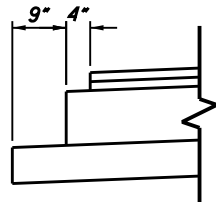


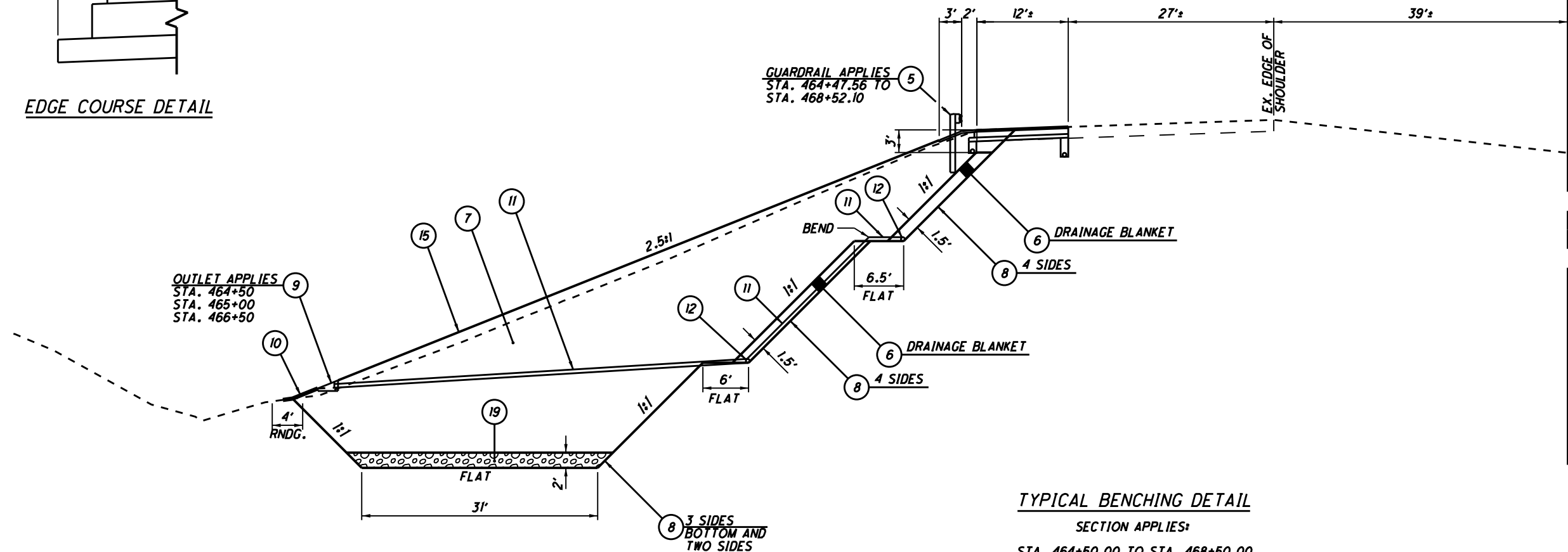


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EDGE COURSE DETAIL

R/W & CONSTRUCTION I.R. 271

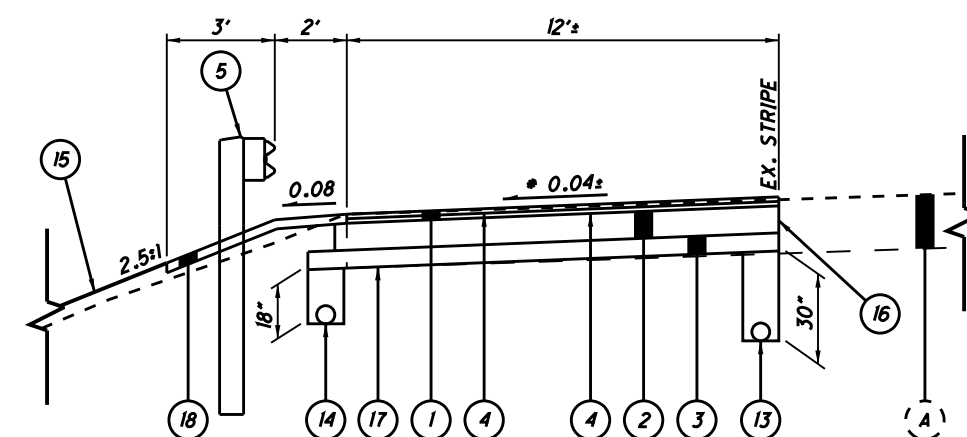


TYPICAL BENCHING DETAIL

SECTION APPLIES:
STA. 464+50.00 TO STA. 468+50.00

LEGEND

- | | |
|--|--|
| 1 ITEM 442 - 3" ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE B (448), AS PER PLAN (PLACE IN TWO 1-1/2" LIFTS) | 11 ITEM 611 - 6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS |
| 2 ITEM 301 - 9" ASPHALT CONCRETE BASE, PG64-22 | 12 ITEM 611 - 6" CONDUIT, TYPE F, 707.41 (PERFORATED) |
| 3 ITEM 304 - 6" AGGREGATE BASE, AS PER PLAN | 13 ITEM 605 - 6" SHALLOW PIPE UNDERDRAIN |
| 4 ITEM 407 - NON-TRACKING TACK COAT | 14 ITEM 605 - 6" BASE PIPE UNDERDRAIN |
| 5 ITEM 606 - GUARDRAIL, TYPE MGS WITH LONG POSTS | 15 ITEM 671 - EROSION CONTROL MAT, TYPE E |
| 6 ITEM 203 - GRANULAR EMBANKMENT, (NO. 57 STONE) | 16 ITEM 252 - FULL DEPTH PAVEMENT SAWING |
| 7 ITEM 203 - EMBANKMENT | 17 ITEM 204 - SUBGRADE COMPACTION |
| 8 ITEM 204 - GEOTEXTILE FABRIC, 712.09, TYPE A | 18 ITEM 441 - 3" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I, (448), (UNDER GUARDRAIL), AS PER PLAN |
| 9 ITEM 611 - PRECAST REINFORCED CONCRETE OUTLET | 19 ITEM 203 - GRANULAR MATERIAL, TYPE C |
| 10 ITEM 601 - TIED CONCRETE BLOCK MAT, TYPE I | (A) EXISTING PAVEMENT |



TYPICAL SECTION

SECTION APPLIES:
STA. 464+50.00 TO STA. 468+50.00

* CONTRACTOR SHALL ADJUST SHOULDER CROSS SLOPE TO TIE INTO THE EXISTING PAVEMENT ELEVATION

TYPICAL SECTIONS

SUM-271-8.80

2
16

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ROUNDING

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

UTILITIES

THERE ARE NO KNOWN UNDERGROUND OR OVERHEAD UTILITIES WITHIN THE PROJECT CONSTRUCTION LIMITS.

SURVEYING PARAMETERS

PRIMARY PROJECT CONTROL MONUMENTS GOVERN ALL POSITIONING ON ODOT PROJECTS. SEE BELOW FOR A TABLE CONTAINING PROJECT CONTROL INFORMATION.

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

PROJECT CONTROL

POSITIONING METHOD: ODOT VRS
MONUMENT TYPE: AS NOTED IN PROJECT CONTROL TABLE SHOWN ON THIS SHEET

VERTICAL POSITIONING

ORTHOMETRIC HEIGHT DATUM: NAVD 88
GEOID: GEOID 2012A

HORIZONTAL POSITIONING

REFERENCE FRAME: NAD 83 (2011) (EPOCH: 2010.0000)
ELLIPSOID: GRS 80
MAP PROJECTION: LAMBERT CONFORMAL CONIC
COORDINATE SYSTEM: OHIO STATE PLANE (NORTH ZONE) (3401)
COMBINED SCALE FACTOR: 0.9999069813
ORIGIN OF COORDINATE SYSTEM: 0,0

USE THE POSITIONING METHODS AND MONUMENT TYPE USED IN THE ORIGINAL SURVEY TO RESTORE ALL MONUMENTS RELATED TO PRIMARY PROJECT CONTROL THAT ARE DAMAGED OR DESTROYED BY CONSTRUCTION ACTIVITIES. RESTORE THE DAMAGED OR DESTROYED MONUMENTS IN ACCORDANCE WITH CMS 623.

UNITS ARE IN U.S. SURVEY FEET.

PRIMARY PROJECT CONTROL POINTS - PAF 0.9999069813 SCALE ABOUT ORIGIN POINT N=0, E=0 LOCAL COORDINATES USED FOR CONTROL POINTS				
SOURCE OF CONTROL	PROJ. NORTH	PROJ. EAST	MON. TYPE	ELEV.
T1	584578.824	2230493.132	#5 REBAR W/ ODOT CAP	774.65
T2	585258.634	2231063.028	#5 REBAR W/ ODOT CAP	802.84
T9	584193.263	2230223.348	#5 REBAR W/ ODOT CAP	765.14

WORK LIMITS

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

PROTECTION OF RIGHT-OF-WAY LANDSCAPING

PRIOR TO BEGINNING WORK, THE CONTRACTOR, THE PROJECT ENGINEER, AND A REPRESENTATIVE OF THE MAINTAINING AGENCY WILL REVIEW AND RECORD ALL LANDSCAPING ITEMS WITHIN THE RIGHT-OF-WAY (BOTH WITHIN AND OUTSIDE THE CONSTRUCTION LIMITS). A RECORD OF THIS REVIEW WILL BE KEPT IN THE PROJECT ENGINEER'S FILES. PRIOR TO FINAL ACCEPTANCE, A FINAL REVIEW OF LANDSCAPING ITEMS WILL BE MADE.

CONSTRICT ALL ACTIVITIES, EQUIPMENT STORAGE, AND STAGING TO WITHIN THE CONSTRUCTION LIMITS. UNLESS OTHERWISE IDENTIFIED IN THE PLANS OR PROPOSAL, THE CONSTRUCTION LIMITS ARE IDENTIFIED AS 30 FEET FROM THE EDGE OF PAVEMENT.

SUBMIT A WRITTEN REQUEST TO THE PROJECT ENGINEER TO USE ANY AREA OUTSIDE THESE LIMITS. THE DOCUMENT SUBMITTED MUST CLEARLY IDENTIFY THE AREA AND EXPLAIN THE PROPOSED USE AND RESTORATION OF THE AREA. USE OF THESE AREAS FOR DISPOSAL OF WASTE MATERIAL AND CONSTRUCTION DEBRIS, EXCAVATION OF BORROW MATERIAL AND PLACEMENT OF PORTABLE PLANTS IS PROHIBITED. THE REQUEST MUST BE APPROVED, IN WRITING, BEFORE THE CONTRACTOR HAS PERMISSION TO USE THE AREA.

ANY ITEMS DAMAGED BEYOND THE CONSTRUCTION LIMITS, AS DEFINED ABOVE, WILL BE REPLACED IN KIND OR AS APPROVED BY THE PROJECT ENGINEER.

CLEARING AND GRUBBING

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

BENCHING OF FOUNDATION SLOPES

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

ITEM 203 - EMBANKMENT USING NO. 57 AGGREGATE

FURNISH DURABLE, NATURAL AGGREGATE NO. 57 SIZE. PLACE THE AGGREGATE AT THE THICKNESS AND SLOPE AS SHOWN ON THE TYPICAL SECTION AND CROSS-SECTIONS.

ITEM 304 - AGGREGATE BASE, AS PER PLAN

GRANULATED SLAG (GS) SHALL NOT BE PERMITTED FOR THIS ITEM. ALL OTHER REQUIREMENTS OF SECTIONS 304 AND 703.17 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS SHALL STILL BE APPLICABLE.

