

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

LAW-243-10.26

FAYETTE TOWNSHIP
LAWRENCE COUNTY

PROJECT DESCRIPTION

REMEDATION OF TWO LANDSLIDES ALONG 0.19 MILES
OF SR-243 IN FAYETTE TOWNSHIP, LAWRENCE COUNTY,
BY DRILLED SHAFT RETAINING WALL CONSTRUCTION,
SOLDIER PILE AND LAGGING WALL CONSTRUCTION, WITH
MINOR PAVEMENT REPAIRS.

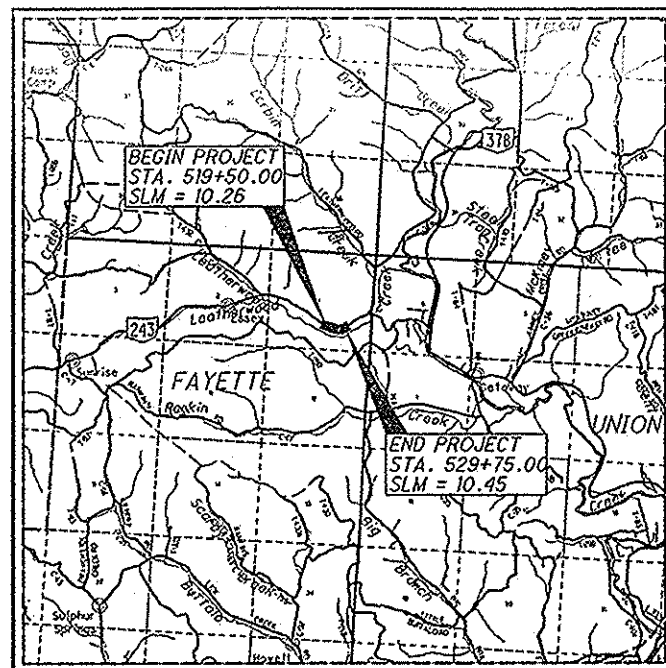
PROJECT EARTH DISTURBED AREA: 0.803 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA: 0.125 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA: 0.928 ACRES
(NOI NOT REQUIRED)

2013 SPECIFICATIONS

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

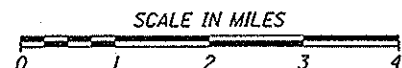
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LOCATION MAP

LATITUDE: N 38°33'05" LONGITUDE: W 82°26'19"



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

DESIGN DESIGNATION

CURRENT ADT (2016)	460
DESIGN YEAR ADT (2036)	590
DESIGN HOURLY VOLUME (2036)	70
DIRECTIONAL DISTRIBUTION	54%
TRUCKS (24 HOUR B&C)	2.0%
T _d	1.0%
DESIGN SPEED	55 MPH
LEGAL SPEED	55 MPH
DESIGN FUNCTIONAL CLASSIFICATION:	
05 MAJOR COLLECTOR (RURAL)	
NHS PROJECT	NO

DESIGN EXCEPTIONS

None

UNDERGROUND UTILITIES	
CONTACT BOTH SERVICES TWO WORKING DAYS BEFORE YOU DIG.	
 OHIO Utilities Protection SERVICE (Non-members must be called directly)	Call Before You Dig 1-800-362-2764
OIL & GAS PRODUCERS UNDERGROUND PROTECTION SERVICE 1-800-925-0988	

PLAN PREPARED BY:



445 HUTCHINSON AVENUE
SUITE 540
COLUMBUS, OH 43235
(614) 438-1700

ENGINEERS SEAL



SIGNED: *Shawn O. Vanchan*
DATE: 4/1/2016

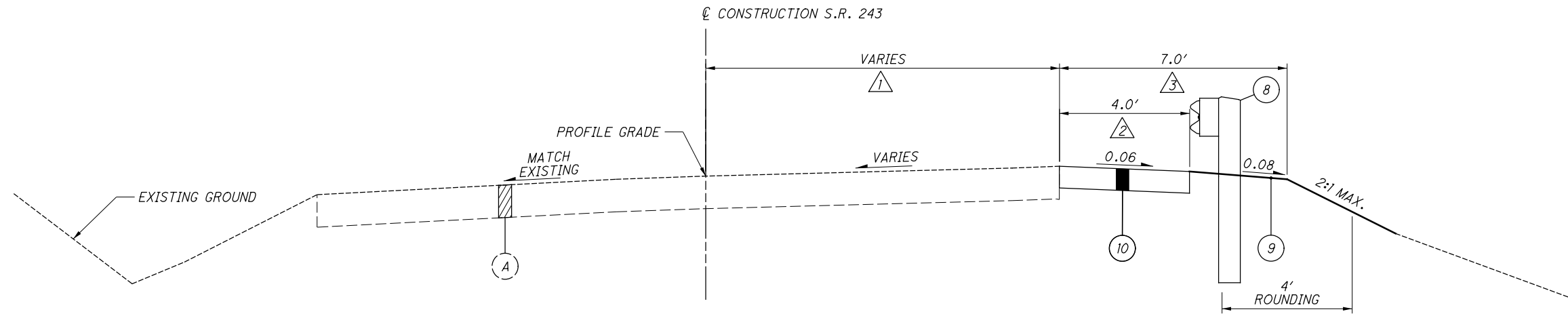
STANDARD CONSTRUCTION DRAWINGS						SUPPLEMENTAL SPECIFICATIONS	SPECIAL PROVISIONS
BP-3.1	7/18/14	MT-96.20	7/19/13			800-2013	4/15/16
		MT-96.26	7/19/13				
DM-1.1	1/15/16	MT-97.10	7/18/14			832	1/17/14
DM-1.2	1/18/13	MT-101.70	1/17/14				
DM-4.3	1/15/16	MT-101.90	7/17/15			961	10/17/14
DM-4.4	1/15/16	MT-105.10	7/19/13				
MGS-1.1	7/19/13	TC-61.10	1/17/14				
MGS-2.1	7/19/13	TC-61.30	7/18/14				
MGS-4.2	7/19/13	TC-65.10	1/17/14				
MGS-5.2	7/19/13	TC-65.11	7/18/14				
MGS-5.3	7/19/13						
RM-4.2	4/18/14						
MT-96.11	7/17/15						

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

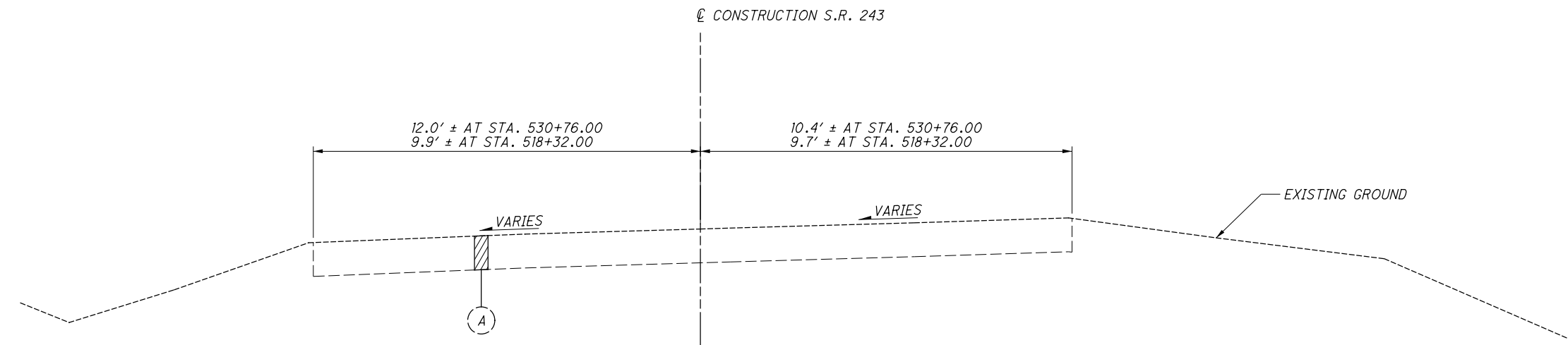
APPROVED: *Vaughan E. Wilson*
DATE: 4-7-16 DISTRICT DEPUTY DIRECTOR

APPROVED: *Shawn O. Vanchan*
DATE: 4-25-16 DIRECTOR, DEPARTMENT OF
TRANSPORTATION

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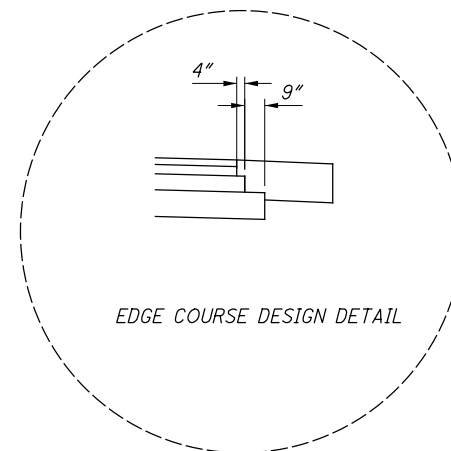
NORMAL SECTION - S.R. 243
STA. 518+32.00 TO STA. 519+50.00 = 118.00'
STA. 529+75.00 TO STA. 530+76.00 = 101.00'



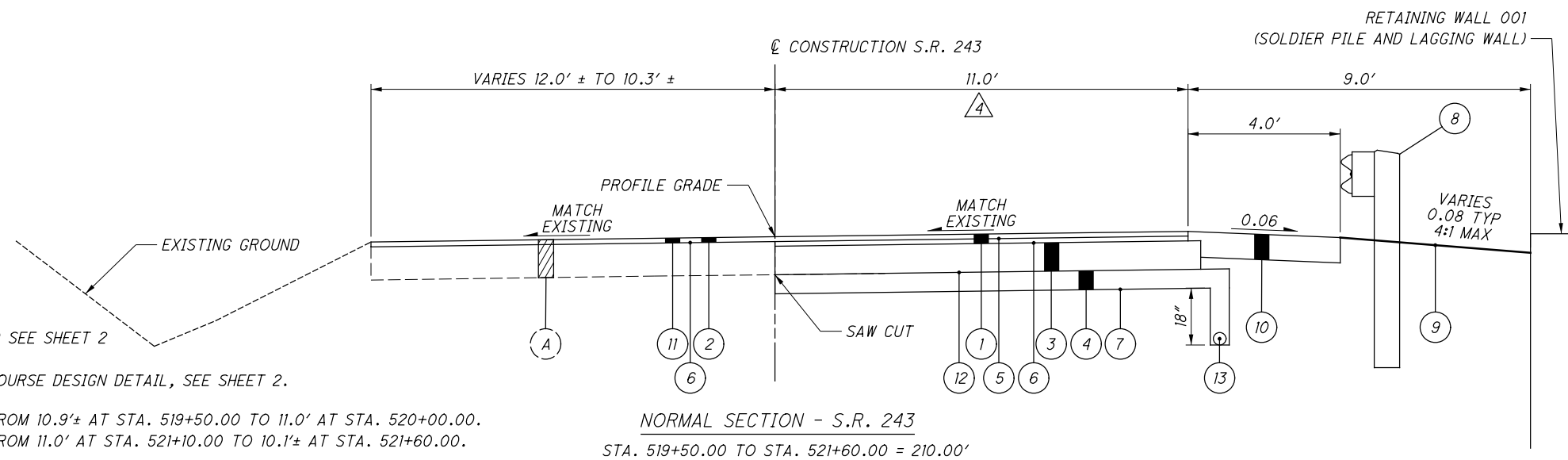
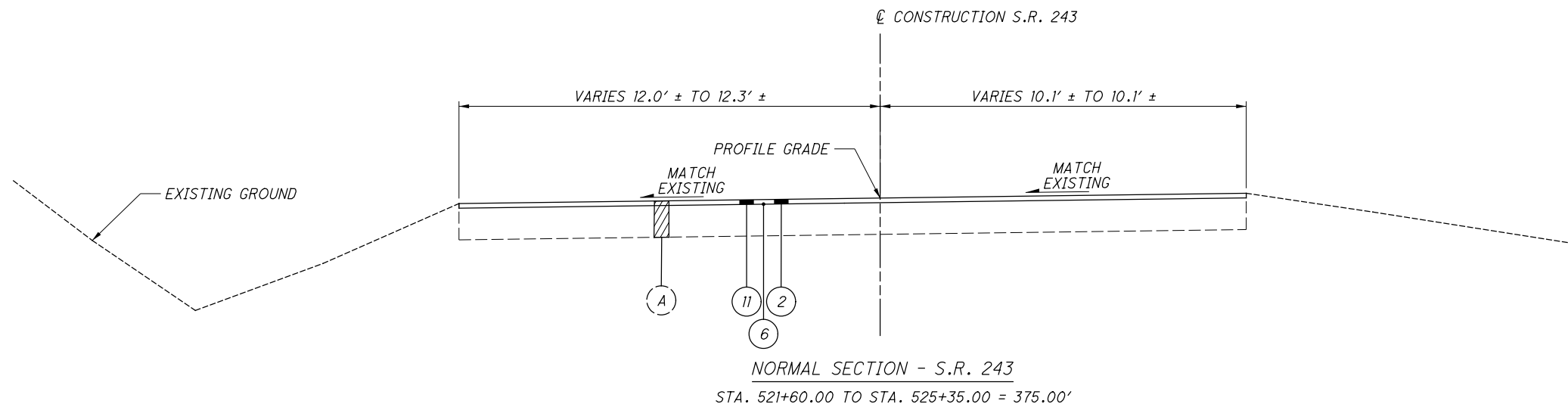
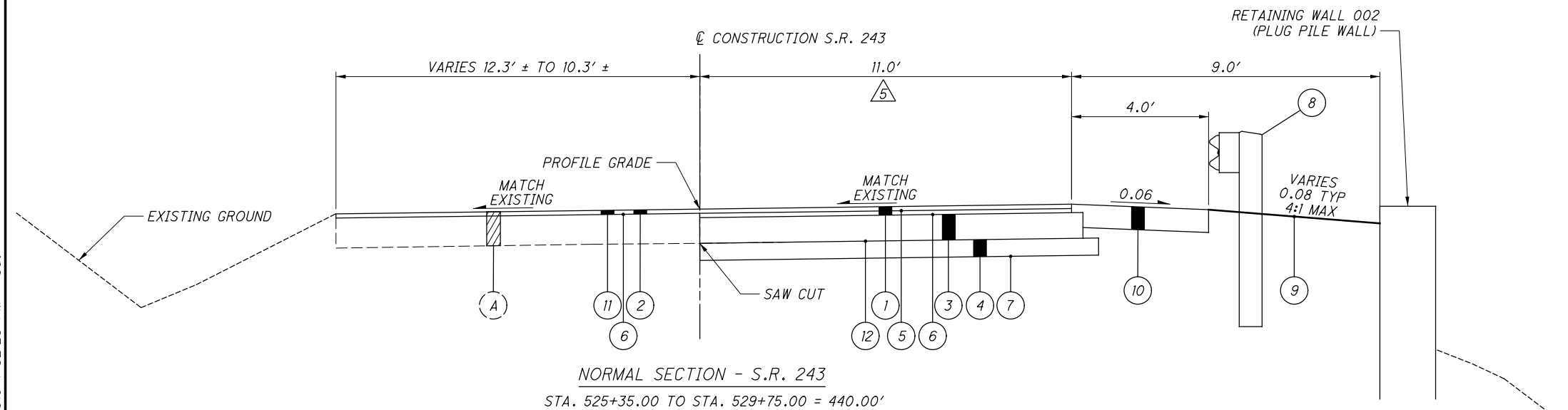
EXISTING PAVEMENT SECTION - S.R. 243
STA. 518+32.00
STA. 530+76.00

LEGEND

- 1 ITEM 441 - 3" ASPHALT SURFACE COURSE, TYPE 1, (448), AS PER PLAN
- 2 ITEM 441 - 1 1/2" ASPHALT SURFACE COURSE, TYPE 1, (448), PG 64-22
- 3 ITEM 301 - 9 " ASPHALT CONCRETE BASE, PG 64-22
- 4 ITEM 304 - 6 " AGGREGATE BASE
- 5 ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE (APPLIED AT A RATE OF 0.04 GAL/SY)
- 6 ITEM 407 - TACK COAT (APPLIED AT A RATE OF 0.075 GAL/SY)
- 7 ITEM 204 - SUBGRADE COMPACTION
- 8 ITEM 606 - GUARDRAIL, TYPE MGS, AS PER PLAN
- 9 ITEM 659 - SEEDING AND MULCHING
- 10 ITEM 411 - 8" STABILIZED CRUSHED AGGREGATE
- 11 ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE 1 1/2" DEPTH
- 12 ITEM 408 - PRIME COAT (APPLIED AT A RATE OF 0.4 GAL/SY)
- 13 ITEM 611 - 4" BASE PIPE UNDERDRAIN
- A EXISTING ASPHALT (12"±)



- 1 VARIES FROM 9.7'± AT STA. 518+32.00 TO 10.9'± AT STA. 519+50.00.
VARIES FROM 10.8'± AT STA. 529+75.00 TO 10.4'± AT STA. 530+76.00.
- 2 TRANSITION FROM 0' AT STA. 518+32.00 TO 4' AT STA. 518+52.93.
TRANSITION FROM 4' AT STA. 530+36.31 TO 3.1' AT STA. 530+76.00.
- 3 TRANSITION FROM 0' AT STA. 518+32.00 TO 7' AT STA. 518+52.93.
TRANSITION FROM 7' AT STA. 530+36.31 TO 3.1' AT STA. 530+76.00.



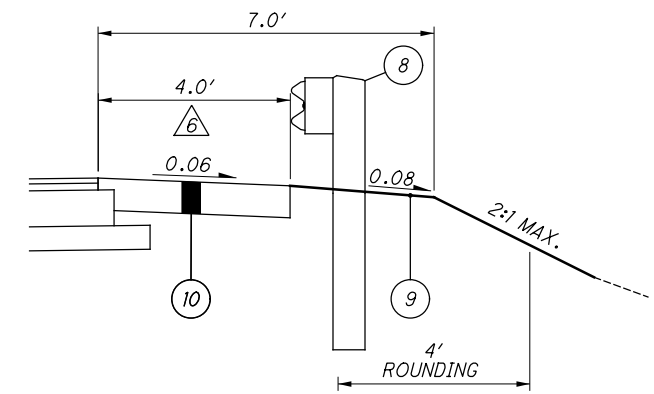
NOTES

1. FOR LEGEND SEE SHEET 2
2. FOR EDGE COURSE DESIGN DETAIL, SEE SHEET 2.

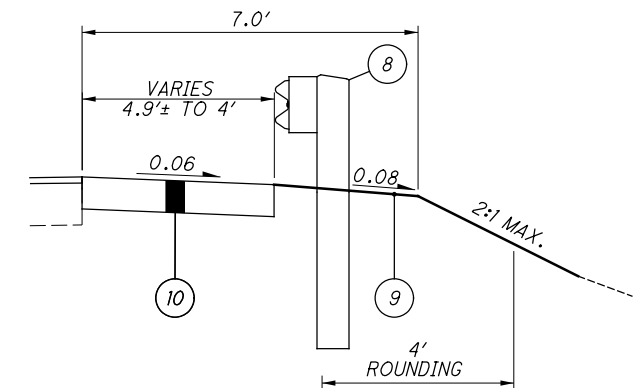
4 TRANSITION FROM 10.9'± AT STA. 519+50.00 TO 11.0' AT STA. 520+00.00.
TRANSITION FROM 11.0' AT STA. 521+10.00 TO 10.1'± AT STA. 521+60.00.

5 TRANSITION FROM 10.1'± AT STA. 525+35.00 TO 11.0' AT STA. 525+90.00.
TRANSITION FROM 11.0' AT STA. 529+25.00 TO 10.8'± AT STA. 529+75.00.

△6 TRANSITION FROM 4.9' AT STA. 525+35.00 TO 4' AT STA. 525+90.00

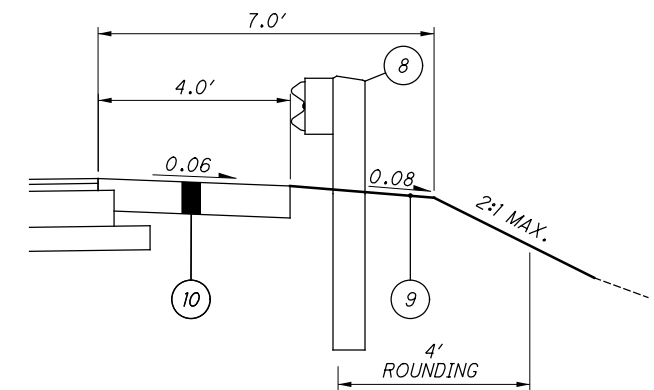


PARTIAL SECTION #3 - S.R. 243

$$\begin{aligned} \text{STA. } 525+35.00 \text{ TO STA. } 525+43.02 &= 8.02' \\ \text{STA. } 529+56.24 \text{ TO STA. } 529+75.00 &= 18.76' \end{aligned}$$


PARTIAL SECTION #2 - S.R. 243

STA. 521+60.00 TO STA. 521+75.00 = 15.00'
STA. 525+26.75 TO STA. 525+35.00 = 8.25'



PARTIAL SECTION #1 - S.R. 243

$$\begin{array}{l} \text{STA. 519+50.00 TO STA. 519+55.00} = 5.00' \\ \text{STA. 521+29.00 TO STA. 521+60.00} = 31.00' \end{array}$$

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ROUNDING

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

UTILITIES

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

TELEPHONE:	TELEVISION:
FRONTIER COMMUNICATIONS 1315 ALBERT STREET PORTSMOUTH, OHIO 45662 MR. PAUL MONTAVON 740-354-0512	ARMSTRONG CABLE SERVICES 9651 COUNTY ROAD 1 SOUTH POINT, OHIO 45680 MR. LEONARD HARVEY 740-894-3886
WATER:	ELECTRIC:
HECLA WATER ASSOCIATION 3190 SR 141 IRONTON, OHIO 45638 MR. TIM DALTON 740-533-0526 EXT. 5	BUCKEYE RURAL ELECTRIC CO-OP P.O. BOX 200 RIO GRANDE, OHIO 45674 MR. STEVE ELLIOTT 740-379-2025 EXT. 140

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

SURVEYING PARAMETERS

PRIMARY PROJECT CONTROL MONUMENTS GOVERN ALL POSITION-ING ON ODOT PROJECTS. SEE THIS SHEET OF THE PLANS FOR A TABLE CONTAINING PROJECT CONTROL INFORMATION.

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

PROJECT CONTROL

POSITIONING METHOD: OPUS RS GPS
MONUMENT TYPE: TYPE B

VERTICAL POSITIONING

ORTHOMETRIC HEIGHT DATUM: NAVD88
GEOID: 12B

HORIZONTAL POSITIONING

REFERENCE FRAME: NAD83(2011)
ELLIPSOID: GRS80
MAP PROJECTION: LAMBERT CONFORMAL CONIC
COORDINATE SYSTEM: OHIO STATE PLANE SOUTH ZONE
COMBINED SCALE FACTOR: 1.00003181
ORIGIN OF COORDINATE
SYSTEM: N:179896.130, E:1969478.750

USE THE POSITIONING METHODS AND MONUMENT TYPE USED IN THE ORIGINAL SURVEY TO RESTORE ALL MONUMENTS RELATED TO PRIMARY PROJECT CONTROL THAT ARE DAMAGED OR DESTROYED BY CONSTRUCTION ACTIVITIES. RESTORE THE DAMAGED OR DESTROYED MONUMENTS IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 823.

UNITS ARE IN U.S. SURVEY FEET. USE THE FOLLOWING CONVERSION FACTOR: 1 METER = 3.280833333 U.S. SURVEY FEET.

WORK LIMITS

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

CLEARING AND GRUBBING

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

SEEDING AND MULCHING

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

659, SEEDING AND MULCHING 1997 SQ. YD.

659, REPAIR SEEDING AND MULCHING 100 SQ. YD

659, COMMERCIAL FERTILIZER 0.27 TON

659, LIME 0.42 ACRES

659, WATER 6 M. GAL.

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

ITEM 606 - ANCHOR ASSEMBLY, MGS TYPE E

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

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

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

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

ITEM 606 - ANCHOR ASSEMBLY, MGS TYPE E (CONT.)

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.

ITEM 606 - GUARDRAIL, TYPE MGS, AS PER PLAN

WOODEN POSTS WILL BE PRE-BORED (NOT DRIVEN) OR STEEL POSTS CAN BE DRIVEN IF PREFERRED.

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' 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.

PART-WIDTH CONSTRUCTION

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

BENCHMARKS

BENCHMARK #1 5/8" X 30" REBAR W/GPD STAMP STA. 519+61.42, 15.90' RT N180028.43, E1969228.81 ELEV. 609.71	BENCHMARK #3 5/8" X 30" REBAR W/GPD STAMP STA. 525+34.98, 14.13' RT N179810.16, E1969762.19 ELEV. 605.12
BENCHMARK #2 5/8" X 30" REBAR W/GPD STAMP STA. 522+40.27, 15.16' RT N179896.13, E1969478.75 ELEV. 607.76	BENCHMARK #4 5/8" X 30" REBAR W/GPD STAMP STA. 529+61.09, 16.46' RT N179790.74, E1970191.25 ELEV. 602.97

PAVEMENT ELEVATIONS		
Station	PG Elev.	Rt. Pvmt. Elev.
519+00	608.84	609.22
519+25	609.29	609.7
519+50	609.93	610.24
519+75	610.37	610.69
520+00	610.72	610.98
520+25	610.97	611.16
520+50	610.97	611.11
520+75	610.69	610.68
521+00	610.31	610.32
521+25	609.85	610.08
521+50	609.48	609.79
521+75	609.24	609.54
522+00	609.09	609.33
525+25	605.98	605.68
525+50	605.64	606.13
526+00	605.18	605.46
526+50	604.94	605.3
527+00	604.86	604.86
527+50	604.92	604.89
528+00	605.43	605.25
528+50	605.13	605.5
529+00	604.43	605.01
529+50	603.52	604.13
530+00	602.13	602.95
530+50	600.12	600.54

CENTERLINE REFERENCE S.R. 243 - GROUND COORDINATES						
	STATION	OFFSET	SIDE	NORTHING	EASTING	DESCRIPTION
CURVE 1	518+92.19	0.00	CL	180,077.2897	1,969,179.6355	P.C.
	519+33.34	0.71	LT	180,053.4950	1,969,213.2107	P.I.
	519+74.46	0.00	CL	180,032.0562	1,969,248.3372	P.T.
CURVE 2	520+43.16	0.00	CL	179,996.2698	1,969,306.9716	P.C.
	521+65.13	7.23	LT	179,932.7276	1,969,411.0826	P.I.
	522+85.96	0.00	CL	179,895.3912	1,969,527.1978	P.T.
CURVE 3	523+78.49	0.00	CL	179,867.0641	1,969,615.2945	P.C.
	524+71.57	1.73	LT	179,838.5726	1,969,703.9023	P.I.
	525+64.56	0.00	CL	179,816.7486	1,969,794.3835	P.T.
CURVE 4	525+64.56	0.00	CL	179,816.7486	1,969,794.3835	P.C.
	526+83.77	6.03	LT	179,788.7980	1,969,910.2658	P.I.
	528+02.16	0.00	CL	179,784.6901	1,970,029.4005	P.T.
CURVE 5	528+02.16	0.00	CL	179,784.6901	1,970,029.4005	P.C.
	528+35.16	0.98	LT	179,783.5529	1,970,062.3801	P.I.
	528+68.08	0.00	CL	179,786.3672	1,970,095.2591	P.T.
CURVE 6	528+68.08	0.00	CL	179,786.3672	1,970,095.2591	P.C.
	529+04.73	1.91	LT	179,789.4929	1,970,131.7771	P.I.
	529+41.11	0.00	CL	179,800.1161	1,970,166.8553	P.T.
CURVE 7	529+41.11	0.00	CL	179,800.1161	1,970,166.8553	P.C.
	529+82.36	1.70	LT	179,812.0714	1,970,206.3321	P.I.
	530+23.42	0.00	CL	179,830.3557	1,970,243.3054	P.T.

