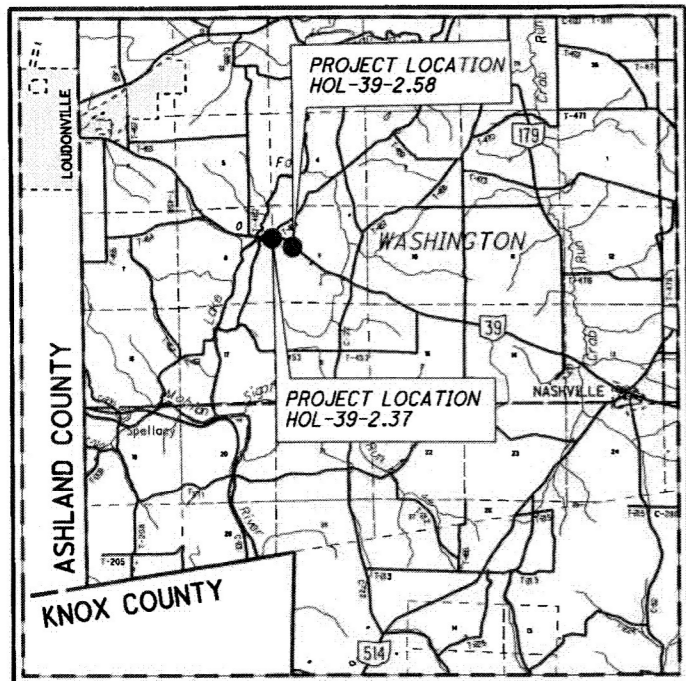
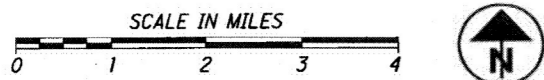


HOL - SR 39-02.37/02.58
 204026 PID - 105123
 Dist 11 12/17/2020



LOCATION MAP

LATITUDE: N40°37'10" LONGITUDE: W82°10'50"



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

DESIGN DESIGNATION

CURRENT ADT (2021)	-----	2300
DESIGN YEAR ADT (2041)	-----	2800
DESIGN HOURLY VOLUME (2041)	-----	350
DIRECTIONAL DISTRIBUTION	-----	57%
TRUCKS (24 HOUR B&C)	-----	10%
DESIGN SPEED	-----	55 MPH
LEGAL SPEED	-----	55 MPH
DESIGN FUNCTIONAL CLASSIFICATION:		
04 - RURAL MINOR ARTERIAL		
NHS PROJECT	-----	NO

DESIGN EXCEPTIONS

STATE OF OHIO
 DEPARTMENT OF TRANSPORTATION
HOL - 39 - 2.37 / 2.58
 WASHINGTON TOWNSHIP
 HOLMES COUNTY

INDEX OF SHEETS:

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ATTENTION
 Contact the Ohio Department
 of Transportation for current
 Plans of Record

PROJECT DESCRIPTION

IMPROVEMENT OF 2 SITES ON S.R. 39 IN WASHINGTON TOWNSHIP OF HOLMES COUNTY. S.L.M. 2.37 - REPLACEMENT OF AN EXISTING CONCRETE BOX WITH A 24" CONDUIT AND EMBANKMENT RECONSTRUCTION. S.L.M. 2.58 - REPLACEMENT OF AN EXISTING CONCRETE BOX WITH A 30" CONDUIT AND SOLDIER PILE WALL ON OUTLET SIDE. BOTH SITES WILL HAVE MINIMAL PAVEMENT WORK.

EARTH DISTURBED AREAS

PROJECT EARTH DISTURBED AREA:	0.72 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA:	0.39 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA:	1.11 ACRES

2019 SPECIFICATIONS

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

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT DETOURS WILL BE PROVIDED AS INDICATED ON SHEET 7 .

DESIGN FEATURE	APPROVAL DATE	SHEET NO.
LANE WIDTH	6/5/19	2, 3, 13, 24
SHOULDER WIDTH	6/5/19	2, 3, 13, 24
HORIZONTAL CURVE RADIUS	6/5/19	24
SUPERELEVATION RATE	6/5/19	24
STOPPING SITE DISTANCE	6/5/19	24

UNDERGROUND UTILITIES
 Contact Two Working Days Before You Dig

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

ENGINEERS SEAL:

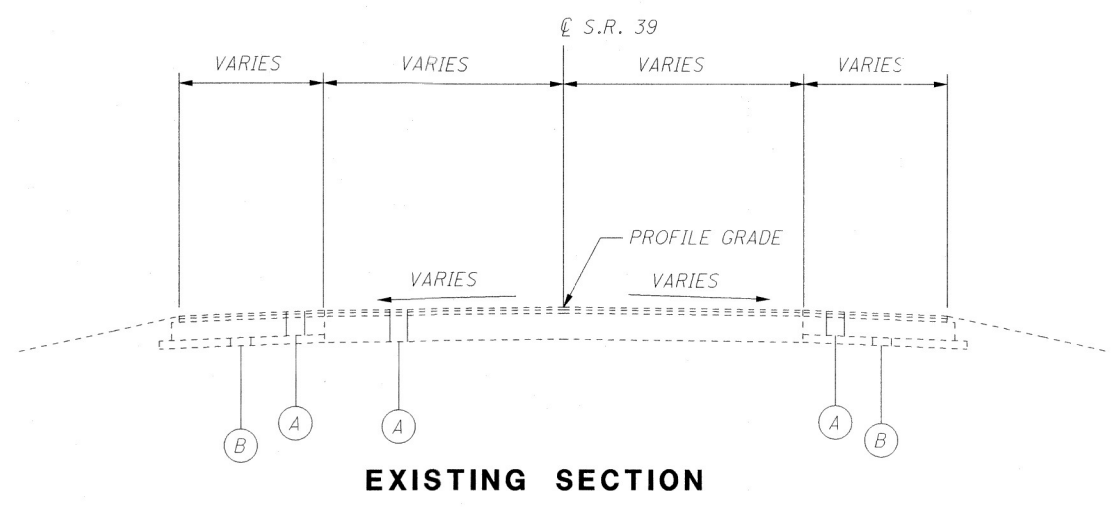
 SIGNED: *DAH*
 DATE: 9-9-2020

STANDARD CONSTRUCTION DRAWINGS		SUPPLEMENTAL SPECIFICATIONS	SPECIAL PROVISIONS
BP-3.1	1/17/20	MGS-1.1 1/19/18 TC-41.20 10/18/13	
		MGS-2.1 1/19/18 TC-41.30 10/18/13	
		MGS-4.3 1/18/13 TC-42.20 10/18/13	
CB-1.2	1/15/16	TC-52.10 10/18/13	832 10/19/18
		TC-52.20 7/20/18	
DM-1.1	7/17/20	MT-97.10 4/19/19 TC-61.30 7/19/19	902 7/19/19
		TC-65.10 1/17/14	
		TC-65.11 7/21/17	
DM-4.3	1/15/16		
DM-4.4	1/15/16	MT-101.60 1/17/20	
		MT-101.90 7/21/17	
		MT-105.10 1/17/20	
HW-2.1	7/20/18		
HW-2.2	7/20/18		

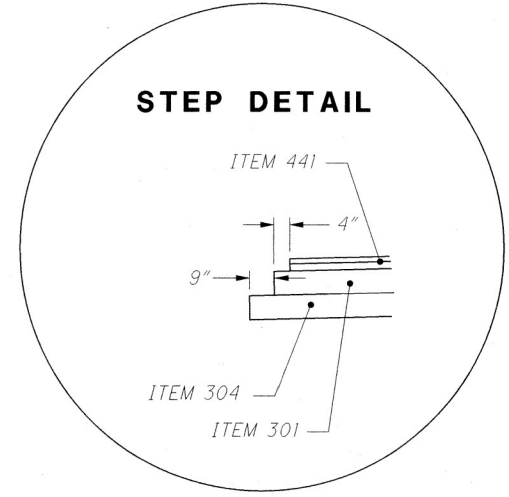
APPROVED: *Thomas J. Coey*
 DATE: 9-11-2020 DISTRICT DEPUTY DIRECTOR
 APPROVED: _____
 DATE: _____ DIRECTOR, DEPARTMENT OF TRANSPORTATION

FEDERAL PROJECT NO. **E171(037)**
 PID NO. **105123**
 CONSTRUCTION PROJECT NO. _____
 RAILROAD INVOLVEMENT **NONE**
HOL - 39 - 2.37 / 2.58
 1/39

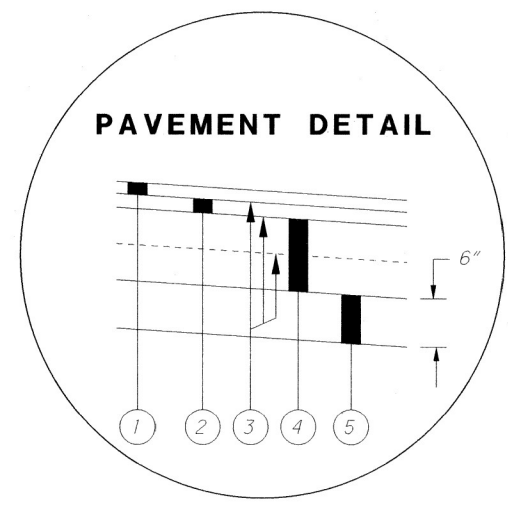
Contract Proposal available @ www.contracts.dot.state.oh.us
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EXISTING SECTION



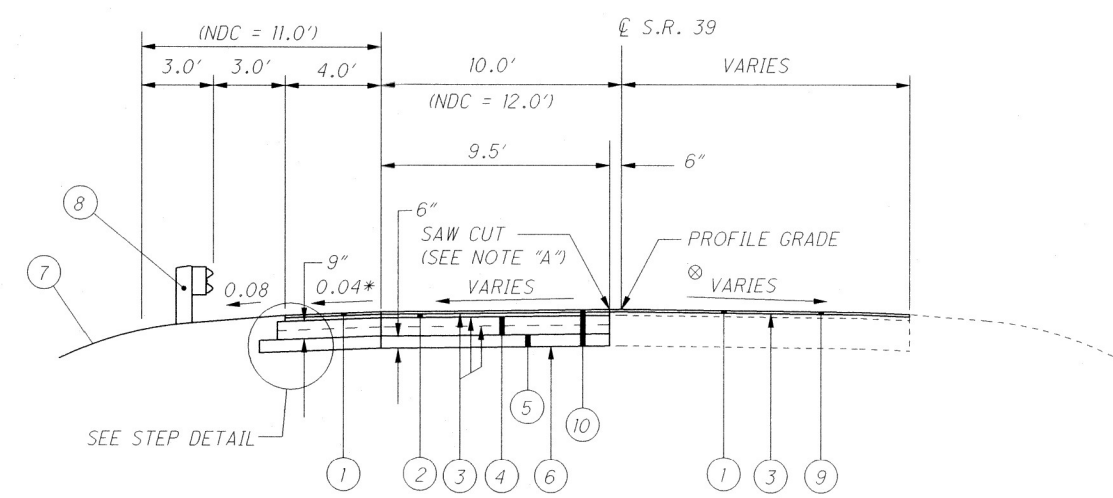
STEP DETAIL



PAVEMENT DETAIL

LEGEND

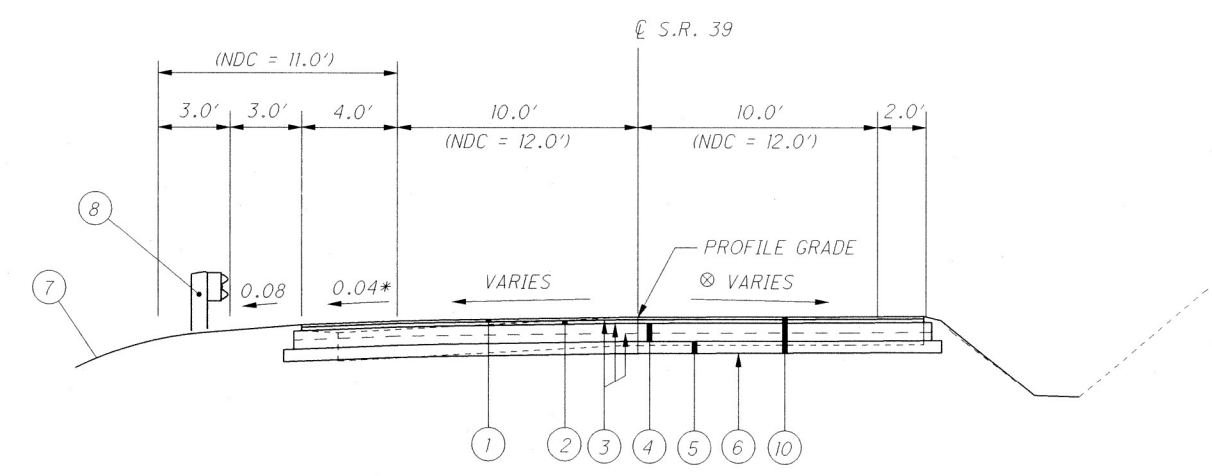
- (A) — EXISTING ASPHALT CONCRETE (1 1/4")
- (B) — EXISTING AGGREGATE BASE
- (1) — ITEM 441 - 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), AS PER PLAN (PG70-22M)
- (2) — ITEM 441 - 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)
- (3) — ITEM 407 - TACK COAT
- (4) — ITEM 301 - 9" ASPHALT CONCRETE BASE, PG64-22
- (5) — ITEM 304 - AGGREGATE BASE
- (6) — ITEM 204 - SUBGRADE COMPACTION
- (7) — ITEM 659 - SEEDING AND MULCHING
- (8) — ITEM 606 - GUARDRAIL, TYPE MGS
- (9) — ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (1 1/4" NOMINAL THICKNESS)
- (10) — ITEM 202 - PAVEMENT REMOVED



NOTE "A"
SAW CUT THE EXISTING PAVEMENT TO PROVIDE A NEAT JOINT PER 202.05 OF CMS. PAVEMENT FOR WORK SHALL BE INCLUDED WITH ITEM 202 - PAVEMENT REMOVED

SECTION APPLIES:
STA. 126+00.00 TO STA. 127+50.00
STA. 128+00.00 TO STA. 128+50.00

* OR RATE OF SUPER
⊗ MATCH EXISTING CROSS SLOPE



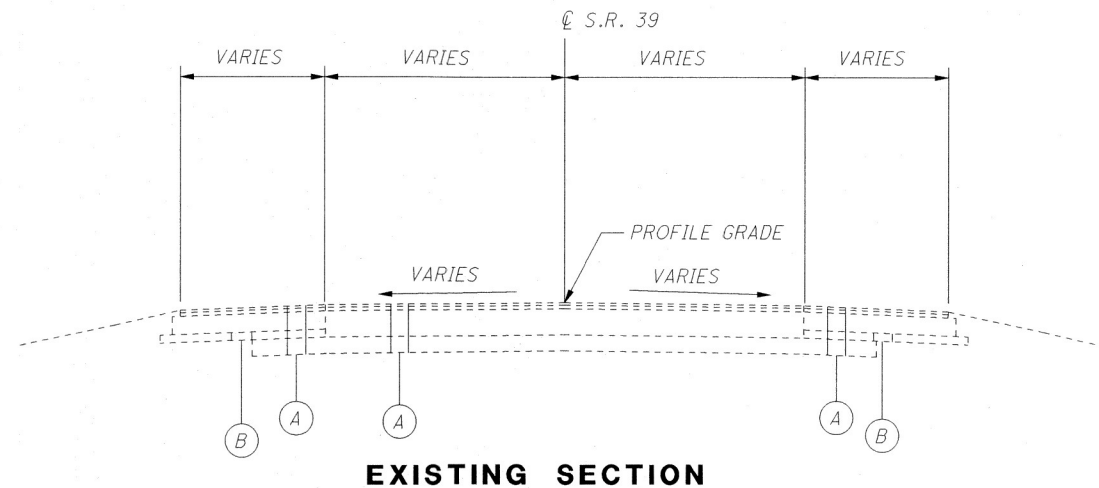
SECTION APPLIES:
STA. 127+50.00 TO STA. 128+00.00

* OR RATE OF SUPER
⊗ MATCH EXISTING CROSS SLOPE

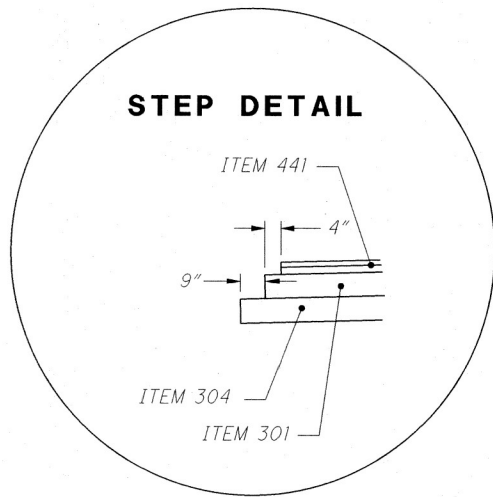
PAVEMENT TRANSITION TABLE - HOL-39-2.37

EDGE ELEVATION	ELEVATION CORRECTION	LEFT SIDE			STATION	CENTERLINE ELEVATION	RIGHT SIDE			EDGE ELEVATION
		CROSS SLOPE	EDGE OF PAVEMENT OFFSET FROM SAWCUT	SAWCUT ELEVATION 16" LEFT OF CENTERLINE			EDGE OF PAVEMENT OFFSET FROM CENTERLINE	CROSS SLOPE	ELEVATION CORRECTION	
983.83	-0.24	-0.0252	9.50	984.07	126+00.00					
986.12	-0.15	-0.0160	9.50	986.27	126+25.00					
988.30	-0.15	-0.0160	9.50	988.45	126+50.00					
990.40	-0.15	-0.0160	9.50	990.55	126+75.00					
992.54	-0.15	-0.0160	9.50	992.69	127+00.00					
994.68	-0.15	-0.0160	9.50	994.83	127+25.00					
996.77	-0.15	-0.0160	9.50	996.92	127+50.00	996.93	10.00	0.022	0.22	997.14
999.00	-0.15	-0.0160	9.50	999.15	127+75.00	999.16	10.00	0.021	0.21	999.37
1001.21	-0.15	-0.0160	9.50	1001.36	128+00.00	1001.36	10.00	0.002	0.02	1001.38
1003.35	-0.15	-0.0158	9.50	1003.50	128+25.00					
1005.38	-0.32	-0.0339	9.50	1005.70	128+50.00					

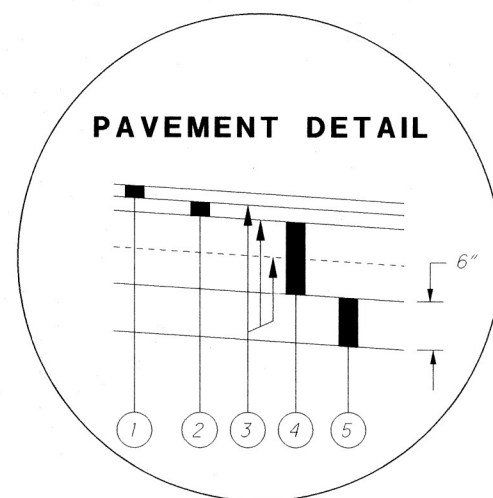
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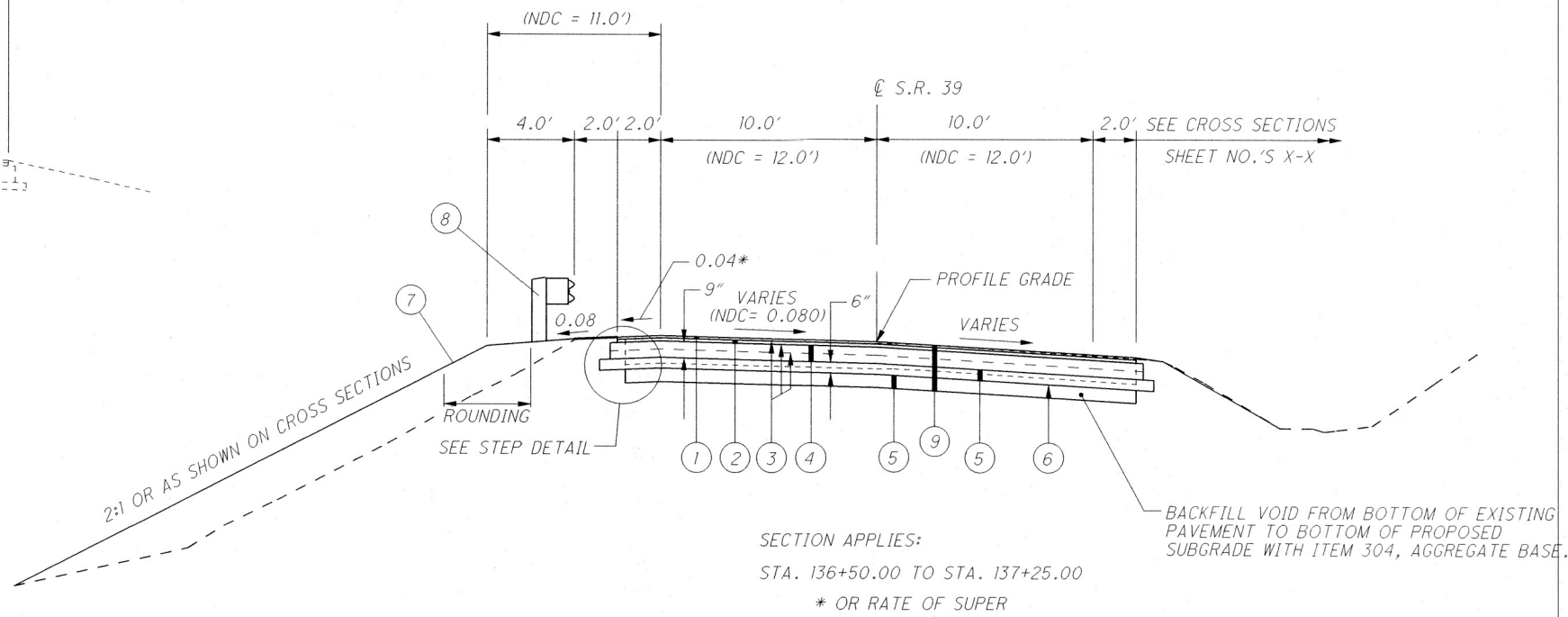
EXISTING SECTION



STEP DETAIL



PAVEMENT DETAIL



HOL-39-2.58

LEFT SIDE				CENTERLINE		RIGHT SIDE			
EDGE ELEV	ELEV CORR	CROSS SLOPE	WIDTH	STATION	PROFILE GRADE	WIDTH	CROSS SLOPE	ELEV CORR	EDGE ELEV
1075.39	0.627	0.0630	10.00	136+50.00	1074.76	10.00	-0.0780	-0.773	1073.99
1077.26	0.450	0.0450	10.00	136+75.00	1076.81	10.00	-0.0690	-0.690	1076.12
1079.13	0.270	0.0270	10.00	137+00.00	1078.86	10.00	-0.0600	-0.600	1078.26
1080.94	0.030	0.0030	10.00	137+25.00	1080.91	10.00	-0.0470	-0.470	1080.44

LEGEND

- (A) — EXISTING PAVEMENT BUILDUP (16"± ASPHALT AND 8"± CONCRETE)
- (B) — EXISTING AGGREGATE BASE
- (1) — ITEM 441 - 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), AS PER PLAN (PG70-22M)
- (2) — ITEM 441 - 1/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)
- (3) — ITEM 407 - TACK COAT
- (4) — ITEM 301 - 9" ASPHALT CONCRETE BASE, PG64-22
- (5) — ITEM 304 - AGGREGATE BASE
- (6) — ITEM 204 - SUBGRADE COMPACTION
- (7) — ITEM 659 - SEEDING AND MULCHING
- (8) — ITEM 606 - GUARDRAIL, TYPE MGS
- (9) — ITEM 202 - PAVEMENT REMOVED

TYPICAL SECTIONS - (HOL-39-2.58)

HOL-39-2.37 / 2.58

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CALCULATED
TKB
CHECKED
DAH

UTILITIES

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

BOTH LOCATIONS:

TELEPHONE:
FRONTIER COMMUNICATIONS
1534 SR 511, SOUTH
ASHLAND, OH 44805
419-282-6551
ATTN: JIM SAUBER

POWER:
OHIO EDISON COMPANY
730 SOUTH AVENUE
YOUNGSTOWN, OH 44502
330-740-7704
ATTN: MIKE BECK

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.

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.

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. FOR THE PURPOSES OF THIS NOTE, A TREE IS DEFINED AS: A LIVE, DYING, OR DEAD WOODY PLANT, WITH A TRUNK THREE INCHES OR GREATER IN DIAMETER AT A HEIGHT OF 4.5 FEET ABOVE THE GROUND SURFACE, AND WITH A MINIMUM HEIGHT OF 13 FEET.

ITEM 202, REMOVAL MISC.: PILING REMOVED

THERE IS EXISTING PILING DRIVEN IN THE DOWNHILL SLOPE. THE CONTRACTOR SHALL REMOVE THE EXISTING PILING ONLY AS NEEDED FOR CONSTRUCTION OF THE PROPOSED SLOPE. THE REMOVAL OF GUARDRAIL LAGGING IS INCLUDED WITH THIS ITEM.

ALL MATERIALS AND LABOR NEEDED TO COMPLETE THE ABOVE WORK SHALL BE PAID FOR AT THE LUMP SUM BID PRICE FOR ITEM 202, REMOVAL MISC.: PILING REMOVED.

(SEE SHEET 13 FOR LOCATION)

THIS QUANTITY SHALL BE CARRIED TO THE GENERAL SUMMARY

SURVEY PARAMETERS

PRIMARY PROJECT CONTROL MONUMENTS GOVERN ALL POSITIONING ON ODOT PROJECTS. SEE SHEET 12 AND 23 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
MONUMENT TYPE: TYPE A

VERTICAL POSITIONING

ORTHOMETRIC HEIGHT DATUM: NAVD 88
GEOID: GEOID 12A

HORIZONTAL POSITIONING

REFERENCE FRAME: NAD 83 (2011)
ELLIPSOID: GRS 1980
MAP PROJECTION: LAMBERT CONFORMAL CONIC
COORDINATE SYSTEM: OHIO STATE PLANE, NORTH ZONE
COMBINED SCALE FACTOR: 1.00007159581601
ORIGIN OF COORDINATE SYSTEM: N 347531.431, E 2056321.145

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 CMS 623.

UNITS ARE IN U.S. SURVEY FEET.

SEEDING AND MULCHING

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.

ROUNDING

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

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.

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.

BENCHING OF FOUNDATION SLOPES

ALTHOUGH CROSS-SECTIONS INDICATE SPECIFIC DIMENSIONS FOR PROPOSED BENCHING OF THE EMBANKMENT FOUNDATIONS IN CERTAIN AREAS, NO WAIVER OF THE SPECIFICATIONS IS INTENDED. BENCH ALL OTHER SLOPED EMBANKMENT AREAS AS SET FORTH IN 203.05. NO ADDITIONAL PAYMENT WILL BE MADE FOR BENCHING REQUIRED UNDER THE PROVISIONS OF 203.05.

ITEM 441 - ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), AS PER PLAN, (PG70-22M)

FOLLOW SPECIFICATION 703.05 EXCEPT DO NOT USE COARSE AGGREGATE FROM A SOURCE DESIGNATED "SR" OR "SRH" ACCORDING TO THE OFFICE OF MATERIALS MANAGEMENT (OMM) IN ANY JOB MIX FORMULA (JMF) FOR THIS ITEM.

COOPERATION BETWEEN CONTRACTORS

THE CONTRACTOR IS HEREBY ADVISED THAT THE FOLLOWING PROJECT:

HOL-62/VAR-5.04/VAR, PID 1105124

MAY BE UNDER CONSTRUCTION DURING THE SAME PERIOD THAT THIS PROJECT IS TO BE CONSTRUCTED. UPON AWARD OF THIS CONTRACT, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND THE OTHER CONTRACTOR OF THE EFFECTS OF THIS CONTRACT UPON THE HOL-62/VAR-5.04/VAR PROJECT. THE CONTRACTOR SHALL COOPERATE WITH THE OTHER CONTRACTOR IN ACCORDANCE WITH SEC. 105.08 AND ARRANGE A MUTUALLY ACCEPTABLE WORK SCHEDULE, SUBJECT TO THE APPROVAL OF THE ENGINEER. ANY CONFLICTS BETWEEN CONTRACTORS INVOLVING WORK SCHEDULES, WORK AREAS OR COOPERATION WILL BE RESOLVED BY THE ENGINEER.

GENERAL NOTES

HOL-39-2.37 / 2.58

4
39

ITEM 507 - STEEL PILES, MISC.: W16x67 STEEL BEAMS, FURNISHED

FURNISH STEEL BEAMS CONSISTING OF STRUCTURAL STEEL MEMBERS THAT MEET THE PLAN REQUIREMENTS AND CONFORM TO ASTM A572, GRADE 50 AND CMS 711.01.

THE FURNISHED LENGTH OF EACH BEAM SHALL BE 35 FT., SEE SHEET NO. 32 FOR ADDITIONAL DETAILS.

ALONG WITH THE W-16X67 BEAM SIZE SHOWN IN THIS PLAN, THE FOLLOWING ALTERNATE BEAM SIZES ARE ALSO ALLOWED: HP-17x73, W-18x76 OR W-16x77.

MEASUREMENT FOR PAYMENT WILL BE THE FURNISHED LENGTH OR THE DISTANCE FROM THE TOP OF BEAM TO THE BOTTOM OF THE DRILLED SHAFT (IF GREATER THAN THE FURNISHED LENGTH), AS DETERMINED BY THE ENGINEER. THE DEPARTMENT WILL PAY FOR SOLDIER PILES AT THE CONTRACT UNIT PRICE PER FOOT OF ITEM 507 - STEEL PILES, MISC.: W-16x67 STEEL BEAMS, FURNISHED.

ITEM 503, UNCLASSIFIED EXCAVATION, AS PER PLAN

THIS ITEM SHALL CONSIST OF THE 1:1 EXCAVATION FOR FOOTING AND LAGGING PLACEMENT AND FOR SUBSEQUENT EMBANKMENT REPLACEMENT BEHIND THE RETAINING WALL.

THE REPLACEMENT MATERIAL ROAD-SIDE OF THE WALL SHALL BE GRANULAR MATERIAL TYPE B CONFORMING TO 703.16.C.2 EXCEPT FOR THE POROUS BACKFILL AND 203 EMBANKMENT ABOVE THE POROUS BACKFILL AS DETAILED IN THE PLANS. ASSUMING A 1:1 EXCAVATION ROAD-SIDE OF THE WALL, THE FOLLOWING QUANTITY OF GRANULAR MATERIAL IS PROVIDED FOR ESTIMATING PURPOSES ONLY AND SHALL BE PAID FOR UNDER ITEM 503, UNCLASSIFIED EXCAVATION, AS PER PLAN:

39 CY (SEE SHEET 32)

THE EMBANKMENT REPLACED DOWN-SLOPE OF THE RETAINING WALL SHALL BE PAID FOR UNDER ITEM 203, EMBANKMENT.

IN LIEU OF THE 1:1 EXCAVATION BEHIND THE WALL, THE CONTRACTOR MAY USE TEMPORARY SHEETING. ALL COSTS ASSOCIATED WITH USING TEMPORARY SHEETING IN LIEU OF EXCAVATION SHALL BE PAID FOR UNDER THIS ITEM. NO ADDITIONAL PAYMENTS SHALL BE MADE.

