OHIO TURNPIKE AND INFRASTRUCTURE COMMISSION

ADDENDUM NO. 3

PROJECT NO. 43-19-06
BRIDGE REHABILITATION AND 3RD LANE WIDENING M.P. 237.17 TO M.P. 238.63
OHIO TURNPIKE OVER POLAND-UNITY ROAD M.P. 237.8, OHIO TURNPIKE OVER
COLUMBIANA-NEW CASTLE ROAD M.P. 238.1
MAHONING COUNTY, OHIO

OPENING DATE:
2:00 P.M. (EASTERN TIME), OCTOBER 26, 2018

ATTENTION OF BIDDERS IS DIRECTED TO:
ANSWERS TO QUESTIONS RECEIVED THROUGH 4:00 PM ON OCTOBER 19, 2018

MODIFICATIONS TO THE CONTRACT DOCUMENTS

Plan Sheets: 10, 11, 14, 15 and 19 of 186.

Bid Schedule of Items and Estimated Quantities Worksheet
Ref. Nos. 10, 11, 49 and 49A

Special Provision – SP 118

Issued by the Ohio Turnpike and Infrastructure Commission on October 19, 2018 by Anthony D. Yacobucci, Chief Engineer, and Mark R. Musson, Director of Contracts Administration.

Anthony D. Yacobucci 10-19-18
Anthony D. Yacobucci Date

Mark R. Musson 10/19/18
Mark R. Musson Date

ANSWERS TO QUESTIONS RECEIVED THROUGH 4:00 PM ON OCTOBER 19, 2018:

Q#11 Where is the project work location for the plan note on page 32 for bid item 164 "Existing Crossover to be closed/re-opened"?

A#11 On Plan Sheet 48 of 186, a Maintenance Crossover is being installed with the third lane. This Crossover will be installed in Phase 1, but will need to be closed to accommodate Phase 2 traffic, and re-opened at the completion of the project.

Q#12 Where is payment for the plan note on page 10 for the locating of the gas line crossings?

A#12 The cost for locating the gas line shall be included in the unit bid price for the proposed inlet. To account for this, ITEM SP 611, INLET NO. I-3B50, DOUBLE GRATE, AS PER PLAN has been added for the proposed inlet at STA 1144+97 and is incorporated through this Addendum No. 3. The plan note on Plan Sheet 10 of 186 is revised and the pay items and quantities on Plan Sheets 15 and 19 of 186 are revised through this Addendum No. 3 to accommodate this change. The Bid Schedule of Items for Reference No. 49 is revised through this Addendum No. 3 from 12 Each to 11 Each, and Reference No. 49A is added through this Addendum No. 3. The revised Plan Sheets 10, 15, and 19 of 186 are included as part of this Addendum No. 3.

Q#13 The Item 203 – Excavation, As Per Plan note on page 11 states that the item "shall consist of the removal and replacement of the full depth of all slag material courses encountered within the limits of the *subgrade compaction* areas…". Since there is only 228 SY of Subgrade Compaction on the project, is this item actually intended to be used in the areas of Cement Stabilization?

A#13 The note should have read "shall consist of the removal and replacement of the full depth of all slag material courses encountered within the limits of the cement stabilization areas…". The plan note, including quantities, on Plan Sheet 11 of 186 have been revised, and the respective quantities on Plan Sheet 14 of 186 have been revised through this Addendum 3. The Bid Schedule of Items for Reference Nos. 10 and 11 are revised through this Addendum No. 3. The revised Plan Sheets 11 and 14 of 186 are included as part of this Addendum No. 3.

Q#14 Addendum 2 provided bore logs, but are there cross sections or detailed calculations available showing how the 4,000 CY of Excavation, APP and Embankment were determined?

A#14 Please see response to Q13. The Excavation, As Per Plan, and Embankment quantities have been revised as noted in the response to Q13 through this Addenedum No. 3.

Q#15 The substantial completion date of October 15, 2019 is not achievable. The construction access date of February 1, 2019 does very little to get the project started. The first work on the project per the suggested sequence of construction on plan page 31/186 is to install the Pre-Phase 1 temporary pavement. The asphalt plants in this area do not open before April 15th on a good year, May 1 is more often than not the actual opening date. It is not possible to complete Pre-Phase 1, Phase 1 and Phase 2 by October 15th 2019. (5-1/2 months) Please extend the substantial completion date to October 15, 2020.

A#15 The Commission will respond to this question in a future addendum.

Q#16 The metallizing specification as currently written is incorrect. 100% zinc metallizing does not require the epoxy barrier. The only time epoxy is needed, is if the wire used is 85/15 (85% zinc, 15% aluminum). The aluminum is what reacts with concrete. Please review and revise the spec. accordingly.

A#16 The Commission will investigate this claim; however, the specification will remain unchanged for this project. The Commission has successfully used this specification for projects at least since 2013 and making a change at this stage is not prudent.

Q#17 Existing 1984 rehab drawings for the Columbiana New Castle Road structures indicates 360 shear studs are on these two structures. Please provide information where these are located on the beams. Also, will new studs be required on the new proposed beams?

A#17 The placement of the shear studs on the Columbiana-New Castle Road structure are believed to be located as shown on Plan Sheet 21 of 23 of the 1984 Rehabilitation Plans. In accordance with note 5 on Plan Sheet 146 of 186 and note 6 on Plan Sheet 177 of 186, shear studs are not being added to the beams.

Q#18 Existing drawings for Poland Unity Road show no shear studs on the existing structures. Is this correct?

A#18 The 1984 Rehabilitation Plans for Poland Unity Road do show the same configuration of shear studs as the Columbia-New Castle Road structure, 180 shear studs on each structure.

Q#19 SP 514A states in the first paragraph "The existing steel being prepared and coated may be a total structure or a portion of a structure as noted on the Plans." Where in the plans can we find if the structures are being totally painted or just a portion of?

A#19 All existing structural steel beams, diaphragms, connection plates, and bearings shall be blast cleaned and receive a field applied 3 coat paint system in accordance with SP 514A.

Q#20 Since the majority of the excavated material in reference number 9 is either slag aggregate or asphalt and will have to be removed from the project site and can't be used in the embankment item, will the Commission provide a borrow site for this project?

A#20 No, the Commission does not have a pre-determined borrow site for the project. It shall be the Contractors responsibility to obtain embankment from an acceptable borrow site.

Q#21 In the Table of Contents, it is noted that SP 118 – Asphalt Binder Price Adjustment is not used on this project. However, on page SP – 67, it is noted that the price adjustment for Asphalt Binder Material shall be in accordance with SP 118 of the specifications. Please provide clarification as to whether the Asphalt Binder Price Adjustment is applicable for this project or not.

A#21 SP 118 – Asphalt Binder Price Adjustment shall be incorpated into the Contract Documents and is included in this Addendum No. 3.

Q#22 After a site visit, the existing conduit that is called out to be removed and is attached to beam line 6, appears to be wrapped in a potential asbestos containing material. Has an asbestos survey been performed on either of the existing bridges? If so, can the asbestos reports be posted? If the conduits are asbestos containing materials, how will the contractor be paid to remove this material?

A#22 The existing conduits on the bridges carry Fiber Optic Cables. As such, the wrapping should not have asbestos containing material. An asbestos survey was not conducted on either bridge for this project. The material shall be removed under Item SP 202, Portions of Structure Removed.

Q#23 The plans show existing aerial telephone lines running under the existing bridges and in span 1 at the bridge at M.P. 237.8 and in span 3 at the bridge at M.P. 238.1. What is the schedule for these utility lines to be relocated? What is the proposed location for the relocated lines?

A#23 The Commission will respond to this question in a future addendum.

Q#24 The plans show existing power lines running overhead of the bridge at M.P. 237.8. Can these power lines be turned off temporally in order to drive piling at the forward abutments and to set structural steel? Is the voltage known for these power lines?

A#24 Discussions with the power company to de-energize the line have not occurred. If the Contractor desires to de-energize the lines, they can coordinate with the power company to see if it is feasible. Otherwise, it is anticipated that the bridge will be constructed around the power lines. The voltage of the power lines in not known.

Q#25 The answer to Q#3 on addendum #2 states that soil information for the existing structures was obtained in the original plans and widening and the information is contained within the existing plans. These plans only show the elevations for top of rock but no information is given on the type of rock or information on the strength of the rock. Can any of this soil boring information be provided from the original plan sets?

A#25 Soil borings from the original turnpike construction have been included in this Addendum No. 3 solely to share information available to the Commission in accordance with IB 2.1.4. This is the extent of subsurface information available.

MODIFIED CONTRACT DOCUMENTS

With this Addendum No. 3, the Commission substitutes the enclosed material for the following Contract Documents:

Plan Sheets: 10, 11, 14, 15 and 19 of 186

with additions and deletions to the Plan Drawings called out with a cloud and marked with a revision triangle as thus:

With this Addendum No. 3, the Commission modifies the Bid Schedule of Items for the following Reference Numbers:

Ref. Nos. 10, 11, 49 and 49A

With this Addendum No. 3, the Commission adds or revises the following Special Provisions:

Special Provision: SP118

Receipt of Addendum No. 3
Project No. 43-19-06 is hereby acknowledged:

(Firm Name) _____

(Signature) _____

(Printed Name) _____

(Date) _____

BIDDERS MUST RETURN THE ABOVE ACKNOWLEDGEMENT OF RECEIPT OF ADDENDUM NO. 3 WITH THEIR BID.

SP 118 ASPHALT BINDER PRICE ADJUSTMENT- SINGLE YEAR PROJECTS

Any contract line item specifying more than 500 CY of asphalt concrete is eligible for a price adjustment, if the ODOT's asphalt binder index shows the price for asphalt binders has increased or decreased in excess of ten (10) percent and the adjustment is more than $100 for any individual item.

If the ratio of the placing index (PI) to the bidding index (BI) is greater than 1.1 or less than 0.90, the Commission will adjust compensation the Contractor receives for work done each month under applicable contract items specifying asphalt concrete. The adjustment will apply to the price for asphalt binder used in those contract items according to the following formula:

PA = ((PI/BI) - 1.1) x C x Q (for a price increase)

PA = ((PI/BI) - 0.9) x C x Q (for a price decrease)

Where: PA = price adjustment
C = BI x percent virgin asphalt binder / 100
PI = Placing Index, the asphalt index for the month the asphalt concrete is placed
Q = quantity of asphalt concrete in tons (metric tons)
BI = Bidding Index, the asphalt index for the month the project is bid

The Asphalt Index is secured by ODOT and is based on the data provided in the Poten & Partners, Inc., Asphalt Weekly Monitor® (http://www.poten.com/copyright.asp). ODOT uses the selling price for PG 64-22 paving grade asphalt from the Midwest / Mid-continent Markets, Illinois / Michigan / Ohio / Indiana / Kentucky, for the Cleveland, Toledo and Cincinnati areas. ODOT will average the three city areas low and high selling prices (6 numbers) as in effect on the last Wednesday of the month. Only the calculated average price will be published by ODOT. The calculated price can be found at the following website:
http://www.dot.state.oh.us/Divisions/ConstructionMgt/Admin/Pages/PriceIndexes.aspx., under "Placing Index" for Asphalt Binders - PN 530 and PN 535. If the price is not available for any reason, then the Chief Engineer's determination will be final.

The percent of virgin asphalt binder used to calculate C is determined from the approved Job Mix Formula.

The quantity of asphalt concrete items (Q) is the authorized constructed quantity in tons placed in the month being considered. If the contract item is in cubic yards, the Commission will convert the volume into tons using the conversion factor established according to CMS 401.21.

If contract items specifying asphalt concrete are placed beyond an approved Contract Completion Date and liquidated damages are applied for completion of the Contract, the Commission will base price adjustments on either the PI for the last month before liquidated damages were applicable or the PI for the actual month of placing, whichever is less.

At a minimum, the Commission will calculate and apply price adjustments at the end of each construction season and as soon as practical after the completion of the project.

CONSTRUCTION SPECIFICATIONS

THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION 2016 CONSTRUCTION AND MATERIALS SPECIFICATIONS AND THE SPECIAL PROVISIONS CONTAINED IN THE CONTRACT DOCUMENTS SHALL GOVERN THIS PROJECT.

UTILITIES

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

MAHONING COUNTY SANITARY
ENGINEER'S OFFICE (WATER/SEWER)
761 INDUSTRIAL ROAD
YOUNGSTOWN, OHIO
CONTACT PERSON: JOE MUCCIO
330-793-5514

MAHONING COUNTY PUBLIC WORKS
761 INDUSTRIAL ROAD
YOUNGSTOWN, OHIO
CONTACT PERSON: JOE MUCCIO
330-793-5514

DOMINION ENERGY OHIO (DEO)
320 SPRINGSIDE DRIVE
AKRON, OHIO 44333
CONTACT PERSON: MICHAEL SALVATORE
330-664-2783

DOMINION ENERGY TRANSMISSION
925 WHITE OAKS BLVD.
BRIDGEPORT, WV 26330
681-842-3333

OHIO EDISON
730 SOUTH AVE.
YOUNGSTOWN, OH 44502
CONTACT PERSON: SAM ARISMAN
330-740-7506

SPRINGFIELD TOWNSHIP TRUSTEES / SPRINGFIELD TOWNSHIP ROAD DEPT.
3475 EAST SOUTH RANGE ROAD
NEW SPRINGFIELD, OHIO
CONTACT PERSON: DONALD WILLIAMS
330-718-3705

AQUA OHIO
6650 SOUTH AVE
BOARDMAN, OHIO
CONTACT PERSON: LORI MCCLARY
330-397-0795

ARMSTRONG CABLE
9328 WOODWORTH RD
NORTH LIMA, OHIO
CONTACT PERSON: GENO SHONCE
330-953-0705

AT&T
50 W. BOWERY STREET
AKRON, OHIO 44308
CONTACT PERSON: HAROLD MAYNARD
330-384-8974

BLUE RACER MIDSTREAM
553 WHEELING AVENUE
CAMBRIDGE, OHIO 43725
CONTACT PERSON: KYLE LARRICK
740-255-2633

THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE OBTAINED FROM THE OWNERS AS REQUIRED BY SECTION 135.64 ORC. CONTRACTOR SHALL EXERCISE CARE WHEN WORKING NEAR EXISTING UTILITIES. THE ENGINEER IS NOT RESPONSIBLE FOR ANY DAMAGE CAUSED BY THE CONTRACTOR IF A UTILITY IS FOUND OUTSIDE OF WHERE IT IS SHOWN ON THE PLANS. UTILITY LOCATIONS AS SHOWN ON THE PLANS ARE BASED ON THE MOST ACCURATE INFORMATION AS OBTAINED BY THE ENGINEER.