CONNECTION BETWEEN EXISTING AND PROPOSED GUARDRAIL

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

SEEDING AND MULCHING

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

ITEM 659 - TOPSOIL _ _ _ _ _ .541 CY

ITEM 659 - COMMERCIAL FERTILIZER _ _ _ _ _ 0.66 TON

ITEM 659 - LIME _ _ _ _ _ 1.01 AC

ITEM 659 - WATER _ _ _ _ _ 26 MGAL

ITEM 671 - EROSION CONTROL MAT, TYPE E _ _ _ .4875 SY

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

EXISTING SUBSURFACE DRAINAGE

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

PROVIDE AN OUTLET PER STANDARD CONSTRUCTION DRAWING DM-1.1 FOR ALL UNDERDRAINS THAT OUTLET TO A SLOPE.

UNDERDRAINS THAT CAN BE CONNECTED TO THE NEW OR EXISTING UNDERDRAINS AT THE END OF THE PROJECT LIMITS AS WELL AS ALL NECESSARY BENDS OR BRANCHES REQUIRED FOR CONNECTION ARE INCLUDED IN THE BASIS OF PAYMENT FOR UNCLASSIFIED PIPE UNDERDRAINS.

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

ITEM 605 - 6" UNCLASSIFIED PIPE UNDERDRAINS _ _ _ 20 FT

ITEM 203 - EXCAVATION, AS PER PLAN

ALL PROVISIONS OF CMS ITEM 203 APPLY, EXCEPT THE REMOVAL OF EXISTING GEOWEB WILL BE CONSIDERED INCIDENTAL TO THE UNIT BID PRICE OF ITEM 203 EXCAVATION, AS PER PLAN.

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ITEM 442 - ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE B (448), AS PER PLAN

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

PAVING UNDER GUARDRAIL

THIS OPERATION SHALL INCLUDE PREPARATION OF THE AREA UNDER THE GUARDRAIL TO BE PAVED USING 209, LINEAR GRADING AS PER PLAN, AND PAVING UNDER THE GUARDRAIL USING 441 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I, (448), (UNDER GUARDRAIL), AS PER PLAN.

ITEM 209, LINEAR GRADING AS PER PLAN, SHALL CONSIST OF EXCAVATING TOPSOIL, AND PLACING GRANULAR MATERIAL.

ALL COLLECTED DEBRIS AND TOPSOIL, INCLUDING RHIZOMES, ROOTS AND OTHER VEGETATIVE PLANT MATERIAL SHALL BE REMOVED AND DISPOSED OF AS SPECIFIED IN 105.17.

THE REMOVED MATERIAL SHALL BE REPLACED WITH COMPACTABLE GRANULAR MATERIAL CONFORMING TO 703.16 PLACED TO GRADE AS DETAILED ON THE TYPICAL SECTION OR AS APPROVED BY THE ENGINEER.

ALL EQUIPMENT, MATERIALS AND LABOR REQUIRED TO PERFORM THE WORK OUTLINED ABOVE SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 209, LINEAR GRADING, AS PER PLAN.

PAVING UNDER GUARDRAIL SHALL CONSIST OF PLACING ITEM 441 TO THE DEPTH SPECIFIED USING ONE OF THE FOLLOWING METHODS:

METHOD A:

1. SET GUARDRAIL POSTS
2. PLACE ITEM 441

METHOD B:

1. PLACE ITEM 441
2. BORE ASPHALT AT POST LOCATIONS (MAY BE OMITTED IF STEEL POSTS ARE USED)
3. SET GUARDRAIL POSTS
4. PATCH AROUND POSTS. THE MATERIALS USED FOR PATCHING SHALL BE AN ASPHALT CONCRETE APPROVED BY THE ENGINEER. PATCHED AREAS SHALL BE COMPACTED USING EITHER HAND OR MECHANICAL METHODS. FINISHED SURFACES SHALL BE SMOOTH AND SLOPED TO DRAIN AWAY FROM THE POSTS.

ALL EQUIPMENT, MATERIALS AND LABOR REQUIRED TO PERFORM THE WORK OUTLINED ABOVE, WITH THE EXCEPTION OF SETTING GUARDRAIL POSTS, SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 441, ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE I, (448), (UNDER GUARDRAIL), AS PER PLAN.

CALCULATED	SLP	GENERAL NOTES	SUM - 271 - 8.80	4 16
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TRAFFIC CONTROL INSPECTOR

THE CONTRACTOR SHALL DESIGNATE AN INDIVIDUAL OTHER THAN THE SUPERINTENDENT AND SUBJECT TO THE APPROVAL OF THE ENGINEER, TO CONTINUOUSLY INSPECT ALL TRAFFIC CONTROL DEVICES WHENEVER CONSTRUCTION WORK IS BEING PERFORMED WITHIN THE WORK LIMITS OF THE PROJECT. THE DESIGNATED INDIVIDUAL SHALL ALSO INSPECT ALL TRAFFIC DEVICES AT THE BEGINNING AND AT THE END OF EACH WORK DAY. THE DESIGNATED INDIVIDUAL OR A QUALIFIED REPRESENTATIVE SHALL ALSO BE AVAILABLE ON AN AROUND THE CLOCK BASIS TO REPAIR AND/OR REPLACE DAMAGED OR MISSING TRAFFIC CONTROL DEVICES. THESE INDIVIDUALS SHALL BE EQUIPPED WITH CELLULAR PHONES AND THEIR NAMES AND PHONE NUMBERS SHALL BE GIVEN TO THE PROJECT ENGINEER AT THE PRE-CONSTRUCTION MEETING. THE DESIGNATED INDIVIDUAL MAY HAVE OTHER CONSTRUCTION RELATED DUTIES AS LONG AS IMMEDIATE ATTENTION IS GIVEN TO TRAFFIC CONTROL. PAYMENT FOR THE SERVICES OF THE TRAFFIC CONTROL INSPECTOR SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614 MAINTAINING TRAFFIC.

MAINTENANCE OF TRAFFIC

THIS ITEM SHALL CONSIST OF MAINTENANCE OF TRAFFIC ON EXISTING ROADWAYS AND RAMPS IN ACCORDANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, CURRENT EDITION, LATEST REVISION, THE SPECIFICATIONS AND THE FOLLOWING:

1. TWO TEN FOOT LANES SHALL BE MAINTAINED DURING PEAK HOURS AND A MINIMUM OF ONE TEN FOOT LANE SHALL BE MAINTAINED DURING OFF PEAK HOURS.
2. THE CONTRACTOR SHALL INFORM THE DISTRICT OFFICE (330) 786-2208, EIGHTEEN (18) DAYS PRIOR TO THE BEGINNING OF WORK.
3. LANE RESTRICTIONS OR LANE REDUCTIONS SHALL NOT BE PERMITTED AFTER NORMAL WORKING HOURS. NORMAL WORKING HOURS SHALL BE THOSE HOURS DURING WHICH THE CONTRACTOR HAS A FULL COMPLEMENT OF EMPLOYEES AND EQUIPMENT ACTIVELY REMOVING AND/OR PLACING PAVEMENT MATERIALS.
4. ONLY DURING OFF-PEAK PERIODS (i.e. ANY PERIOD OTHER THAN 6-8AM AND 3-6PM) SHALL THE CONTRACTOR INSTALL AND SUBSEQUENTLY RESET ALL TRAFFIC CONTROL NECESSARY FOR THE WORK ZONE FOR EACH CONSTRUCTION PHASE.

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 614, WORK ZONE MARKING SIGN, 10 EACH
ITEM 614, WORK ZONE EDGE LINE, CLASS 1, 6", 1.30 MILE
ITEM 614, WORK ZONE CHANNELIZING LINE, CLASS 1, 12", 3,440 FT
ITEM 614, WORK ZONE IMPACT ATTENUATOR, UNIDIRECTIONAL 1 EACH
ITEM 614, BARRIER REFLECTORS, TYPE 1, 1-WAY, 15 EACH
ITEM 614, OBJECT MARKER, ONE-WAY, 15 EACH
ITEM 622, PORTABLE BARRIER, 32", 730 FT
ITEM 642 REMOVAL OF PAVEMENT MARKING, 1.31 MILE

DELINEATION OF PORTABLE AND PERMANENT BARRIER

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

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

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

ITEM 622 PORTABLE BARRIER PLACEMENT

DURING THE PLACEMENT OF THE PORTABLE BARRIER, TRAFFIC WILL BE PROHIBITED FROM OCCUPYING THE TRAVEL LANE ADJACENT TO THE BARRIER. THE BARRIER WILL BE PLACED AT NIGHT PER THE WORK HOUR RESTRICTION NOTE AND IN ACCORDANCE WITH THE PERMITTED LANE CLOSURE MAP. THE CLOSURE OF THE ADJACENT LANE WILL BE PER THE STANDARD DRAWING MT-95.30.

THE CONTRACTOR WILL SUBMIT A PLAN TO THE ENGINEER FOR APPROVAL SEVEN (7) DAYS IN ADVANCE OF THE PLANNED LANE CLOSURE. WORK WILL NOT BEGIN UNTIL APPROVAL OF THE PLANS HAS BEEN GRANTED.

ALL COSTS INVOLVED IN PLACING THE PORTABLE CONCRETE BARRIER WILL BE INCLUDED IN THE CONTRACT PRICE BID FOR ITEM 622 PORTABLE CONCRETE BARRIER.

ADJACENT LANE CLOSURE

DURING THE HAULING OF MATERIAL AND EQUIPMENT IN AND OUT OF THE WORK AREA TRAFFIC WILL BE PROHIBITED FROM OCCUPYING THE ADJACENT LANE TO THE WORK AREA.

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.

ITEM 615 - PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN

THE PAVEMENT BUILDUP SHALL USE ITEM 302 AS SPECIFIED IN CMS 615.05. THE PAVEMENT SHALL REMAIN AFTER COMPLETION OF ALL WORK.

PAVEMENT FOR MAINTAINING TRAFFIC SHALL NOT BE OPENED TO TRAFFIC UNTIL ALL WORK ZONE TRAFFIC CONTROL DEVICES, SIGNS, PAVEMENT MARKINGS AND PORTABLE CONCRETE BARRIERS HAVE BEEN ERECTED AND APPROVED BY THE ENGINEER.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED IN CONSTRUCTING THE PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN.

615, ROADS FOR MAINTAINING TRAFFIC, LUMP SUM
615, PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN, 900 S.Y.

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

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING A NONGATING 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.

LANE CLOSURES

DURATION OF LANE CLOSURES AND RESTRICTIONS SHALL BE AS PER THE PERMITTED LANE CLOSURE CHART. THE PERMITTED LANE CLOSURE CHART USED FOR THIS PROJECT SHALL BE THE MOST CURRENT CHART AVAILABLE ON THE DATE THIS PROJECT SELLS.

THE CHART CAN BE FOUND AT:
<http://plcm.dot.state.oh.us>

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THE REQUIREMENTS IN THE CHART, THE CONTRACTOR SHALL BE ASSESSED DISINCENTIVES IN THE AMOUNT OF \$1,000 PER HOUR OR PORTION THEREOF THAT THE LANE REDUCTION REMAINS BEYOND THE SPECIFIED LIMIT.

EARTHWORK FOR MAINTAINING TRAFFIC

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

EXCAVATION FOR MAINTAINING TRAFFIC 150 CU. YD.

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

ITEM 614 - WORK ZONE RAISED PAVEMENT MARKER, AS PER PLAN

WORK ZONE RAISED PAVEMENT MARKERS, AS PER PLAN, AND THEIR INSTALLATION SHALL CONFORM TO C&MS 614 OR C&MS 621 AS SPECIFIED HEREIN.

RAISED PAVEMENT MARKERS IN USE DURING THE SNOW-PLOWING SEASON SHALL CONFORM TO 621.

RAISED PAVEMENT MARKERS IN USE DURING THE NON-SNOW-PLOW SEASON SHALL CONFORM TO EITHER 614 OR TO 621.

