

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

BUT - 27 - 1.85

**BUTLER COUNTY
ROSS TOWNSHIP**

PROJECT DESCRIPTION

CONSTRUCTION OF LEFT TURN LANES ON US 27 AT HERMAN ROAD, ROSS MILLVILLE ROAD, AND HAMILTON NEW LONDON ROAD. CONSTRUCTION OF A TWO WAY LEFT TURN LANE ON US 27 BETWEEN ROSS MILLVILLE ROAD AND HAMILTON NEW LONDON ROAD.

EARTH DISTURBED AREAS

PROJECT EARTH DISTURBED AREA: 10.42 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA: 0.50 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA: 10.92 ACRES

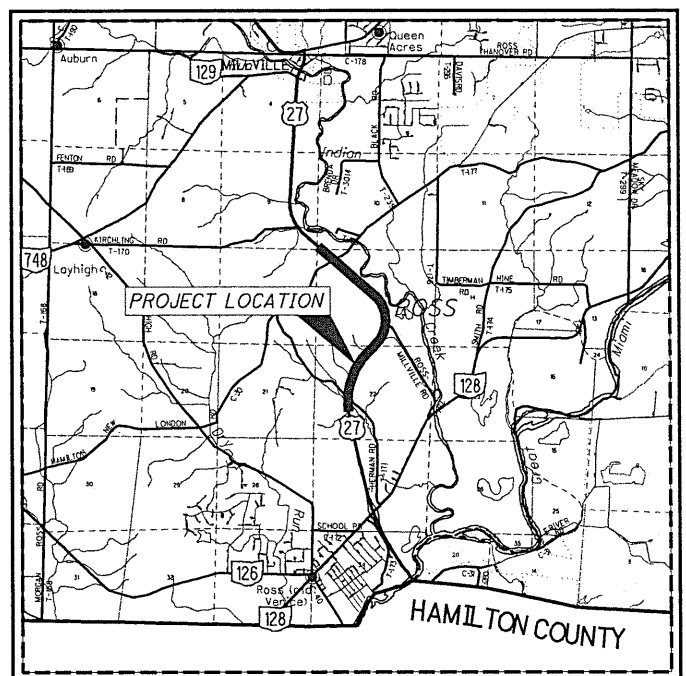
2019 SPECIFICATIONS

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 NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY EXCEPT AS NOTED ON SHEET 18 AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

APPROVED *Tammy K Campbell*
DATE 11-15-2021 DISTRICT DEPUTY DIRECTOR

APPROVED _____
DATE _____ DIRECTOR, DEPARTMENT OF TRANSPORTATION



LOCATION MAP

LATITUDE: 39°21'02" LONGITUDE: -84°38'14"



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

DESIGN DESIGNATION

CURRENT ADT (2022)	16,000
DESIGN YEAR ADT (2042)	21,000
DESIGN HOURLY VOLUME (2042)	2,100
DIRECTIONAL DISTRIBUTION	70%
TRUCKS (24 HOUR B&C)	14%
DESIGN SPEED	50/55
LEGAL SPEED	50/55
DESIGN FUNCTIONAL CLASSIFICATION:	
03 PRINCIPAL ARTERIAL (RURAL)	
NHS PROJECT	YES

ADA DESIGN WAIVER

NONE REQUIRED

DESIGN EXCEPTIONS

NONE REQUIRED

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UNDERGROUND UTILITIES
Contact Two Working Days Before You Dig

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

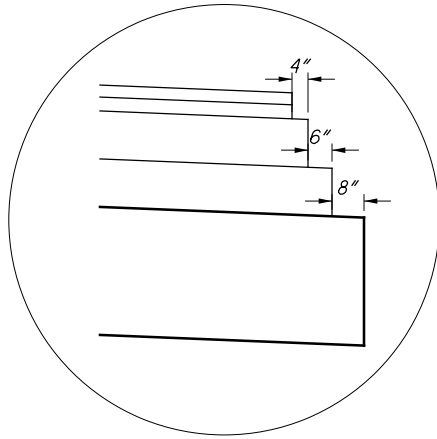
ENGINEERS SEAL:

SIGNED: *Lucas W. Braun*
DATE: 11/19/21

STANDARD CONSTRUCTION DRAWINGS						SUPPLEMENTAL SPECIFICATIONS	SPECIAL PROVISIONS
BP-3.1	1/17/20	RM-1.1	1/15/21	TC-41.30	10/18/13	800-2019	10/15/21
BP-8.2	1/18/19	RM-4.2	4/17/20	TC-41.40	10/18/13	809	1/15/21
				TC-41.41	7/19/19	813	10/19/18
CB-2-2A,2B,2C	7/16/21	MT-95.60	4/19/19	TC-42.20	10/18/13	832	10/19/18
CB-2-5	2-6, 7/16/21	MT-95.61	4/19/19	TC-52.10	10/18/13	874	4/17/20
		MT-97.10	4/19/19	TC-52.20	1/15/21	878	1/17/20
DM-1.1	7/17/20	MT-97.12	1/20/17	TC-61.30	7/19/19	909	1/15/21
DM-1.2	1/18/13	MT-99.20	4/19/19	TC-65.10	1/17/14	913	4/21/17
DM-4.3	1/15/16	MT-101.60	1/17/20	TC-65.11	7/21/17		
DM-4.4	1/15/16	MT-101.90	7/17/20	TC-71.10	7/16/21		
		MT-105.10	1/17/20	TC-81.22	7/16/21		
MGS-1.1	1/19/18			TC-83.10	1/17/20		
MGS-2.1	1/19/18	TC-12.31	1/21/22	TC-83.20	7/21/17		
MGS-4.2	7/19/13	TC-21.21	7/16/21	TC-85.20	7/20/18		
MGS-5.3	7/15/16	TC-22.10	4/17/20				
		TC-41.20	10/18/13				

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FEDERAL PROJECT NO. E190 (558)
PID NO. 109351
CONSTRUCTION PROJECT NO.
RAILROAD INVOLVEMENT NONE
BUT - 27 - 1.85
1/203

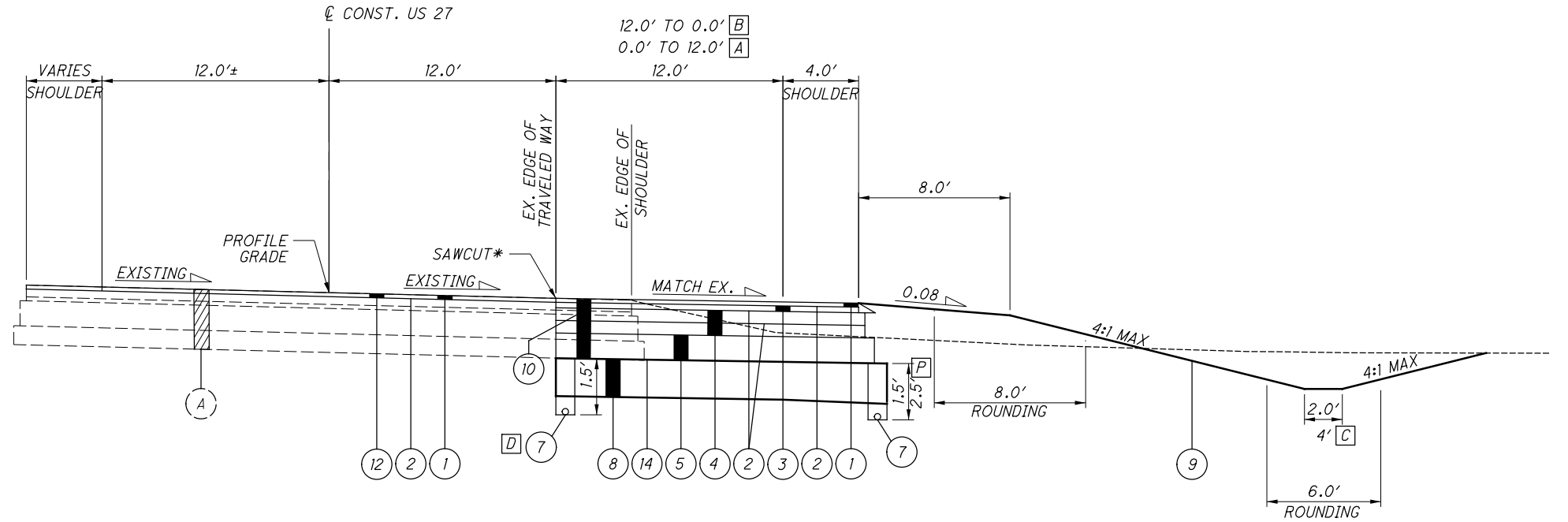


STEP DETAIL

NOTES

*THE EXISTING PAVEMENT EDGES SHALL BE SAW CUT TO LOCATE A SOUND PAVEMENT EDGE. FOR ESTIMATING PURPOSES, SEE PLAN VIEW FOR SAWCUT LOCATIONS.

- ① ITEM 442 - 1.5" ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446)
- ② ITEM 407 - NON-TRACKING TACK COAT
- ③ ITEM 442 - 1.75" ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (446)
- ④ ITEM 301 - 8" ASPHALT CONCRETE BASE, PG64-22 (2-4" LIFTS)
- ⑤ ITEM 304 - 8" AGGREGATE BASE
- ⑥ ITEM 204 - EXCAVATION OF SUBGRADE, 12" DEEP
ITEM 204 - GRANULAR MATERIAL, TYPE C
- ⑦ ITEM 605 - 6" BASE PIPE UNDERDRAIN
- ⑧ ITEM 206 - CEMENT STABILIZED SUBGRADE, 12" DEEP
- ⑨ ITEM 659 - SEEDING AND MULCHING
- ⑩ ITEM 202 - PAVEMENT REMOVED
- ⑪ ITEM 606 - GUARDRAIL, TYPE MGS
- ⑫ ITEM 254 - PAVEMENT PLANING, 1.5"
- ⑬ ITEM 204 - GEOTEXTILE FABRIC
- ⑭ ITEM 204 - PROOF ROLLING
- ⑮ ITEM 204 - SUBGRADE COMPACTION
- Ⓐ EXISTING ASPHALT CONCRETE PAVEMENT (10.5"±)



SUPERELEVATED SECTION - US 27

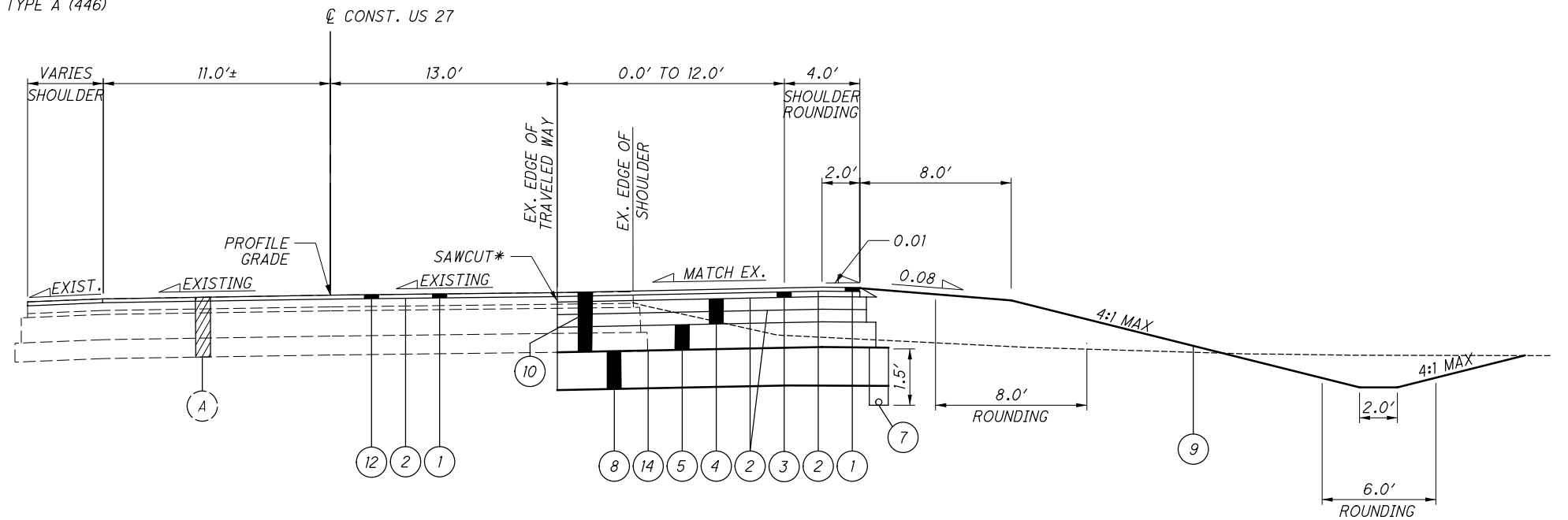
STA. 97+80.00 TO STA. 104+40.00 **A**
 STA. 104+40.00 TO STA. 107+97.19
 STA. 109+31.68 TO STA. 113+20.00
 STA. 113+20.00 TO STA. 119+80.00 **B**

SEE INTERSECTION DETAIL SHEET 136
 STA. 107+97.19 TO STA. 109+31.68

C = FROM STA. 97+80.00 TO STA. 103+00.00
 FROM STA. 110+80.00 TO STA. 119+80.00

D = FROM STA. 102+89.53 TO STA. 107+97.19
 FROM STA. 109+15.00 TO STA. 114+97.05

P = FROM STA. 97+80 TO STA. 107+97.19



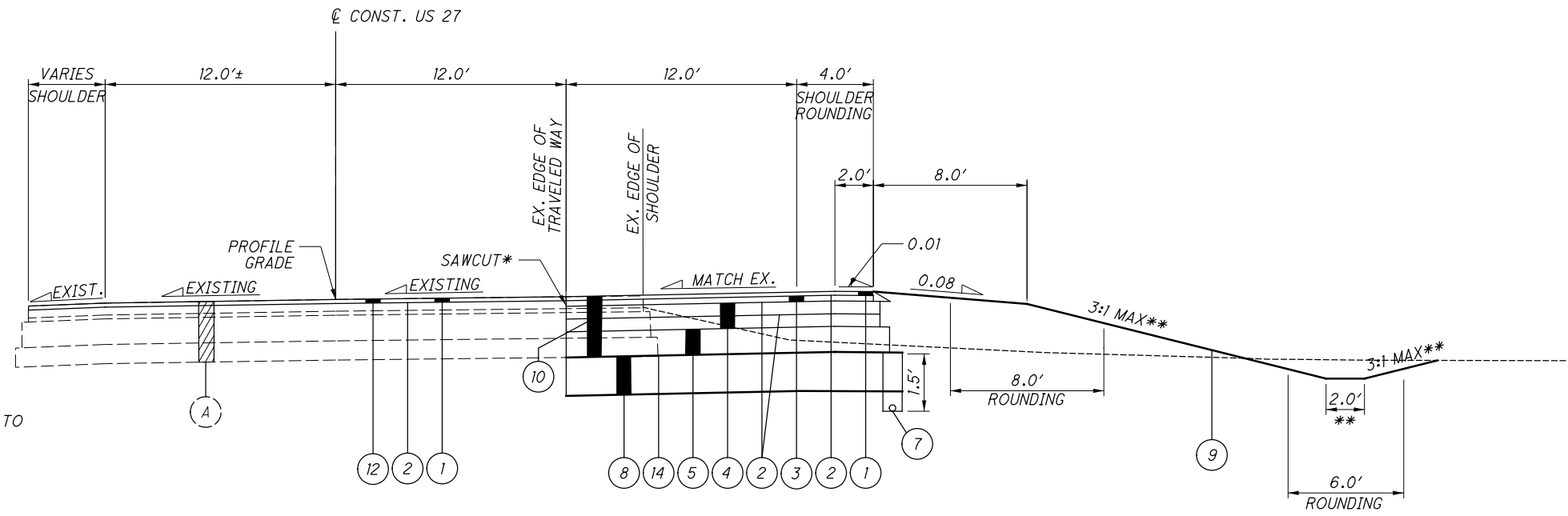
SUPERELEVATED SECTION - US 27

STA. 147+80.00 TO STA. 153+75.51

SEE INTERSECTION DETAIL SHEET 136
 STA. 153+75.51 TO STA. 154+93.03

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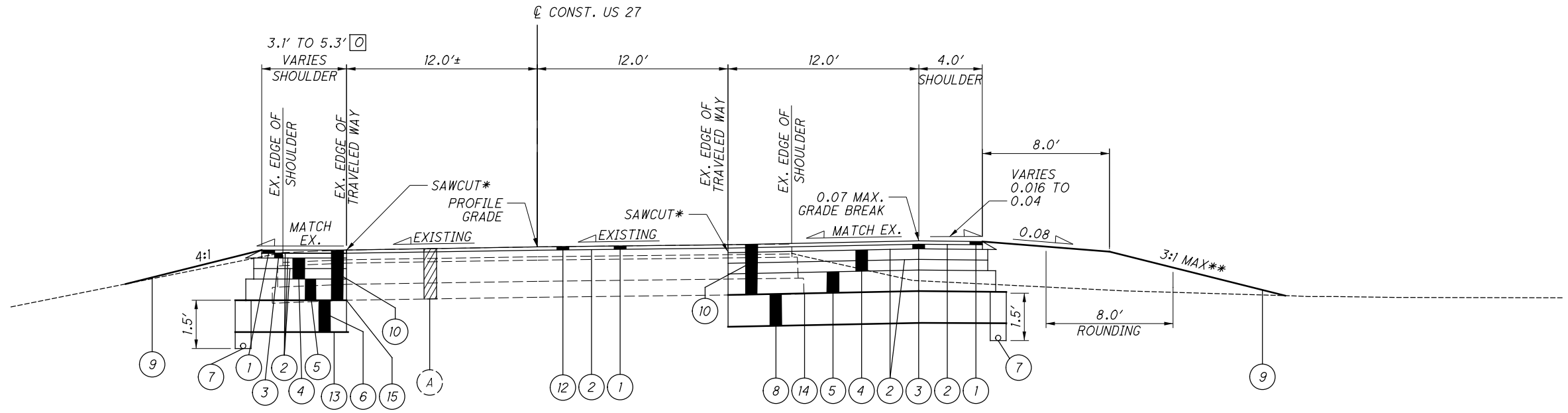
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NOTES

*THE EXISTING PAVEMENT EDGES SHALL BE SAW CUT TO LOCATE A SOUND PAVEMENT EDGE. FOR ESTIMATING PURPOSES, SEE PLAN VIEW FOR SAWCUT LOCATIONS.
 **SEE US 27 CROSS SECTIONS