ITEM SP 611 - INLET NO. I-3B50, DOUBLE GRATE, AS PER PLAN

PRIOR TO DIGGING, THE CONTRACTOR SHALL LOCATE (I.E., HYDRO-VAC, POT HOLE, ETC.) THE TWO GAS LINE CROSSINGS NEAR THE PROPOSED CATCH BASIN AT STA.1144+97. THE CONTRACTOR SHALL COORDINATE WITH BLUE RACER AND DEO PRIOR TO THE LOCATE IN ACCORDANCE WITH THE NOTES BELOW. A TWO-FOOT VERTICAL SEPARATION DISTANCE IS REQUIRED OVER GAS TRANSMISSION LINES. THIS CATCH BASIN SHALL BE INSTALLED PER THE SPECIFICATIONS OF SP 611, AND ALL COSTS FOR COORDINATING WITH THE GAS COMPANIES, LOCATING THE LINES, AND THE INSTALLATION OF THE CATCH BASIN SHALL BE COVERED UNDER ITEM SP 611, INLET I-3B50, DOUBLE GRATE, AS PER PLAN.

DOMINION ENERGY NOTES

IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE LATERAL AND SUBJACENT SUPPORT OF DOMINION ENERGY'S PIPELINE(S), IN COMPLIANCE TO 29 CFR, PART 1926, AND SUBPART P, (SAFE EXCAVATION & SHORING). ONE FOOT MINIMUM VERTICAL AND HORIZONTAL CLEARANCE MUST BE MAINTAINED BETWEEN DOMINION ENERGY OHIO'S (DEO) EXISTING PIPELINE(S) AND ALL OTHER IMPROVEMENTS. EXTREME CARE SHOULD BE TAKEN NOT TO HARM ANY DEO FACILITY (PIPELINES, ETC.) OR APPURTENANCE (PIPE COATING, TRACER WIRE, CATHODIC PROTECTION TEST STATION WIRES & DEVICES, VALUE BOXES, ETC.). DEO FACILITIES MUST BE PROTECTED WITH A TARP DURING BRIDGE CONSTRUCTION. THE CONTRACTOR WILL BE RESPONSIBLE AND LIABLE FOR ENSURING THAT ALL DEO EXISTING FACILITIES, ABOVE AND BELOW GROUND, REMAIN UNDAMAGED, ACCESSIBLE AND IN WORKING ORDER. THE CROSSING OF DEO'S PIPELINE WITH ANOTHER STEEL FACILITY MAY CREATE A POTENTIAL CORROSION ISSUE FOR THE PROPOSED FACILITY AND THE EXISTING DEO FACILITY. PLEASE CONTACT DOMINION ENERGY OHIO'S CORROSION DEPARTMENT: DAVE CUTLIP (330-266-2121), RICK MCDONALD (330-266-2122), OR AL HUMRICHOUSER (330-478-3757).

BLUE RACER MIDSTREAM NOTES

THE CONTRACTOR SHALL OBTAIN ACTUAL LOCATIONS (HYDRO-VAC, POT HOLE, ETC.) OF ANY GAS LINE CROSSINGS PRIOR TO DIGGING NEAR THE CROSSING LOCATIONS. PROPOSED STORM WATER WORK CROSSING EXISTING BRM TRANSMISSION GAS LINES SHALL BE IN ACCORDANCE WITH BRM'S "PIPE AND UTILITY LINE CROSSING SPECIFICATIONS" AND IN ACCORDANCE WITH THE EXISTING EASEMENT REQUIREMENTS WITH OTIC. ALL CROSSINGS SHALL HAVE A MINIMUM VERTICAL CLEARANCE OF 24 INCHES. ALL INQUIRIES OR QUESTIONS PURSUANT TO BRM FACILITIES, INCLUDING OBTAINING THE MOST RECENT BRM SPECIFICATIONS, SHALL BE DIRECTED TO BLUE RACER MIDSTREAM, OPERATIONS DEPARTMENT, 553 WHEELING AVENUE, CAMBRIDGE, OHIO 43725, AND AT 740-260-4549 ATTN. RILEY WEBER, OR AT 740-421-9255 ATTN. KYLE LARRICK OR JOHN MANZONIE.

ENDANGERED SPECIES - INDIANA BAT

THIS PROJECT IS WITHIN THE RANGE OF THE FEDERALLY ENDANGERED INDIANA BAT (MYOTIS SODALIS). THE ROOSTING HABITAT FOR THE INDIANA BAT CONSISTS OF LIVING OR DEAD TREES OR SNAGS WITH EXFOLIATING, PEELING OR LOOSE BARK, SPLIT TRUNKS AND/OR BRANCHES OR CAVITIES. THEREFORE, ANY UNAVOIDABLE CUTTING OF SUCH TREES OR SNAGS WILL BE PERFORMED ONLY AFTER SEPTEMBER 30 AND BEFORE APRIL 1. PRIOR TO ANY REHABILITATION/REMOVAL, THE UNDERSIDE OF THE EXISTING BRIDGE SHALL BE CAREFULLY EXAMINED FOR THE PRESENCE OF BATS, ESPECIALLY FROM APRIL 1 TO SEPTEMBER 30. IF ANY BATS ARE FOUND ROOSTING, ON THE UNDERSIDE OF A BRIDGE, THE UNITED STATES FISH AND WILDLIFE SERVICE, ECOLOGICAL SERVICES DIVISION, THE ODOT OFFICE OF ENVIRONMENTAL SERVICES AND ODOT DISTRICT 4 ENVIRONMENTAL SECTION SHALL BE CONTACTED OR PROVIDED WITH INFORMATION.

ORIGINAL CONSTRUCTION PLANS

THE ORIGINAL CONSTRUCTION PLANS, SHOWING THE ORIGINAL ALIGNMENT, PROFILE AND DETAILS OF THE BRIDGE ARE AVAILABLE ON BID EXPRESS, WITH THE OTHER CONTRACT DOCUMENTS,

CONTINGENCY QUANTITIES

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK FOR ITEMS DESIGNATED BY PLAN NOTE TO BE USED "AS DIRECTED BY THE CHIEF ENGINEER" UNLESS AUTHORIZED BY THE CHIEF ENGINEER. THE ACTUAL WORK LOCATIONS AND QUANTITIES USED FOR SUCH ITEMS SHALL BE INCORPORATED INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

ITEM 202 - PAVEMENT REMOVED, AS PER PLAN

THIS ITEM INCLUDES REMOVAL OF THE EXISTING PAVEMENT, EXCAVATING THE EXISTING GRANULAR BASE UNDER THE LEFT AND RIGHT LANES, FULL DEPTH EXCAVATION OF THE EXISTING RIGHT SHOULDER AFTER MILLING ASPHALT OVERLAY AND TRENCH EXCAVATION FOR AGGREGATE DRAIN. EXISTING GRANULAR BASE THICKNESS VARIES WITH AN ESTIMATED 6 INCHES THICK UNDER THE RIGHT AND LEFT LANE.THE EXCAVATION OF THE EXISTING SHOULDER, AFTER MILLING, INCLUDES APPROXIMATELY 12 TO 13 INCHES OF MATERIAL INCLUDING, BUT NOT LIMITED TO, CHIP AND SEAL, GRANULAR BASE AND EARTH. THESE THICKNESS WERE DERIVED FROM THE EXISTING PLANS AND MAY VARY IN THE FIELD. THE ESTIMATED QUANTITIES FOR THIS WORK IS SHOWN IN THE PAVEMENT CALCULATIONS.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID PER SQUARE YARD FOR ITEM 202 - PAVEMENT REMOVED, AS PER PLAN AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THE WORK.

PAVEMENT REPAIRS

THE FOLLOWING QUANTITIES ARE INCLUDED AS A CONTINGENCY TO BE USED AS DIRECTED BY THE CHIEF ENGINEER FOR PAVEMENT REPAIR MEASURES TO MAINTAIN TRAFFIC. CONTRACTOR SHALL FOLLOW SP 451 AND MAINTENANCE OF TRAFFIC COSTS INCURRED BY THE CONTRACTOR FOR THESE CURRENTLY UNKNOWN AND UNDEFINED PAVEMENT REPAIRS WILL BE COMPENSATED ON A TIME AND MATERIALS BASIS AS APPROVED BY THE CHIEF ENGINEER. DEPTH FOR PARTIAL REMOVAL WILL BE 5" (+/-) ASPHALT ON CONCRETE TO THE SURFACE OF THE CONCRETE BASE. REPLACEMENT MATERIALS ARE SPECIFIED IN 451.02 251.03 UNIT PRICES BID FOR THE ITEMS IMMEDIATELY BELOW SHALL NOT INCLUDE MAINTENANCE OF TRAFFIC COSTS.

ITEM 251 - PARTIAL DEPTH PAVEMENT REPAIR	75 SQ. YD.
ITEM SP 451 - FULL DEPTH PAVEMENT REPAIR (ASPHALT)	50 SQ. YD.
ITEM 255 - FULL DEPTH PAVEMENT SAWING	500 FT

TEMPORARY PAVEMENT

TEMPORARY PAVEMENT INSTALLED WITHIN THE SHOULDERS AS PART OF MAINTENANCE OF TRAFFIC SHALL REMAIN IN PLACE UNLESS OTHERWISE DIRECTED BY THE CHIEF ENGINEER.

MEDIAN EMBANKMENT

THE EXISTING MEDIAN DITCH SHALL BE FILLED AND RE-GRADED FROM STA. 1074+94 TO STA. 1076+94, AND FROM STA. 1152+31 TO STA. 1156+25, AS SHOWN IN THE PLAN AND PROFILES AND CROSS SECTIONS. THE EMBANKMENT SHALL BE TIED INTO EXISTING GRADE AT EACH END AND SHALL BE SEEDED AND MULCHED. THE FINAL ELEVATIONS SHALL PROMOTE POSITIVE DRAINAGE AWAY FROM THE PROJECT LIMITS AT THE CENTERLINE OF THE RE-ESTABLISHED SURVEY BASELINE.

EXISTING CROSSOVER REMOVAL

THE EXISTING CROSSOVER LOCATED NEAR STA. 1090+00 SHALL BE REMOVED. IT SHALL INCLUDE THE REMOVAL OF AN EXISTING 12" CORRUGATED METAL PIPE CULVERT AND THE PAVEMENT WITHIN THE MEDIAN BETWEEN THE EDGE OF SHOULDERS. THE FOLLOWING ESTIMATED QUANTITIES SHALL BE CARRIED TO THE GENERAL SUMMARY:

ITEM 202 - PAVEMENT REMOVED, AS PER PLAN	1,230 SQ. YD.
ITEM 202 - PIPE REMOVED, 24" AND UNDER	390 FEET

ESTIMATED EARTH-DISTURBING ACTIVITY

THE ESTIMATED EARTH DISTURBED AREA IS: 15.8 ACRES

ITEM 201 - CLEARING AND GRUBBING

ALL TREES, BRUSH AND STUMPS SHALL BE REMOVED WITHIN THE CONSTRUCTION LIMITS AS SHOWN IN THE CONSTRUCTION PLANS. THIS WORK SHALL BE COMPLETED UNDER THE LUMP SUM BID FOR ITEM 201, CLEARING AND GRUBBING.

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. THE INSTALLATION AND OPERATION OF ALL TEMPORARY TRAFFIC CONTROL AND TEMPORARY TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS SHALL BE PROVIDED BY THE CONTRACTOR WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

PROJECT SURVEY

REFER TO THE SURVEY CONTROL PLAN ON SHEET 2 FOR SURVEY AND ALIGNMENT NOTES.

ALL CONSTRUCTION STAKING SHALL BE DONE BY OR UNDER THE DIRECTION OF A PROFESSIONAL REGISTERED SURVEYOR, AND SHALL BE INCLUDED AS A LUMP SUM COST IN THE CONTRACTOR'S BID.

PAYMENT FOR THIS WORK SHALL BE INCLUDED WITH THE LUMP SUM PRICE FOR ITEM SP 623 - CONSTRUCTION LAYOUT STAKES AND SURVEYING.

Jobes Henderson
A HULL COMPANY
4 Hemisphere Way
Bedford, OH 44146
PH: (440) 232-8777
www.hullinc.com

NO.	REVISIONS	BY	DATE
1	ADDENDUM NO. 3	JAH	10/18
-			-
-			-
-			-
-			-

DESIGNED KF | CHECKED JAH
DRAWN BA | IN CHARGE RBP

OHIO TURNPIKE

OHIO TURNPIKE AND INFRASTRUCTURE COMMISSION

GENERAL NOTES

PROJECT 43-19-06
DATE: 09-17-2018

1 / 4

10
186

OHIO TURNPIKE

OTC037_GENERAL NOTES & SUMMARY.dwg; 10/16/18 - 1:28pm

ITEM 203 - EXCAVATION, AS PER PLAN

2 THIS ITEM SHALL CONSIST OF THE REMOVAL AND REPLACEMENT OF THE FULL DEPTH OF ALL SLAG MATERIAL COURSES ENCOUNTERED WITHIN THE LIMITS OF CEMENT STABILIZATION WITH MATERIAL CONFORMING TO 203.02. FILL MATERIAL SHALL CONFORM TO 203.02 AND BE PLACED ACCORDING TO 203.06.

APPROXIMATE SLAG EXCAVATION LIMITS (LOCATION AND DEPTH) HAVE BEEN DETERMINED FROM PAVEMENT BORINGS PERFORMED IN 2018.

