABILITY.
- FINE GRADE THE SUBGRADE TO THE SPECIFIED GRADE.

THE QUANTITIES FOR EXCAVATING THE UNSUITABLE SUBGRADE AND UNSTABLE SUBGRADE ARE BOTH PAID UNDER ITEM 204 EXCAVATION OF SUBGRADE.

CONTRACTION AND/OR EXPANSION JOINTS

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

ITEM 872 - VOID REDUCING ASPHALT MEMBRANE

THIS WORK CONSISTS OF FURNISHING AND INSTALLING VOID REDUCING ASPHALT MEMBRANE (VRAM) MATERIAL DURING CONSTRUCTION OF COLD LONGITUDINAL CONSTRUCTION JOINTS IN ASPHALT CONCRETE SURFACE COURSES IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 872. THE FOLLOWING ESTIMATED QUANTITY IS INCLUDED IN THE GENERAL SUMMARY TO COMPLETE THIS WORK:

ITEM 872 - VOID REDUCING ASPHALT MEMBRANE 35,000 FT.

ITEM 606 - ANCHOR ASSEMBLY, MGS TYPE E (MASH2016)

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

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

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

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

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

ANTI-SEGREGATION

PROVIDE ANTI-SEGREGATION EQUIPMENT FOR ALL COURSES OF UNIFORM THICKNESS IN ACCORDANCE WITH CMS 401.12.

ITEM 442 - ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A (446), AS PER PLAN

JOINT CORING IN ACCORDANCE WITH 446.04 IS NOT REQUIRED FOR COLD LONGITUDINAL JOINTS PLACED OVER VOID REDUCING ASPHALT MEMBRANE (VRAM). CONSTRUCT COLD LONGITUDINAL JOINTS OVER VRAM USING THE SAME TECHNIQUES, EQUIPMENT, AND ROLLER PATTERNS USED ON THE REST OF THE MAT. OBTAIN 10 MAT CORES FOR EACH LOT OF MATERIAL IN ACCORDANCE WITH 446.04. PAY FACTORS FOR EACH LOT OF MATERIAL WILL BE DETERMINED ACCORDING TO TABLE 446.04-2.

CONNECTION BETWEEN EXISTING AND PROPOSED GUARDRAIL

WHEN IT IS NECESSARY TO SPLICE PROPOSED GUARDRAIL TO EXISTING GUARDRAIL, ONLY THE EXISTING GUARDRAIL SHALL BE CUT, DRILLED, OR PUNCHED. THE CONNECTION SHALL BE MADE USING A W-BEAM, BEAM SPLICE AS SHOWN IN AASHTO M 180-12, EXCEPT THE BEAM WASHERS ARE NOT TO BE USED. PAYMENT SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE RESPECTIVE GUARDRAIL ITEMS.

CABLE BARRIER ANCHOR ASSEMBLY

ALL CABLE BARRIER ANCHOR ASSEMBLIES SHALL MATCH THE EXISTING CABLE BARRIER SYSTEM.

ITEM 606 - CABLE GUARDRAIL

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ANY ONE OF THE HIGH TENSION FOUR CABLE GUARDRAIL SYSTEMS AS LISTED ON THE OFFICE OF ROADWAY ENGINEERING'S WEB PAGE. PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, CABLE BARRIER WITH CONCRETE LINE POST FOUNDATION, AND ITEM 606 CABLE BARRIER, ANCHOR ASSEMBLY AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL HIGH TENSION CABLE GUARDRAIL SYSTEM NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER. THE LENGTH OF THE TENSIONED CABLE NECESSARY TO INSTALL A FUNCTIONAL ANCHOR SYSTEM SHALL BE INCLUDED IN ITEM 606, CABLE BARRIER WITH CONCRETE LINE POST FOUNDATION.

INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

SYSTEMS SHALL HAVE A MAXIMUM DEFLECTION OF 8 FEET AND THE MAXIMUM LONGITUDINAL DISTANCE BETWEEN POSTS SHALL BE 15 FEET.

INSTALLATION WILL BE A FOUR CABLE HIGH TENSION SYSTEM INSTALLED IN SOCKETED POSTS FOUNDATION WITH A FOUR FOOT WIDE "NO MOW STRIP".

DELINEATE THE CABLE BARRIER USING TYPE 6 BARRIER REFLECTORS PER ITEM 626 OR USING FLEXIBLE POSTS PER ITEM 620 AS CALLED FOR IN THE PLANS OR DIRECTED BY THE ENGINEER.

ANCHOR TERMINAL STRUTS SHALL BE COVERED COMPLETELY ON BOTH SIDES WITH YELLOW TYPE J, ASTM D 4956 TYPE XI REFLECTIVE SHEETING, PER CMS 730.193.

TRANSITIONS TO W-BEAM GUARDRAIL ARE NOT ALLOWED.

REFER TO MANUFACTURER FOR MAXIMUM OFFSET FROM BREAK POINT.

TORPEDO OR BULLET SPLICES ARE NOT ALLOWED. ALL CABLE SPLICES SHALL BE A SWAGED OR OPEN BODY DESIGN THAT ALLOWS FOR ANNUAL INSPECTION BETWEEN THE WEDGE AND STRANDS OF CABLE.

POSTS ARE SET IN SOCKETED CONCRETE FOUNDATIONS AND SHALL NOT BE PERMANENTLY INSTALLED UNTIL THEIR RESPECTIVE RUNS OF TENSIONED CABLE GUARDRAIL ARE READY FOR FINAL CONNECTION TO THE END TERMINAL ASSEMBLY. THE CONTRACTOR SHALL REPLACE ANY POSTS DAMAGED DURING INSTALLATION AS DETERMINED BY THE ENGINEER AT NO ADDITIONAL COST TO THE STATE.

CEMENT STABILIZED SUBGRADE

THE ROADWAY SUBGRADE SHALL BE CEMENT STABILIZED AS DESIGNATED IN THE TYPICAL SECTIONS. ALL CEMENT STABILIZATION SHALL BE 14 INCHES DEEP AND SHALL BE CONSTRUCTED PER THE REQUIREMENTS STATED IN C&MS SPECIFICATION ITEM 206. FOR ESTIMATING CEMENT, A SPREAD RATE OF FIVE PERCENT PER A SOIL DRY UNIT WEIGHT OF 115 POUNDS PER CUBIC FOOT WAS USED.

THE FOLLOWING ESTIMATED QUANTITIES ARE INCLUDED IN THE GENERAL SUMMARY TO COMPLETE THE WORK NOTED ABOVE:

ITEM 206 - CEMENT	2955 TON
ITEM 206 - CURING COAT	97800 SY
ITEM 206 - TEST ROLLING	50 HOURS
ITEM 206 - MIXTURE DESIGN FOR CHEMICALLY STABILIZED SOIL	1 LUMP

ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE: S.R. 33 AND S.R. 161

THE CONTRACTOR SHALL BE TOTALLY RESPONSIBLE FOR ANY AND ALL DAMAGE TO THE CONTRACTORS EQUIPMENT THAT MAY RESULT FROM THE PLANING OPERATION, INCLUDING DAMAGE CAUSED BY CASTINGS AND LOOP DETECTORS. THE DEPTH OF PLANING CLOSE TO THE CASTINGS SHALL BE AS DIRECTED; TO ACHIEVE A SMOOTH RIDING FINISHED PAVEMENT. GREAT CARE SHALL BE TAKEN TO PREVENT THE REMOVAL OF THE EXISTING PAVEMENT CROSS-SLOPE (CROWN) DURING THE PLANING OPERATIONS.

ALL PLANED PAVEMENT SHALL BE PLANED AND RESURFACED AS INDICATED ON THE TYPICAL SECTIONS WITHIN THE SAME WORK PERIOD. FAILURE TO MEET THIS REQUIREMENT WILL SUBJECT THE CONTRACTOR TO A DISINCENTIVE OF \$XXXX/DAY FOR EACH DAY THE PLANED SURFACE IS NOT RESURFACED.

CROSSINGS AND CONNECTIONS TO EXISTING PIPES AND UTILITIES

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

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

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

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

U.S. 33 SUPERELEVATION

THE WORK PROPOSED BY THIS PROJECT DOES NOT ALTER THE EXISTING SUPERELEVATION ALONG U.S. 33. FOR THE RESURFACING OF THE SUPERELEVATED SECTIONS, MATCH THE EXISTING CROSS SLOPE.

ITEM 670 - SLOPE EROSION PROTECTION

ITEM 670, SLOPE EROSION PROTECTION SHALL BE PROVIDED ON SLOPES STEEPER THAN 3:1. THE QUANTITY BELOW HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR THIS WORK.

ITEM 670 - SLOPE EROSION PROTECTION 18,500 SY

ITEM 601 - 6" CONCRETE SLOPE PROTECTION, APP

6" CONCRETE SLOPE PROTECTION, SHALL BE CONSTRUCTED IN ACCORDANCE WITH ITEM 601, EXCEPT THE BLOCK GRID PATTERN SHALL BE SPACED AS SHOWN ON SHEET 35

NO.	DESCRIPTION	REV. BY	DATE
B <td>ADDED NOTE <td>ENR <td>2-28-2022</td> </td></td>	ADDED NOTE <td>ENR <td>2-28-2022</td> </td>	ENR <td>2-28-2022</td>	2-28-2022

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GENERAL NOTES

UNI - 33 - 24.87

PIPE CONNECTIONS TO CORRUGATED METAL STRUCTURES

CONNECTIONS OF PROPOSED LONGITUDINAL DRAINAGE TO CORRUGATED METAL STRUCTURES SHALL BE MADE BY MEANS OF A SHOP FABRICATED OR FIELD WELDED STUB ON THE STRUCTURE. THE STUB SHALL MEET THE REQUIREMENTS OF 707 AND HAVE A MINIMUM LENGTH OF 2 FEET AND A MINIMUM WALL THICKNESS OF 0.064 INCHES.

THE LOCATION AND ELEVATION OF THE STUB ARE TO BE CONSIDERED APPROXIMATE AND MAY BE ADJUSTED BY THE ENGINEER TO AVOID CUTTING THROUGH JOINTS IN THE STRUCTURE.

THE FIELD WELDED JOINT, IF USED, SHALL BE THOROUGHLY CLEANED AND REGALVANIZED OR OTHERWISE SUITABLY REPAIRED. WELDING SHALL MEET THE REQUIREMENTS OF 513.21.

A MASONRY COLLAR, AS PER STANDARD DRAWING DM-1.1, WILL BE REQUIRED TO CONNECT THE LONGITUDINAL DRAINAGE TO THE STUB, WHEN PIPE OTHER THAN CORRUGATED METAL IS PROVIDED FOR THE LONGITUDINAL DRAINAGE.

PAYMENT FOR CUTTING INTO THE STRUCTURE AND PROVIDING THE CONNECTION DESCRIBED, SHALL BE INCLUDED IN THE CONTRACT PRICE FOR ITEM 611 OR 522.

FARM DRAINS

ALL FARM DRAINS, WHICH ARE ENCOUNTERED DURING CONSTRUCTION, SHALL BE PROVIDED WITH UNOBSTRUCTED OUTLETS. EXISTING COLLECTORS WHICH ARE LOCATED BELOW THE ROADWAY DITCH ELEVATIONS, AND WHICH CROSS THE ROADWAY, SHALL BE REPLACED WITHIN THE (RIGHT OF WAY) (CONSTRUCTION) LIMITS BY ITEM 611 CONDUIT, TYPE B, ONE COMMERCIAL SIZE LARGER THAN THE EXISTING CONDUIT.

EXISTING COLLECTORS AND ISOLATED FARM DRAINS, WHICH ARE ENCOUNTERED ABOVE THE ELEVATION OF ROADWAY DITCHES, SHALL BE OUTLETTED INTO THE ROADWAY DITCH BY 611 TYPE F CONDUIT. THE OPTIMUM OUTLET ELEVATION SHALL BE ONE FOOT ABOVE THE FLOWLINE ELEVATION OF THE DITCH. LATERAL FIELD TILES WHICH CROSS THE ROADWAY SHALL BE INTERCEPTED BY 611, TYPE E CONDUIT, AND CARRIED IN A LONGITUDINAL DIRECTION TO AN ADEQUATE OUTLET OR ROADWAY CROSSING.

THE LOCATION, TYPE, SIZE AND GRADE OF REPLACEMENTS SHALL BE DETERMINED BY THE ENGINEER AND PAYMENT SHALL BE MADE ON FINAL MEASUREMENTS.

EROSION CONTROL PADS SHALL BE PROVIDED AT THE OUTLET END OF ALL FARM DRAINS AS PER STANDARD CONSTRUCTION DRAWING DM-1.1, EXCEPT WHEN THEY OUTLET INTO A DRAINAGE STRUCTURE. PAYMENT FOR THE EROSION CONTROL PADS AND ANY NECESSARY BENDS OR BRANCHES SHALL BE INCLUDED FOR PAYMENT IN THE PERTINENT CONDUIT ITEMS.

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

- 611 6" CONDUIT, TYPE B 500 FT.
- 611 6" CONDUIT, TYPE F 500 FT.
- 611 12" CONDUIT, TYPE C 500 FT.
- 601 ROCK CHANNEL PROTECTION TYPE C WITH FILTER 10 CU. YD.

NO.	DESCRIPTION	REV. BY	DATE
A	UPDATE NOTES	ENR	2-3-2022
B	UPDATE NOTES	ENR	2-28-2022

REVIEW OF DRAINAGE FACILITIES

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

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

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

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

MANHOLES, CATCH BASINS AND INLETS REMOVED OR ABANDONED

ALL CASTINGS SHALL BE CAREFULLY REMOVED AND STORED WITHIN THE RIGHT OF WAY FOR SALVAGE BY (STATE) (CITY) (VILLAGE) (COUNTY) FORCES.

PAYMENT FOR ALL OF THE ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 202 ITEM.

EXISTING SUBSURFACE DRAINAGE

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

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

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

- 601, TIED CONCRETE BLOCK MAT, TYPE 1 10 SQ. YD.
- 605, BASE PIPE UNDERDRAINS 500 FT.
- 605, SHALLOW PIPE UNDERDRAINS 500 FT
- 611, 6" CONDUIT, TYPE F 100 FT.
- 611, PRECAST REINFORCED CONCRETE OUTLET 5 EACH

ITEM 202 PAVEMENT REMOVED, AS PER PLAN

THIS WORK IS FOR REMOVAL AND DISPOSAL OF CONCRETE AND ASPHALT PAVEMENT. ALL OTHER RIGID REMOVAL (CURBS, WALKS, MEDIANS, ETC.) WILL BE PAID UNDER THE APPROPRIATE ITEM.

PIPE AND UTILITIES WITHIN SUBGRADE STABILIZATION

ALL PIPES AND UTILITIES THAT MAY INTERFERE WITH THE SUBGRADE STABILIZATION PROCESS (LOCATED 16" OR LESS BELOW THE SUBGRADE) SHALL BE FLAGGED BEFORE THE STABILIZATION PROCESS BEGINS TO ALERT THOSE INVOLVED TO BE CAUTIOUS IN THOSE AREAS.

THE FOLLOWING IS A LIST OF LOCATIONS WHERE INTERFERENCE IS ANTICIPATED. THIS LIST IS NOT INTENDED TO BE ALL INCLUSIVE, IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY EACH CROSSING PRIOR TO STABILIZING.

STORM SEWERS AND CULVERTS AT STATIONS: 51+50, 65+73, 69+31, 72+39, 401+25, 608+00, 708+00, 805+00, 918+50, 3055+43, 3071+39 AT&T FIBER OPTIC STATIONS: 64+00 TO 70+00

PAYMENT FOR THIS ITEM SHALL BE INCLUDED IN THE PRICE BID FOR ITEM 206, CEMENT STABILIZED SUBGRADE.

UNDERDRAINS IN SUBGRADE STABILIZATION

WHEN AN EXISTING UNDERDRAIN IS FOUND TO BE WITHIN THE LIMITS OF THE SUBGRADE STABILIZATION, IT SHALL BE REMOVED AND REPLACED. THE NEW UNDERDRAIN SHALL BE PLACED SO THAT THE CROWN OF THE UNDERDRAIN IS AT THE BOTTOM OF THE SUBGRADE STABILIZATION. THE NEW UNDERDRAIN SHALL BE CONNECT TO THE ADJOINING UNDERDRAINS AS LONG AS THERE IS POSITIVE SLOPE. IF THERE IS NOT POSITIVE SLOPE A NEW UNDERDRAIN OUTLET SHOULD BE ESTABLISHED.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR USE AS APPROVED BY THE ENGINEER FOR REMOVING AND REPLACING UNDERDRAINS:

- 601, TIED CONCRETE BLOCK MAT, TYPE 1 10 SQ. YD
- 605, BASE PIPE UNDERDRAINS 500 FT
- 605, SHALLOW PIPE UNDERDRAIN 500 FT
- 611, CONDUIT, TYPE F 100 FT
- 611, PRECAST REINFORCED CONCRETE OUTLET 5 EACH

A ITEM 602 CONCRETE MASONRY, AS PER PLAN

THE OUTLETS OF ALL NEW STORM SEWER AND CULVERT PIPE LOCATED WITHIN THE DUBLIN CORPORATION LIMITS, WHERE CALLED OUT IN THE PLANS, SHALL HAVE A PREFABRICATED FLARED END SECTION. FLARED END SECTIONS 24 AND LARGER SHALL BE PRECAST CONCRETE AS MANUFACTURED BY FORTERRA PIPE AND PRECAST, OR APPROVED EQUAL. THIS WORK SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, AND INCIDENTALS REQUIRED TO INSTALL THE HEADWALL (FLARED END SECTION), COMPLETE AND ACCEPTED.

EXISTING UNDERDRAINS

EXISTING UNDERDRAINS ALONG U.S. 33 SHALL REMAIN IN USE, EXCEPT WITHIN THE FOLLOWING LIMITS WHERE THEY SHALL BE ABANDONED OR REMOVED:

- U.S. 33 EB STA. 2008+56.35 TO STA. 2043+71.69
- U.S. 33 WB STA. 3000+62.62 TO STA. 3043+71.69

WHERE EXISTING UNDERDRAINS ARE TO REMAIN IN USE ADJACENT TO SAW CUTTING AND FULL-DEPTH PAVEMENT WIDENING, THE CONTRACTOR IS TO ENSURE THAT THE EXISTING AGGREGATE BASE CONTINUES TO DRAIN TO THE EXISTING UNDERDRAIN. NO SUBGRADE STEP SHALL BE CONSTRUCTED, BLOCKING SUBGRADE DRAINAGE. ANY ADDITIONAL COSTS FOR THIS SHALL BE INCIDENTAL TO THE CONSTRUCTION OF ITEM 304, AGGREGATE BASE.

EXTENDED RETENTION BASIN

THIS PLAN UTILIZES EXTENDED RETENTION BASIN(S) FOR POST CONSTRUCTION STORM WATER TREATMENT. RETENTION BASINS MAY BE USED AS SEDIMENT CONTROL DEVICES DURING CONSTRUCTION. FOLLOWING STABILIZATION OF THE TRIBUTARY AREA, FINAL GRADING OF THE RETENTION BASIN MUST MATCH THE PLANS. THE RETENTION BASIN OUTLET STRUCTURE FOR CONSTRUCTION SEDIMENT CONTROL MUST BE REMOVED AND THE OUTLET STRUCTURE MUST BE MADE TO MATCH THE DESIGN SHOWN IN THE PLANS.

ITEM 611 - MANHOLE RECONSTRUCTED TO GRADE, AS PER PLAN

THIS ITEM SHALL MEET ALL THE REQUIREMENTS OF ITEM 611, MANHOLE RECONSTRUCTED TO GRADE, AS PER PLAN EXCEPT AS MODIFIED BY THIS NOTE. THE INTENT OF THIS ITEM IS TO ADJUST THE CASTING DOWN TO THE PLAN ELEVATION. THE CHANGE IN ELEVATION IS OUTSIDE THAT ALLOWABLE TO ADJUST TO GRADE. THE CONTRACTOR SHALL REMOVE EXISTING RISER SECTIONS OF THE MANHOLE FAR ENOUGH DOWN SO IT CAN ADJUSTED TO THE PLAN ELEVATION. THE NEW PORTION OF THE MANHOLE SHALL COMPLY WITH CITY OF DUBLIN STANDARD DETAIL SA-01.

PAYMENT FOR THIS ITEM SHALL BE MADE AT THE CONTRACT UNIT PRICE BID FOR EACH MANHOLE RECONSTRUCTED TO GRADE, AS PER PLAN AND SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPETE THIS ITEM.

ENVIRONMENTAL COMMITMENT NOTES

THE CONTRACTOR WILL INSTALL TEMPORARY SILT FENCING ALONG THE BOUNDARY OF WETLAND 1 BETWEEN STA. 911+00 TO STA. 915+00 TO PREVENT THE EQUIPMENT FROM ENTERING THE AREA AND IMPLEMENT BEST MANAGEMENT PRACTICES (BMP) FOR EROSION AND SEDIMENT CONTROL TO PREVENT STORMWATER RUN-OFF FROM ENTERING THE WETLAND.

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.

ITEM SPECIAL - MISC: HEAVY DUTY BRICK PAVERS INCLUDING CONCRETE BASE

HEAVY DUTY BRICK PAVERS INCLUDING CONCRETE BASE, BITUMINOUS SETTING BED, ASPHALT ADHESIVE, BRICK PAVERS, AND POLYMERIC SAND FILL, SHALL BE CONSTRUCTED IN ACCORDANCE TO THE DETAIL ON SHEET 34.

THE SUBGRADE COMPACTION AND 304 AGGREGATE BASE ARE QUANTIFIED AND PAID UNDER SEPARATE ITEMS.

PAYMENT FOR THIS WORK, INCLUDING ALL LABOR, TOOLS, EQUIPMENT AND NECESSARY MATERIALS, SHALL BE MADE AT THE UNIT PRICE BID PER SQ. FT., COMPLETE IN PLACE, AND ACCEPTED.