IF PROJECT DELAYS, NOT THE FAULT OF ODOT, CAUSE THE WORK TO EXTEND INTO THE SNOW-PLOWING SEASON, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING WORK ZONE RAISED PAVEMENT MARKERS (WZRPMS) CONFORMING TO C&MS 614, WITH RAISED PAVEMENT MARKERS CONFORMING TO 621, AS DETERMINED BY THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.

THIS ITEM SHALL INCLUDE PURCHASE, INSTALLATION AND REMOVAL OF ITEM 614 WORK ZONE RAISED PAVEMENT MARKER, AS PER PLAN, INCLUDING FILLING OF ANY DEPRESSIONS CREATED IN THE PAVEMENT AS PER C&MS 621.08.

RESURFACING OF THE TRANSITION AREAS SHALL BE PERFORMED AT THE TIME THAT THE SURFACE COURSE IS BEING APPLIED TO THE ENTIRE PROJECT. PRIOR TO APPLICATION OF THE SURFACE COURSE ON THE PROJECT, THE EXISTING PAVEMENT WITHIN THE TRANSITION AREA SHALL BE REMOVED TO A DEPTH NECESSARY TO REACH THE LEVEL OF THE INTERMEDIATE COURSE OF THE PAVEMENT, AS DETERMINED BY THE ENGINEER.

THE FOLLOWING BID ITEMS SHOULD BE INCLUDED IN THE PLANS:

ITEM 614 WORK ZONE RAISED PAVEMENT MARKER, AS PER PLAN 500 EACH

PAYMENT FOR RESURFACING WITHIN THE TRANSITION AREA SHALL BE PAID FOR UNDER THE APPROPRIATE BID ITEMS FOR THE WORK REQUIRED, AS PROVIDED FOR IN THE PLANS.

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

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

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

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

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

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

FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN A NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED FOR LONG-TERM LANE CLOSURES/SHIFTS (FOR THE FIRST AND LAST DAY OF MAJOR CHANGES IN TRAFFIC CONTROL SETUP).

IN GENERAL, LEOS SHOULD BE POSITIONED IN ADVANCE OF AND ON THE SAME SIDE AS THE LANE RESTRICTION OR AT THE POINT OF ROAD CLOSURE, AND TO MANUALLY CONTROL TRAFFIC MOVEMENTS THROUGH SIGNALIZED INTERSECTIONS IN WORK ZONES.

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

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

ENSURE PROVIDED LEOS HAVE BEEN TRAINED APPROPRIATE TO THE JOB DECISIONS THEY ARE REQUIRED TO MAKE WHILE ON THE PROJECT, IN ACCORDANCE WITH C&MS 614.03.

THE LEO SHALL REPORT IN TO THE CONTRACTOR PRIOR TO THE START OF THE SHIFT, IN ORDER TO RECEIVE INSTRUCTIONS REGARDING THE SPECIFIC WORK ASSIGNMENTS DURING HIS/HER SHIFT. THE LEO IS EXPECTED TO STAY AT THE PROJECT SITE FOR THE ENTIRE DURATION OF HIS/HER SHIFT. THE LEO SHALL REPORT TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT. SHOULD IT BE NECESSARY TO LEAVE THE PROJECT SITE, THE LEO SHALL NOTIFY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE THE LEO WITH A TWO-WAY COMMUNICATION DEVICE WHICH SHALL BE RETURNED TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT.

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

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE 100 HOURS

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

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

ITEM 614 - PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE, WHEN NO LONGER NEEDED, A PORTABLE CHANGEABLE MESSAGE SIGN, THE SIGN SHALL BE OF A TYPE SHOWN ON A LIST OF APPROVED PCMS UNITS AVAILABLE ON THE OFFICE OF MATERIALS MANAGEMENT WEB PAGE. THE LIST CONTAINS CLASS A AND B UNITS WITH MINIMUM LEGIBILITY DISTANCE OF 800 FEET AND 650 FEET RESPECTIVELY.

EACH SIGN SHALL BE TRAILER MOUNTED AND EQUIPPED WITH A FUNCTIONAL DIMMING MECHANISM TO DIM THE SIGN DURING DARKNESS AND A TAMPER AND VANDAL PROOF ENCLOSURE. EACH SIGN SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ON-SITE PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT. THE SIGN SHALL ALSO BE CAPABLE OF BEING POWERED BY AN ELECTRICAL SERVICE DROP FROM A LOCAL UTILITY COMPANY. PCMS TRAILERS SHOULD BE DELINEATED.

PLACEMENT, OPERATION, MAINTENANCE AND ALL ACTIVATION OF THE SIGNS BY THE CONTRACTOR SHALL BE AS DIRECTED BY THE ENGINEER. THE PCMS SHALL BE LOCATED IN A HIGHLY VISIBLE POSITION YET PROTECTED FROM TRAFFIC. THE PCMS SHOULD NOT BE LOCATED IN THE MEDIAN OF THE HIGHWAY UNLESS IT IS PROTECTED FROM BOTH DIRECTIONS OF TRAFFIC. THE PCMS SHALL BE LOCATED. IN A HIGHLY VISIBLE POSITION YET PROTECTED FROM TRAFFIC. THE CONTRACTOR SHALL, AT THE DIRECTION OF THE ENGINEER, RELOCATE THE PCMS TO IMPROVE THE VISIBILITY OR ACCOMMODATE CHANGED CONDITIONS. WHEN NOT IN USE, THE PCMS WILL BE OFF. ADDITIONALLY WHEN NOT IN USE FOR EXTENDED PERIODS OF TIME, THE PCMS SHALL BE TURNED, FACING AWAY FROM ALL TRAFFIC AND SHALL DISPLAY ONE OR MORE TYPE G YELLOW REFLECTIVE SHEETING SURFACES OF 9-INCH BY 15-INCH MINIMUM SIZE FACING TRAFFIC.

THE ENGINEER SHALL BE PROVIDED ACCESS TO EACH SIGN UNIT AND SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT AND TO REVISE SIGN MESSAGES, IF NECESSARY.

ALL MESSAGES TO BE DISPLAYED ON THE SIGN WILL BE PROVIDED BY THE CONTRACTOR. A LIST OF ALL PROPOSED PREPROGRAMMED MESSAGES WILL BE GIVEN TO THE ENGINEER PRIOR TO CONSTRUCTION. THE SIGN SHALL HAVE THE CAPABILITY TO STORE UP TO 99 MESSAGES. MESSAGE MEMORY OR PRE-PROGRAMMED DISPLAYS SHALL NOT BE LOST AS A RESULT OF POWER FAILURES TO THE ON-BOARD COMPUTER. THE SIGN LEGEND SHALL BE CAPABLE OF BEING CHANGED IN THE FIELD. THREE LINE PRESENTATION FORMATS WITH UP TO OF SIX MESSAGE PHASES SHALL BE SUPPORTED. PCMS FORMAT SHALL PERMIT THE COMPLETE MESSAGE FOR EACH PHASE TO BE READ AT LEAST TWICE.

THE PCMS SHALL CONTAIN AN ACCURATE CLOCK AND PROGRAMMING LOGIC WHICH WILL ALLOW THE SIGN TO BE ACTIVATED, DE-ACTIVATED OR MESSAGES CHANGED AUTOMATICALLY AT DIFFERENT TIMES OF THE DAY FOR DIFFERENT DAYS OF THE WEEK.

THE PCMS SHALL CONTAIN A CELLULAR TELEPHONE DATA LINK WHICH WILL [IN ACTIVE CELLULAR AREAS] ALLOW REMOTE SIGN ACTIVATION, DEACTIVATION, MESSAGE CHANGES, MESSAGE ADDITIONS AND REVISIONS TO TIME OF DAY PROGRAMS. THE SYSTEM SHALL ALSO PERMIT VERIFICATION OF CURRENT AND PROGRAMMED MESSAGES.

THE PCMS UNIT SHALL BE MAINTAINED IN GOOD WORKING ORDER BY THE CONTRACTOR IN ACCORDANCE WITH THE PROVISIONS OF 614.07. THE CONTRACTOR SHALL PRIOR TO ACTIVATING THE UNIT, MAKE ARRANGEMENTS WITH AN AUTHORIZED SERVICE AGENT FOR THE PCMS TO ASSURE PROMPT SERVICE IN THE EVENT OF FAILURE. ANY FAILURE SHALL NOT RESULT IN THE SIGN BEING OUT OF SERVICE FOR MORE THAN 12 HOURS INCLUDING WEEKENDS. FAILURE TO COMPLY MAY RESULT IN AN ORDER TO STOP WORK AND OPEN ALL TRAFFIC LANES AND/OR IN THE DEPARTMENT TAKING APPROPRIATE ACTION TO SAFELY CONTROL TRAFFIC. THE ENTIRE COST TO CONTROL TRAFFIC ACCRUED BY THE DEPARTMENT WILL BE DEDUCTED FROM MONEYS DUE, OR TO BECOME DUE THE CONTRACTOR ON HIS CONTRACT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR 24 HOURS PER DAY OPERATION AND MAINTENANCE OF THESE SIGNS ON THE PROJECT FOR THE DURATION OF THEIR USE. THE REQUIREMENT TO FURNISH, INSTALL, MAINTAIN AND REMOVE A PCMS UNIT ON THIS PROJECT SHALL NOT IN ANY WAY RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITIES AS OUTLINED IN 614.02.

PAYMENT FOR THE ABOVE DESCRIBED ITEM SHALL BE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, FUELS, LUBRICATING OILS, SOFTWARE, HARDWARE AND INCIDENTALS TO PERFORM THE ABOVE DESCRIBED WORK.

614 PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN, 2 SIGN MONTH (ASSUMING 1 SIGN, 2 MONTHS)

NOTIFICATION OF TRAFFIC RESTRICTIONS

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

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

NOTIFICATION TIME TABLE		
ITEM	DURATION OF CLOSURE	NOTICE DUE TO PERMITS & PIO
RAMP &	>= 2 WEEKS	21 CALENDAR DAYS PRIOR TO CLOSURE
ROAD >	12 HOURS & < 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
CLOSURES	<= 12 HOURS	4 BUSINESS DAYS PRIOR TO CLOSURE

LANE CLOSURES &	>= 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
RESTRICTIONS	< 2 WEEKS	5 BUSINESS DAYS PRIOR TO CLOSURE

START OF CONSTRUCTION & TRAFFIC PATTERN CHANGES	14 CALENDAR DAYS PRIOR TO IMPLEMENTATION
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ANY UNFORESEEN CONDITIONS NOT SPECIFIED IN THE PLANS REQUIRING TRAFFIC RESTRICTIONS SHALL ALSO BE REPORTED TO THE PROJECT ENGINEER USING THE NOTIFICATION TIME TABLE.