APPROXIMATE SLAG EXCAVATION AND EMBANKMENT QUANTITIES AS SHOWN BELOW ARE BASED UPON THESE BORINGS. 1

THE FOLLOWING ADDITIONAL ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER FOR REMOVAL AND REPLACEMENT OF THE SLAG MATERIAL COURSE:

ITEM 203 - EXCAVATION, AS PER PLAN	10,500 CY 2
ITEM 203 - EMBANKMENT	10,500 CY

ITEM 206 - CHEMICALLY STABILIZED SUBGRADE, AS PER PLAN

THIS WORK SHALL COMPLY WITH ALL REQUIREMENTS SPECIFIED IN ITEM 206 - CHEMICALLY STABILIZED SUBGRADE OF ODOT 2016 CMS EXCEPT AS NOTED BELOW:

ITEM 206.01 DESCRIPTION

THIS WORK CONSISTS OF CONSTRUCTING A CHEMICALLY STABILIZED SUBGRADE BY THE APPLICATION OF PORTLAND CEMENT USING THE METHODS AND APPLICATION RATES OF EACH CHEMICAL AS SPECIFIED. SPREAD AND MIX EACH CHEMICAL PER THE SPECIFICATION REQUIREMENTS AND AS NOTED BELOW. AFTER APPLICATION AND MIXING OF THE PORTLAND CEMENT COMPACT AND CURE PER THE SPECIFICATION REQUIREMENTS AND AS NOTED BELOW.

ITEM 206.02 MATERIALS: FOR THE CURING COAT, FURNISH CURING MATERIALS SPECIFIED IN 451.02

ITEM 206.03 SUBMITTALS: MIXTURE DESIGN FOR CHEMICALLY STABILIZED SOILS IS NOT REQUIRED BY THE CONTRACTOR. ALL OTHER REQUIREMENTS ARE DUE TO BE SUBMITTED AND APPROVED BY THE OTIC PRIOR TO THE PRE-STABILIZATION MEETING

ITEM 206.05 CONSTRUCTION

A. SPREADING - USE AN APPLICATION RATE OF 6% PORTLAND CEMENT BY DRY UNIT WEIGHT. THE APPLICATION RATE WILL VARY DEPENDING ON THE IN-SITU DRY UNIT WEIGHT OF THE SOIL. QUANTITIES OF PORTLAND CEMENT ARE BASED ON AN IN-SITU DRY UNIT WEIGHT OF 115 LBS/FT3.

B. CURING - THE TREATED AREA SHALL BE SHAPED TO THE REQUIRED LINES, GRADES, AND CROSS-SECTION AND FINAL COMPACTION AFTER APPLICATION OF THE CEMENT USING A SMOOTH DRUM ROLLER WEIGHING AT LEAST 10 TONS AND SHALL CONTINUE UNTIL UNIFORM AND THE REQUIRED COMPACTION IS OBTAINED. UNIFORMLY APPLY CURING COAT ON THE SURFACE OF THE CHEMICALLY STABILIZED SOIL SUBGRADE AT AN APPLICATION RATE OF 1 GALLON PER 150 SQUARE FEET. APPLY THE CURING COAT BEFORE THE SURFACE DRIES. IF THE CURING COAT IS DELAYED OR THE SURFACE STARTS TO DRY OUT, INDICATED BY TURNING WHITE, APPLY WATER FOR THE TEMPORARY CURING UNTIL THE CURING COAT CAN BE APPLIED. DO NOT APPLY THE CURING COAT UNLESS THE CURING COAT CAN BE SET UP BEFORE IT RAINS. WHEN THE APPLICATION OF THE CURING COAT MUST BE DELAYED, KEEP THE CHEMICALLY STABILIZED SUBGRADE WET BY USING WATER UNTIL THE CURING COAT CAN BE APPLIED. COMPLETED SECTIONS OF THE STABILIZED SUBGRADE THAT ARE USED DURING THE CONSTRUCTION OF ADJOINING SECTIONS SHALL BE PROTECTED TO PREVENT EQUIPMENT FROM MARRING OR DAMAGING THE COMPLETED WORK. THE STABILIZED SOIL SUBGRADE SHALL NOT BE SUBJECTED TO CONSTRUCTION TRAFFIC UNTIL ACCEPTANCE OF THE STABILIZED SOIL SUBGRADE. THE ACCEPTANCE OF THE STABILIZED SOIL SUBGRADE WILL BE EVALUATED AFTER 72 HOURS OF CURING AS DETERMINED IN ITEM C OF THESE PLAN NOTES. SUFFICIENT PROTECTION FROM FREEZING SHALL BE GIVEN TO THE CHEMICALLY STABILIZED MATERIAL FOR 7 DAYS AFTER ITS CONSTRUCTION OR AS APPROVED BY THE CHIEF ENGINEER. THE CONTRACTOR SHALL REPAIR ANY STABILIZED SOIL SUBGRADE CAUSED BY CONSTRUCTION TRAFFIC AND OPERATIONS AT THE CONTRACTOR'S OWN COST. THE CONTRACTOR SHALL SUBMIT THE PROPOSED SUBGRADE REPAIR METHOD TO THE CHIEF ENGINEER FOR APPROVAL.

C. PROOF ROLLING - AFTER THE INITIAL 72-HOUR CURE PERIOD AND AT THE CONTRACTOR'S REQUEST, THE COMMISSION'S AGENT WILL USE A DUAL-MASS DYNAMIC CONE PENETROMETER (DCP) TO MEASURE THE PENETRATION RATE (PR) IN MM/BLOW OF THE STABILIZED SOIL SUBGRADE THROUGH THE TOTAL TREATMENT DEPTH. TESTING SHALL BE CONDUCTED EVERY 200 LINEAR FEET.

1.1. IF THE AVERAGE PR IS ABOVE 11 MM/BLOW THE CURE PERIOD SHALL BE EXTENDED FOR 2 DAYS FOLLOWED BY TEST ROLLING PER ODOT ITEM 206.

1.2. IF THE AVERAGE PR IS 11 MM/BLOW OR LOWER THE CONTRACTOR SHALL PROCEED WITH PROOF ROLLING PER ODOT ITEM 206 FOR FINAL ACCEPTANCE OF THE STABILIZED SUBGRADE.

D. PROTECTION - ALL THE PROVISIONS OF 206.05 PARAGRAPH F APPLY AS WELL AS THE FOLLOWING: COMPLETED AND ACCEPTED PORTIONS OF THE STABILIZED SOIL SUBGRADE THAT ARE TRAVELED ON BY EQUIPMENT USED IN CONSTRUCTING ANY OTHER SECTION, OR ANY OTHER WORK, SHALL BE PROTECTED IN SUCH A MANNER AS TO PREVENT EQUIPMENT AND OPERATIONS FROM MARRING OR DAMAGING THE SUBGRADE IN ANY WAY. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ANY DAMAGE AND IS REQUIRED TO REPAIR THE STABILIZED SOIL SUBGRADE THAT ARISES DUE TO HIS OPERATIONS.

E. IN CASES WHERE SUBGRADE STABILITY USING SOIL STABILIZATION IS NOT EFFECTIVE AS DETERMINED BY PROOF ROLLING AND CONCURRENCE BY THE CHIEF ENGINEER, THE AREA SHALL BE REPAIRED BY ONE OF THE FOLLOWING OPTIONS AS DETERMINED BY THE CHIEF ENGINEER:

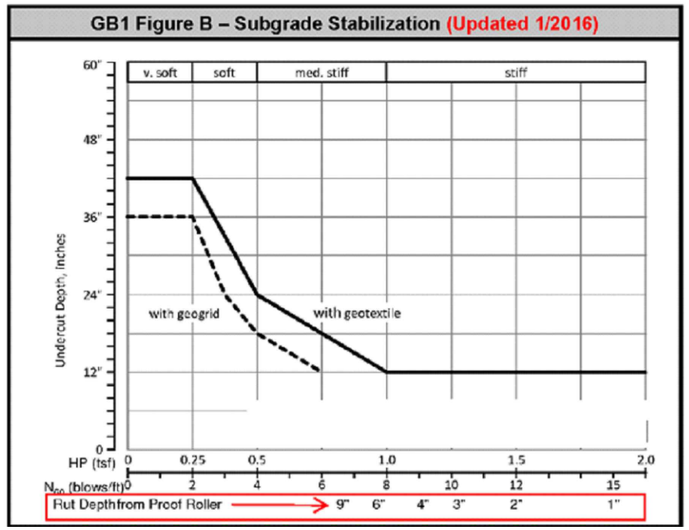
1. EXCAVATE THE TOP 16 INCHES OF SUBGRADE MATERIAL AND STOCKPILE THE EXCAVATED MATERIAL. IN THE EXCAVATION PERFORM SOIL STABILIZATION ON THE NEWLY EXPOSED SOIL AT THE APPLICATION RATE STATED IN PLAN NOTE ITEM 206.05.A WITH A TREATMENT DEPTH OF 16 INCHES. COMPACT THE SOIL STABILIZATION IN ACCORDANCE WITH ODOT ITEM 206. BACKFILL THE EXCAVATION WITH THE EXCAVATED MATERIAL AND PERFORM SOIL STABILIZATION AT THE APPLICATION RATE STATED IN PLAN NOTE ITEM 206.06.A WITH A TREATMENT DEPTH OF 16 INCHES. COMPACT THE SOIL STABILIZATION IN ACCORDANCE WITH ODOT ITEM 206. LIMITS OF THE REPAIR SHALL BE DETERMINED BY THE CHIEF ENGINEER.

2. PERFORM SOIL STABILIZATION IN ACCORDANCE WITH PLAN SHEET ITEM 206.05 EXCEPT USE AN APPLICATION RATE OF 6% PORTLAND CEMENT (WITH AN IN-SITU DRY UNIT WEIGHT OF 115 PCF) AND A TREATMENT DEPTH OF 16 INCHES.

3. UNDERCUT USING THE FOLLOWING CHART FROM ODOT GEOTECHNICAL BULLETIN 1, BASED ON THE RUT DEPTH FROM PROOF ROLLING:

1.1. IF THE REPLACEMENT IS LESS THAN 16 INCHES IN DEPTH, PLACE GEOGRID AT THE BOTTOM OF THE EXCAVATION.

1.2. IF THE REPLACEMENT IS 16 INCHES OR GREATER, PLACE THE GEOGRID IN THE MIDDLE OF THE GRANULAR MATERIAL AND THE GEOTEXTILE FABRIC ON THE BOTTOM OF THE EXCAVATION.



F. SOIL-STABILIZATION AT CULVERTS

1. BOX CULVERTS WHERE DEPTH OF COVER IS GREATER THAN 4 FEET:

CHEMICALLY STABILIZE ACCORDING TO PROJECT DOCUMENTS

2. BOX CULVERTS WHERE DEPTH OF COVER IS BETWEEN 2-4 FEET:

EXCAVATE 16 INCHES OF THE EXPOSED SOIL SUBGRADE FROM THE BOX CULVERT TO DISTANCE 20 FEET LONGITUDINALLY ON EACH SIDE (FORWARD AND REAR). SPREAD THE EXCAVATED SOIL AND PERFORM CHEMICAL STABILIZATION ON THE EXCAVATED SOIL USING THE SAME REQUIREMENTS AS THE ADJACENT SUBGRADE. AFTER CHEMICALLY STABILIZING THE EXCAVATED SOIL, PLACE THE EXCAVATED SOIL BACK IN THE EXCAVATION TO A DISTANCE OF 20 FEET LONGITUDINALLY ON EACH SIDE OF THE BOX CULVERT. COMPACT ACCORDING TO THE SPECIAL PROVISIONS DETAILED BELOW.

3. BOX CULVERTS WHERE DEPTH OF COVER IS LESS THAN 2 FEET:

EXCAVATE 12 INCHES OF THE EXPOSED SOIL SUBGRADE FROM THE BOX CULVERT TO A DISTANCE 20 FEET LONGITUDINALLY EACH SIDE (FORWARD AND REAR). SPREAD THE EXCAVATED SOIL AND PERFORM CHEMICAL STABILIZATION ON THE EXCAVATED SOIL USING THE SAME REQUIREMENTS AS THE ADJACENT SUBGRADE. AFTER CHEMICALLY STABILIZING THE EXCAVATED SOIL, PLACE THE EXCAVATED SOIL BACK IN THE EXCAVATION TO A DISTANCE OF 20 FEET LONGITUDINALLY ON EACH SIDE OF THE BOX CULVERT. COMPACT ACCORDING TO THE SPECIAL PROVISIONS DETAILED BELOW.

SPECIAL PROVISIONS FOR COMPACTION OF ITEMS 2 AND 3 ABOVE

COMPACT THE EXISTING SUBGRADE MATERIAL OVER THE BOX CULVERT USING A NON-VIBRATORY ROLLER AND TEST FOR PERCENT COMPACTION ACCORDING TO THE PROJECT SPECIFICATIONS. DO NOT PROOF ROLL. IF THE COMPACTED SOIL DOES NOT MEET THE SPECIFICATION REQUIREMENTS FOR DENSITY, THE ENGINEER WILL DELINEATE THE AREA TO BE UNDERCUT AND BACKFILL WITH ITEM SP304 MATERIAL.

FOR ALL SCENARIOS LISTED ABOVE, AND IN OTHER AREAS INACCESSIBLE TO THE SPECIFIED COMPACTION EQUIPMENT, THE CONTRACTOR SHALL ENSURE THAT THE SPECIFIED COMPACTION IS OBTAINED USING OTHER SUITABLE EQUIPMENT.

G. BRIDGE APPROACH SLABS

1. EXCAVATE 14 INCHES OF THE EXPOSED SOIL SUBGRADE FROM THE EDGE OF THE BRIDGE FACE TO 20 FEET BEYOND THE BRIDGE FACE AND SPREAD THE EXCAVATED SOIL IN THE AREA TO BE CHEMICALLY STABILIZED. PERFORM CHEMICAL STABILIZATION ON THE EXCAVATED SOIL USING THE SAME REQUIREMENTS AS THE ADJACENT SUBGRADE. AFTER CHEMICALLY STABILIZING THE EXCAVATED SOIL, PLACE THE EXCAVATED SOIL BACK IN THE EXCAVATION FROM THE BRIDGE FACE TO 20 FEET BEYOND THE BRIDGE FACE AND COMPACT ACCORDING TO SPECIFICATIONS.

PAYMENT FOR EXCAVATION AND EMBANKMENT REQUIRED TO COMPLETE THE STABILIZATION IN THE AREAS SHALL BE INCLUDED IN AND INCIDENTAL TO ITEMS 206 -CEMENT STABILIZED SUBGRADE, 16 INCHES DEEP, AS PER PLAN.