SHEET NO.	MOT PHASE	254	411	442	614	614	614	614	614	614	614	614	614	614	614	614	614	614	614	614	614	
		SY	CY	CY	FT	EACH	EACH	EACH	EACH	MILE	MILE	FT	FT	EACH	SY	FT	FT	FT	MILE	MILE	FT	FT
60	- 61					4	19	19		0.21	529		10	1959				890				
63	- 64				113	8	26	26		0.37	82	874	2	2401		250	1080					
65	- 67				163	12	111	111	0.51	1.29	210	1301	4	117		4035	1455					
68	- 71				556	16	110	110	0.013	1.61		981	1	198		5475						
72	- 73										0.03	618	71	282								
74	- 75				383	3	37	37		0.13	394	484	5	209		1870						
76	- 80	8511	2840	1047	1028	16	375	353	353					4261	2	16920	470	6.23	2.71	4827	1595	
81	- 84				673	13	82	82						168	2	3120	500	2.22	0.19	4209	420	
85	- 88				705	6	86	86								4250		3.17	1.15	1010	1897	
89	- 90				582	5	30	30						692		1510		1.82	0.04	4205	914	
MAINTENANCE OF TRAFFIC SUMMARY		8511	2841	1047	4203	83	375	854	854	0.53	3.64	1833	3711	22	10288	4	37430	4395	13.44	4.09	14251	4826
TOTALS CARRIED TO GENERAL SUMMARY																						

PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN

PORTABLE BARRIER, Y CONNECTOR

PORTABLE BARRIER, UNANCHORED

PORTABLE BARRIER, ANCHORED

WORK ZONE EDGE LINE, CLASS 1, 6", 807 PAINT

WORK ZONE LANE LINE, CLASS 1, 6", 807 PAINT

WORK ZONE CHANNELIZING LINE, CLASS 1, 12", 807 PAINT

WORK ZONE DOTTED LINE, CLASS 1, 6", 807 PAINT

NO.	DESCRIPTION	REV. BY	DATE
B	ITEM UPDATES	EMW	2-28-2022

MAINTENANCE OF TRAFFIC SUBSUMMARY

SHEET NUM.															PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.	CALCULATED NJL	CHECKED KOD	
36	37	38	109	110	111	112	104	108	121	122	129		881	883	01/NHS/PV	02/S>2/PV									
																					ROADWAY				
LS															LS		201	11000	LS		CLEARING AND GRUBBING	36			
															11	7	202	20010	18	EACH	HEADWALL REMOVED				
															32,593	25,443	202	23001	58,036	SY	PAVEMENT REMOVED, AS PER PLAN	38			
															6,051	6,051	202	30000	6,051	SF	WALK REMOVED				
															1,091	1,022	202	30600	1,091	SY	CONCRETE MEDIAN REMOVED				
															163	163	202	30700	163	FT	CONCRETE BARRIER REMOVED				
															2,399	2,187	202	32000	2,399	FT	CURB REMOVED				
															2,715	2,715	202	32500	2,715	FT	CURB AND GUTTER REMOVED				
															4,373	3,576	202	35100	4,373	FT	PIPE REMOVED, 24" AND UNDER				
															2,147	93	202	38000	2,147	FT	GUARDRAIL REMOVED				
															232	232	202	38300	232	FT	GUARDRAIL REMOVED, BARRIER DESIGN				
															8	8	202	42206	8	EACH	ANCHOR ASSEMBLY REMOVED				
															3	3	202	47000	3	EACH	BRIDGE TERMINAL ASSEMBLY REMOVED				
															5	5	202	47800	5	EACH	IMPACT ATTENUATOR REMOVED				
															35	35	202	48000	35	FT	CABLE BARRIER REMOVED				
															1	1	202	53100	1	EACH	MAILBOX REMOVED				
															2	2	202	58000	2	EACH	MANHOLE REMOVED				
															18	15	202	58100	18	EACH	CATCH BASIN REMOVED				
															1	1	202	60010	1	EACH	MONUMENT ASSEMBLY REMOVED				
															40	559	202	75000	11,897	FT	FENCE REMOVED				
															16	16	202	98400	16	SF	REMOVAL MISC.: CONCRETE PAD	40			
																	203	10000		CY	EXCAVATION				
															450	42,649	203	20000	106,952	CY	EMBANKMENT				
															450	6,767	204	10000	7,015	SY	SUBGRADE COMPACTION				
															5,666	5,666	206	10500	2,955	TON	CEMENT				
															2,955	886	206	30000	LS		MIXTURE DESIGN FOR CHEMICALLY STABILIZED SOILS				
															LS	LS	206	11000	97,800	SY	CURING COAT				
															97,800	29,340	206	15020	97,525	SY	CEMENT STABILIZED SUBGRADE, 14 INCHES DEEP				
															68,137	28,770	206	20000	50	HOUR	TEST ROLLING				
															50	15	206	20000	50						
																	606	15050	5,032	FT	GUARDRAIL, TYPE MGS				
															5,032	163	606	15550	175	FT	GUARDRAIL, BARRIER DESIGN, TYPE MGS				
															175	7	606	26050	8	EACH	ANCHOR ASSEMBLY, MGS TYPE B				
															8	1	606	26150	8	EACH	ANCHOR ASSEMBLY, MGS TYPE E (MASH TYPE I)				
															8	1	606	26550	12	EACH	ANCHOR ASSEMBLY, MGS TYPE T				
															12	9	606	35002	9	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1				
															9	4	606	35102	4	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 2				
															4	1	SPECIAL	60655150	1	EACH	CABLE BARRIER, ANCHOR ASSEMBLY	40			
															1	1	606	60012	1	EACH	IMPACT ATTENUATOR, TYPE 1 (BIDIRECTIONAL)				
															1	98	606	98000	98	FT	GUARDRAIL, MISC.: STEEL BACKED TIMBER GUARDRAIL, TYPE A	40			
															98	2	606	98100	2	EACH	GUARDRAIL, MISC.: STEEL BACKED TIMBER GUARDRAIL, TERMINAL SECTION, TYPE SBT FAT-30	40			
															2	210	607	15000	11,143	FT	FENCE, TYPE 47				
																6,455	608	10000	6,455	SF	4" CONCRETE WALK				
															6,455	1,139	608	52000	1,139	SF	CURB RAMP				
															1,139	260	608	53020	260	SF	DETECTABLE WARNING				
															260	20	622	10160	20	FT	CONCRETE BARRIER, SINGLE SLOPE, TYPE D				
															20	1	622	25000	1	EACH	CONCRETE BARRIER END SECTION, TYPE D				
															1	1	622	25050	1	EACH	CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE D				
															1	2	623	40500	2	EACH	REFERENCE MONUMENT				
																LS	SPECIAL	69091000	LS		AS BUILT CONSTRUCTION PLANS	39			
																1,112	SPECIAL	69098300	1,896	SY	HEAVY DUTY BRICK PAVERS INCLUDING CONCRETE BASE	38			
																LS	878	25000	LS		INSPECTION AND COMPACTION TESTING OF UNBOUND MATERIALS				
																	601	21001	198	SY	CONCRETE SLOPE PROTECTION, AS PER PLAN	37			
																198	601	21050	102	SY	TIED CONCRETE BLOCK MAT, TYPE 1				
															20	73	601	21060	73	SY	TIED CONCRETE BLOCK MAT, TYPE 2				
																48	601	32200	58	CY	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER				
															10	243	601	32300	243	CY	ROCK CHANNEL PROTECTION, TYPE D WITH FILTER				
																	659	00100	3	EACH	SOIL ANALYSIS TEST				
															3	1	659	00300	24,943	CY	TOPSOIL				
															24,943	2,993	659	10000	224,712	SY	SEEDING AND MULCHING				
																	659	10000							

GENERAL SUMMARY

UNI - 33 - 24.87

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SHEET NUM.									PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
48	109	110	111	108	122	585	601	37	01/NHS/PV	02/S>2/PV						
					1					1	611	99851	1	EACH	WATER QUALITY BASIN, RETENTION, AS PER PLAN	582
															PAVEMENT	
	4,635								4,635	254	01000	4,635		SY	PAVEMENT PLANING, ASPHALT CONCRETE, 1.5"	
	47,759								46,451	1,308	254	01000	47,759	SY	PAVEMENT PLANING, ASPHALT CONCRETE, VARIABLE DEPTH	
	697									697	301	46000	697	CY	ASPHALT CONCRETE BASE, PG64-22	
	19,404								12,226	7,178	302	46000	19,404	CY	ASPHALT CONCRETE BASE, PG64-22	
	12,869	3,539			692				12,626	6,058	304	20000	18,684	CY	AGGREGATE BASE	
					238				238		305	16010	238	SY	12" CONCRETE BASE, CLASS QC 1P	
	16,436								12,693	3,743	407	20000	16,436	GAL	NON-TRACKING TACK COAT	
	155									155	441	50101	155	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), AS PER PLAN	9
	9,333								6,606	2,727	442	00100	9,333	CY	ANTI-SEGREGATION EQUIPMENT	
	5,056								3,550	1,506	442	10001	5,056	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446), AS PER PLAN, PG 70-22M	37
	3,224								1,756	1,468	442	10100	3,224	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (446)	
	2,258								2,258		442	10100	2,258	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (446), 1.75	
		19,498	7,785						27,283		452	14020	27,283	SY	10" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC 1P WITH QC/QA	
					6,216					6,216	609	12001	6,216	FT	COMBINATION CURB AND GUTTER, TYPE 2, AS PER PLAN	33
					169					169	609	18001	169	FT	COMBINATION CURB AND GUTTER, TYPE 3, AS PER PLAN	33
					926				392	534	609	24510	926	FT	CURB, TYPE 4-C	
					209					209	609	26000	209	FT	CURB, TYPE 6	
					5,310					5,310	609	26001	5,310	FT	CURB, TYPE 6, AS PER PLAN	33
					1,506					1,506	609	71000	1,506	SF	CONCRETE MEDIAN	
					342					342	609	98000	342	FT	CURB, MISC : 18" HEIGHT	33
									35,000	35,000	872	10000	35,000	FT	VOID REDUCING ASPHALT MEMBRANE (VRAM)	37
															WATER WORK	
						9				9	202	75610	9	EACH	VALVE BOX REMOVED	
						32				32	613	41201	32	CY	LOW STRENGTH MORTAR BACKFILL, AS PER PLAN	586
						769				769	638	02401	769	FT	12" WATERMAIN DUCTILE IRON PIPE ANSI CLASS 52, PUSH-ON JOINTS AND FITTINGS, AS PER PLAN, (COC 801)*	586
						160				160	638	03001	160	FT	16" WATER MAIN DUCTILE IRON PIPE ANSI CLASS 52, PUSH-ON JOINTS AND FITTINGS, AS PER PLAN, (COC 801)	593
						60				60	638	06705	60	FT	20" STEEL PIPE ENCASEMENT, OPEN CUT, AS PER PLAN*	586
						320				320	638	07305	320	FT	20" STEEL PIPE ENCASEMENT, BORED OR JACKED, AS PER PLAN*	586
						4				4	638	07501	4	EACH	12" GATE VALVE, AS PER PLAN, (COC 802)*	586
						2				2	638	09801	2	EACH	12" X 12" TAPPING SLEEVE, VALVE AND VALVE BOX, AS PER PLAN, (COC 803)*	586
						1				1	638	10201	1	EACH	6" FIRE HYDRANT, AS PER PLAN, (COC 809)*	595
						1				1	638	10600	1	EACH	FIRE HYDRANT AND GATE VALVE REMOVED AND RESET, (COC 809)	
						9				9	638	10800	9	EACH	VALVE BOX ADJUSTED TO GRADE, (COC 807)	
						1				1	638	11300	1	EACH	1" AIR RELEASE VALVE, (COC 812)	
							2,350			2,350	SPECIAL	63820414	2,350	FT	2" WATER MAIN POLYVINYL CHORIDE PIPE AND FITTINGS (WSP 6768)	601
						1				1	SPECIAL	63820752	1	EACH	FIRE HYDRANT REMOVED FOR STORAGE, (COC 809)*	586
							114			114	638	20774	114	FT	1-1/2" WATER TUBING, TYPE K SOFT COPPER (COLS. CMS ITEM 805.03), A.P.P. (WSP 6768)	601
										1	SPECIAL	63898000	1	EACH	1-1/2" WATER SERVICE TAP, COMPLETE (COLS. CMS ITEM 805) (WSP 6768)	601
										8	SPECIAL	63898000	8	EACH	QUICK COUPLER VALVE, 1" BRASS, 2 PIECE, WITH BOX (10" ROUND) (WSP 6768)	601
										1	SPECIAL	63898100	1	LUMP	1 1/2" METER SETTING WITH BACK FLOW PREVENTER IN HEATED ENCLOSURE (WSP 6768)	601
															*INDICATES CITY OF MARYSVILLE SYSTEM ONLY	

GENERAL SUMMARY

UNI - 33 - 24.87

CALCULATED	NJL	CHECKED	KOD
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NO.	DESCRIPTION	REV. BY	DATE
A	QUANTITY REVISIONS	ENR	2-3-2022
B	ADDED ITEM	ENR	2-28-2022

93
923

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REF NO.	SHEET NO.	STATION TO STATION	202	202	202	202	202	202	202	202	202	202	202	202	202	202	202	202	202	202	202	202	202																						
			HEADWALL REMOVED EACH	PAVEMENT REMOVED, AS PER PLAN SY	WALK REMOVED SF	CONCRETE MEDIAN REMOVED SY	CONCRETE BARRIER REMOVED FT	CURB REMOVED FT	CURB AND GUTTER REMOVED FT	PIPE REMOVED, 24" AND UNDER FT	GUARDRAIL REMOVED FT	MAILBOX REMOVED EACH	MANHOLE REMOVED EACH	CATCH BASIN REMOVED EACH	FENCE REMOVED FT	MONUMENT ASSEMBLY REMOVED EACH	GUARDRAIL REMOVED, BARRIER DESIGN FT	ANCHOR ASSEMBLY REMOVED EACH	IMPACT ATTENUATOR REMOVED EACH	BRIDGE TERMINAL ASSEMBLY REMOVED EACH	REMOVAL MISC.: CONCRETE PAD SF	CABLE BARRIER REMOVED FT																							
R1	133	2012+00.00, 10.00' LT TO 2024+50.00, 55.44' RT	1	2940					95			1																																	
R2	133	2023+23.81, 9.14' RT TO 2023+23.52, 103.90' RT																																											
R3	133	2023+22.42, 13.79' RT TO 2023+63.77, 10.34' RT			30																																								
R4	133	2023+64.07, 10.55' RT TO 2024+17.95, 10.46' RT						54																																					
R5	133	2023+63.79, 19.68' RT TO 2024+20.69, 28.01' RT						58																																					
R1	134	3012+00.00, 10.00' LT TO 3024+50.00, 15.50' LT		2421																																									
R2	134	3012+47.40, 11.23' LT TO 3015+87.54, 16.74' LT								276							2																												
R3	134	3023+98.30, 90.99' LT TO 3023+99.93, 30.51' LT	1						61																																				
R1	135	2024+50.00, 9.00' RT TO 2037+00.00, 9.00' RT		1170																																									
R2	135	2024+50.00, 55.44' RT TO 2031+48.94, 165.20' RT		2039																																									
R3	135	2031+64.10, 64.10' RT TO 2032+95.40, 207.22' RT		355																																									
R4	135	2028+50.13, 11.32' RT TO 2031+89.06, 9.40' RT												339			1				1																								
R5	135	2030+89.92, 46.58' LT TO 2032+11.73, 29.45' LT												109			1																												
R6	135	2030+13.56, 58.39' LT TO 2030+89.92, 46.58' LT												47																															
R7	135	2032+20.85, 53.92' LT TO															1																												
R8	135	2029+73.48, 226.35' RT TO 2030+00.37, 108.00' RT	1						121																																				
R1	136	3024+50.00, 15.48' LT TO 3037+00.00, 9.00' LT		1963																																									
R2	136	3026+65.00, 62.50' LT TO 3033+42.23, 232.40' LT		1571																																									
R3	136	3033+14.50, 213.00' LT TO 3034+38.82, 232.65' LT		310																																									
R4	136	3035+03.95, 176.40' LT TO 3037+00.00, 132.77' LT		610																																									
R5	136	3034+43.70, 29.72' RT TO 3035+62.56, 47.10' RT												130							1																								
R6	136	3035+62.56, 47.10' RT TO 3036+38.27, 61.44' RT															77				1																								
R7	136	3034+64.72, 9.69' LT TO 3036+99.86, 10.41' LT												235																															
R8	136	3036+04.86, 20.22' LT TO 3036+32.14, 237.43' LT	1						114																																				
R9	136	3031+87.75, 40.25' RT TO 3032+22.73, 41.42' RT																					35																						
R1	137	2037+00.00, 108.13' RT TO 2039+30.00, 64.50' RT		429																																									
R2	137	2037+00.00, 8.00' RT TO 2049+50.00, 9.00' RT		3715																																									
R3	137	2042+10.76, 8.84' RT TO 2042+15.33, 92.92' RT	1						84					1																															
R4	137	2049+00.91, 65.31' LT TO 2049+51.97, 55.22' LT															51				1																								
R5	137	2049+51.97, 55.22' LT TO 2049+52.04, 57.48' LT												10								1																							
R6	137	2041+99.41, 38.25' RT TO 2042+11.85, 57.72' RT																																											
R1	138	3037+00.00, 132.77' LT TO 3040+69.50, 73.97' LT		1006																																									
R2	138	3037+00.00, 8.00' LT TO 3049+50.00, 21.00' LT		3039																																									
R3	138	3036+00.00, 10.50' LT TO 3038+02.13, 10.84' LT		103																																									
R4	138	3042+67.73, 10.48' LT TO 3043+18.99, 13.33' LT																																											
R5	138	3042+95.35, 6.06' RT TO 3043+24.02, 100.43' LT	1																																										
R6	138	3042+19.15, 27.99' LT TO 3042+68.55, 20.50' LT												50																															
R7	138	3042+18.32, 10.58' LT TO 3042+67.91, 10.51' LT												50																															
R1	139	2049+78.73, 52.23' LT TO 2051+71.67, 31.05' LT																																											
R2	139	2049+51.93, 57.53' LT TO 2049+78.73, 52.23' LT																																											
R3	139	2050+57.03, 18.11' RT TO 2051+75.41, 10.28' RT																																											
R4	139	2050+68.93, 74.90' LT TO 2052+51.60, 55.44' LT																																											
R5	139	2052+51.60, 55.44' LT TO 2053+27.13, 36.96' LT																																											
R6	139	2060+10.44, 17.15' RT TO 2061+50.24, 12.89' RT																																											
R7	139	2049+50.00, 15.00' RT TO 2062+00.00, 11.50' RT		1723																																									
R1	140	3049+50.00, 0.00' LT TO 3061+64.00, 9.00' LT		1703																																									
R2	140	3050+57.01, 15.31' LT TO 3052+28.60, 16.33' LT																																											
R3	140	3055+43.33, 27.57' LT TO 2055+63.75, 167.96' LT	1																																										
R4	140	3055+23.41, 31.63' LT TO 3055+36.58, 63.02' LT	1																																										
R5	140	3055+39.46, 20.29' LT TO 3055+39.73, 57.23' LT	1																																										
R6	140	3055+49.40, 56.62' LT TO 3055+49.57, 18.61' LT	1																																										
R7	140	3055+49.82, 63.47' LT TO 3055+72.93, 35.49' LT	1																																										
R1	141	3071+57.72, 15.85' LT TO																																											
R2	141	3071+66.65, 11.83' LT TO 3073+46.13, 11.95' LT																																											
TOTALS CARRIED TO SHEET 104			11	25097			69		212					797	2054					3		1	232																						

ROADWAY SUBSUMMARY

CALCULATED		NUL		CHECKED		KOD	
UNI - 33 - 24.87							

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REF NO.	SHEET NO.	STATION TO STATION				202	202	202	202	202	202	202	202	202	202	202	202	202	202	202	202	202	202	202	CALCULATED NJL CHECKED KOD
						HEADWALL REMOVED EACH	PAVEMENT REMOVED, AS PER PLAN SY	WALK REMOVED SF	CONCRETE MEDIAN REMOVED SY	CONCRETE BARRIER REMOVED FT	CURB REMOVED FT	CURB AND GUTTER REMOVED FT	PIPE REMOVED, 24" AND UNDER FT	GUARDRAIL REMOVED FT	MAILBOX REMOVED EACH	MANHOLE REMOVED EACH	CATCH BASIN REMOVED EACH	FENCE REMOVED FT	MONUMENT ASSEMBLY REMOVED EACH	GUARDRAIL REMOVED, BARRIER DESIGN FT	ANCHOR ASSEMBLY REMOVED EACH	IMPACT ATTENUATOR REMOVED EACH	BRIDGE TERMINAL ASSEMBLY REMOVED EACH	REMOVAL MISC.: CONCRETE PAD SF	
R6	150	64+28.81, 65.51' LT	TO	64+49.19, 44.46' RT																					
R7	150	64+49.69, 46.53' RT	TO	65+82.96, 50.60' RT										110											
R8	150	65+85.13, 48.55' RT	TO	65+86.07, 23.26' RT										126		1									
R9	150	63+52.58, 53.02' LT	TO	66+00.00, 32.32' LT									258	25											
R10	150	64+03.05, 70.78' RT	TO	66+00.00, 23.80' RT									234												
R11	150	63+91.39, 39.94' LT	TO	66+00.00, 46.50' LT																					
R12	150	64+01.97, 49.38' RT	TO	66+00.00, 42.60' RT																					
R13	150	61+50.00, 36.00' LT	TO	66+00.00, 32.50' RT																					
R1	151	66+00.00, 23.80' RT	TO	70+00.00, 27.93' RT										395											
R2	151	66+00.00, 32.32' LT	TO	69+02.85, 59.89' LT										323											
R3	151	69+35.33, 61.79' LT	TO	71+00.00, 28.30' LT										180											
R4	151	66+29.33, 35.33' LT	TO																						
R5	151	66+00.00, 41.81' LT	TO	68+94.79, 75.00' LT																					
R6	151	69+44.12, 75.00' LT	TO	71+00.00, 41.94' LT																					
R7	151	66+00.00, 34.74' RT	TO	70+00.00, 46.27' RT																					
R8	151	66+00.00, 36.23' RT	TO	68+79.20, 39.53' RT										276											
R9	151	67+37.62, 30.00' RT	TO	67+37.61, 53.33' RT										22											
R10	151	69+92.97, 29.78' RT												8											
R11	151	70+89.11, 28.62' LT	TO	70+89.20, 14.09' LT										14											
R12	151	68+64.65, 28.30' LT	TO	68+69.39, 29.14' LT										4											
R13	151	66+00.00, 28.00' LT	TO	71+00.00, 6.00' RT																					
R1	152	71+00.00, 28.30' LT	TO	74+25.01, 28.18' LT										338											
R2	152	72+41.70, 4.56' LT	TO	72+45.72, 11.45' LT										10											
R3	152	71+00.00, 37.12' LT	TO	74+25.45, 41.99' LT																					
R4	152	71+00.00, 28.00' LT	TO	74+25.00, 28.00' LT																					
R1	159	800+00.00, 9.50' RT	TO	808+39.00, 28.00' RT																					
R2	159	801+24.04, 68.13' RT	TO	801+33.27, 1.63' RT										67											
R3	159	803+17.62, 91.51' RT	TO	803+30.48, 25.06' LT										117											
R4	159	803+68.82, 33.39' LT	TO	804+43.95, 29.97' RT									99												
R5	159	805+13.06, 126.35' RT	TO	805+28.25, 9.73' LT										137											
R1	161	1001+20.35, 55.63' LT	TO	1004+53.88, 136.8' LT										423											
R1	165	45+20.95, 208.87' RT	TO	45+25.23, 89.32' RT									159												
R2	165	45+76.53, 215.64' RT	TO	46+94.49, 56.76' RT										273											
R1	166	401+38.62, 103.79' LT	TO	402+29.32, 88.01' LT																					
R2	166	400+65.07, 33.90' LT	TO	401+34.58, 44.25' LT										84											
R3	166	401+12.00, 44.30' LT	TO	405+00.00, 50.00' LT										69											
F1	168	21+81.20, 37.75' LT	TO	22+08.25, 38.40' LT																					
R1	168	20+87.50, 15.50' LT	TO	21+45.00, 0.00' LT																					
R1	132	3000+63+00, 8.00' LT	TO	3012+00.00, 8.00' LT																					
R2	132	2008+56.00, 8.00' RT	TO	2012+00.00, 8.00' RT																					
R3	141	2062+00.00, 10.00' RT	TO	2064+62.00, 10.00' RT																					
R4	141	3061+64.00, 0.00' LT	TO	3073+83.00, 13.00' LT																					
R1	142	3073+83.00, 0.00' LT	TO	3086+02.00, 13.00' LT																					
R1	143	3086+02.00, 0.00' LT	TO	3088+67.50, 0.00' LT																					
R1	167	405+00.00, 50.00' LT	TO	408+95.00, 0.00' RT																					
TOTALS CARRIED TO SHEET 104					3	18719	5370			258	2070	1423		1	1	8	40								

ROADWAY SUBSUMMARY

UNI - 33 - 24.87

NO.	DESCRIPTION	REV. BY	DATE
A	ITEM UPDATE	ENR	2-4-2022
B	STATION & QUANTITY UPDATES	ENR	2-28-2022

P:\PR55741\FRA\80748\Design\Roadway\Sheets\80748GS10.dgn Sheet 2/28/2022 4:08:26 PM riley

	202	202	202	202	202	202	202	202	202	202	202	202	202	202	202	202	202	202	202	202	202
	HEADWALL REMOVED	PAVEMENT REMOVED, AS PER PLAN	WALK REMOVED	CONCRETE MEDIAN REMOVED	CONCRETE BARRIER REMOVED	CURB REMOVED	CURB AND GUTTER REMOVED	PIPE REMOVED, 24" AND UNDER	GUARDRAIL REMOVED	MAILBOX REMOVED	MANHOLE REMOVED	CATCH BASIN REMOVED	FENCE REMOVED	MONUMENT ASSEMBLY REMOVED	GUARDRAIL REMOVED, BARRIER DESIGN	ANCHOR ASSEMBLY REMOVED	IMPACT ATTENUATOR REMOVED	BRIDGE TERMINAL ASSEMBLY REMOVED	REMOVAL MISC.: CONCRETE PAD	CABLE BARRIER REMOVED	
	EACH	SY	SF	SY	FT	FT	FT	FT	FT	EACH	EACH	EACH	FT	EACH	FT	EACH	EACH	EACH	SF	FT	
QUANTITIES FOR PLAN SPLIT 01/NHS/PV																					
101	11	25097		69		212		797	2054			3		1	232	8	5	3	16	35	
102		7496																			
103																					
SUBTOTAL	11	32593		69		212		797	2054			3		1	232	8	5	3	16	35	
QUANTITIES FOR PLAN SPLIT 02/S>2/PV																					
101																					
102	4	14220	681	1022	163	1929	645	2153	93		1	7									
103	3	11223	5370			258	2070	1423		1	1	8	40								
SUBTOTAL	7	25443	6051	1022	163	2187	2715	3576	93	1	2	15	40								
TOTALS CARRIED TO GENERAL SUMMARY																					
	18	58036	6051	1091	163	2399	2715	4373	2147	1	2	18	40	1	232	8	5	3	16	35	