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ITEM 610 - SPECIAL - RETAINING WALL, MISC.: PRECAST CONCRETE LAGGING PANELS

THE NEAR FACE AND SIDES OF THE CONCRETE PANEL SHALL BE SEALED WITH ITEM 512, SEALING OF CONCRETE SURFACES (EPOXY-URETHANE). THE COLOR OF THE URETHANE SHALL BE FEDERAL COLOR NUMBER 17778 (LIGHT NEUTRAL).

THIS WORK CONSISTS OF FURNISHING AND PLACING PRECAST REINFORCED CONCRETE PANELS BETWEEN THE SOLDIER PILES TO FUNCTION AS LAGGING FOR THE RETAINING WALL. PROVIDE PRECAST CONCRETE LAGGING FROM A PRECAST CONCRETE MANUFACTURER CERTIFIED UNDER SUPPLEMENT 1073. PROVIDE CONCRETE WITH A 28-DAY DESIGN STRENGTH OF AT LEAST 4000 PSI ACCORDING TO CMS 499. PROVIDE EPOXY COATED REINFORCING STEEL ACCORDING TO CMS 709.00. IN LIEU OF EPOXY COATING, A CORROSION INHIBITING CONCRETE ADMIXTURE MAY BE USED AT THE SPECIFIED DOSAGE RATE. A QUALIFIED PRODUCT LIST OF CORROSION INHIBITING ADMIXTURES IS ON FILE AT THE LABORATORY. MANUFACTURERS SHOULD RECOGNIZE THAT THE CORROSION INHIBITOR MAY AFFECT THE STRENGTH, ENTRAINED AIR CONTENT, WORKABILITY, ETC. OF THEIR CONCRETE MIXES. THE MANUFACTURER'S CHOICE TO USE ONE OF THE CORROSION INHIBITORS DOES NOT ALLEVIATE MEETING ALL DESIGN REQUIREMENTS. DO NOT ALLOW THE DIMENSIONS OF THE REINFORCING STEEL TO VARY BY MORE THAN 1/4 INCH. PERMANENTLY MARK EACH PANEL TO INDICATE THE FACE TO BE PLACED AGAINST THE SOIL. PLACE THE PANEL BETWEEN THE FLANGES OF THE SOLDIER PILES AND BEARING AGAINST THE FLANGES ON THE EXPOSED SIDE OF THE WALL.

THE DEPARTMENT WILL PAY FOR PRECAST LAGGING AT THE CONTRACT UNIT PRICE PER EACH FOR ITEM SPECIAL, PRECAST CONCRETE LAGGING.

ITEM 507 - STEEL PILES, MISC.: W14X120 STEEL BEAM, FURNISHED
ITEM 507 - STEEL PILES, MISC.: HP12X53 STEEL BEAM, FURNISHED
ITEM 507 - STEEL PILES, MISC.: W18X76 SOLDIER PILE

THIS WORK SHALL CONSIST OF FURNISHING STRUCTURAL STEEL MEMBERS THAT CONFORM TO ASTM A572, GRADE 50 AND CMS 711.01. DO NOT FIELD WELD OR SPLICE THOSE PARTS OF THE STRUCTURAL STEEL MEMBERS THAT WILL BE ABOVE GROUND WITH PANEL SEATS BEING THE EXCEPTION.

THE INDIVIDUAL LENGTHS SHOWN IN THE SOLDIER PILE WALL DETAILS TABLE ON SHEET 31, INDIVIDUAL LENGTHS SHOWN IN THE PLUG PILE RETAINING WALL DETAILS (REINFORCED DRILLED SHAFTS) TABLE ON SHEET 35, AND THE TOTAL LENGTHS SHOWN IN THE ESTIMATED QUANTITIES ARE CALCULATED FROM THE ESTIMATED TOP OF ROCK ELEVATIONS AND THE ACTUAL LENGTH OF EACH STEEL PILE MAY VARY. THE CONTRACTOR SHOULD ANTICIPATE THAT THE STEEL PILES WILL NEED TO BE TRIMMED OR SPLICED TO THE TOP OF PLUG PILE WALL. THE CONTRACTOR MAY WANT TO ORDER ADDITIONAL LENGTH OF EACH TYPE OF STEEL PILE FOR SPLICING.

THE DEPARTMENT WILL MEASURE STEEL PILES ALONG THE AXIS OF THE STEEL PILE FROM THE TOP OF PILE ELEVATION TO THE BOTTOM OF THE DRILLED SHAFT, AS DETERMINED BY THE ENGINEER. THE DEPARTMENT WILL PAY FOR STEEL BEAMS AT THE CONTRACT UNIT PRICE PER FOOT.

ITEM 524 - DRILLED SHAFTS, 30" DIAMETER, ABOVE BEDROCK, AS PER PLAN
ITEM 524 - DRILLED SHAFTS, 30" DIAMETER, INTO BEDROCK, AS PER PLAN

THIS WORK CONSISTS OF FURNISHING AND INSTALLING DRILLED SHAFTS FOR EITHER SOLDIER PILE AND LAGGING WALLS OR REINFORCED PLUG PILES. THE DRILLED SHAFTS ARE REINFORCED WITH STEEL PILES INSTEAD OF REINFORCING STEEL CAGES. THE SOLDIER PILES EXTEND ABOVE THE TOP OF THE DRILLED SHAFT. THE STEEL PILES HAVE A 3" COVER BELOW THE TOP OF THE DRILLED SHAFT. FURNISH AND INSTALL THE DRILLED SHAFTS IN ACCORDANCE WITH CMS 524 EXCEPT AS MODIFIED AND SUPPLEMENTED BELOW.

EXCAVATE THE HOLE FOR THE DRILLED SHAFT WITHIN 3 INCHES OF THE PLAN LOCATION IN THE HORIZONTAL PLANE. THE DESIGN FOR THE SOLDIER PILE AND LAGGING WALL IS BASED ON A MINIMUM LENGTH OF PILE OF 10.50 FEET FROM THE TOP OF THE WALL TO BOTTOM OF LAGGING REGARDLESS OF THE TOP OF ROCK DEPTH. THE DESIGN FOR THE REINFORCED PLUG PILE WALL IS BASED ON A MINIMUM HEIGHT OF PILE 19.00 FEET FROM THE TOP OF THE WALL TO BOTTOM OF DRILLED SHAFT REGARDLESS OF TOP OF ROCK DEPTH.

PLACE THE STEEL PILE WITHIN THE HOLE SO IT IS VERTICAL AND NOT INCLINED MORE THAN 1 INCH BETWEEN THE TOP AND BOTTOM. PLACE THE STEEL PILE SO THAT THE FLANGES ARE PARALLEL TO THE CENTERLINE OF THE ROW OF DRILLED SHAFTS. DO NOT ALLOW THE ORIENTATION OF THE FLANGES TO VARY BY MORE THAN 10 DEGREES. SUPPORT THE STEEL PILE SO THAT IT DOES NOT MOVE DURING CONCRETE PLACEMENT.

USE CLASS OCI CONCRETE ACCORDING TO CMS 511. PLACE CONCRETE TO THE ELEVATION FOR THE BOTTOM OF THE PRECAST LAGGING OR TO THE TOP OF THE DRILLED SHAFT. THE CONTRACTOR MAY PLACE CONCRETE USING THE FREE USING THE FREE FALL METHOD PROVIDED THE DEPTH OF WATER IS LESS THAN 6 INCHES AND THE CONCRETE FALLS WITHOUT STRIKING THE SIDES OF THE HOLE. POURING CONCRETE ALONG THE WEB OF THE STEEL PILE IS ACCEPTABLE. CASING MAY BE REQUIRED FOR DRILLED SHAFT ABOVE BEDROCK.

CHECK THE POSITION, THE VERTICAL ALIGNMENT AND ORIENTATION OF THE STEEL PILE IMMEDIATELY AFTER CONCRETE PLACEMENT. MAKE CORRECTIONS AS NECESSARY TO MEET THE ABOVE TOLERANCES.

PLACE PRECAST LAGGING SO THAT THE STEEL PILE FLANGE OVERLAPS THE END OF THE LAGGING BY AT LEAST 3 INCHES AT BOTH ENDS OF THE LAGGING.

SEQUENCE OF INSTALLATION:
THE INSTALLATION SEQUENCE SHALL BE SUCH THAT NO DRILLED SHAFT IS INSTALLED ADJACENT TO EITHER AN OPEN DRILLED SHAFT EXCAVATION OR A DRILLED SHAFT IN WHICH THE CONCRETE HAS LESS THAN A 48 HOUR CURE. INSTALLING THE SHAFTS IN AN ALTERNATING SEQUENCE OR ANY OTHER SEQUENCE THAT MEETS THIS CRITERIA IS PERMISSIBLE.

PROTECTION OF UNATTENDED OPEN SHAFTS:
CARE SHALL BE EXERCISED AS TO COVER UNATTENDED OPEN SHAFTS. TEMPORARY COVERS SHALL BE OF ADEQUATE STRENGTH TO PREVENT A PERSON OR ANIMAL FROM FALLING IN. NO DRILLED SHAFT EXCAVATION SHALL BE LEFT UN-POURED OVERNIGHT.

LOADING OF PILES:
THE PILES SHALL NOT BE LOADED NOR ANY EXCAVATION PERFORMED IN FRONT OF THE WALL FOR 14 DAYS AFTER THE PLACING OF CONCRETE.

ITEM 524 - DRILLED SHAFTS, 30" DIAMETER, ABOVE BEDROCK, AS PER PLAN (CONTINUED)
ITEM 524 - DRILLED SHAFTS, 30" DIAMETER, INTO BEDROCK, AS PER PLAN (CONTINUED)

ACCESS:
THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MEANS AND METHODS USED TO CONSTRUCT THE DRILLED SHAFTS AND PLACE CONCRETE PANELS. ANY TEMPORARY GRADING, AGGREGATE, DRAINAGE, SHEETING, ETC. NEEDED FOR ACCESS TO THE WORK AREA SHALL BE INCLUDED IN THE BID PRICE FOR THE DRILLED SHAFTS. THE COST OF ANY EXCAVATION AND SUBSEQUENT PLACEMENT OF EMBANKMENT (PER ITEM 203 - EMBANKMENT) SHALL BE INCLUDED IN THE VARIOUS BID ITEMS FOR THE DRILLED SHAFTS AND CONCRETE PANELS. NO SEPARATE PAYMENT WILL BE MADE.

METHOD OF MEASUREMENT:
THE DEPARTMENT WILL MEASURE DRILLED SHAFTS ABOVE BEDROCK, AS PER PLAN, ALONG THE AXIS OF THE DRILLED SHAFT FROM THE EXISTING GROUND SURFACE TO THE TOP OF BEDROCK, AS DETERMINED BY THE ENGINEER. THE DEPARTMENT WILL MEASURE DRILLED SHAFTS INTO BEDROCK, AS PER PLAN, ALONG THE AXIS OF THE DRILLED SHAFT FROM TOP OF BEDROCK TO THE BOTTOM OF THE DRILLED SHAFT, AS DETERMINED BY THE ENGINEER.

PAYMENT IS FULL COMPENSATION FOR CONSTRUCTING THE DRILLED SHAFTS, INCLUDING FURNISHING AND PLACING CONCRETE, AND REMOVAL OF CONCRETE FROM AROUND THE SOLDIER PILE IN ORDER TO PLACE PRECAST LAGGING. PAYMENT FOR SOIL OVERBURDEN DRILLING, WHICH IS GROUND LEVEL TO THE TOP OF SHAFT, SHALL BE INCLUSIVE OF ITEM 524, DRILLED SHAFTS, 30" DIAMETER, ABOVE BEDROCK.

ITEM 524 - DRILLED SHAFTS, MISC.: PLUG PILE, 30" DIAMETER, UNREINFORCED, AS PER PLAN

THIS WORK SHALL BE AS PER ITEM 524 EXCEPT A REINFORCING CAGE WILL NOT BE USED IN THE SHAFT. EACH UNREINFORCED DRILLED SHAFT SHALL BE CENTERED BETWEEN EACH REINFORCED DRILLED SHAFT AND DRILLED TO THE TOP OF BEDROCK AND BACKFILLED WITH UNREINFORCED CLASS OCI CONCRETE.

PERFORM QA/QC PER CMS SECTION 511.04.

CASING MAY BE REQUIRED FOR THESE DRILLED SHAFTS.

PAYMENT FOR LABOR, QA/QC, EQUIPMENTS AND MATERIALS FOR THE ABOVE SHALL BE INCLUDED IN THE FOOT CONTRACT PRICE FOR ITEM 524, DRILLED SHAFTS, MISC: PLUG PILE, 30" DIAMETER, UNREINFORCED, AS PER PLAN.

ITEM 441 - ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), AS PER PLAN

CMS 441 SHALL APPLY EXCEPT THAT THE MAXIMUM LIFT THICKNESS FOR THIS ASPHALT CONCRETE COURSE IS 1½". A PG64-22 BINDER SHALL BE USED.

PROFILE AND ALIGNMENT

PLACE THE PROPOSED PAVEMENT TO FOLLOW THE ALIGNMENT AND PROFILE OF THE EXISTING PAVEMENT. PLACE THE PROPOSED ASPHALT CONCRETE OVERLAY AS SHOWN ON THE TYPICAL SECTIONS.

ITEM SPECIAL - MAILBOX SUPPORT

THIS WORK SHALL CONSIST OF FURNISHING AND ERECTING MAILBOX SUPPORTS AND ANY ASSOCIATED MOUNTING HARDWARE IN ACCORDANCE WITH PLAN DETAILS, AND ATTACHING AN OWNER-SUPPLIED MAILBOX AT LOCATIONS SPECIFIED IN THE PLAN, OR OTHERWISE ESTABLISHED BY THE ENGINEER.

WOOD POSTS SHALL BE NOMINAL 4 INCHES BY 4 INCHES SQUARE OR 4.5 INCHES DIAMETER ROUND, AND CONFORM TO 710.14.

STEEL POSTS SHALL BE NOMINAL PIPE SIZE 2 INCHES I.D., AND CONFORM TO AASHTO M 181.

ALL HARDWARE INCLUDING BUT NOT LIMITED TO PLATES, SCREWS, BOLTS, AND ETC. SHALL BE COMMERCIAL-GRADE GALVANIZED STEEL.

POSTS SHALL BE SET PER THE FIRST PARAGRAPH OF 606.03, AND SHALL IN NO INSTANCE BE ENCASED IN CONCRETE.

SUPPORT HARDWARE SHALL ACCOMMODATE EITHER A SINGLE OR A DOUBLE MAILBOX INSTALLATION, AND NO MORE THAN TWO BOXES MAY BE MOUNTED ON A SINGLE POST.

THE MAILBOX SHALL BE SECURELY AND NEATLY ATTACHED BY THE CONTRACTOR TO THE NEW SUPPORT. THE CONTRACTOR SHALL FURNISH ALL NECESSARY ATTACHMENT HARDWARE (NUTS, BOLTS, PLATES, SPACERS, AND WASHERS) AS NECESSARY TO ACCOMMODATE THE COMPLETE INSTALLATION.

IN THE ABSENCE OF A NEW BOX SUPPLIED BY THE OWNER, THE CONTRACTOR SHALL SALVAGE THE EXISTING BOX AND PLACE IT ON THE NEW SUPPORT. DUE CARE SHALL BE EXERCISED IN SUCH AN OPERATION, AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING OR REPLACING ANY BOX DAMAGED BY IMPROPER HANDLING ON HIS PART, AS JUDGED AND DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE LOCAL POST MASTER REGARDING THE TIMING OF THE MOVEMENT OF ANY MAILBOX TO A NEW LOCATION.

PAYMENT UNDER THIS ITEM SHALL BE LIMITED TO FINAL PERMANENT INSTALLATIONS. TEMPORARY INSTALLATIONS SHALL BE IN ACCORDANCE WITH 107.10. HOWEVER, THE SAME MATERIAL AND SIZE LIMITATIONS AS FOR PERMANENT INSTALLATIONS SHALL APPLY.

MAILBOX SUPPORTS, COMPLETE IN PLACE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER EACH, FOR ITEM SPECIAL MAILBOX SUPPORT SYSTEM, (SINGLE) (DOUBLE).

ITEM 202 - STRUCTURE REMOVED

AN EXISTING DRIVEN PILE RETAINING WALL WITHIN THE CONSTRUCTION LIMITS OF THE PROPOSED RETAINING WALL 001 WILL NEED TO BE PARTIALLY REMOVED TO INSTALL THE DRILLED SHAFTS AND PRECAST PANELS. A LUMP SUM STRUCTURE REMOVED PAY ITEM HAS BEEN ADDED TO THE GENERAL SUMMARY ON SHEET 12 TO COMPENSATE THE CONTRACTOR FOR ANY REMOVAL OF THE EXISTING PILING WITHIN THE LIMITS OF RETAINING WALL 001.

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ITEM 614, MAINTAINING TRAFFIC (AT ALL TIMES)

NO WORK SHALL BEGIN PRIOR TO FEBRUARY 1, 2017, UNLESS APPROVED BY THE DISTRICT CONSTRUCTION ENGINEER.

A MINIMUM OF 1 LANE OF ALTERNATING DIRECTIONAL TRAFFIC SHALL BE MAINTAINED AT ALL TIMES BY USE OF THE EXISTING PAVEMENT, THE COMPLETED PAVEMENT, ITEM 615 PAVEMENT FOR MAINTAINING TRAFFIC.

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

BEFORE THE WORK BEGINS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER THE NAME(S) AND TELEPHONE NUMBER(S) OF A PERSON OR PERSONS WHO CAN BE CONTACTED TWENTY-FOUR (24) HOURS PER DAY BY THE OHIO DEPARTMENT OF TRANSPORTATION AND ALL INTERESTED POLICE AGENCIES. THIS PERSON OR PERSONS SHALL BE RESPONSIBLE FOR PLACING OR REPLACING NECESSARY TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

THE CONTRACTOR WILL ADVISE THE DISTRICT PUBLIC INFORMATION OFFICER AT (740) 774-8834, OR FAX (740) 773-2710 FOURTEEN (14) DAYS PRIOR TO THE START OF CONSTRUCTION ACTIVITIES. THE PROJECT ENGINEER WILL PROVIDE ASSISTANCE/CLARIFICATION FOR ANY QUESTIONS.

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

TRENCH FOR WIDENING

TRENCH EXCAVATION FOR BASE WIDENING SHALL BE ONLY ON ONE SIDE OF THE PAVEMENT AT A TIME. THE OPEN TRENCH SHALL BE ADEQUATELY MAINTAINED AND PROTECTED WITH DRUMS OR BARRICADES AT ALL TIMES. PLACEMENT OF PROPOSED SUBBASE AND BASE MATERIAL SHALL FOLLOW AS CLOSELY AS POSSIBLE BEHIND EXCAVATION OPERATIONS. THE LENGTH OF WIDENING TRENCH WHICH IS OPEN AT ANY ONE TIME SHALL BE HELD TO A MINIMUM AND SHALL AT ALL TIMES BE SUBJECT TO APPROVAL OF THE ENGINEER.

OVERNIGHT TRENCH CLOSING

THE BASE WIDENING SHALL BE COMPLETED TO A DEPTH OF NO MORE THAN 3 INCHES BELOW THE EXISTING PAVEMENT BY THE END OF EACH WORK DAY. NO TRENCH SHALL BE LEFT OPEN OVERNIGHT EXCEPT FOR A SHORT LENGTH (25 FEET OR LESS) OF A WORK SECTION AT THE END OF THE TRENCH. IN CASE WORK MUST BE SUSPENDED BECAUSE OF INCLEMENT WEATHER OR OTHER REASONS, THE TRENCH FOR THE UNCOMPLETED BASE WIDENING SHALL BE BACKFILLED AT THE DIRECTION OF THE ENGINEER.

WORK ZONE MARKINGS AND SIGNS

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY SHEET 12 FOR USE AT LOCATIONS IDENTIFIED BY THE ENGINEER FOR WORK ZONE PAVEMENT MARKINGS AND SIGNS PER THE REQUIREMENTS OF CMS 614.04 AND 614.11.

ITEM 614, WORK ZONE EDGE LINE, CLASS I, TYPE I 0.47 MILE
ITEM 614, WORK ZONE STOP LINE, CLASS I, TYPE I 20 FEET

EARTHWORK FOR MAINTAINING TRAFFIC

THE FOLLOWING QUANTITIES HAVE BEEN INCLUDED IN THE PLAN FOR INFORMATION ONLY:

EXCAVATION FOR MAINTAINING TRAFFIC 114 CU. YD.
EMBANKMENT FOR MAINTAINING TRAFFIC 107 CU. YD.

WHEN UNDERCUTS ARE NECESSARY FOR MAINLINE PAVEMENT OR EMBANKMENT CONSTRUCTION, EVALUATE THE NEED FOR TEMP-ORARY ROAD UNDERCUTS IF WITHIN A CLOSE PROXIMITY TO THE MAINLINE UNDERCUTS. A GEOTECHNICAL EVALUATION SHOULD BE CONSIDERED TO DETERMINE IF THE EXISTING SOIL CONDITIONS ARE ADEQUATE TO SUPPORT THE TEMPORARY ROAD. ADDITIONAL SOIL BORINGS ALONG THE TEMPORARY ROAD ARE NOT NORMALLY REQUIRED.

WORK ZONE IMPACT ATTENUATOR FOR 24" WIDE HAZARDS (BIDIRECTIONAL)

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING A NON-GATING IMPACT ATTENUATOR. FURNISH AN IMPACT ATTENUATOR FROM THE OFFICE OF ROADWAY ENGINEERING'S APPROVED LIST FOR WORK ZONE IMPACT ATTENUATORS, FROM THE ROADWAY STANDARDS WEB PAGE FOR ROADWAY STANDARDS APPROVED PRODUCTS.

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

THE CONTRACTOR SHALL REPAIR OR REPLACE A DAMAGED UNIT WITHIN 24 HOURS OF A DAMAGING IMPACT.

WHEN BIDIRECTIONAL DESIGNS ARE SPECIFIED, THE CONTRACTOR SHALL SUPPLY APPROPRIATE TRANSITIONS.

WHEN GATING IMPACT ATTENUATORS ARE DESIRED, THE CONTRACTOR SHALL SUBMIT DOCUMENTATION TO THE ENGINEER FOR ACCEPTANCE.

THE COST FOR THE ADDITIONAL BARRIER REQUIRED FOR A GATING IMPACT ATTENUATOR SHALL BE INCLUDED IN THE COST OF THE GATING IMPACT ATTENUATOR.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT AND MAINTAIN A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM, INCLUDING ALL RELATED BACKUPS, TRANSITIONS, LEVELING PADS, HARDWARE AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

FULLY-ACTUATED OPERATION OF WORK ZONE TRAFFIC SIGNAL

THE WORK ZONE SIGNAL CONTROL REQUIRED FOR THIS PROJECT AND SHOWN ON SHEETS 9 THRU 11 AND TRAFFIC SCDS MT-96.11, 96.20 AND 96.26 SHALL BE FULLY TRAFFIC-ACTUATED AND OPERATE IN A MANNER SIMILAR TO THAT DESCRIBED IN SECTION 733.02 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS.

THE CONTRACTOR SHALL ALSO DESIGN, FURNISH, INSTALL AND MAINTAIN A TRAFFIC DETECTOR ON EACH TRAFFIC APPROACH WHICH WILL RELIABLY DETECT ALL LEGAL TRAFFIC APPROACHING (BUT NOT LEAVING) THE SIGNAL AS IT PASSES OR WAITS IN THE DESIGNATED DETECTOR ZONE SHOWN IN THE PLANS. DETECTOR DESIGNS WHICH DO NOT PROVIDE RELIABLE DETECTION, FREE FROM FALSE CALLS, SHALL BE IMMEDIATELY REPLACED BY THE

FOR DETAILS OF SIGNAL TIMING REFER TO SHEET 9.

DELINEATION OF PORTABLE AND PERMANENT BARRIER

BARRIER REFLECTORS AND OBJECT MARKERS SHALL BE INSTALLED ON ALL PORTABLE BARRIER (PB) USED FOR TRAFFIC CONTROL AND ON PERMANENT CONCRETE BARRIER (INCLUDING BRIDGE PARAPETS) LOCATED WITHIN 5 FEET OF THE EDGE OF THE ADJACENT TRAVEL LANE.

DELINEATION OF PORTABLE AND PERMANENT BARRIER (CONTD.)

BARRIER REFLECTORS SHALL CONFORM TO C&MS 626, EXCEPT THAT THE SPACING SHALL BE AS PER TRAFFIC SCD MT-101.70. OBJECT MARKERS AND THEIR INSTALLATION SHALL CONFORM TO C&MS 614.03 AND SCD MT-101.70. WHEN THE PB CONTAINS GLARE SCREEN, ONE SET OF THREE VERTICAL STRIPES OF SHEETING SHALL BE CONSIDERED EQUIVALENT TO AN OBJECT MARKER, ONE-WAY.

INCREASED BARRIER DELINEATION, AS SPECIFIED HEREIN, SHALL BE INSTALLED ON ALL PB AND CONCRETE PERMANENT BARRIER LOCATED WITHIN 5 FEET OF THE EDGE OF THE TRAVELED LANE ALONG TAPERS AND TRANSITION AREAS AND ALONG CURVES (OUTSIDE ONLY) WITH DEGREE OF CURVATURE GREATER THAN OR EQUAL TO 3 DEGREES.

THE INCREASED BARRIER DELINEATION SHALL CONSIST OF EITHER DELINEATION PANELS OR THE TRIPLE STACKING OF WORK ZONE BARRIER REFLECTORS.

DELINEATION PANELS SHALL CONSIST OF PANELS OF DELINEATION, APPROXIMATELY 34 INCHES LONG AND 6 INCHES WIDE AND SHALL BE "CRIMPED." PANELS SHALL BE INSTALLED AND SPACED PER TRAFFIC SCD MT-101.70.

TRIPLE-STACKED BARRIER REFLECTORS SHALL CONSIST OF ALIGNING THREE BARRIER REFLECTORS VERTICALLY, AT LOCATIONS WHERE A SINGLE BARRIER REFLECTOR WOULD BE OTHERWISE ATTACHED. THERE SHALL BE NO OPEN SPACE BETWEEN THE ADJACENT BARRIER REFLECTORS. THE TRIPLE-STACKED BARRIER REFLECTORS SHALL CONFORM TO C&MS 626, EXCEPT THAT THEY SHALL BE SPACED AND ALIGNED PER TRAFFIC SCD MT-101.70.J

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE PLANS AND CARRIED TO THE GENERAL SUMMARY:

ITEM 614, BARRIER REFLECTOR, TYPE B2 25 EACH
ITEM 614, OBJECT MARKER, TWO-WAY 25 EACH
ITEM 614, INCREASED BARRIER DELINEATION 1,160 FEET

PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIAL, LABOR, INCIDENTALS AND EQUIPMENT NECESSARY FOR FURNISHING, INSTALLING, MAINTAINING AND REMOVING EACH OF THE ABOVE ITEMS.