THE FOLLOWING QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE WORK UNDER ITEM 206 - CEMENT STABILIZED SUBGRADE, AS PER PLAN:

ITEM 206 - CEMENT STABILIZED SUBGRADE, 16 INCHES DEEP, AS PER PLAN	(SEE SHEET 30) SQ.YD.
ITEM 206 - CEMENT	2,600 TON
ITEM 206 - CURING COAT, AS PER PLAN	3,500 GAL.
ITEM 206 - TEST ROLLING	30 HOURS

THE FOLLOWING CONTINGENCY QUANTITIES SHALL BE USED TO EXCAVATE AND STABILIZE THE UNSTABLE SUBGRADE SOILS AS DESCRIBED ABOVE IN SECTION E.1:

ITEM 203 - ROADWAY EXCAVATION & EMBANKMENT	1,800 CU. YD.
ITEM 206 - CEMENT STABILIZED SUBGRADE, 16 INCHES DEEP	8,000 SQ. YD.
ITEM 206 - CEMENT	320 TON
ITEM 206 - CURING COAT, AS PER PLAN	240 GAL.
ITEM 206 - TEST ROLLING	10 HOURS

THE FOLLOWING CONTINGENCY QUANTITIES SHALL BE USED TO EXCAVATE AND STABILIZE THE UNSTABLE SUBGRADE SOILS AS DESCRIBED ABOVE IN SECTION E.2:

ITEM 206 - CEMENT STABILIZED SUBGRADE, 16 INCHES DEEP	4,000 SQ. YD.
ITEM 206 - CEMENT	360 TON
ITEM 206 - CURING COAT, AS PER PLAN	240 GAL.
ITEM 206 - TEST ROLLING	10 HOURS

THE FOLLOWING CONTINGENCY QUANTITIES SHALL BE USED TO UNDERCUT AND REPLACE THE UNSTABLE SUBGRADE SOILS AS DESCRIBED ABOVE IN SECTION E.3:

ITEM 203 - EXCAVATION	178 CU. YD.
SP 304 - GRANULAR MATERIAL	178 CU. YD.
ITEM 204 - SUBGRADE COMPACTION	227 SQ. YD.
ITEM 204 - TYPE D GEOTEXTILE, 712.09	227 SQ. YD.
ITEM 861 - GEOGRID FOR SUBGRADE STABILIZATION, AS PER PLAN, TENSAR TRIAX 160 GEOGRID	227 SQ. YD.

ITEM 209 - LINEAR GRADING, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ITEM 209, THE CONTRACTOR SHALL PERFORM THE FOLLOWING ADJACENT TO NEW PAVEMENT AND/OR SP304 BERM. THIS WORK CONSISTS OF PERFORMING LINEAR GRADING TO BACK UP THE NEW PAVEMENT UNDER SP627 OR SP304 BERM AND FILLING ANY LOW SPOTS TO RE-ESTABLISH THE AREA OUTSIDE OF THE THREE-FOOT AGGREGATE BERM, CONCRETE CURB OR CONCRETE BARRIER IF NOT PAID FOR UNDER ITEM 622. THE EMBANKMENT MATERIALS USED TO BACK UP THE PAVEMENT SHALL MEET THE SPECIFICATIONS OF ODOT CMS 204 WHICH INCLUDES THE COMPACTION OF FILL MATERIAL IN 6" LIFTS (MAX). THE FINAL ELEVATION OF THE COMPACTED EMBANKMENT SHALL BE THREE INCHES BELOW THE FINISHED GRADE. ADJACENT TO ALL BERMS AND CURB, PLACE THREE INCHES OF ITEM 659 - TOPSOIL ON THE DISTURBED FORESLOPE AS DIRECTED BY THE CHIEF ENGINEER.

ANY ADDITIONAL AREA DISTURBED BY THE CONTRACTOR OUTSIDE OF THE PLAN EXCAVATION LIMITS SHALL BE RE-ESTABLISHED TO THE EXISTING GRADE AND SHALL BE INCLUDED IN THIS ITEM. REMOVE THE LOOSE MATERIAL FROM THESE AREAS AND COMPACT THE UNDISTURBED SOIL BELOW PRIOR TO PLACEMENT OF THE LOOSE MATERIAL IN 6" LIFTS (MAX) IN ACCORDANCE WITH ODOT CMS 204. THE SURFACE ELEVATION OF COMPACTED LOOSE MATERIAL PLACED IN THE DISTURBED AREAS SHALL BE THREE INCHES BELOW THE FINISHED GRADE. PLACE THREE INCHES OF ITEM 659 -TOPSOIL ON THE RECONSTRUCTED FORESLOPE TO MATCH THE GRADE OF THE EXISTING FORE SLOPE. PERFORM SEEDING AND MULCHING IN ACCORDANCE WITH ODOT CMS 659 .

IF BURIED GUARDRAIL CABLE IS ENCOUNTERED ADJACENT TO THE PAVEMENT, IT SHALL BE CUT AT THE POINT IT ENTERS THE GROUND AND THE LOOSE MATERIAL SHALL BE REMOVED IN ACCORDANCE WITH SP105. THE COST OF THIS WORK SHALL BE INCIDENTAL TO ITEM 209.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID PER LINEAR FOOT FOR ITEM 209 - LINEAR GRADING, AS PER PLAN, AND SHALL INCLUDE ANY EXCAVATION, EMBANKMENT, TOPSOIL, SEEDING AND MULCHING, SUBGRADE COMPACTION, COMPACTION, PROOF ROLLING, GUARDRAIL CABLE REMOVAL, ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THIS WORK.

ITEM 203 - ROADWAY EXCAVATION AND EMBANKMENT

THIS WORK SHALL COMPLY WITH ALL REQUIREMENTS SPECIFIED IN ITEM 203 - EXCAVATION AND EMBANKMENT OF ODOT 2016 CMS EXCEPT AS NOTED BELOW:

ITEM 203.03 SUITABLE MATERIALS:

ALL SUITABLE EMBANKMENT MATERIALS SHALL MEET THE REQUIREMENTS OF 203.03 AS WELL AS THE FOLLOWING:

A. ALL EMBANKMENT MATERIAL SHALL CONTAIN A SULFATE CONTENT LESS THAN 3,000 PPM AS TESTED PER ODOT S 1122. THE CONTRACTOR SHALL SUBMIT SULFATE RESULTS FOR THE PROPOSED EMBANKMENT MATERIAL EVERY 500 CY TO THE CHIEF ENGINEER FOR APPROVAL.

B. NATURAL SOIL CLASSIFIED AS A-7-6 OR A-7-5 SHALL NOT BE USED AS EMBANKMENT MATERIAL. THE CONTRACTOR SHALL SUBMIT SOIL CLASSIFICATION RESULTS FOR THE PROPOSED EMBANKMENT MATERIAL EVERY 500 CY TO THE CHIEF ENGINEER FOR APPROVAL.

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NO.	REVISIONS	BY	DATE
1	ADDENDUM NO. 1	RBP	10/18
2	ADDENDUM NO. 3	JAH	10/18
-	-	-	-

DESIGNED KF | CHECKED JAH
DRAWN BA | IN CHARGE RBP

OHIO TURNPIKE

OHIO TURNPIKE COMMISSION

OHIO TURNPIKE AND INFRASTRUCTURE COMMISSION

GENERAL NOTES

PROJECT 43-19-06 DATE: 09-17-2018

2 / 4

11 / 186

OHIO TURNPIKE

OTC037_GENERAL NOTES & SUMMARY.dwg: 10/16/18 - 1:29pm

SHEET NUMBER													ITEM	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
10	11	12	13	18	19	20	22	27	28	30		112					
																ROADWAY	
1													201	1	LUMP	CLEARING AND GRUBBING	10
										660			202	660	SQ. YD.	APPROACH SLAB REMOVED	
1,230							16,312			13,585			202	31,127	SQ. YD.	PAVEMENT REMOVED, AS PER PLAN	10
				5,375									202	5,375	FOOT	GUARDRAIL REMOVED	
				230									202	230	FOOT	FENCE REMOVED	
390					628								202	1,018	FOOT	PIPE REMOVED, 24" AND UNDER	
					17								202	17	EACH	CATCH BASIN OR INLET REMOVED, AS PER PLAN	12
			1										202	1	EACH	REMOVAL MISC.: SIGN REMOVED	13
	178											6,858 (1)	203	7,036 (1)	CU. YD.	EXCAVATION	
	10,500 (2)												203	10,500 (2)	CU. YD.	EXCAVATION, AS PER PLAN	11
	10,500											6,960 (1)	203	17,460	CU. YD.	EMBANKMENT	
	1,800												203	1,800	CU.YD	ROADWAY EXCAVATION & EMBANKMENT	
	227												204	227	SQ. YD.	SUBGRADE COMPACTION	
	227												204	227	SQ. YD.	TYPE D GEOTEXTILE, 712.09	
	3,280												206	3,280	TON	CEMENT	
	12,000												206	12,000	SQ. YD.	CEMENT STABILIZED SUBGRADE, 16 INCHES DEEP	
										58,037			206	58,037	SQ. YD.	CEMENT STABILIZED SUBGRADE, 16 INCHES DEEP, AS PER PLAN	11
	3,980												206	3,980	GAL.	CURING COAT, AS PER PLAN	11
	50												206	50	HOURS	TEST ROLLING	
				2.98									209	2.98	MILE	LINEAR GRADING, AS PER PLAN	11
				3,167									606	3,167	FOOT	GUARDRAIL, TYPE MGS WITH LONG STEEL POSTS	
				4									606	4	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1	
				4									606	4	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 2	
									2				SP 606B	2	EACH	IMPACT ATTENUATOR, TYPE 1	
				3,701									622	3,701	FOOT	CONCRETE BARRIER, SINGLE SLOPE, TYPE B-50, AS PER PLAN	13
				2,758									622	2,758	FOOT	CONCRETE BARRIER, SINGLE SLOPE, TYPE C-50, AS PER PLAN	13
			240										622	240	FOOT	BARRIER, MISC.: REMOVE AND REPLACE TYPE D BARRIER	13
				152									622	152	FOOT	PORTABLE BARRIER 32", AS PER PLAN	XOV-3
			10										622	10	EACH	CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE B	
			5										622	5	EACH	CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE C	
	227												861	227	SQ. YD.	GEOGRID FOR SUBGRADE STABILIZATION, AS PER PLAN, TENSAR TRIAX 160 GEOGRID	11
																EROSION CONTROL	
		1											SP 113	1	LUMP	SWP3 MANAGEMENT	
					13.2								601	13.2	CU. YD.	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	
		2											659	2	EACH	SOIL ANALYSIS TEST	
		2,036											659	2,036	CU. YD.	TOPSOIL	12
		18,341											659	18,341	SQ. YD.	SEEDING AND MULCHING	
		918											659	918	SQ. YD.	REPAIR SEEDING AND MULCHING	
		918											659	918	SQ. YD.	INTER SEEDING	
		2.56											659	2.56	TON	COMMERCIAL FERTILIZER	
		3.79											659	3.79	ACRE	LIME	
		100											659	100	M. GAL.	WATER	
		700											670	700	SQ. YD.	SLOPE EROSION PROTECTION	
		1											832	1	LUMP	STORM WATER POLLUTION PREVENTION PLAN	
		1,000											832	1,000	FOOT	PERIMETER GEOTEXTILE FABRIC FENCE	12
		20,000											832	20,000	EACH	EROSION CONTROL	

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2	ADDENDUM NO. 3	JAH	10/18
-	-	-	-

DESIGNED	CHECKED
KF	JAH
DRAWN	IN CHARGE
BA	RBP

GENERAL SUMMARY

PROJECT 43-19-06

DATE: 09-17-2018

1 / 3

14
186

OHIO TURNPIKE AND INFRASTRUCTURE COMMISSION

SHEET NUMBER													ITEM	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
10	11	12	13	18	19	20	22	27	28	30		112					
																DRAINAGE	
						2,968							SP 605	2,968	FOOT	6" BASE PIPE UNDERDRAIN, WITH FABRIC WRAP (18")	
						31,788							SP 605	31,788	FOOT	6" SHALLOW PIPE UNDERDRAIN, WITH FABRIC WRAP (30")	
						792							SP 605	792	FOOT	6" UNDERDRAIN OUTLET PIPE, WITH FABRIC WRAP	
					11								SP 611	11	EACH	INLET NO. I-3B50, DOUBLE GRATE	
					1								SP 611	1	EACH	INLET NO. I-3B50, DOUBLE GRATE, AS PER PLAN ⚠1	10
					4								SP 611	4	EACH	INLET NO. I-3C50, DOUBLE GRATE	
					12								SP 611	12	EACH	CATCH BASIN, NO. CB-1	12
					2								SP 611	2	EACH	MANHOLE NO. 3	
					610								SP 611	610	FOOT	12" CONDUIT, TYPE F, 707.33	
					1,643								SP 611	1,643	FOOT	15" CONDUIT, TYPE B, 706.02	
					48								SP 611	48	FOOT	18" CONDUIT, TYPE B, 706.02	
					12								SP 611	12	FOOT	36" CONDUIT, TYPE B, 706.02	
					12								SPECIAL	12	EACH	12" PRECAST CONCRETE END SECTION	
					2								SPECIAL	2	EACH	SECURING MANHOLE LID	12
		500											SPECIAL	500	FOOT	PIPE CLEANOUT, 15" TO 36"	12
						2							SP 611	2	EACH	PRECAST REINFORCED CONCRETE OUTLET	
																PAVEMENT	
75													251	75	SQ. YD.	PARTIAL DEPTH PAVEMENT REPAIR	
										2,338			254	2,338	SQ. YD.	PAVEMENT PLANING, ASPHALT CONCRETE (T=2")	
500										14,443			255	14,943	FOOT	FULL DEPTH PAVEMENT SAWING	
										18,657			SP 302	18,657	CU. YD.	ASPHALT CONCRETE BASE, PG 64-22	
	178												SP 304	178	CU. YD	GRANULAR MATERIAL	
										8,953			SP 304	8,953	CU. YD.	AGGREGATE BASE (T=6")	
										256			SP 304	256	CU. YD.	AGGREGATE BASE (T=9")	
										1,007			SP 304	1,007	CU. YD.	AGGREGATE BASE (SHOULDER) (T=10")	
										2,590			SP 402	2,590	CU. YD.	ASPHALT CONCRETE INTERMEDIATE COURSE OR RECYCLED ASPHALT CONCRETE INTERMEDIATE COURSE, PG 76-22 (FR)	
										160			SP 402	160	CU. YD.	ASPHALT CONCRETE INTERMEDIATE COURSE OR RECYCLED ASPHALT CONCRETE INTERMEDIATE COURSE, PG 64-22	
										35			SP 403	35	CU. YD.	ASPHALT CONCRETE LEVELING COURSE, USING CRUSHED STONE, PG 76-22 (FR)	
										2,167			SP 404	2,167	CU. YD.	ASPHALT CONCRETE SURFACE COURSE, USING CRUSHED SLAG, PG 76-22 (FR)	
										172			SP 404	172	CU. YD.	ASPHALT CONCRETE SURFACE COURSE, USING CRUSHED STONE, PG 64-22	
										2,945			SP 404A	2,945	FOOT	JOINT SEALER	
										3,561			407	3,561	GAL.	NON-TRACKING TACK COAT FOR INTERMEDIATE COURSE	
										4,452			407	4,452	GAL.	NON-TRACKING TACK COAT	
50													SP 451	50	SQ. YD.	FULL DEPTH PAVEMENT REPAIR (ASPHALT)	
										1,016			526	1,016	SQ. YD.	REINFORCED CONCRETE APPROACH SLAB (T=12"), AS PER PLAN	13
				1,751									609	1,751	FOOT	ASPHALT CONCRETE CURB, TYPE 1, PG 64-22	
				90									SP 627	90	CU. YD.	STONE SHOULDER PROTECTION	