ITEM 511, CONCRETE MISC.: CAST-IN-PLACE CONCRETE LAGGING

PROVIDE EPOXY COATED REINFORCING STEEL PER CMS 509 (GRADE 60). THE CONCRETE FOR THE LAGGING SHALL BE CLASS QC1 WITH A 28-DAY DESIGN STRENGTH OF AT LEAST 4,000 PSI ACCORDING TO CMS 499. THE 3/4" PREFORMED EXPANSION JOINT FILLER SHALL BE PER CMS 516. CAST-IN-PLACE LAGGING DETAILS ARE SHOWN ON SHEET NO. 33.

CONCRETE FOR THE REINFORCED DRILLED SHAFTS THAT WILL BE SUPPORTING THE CAST-IN-PLACE LAGGING MAY BE POURED PRIOR TO (OR AT THE SAME TIME AS) INSTALLATION OF THE CAST-IN-PLACE LAGGING. ANY WORK REQUIRED TO BLOCK OUT THE WEB OF THE ADJACENT BEAM SHALL BE INCLUDED IN THIS ITEM.

PAYMENT FOR ALL LABOR, EQUIPMENT, AND MATERIAL (INCLUDING THE 3/4" PREFORMED EXPANSION JOINT FILLER) REQUIRED TO CONSTRUCT THE CAST-IN-PLACE CONCRETE LAGGING SECTION AS SHOWN IN THE PLANS SHALL BE MADE UNDER ITEM 511, CONCRETE MISC.: CAST-IN-PLACE CONCRETE LAGGING.

ITEM 511 - CONCRETE MISC.: 8"x24"x69" PRECAST CONCRETE LAGGING

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 THESE 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". 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.

WHEN INSTALLING THE PRECAST CONCRETE LAGGING PANELS, PLACE HARDWOOD WEDGES TO HOLD THE LAGGING PANELS AGAINST THE FRONT INSIDE FLANGE OF THE STEEL PILES AS DETAILED ON SHEET 34.

PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIAL REQUIRED TO FABRICATE TRANSPORT AND INSTALL THE PRECAST CONCRETE LAGGING SECTIONS AS SHOWN IN THE PLANS SHALL BE MADE UNDER ITEM 511 - CONCRETE MISC.: 8"x24"x69" PRECAST CONCRETE LAGGING.

ITEM 511 - CLASS QC1 CONCRETE, FOOTING, AS PER PLAN

ALL REQUIREMENTS OF CMS SECTION 511 SHALL BE FOLLOWED, EXCEPT THE CONTRACTOR WILL BE PERMITTED TO LOAD THE CONCRETE PAD ONE DAY AFTER PLACEMENT.

ITEM 518 - POROUS BACKFILL WITH GEOTEXTILE FABRIC

POROUS BACKFILL, 2 FT. THICK, WILL BE PLACED AS SHOWN IN THE DETAILS. IT WILL EXTEND FROM 6" BELOW THE PROPOSED GROUND LINE ON THE UPWARD SIDE OF THE SHAFT TO THE TOP OF THE CONCRETE PAD. GEOTEXTILE FABRIC WILL BE PLACED AROUND THE POROUS BACKFILL.

ALL EQUIPMENT, MATERIALS AND LABOR REQUIRED TO PERFORM THE WORK ABOVE SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 518 - POROUS BACKFILL WITH GEOTEXTILE FABRIC.

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 SLOPE STABILIZATION. THE DRILLED SHAFTS ARE REINFORCED WITH STEEL BEAMS. FURNISH AND INSTALL DRILLED SHAFTS IN ACCORDANCE WITH CMS 524 EXCEPT AS MODIFIED AND SUPPLEMENTED BELOW.

EXCAVATE THE HOLE FOR THE DRILLED SHAFTS WITHIN 3 INCHES OF THE PLAN LOCATION IN THE HORIZONTAL PLANE. IF FIELD CONDITIONS INDICATE GREATER DEPTH TO BEDROCK THAN THAT WHICH IS ESTIMATED IN THE PLANS, NOTIFY THE ENGINEER FOR FURTHER EVALUATION. PLACE THE SOLDIER PILE VERTICALLY WITHIN THE HOLE SO IT IS NOT INCLINED MORE THAN 1" BETWEEN THE TOP AND BOTTOM.

PLACE THE SOLDIER PILE SO THAT THE FLANGES ARE PARALLEL TO THE CENTERLINE OF CONSTRUCTION. DO NOT ALLOW THE ORIENTATION OF THE FLANGES TO VARY BY MORE THAN 10 DEGREES. SUPPORT THE SOLDIER PILE SO THAT IT DOES NOT MOVE DURING CONCRETE PLACEMENT.

USE CLASS QC1 CONCRETE ACCORDING TO CMS 511. THE CONTRACTOR MAY PLACE CONCRETE USING THE FREE FALL METHOD PROVIDED THE DEPTH OF GROUNDWATER IS LESS THAN 6 INCHES AND THE CONCRETE FALLS WITHOUT STRIKING THE SIDES OF THE HOLE. POURING CONCRETE ALONG THE WEB OF THE SOLDIER PILE IS ACCEPTABLE.

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

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 24 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.

ACCESS:
ANY TEMPORARY GRADING, CRANE MATS, AGGREGATE, DRAINAGE, ETC. NEEDED FOR ACCESS TO THE WORK AREA SHALL BE INCLUDED IN THE BID PRICE FOR THE DRILLED SHAFTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MEANS AND METHODS USED TO CONSTRUCT THE DRILLED SHAFTS. THE COST OF ANY TEMPORARY EXCAVATION AND SUBSEQUENT REPLACEMENT OF EMBANKMENT (PER ITEM 203 EMBANKMENT) OUTSIDE OF THE LIMITS OF THE UNCLASSIFIED EXCAVATION SHOWN IN THE PLANS SHALL BE INCLUDED IN THE BID ITEM FOR THE DRILLED SHAFTS.

MEASUREMENT FOR PAYMENT FOR ITEM 524 - DRILLED SHAFTS 30" DIAMETER, ABOVE BEDROCK, AS PER PLAN, WILL BE MEASURED ALONG THE AXIS OF THE DRILLED SHAFT FROM THE EXISTING GROUND LINE ELEVATION TO THE TOP OF BEDROCK, AS DETERMINED BY THE ENGINEER. MEASUREMENT FOR PAYMENT FOR DRILLED SHAFTS INTO BEDROCK, AS PER PLAN, WILL BE LIMITED TO THE DISTANCE BETWEEN THE TOP OF BEDROCK AND THE BOTTOM OF THE DRILLED SHAFT, AS DETERMINED BY THE ENGINEER.

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GENERAL NOTES

HOL - 39 - 2.37 / 2.58

5
39

ITEM 614, MAINTAINING TRAFFIC

A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES, EXCEPT FOR A PERIOD NOT TO EXCEED 30 CONSECUTIVE CALENDAR DAYS, WHEN THROUGH TRAFFIC MAY BE DETOURED AS SHOWN ON SHEET 7.

THE DETOUR SHALL NOT BEGIN PRIOR TO JULY 1, 2021. THE DETOUR SHALL END AND S.R. 39 SHALL BE REOPENED TO TRAFFIC NO LATER THAN AUGUST 15, 2021.

THIS 30 DAY CLOSURE PERIOD MUST OCCUR DURING THE SUMMER WHEN THE LOCAL SCHOOLS ARE NOT IN SESSION BETWEEN 7/1/2021 AND 8/15/2021.

A DISINCENTIVE SHALL BE ASSESSED IN THE AMMOUNT OF \$4,100.00 PER DAY FOR EACH CALENDAR DAY THE ROADWAY REMAINS CLOSED TO TRAFFIC BEYOND THE SPECIFIED LIMIT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MANINTAINING SAFE AND EFFECTIVE TRAFFIC CONTROL TWENTY FOUR HOURS A DAY FOR THE DURATION OF THIS PROJECT. THIS WILL INCLUDE THE FURNISHING, PLACING, MAINTAINING, AND SUBSEQUENTLY REMOVING ALL TRAFFIC CONTROL DEVICES AFFECTING THE FLOW OF TRAFFIC WITHIN THE LIMITS OF THIS PROJECT.

ACCESS FOR ABUTTING PROPERTY OWNERS SHALL BE MAINTAINED AT ALL TIMES IN ACCORDANCE WITH THESE NOTES AND PLAN SPECIFICATIONS. THE CONTRACTOR SHALL WORK WITH THE PROPERTY OWNERS TO MAINTAIN SPECIAL ACCESS PROVISIONS.

NOTICE OF CLOSURE SIGNS (W20-H13) SHALL BE ERECTED BY THE CONTRACTOR PRIOR TO THE SCHEDULED ROAD CLOSURE IN ACCORDANCE WITH THE NOTICE OF CLOSURE TIME TABLE BELOW.

THE SIGNS SHALL BE ERECTED ON THE RIGHT-HAND SIDE OF THE ROAD FACING TRAFFIC. THEY SHALL BE PLACED SO AS NOT TO INTERFERE WITH THE VISIBILITY OF ANY OTHER TRAFFIC CONTROL SIGNS. ON ROADWAYS, THEY SHOULD BE ERECTED AT OR NEAR THE POINT OF CLOSURE.

ITEM	DURATION OF CLOSURE	SIGN DISPLAYED TO PUBLIC
RAMP & ROAD CLOSURES	>= 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
	> 12 HOURS & < 2 WEEKS	7 CALENDAR DAYS PRIOR TO CLOSURE
	< 12 HOURS	2 BUSINESS DAYS PRIOR TO CLOSURE

THE SIGN SHALL DISPLAY THE DATE OF THE CLOSURE IN MMM-DD FORMAT AND THE NUMBER OF DAYS OF THE CLOSURE. THE LAST LINE OF THE W20-H13 SIGN LISTS A PHONE NUMBER WHICH A MOTORIST MAY CALL FOR ADDITIONAL INFORMATION.

SR 39 WILL BE CLOSED MMM-DD FOR 30 DAYS
INFO: 330-339-6633

W20-H13-60

THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN STANDARD 48 X 30 INCHES ROAD CLOSED SIGNS, SIGN SUP-PORTS, BARRICADES, AND LIGHTS, AS DETAILED IN SCD MT-101.60 AT THE PROJECT LIMITS DURING PERIODS IN WHICH THE ROAD IS CLOSED TO TRAFFIC.

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.

DESIGNATED LOCAL DETOUR ROUTE

IN ADDITION TO THE OFFICIAL, SIGNED DETOUR ROUTE, A LOCAL ROUTE HAS BEEN DETERMINED TO BE THE SECONDARY, UNSIGNED DETOUR ROUTE OR "DESIGNATED LOCAL DETOUR ROUTE." THIS ROUTE IS SHOWN ON SHEET NO. 7. DURING THE TIME THAT TRAFFIC IS DETOURED, THE CONTRACTOR SHALL MAINTAIN THIS ROUTE IN A CONDITION WHICH IS REASONABLY SMOOTH AND FREE FROM HOLES, RUTS, RIDGES, BUMPS, DUST AND STANDING WATER. ONCE THE DETOUR IS REMOVED AND TRAFFIC RETURNED TO ITS NORMAL PATTERN, THE DESIGNATED LOCAL DETOUR ROUTE SHALL BE RESTORED TO A CONDITION THAT IS EQUIVALENT TO THAT WHICH EXISTED PRIOR TO ITS USE FOR THIS PURPOSE. ALL SUCH WORK SHALL BE PERFORMED WHEN AND AS DETERMINED BY THE ENGINEER.

THE FOLLOWING ESTIMATED QUANTITIES ARE PROVIDED FOR USE AS DETERMINED BY THE ENGINEER TO MAINTAIN AND SUBSEQUENTLY RESTORE THE DESIGNATED LOCAL DETOUR ROUTE.

- ITEM 614, ASPHALT CONCRETE FOR MAINTAINING TRAFFIC 20 CU. YD.
- ITEM 617, COMPACTED AGGREGATE 10 CU. YD.

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 10 M. GAL

NOTIFICATION OF TRAFFIC RESTRICTIONS

THROUGHOUT THE DURATION OF THE PROJECT, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IN WRITING OF ALL TRAFFIC RESTRICTIONS AND UPCOMING MAINTENANCE OF TRAFFIC CHANGES. THE CONTRACTOR SHALL ENSURE THE WRITTEN NOTIFICATION IS SUBMITTED IN A TIMELY MANNER TO ALLOW THE PROJECT ENGINEER TO MEET THE REQUIRED TIME FRAMES SET FORTH IN THE TABLE BELOW TO INFORM THE SPECIAL HAULING PERMITS SECTION (Hauling.Permits@dot.ohio.gov) AND THE DISTRICT PUBLIC INFORMATION OFFICE (PIO). THIS NOTIFICATION SHALL BE RECEIVED BY THE PROJECT ENGINEER PRIOR TO THE PHYSICAL SETUP OF ANY APPLICABLE SIGNS OR MESSAGE BOARDS.

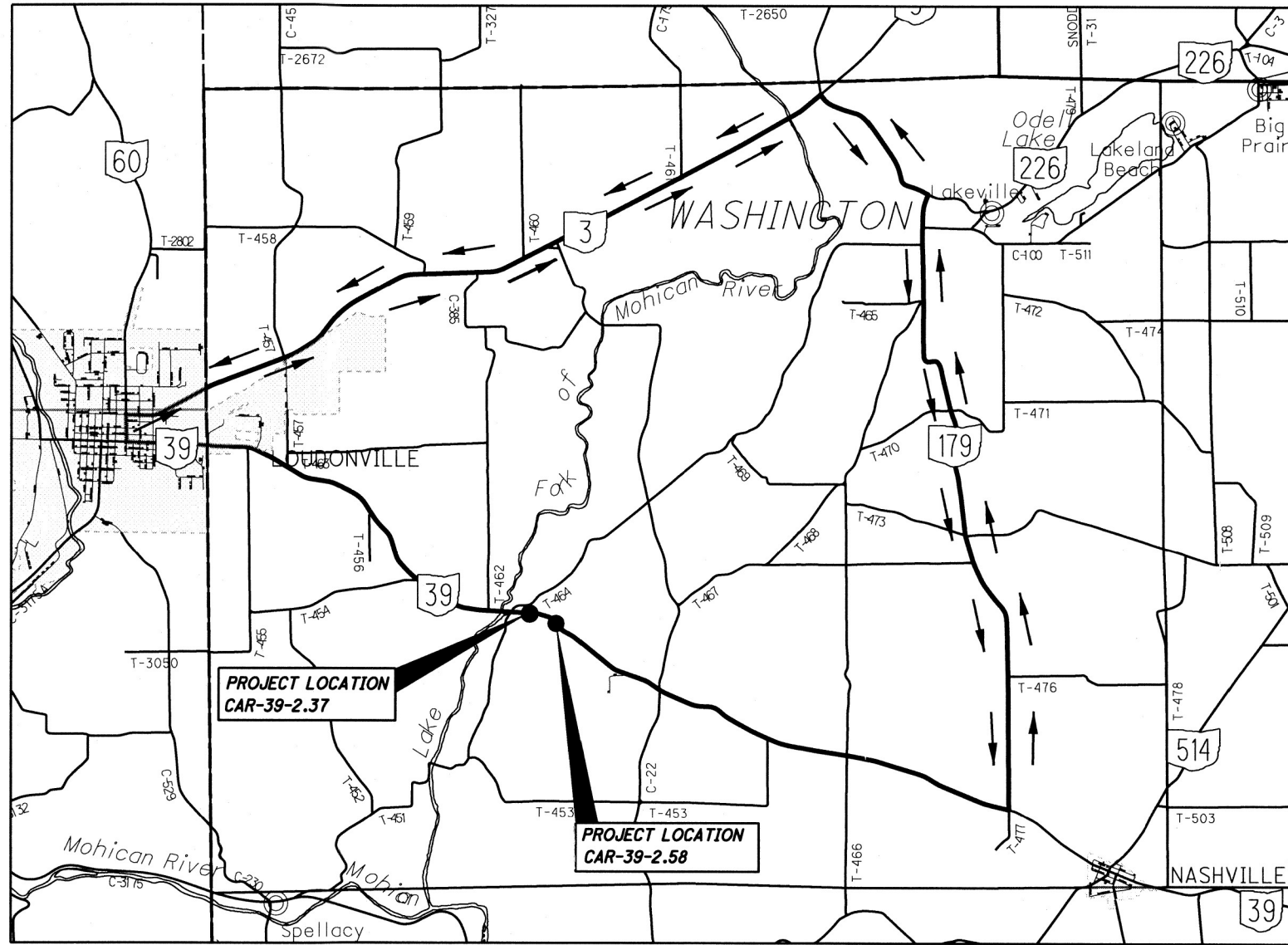
INFORMATION SHOULD INCLUDE, BUT IS NOT LIMITED TO, ALL CONSTRUCTION ACTIVITIES THAT IMPACT OR INTERFERE WITH TRAFFIC AND SHALL LIST THE SPECIFIC LOCATION, TYPE OF WORK, ROAD STATUS, DATE AND TIME OF RESTRICTION, DURATION OF RESTRICTION, NUMBER OF LANES MAINTAINED, NUMBER OF LANES CLOSED, MINIMUM VERTICAL CLEARANCE, MINIMUM WIDTH OF DRIVABLE PAVEMENT, DETOUR ROUTES, IF APPLICABLE, AND ANY OTHER INFORMATION REQUESTED BY THE PROJECT ENGINEER.

ITEM	DURATION OF CLOSURE	NOTICE DUE TO PERMITS & PIO
RAMP & ROAD CLOSURES	>= 2 WEEKS	21 CALENDAR DAYS PRIOR TO CLOSURE
	> 12 HOURS & < 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
	<= 12 HOURS	4 BUSINESS DAYS PRIOR TO CLOSURE
LANE CLOSURES & RESTRICTIONS	>= 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
	< 2 WEEKS	5 BUSINESS DAYS PRIOR TO CLOSURE
START OF CONSTRUCTION & TRAFFIC PATTERN CHANGES	N/A	14 CALENDAR DAYS PRIOR TO IMPLEMENTATION

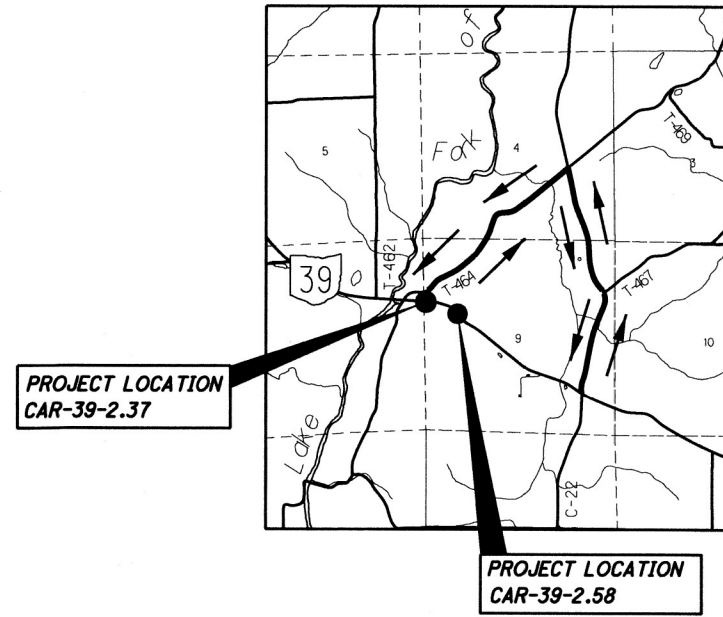
ANY UNFORESEEN CONDITIONS NOT SPECIFIED IN THE PLANS REQUIRING TRAFFIC RESTRICTIONS SHALL ALSO BE REPORTED TO THE PROJECT ENGINEER USING THE NOTIFICATION TIME TABLE.

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STATE DETOUR MAP

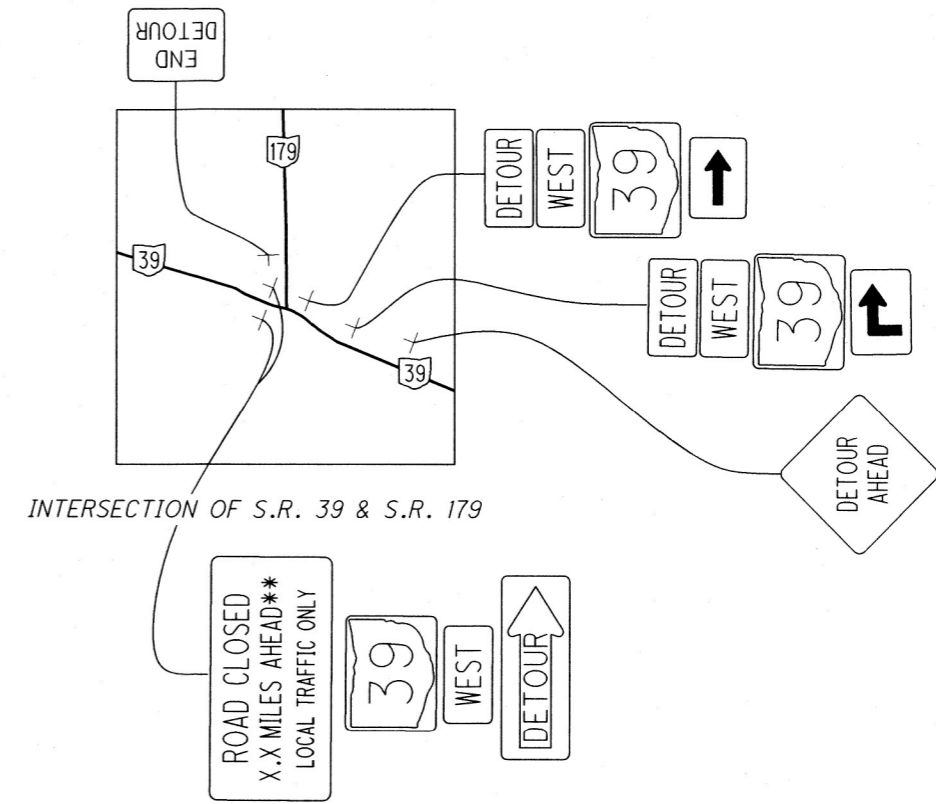
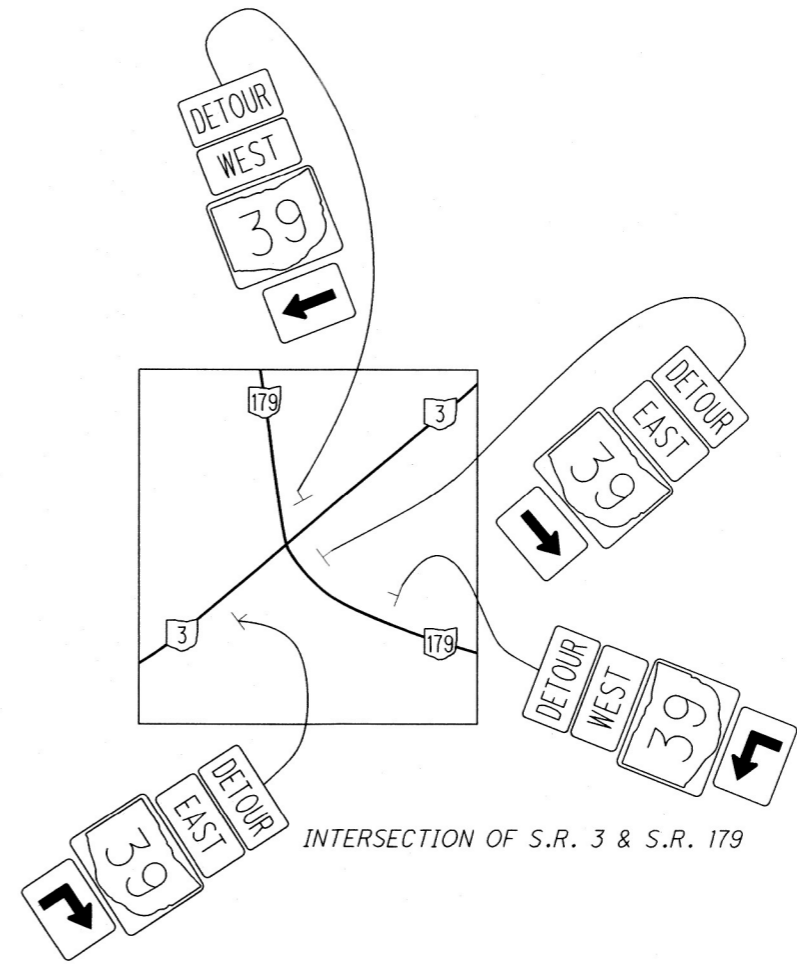
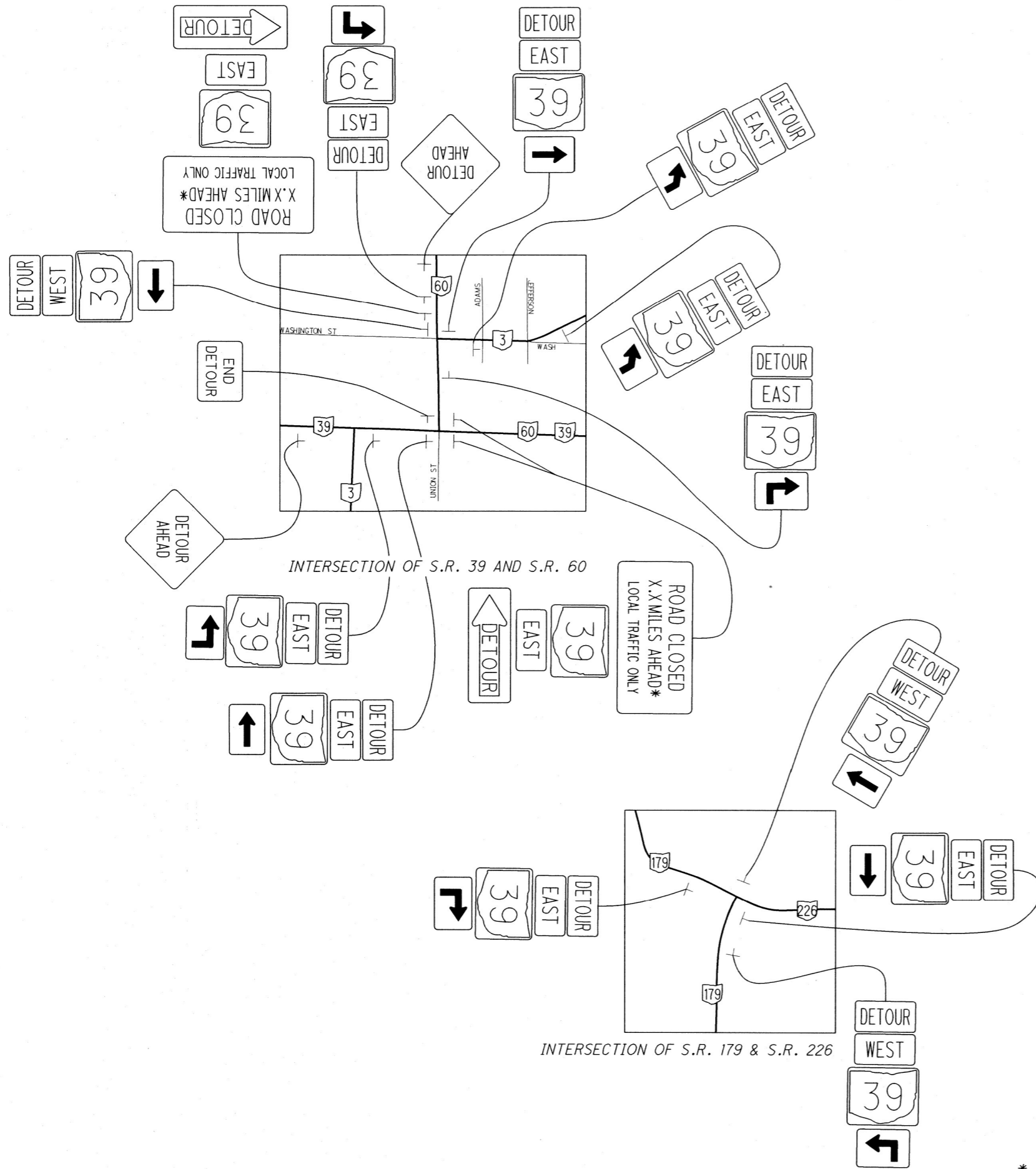


LOCAL DESIGNATED DETOUR MAP

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MAINTENANCE OF TRAFFIC - DETOUR MAP

HOL - 39 - 2.37 / 2.58

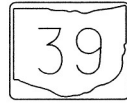


* FOR THE 2.58 SITE USE 3.1 MILES, FOR THE 2.37 SITE USE 2.9 MILES
 ** FOR THE 2.58 SITE USE 3.1 MILES, FOR THE 2.37 SITE USE 3.3 MILES
 FOR ADDITIONAL SIGNING AND DETAILS AT POINT OF CLOSURE, SEE STD. DWG. MT-101.60.

ITEM 614, DETOUR SIGNING

THE FOLLOWING SIGNS SHALL BE ERECTED ALONG THE DESIGNATED OFFICIAL DETOUR ROUTE AND SHALL BE ASSEMBLED AS SHOWN ON SHEETS 7 AND 8. ALL DETOUR SIGNING SHALL BE INSTALLED BEFORE COMMENCING ANY OF THE PROPOSED WORK.

EACH SIGN ASSEMBLY SHALL BE PLACED 100 FT. (OR AS DIRECTED) IN ADVANCE OF THE IMPENDING CHANGE OF ROUTE. OFFSET SHALL BE AS PER STANDARD CONSTRUCTION DRAWING TC-42.20.



M1-5-24-2



M3-2-24



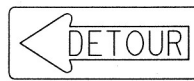
M3-4-24



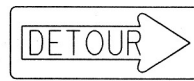
M4-8-24



M4-8A-24



M4-10L-48



M4-10R-48



W20-2-36



M5-1L-21



M5-1R-21



M6-1L-21



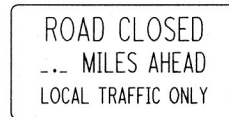
M6-1R-21



M6-3-21



M5-2L-21



R11-3A-60

IN ADDITION TO THE SIGNS LISTED ABOVE AND SHOWN ON THE DETOUR MAPS, PLACE THE FOLLOWING SIGN ASSEMBLY:



AT INTERVALS NOT TO EXCEED 2 MILES IN RURAL AREAS AND AT INTERVALS NOT TO EXCEED 2 BLOCKS WITHIN URBANIZED AREAS. IT IS ANTICIPATED THAT 12 S.R. 39 SIGN ASSEMBLIES WILL BE REQUIRED TO MEET THIS MAXIMUM SPACING.

ALL ANTICIPATED QUANTITIES ARE SHOWN IN THE TABLE BELOW AND ARE PROVIDED ARE FOR INFORMATION ONLY.