NO.	DESCRIPTION	REV. BY	DATE
A	ITEM UPDATE	ENR	2-4-2022
B	QUANTITY UPDATES	ENR	2-28-2022

CALCULATED	NJL
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KOD	

ROADWAY SUBSUMMARY

UNI - 33 - 24.87

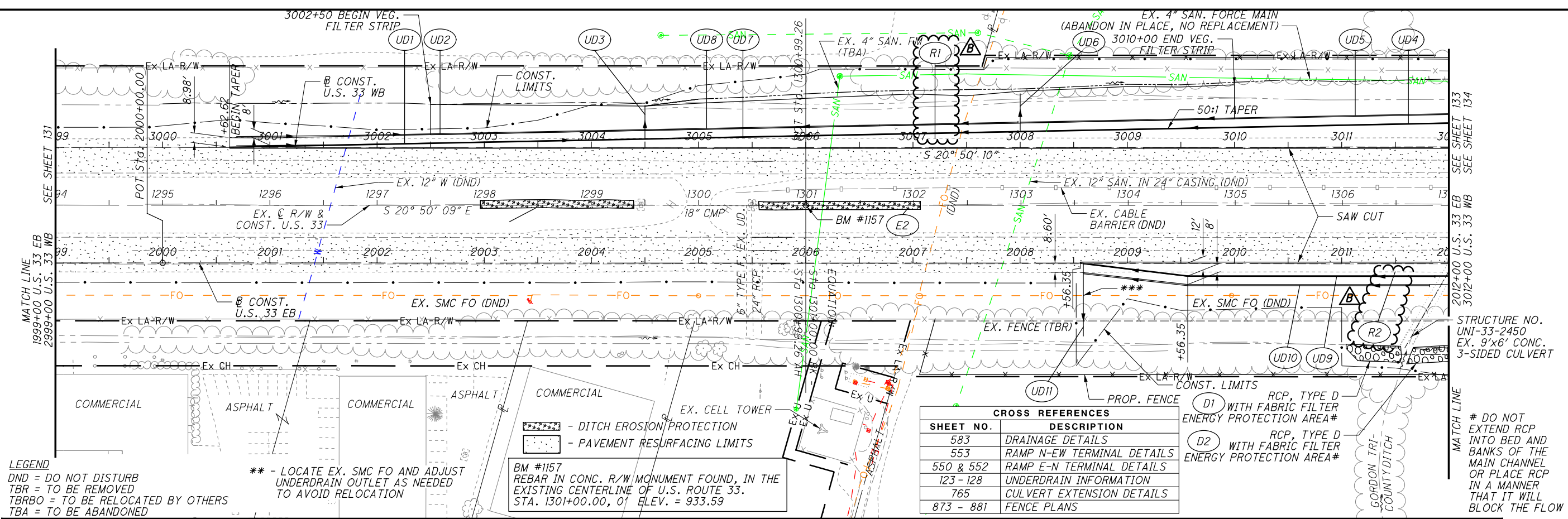
104
923

			203	203	659	203	203												
			EXCAVATION	EMBANKMENT	SEEDING AND MULCHING	REDUCTION IN EXCAVATION FOR PAVEMENT REMOVAL (12" AVERAGE PAVEMENT THICKNESS)	EXCAVATION (ADJUSTMENT)												
			CY	CY	SY	CY	CY												
SHEET NO.	ALIGNMENT	FUNDING SPLIT																	
269	U.S. 33 EB	01/NHS/PV	7325	10229	25933	(1717)	5608												
385	U.S. 33 WB	01/NHS/PV	14575	12161	37912	(1900)	12675												
423	S.R. 161 / POST RD.	02/S>2/PV	25383	3144	18520	(56)	25327												
429	REFERENCE LINE CC	02/S>2/PV	910	410	1041	(167)	743												
432	REFERENCE LINE SR	02/S>2/PV	234	14	214	(161)	73												
451	RAMP E-N	01/NHS/PV	12749	2732	14385		12749												
464	RAMP N-EW	01/NHS/PV	10092	2731	11860		10092												
479	RAMP E-S	01/NHS/PV	1527	8494	7148		1527												
505	RAMP W-S	01/NHS/PV	12282	6937	18778		12282												
516	RAMP W-N	01/NHS/PV	2999	2698	3326		2999												
534	RAMP S-EW	01/NHS/PV	15859	2162	10434		15859												
543	HYLAND-CROY RD.	02/S>2/PV	4496	3197	329		4496												
545	POST PRESERVE BLVD.	02/S>2/PV	509	2	281		509												
581	RETENTION BASIN	02/S>2/PV	11500	0	6500		11500												
622	U.S. 33 GRADING DETAILS	01/NHS/PV	1190	261	2103		1190												
623	U.S. 33 GRADING DETAILS	01/NHS/PV	6247	28078	34103		6247												
624	U.S. 33 GRADING DETAILS	01/NHS/PV	4448	20459	31069		4448												
625	U.S. 33 GRADING DETAILS	01/NHS/PV	2697	2793	776		2697												
TOTAL FROM SPLIT			91990	99735	197827	(3617)	88373												
			43032	6767	26885	(383)	42649												
TOTALS CARRIED TO GENERAL SUMMARY			135022	106502	224712		131022												

NO.	DESCRIPTION	REV. BY	DATE
B	QUANTITY UPDATES	ENR	2-28-2022

CALCULATED	ENR	CHECKED	KOD
EARTHWORK SUBSUMMARY			
UNI - 33 - 24.87			
112 923			

NO.	DESCRIPTION	REV. BY	DATE
B	ADDED BALLOON	ENR	2-28-2022



LEGEND
 DND = DO NOT DISTURB
 TBR = TO BE REMOVED
 TBRBO = TO BE RELOCATED BY OTHERS
 TBA = TO BE ABANDONED

** - LOCATE EX. SMC FO AND ADJUST UNDERDRAIN OUTLET AS NEEDED TO AVOID RELOCATION

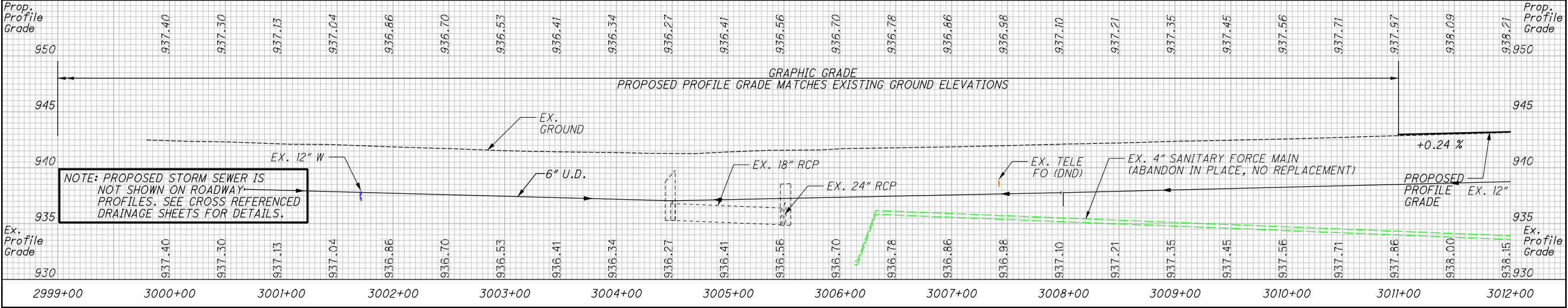
BM #1157
 REBAR IN CONC. R/W MONUMENT FOUND, IN THE EXISTING CENTERLINE OF U.S. ROUTE 33.
 STA. 1301+00.00, 0' ELEV. = 933.59

CROSS REFERENCES	
SHEET NO.	DESCRIPTION
583	DRAINAGE DETAILS
553	RAMP N-EW TERMINAL DETAILS
550 & 552	RAMP E-N TERMINAL DETAILS
123 - 128	UNDERDRAIN INFORMATION
765	CULVERT EXTENSION DETAILS
873 - 881	FENCE PLANS

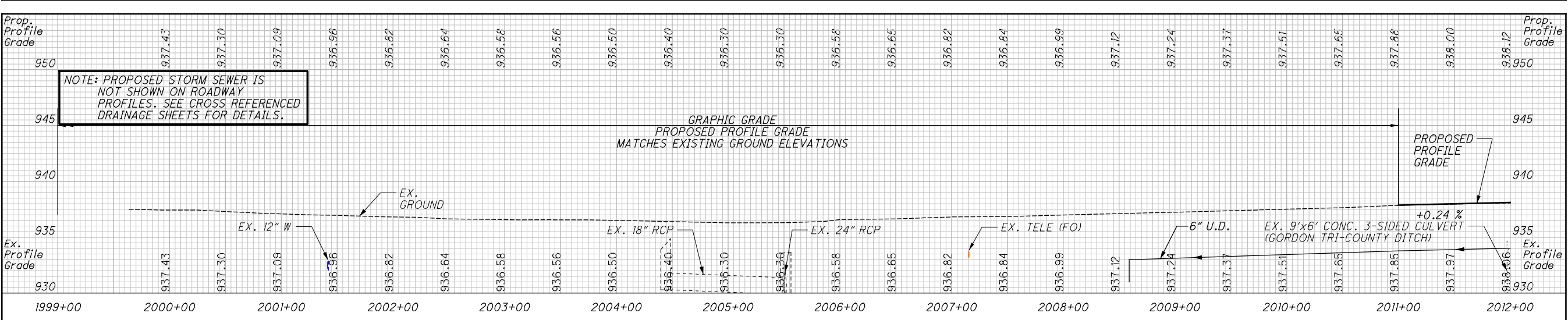
STRUCTURE NO. UNI-33-2450
 EX. 9'x6' CONC. 3-SIDED CULVERT

DO NOT EXTEND RCP INTO BED AND BANKS OF THE MAIN CHANNEL OR PLACE RCP IN A MANNER THAT IT WILL BLOCK THE FLOW

WEST BOUND PROFILE



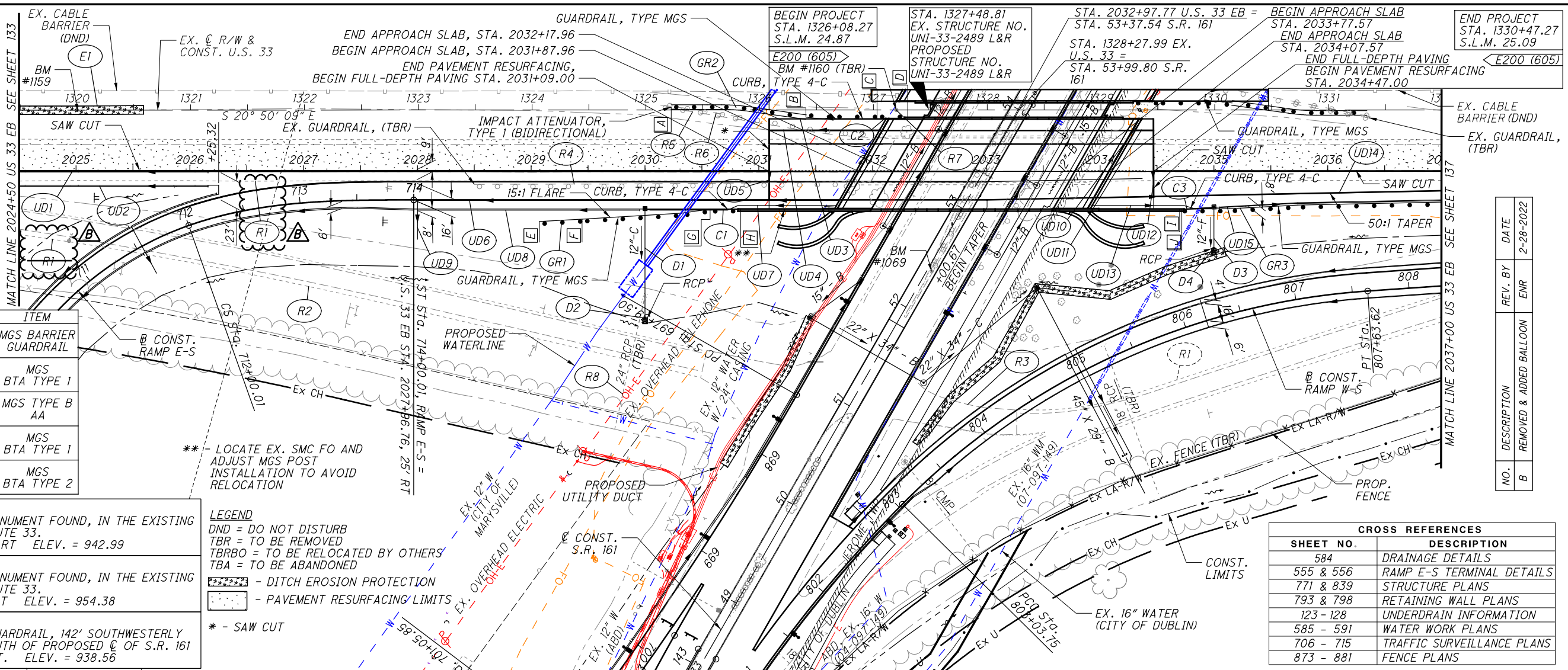
EAST BOUND PROFILE



PLAN AND PROFILE - U.S. 33 EB & WB
 STA. 1999+00.00 EB & STA. 2999+00.00 WB
 TO STA 2012+00.00 EB & 3012+00.00 WB

UNI-33-24.87

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GUARDRAIL STATIONING	ITEM
A STA. 2030+23.05 LT	MGS BARRIER GUARDRAIL
B STA. 2031+41.42 LT	MGS
C STA. 2032+03.92 LT	BTA TYPE 1
D STA. 2032+30.82 LT	MGS TYPE B
E STA. 2029+07.20 RT	AA
F STA. 2029+44.70 RT	MGS
G STA. 2030+57.29 RT	BTA TYPE 1
H STA. 2030+84.19 RT	MGS
I STA. 2034+69.85 RT	BTA TYPE 2
J STA. 2034+71.85 RT	

BM #1159
REBAR IN CONC. R/W MONUMENT FOUND, IN THE EXISTING CENTERLINE OF U.S. ROUTE 33.
STA. 1320+00.08, 0.23' RT ELEV. = 942.99

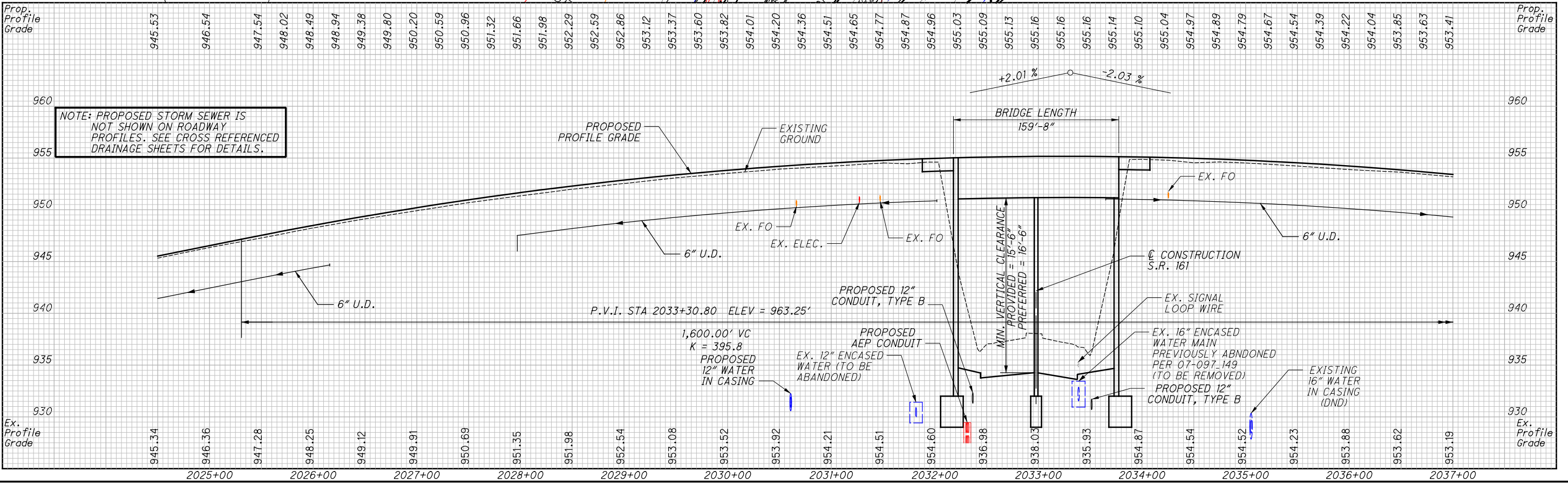
BM #1160
REBAR IN CONC. R/W MONUMENT FOUND, IN THE EXISTING CENTERLINE OF U.S. ROUTE 33.
STA. 1327+20.15, 0.16' RT ELEV. = 954.38

BM #1069
BOLT ON "W" SIDE OF GUARDRAIL, 142' SOUTHWESTERLY OF THE U.S. 33., 4' SOUTH OF PROPOSED C OF S.R. 161
STA. 52+38.33, 3.90' RT. ELEV. = 938.56

LEGEND
 DND = DO NOT DISTURB
 TBR = TO BE REMOVED
 TBRBO = TO BE RELOCATED BY OTHERS
 TBA = TO BE ABANDONED
 - - - - - DITCH EROSION PROTECTION
 - - - - - PAVEMENT RESURFACING LIMITS
 * - SAW CUT

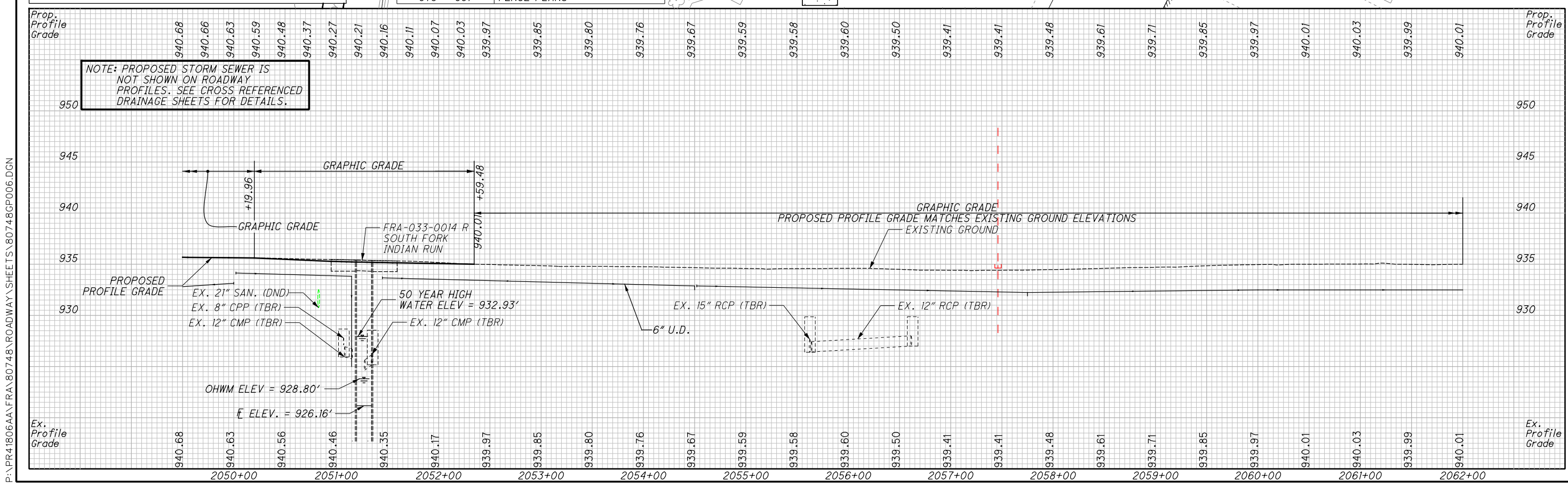
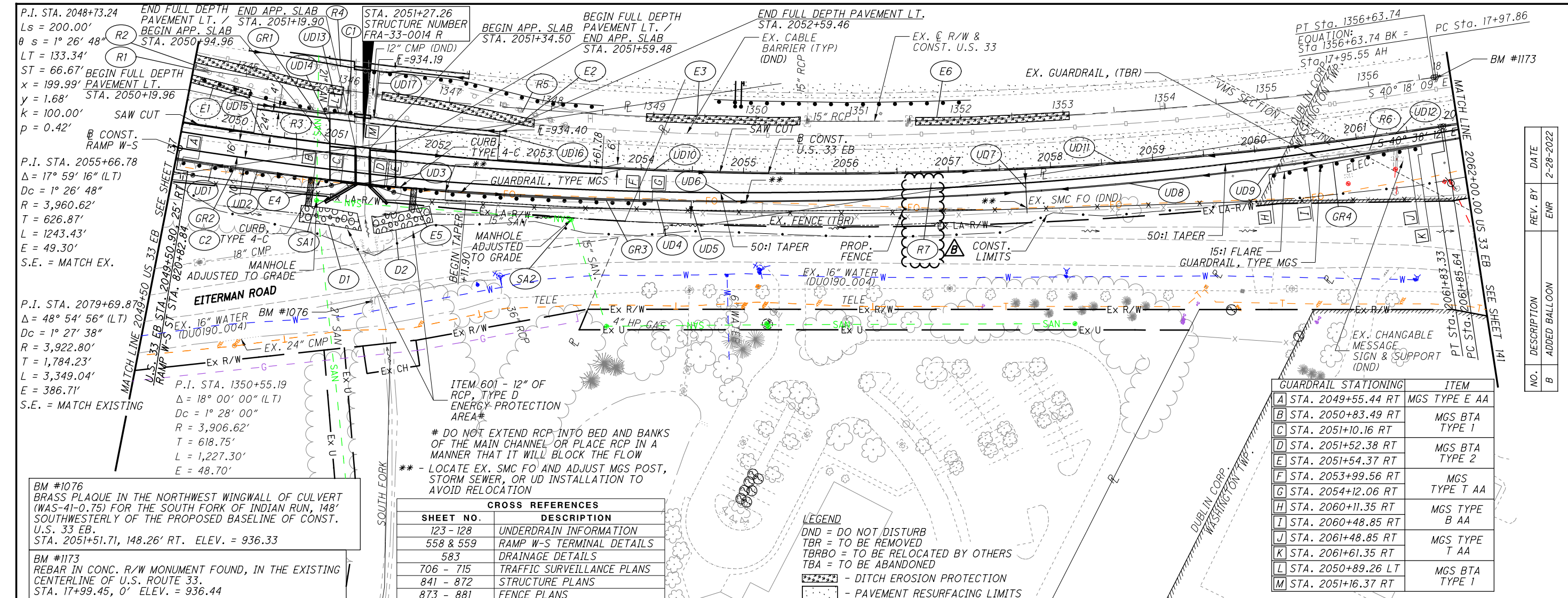
NO.	DESCRIPTION	REV. BY	DATE
B	REMOVED & ADDED BALLOON	ENR	2-28-2022

CROSS REFERENCES	
SHEET NO.	DESCRIPTION
584	DRAINAGE DETAILS
555 & 556	RAMP E-S TERMINAL DETAILS
771 & 839	STRUCTURE PLANS
793 & 798	RETAINING WALL PLANS
123 - 128	UNDERDRAIN INFORMATION
585 - 591	WATER WORK PLANS
706 - 715	TRAFFIC SURVEILLANCE PLANS
873 - 881	FENCE PLANS

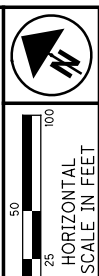


PLAN AND PROFILE - US 33 EB
 STA. 2024+50.00 TO STA. 2037+00.00 EB
 UNI-33-24.87
 135
 923

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NO.	DESCRIPTION	REV. BY	DATE
B	ADDED BALLOON	ENR	2-28-2022

PLAN AND PROFILE - US 33 EB
STA. 2049+50.00 EB TO STA. 2062+00.00 EB

UNI-33-24.87
 139
 923

GUARDRAIL STATIONING	ITEM
A STA. 2049+55.44 RT	MGS TYPE E AA
B STA. 2050+83.49 RT	MGS BTA TYPE 1
C STA. 2051+10.16 RT	MGS BTA TYPE 2
D STA. 2051+52.38 RT	MGS TYPE T AA
E STA. 2051+54.37 RT	MGS TYPE B AA
F STA. 2053+99.56 RT	MGS TYPE T AA
G STA. 2054+12.06 RT	MGS TYPE B AA
H STA. 2060+11.35 RT	MGS TYPE T AA
I STA. 2060+48.85 RT	MGS TYPE B AA
J STA. 2061+48.85 RT	MGS TYPE T AA
K STA. 2061+61.35 RT	MGS TYPE B AA
L STA. 2050+89.26 LT	MGS BTA TYPE 1
M STA. 2051+16.37 RT	MGS BTA TYPE 1

SHEET NO.	DESCRIPTION
123 - 128	UNDERDRAIN INFORMATION
558 & 559	RAMP W-S TERMINAL DETAILS
583	DRAINAGE DETAILS
706 - 715	TRAFFIC SURVEILLANCE PLANS
841 - 872	STRUCTURE PLANS
873 - 881	FENCE PLANS

LEGEND
 DND = DO NOT DISTURB
 TBR = TO BE REMOVED
 TBRBO = TO BE RELOCATED BY OTHERS
 TBA = TO BE ABANDONED
 - - - - - DITCH EROSION PROTECTION
 - - - - - PAVEMENT RESURFACING LIMITS

ITEM 601 - 12" OF RCP, TYPE D ENERGY PROTECTION AREA
 # DO NOT EXTEND RCP INTO BED AND BANKS OF THE MAIN CHANNEL OR PLACE RCP IN A MANNER THAT IT WILL BLOCK THE FLOW
 ** - LOCATE EX. SMC FO AND ADJUST MGS POST, STORM SEWER, OR UD INSTALLATION TO AVOID RELOCATION