ALONG RUNS OF INCREASED BARRIER DELINEATION WHERE THIS ITEM IS PROVIDED, THE QUANTITY SHALL BE MEASURED AS THE ENTIRE LENGTH OF THE RUN OF INCREASED BARRIER DELINEATION, INCLUDING THE SPACES BETWEEN THE INDIVIDUAL DELINEATION

ITEM 614 - LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS

USE OF LAW ENFORCEMENT OFFICERS (LEOS) BY CONTRACTORS OTHER THAN THE USES SPECIFIED BELOW WILL NOT BE PER- MITTED AT PROJECT COST. LEOS SHOULD NOT BE USED WHERE THE OMTCD INTENDS THAT FLAGGERS BE USED.

IN ADDITION TO THE REQUIREMENTS OF C&MS 614 AND THE OMTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCE- MENT AGENCY) SHALL BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS:

DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHERE COMPLETE BLOCKAGE OF TRAFFIC IS REQUIRED.

DURING A TRAFFIC SIGNAL INSTALLATION WHEN IMPACTING THE NORMAL FUNCTION OF THE SIGNAL OR THE FLOW OF TRAFFIC OR WHEN TRAFFIC NEEDS TO BE DIRECTED THROUGH AN ENERGIZED TRAFFIC SIGNAL CONTRARY TO THE SIGNAL DISPLAY (E.G., DIRECTING MOTORISTS THROUGH A RED LIGHT).

IN ADDITION TO THE REQUIREMENT OF C&MS 614 AND THE OMTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHOULD BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS:

ITEM 614 - LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS (CONTD.)

FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED FOR LONG-TERM LANE CLOSURES/SHIFTS (FOR THE FIRST AND LAST DAY OF MAJOR CHANGES IN TRAFFIC CONTROL SETUP). IN GENERAL, LEOS SHOULD BE POSITIONED AT THE POINT OF LANE RESTRICTION OR ROAD CLOSURE AND TO MANUALLY CONTROL TRAFFIC MOVEMENTS THROUGH INTERSECTIONS IN WORK ZONES.

WHEN CONSTRUCTION VEHICLES ARE ENTERING/EXITING THE ZONE DIRECTLY FROM/INTO AN OPEN LANE OF TRAFFIC. IF A LANE HAS BEEN CLOSED TO PROVIDE AN ACCELERATION/ DECELERATION LANE FOR THE VEHICLE, THE LEO WILL NOT BE REQUIRED.

LEOS SHOULD NOT FORGO THEIR TRAFFIC CONTROL RESPONSIBILITIES TO APPREHEND MOTORISTS FOR ROUTINE TRAFFIC VIOLATIONS. HOWEVER, IF A MOTORIST'S ACTIONS ARE CONSIDERED TO BE RECKLESS, THEN PURSUIT OF THE MOTORIST IS APPROPRIATE.

THE LEOS WORK AT THE DIRECTION OF THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR SECURING THE SERVICES OF THE LEOS WITH THE APPROPRIATE AGENCIES AND COMMUNICATING THE INTENTIONS OF THE PLANS WITH RESPECT TO DUTIES OF THE LEOS. THE ENGINEER SHALL HAVE FINAL CONTROL OVER THE LEOS' DUTIES AND PLACE- MENT, AND WILL RESOLVE ANY ISSUES THAT MAY ARISE BETWEEN THE TWO PARTIES.

THE LEO SHALL REPORT IN TO THE CONTRACTOR PRIOR TO THE START OF THE SHIFT, IN ORDER TO RECEIVE INSTRUCTIONS REGARDING SPECIFIC WORK ASSIGNMENTS DURING HIS/HER SHIFT. THE LEO IS EXPECTED TO STAY AT THE PROJECT SITE FOR THE ENTIRE DURATION OF HIS/HER SHIFT. THE LEO SHALL REPORT TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT. ONCE THE LEO HAS COMPLETED THE DUTIES DESCRIBED ABOVE AND STILL HAS TIME REMAINING ON HIS/HER SHIFT, THE LEO MAY BE ASKED TO PATROL THROUGH THE WORK ZONE (WITH FLASHING LIGHTS OFF) OR BE PLACED AT A LOCATION TO DETER MOTORISTS FROM SPEEDING. SHOULD IT BE NECESSARY TO LEAVE THE PROJECT SITE, THE LEO SHALL NOTIFY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE THE LEO WITH A TWO-WAY COMMUNICATION DEVICE WHICH SHALL BE RE- TURNED TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT.

LEOS (WITH PATROL CAR) REQUIRED BY THE TRAFFIC MAINT- ENANCE TASKS ABOVE SHALL BE PAID FOR ON A UNIT PRICE (HOURLY) BASIS UNDER ITEM 614, LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE 40 HOURS

THE HOURS PAID SHALL INCLUDE ANY MINIMUM SHOW-UP TIME REQUIRED BY THE LAW ENFORCEMENT AGENCY INVOLVED.

ANY ADDITIONAL COSTS (ADMINISTRATIVE OR OTHERWISE) INCURRED BY THE CONTRACTOR TO OBTAIN THE SERVICES OF AN LEO ARE INCLUDED WITH THE BID UNIT PRICE FOR ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE.

DUST CONTROL

THE CONTRACTOR SHALL FURNISH AND APPLY WATER FOR DUST CONTROL AS DIRECTED BY THE ENGINEER. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED FOR DUST CONTROL PURPOSES: ITEM 616, WATER 2 M. GAL

SEQUENCE OF CONSTRUCTION

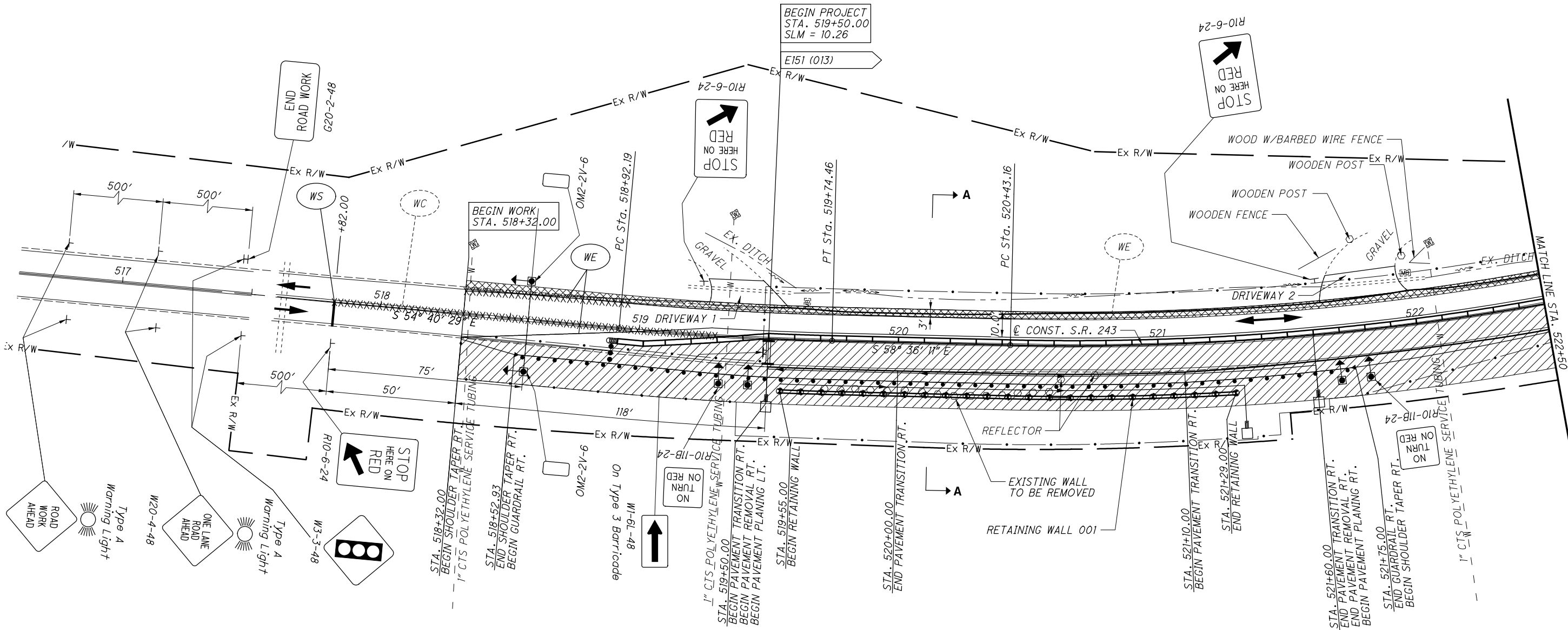
STAGE 1
INSTALL TEMPORARY PAVEMENT, TEMPORARY PAVEMENT MARKINGS, PORTABLE BARRIER AND TEMPORARY TRAFFIC SIGNALS USING STANDARD CONSTRUCTION DRAWING MT-97.10, AND CLOSE THE EASTBOUND TRAVEL LANE. CONSTRUCT TWO RETAINING WALLS AND RECONSTRUCT THE EASTBOUND TRAVEL LANE AS INDICATED. THIS WORK SHALL BE DONE USING STANDARD CONSTRUCTION DRAWING MT-96.11 SIGNALIZED CLOSING ONE LANE OF A 2-LANE HIGHWAY. ACCESS TO THE THREE RESIDENTIAL DRIVES AT STA. 519+40 LT, 521+75 LT AND 525+00 RT RESPECTIVELY MUST BE MAINTAINED AT ALL TIMES.

STAGE 2
INSTALL TEMPORARY TRAFFIC CONTROL TO PERFORM MILL AND FILL OPERATIONS ON THE REMAINING EXISTING PAVEMENT WITHIN THE PROJECT LIMITS, CONSTRUCT GRADING FOR GUARDRAIL PLACEMENT AND INSTALL GUARDRAIL. USE STANDARD CONSTRUCTION DRAWING MT-97.10 FLAGGER CLOSING 1 LANE OF A 2-LANE HIGHWAY.

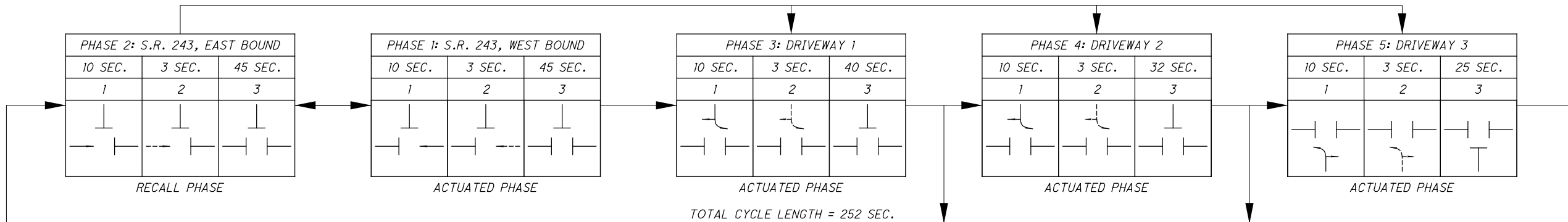
		ESTIMATED QUANTITIES							
		614	614	614	614	614	614	615	622
STATION		BARRIER REFLECTOR, TYPE B2	OBJECT MARKER, TWO WAY	INCREASED BARRIER DELINEATION	WORK ZONE IMPACT ATTENUATOR	WORK ZONE EDGE LINE, CLASS 1, 740.06, TYPE 1	WORK ZONE STOP LINE, CLASS 1, 740.06, TYPE 1	PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A	PORTABLE BARRIER, 32"
FROM	TO	EACH	EACH	FT	EACH	MILE	FT	SY	FT
517+82.00							10		
518+32.00	530+75.00	25	25	1160		0.47		411	1160
518+92.00					1				
524+80.00					1				
525+15.00					1				
530+83.00					1				
531+25.00							10		
TOTAL		25	25	1160	4	0.47	20	411	1160

TOTALS CARRIED TO GENERAL SUMMARY

W20-1-48



SIGNAL PHASING

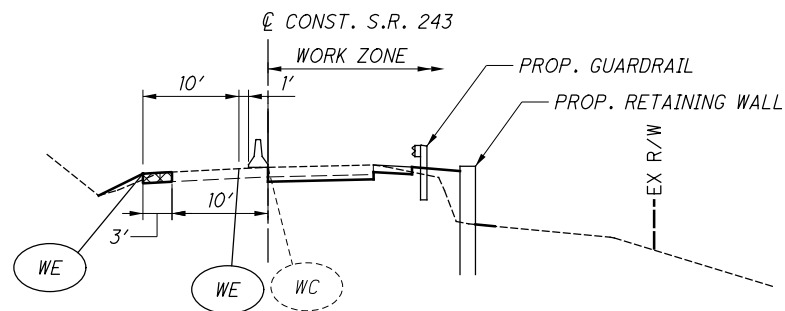


LEGEND

- PORTABLE BARRIER (PB)
- DIRECTION OF TRAVEL
- WE WORK ZONE EDGE LINE, CLASS 1, 740.06, TYPE 1 (WHITE)
- WS WORK ZONE STOP LINE, CLASS 1, 740.06, TYPE 1 (WHITE)
- WE EXISTING WHITE EDGE LINE (TO BE REMOVED)
- WC EXISTING CENTER LINE, DOUBLE SOLID (TO BE REMOVED)
- WORK ZONE
- SIGN POST
- BARREL
- IMPACT ATTENUATOR
- TEMPORARY TRAFFIC SIGNAL SUPPORT
- REMOVE EXISTING MARKINGS
- PAVEMENT FOR MAINTAINING TRAFFIC

NOTES:

- SEE SHEETS 6 AND 7 FOR MAINTAINING TRAFFIC NOTES.
- REMOVE ANY CONFLICTING PAVEMENT MARKINGS.
- SEE STANDARD DRAWING MT-96.11 FOR ADDITIONAL INFORMATION.



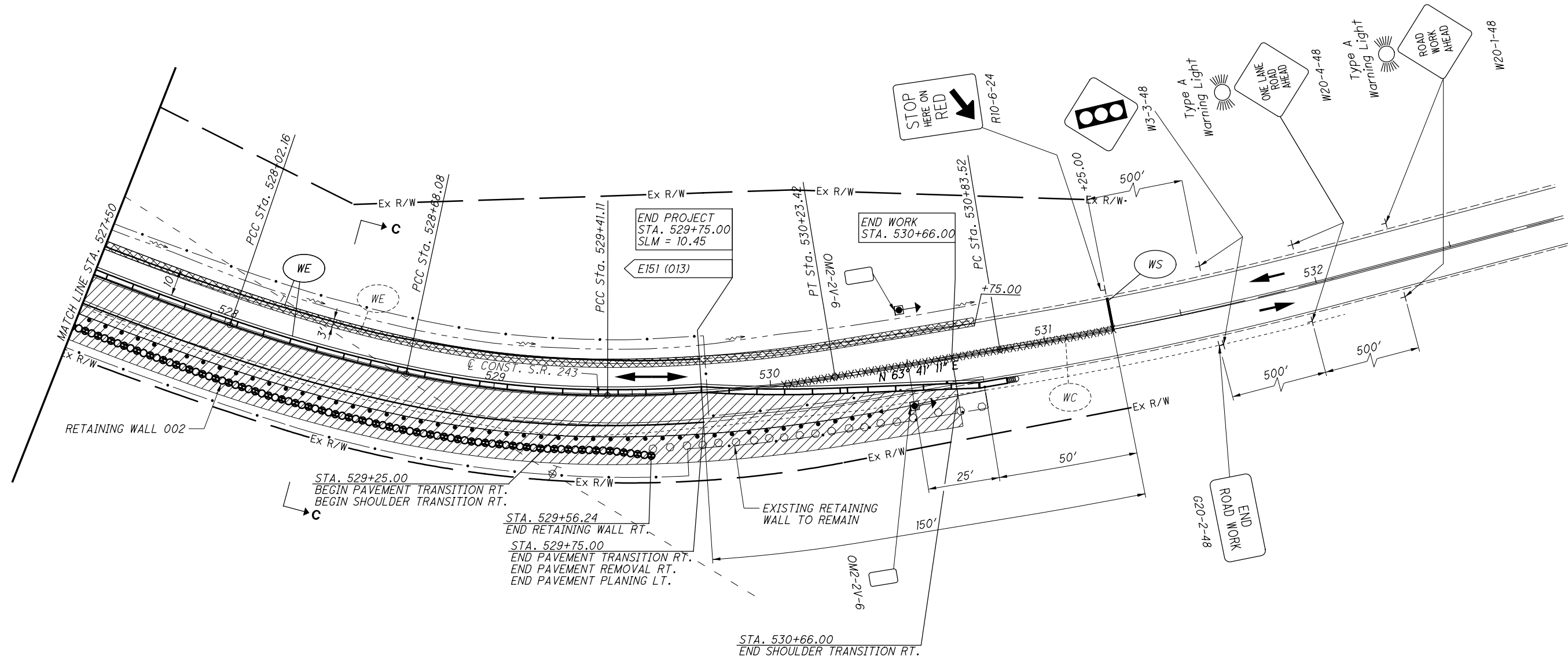
SECTION A-A

STA. 518+32.00 TO STA. 522+50.00



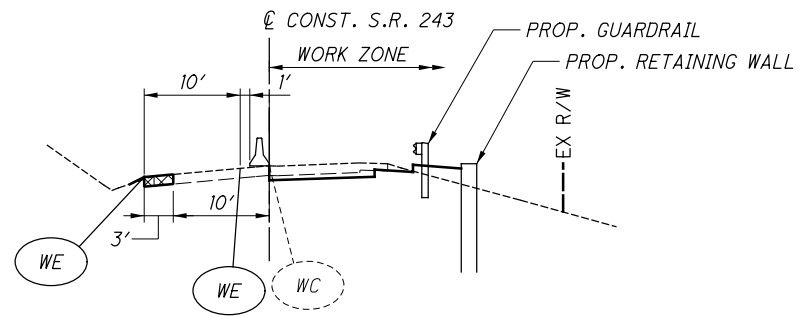
	PORTABLE BARRIER (PB)		WORK ZONE
	DIRECTION OF TRAVEL		SIGN POST
	WORK ZONE EDGE LINE, CLASS 1, 740.06, TYPE 1 (WHITE)		BARREL
	EXISTING WHITE EDGE LINE (TO BE REMOVED)		IMPACT ATTENUATOR
	EXISTING CENTER LINE, DOUBLE SOLID (TO BE REMOVED)		TEMPORARY TRAFFIC SIGNAL SUPPORT
			REMOVE EXISTING MARKINGS
			PAVEMENT FOR MAINTAINING TRAFFIC

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NOTES:

1. SEE SHEETS 6 AND 7 FOR MAINTAINING TRAFFIC NOTES.
2. REMOVE ANY CONFLICTING PAVEMENT MARKINGS.
3. SEE STANDARD DRAWING MT-96.11 FOR ADDITIONAL INFORMATION.



SECTION C-C
STA. 527+50.00 TO STA 530+75.00

LEGEND

- | | | | |
|--|--|--|----------------------------------|
| | PORTABLE BARRIER (PB) | | WORK ZONE |
| | DIRECTION OF TRAVEL | | SIGN POST |
| | WORK ZONE EDGE LINE, CLASS 1, 740.06, TYPE 1 (WHITE) | | BARREL |
| | WORK ZONE STOP LINE, CLASS 1, 740.06, TYPE 1 (WHITE) | | IMPACT ATTENUATOR |
| | EXISTING WHITE EDGE LINE (TO BE REMOVED) | | TEMPORARY TRAFFIC SIGNAL SUPPORT |
| | EXISTING CENTER LINE, DOUBLE SOLID (TO BE REMOVED) | | REMOVE EXISTING MARKINGS |
| | | | PAVEMENT FOR MAINTAINING TRAFFIC |

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SHEET NUM.													PART.	ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE
4	13	28											01/STR/O T	EXT	TOTAL		SHEET NO.		
																	ROADWAY		
													LS	201	11000	LS			
	794												794	202	23000	794	SY	CLEARING AND GRUBBING	
	207												207	203	10000	207	CY	PAVEMENT REMOVED	
	307												307	203	20000	307	CY	EXCAVATION	
	873												873	204	10000	873	SY	EMBANKMENT	
																		SUBGRADE COMPACTION	
	675												675	606	15051	675	FT	GUARDRAIL, TYPE MGS, AS PER PLAN	
	3												3	606	26150	3	EACH	ANCHOR ASSEMBLY, MGS TYPE E	
	1												1	606	27820	1	EACH	ANCHOR ASSEMBLY, MGS TYPE T	
													2	SPECIAL	69050350	2	EACH	MAILBOX REMOVED AND RESET	
																		4	
																		14,15	
	6												6	601	21050	6	SY	EROSION CONTROL	
1,997													1,997	659	10000	1,997	SY	TIED CONCRETE BLOCK MAT, TYPE 1	
100													100	659	14000	100	SY	SEEDING AND MULCHING	
0.27													0.27	659	20000	0.27	TON	REPAIR SEEDING AND MULCHING	
0.42													0.42	659	31000	0.42	ACRE	COMMERCIAL FERTILIZER	
																		LIME	
													6	659	35000	6	MGAL	WATER	
													9,000	832	30000	9,000	EACH	EROSION CONTROL	
	210												210	605	06000	210	FT	DRAINAGE	
	22												22	611	00406	22	FT	4" BASE PIPE UNDERDRAINS	
	3												3	611	99710	3	EACH	4" CONDUIT, TYPE F	
																		PRECAST REINFORCED CONCRETE OUTLET	
	692												692	252	01500	692	FT	PAVEMENT	
1,759													1,759	254	01000	1,759	SY	FULL DEPTH PAVEMENT SAWING	
205													205	301	46000	205	CY	PAVEMENT PLANING, ASPHALT CONCRETE	
146													146	304	20000	146	CY	ASPHALT CONCRETE BASE, PG64-22	
192													192	407	10000	192	GAL	AGGREGATE BASE	
																		TACK COAT	
	32												32	407	14000	32	GAL	TACK COAT FOR INTERMEDIATE COURSE	
	349												349	408	10000	349	GAL	PRIME COAT	
	108												108	411	10000	108	CY	STABILIZED CRUSHED AGGREGATE	
	74												74	441	50000	74	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22	
	66												66	441	50101	66	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), AS PER PLAN PG64-22	
																		5	
		54											54	621	00100	54	EACH	TRAFFIC CONTROL	
		54											54	621	54000	54	EACH	RPM	
		14											14	626	00100	14	EACH	RAISED PAVEMENT MARKER REMOVED	
		2											2	630	85000	2	EACH	BARRIER REFLECTOR	
		0.48											0.48	642	00090	0.48	MILE	REMOVAL OF GROUND MOUNTED SIGN AND STORAGE	
																		EDGE LINE, 4"	
		0.26											0.26	642	00290	0.26	MILE	CENTER LINE	
													0.06	642	30030	0.06	MILE	REMOVAL OF PAVEMENT MARKING	

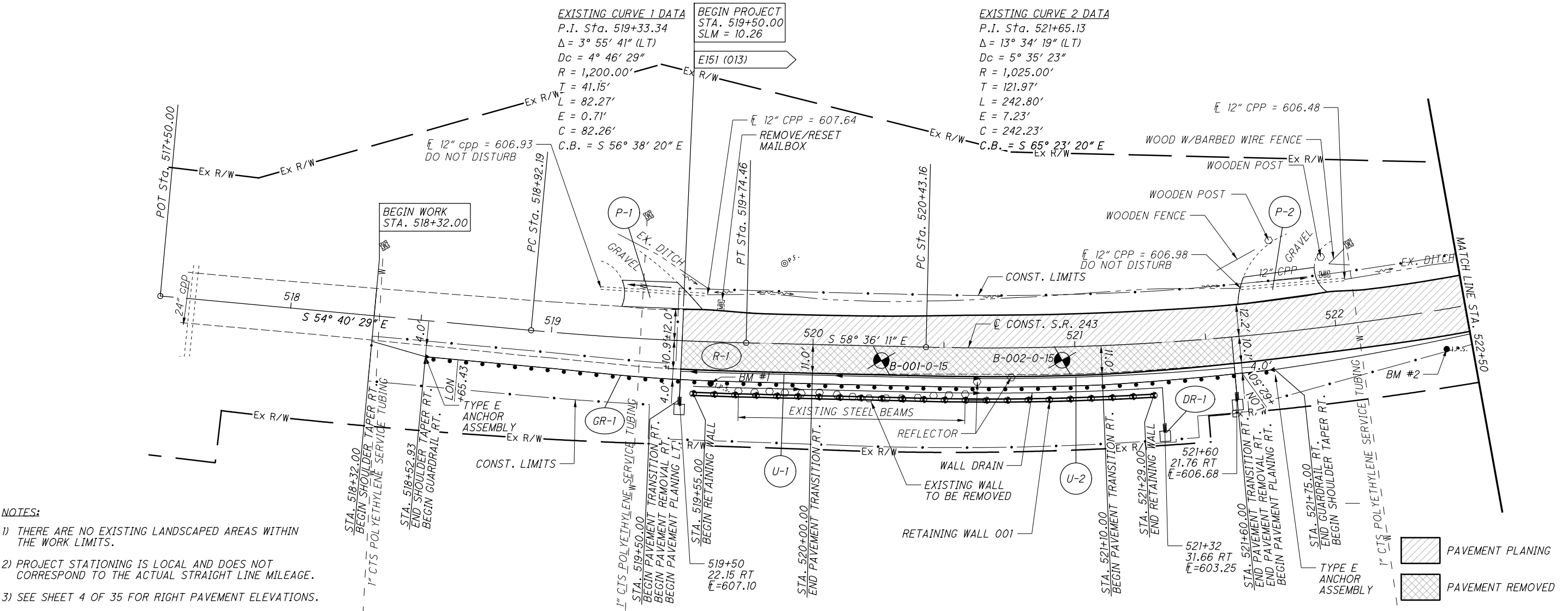
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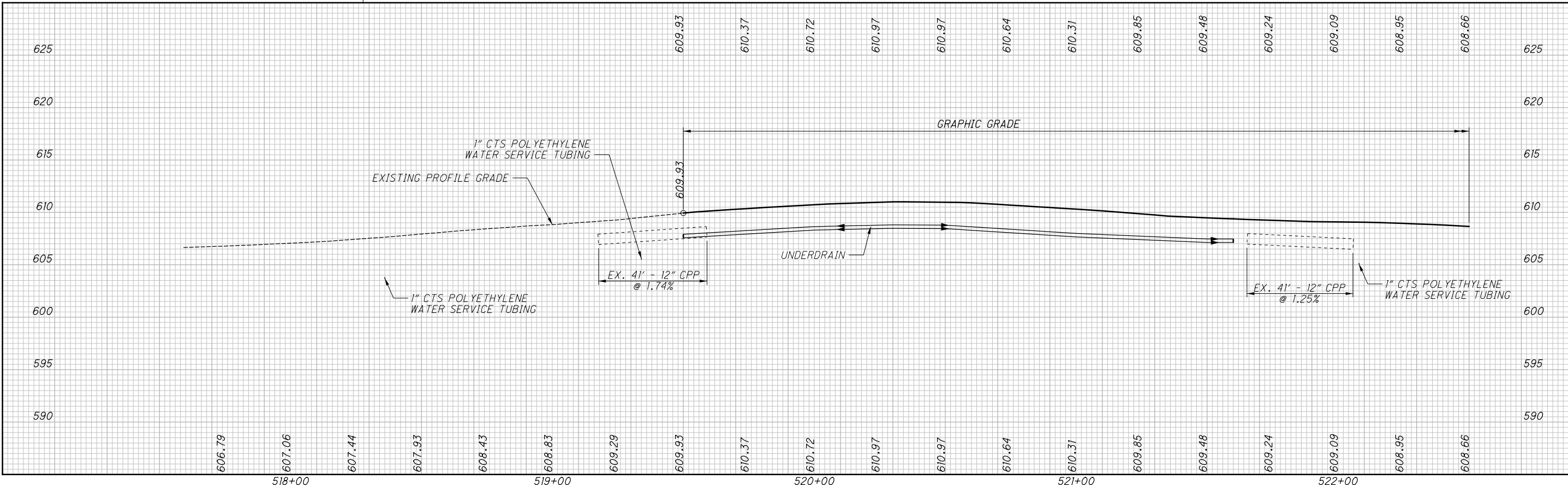
REF. NO.	SHEET NO.	STATION		SIDE	202	203	203	204	252	254	301	304	407	407	408	411	441	441	606	606	606	601	611	605	605
					PAVEMENT REMOVED, ASPHALT	EXCAVATION	EMBANKMENT	SUBGRADE COMPACTION	FULL DEPTH PAVEMENT SAWING	PAVEMENT PLANING, ASPHALT CONCRETE 1 1/2" DEPTH	ASPHALT CONCRETE BASE, PG64-22, 9"	AGGREGATE BASE, 6"	TACK COAT (0.075 GAL/SQ YD)	TACK COAT FOR INTERMEDIATE COURSE (0.04 GAL/ SQ YD)	PRIME COAT (0.4 GAL/ SQ YD)	STABILIZED CRUSHED AGGREGATE, 8"	1-1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE I, (448)	3" ASPHALT CONCRETE SURFACE COURSE, TYPE I, (448), AS PER PLAN	GUARDRAIL, TYPE MGS AS PER PLAN	ANCHOR ASSEMBLY, MGS TYPE T	ANCHOR ASSEMBLY, MGS TYPE E	TIED CONCRETE BLOCK MAT, TYPE I	PRECAST REINFORCED CONCRETE OUTLET	4" BASE PIPE UNDERDRAIN	4" CONDUIT, TYPE F
		FROM	TO		SY	CY	CY	SY	FT	SY	CY	CY	GAL	GAL	GAL	CY	CY	CY	FT	EA	EA	SY	EA	LF	LF
R-1	14	519+50.00	521+60.00	RT	255																				
R-2	15,16	525+35.00	529+75.00	RT	539																				
	15,16,17	518+32.00	530+76.00			207	307									94									
	14	519+50.00	522+50.00					281	231	501	66	47	57	10	112		21	21							
	15	522+50.00	527+50.00					287	225	959	67	48	92	11	115		40	22							
	16	527+50.00	529+75.00					305	236	299	72	51	43	11	122		13	23							
P-1	14	519+40		LT												6									
P-2	14	521+75		LT												8									
GR-1	14	518+52.93	521+75.00	RT														225.00		2					
GR-2	15,16	525+26.30	530+38.39	RT														450.00	1	1					
DR-1	14	521+41.72		RT																	1.78	1			
U-1	14	519+50	520+30	RT																	1.78	1	80	11	
U-2	14	520+30	521+60	RT																	1.78	1	130	11	

CALCULATED BAT	CHECKED SOI	ROADWAY SUBSUMMARY	LAW - 243-10.26	13 35

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- NOTES:
- 1) THERE ARE NO EXISTING LANDSCAPED AREAS WITHIN THE WORK LIMITS.
 - 2) PROJECT STATIONING IS LOCAL AND DOES NOT CORRESPOND TO THE ACTUAL STRAIGHT LINE MILEAGE.
 - 3) SEE SHEET 4 OF 35 FOR RIGHT PAVEMENT ELEVATIONS.