HOL-39-2.37/2.58		
SIGN CODE	NO. OF SIGNS	SIZE
M4-8-24	30	24" x 12"
M1-5-24-2	36	24" x 24"
M3-2-24	14	24" x 12"
M3-4-24	9	24" x 12"
M5-1R-21	4	21" x 15"
M5-1L-21	4	21" x 15"
M5-2L-21	2	21" x 15"
M6-1-R-21	4	21" x 15"
M6-1-L-21	4	21" x 15"
M6-3-21	13	21" x 15"
W20-2-36	3	36" x 36"
M4-10R-48	2	48" x 18"
M4-10L-48	3	48" x 18"
R11-3A-60	5	60" x 30"
M4-8A-24	2	24" x 18"

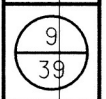
PAYMENT FOR ALL LABOR, EQUIPMENT & MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, DETOUR SIGNING, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

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MAINTENANCE OF TRAFFIC - DETOUR PLAN

HOL-39-2.37/2.58



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SHEET NUM.				PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
4	14	25	32	OFFICE CALCS	01/STR/CV						
ROADWAY											
LS					LS	201	11000	LS		CLEARING AND GRUBBING	
	LS	LS			LS	202	11000	LS		STRUCTURE REMOVED	
	413	200			613	202	23000	613	SY	PAVEMENT REMOVED	
	263	88			351	202	38000	351	FT	GUARDRAIL REMOVED	
LS					LS	202	98000	LS		REMOVAL MISC.: PIPE PILING REMOVED	4
	2,259	41			2,300	203	10000	2,300	CY	EXCAVATION	
	4,161	59			4,220	203	20000	4,220	CY	EMBANKMENT	
					1,008	204	10000	1,008	SY	SUBGRADE COMPACTION	
	262.5	87.5			350	606	15050	350	FT	GUARDRAIL, TYPE MGS	
EROSION CONTROL											
	2				2	601	11000	2	SY	RIPRAP, TYPE D	
	35				35	601	23000	35	SY	ARTICULATING CONCRETE BLOCK REVETMENT SYSTEM, TYPE 1	
		11			11	601	32100	11	CY	ROCK CHANNEL PROTECTION, TYPE B WITH FILTER	
	2	2			4	659	00100	4	EACH	SOIL ANALYSIS TEST	
	193	33			226	659	00300	226	CY	TOPSOIL	
	1,742	294			2,036	659	10000	2,036	SY	SEEDING AND MULCHING	
	0.24	0.04			0.28	659	20000	0.28	TON	COMMERCIAL FERTILIZER	
	0.36	0.06			0.42	659	31000	0.42	ACRE	LIME	
	9	2			11	659	35000	11	MGAL	WATER	
					2,000	832	30000	2,000	EACH	EROSION CONTROL	
DRAINAGE											
	0.92	0.6			1.52	602	20000	1.52	CY	CONCRETE MASONRY	
	67				67	611	10400	67	FT	24" CONDUIT, TYPE B	
	15				15	611	10600	15	FT	24" CONDUIT, TYPE C	
		42			42	611	13400	42	FT	30" CONDUIT, TYPE B	
		15			15	611	13600	15	FT	30" CONDUIT, TYPE C	
	1	1			2	611	98510	2	EACH	CATCH BASIN, NO. 2-3	
			1		1	611	99710	1	EACH	PRECAST REINFORCED CONCRETE OUTLET	
PAVEMENT											
					289	254	01000	289	SY	PAVEMENT PLANING, ASPHALT CONCRETE (1 1/4")	
					237	301	46000	237	CY	ASPHALT CONCRETE BASE, PG64-22	
		35			164	304	20000	199	CY	AGGREGATE BASE	
					131	407	10000	131	GAL	TACK COAT	
					32	441	50101	32	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), AS PER PLAN (PG70-22M)	4
					46	441	50300	46	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)	
TRAFFIC CONTROL											
	7	2			9	621	00100	9	EACH	RPM	
	7	2			9	621	54000	9	EACH	RAISED PAVEMENT MARKER REMOVED	
	3	3			6	626	00110	6	EACH	BARRIER REFLECTOR, TYPE 2 (BIDIRECTIONAL)	
	13				13	630	03100	13	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	
	1				1	630	08600	1	EACH	SIGN POST REFLECTOR	
	1				1	630	85100	1	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	
	1				1	630	86002	1	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
	0.1	0.02			0.12	646	10010	0.12	MILE	EDGE LINE, 6"	
	0.05	0.01			0.06	646	10200	0.06	MILE	CENTER LINE	
RETAINING WALLS											
			68		68	503	21101	68	CY	UNCLASSIFIED EXCAVATION, AS PER PLAN	5
			140		140	507	00400	140	FT	STEEL PILES, MISC.: W16X67 STEEL BEAMS, FURNISHED	5
			3		3	511	46511	3	CY	CLASS QCI CONCRETE, FOOTING, AS PER PLAN	5
			2		2	511	71100	2	CY	CONCRETE, MISC.: CAST-IN-PLACE CONCRETE LAGGING	5
			10		10	511	81300	10	EACH	CONCRETE, MISC.: 8"X24"X69" PRECAST CONCRETE LAGGING	5
			12		12	518	21200	12	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	
			22		22	518	40000	22	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	
			10		10	518	40010	10	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	
			65		65	524	94603	65	FT	DRILLED SHAFTS, 30" DIAMETER, ABOVE BEDROCK, AS PER PLAN	5
			52		52	524	94605	52	FT	DRILLED SHAFTS, 30" DIAMETER INTO BEDROCK, AS PER PLAN	5

GENERAL SUMMARY

HOL -39 -2.37 / 2.58

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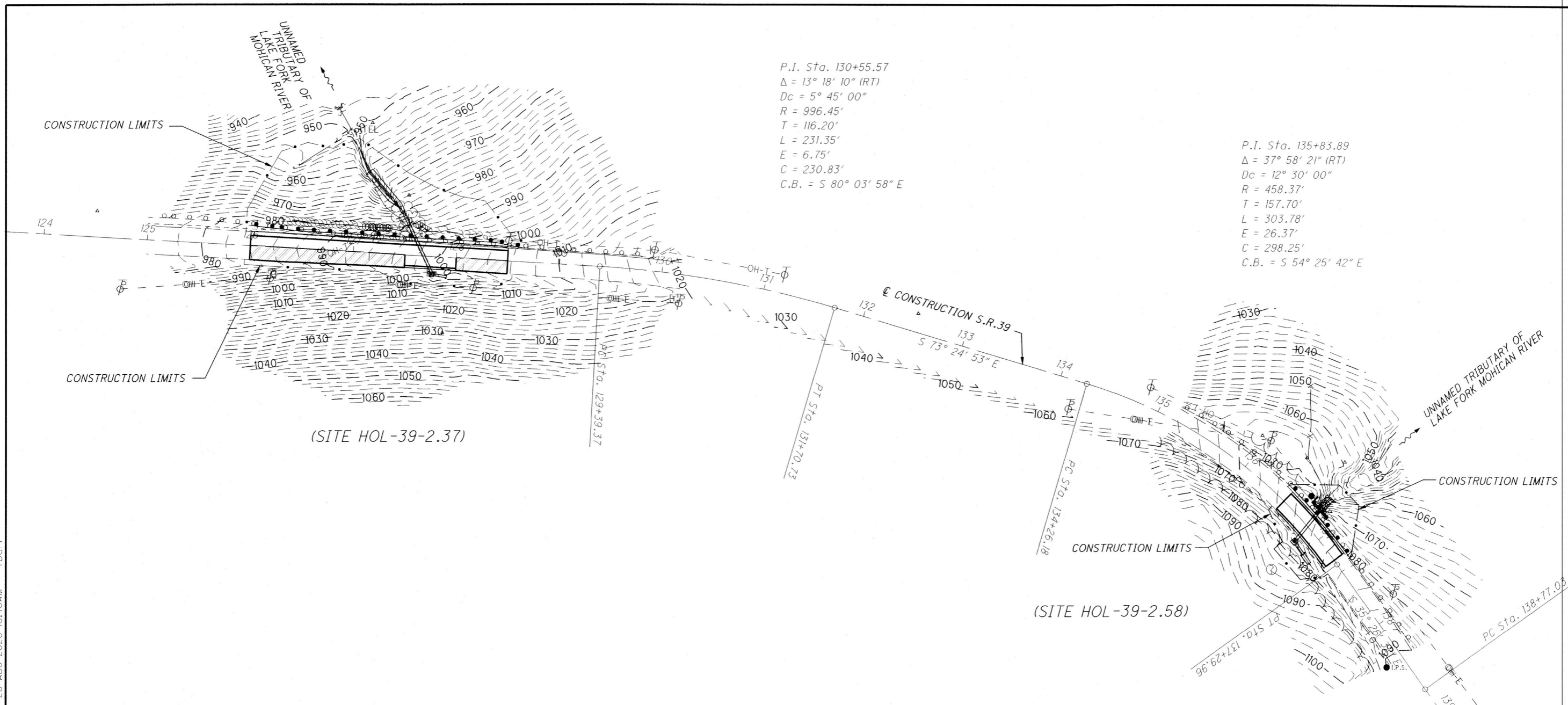
SHEET NUM.								PART.		ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE SHEET NO.
6	9						OFFICE CALCS	01/STR/CV		EXT	TOTAL				
MAINTENANCE OF TRAFFIC															
	LS							LS	614	12420	LS		DETOUR SIGNING		
20								20	614	13000	20	CY	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC		
10								10	616	10000	10	MGAL	WATER		
10								10	617	10100	10	CY	COMPACTED AGGREGATE		
INCIDENTALS															
LS								LS	614	11000	LS		MAINTAINING TRAFFIC		
								6	619	16010	6	MNTH	FIELD OFFICE, TYPE B		
								LS	623	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING		
								LS	624	10000	LS		MOBILIZATION		



PREPARED BY
TKB
CHECKED BY
DAH

PROJECT SITE PLAN

HOL-39-2.37 / 2.58



P.I. Sta. 130+55.57
 $\Delta = 13^\circ 18' 10''$ (RT)
 $D_c = 5^\circ 45' 00''$
 $R = 996.45'$
 $T = 116.20'$
 $L = 231.35'$
 $E = 6.75'$
 $C = 230.83'$
C.B. = S $80^\circ 03' 58''$ E

P.I. Sta. 135+83.89
 $\Delta = 37^\circ 58' 21''$ (RT)
 $D_c = 12^\circ 30' 00''$
 $R = 458.37'$
 $T = 157.70'$
 $L = 303.78'$
 $E = 26.37'$
 $C = 298.25'$
C.B. = S $54^\circ 25' 42''$ E

P.I. Sta. 140+25.74
 $\Delta = 25^\circ 12' 57''$ (LT)
 $D_c = 8^\circ 37' 04''$
 $R = 664.85'$
 $T = 148.71'$
 $L = 292.60'$
 $E = 16.43'$
 $C = 290.24'$
C.B. = S $48^\circ 03' 00''$ E

PROJECT DATA	
TOTAL AREA (RIGHT-OF-WAY) - - - - -	1.598 AC.
PROJECT EARTH DISTURBED AREA - - - - -	0.722 AC.
ESTIMATED CONTRACTOR EARTH DISTURBED AREA - - - - -	0.385 AC.
NOTICE OF INTENT EARTH DISTURBED AREA - - - - -	1.1 AC.
IMPERVIOUS (PAVED) AREA FOR PRE-CONSTRUCTION SITE - - - - -	0.19 AC.
IMPERVIOUS (PAVED) AREA FOR POST CONSTRUCTION SITE - - - - -	0.19 AC.
RUNOFF COEFFICIENT FOR PRE-CONSTRUCTION SITE - - - - -	0.75
RUNOFF COEFFICIENT FOR POST CONSTRUCTION SITE - - - - -	0.75
SOIL AND WATER CONSERVATION MAP - - - - -	HOLMES COUNTY, OH
IMMEDIATE RECEIVING WATERS - - - - -	UNNAMED TRIBUTARY OF LAKE FORK MOHICAN RIVER
SUBSEQUENT RECEIVING WATER - - - - -	LAKE FORK MOHICAN RIVER

PROJECT DESCRIPTION

IMPROVEMENT OF 2 SITES ON S.R. 39 IN WASHINGTON TOWNSHIP OF HOLMES COUNTY. S.L.M. 2.40 - REPLACEMENT OF AN EXISTING CONCRETE BOX WITH A 24" CONDUIT AND EMBANKMENT RECONSTRUCTION. S.L.M. 2.59 - REPLACEMENT OF AN EXISTING CONCRETE BOX WITH A 30" CONDUIT AND SOLDIER PILE WALL ON OUTLET SIDE. BOTH SITES WILL HAVE MINIMAL PAVEMENT WORK.

USGS MAP: GREER QUADRANGLE
LATITUDE: N40°37'10" LONGITUDE: W82°10'50"
LATITUDE AND LONGITUDE TO APPROX. CENTER OF PROJECT

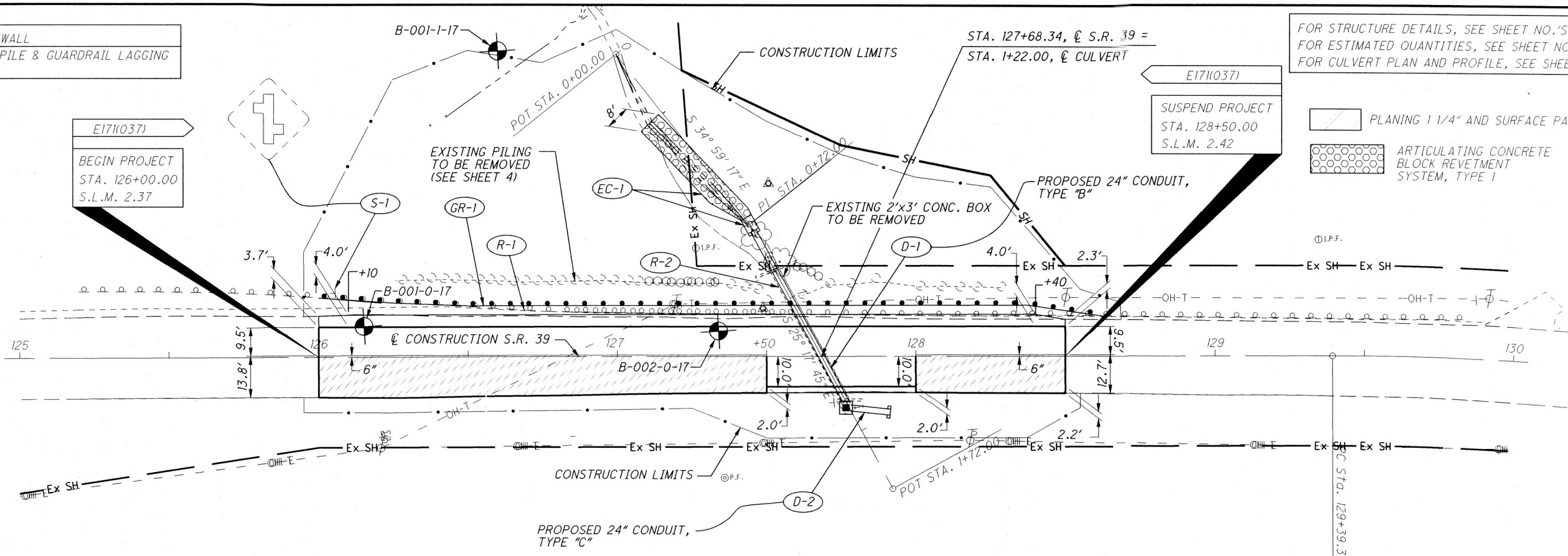
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EXISTING RETAINING WALL
 TYPE: DRIVEN PIPE PILE & GUARDRAIL LAGGING
 RWFN: 1003957

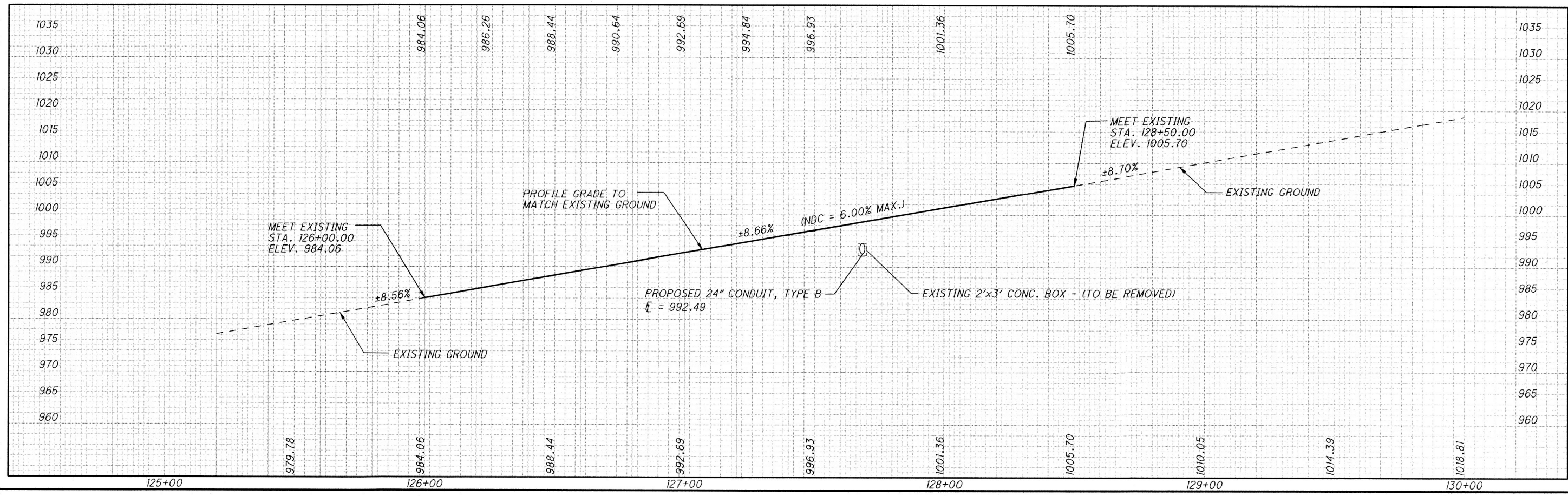
E171(037)
 BEGIN PROJECT
 STA. 126+00.00
 S.L.M. 2.37

FOR STRUCTURE DETAILS, SEE SHEET NO.'S 31-34.
 FOR ESTIMATED QUANTITIES, SEE SHEET NO. 14.
 FOR CULVERT PLAN AND PROFILE, SEE SHEET NO. 29.

PLANING 1 1/4" AND SURFACE PAVEMENT
 ARTICULATING CONCRETE BLOCK REVETMENT SYSTEM, TYPE 1



S.R. 39	HORIZONTAL CONTROL POINTS FOR S.R. 39				
STATION	OFFSET	NORTH	EAST	ELEVATION	DESCRIPTION
112+71.95	25.06' RT.	347,548.889	2,055,142.203	917.273	CONC. MON.
124+49.96	25.02' LT.	347,531.431	2,056,321.145	969.524	CONC. MON.
126+00.00	CL	347,497.865	2,056,469.506	NA	SURVEY NAIL
129+39.37	CL	347,478.433	2,056,808.323	NA	SURVEY NAIL



CALCULATED: TKB
 CHECKED: DAH
 HORIZONTAL SCALE IN FEET
 PLAN AND PROFILE (2.37)
 STA. 125+00.00 TO STA. 130+00.00
 HOL-39-2.37 / 2.58

I:\ProjectData\05123_Design\Roadway\Sheets\105123_gp001.dgn Sheet 04-SEP-2020 7:52AM tbarr

I:\ProjectData\05123\Design\Roadway\Sheets\05123_0001.dgn Sheet 04-SEP-2020 7:56AM +barr

REFERENCE NUMBER	SHEET NUMBER	STATION		SIDE	202		602	611		601		630				606	626	
					GUARDRAIL REMOVED	STRUCTURE REMOVED	CONCRETE MASONRY	24" CONDUIT, TYPE B	24" CONDUIT, TYPE C	CATCH BASIN NO. 2-3	RIPRAP, TYPE D	ARTICULATING REVENTMENT CONCRETE BLOCK SYSTEM, TYPE 1	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	GROUND MOUNTED SUPPORT, NO. 3 POST	SIGN POST REFLECTOR	GUARDRAIL, TYPE MGS	BARRIER REFLECTORS, TYPE 2 BI-DIRECTIONAL
					FT.	LUMP	CU. YD.	FT.	FT.	EACH	SQ. YD.	SQ. YD.	EACH	EACH	FT.	EACH	FT.	EACH
R-1	13	126+00.00	128+62.10	LT	262.5													
R-2	13	127+52.55	127+76.36	LT & RT		LUMP												
GR-1	13	126+00.00	128+62.10	LT												262.5	3	
D-1	13	127+45.61	127+76.36	LT & RT			0.46	67										
D-2	13	127+45.61	127+76.36	RT			0.46		15	1								
EC-1	13	127+08.17	127+47.37	LT						2	35							
S-1	13	126+05.50		LT								1	1	13	1			
TOTALS (CARRIED TO GENERAL SUMMARY)					263	LUMP	0.92	67	15	1	2	35	1	1	13	1	262.5	3

SHEET	659 SEEDING & MULCHING	203 EXCAVATION	203 EMBANKMENT
	SQ YD	CU YD	CU YD
15	17		
16	347	500	852
17	479	709	1327
18	427	504	1138
19	158	225	349
20	144	151	231
21	167	170	264
22	3		
TOTALS	1742	2259	4161

ITEM 202 - PAVEMENT REMOVED
 STA. 126+00.00 TO STA. 127+50.00
 150 FT. x 12.5 FT. (LT.) ÷ 9 = 208 SQ. YD.

STA. 127+50.00 TO STA. 128+00.00
 50 FT. x 24.5 FT. (LT. AND RT.) ÷ 9 = 136 SQ. YD.

STA. 128+00.00 TO STA. 128+50.00
 50 FT. x 12.5 FT. (LT.) ÷ 9 = 69 SQ. YD.

USE 413 SQ. YD.

ITEM 621 - RAISED PAVEMENT MARKER REMOVED
 STA. 126+00.00 TO STA. 128+50.00
 250 ÷ 40 = 6.25 EACH

USE 7 EACH

ITEM 621 - RPM
 STA. 126+00.00 TO STA. 128+50.00
 250 ÷ 40 = 6.25 EACH

USE 7 EACH

SEEDING AND MULCHING QUANTITIES

ITEM 659 - SOIL ANALYSIS TEST
 2259 C.Y. x 1 TEST/10000 C.Y. = 0.22 EACH
 (USE 2 EACH)

ITEM 659 - TOPSOIL
 1742 S.Y. x 111 C.Y./1000 S.Y. = 193.4 C.Y.
 (USE 193 C.Y.)

ITEM 659 - COMMERCIAL FERTILIZER
 1742 S.Y. x 9 x 30 LB/1000 S.F. ÷ 2000 LB./TON = 0.24 TON
 (USE 0.24 TON)

ITEM 659 - LIME
 1742 S.Y. x (9 S.F./S.Y.) ÷ (43560 S.F./ACRE) = 0.36 ACRES
 (USE 0.36 ACRES)

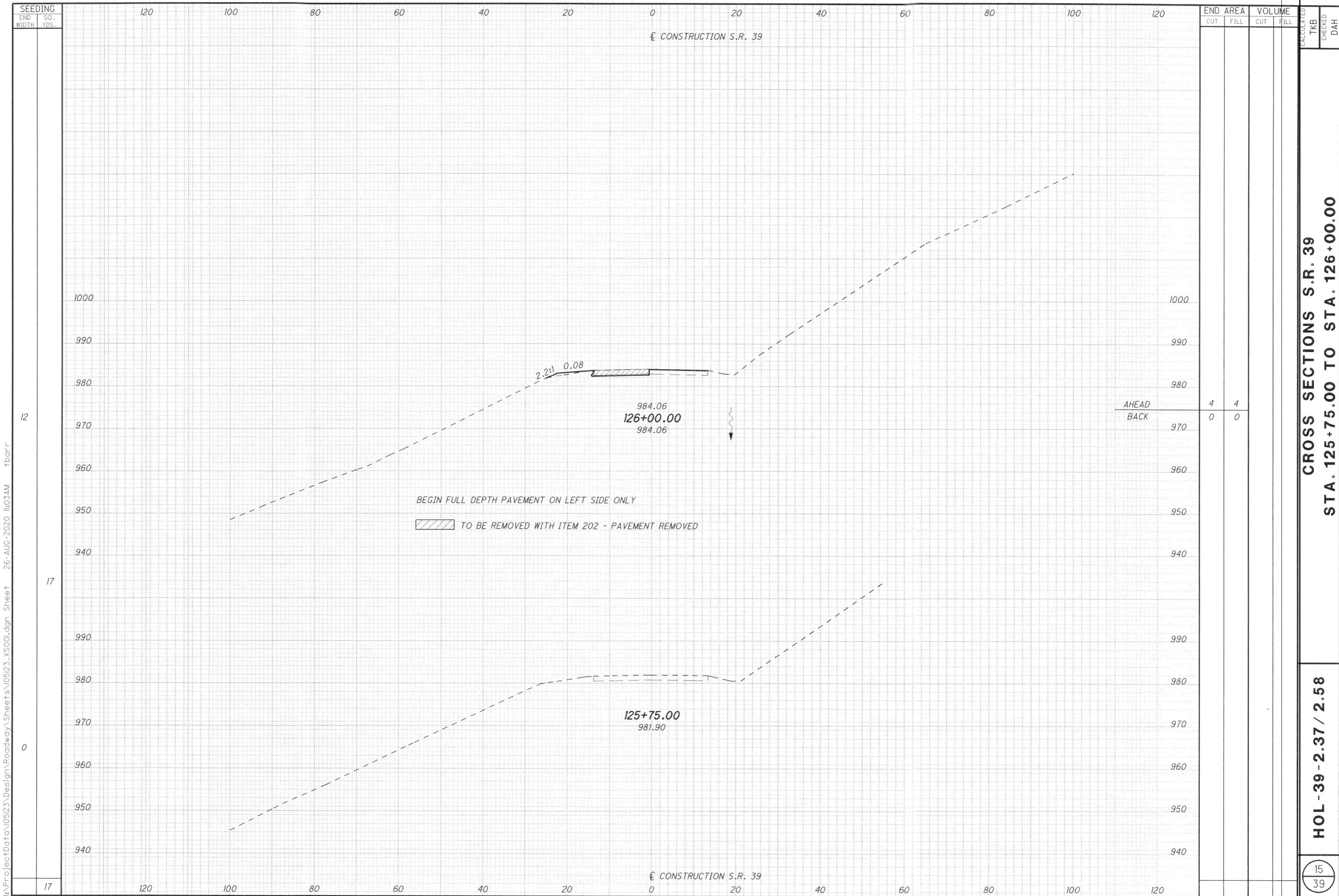
ITEM 659 - WATER
 1742 S.Y. x 9 x 300 GAL./1000 S.F. x 2 APP./1000 S.F. = 9.4 M. GAL.
 (USE 9 M. GAL.)

ITEM 646 - CENTER LINE
 STA. 126+00.00 TO STA. 128+50.00
 250 FT. ÷ 5280 = 0.05 MI.
 USE 0.05 MI.

ITEM 646 - EDGE LINE, 6"
 STA. 126+00.00 TO STA. 128+50.00
 250 FT. ÷ 5280 = 0.05 MI. x 2 = 0.09 MI.
 USE 0.1 MI.

TOTALS CARRIED TO THE GENERAL SUMMARY.

CALCULATED TKB CHECKED DAH
 ESTIMATED QUANTITIES - HOL-39-2.37
 HOL-39-2.37 / 2.58
 14
 39

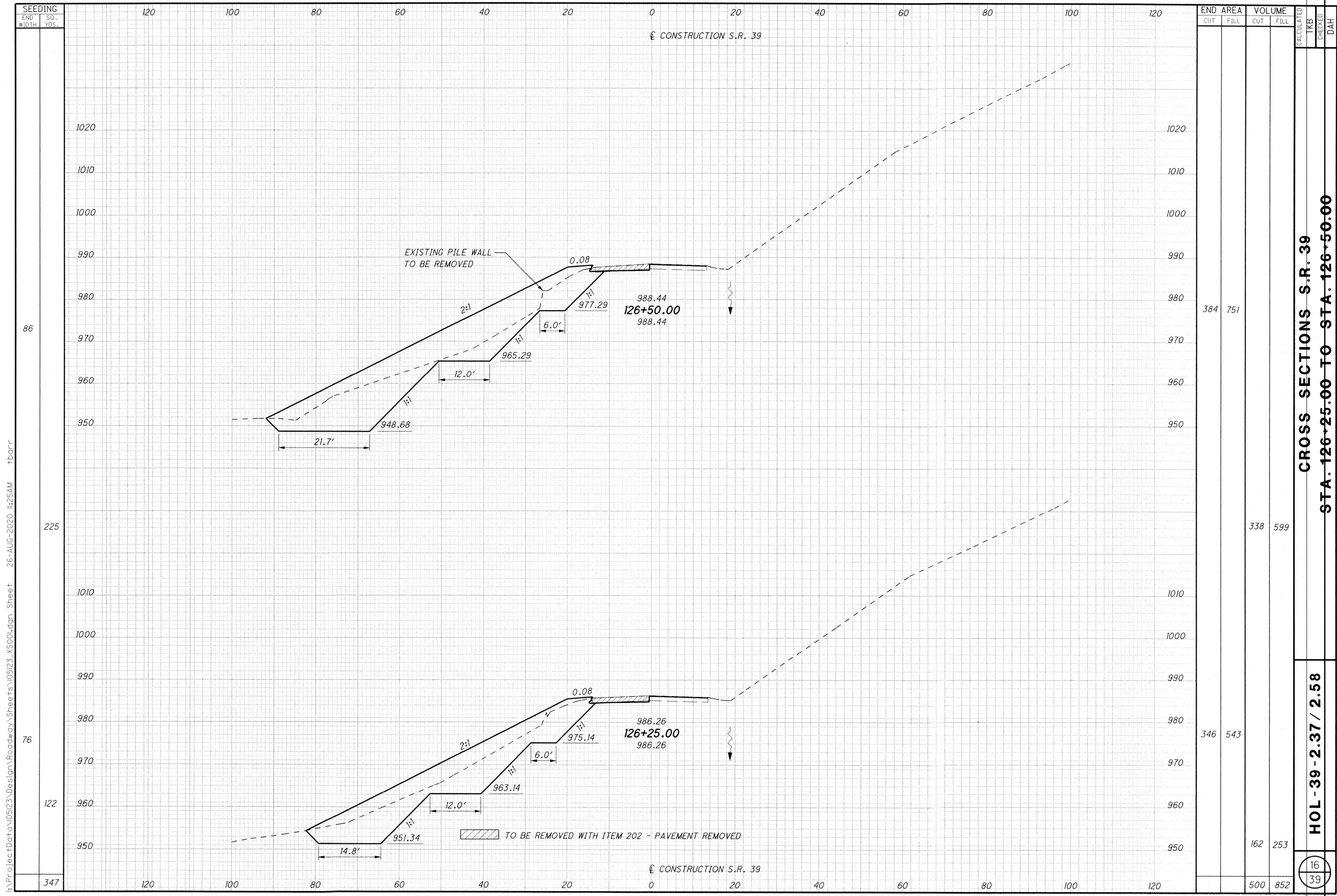


i:\ProjectData\05123\Design\Roadway\Sheets\05123-XS001.dgn Sheet 26-AUG-2020 11:03AM tbarr

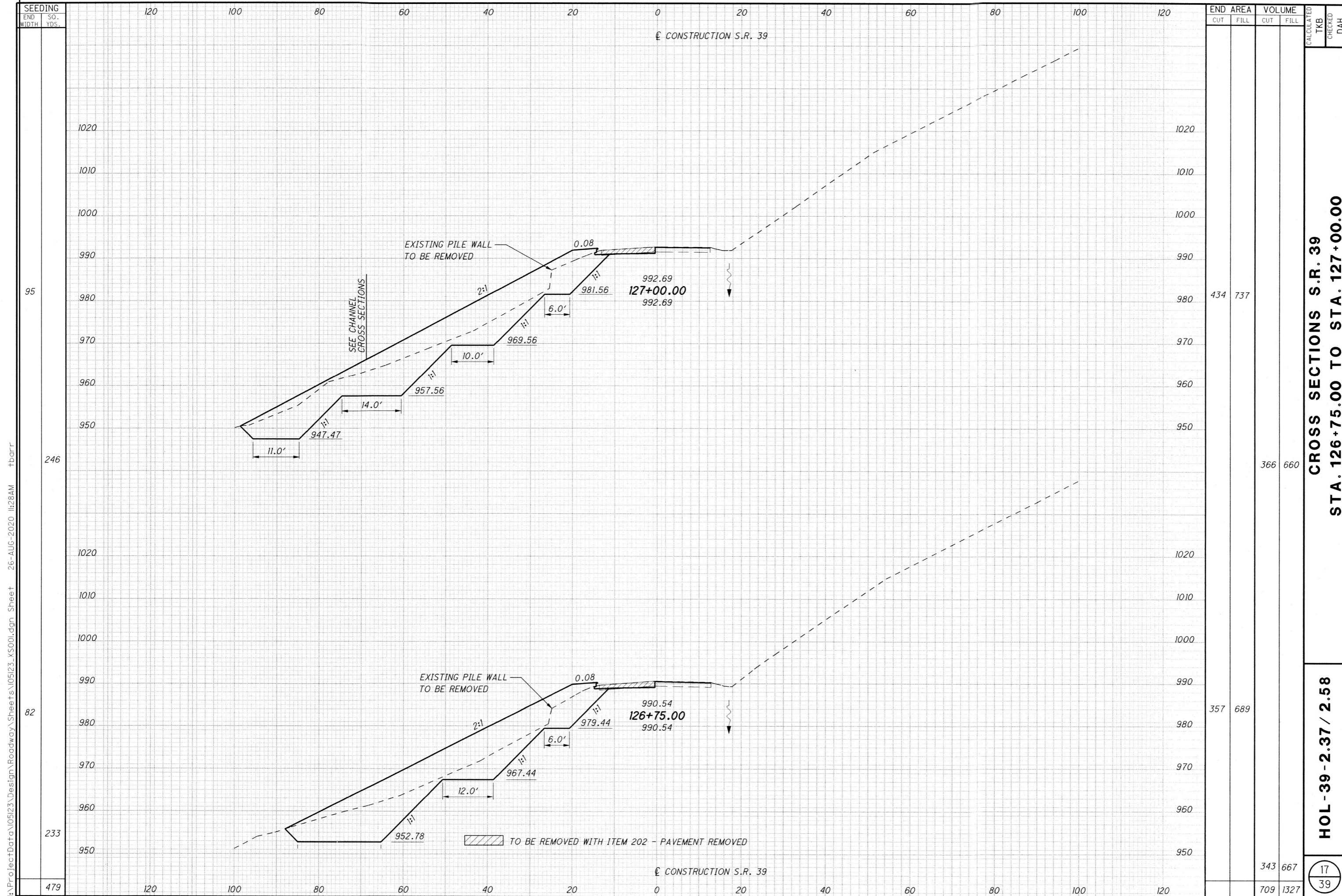
**CROSS SECTIONS S.R. 39
STA. 125+75.00 TO STA. 126+00.00**

HOL -39 - 2.37 / 2.58

15
39



I:\ProjectData\05123\Design\Roadway\Sheets\05123_XS001.dgn Sheet 26-AUG-2020 11:25AM tbarr



SEEDING
END SO. WIDTH YDS.