BM #1076
 BRASS PLAQUE IN THE NORTHWEST WINGWALL OF CULVERT (WAS-41-0.75) FOR THE SOUTH FORK OF INDIAN RUN, 148' SOUTHWESTERLY OF THE PROPOSED BASELINE OF CONST. U.S. 33 EB.
 STA. 2051+51.71, 148.26' RT. ELEV. = 936.33

BM #1173
 REBAR IN CONC. R/W MONUMENT FOUND, IN THE EXISTING CENTERLINE OF U.S. ROUTE 33.
 STA. 17+99.45, 0' ELEV. = 936.44

** - LOCATE EX. SMC FO AND ADJUST MGS POST, STORM SEWER, OR UD INSTALLATION TO AVOID RELOCATION

LEGEND
 DND = DO NOT DISTURB
 TBR = TO BE REMOVED
 TBRBO = TO BE RELOCATED BY OTHERS
 TBA = TO BE ABANDONED

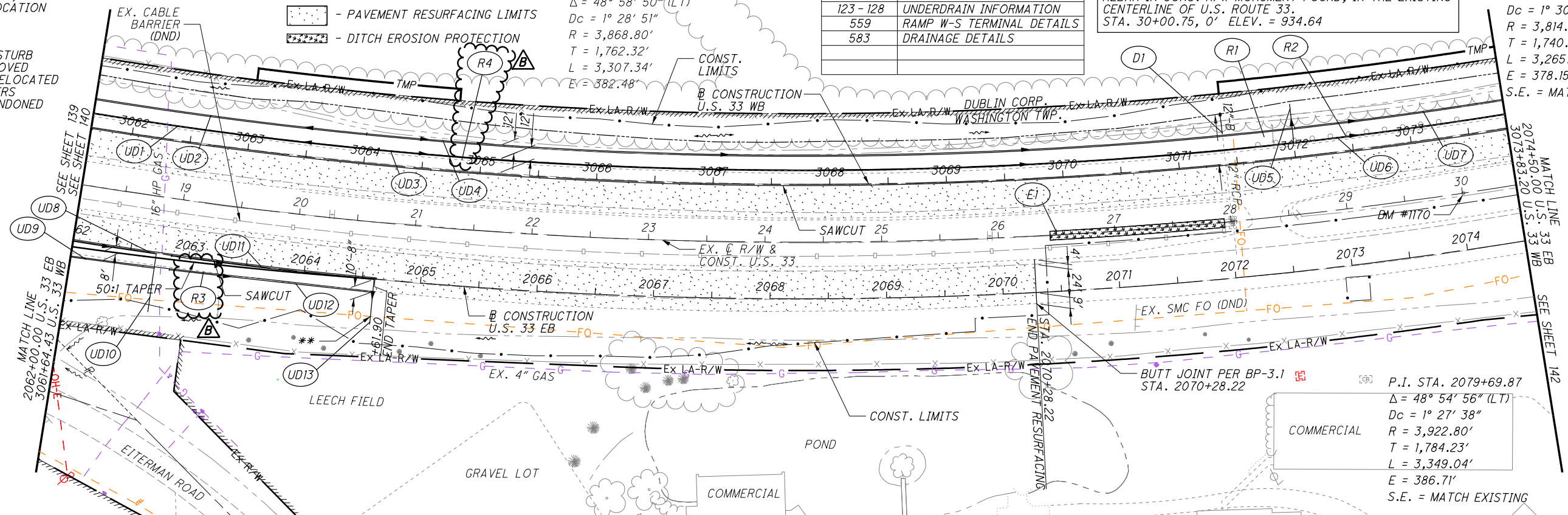
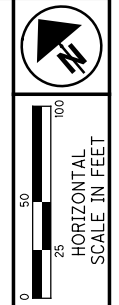
--- - PAVEMENT RESURFACING LIMITS
 - - - - - DITCH EROSION PROTECTION

P.I. STA. 35+60.19
 $\Delta = 48^\circ 58' 50''$ (LT)
 $Dc = 1^\circ 28' 51''$
 $R = 3,868.80'$
 $T = 1,762.32'$
 $L = 3,307.34'$
 $E = 382.48'$

CROSS REFERENCES	
SHEET NO.	DESCRIPTION
123 - 128	UNDERDRAIN INFORMATION
559	RAMP W-S TERMINAL DETAILS
583	DRAINAGE DETAILS

BM #1170
 REBAR IN CONC. R/W MONUMENT FOUND, IN THE EXISTING CENTERLINE OF U.S. ROUTE 33.
 STA. 30+00.75, 0' ELEV. = 934.64

P.I. STA. 3078+90.59
 $\Delta = 49^\circ 02' 25''$ (LT)
 $Dc = 1^\circ 30' 07''$
 $R = 3,814.80'$
 $T = 1,740.13'$
 $L = 3,265.15'$
 $E = 378.15'$
 S.E. = MATCH EXISTING



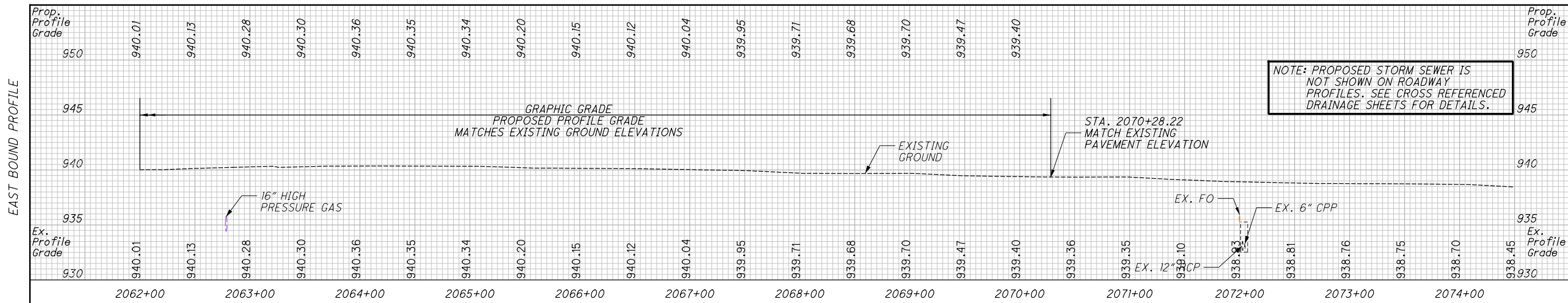
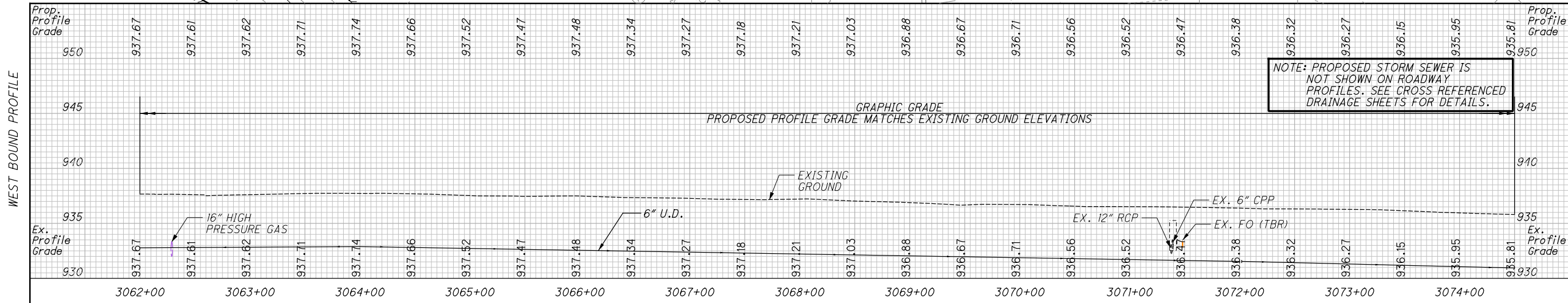
NO.	DESCRIPTION	REV. BY	DATE
B	ADDED BALLOON	ENR	2-28-2022

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PLAN AND PROFILE - U.S. 33 EB & WB
STA. 2062+00.00 EB & 3061+64.43 WB TO
STA. 2074+50.00 EB & 3073+83.20 WB

UNI - 33 - 24.87

141
923



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P.I. STA. 35+60.19
 $\Delta = 48^\circ 58' 50''$ (LT)
 $D_c = 1^\circ 28' 51''$
 $R = 3,868.80'$
 $T = 1,762.32'$
 $L = 3,307.34'$
 $E = 382.48'$

P.I. STA. 3078+90.59
 $\Delta = 49^\circ 02' 25''$ (LT)
 $D_c = 1^\circ 30' 07''$
 $R = 3,814.80'$
 $T = 1,740.13'$
 $L = 3,265.15'$
 $E = 378.15'$
 S.E. = MATCH EXISTING

P.I. STA. 2079+69.87
 $\Delta = 48^\circ 54' 56''$ (LT)
 $D_c = 1^\circ 27' 38''$
 $R = 3,922.80'$
 $T = 1,784.23'$
 $L = 3,349.04'$
 $E = 386.71'$
 S.E. = MATCH EXISTING

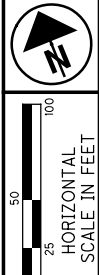
BM #1169
 REBAR IN CONC. R/W MONUMENT FOUND, IN THE EXISTING
 CENTERLINE OF U.S. ROUTE 33.
 STA. 35+00.70, 0.14' RT ELEV. = 934.00

BM #1168
 REBAR IN CONC. R/W MONUMENT FOUND, IN THE EXISTING
 CENTERLINE OF U.S. ROUTE 33.
 STA. 40+00.00, 0' ELEV. = 932.33

LEGEND
 DND = DO NOT DISTURB
 TBR = TO BE REMOVED
 TBRBO = TO BE RELOCATED BY OTHERS
 TBA = TO BE ABANDONED
 [Pattern] - PAVEMENT RESURFACING LIMITS
 [Pattern] - DITCH EROSION PROTECTION

CROSS REFERENCES	
SHEET NO.	DESCRIPTION
123 - 128	UNDERDRAIN INFORMATION
583	DRAINAGE DETAILS

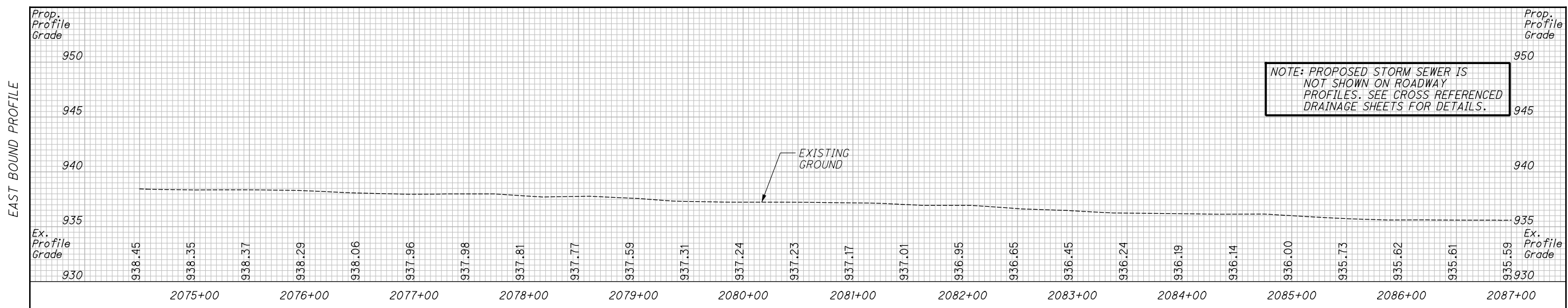
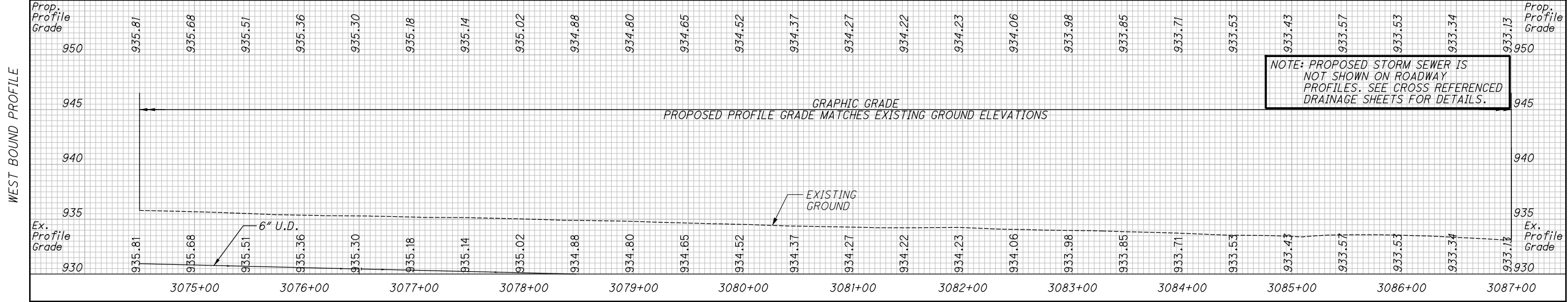
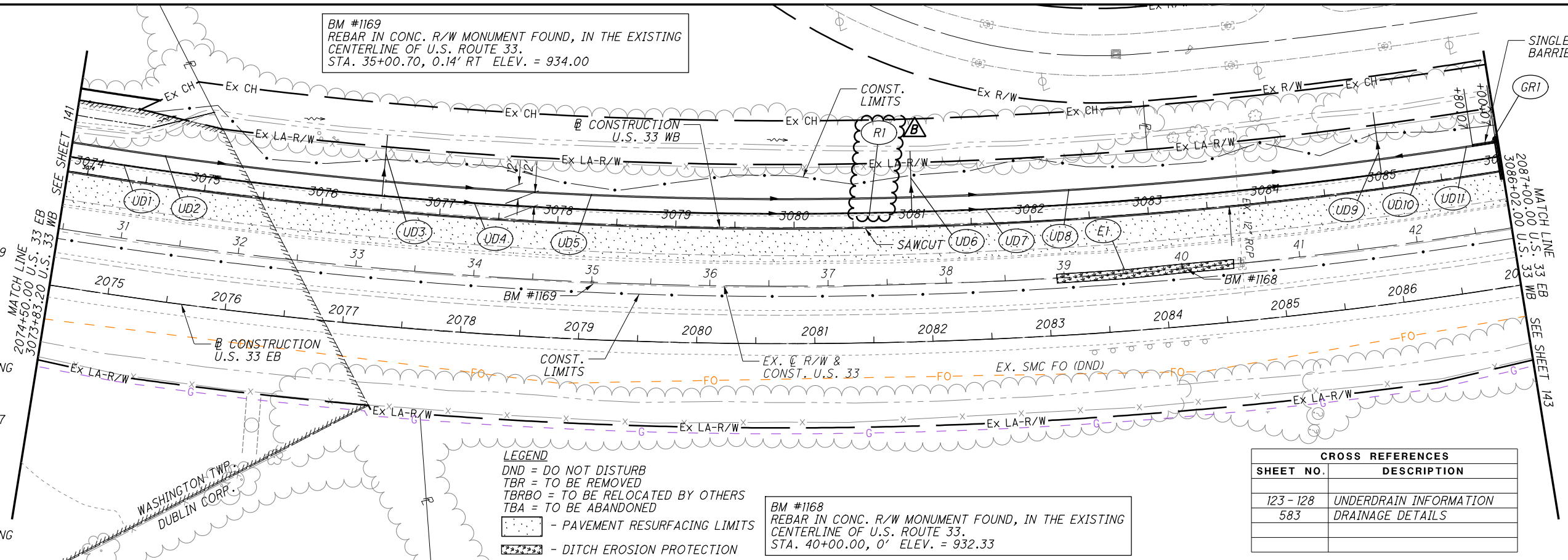
NO.	DESCRIPTION	REV. BY	DATE
B	ADDED BALLOON	ENR	2-28-2022



PLAN AND PROFILE - U.S. 33 EB & WB
 STA. 2074+50.00 EB & 3073+83.20 WB TO
 STA. 2087+00.00 EB & 3086+02.00 WB

UNI - 33 - 24.87

142
923



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P.I. STA. 3078+90.59
 $\Delta = 49^\circ 02' 25''$ (LT)
 $D_c = 1^\circ 30' 07''$
 $R = 3,814.80'$
 $T = 1,740.13'$
 $L = 3,265.15'$
 $E = 378.15'$
 S.E. = MATCH EXISTING

P.I. STA. 35+60.19
 $\Delta = 48^\circ 58' 50''$ (LT)
 $D_c = 1^\circ 28' 51''$
 $R = 3,868.80'$
 $T = 1,762.32'$
 $L = 3,307.34'$
 $E = 382.48'$

P.I. STA. 2079+69.87
 $\Delta = 48^\circ 54' 56''$ (LT)
 $D_c = 1^\circ 27' 38''$
 $R = 3,922.80'$
 $T = 1,784.23'$
 $L = 3,349.04'$
 $E = 386.71'$
 S.E. = MATCH EXISTING

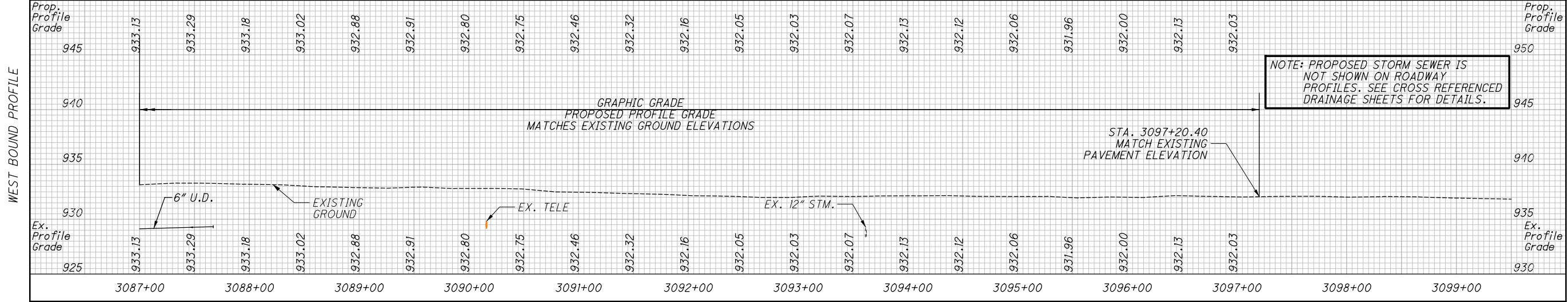
GUARDRAIL STATIONING	ITEM
A STA. 3086+14.07 LT	MGS BTA
B STA. 3086+41.13 LT	TYPE 1
C STA. 3086+82.82 LT	MGS
D STA. 3087+32.82 LT	TYPE E AA

BM #1166
 REBAR IN CONC. R/W MONUMENT FOUND, IN THE EXISTING CENTERLINE OF U.S. ROUTE 33.
 STA. 51+05.20, 0' ELEV. = 929.84

BM #1167
 REBAR IN CONC. R/W MONUMENT FOUND, IN THE EXISTING CENTERLINE OF U.S. ROUTE 33.
 STA. 45+00.64, 0' ELEV. = 930.98

LEGEND
 DND = DO NOT DISTURB
 TBR = TO BE REMOVED
 TBRBO = TO BE RELOCATED BY OTHERS
 TBA = TO BE ABANDONED
 [Pattern] - PAVEMENT RESURFACING LIMITS
 [Pattern] - DITCH EROSION PROTECTION

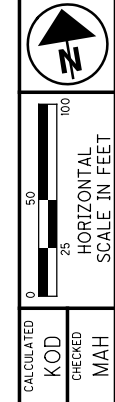
CROSS REFERENCES	
SHEET NO.	DESCRIPTION
123 - 128	UNDERDRAIN INFORMATION
583	DRAINAGE DETAILS



NOTE: PROPOSED STORM SEWER IS NOT SHOWN ON ROADWAY PROFILES. SEE CROSS REFERENCED DRAINAGE SHEETS FOR DETAILS.

NOTE: PROPOSED STORM SEWER IS NOT SHOWN ON ROADWAY PROFILES. SEE CROSS REFERENCED DRAINAGE SHEETS FOR DETAILS.

NO.	DESCRIPTION	REV. BY	DATE
B	ADDED BALLOON	EMR	2-28-2022



PLAN AND PROFILE - U.S. 33 EB & WB
 STA. 2087+00.00 EB & 3086+02.00 WB TO
 STA. 2099+00.00 EB & 3097+81.02 WB

UNI - 33 - 24.87

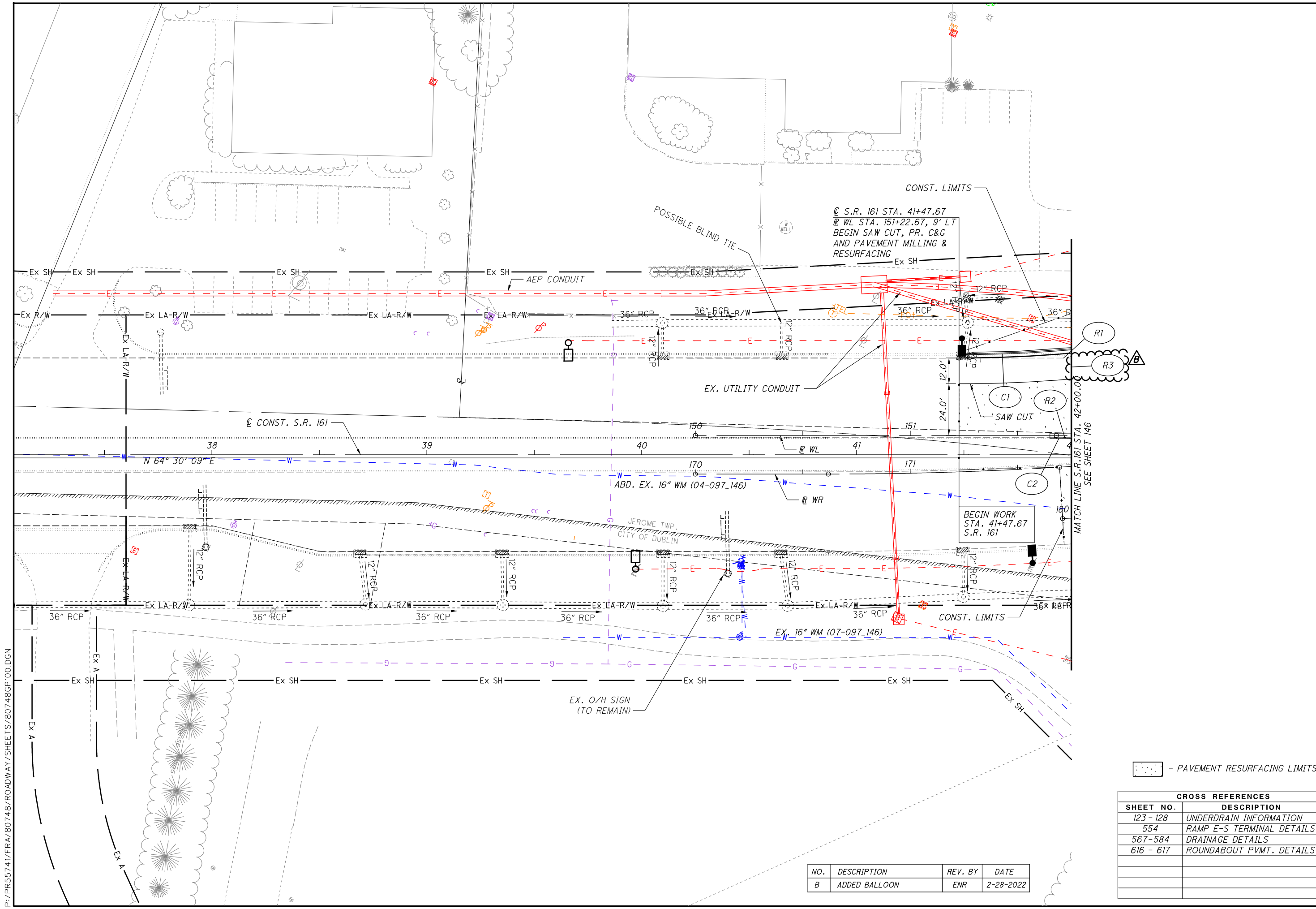


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PLAN - S.R. 161
BEGIN TO STA. 42+00.00

UNI-33-24.87

145
923



- PAVEMENT RESURFACING LIMITS

CROSS REFERENCES	
SHEET NO.	DESCRIPTION
123 - 128	UNDERDRAIN INFORMATION
554	RAMP E-S TERMINAL DETAILS
567-584	DRAINAGE DETAILS
616 - 617	ROUNDBOUT PVMT. DETAILS