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DESIGNED	CHECKED
KF	JAH
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BA	RBP

GENERAL SUMMARY

PROJECT 43-19-06

DATE: 09-17-2018

2 / 3

15
186

OHIO TURNPIKE AND INFRASTRUCTURE COMMISSION

OTC037_GENERAL NOTES & SUMMARY.dwg; 10/16/18 - 1:29pm

REFERENCE	SHEET	STATION TO STATION		SIDE	OFFSET	202	202	601	SP 611								SPECIAL	SPECIAL
						CATCH BASIN OR INLET REMOVED, AS PER PLAN	PIPE REMOVED, 24" AND UNDER	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	12" CONDUIT, TYPE F, 707.33	15" CONDUIT, TYPE B, 706.02	18" CONDUIT, TYPE B, 706.02	36" CONDUIT, TYPE B, 706.02	INLET NO. I-3B50, DOUBLE GRATE	⚠1 INLET NO. I-3B50, DOUBLE GRATE, AS PER PLAN	INLET NO. I-3C50, DOUBLE GRATE	CATCH BASIN, NO. CB-1	MANHOLE NO. 3	12" PRECAST CONCRETE END SECTION	SECURING MANHOLE LID
		FROM	TO OR AT		FEET	EACH	FOOT	CU. YD.	FOOT	FOOT	FOOT	FOOT	EACH	EACH	EACH	EACH	EACH	EACH	EACH
DR-1	45		1085+97	CL	----	1					6				1				
DR-2	46		1095+98	CL	----	1					6				1				
DR-3	47		1102+75	CL	----					300					1				
DR-4	47		1105+75	CL	----	1				19					1				
DR-5	47		1105+90	RT	11.54							12					1		1
DR-6	47		1107+87	LT	62.00		25	1.1	25							1		1	
DR-7	47		1108+82	RT	62.00		20	1.1	20							1		1	
DR-8	47		1111+98	CL	----					300			1						
DR-9	47		1114+98	CL	----	1					6		1						
DR-10	48		1116+57.5	RT	62.00	1	75	1.1	75							1		1	
DR-11	48		1116+58.5	LT	62.00	1	65	1.1	65							1		1	
DR-12	48		1119+08.5	RT	62.00	1	45	1.1	45							1		1	
DR-13	48		1119+09.5	LT	62.00	1	60	1.1	60							1		1	
DR-14	48		1119+68	CL	----					292			1						
DR-15	48		1121+58	RT	62.00	1	50	1.1	50							1		1	
DR-16	48		1121+58	LT	62.00	1	50	1.1	50							1		1	
DR-17	48		1122+49	RT	62.00	1	50	1.1	50							1		1	
DR-18	48		1122+60	CL	----					14			1						
DR-19	48		1122+68	RT	11.54	1	18				6						1		1
DR-20	48		1123+04	LT	62.00	1	50	1.1	50							1		1	
DR-21	48		1124+62 (BK)	RT	62.00		40	1.1	40							1		1	
DR-22	48		1124+72 (AH)	LT	62.00		80	1.1	80							1		1	
DR-23	48		1127+97	CL	----					300			1						
DR-24	49		1130+97	CL	----	1					6		1						
DR-25	49		1134+30	CL	----					67			1						
DR-26	49		1134+99	CL	----	1					6		1						
DR-27	49		1135+50	CL	----					51			1						
DR-28	49		1137+97	CL	----	1					6		1						
DR-29	49		1140+97	CL	----					300			1						
DR-30	50		1144+97	CL	----	1					6			1					
TOTALS CARRIED TO GENERAL SUMMARY						17	628	13.2	610	1,643	48	12	11	1	4	12	2	12	2

NOTE: THE DOWNSTREAM PIPE IS ASSOCIATED WITH EACH DRAINAGE STRUCTURE.

Jobes Henderson
A HULL COMPANY
4 Hemisphere Way
Bedford, OH 44146
PH: (440) 232-8777
www.hullinc.com

NO.	REVISIONS	BY	DATE
1	ADDENDUM NO. 3	JAH	10/18
-	-	-	-
-	-	-	-

DESIGNED KF | DRAWN BA | CHECKED JAH | IN CHARGE RBP

SUBSUMMARY
DRAINAGE

PROJECT 43-19-06
DATE: 09-17-2018

1 / 1

19 / 186

OHIO TURNPIKE

OHIO TURNPIKE AND INFRASTRUCTURE COMMISSION

OTC037_SUBSUMMARIES.dwg; 10/16/18 - 1:29pm

1004+00 - 1009+00 Rt. Unsuitable Material Removed (Undercut)

1029+90 - 1035+90 Unsuitable Material Removed (Undercut)

Series #718

Series #711

Abandoned Borrow Pit

Series #712

Series #732

Depth Varies 2.5'-5.0'

1002 1005 1010 1015 1020 1025 1030 1035

T.H. #47

T.H. #46

P.A.B. #36

P.A.B. #37

P.A.B. #38

Series #712

Series #713

Series #718

Series #712

Series #713

Series #743

Series #711

Series #732

Series #746

Avg. Depth 2.0'

SOUTH RANGE-CENTER ACCESS ROAD

SYMBOLS

- □ Mechanical Analysis Test (Including Hydrometer Analysis)
- ○ Compaction Control Test (AASHO T-99 for cohesive materials) (Michigan Cone for granular materials)
- ⧗ Natural Density & Moisture Content Test
- × Compacted In-Place Density & Moisture Content Test
- △ Atterburg Limit Test
- 53147 Laboratory Number assigned to sample tested; test results listed under Laboratory Number in Test Data Books.
- ▨ Designates areas of unsuitable material and subgrade undercut

NOTES

1. Penetrations noted in the T.H. Logs represent the Number of Blows of a 140# Hammer falling 30" required to drive a 1½" I.D. Sampler 12". Penetrations other than 12" are noted on the Log.
2. The Symbol, ▽ denotes the Water Level in the Test Hole upon completion. Where the Water Level was determined subsequent to completion of the Test Hole, the elapsed time is indicated.
3. Soil Boundaries and Profiles determined by Field Exploration as prescribed in A.A.S.H.O. Designation: T 86-49, "Standard Methods of Surveying and Sampling Soils for Highway Purposes."

ABBREVIATIONS

T.H. - Test Hole
P.A.B. - Power Auger Boring
C.E.B. - Coal Exploration Boring (Well-Driller Logs)

LIMIT OF WORK
CONT. NO. C-1

Soil Series #712 | Borrow Pit - Silty Sand & Gravel HRB A-1-a & A-1-b | Soil Series #712 | Soil Series #718 | Soil Series #712 | Soil Series #713 | Soil Series #712 | Soil Series #711 | Soil Series #732

Nat. Dens. = 91.0 pcf
Nat. M.C. = 19.8 %
Max. Dens. = 95.6 pcf
Opt. M.C. = 23.3 %

Topsoil
Brown Sandy Silty Grvly. Clay
53067
Rock
Nat. Density = 71.8 pcf
Nat. M.C. = 41.4 %
V. Stiff Gr. & Br. Damp Slightly Plastic Clay
Soft Decomposed Shale (37.5 %-Rec.)
Hard Limestone with Seams of Hd. Clay & Soft Shale (10.0 %-Rec.)
Fishtailed (100 %-Rec.)
Hard Limestone (60.0 %-Rec.)
(100 %-Rec.)
Topsoil
Sandy Gravelly Silt
Brown Silty Sandy Clay
Br. Silty Sandy Grvly. Clay
Rock
Topsoil
53082
Hard Br. Fine Gravelly Clay & Silt
Fishtailed thru Very Hard Consolidated Silt-Clay
53027
53095
Hard Limestone (91.6 %-Rec.)
"A" Horizon
"B" Horizon
"C" Horizon
Topsoil
53028
53029
Brown Silty Sandy Clay
Brown Silty Sandy Grvly. Clay
Br. Silty Sandy Coarse Grvly. Clay

-1.00 %

DATUM 1170

1002 03 04 1005 06 07 08 09 1010 11 12 13 14 1015 16 17 18 19 1020 21 22 23 24 1025 26 27 28 29 1030

1230 1220 1210 1200 1190 1180 1170

Soil Series #732

-1.00 %

Nat. Dens. = 106.2 pcf
Nat. M.C. = 17.6 %

1210 1200 1190 1180 1170 1160

DATUM 1150

31 32 33 34 1035

No.	REVISION	BY	DATE
2	AS-BUILT	C.R.W.	2-1-56
1	Revision referred to in Spec. Prov. SP-1.09	W.A.G.	1-20-53

OHIO TURNPIKE COMMISSION

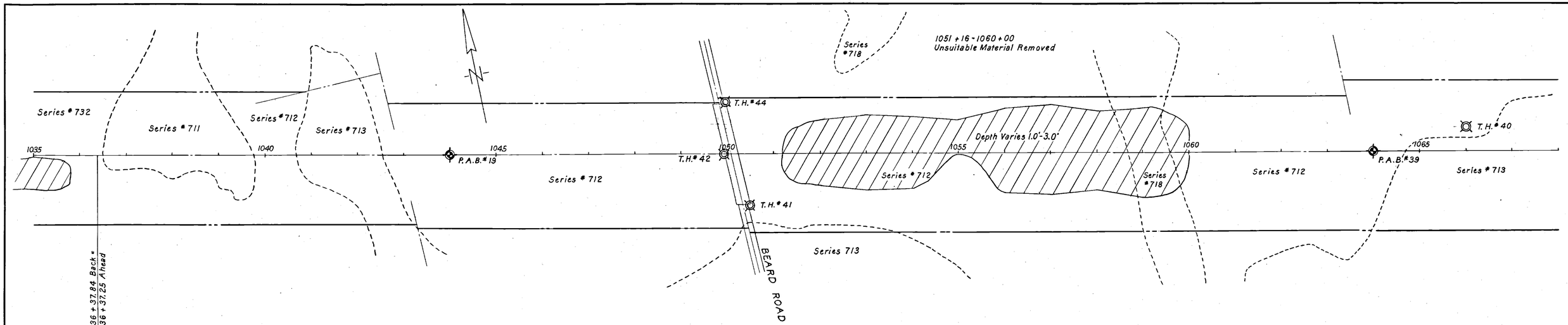
OHIO TURNPIKE PROJECT NO. 1

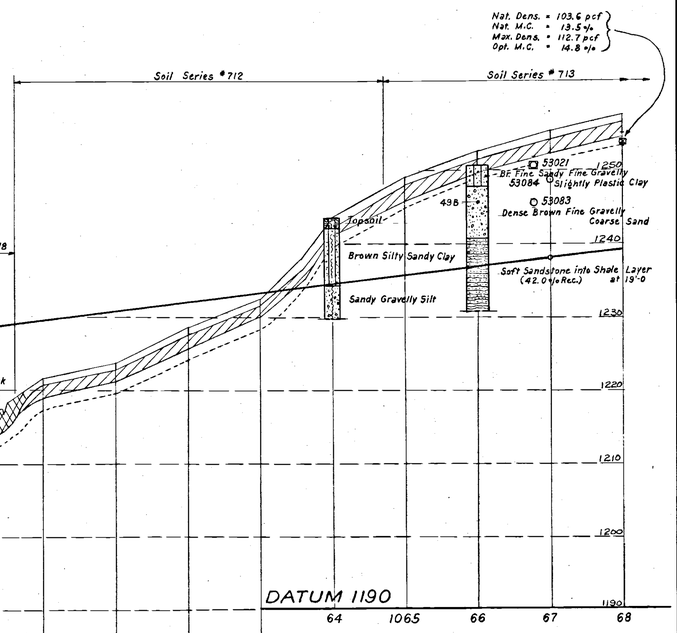
MASTER SOIL PROFILE
STA. 1015 +00 TO STA. 1035 +00