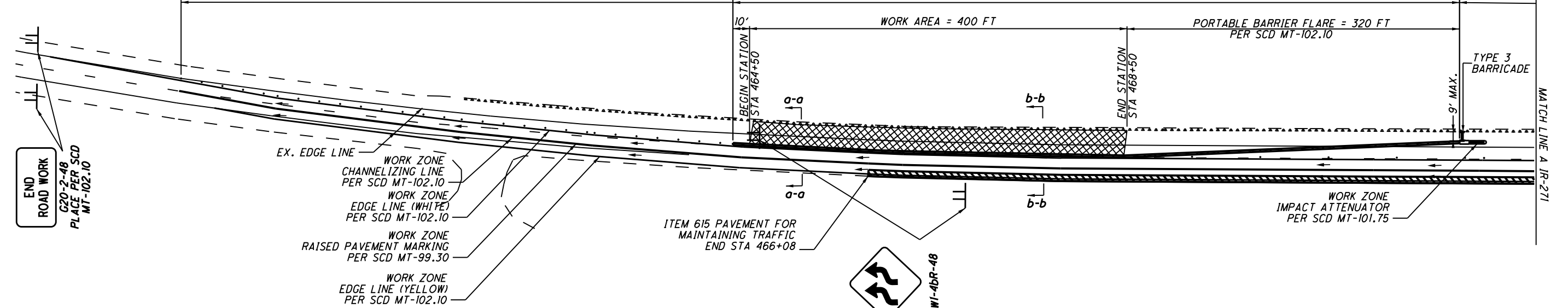
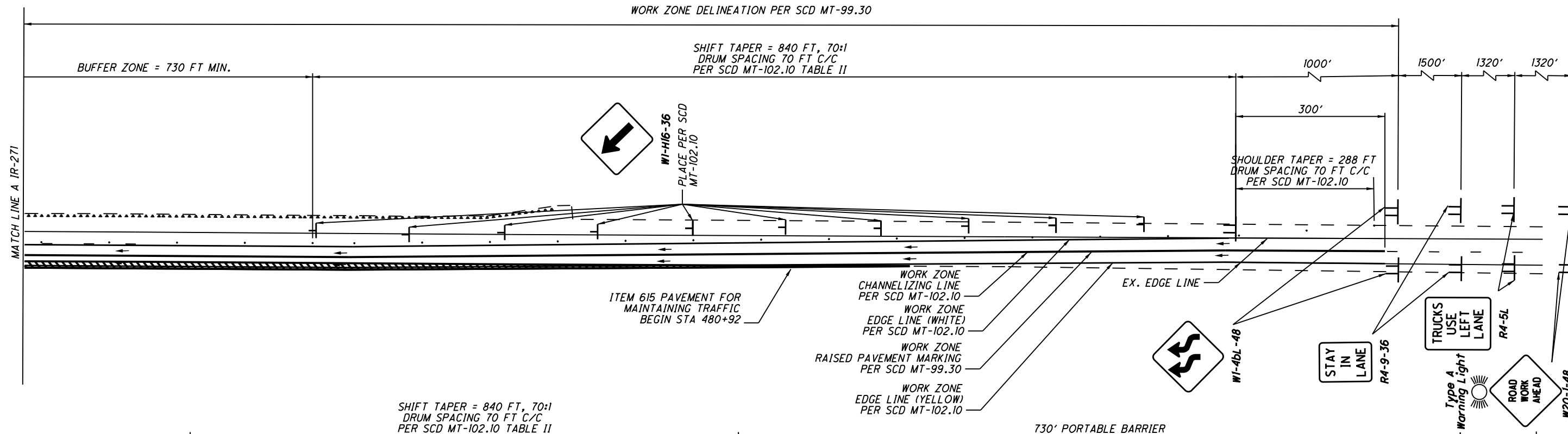
DUST CONTROL

THE CONTRACTOR SHALL FURNISH AND APPLY WATER FOR DUST CONTROL AS DIRECTED BY THE ENGINEER. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED FOR DUST CONTROL PURPOSES:

ITEM 616,	WATER	101 M. GAL.
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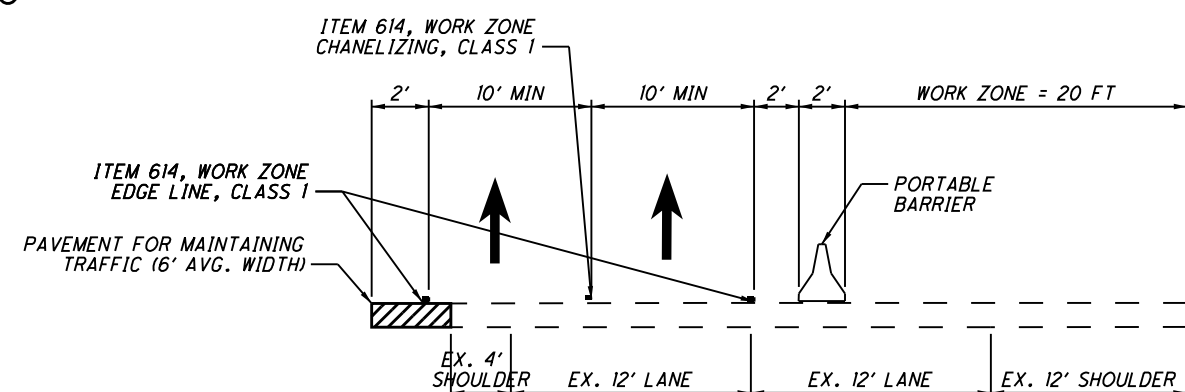
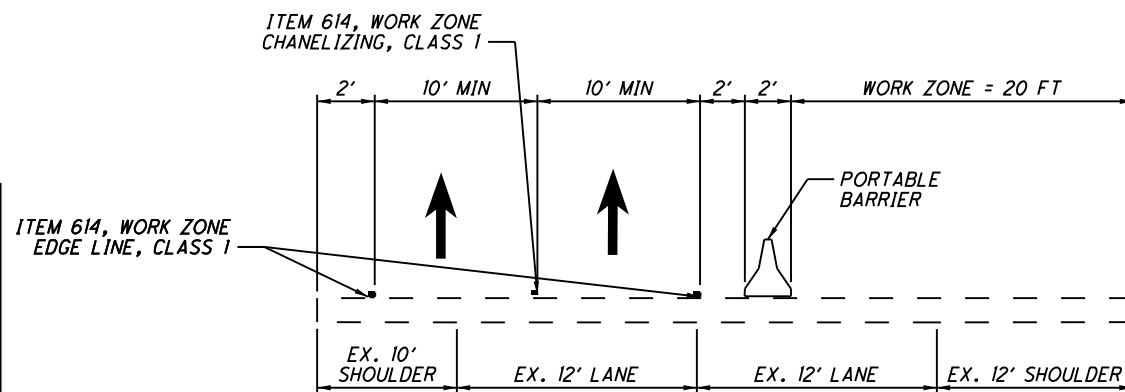
NOTE:
LEGAL SPEED AT TIME OF DESIGN: 65 MPH
LEGAL SPEED AT TIME OF CONSTRUCTION: 70 MPH

WORK ZONE DELINEATION PER SCD MT-99.30



LEGEND

WORK AREA	
DRUMS	
PORTABLE BARRIER (PB)	
REMOVE EXISTING MARKINGS	
ATTENUATOR	
DIRECTION OF TRAVEL	
PAVEMENT FOR MAINTAINING TRAFFIC	



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SHEET NUM.													PART.	ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE	CALCULATED	SLP	CHECKED	ALB
3	5	6	9	16									01/IMS/01		EXT	TOTAL			SHEET				
																		ROADWAY					
LS													LS	201	11000	LS		CLEARING AND GRUBBING					
			757										757	202	23010	757	SY	PAVEMENT REMOVED, ASPHALT					
			400										400	202	38000	400	FT	GUARDRAIL REMOVED					
				17,177									17,177	203	10001	17,177	CY	EXCAVATION, AS PER PLAN					
				16,428									16,428	203	20000	16,428	CY	EMBANKMENT					
				723									723	203	35000	723	CY	GRANULAR EMBANKMENT, NO. 57 STONE					
				854									854	203	35120	854	CY	GRANULAR MATERIAL, TYPE C					
			600										600	204	10000	600	SY	SUBGRADE COMPACTION					
				4,647									4,647	204	50100	4,647	SY	GEOTEXTILE FABRIC, 712.09, TYPE A					
			4										4	209	60201	4	STA	LINEAR GRADING, AS PER PLAN					4
			400										400	606	15100	400	FT	GUARDRAIL, TYPE MGS WITH LONG POSTS					
																		EROSION CONTROL					
			6										6	601	21050	6	SY	TIED CONCRETE BLOCK MAT, TYPE I					
541													541	659	00300	541	CY	TOPSOIL					
0.66													0.66	659	20000	0.66	TON	COMMERCIAL FERTILIZER					
1.01													1.01	659	31000	1.01	ACRE	LIME					
26													26	659	35000	26	MGAL	WATER					
4,875													4,875	671	15040	4,875	SY	EROSION CONTROL MAT, TYPE E					
													10,829	832	30000	10,829	EACH	EROSION CONTROL					
																		DRAINAGE					
			400										400	605	11100	400	FT	6" SHALLOW PIPE UNDERDRAINS					
20													20	605	13300	20	FT	6" UNCLASSIFIED PIPE UNDERDRAINS					
			400										400	605	14000	400	FT	6" BASE PIPE UNDERDRAINS					
			234										234	611	00510	234	FT	6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS					
			594										594	611	01500	594	FT	6" CONDUIT, TYPE F, 707.41 (PERFORATED)					
			3										3	611	99710	3	EACH	PRECAST REINFORCED CONCRETE OUTLET					
																		PAVEMENT					
			138										138	301	46000	138	CY	ASPHALT CONCRETE BASE, PG64-22					
			97										97	304	20001	97	CY	AGGREGATE BASE, AS PER PLAN					3
			59										59	407	20000	59	GAL	NON-TRACKING TACK COAT					
			19										19	441	50701	19	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I, (448), (UNDER GUARDRAIL), AS PER PLAN					4
			45										45	442	20051	45	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE B (448), AS PER PLAN					4
			400										400	618	40100	400	FT	RUMBLE STRIPS, SHOULDER (ASPHALT CONCRETE)					
																		TRAFFIC CONTROL					
			5										5	626	00110	5	EACH	BARRIER REFLECTOR, TYPE 2, I-WAY					
			0.08										0.08	644	00104	0.08	MILE	EDGE LINE, 6"					
																		MAINTENANCE OF TRAFFIC					
		100											100	614	11110	100	hour	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE					
	1												1	614	12336	1	EACH	WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)					
	10												10	614	12460	10	EACH	WORK ZONE MARKING SIGN					
	500												500	614	12801	500	EACH	WORK ZONE RAISED PAVEMENT MARKER, AS PER PLAN					5
	15												15	614	13310	15	EACH	BARRIER REFLECTOR, TYPE 1, I-WAY					
	15												15	614	13350	15	EACH	OBJECT MARKER, ONE WAY					
		2											2	614	18601	2	SNMT	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN					6
	1.3												1.3	614	22010	1.3	MILE	WORK ZONE EDGE LINE, CLASS 1, 6"					
	3,440												3,440	614	23010	3,440	FT	WORK ZONE CHANNELIZING LINE, CLASS 1, 12"					
	LS												LS	615	10000	LS		ROADS FOR MAINTAINING TRAFFIC					
	900												900	615	20001	900	SY	PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN					5
		101											101	616	10000	101	MGAL	WATER					
	730												730	622	41000	730	FT	PORTABLE BARRIER, 32"					
	1.31												1.31	642	30030	1.31	MILE	REMOVAL OF PAVEMENT MARKING					
																		INCIDENTALS					
													LS	614	11000	LS		MAINTAINING TRAFFIC					
													4	619	16010	4	MNTH	FIELD OFFICE, TYPE B					
													LS	623	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING					
													LS	624	10000	LS		MOBILIZATION					

GENERAL SUMMARY

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SUBSUMMARY												
REF NO.	SHEET NO.	STATION		SIDE	202		209	441	606	618	644	626
					GUARDRAIL REMOVED	PAVEMENT REMOVED, ASPHALT	LINEAR GRADING, AS PER PLAN	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (448), (UNDER GUARDRAIL), AS PER PLAN, 3"	GUARDRAIL, TYPE MGS WITH LONG POSTS	RUMBLE STRIPS, (ASPHALT CONCRETE)	EDGE LINE, 6", WHITE	BARRIER REFLECTOR, TYPE 2, 1-WAY
		FROM	TO		FT	SY	STA.	CY	FT	FT	MILE	EACH
		I.R. 271										
EL-1	10	464+50.00	468+50.00	LT							0.08	
GR-1	10	464+47.56	468+52.10	LT		222.22	4	18.52	400			5
R-1	10	464+47.56	468+52.10	LT	400							
RS-1	10	464+50.00	468+50.00	LT						400		
TOTALS					400	222.22	4	18.52	400	400	0.08	5
TOTALS CARRIED TO GENERAL SUMMARY					400	223	4	19	400	400	0.08	5