NO.	DESCRIPTION	REV. BY	DATE
B	ADDED BALLOON	ENR	2-28-2022

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NO.	DESCRIPTION	REV. BY	DATE
B	ADDED BALLOON	ENR	2-28-2022



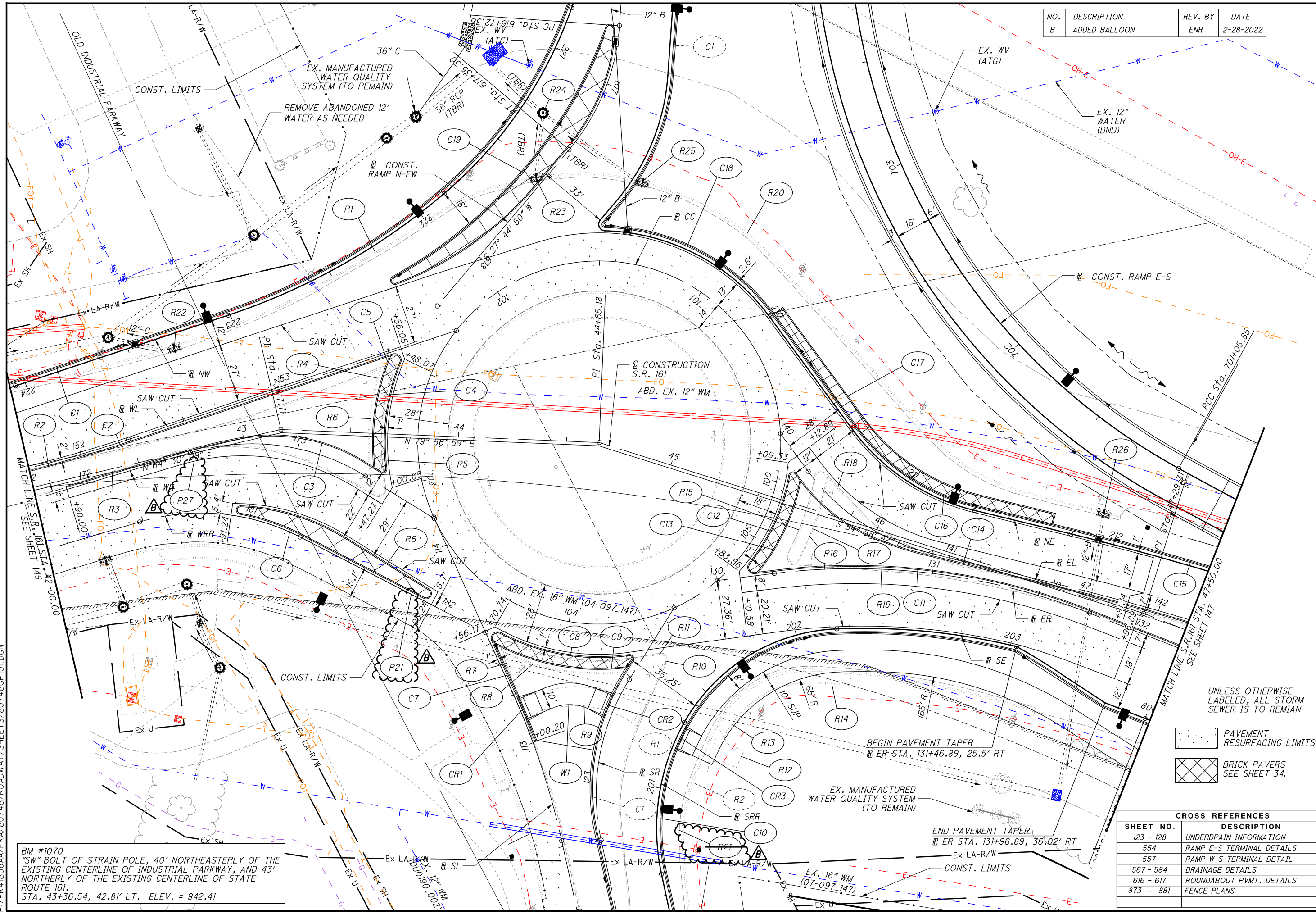
0 10 20
HORIZONTAL SCALE IN FEET

CALCULATED
MRT
CHECKED
MAH

PLAN - S.R. 161
STA. 42+00.00 TO STA. 47+50.00

UNI-33-24.87

146
923



BM #1070
"SW" BOLT OF STRAIN POLE, 40' NORTHEASTERLY OF THE
EXISTING CENTERLINE OF INDUSTRIAL PARKWAY, AND 43'
NORTHERLY OF THE EXISTING CENTERLINE OF STATE
ROUTE 161.
STA. 43+36.54, 42.81' LT. ELEV. = 942.41

UNLESS OTHERWISE
LABELED, ALL STORM
SEWER IS TO REMAIN

- PAVEMENT
RESURFACING LIMITS
- BRICK PAVERS
SEE SHEET 34.

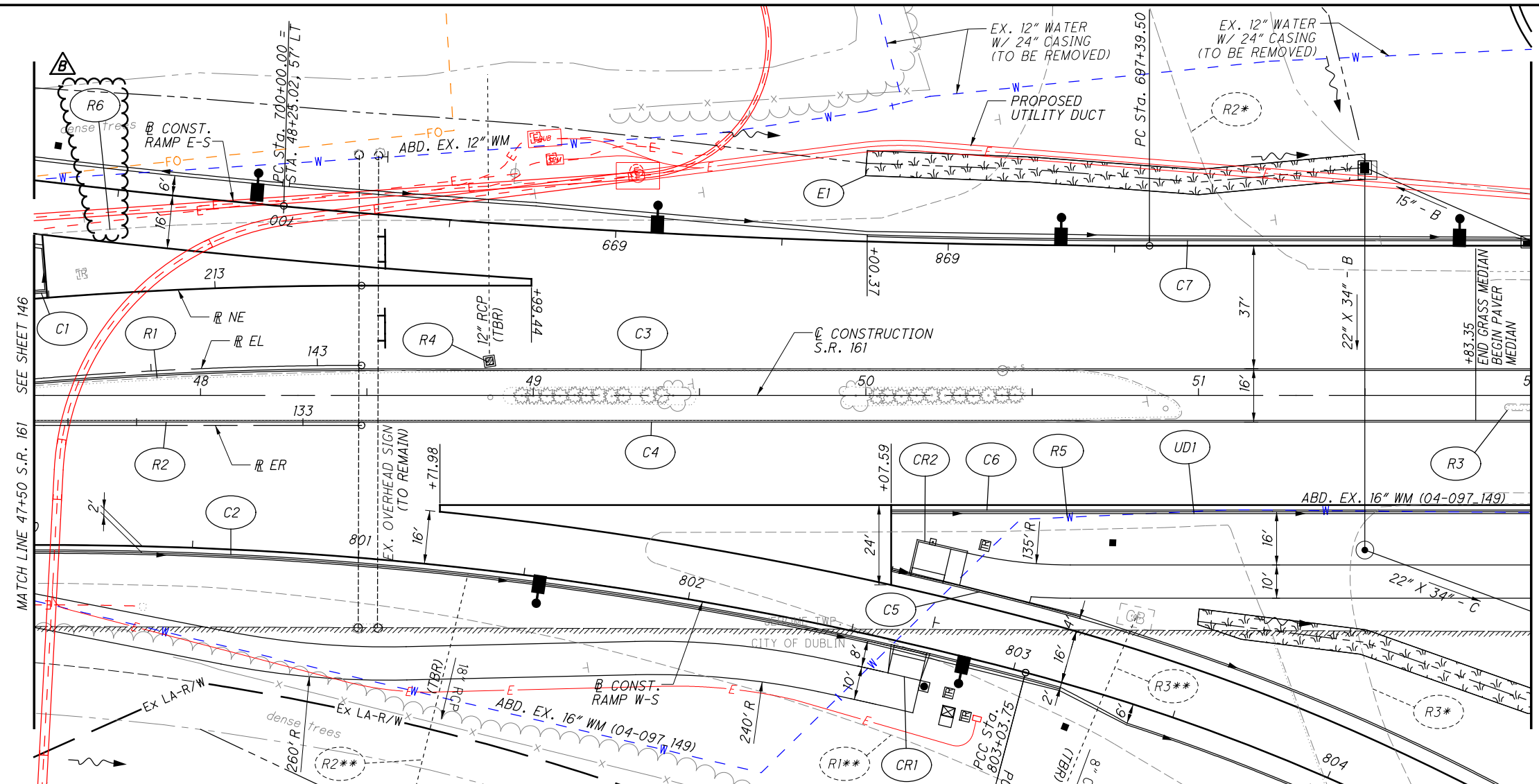
CROSS REFERENCES	
SHEET NO.	DESCRIPTION
123 - 128	UNDERDRAIN INFORMATION
554	RAMP E-S TERMINAL DETAILS
557	RAMP W-S TERMINAL DETAIL
567 - 584	DRAINAGE DETAILS
616 - 617	ROUNDBOUT PVMT. DETAILS
873 - 881	FENCE PLANS

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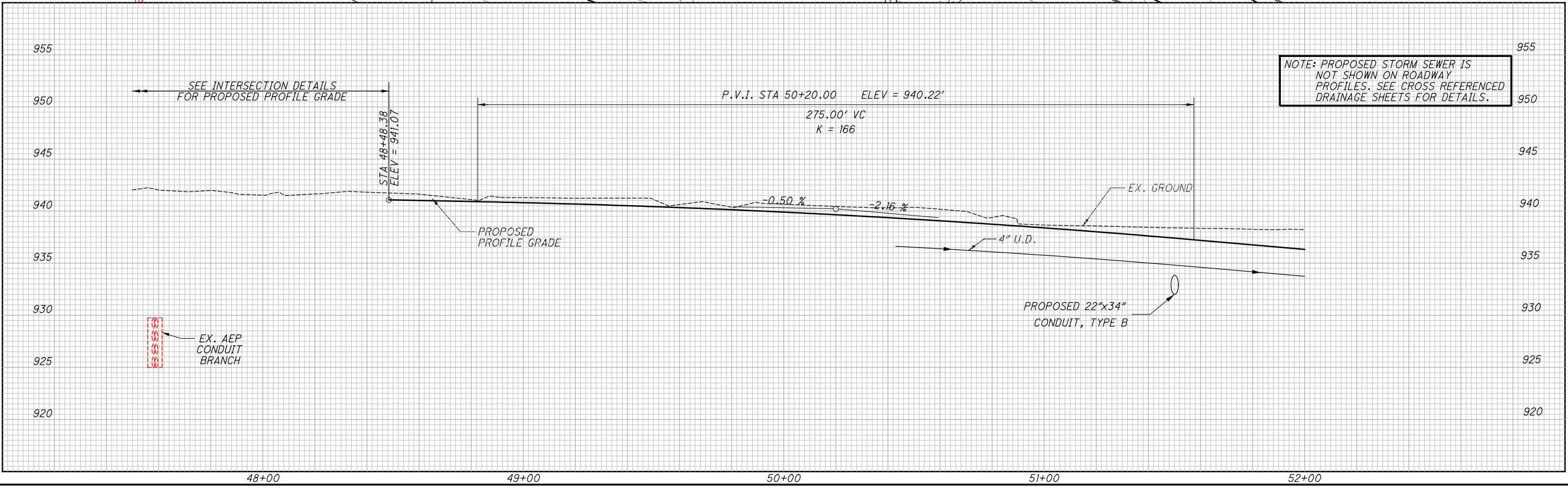
LEGEND
 DND = DO NOT DISTURB
 TBR = TO BE REMOVED
 TBRBO = TO BE RELOCATED BY OTHERS
 - PAVEMENT RESURFACING LIMITS
 - DITCH EROSION PROTECTION

NOTE
 * SEE SHEET 135 FOR QUANTITY
 ** SEE SHEET 159 FOR QUANTITY

CROSS REFERENCES	
SHEET NO.	DESCRIPTION
123 - 128	UNDERDRAIN INFORMATION
568 - 570, 583 - 584	DRAINAGE DETAILS
616 - 621	ROUNDABOUT PVMT. DETAILS
554	RAMP E-S TERMINAL DETAILS
557	RAMP W-S TERMINAL DETAILS
609 - 615	UTILITY DUCT PLANS
791 - 805	RETAINING WALL PLANS



NO.	DESCRIPTION	REV. BY	DATE
B	ADDED BALLOON	ENR	2-28-2022



LEGEND
 DND = DO NOT DISTURB
 TBR = TO BE REMOVED
 TBRBO = TO BE RELOCATED BY OTHERS

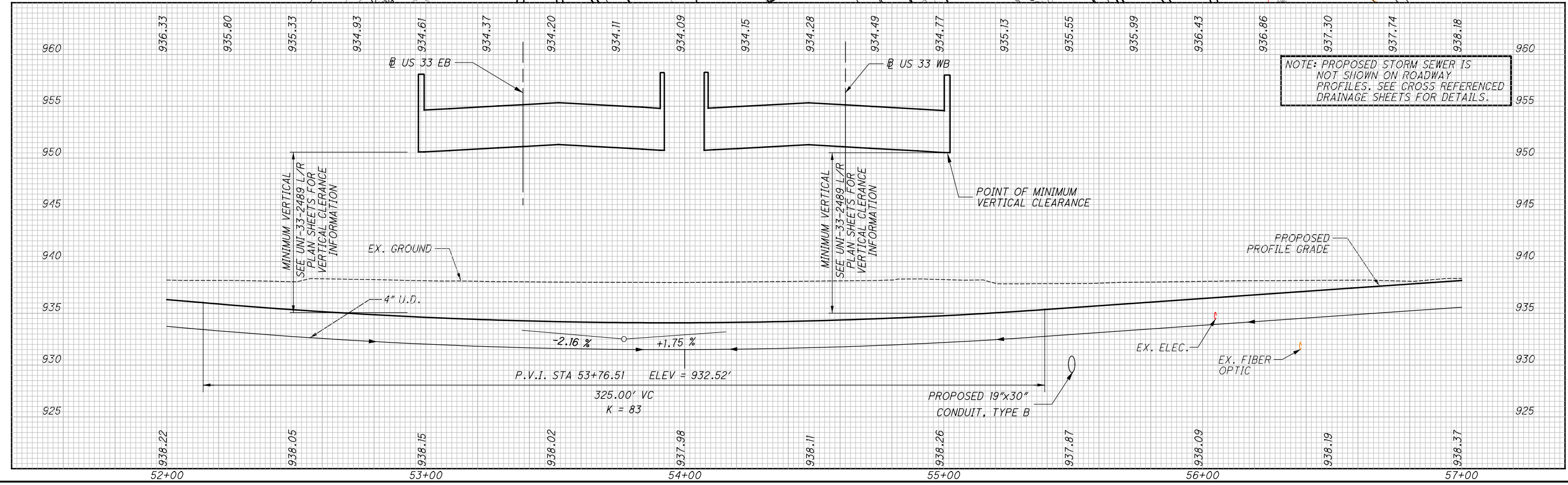
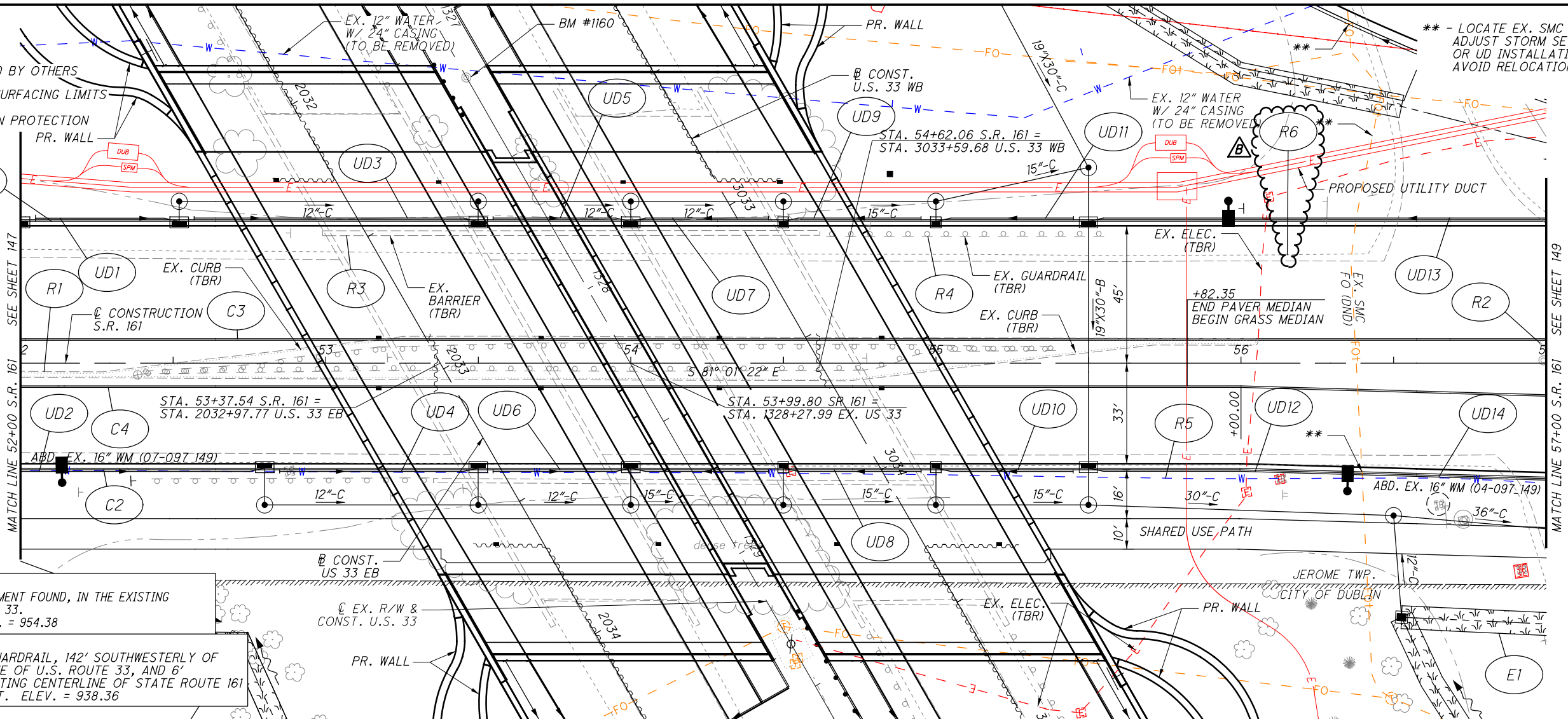
- PAVEMENT RESURFACING LIMITS
 - DITCH EROSION PROTECTION

** - LOCATE EX. SMC FO AND ADJUST STORM SEWER OR UD INSTALLATION TO AVOID RELOCATION

SHEET NO.	CROSS REFERENCES	DESCRIPTION
568-570,		DRAINAGE DETAILS
583-584		RAMP E-S TERMINAL DETAILS
554		RAMP W-N TERMINAL DETAILS
560		LANDSCAPE PLANS
		PAVEMENT DETAILS
		UTILITY DUCT PLANS
		STRUCTURE UNI-33-2489 L/R

BM #1160
 REBAR IN CONC. R/W MONUMENT FOUND, IN THE EXISTING CENTERLINE OF U.S. ROUTE 33.
 STA. 1327+20.00, 0' ELEV. = 954.38

BM #1069
 BOLT ON "W" SIDE OF GUARDRAIL, 142' SOUTHWESTERLY OF THE EXISTING CENTERLINE OF U.S. ROUTE 33, AND 6' SOUTHERLY OF THE EXISTING CENTERLINE OF STATE ROUTE 161
 STA. 52+30.59, 3.90' RT. ELEV. = 938.36



NOTE: PROPOSED STORM SEWER IS NOT SHOWN ON ROADWAY PROFILES. SEE CROSS REFERENCED DRAINAGE SHEETS FOR DETAILS.



NO.	DESCRIPTION	REV. BY	DATE
B	ADDED BALLOON	ENR	2-28-2022

PLAN AND PROFILE - S.R. 161
 STA. 52+00.00 TO STA. 57+00.00


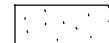
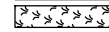
UNI-33-24.87

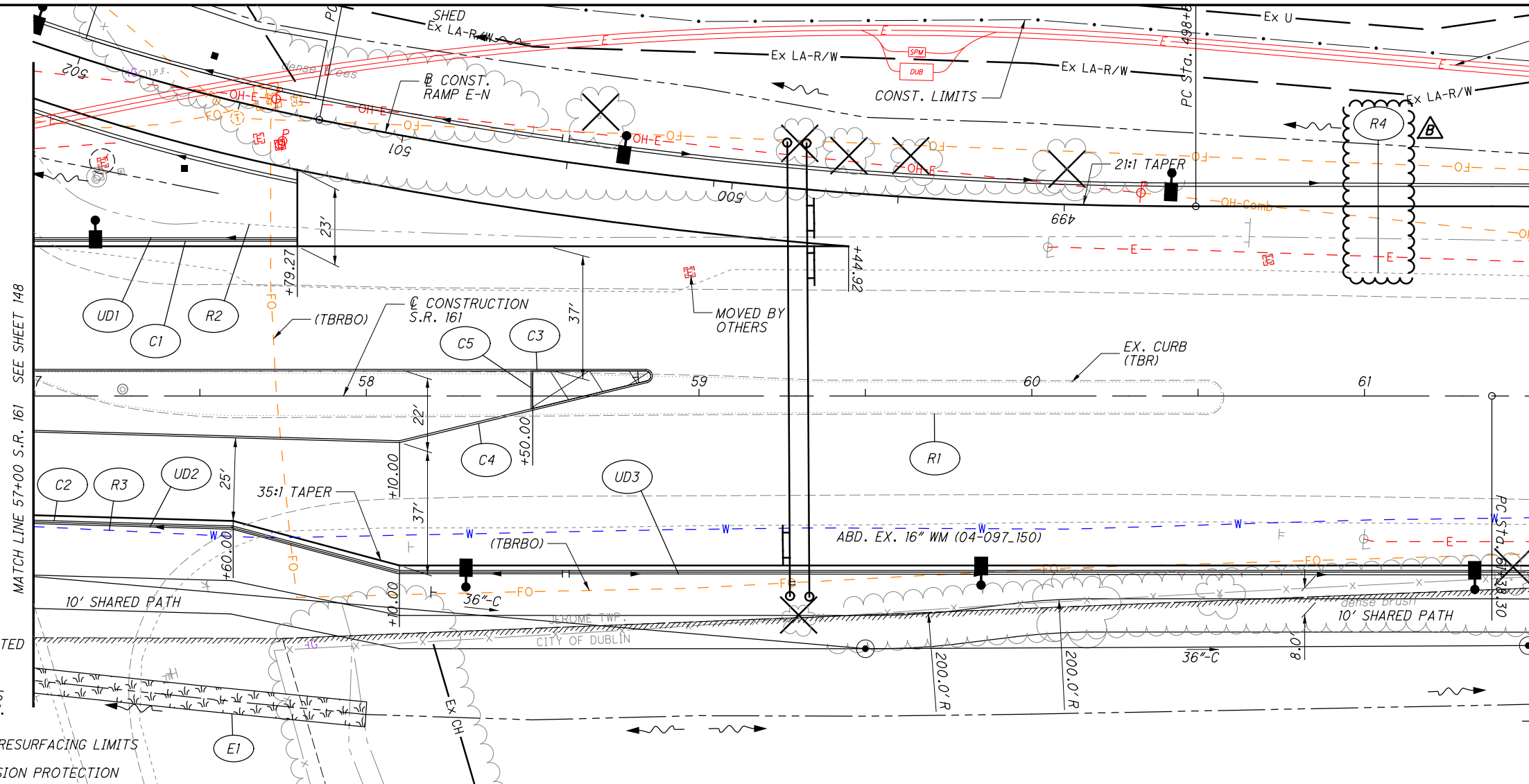
148
 923

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NO.	DESCRIPTION	REV. BY	DATE
B	ADDED BALLOON	ENR	2-28-2022

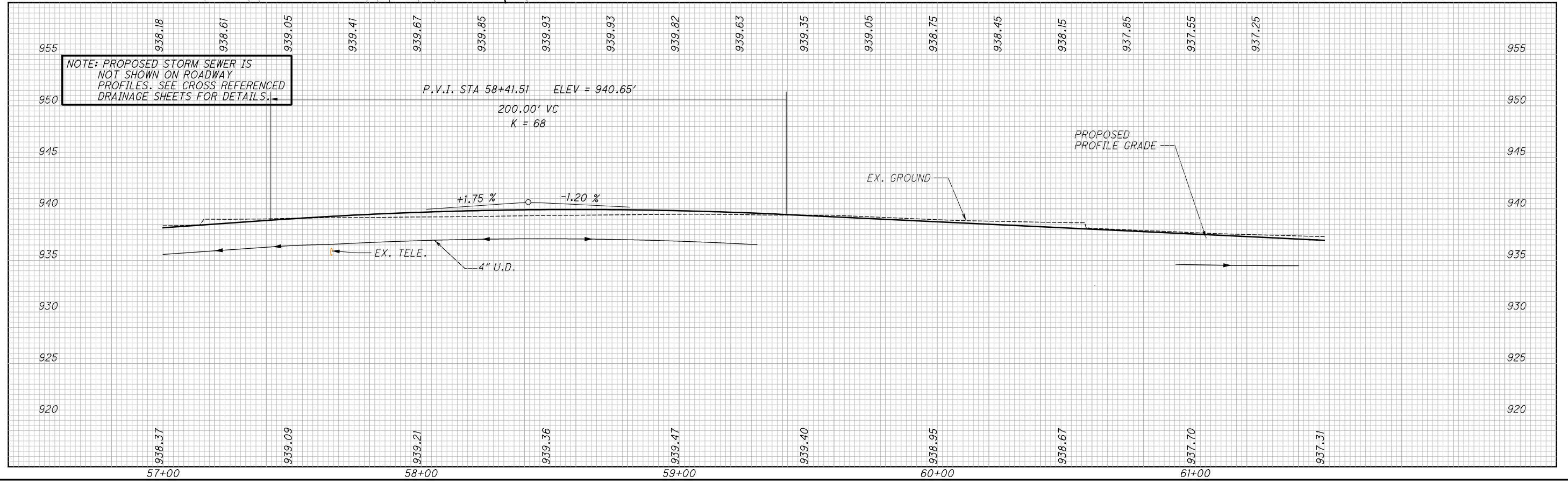
LEGEND
 DND = DO NOT DISTURB
 TBR = TO BE REMOVED
 TBRBO = TO BE RELOCATED BY OTHERS