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HORIZONTAL
SCALE IN FEET

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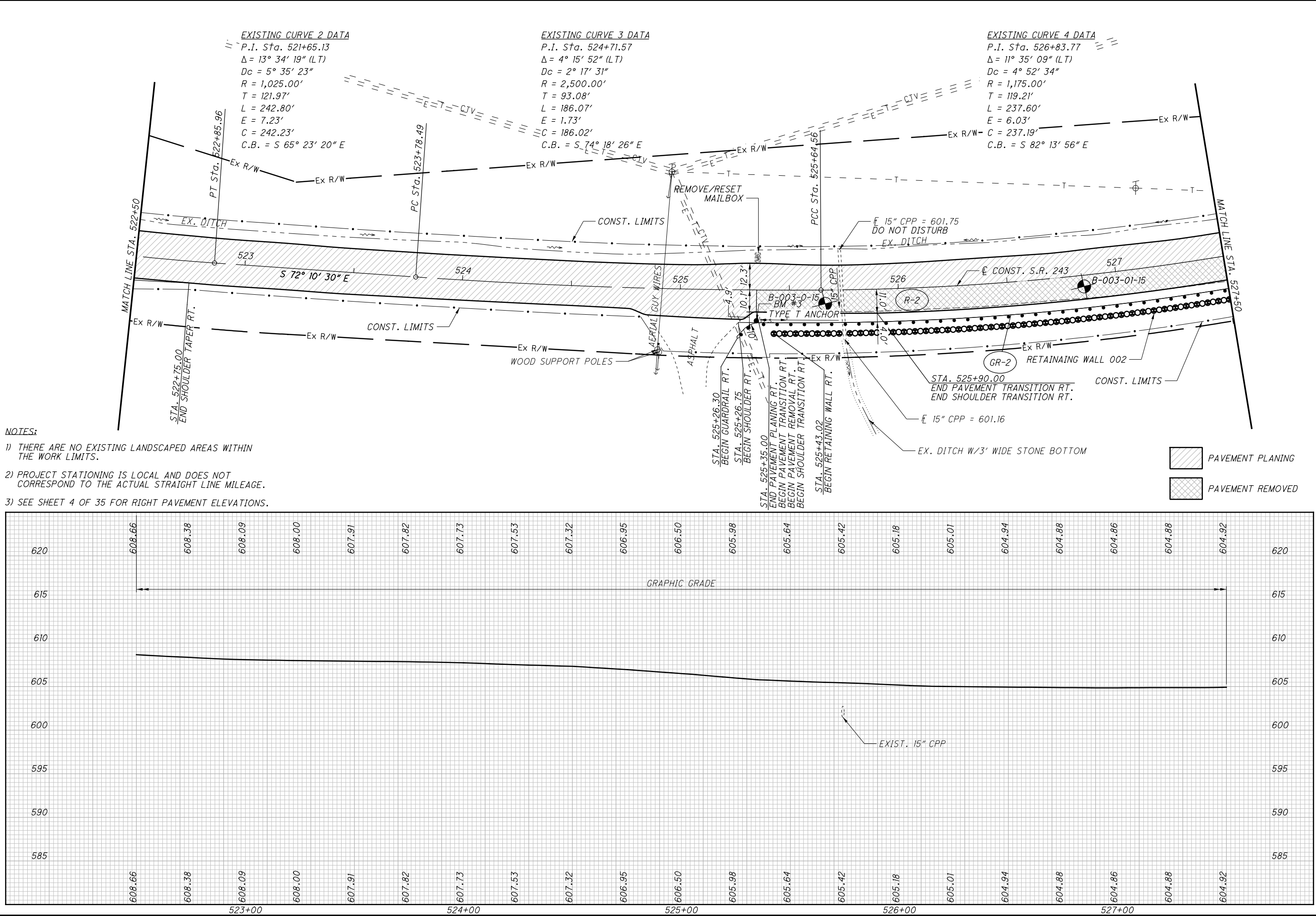
PLAN AND PROFILE

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LAW -243-10.26

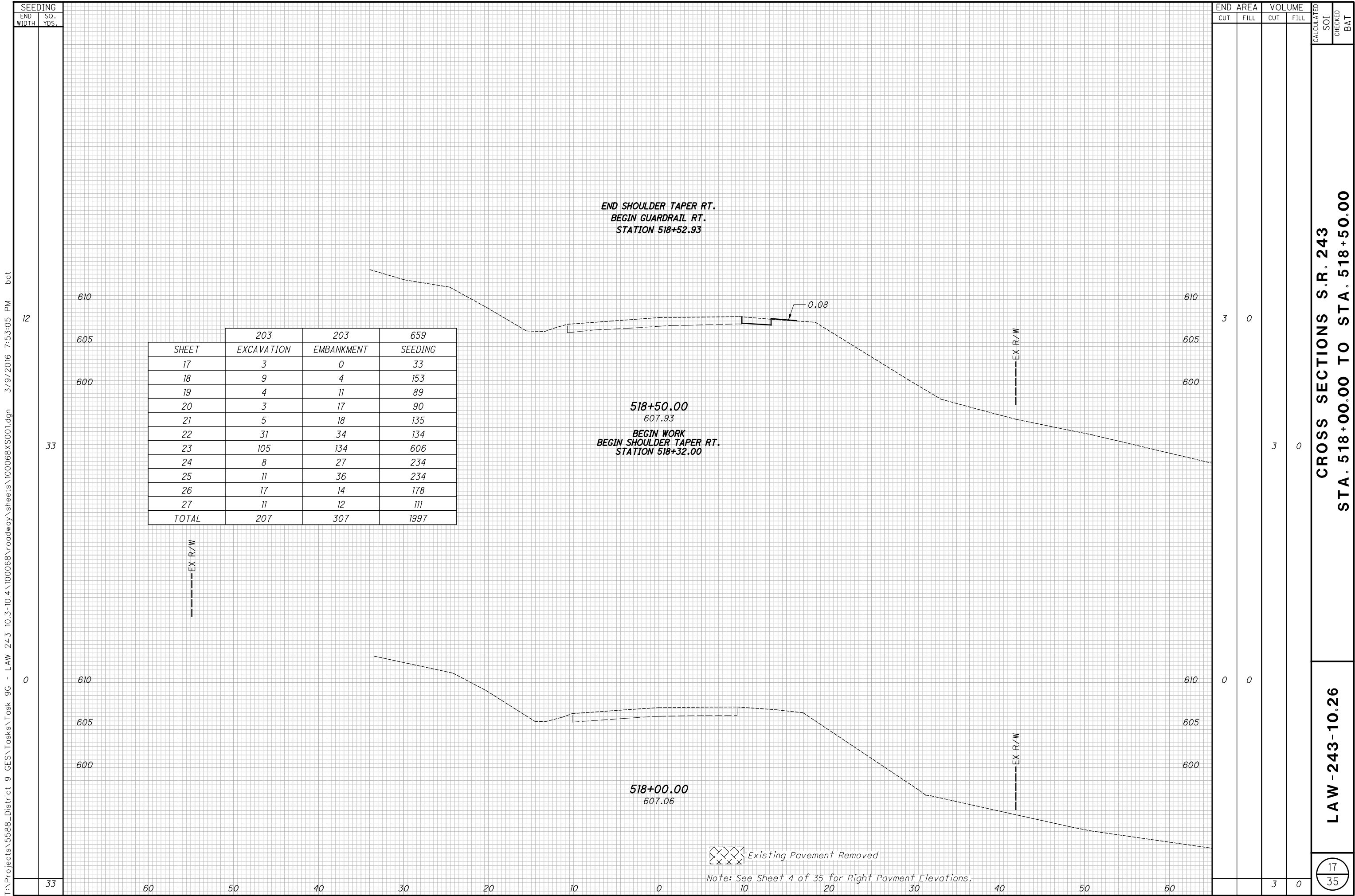
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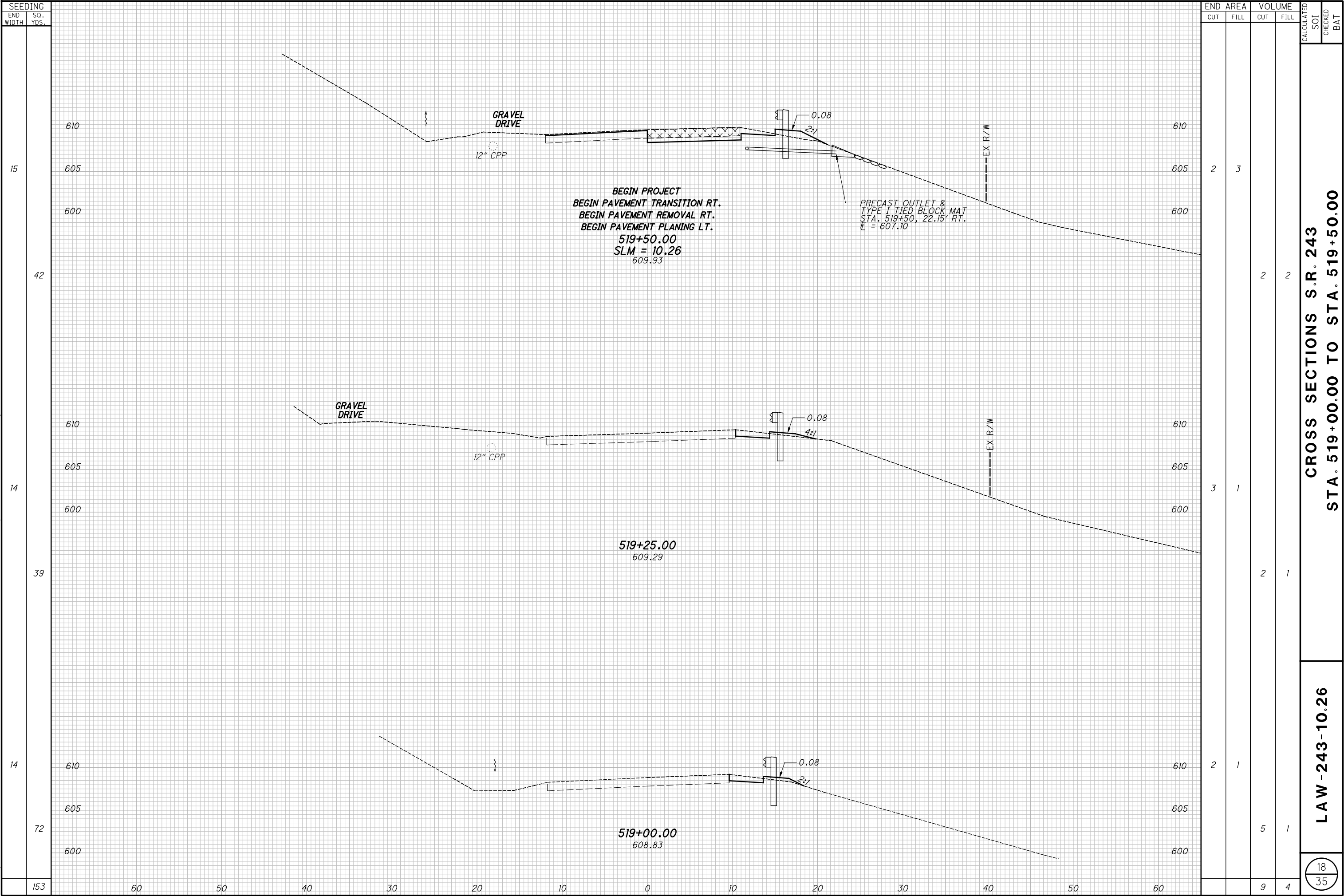




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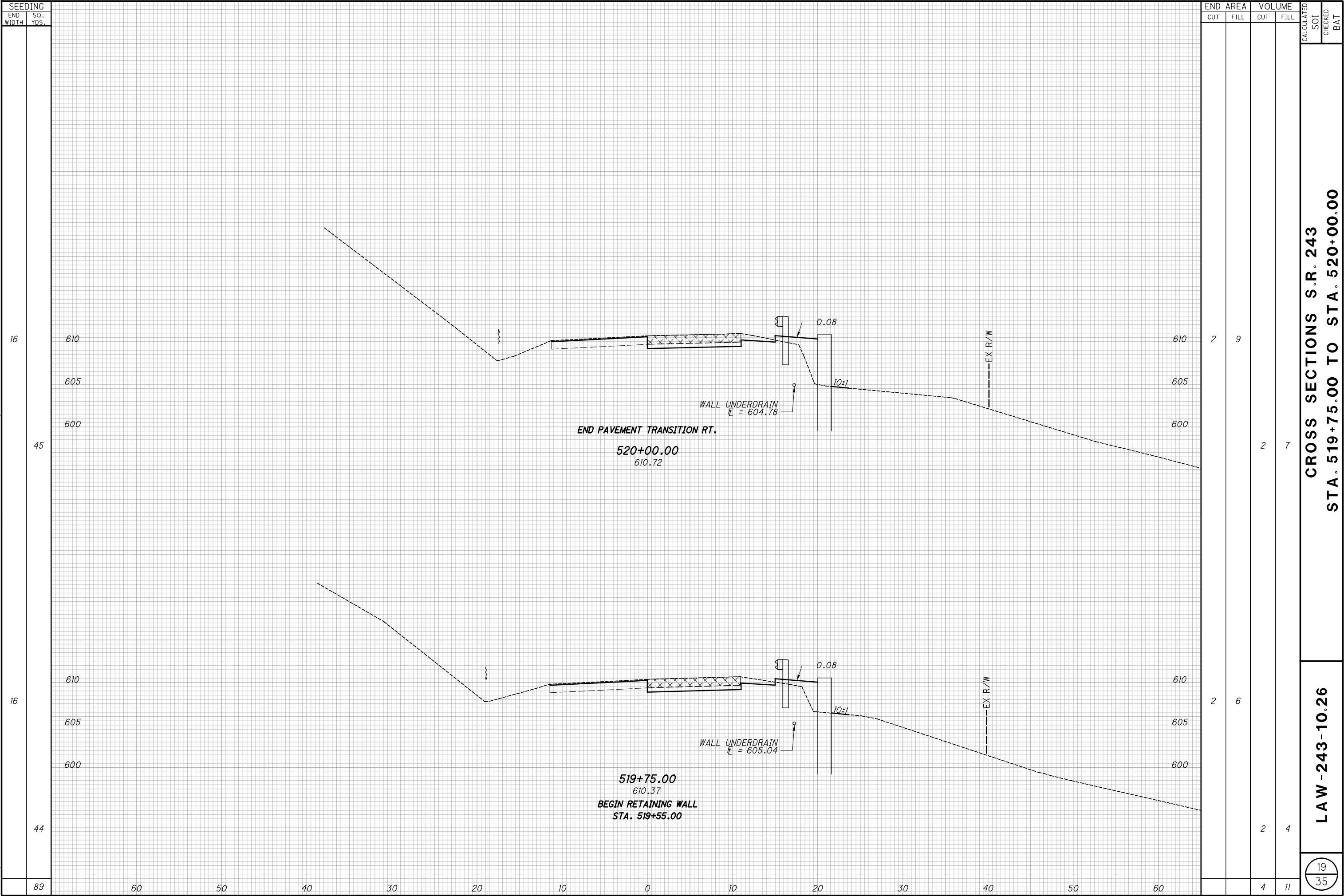


CROSS SECTIONS S.R. 243
STA. 519+00.00 TO STA. 519+50.00

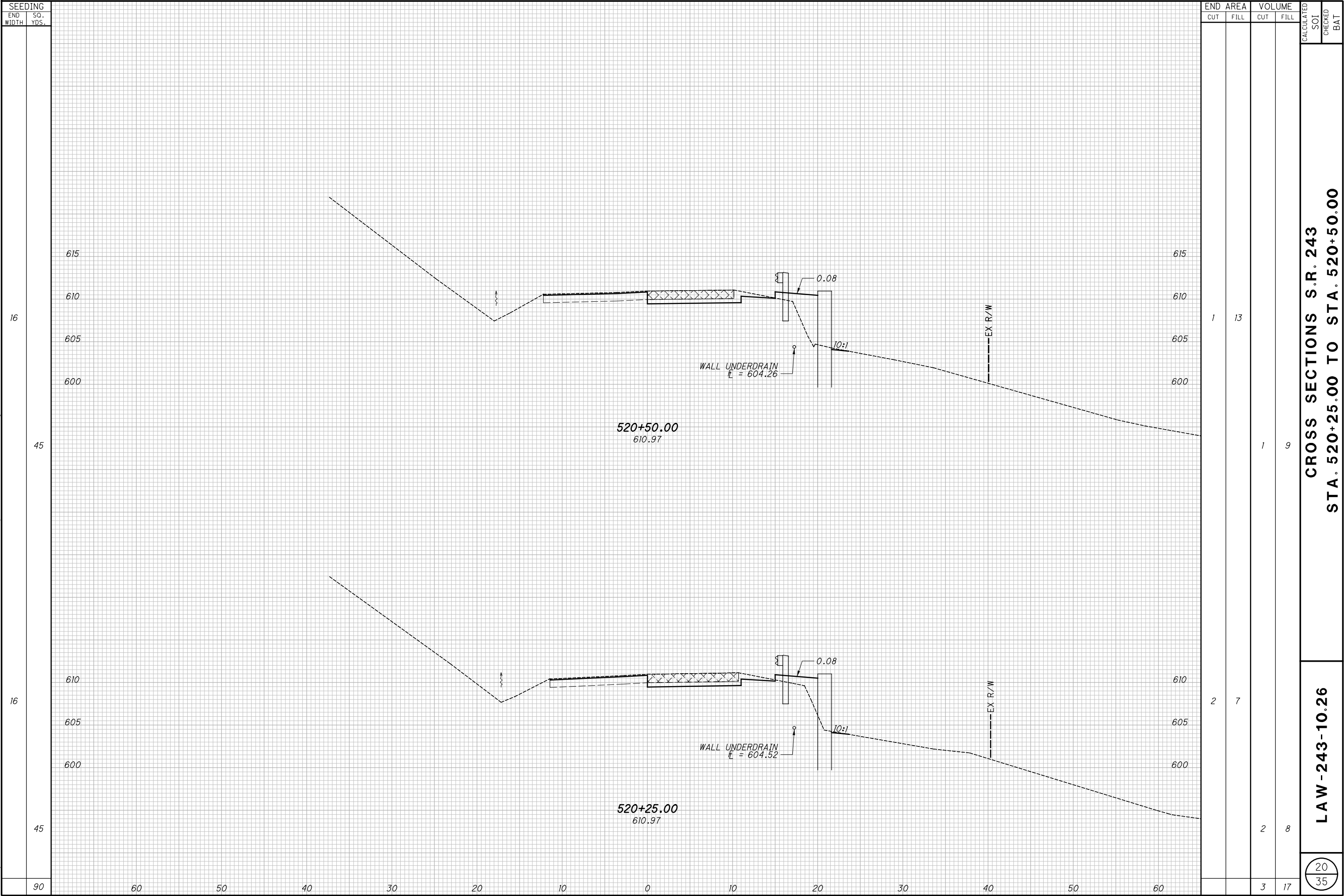
LAW - 243-10.26

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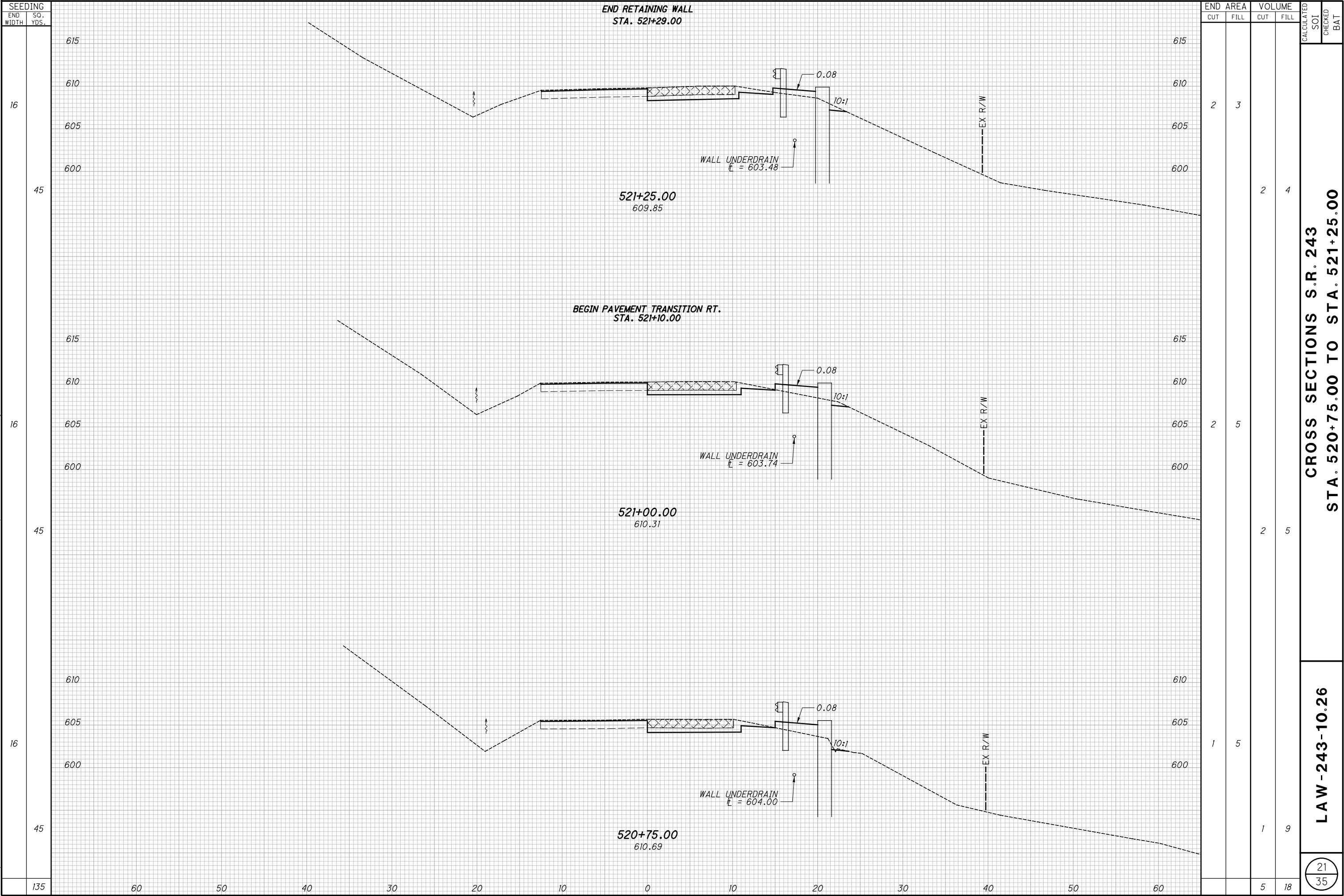
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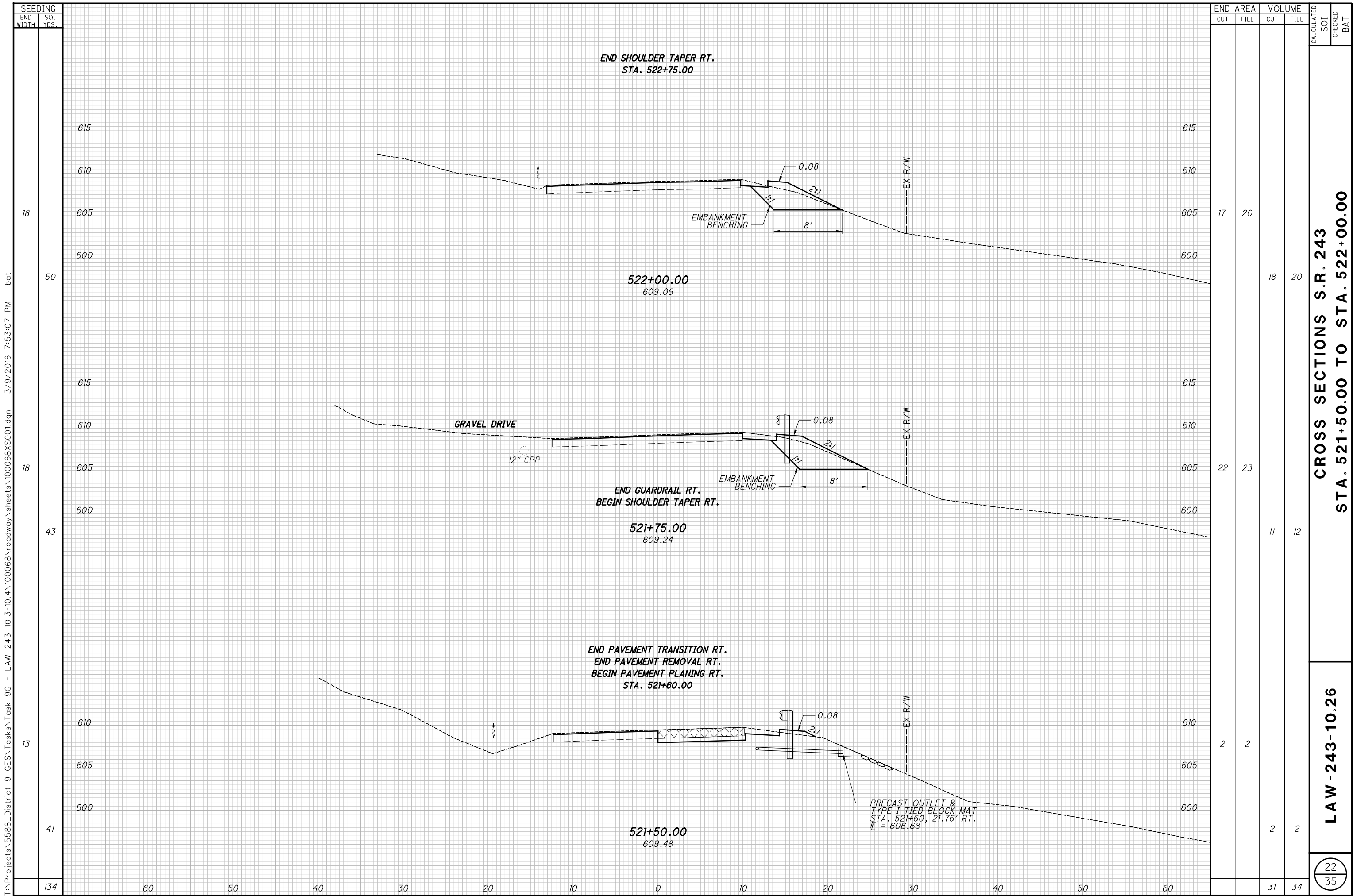