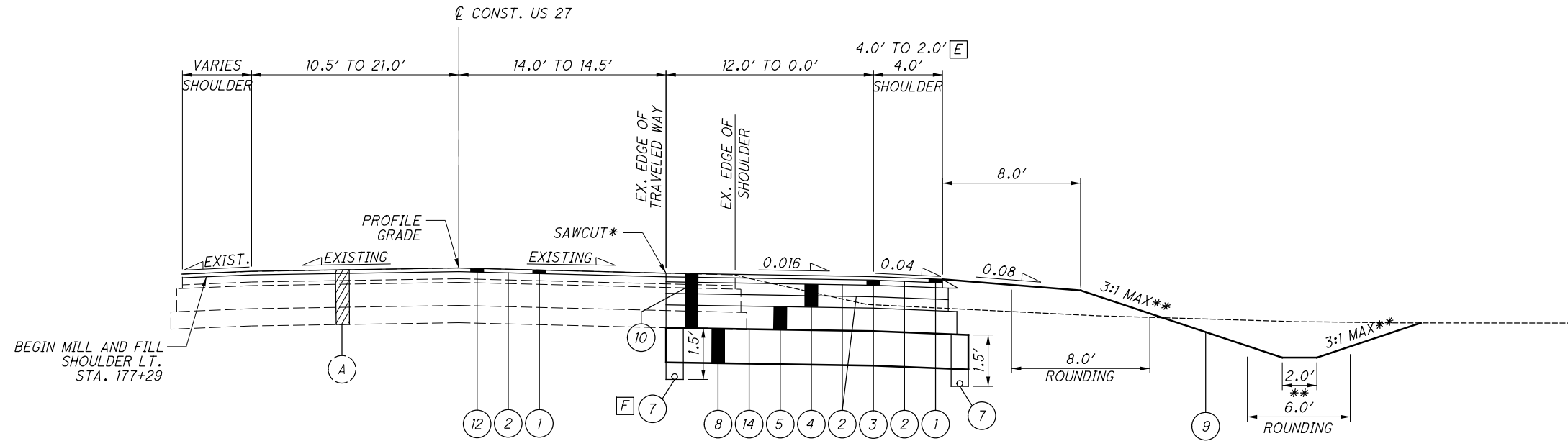
SUPERELEVATED SECTION - US 27
 STA. 154+93.03 TO STA. 172+00.00



◻ = FROM STA. 173+08.00 TO STA. 177+23.00
 FULL DEPTH REPLACEMENT

SUPERELEVATED SECTION - US 27
 STA. 172+00.00 TO STA. 175+75.83

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NOTES

**US 27 SEE CROSS SECTIONS

NOTES

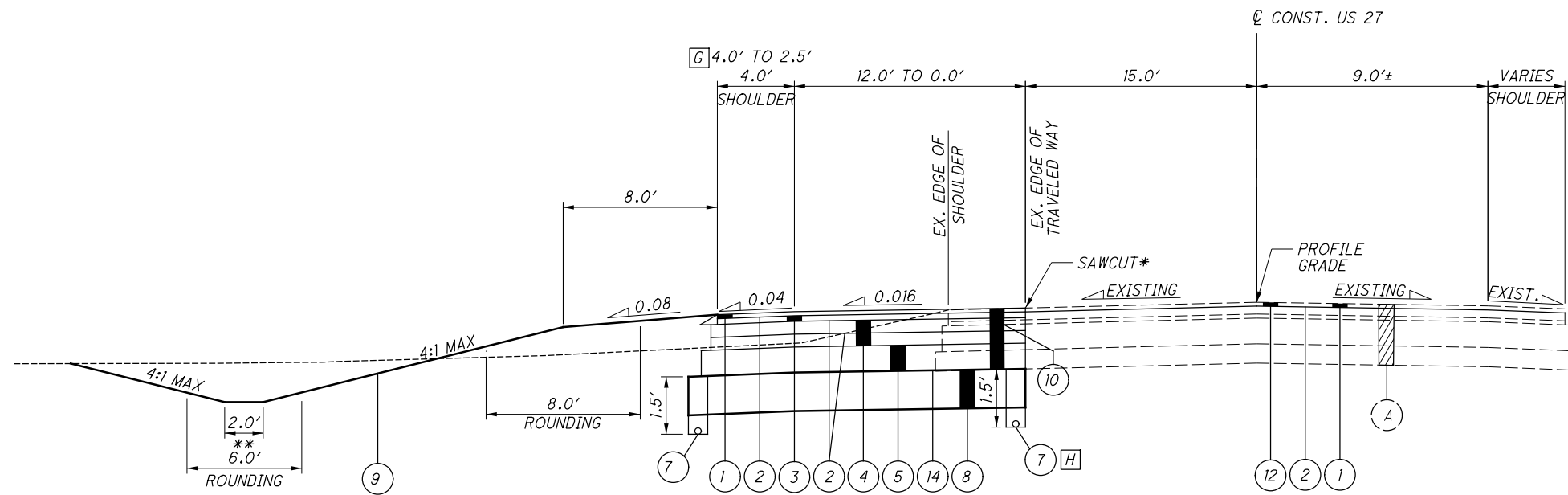
*THE EXISTING PAVEMENT EDGES SHALL BE SAW CUT TO LOCATE A SOUND PAVEMENT EDGE. FOR ESTIMATING PURPOSES, SEE PLAN VIEW FOR SAWCUT LOCATIONS.

**SEE US 27 CROSS SECTIONS

NORMAL SECTION - US 27
STA. 175+75.83 TO STA. 182+65.00

[E] = FROM STA. 181+90.00 TO STA. 182+65.00

[F] = FROM STA. 175+75.83 TO STA. 178+27.84

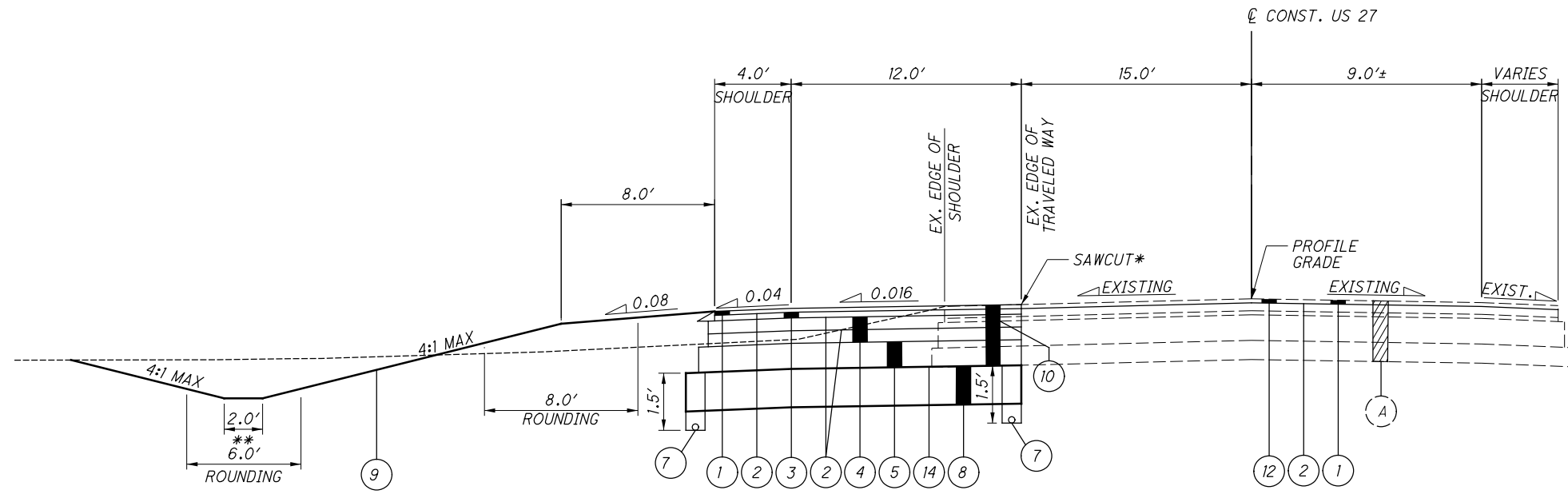


[G] = FROM STA. 189+18.60 TO STA. 189+47.00

[H] = FROM STA. 194+10.00 TO STA. 196+67.00

NORMAL SECTION - US 27
STA. 189+18.60 TO STA. 196+67.00

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NOTES

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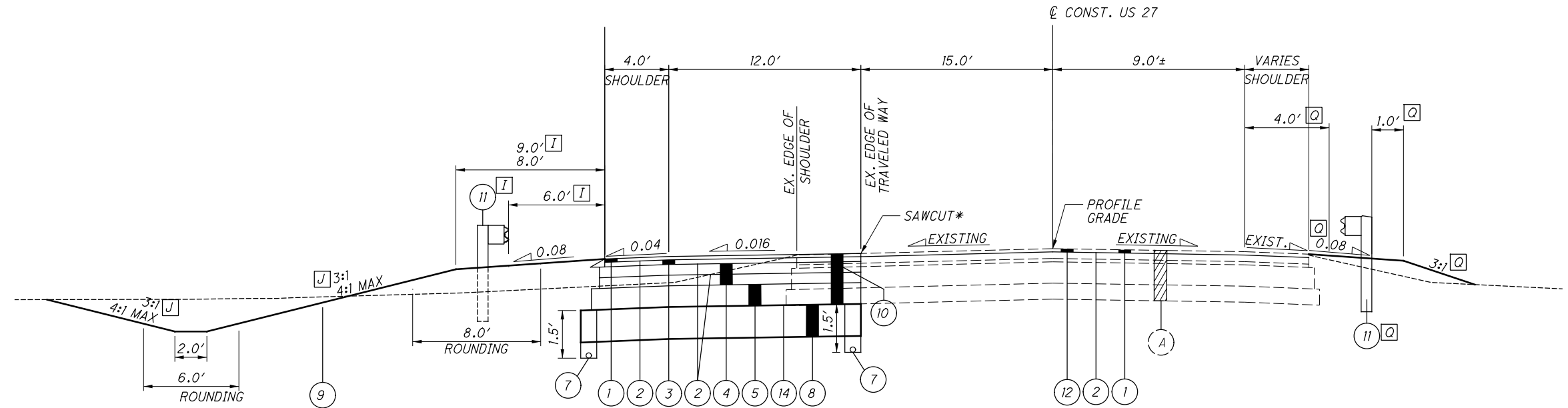
**SEE US 27 CROSS SECTIONS

NORMAL SECTION - US 27

STA. 196+67.00 TO STA. 201+60.66

SEE INTERSECTION DETAIL SHEET 136

STA. 201+60.66 TO STA. 202+68.47



I = FROM STA. 202+68.47 TO STA. 204+31.50

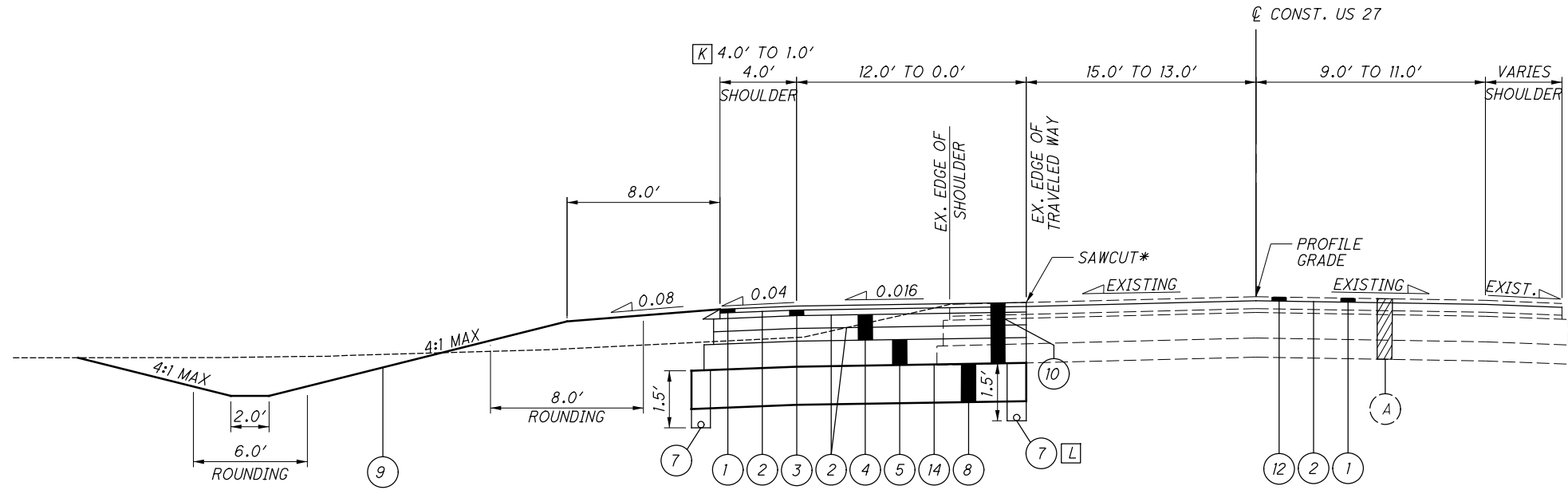
J = FROM STA. 204+00.00 TO STA. 205+50.00

Q = FROM STA. 202+26.36 TO STA. 202+93.63

NORMAL SECTION - US 27

STA. 202+68.47 TO STA. 208+18.00

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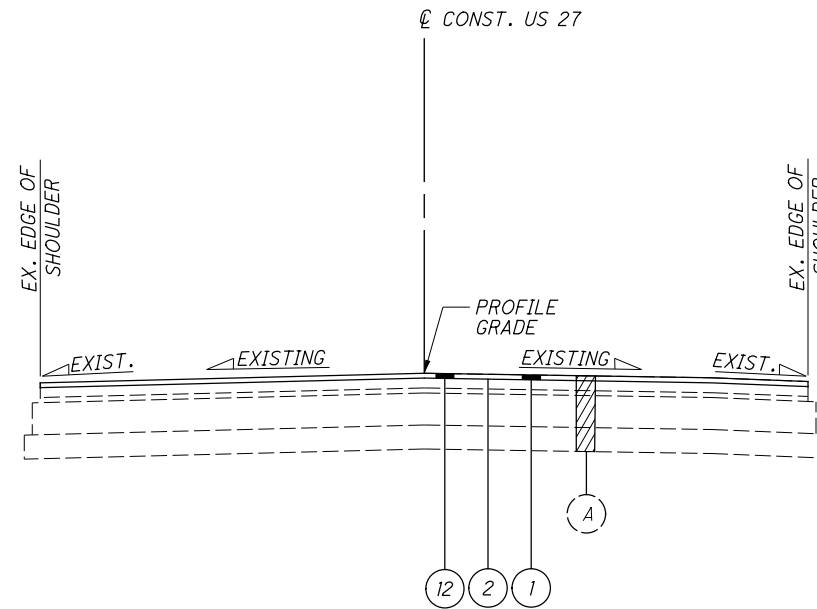


K = FROM STA. 215+23.00 TO STA. 215+38.00
L = FROM STA. 208+18.00 TO STA. 210+82.41

NORMAL SECTION - US 27
 STA. 208+18.00 TO STA. 215+38.00

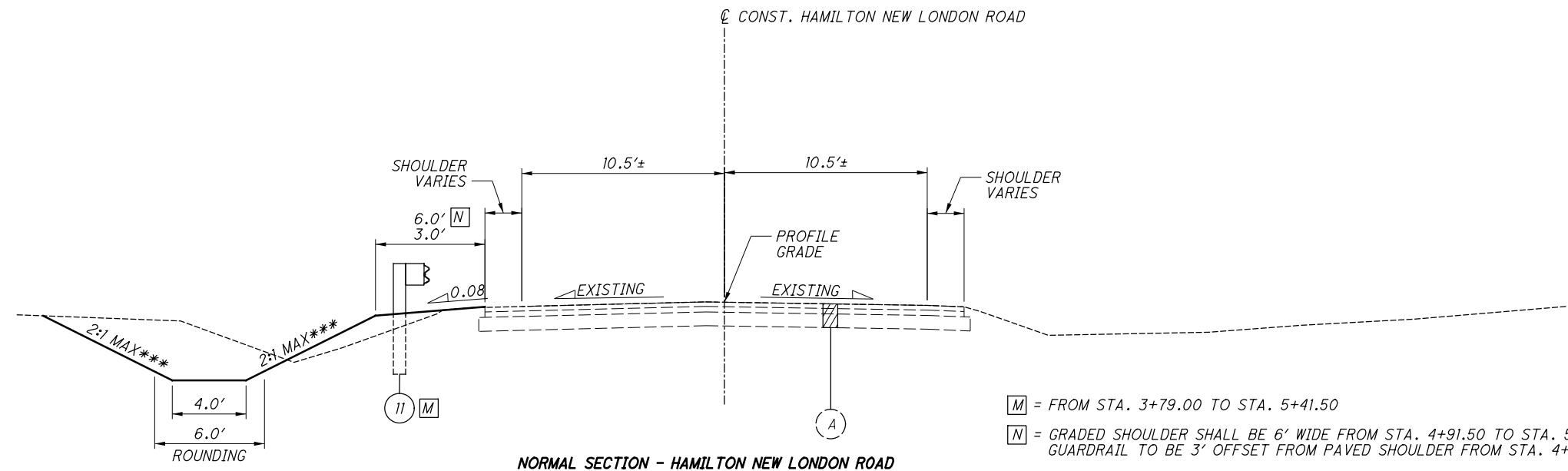
NOTES

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MILL AND FILL ONLY SECTION - US 27
 STA. 94+50.00 TO STA. 97+80.00
 STA. 119+80.00 TO STA. 147+80.00
 STA. 182+65.00 TO STA. 189+18.60
 STA. 215+38.00 TO STA. 218+63.00

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[M] = FROM STA. 3+79.00 TO STA. 5+41.50
 [N] = GRADED SHOULDER SHALL BE 6' WIDE FROM STA. 4+91.50 TO STA. 5+41.50
 GUARDRAIL TO BE 3' OFFSET FROM PAVED SHOULDER FROM STA. 4+91.50 TO STA. 5+41.50