95

246

82

233

479

END AREA		VOLUME		CALCULATED	
CUT	FILL	CUT	FILL	TKB	DAH
434	737				
		366	660		
357	689				
		343	667		
		709	1327		

CROSS SECTIONS S.R. 39
STA. 126+75.00 TO STA. 127+00.00

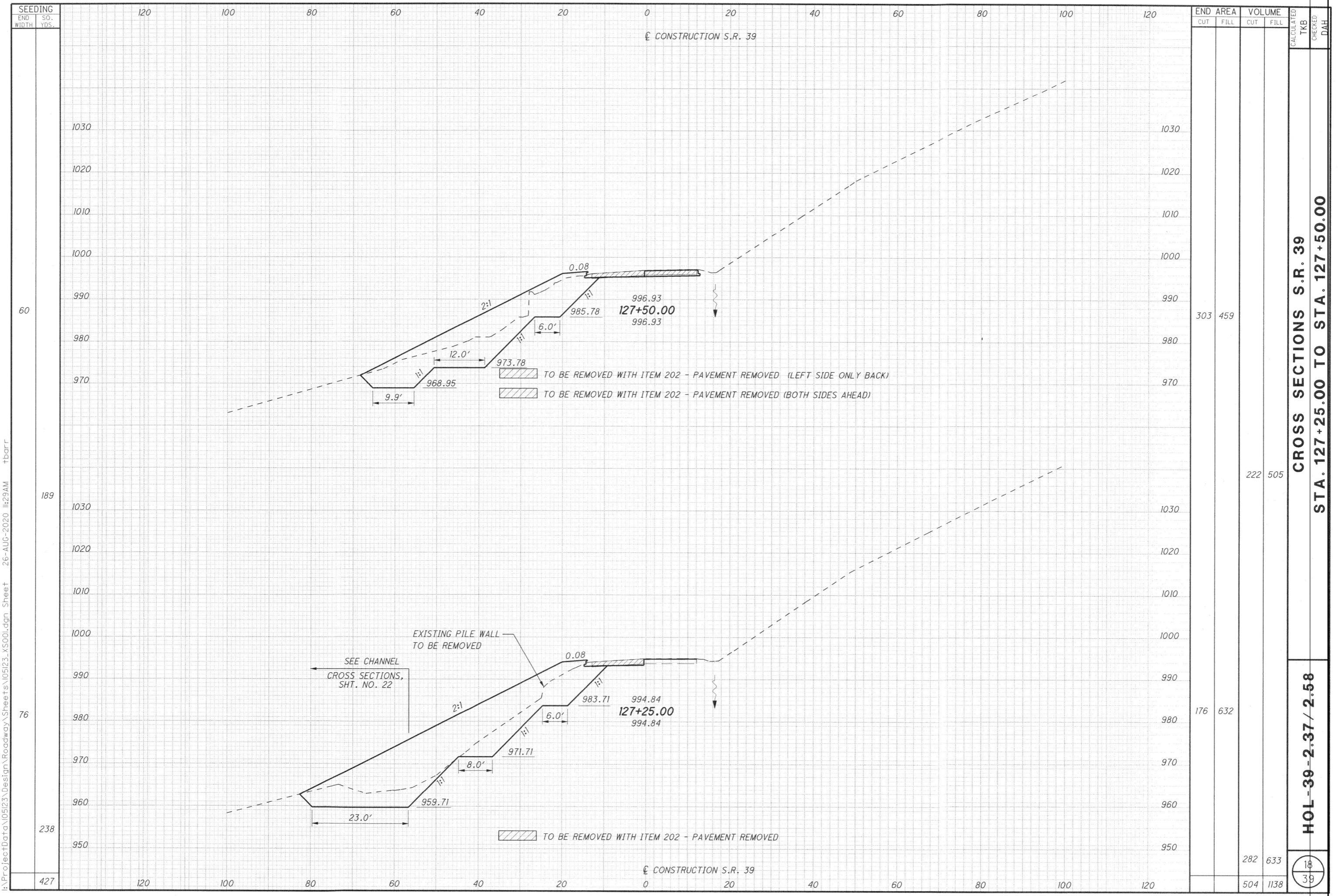
HOL-39-2.37 / 2.58

17
39

CONSTRUCTION S.R. 39

CONSTRUCTION S.R. 39

I:\ProjectData\105123\Design\Roadway\Sheets\105123.X5001.dgn Sheet 26-AUG-2020 11:28AM tbarr



SEEDING	END SO. WIDTH	SO. YDS.
	120	100
	80	60
	40	20
	0	0
	20	20
	40	40
	60	60
	80	80
	100	100
	120	120

END AREA		VOLUME		CALCULATED	
CUT	FILL	CUT	FILL	TKB	DAH
303	459				
222	505				
176	632				
282	633				
504	1138				

CROSS SECTIONS S.R. 39
STA. 127+25.00 TO STA. 127+50.00

HOL-39-2.37 / 2.58

18
39

I:\ProjectData\05123\Design\Roadway\Sheets\05123.XS001.dgn Sheet 26-AUG-2020 11:29AM tbarr

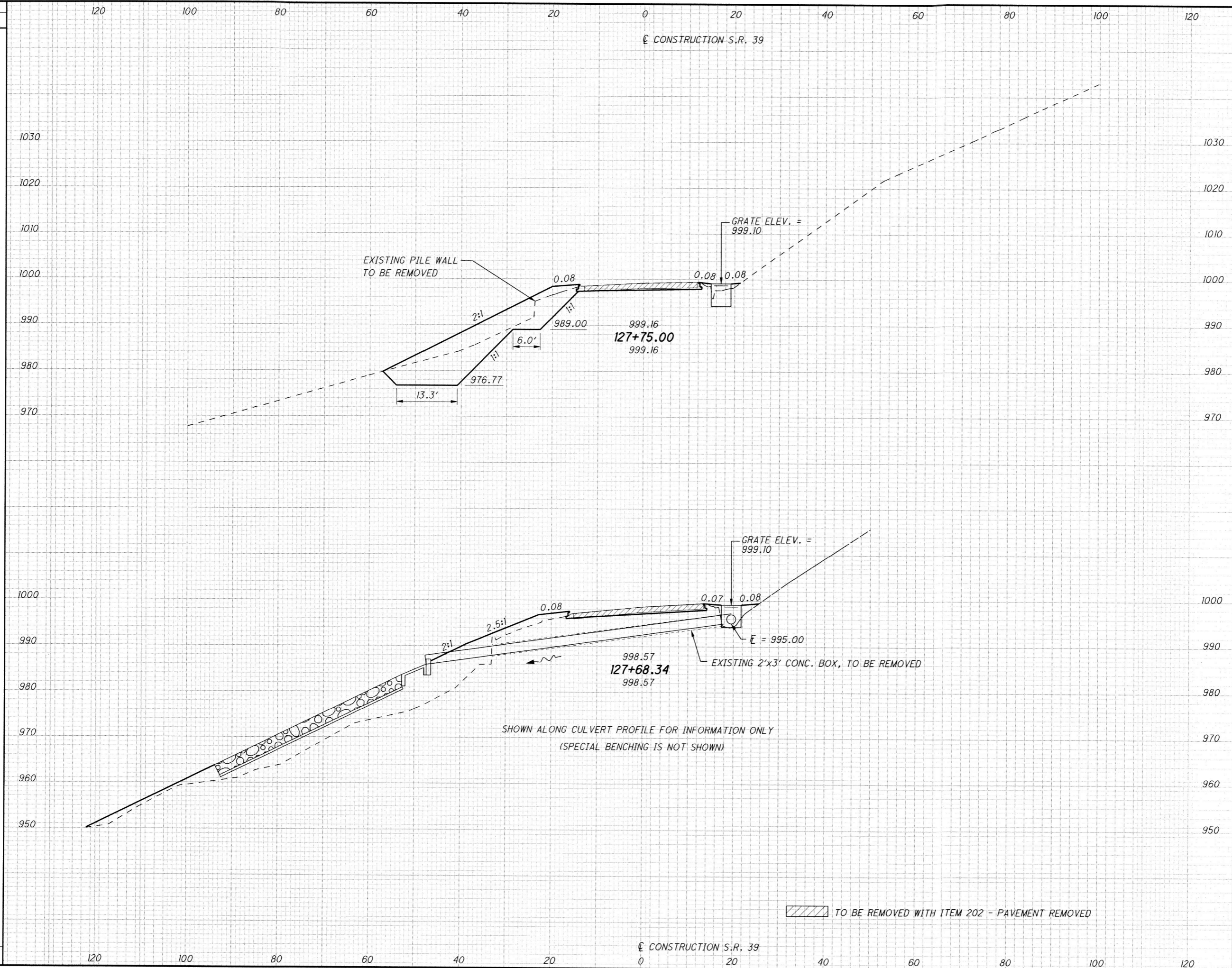
SEEDING
END SO. WIDTH YDS.

53

158

158

I:\ProjectData\05123\Design\Roadway\Sheets\05123.XS001.dgn Sheet 26-AUG-2020 11:30AM tbarr



END AREA		VOLUME	
CUT	FILL	CUT	FILL
183	294		
		225	349
		225	349

CALCULATED
TJB

CHECKED
DAH

CROSS SECTIONS S.R. 39

STA. 127+68.34 TO STA. 127+75.00

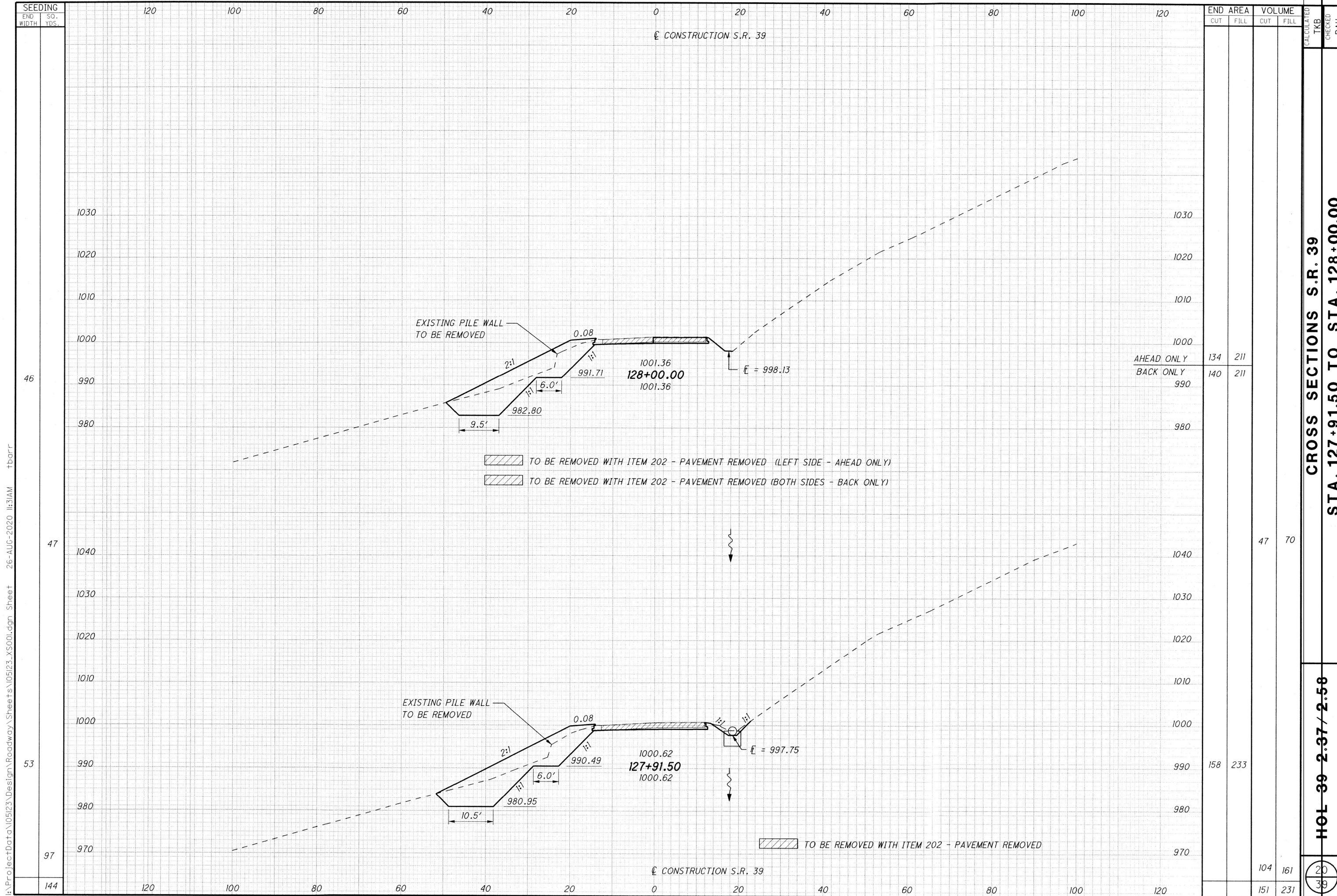
HOL-39-2.37 / 2.58

39

39

CONSTRUCTION S.R. 39

CONSTRUCTION S.R. 39



SEEDING
END SO.
WIDTH YDS.

46

47

53

97

144

120 100 80 60 40 20 0 20 40 60 80 100 120

CONSTRUCTION S.R. 39

1030

1020

1010

1000

990

980

1040

1030

1020

1010

1000

990

980

970

CONSTRUCTION S.R. 39

120 100 80 60 40 20 0 20 40 60 80 100 120

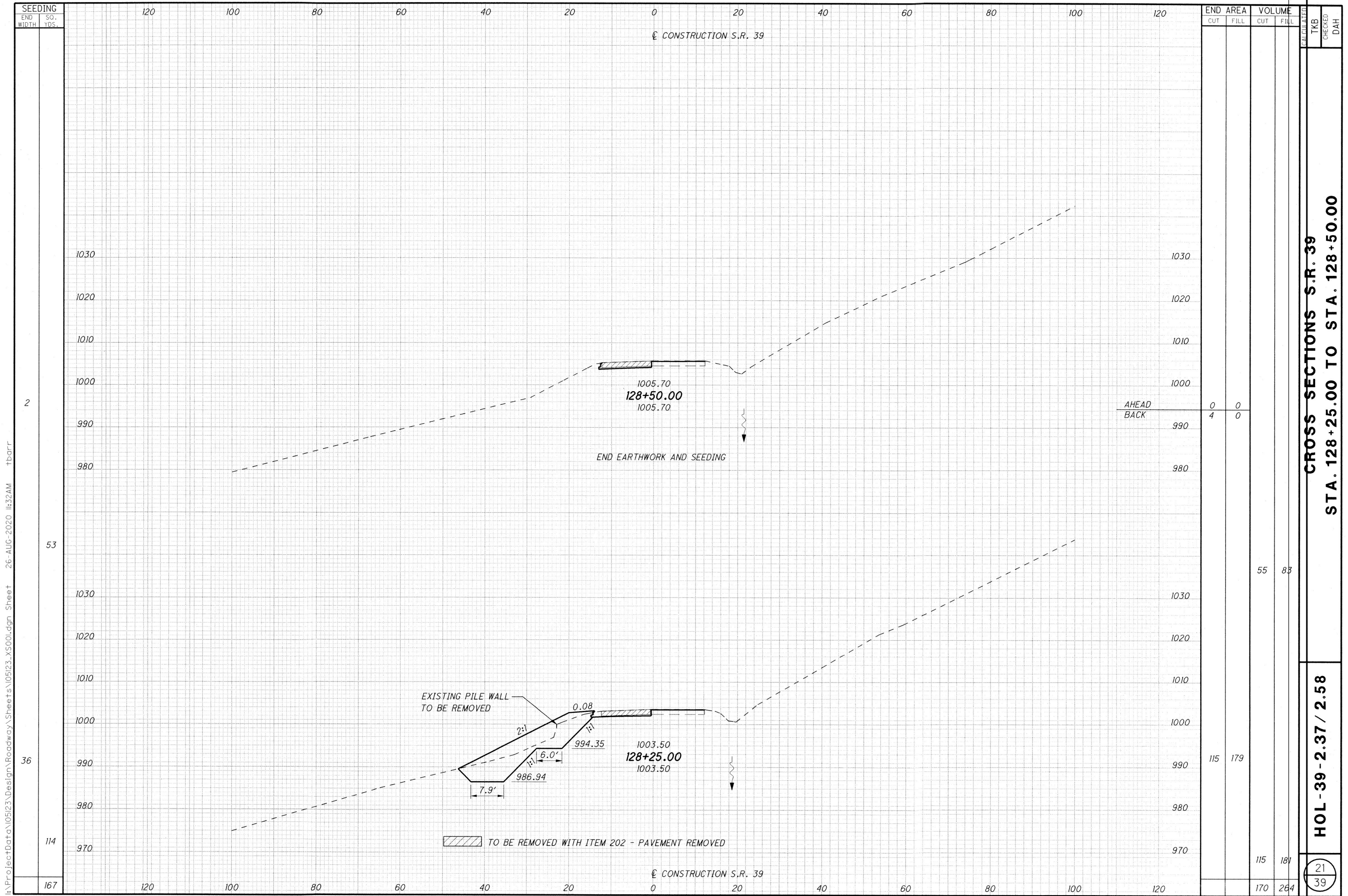
END AREA	VOLUME		CALCULATED	TKB	CHECKED	DAH
	CUT	FILL				
AHEAD ONLY	134	211				
BACK ONLY	140	211				
			47	70		
	158	233				
			104	161		
	151	231				

CROSS SECTIONS S.R. 39
STA. 127+91.50 TO STA. 128+00.00

HOL 39 2.37 / 2.58

20
39

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SEEDING	END WIDTH	SO. YDS.

END AREA		VOLUME		CALCULATED	TKB	CHECKED	DAH
CUT	FILL	CUT	FILL				
0	0	0	0				
4	0	55	83				
115	179	115	181				
170	264	170	264				

CROSS SECTIONS S.R. 39
STA. 128+25.00 TO STA. 128+50.00

HOL-39-2.37 / 2.58

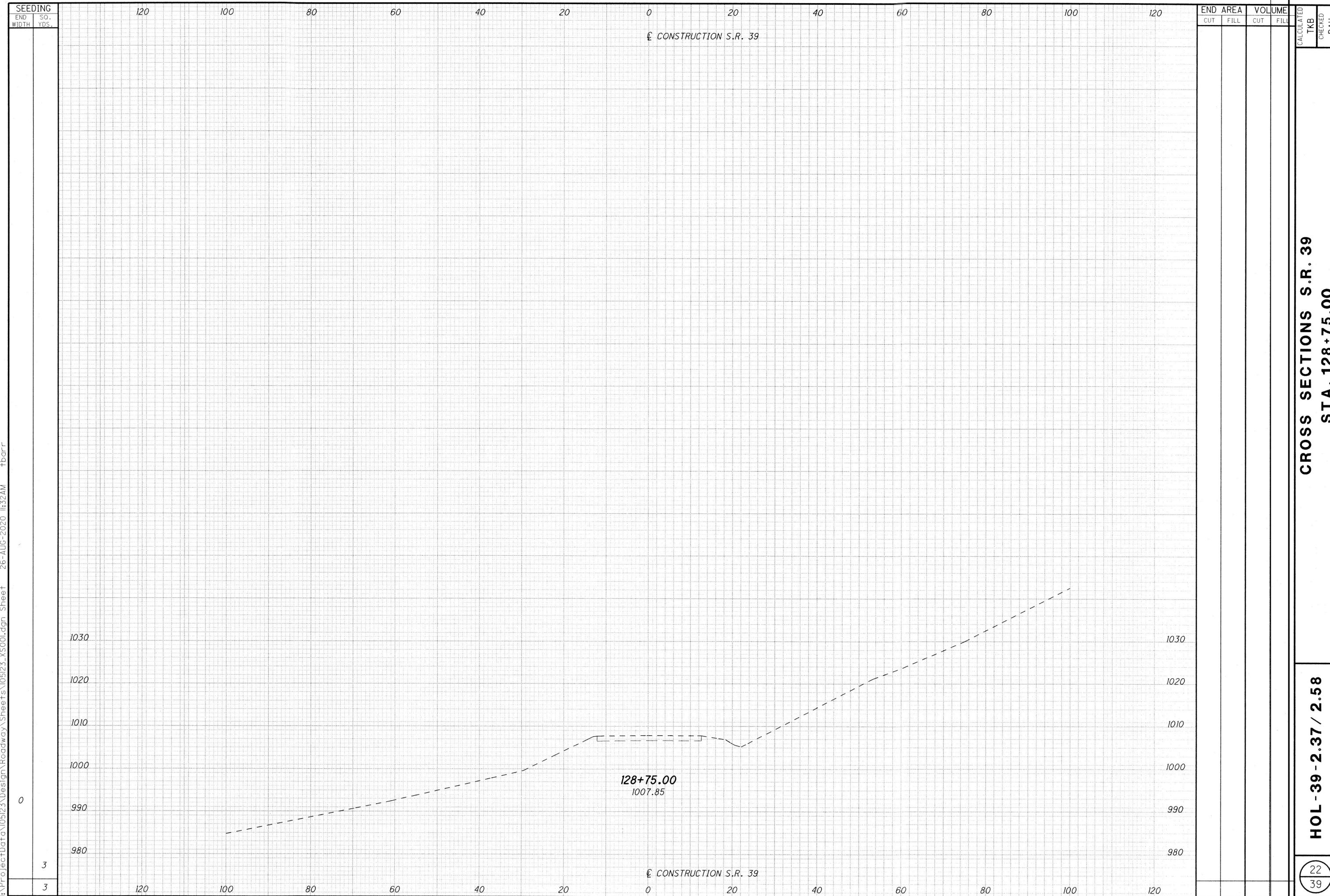
21
39

i:\ProjectData\105123\Design\Roadway\Sheet\105123_XS001.dgn Sheet 26-AUG-2020 11:32AM tbarr

CONSTRUCTION S.R. 39

CONSTRUCTION S.R. 39

128+75.00
1007.85



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CROSS SECTIONS S.R. 39
STA. 128+75.00

HOL - 39 - 2.37 / 2.58

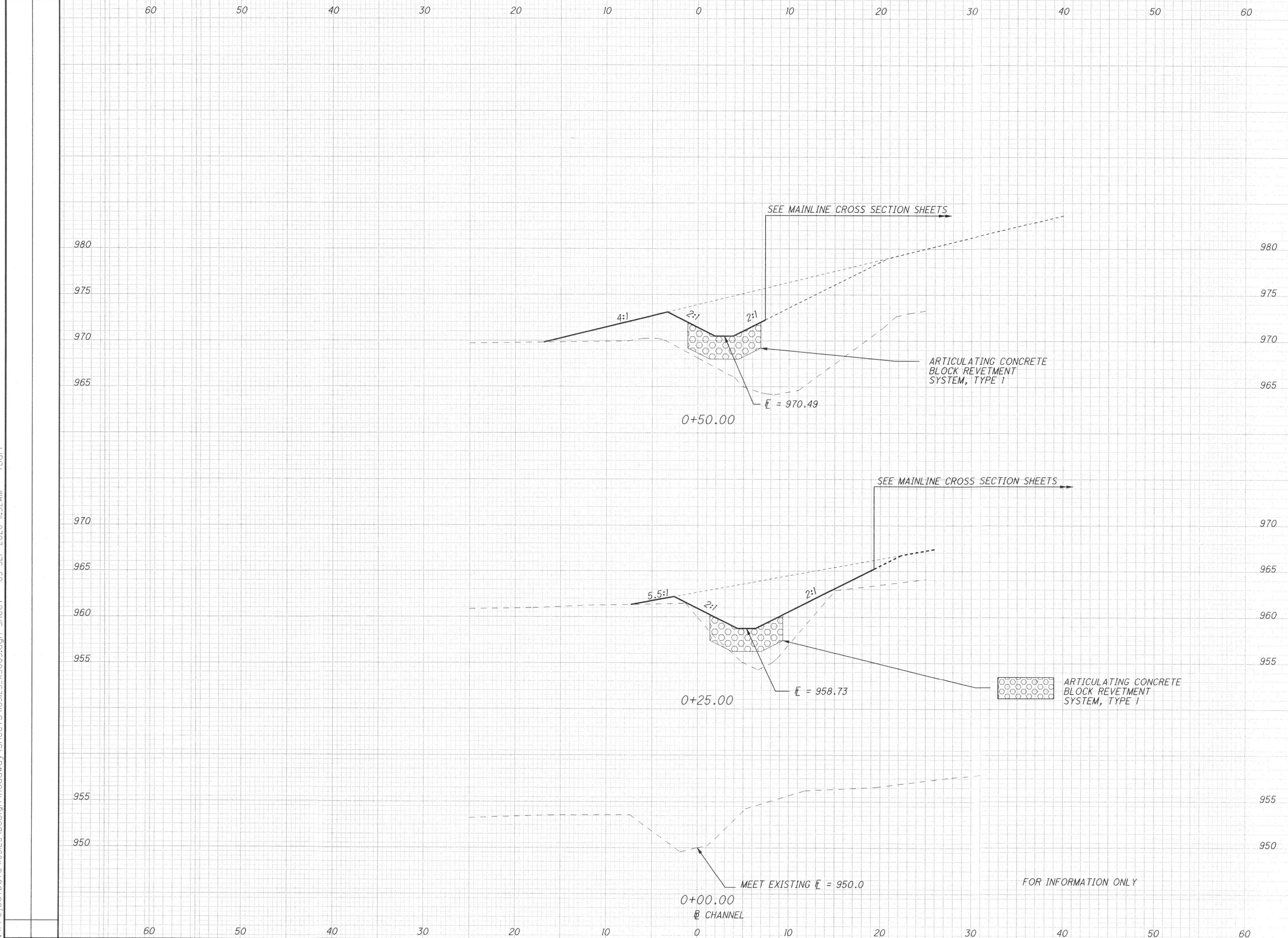
22
39

i:\ProjectData\05123\Design\Roadway\Sheets\05123_X5003.dgn Sheet 03-SEP-2020 11:52AM tbarr

SEEDING	
END WIDTH	SO. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED
TKB
CHECKED
DAH