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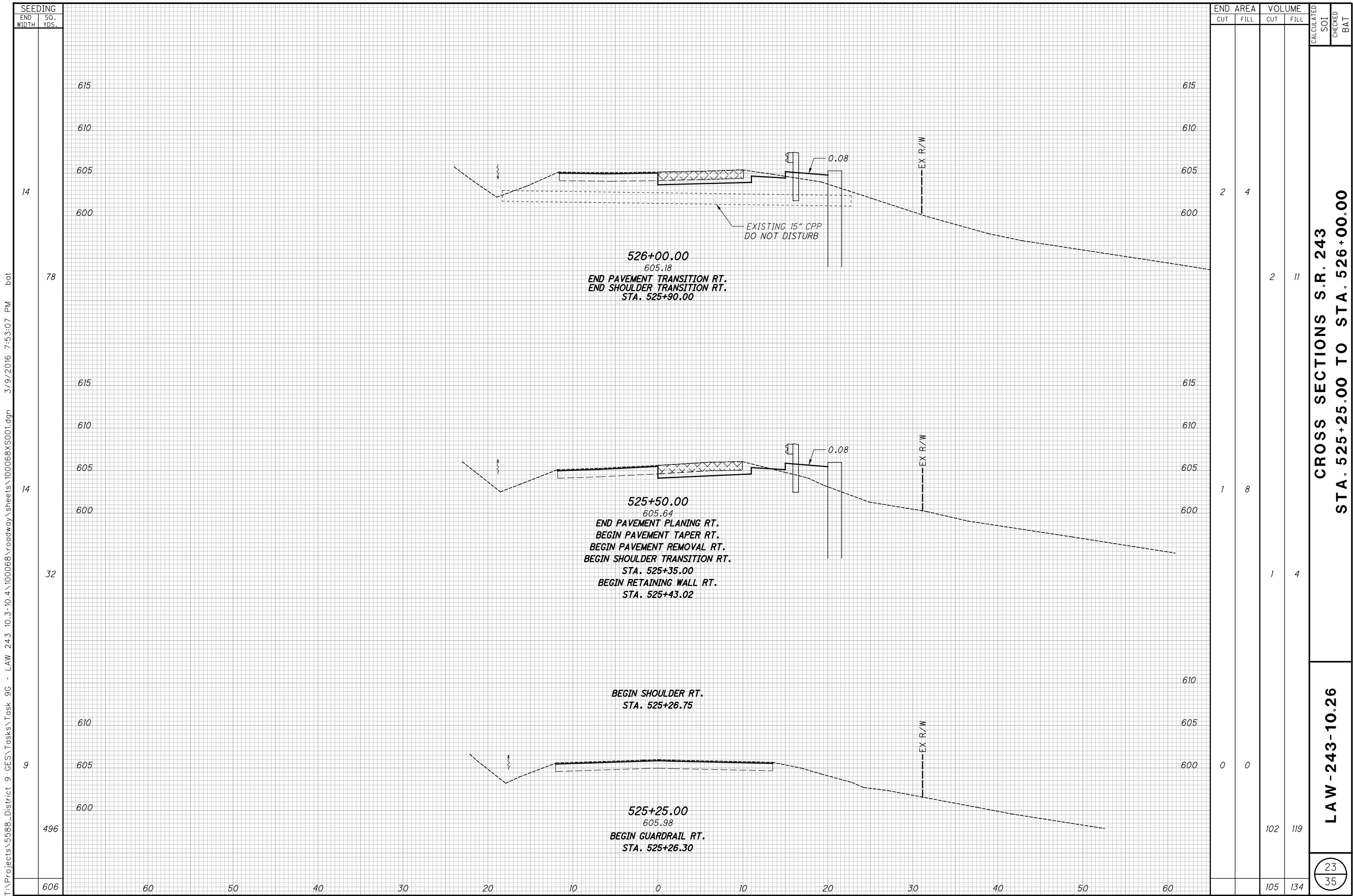


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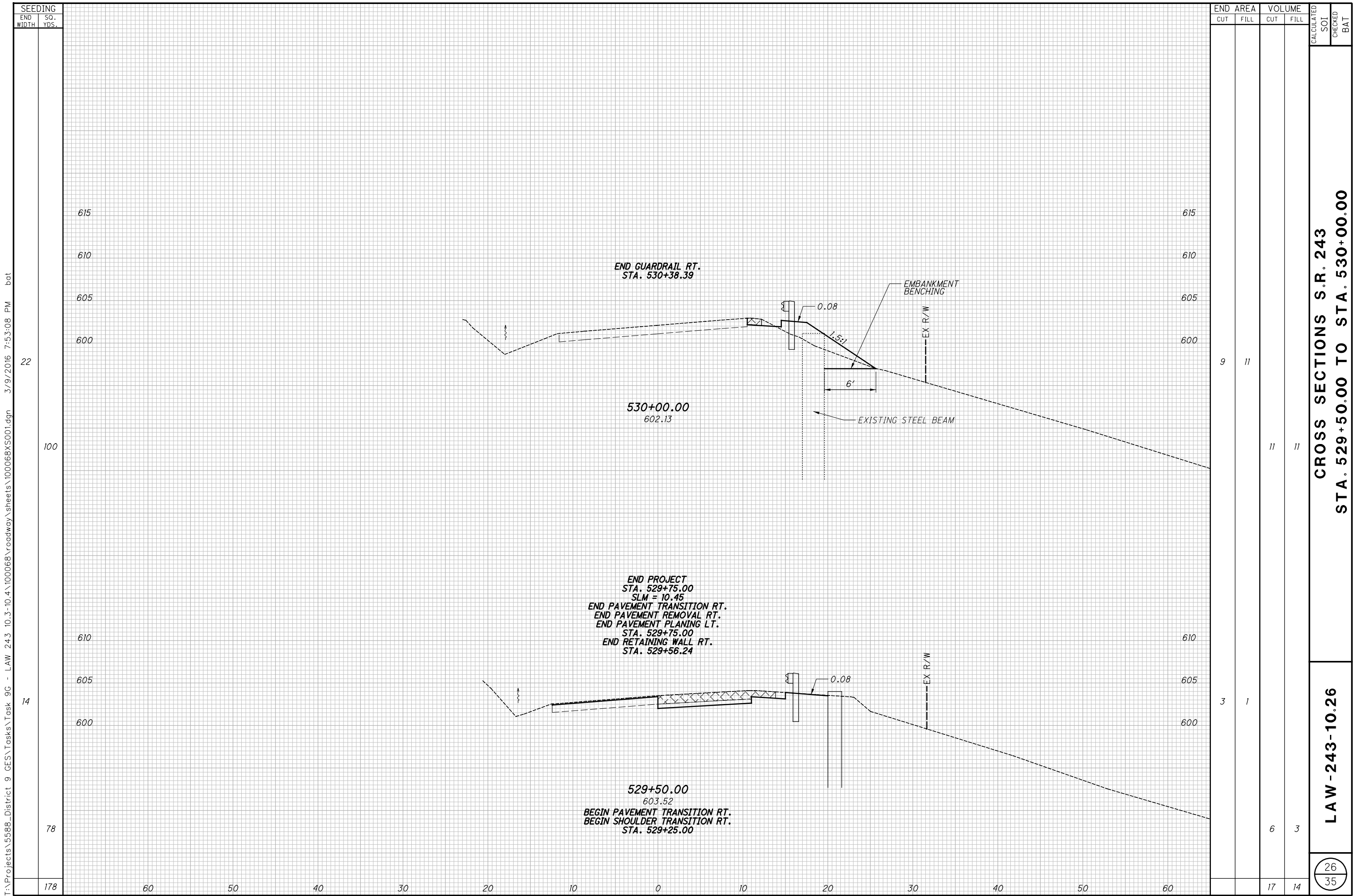


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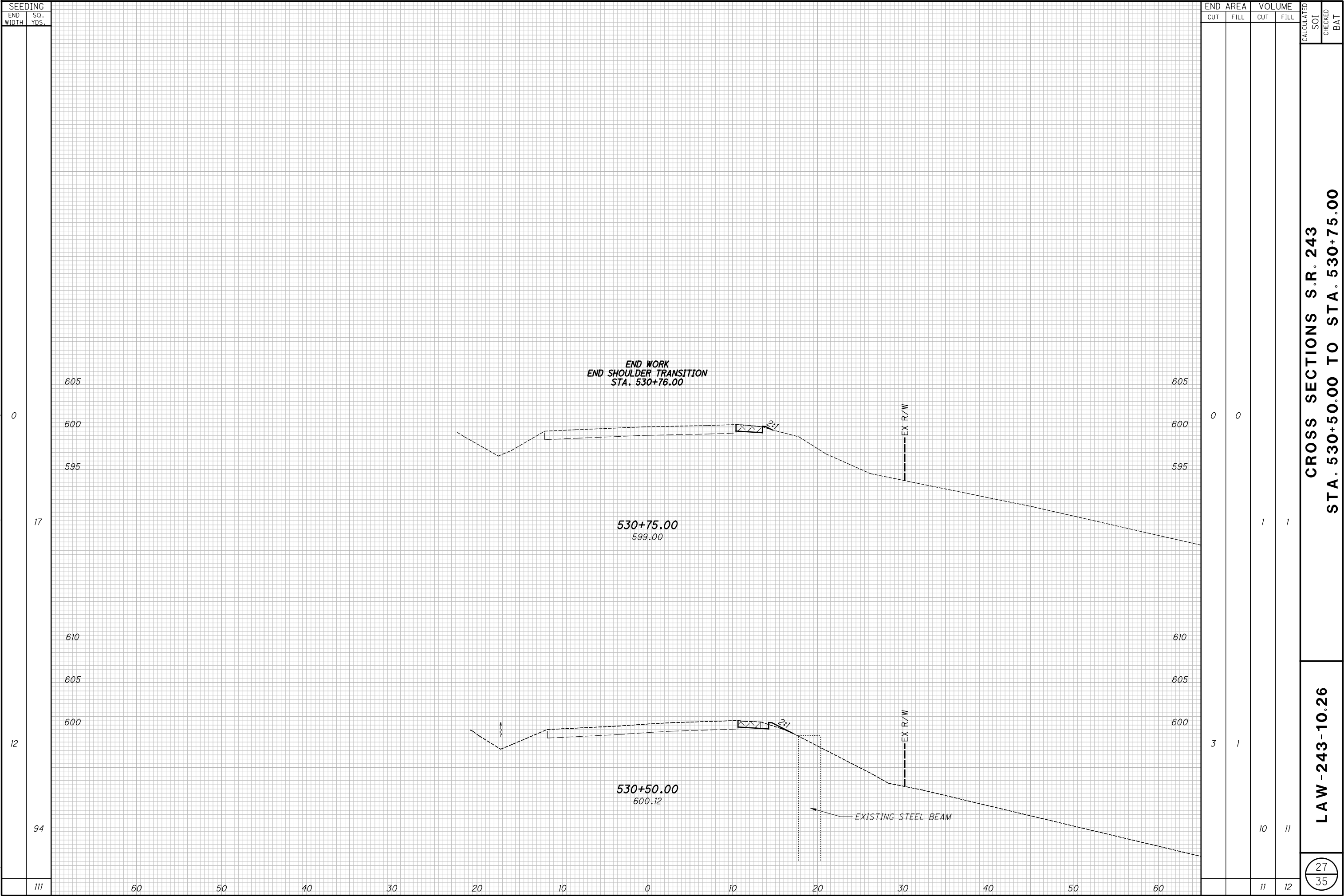


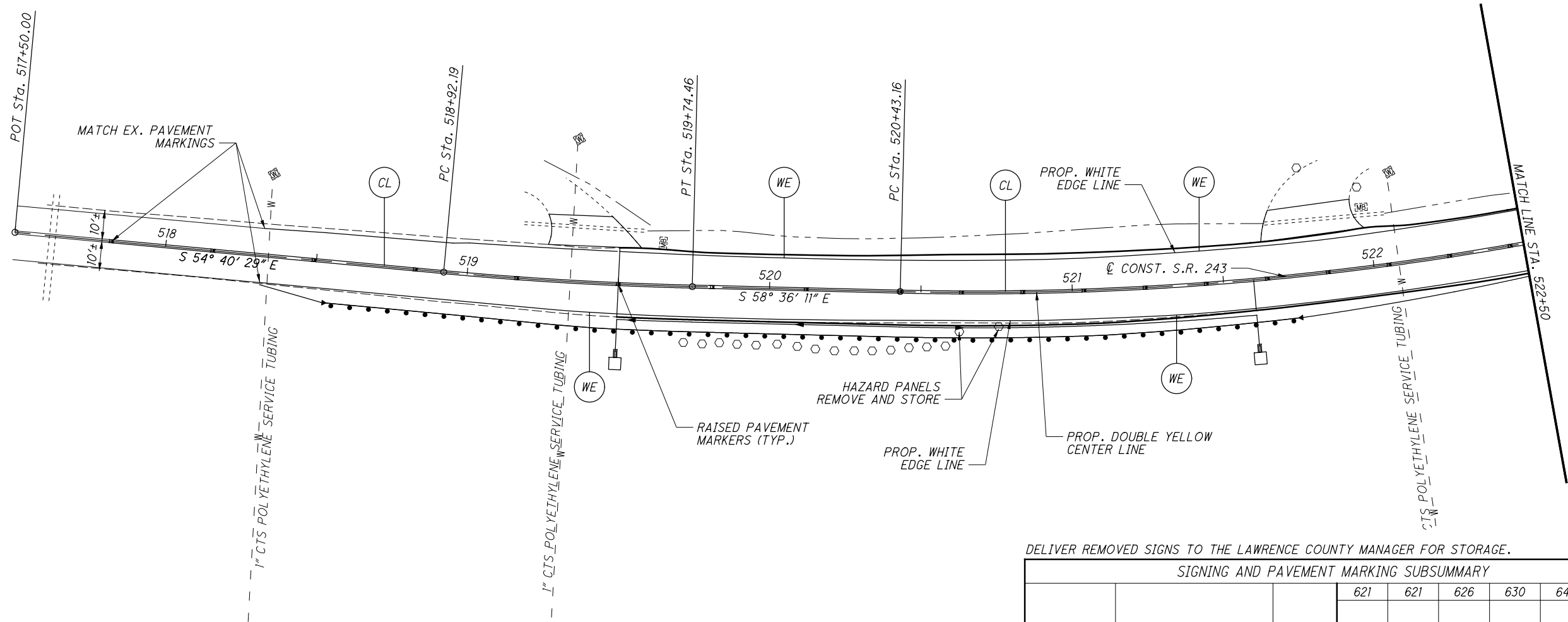
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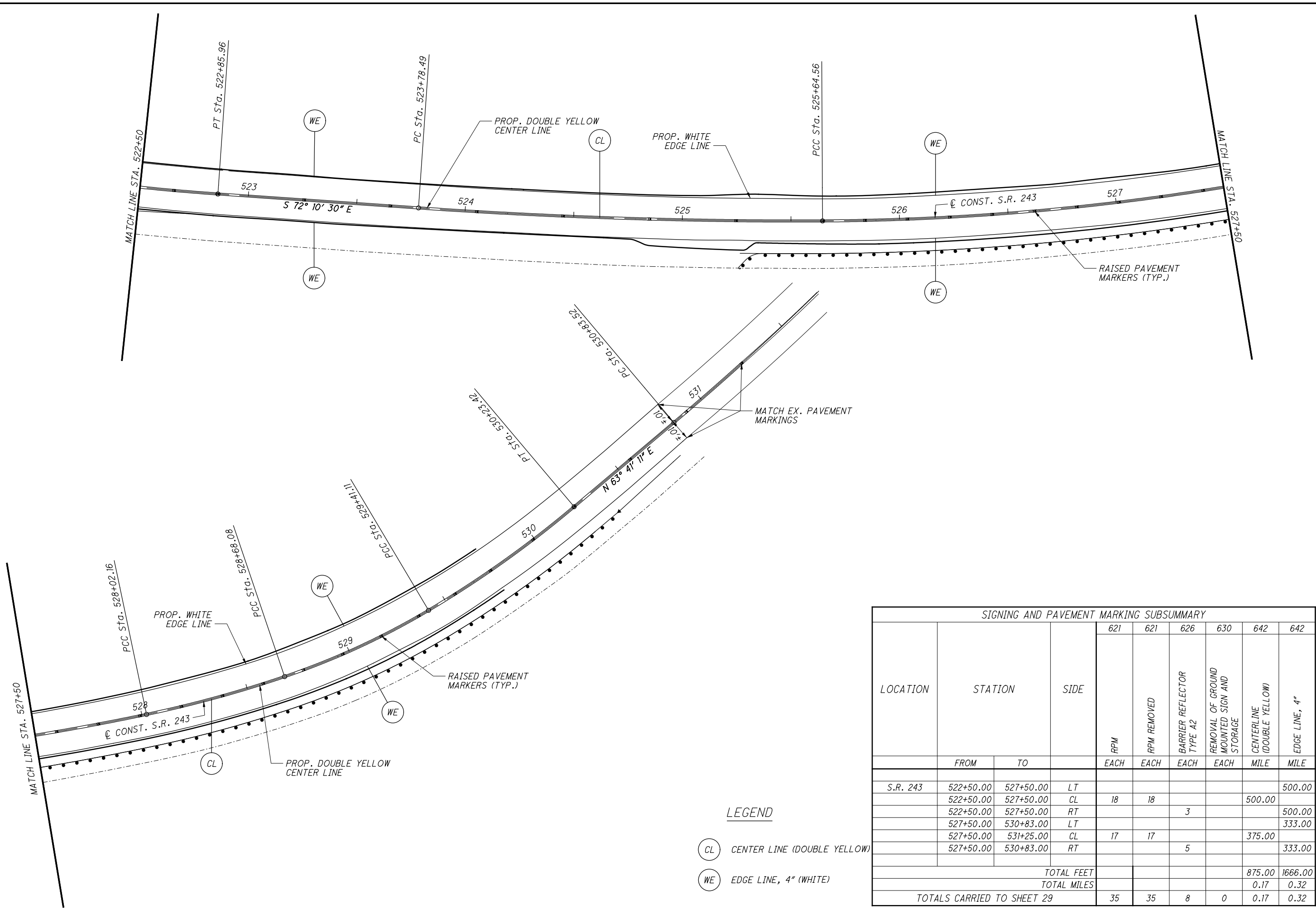
LEGEND

- (CL) CENTER LINE (DOUBLE YELLOW)
- (WE) EDGE LINE, 4" (WHITE)

DELIVER REMOVED SIGNS TO THE LAWRENCE COUNTY MANAGER FOR STORAGE.

SIGNING AND PAVEMENT MARKING SUBSUMMARY									
LOCATION	STATION		SIDE	621	621	626	630	642	642
				RPM	RPM REMOVED	BARRIER REFLECTOR TYPE 42	REMOVAL OF GROUND MOUNTED SIGN AND STORAGE	CENTERLINE (DOUBLE YELLOW)	EDGE LINE, 4"
	FROM	TO		EACH	EACH	EACH	EACH	MILE	MILE
S.R. 243	518+32.00	522+50.00	LT						418.00
	517+32.00	522+50.00	CL	19	19			468.00	
	518+32.00	522+50.00	RT			6			418.00
	520+63		RT				1		
	520+76		RT				1		
TOTAL FEET								468.00	836.00
TOTAL MILES								0.09	0.16
TOTAL FROM SHEET 30				35	35	8	0	0.17	0.32
TOTALS CARRIED TO GENERAL SUMMARY				54	54	14	2	0.26	0.48

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LEGEND

CL CENTER LINE (DOUBLE YELLOW)

WE EDGE LINE, 4" (WHITE)

SIGNING AND PAVEMENT MARKING SUBSUMMARY									
LOCATION	STATION		SIDE	621	621	626	630	642	642
				RPM	RPM REMOVED	BARRIER REFLECTOR TYPE A2	REMOVAL OF GROUND MOUNTED SIGN AND STORAGE	CENTERLINE (DOUBLE YELLOW)	EDGE LINE, 4"
	FROM	TO		EACH	EACH	EACH	EACH	MILE	MILE
S.R. 243	522+50.00	527+50.00	LT						500.00
	522+50.00	527+50.00	CL	18	18			500.00	
	522+50.00	527+50.00	RT			3			500.00
	527+50.00	530+83.00	LT						333.00
	527+50.00	531+25.00	CL	17	17			375.00	
	527+50.00	530+83.00	RT			5			333.00
TOTAL FEET								875.00	1666.00
TOTAL MILES								0.17	0.32
TOTALS CARRIED TO SHEET 29				35	35	8	0	0.17	0.32

CALCULATED
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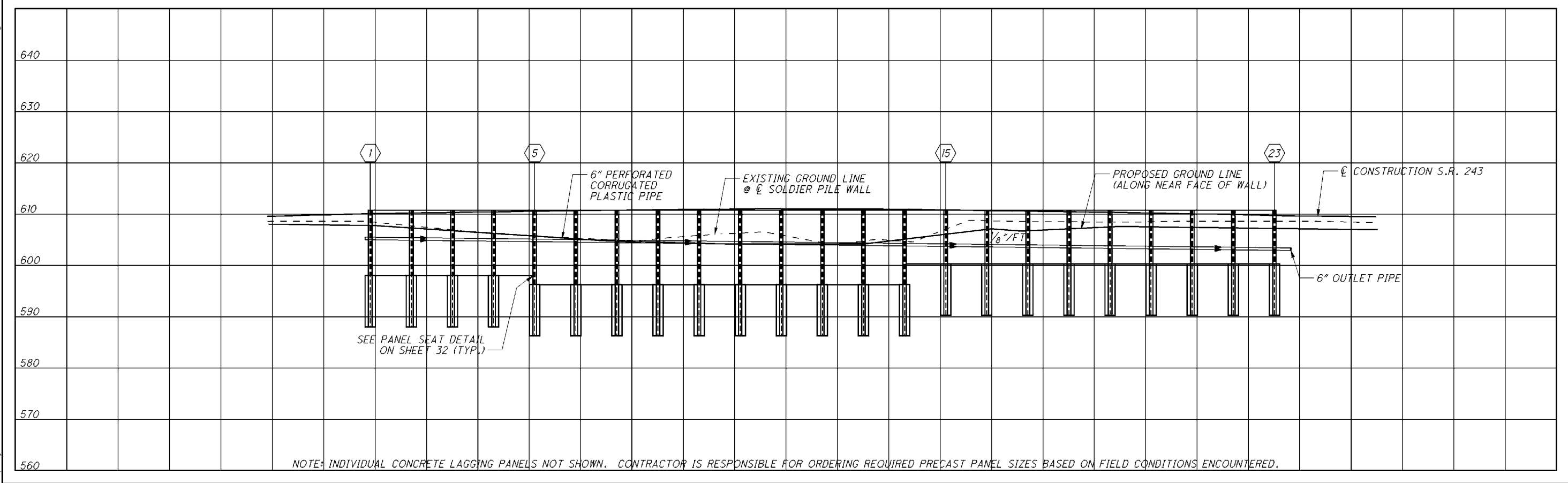
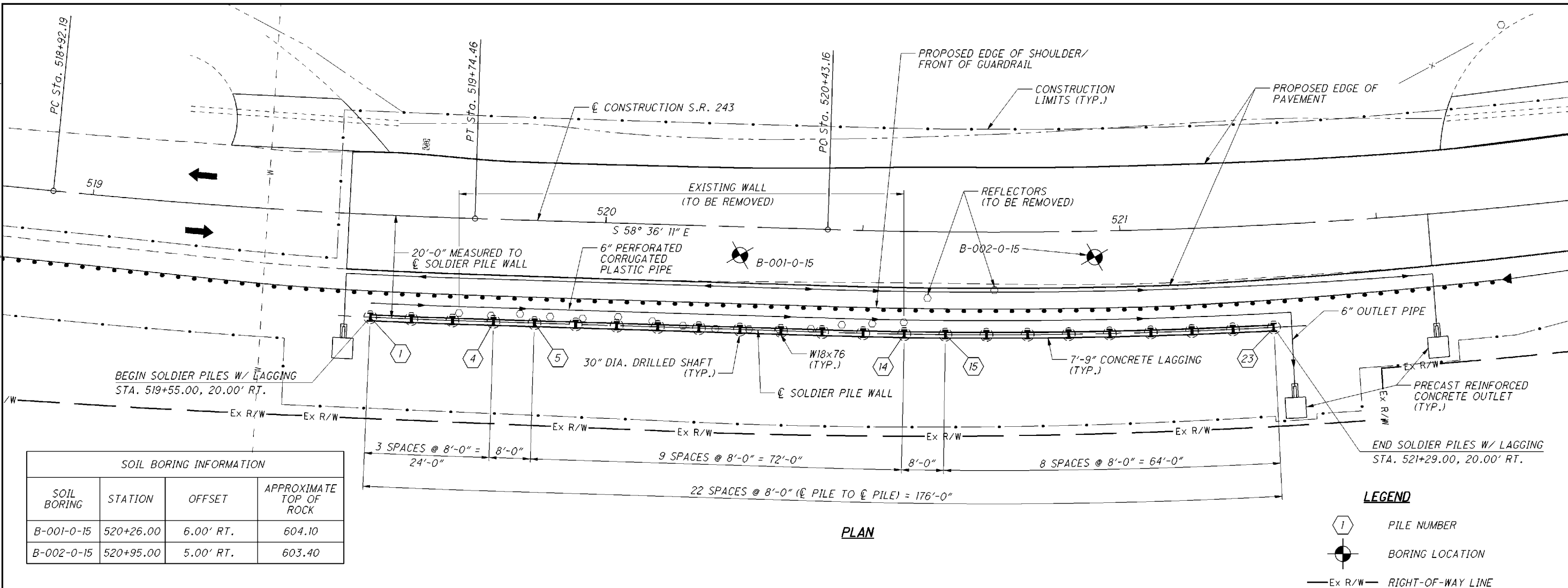
LAW -243-10.26