NORMAL SECTION - HAMILTON NEW LONDON ROAD
 STA. 2+35.00 TO STA. 2+66.00***
 STA. 3+79.00 TO STA. 5+93.00

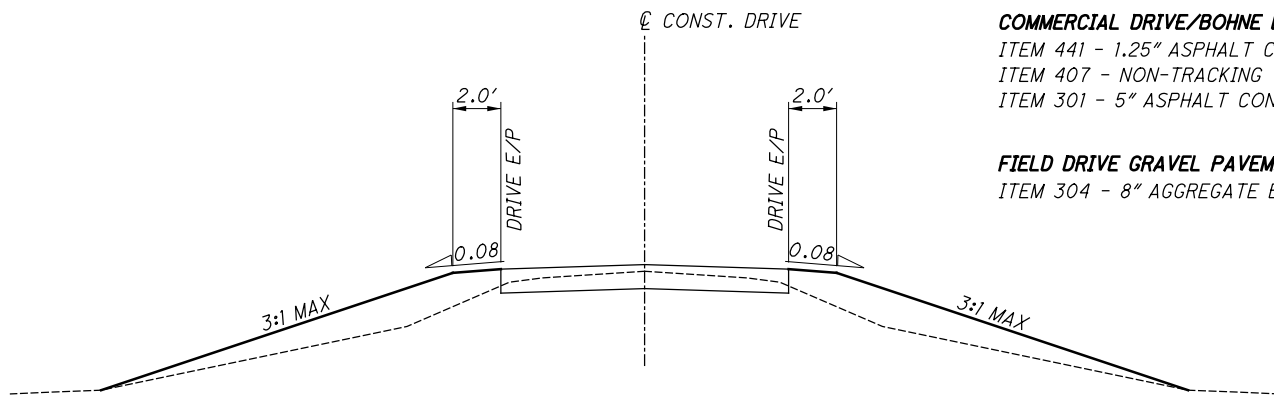
NOTE
 ***SEE HAMILTON NEW LONDON ROAD CROSS SECTIONS

DRIVE PAVEMENT SECTIONS

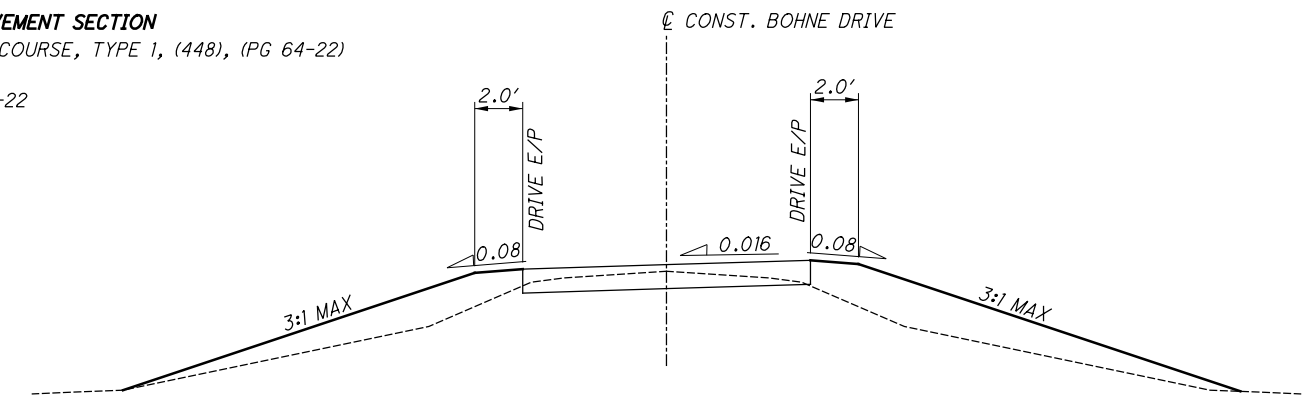
RESIDENTIAL DRIVE CONCRETE PAVEMENT SECTION
 ITEM 452 - 6" NON-REINFORCED CONCRETE PAVEMENT

COMMERCIAL DRIVE/BOHNE DRIVE ASPHALT PAVEMENT SECTION
 ITEM 441 - 1.25" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), (PG 64-22)
 ITEM 407 - NON-TRACKING TACK COAT
 ITEM 301 - 5" ASPHALT CONCRETE BASE, PG64-22

FIELD DRIVE GRAVEL PAVEMENT SECTION
 ITEM 304 - 8" AGGREGATE BASE (COMPACTED)



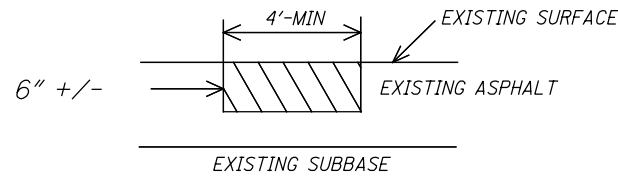
TYPICAL DRIVEWAY SECTION



TYPICAL BOHNE DRIVE SECTION
 SEE INTERSECTION DETAIL SHEET

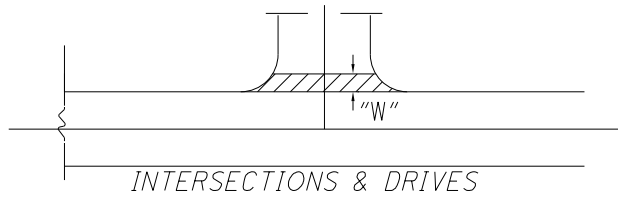
ITEM 253- PAVEMENT REPAIR

AN ESTIMATED QUANTITY OF 83 CU YDS OF ITEM 253-PAVEMENT REPAIR HAS BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER. THIS OPERATION SHALL BE PERFORMED BEFORE PAVEMENT PLANING OF ROADWAY.



EXISTING DETERIORATED ASPHALT SHALL BE REMOVED TO A MAXIMUM DEPTH OF 6" INCHES OR AS DIRECTED BY THE ENGINEER AND REPLACED WITH ITEM 301, ASPHALT CONCRETE BASE. THE 301 SHALL BE COMPACTED AS PER 401.15 AND IN APPROXIMATELY EQUAL LAYERS. THE LOCATIONS AND SIZE OF THE REPAIRS SHALL BE DETERMINED BY THE ENGINEER.

INTERSECTIONS AND DRIVES



INTERSECTION AND DRIVES QUANTITIES ARE INCLUDED IN THE ASPHALT CONCRETE QUANTITIES. INTERSECTION QUANTITIES HAVE BEEN ESTIMATED BASED ON LIMITS SHOWN ON PLAN SHEETS. DRIVE QUANTITIES HAVE BEEN ESTIMATED AT W=3' MEASURED FROM EDGE OF PAVED SHOULDER.

PERFORM WORK PER SPECIFIED OFFSET LIMITS UNLESS THERE IS A JOINT PRESENT CLOSER TO THE EDGE OF PAVED SHOULDER, IN WHICH CASE END WORK AT SAID JOINT.

ITEM 254 - PAVEMENT PLANING

THE PAVEMENT PLANING SHALL BE SCHEDULED SO AS TO BE COVERED BY THE SURFACE COURSE PRIOR TO REOPENING THE LANE TO TRAFFIC. THE COST OF THE ABOVE SHALL BE INCLUDED IN THE UNIT BID PRICE FOR THE RESPECTIVE ITEM. A DISINCENTIVE IN THE AMOUNT OF \$9,600 SHALL BE ASSESS FOR EACH DAY, OR PORTION THEREOF, A PLANED SURFACE IS OPEN TO TRAFFIC.

SOLE SOURCE AQUIFER

THIS PROJECT IS LOCATED OVER A PORTION OF THE GREATER MIAMI SOLE SOURCE AQUIFER. IN ORDER TO MINIMIZE THE POTENTIAL FOR A RELEASE IN THIS SENSITIVE AREA, PROJECT RELATED REFUELING AND MAINTENANCE ACTIVITIES SHALL NOT BE PERFORMED FROM STA 215+38 TO STA 157+00 SPILLS OF FUELS, OILS, CHEMICALS OR OTHER MATERIALS WHICH COULD POSE A THREAT TO THE GROUNDWATER SHALL BE CLEANED UP IMMEDIATELY BY THE CONTRACTOR. IF THE SPILL IS REPORTABLE AMOUNT, THE CONTRACTOR SHOULD CONTACT (EVERGREEN AES 513-829-0809) FOR CLEAN UP OF THE SPILL.

TREE CUTTING RESTRICTIONS

THIS PROJECT IS LOCATED WITHIN THE KNOWN HABITAT RANGES OF THE FEDERALLY LISTED AND PROTECTED INDIANA BAT AND NORTHERN LONG-EARED BAT. THE CONTRACTOR SHALL NOT REMOVE TREES UNDER THIS PROJECT FROM APRIL 1 THROUGH SEPTEMBER 30. ALL NECESSARY TREE REMOVAL SHALL OCCUR FROM OCTOBER 1 THROUGH MARCH 31. THE CONTRACTOR SHALL DEMARCAT CLEARING LIMITS IN THE FIELD TO AVOID ANY UNAUTHORIZED TREE CLEARING. 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.

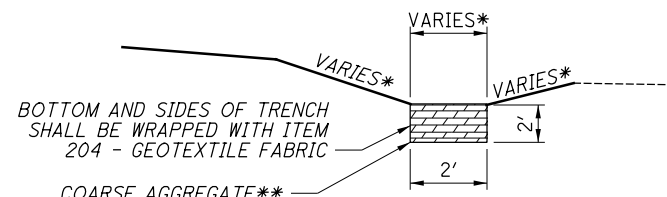
WATERWAY PERMIT

IF THE CONTRACTOR CHOOSES TO REMAIN IN STREAM (BELOW THE OHWM OF THE PERMITTED STREAM(S) PAST MARCH 18TH, 2023, A NEW PERMIT WILL NEED TO BE AUTHORIZED BEYOND THE ONE PROVIDED WITH THESE PLANS. THE CONTRACTOR IS RESPONSIBLE FOR PREDICTING WHETHER THIS IS NECESSARY AND CONTACTING ODOT D08 ENVIRONMENTAL STAFF AT (513-933-6586 OR PAUL.MARICOCCHI@DOT.OHIO.GOV) TO PERFORM THE PROCESS TO OBTAIN A NEW PERMIT. THIS NOTIFICATION SHOULD BE AT LEAST 45 DAYS IN ADVANCE OF MARCH 18TH, 2023 IN ORDER FOR THE CONTRACTOR TO BE ELIGIBLE TO STAY IN THE STREAM PAST MARCH 18TH. 2023.

ITEM 206 - CEMENT STABILIZED SUBGRADE

THE CULVERT STATION 202+18.50 WILL CONFLICT WITH THE STABILIZED SUBGRADE DUE TO THE SHALLOW DEPTH OF COVER. PRIOR TO PERFORMING WORK IN THIS AREA, ACCURATELY IDENTIFY THE CONFLICTING AREA AND NON-PERFORM THE ITEM 206 WORK.

ITEM 601 - INFILTRATION TRENCH FILTER, 2' THICKNESS



*SEE CROSS SECTIONS AND PLAN SHEETS FOR WIDTH, SLOPES, AND LOCATIONS

**COARSE AGGREGATE MATERIAL SHALL CONFORM TO TABLE 703.01 STANDARD SIZES OF PROCESSED AGGREGATE, SIZE NO. 57

ITEM 601 - INFILTRATION TRENCH FILTER, 2' THICKNESS 72 CY

ITEM 203 - EXCAVATION, AS PER PLAN

REMOVE EMBANKMENT TO THE LIMITS ILLUSTRATED IN THE CROSS-SECTIONS. THE ESTIMATED DEPTH OF REMOVAL IS 2 FT. BELOW THE EXISTING GROUND SURFACE. REMOVE THE EXISTING SOIL PER ITEM 203 - EXCAVATION. PAYMENT FOR THESE ITEMS INCLUDE ALL MATERIALS AND EQUIPMENT NECESSARY TO PERFORM THE WORK. THE FOLLOWING QUANTITIES HAVE BEEN CARRIED OVER TO THE GENERAL SUMMARY:

ITEM 203 - EXCAVATION, AS PER PLAN 72 CY

INTERIM COMPLETION REQUIREMENTS

THE PROJECT HAS AN INTERIM COMPLETION DATE OF 11/1/2022. ON OR BEFORE THE INTERIM COMPLETION DATE, THE ROADWAY SHALL BE COMPLETED UP TO THE INTERMEDIATE COURSE AND TRAFFIC PLACED IN THE FINAL CONFIGURATION WITH WORK ZONE PAVEMENT MARKINGS IN PLACE AND OPEN TO TRAFFIC.

THE PROJECT HAS AN INTERIM COMPLETION DATE OF 12/1/2022. ON OR BEFORE THE INTERIM COMPLETION DATE, ALL TRAFFIC SIGNAL WORK AT HAMILTON NEW LONDON ROAD SHALL BE COMPLETED AND OPERATIONAL.

THE PROJECT HAS AN INTERIM COMPLETION DATE OF 09/30/2022. ON OR BEFORE THE INTERIM COMPLETION DATE, THE FIELD DRIVE ON US-27 STA. 209+50 SHALL BE COMPLETED AND OPERATIONAL.

THE CONTRACTOR SHALL BE ASSESSED A DAILY DISINCENTIVE IN THE AMOUNT OF \$2,500 PER DAY FOR FAILURE TO COMPLETE ALL THE REQUIRED WORK AND ASSOCIATED INCIDENTALS RELATED TO THE WORK. DAILY DISINCENTIVES ARE APPLICABLE TO THE WORK REQUIRED TO THE INTERIM COMPLETION DATE ONLY. THE CONTRACTOR IS STILL SUBJECT TO LIQUIDATED DAMAGES AS OUTLINED IN CMS 108.07 FOR THE REMAINDER OF THE CONTRACT.

DESCRIPTION OR LOCATION OF CRITICAL WORK	COMPLETION DATE	TIME PERIOD	DISINCENTIVE \$ PER TIME PERIOD
ALL TRAFFIC SIGNAL WORK AT HAMILTON NEW LONDON ROAD	1/15/2023	DAY	\$2,500
FIELD DRIVE ON US-27 STA. 209+50	9/30/2022	DAY	\$2,500

FARM DRAINS

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

OUTLET EXISTING COLLECTORS AND ISOLATED FARM DRAINS, WHICH ARE ENCOUNTERED ABOVE THE ELEVATION OF ROADWAY DITCHES INTO THE ROADWAY.

DITCH USING ITEM 611, TYPE F CONDUIT. THE OPTIMUM OUTLET ELEVATION IS ONE FOOT ABOVE THE FLOWLINE ELEVATION OF THE DITCH. INTERCEPT LATERAL FIELD TILES WHICH CROSS THE ROADWAY WITH ITEM 611, TYPE E CONDUIT, AND CARRY IN A LONGITUDINAL DIRECTION TO AN ADEQUATE OUTLET OR ROADWAY CROSSING.

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

PROVIDE EROSION CONTROL PADS AT THE OUTLET END OF ALL FARM DRAINS PER STANDARD CONSTRUCTION DRAWING DM-1.1, EXCEPT WHEN THEY OUTLET INTO A DRAINAGE STRUCTURE.

PAYMENT FOR THE EROSION CONTROL PADS AND ANY NECESSARY BENDS OR BRANCHES IS INCLUDED FOR PAYMENT IN THE PERTINENT CONDUIT ITEMS.

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

611 4" CONDUIT, TYPE E 100 FT.

WATER WORKS ITEMS

ALL WATER WORK ITEMS SHOWN ON THE GENERAL SUMMARY SHALL FOLLOW THE SOUTHWEST REGIONAL WATER DISTRICT SPECIFICATIONS, RESPECTIVELY ON SHEET 150.

- ITEM SPECIAL - 6" WATER MAIN DIP & FITTINGS: 2.03
- ITEM SPECIAL - 8" WATER MAIN DIP & FITTINGS: 2.03
- ITEM SPECIAL - RETAP, RECONNECT & EXTEND 1" COPPER WATER SERVICE CONNECTION: 3.06
- ITEM - 6" FIRE HYDRANT, AS PER PLAN
- ITEM - FIRE HYDRANT & GATE VALVE REMOVED & RESET, AS PER PLAN
- ITEM - WATER WORK, MISC: CONNECT TO EX. WATER MAIN
- ITEM - 16" STEEL PIPE ENCASMENT, BORED OR JACKED, AS PER PLAN
- ITEM - SERVICE BOX ADJUSTED TO GRADE

THIS WORK CONSISTS OF ALL THE ITEMS PER CMS 638.01 AND SHALL FOLLOW SOUTHWEST REGIONAL WATER DISTRICT SPECIFICATIONS.

VEGETATED FILTER STRIP

THIS PLAN UTILIZES VEGETATED FILTER STRIP(S) FOR POST CONSTRUCTION STORM WATER TREATMENT. PLACE EITHER ITEM 660 SODDING OR ITEM 659 SEEDING AND MULCHING WITH A 4-INCH LIFT OF TOPSOIL AND ITEM 670, SLOPE EROSION PROTECTION TO ALL DISTURBED AREAS DESIGNATED AS VEGETATED FILTER STRIPS, THE EDGE OF SHOULDER, AND THE FORESLOPE AS SPECIFIED IN THE PLANS.

TC-12.31 BASE PLATE CONNECTION:

ALL REFERENCE ITEMS THAT REFER TO THE TC-12.31 STANDARD DRAWING SHALL HAVE BASE CONNECTION FABRICATED AS PER THE "STANDARD BASE DESIGN" WHICH UTILIZES COMPLETE JOINT PENETRATION (CJP) WELDS.

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GENERAL NOTES

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ITEM 614, MAINTAINING TRAFFIC

ALL LANES OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES ON US 27, EXCEPT IN ACCORDANCE WITH THE PERMITTED LANE CLOSURE TIMES NOTE, AND EXCEPT FOR A PERIOD NOT TO EXCEED 7 DAYS WHEN THROUGH TRAFFIC MAY BE DETOURED AS SHOWN ON SHEET 18 FOR CONSTRUCTION OF CULVERT BUT-27-3.83. A DISINCENTIVE SHALL BE ASSESSED IN THE AMOUNT SHOWN IN THE UNAUTHORIZED LANE USE TABLE FOR EACH TIME PERIOD THE ROADWAY REMAINS CLOSED TO TRAFFIC BEYOND THE SPECIFIED LIMIT. LANE CLOSURES SHALL BE IN ACCORDANCE WITH THE PERMITTED LANE CLOSURES NOTE. TRAFFIC SHALL BE MAINTAINED BY USE OF THE EXISTING PAVEMENT, THE COMPLETED PAVEMENT, AND ITEM 615 PAVEMENT FOR MAINTAINING TRAFFIC.

ROAD CLOSURES AND DETOURS SHALL BE BETWEEN JUNE 8 AND AUGUST 10.

ONE LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES ON ALL OTHER ROADS, EXCEPT TWO-WAY TRAFFIC USING FLAGGERS MAY BE MAINTAINED DURING WORKING HOURS BY USE OF THE EXISTING PAVEMENT, THE COMPLETED PAVEMENT, AND ITEM 615 PAVEMENT FOR MAINTAINING TRAFFIC.