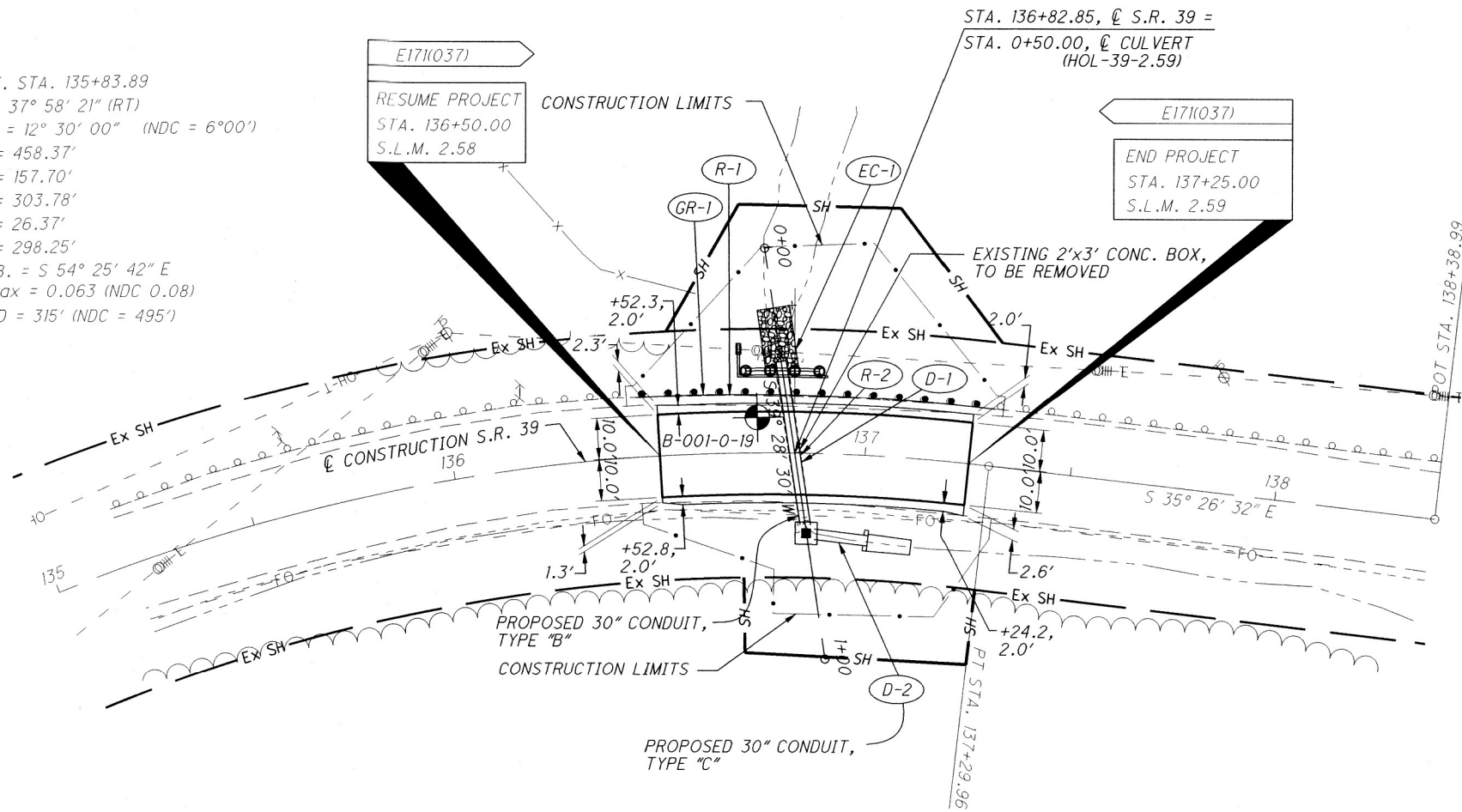


**CROSS SECTIONS
STA. 0+00.00 TO STA. 0+50.00 (2.40 CHANNEL SECTIONS)**

HOL-39-2.37 / 2.58

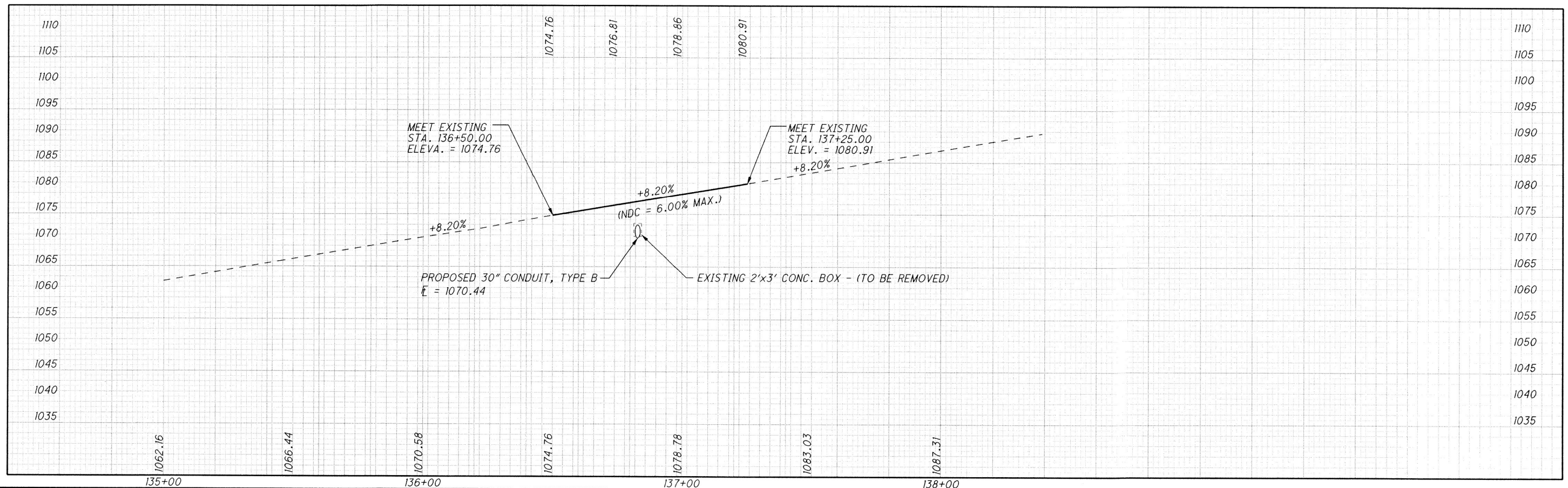
FOR INFORMATION ONLY

P.I. STA. 135+83.89
 $\Delta = 37^\circ 58' 21''$ (RT)
 $D_c = 12^\circ 30' 00''$ (NDC = $6^\circ 00'$)
 $R = 458.37'$
 $T = 157.70'$
 $L = 303.78'$
 $E = 26.37'$
 $C = 298.25'$
 $C.B. = S 54^\circ 25' 42'' E$
 $e_{max} = 0.063$ (NDC 0.08)
 $SSD = 315'$ (NDC = 495')



FOR CULVERT PLAN AND PROFILE, SEE SHEET NO. 30.
 FOR ESTIMATED QUANTITIES, SEE SHEET NO. 25.
 FOR LAGGING WALL DETAILS, SEE SHEET NO.'S 31-34.

S.R. 39	HORIZONTAL CONTROL POINTS FOR S.R. 39				
STATION	OFFSET	NORTH	EAST	ELEVATION	DESCRIPTION
135+94.91	34.13' LT.	347,316.203	2,057,450.699	1067.499	CONC. MON.
136+00.00	☐	347,286.050	2,057,433.851	NA	SURVEY NAIL
136+64.90	22.68 LT.	347,257.981	2,057,498.191	1074.910	IRON PIN SET
137+29.96	☐	347,192.195	2,057,523.118	NA	SURVEY NAIL
138+38.46	18.23 RT.	347,093.234	2,057,571.179	1090.096	IRON PIN SET



I:\ProjectData\105123\Design\Roadway\Sheets\105123_gp002.dgn Sheet 26-AUG-2020 12:33PM tbarr

CALCULATED TKB CHECKED DAH
 PLAN AND PROFILE (2.58)
 STA. 135+00.00 TO STA. 138+38.99
 HOL-39-2.37 / 2.58
 HORIZONTAL SCALE IN FEET
 0 10 20 40

REFERENCE NUMBER	SHEET NUMBER	STATION		SIDE	202		602	611		601					606		626	
					GUARDRAIL REMOVED	STRUCTURE REMOVED	CONCRETE MASONRY	30 CONDUIT, TYPE B	30 CONDUIT, TYPE C	CATCH BASIN NO. 2-3	ROCK CHANNEL PROTECTION, TYPE B WITH FILTER	GUARDRAIL, TYPE MGS	BARRIER REFLECTORS, TYPE 2 BI-DIRECTIONAL					
					FT.	LUMP	CU. YD.	FT.	FT.		CU. YD.	FT.	EACH					
R-1	24	136+45.06	137+29.95	LT	87.5													
R-2	24	136+85.65	137+29.95	LT & RT		LUMP												
GR-1	24	136+45.06	137+29.95	LT										87.5				3
D-1	24	136+79.42	136+86.00	LT & RT				42										
D-2	24	137+01.65	136+86.00	RT			0.60	15	1									
EC-1	24	136+73.59	136+84.09	LT						11								
TOTALS (CARRIED TO GENERAL SUMMARY)					88	LUMP	0.6	42	15	1	11			87.5				3

SHEET	659 SEEDING & MULCHING	203 EXCAVATION	203 EMBANKMENT
	SQ YD	CU YD	CU YD
26	71	16	3
27	219	25	56
28	4	0	0
TOTALS	294	41	59

ITEM 304 - AGGREGATE BASE
 STA. 136+50.00 TO STA. 137+25.00
 (FOR UNDERCUT PAVEMENT AREAS)
 34.35 CU. YD.
 USE 35 CU. YD.

ITEM 202 - PAVEMENT REMOVED
 STA. 136+50.00 TO STA. 137+25.00
 1800 SQ. FT. CADD AREA ÷ 9 = 200 SQ. YD.
 USE 200 SQ. YD.

ITEM 621 - RAISED PAVEMENT MARKER REMOVED
 STA. 136+50.00 TO STA. 137+25.00
 75 ÷ 40 = 1.8 EACH
 USE 2 EACH

ITEM 621 - RPM
 STA. 136+50.00 TO STA. 137+25.00
 75 ÷ 40 = 1.8 EACH
 USE 2 EACH

ITEM 646 - CENTER LINE
 STA. 136+50.00 TO STA. 137+25.00
 75 FT. ÷ 5280 = 0.01 MI.
 USE 0.01 MI.

ITEM 646 - EDGE LINE, 6"
 STA. 136+50.00 TO STA. 137+25.00
 75 FT. ÷ 5280 = 0.01 MI. x 2 = 0.02 MI.
 USE 0.02 MI.

SEEDING AND MULCHING QUANTITIES

ITEM 659 - SOIL ANALYSIS TEST
 41 C.Y. x 1 TEST/10000 C.Y. = 0.01 EACH
 (USE 2 EACH)

ITEM 659 - TOPSOIL
 294 S.Y. x 111 C.Y./1000 S.Y. = 32.6 C.Y.
 (USE 33 C.Y.)

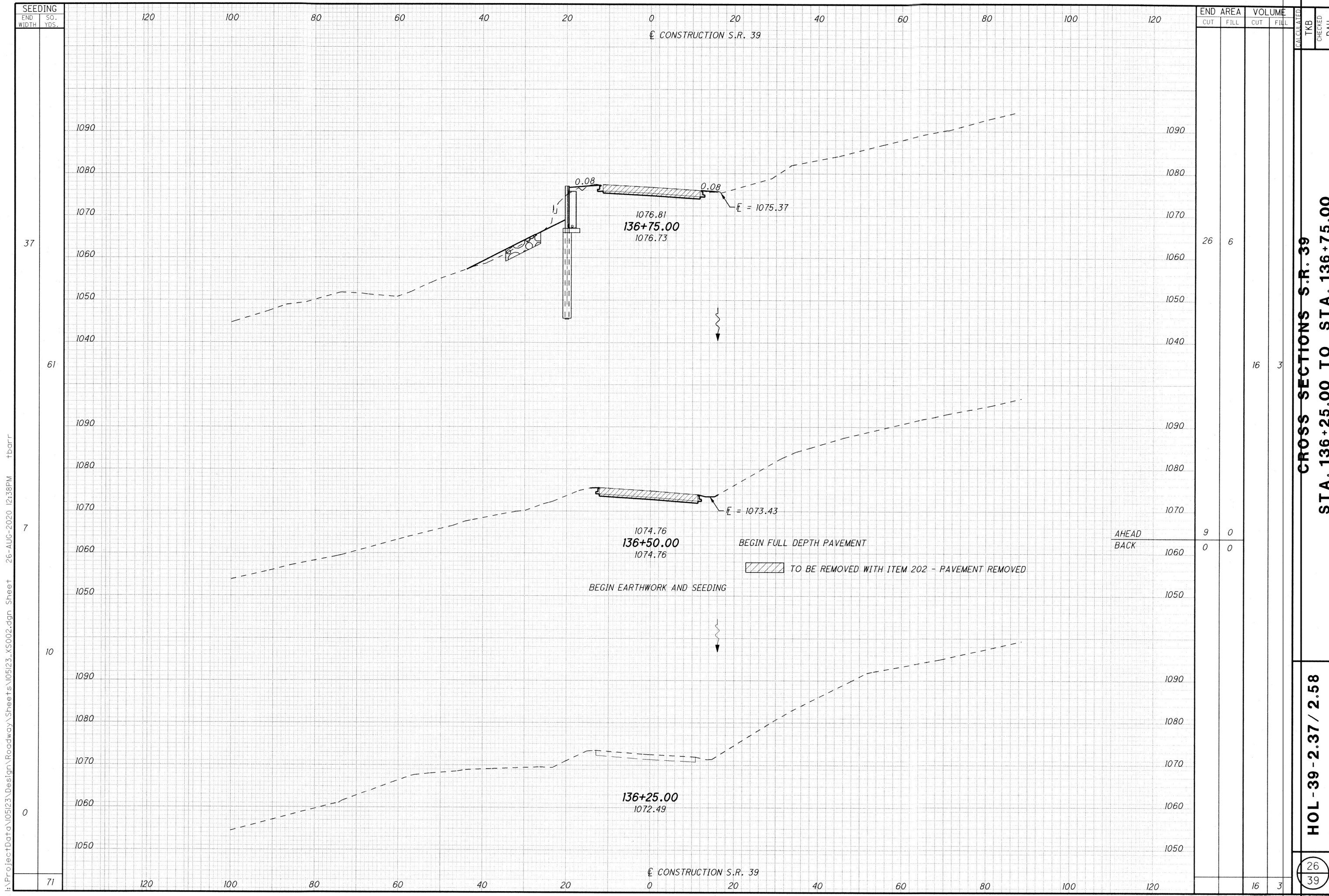
ITEM 659 - COMMERCIAL FERTILIZER
 294 S.Y. x 9 x 30 LB/1000 S.F. ÷ 2000 LB./TON = 0.04 TON
 (USE 0.04 TON)

ITEM 659 - LIME
 294 S.Y. x (9 S.F./S.Y.) ÷ (43560 S.F./ACRE) = 0.06 ACRES
 (USE 0.06 ACRES)

ITEM 659 - WATER
 294 S.Y. x 9 x 300 GAL./1000 S.F. x 2 APP./1000 S.F. = 1.59 M. GAL.
 (USE 2 M. GAL.)

TOTALS CARRIED TO THE GENERAL SUMMARY.

I:\ProjectData\05123\Design\Roadway\Sheets\05123.GC002.dgn Sheet 04-SEP-2020 8:00AM tbarr

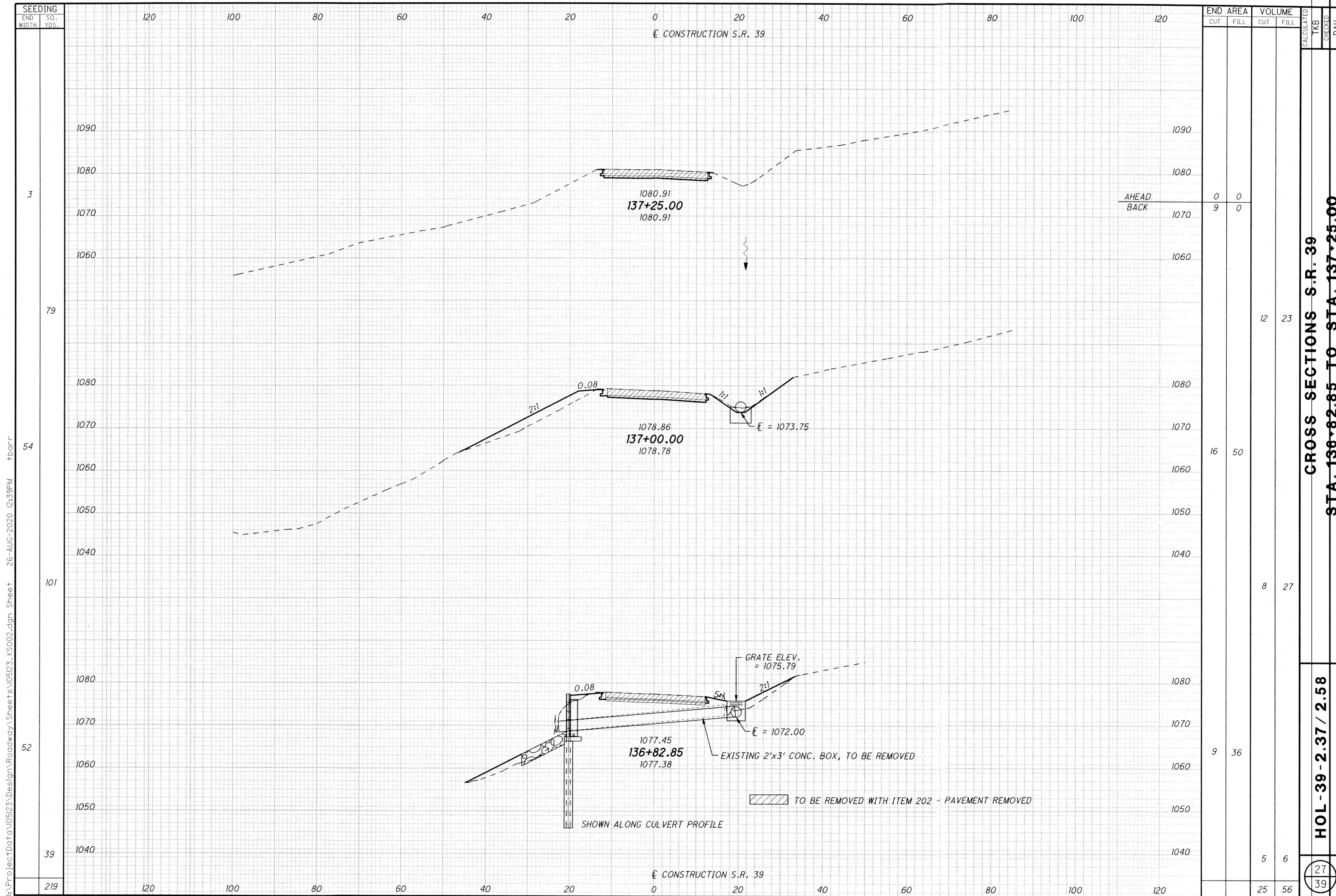


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SEEDING	
END WIDTH	SO. YDS.
37	
61	
7	
10	
0	
71	

END AREA		VOLUME		CALCULATED	TKB CHECKED	DAH
CUT	FILL	CUT	FILL			
26	6					
16	3					
9	0					
0	0					
16	3					

CROSS SECTIONS S.R. 39
STA. 136+25.00 TO STA. 136+75.00
HOL-39-2.37 / 2.58
 26 / 39



SEEDING	
END WIDTH	SO. YDS.
3	
79	
54	
101	
52	
39	
219	

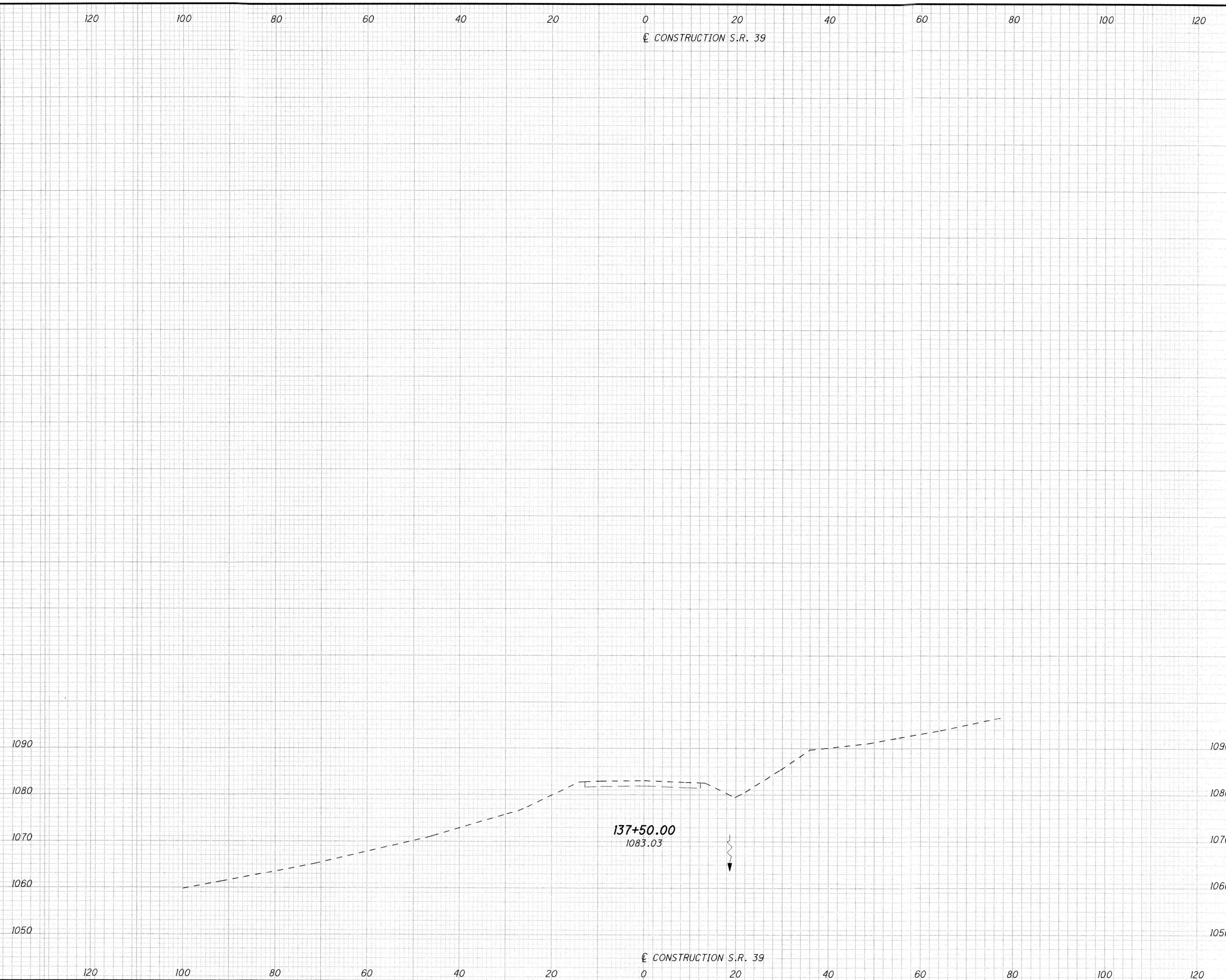
END	AREA		VOLUME		CALCULATED	TKB	CHECKED	DAH
	CUT	FILL	CUT	FILL				
	0	0						
AHEAD	9	0						
BACK								
			12	23				
	16	50						
			8	27				
	9	36						
			5	6				
			25	56				

CROSS SECTIONS S.R. 39
STA. 136+82.85 TO STA. 137+25.00
HOL - 39 - 2.37 / 2.58
 27
 39

I:\ProjectData\05123\Design\Roadway\Sheets\05123_X5002.dgn_Sheet 26-AUG-2020 12:39PM tbarr

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SEEDING	
END WIDTH	SO. YDS.
4	4



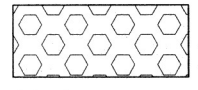
END AREA		VOLUME		CALCULATED	TKB CHECKED	DAH
CUT	FILL	CUT	FILL			

CROSS SECTIONS S.R. 39
STA. 137 + 50.00

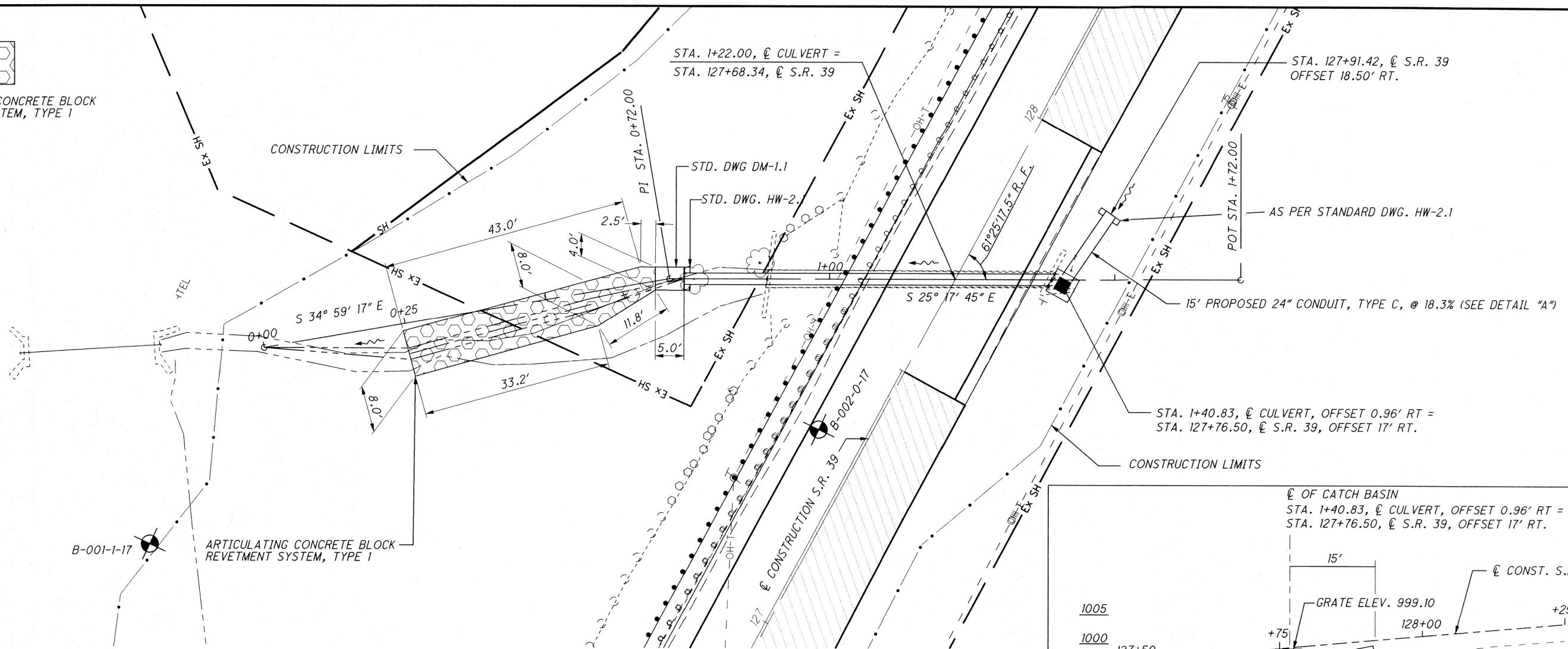
HOL - 39 - 2.37 / 2.58

28
39

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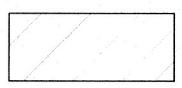


ARTICULATING CONCRETE BLOCK REVELTMENT SYSTEM, TYPE 1



EXISTING CULVERT		
TYPE : 2' X 3' CONCRETE BOX		
SKEW : 61° 25' 17.5" R. F. ALIGNMENT : TANGENT		
WEARING SURFACE : ASPHALT CONCRETE		
CULVERT FILE NO. : 1885519		
DATE BUILT : 1918		

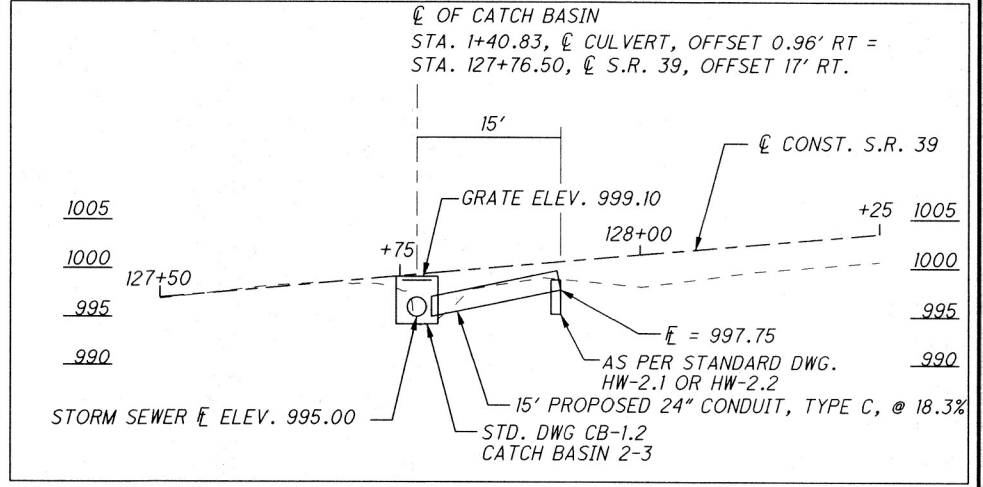
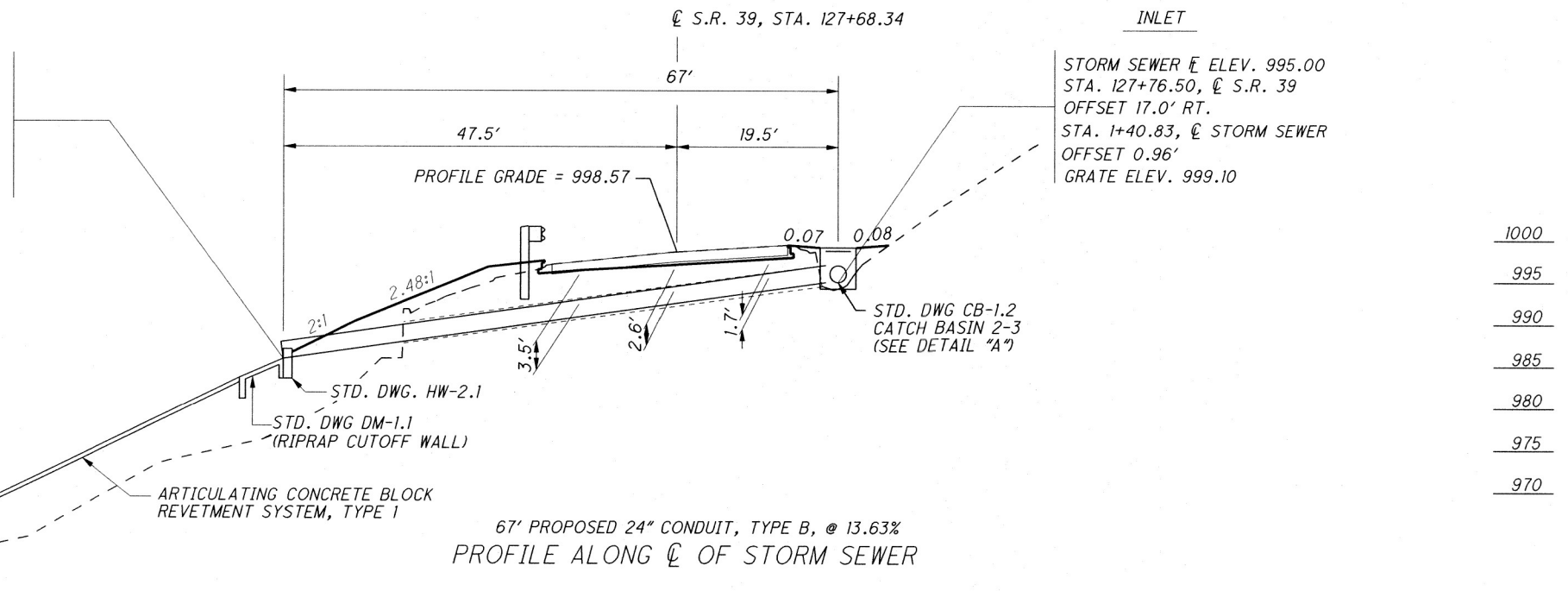
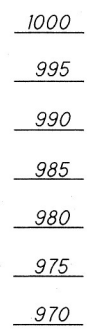
HYDRAULIC DATA		
DRAINAGE AREA = 0.012 SQ. MI. (7.82 ACRES)		
DISCHARGE	HYDRAULIC GRADE LINE	CFN
$Q_{10} = 12.8$ cfs	995.63	1977123