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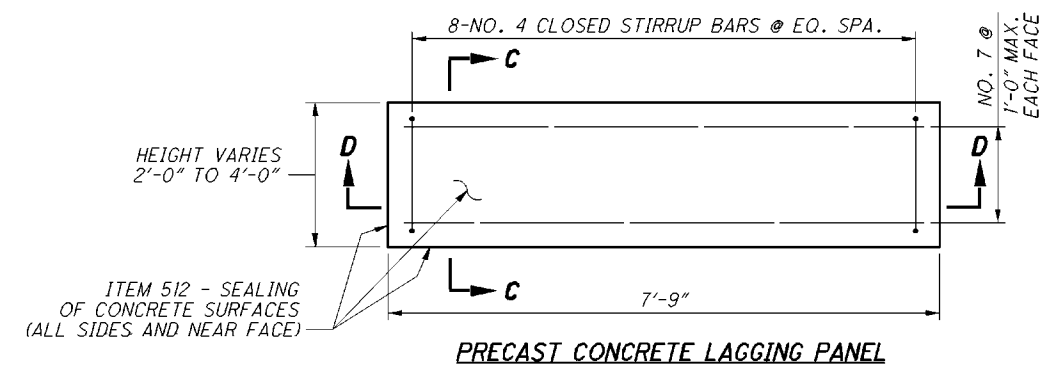
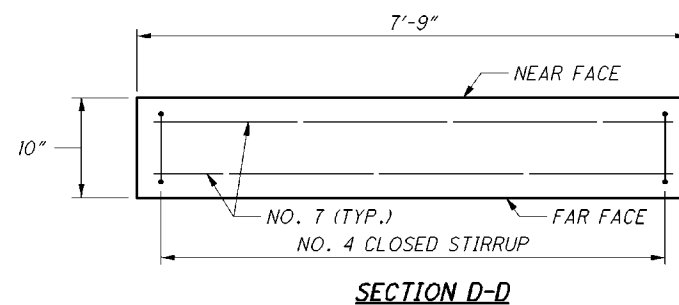
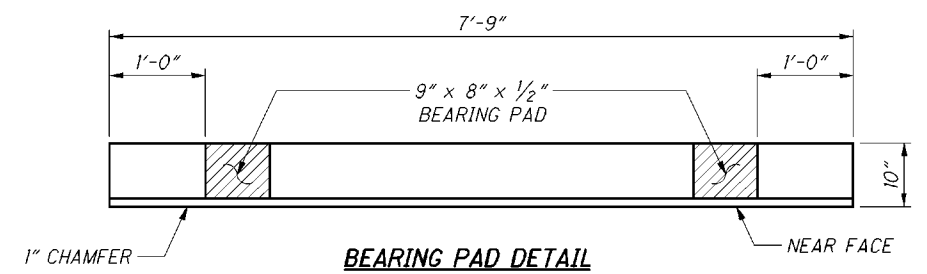
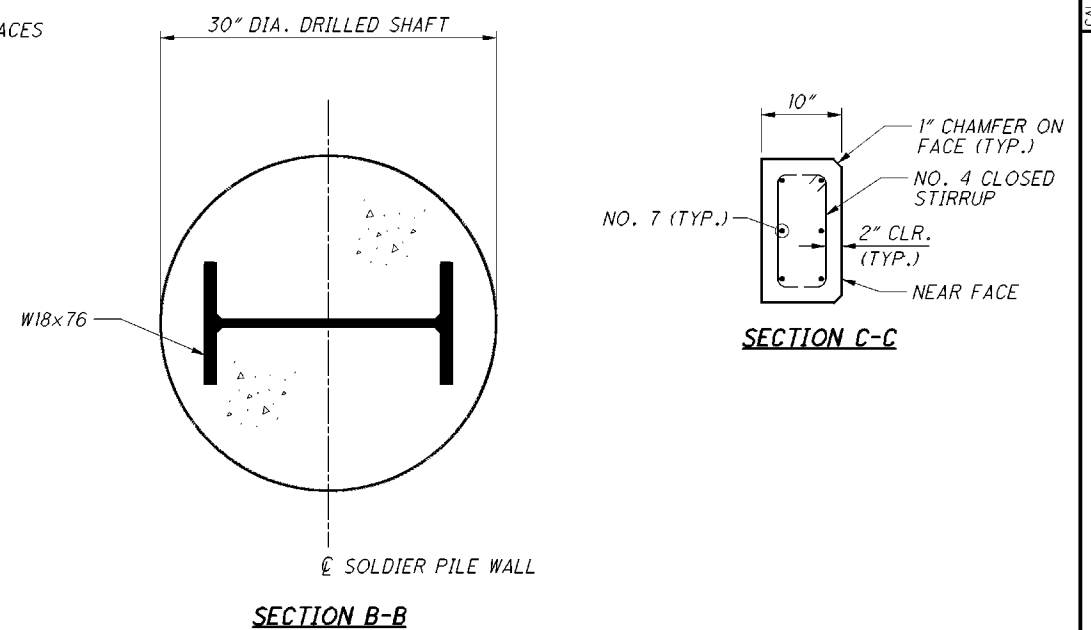
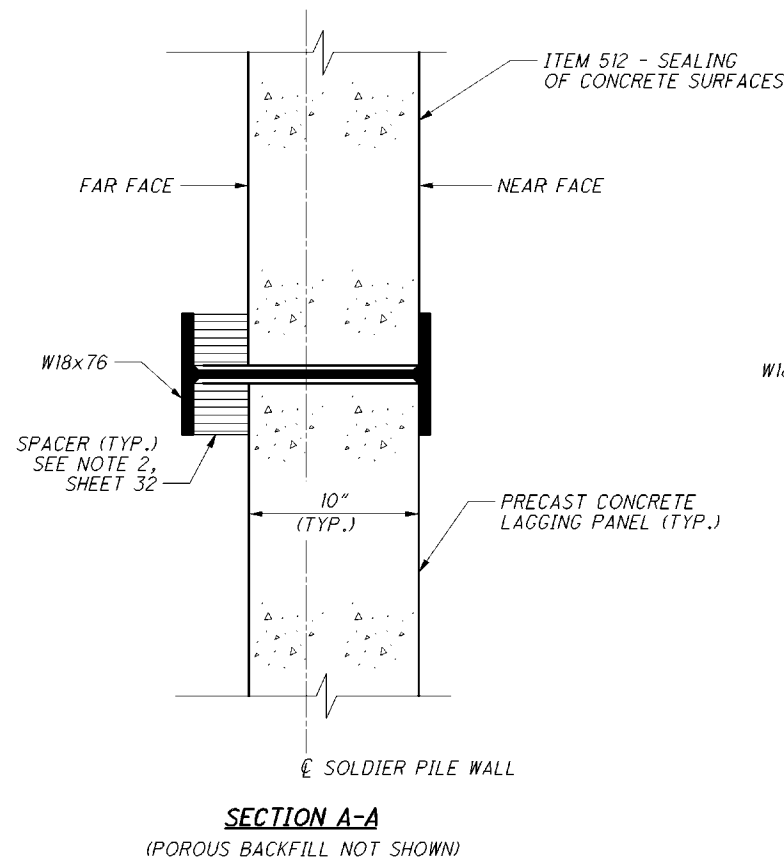
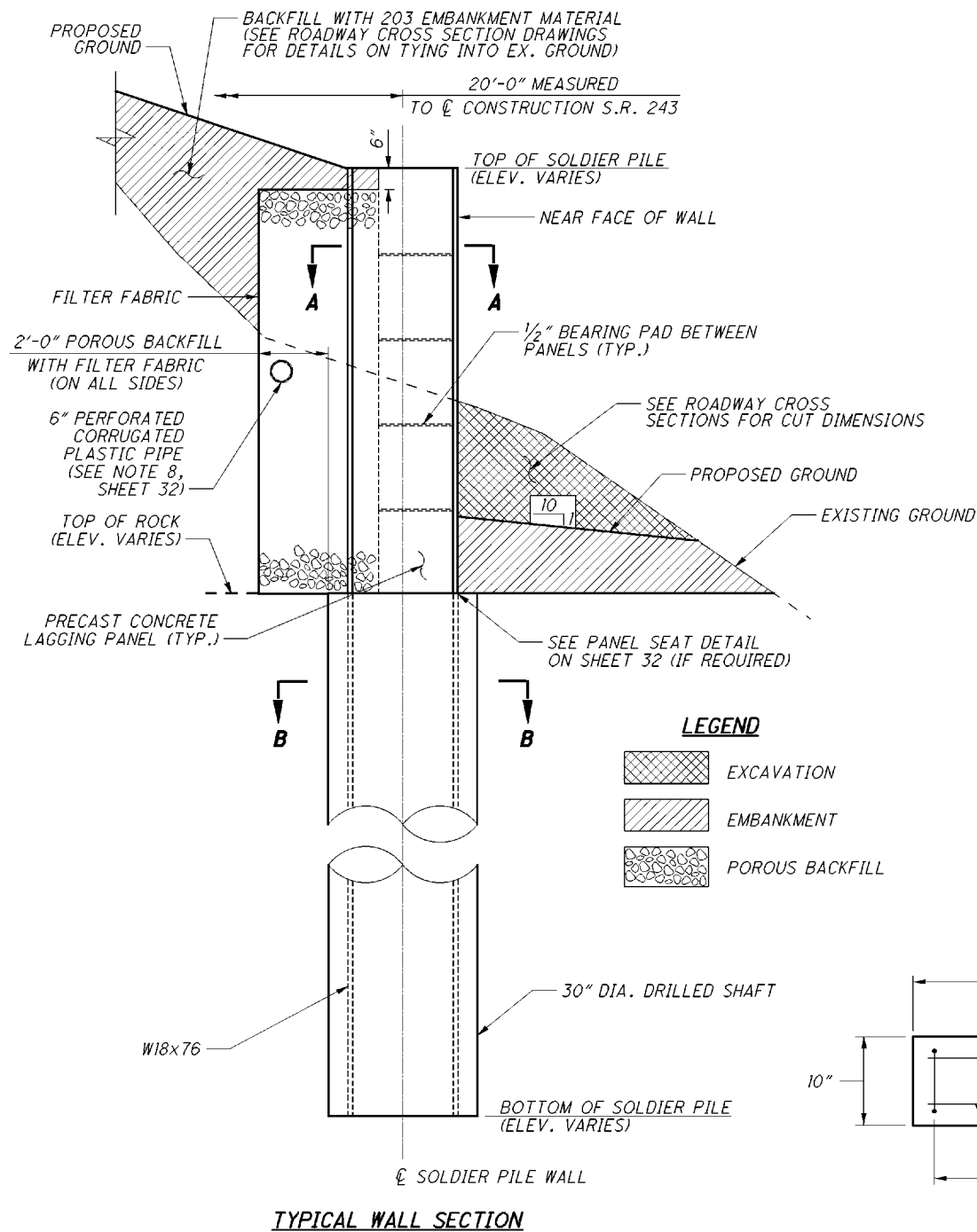
SIGNING AND PAVEMENT MARKING PLAN

0 20 40
HORIZONTAL
SCALE IN FEET

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GENERAL NOTES:

DESIGN SPECIFICATIONS: THIS STRUCTURE CONFORMS TO "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2010, AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN DATA:

CONCRETE CLASS OC1 - COMPRESSIVE STRENGTH 4,000 PSI (PANELS AND DRILLED SHAFT)

REINFORCING STEEL - ASTM A615 OR A996, GRADE 60 MINIMUM YIELD STRENGTH 60,000 PSI

STRUCTURAL STEEL - A572 GRADE 50, YIELD STRENGTH 50,000 PSI

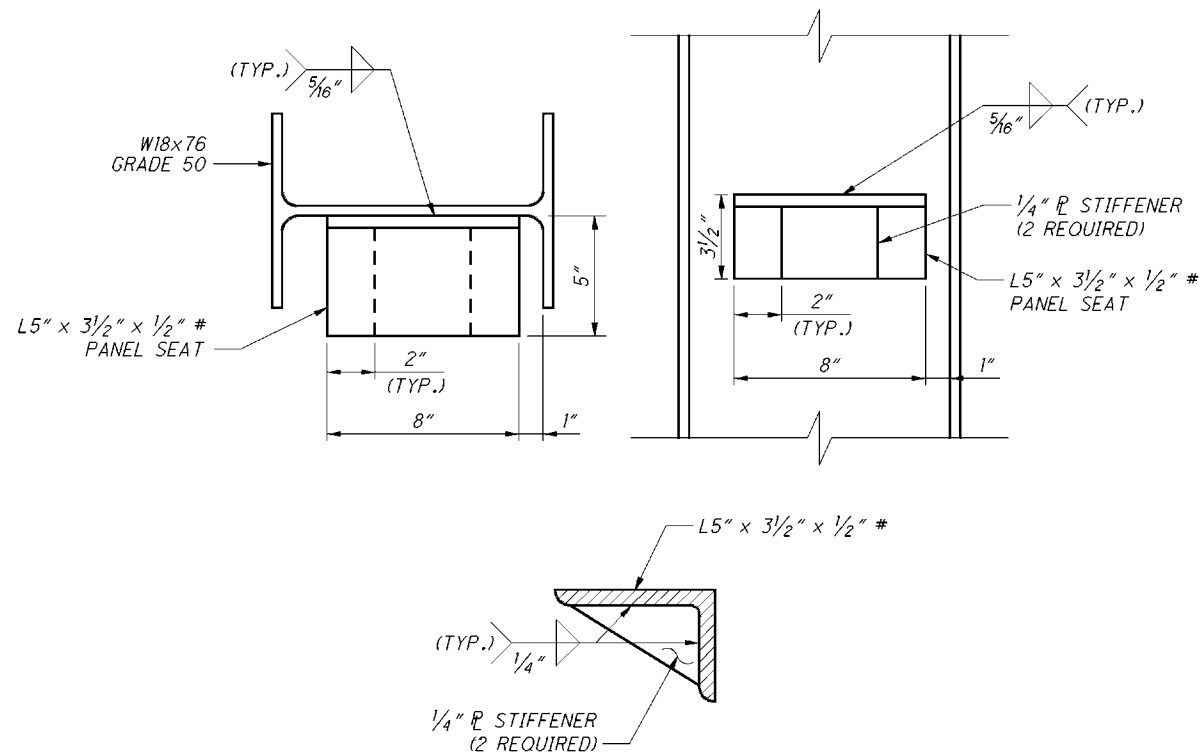
SOLDIER PILE WALL DETAILS*					
PILE NO.	BOTTOM OF SOLDIER PILE	APPROXIMATE TOP OF ROCK	BOTTOM OF LAGGING	TOP OF SOLDIER PILE	ESTIMATED PILE LENGTH
1 - 4	588.00	604.10	598.00	610.75	22.75
5 - 14	586.25	604.10	596.25	610.75	24.50
15 - 23	590.25	603.40	600.25	610.75	20.50

* TOP OF ROCK ELEVATIONS PROVIDED ARE AT BORING LOCATIONS AND ARE NOT INTENDED TO REPRESENT ACTUAL ROCK LOCATIONS ALONG SOLDIER PILE AND LAGGING WALL.

ESTIMATED QUANTITIES*

ITEM	ITEM EXT	TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
202	11000	LS		STRUCTURE REMOVED	
503	21100	773	CY	UNCLASSIFIED EXCAVATION	
507	00400	521	FT	STEEL PILES, MISC.: W18x76 SOLDIER PILES	5
512	10100	410	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
518	21200	254	CY	POROUS BACKFILL WITH FILTER FABRIC	
518	40000	180	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	
518	40010	15	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	
524	94603	184	FT	DRILLED SHAFTS, 30" DIAMETER, ABOVE BEDROCK, AS PER PLAN	5
524	94605	362	FT	DRILLED SHAFTS, 30" DIAMETER, INTO BEDROCK, AS PER PLAN	5
610	50010	2170	SF	SPECIAL - RETAINING WALL, MISC.: PRECAST CONCRETE LAGGING PANELS	5

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PANEL SEAT DETAILS

NOTES:

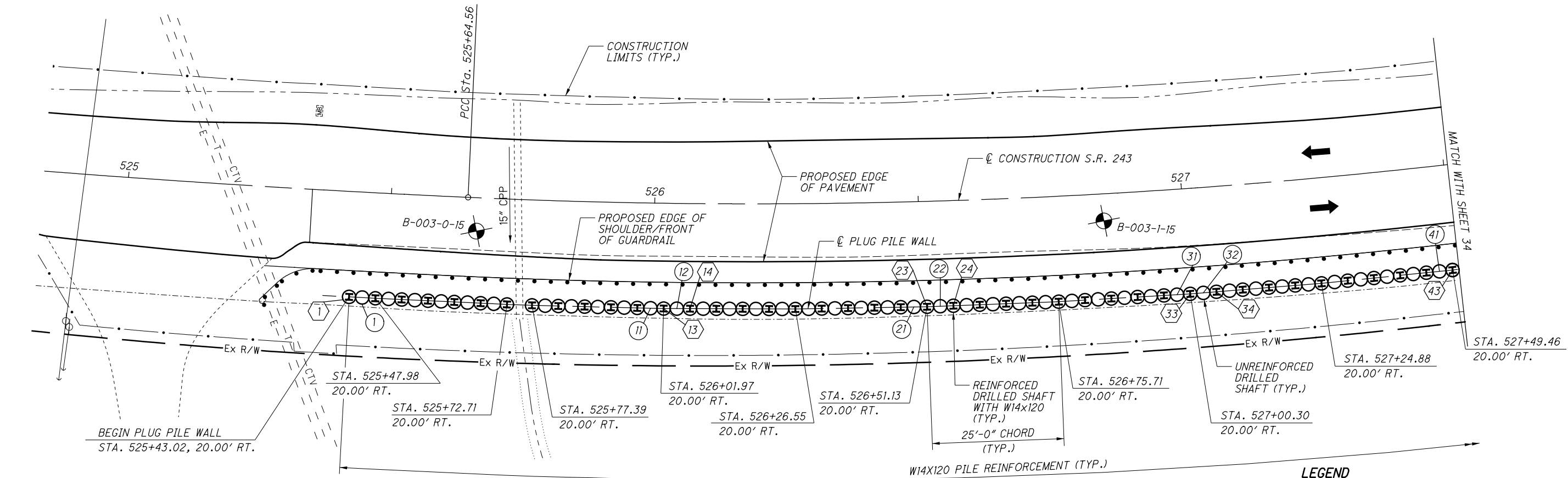
PANEL SEATS CAN BE FIELD WELDED TO THE CORRECT ELEVATION.

* PANEL SEAT AND STIFFENERS ARE INCLUDED IN PAYMENT FOR ITEM 507, STEEL PILES, MISC.: W18x76 SOLDIER PILES.

RETAINING WALL NOTES:

1. ALL REINFORCING STEEL SHALL BE EPOXY COATED EXCEPT AS ALLOWED BY THE ITEM 610 NOTE ON SHEET 5.
2. A MINIMUM OF TWO SPACERS AT THE TOP AND BOTTOM OF EACH SEPERATE PANEL SHALL BE USED AS NECESSARY TO PREVENT LAGGING PANELS FROM MOVING. PAYMENT FOR SPACER MATERIAL AND INSTALLATION SHALL BE INCLUDED WITH ITEM 610.
3. CONTRACTOR SHALL SECURE PRECAST CONCRETE PANEL AGAINST BEAM FLANGE UNTIL BACKFILL HAS BEEN PLACED AND COMPACTED.
4. THE STEEL SECTION SHALL BE CENTERED WITHIN THE DRILLED SHAFT, SUPPORTED VERTICALLY, SET PLUMB, AND SECURED IN PLACE SO AS NOT TO MOVE DURING CONCRETE PLACEMENT AND CURING. THE STEEL SECTION SHALL BE CHECKED FOR PLUMBNESS IMMEDIATELY AFTER CONCRETE PLACEMENT AND CORRECTED AS NECESSARY PRIOR TO THE CONCRETE SETTING.
5. THE DESIGN OF THE WALL IS BASED ON A DEPTH FROM GROUND SURFACE TO BEDROCK OF 14.50' MAX. IF FIELD CONDITIONS INDICATE GREATER DEPTHS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER FOR FURTHER EVALUATION.
6. PRICE OF THE ELASTOMERIC BEARING PADS SHALL BE INCLUDED IN THE UNIT PRICE OF THE PRECAST PANELS.
7. PANEL MAY SIT UPON THE TOP OF THE SHAFT OR PANEL SEAT MAY BE REQUIRED.
8. LOCATE PERFORATED CORRUGATED PLASTIC PIPE BASED ON ELEVATIONS SHOWN ON SHEETS 19 THROUGH 21 TO PROVIDE POSITIVE GRAVITY FLOW IN THE PIPE TO THE OUTLET LOCATION.

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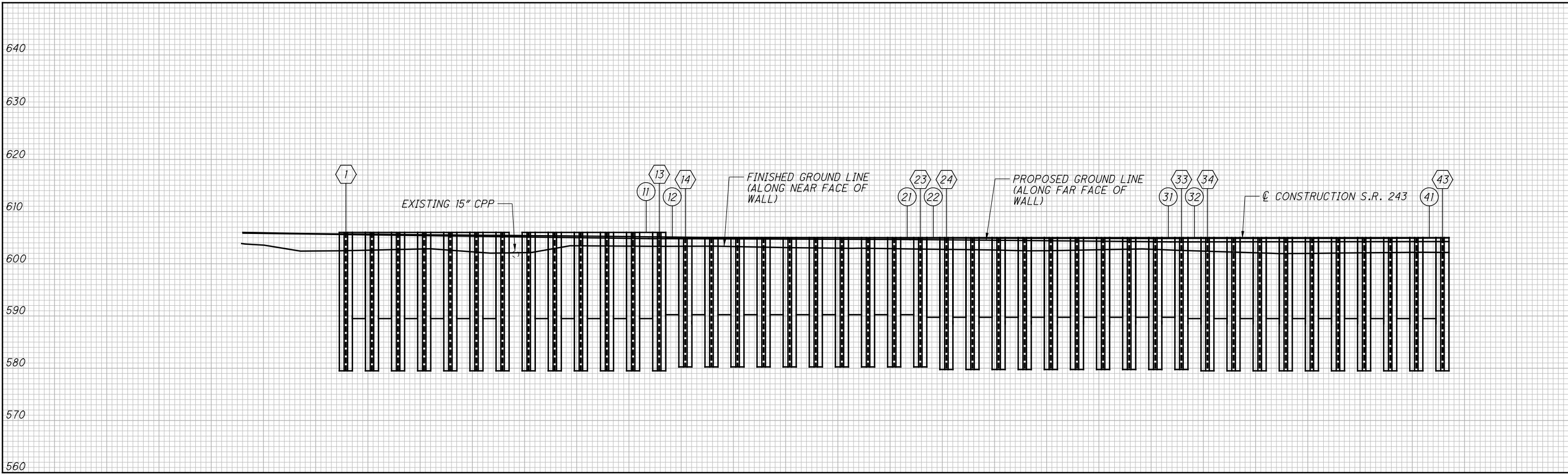
SOIL BORING INFORMATION			
SOIL BORING	STATION	OFFSET	APPROXIMATE TOP OF ROCK
B-003-0-15	525+66.00	6.00' RT.	592.80
B-003-1-15	526+85.00	5.00' RT.	594.90

NOTES

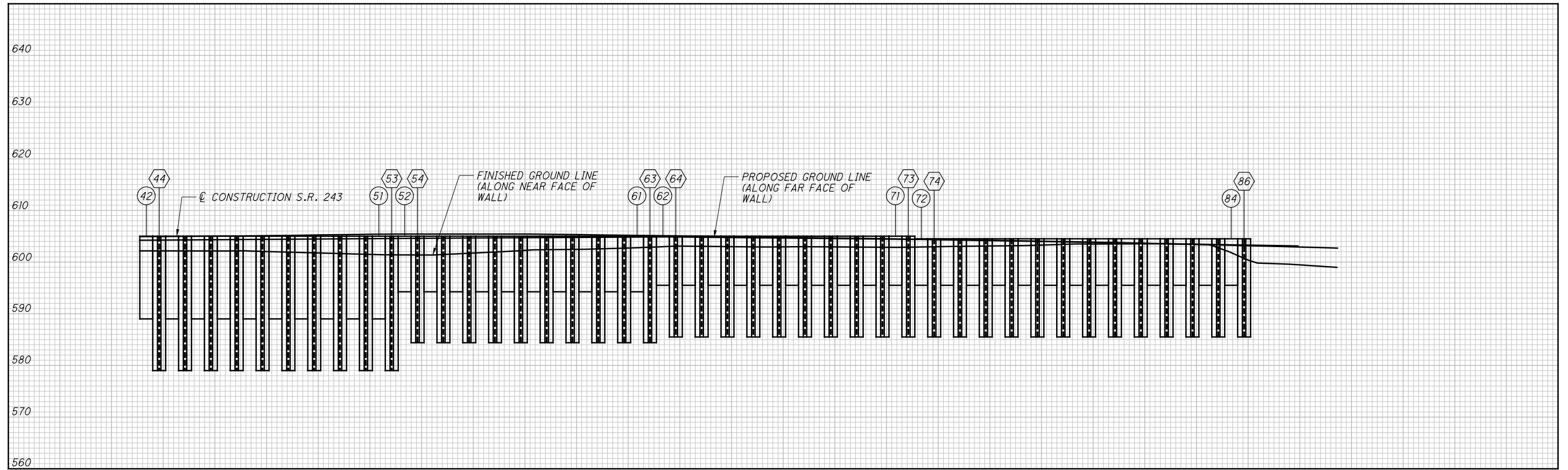
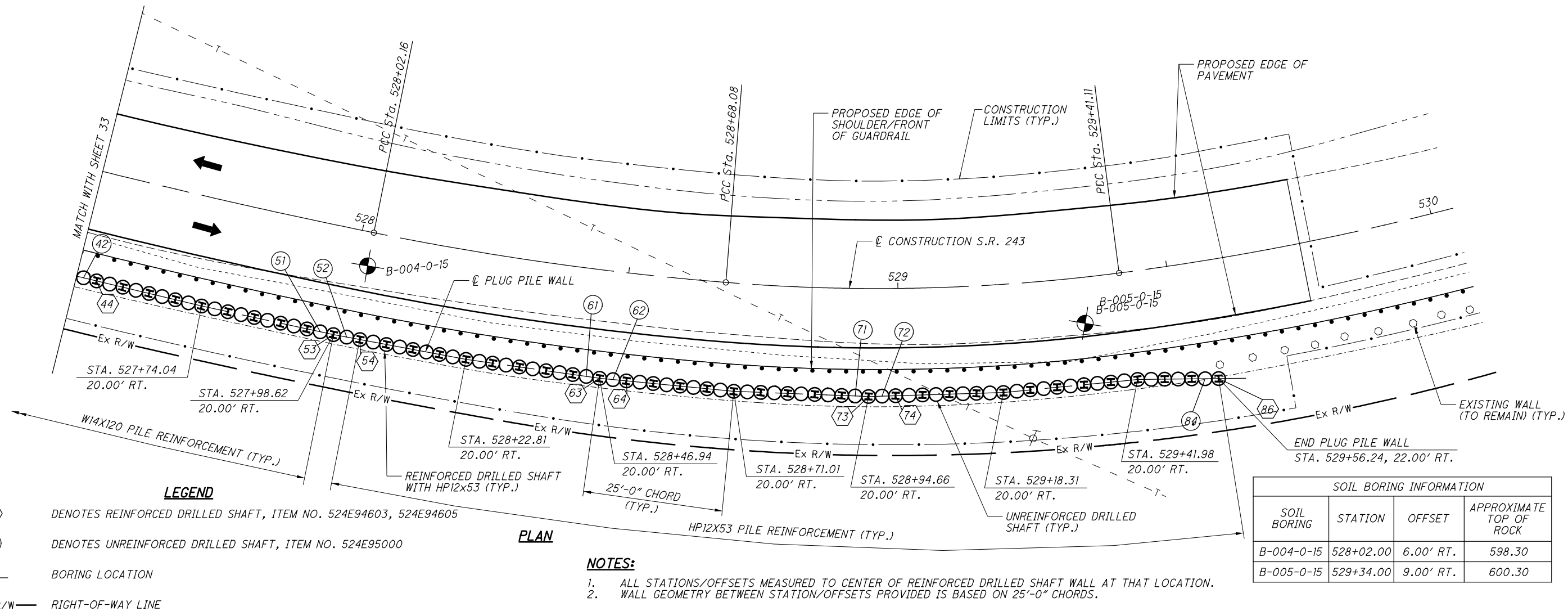
- ALL STATIONS/OFFSETS MEASURED TO CENTER OF REINFORCED DRILLED SHAFT WALL AT THAT LOCATION.
- WALL GEOMETRY BETWEEN STATION/OFFSETS PROVIDED IS BASED ON 25'-0" CHORDS.