-  BRICK PAVERS SEE SHEET 34.
-  - PAVEMENT RESURFACING LIMITS
-  - DITCH EROSION PROTECTION



CURVE DATA
 P.I. Sta. 64+26.76
 $\Delta = 28^\circ 15' 32''$ (RT)
 $D_c = 5^\circ 00' 00''$
 $R = 1,145.92'$
 $T = 288.46'$
 $L = 565.18'$
 $E = 35.75'$
 $C = 559.47'$
 C.B. = S $66^\circ 53' 36''$ E
 S.E. = MATCH EXISTING

CROSS REFERENCES	
SHEET NO.	DESCRIPTION
568 - 573, 583 - 584	DRAINAGE DETAILS
550	RAMP E-N TERMINAL DETAILS
560	RAMP W-N TERMINAL DETAILS
	UNDERDRAIN INFORMATION
	UTILITY DUCT PLANS



PLAN AND PROFILE - S.R. 161
STA. 57+00.00 TO STA. 61+50.00

UNI-33-24.87

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BM #1162
REBAR IN CONC. R/W MONUMENT FOUND, IN THE EXISTING
CENTERLINE OF U.S. ROUTE 33.
STA. 1344+36.44, 0' ELEV. = 939.13

BM #1001
BRASS PLAQUE, FRANKLIN COUNTY ENGINEER'S BENCHMARK
N32, WEST OF THE EXISTING CENTERLINE OF POST ROAD.
STATION 13+61.72, 12.97' WEST, ELEV. = 934.12

RP# 1068
SOUTHEAST BOLT OF LIGHT POLE BASE (#CC-2/C-9),
NORTH OF THE EXISTING CENTERLINE OF POST ROAD.
STA. 243+27.68, 38.89' NORTH, ELEV. 937.29

IPS# 100
IRON PIN SET, EAST OF THE EXISTING CENTERLINE
OF LIGGETT ROAD.
STA. 1+78.79, 35.84' EAST, ELEV. = 936.46

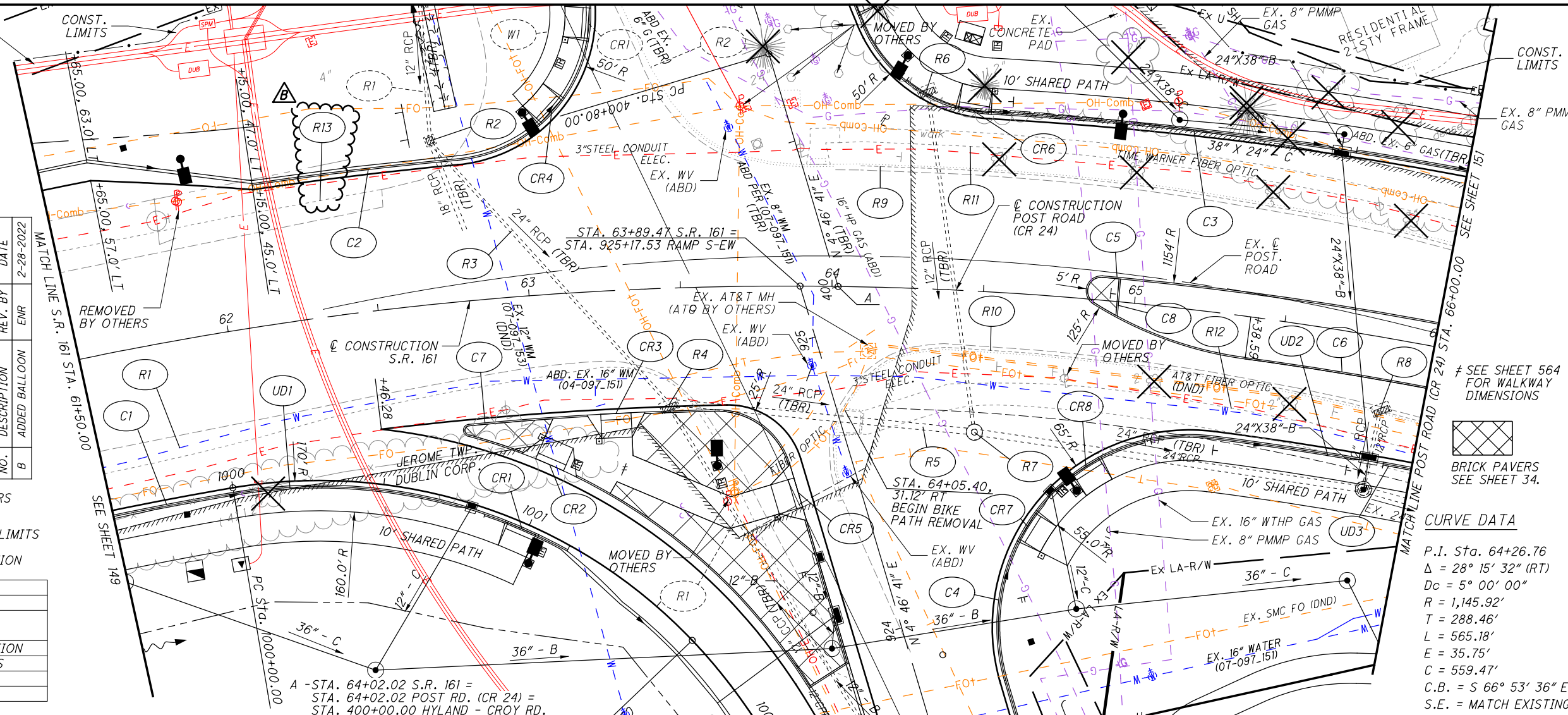
NO.	DESCRIPTION	REV. BY	DATE
B	ADDED BALLOON	ENR	2-28-2022

LEGEND

DND = DO NOT DISTURB
TBR = TO BE REMOVED
TBRBO = TO BE RELOCATED BY OTHERS
TBA = TO BE ABANDONED

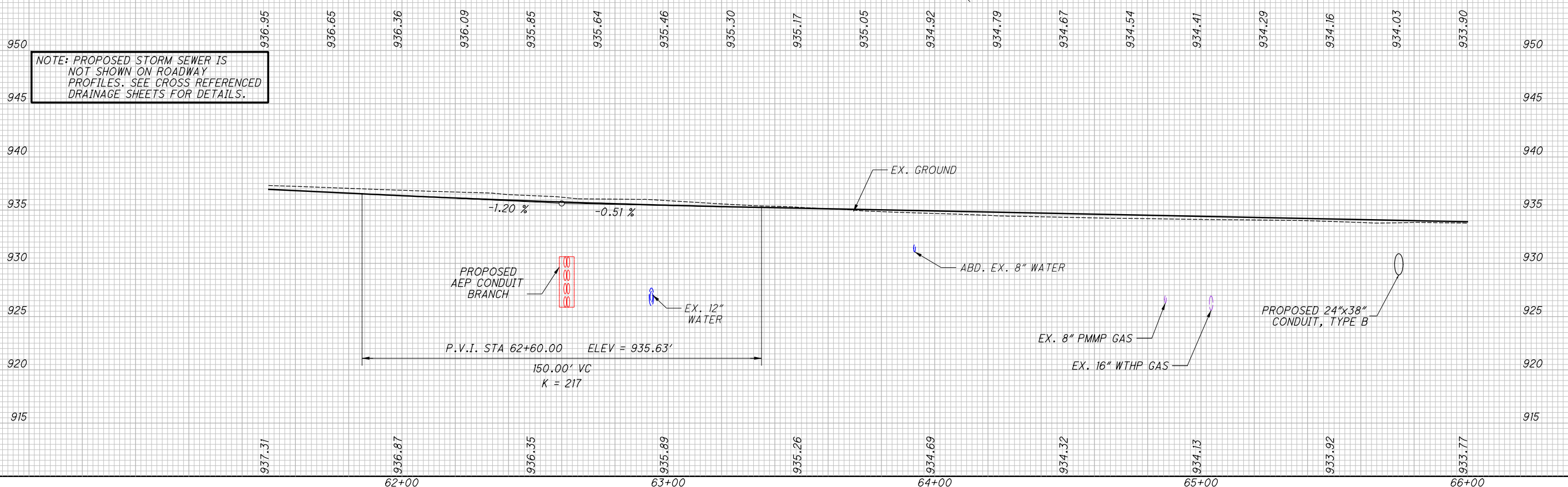
- PAVEMENT RESURFACING LIMITS
 - DITCH EROSION PROTECTION

CROSS REFERENCES	
SHEET NO.	DESCRIPTION
571-573, 583-584	DRAINAGE DETAILS
	UNDERDRAIN INFORMATION
	INTERSECTION DETAILS
587-590	WATER WORK
609-615	UTILITY DUCT PLAN



CURVE DATA

P.I. Sta. 64+26.76
 $\Delta = 28^\circ 15' 32''$ (RT)
 $D_c = 5^\circ 00' 00''$
 $R = 1,145.92'$
 $T = 288.46'$
 $L = 565.18'$
 $E = 35.75'$
 $C = 559.47'$
 $C.B. = S 66^\circ 53' 36'' E$
 $S.E. = MATCH EXISTING$

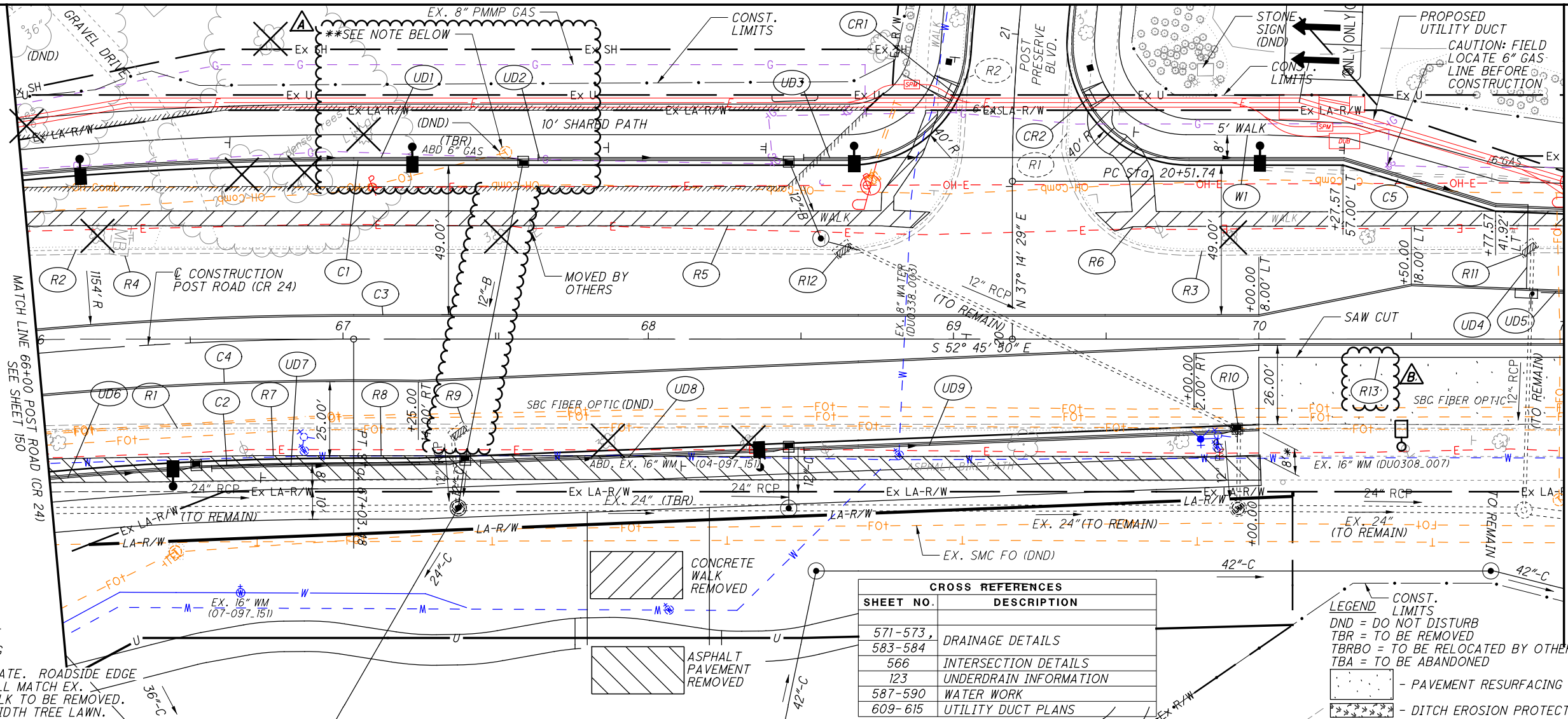


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CALCULATED MRT
 CHECKED MAH
PLAN AND PROFILE - POST ROAD (CR 24)
STA. 66+00.00 TO STA. 71+00.00

UNI-33-24.87
 151
 923



CURVE DATA

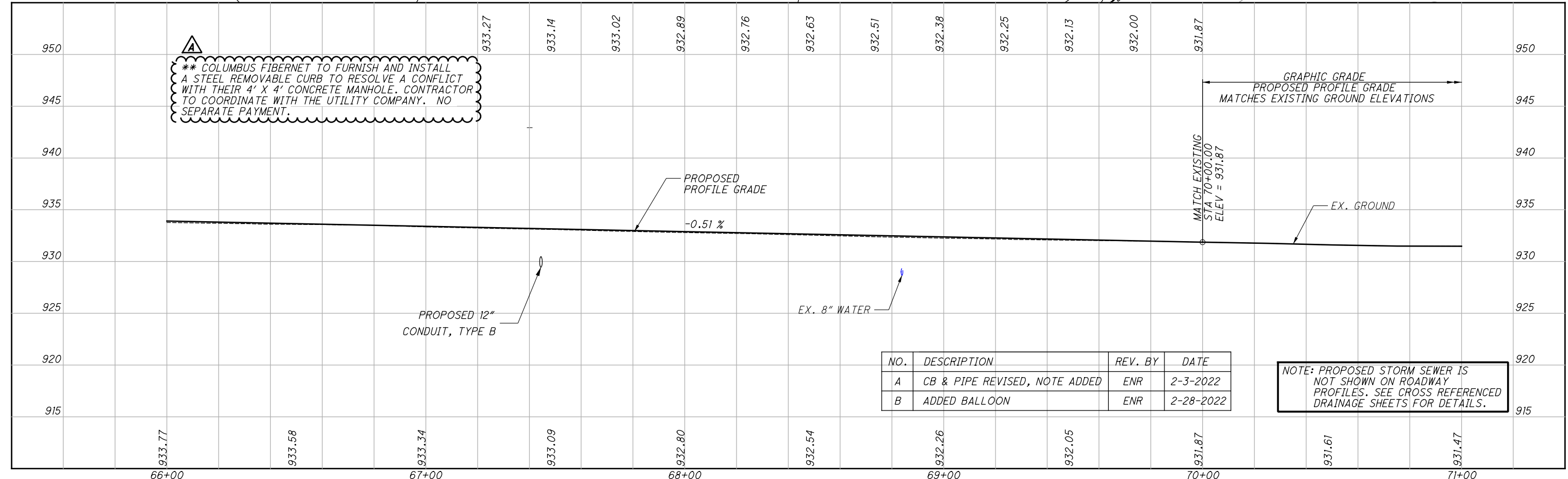
P.I. Sta. 64+26.76
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 $D_c = 5^\circ 00' 00''$
 $R = 1,145.92'$
 $T = 288.46'$
 $L = 565.18'$
 $E = 35.75'$
 $C = 559.47'$
 $C.B. = S 66^\circ 53' 36'' E$
 $S.E. =$ MATCH EXISTING

*OFFSET IS APPROXIMATE. ROADSIDE EDGE OF WALKING PATH SHALL MATCH EX. ROADSIDE EDGE OF WALK TO BE REMOVED. MAINTAIN CONSTANT WIDTH TREE LAWN.

CROSS REFERENCES	
SHEET NO.	DESCRIPTION
571-573, 583-584	DRAINAGE DETAILS
566	INTERSECTION DETAILS
123	UNDERDRAIN INFORMATION
587-590	WATER WORK
609-615	UTILITY DUCT PLANS

LEGEND

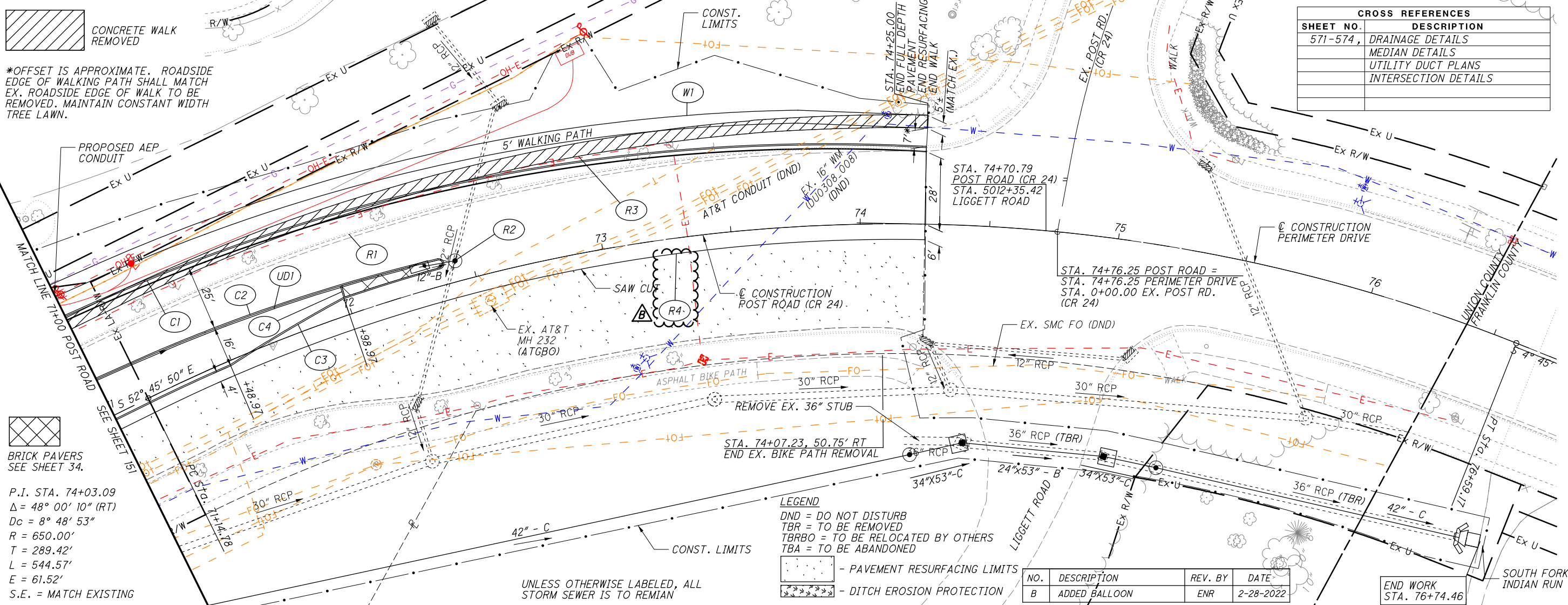
CONST. LIMITS
 DND = DO NOT DISTURB
 TBR = TO BE REMOVED
 TBRBO = TO BE RELOCATED BY OTHERS
 TBA = TO BE ABANDONED
 - PAVEMENT RESURFACING LIMITS
 - DITCH EROSION PROTECTION



NO.	DESCRIPTION	REV. BY	DATE
A	CB & PIPE REVISED, NOTE ADDED	ENR	2-3-2022
B	ADDED BALLOON	ENR	2-28-2022

NOTE: PROPOSED STORM SEWER IS NOT SHOWN ON ROADWAY PROFILES. SEE CROSS REFERENCED DRAINAGE SHEETS FOR DETAILS.

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*OFFSET IS APPROXIMATE. ROADSIDE EDGE OF WALKING PATH SHALL MATCH EX. ROADSIDE EDGE OF WALK TO BE REMOVED. MAINTAIN CONSTANT WIDTH TREE LAWN.

BRICK PAVERS
SEE SHEET 34.

P.I. STA. 74+03.09
 $\Delta = 48^\circ 00' 10''$ (RT)
 $D_c = 8^\circ 48' 53''$
 $R = 650.00'$
 $T = 289.42'$
 $L = 544.57'$
 $E = 61.52'$
 S.E. = MATCH EXISTING

LEGEND
 DND = DO NOT DISTURB
 TBR = TO BE REMOVED
 TBRBO = TO BE RELOCATED BY OTHERS
 TBA = TO BE ABANDONED
 [Symbol] - PAVEMENT RESURFACING LIMITS
 [Symbol] - DITCH EROSION PROTECTION

NO.	DESCRIPTION	REV. BY	DATE
B	ADDED BALLOON	ENR	2-28-2022

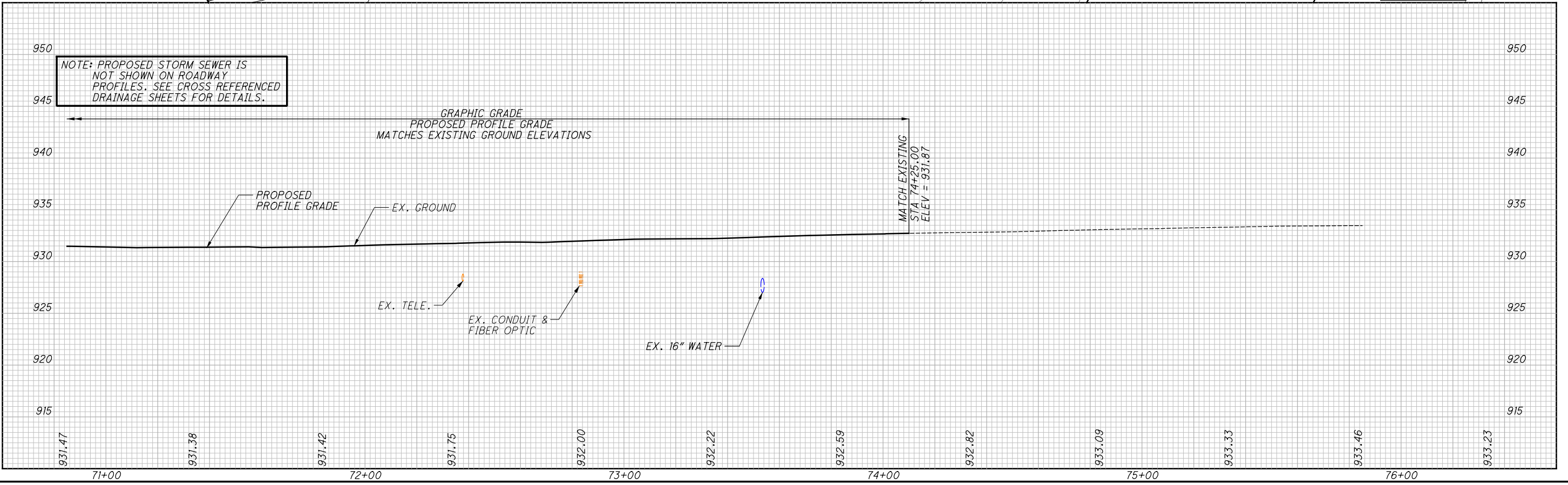
CROSS REFERENCES	
SHEET NO.	DESCRIPTION
571-574,	DRAINAGE DETAILS
	MEDIAN DETAILS
	UTILITY DUCT PLANS
	INTERSECTION DETAILS



PLAN - POST ROAD (CR 24) / PERIMETER DRIVE
 STA 71+00.00 TO END WORK

UNI-33-24.87

152
 923



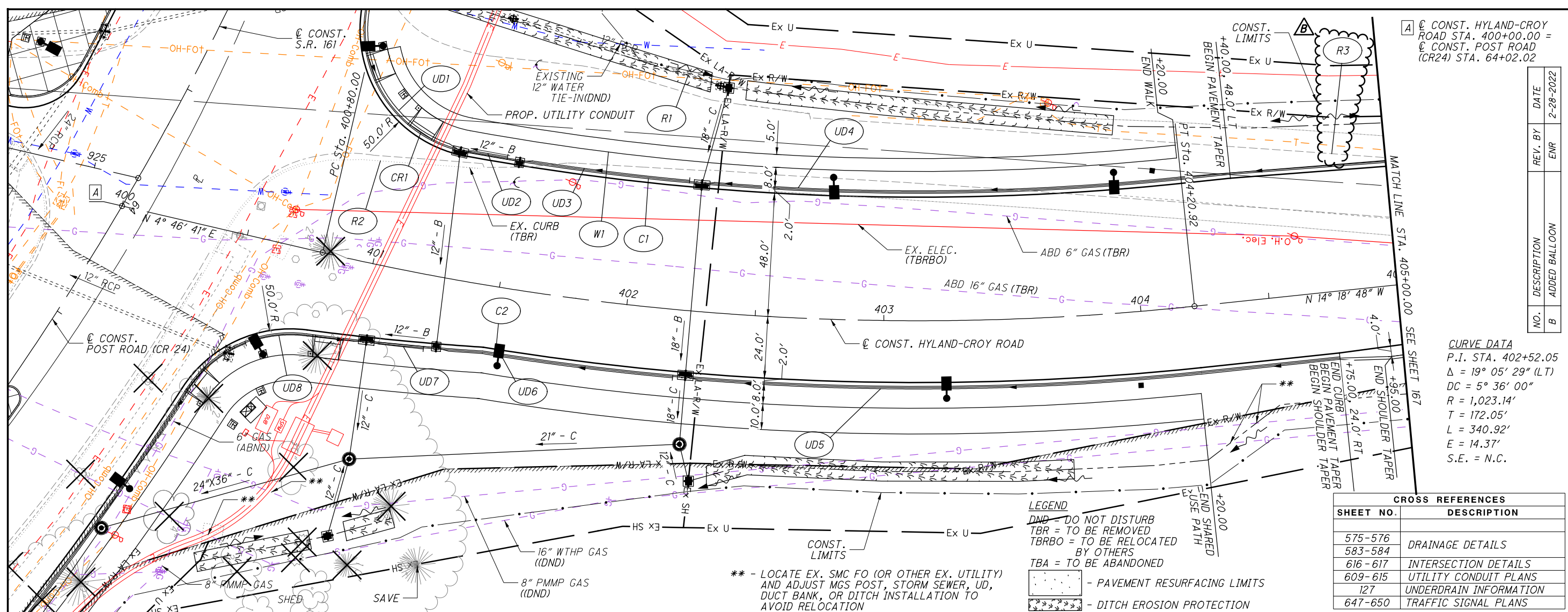
NOTE: PROPOSED STORM SEWER IS NOT SHOWN ON ROADWAY PROFILES. SEE CROSS REFERENCED DRAINAGE SHEETS FOR DETAILS.