NO WORK SHALL BE PERFORMED AND ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC DURING THE FOLLOWING DESIGNATED HOLIDAYS OR EVENTS:

CHRISTMAS FOURTH OF JULY
 NEW YEARS LABOR DAY
 MEMORIAL DAY THANKSGIVING

THE PERIOD OF TIME THAT THE LANES ARE TO BE OPEN DEPENDS ON THE DAY OF THE WEEK ON WHICH THE HOLIDAY OR EVENT FALLS. THE FOLLOWING SCHEDULE SHALL BE USED TO DETERMINE THIS PERIOD:

DAY OF HOLIDAY OR EVENT	TIME ALL LANES MUST BE OPEN TO TRAFFIC
SUNDAY	12:00N FRIDAY THROUGH 6:00AM MONDAY
MONDAY	12:00N FRIDAY THROUGH 6:00AM TUESDAY
TUESDAY	12:00N MONDAY THROUGH 6:00AM WEDNESDAY
WEDNESDAY	12:00N TUESDAY THROUGH 6:00AM THURSDAY
THURSDAY	12:00N WEDNESDAY THROUGH 6:00AM FRIDAY
THURSDAY	(THANKSGIVING ONLY) 6:00AM WEDNESDAY THROUGH 6:00AM MONDAY
FRIDAY	12:00N THURSDAY THROUGH 6:00AM MONDAY
SATURDAY	12:00N FRIDAY THROUGH 6:00AM MONDAY

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THESE REQUIREMENTS, THE CONTRACTOR SHALL BE ASSESSED A DISINCENTIVE PER THE UNAUTHORIZED LANE USE (PN 128).

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

NOTICE OF CLOSURE SIGNS (W20-H13) SHALL BE ERECTED BY THE CONTRACTOR PRIOR TO THE SCHEDULED ROAD OR RAMP CLOSURE IN ACCORDANCE WITH THE NOTICE OF CLOSURE TIME TABLE BELOW. AT THE APPROVAL OF THE ENGINEER, PORTABLE CHANGEABLE MESSAGE SIGNS MAY BE USED IN LIEU OF THE STANDARD FLATSHEET SIGN FOR CLOSURE DURATIONS OF LESS THAN 1 WEEK.

THE SIGNS SHALL BE ERECTED ON THE RIGHT-HAND SIDE OF THE ROAD/RAMP 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. THE SIGNS MAY BE ERECTED ANYWHERE ON RAMPS AS LONG AS THEY ARE VISIBLE TO THE MOTORISTS USING THE RAMP. ON ENTRANCE RAMPS, THE SIGN SHALL BE ERECTED WELL IN ADVANCE OF THE MERGE AREA TO AVOID DISTRACTING MOTORISTS.

NOTICE OF CLOSURE SIGN TIME TABLE

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

THE SIGN SHALL DISPLAY THE DATE OF THE CLOSURE IN MM-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. THIS IS TO BE A SPECIFIC OFFICE WITHIN THE DISTRICT RATHER THAN THE GENERAL SWITCHBOARD NUMBER.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR USE AS DETERMINED BY THE ENGINEER FOR THE MAINTENANCE OF TRAFFIC.

ITEM 410, TRAFFIC COMPACTED SURFACE, TYPE A OR B 138 CU. YD.

MAINTAIN ACCESS TO ALL DRIVEWAYS. ADJUST WORK ON DRIVES BY CONSTRUCTING PART-WIDTH OR PROVIDING TEMPORARY ACCESS. FOR RESIDENCE AND BUSINESSES WITH TWO (2) OR MORE DRIVES, CONSTRUCT ONE DRIVE AT A TIME, ALLOWING THE ALTERNATIVE DRIVE(S) TO BE USED FOR ACCESS. IF NOT FEASIBLE, ACCESS MAY BE DENIED FOR TWO (2) HOURS WITH 48 HOURS ADVANCE NOTICE OF CLOSURE. PROJECT ENGINEER MUST APPROVE CLOSURE PRIOR TO NOTIFICATION.

PERMITTED LANE CLOSURE TIMES

SHORT TERM LANE CLOSURES ARE THOSE WHICH ARE PERMITTED BY THE PERMITTED LANE CLOSURE NOTE. THESE TIMES SHALL NOT BE REVISED WITHOUT PRIOR APPROVAL FROM THE DISTRICT 8 WORK ZONE TRAFFIC CONTROL MANAGER. SHORT TERM LANE CLOSURES SHALL ONLY BE IMPLEMENTED WHEN WORK IS BEING CONTINUOUSLY PERFORMED IN THE LANE. THE CLOSURE SHALL BE REMOVED AS SOON AS POSSIBLE AFTER WORK HAS STOPPED. PERMITTED LANE CLOSURES SHALL ONLY BE ALLOWED DURING THE TIMES SPECIFIED IN THE UNAUTHORIZED LANE USE TABLE INCLUDED IN THESE PLANS. NO LANE OR SHOULDER CLOSURE SHALL BE IN PLACE WHEN NO WORK IS BEING PERFORMED.

UNAUTHORIZED LANE USE TABLE			
DESCRIPTION OF CRITICAL LANE/RAMP TO BE MAINTAINED	PERMITTED TIME PERIOD	TIME UNIT	DISINCENTIVE \$ PER TIME UNIT
US 27: MAINTAIN ONE LANE OF TWO-WAY TRAFFIC USING A FLAGGER.	9 AM TO 2 PM AND 7 PM TO 6 AM	1 MINUTE PERIOD	\$160
ALL OTHER ROADS: MAINTAIN ONE LANE OF TWO-WAY TRAFFIC USING A FLAGGER.	ALL TIMES	1 MINUTE PERIOD	\$30
US 27: COMPLETE CLOSURE FOR BUT-27-3.83	7 DAYS	1 DAY	\$5,000

TRENCH FOR WIDENING

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

OVERNIGHT TRENCH CLOSING

THE BASE WIDENING SHALL BE COMPLETED TO A DEPTH OF NO MORE THAN 12 INCHES BELOW THE EXISTING PAVEMENT BY THE END OF EACH WORK DAY. NO TRENCH SHALL BE LEFT OPEN OVERNIGHT EXCEPT FOR A SHORT LENGTH (25 FEET OR LESS) OF A WORK SECTION AT THE END OF THE TRENCH. IN CASE WORK MUST BE SUSPENDED BECAUSE OF INCLEMENT WEATHER OR OTHER REASONS, THE TRENCH FOR THE UNCOMPLETED BASE WIDENING SHALL BE BACK-FILLED AT THE DIRECTION OF THE ENGINEER. TRENCHES WITHIN THE TRAVELED LANE SHALL BE COMPLETED FLUSH TO THE ADJACENT PAVEMENT.

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:

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH C&MS 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.

ITEM 616, WATER 47 M. GAL.

ITEM 614, DETOUR SIGNING

THE CONTRACTOR SHALL PROVIDE, MAINTAIN, AND SUBSEQUENTLY REMOVE ALL DETOUR SIGNING AND SUPPORTS AS SHOWN ON SHEET 18 AND ON STANDARD CONSTRUCTION DRAWING MT-101.60. ALL WORK SHALL BE PAID FOR UNDER ITEM 614, DETOUR SIGNING.

EARTHWORK FOR MAINTAINING TRAFFIC

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

EXCAVATION FOR MAINTAINING TRAFFIC 287 CU. YD.
 EMBANKMENT FOR MAINTAINING TRAFFIC 378 CU. YD.
 SEEDING AND MULCHING, CLASS I 1,362 S.Y.

PAYMENT FOR THESE ITEMS SHALL BE INCLUDED IN ITEM 614 MAINTAINING TRAFFIC LUMP SUM.

FLOODLIGHTING

FLOODLIGHTING OF THE WORK SITE FOR OPERATIONS CONDUCTED DURING NIGHTTIME PERIODS SHALL BE ACCOMPLISHED SO THAT THE LIGHTS DO NOT CAUSE GLARE TO THE DRIVERS ON THE ROADWAY. TO ENSURE THE ADEQUACY OF THE FLOODLIGHT PLACEMENT, THE CONTRACTOR AND THE ENGINEER SHALL DRIVE THROUGH THE WORK SITE EACH NIGHT WHEN THE LIGHTING IS IN PLACE AND OPERATIVE PRIOR TO COMMENCING ANY WORK. IF GLARE IS DETECTED, THE LIGHT PLACEMENT AND SHIELDING SHALL BE ADJUSTED TO THE SATISFACTION OF THE ENGINEER BEFORE WORK PROCEEDS.

PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC.

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MAINTENANCE OF TRAFFIC GENERAL NOTES

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SEQUENCE OF CONSTRUCTION

PHASE 1

- 1. INSTALL DETOUR FOR NORTH LEG ON US 27 AT INTERSECTION WITH HAMILTON NEW LONDON ROAD.
- 2. CONSTRUCT CULVERT BUT-27-3.83. INSTALL AS MUCH OF PROPOSED CULVERT AS POSSIBLE BEFORE REMOVING EXISTING CULVERT TO MINIMIZE TIME FOR DROP OFF ALONG HAMILTON NEW LONDON ROAD.
- 3. REMOVE EXISTING DETOUR.
- 4. CONSTRUCT PAVEMENT FOR MAINTAINING TRAFFIC ALONG EAST AND WEST SIDE OF US 27 BY MAINTAINING ONE LANE OF TWO-WAY TRAFFIC VIA FLAGGING OPERATIONS PER MT-97.10.

PHASE 2

- 1. MAINTAIN TRAFFIC FOR THE NORTH-SOUTH MOVEMENT ON US 27 USING TWO-WAY TRAFFIC ON THE EXISTING AND TEMPORARY PAVEMENT. PLACE TEMPORARY CONCRETE BARRIER TO SEPARATE THE CONSTRUCTION ZONE FROM THE TRAFFIC BEING MAINTAINED. CONTRACTOR SHALL MAINTAIN ALL DRIVEWAY ACCESS TO ALL PROPERTIES AT ALL TIMES.
- 2. CONTRACTOR CAN INCLUDE WIDENING ON EAST SIDE FROM STA. 97+80 TO STA. 182+65 AND WEST SIDE OF US 27 FROM STA. 188+81 TO STA. 215+38 IN PHASE 2 OR CONSTRUCT AS PART OF SEPARATE PHASES. CONSTRUCT TEMPORARY SIGNAL AS PART OF WORK WITH WIDENING OF WEST SIDE OF US 27.

PHASE 3

- 1. CONSTRUCT ALL WORK ON WEST SIDE OF US 27 FROM STA. 171+00 TO STA. 173+50 FOR RELOCATION OF BOHNE DRIVE. MAINTAIN TRAFFIC FOR THE NORTH-SOUTH MOVEMENT ON US 27 USING TWO-WAY TRAFFIC ON THE EXISTING, PROPOSED AND TEMPORARY PAVEMENT. PLACE TEMPORARY CONCRETE BARRIER TO SEPARATE THE CONSTRUCTION ZONE FROM THE TRAFFIC BEING MAINTAINED.
- 2. CONTRACTOR SHALL MAINTAIN ALL DRIVEWAY ACCESS TO ALL PROPERTIES AT ALL TIMES.

PHASE 4

- 1. COMPLETE ALL REMAINING PERMANENT SIGNAL WORK AT THE INTERSECTION OF US 27 AND HAMILTON NEW LONDON ROAD BY MAINTAINING ONE LANE OF TWO-WAY TRAFFIC VIA FLAGGING OPERATIONS PER MT-97.10 PER THE UNAUTHORIZED LANE USE TABLE.

PHASE 5

- 1. COMPLETE MILL AND FILL OPERATION FOR THE LENGTH OF THE PROJECT. COMPLETE ALL SIGNAGE AND PLACEMENT OF FINAL PAVEMENT MARKINGS.

PLACEMENT OF ASPHALT CONCRETE

TWO-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES EXCEPT THAT ONE-WAY TRAFFIC WILL BE PERMITTED FOR MINIMUM PERIODS OF TIME CONSISTENT WITH THE REQUIREMENTS OF THE SPECIFICATIONS FOR PROTECTION OF COMPLETED ASPHALT CONCRETE COURSES.

TEMPORARY TRAFFIC SIGNAL

CONTRACTOR SHALL INSTALL A TEMPORARY 32' WOOD POLE, CLASS 3 AT STA. 201+80, 56' LT TO MAINTAIN THE EXISTING TRAFFIC SIGNAL AT US 27 AND HAMILTON NEW LONDON ROAD DURING WIDENING WORK. THE EXISTING UTILITY POLE AT STA. 202+33, 21' RT WITH THE EXISTING SPAN WIRE ATTACHMENT WILL REMAIN FOR TEMPORARY SIGNAL.

CONTRACTOR SHALL RELOCATE ALL SIGNAL HEADS, MESSENGER WIRE, WIRING, ETC. TO NEW POLE TO MAKE SIGNAL FULLY OPERATIONAL AND PROVIDE POWER IN ACCORDANCE WITH C&MS 614.10. ALL TRAFFIC SIGNAL EQUIPMENT SHALL BE IN ACCORDANCE WITH SPECIFICATIONS IN C&MS 632, 633, 732, AND 733. WOOD POLE SHALL BE REMOVED AT COMPLETION OF FINAL TRAFFIC SIGNAL.

ALL WORK SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR ITEM 614 - MAINTAINING TRAFFIC.

ITEM 614, WORK ZONE IMPACT ATTENUATOR FOR 24" WIDE HAZARDS (UNIDIRECTIONAL OR BIDIRECTIONAL)

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

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

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

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

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

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

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

WORK ZONE MARKINGS AND SIGNS

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERERAL SUMMARY FOR USE AT LOCATIONS IDENTIFIED BY THE ENGINEER FOR WORK ZONE PAVEMENT MARKINGS AND SIGNS PER THE REQUIREMENTS OF C&MS 614.04 AND 614.11.

PHASE 1:

ITEM 614, WORK ZONE EDGE LINE, CLASS I, 6" 0.63 MI

PHASE 5 (PROPOSED CONFIGURATION):

- ITEM 614, WORK ZONE CENTER LINE, CLASS I, 648 4.0 MI
- ITEM 614, WORK ZONE EDGE LINE, CLASS I, 6", 648 5.0 MI
- ITEM 614, WORK ZONE CHANNELIZING LINE, CLASS I, 8", 648 2439 FT
- ITEM 614, WORK ZONE STOP LINE, CLASS I, 648 92 FT
- ITEM 614, WORK ZONE ISLAND MARKING, CLASS I, 648 114 SQ FT
- ITEM 614, WORK ZONE CENTER LINE, CLASS III, 642 PAINT 4.0 MI
- ITEM 614, WORK ZONE EDGE LINE, CLASS III, 642 PAINT 5.0 MI
- ITEM 614, WORK ZONE STOP LINE, CLASS III, 642 PAINT 92 FT
- ITEM 614, WORK ZONE CHANNELIZING LINE, CLASS III, 642 PAINT 2439 FT
- ITEM 614, WORK ZONE ISLAND MARKING, CLASS III, 642 PAINT 114 SQ FT
- ITEM 614, WORK ZONE ARROW, CLASS III, 642 PAINT 40 EA
- ITEM 614, WORK ZONE TRANSVERSE/DIAGONAL LINE, CLASS III, 642 PAINT 1319 FT
- ITEM 614, WORK ZONE RAISED PAVEMENT MARKING, 2-WAY, YELLOW/YELLOW 212 EACH
- ITEM 614, WORK ZONE RAISED PAVEMENT MARKING, 2-WAY, WHITE/RED 64 EACH
- ITEM 614, WORK ZONE RAISED PAVEMENT MARKING, 1-WAY, WHITE 32 EACH

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MAINTENANCE OF TRAFFIC GENERAL NOTES

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SEEDING	
END WIDTH	SO. YDS.
154	70
154	154