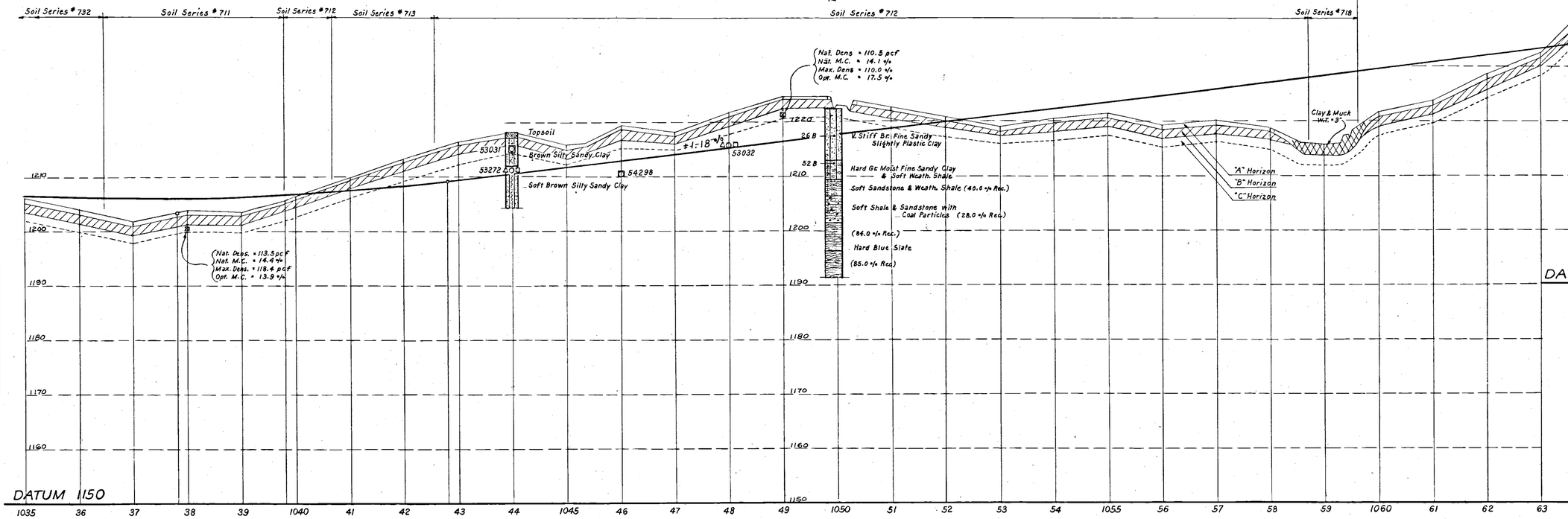
RICHARDSON, MOREHOUSE, RAMSEY & FISHER
CONTRACTING ENGINEER
DESIGN SECTION D-1

DESIGNED: G.A.O.	CHECKED: G.A.O.	DATE: NOV. 1952
DRAWN: W.A.G.	IN CHARGE: J.C.F.	SCALE: HOR 1"=100' VER 1"=10'

CONTRACT No. C-1 SHEET 1-S OF 10







No.	REVISION	BY	DATE
2	AS-BUILT	C.R.W.	2-1-56
1	Revision referred to in Spec. Prov. SP-1.09	W.A.G.	1-20-53

OHIO TURNPIKE COMMISSION

OHIO TURNPIKE PROJECT NO. 1

MASTER SOIL PROFILE
STA. 1035 + 00 TO STA. 1068 + 00

RICHARDSON, MOREHOUSE, RAMSEY & FISHER
CONTRACTING ENGINEER
DESIGN SECTION D-1

DESIGNED: G.A.O.	CHECKED: G.A.O.	DATE: NOV. 1952
DRAWN: W.A.G.	IN CHARGE: J.C.F.	SCALE: HOR. 1"=100' VER. 1"=10

CONTRACT No. C-1 SHEET 2-5 OF 10

1080 + 00 - 1083 + 00 Rt.
Unsuitable Material
Removed

1082 + 00 - 1083 + 00 Rt.
Unsuitable Material
Removed (Undercut)

1084 + 80 - 1087 + 20
1087 + 60 - 1088 + 50 Lt.
1089 + 20 - 1089 + 90 Lt.
Unsuitable Material Removed

1099 + 75 - 1100 + 00 Rt.
Unsuitable Material Removed

Series # 712
Series # 713
Series # 714
Series # 711
1070
1075
1080
1085
1090
1095
1100
P.A.B. # 40
P.A.B. # 41
T.H. # 39
1.0' Av. Dep.
1.0' Ave. Depth
3.0' Av. Dep.
3' Av. Dep.
Depth Varies 1.0' - 3.0'
1.0' Av. Depth

Soil Series # 712

Soil Series # 713 | Soil Series # 714 | Soil Series # 713 | Soil Series # 712 | Soil Series # 711 | Soil Series # 712 | Soil Series # 713

Nat. Dens. = 103.6 pcf
Nat. M.C. = 13.5 %
Max. Dens. = 112.7 pcf
Opt. M.C. = 14.8 %

Topsoil
Brown Sandy Silty Clay
Brown Sandy Silty Gravelly Clay
Brown Sandy Gravelly Silt
Gray Sandy Grvly. Silt
Coarse Gravelly Silt
Rock
V. Stiff Br. Grvly. Fine Sandy Clay
Hd. Br. Silt & Wcath. Shale
Soft Weathered Shale & Sandstone
Soft Sandstone into Hard Limestone.
53020
53024
24 B
57 B
(40.0 % Rec.)
(75.0 % Rec.)

Topsoil
Brown Silty Sandy Clay
53023
Brown Silty Sandy Grvly. Clay
52024
Gray Silty Sandy Grvly. Clay
Gray Sandy Gravelly Silt
Rock

Topsoil
Clay = 51 %
Silt = 35 %
F. Sand = 9 %
C. Sand = 4 %
Gravel = 1 %
Nat. M.C. = 30.2 %

Clay = 36 %
Silt = 32 %
F. Sand = 19 %
C. Sand = 7 %
Gravel = 6 %
L.L. = 27
P.I. = 6
Nat. M.C. = 17.5 %
HRB Class = A-4 (7)

Clay = 28 %
Silt = 24 %
F. Sand = 29 %
C. Sand = 7 %
Gravel = 12 %
L.L. = 28
P.I. = 8
Nat. Dens. = 108.7 pcf
Nat. M.C. = 12.2 %
Max. Dens. = 113.3 pcf
Opt. M.C. = 15.3 %
HRB Class = A-4 (3)

-0.682 %

"A" Horizon
"B" Horizon
"C" Horizon

1260
1250
1240
1230
1220
1210
1200
1190

DATUM 1190

68 69 1070 71 72 73 74 1075 76 77 78 79 1080 81 82 83 84 1085 86 87 88 89 1090 91 92 93 94 1095 96

1230
1220
1210
1200
1190

DATUM 1190

97 98 99 1100 01

No.	REVISION	BY	DATE
2	AS-BUILT	C.R.W.	2-1-56
1	Revision referred to in Spec. Prov. SP-1.09	W.A.G.	1-20-53

OHIO TURNPIKE COMMISSION

OHIO TURNPIKE PROJECT NO. 1

MASTER SOIL PROFILE
STA. 1068 + 00 TO STA. 1101 + 00

RICHARDSON, MOREHOUSE, RAMSEY & FISHER
CONTRACTING ENGINEER
DESIGN SECTION D-1

DESIGNED: G.A.O.	CHECKED: G.A.O.	DATE: NOV. 1952
DRAWN: W.A.G.	IN CHARGE: J.C.F.	SCALE: HOR. 1" = 100' VER. 1" = 10'

CONTRACT No. C-1 SHEET 3-5 OF 10

A. B. SMITH CO., PGH., PA.

PR 1510-782

1114+40 - 1115+60 Rt.
1115+90 - 1117+08
1117+50 - 1123+70 Lt.
Unsuitable Material Removed

1124+00 - 1144+15
Unsuitable Material Removed

Series # 712
Series # 713
Series # 718
Ditch
Depth Varies 2.0' - 5.0'
1.0' Avg. Depth
3.0' Av. Depth
1.5' Avg. Depth
T.H. #38
T.H. #36
T.H. #35
T.H. #34
T.H. #33
T.H. #31
T.H. #29
T.H. #28
T.H. #27
T.H. #26
T.H. #24
T.H. #22
C.E.B. #18
C.E.B. #17
C.E.B. #16
1105
1110
1115
1120
1125
1130
POLAND - UNITY ROAD
COLUMBIANA - NEW CASTLE RD.
1124+73.70 Back =
1124+00.00 Ahead

Soil Series #712
Soil Series #718
Soil Series #713
Remove Top 2± Ft.
-1.98 %

Topsoil
Clay = 45+/-
Silt = 40+/-
F. Sand = 10+/-
C. Sand = 3+/-
Gravel = 2+/-
Nat. M.C. = 21.0+/-

Clay = 32+/-
Silt = 28+/-
F. Sand = 9+/-
C. Sand = 8+/-
Gravel = 13+/-
L.L. = 27
P.I. = 10
Nat. M.C. = 16.4+/-
H.R.B. Class = A-4(3)

Clay = 42+/-
Silt = 41+/-
F. Sand = 7+/-
C. Sand = 3+/-
Gravel = 3+/-
L.L. = 38
P.I. = 15
Nat. M.C. = 20.6+/-
H.R.B. Class = A-6(10)

53271
53B
56B
51B
Hard Br. & Gr. Damp Fine - Sandy Clay
Hard Br. Moist Fine to Med. Sandy Fine Gravelly Clay
V. Hard Gray Med. Gravelly Clay with Soft Weathered Shale
(32.5+/- Rec.)
Soft Sandstone
(70.0+/- Rec.)
Hard Limestone (Lens or Boulder)
(90.0+/- Rec.)
(40.0+/- Rec.)
Soft Weathered Shale
(66.7+/- Rec.)
Hard Limestone (90.0+/- Rec.)

Clay = 42+/-
Silt = 28+/-
F. Sand = 13+/-
C. Sand = 8+/-
Gravel = 3+/-
L.L. = 26
P.I. = 4
Nat. M.C. = 20.2+/-
H.R.B. Class = A-4(7)

"A" Horizon
"B" Horizon
"C" Horizon

Topsoil
Clay = 40+/-
Silt = 53+/-
F. Sand = 7+/-
C. Sand = 0+/-
Gravel = 0+/-
Nat. M.C. = 51.4+/-

Clay = 40+/-
Silt = 50+/-
F. Sand = 8+/-
C. Sand = 2+/-
Gravel = 0+/-
L.L. = 36
P.I. = 9
Nat. M.C. = 34.7+/-
H.R.B. Class = A-6(8)

Gravelly - Clay - Topsoil
Hard Gr+/- Clay & Weath. Shale
30.83'
(100+/- Rec.)
53318
Soft Weathered Shale (33.3+/- Rec.)
Blue Hard Shale (100+/- Rec.)
Blue Very Hard Shale (100+/- Rec.)
Dark Gray Shale
Coal (Fair)
Coal & Shale (Very Poor)
Dark Gray Clay
Light Gray Shale
Dark Gray Shale

Surface & Brown Wash
Dark Shale
Coal (Fair)
Shale Binder
Coal
Dark Gray Clay
Surface & Wash
Dark Gray Shale
Coal (Good)
Shale Binder
Coal (Fair)
Med. Gray Clay

DATUM 1120
DATUM 1120
DATUM 1090
DATUM 1100

01 02 03 04 1105 06 07 08 09 1110 11 12 13 14 1115 16 17 18 19 1120 21 22 23 24 24 1125 26 27 28
29 1130 31 32 33

No.	REVISION	BY	DATE
2	AS-BUILT	C.R.W.	2-1-56
1	Revision referred to in Spec. Prov. SP-1.09	W.A.G.	1-20-53

OHIO TURNPIKE COMMISSION

OHIO TURNPIKE PROJECT NO. 1

MASTER SOIL PROFILE
STA. 1101+00 TO STA. 1133+00

RICHARDSON, MOREHOUSE, RAMSEY & FISHER
CONTRACTING ENGINEER
DESIGN SECTION D-1

DESIGNED: G.A.O.	CHECKED: G.A.O.	DATE: NOV. 1952
DRAWN: W.A.G.	IN CHARGE: J.C.F.	SCALE: HOR. 1"=100' VER. 1"=10'

CONTRACT No. C-1 SHEET 4-S OF 10

A. & B. SMITH CO., PERN., PA.
PR 1310-752

1124+00 - 1144+15
Unsuitable Material Removed

Series # 712
Series # 713
Series # 714
Series # 744
1.5' Avg. Depth
C.E.B. # 15
C.E.B. # 14
C.E.B. # 13
Prospect Pit
No Coal
No Rock
T.H. # 21
T.H. # 20
R.A.B. # 20
R.A.B. # 21
P.A.B. # 22
P.A.B. # 23
1135
1140
1145
1150
1155
1160
1165

Soil Series # 712
Soil Series # 713
Soil Series # 714
Soil Series # 744
+1.38 %
-1.00 %
Old Borrow Pit
Surface & Wash
Dark Shale
Coal & Shale Mixture (Poor)
Light Gray Clay
Gray Shale
Coal
Coal Blossom
Dark Gray Clay
Sandy Shale
Limestone
Hard Sandy Shale
Dark Gray Shale
Hard Coal (Good)
Light Gray Clay
Light Shale
Coal (Very Poor)
Light Sandy Shale
Coal (Good)
"A" Horizon
"B" Horizon
"C" Horizon
Topsoil
Brown Silty Sandy Gravelly Clay
Sandy Gravelly Silt
Grvly. Clay Topsoil
Hard Clay with Shale-Flshtailed
Weathered Shale with Clay Seams
Weathered Shale with Sandstone
Weathered Shale to Sound Blue Shale
(25.0 %/+ Rec.)
(20.0 %/+ Rec.)
(42.0 %/+ Rec.)
(100 %/+ Rec.)
Clay = 30 %/+
Silt = 33 %/+
F. Sand = 18 %/+
C. Sand = 6 %/+
Gravel = 13 %/+
L.L. = 28
P.I. = 8
Nat. M.C. = 11.8 %/+
H R B Class = A-4(6)
Topsoil
Clay = 41 %/+
Silt = 34 %/+
F. Sand = 14 %/+
C. Sand = 5 %/+
Gravel = 6 %/+
Nat. M.C. = 19.5 %/+
Clay = 37 %/+
Silt = 34 %/+
F. Sand = 13 %/+
C. Sand = 6 %/+
Gravel = 10 %/+
L.L. = 27
P.I. = 6
Nat. M.C. = 16.3 %/+
H R B Class = A-4(7)
53033
53034
53057
53058
53011
Topsoil
Brown Silty Sandy Clay
Brown Silty Sandy Gravelly Clay (10 ft.)
Firm Gr. Silty Sandy Gravelly Clay
Gray Silty Sandy Gravelly Clay
Brown Sandy Grvly. Silt
Rock
(Nat. Dens. = 110.5 pcf
Nat. M.C. = 14.4 %/+
Max. Dens. = 111.6 pcf
Opt. M.C. = 17.0 %/+
Stiff Gravelly Clay
H. Blue Fine to Coarse Grvly. Clay with Shale Seams
(86.0 %/+ Rec.)
Soft Shale & Sandstone
(100 %/+ Rec.)
Shale (100 %/+ Rec.)
Shale with Weather Fracture Rock (100 %/+ Rec.)
Topsoil
Brown Silty Sandy Clay
Gray Silty Sandy Grvly. Clay
1180
1170
1160
1150
1140
1130
1120
1110
1100
1090
1080
1070
1200
1190
DATUM 1070
DATUM 1120
33
34
1135
36
37
38
39
1140
41
42
43
44
1145
46
47
48
49
1150
51
52
53
54
1155
56
57
58
59
1160
61
62
63
64
1165