LEGEND

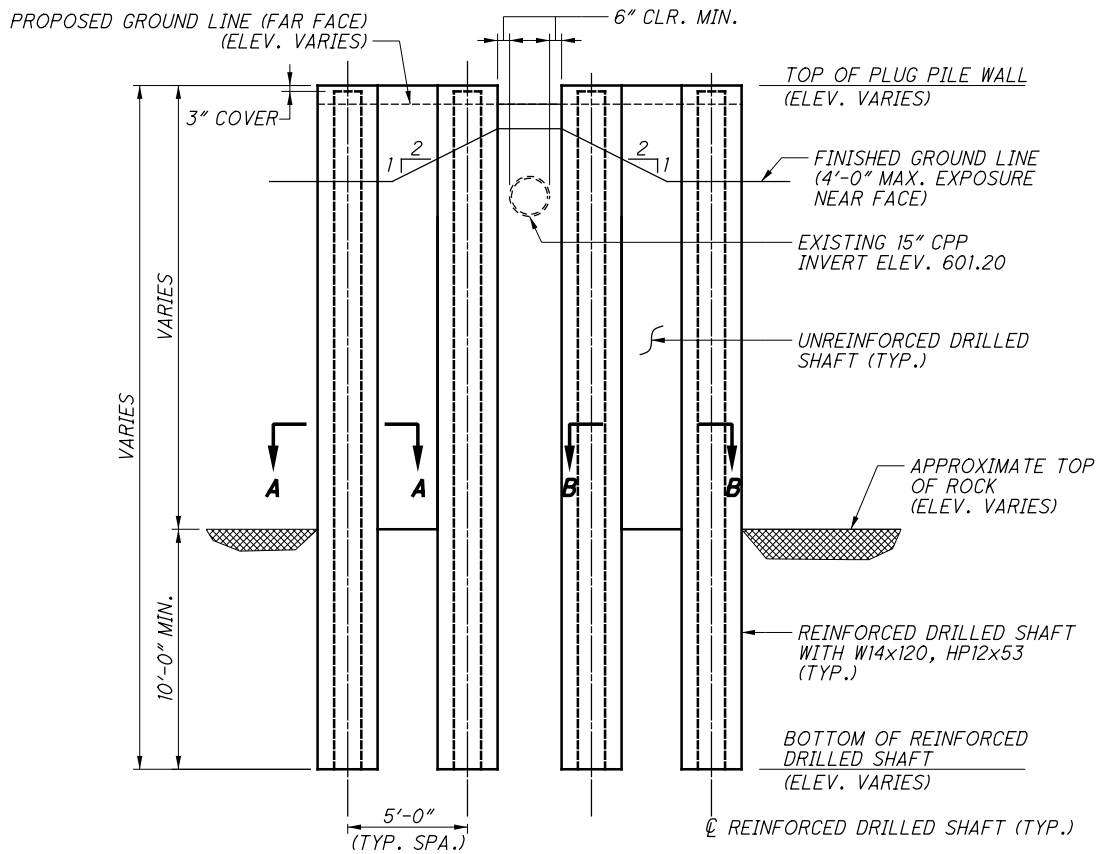
- DENOTES REINFORCED DRILLED SHAFT, ITEM NO. 524E94603, 524E94605
- DENOTES UNREINFORCED DRILLED SHAFT, ITEM NO. 524E95000
- BORING LOCATION
- Ex R/W RIGHT-OF-WAY LINE



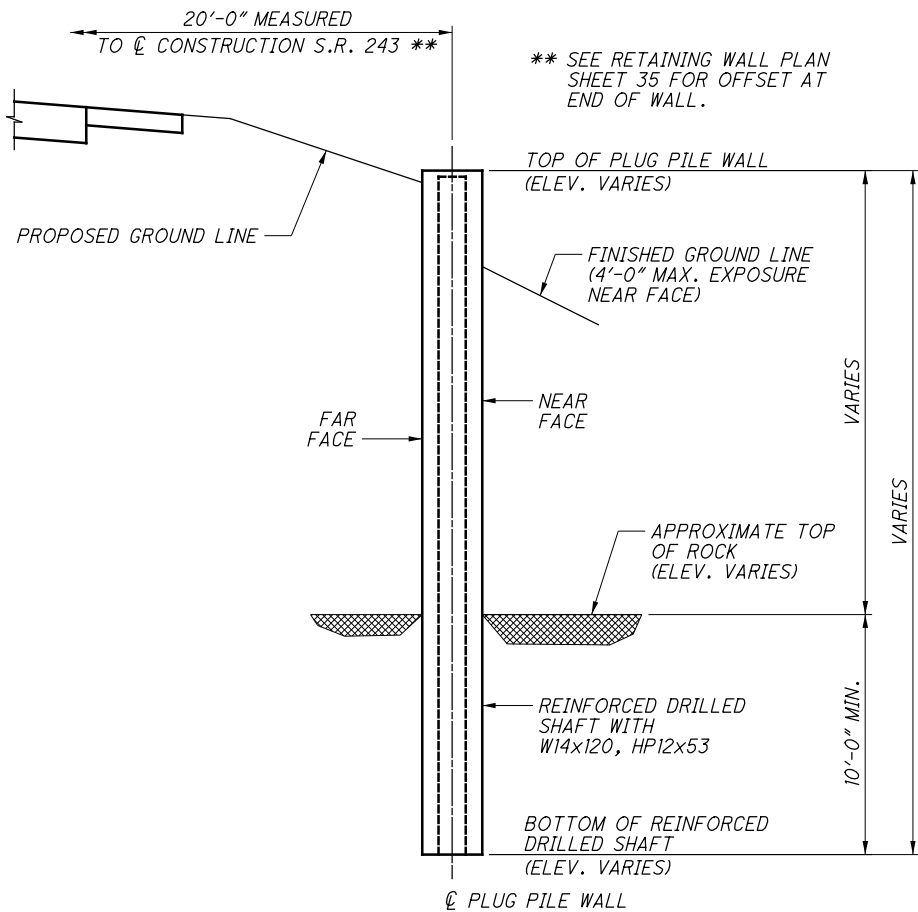
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\\onserver1\public\Projects\5588_District 9 GES\Tasks\Task 9G - LAW 243 10.3-10.4\100068_structures\Wall_002\Sheets\100068_002_WD001.dgn 3/9/2016 7:54:02 PM bat

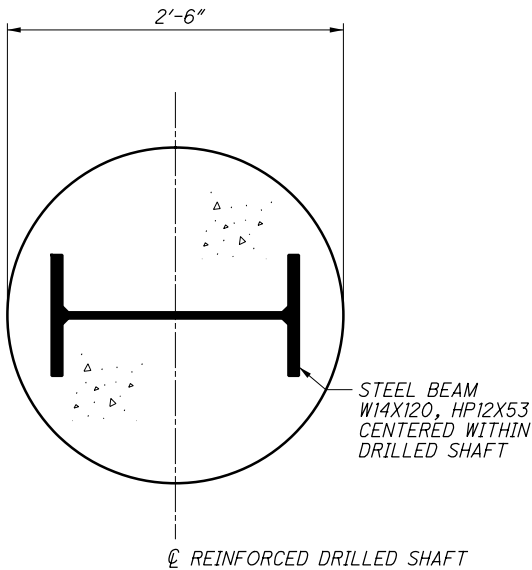


TYPICAL WALL ELEVATION

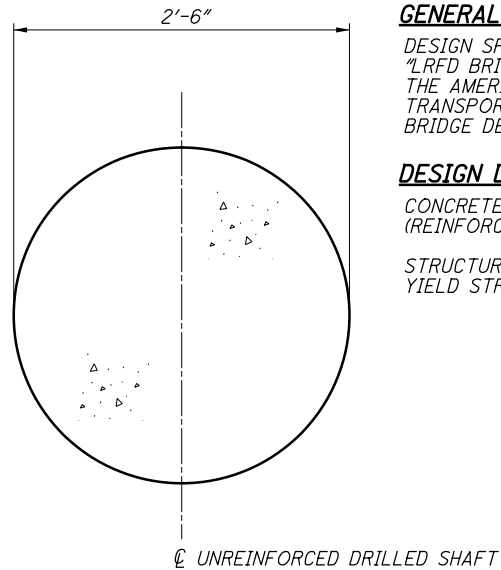


TYPICAL WALL SECTION

ESTIMATED QUANTITIES					
ITEM	ITEM EXT	TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
507	00400	1360	FT	STEEL PILES, MISC.: W14X120 STEEL BEAM, FURNISHED	5
507	00400	643	FT	STEEL PILES, MISC.: HP12X53 STEEL BEAM, FURNISHED	5
524	94603	1143	FT	DRILLED SHAFTS, 30" DIAMETER, ABOVE BEDROCK, AS PER PLAN	5
524	94605	860	FT	DRILLED SHAFTS, 30" DIAMETER, INTO BEDROCK, AS PER PLAN	5
524	95000	1101	FT	DRILLED SHAFTS, MISC: PLUG PILE, 30" DIAMETER, UNREINFORCED, AS PER PLAN	5



SECTION A-A



SECTION B-B

GENERAL NOTES:

DESIGN SPECIFICATIONS: THIS STRUCTURE CONFORMS TO "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2010, AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN DATA:

CONCRETE CLASS QC1 - COMPRESSIVE STRENGTH 4,000 PSI (REINFORCED & UNREINFORCED DRILLED SHAFTS)

STRUCTURAL STEEL - A572 GRADE 50, YIELD STRENGTH 50,000 PSI

PLUG PILE RETAINING WALL DETAILS (REINFORCED DRILLED SHAFTS)						
PILE NO.	LOCATION LIMITS	TOP OF PLUG PILE WALL	ESTIMATED PILE LENGTH	NO. OF PILES	APPROXIMATE TOP OF ROCK ELEVATION*	BEAM
1 - 13	525+43.02 TO 526+01.97	606.00	26.50	13	592.80	W14x120
14 - 23	526+06.88 TO 526+51.13	605.00	24.75	10	592.80	W14x120
24 - 33	526+56.05 TO 527+00.30	605.00	25.25	10	594.90	W14x120
34 - 43	527+05.21 TO 527+49.46	605.00	25.50	10	594.90	W14x120
44 - 53	527+54.38 TO 527+98.62	605.00	26.00	10	594.90	W14x120
54 - 63	528+03.51 TO 528+46.94	605.00	20.75	10	598.30	HP12x53
64 - 73	528+51.76 TO 528+94.66	605.00	19.50	10	598.30	HP12x53
74 - 86	528+99.39 TO 529+56.24	604.50	19.00	13	600.30	HP12x53

① DENOTES REINFORCED DRILLED SHAFT, ITEM NO. 524E94603, 524E94605 (SEE RETAINING WALL PLAN SHEETS 34 AND 35 FOR REFERENCE)

*TOP OF ROCK ELEVATIONS PROVIDED ARE AT BORING LOCATIONS AND ARE NOT INTENDED TO REPRESENT ACTUAL ROCK LOCATION ALONG PLUG PILE WALL.

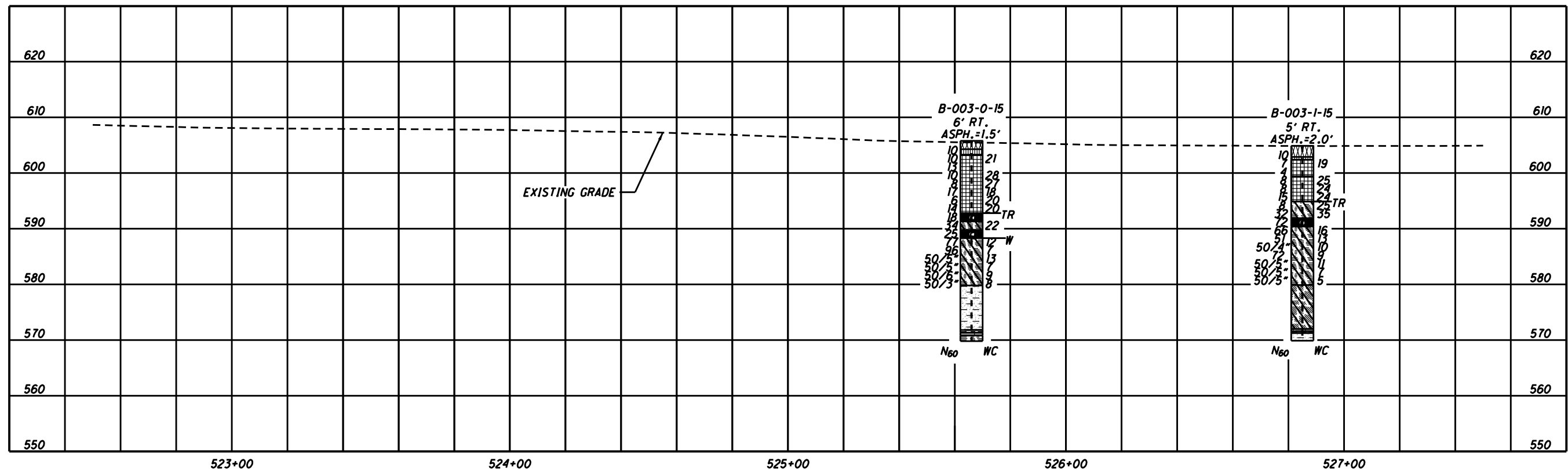
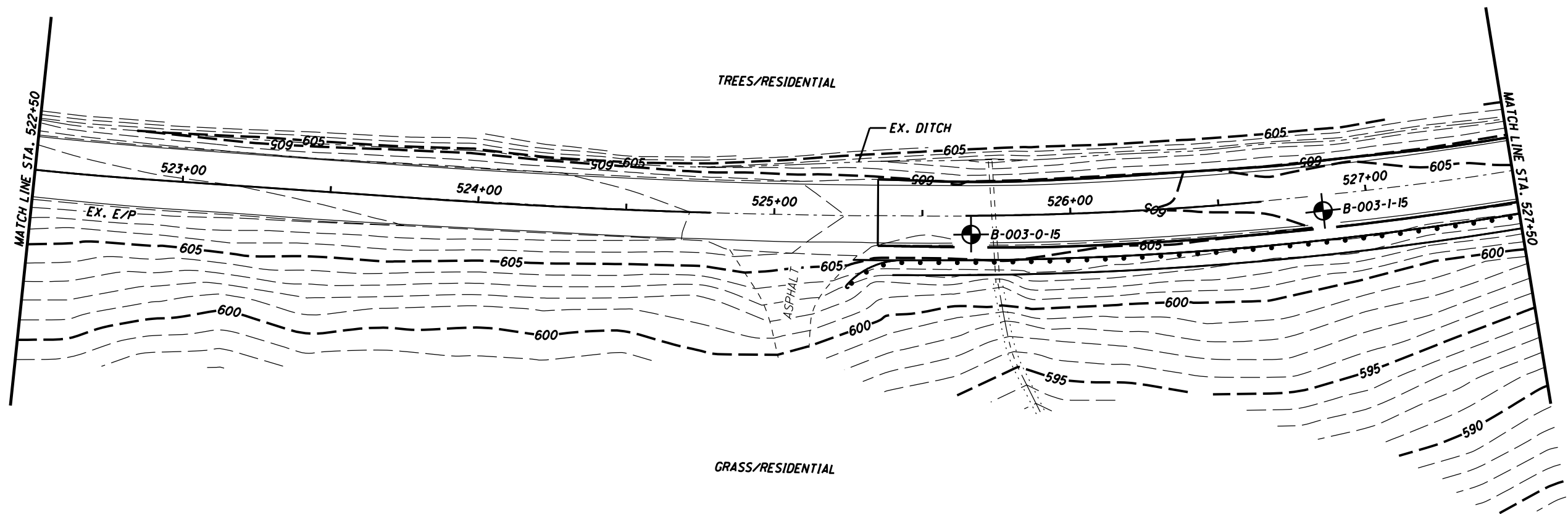
PLUG PILE RETAINING WALL DETAILS (UNREINFORCED DRILLED SHAFTS)					
PILE NO.	LOCATION LIMITS	TOP OF PLUG PILE WALL	ESTIMATED PILE LENGTH	NO. OF PILES	APPROXIMATE TOP OF ROCK ELEVATION*
1 - 11	525+45.50 TO 525+99.51	606.00	16.50	11	592.80
12 - 21	526+04.43 TO 526+48.67	605.00	14.75	10	592.80
22 - 31	526+53.59 TO 526+97.84	605.00	15.25	10	594.90
32 - 41	527+02.75 TO 527+47.00	605.00	15.50	10	594.90
42 - 51	527+51.92 TO 527+96.17	605.00	16.00	10	594.90
52 - 61	528+01.08 TO 528+44.53	605.00	10.75	10	598.30
62 - 71	528+49.35 TO 528+92.29	605.00	9.50	10	598.30
72 - 84	528+97.02 TO 529+53.87	604.50	9.00	13	600.30

① DENOTES UNREINFORCED DRILLED SHAFT, ITEM NO. 524E95000 (SEE RETAINING WALL PLAN SHEETS 34 AND 35 FOR REFERENCE)

*TOP OF ROCK ELEVATIONS PROVIDED ARE AT BORING LOCATIONS AND ARE NOT INTENDED TO REPRESENT ACTUAL ROCK LOCATION ALONG PLUG PILE WALL.

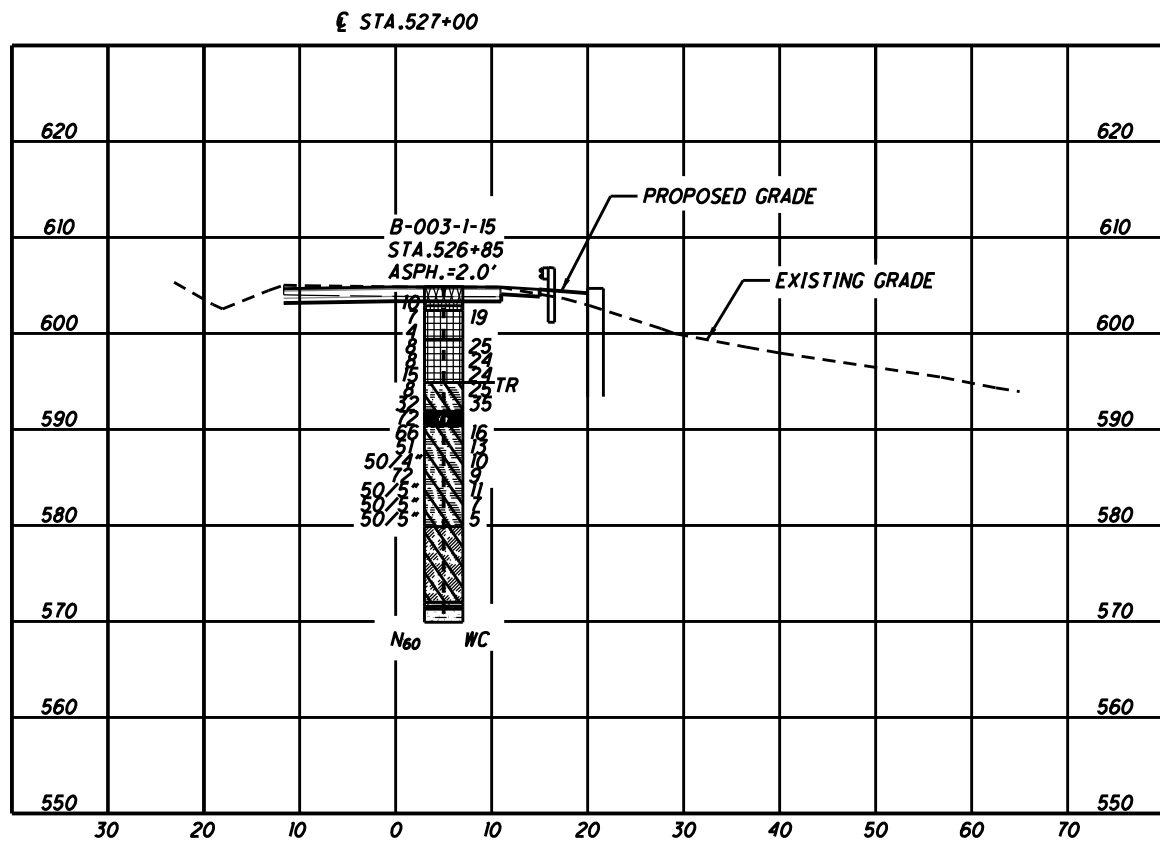
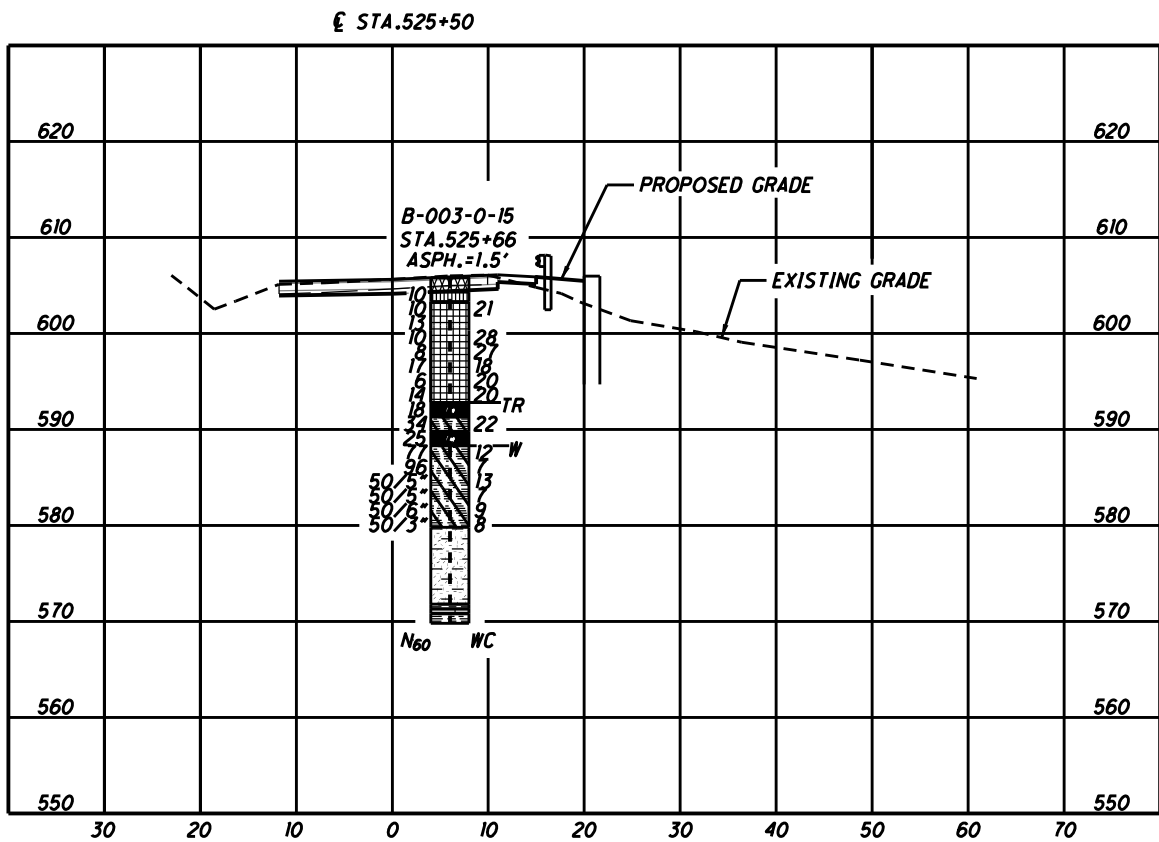
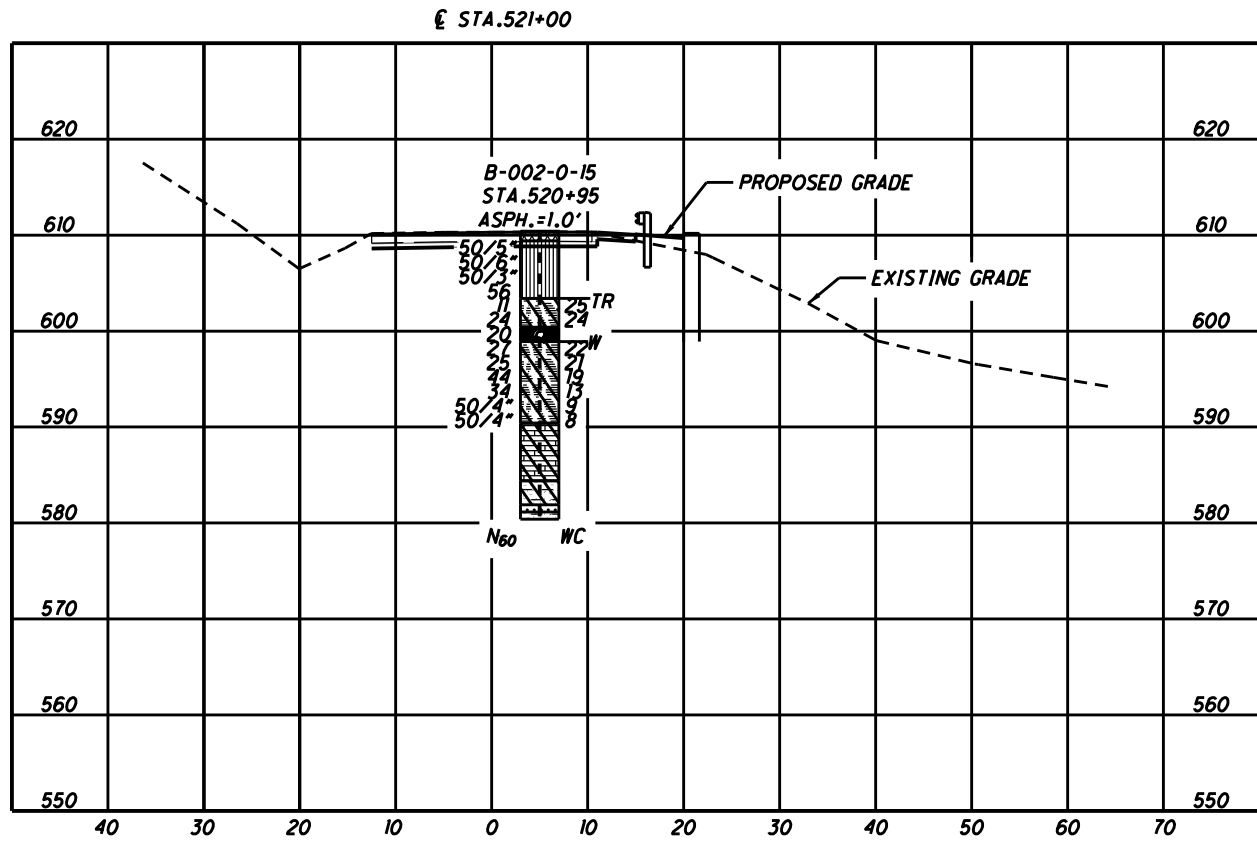
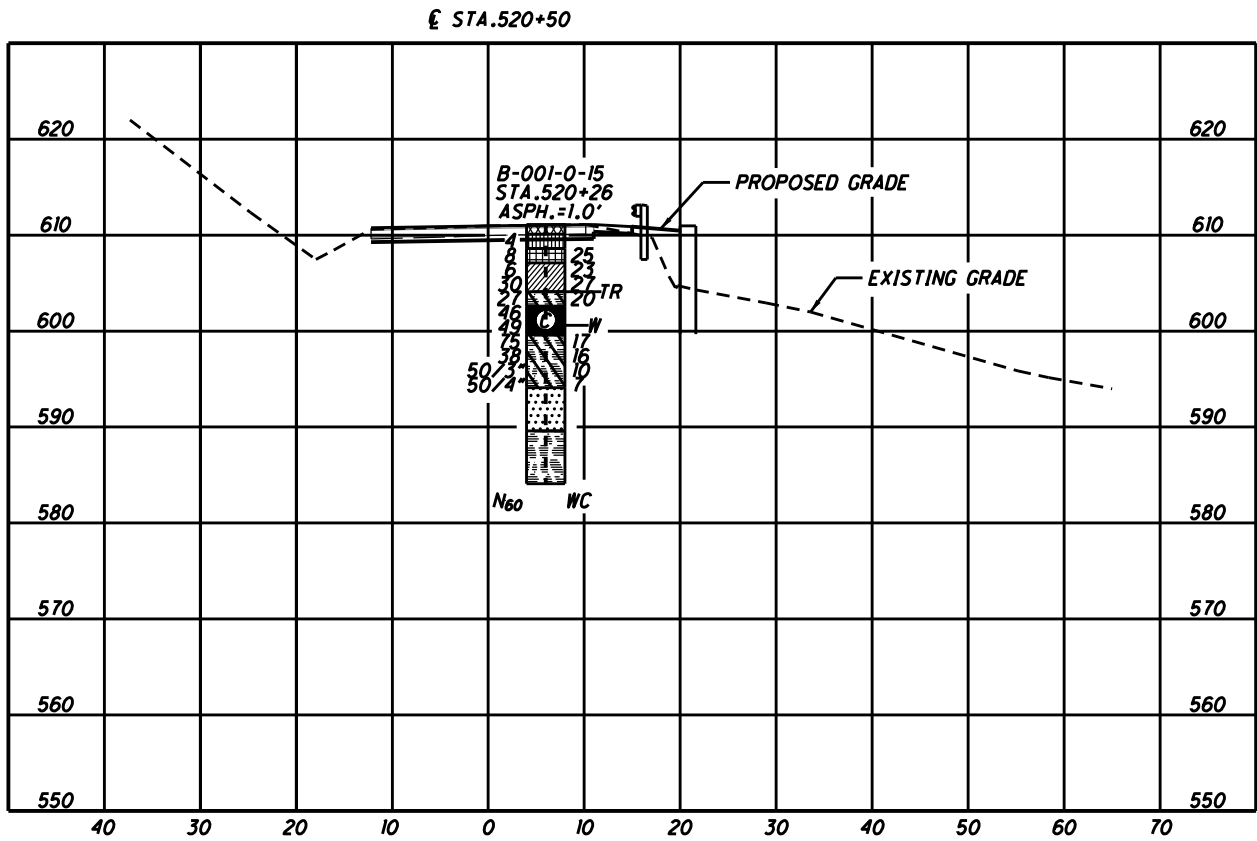