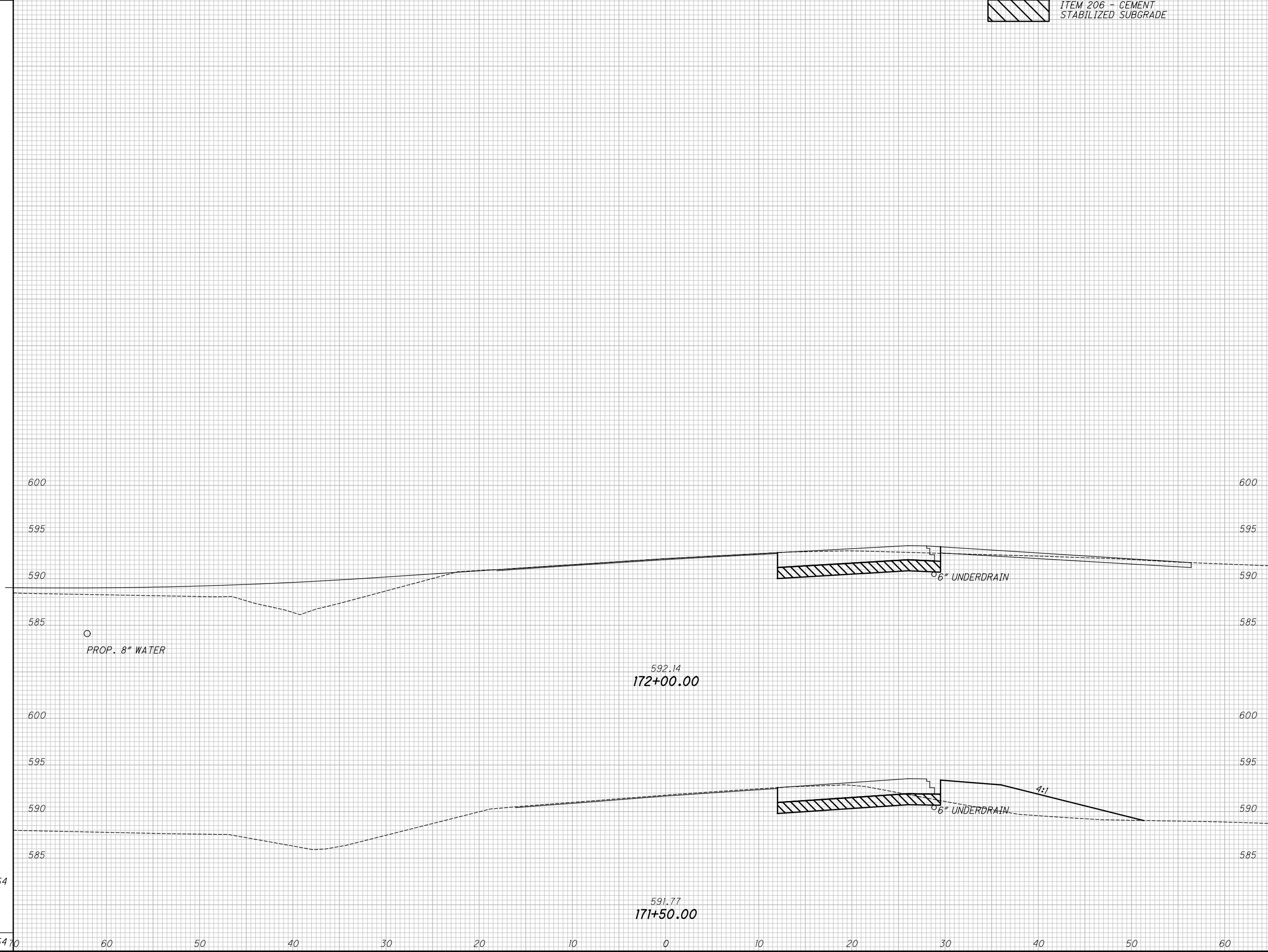
 ITEM 206 - CEMENT STABILIZED SUBGRADE

END AREA		VOLUME		CALCULATED LWB	CHECKED JDO
CUT	FILL	CUT	FILL		
16	42	29	89		

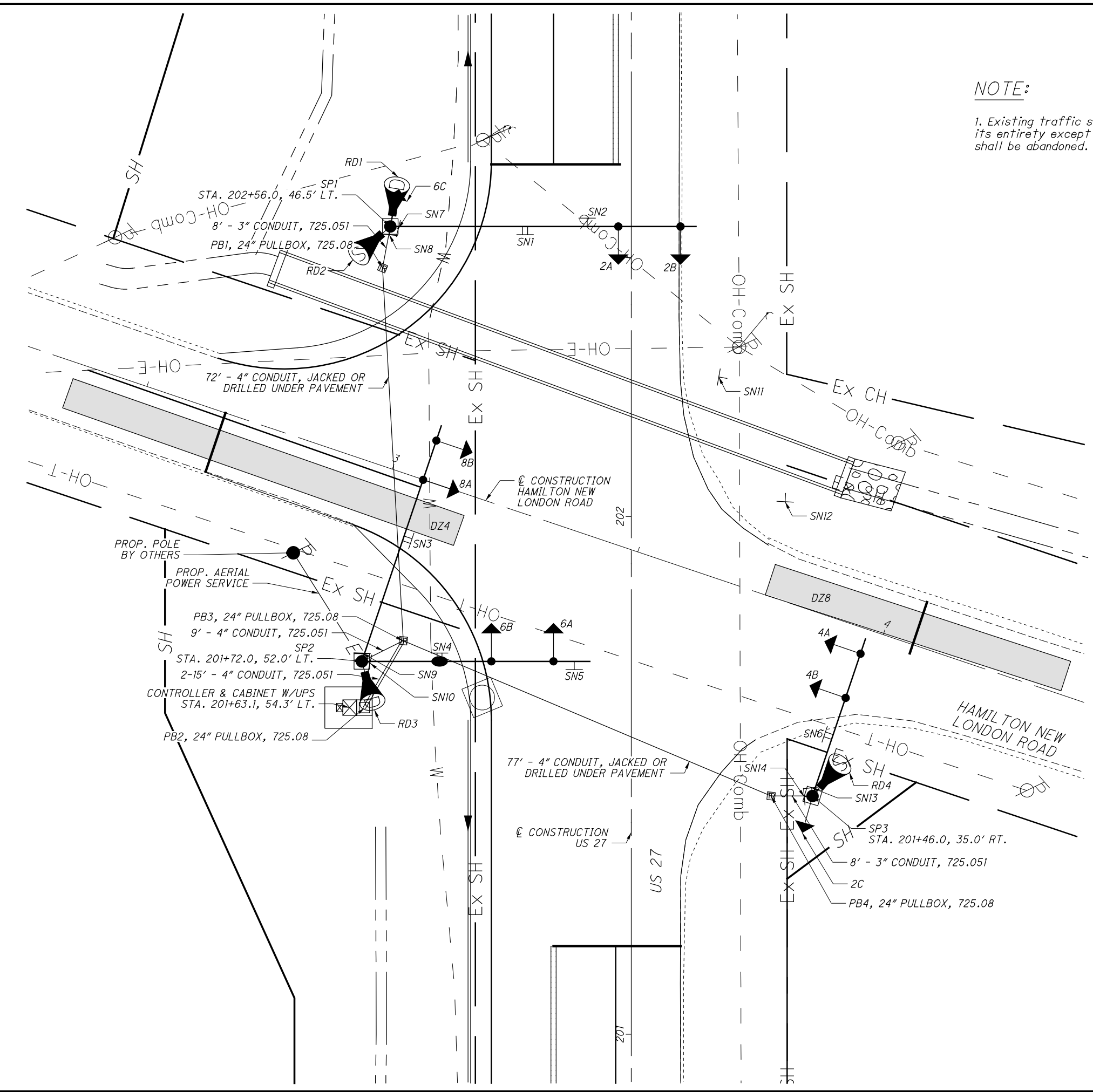
**CROSS SECTIONS - US 27
STA. 171+50 TO STA. 172+00**

BUT -27 -1.85

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203



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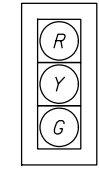
NOTE:

1. Existing traffic signal shall be removed in its entirety except existing signal conduit shall be abandoned.

LEGEND

	PROP	EXIST
TRAFFIC SIGNAL, 3 UNIT HEAD, 12"		
SIGNAL SUPPORT POLE		
LUMINAIRE, CONVENTIONAL		
CONTROLLER CABINET AND WORK PAD (332)		
TRAFFIC PULL BOX		
DILEMMA ZONE RADAR DETECTION UNIT		
STOP BAR RADAR DETECTION UNIT		
DETECTION ZONE		

SIGNAL HEADS



2A, 2B, 2C,
4A, 4B,
6A, 6B, 6C,
8A, 8B

SIGNS

Ross Millville Rd
D3-1
72 x 12
SN3, SN6

R3-5L-30
SN2, SN5

Hamilton New London Rd
D3-1
60 x 24
SN1, SN4

R9-3-18
SN7 - SN14

PULLBOX TABLE

PULL BOX #	STATION	SIDE	OFFSET	SIZE (IN.)
PB1	202+48.0	LT	48.0'	24
PB2	201+63.0	LT	51.5'	24
PB3	201+76.0	LT	44.0'	24
PB4	201+46.0	RT	27.0'	24

GENERAL INFORMATION

INTRODUCTION

The project consists for the relocation of a 3.5 mile section of USR 27, beginning at the Miami River, east of the junction of SR 126 and USR 27, extending northward and terminating on USR 27, 2000 feet southeast of New London Rd. Included in the project are profiles of the SR 128 interchange.

Proposed grades indicate the following proposed cuts and fills:

	CUTS (MAX.)	FILL EMBANKMENTS (MAX.)
USR 27	14'	27'
Service Rd.	9'	11'
SR 128	8'	11'
Ramp Dr.	6'	4'
Relocated Herman Rd.	5'	7'

GEOLOGY AND OBSERVATIONS OF THE PROJECT

The alignment incepts at the Miami River, extending northward across the broad floodplain, ascends and traverses a portion of the bordering uplands, then descends and terminates on the floodplain of a tributary, Indian Creek. Deep valley fill and overlying alluvium of the floodplain, and thin to shallow drift and residual soils of the uplands, overlie interbedded shales and limestones, of Ordovician age. Several gravel pits were observed along the floodplains of the project.

EXPLORATION

Borings were made by means of truck-mounted mechanical soil auger, hand auger (in areas of difficult access), and rotary type drill rig, between September 14 and 24 and on November 3 and 4, 1965. Included in this report is a log of boring from the SR 128 structure investigation.

INVESTIGATIONAL FINDINGS

Materials occurring immediately below proposed grades consist predominantly of gravels (A-1-a), sandy silts (A-1-a), silt clays (A-6a and A-6b), and clays (A-7-6), generally having low moisture contents, and moisture contents in the lower portion of, or below the plastic range, as well as interbedded shale and limestone bedrock.

Bedrock is anticipated in the excavations in the following areas:

- Stations 80+50 to 81+00 - at left grade and in the left ditch and lower portion of the left backslope.
- Stations 81+00 to 82+50 - at both grades and in the left ditch and backslope.
- Stations 82+50 to 83+00 - at both grades and in the ditches and backslopes.
- Stations 83+00 to 83+50 - at both grades and in the left ditch and backslope.
- Stations 83+50 to 91+50 - at left grade and in the left ditch and backslope.
- Stations 91+50 to 92+00 - in the left ditch and lower portion of the left backslope.
- Stations 113+00 to 114+00 - in the right ditch and lower portion of the right backslope.
- Stations 114+00 to 119+00 - at right grade and in the right ditch and backslope.
- Stations 119+00 to 126+00 - at both grades and in the ditches and backslopes.

Frost susceptible silts (A-1-a) were encountered within three feet below proposed grade at stations 128+25 and 152+60.

Embankment foundation materials on the floodplain are comprised of gravels and sandy gravels (A-1-a, A-1-b, and A-2-a), overlain in part by silt clays (A-6a) and clays (A-7-6) having low moisture contents and moisture contents generally below the plastic range. In the uplands, embankment foundation materials consist predominantly of sandy silts (A-1-a) and silt clays (A-6a) having moisture contents in the lower portions of, or below the plastic range.

Net materials were encountered at stations 3+00, 106+00, and 110+00.

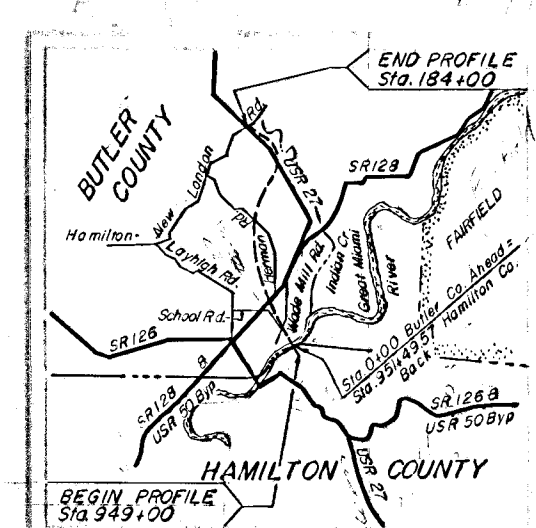
LEGEND FOR PROJECT AVERAGE RESULTS OF TESTS 122 SAMPLES TESTED

DESCRIPTION	U.S. CLASS	U.S. CLASS	% SAND	% SAND	% SAND	% SAND	% SAND	% SAND	% SAND	% SAND	% SAND	% SAND
Gravel and/or stone fragments	A-1-a(0)	A-1-a	72	16	7	-	5	-	23	0	6	31
Gravel and/or stone fragments with sand	A-1-b(0)	A-1-b	48	25	13	7	7	19	1	6	5	
Coarse and Fine sand	--	A-3a	0	15	58	16	11	NP	NP	15	2	
Gravel and stone fragments with sand and silt	A-2-4	A-2-4	46	8	15	18	13	24	4	14	5	
Gravel and stone fragments with sand, silt, and clay	A-2-6	A-2-6	46	14	12	10	18	34	16	14	8	
Sandy silt	A-4(3)	A-4a	27	7	18	30	18	23	4	14	21	
Silt	A-4(8)	A-4b	0	3	13	63	21	29	2	18	4	
Silt and clay	A-5(6)	A-6a	20	7	11	30	32	30	12	15	19	
Silty clay	A-6(10)	A-6b	12	5	12	36	35	35	17	16	13	
Clay	A-7-6(15)	A-7-6	6	6	8	32	48	47	24	23	14	
Weathered shale												VISUAL CLASSIFICATION
Shale												VISUAL CLASSIFICATION
Limestone												VISUAL CLASSIFICATION
Auger boring-plan view												Water content nearly equal to or greater than liquid limit.
Drive sample and core boring-plan view												Indicates a non-plastic material with a high water content
Auger boring plotted to vertical scale only.												Free water
Drive sample and core boring plotted to vertical scale only												Number of blows for "Standard Penetration" test.
												X-number of blows for first 6 inches
												Y-number of blows for second 6 inches.

NOTE: Figures beside borings indicate water content in percent e.g. 15

SOIL PROFILE
HAMILTON-BUTLER COS.
HAM-27-17.96
BUT-27-0.00

ENGINEERING INFORMATION SHOWN BY THIS SOIL PROFILE WAS OBTAINED SOLELY FOR USE IN STARTING CONSTRUCTION FOR THE PROJECT. THE ENGINEER DOES NOT GUARANTEE THE ACCURACY OF THE DATA TO BE CONSIDERED AS A BASIS FOR CONSTRUCTION.



Recon - J.S.M. 9/10/65
Drilling - Auger - T.R.S. 9/20/65 to 9/24/65
Core - C.F.C. 9/14/65 to 9/17/65
and 11/3/65 to 11/4/65
Drafting - A.F. 11/18/65

SOIL PROFILE
HAMILTON-BUTLER COS.
HAM-27-17.96
BUT-27-0.00
 OHIO STATE HIGHWAY TESTING LABORATORY
 1620 W. BROAD ST. COLUMBUS 23, OHIO



SUMMARY OF SOIL TEST DATA

NOTE: NP shown in Liquid Limit and Plasticity Index columns indicates that the material is non-plastic.
 * Denotes sample taken at or near grade.

STATION & OFFSET	DEPTH FROM - TO	AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	W.C.	SHTL CLASS
USR 27										
3+00 CL	0.0-2.0	37	18	13	20	41	21	19	19	A-6a
	2.0-4.0	66	18	13	20	41	21	19	19	A-1-a
	4.0-6.0	66	18	13	20	41	21	19	19	A-1-a
	6.0-8.0	66	18	13	20	41	21	19	19	A-1-a
	8.0-10.0	39	4	28	38	20	NP	NP	20	A-2-u
	10.0-12.0	39	4	28	38	20	NP	NP	20	A-1-a
	12.0-14.0	54	28	12	10	4	NP	NP	17	A-1-a
6+00 CL	0.0-6.0	47	28	18	10	10	NP	NP	4	A-1-b
12+00 CL	0.0-5.0	79	19	2	0	0	NP	NP	9	A-1-a
	5.0-10.0	62	26	2	0	0	NP	NP	9	A-1-a
17+50 CL	0.0-5.0	80	9	7	0	4	NP	NP	5	A-1-a
	5.0-10.0	87	8	3	0	4	NP	NP	5	A-1-a
23+00 CL	0.0-4.0	0	3	9	43	48	39	18	17	A-6a *
	4.0-10.0	63	23	9	5	5	NP	NP	5	A-1-a
29+00 CL	0.0-6.0	69	10	6	8	8	28	11	8	A-2-g *
35+00 CL	0.0-3.0	0	10	8	20	62	43	21	28	A-7-g
	3.0-9.0	89	5	3	0	3	NP	NP	4	A-1-a
39+00 CL	0.0-3.0	49	12	11	11	17	NP	NP	3	A-2-u
	3.0-9.0	89	10	3	0	0	NP	NP	4	A-1-a
43+50 CL	0.0-3.0	29	12	12	20	27	34	15	9	A-6a
	3.0-8.0	77	14	5	0	4	NP	NP	7	A-1-a
	8.0-12.0	88	9	4	0	2	NP	NP	4	A-1-a
48+00 CL	0.0-3.0	43	10	12	10	23	33	19	18	A-2-g *
	3.0-8.0	78	12	8	4	4	NP	NP	3	A-1-a
52+00 CL	0.0-2.0	20	29	18	10	24	38	13	18	A-2-g *
	2.0-8.5	58	28	14	0	3	NP	NP	9	A-1-a
57+00 CL	0.0-6.0	0	1	2	39	58	48	26	22	A-7-g *
	6.0-10.0	76	7	4	10	3	NP	NP	6	A-1-a
63+50 CL	0.0-2.0	21	20	13	14	32	47	21	22	A-7-g *
	2.0-7.0	33	17	14	0	7	NP	NP	4	A-1-a
	7.0-10.0	39	38	18	0	7	NP	NP	4	A-1-b
69+00 CL	0.0-4.5	0	2	3	40	55	41	18	23	A-7-g
74+50 CL	0.0-5.0	0	3	5	36	56	49	25	23	A-7-g
	5.0-10.0	30	12	20	26	12	NP	NP	7	A-1-a