GRAPHIC GRADE
 PROPOSED PROFILE GRADE
 MATCHES EXISTING GROUND ELEVATIONS

MATCH EXISTING
 STA 74+25.00
 ELEV = 931.87

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CONST. HYLAND-CROY ROAD STA. 400+00.00 =
 CONST. POST ROAD (CR24) STA. 64+02.02

CURVE DATA
 P.I. STA. 402+52.05
 $\Delta = 19^\circ 05' 29''$ (LT)
 $DC = 5^\circ 36' 00''$
 $R = 1,023.14'$
 $T = 172.05'$
 $L = 340.92'$
 $E = 14.37'$
 $S.E. = N.C.$

LEGEND
 DND = DO NOT DISTURB
 TBR = TO BE REMOVED
 TBRBO = TO BE RELOCATED BY OTHERS
 TBA = TO BE ABANDONED
 [Symbol] - PAVEMENT RESURFACING LIMITS
 [Symbol] - DITCH EROSION PROTECTION

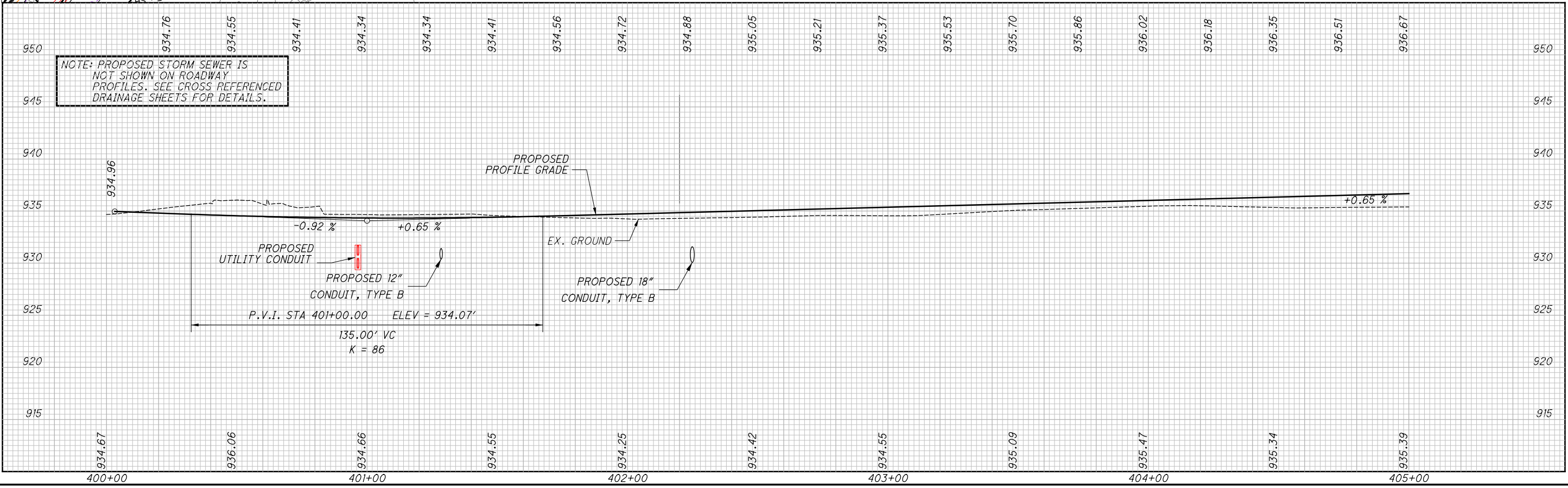
CROSS REFERENCES	
SHEET NO.	DESCRIPTION
575-576	
583-584	DRAINAGE DETAILS
616-617	INTERSECTION DETAILS
609-615	UTILITY CONDUIT PLANS
127	UNDERDRAIN INFORMATION
647-650	TRAFFIC SIGNAL PLANS

NO.	DESCRIPTION	REV. BY	DATE
B	ADDED BALLOON	ENR	2-28-2022



**PLAN AND PROFILE - HYLAND-CROY ROAD
 STA. 400+00.00 TO STA. 405+00.00**

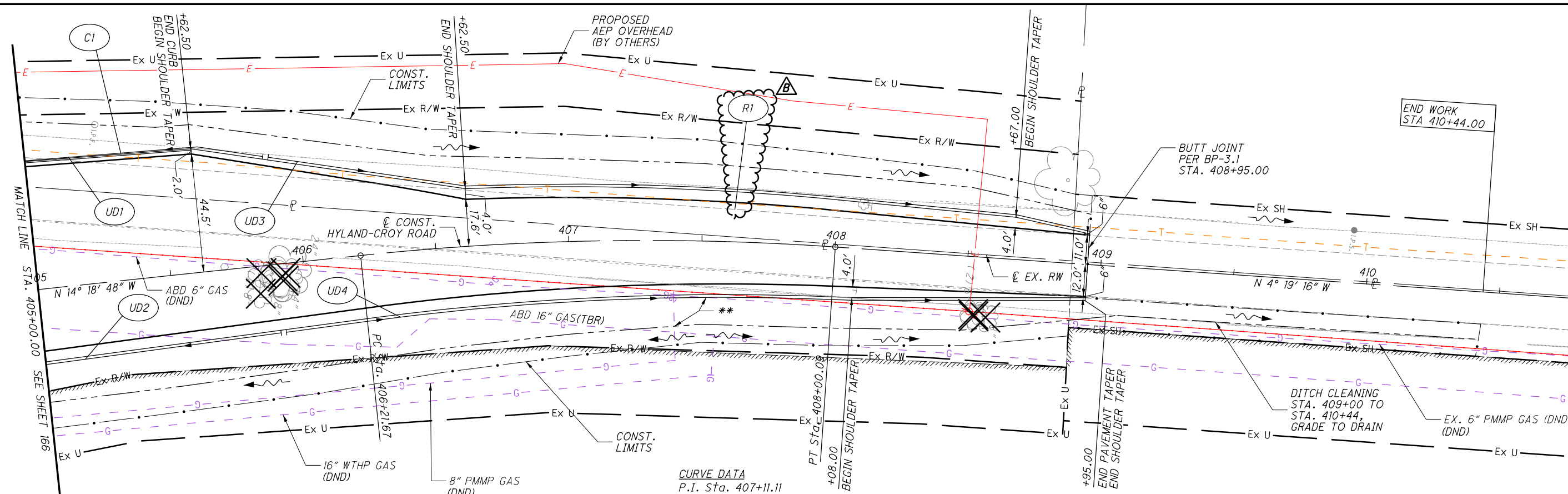
UNI-33-24.87



NOTE: PROPOSED STORM SEWER IS NOT SHOWN ON ROADWAY PROFILES. SEE CROSS REFERENCED DRAINAGE SHEETS FOR DETAILS.

PROPOSED UTILITY CONDUIT
 PROPOSED 12" CONDUIT, TYPE B
 P.V.I. STA 401+00.00 ELEV = 934.07'
 135.00' VC
 K = 86

PROPOSED PROFILE GRADE
 EX. GROUND
 PROPOSED 18" CONDUIT, TYPE B



** - LOCATE EX. SMC FO (OR OTHER EX. UTILITY) AND ADJUST MGS POST, STORM SEWER, UD, DUCT BANK, OR DITCH INSTALLATION TO AVOID RELOCATION

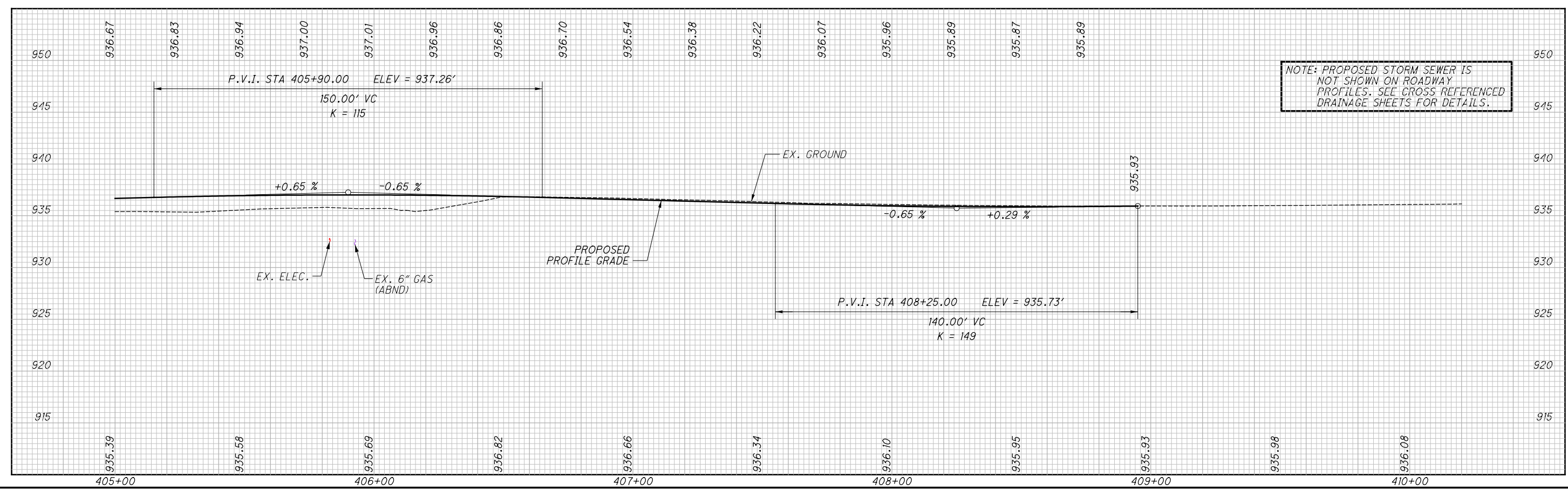
CURVE DATA
P.I. Sta. 407+11.11
 $\Delta = 9^\circ 59' 31''$ (RT)
 $D_c = 5^\circ 36' 00''$
 $R = 1,023.14'$
 $T = 89.44'$
 $L = 178.43'$
 $E = 3.90'$
S.E. = N.C.

LEGEND
DND = DO NOT DISTURB
TBR = TO BE REMOVED
TBRBO = TO BE RELOCATED BY OTHERS
TBA = TO BE ABANDONED

- PAVEMENT RESURFACING LIMITS
 - DITCH EROSION PROTECTION

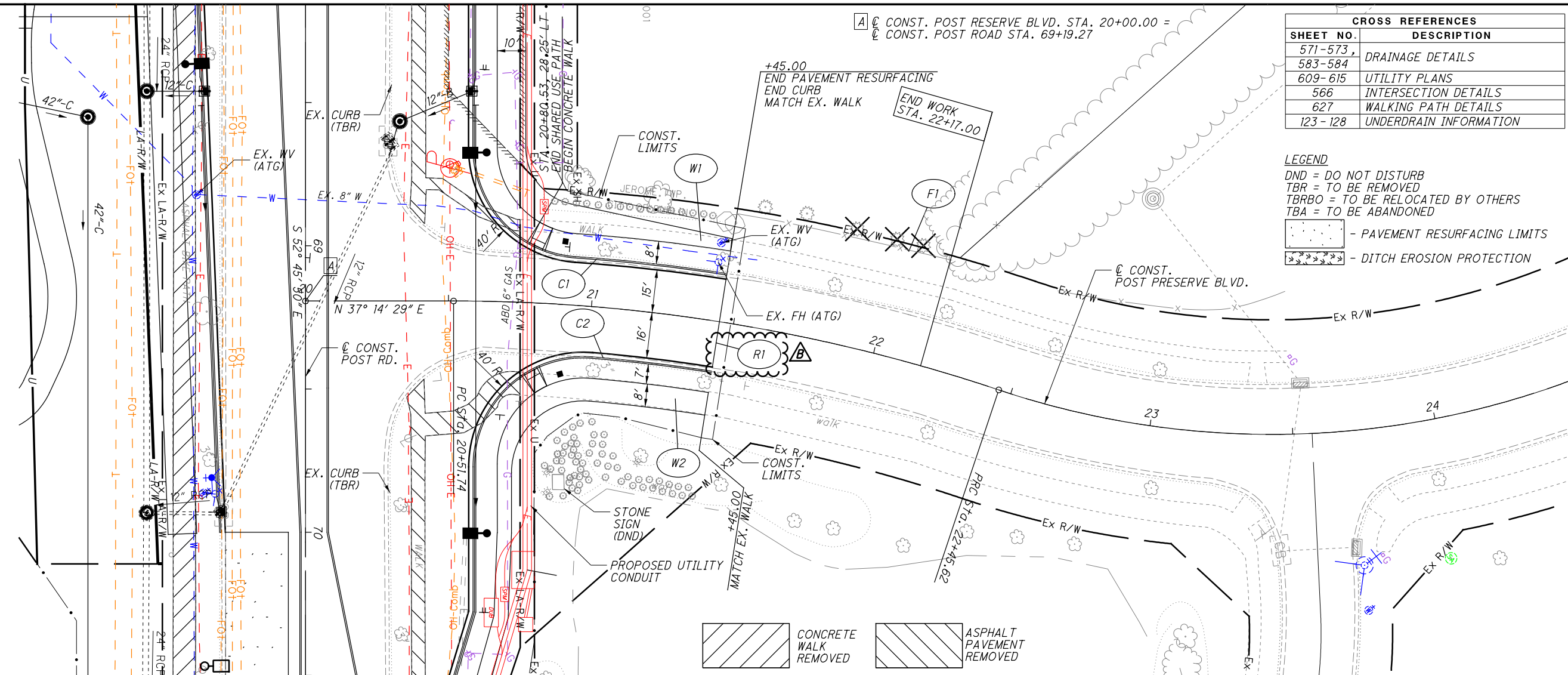
CROSS REFERENCES	
SHEET NO.	DESCRIPTION
583	DRAINAGE DETAILS
127	UNDERDRAIN INFORMATION

NO.	DESCRIPTION	REV. BY	DATE
B	ADDED BALLOON	ENR	2-28-2022



NOTE: PROPOSED STORM SEWER IS NOT SHOWN ON ROADWAY PROFILES. SEE CROSS REFERENCED DRAINAGE SHEETS FOR DETAILS.

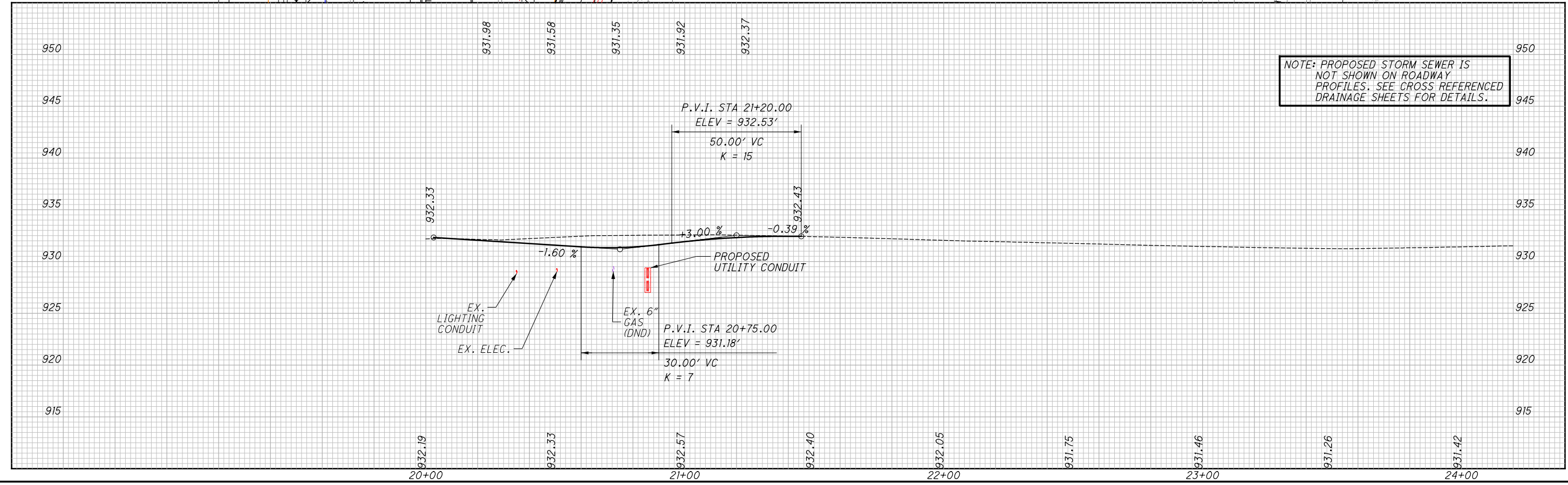
NO.	DESCRIPTION	REV. BY	DATE
B	ADDED BALLOON	ENR	2-28-2022



CROSS REFERENCES	
SHEET NO.	DESCRIPTION
571-573, 583-584	DRAINAGE DETAILS
609-615	UTILITY PLANS
566	INTERSECTION DETAILS
627	WALKING PATH DETAILS
123-128	UNDERDRAIN INFORMATION

LEGEND
 DND = DO NOT DISTURB
 TBR = TO BE REMOVED
 TBRBO = TO BE RELOCATED BY OTHERS
 TBA = TO BE ABANDONED

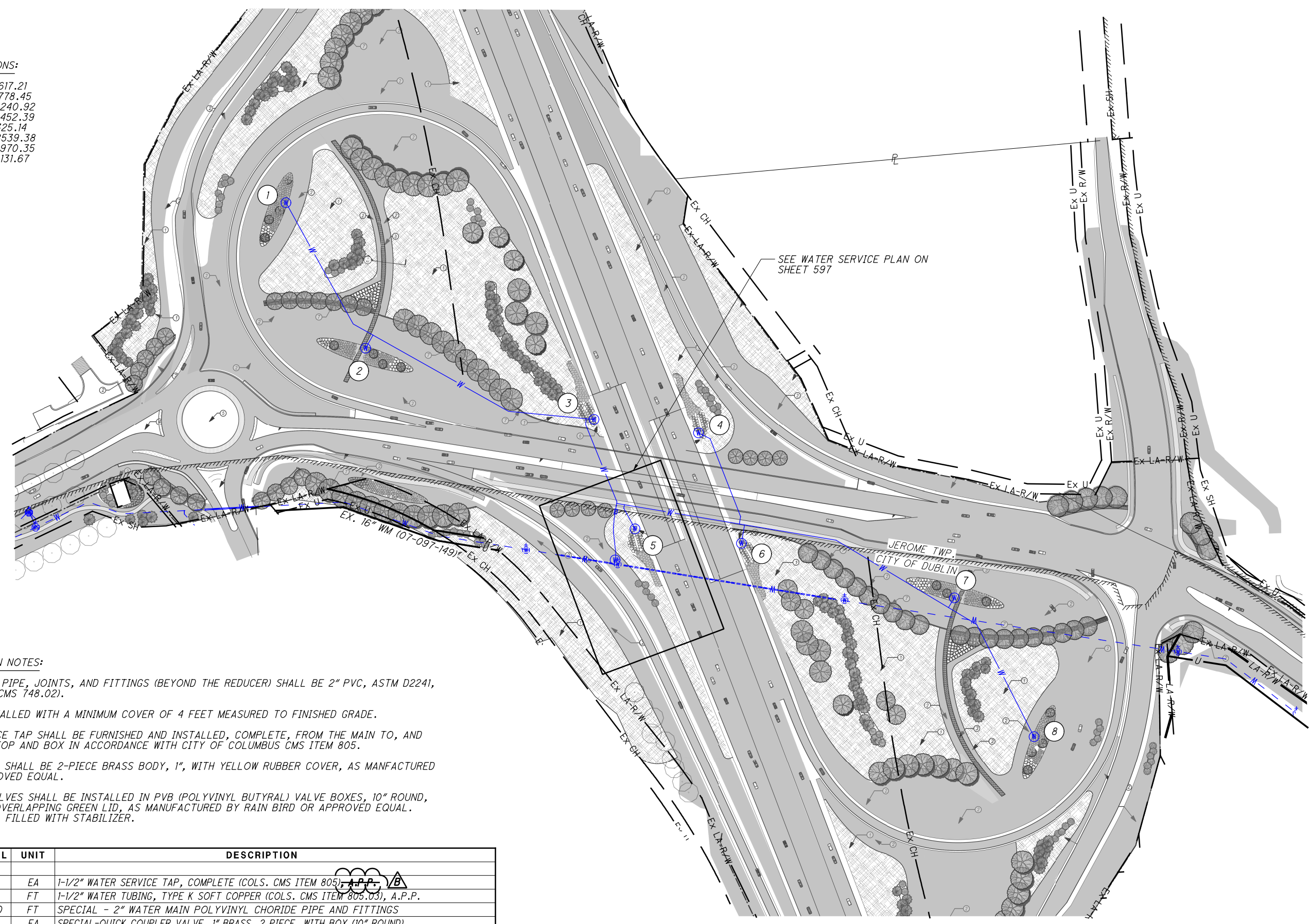
- PAVEMENT RESURFACING LIMITS
 - DITCH EROSION PROTECTION



NOTE: PROPOSED STORM SEWER IS NOT SHOWN ON ROADWAY PROFILES. SEE CROSS REFERENCED DRAINAGE SHEETS FOR DETAILS.

QUICK COUPLER LOCATIONS:

- 1 - N 769764.60, E 1777617.21
- 2 - N 769470.17, E 1777778.45
- 3 - N 769325.93, E 1778240.92
- 4 - N 769298.85, E 1778452.39
- 5 - N 769101.95, E 1778325.14
- 6 - N 769075.20, E 1778539.38
- 7 - N 768964.62, E 1778970.35
- 8 - N 768683.76, E 1779131.67



IRRIGATION AS PER PLAN NOTES:

ALL IRRIGATION SYSTEM PIPE, JOINTS, AND FITTINGS (BEYOND THE REDUCER) SHALL BE 2" PVC, ASTM D2241, SDR 21, 200 PSI (ODOT CMS 748.02).

ALL PIPE SHALL BE INSTALLED WITH A MINIMUM COVER OF 4 FEET MEASURED TO FINISHED GRADE.