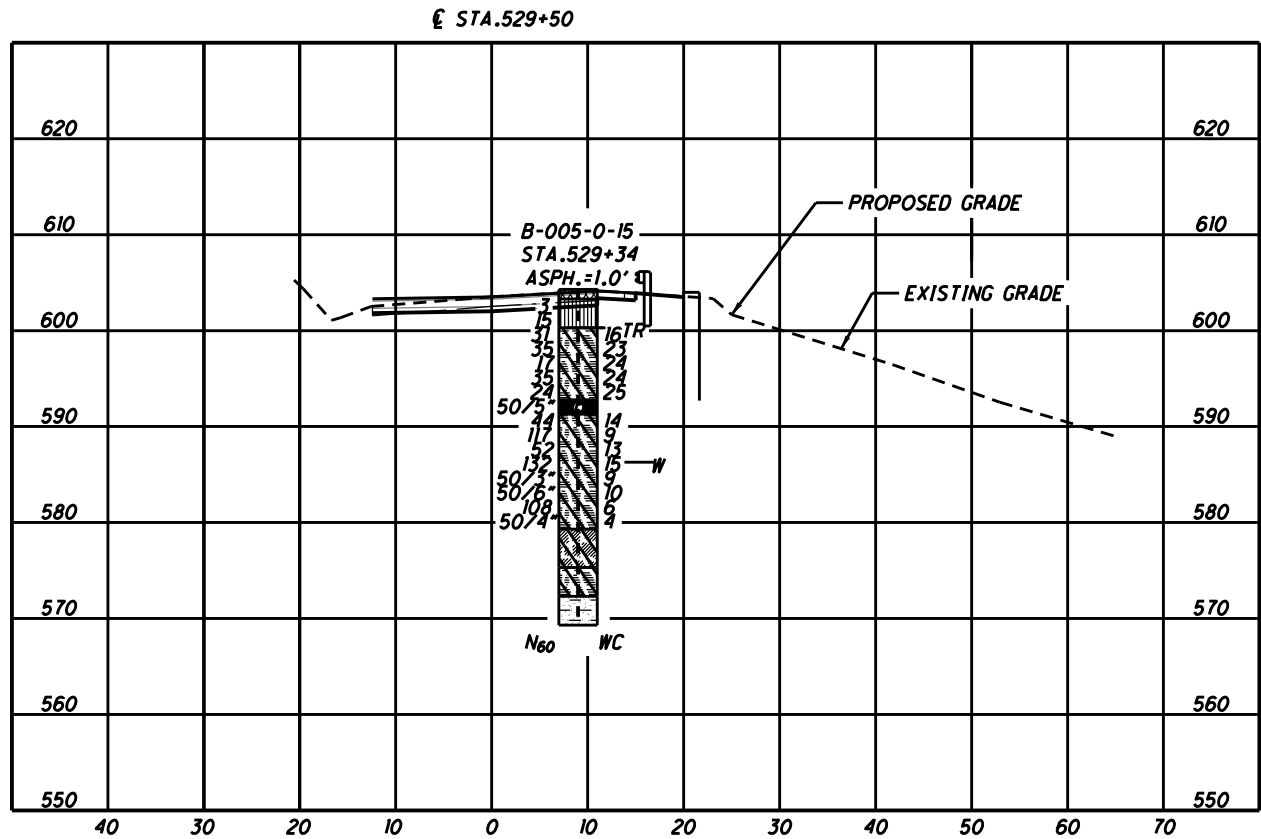
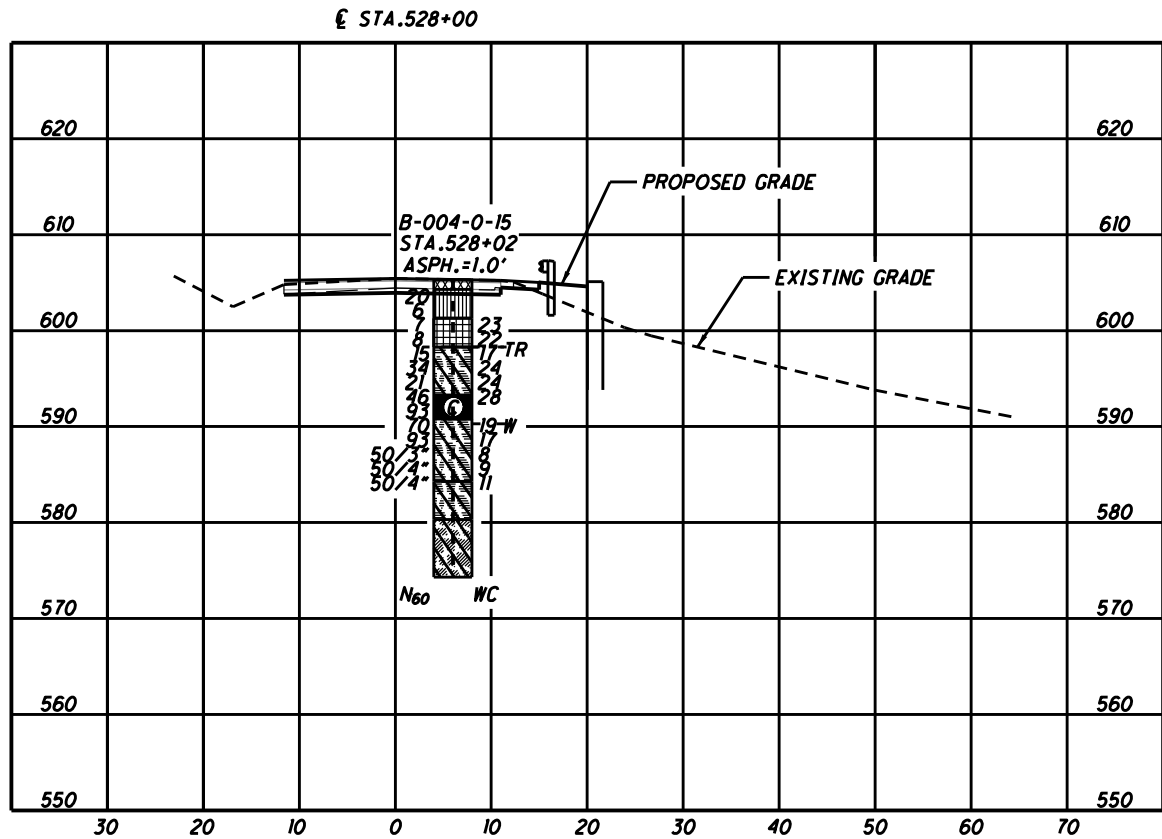
LAW-243-10.3-10.4





J:\dept5\15 Projects\15050086COL-McCormick Taylor-LAW-243-10.3-10.4\Design\From Sachina\15050086COL\100068YX001.dgn 9/22/2015 6:03:30 PM smalladi





STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 9/22/15 14:09 - J:\DEPT5\15 PROJECTS\15050086COL-MCCORMICK TAYLOR-LAW-243-10.3-10.4\REPORTS\LOGS\15050086COL

PROJECT: LAW-243-10.3-10.4		DRILLING FIRM / OPERATOR: CTL / ZB		DRILL RIG: CME 75/# 25		STATION / OFFSET: 520+26, 6' RT.		EXPLORATION ID																									
TYPE: GEOHAZARD EXPLORATION		SAMPLING FIRM / LOGGER: CTL / ZB		HAMMER: CME AUTOMATIC		ALIGNMENT:		B-001-0-15																									
PID: 100068 SFN:		DRILLING METHOD: 3.25" HSA / NQ		CALIBRATION DATE: 9/24/13		ELEVATION: 611.1 (MSL) EOB: 27.0 ft		PAGE																									
START: 5/19/15 END: 5/19/15		SAMPLING METHOD: SPT		ENERGY RATIO (%): 84.4		COORD: 180000.3578 N, 1969289.6621 E		1 OF 1																									
MATERIAL DESCRIPTION AND NOTES		ELEV.		SPT/ RQD		REC (%)		SAMPLE ID		HP (tsf)		GR		CS		FS		SI		CL		LL		PL		PI		WC		ODOT CLASS (G)		BACK FILL	
Asphalt (12")		611.1		1																													
VERY LOOSE, BROWN AND BLACK, SANDY SILT, SOME GRAVEL, WITH ASPHALT PIECES, FILL, DRY		610.1		2		1		4		56		SS-1																		A-4a (V)			
VERY STIFF, BROWN, CLAY, SOME SILT, TRACE SAND, CONTAINS ASPHALT FRAGMENTS, FILL, DAMP		608.6		3		2		8		56		SS-2		3.50		0		2		31		65		57		27		30		25			
@5.5'; HARD				4		3		6		67		SS-3																		A-7-6 (V)			
				5		4		3																						A-7-6 (V)			
		604.1		6		7		30		67		SS-4		4.50																27			
SHALE, BLACK AND BROWN, SEVERELY WEATHERED, VERY WEAK, (SOIL-LIKE).		602.6		7		12		27		89		SS-5		4.50																20			
COAL, BLACK.				8		11		46		67		SS-6																		Rock (V)			
				9		20		49		89		SS-7																		Rock (V)			
		599.6		10		14		75		67		SS-8																		17			
SHALE, GRAY, SEVERELY TO HIGHLY WEATHERED, WEAK, (SOIL-LIKE).				11		23		38		89		SS-9																		Rock (V)			
				12		30		10		89		SS-10																		16			
				13		17		-		89		SS-10																		10			
				14		50/3"		-		-		-																		Rock (V)			
		594.1		15		25		-		100		SS-11																		7			
				16		50/4"		-		-		-																		Rock (V)			
				17				-		-		-																		Rock (V)			
CONGLOMERATE, GRAY TO BROWN, HIGHLY WEATHERED, VERY WEAK, INDURATED, RQD 15%.				18				-		-		-																		CORE			
				19				13		37		NQ-1																		CORE			
				20				-		-		-																		CORE			
				21				-		-		-																		CORE			
		589.6		22				-		-		-																		CORE			
SHALE, OLIVE GRAY, MODERATELY WEATHERED, WEAK, RQD 48%.				23				-		-		-																		CORE			
@23.0'; COMPRESSIVE STRENGTH = 1,171 PSI				24				53		92		NQ-2																		CORE			
				25				-		-		-																		CORE			
				26				-		-		-																		CORE			
		584.1		27				-		-		-																		CORE			
				EOB				-		-		-																		CORE			

NOTES: CAVED AT 10.0'
ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1/4 BAG ASPHALT PATCH, POURED 1/2 BAG BENTONITE GEL, BACKFILLED WITH SOIL CUTTINGS



PROJECT: LAW-243-10.3-10.4			DRILLING FIRM / OPERATOR: CTL / ZB			DRILL RIG: CME 75/# 25			STATION / OFFSET: 525+66, 6' RT.			EXPLORATION ID								
TYPE: GEOHAZARD EXPLORATION			SAMPLING FIRM / LOGGER: CTL / ZB			HAMMER: CME AUTOMATIC			ALIGNMENT:			B-003-0-15								
PID: 100068 SFN:			DRILLING METHOD: 3.25" HSA / NQ			CALIBRATION DATE: 9/24/13			ELEVATION: 605.8 (MSL) EOB: 36.0 ft.			PAGE								
START: 5/20/15 END: 5/20/15			SAMPLING METHOD: SPT			ENERGY RATIO (%): 84.4			COORD: 179810.1589 N, 1969794.6973 E			1 OF 2								
MATERIAL DESCRIPTION AND NOTES																				
Asphalt (18")			ELEV. 605.8			DEPTHS			GRADATION (%)			ATTERBERG			BACK FILL					
LOOSE, BROWN AND BLACK, SANDY SILT, SOME GRAVEL, WITH ASPHALT PIECES, FILL, DRY VERY STIFF, BROWN, CLAY, SOME SILT, LITTLE GRAVEL, LITTLE SAND, CONTAINS SHALE FRAGMENTS, FILL, DAMP @4.0'; STIFF, NO RECOVERY VERY STIFF, BROWN, CLAY, AND SILT, TRACE SAND, TRACE GRAVEL, DAMP @8.5'; TRACE SAND @10.0'; SOME SILT, LITTLE GRAVEL COAL, BLACK SHALE, GRAY, SEVERELY WEATHERED, VERY WEAK, (SOIL-LIKE). COAL, BLACK. SHALE, BROWNISH GRAY, SEVERELY WEATHERED, WEAK, (SOIL-LIKE). @19.0'; GRAY, SLIGHTLY WEATHERED. @23.5'; VERY WEAK. SILTSTONE, OLIVE GRAY, MODERATELY WEATHERED, VERY WEAK, WITH IRON STAINING, FEW LIMESTONE NODULES, BECOMES WEAK AT 30.0', BECOMES HIGHLY WEATHERED AT APPROXIMATELY 31' WITH VERTICAL FRACTURES AND IRON STAINING; ROD 58%. @ 26.0'; COMPRESSIVE STRENGTH = 714 psi			604.3			1														
			603.3			2			6 4 10 67			-			-					
									3			4			-			-		
									4			3 10 89			4.00			21		
									5			12 6 13 0			-			-		
						600.3			6			4 4 10 56			3.00			28		
									7			4 4 10 56			3.00			27		
									8			5 6 17 56			3.50			18		
									9			1 2 6 61			3.00			20		
									10			4 5 14 100			3.50			20		
									11			6 18 39			-			-		
									12			7 11 34 89			4.50			22		
									13			3 7 25 44			-			-		
									14			9 17 77 83			4.50			12		
									15			22 38 96			4.50			7		
									16			16 89 50/5'			4.50			13		
									17			24 50/5'			4.50			7		
									18			23 50			-			9		
									19			24 50/3"			-			8		
									20											
									21											
									22											
									23											
									24											
									25											
									26											
						27														
						28														
						29														

STANDARD ODOT SOIL BORING LOG (6.5 X 11) - OH DOT.GDT - 9/22/15 17:49 - J:\DEPT5\15 Projects\15050086COL-MCCORMICK TAYLOR-LAW-243-10.3-10.4\REPORTS\L0GS\15050086COL

PROJECT: LAW-243-10.3-10.4		DRILLING FIRM / OPERATOR: CTL / ZB		DRILL RIG: CME 75/# 25		STATION / OFFSET: 528+02, 6' RT.		EXPLORATION ID									
TYPE: GEOHAZARD EXPLORATION		SAMPLING FIRM / LOGGER: CTL / ZB		HAMMER: CME AUTOMATIC		ALIGNMENT:		B-004-0-15									
PID: 100068 SFN:		DRILLING METHOD: 3.25" HSA / NQ		CALIBRATION DATE: 9/24/13		ELEVATION: 605.3 (MSL) EOB: 31.0 ft		PAGE									
START: 5/20/15 END: 5/20/15		SAMPLING METHOD: SPT		ENERGY RATIO (%): 84.4		COORD: 179778.4293 N, 1970029.2875 E		1 OF 2									
MATERIAL DESCRIPTION AND NOTES		ELEV.		SPT/ RQD		REC SAMPLE (%)		HP (tsf)		GRADATION (%)		ATTERBERG		ODOT CLASS (GI)		BACK FILL	
		605.3				N ₆₀		ID		GR CS FS SI CL LL PL PI WC							
Asphalt (12")		604.3		1													
MEDIUM DENSE, BLACK AND BROWN, SANDY SILT, SOME GRAVEL, WITH ASPHALT, FILL				2		20		SS-1								A-4a (V)	
@2.5"; LOOSE				3		6		SS-2								A-4a (V)	
MEDIUM STIFF, BROWN, CLAY, AND GRAVEL, SOME SILT, LITTLE SAND, DAMP		601.3		4		7		SS-3		37		6 7 21 29 48 23 25		23		A-7-6 (9)	
@5.5"; VERY STIFF, SOME GRAVEL, TRACE SAND				5		8		SS-4		3.50		4 31 34 44 23 21		22		A-7-6 (11)	
SHALE, BROWN AND GRAY, SEVERELY WEATHERED, WEAK (SOIL-LIKE).		598.3		6		15		SS-5		4.00						Rock (V)	
				7		34		SS-6		4.50						Rock (V)	
				8		21		SS-7		4.50						Rock (V)	
COAL, BLACK		593.3		9		46		SS-8								Rock (V)	
				10		93		SS-9								Rock (V)	
SHALE, GRAY, SEVERELY WEATHERED, VERY WEAK, (SOIL-LIKE).		590.8		11		70		SS-10		4.50						Rock (V)	
				12		93		SS-11		4.50						Rock (V)	
@17.5"; WEAK.				13		100		SS-12								Rock (V)	
@19.0"; BROWN.				14		67		SS-13								Rock (V)	
@20.5"; VERY WEAK.		594.3		15		94		SS-14								Rock (V)	
SHALE, GRAY, HIGHLY WEATHERED, VERY WEAK; ROD 81%.				16		100		SS-14								Rock (V)	
CLAYSTONE, OLIVE GRAY, HIGHLY WEATHERED, VERY WEAK, VERTICAL FRACTURES WITH IRON STAINING; RQD 54%.		580.3		17		65		NQ-1								CORE	
@29.0"; COMPRESSIVE STRENGTH= 307 PSI				18												CORE	

STANDARD ODOT SOIL BORING LOG (6.5 X 11) - OH DOT.GDT - 9/22/15 17:49 - J:\DEPT5\15 Projects\15050086COL-MCCORMICK TAYLOR-LAW-243-10.3-10.4\REPORTS\L0GS\15050086COL

PID: 100068 SFN:	PROJECT: LAW-243-10.3-10.4	STATION / OFFSET: 528+02, 6' RT.		START: 5/20/15	END: 5/20/15	PG 2 OF 2		B-004-0-15									
MATERIAL DESCRIPTION AND NOTES		ELEV.		SPT/ RQD		REC SAMPLE (%)		HP (tsf)		GRADATION (%)		ATTERBERG		ODOT CLASS (GI)		BACK FILL	
		575.3				N ₆₀		ID		GR CS FS SI CL LL PL PI WC							
		574.3		EOB													
NOTES: CAVED AT 12.0'																	
ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1/4 BAG ASPHALT PATCH; POURED 1/2 BAG BENTONITE GEL; BACKFILLED WITH SOIL CUTTINGS																	

PROJECT: LAW-243-10.3-10.4			DRILLING FIRM / OPERATOR: CTL / ZB			DRILL RIG: CME 75/# 25			STATION / OFFSET: 529+34, 9' RT.			EXPLORATION ID B-005-0-15							
TYPE: GEOHAZARD EXPLORATION			SAMPLING FIRM / LOGGER: CTL / ZB			HAMMER: CME AUTOMATIC			ALIGNMENT:			PAGE 1 OF 2							
PID: 100068 SFN:			DRILLING METHOD: 3.25" HSA / NQ			CALIBRATION DATE: 9/24/13			ELEVATION: 604.3 (MSL) EOB: 35.0 ft			COORD: 179789.8795 N, 1970162.1855 E							
START: 5/21/15 END: 5/21/15			SAMPLING METHOD: SPT			ENERGY RATIO (%): 84.4			GR CS FS SI CL			ATTERBERG LL PL PI WC							
MATERIAL DESCRIPTION AND NOTES						ELEV. 604.3		SPT/ RQD		REC SAMPLE ID		GRADATION (%)		OBSOT CLASS (gl)		BACK FILL			
Asphalt (12") VERY LOOSE, BROWN AND BLACK, SANDY SILT, SOME GRAVEL, WITH ASPHALT, FILL, DRY @2.5"; MEDIUM DENSE						603.3		1		33									
						603.3		1		SS-1								A-4a (V)	
						600.3		4		15		SS-2						A-4a (V)	
						600.3		7		39		SS-3						Rock (V)	
						600.3		10		56		SS-4						Rock (V)	
						600.3		12		61		SS-5						Rock (V)	
						600.3		13		39		SS-6						Rock (V)	
						600.3		14		61		SS-7						Rock (V)	
						600.3		15		39		SS-8						Rock (V)	
						600.3		16		61		SS-9						Rock (V)	
						600.3		17		39		SS-10						Rock (V)	
						600.3		18		56		SS-11						Rock (V)	
COAL, BLACK						592.8		23		89		SS-12				Rock (V)			
						592.8		44		100		SS-13						Rock (V)	
						591.3		72		SS-14								Rock (V)	
						591.3		108		SS-15								Rock (V)	
						591.3		132		SS-16								Rock (V)	
						591.3		156		SS-17								Rock (V)	
						591.3		180		SS-18								Rock (V)	
						591.3		204		SS-19								Rock (V)	
						591.3		228		SS-20								Rock (V)	
						591.3		252		SS-21								Rock (V)	
						591.3		276		SS-22								Rock (V)	
						591.3		300		SS-23								Rock (V)	
SHALE, GRAY, SEVERELY WEATHERED, SLIGHTLY STRONG, (SOIL-LIKE). @16.0"; WEAK. @17.5"; BROWN. @20.5"; VERY WEAK.						579.3		33		90		NQ-1				CORE			
						579.3		33		90		NQ-1						CORE	
						579.3		33		90		NQ-1						CORE	
						579.3		33		90		NQ-1						CORE	
						579.3		33		90		NQ-1						CORE	
						579.3		33		90		NQ-1						CORE	
						579.3		33		90		NQ-1						CORE	
						579.3		33		90		NQ-1						CORE	
						579.3		33		90		NQ-1						CORE	
						579.3		33		90		NQ-1						CORE	
						579.3		33		90		NQ-1						CORE	
						579.3		33		90		NQ-1						CORE	