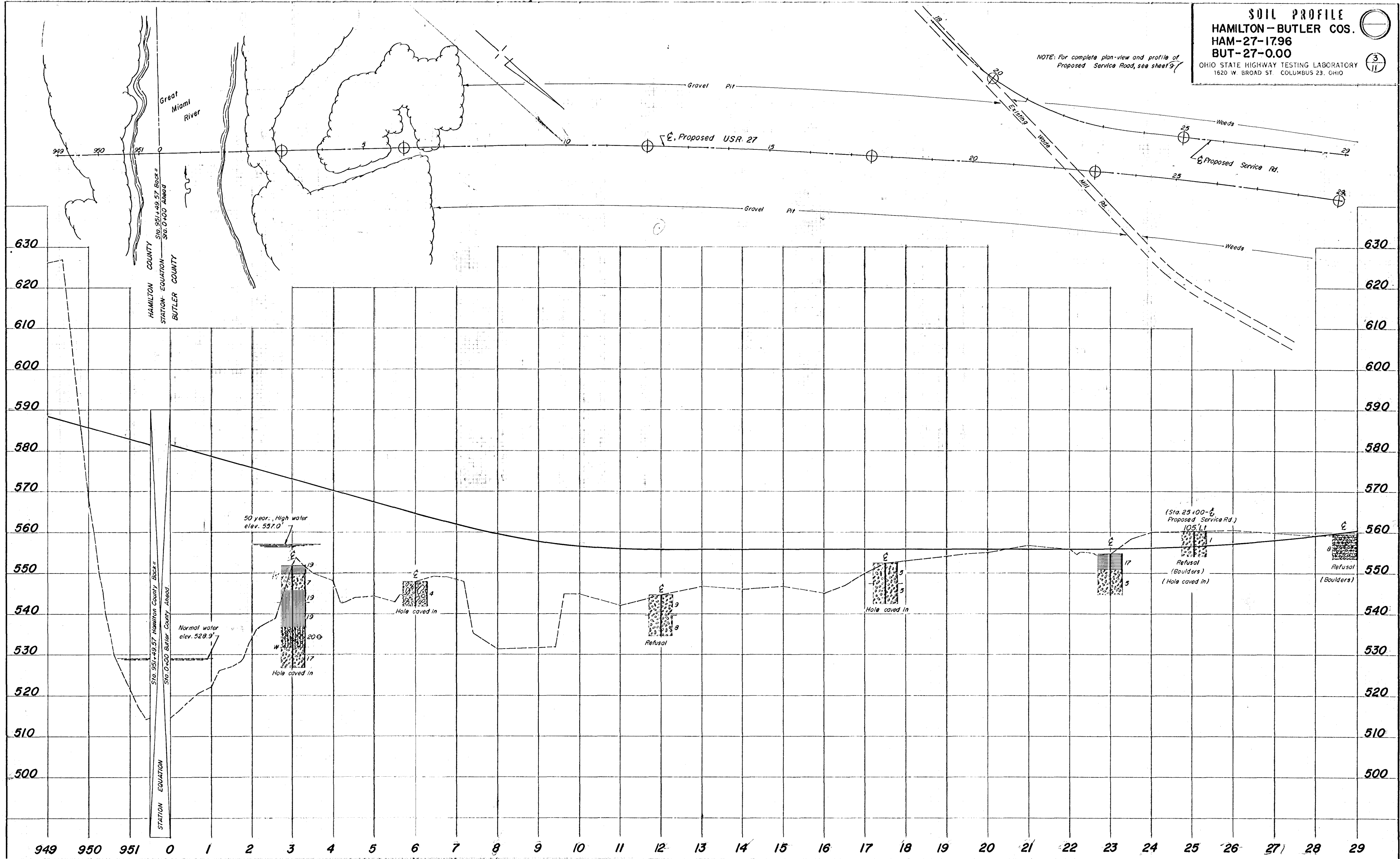
STATION & OFFSET	DEPTH FROM - TO	AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	W.C.	SHTL CLASS
78+00 CL	0.0-5.0	0	10	25	24	41	43	22	21	A-7-g *
79+00 CL	0.0-2.0	77	8	4	8	3	NP	NP	18	A-1-a *
	2.0-5.0	0	4	41	44	11	NP	NP	17	A-1-a *
88+00 CL	0.0-5.0	0	3	4	41	52	40	16	15	A-6b
91+60 CL	0.0-4.0	0	7	16	38	39	34	17	12	A-6b *
93+50 CL	0.0-5.0	0	0	1	62	37	35	15	25	A-6a
	5.0-10.0	0	4	12	69	15	NP	NP	21	A-4a
98+00 CL	0.0-5.0	0	4	26	50	20	NP	NP	8	A-4b
	5.0-9.0	0	8	19	32	41	25	12	11	A-6a
	9.0-15.0	12	3	22	40	23	NP	NP	12	A-4a
	15.0-20.0	44	8	12	19	17	20	8	15	A-4a
101+00 CL	0.0-4.5	0	3	7	47	43	PL	20	18	A-6a
106+00 CL	0.0-3.0	0	9	18	34	39	31	11	28	A-6a
	3.0-6.0	0	6	12	55	27	35	16	23	A-6b
	6.0-12.0	48	7	7	11	22	26	7	22	A-2-u
	12.0-18.0	44	10	20	22	7	NP	NP	13	A-4a
	18.0-20.0	32	9	13	25	21	19	5	11	A-4a
110+00 CL	0.0-5.0	0	0	1	50	49	47	26	27	A-7-g *
	5.0-12.0	28	5	13	29	25	26	9	28	A-4a
	12.0-18.0	17	8	5	39	31	36	18	16	A-6b
114+00 CL	0.0-5.0	34	13	13	24	16	20	4	6	A-4a *
	5.0-9.5	46	10	11	19	14	21	8	9	A-2-u
116+25 75' Rt	0.0-4.5	20	7	9	25	39	33	16	10	A-6b
117+50 36' Lt	0.0-4.0	0	1	8	45	49	32	12	15	A-6a
	4.0-7.0	54	4	4	18	20	36	16	10	A-6b
120+50 18' Lt	0.0-3.5	43	8	8	16	25	34	16	9	A-6b
128+25 CL	0.0-5.0	0	1	2	69	28	29	7	23	A-4b *
	5.0-10.0	33	6	7	40	18	24	7	17	A-4a *
	10.0-15.0	33	7	10	25	25	22	7	11	A-4a
135+00 CL	0.0-3.5	30	7	10	23	30	33	13	9	A-6a
138+00 CL	0.0-3.5	30	4	10	29	27	39	12	13	A-6a
	3.5-7.0	41	6	10	19	29	24	8	10	A-4a
	7.0-10.0	15	7	10	37	31	23	8	15	A-4a

STATION & OFFSET	DEPTH FROM - TO	AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	W.C.	SHTL CLASS
143+00 CL	0.0-5.0	9	9	19	35	30	32	14	17	A-6a
	5.0-8.0	42	10	11	16	21	29	9	9	A-4a
143+50 65' Rt	0.0-5.0	59	17	8	10	7	32	11	9	A-2-g
	5.0-11.0	58	20	0	10	19	19	5	11	A-1-b
149+50 CL	0.0-5.0	33	9	13	20	25	29	13	12	A-6a
	5.0-10.0	45	8	10	19	18	24	10	13	A-4a
	10.0-11.5	17	6	13	40	24	21	6	13	A-4a *
	11.5-18.0	71	13	3	7	6	23	6	10	A-1-a *
152+50 CL	0.0-3.0	0	2	12	37	49	36	17	16	A-6a
	3.0-9.0	24	6	28	32	10	NP	NP	11	A-4a
	9.0-10.0	0	1	10	67	23	NP	NP	19	A-4b *
	10.0-15.0	25	7	27	29	12	NP	NP	17	A-4a *
154+25 CL	0.0-5.0	75	12	5	0	0	NP	NP	3	A-1-a *
	5.0-10.0	30	9	19	32	10	NP	NP	11	A-4a
158+30 CL	0.0-6.0	35	9	10	24	22	31	13	19	A-6a
	6.0-11.0	72	14	6	0	0	NP	NP	9	A-1-a
	11.0-15.0	79	19	4	0	0	NP	NP	9	A-1-a
162+00 CL	0.0-4.5	11	3	1	31	54	57	33	24	A-7-g
	4.5-8.0	62	16	4	13	8	NP	NP	4	A-1-b
	8.0-12.0	33	27	18	8	14	NP	NP	5	A-1-b
167+00 CL	0.0-4.5	0	2	4	38	59	52	28	23	A-7-g
172+00 CL	0.0-6.0	24	13	13	16	34	53	30	26	A-7-g
	6.0-12.0	69	19	8	0	0	NP	NP	9	A-1-a
176+00 20' Lt	0.0-5.0	0	3	8	44	43	31	11	22	A-6a *
	5.0-9.0	0	0	19	42	39	33	16	11	A-6a
	9.0-12.0	0	28	8	11	13	NP	NP	15	A-3a
181+00 15' Lt	0.0-6.0	0	1	37	28	34	32	18	9	A-6a
	6.0-10.0	87	4	2	0	0	NP	NP	7	A-1-a
PROPOSED SERVICE ROAD										
20+00 CL	0.0-4.0	0	14	63	11	10	NP	NP	3	A-3a *
	4.0-10.0	66	17	17	6	0	NP	NP	5	A-1-a
25+00 CL	0.0-6.0	73	9	8	0	0	NP	NP	1	A-1-a *
32+00 CL	0.0-7.0	75	14	6	0	0	NP	NP	4	A-1-a *
37+00 CL	0.0-7.0	78	16	5	0	0	NP	NP	4	A-1-a *

STATION & OFFSET	DEPTH FROM - TO	AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	W.C.	SHTL CLASS
44+00 CL	0.0-5.0	23	17	7	0	0	NP	NP	8	A-1-a *
	5.0-10.0	23	17	7	0	0	NP	NP	8	A-1-a *
PROPOSED SR 128 INTERCHANGE										
SR 128										
12+00 15' Rt	0.0-5.0	56	17	7	8	20	18	20	17	A-2-g *
	5.0-10.0	49	9	9	8	13	29	11	13	A-2-g *
29+00 12' Rt	0.0-4.0	25	7	19	26	27	33	17	15	A-6b *
	4.0-10.0	75	14	6	0	0	NP	NP	6	A-1-a
35+65 12' Rt	0.0-4.0	46	14	12	0	22	43	19	18	A-2-g *
	4.0-10.0	78	13	6	0	0	NP	NP	6	A-1-a
RA 20										
47+00 8L	0.0-2.0	37	10	21	9	23	43	24	16	A-2-g *
	2.0-8.0	74	13	8	0	0	NP	NP	2	A-1-a *
HERMAN ROAD										
17+60 CL	0.0-4.5	0	7	20	24	49	42	23	22	A-7-g *
	4.5-10.0	30	9	12	23	26	28	11	11	A-6a
19+50 CL	0.0-6.0	0	1	1	52	46	42	19	24	A-7-g *
	6.0-11.0	0	0	2	52	46	42	19	24	A-7-g *
	11.0-13.0	0	0	0	60	38	40	20	20	A-6a
	13.0-14.0	23	7	10	23	37	27	12	14	A-6a
21+00 CL	0.0-5.0	33	4	11	22	30	42	22	27	A-7-g
	5.0-12.0	30	12	18	24	16	42	7	21	A-4a
DRIVE SAMPLE SOIL TEST DATA										
USR 27										
44+00 52' Rt	5.0-6.0	46	22	17	0	0	NP	NP	9	A-1-b
	6.0-11.0	46	30	13	0	0	NP	NP	10	A-1-b
	11.0-16.0	74	14	8	0	0	NP	NP	7	A-1-a
	16.0-21.0	63	10	9	0	0	NP	NP	8	A-1-a
	21.0-26.0	68	10	7	0	0	NP	NP	8	A-1-a
	26.0-31.0	80	10	3	0	0	NP	NP	11	A-1-a
	31.0-36.0	89	10	3	0	0	NP	NP	7	A-1-a
85+00 34' Lt	5.0-6.0	10	6	12	28	41	32	15	14	A-6a
123+50 75' Rt	5.0-6.0	0	10	9	33	48	36	15	17	A-6a
	6.0-11.0	24	5	4	34	33	35	14	24	A-6a
	11.0-16.0	50	4	4	14	26	0	0	11	A-6a
	16.0-20.5	56	19	5	11	15	0	0	8	A-2-g

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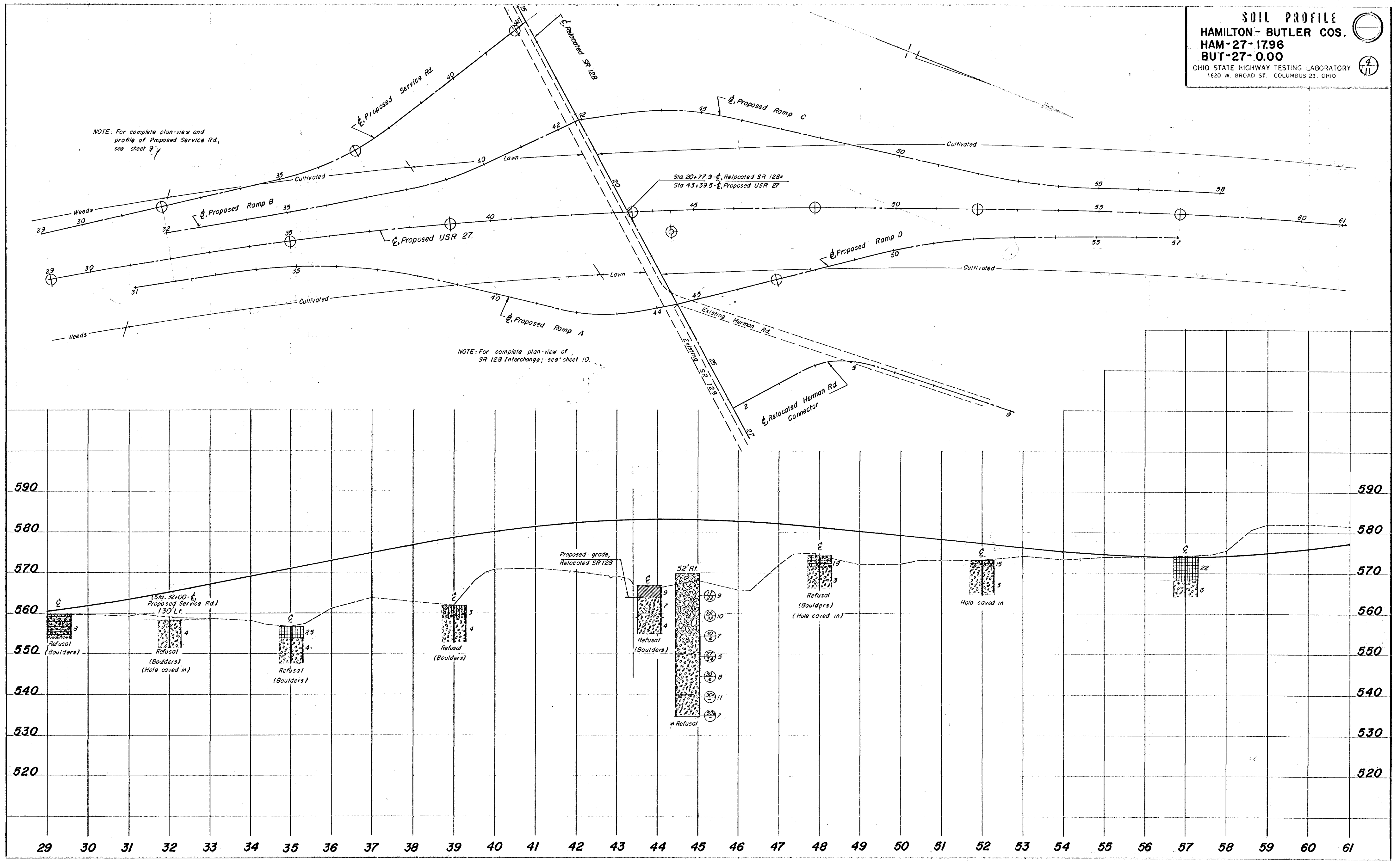
NOTE: For complete plan-view and profile of Proposed Service Road, see sheet 9



SOIL PROFILE
HAMILTON - BUTLER COS.
HAM-27-1796
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 OHIO STATE HIGHWAY TESTING LABORATORY
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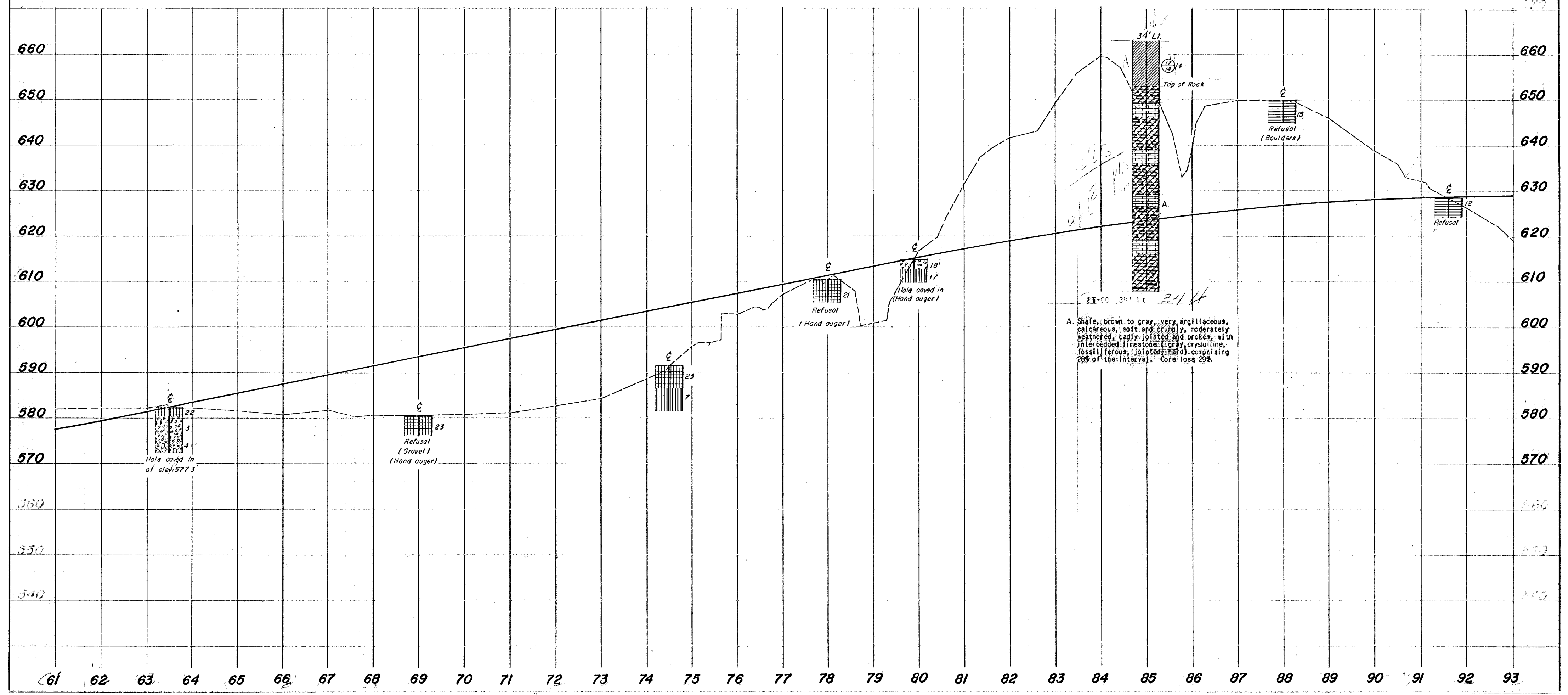
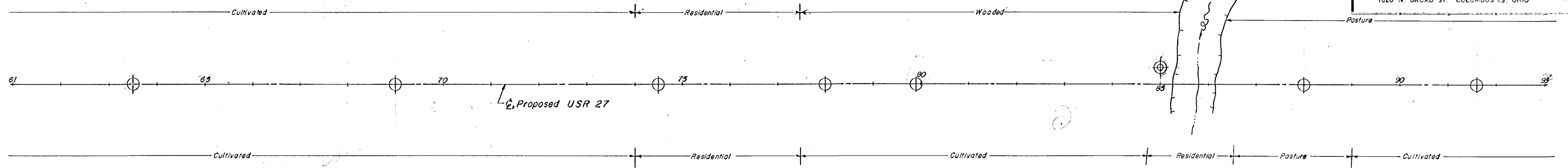
NOTE: For complete plan-view and profile of Proposed Service Rd., see sheet 9.