No.	REVISION	BY	DATE
2	AS-BUILT	C.R.W.	2-1-56
1	Revision referred to in Spec. Prov. SP-1.09	W.A.G.	1-20-53

OHIO TURNPIKE COMMISSION
OHIO TURNPIKE PROJECT NO. 1

MASTER SOIL PROFILE
STA. 1133+00 TO STA. 1165+00

RICHARDSON, MOREHOUSE, RAMSEY & FISHER
CONTRACTING ENGINEER
DESIGN SECTION D-1

DESIGNED: G.A.O.	CHECKED: G.A.O.	DATE: NOV. 1952	
DRAWN: W.A.G.	IN CHARGE: J.C.F.	SCALE: HOR. 1"=100' VER 1"=10'	

CONTRACT No. C-1 SHEET 5-S OF 10

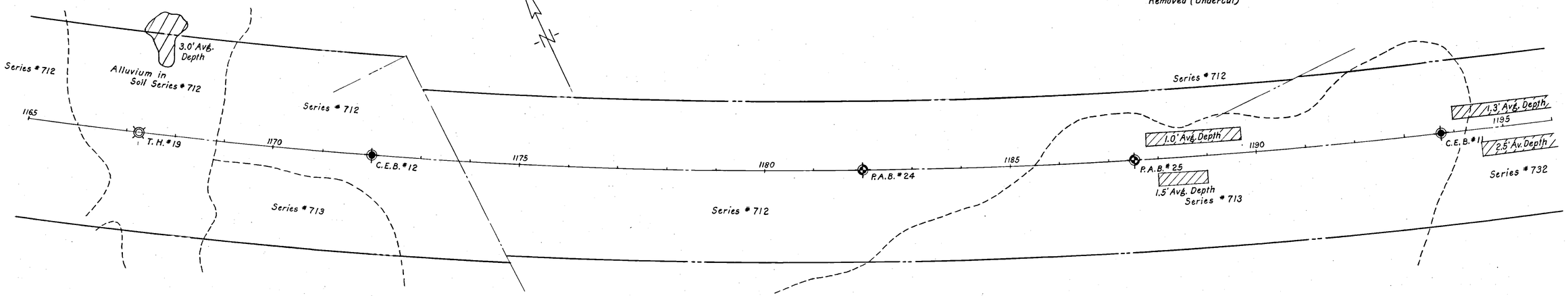
A. B. SMITH CO., PHILA., PA.

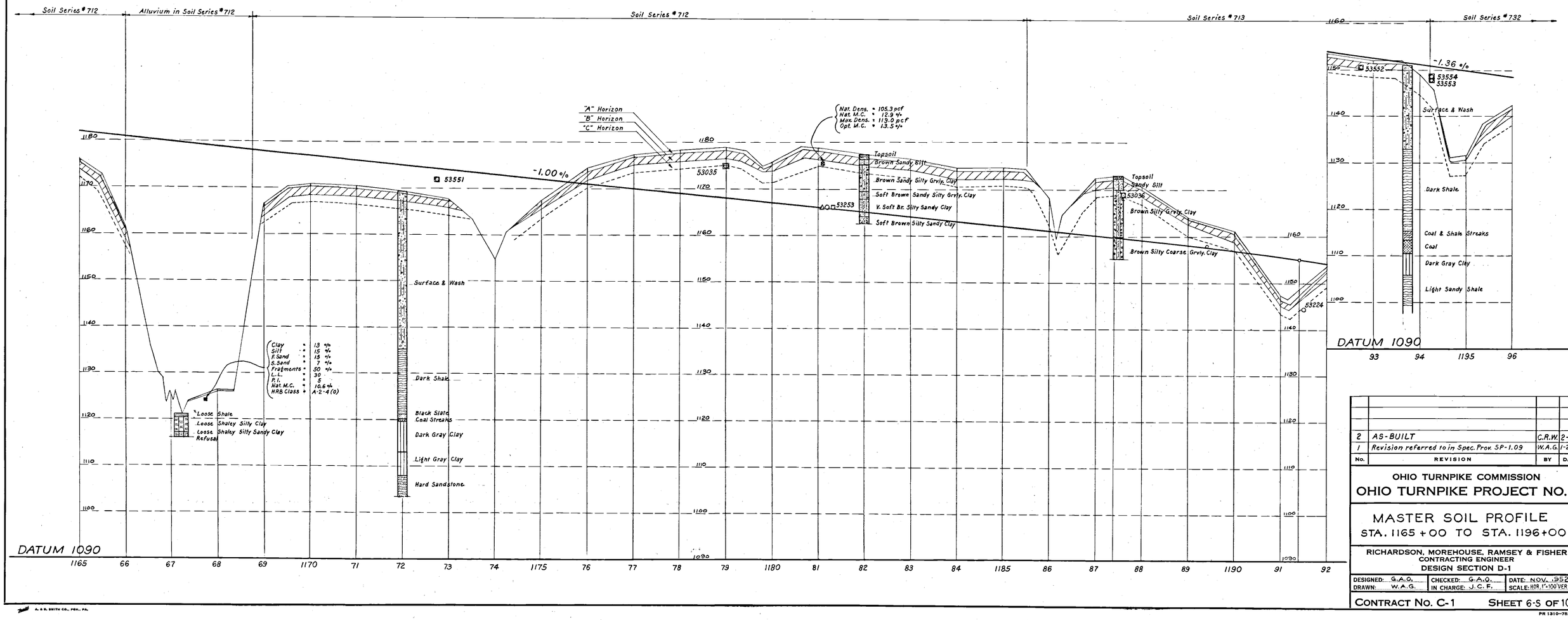
PR 1310-752

1167+10 - 1168+05 Lt.
Unsuitable Material Removed

1187+75 - 1189+75 Lt.
1188+00 - 1189+00 Rt.
Unsuitable Material
Removed (Undercut)

1194+00 - 1201+00 Lt.
1194+50 - 1198+50 Rt.
Unsuitable Material
Removed (Undercut)





No.	REVISION	BY	DATE
2	AS-BUILT	C.R.W.	2-1-56
1	Revision referred to in Spec. Prov. SP-1.09	W.A.G.	1-20-53

OHIO TURNPIKE COMMISSION

OHIO TURNPIKE PROJECT NO. 1

MASTER SOIL PROFILE
STA. 1165+00 TO STA. 1196+00

RICHARDSON, MOREHOUSE, RAMSEY & FISHER
CONTRACTING ENGINEER
DESIGN SECTION D-1

DESIGNED: G.A.Q.	CHECKED: G.A.Q.	DATE: NOV., 1952
DRAWN: W.A.G.	IN CHARGE: J.C.F.	SCALE: HOR. 1"=100' VER. 1"=10'

CONTRACT No. C-1 SHEET 6-S OF 10

1194+00 - 1201+00 Lt.
1194+50 - 1198+50 Rt.
Unsuitable Material
Removed (Undercut)

1207+00 - 1210+00
Unsuitable Material
Removed

1207+50 - 1210+30 Rt.
Unsuitable Material
Removed (Undercut)

1212+00 - 1214+00
Unsuitable Material
Removed

1218+60 - 1222+10
Unsuitable Material
Removed

1223+90 - 1226+10
Unsuitable Material
Removed

1227+00 - 1230+00 Rt.
Unsuitable Material
Removed (Undercut)

Series # 731

Series # 732
1.3' Avg. Depth
2.5' Avg. Depth

1200
C.E.B. # 10
C.E.B. # 9

1205
C.E.B. # 8

Depth Varies 2.0'-10.0'
1210
C.E.B. # 7
1.5' Avg. Depth

Series # 733

Series # 732
3.0' Avg. Depth

1215
C.E.B. # 6

Series # 731

Series # 738
Depth Varies 2.0'-5.0'
1220
C.E.B. # 5

Series # 732

Depth Varies 2.0'-4.5'
1225
C.E.B. # 4
C.E.B. # 3

0.8' Av. Depth

Soil Series # 732 | Series # 731 | Soil Series # 732 | Soil Series # 733 | Soil Series # 732 | Soil Series # 738 | Soil Series # 732 | Muck Series # 200 | Soil Series # 732

Remove Top 3.5' Ft.

1.36 %
52037

53358
53357

53085
53086

"A" Horizon
"B" Horizon
"C" Horizon

Nat. Dens. = 103.9 pcf
Nat. M.C. = 13.7 %
Max. Dens. = 111.1 pcf
Opt. M.C. = 17.5 %

Nat. Dens. = 98.5 pcf
Nat. M.C. = 17.8 %
Max. Dens. = 111.4 pcf
Opt. M.C. = 16.9 %

Surface & Wash
Light Gray Shale
Light Sandy Shale
Dark Gray Shale
Coal (Good)
Light Gray Shale
Dark Shale
Coal & Slate Mixture (Poor)
Dark Gray Clay
Hard Dark Shale
Coal & Shale Mixture (Poor)
Coal (Medium)
Med. Gray Shale
Gray Sandy Shale
Dark Gray Shale
Coal (Good)
Clay
Coal (Poor)
Dark Gray Clay
Light Gray Sandy Shale
Dark Gray Shale
Coal (Good)
Gray Clay
Soft Gray Shale
Coal (Good)
Light Gray Clay
Dark Gray Shale
Coal (Good)
Light Gray Clay
Swamp Mud & Wash
Dark Gray Shale
Coal (Good)
Clay
Light Sandy Shale

DATUM 1040

96 97 98 99 1200 01 02 03 04 1205 06 07 08 09 1210 11 12 13 14 1215 16 17 18 19 1220 21 22 23 24

DATUM 1040

1225 26 27 28

No.	REVISION	BY	DATE
2	AS-BUILT	C.R.W.	2-1-56
1	Revision referred to in Spec. Prov. SP-1.09	W.A.G.	1-20-53

OHIO TURNPIKE COMMISSION

OHIO TURNPIKE PROJECT NO. 1

MASTER SOIL PROFILE
STA. 1196+00 TO STA. 1228+00

RICHARDSON, MOREHOUSE, RAMSEY & FISHER
CONTRACTING ENGINEER
DESIGN SECTION D-1

DESIGNED: G.A.G. | CHECKED: G.A.G. | DATE: NOV. 1952
DRAWN: W.A.G. | IN CHARGE: J.C.F. | SCALE: HOR. 1"=100' VER. 1"=10'

CONTRACT No. C-1 SHEET 7-S OF 10

A. B. D. SMITH CO., PGH., PA.

PR 1310-752

1227 + 00 - 1230 + 00 Rt.
Unsuitable Material
Removed (Undercut)

1236 + 90 - 1244 + 40 Lt.
1236 + 90 - 1242 + 10 Rt.
Unsuitable Material
Removed (Undercut)

Bent 2- Structure No. 4
Unsuitable Material Removed

1249 + 50 - 1262 + 30
Unsuitable Material
Removed (Undercut)

Soil Series # 732 | Soil Series # 733 | Soil Series # 732 | Soil Series # 733 | Soil Series # 732 | Soil Series # 128 | Soil Series # 732 | Soil Series # 128

Nat. Dens. = 98.5 pcf
Nat. M.C. = 10.1 %
Max. Dens. = 112.5 pcf
Opt. M.C. = 16.7 %

Nat. Dens. = 117.5 pcf
Nat. M.C. = 13.6 %
Max. Dens. = 115.2 pcf
Opt. M.C. = 16.0 %

Nat. Dens. = 106.1 pcf
Nat. M.C. = 13.3 %
Max. Dens. = 118.3 pcf
Opt. M.C. = 13.2 %

Clay = 45 %
Silt = 47 %
F. Sand = 8 %
C. Sand = 0 %
Gravel = 0 %
Nat. M.C. = 18.7 %
H.R.B Class = A-8

Clay = 38 %
Silt = 45 %
F. Sand = 16 %
C. Sand = 2 %
Gravel = 1 %
L.L. = 39
P.I. = 10
Nat. M.C. = 38.8 %
Max. Dens. = 90.0 pcf
Opt. M.C. = 27.5 %
H.R.B Class = A-4 or B (A-8)

DATUM 1010

No.	REVISION	BY	DATE
2	AS-BUILT	C.R.W.	2-1-56
1	Revision referred to in Spec. Prov. SP-1.09	W.A.G.	1-20-53

OHIO TURNPIKE COMMISSION
OHIO TURNPIKE PROJECT NO. 1

MASTER SOIL PROFILE
STA. 1228 + 00 TO STA. 1261 + 00

RICHARDSON, MOREHOUSE, RAMSEY & FISHER
CONTRACTING ENGINEER
DESIGN SECTION D-1

DESIGNED: G.A.Q. | CHECKED: G.A.Q. | DATE: NOV. 1952
DRAWN: W.A.G. | IN CHARGE: J.C.F. | SCALE: HOR. 1"=100' VER. 1"=10'

CONTRACT No. C-1 SHEET 8-S OF 10

PR 1310-752

A. B. SMITH CO., PITTSBURGH, PA.

1249+50 - 1262+30
Unsuitable Material
Removed (Undercut)

1262+25 - 1264+10
Unsuitable Material
Removed

1270+25 - 1272+00
Unsuitable Material
Removed

1288+30 - 1289+50
Unsuitable Material
Removed

Series # 322

2.0' Avg. Depth

Depth Varies
2.0'-5.0'

Series # 128

Series # 732

Series # 323

GARFIELD ROAD

T.H. #9

T.H. #10

T.H. #8

T.H. #7

T.H. #5

T.H. #6

T.H. #3

1.5' Avg. Depth

Series # 321

T. H. #2

Series # 323

STATE OF OHIO

STATE OF PENNA.