THE 1-1/2" WATER SERVICE TAP SHALL BE FURNISHED AND INSTALLED, COMPLETE, FROM THE MAIN TO, AND INCLUDING, THE CURB STOP AND BOX IN ACCORDANCE WITH CITY OF COLUMBUS CMS ITEM 805.

QUICK COUPLING VALVES SHALL BE 2-PIECE BRASS BODY, 1", WITH YELLOW RUBBER COVER, AS MANUFACTURED BY RAIN BIRD, OR APPROVED EQUAL.

ALL QUICK COUPLING VALVES SHALL BE INSTALLED IN PVB (POLYVINYL BUTYRAL) VALVE BOXES, 10" ROUND, WITH BLACK BODY AND OVERLAPPING GREEN LID, AS MANUFACTURED BY RAIN BIRD OR APPROVED EQUAL. BOXES SHALL BE GRAVEL FILLED WITH STABILIZER.

ITEM	EXT.	TOTAL	UNIT	DESCRIPTION
638	98000	1	EA	1-1/2" WATER SERVICE TAP, COMPLETE (COLS. CMS ITEM 805), A.P.P.
638	20774	114	FT	1-1/2" WATER TUBING, TYPE K SOFT COPPER (COLS. CMS ITEM 805.03), A.P.P.
638	20414	2,350	FT	SPECIAL - 2" WATER MAIN POLYVINYL CHORIDE PIPE AND FITTINGS
638	98000	8	EA	SPECIAL-QUICK COUPLER VALVE, 1" BRASS, 2 PIECE, WITH BOX (10" ROUND)
638	98100	1	LUMP	SPECIAL-1 1/2" METER SETTING WITH BACK FLOW PREVENTER IN HEATED ENCLOSURE

NO.	DESCRIPTION	REV. BY	DATE
B	ITEM UPDATES	ENR	2-28-2022

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POWER SUPPLY FOR TRAFFIC SIGNALS

ELECTRICAL POWER SHALL BE OBTAINED FROM AEP. THE AT THE LOCATION INDICATED ON THE PLANS. POWER SUPPLIED SHALL BE 120/240 VOLTS.

B

NO.	DESCRIPTION	REV. BY	DATE
B	ADDED NOTE	EMW	2-28-2022

ITEM 632 - POWER SERVICE, AS PER PLAN

POWER CABLE SHALL BE PROVIDED AS PER 632.23 BETWEEN THE CONTROL CABINET AND THE TAP-IN LOCATION NOTED IN THE PLAN. WHEN THE POWER CABLE IS IN PLACE AND TWO WEEKS PRIOR TO THE TIME THAT ELECTRICAL POWER WILL BE REQUIRED, THE CONTRACTOR SHALL CONTACT THE AMERICAN ELECTRIC POWER COMPANY CUSTOMER SOLUTION CENTER (1-800-672-2231) WHICH WILL MAKE THE ELECTRICAL SERVICE CONNECTION. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR CONNECT POWER CABLE INTO THE POWER COMPANY'S CIRCUITS. A COMMON PHOTO ELECTRIC RELAY AND CONTRACTOR WITH ON/OFF/AUTO SWITCH SHALL CONTROL ALL STREET LIGHTING. THE VOLTAGE SUPPLIED SHALL BE 120/240 VOLTS. 120 VOLTS PER CIRCUIT WITH ONE CIRCUIT FOR TRAFFIC SIGNALS AND ONE CIRCUIT FOR STREET LIGHTING AND ILLUMINATED SIGNS. POWER AND SERVICE CABLE CONDUCTORS SHALL BE COPPER. THE NEUTRAL OF THE POWER CABLE SHALL ONLY BE GROUNDED AT THE MAIN POWER SERVICE DISCONNECT AT THE POWER METER CABINET AND AT THE CONTROLLER CABINET WITH UPS AND GENERATOR CONNECTIONS.

POWER SERVICE SHALL ALSO PROVIDE FOR THE FOLLOWING:

- SERVICE SHALL BE AEP METERED.
- POWER CABLE FROM THE POWER SOURCE SHALL BE ROUTED IN A SEPARATE CONDUIT TO THE DISCONNECT. A TRACER WIRE SHALL BE INSTALLED WITH THE POWER CABLE FROM THE POWER SOURCE TO THE POWER METER CABINET AND CONTINUED INTO THE TRAFFIC SIGNAL CABINET. THIS TRACER WIRE SHALL BE IDENTIFIED AT THE TRANSFORMER, AND BOTH CABINETS.
- THE POWER METER CABINET SHALL INCLUDE A PADLOCK EQUAL TO MASTER NO. 4B KA OR WILSON BOHANNON 66D WITH LOCK BODY OF BRONZE OR BRASS. ALL PADLOCKS SHALL USE THE SAME KEY AND FOUR KEYS SHALL BE GIVEN TO THE CITY.
- PROVIDE FOR ALL COPPER CONDUCTORS.
- ALL STREET LIGHTS INSTALLED ON THE COMBINATION SIGNAL SUPPORTS SHALL BE WIRED TO A 120 VOLT CIRCUIT CONTROLLED AT THE SIGNAL CONTROLLER CABINET AT EACH INTERSECTION AND INCLUDE THE FOLLOWING:
 - A CIRCUIT BREAKER (20 AMP) AND A 6-POLE LIGHTING CONTACTOR ON THE CABINET SIDE PANEL (ELECTRONICALLY HELD, OPEN STYLE)
 - A PHOTOCELL (3-POSITION ON-OFF-AUTO) RATED AS PER CITY SPECIFICATIONS, INSTALLED ON THE SIGNAL SUPPORT CLOSEST TO THE SIGNAL CONTROLLER
 - ALL PHOTOCELL WIRING TO THE CONTROLLER
 - ALL WIRING TO BE PROTECTED BY TWO DISCONNECTS FOR THE SIGNAL AND LIGHTING. (TWO 30 AMP CIRCUIT BREAKERS, ONE FOR LIGHTING AND ONE FOR SIGNAL)

PROVIDE AN ARC FLASH HAZARD WARNING SIGN ON THE OUTSIDE FRONT DOOR OF THE ENCLOSURE IN ACCORDANCE WITH THE CURRENT NATIONAL ELECTRICAL CODE PARAGRAPH 110.16. PROVIDE AN AVAILABLE FAULT CURRENT SIGN ON THE OUTSIDE FRONT DOOR OF THE POWER SERVICE DISCONNECT IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE PARAGRAPH 110.24.

MEASUREMENT AND PAYMENT SHALL BE AS PER ITEM 632.

WORK INSPECTION

THE CONTRACTOR SHALL PROVIDE THE PROJECT ENGINEER AND DISTRICT TRAFFIC ENGINEER WITH 72-HOUR NOTICE OF ANY SIGNAL WORK TO BE PERFORMED AT THE INTERSECTION SITE SO THAT INSPECTION SERVICES CAN BE SUPPLIED.

DOCUMENTATION

TWO (2) SET OF MANUALS AND CONTROLLER CABINET DRAWING WIRING DIAGRAMS SHALL BE SUPPLIED WITH EACH SEPARATE PIECE OF TRAFFIC CONTROL EQUIPMENT SUPPLIED, INCLUDING SYSTEM SOFTWARE OPERATION AND MAINTENANCE MANUALS. A HEAVY CLEAR PLASTIC ENVELOPE ATTACHED TO THE INSIDE OF THE CABINET DOOR SHALL BE PROVIDED FOR STORING WIRING DIAGRAMS (MINIMUM OF 9" X 12" IN SIZE). NO SEPARATE PAYMENT SHALL BE ALLOWED FOR THIS WORK AND THE COST SHALL BE INCLUDED IN THE VARIOUS BID ITEMS.

TWO (2) EACH WIRING DIAGRAMS AND TWO (2) EACH SERVICE/OPERATION MANUALS FOR EACH DIFFERENT PIECE OF EQUIPMENT SHALL BE PROVIDED.

ITEM 632 PEDESTRIAN SIGNAL HEAD (LED), (COUNTDOWN, TYPE D2, AS PER PLAN

PEDESTRIAN SIGNAL HEADS SHALL DISPLAY INTERNATIONAL SYMBOLS IN LIEU OF THE WORDS "WALK" AND "DON'T WALK" AND SHALL BE SUPPLEMENTED BY A PEDESTRIAN CHANGE INTERVAL COUNTDOWN TIMER. THE INTERNATIONAL SYMBOLS AND THE COUNTDOWN DISPLAY SHALL BE HOUSED IN A SINGLE ENCLOSURE. THE DISPLAY SHALL UTILIZE AN LED LIGHT SOURCE THAT COMPLIES WITH APPLICABLE STANDARDS PROMULGATED BY THE ODOT AND THE INSTITUTE OF TRANSPORTATION ENGINEERS.

COUNTDOWN TIMER REQUIREMENTS:

1. THE COUNTDOWN FEATURE SHALL AUTOMATICALLY ADJUST TO THE PROGRAMMED INTERVALS OF THE TRAFFIC CONTROLLER PER THE REQUIREMENTS OF 732.05
2. THE COUNTDOWN TIMER SHALL BE TO THE RIGHT OF THE INTERNATIONAL SYMBOLS.
3. COUNTDOWN NUMBERS SHALL BE CREATED USING TWO ROWS OF L.E.D.'S AND BE 9 INCHES HIGH.
4. USE GE LIGHTING SOLUTIONS TYPE GT1, MODEL NO. PS7-CFFI-26A (OR APPROVED EQUAL).

FINAL PLACEMENT OF PEDESTRIAN SIGNAL HEADS SHALL BE APPROVED BY THE ENGINEER.

THE HOUSING SHALL BE FIELD DRILLED TO FIT THE HINGED MOUNTING BRACKET AND REINFORCED WITH PARTS FURNISHED BY THE MANUFACTURER. HEADS SHALL BE MOUNTED ON TWO-HINGED TYPE BRACKETS WHICH ARE BOLTED TO THE POLE. BANDING WILL NOT BE PERMITTED. THE CONTRACTOR SHALL SUPPLY THE MOUNTING BRACKETS AND ALL OTHER NECESSARY HARDWARE.

THE BOTTOM OF THE PEDESTRIAN SIGNAL HEADS SHALL BE MOUNTED 8 FEET ABOVE PEDESTRIAN PATHWAY. THE BRACKETS SHALL BE HINGED TO ALLOW THE PEDESTRIAN HEADS TO SWING AWAY FROM EACH OTHER. A CLEAR, SHATTERPROOF, LENS SHALL COVER THE FACE OF THE SIGNAL HEAD AND BE OF SUFFICIENT STRENGTH TO PROTECT THE COMPONENTS FROM ROADSIDE HAZARDS AND VANDALISM.

THE SIGNAL HOUSINGS SHALL BE BLACK POLYCARBONATE.

PAYMENT SHALL BE AS PER ITEM 632.

ITEM 809 - ADVANCE RADAR DETECTION, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING A WAVETRONIX SMARTSENSOR ADVANCE DETECTION UNIT (MODEL SS-200E). THE DETECTION UNIT SHALL INCLUDE THE FOLLOWING:

1. POWER SHALL BE PROVIDED FROM THE TRAFFIC CABINET.
2. ALL REQUIRED INPUTS CARDS SHALL BE INCLUDED IN THE TRAFFIC CABINET AND SHALL BE COMPATIBLE WITH CALTRANS, NEMA TS1 AND NEMA TS2 DETECTOR RACKS. THE CARDS SHALL PROVIDE TRUE PRESENCE DETECTOR CALLS OR CONTACT CLOSURE TO THE TRAFFIC CONTROLLER.
3. THE UNIT SHALL BE MOUNTED DIRECTLY TO A POLE OR MAST ARM, AS RECOMMENDED BY THE MANUFACTURER. CABLE(S) SHALL BE PROVIDED AS REQUIRED AND RECOMMENDED BY THE MANUFACTURER.
4. SURGE PROTECTION DEVICES, AS RECOMMENDED BY THE MANUFACTURER SHALL BE INCLUDED BOTH AT THE POLE WHERE THE UNIT IS LOCATED TO PROTECT THE UNIT AND IN THE TRAFFIC CABINET TO PROTECT THE CABINET ELECTRONICS.
5. THE MANUFACTURER'S REPRESENTATIVE SHALL BE ON SITE DURING INSTALLATION AND TESTING AND SHALL PROVIDE ONSITE TRAINING ON THE SETUP, OPERATION AND MAINTENANCE OF THE UNIT.
6. A SERIAL TO ETHERNET COMMUNICATIONS MODULE AND ETHERNET CABLE (MINIMUM 7 FEET).
7. THE POWER SUPPLY AND COMMUNICATION MODULES SHALL BE SECURED TO A SINGLE PANEL THAT CAN BE MOUNTED INTERIOR TO THE TRAFFIC CABINET. THE PANEL SHALL INCLUDE MODULAR-PLUG STYLE CONNECTIONS FOR UP TO FOUR (4) SENSOR CABLES. ADDITIONAL SENSORS MAY BE HARD-WIRED TO THE COMMUNICATION MODULES, AS NECESSARY.
8. THE CONTRACTOR SHALL INSTALL THE RADAR DETECTION PRIOR TO MILLING/DISABLING EXISTING LOOPS.
9. THE INSTALLATION SHALL INCLUDE ALL CONTROLLER PROGRAMMING FOR COMPLETE INSTALLATION, WHICH INCLUDES MODIFICATIONS FOR REMOVAL OF EXISTING DETECTION.

PAYMENT FOR ITEM 809 ADVANCE RADAR DETECTION, AS PER PLAN SHALL BE MADE AT THE CONTRACT UNIT PRICE FOR EACH UNIT, COMPLETE AND IN PLACE INCLUDING ALL REQUIRED CABINET HARDWARE, MOUNTING BRACKETS, CABLES, CONDUIT, CONNECTIONS TESTED AND ACCEPTED, AND ANY OTHER NECESSARY HARDWARE TO ESTABLISH A FULLY FUNCTIONAL DETECTION SYSTEM.

ITEM 809 - STOP-LINE RADAR DETECTION, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING A WAVETRONIX SMARTSENSOR MATRIX DETECTION UNIT. THE DETECTION UNIT SHALL INCLUDE THE FOLLOWING:

1. POWER SHALL BE PROVIDED FROM THE TRAFFIC CABINET.
2. ALL REQUIRED INPUTS CARDS SHALL BE INCLUDED IN THE TRAFFIC CABINET AND SHALL BE COMPATIBLE WITH CALTRANS, NEMA TS1 AND NEMA TS2 DETECTOR RACKS. THE CARDS SHALL PROVIDE TRUE PRESENCE DETECTOR CALLS OR CONTACT CLOSURE TO THE TRAFFIC CONTROLLER.
3. THE UNIT SHALL BE MOUNTED DIRECTLY TO A POLE OR MAST ARM, AS RECOMMENDED BY THE MANUFACTURER. CABLE(S) SHALL BE PROVIDED AS REQUIRED AND RECOMMENDED BY THE MANUFACTURER.
4. SURGE PROTECTION DEVICES, AS RECOMMENDED BY THE MANUFACTURER SHALL BE INCLUDED BOTH AT THE POLE WHERE THE UNIT IS LOCATED TO PROTECT THE UNIT AND IN THE TRAFFIC CABINET TO PROTECT THE CABINET ELECTRONICS.
5. THE MANUFACTURER'S REPRESENTATIVE SHALL BE ON SITE DURING INSTALLATION AND TESTING AND SHALL PROVIDE ONSITE TRAINING ON THE SETUP, OPERATION AND MAINTENANCE OF THE UNIT.
6. A SERIAL TO ETHERNET COMMUNICATIONS MODULE AND ETHERNET CABLE (MINIMUM 7 FEET).
7. THE POWER SUPPLY AND COMMUNICATION MODULES SHALL BE SECURED TO A SINGLE PANEL THAT CAN BE MOUNTED INTERIOR TO THE TRAFFIC CABINET. THE PANEL SHALL INCLUDE MODULAR-PLUG STYLE CONNECTIONS FOR UP TO FOUR (4) SENSOR CABLES. ADDITIONAL SENSORS MAY BE HARD-WIRED TO THE COMMUNICATION MODULES, AS NECESSARY.
8. THE CONTRACTOR SHALL INSTALL THE RADAR DETECTION PRIOR TO MILLING/DISABLING EXISTING LOOPS.
9. THE INSTALLATION SHALL INCLUDE ALL CONTROLLER PROGRAMMING FOR COMPLETE INSTALLATION, WHICH INCLUDES MODIFICATIONS FOR REMOVAL OF EXISTING DETECTION.

PAYMENT FOR ITEM 809 STOP-LINE RADAR DETECTION, AS PER PLAN SHALL BE MADE AT THE CONTRACT UNIT PRICE FOR EACH UNIT, COMPLETE AND IN PLACE INCLUDING ALL REQUIRED CABINET HARDWARE, MOUNTING BRACKETS, CABLES, CONDUIT AND CONNECTIONS TESTED AND ACCEPTED.

ITEM 625 - GROUND ROD, AS PER PLAN

IN ADDITION TO ITEM 625 AND 725, THIS ITEM SHALL ALSO INCLUDE A CADWELD WIRE CONNECTION AT THE GROUND ROD (AS PER CITY OF DUBLIN SPECIFICATIONS), THE COST OF WHICH SHALL BE INCLUDED IN THE GROUND ROD INSTALLATION.

IT IS THE INTENT OF THIS ITEM THAT THE NO. 4 AWG GROUNDING CONDUCTORS BE INSTALLED IN THE 3/4" CONDUIT BETWEEN THE GROUND ROD AND THE ENCLOSURE GROUND BAR, OR SERVICE NEUTRAL AT MAIN POWER SERVICE DISCONNECT, AS PER CITY OF DUBLIN SPECIFICATIONS.

GROUND ROD TESTING AND ADHERENCE TO RESISTANCE REQUIREMENTS MUST BE SATISFIED AS SPECIFIED IN THE CMS. PAYMENT SHALL BE CONSIDERED INCIDENTAL TO THIS ITEM OF WORK.

PAYMENT SHALL BE PER ITEM 625.

GUARANTEE

THE CONTRACTOR SHALL GUARANTEE THAT THE TRAFFIC CONTROL EQUIPMENT INSTALLED AS PART OF THIS CONTRACT SHALL OPERATE SATISFACTORY FOR A PERIOD OF 1 YEAR FOLLOWING COMPLETION OF THE 10 DAY PERFORMANCE TEST. IN THE EVENT OF UNSATISFACTORY OPERATIONS, THE CONTRACTOR SHALL CORRECT FAULTY INSTALLATIONS, MAKE REPAIRS AND REPLACE DEFECTIVE PARTS WITH NEW PARTS FROM THE SAME MANUFACTURER. MATERIAL AND LABOR COST INCURRED IN CORRECTING THE UNSATISFACTORY OPERATIONS SHALL BE BORNE BY THE CONTRACTOR. CUSTOMARY MANUFACTURERS' GUARANTEES FOR THE FOREGOING ITEMS SHALL BE TURNED OVER TO THE CITY OF DUBLIN FOLLOWING ACCEPTANCE OF THE EQUIPMENT. THE COST OF GUARANTEEING THE TRAFFIC CONTROL EQUIPMENT SHALL BE INCIDENTAL TO AND INCLUDED IN THE CONTRACT UNIT PRICE OF THE VARIOUS ITEMS MAKING UP THE SIGNAL INSTALLATION.

633 UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF CMS 633 AND 733, THE UPS CABINET SHALL INCLUDE A GENERATOR POWER PANEL AND INLET AS DETAILED WITHIN. THE BACKUP UNIT SHALL BE A SYSTEM BASED ON MYERS POWER PRODUCTS MODEL MP2000E OR APPROVED EQUAL. BATTERIES SHALL BE COMPLETE, MOUNTED AND CONTAINED WITHIN THE BATTERY COMPARTMENT OF THE P-UPS CONTROLLER CABINET. THE BATTERY BACKUP SYSTEM EQUIPMENT SHALL BE MOUNTED IN THE MAIN CONTROLLER COMPARTMENT OF THE CABINET.

THE CONTROLLER AND BATTERY BACK-UP CABINET SHALL APPEAR AS ONE CABINET FROM THE OUTSIDE WITH TWO INTERNAL COMPARTMENTS ACCESSED BY SEPARATE DOORS (P58UPS).

THE UPS OUTPUT NOTIFICATIONS FOR ON BATTERY, BATTERY 2 HOUR TIMER, OFF BATTERY AND LOW BATTERY SHALL BE WIRED INTO THE TRAFFIC SIGNAL CABINET BACK PANEL TO PROVIDE SPECIAL STATUS ALARMS FOR EACH OUTPUT INTO THE SIGNAL CONTROLLER.

THE CABINET'S EXTERIOR FINISH SHALL MATCH THE COLOR OF THE MAIN TRAFFIC SIGNAL CONTROLLER CABINET.

ALL CONNECTIONS, WIRING, ATTACHMENT HARDWARE AND MISCELLANEOUS MATERIALS FOR BOTH ATTACHING THE CABINETS AND FOR FULL OPERATION OF THE UPS SYSTEM SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THIS ITEM. PAYMENT SHALL BE PER ITEM 633 AND SHALL BE MADE AT THE UNIT PRICE BID PER EACH, COMPLETE, IN PLACE, TESTED AND ACCEPTED.

ITEM 632 - SIGNAL SUPPORT FOUNDATION, AS PER PLAN

THE FORMED TOP OF THE ANCHOR BASE POLE FOUNDATION SHALL BE ORIENTED PARALLEL TO THE SIDEWALK OR BACK-OF-CURB OR EDGE-OF-PAVEMENT AS SHOWN ON THE SIGNAL PLANS. A MINIMUM OF TWO CONDUIT ELLS, USED OR UNUSED, SHALL BE INSTALLED IN EACH SIGNAL SUPPORT FOUNDATION.

CONTRACTOR SHALL VACUUM EXCAVATE PROPOSED FOUNDATION LOCATIONS PRIOR TO INSTALLATION.

PAYMENT SHALL BE AS PER ITEM 632.

ITEM 625 - LUMINAIRE, CONVENTIONAL, SOLID STATE (LED), TYPE III, 110 WATT, AS PER PLAN

LUMINAIRES SHALL BE MANUFACTURED BY CREE, WITH THE FOLLOWING PART NUMBER: ARE-EDG-3M-DA-(LED COUNT)-E-UL-BZ-525-40K, AND SHALL BE INSTALLED ON THE SIGNAL SUPPORT AS INDICATED WITHIN. LUMINAIRES SHALL BE COATED DARK BRONZE TO MEET FEDERAL SPECIFICATION NO. 595B AND CONFORM TO COLOR NO. 20040.

ANY ADDITIONAL HARDWARE, INCLUDING MOUNTING ARM, REQUIRED TO ATTACH THE LUMINAIRE TO THE SIGNAL SUPPORT SHALL BE CONSIDERED INCIDENTAL TO THIS ITEM.

PAYMENT SHALL BE PER ITEM 625.

SIGNAL ACTIVATION

PRIOR TO ACTIVATING THE NEW TRAFFIC SIGNAL TO STOP-AND-GO MODE AND/OR REMOVING THE EXISTING TRAFFIC SIGNAL FROM SERVICE, ALL ITEMS IN THE PROPOSED SIGNAL PLAN SHALL BE FULLY COMPLETED. (I.E., VEHICLE DETECTION, PEDESTRIAN SIGNAL HEADS, ETC.). IF THERE ARE CONSTRUCTABILITY ISSUES (I.E., ROADWAY WIDENING, ETC.) THAT PREVENT THE SIGNAL FROM BEING COMPLETED PRIOR TO ACTIVATION, IT SHALL BE BROUGHT TO THE ATTENTION OF THE PROJECT ENGINEER AND DISTRICT TRAFFIC ENGINEER. THE DISTRICT TRAFFIC ENGINEER WILL THEN REVIEW, APPROVE OR REJECT PROPOSALS TO ACTIVATE THE TRAFFIC SIGNAL PRIOR TO COMPLETION.

THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER AND DISTRICT TRAFFIC ENGINEER AT LEAST 10 WORKING DAYS PRIOR TO SCHEDULING THE FINAL INSPECTION OF THE SIGNAL INSTALLATION. FINAL INSPECTION IS NOT CONSIDERED COMPLETE UNTIL DESIGNATED DISTRICT TRAFFIC PERSONNEL INSPECT THE TRAFFIC SIGNAL AND ISSUE WRITTEN APPROVAL. IF ISSUES ARE FOUND DURING THE FINAL INSPECTION THAT EFFECT THE SAFETY OF THE TRAVELING PUBLIC AND/OR THE EFFICIENCY OF THE INTERSECTION, THE SIGNAL SHALL NOT BE ACTIVATED ON THE PROPOSED DATE. ANY PUNCH LIST ITEMS THAT ARE FOUND SHALL BE CORRECTED AND REINSPECTED BY DISTRICT TRAFFIC PERSONNEL PRIOR TO FINAL ACCEPTANCE. ODOT FORCES SHALL ONLY ASSUME DAY TO DAY MAINTENANCE OF THE TRAFFIC SIGNAL AFTER FINAL WRITTEN ACCEPTANCE HAS BEEN ISSUED.