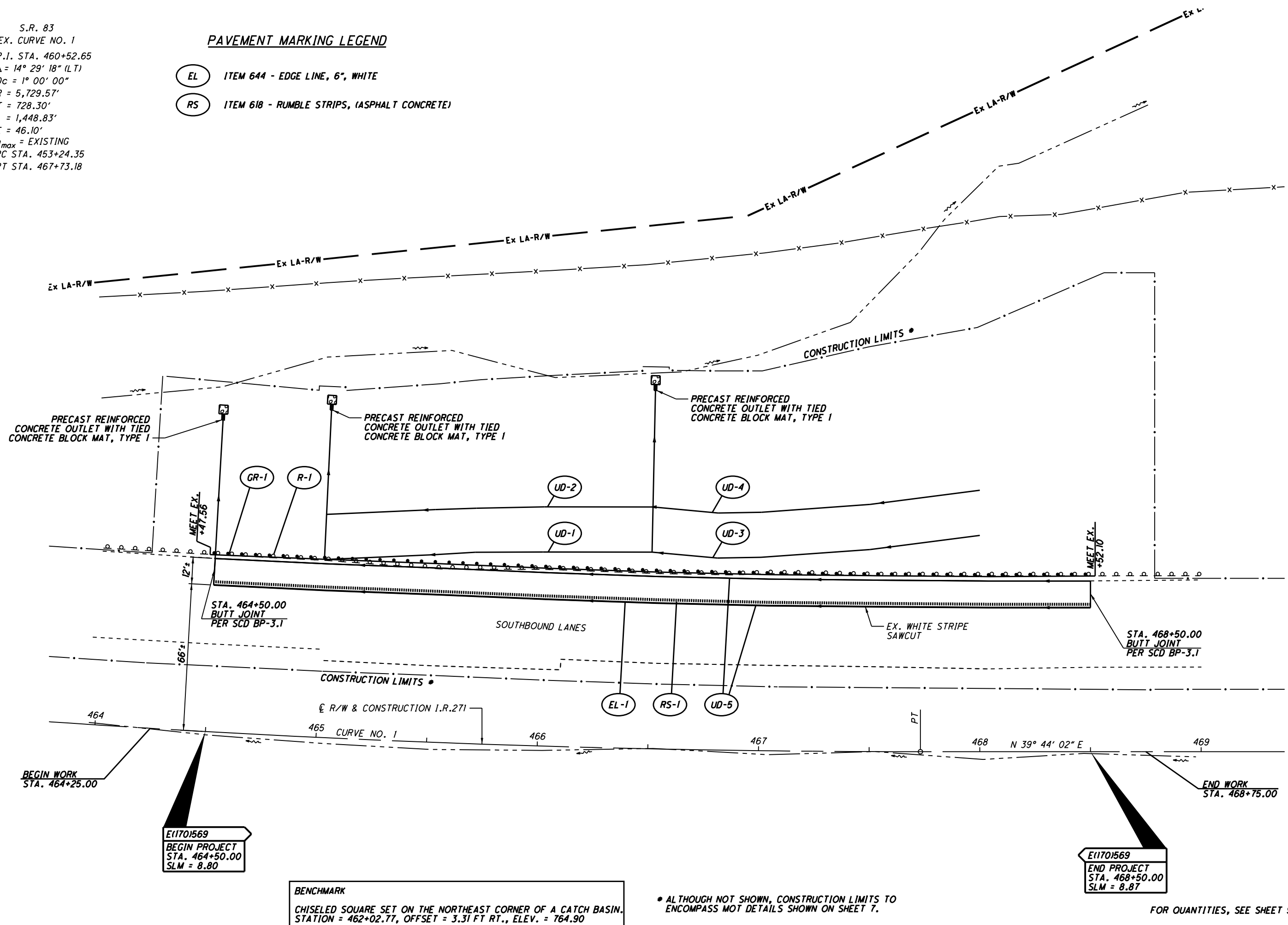
UNDERDRAIN TABLE															
REF NO.	SHEET NO.	STATION		SIDE	LEFT OUTLET TO	OUTLET ELEV.	OUTLET STATION	OUTLET OFFSET	REMARKS	601	605		611		
										TIED CONCRETE BLOCK MAT, TYPE 1	6" SHALLOW PIPE UNDERDRAIN	6" BASE PIPE UNDERDRAIN	6" CONDUIT, TYPE F, 707.41 (PERFORATED)	6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS	PRECAST REINFORCED CONCRETE OUTLET
		FROM	TO							SY	FT	FT	FT	FT	EACH
		I.R. 271													
UD-1	10	465+00.00	466+50.00	LT	SLOPE	744.64	465+00.00	150.57		1.78			148	75	1
UD-2	10	465+00.00	466+50.00	LT	TEE	745.20	465+00.00	100.66	TEE INTO UD-1				148		
UD-3	10	466+50.00	468+00.00	LT	SLOPE	742.72	466+50.00	164.51		1.78			149	80	1
UD-4	10	466+50.00	468+00.00	LT	TEE	746.70	466+50.00	109.09	TEE INTO UD-3				149		1
UD-5	10	464+50.00	468+50.00	LT	SLOPE	746.06	464+50.00	143.61		1.78	400	400		79	1
TOTALS										5.34	400	400	594	234	3
TOTALS CARRIED TO GENERAL SUMMARY										6	400	400	594	234	3

PAVEMENT CALCULATIONS												
STATION		LENGTH	SIDE	202	204		301	304		407	442	
				PAVEMENT REMOVED, ASPHALT	WIDTH	SUBGRADE COMPACTION	WIDTH	9" ASPHALT CONCRETE BASE, PG64-22	WIDTH	6" AGGREGATE BASE, AS PER PLAN	NON-TRACKING TACK COAT	3" ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE B (448), AS PER PLAN
FROM	TO			SY	FT	SY	FT	CY	FT	CY	GAL	FT
I.R. 271												
464+50.00	468+50.00	400.00	LT	533.33	13.50	600.00	12.33	137.04	13.08	96.91	58.66	12.00
TOTALS				533.33		600.00		137.04		96.91	58.66	44.44
TOTALS CARRIED TO GENERAL SUMMARY				534		600		138		97	59	45

PAVEMENT MARKING LEGEND

EL ITEM 644 - EDGE LINE, 6", WHITE

RS ITEM 618 - RUMBLE STRIPS, (ASPHALT CONCRETE)



20 10 40
HORIZONTAL

0	
ALCULATED	
SLP	
CHECKED	
ALP	

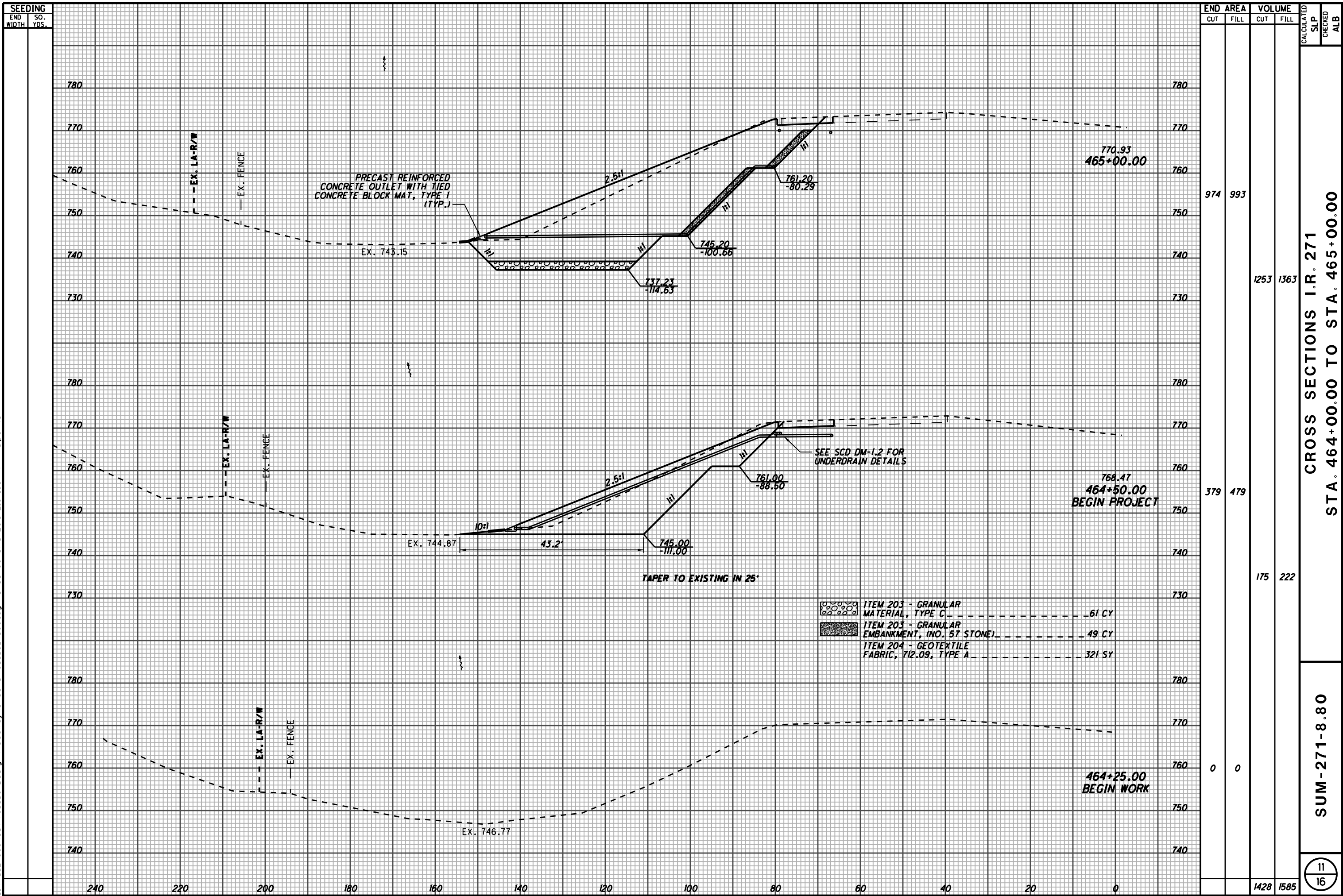
PLAN - I.R. 271	
STA 464+50.00	TO STA 468+50.00