PLANING 1/4" AND SURFACE PAVEMENT

PROPOSED CULVERT		
TYPE : 24" CONDUIT, TYPE B		
SKEW : 61° 25' 17.5" R. F.		
ALIGNMENT : TANGENT		
CULVERT FILE NO. : 1977123		

OUTLET
 STORM SEWER \bar{E} ELEV. 985.87
 STA. 127+45.61, \bar{C} S.R. 39
 OFFSET 41.71' LT.
 STA. 0+74.50, \bar{C} CULVERT
 OFFSET 0.00'



DETAIL "A"



CALCULATED
TKB
CHECKED
DAH

CULVERT PLAN AND PROFILE SHEET
S.R. 39 (2.58)

HOL-39-2.37 / 2.58

30
39

EXISTING CULVERT

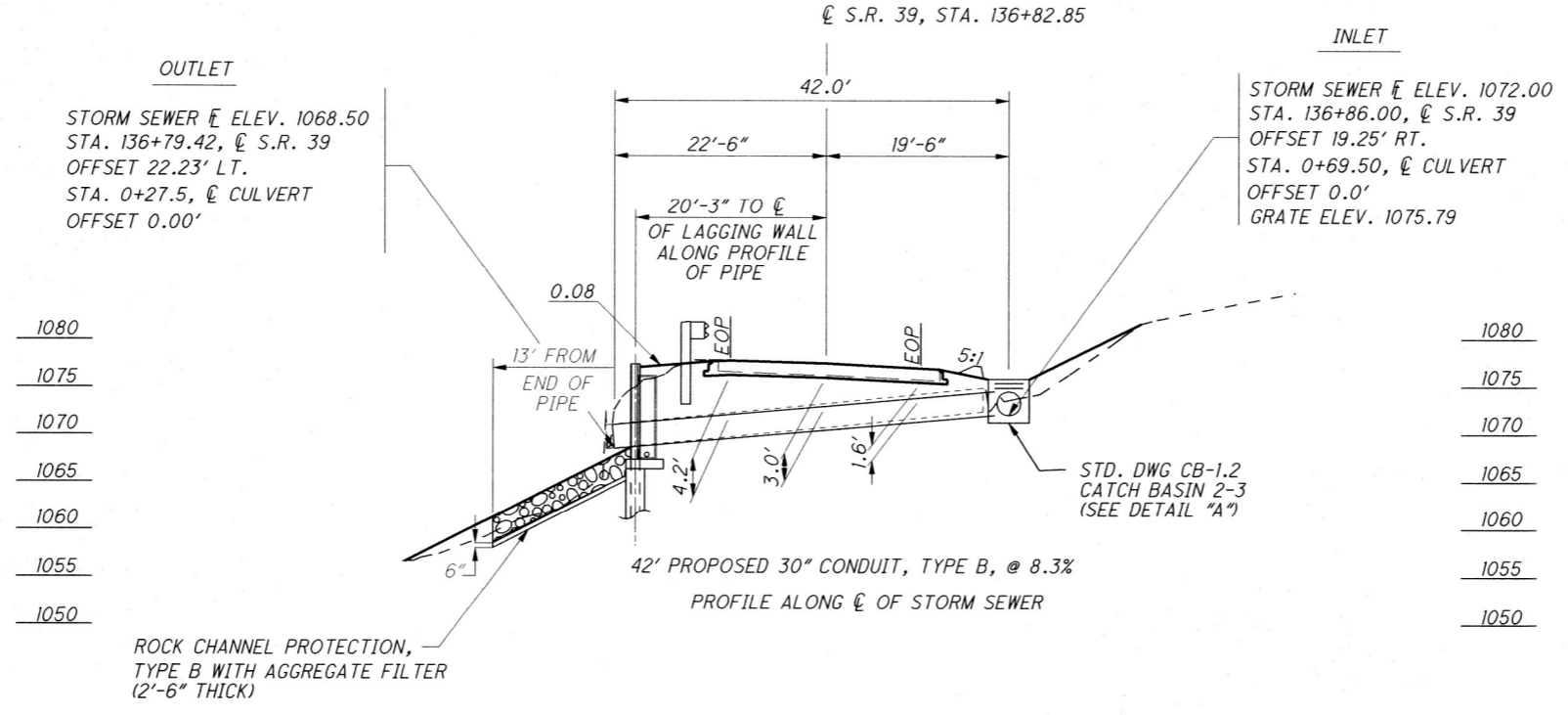
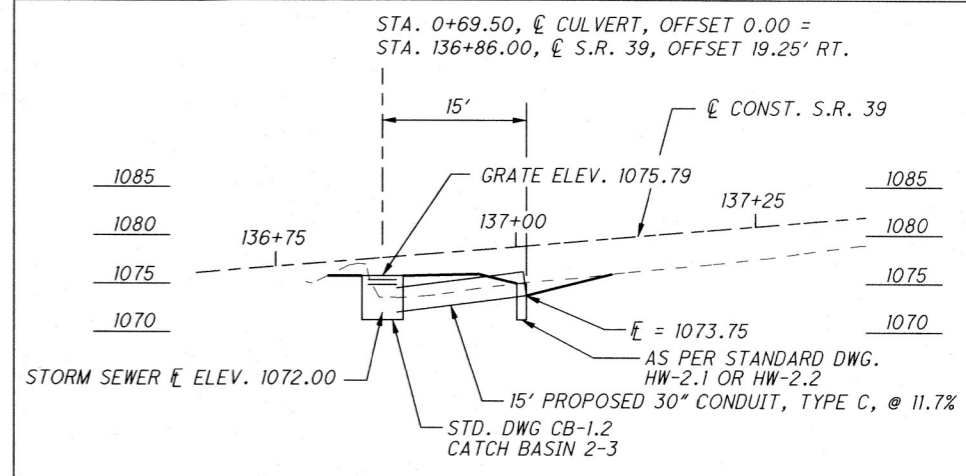
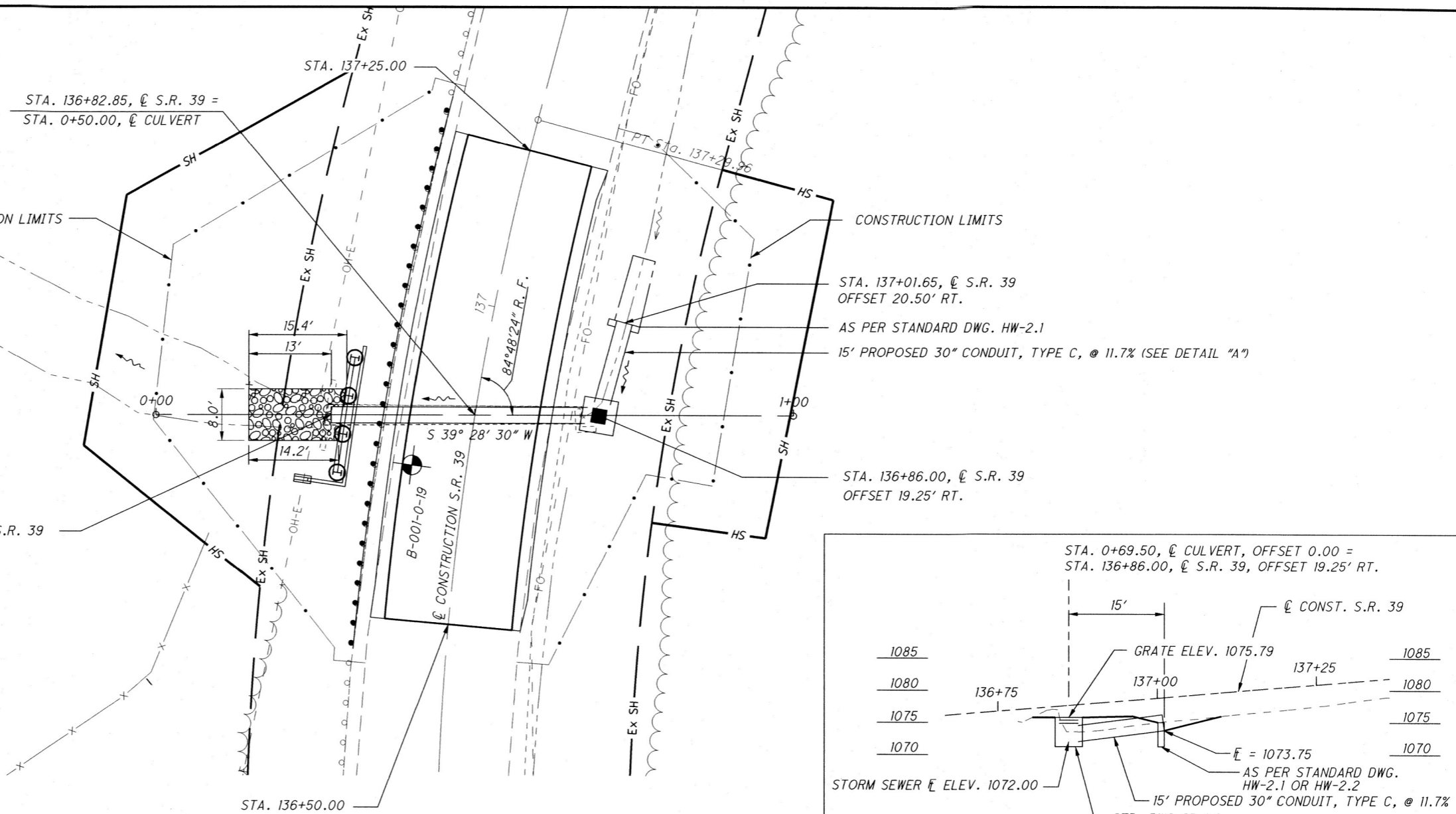
TYPE : 2' X 3' CONCRETE BOX
 SKEW : 84° 48' 25" R. F. ALIGNMENT : 12°30' CURVE (RT.)
 WEARING SURFACE : ASPHALT CONCRETE
 CULVERT FILE NO. : 1929937
 DATE BUILT : 1918

HYDRAULIC DATA

DRAINAGE AREA = 0.015 SQ. MI. (9.69 ACRES)		
DISCHARGE	HYDRAULIC GRADE LINE	CFN
$Q_{10} = 23.2$ cfs	$HW_{10} = 1072.90$	1977126

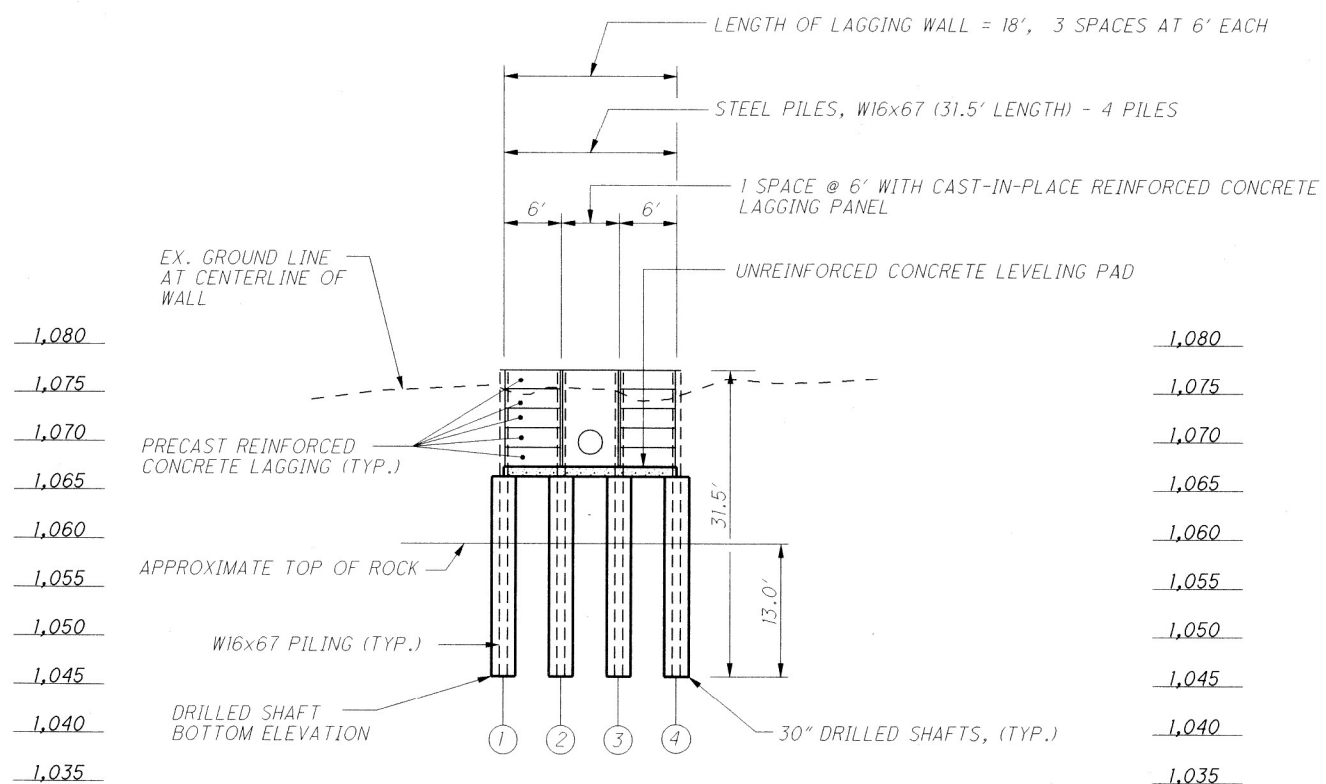
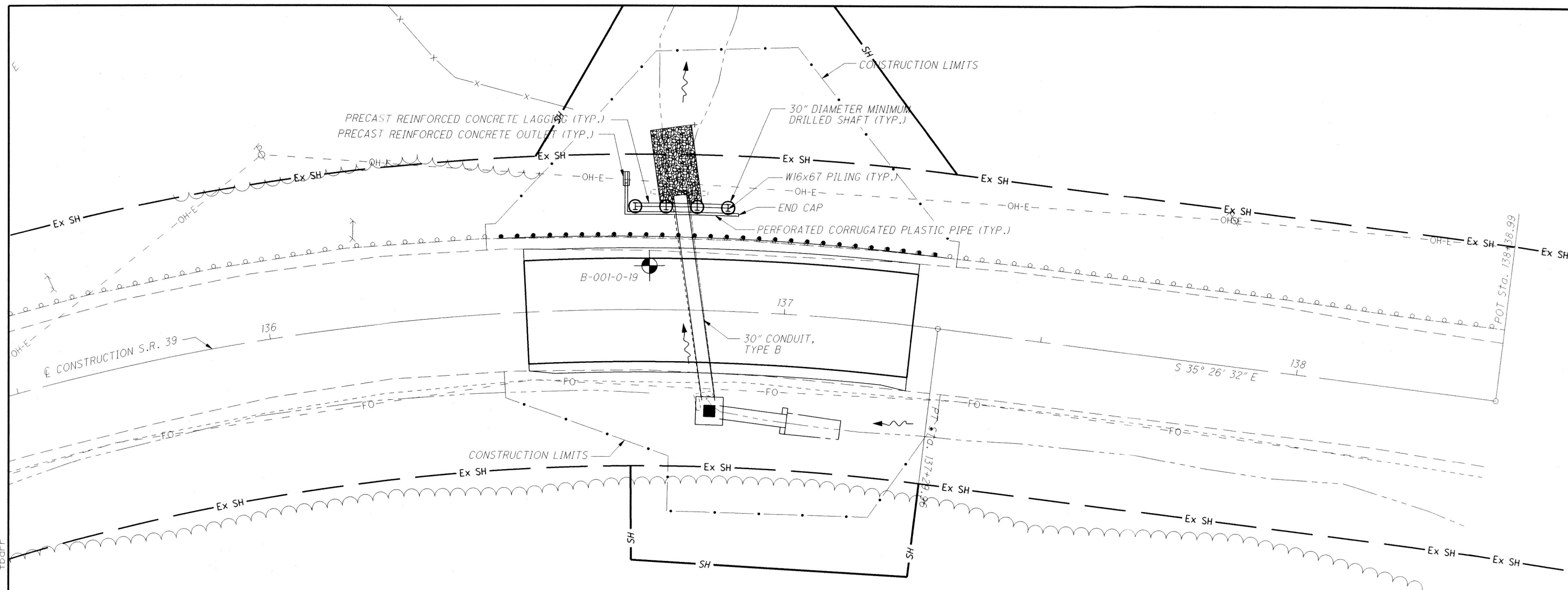
PROPOSED CULVERT

TYPE : 30" CONDUIT, TYPE B
 SKEW : 84° 48' 25" R. F.
 ALIGNMENT : 12°30' CURVE (RT.)
 CULVERT FILE NO. : 1977126



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PROFILE ALONG ϕ OF LAGGING WALL

PROPOSED RETAINING WALL
 TYPE: DRILLED SHAFT, SOLDIER PILE, AND CONCRETE LAGGING
 RWFN: 1003958

CALCULATED: TKB
 CHECKED: DAH
 HORIZONTAL SCALE IN FEET
 RETAINING WALL PLAN AND PROFILE
 STA. 135+50.00 TO STA. 138+38.99
 HOL-99-2.97 / 2.56

ITEM 503 - UNCLASSIFIED EXCAVATION, AS PER PLAN
 *STA. 136+71.12 TO STA. 136+88.37
 AVERAGE END AREA - 101.2 SQ. FT.
 $18' \times 101.2 \text{ SQ. FT.} \div 27 = 67.5 \text{ CU YD}$
 USE 68 CU YD

GRANULAR EMBANKMENT (FOR INFORMATION ONLY)
 AVERAGE END AREA - 58.2 SQ. FT.
 $18' \times 58.2 \text{ SQ. FT.} \div 27 = 38.8 \text{ CU YD}$

ITEM 511 - CLASS QCI CONCRETE, FOOTING, AS PER PLAN
 $18' \times 1.0' \times 4.0' \div 27 = 2.7 \text{ CU YD}$
 USE 3 CU YD

ITEM 511 - CONCRETE MISC.: 8" x 24" x 69" PRECAST CONCRETE LAGGING
 *STA. 136+71.12 TO STA. 136+88.37
 2 SPACES x 5 LAGGING PIECES PER SPACE = 10 EACH
 USE 10 EACH

ITEM 511 - CONCRETE MISC.: CAST-IN-PLACE CONCRETE LAGGING
 STA. 136+76.87 TO STA. 136+82.62
 $10.0' \times 5.75' \times (8" \div 12) \div 27 = 1.42 \text{ CU. YD.}$
 (AREA OF PIPE)
 $\pi 1.25^2 \times (8" \div 12) \div 27 = 0.12 \text{ CU. YD.}$
 $1.42 \text{ CU. YD.} - 0.12 \text{ CU. YD.} = 1.3 \text{ CU. YD.}$
 USE 2 CU. YD.

ITEM 518 - POROUS BACKFILL, WITH GEOTEXTILE FABRIC
 STA. 136+71.12 TO STA. 136+88.37
 $2' \times 9' \times 18' \div 27 = 12.0 \text{ CU. YD.}$
 USE 12 CU. YD.

ITEM 518 - 6" PERFORATED CORRUGATED PLASTIC PIPE
 STA. 136+69.19 TO STA. 136+90.34 - 22 FT
 USE 22 FT

ITEM 518 - 6" NON-PERFORATED CORRUGATED PLASTIC PIPE
 INCLUDING SPECIALS
 STA. 136+69.49 - 10 FT
 USE 10 FT

ITEM 611 - PRECAST REINFORCED CONCRETE OUTLET, AS PER PLAN
 STA. 136+69.49 - 1 EACH
 USE 1 EACH

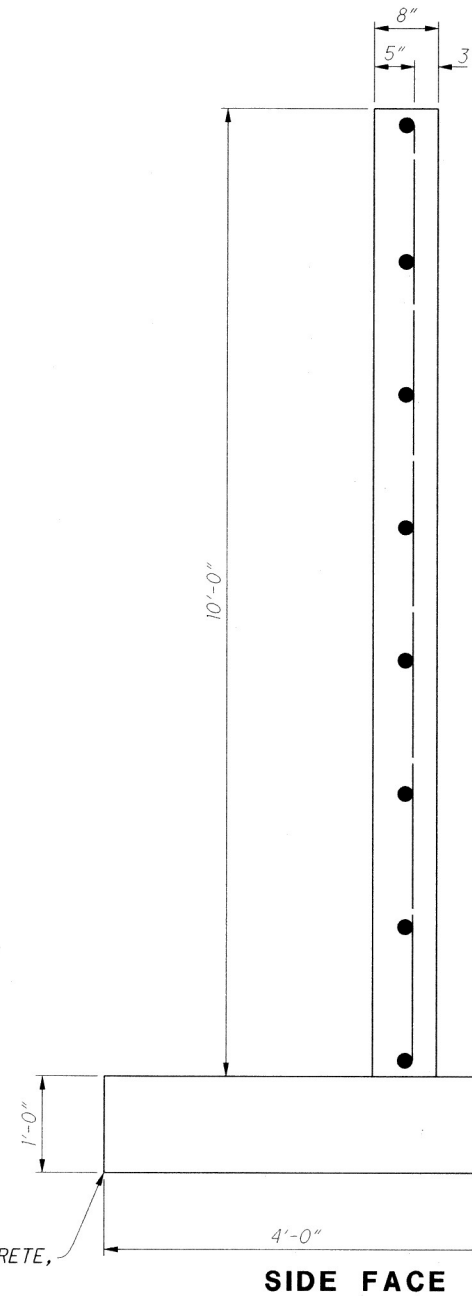
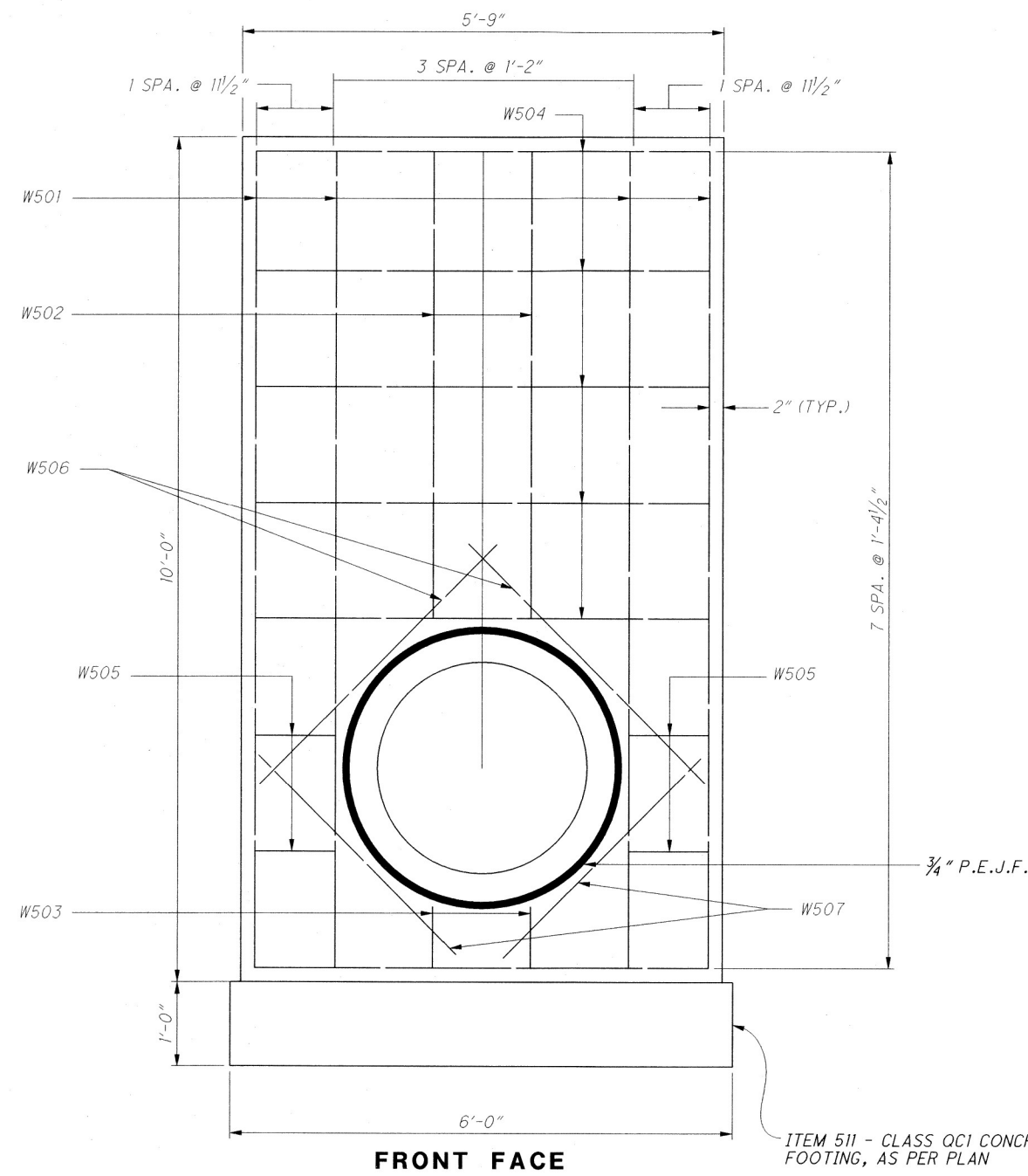
CONCRETE LAGGING WALL QUANTITIES							
				524	524		507
PILE NO.	APPROXIMATE TOP OF ROCK ELEVATION	PROPOSED TOP OF WALL ELEVATION	EXISTING APPROXIMATE TOP OF GROUND ELEVATION	DRILLED SHAFTS, 30" DIAMETER, INTO BEDROCK, AS PER PLAN (FT)	* DRILLED SHAFTS, 30" DIAMETER, ABOVE BEDROCK, AS PER PLAN (FT)	ESTIMATED BEAM LENGTH (FT)	STEEL PILES, MISC.: W16x67 STEEL BEAMS, FURNISHED (FT)
1	1058.5	1076.97	1074.9	13.0	16.5	31.5	35
2	1058.5	1076.97	1075.1	13.0	16.6	31.5	35
3	1058.5	1076.97	1074.6	13.0	16.2	31.5	35
4	1058.5	1076.97	1074.2	13.0	15.7	31.5	35
TOTAL				52.0	65.0		140

* - INCLUDES ONE CAST-IN-PLACE LAGGING PANEL

TOTALS CARRIED TO GENERAL SUMMARY

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CALCULATED
TKB
CHECKED
DAH



EPOXY COATED REINFORCING STEEL				
MARK	NUMBER	LENGTH	SHAPE	WEIGHT (LBS)
W501	4	9'-8"	STR	40.3
W502	2	5'-6 1/2"	STR	11.6
W503	2	0'-8 3/4"	STR	1.5
W504	5	5'-5"	STR	28.2
W505	4	0'-11 1/2"	STR	4
W506	2	4'-0"	STR	8.3
W507	2	3'-4"	STR	7
TOTAL - EPOXY COATED REINFORCING STEEL				101

QUANTITY FOR INFORMATION ONLY

NOTES:

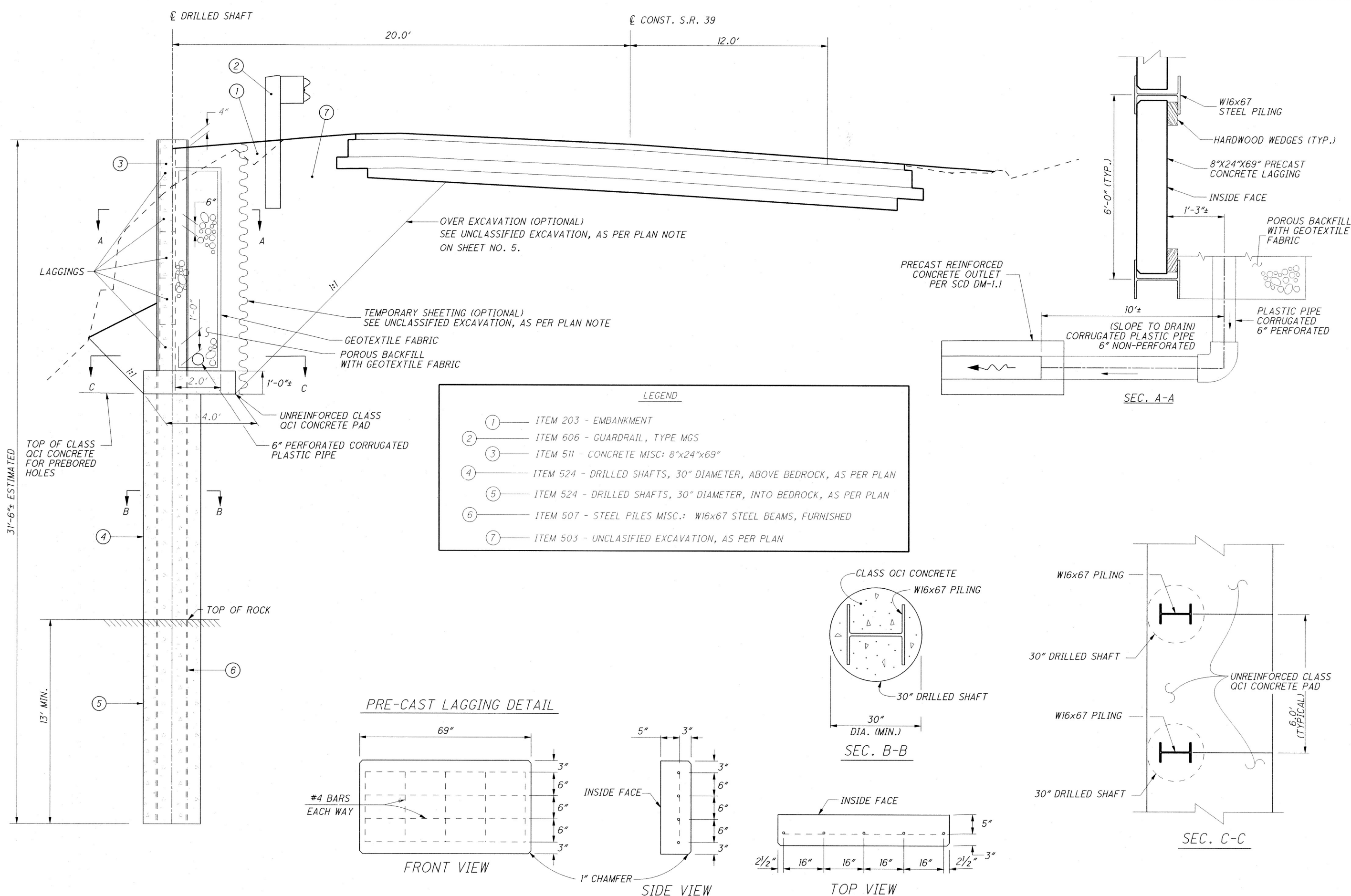
- 1.) THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE W501 IS A NO. 5 BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE NOTED. R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED.
- 2.) ALL REINFORCING SHALL BE EPOXY COATED.
- 3.) "STR" IN THE TYPE COLUMN INDICATES STRAIGHT BARS.
- 4.) ALL REINFORCING CLEARANCES ARE 2" UNLESS OTHERWISE NOTED.