PENNA. TURNPIKE

T. H. #1

2.0' Avg. Depth

Series # 324

1261 1265 1270 1275 1280 1285 1290

Soil Series #128 | Series #322 | Series #128 | Soil Series #323 | Soil Series #321 | Soil Series #323 | Soil Series #324

+0.42%

-1.45%

"A" Horizon
"B" Horizon
"C" Horizon
"D" Horizon

T.H. #7

Topsoil
Clay = 30 +/-
Silt = 50 +/-
F. Sand = 13 +/-
C. Sand = 3 +/-
Gravel = 4 +/-
Nat. M.C. = 32.7 +/-
HRB Class = A-8

Clay = 42 +/-
Silt = 37 +/-
F. Sand = 7 +/-
C. Sand = 7 +/-
Gravel = 7 +/-
L.L. = 35
P.I. = 12
Nat. M.C. = 20.6 +/-
HRB Class = A-6(9)

Clay = 48 +/-
Silt = 47 +/-
F. Sand = 2 +/-
C. Sand = 2 +/-
Gravel = 1 +/-
L.L. = 31
P.I. = 10
Nat. M.C. = 24.0 +/-
HRB Class = A-4(8)

14 B Stiff Brown & Gray Clay
16 B Firm Br. Grvly. Clayey Med. Sand
21 B V. Stiff Gr. & Br. Grvly. Med. Sandy Silt
19 B
16 B V. Stiff Gr. Med. Sandy Fine to Coarse Gravelly Slightly Plastic Clay
18 B Firm Gr. Wet. Med. Grvly. Clayey Med. Sand
26 B Firm, Gr. Wet Med. Sand & Coal Particles
Shale - Limestone
Very Hard Limestone (100 +/- Rec.)
Hard Limestone
V. Hard Clay Seamed Soft Sandstone (76.5 +/- Rec.)
V. Hard Clay Seamed Hard Sandstone (90.3 +/- Rec.)
Refusal

52063

10 B Stiff Fine Sandy Br. Clay
18 B Firm Silty Med. to F. Sand & F. Gravel
17 B
13 B V. Stiff Fine, Sandy, F. Grvly. Silt
15 B
10 B Loose Coarse Gravel
57 B Hard Coarse Grvly. F. Sandy Silt
60 B 9 Refusal

Clay = 17 +/-
Silt = 16 +/-
F. Sand = 56 +/-
C. Sand = 8 +/-
Gravel = 3 +/-
L.L. = 20
P.I. = N.P.
Nat. M.C. = 10.6 +/-
HRB Class = A-2-4(0)

Topsoil
Clay = 37 +/-
Silt = 29 +/-
F. Sand = 20 +/-
C. Sand = 8 +/-
Gravel = 6 +/-
Nat. M.C. = 19.4 +/-
HRB Class = A-8

Clay = 30 +/-
Silt = 35 +/-
F. Sand = 19 +/-
C. Sand = 8 +/-
Gravel = 3 +/-
L.L. = 23
P.I. = 4
Nat. M.C. = 15.6 +/-
HRB Class = A-2-4(0)

Clay = 12 +/-
Silt = 12 +/-
F. Sand = 43 +/-
C. Sand = 13 +/-
Gravel = 17 +/-
L.L. = 17
P.I. = N.P.
Nat. Dens. = 103.2 pcf
Nat. M.C. = 9.9 +/-
Max. Dens. = 109.0 pcf
Opt. M.C. = 10.1 +/-
HRB Class = A-2-4(0)

DATUM 990

61 62 63 64 1265 66 67 68 69 1270 71 72 73 74 1275 76 77 78 79 1280 81 82 83 84 1285 86 87 88

Soil Series # 324

-0.40%

1050
1040
1030
1020
1010
1000
990

53155 53166 53014 53165 53156

13 B Firm Med. to Fine. Sand with Coal Particles
17 B
21 B V. Stiff Fine, Sandy Silt & Shale Fragments
62 B Hd. Fine Sdy. Silt with S. & S.
25 B Fm. Fine Sdy. Silty Fine Gravel & Sandstone
31 B Hd. Fine Sdy. Fine Grvly. Silt & Coal Particles
60 B 7 V. Dense Silty Coarse to Med. Gravel
22 B 2 Refusal

DATUM 990

89 1290 91 92

1.55

No.	REVISION	BY	DATE
2	AS-BUILT	C.R.W.	2-1-56
1	Revision referred to in Spec. Prov. SP-1.09	W.A.G.	1-20-53

OHIO TURNPIKE COMMISSION

OHIO TURNPIKE PROJECT NO. 1

MASTER SOIL PROFILE
STA. 1261+00 TO STA. 1292+04±

RICHARDSON, MOREHOUSE, RAMSEY & FISHER
CONTRACTING ENGINEER
DESIGN SECTION D-1

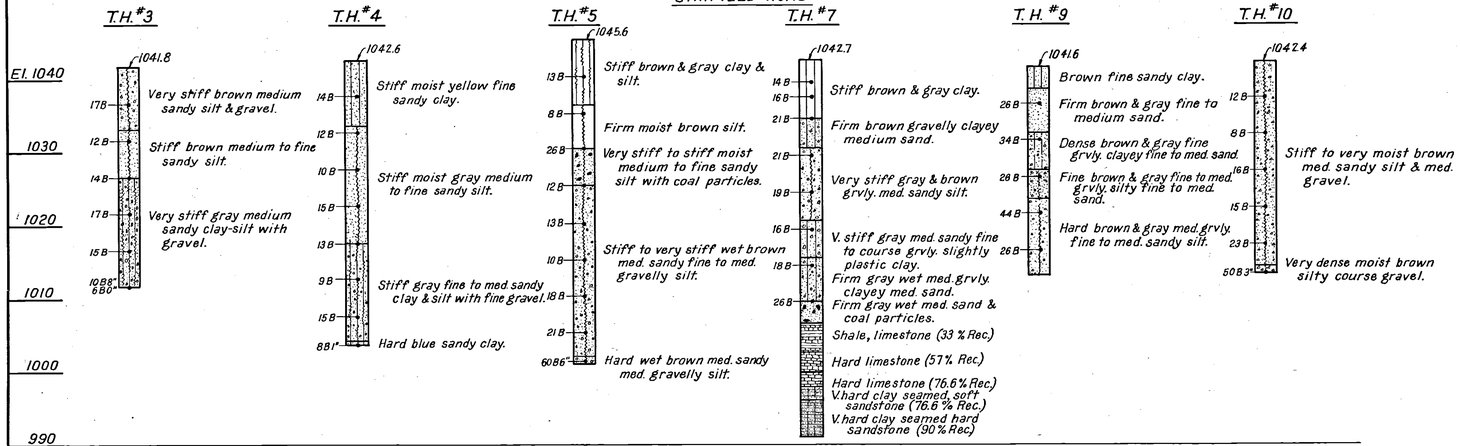
DESIGNED: G.A.O.	CHECKED: G.A.O.	DATE: NOV. 1952	
DRAWN: W.A.G.	IN CHARGE: J.C.F.	SCALE: HOR 1"=100 VER 1"=10'	

CONTRACT No. C-1 SHEET 9-S OF 10

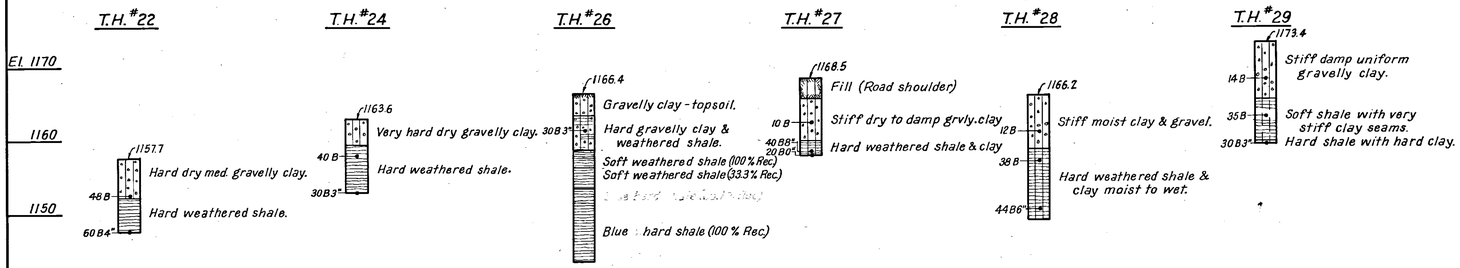
A. & B. SMITH CO., PGH., PA.

PR 1310-752

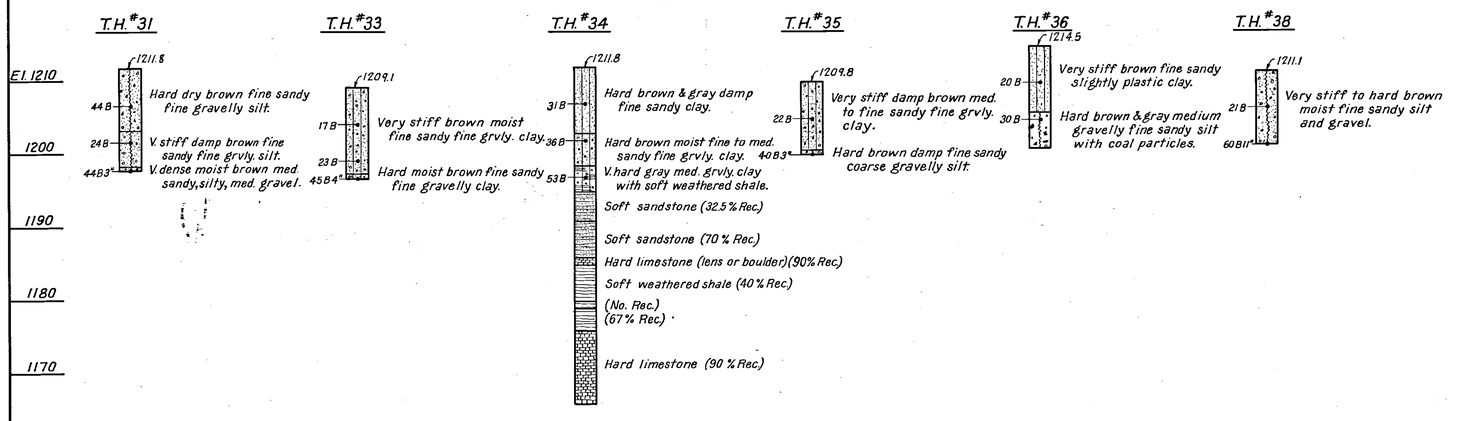
STRUCTURE NO. 2
GARFIELD ROAD



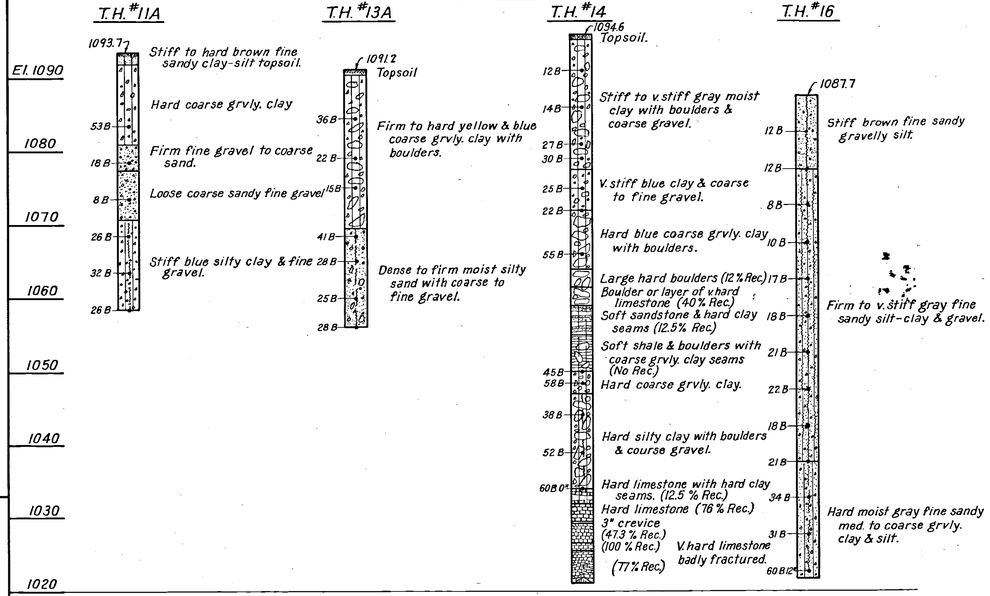
STRUCTURE NO. 6
COLUMBIANA - NEW CASTLE ROAD



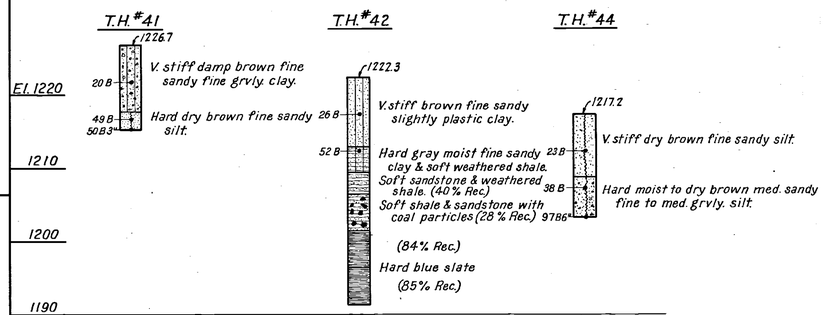
STRUCTURE NO. 7
POLAND-UNITY ROAD



STRUCTURE NO. 4
ROUTE 90



STRUCTURE NO. 8
BEARD ROAD



Note:
Penetration is number of blows of 140 lb. hammer falling 30 in. required to drive 1.5 in. sampler 1 ft.

No.	REVISION	BY	DATE
2	AS-BUILT	C.R.W.	2-1-56
1	Revision referred to in Spec. Prov. SP-1.09	D.U.	1-20-53

OHIO TURNPIKE COMMISSION

OHIO TURNPIKE PROJECT NO. 1

TEST BORING LOGS FOR STRUCTURES

RICHARDSON, MOREHOUSE, RAMSEY & FISHER
CONTRACTING ENGINEER
DESIGN SECTION D-1

DESIGNED: G.A.O.	CHECKED:	DATE: 11-29-52
DRAWN: D.P.U.	IN CHARGE: P.B.R.	SCALE: VERT. 1" = 10'

CONTRACT No. C-1 SHEET 10-S OF 10