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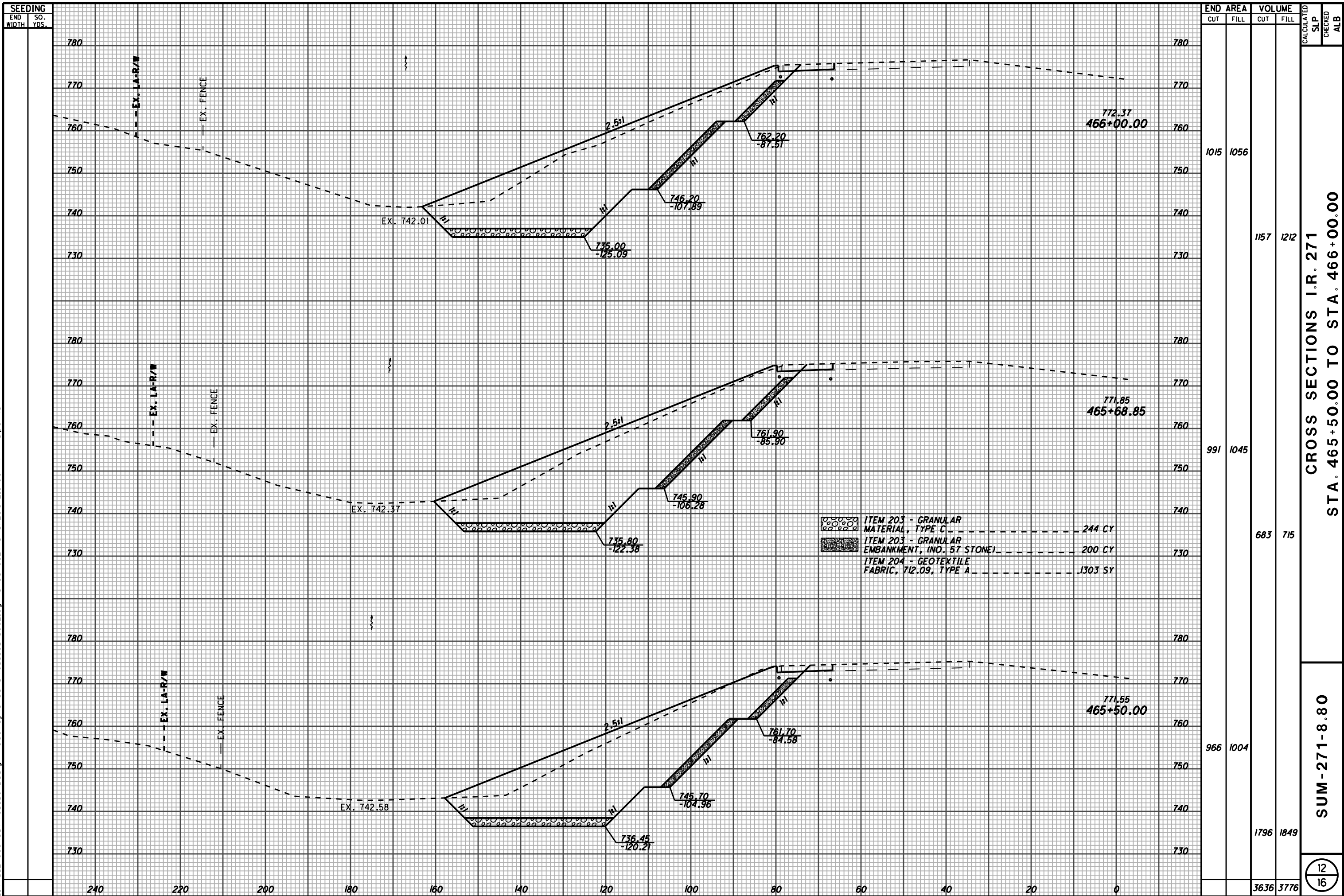
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FOR QUANTITIES, SEE SHEET 9.

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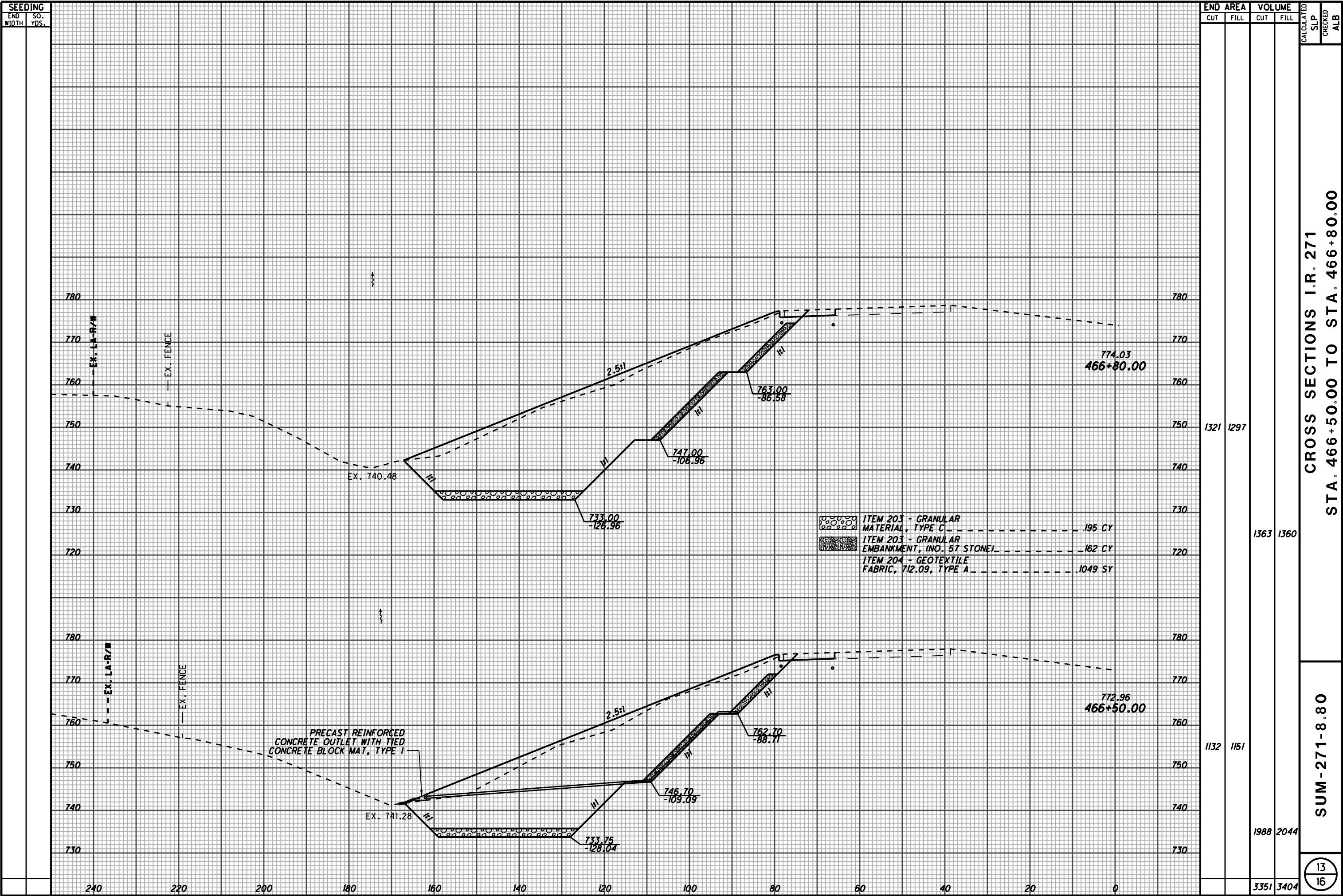


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STA. 465+50.00 TO STA. 466+00.00

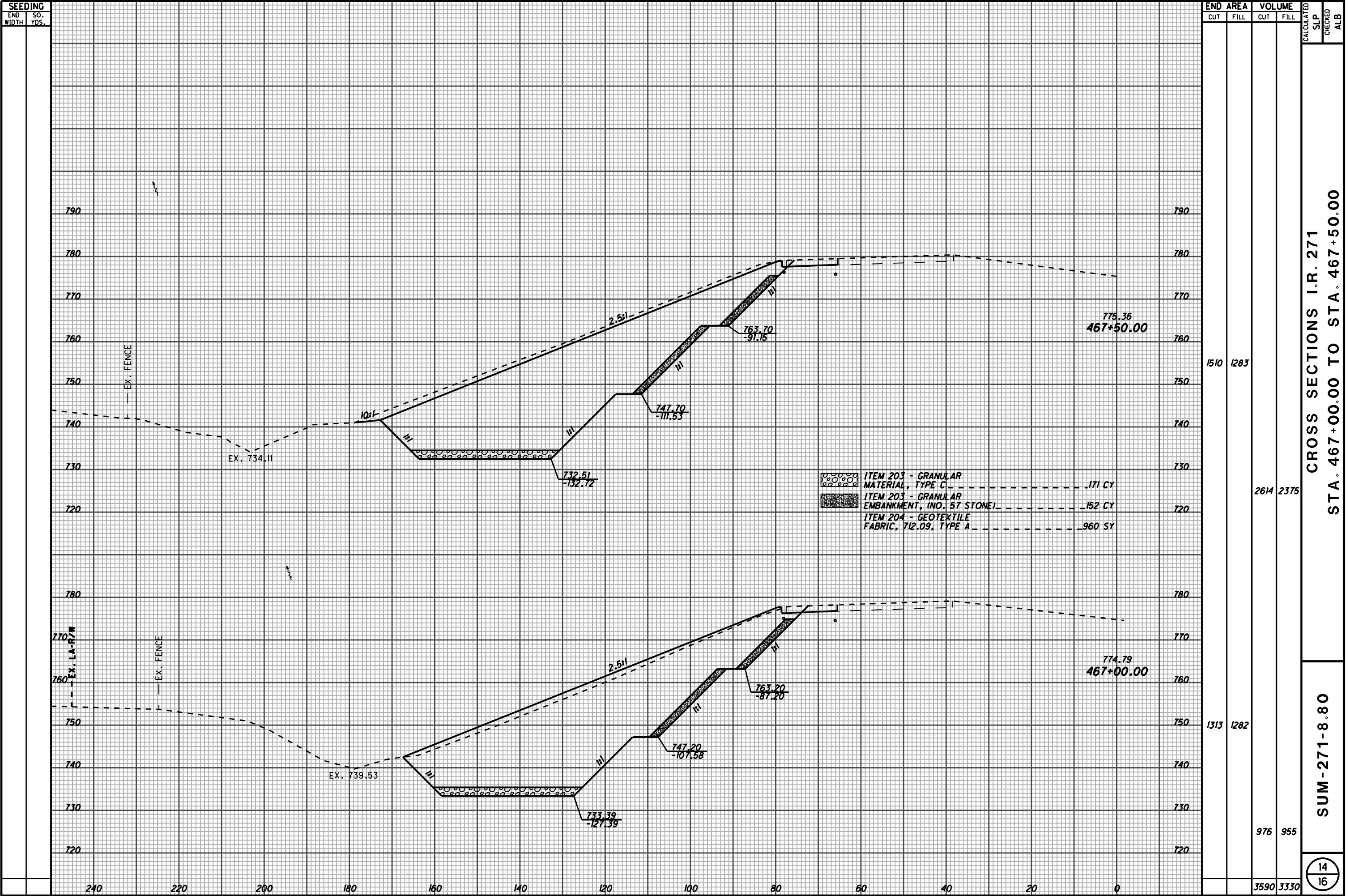
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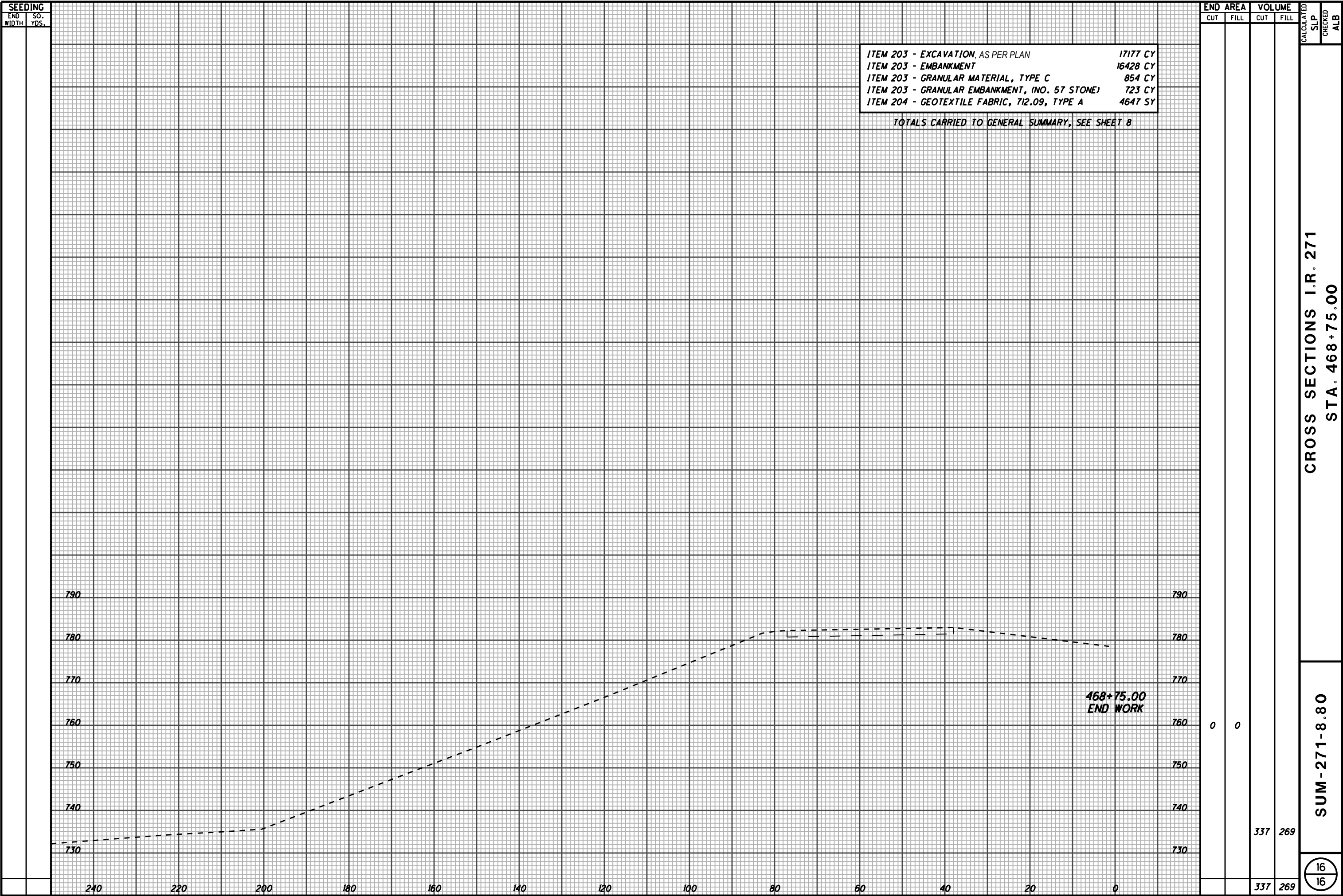
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PROJECT DESCRIPTION