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CAST-IN-PLACE REINFORCED CONCRETE LAGGING DETAILS

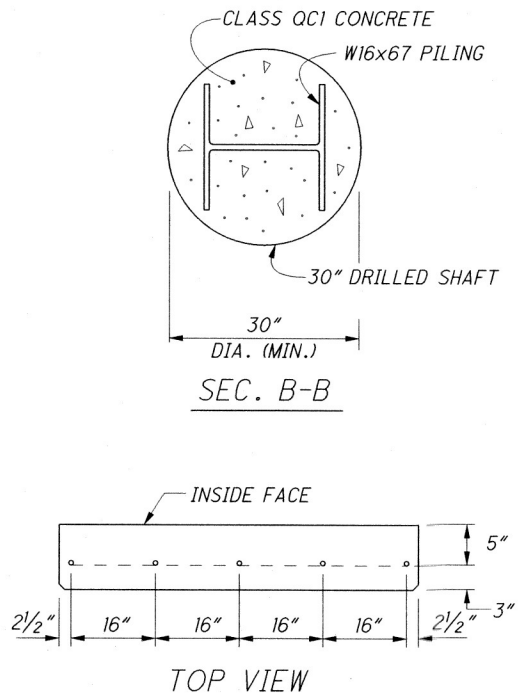
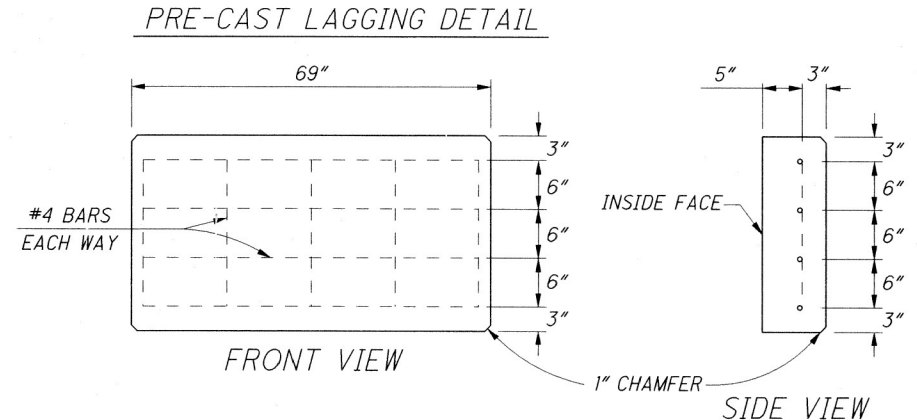
HOL-39-2.37 / 2.58

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LEGEND

①	ITEM 203 - EMBANKMENT
②	ITEM 606 - GUARDRAIL, TYPE MGS
③	ITEM 511 - CONCRETE MISC: 8"x24"x69"
④	ITEM 524 - DRILLED SHAFTS, 30" DIAMETER, ABOVE BEDROCK, AS PER PLAN
⑤	ITEM 524 - DRILLED SHAFTS, 30" DIAMETER, INTO BEDROCK, AS PER PLAN
⑥	ITEM 507 - STEEL PILES MISC.: W16x67 STEEL BEAMS, FURNISHED
⑦	ITEM 503 - UNCLASIFIED EXCAVATION, AS PER PLAN



PROJECT DESCRIPTION

IMPROVEMENT OF 2 SITES ON S.R. 39 IN WASHINGTON TOWNSHIP OF HOLMES COUNTY, S.L.M. 2.40 - REPLACEMENT OF AN EXISTING CONCRETE BOX WITH A 24" CONDUIT AND EMBANKMENT RECONSTRUCTION. S.L.M. 2.59 - REPLACEMENT OF AN EXISTING CONCRETE BOX WITH A 30" CONDUIT AND H-PILE WALL ON OUTLET SIDE. BOTH SITES WILL HAVE MINIMAL PAVEMENT WORK.

HISTORIC RECORDS

NO HISTORICAL RECORDS WERE FOUND FOR THIS PROJECT.

GEOLOGY

THE PROJECT IS LOCATED WITHIN THE KILLBUCK GLACIATED PITTSBURGH PLATEAU PHYSIOGRAPHIC REGION NEAR THE BOUNDARY WITH THE NON-GLACIATED MUSKINGUM-PITTSBURGH PLATEAU. THE AREA IS CHARACTERIZED BY MODERATE RELIEF WITH THIN GLACIALLY DEPOSITED SOILS EXCEPT WITHIN MAJOR DRAINAGE VALLEYS WHERE THE DEPOSITS BECOME THICKER WITHIN STEEP WALLED BURIED BEDROCK PRE-GLACIAL DRAINAGE VALLEYS. OVERBURDEN SOILS ARE PREDOMINATELY COHESIVE MORAINIC DEPOSITS NEAR SURFACE UNDERLAIN BY NON-COHESIVE OUTWASH DEPOSITS WITHIN MAJOR DRAINAGE VALLEYS. THE OVERBURDEN SOILS ARE UNDERLAIN BY SHALE AND SANDSTONE FROM THE MISSISSIPPIAN AGED LOGAN AND CUYAHOGA FORMATION, UNDIVIDED.

RECONNAISSANCE

TWO PHASES OF GEOTECHNICAL EXPLORATION WERE COMPLETED FOR THIS PROJECT. THE INITIAL PHASE FOR HOL-39-2.37 HAD FIELD RECONNAISSANCE COMPLETED BY DISTRICT PERSONNEL AND PERSONNEL FROM THE OFFICE OF GEOTECHNICAL ENGINEERING (OGE) ON MARCH 9, 2017. THE ROADWAY WAS NOTED AS CONTAINING DISTRESS AND PAVEMENT PATCHING FROM SLOPE INSTABILITY BELOW THE ROADWAY. AN EXISTING PIPE PILE AND GUARDRAIL LAGGING WALL WAS NOTED IN POOR CONDITION RUNNING ALONG THE NORTHBOUND LANE BELOW THE AGGREGATE SHOULDER. PILES WERE NOTED AS BEING HIGHLY CORRODED WITH SEVERAL PILES EXHIBITING ROTATION. BELOW THE WALL THE SLOPE WAS WELL VEGETATED AND WOODED AND NOTED AS BEING VERY STEEP. SIGNS OF CREEP MOVEMENT WERE NOTED WITHIN THE SLOPE EXTENDING TO AN ABANDONED SECTION OF TWP RD 464 WHICH HAS BEEN RELOCATED TO THE NORTH/NORTHWEST. A SECOND RECONNAISSANCE WAS COMPLETED BY DISTRICT PERSONNEL AND PERSONNEL FROM THE OFFICE OF GEOTECHNICAL ENGINEERING (OGE) ON JANUARY 16, 2019. THIS RECONNAISSANCE AT HOL-39-2.58 WAS FOR THE REPLACEMENT OF AN EXISTING CULVERT AND EXTENSION OF THE PROPOSED WALL FOR SLOPE STABILITY. THE CULVERT WAS NOTED AS BEING IN POOR CONDITION WITH HEAVY SPALLING OF THE CONCRETE WITH HEAVY CHANNEL EROSION AT THE CULVERT OUTLET. THE PAVEMENT WAS NOTED CONTAINING PATCHING WITHIN BOTH LANES.

SUBSURFACE EXPLORATION

THE EXPLORATION PHASE FOR HOL-39-2.37 CONSISTED OF DRILLING THREE (3) BORINGS, B-001-0-17, B-001-1-17 AND B-002-0-17, BETWEEN MAY 15 AND 17, 2017 UTILIZING A TRUCK MOUNTED CME 55 ROTARY DILL RIG. ALL BORINGS WERE DRILLED USING 3/4-INCH I.D. HOLLOW STEM AUGERS TO ADVANCE THE BORINGS THROUGH THE SOIL. DISTURBED SAMPLES WERE COLLECTED IN ACCORDANCE WITH THE STANDARD PENETRATION TEST (AASHTO T206) AT 2.5-FOOT INTERVALS FOR THE FULL DEPTH OF THE BORINGS. THE HAMMER SYSTEM USED WAS CALIBRATED ON MAY 27, 2015 WITH AN AVERAGE DRILL ROD ENERGY RATIO (ER) OF 85%.

THE EXPLORATION PHASE FOR HOL-39-2.58 CONSISTED OF DRILLING ONE (1) BORING, B-001-0-19 COMPLETED ON APRIL 17 AND 18, 2019 WITH A TRUCK MOUNTED CME 850 ROTARY DRILL RIG. THE BORING WAS DRILLED USING 3/4-INCH I.D. HOLLOW STEM AUGERS TO ADVANCE THE BORINGS THROUGH THE SOIL. DISTURBED SAMPLES WERE COLLECTED IN ACCORDANCE WITH THE STANDARD PENETRATION TEST (AASHTO T206) AT CONTINUOUS AND 2.5-FOOT INTERVALS WITHIN THE OVERBURDEN SOILS. THE HAMMER SYSTEM USED WAS CALIBRATED ON JUNE 1, 2017 WITH AN AVERAGE DRILL ROD ENERGY RATIO (ER) OF 81%. THE BORINGS WERE ADVANCED INTO BEDROCK AND SAMPLED (AASHTO T225) USING AN N SERIES WIRELINE CORE BARREL, WATER METHOD.

EXPLORATION FINDINGS

HOL-39-2.37

B-001-017 AND B-002-0-17 WERE COMPLETED WITHIN THE EXISTING ROADWAY ENCOUNTERING 14 INCHES OF ASPHALT PAVEMENT. B-001 ENCOUNTERED SANDY SILT (A-4a) BENEATH THE PAVEMENT EXTENDING TO ELEVATION 954.1 FEET IN STIFF TO VERY STIFF CONSISTENCY. A MEDIUM DENSE NON-COHESIVE LAYER WAS ENCOUNTERED BETWEEN ELEVATION 976.6 AND 969.1 FEET AND A LOOSE STONE FRAGMENTS WITH SAND AND SILT (A-2-4) LAYER BETWEEN ELEVATION 961.1 AND 959.1 FEET. B-002 ENCOUNTERED MEDIUM DENSE STONE FRAGMENTS IMMEDIATELY BENEATH THE PAVEMENT UNDERLAIN BY STIFF TO VERY STIFF SANDY SILT (A-4a) EXTENDING TO ELEVATION 974.1 FT. BENEATH THE SANDY SILT (A-4a) BOTH BORING ENCOUNTERED NON-COHESIVE MATERIAL CONSISTING OF STONE FRAGMENTS (A-1-a), STONE FRAGMENTS WITH SAND (A-1-b) AND STONE FRAGMENTS WITH SAND AND SILT (A-2-4) IN DENSE TO VERY DENSE COMPACTNESS IN WHICH BOTH BORINGS WERE TERMINATED. B-001-1-17 WAS COMPLETED ON THE ABANDONED TOWNSHIP ROAD BELOW THE ROADWAY ENCOUNTERING 4 INCHES OF TOPSOIL UNDERLAIN BY MEDIUM DENSE SANDY SILT (A-4a). AT ELEVATION 947.5 FEET, THE BORING ENCOUNTERED COHESIVE SOILS CONSISTING OF SILT AND CLAY (A-6a) AND SANDY SILT (A-4a) IN STIFF TO VERY STIFF CONSISTENCY EXTENDING TO ELEVATION 937.5 FEET. AN UNCONFINED COMPRESSIVE STRENGTH TEST WAS COMPLETED ON THE SANDY SILT (A-4a) MATERIAL WITH A RESULT OF 1,385 PSF. BELOW THE COHESIVE SOILS THE BORING ENCOUNTERED NON-COHESIVE SOILS CONSISTING OF STONE FRAGMENTS WITH SAND (A-1-b), STONE FRAGMENTS WITH SAND AND SILT (A-2-4) AND SANDY SILT (A-4a) IN LOOSE TO VERY DENSE COMPACTNESS.

LEGEND

DESCRIPTION	ODOT CLASS	CLASSIFIED MECH./VISUAL	
STONE FRAGMENTS	A-1-a	2	1
GRAVEL AND/OR STONE FRAGMENTS WITH SAND	A-1-b	4	5
STONE FRAGMENTS WITH SAND AND SILT	A-2-4	5	4
SANDY SILT	A-4a	11	15
SILT AND CLAY	A-6a	1	1
TOTAL		23	26
BOULDERY ZONE	VISUAL		
SANDSTONE	VISUAL		
PAVEMENT = X = APPROXIMATE THICKNESS	VISUAL		
SOD AND TOPSOIL = X = APPROXIMATE THICKNESS	VISUAL		
BORING LOCATION - PLAN VIEW.			
DRIVE SAMPLE AND ROCK CORE BORING PLOTTED TO VERTICAL SCALE ONLY. HORIZONTAL BAR INDICATES A CHANGE IN STRATIGRAPHY.			
WC INDICATES WATER CONTENT IN PERCENT.			
N ₆₀ INDICATES STANDARD PENETRATION RESISTANCE NORMALIZED TO 60% DRILL ROD ENERGY RATIO.			
X/D" NUMBER OF BLOWS FOR STANDARD PENETRATION TEST (SPT); X/D" = NUMBER OF BLOWS (UNCORRECTED) FOR D" OF PENETRATION AT REFUSAL.			
W— INDICATES FREE WATER ELEVATION.			
∇ INDICATES WATER AT COMPLETION.			
γ _s INDICATES UNIT WEIGHT OF SOIL.			
NP INDICATES A NON-PLASTIC SAMPLE.			
NQ "N" SERIES ROCK CORE BARREL OF "Q" WIRELINE BIT SIZE.			
QU INDICATES UNCONFINED COMPRESSION TEST, AASHTO T208.			
S _c INDICATES POINT LOAD STRENGTH VALUE, ASTM D5731.			
SS INDICATES A SPLIT SPOON SAMPLE.			
ST INDICATES A SHELBY TUBE SAMPLE.			
TR INDICATES TOP OF ROCK ELEVATION.			

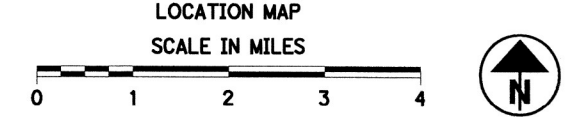
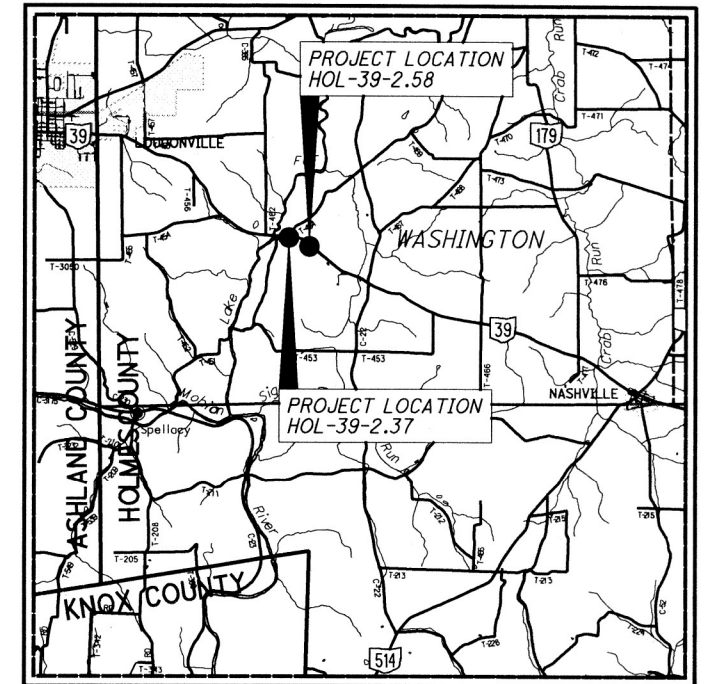
EXPLORATION FINDINGS (CONT.)

HOL-39-2.37 (CONT.)

THE NON-COHESIVE SOILS EXTENDED TO ELEVATION 924.2 FEET WHERE THE BORING ENCOUNTERED VERY STIFF SANDY SILT (A-4a) IN WHICH THE BORING WAS TERMINATE IN. B-001-0 HAD REPORTED FREE WATER AT ELEVATION 961.1 FEET AND AT COMPLETION AT ELEVATION 979.1 FEET. THE REMAINING BORINGS WERE DRY AT COMPLETION.

HOL-39-2.58

B-001-0-19 WAS COMPLETED WITHIN THE ROADWAY ADJACENT TO THE EXISTING CULVERT ENCOUNTERING 16 INCHES OF ASPHALT UNDERLAIN BY 8 INCHES OF CONCRETE. BENEATH THE PAVEMENT THE BORING ENCOUNTERED SANDY SILT (A-4a) IN SOFT TO STIFF CONSISTENCY UNDERLAIN BY MEDIUM DENSE STONE FRAGMENTS WITH SAND AND SILT (A-2-4). SANDSTONE WAS ENCOUNTERED AT ELEVATION 1063.8 FEET WHICH WAS INITIALLY SPLIT SPOON SAMPLED THEN CORED IN WHICH THE BORING WAS TERMINATED. THE SANDSTONE WAS INITIALLY DESCRIBED AS BEING HIGHLY WEATHERED, WEAK, VERY FINE TO FINE GRAINED BECOMING HIGHLY TO MODERATELY WEATHERED, SLIGHTLY TO MODERATELY STRONG AND MEDIUM TO COARSE GRAINED WITH DEPTH. WHEN CORED THE UNIT ROD WAS 9% WITH UNIT RECOVERY OF 93%. POINT LOAD STRENGTH TESTING RESULTED IN A STRENGTH VALUE OF 3,413 PSI. THE BORING WAS REPORTED AS BEING DRY AT COMPLETION.



PARTICLE SIZE DEFINITIONS

BOULDERS	COBBLES	GRAVEL	COARSE SAND	FINE SAND	SILT	CLAY
12"	3"	2.0 mm	0.42 mm	0.074 mm	0.005 mm	
		No. 10 SIEVE	No. 40 SIEVE	No. 200 SIEVE		

SPECIFICATIONS

THIS GEOTECHNICAL EXPLORATION WAS PERFORMED IN ACCORDANCE WITH THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, OFFICE OF GEOTECHNICAL ENGINEERING, SPECIFICATIONS FOR GEOTECHNICAL EXPLORATIONS, DATED JULY 2016.

AVAILABLE INFORMATION

THE SOIL, BEDROCK, AND GROUNDWATER INFORMATION COLLECTED FOR THIS SUBSURFACE EXPLORATION THAT CAN BE CONVENIENTLY DISPLAYED ON THE SOIL PROFILE SHEETS HAS BEEN PRESENTED. GEOTECHNICAL REPORTS, IF PREPARED, ARE AVAILABLE FOR REVIEW ON THE OFFICE OF CONTRACT SALES WEBSITE.

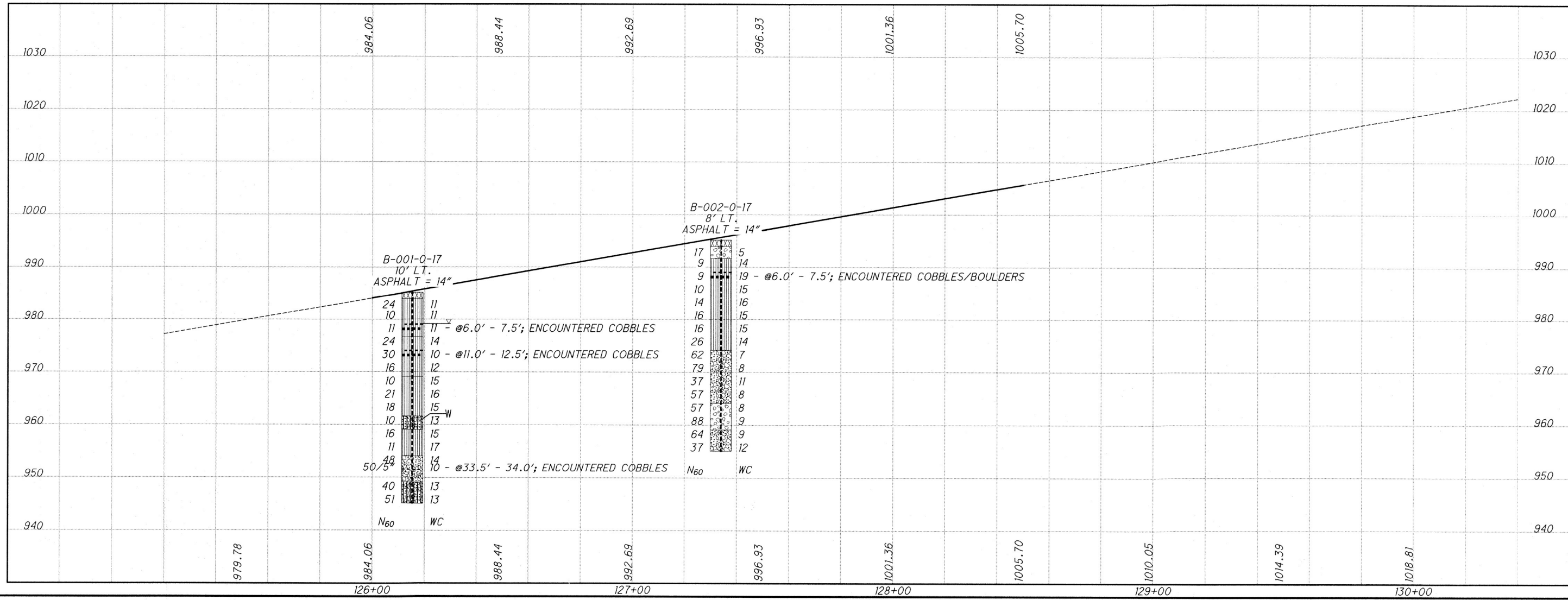
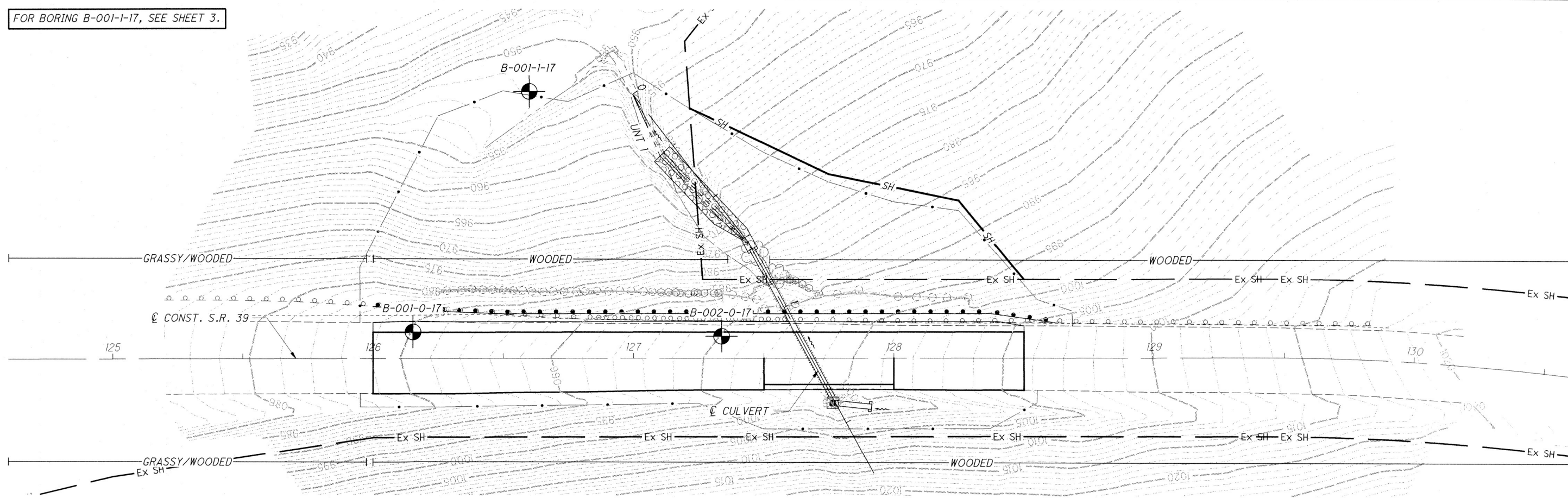
BEDROCK TEST SUMMARY

BORING ID	SAMPLE ELEVATION	DEPTH	S _c (PSI)
B-001-0-19	1050.3	27.0' - 27.9'	3,413

- RECON. - PPP,CCN 03/09/17
- AMJ,CCN 04/11/19
- DRILLING - AMJ 05/15-16/17
- KAM 05/16-17/17
- DML 04/17-18/19
- DRAWN - ARR 08/12/20
- REVIEWED - SAT 08/14/20

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FOR BORING B-001-I-17, SEE SHEET 3.



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HORIZONTAL SCALE IN FEET

DRAWN: ARR
CHECKED: SAT

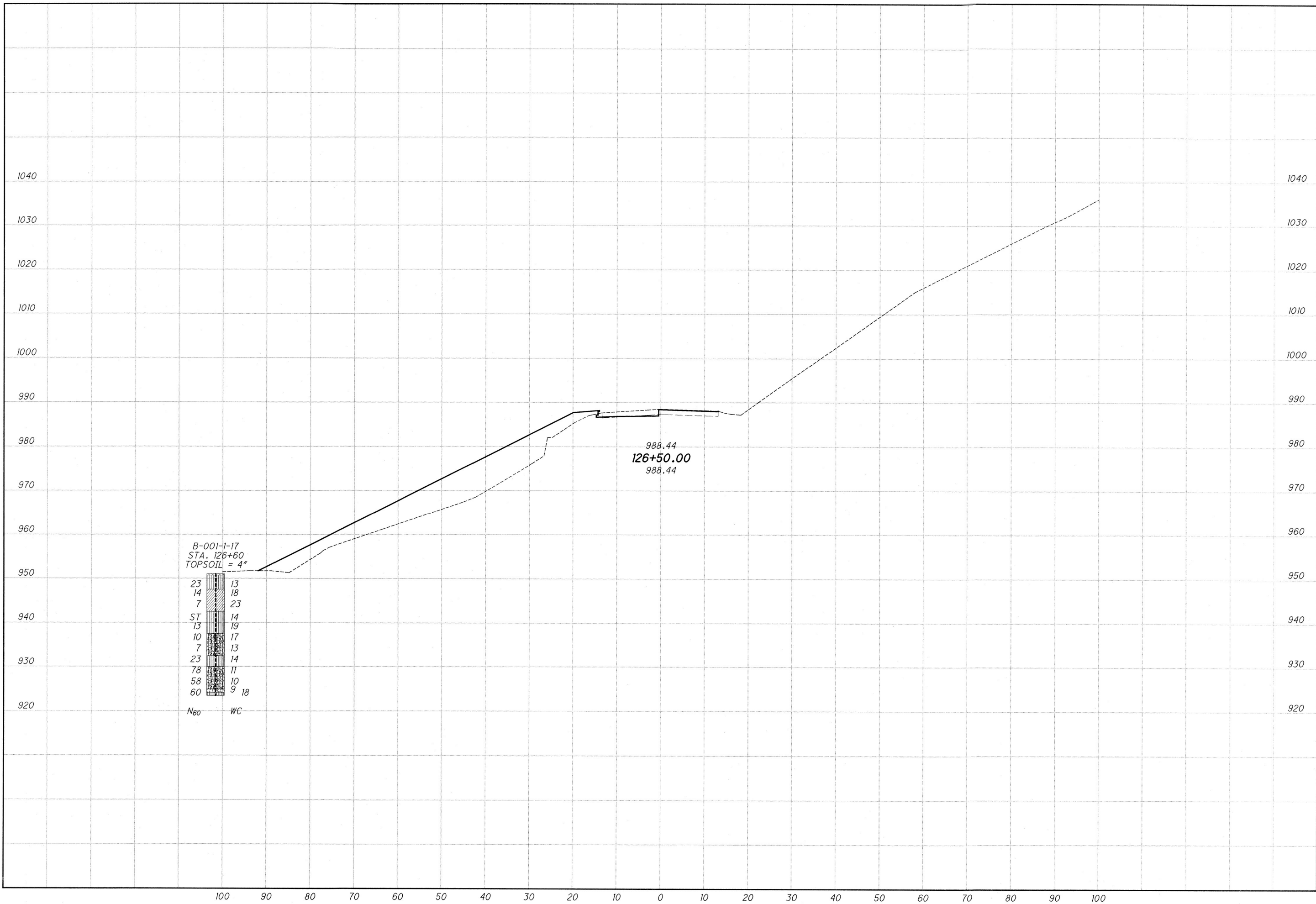
SOIL PROFILE - LANDSLIDE

STA. 125+20 TO STA. 130+40 S.R. 39

HOL - 39 - 2.37 / 2.58

2 / 10

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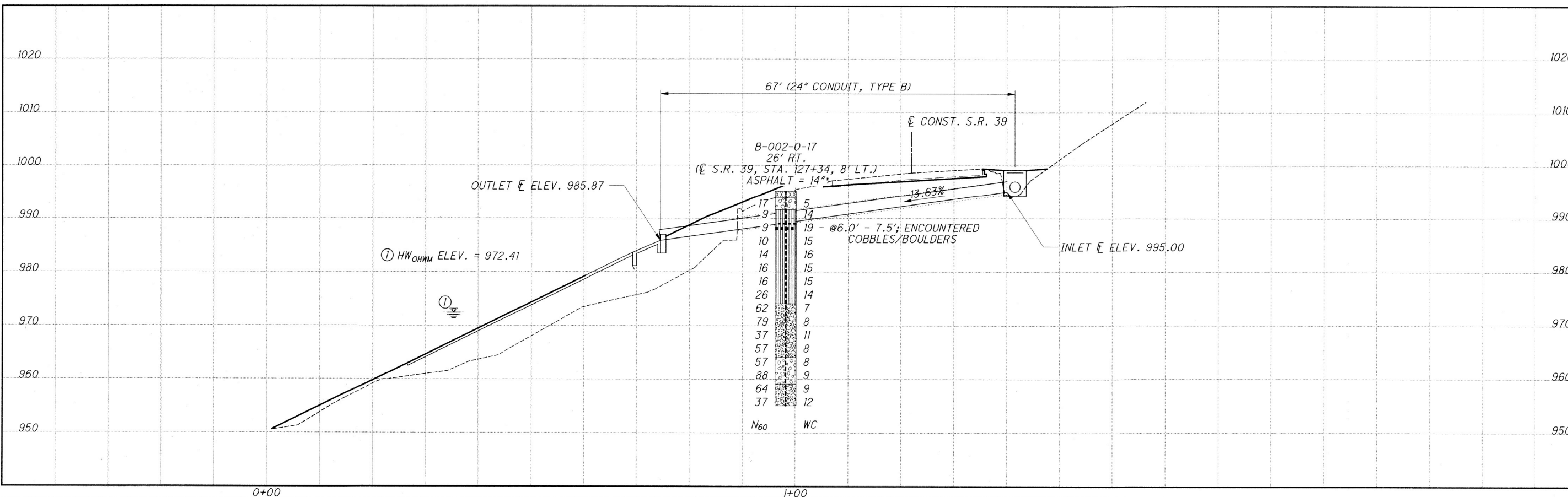
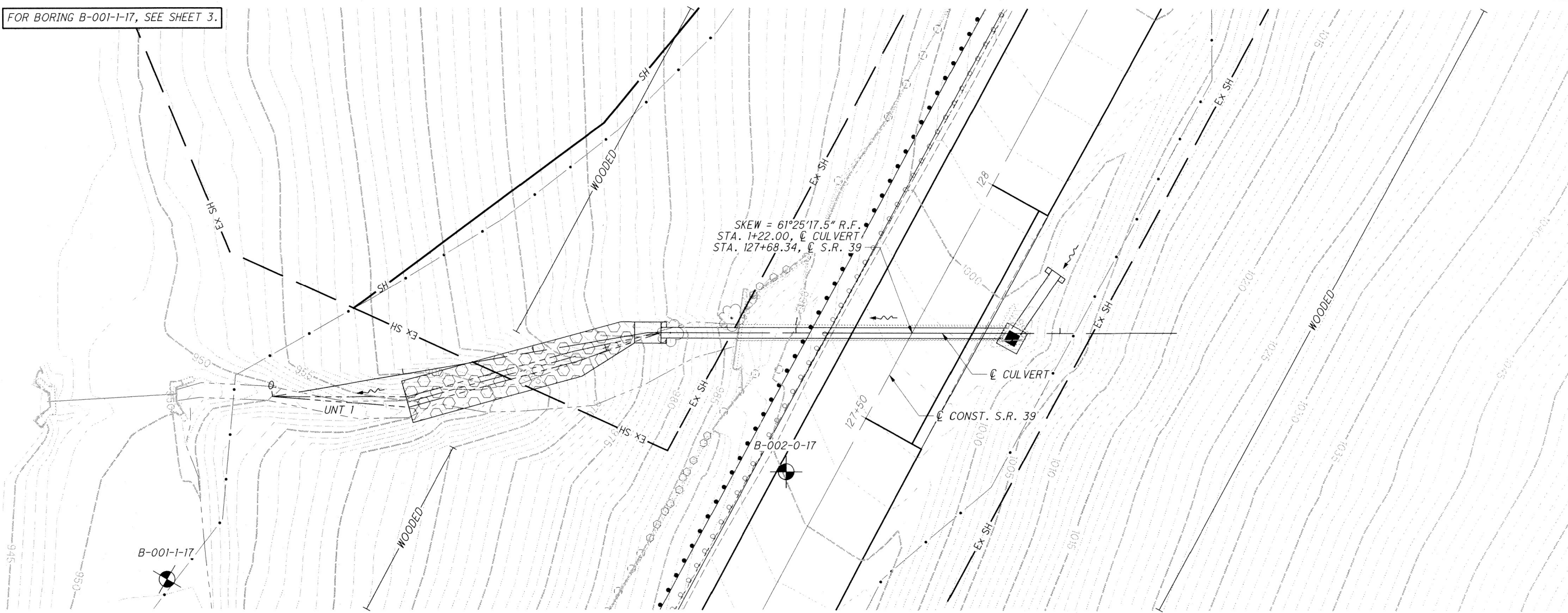


DRAWN: ARR
CHECKED: SAT
SCALE: HORIZONTAL 1"=20'

SOIL PROFILE - LANDSLIDE
CROSS SECTION STA. 126+50

HOL-39-2.37 / 2.58

FOR BORING B-001-1-17, SEE SHEET 3.