NOTE: For complete plan-view of SR 128 Interchange; see sheet 10.



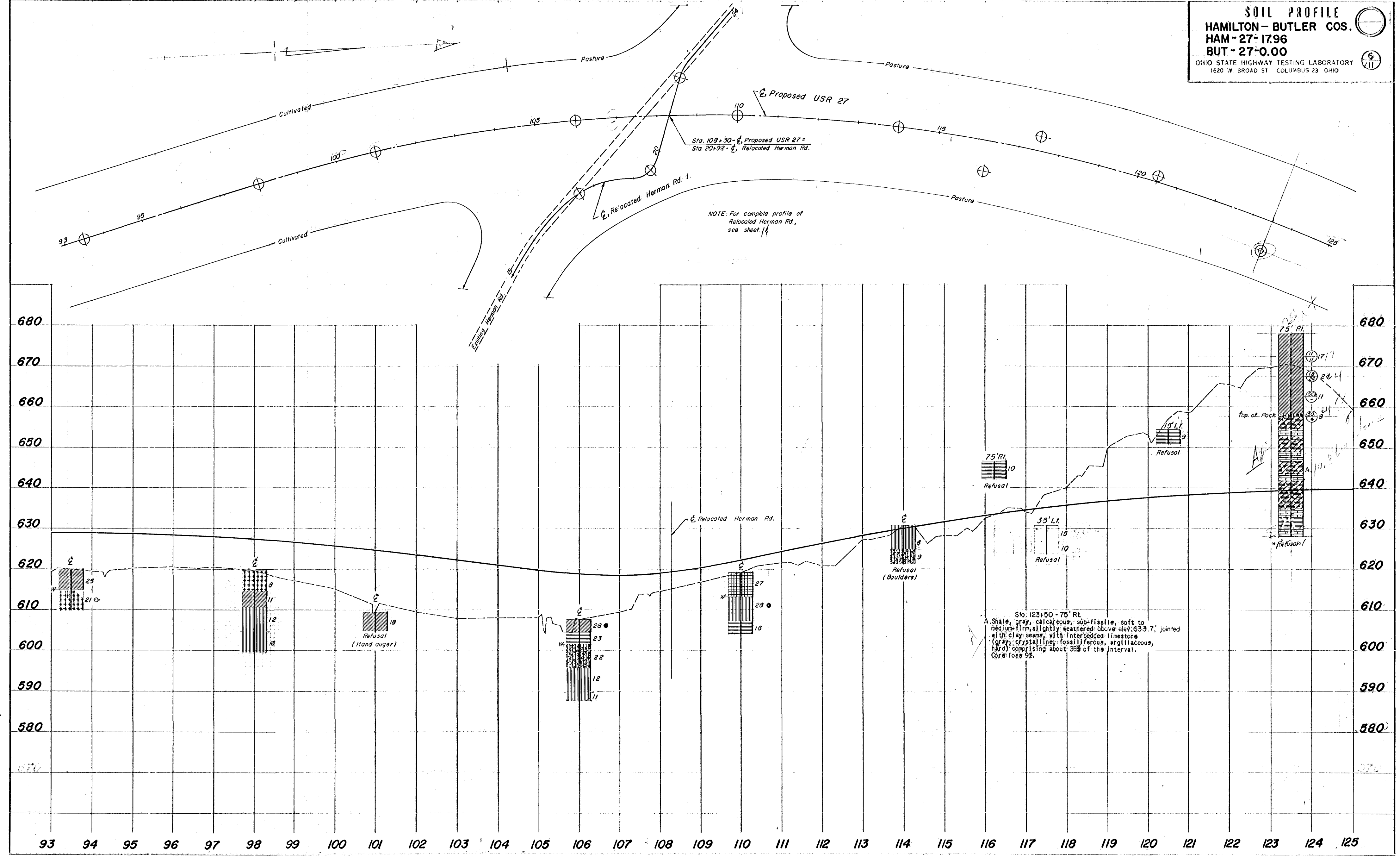
SOIL PROFILE
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 OHIO STATE HIGHWAY TESTING LABORATORY
 1620 W. BROAD ST. COLUMBUS 23, OHIO

NOTE: Loose limestone slabs covering gully bed.

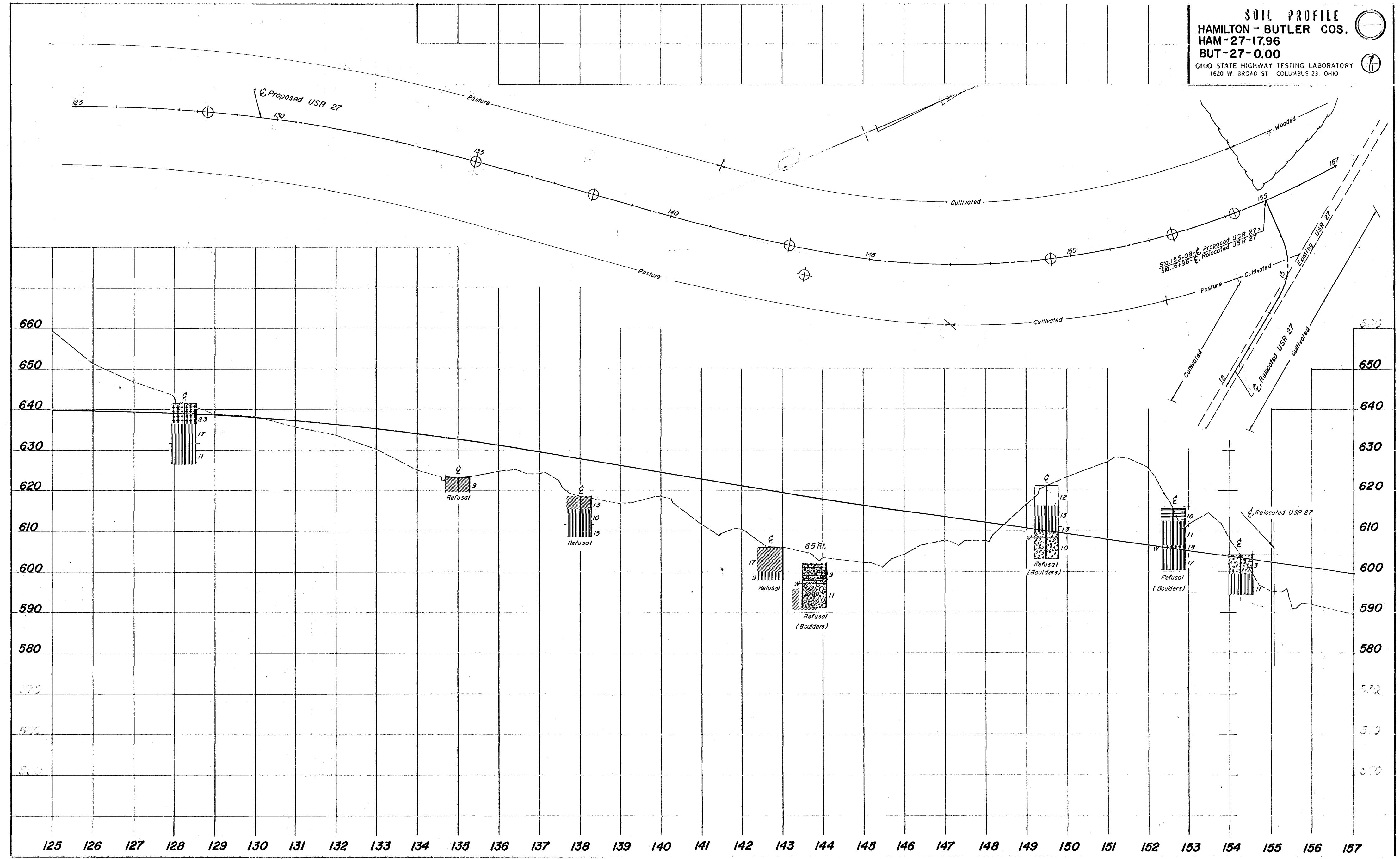


A. Shale, brown to gray, very argillaceous, calcareous, soft and crumbly, moderately weathered, badly jointed and broken, with interbedded limestone (gray, crystalline, fossiliferous, jointed, hard) comprising 20% of the interval. Core loss 25%.

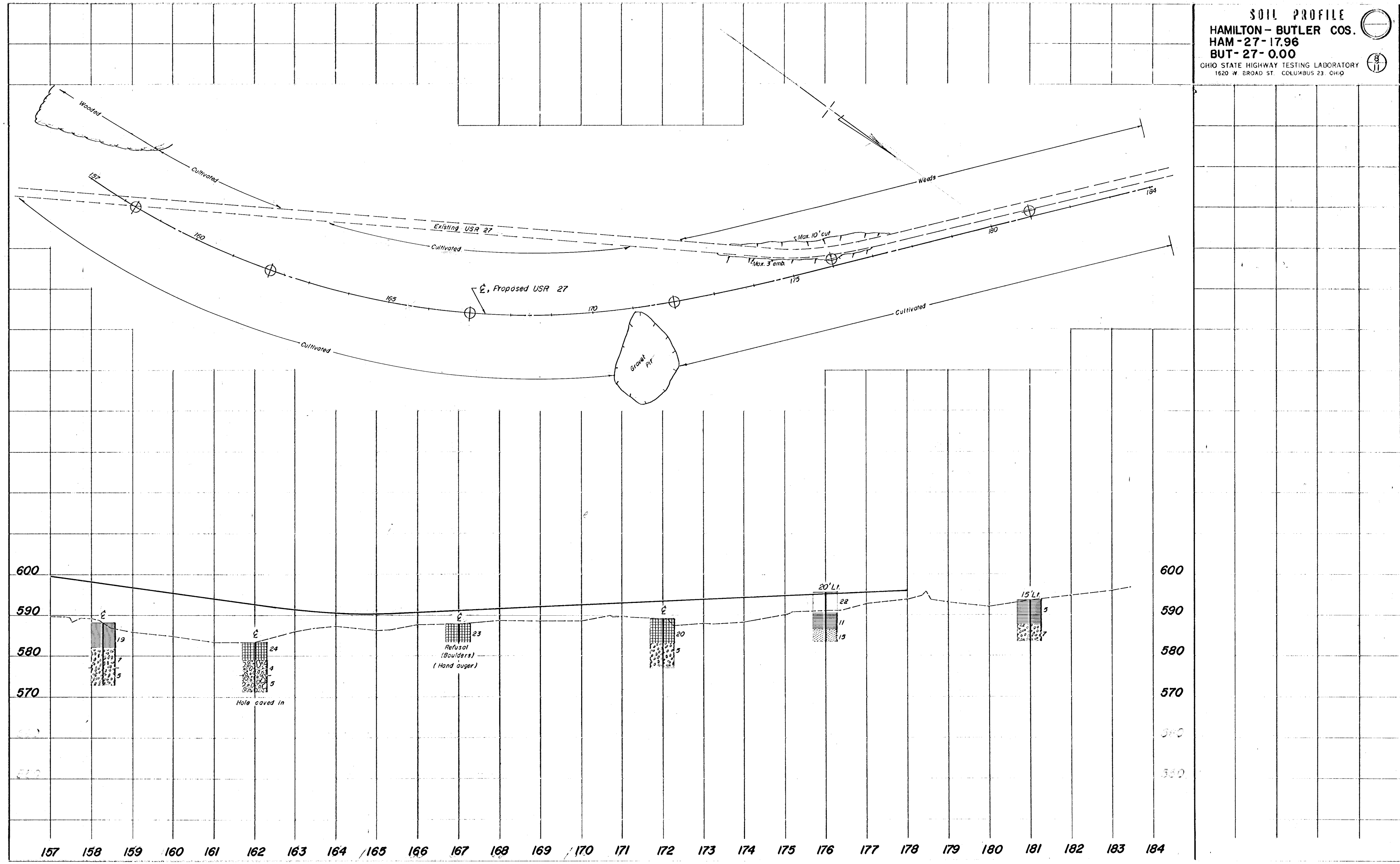
SOIL PROFILE
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 OHIO STATE HIGHWAY TESTING LABORATORY
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 1620 W. BROAD ST. COLUMBUS 23, OHIO

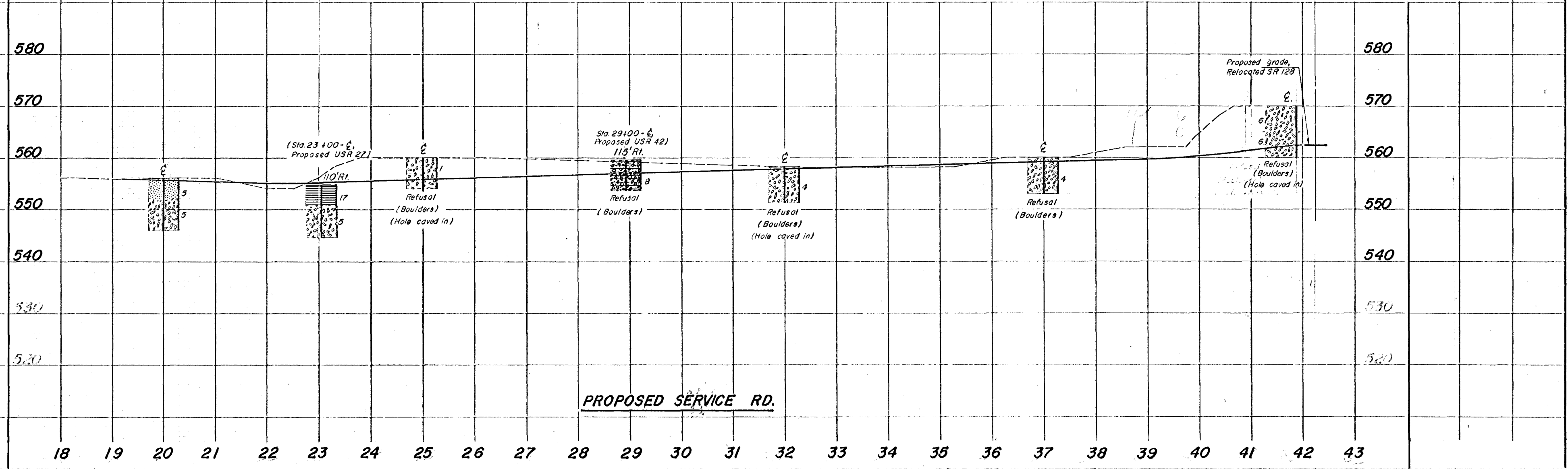
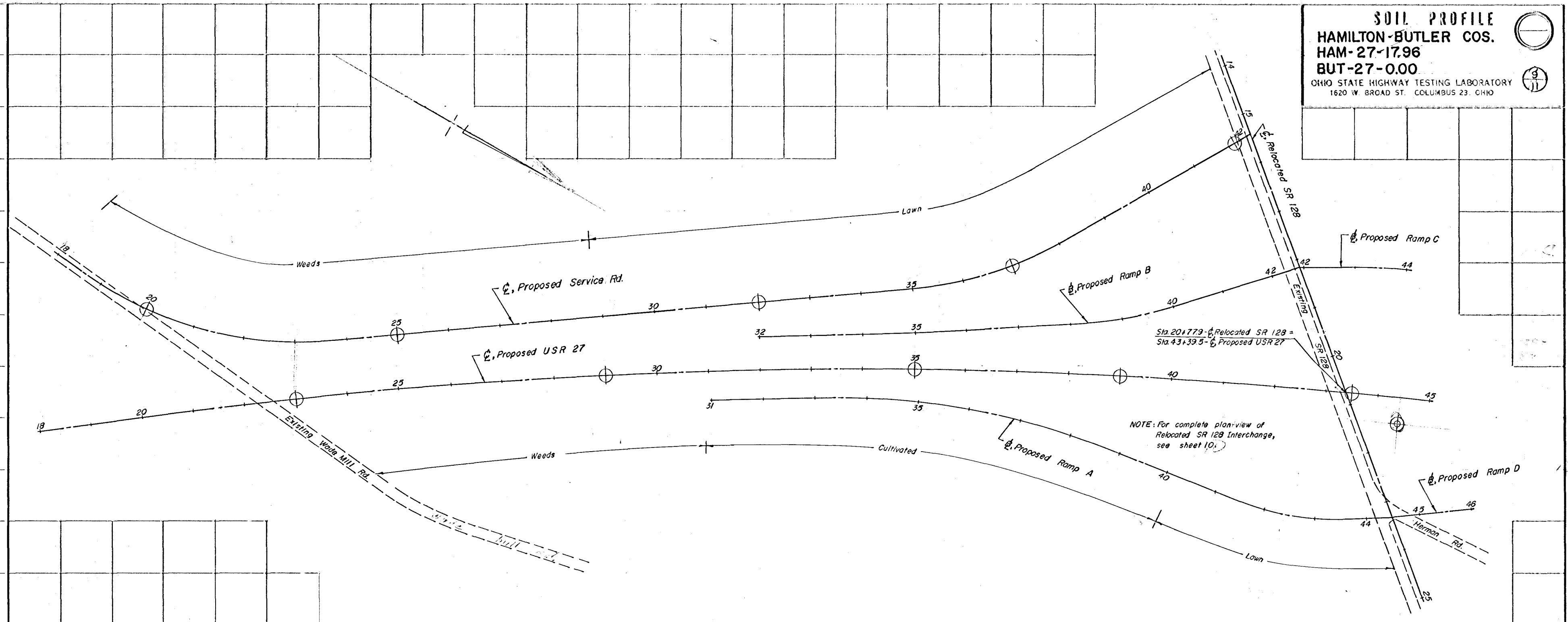


SOIL PROFILE
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 1620 W. BROAD ST. COLUMBUS 23, OHIO



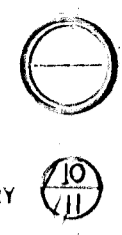
1E 10
 2000 2 44

SOIL PROFILE
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 1620 W. BROAD ST. COLUMBUS 23, OHIO