REPAIRING A HIGHWAY EMBANKMENT EXHIBITING SIGNS OF A SLOPE INSTABILITY LOCATED ON INTERSTATE ROUTE 271 (IR-271) IN BOSTON TOWNSHIP, OHIO NEAR MILE 8.80 IN SUMMIT COUNTY, OHIO.

HISTORIC RECORDS

HISTORICAL BORINGS WERE FOUND WITHIN THE VICINITY OF THE PROJECT LOCATION; HOWEVER, THOSE BORINGS DO NOT FALL WITHIN THE CURRENT PROJECT LIMITS.

GEOLOGY

THE PROJECT SITE IS LOCATED IN THE BOUNDARIES OF THE KILLBUCK-GLACIATED PITTSBURGH PLATEAU AND THE AKRON-CANTON INTERLOBATE PLATEAU REGIONS OF OHIO. THE PROJECT SITE IS COMPRISED OF WISCONSINIAN-AGED CLAY TO LOAM GLACIAL TILL OVER MISSISSIPPIAN-AND PENNSYLVANIAN-AGE SHALES, SANDSTONES, CONGLOMERATES, AND COALS.

RECONNAISSANCE

ON SEPTEMBER 16, 2016 A SITE RECONNAISSANCE VISIT WAS MADE TO INVESTIGATE THE HIGHWAY EMBANKMENT IN SUMMIT COUNTY, OHIO. THE EMBANKMENT IS LOCATED NEAR MILE 8.80 BETWEEN STATIONS 465+00 TO 468+00 OF IR-271 ALONG THE SOUTHBOUND LANES. THE LANDSLIDE WITHIN THE HIGHWAY EMBANKMENT EXTENDS APPROXIMATELY 300 FEET AND HAS DEVELOPED WITHIN THE MID TO UPPER PORTION OF THE EMBANKMENT. THE SLIDING MASS HAS CAUSED DAMAGE TO THE OUTSIDE SHOULDER AND GUARDRAIL OF THE SOUTHBOUND LANES.

SUBSURFACE EXPLORATION

A TOTAL OF FIVE BORINGS WERE PERFORMED AS PART OF THIS GEOTECHNICAL EXPLORATION. AMONGST THE FIVE BORINGS, SLOPE INCLINOMETERS WERE INSTALLED IN THREE BORINGS, ONE NEAR THE SHOULDER (B-003-0-16), ONE NEAR THE MIDSLOPE (B-002-0-16), AND ONE NEAR THE TOE (B-003-1-16). BORINGS B-001-0-16 AND B-003-0-16 WERE LOCATED NEAR OR WITHIN THE EXISTING OUTSIDE SHOULDER OF I-271, BORING B-002-0-16 WAS LOCATED ALONG THE MIDSLOPE OF THE EMBANKMENT, AND BORINGS B-001-1-16 AND B-003-1-16 WERE LOCATED ALONG THE TOE OF THE EMBANKMENT SLOPE.

ALL BORINGS WERE ADVANCED WITH AN ATV-MOUNTED DRILL RIG USING 4.25-INCH INSIDE-DIAMETER HOLLOW-STEM AUGERS. DUE TO THE FAIRLY STEEP 2:1(H:V) SLOPE OF THE HIGHWAY EMBANKMENT, THE BORINGS ON THE SLOPE REQUIRED THE USE OF A WINCH TRUCK (POSITIONED AT THE TOP OF THE EMBANKMENT) TO PROVIDE ANCHORAGE DURING RIG PLACEMENT AND DRILLING OPERATIONS. THE AUTOMATIC HAMMER SYSTEM USED WAS LAST CALIBRATED ON NOVEMBER, 29TH, 2016, AND THE AVERAGE DRILL ROD ENERGY RATIO (ER) IS 90.2%.

DISTURBED SAMPLES WERE COLLECTED IN ACCORDANCE WITH THE STANDARD PENETRATION TEST (AASHTO T206) AT CONTINUOUS INTERVALS FOR THE FULL SOIL DEPTH OF THE BORINGS. UNDISTURBED SAMPLES WERE COLLECTED IN ACCORDANCE WITH THIN-WALLED TUBE SAMPLING OF SOILS (AASHTO T207). NONE OF THE BORINGS WERE ADVANCED INTO BEDROCK.

EXPLORATION FINDINGS

TOPSOIL WITHIN THE MAJORITY OF THE BORINGS IN THE PROJECT VICINITY WAS REGULARLY FOUND TO BE COMPOSED OF A MEDIUM STIFF TO STIFF BROWN MOTTLED GRAY, FINE GRAINED SOIL CONSISTING OF CLAYS AND SILTS THAT WERE DAMP TO MOIST AND VISUALLY CLASSIFIED AS A-7-6 SOILS. TOPSOIL THICKNESSES RANGED FROM 0 TO 1.5 FEET ACROSS THE PROJECT SITE.

EMBANKMENT SOILS WERE ENCOUNTERED BELOW THE TOPSOIL. THESE SOILS WERE DESCRIBED AS FINE GRAINED SOIL, BROWN MOTTLED GRAY IN COLOR AND STIFF TO HARD. THESE SOILS WERE DAMP, WITH HAND PENETROMETER RECORDINGS ON AVERAGE BETWEEN 4.0 TSF TO 4.5+ TSF. THE PREDOMINANT ODOT SOIL CLASSIFICATIONS ENCOUNTERED IN THIS LAYER WERE A-6A AND A-6B.

RESIDUAL SOILS WERE ENCOUNTERED AT A WIDE RANGE OF DEPTHS BELOW THE EMBANKMENT MATERIAL OVER THE PROJECT VICINITY RANGING FROM ELEVATION 732 FEET TO 712 FEET. THESE SOILS MAY BE DESCRIBED AS BOTH GRANULAR AND FINE GRAINED SOILS. ODOT SOIL CLASSIFICATIONS ENCOUNTERED IN THIS LAYER WERE A-1-B AND A-4B.

GROUNDWATER WAS ONLY ENCOUNTERED IN BORING B-003-0-16 AT AN ELEVATION OF 734.3 FEET. IN ALL OTHER BORINGS, GROUNDWATER WAS NOT ENCOUNTERED DURING THE EXPLORATION.

SPECIFICATIONS

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

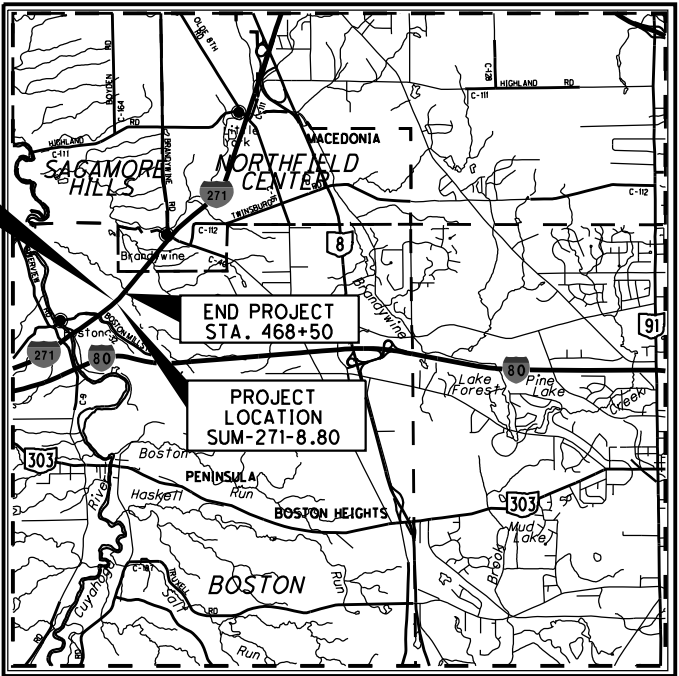
AVAILABLE INFORMATION

THE AVAILABLE SOIL AND BEDROCK INFORMATION THAT CAN BE CONVENIENTLY SHOWN ON THE GEOTECHNICAL EXPLORATION SHEETS HAS BEEN SO REPORTED. ADDITIONAL EXPLORATIONS MAY HAVE BEEN MADE TO STUDY SOME SPECIAL ASPECTS OF THE PROJECT. COPIES OF THIS DATA, IF ANY, MAY BE INSPECTED IN THE OFFICE OF GEOTECHNICAL ENGINEERING AT 1980 WEST BROAD STREET.

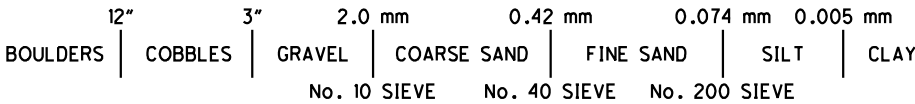
LEGEND

DESCRIPTION	ODOT CLASS	CLASSIFIED MECH./VISUAL	
GRAVEL AND/OR STONE FRAGMENTS WITH SAND	A-1-b	2	13
GRAVEL AND/OR STONE FRAGMENTS WITH SAND AND SILT	A-2-4	1	0
COARSE AND FINE SAND	A-3a	0	1
SILT	A-4b	2	14
SILT AND CLAY	A-6a	8	71
SILTY CLAY	A-6b	5	45
CLAY	A-7-6	0	1
	TOTAL	18	145
PAVEMENT OR BASE = X = APPROXIMATE THICKNESS	VISUAL		
SOD AND/OR TOPSOIL = X = APPROXIMATE THICKNESS	VISUAL		
INCLINOMETER BORING LOCATION - PLAN VIEW			
BORING LOCATION - PLAN VIEW			
DRIVE SAMPLE AND/OR ROCK CORE BORING PLOTTED TO VERTICAL SCALE ONLY. HORIZONTAL BAR INDICATES A CHANGE IN STRATIGRAPHY.			
N_{60}	INDICATES STANDARD PENETRATION RESISTANCE NORMALIZED TO 60% DRILL ROD ENERGY RATIO.		
X/Y/D"	NUMBER OF BLOWS FOR STANDARD PENETRATION TEST (SPT): X= NUMBER OF BLOWS FOR 6 INCHES (UNCORRECTED). Y/D"= NUMBER OF BLOWS (UNCORRECTED) FOR D" OF PENETRATION AT REFUSAL.		
WC	INDICATES WATER CONTENT IN PERCENT.		
NP	INDICATES A NON-PLASTIC SAMPLE.		
SS	INDICATES A SPLIT SPOON SAMPLE, STANDARD PENETRATION TEST.		
ST	INDICATES A SHELBY TUBE SAMPLE.		
INDICATES A NON-PLASTIC SOIL WITH MOISTURE CONTENT GREATER THAN 19% WITH A WET APPEARANCE.			