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ARR

CHECKED

SAT

HORIZONTAL

SCALE IN FEET

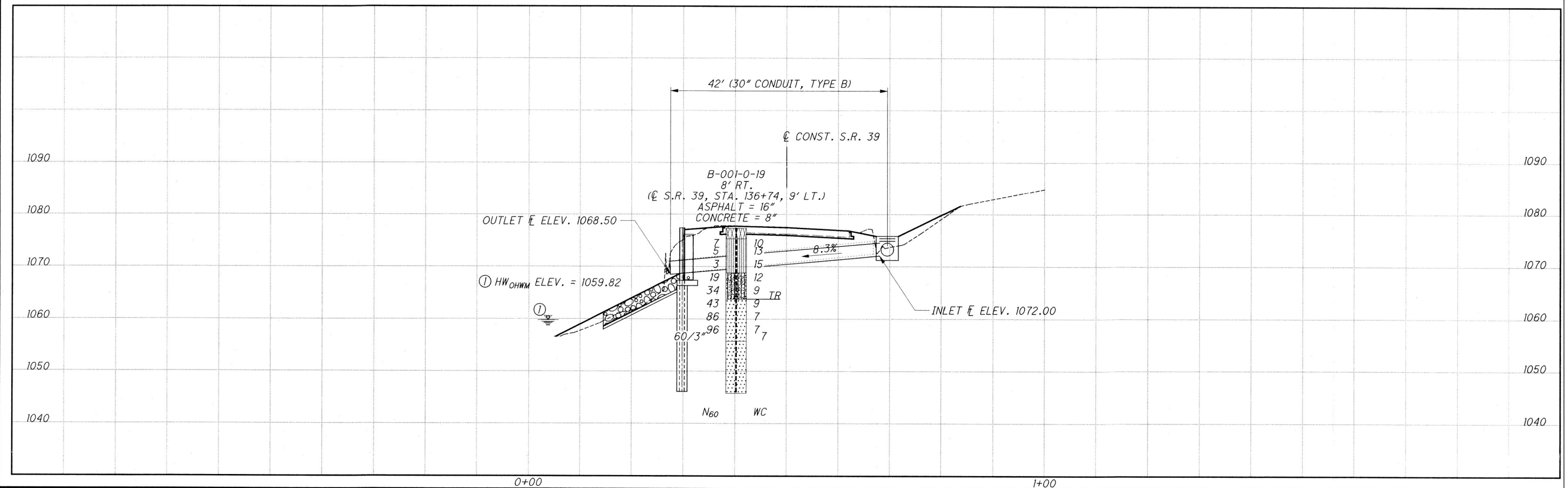
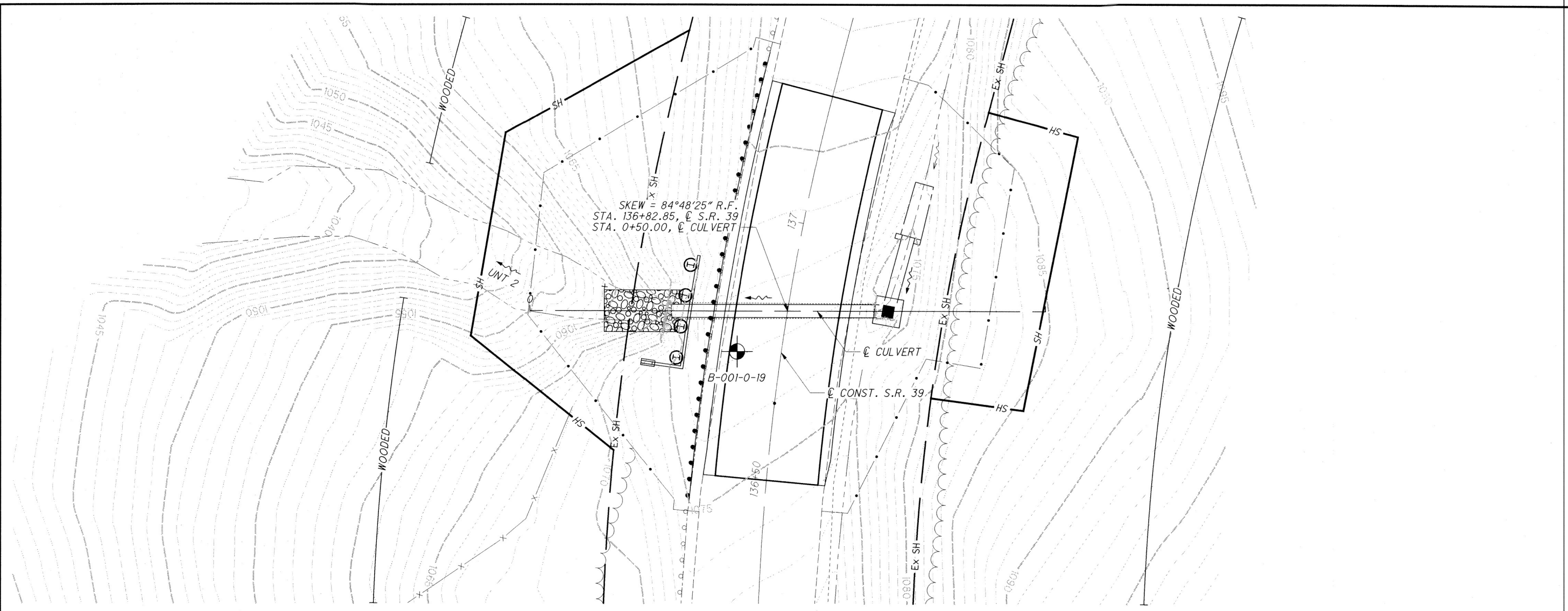
SOIL PROFILE - CULVERT



CULVERT HOL-39-2.37 OVER UNIT 1

HOL-39-2.37 / 2.58

4 / 10

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	 HORIZONTAL SCALE IN FEET
	DRAWN: ARR CHECKED: SAT
SOIL PROFILE CULVERT CULVERT HOL-39-2.58 OVER UNT 2	
HOL-39-2.37 / 2.58	
	

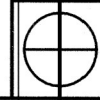
PROJECT: TYPE: PID: START:	HOL-39-2.37 LANDSLIDE 105123 5/15/17	SFN: END:	N/A 5/16/17	DRILLING FIRM / OPERATOR: SAMPLING FIRM / LOGGER: DRILLING METHOD: SAMPLING METHOD:	ODOT / CAREY ODOT / AJ 3.25" HSA SPT	ELEV. 985.1	DEPTHS	STATION / OFFSET:										EXPLOSION ID													
								CME 55 TRUCK CL SR 39		126+15, 10' LT.		B-001-0-17		985.1 (ft) EOB: 40.0 ft.		40.620068, -82.183054			PAGE 1 OF 1												
MATERIAL DESCRIPTION AND NOTES								REC (%)	SPT/ RQD	N ₆₀	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL									
ASPHALT (14")																															
STIFF TO VERY STIFF, BROWN, SANDY SILT, SOME GRAVEL AND STONE FRAGMENTS, LITTLE CLAY, DAMP									12	24	2.50	28	16	14	29	13	22	19	3						11	A-4a (1)					
@6.0' - 7.5'; ENCOUNTERED COBBLES									5	10	2.00	-	-	-	-	-	-	-	-	-	-	-	-	11	A-4a (V)						
MEDIUM DENSE, BROWN, SANDY SILT, SOME STONE FRAGMENTS, LITTLE CLAY, DAMP									8	24	83	27	11	24	26	12	NP	NP	NP	14						A-4a (1)					
@11.0' - 12.5'; ENCOUNTERED COBBLES									15	30	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	A-4a (V)				
STIFF, GRAYISH BROWN, SANDY SILT, LITTLE STONE FRAGMENTS, LITTLE CLAY, DAMP									5	16	56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	A-4a (V)			
LOOSE, GRAYISH BROWN, STONE FRAGMENTS WITH SAND AND SILT, TRACE CLAY, MOIST									1	10	44	29	21	18	24	8	NP	NP	NP	13									A-2-4 (0)		
STIFF, GRAYISH BROWN, SANDY SILT, "ANDY" STONE FRAGMENTS, TRACE CLAY, DAMP									5	16	67	37	12	15	26	10	24	19	5												A-4a (0)
DENSE TO VERY DENSE, BROWN TO REDDISH BROWN, STONE FRAGMENTS WITH SAND, LITTLE SILT, TRACE CLAY, WET									3	11	56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	A-4a (V)
@33.5' - 34.0'; ENCOUNTERED COBBLES									50.5"	-	104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
DENSE TO VERY DENSE, GRAYISH BROWN, STONE FRAGMENTS WITH SAND AND SILT, TRACE CLAY, MOIST TO WET									12	40	89	45	18	10	19	8	NP	NP	NP	13											A-2-4 (0)
									33	51	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	A-2-4 (V)	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT GDT - 8/6/20 08:37 - X:\GINT\PROJECTS\2017 COMPLETE\60350.GPJ

NOTES: LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. ABANDONMENT METHODS, MATERIALS, QUANTITIES: AUGER CUTTINGS MIXED WITH 100 LB. BENTONITE CHIPS

PROJECT: HOL-39-2.37 TYPE: LANDSLIDE	DRILLING FIRM / OPERATOR: ODOT / CAREY	STATION / OFFSET: 126+60, 102' LT.	EXPLORATION ID: B-001-1-17													
				ALIGNMENT: CL SR 39												
PID: 105123 SFN: N/A	DRILLING METHOD: 3.25" HSA	ELEVATION: 951.0 (ft) EOB: 27.5 ft.	PAGE: 1 OF 1													
START: 5/17/17 END: 5/17/17	SAMPLING METHOD: SPT	LAT / LONG: 40.620311, -82.182872														
MATERIAL DESCRIPTION AND NOTES		GRADATION (%)											ODOT CLASS (GI)			
		SPT/ RQD	REC (%)	N ₆₀	HP ID	GR	CS	FS	SI	CL	LL	PL	PI	WC	BACK FILL	
TOPSOIL (4")																
MEDIUM DENSE, BROWN AND REDDISH BROWN, SANDY SILT, LITTLE STONE FRAGMENTS, TRACE CLAY, DAMP		10	100	23	SS-1A	13	16	22	40	9	NP	NP	NP	13	A-4a (3)	
STIFF, BROWN, SILT AND CLAY, SOME STONE FRAGMENTS, TRACE SAND, MOIST		6	100	14	SS-2A	-	-	-	-	-	-	-	-	18	A-6a (V)	
STIFF TO VERY STIFF, BROWN, SANDY SILT, SOME STONE FRAGMENTS, LITTLE CLAY, DAMP @8.5'; QU = 1,385 PSF @ 4.49% STRAIN; $\gamma_c = 118.08$ PCF		3	100	7	SS-3A	22	4	5	44	25	30	17	13	23	A-6a (8)	
LOOSE, BROWN, STONE FRAGMENTS WITH SAND AND SILT, TRACE CLAY, MOIST		2	61	10	SS-6A	39	18	12	24	7	NP	NP	NP	17	A-2-4 (0)	
MEDIUM DENSE, BROWN, SANDY SILT, LITTLE STONE FRAGMENTS, LITTLE CLAY, DAMP		2	94	7	SS-7A	-	-	-	-	-	-	-	-	13	A-2-4 (V)	
VERY DENSE BROWN, STONE FRAGMENTS WITH SAND AND SILT, TRACE CLAY, DAMP		4	78	23	SS-8A	20	17	19	31	13	NP	NP	NP	14	A-4a (2)	
VERY DENSE BROWN, STONE FRAGMENTS WITH SAND AND SILT, TRACE CLAY, DAMP		17	78	38	SS-9A	39	20	14	21	6	NP	NP	NP	11	A-2-4 (0)	
VERY DENSE, BROWN, GRAVEL AND STONE FRAGMENTS WITH SAND, LITTLE SILT, TRACE CLAY, MOIST		16	100	58	SS-10A	-	-	-	-	-	-	-	-	10	A-2-4 (V)	
VERY STIFF, BROWN, SANDY SILT, SOME CLAY, TRACE STONE FRAGMENTS, DAMP TO MOIST		60	78	60	SS-11A	52	16	16	12	4	NP	NP	NP	9	A-1-b (0)	
		19	78	23	SS-11B	2.50	8	12	10	42	28	24	18	6	18	A-4a (7)

NOTES: HOLE DRY UPON COMPLETION. LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. ABANDONMENT METHODS, MATERIALS, QUANTITIES: AUGER CUTTINGS MIXED WITH 50 LB. BENTONITE CHIPS



HOL-39-2.37 / 2.58

**SOIL PROFILE - LANDSLIDE
BORING LOG B-001-1-17**

DRAWN: ARR
CHECKED: SAT

PROJECT: HOL-39-2.37 TYPE: CULVERT		DRILLING FIRM / OPERATOR: ODOT / CAREY		DRILL RIG: CME 55 TRUCK		STATION / OFFSET: 127+34, 8' LT.		EXPLORATION ID			
PID: 105123 SFN: 1977123 (P)		SAMPLING FIRM / LOGGER: ODOT / MCLEISH		HAMMER: CME AUTOMATIC		ALIGNMENT: CL SR 39		B-002-0-17			
START: 5/16/17 END: 5/17/17		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 5/27/15		ELEVATION: 995.1 (ft) EOB: 40.0 ft.		PAGE			
SAMPLING METHOD: SPT		ENERGY RATIO (%): 85		LAT / LONG: 40.620044, -82.182628		GRADATION (%)		1 OF 1			
MATERIAL DESCRIPTION AND NOTES		ELEV.		SPT/ROD		GR		WC			
		995.1		N ₆₀		HP		ATTEMBERG			
				ID		(tsf)		LL PL PI			
		993.9		23		65		1 NP NP 5			
		991.6		9		27		22 20 2			
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				11							
ASPHALT (14")		995.1		1							
MEDIUM DENSE, GRAY, STONE FRAGMENTS, SOME SAND, TRACE SILT, TRACE CLAY, DRY		993.9		2							
STIFF TO VERY STIFF, BROWN, SANDY SILT, SOME STONE FRAGMENTS, LITTLE CLAY, DAMP		991.6		3							
@6.0' - 7.5': ENCOUNTERED COBBLES/BOULDERS				4							
@13.5': SOME CLAY, LITTLE STONE FRAGMENTS				5							
@16.0': WITH CLAY SEAMS				6							
DENSE TO VERY DENSE, REDDISH BROWN, GRAVEL AND STONE FRAGMENTS WITH SAND, LITTLE SILT, TRACE CLAY, DAMP		974.1		7							
@26.0' - 27.5': MOIST				8							
VERY DENSE, REDDISH BROWN, STONE FRAGMENTS, SOME SAND, TRACE SILT, TRACE CLAY, DAMP TO MOIST		964.1		9							
DENSE, REDDISH BROWN, STONE FRAGMENTS WITH SAND, LITTLE SILT, TRACE CLAY, MOIST TO WET		959.1		10							
				11							
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STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT GDT - 8/12/20 08:06 - X:\GINT\PROJECTS\2017 COMPLETE\603350.GPJ

NOTES: HOLE DRY UPON COMPLETION. LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: AUGER CUTTINGS MIXED WITH 50 LB. BENTONITE CHIPS



HOL-39-2.37 / 2.58

SOIL PROFILE - CULVERT
CULVERT HOL-39-2.37 OVER UNT 1
BORING LOG B-002-0-17

DRAWN
ARR
CHECKED
S.A.T.

PROJECT: TYPE: PID: START:	HOL-39-2.58 RETAINING WALL 105123 SFN: 4/17/19	N/A END: 4/18/19	DRILLING FIRM / OPERATOR: SAMPLING FIRM / LOGGER: DRILLING METHOD: SAMPLING METHOD:	ODOT / MCINTOSH ODOT / LEWIS 3.75" HSA / NQ SPT / NQ	DRILL RIG: HAMMER: CALIBRATION DATE: ENERGY RATIO (%):	CME 850R TRACKED CME AUTOMATIC 6/1/17 81	STATION / OFFSET: ALIGNMENT: ELEVATION: LAT / LONG:	136+74.9' LT. CL SR 39 1077.3 (ft) EOB: 40.619329, -82.179423	EXPLOURATION ID B-001-0-19	GRADATION (%)											BACK FILL
										SPT/ ROD	N ₆₀	REC SAMPLE ID	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	
MATERIAL DESCRIPTION AND NOTES			ELEV.	DEPTHS												ODOT CLASS (6)					
ASPHALT (16") & CONCRETE (8")			1077.3	1																	
STIFF, BROWN, SANDY SILT, SOME STONE FRAGMENTS, LITTLE CLAY, DAMP TO MOIST			1075.3	2	2	7	28	2.00	35	13	16	25	11	22	15	7	10	A-4a (0)			
@6.0'; SOFT				3	3	5	56	1.50	-	-	-	-	-	-	-	-	13	A-4a (V)			
MEDIUM DENSE, BROWN, STONE FRAGMENTS WITH SAND AND SILT, TRACE CLAY, DAMP			1068.8	4	1	3	44	0.50	-	-	-	-	-	-	-	-	15	A-4a (V)			
@11.0'; DENSE				5	8	19	67	-	50	9	9	24	8	21	18	3	12	A-2-4 (0)			
SANDSTONE, BROWN, HIGHLY WEATHERED, WEAK, VERY FINE GRAINED TO FINE GRAINED.			1063.8	6	8	34	78	-	-	-	-	-	-	-	-	-	9	A-2-4 (V)			
@27.0' - 27.9'; S _c = 3,413 psi				7	8	17	-	-	-	-	-	-	-	-	-	-	-	-			
SANDSTONE, BROWNISH GRAY, MODERATELY TO HIGHLY WEATHERED, SLIGHTLY TO MODERATELY STRONG, MEDIUM TO COARSE GRAINED, THIN BEDDED, VERY BLOCKY, FAIR; RQD 9%, REC 93%.			1055.8	8	16	43	89	-	-	-	-	-	-	-	-	-	9	Rock (V)			
@31.2'; RUST STAINED FRACTURE				9	14	18	-	-	-	-	-	-	-	-	-	-	-	-			
				10	40	86	89	-	-	-	-	-	-	-	-	-	7	Rock (V)			
				11	12	96	78	-	-	-	-	-	-	-	-	-	7	Rock (V)			
				12	26	45	-	-	-	-	-	-	-	-	-	-	-	-			
				13	60/3"	100	SS-9	-	-	-	-	-	-	-	-	-	7	Rock (V)			
				14																	
				15																	
				16																	
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				27	9	93	NQ-1												CORE		
				28																	
				29																	
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				31																	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT GDT - 8/6/20 08:52 - X:\GINT\PROJECTS\2019 COMPLETE\6E0029.GPJ

NOTES: HOLE DRY BEFORE CORING. LAT/LONG/ELEV FROM DISTRICT SURVEY GRADE INSTRUMENTS. S_c = POINT LOAD STRENGTH VALUES AS PER ASTM D 5731.
ABANDONMENT METHODS, MATERIALS, QUANTITIES: AUGER CUTTINGS MIXED WITH 100 LB. BENTONITE CHIPS



HOL -39 -2.37 / 2.58

SOIL PROFILE - CULVERT
CULVERT HOL-39-2.58 OVER UNIT 2
BORING LOG B-001-0-19

DRAWN
ARR
CHECKED
SAT



OHIO DEPARTMENT OF TRANSPORTATION
OFFICE OF GEOTECHNICAL ENGINEERING

**UNCONFINED COMPRESSION TEST
AASHTO T - 208**

PROJECT HOL-39-02.37

PID 105123

OGE NUMBER OGE600350

PROJECT TYPE CULVERT

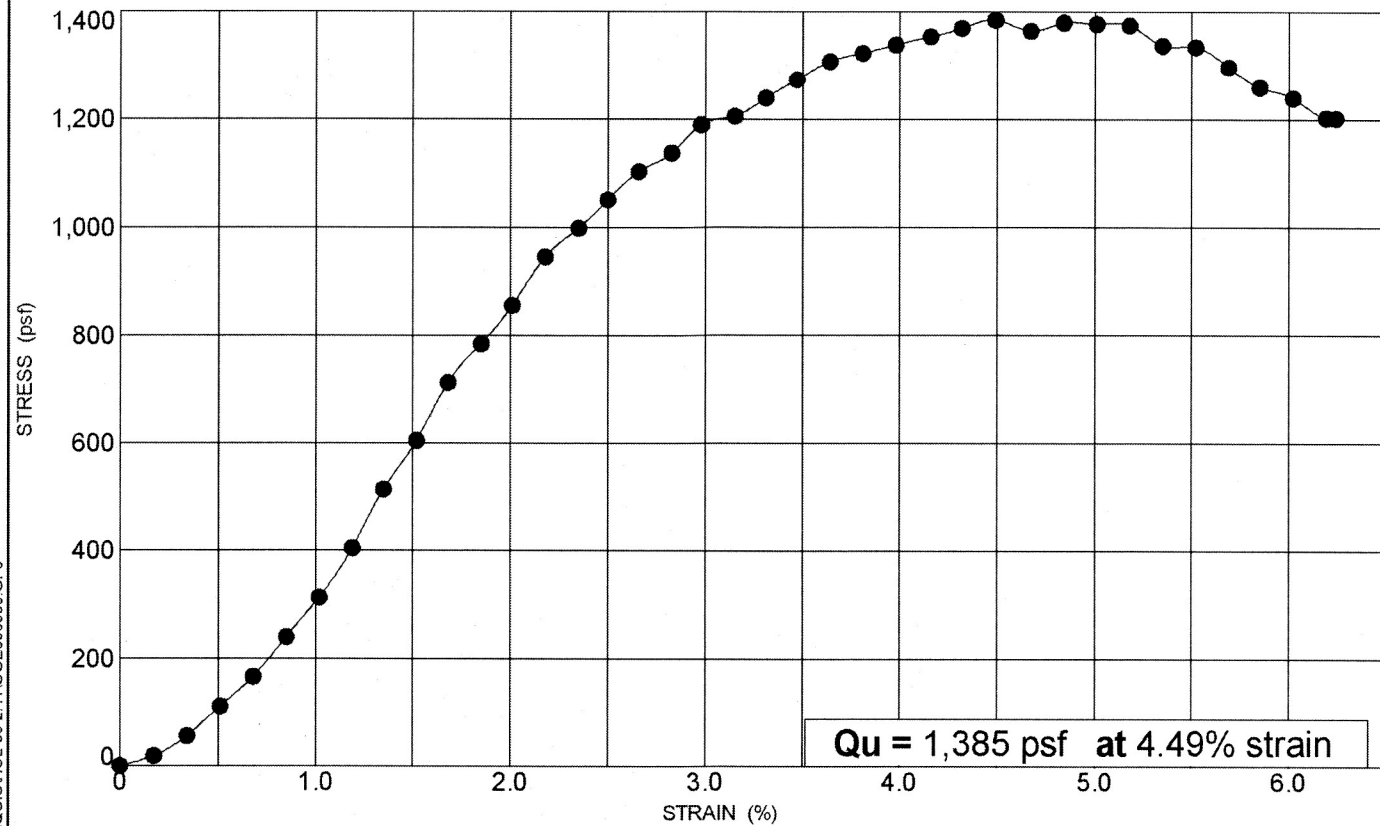
SAMPLE IDENTIFICATION

BORING ID: B-001-1-17

SAMPLE ID: ST-4A

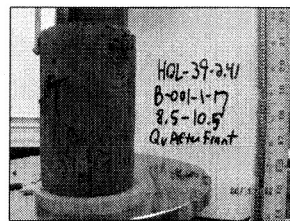
STATION: 120' LEFT

DEPTH: 8.5 - 10.5 feet

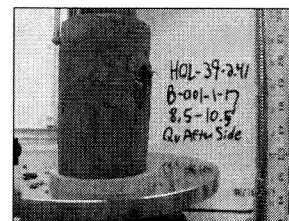


Qu = 1,385 psf at 4.49% strain

SPECIMEN FAILURE SKETCHES OR PHOTOGRAPHS



FRONT VIEW



SIDE VIEW

SPECIMEN DETAILS

HEIGHT: 4.879 in

DIAMETER: 2.855 in

WET UNIT WT: 134.75 pcf

DRY UNIT WT: 118.08 pcf

TESTED BY: AW 5/19/2017

CLASSIFICATION RESULTS

GRADATION (%)				
GR	CS	FS	SI	CL
30	9	11	39	11
ATTERBERG LIMITS			MOISTURE	
LL	PL	PI	WC	
24	20	4	14	

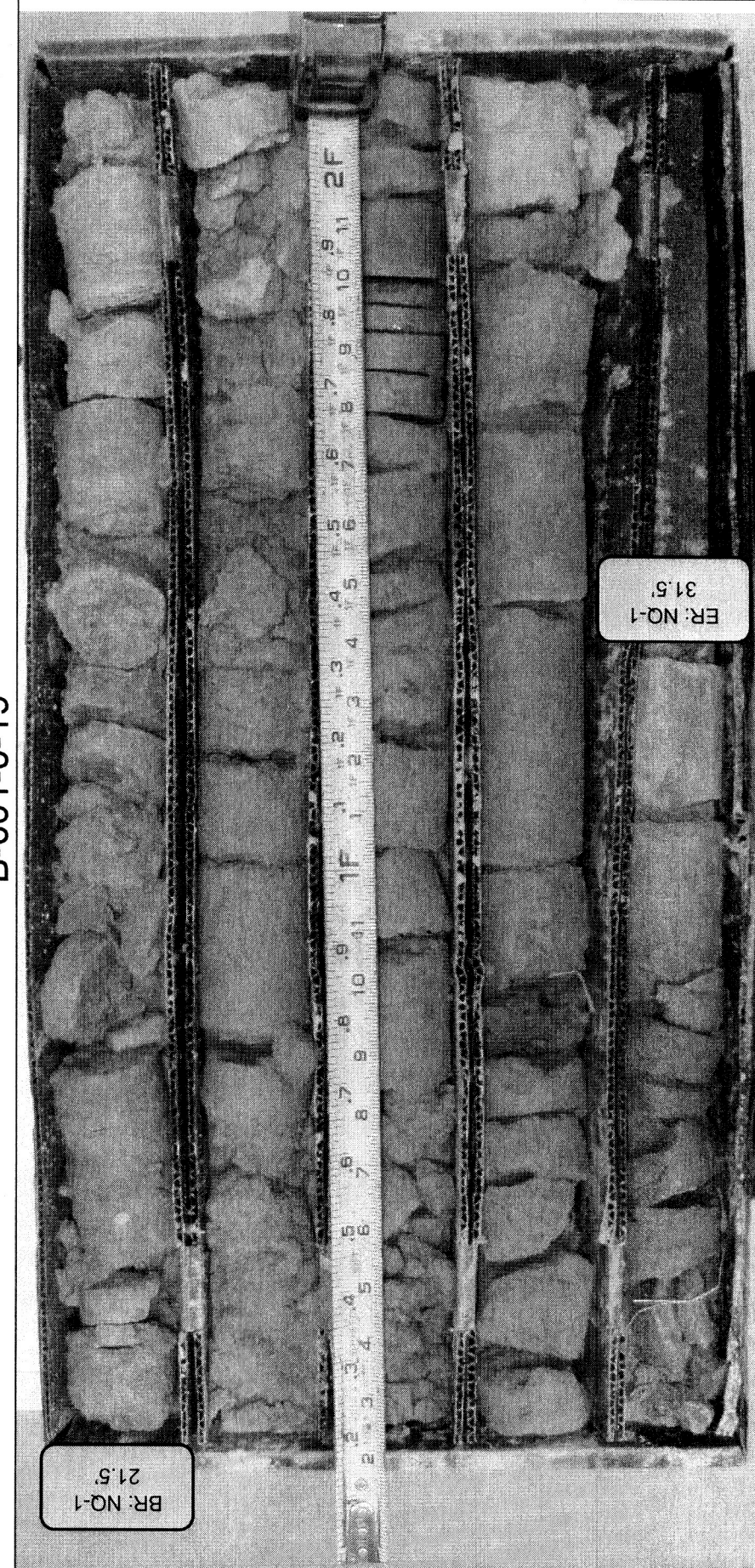
ODOT CLASS: A-4a HP (tsf): 4.0

DESCRIPTION: Very Stiff, Brown, Sandy Silt, Some Stone Fragments, Little Clay, Damp



Office of Geotechnical Engineering

B-001-0-19



Run #:	Depth	Recovery	RQD
NQ-1	21.5'	111/120	11/120
		93%	9%

HOL-39-2.58 PID 105123

HOL-39-2.37 / 2.58

SOIL PROFILE - STRUCTURE
CULV. HOL-39-2.37 OVER UNT 1, UCS TEST RESULTS, B-001-1-17
CULV. HOL-39-2.58, ROCK CORE REPORT, B-001-0-19

DRAWN: []
ARR: []
CHECKED: []
SAT: []

I:\ProjectData\105123\Design\Geotech\Sheets\105123_ZL102.dgn Sheet 8/20/2020 11:41:56 AM gross3
OH DOT UNCONFINED COMPRESSION - OH DOT.GDT - 6/28/17 07:10 - C:\MY EGIS WORK\EGIS\HOL-39-2.41\OGE600350.GPJ