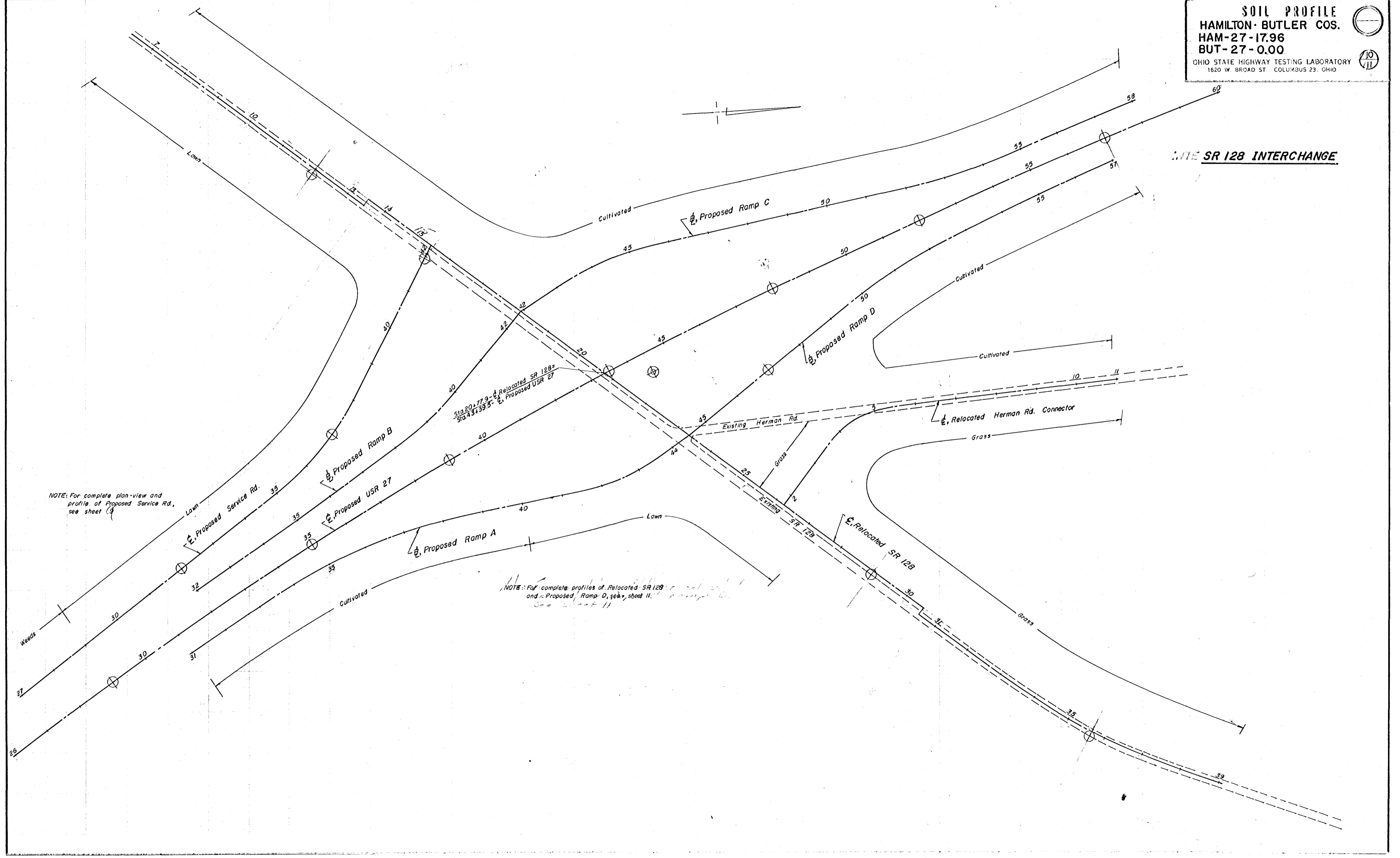


PROPOSED SERVICE RD.

SOIL PROFILE
 HAMILTON-BUTLER COS.
 HAM-27-17.96
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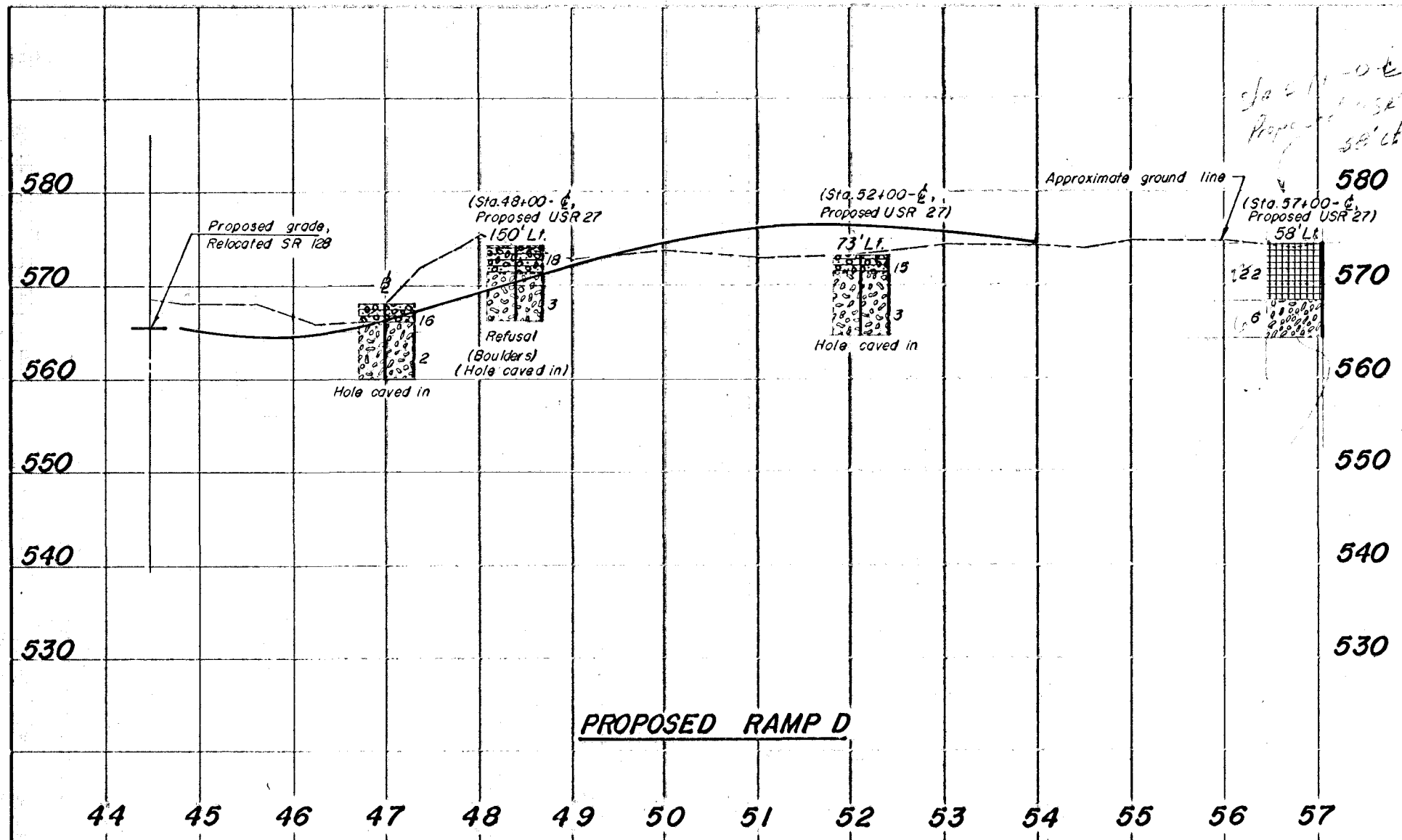


LINE SR 128 INTERCHANGE

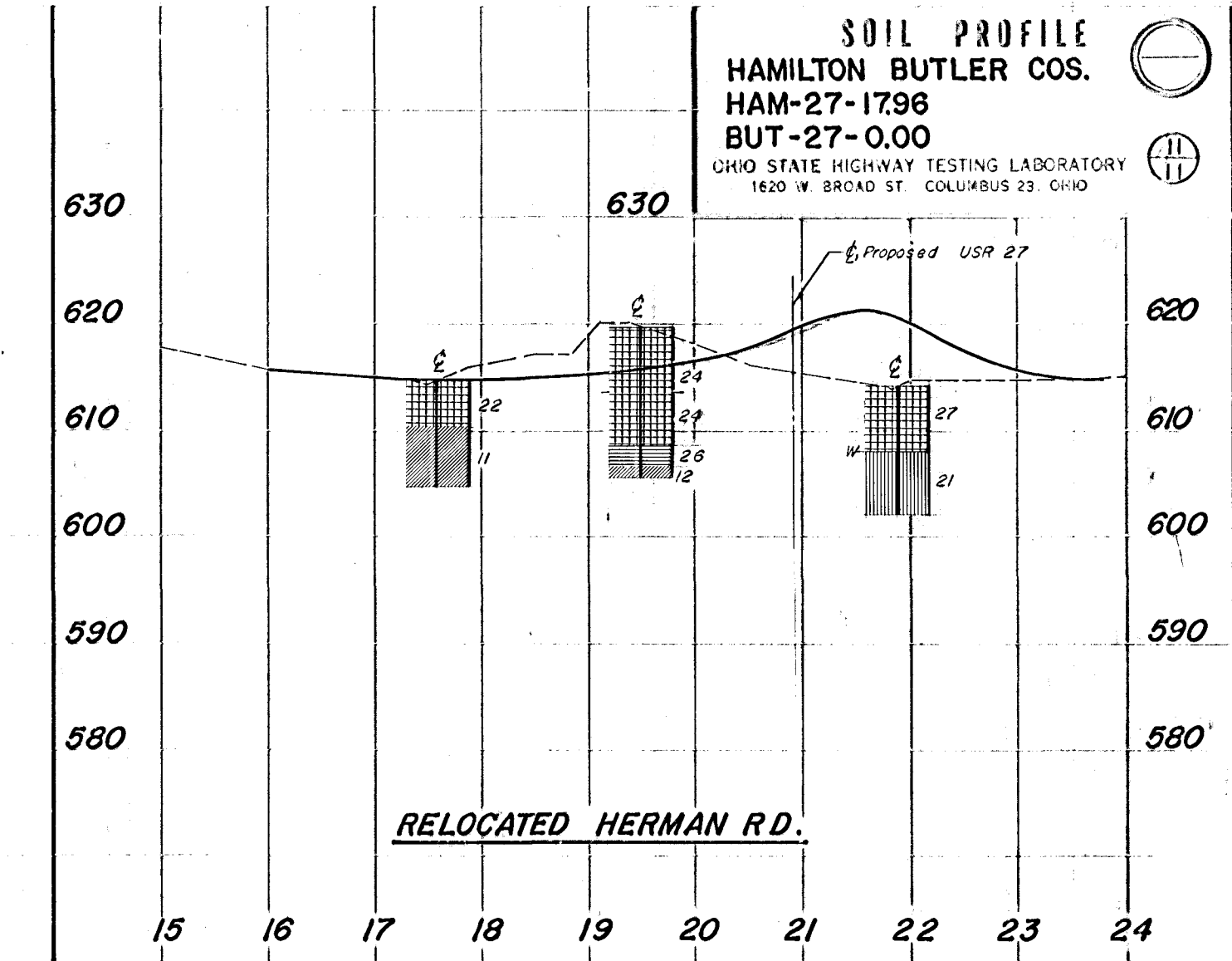


NOTE: For complete plan-view and profile of Proposed Service Rd., see sheet 13

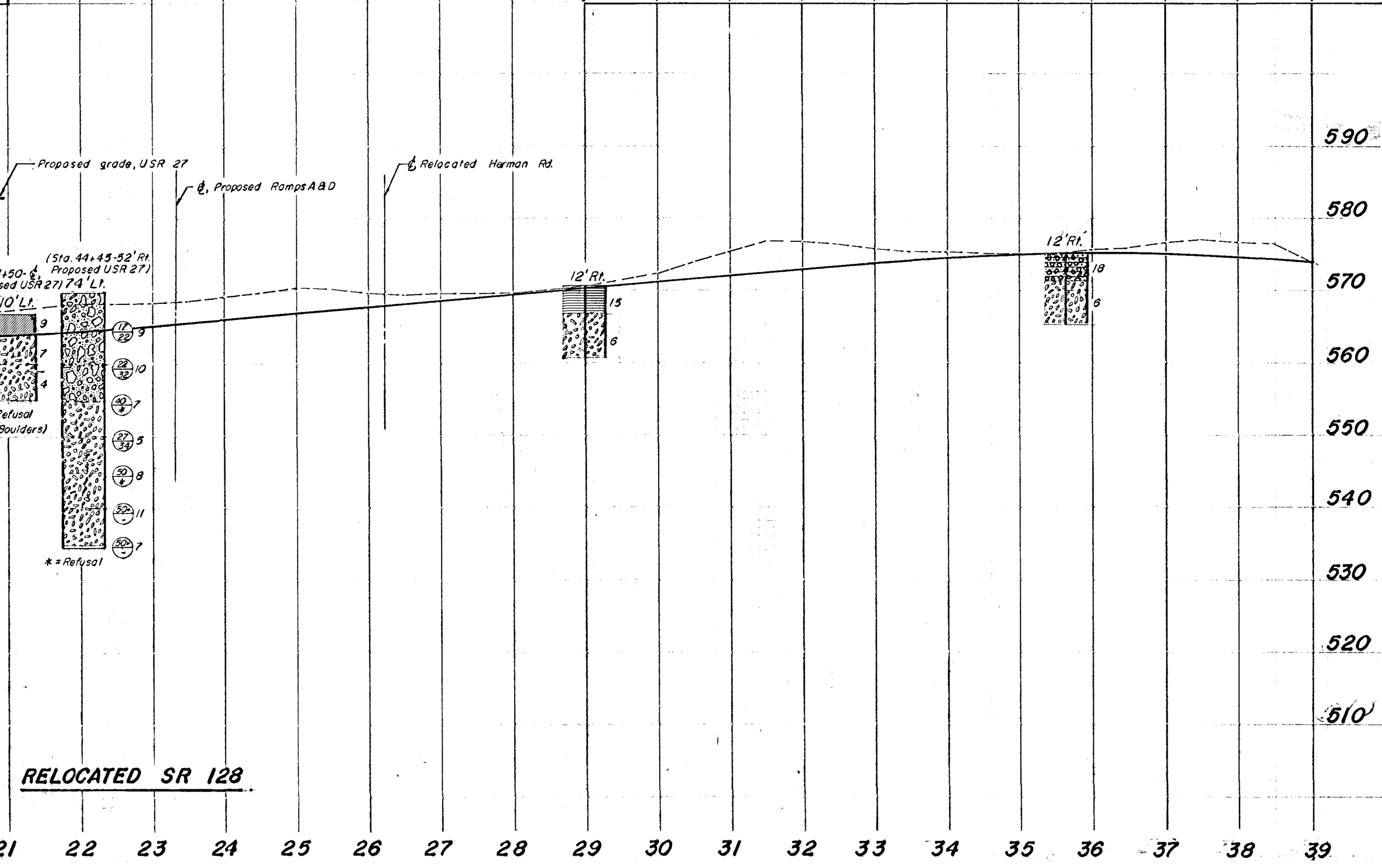
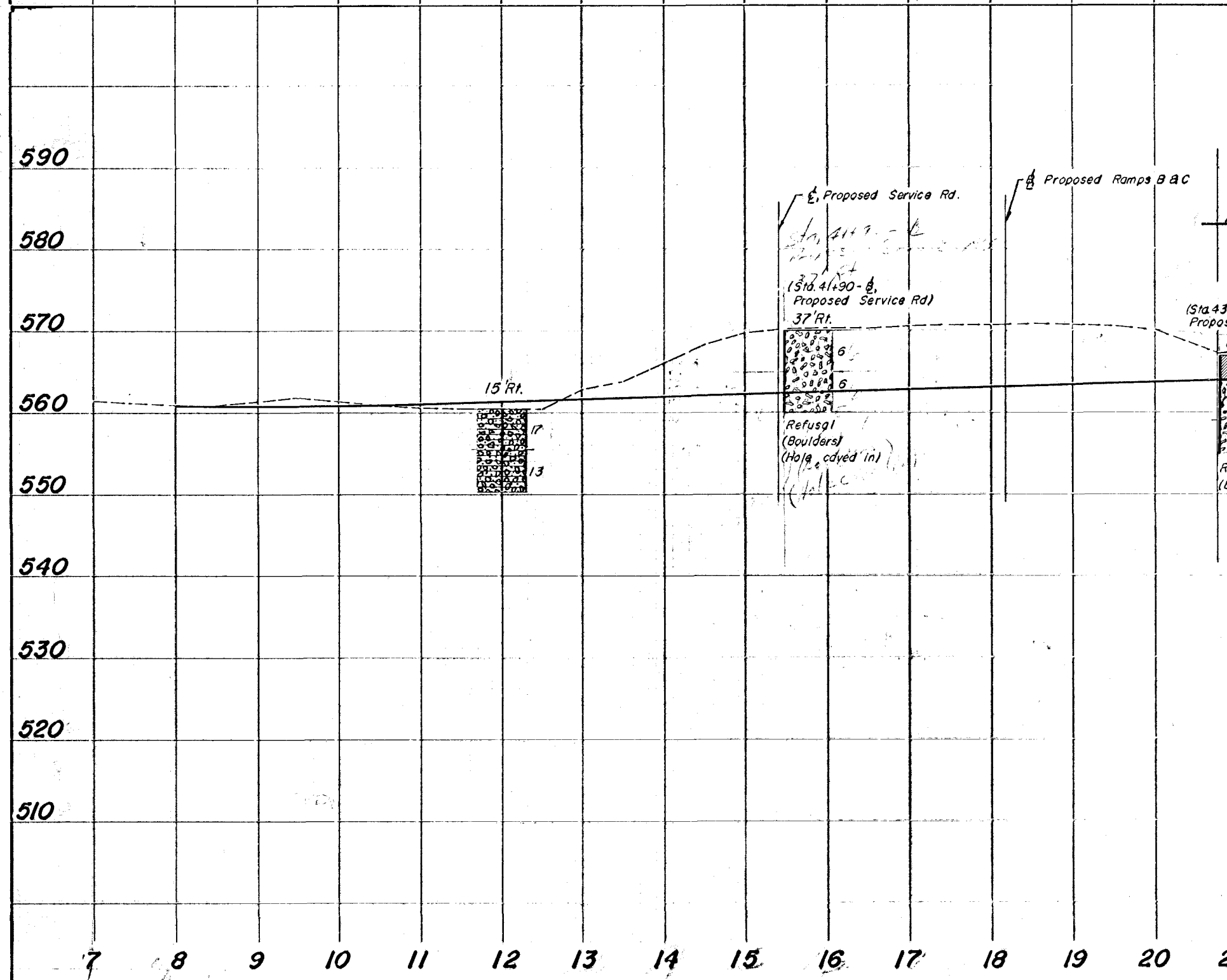
NOTE: For complete profiles of Relocated SR 128 and Proposed Ramp D, see sheet 11



c/a 21-10 e
 Proposed SR 27
 3 p. 4
 $\frac{6}{10} = 1.06$
 $76 = 2.2$



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RELOCATED SR 128