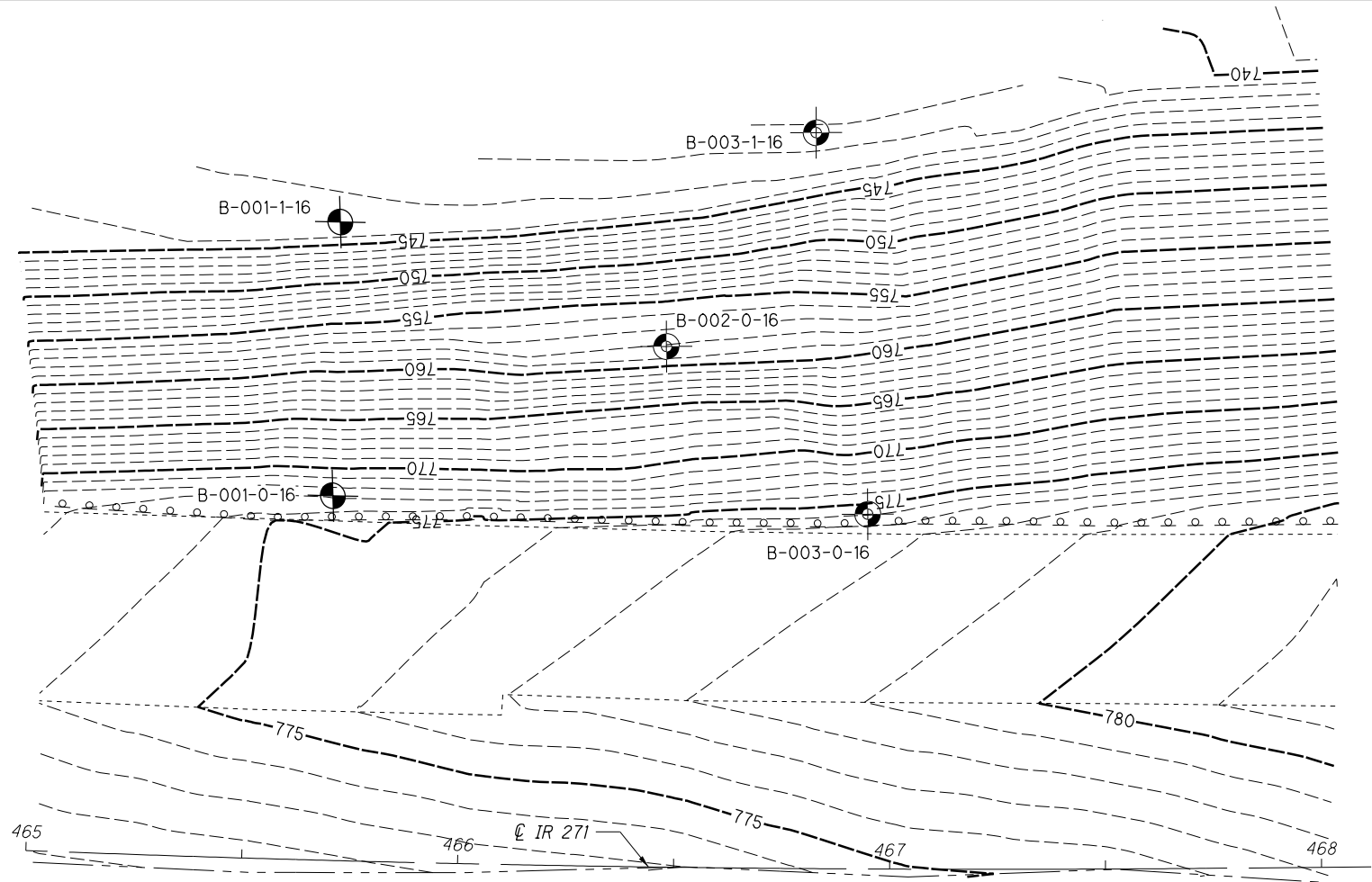
RECON. - PC 09/16/16
DRILLING - PC 11/28/16 TO 12/07/16
DRAWN - MJ 05/18
REVIEWED - ENM 05/18



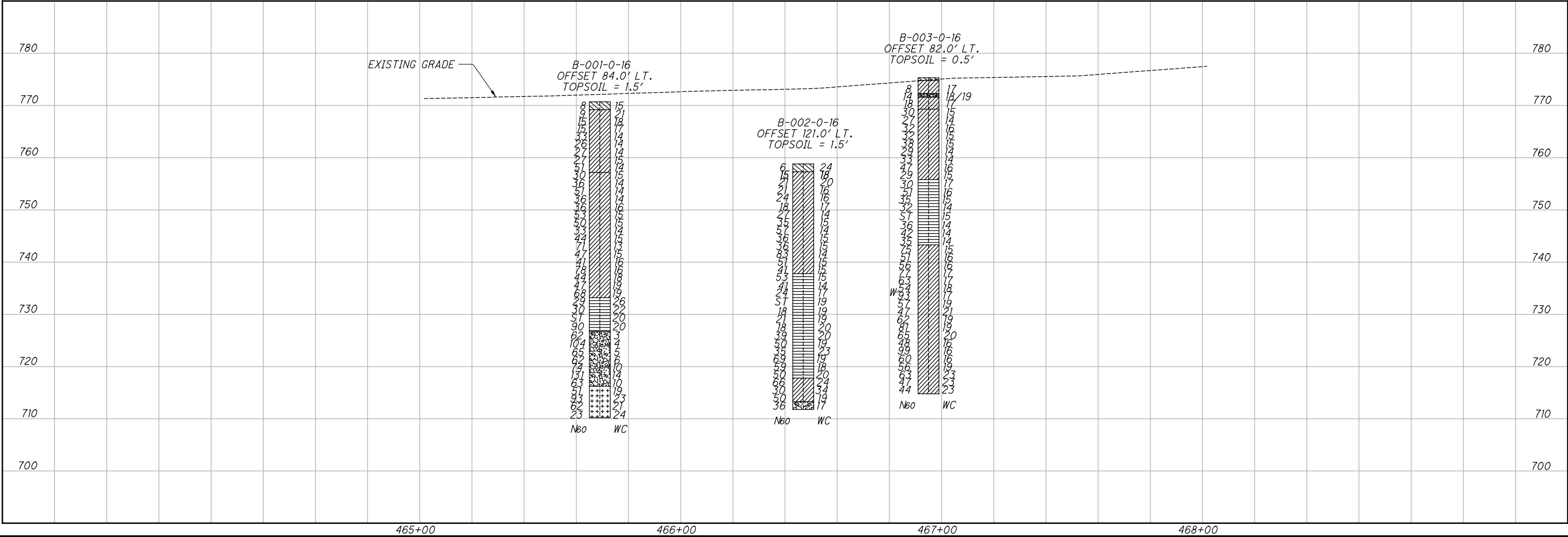
PARTICLE SIZE DEFINITIONS



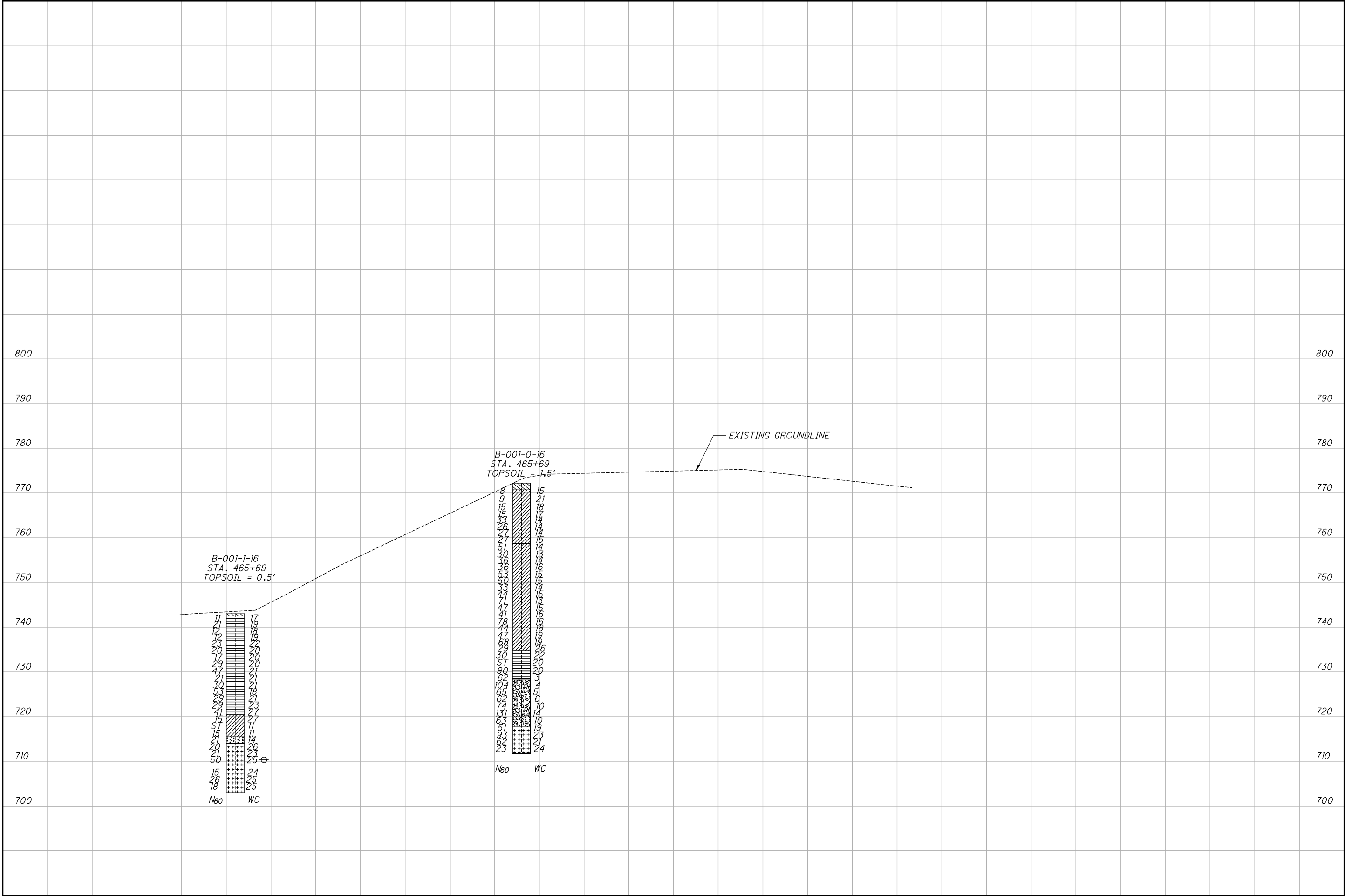
U:\175527006\SUM\103930\Design\Geotechnical\Sheets\103930Y\CO01.dgn 1/11/2019 10:28:00 AM sparker



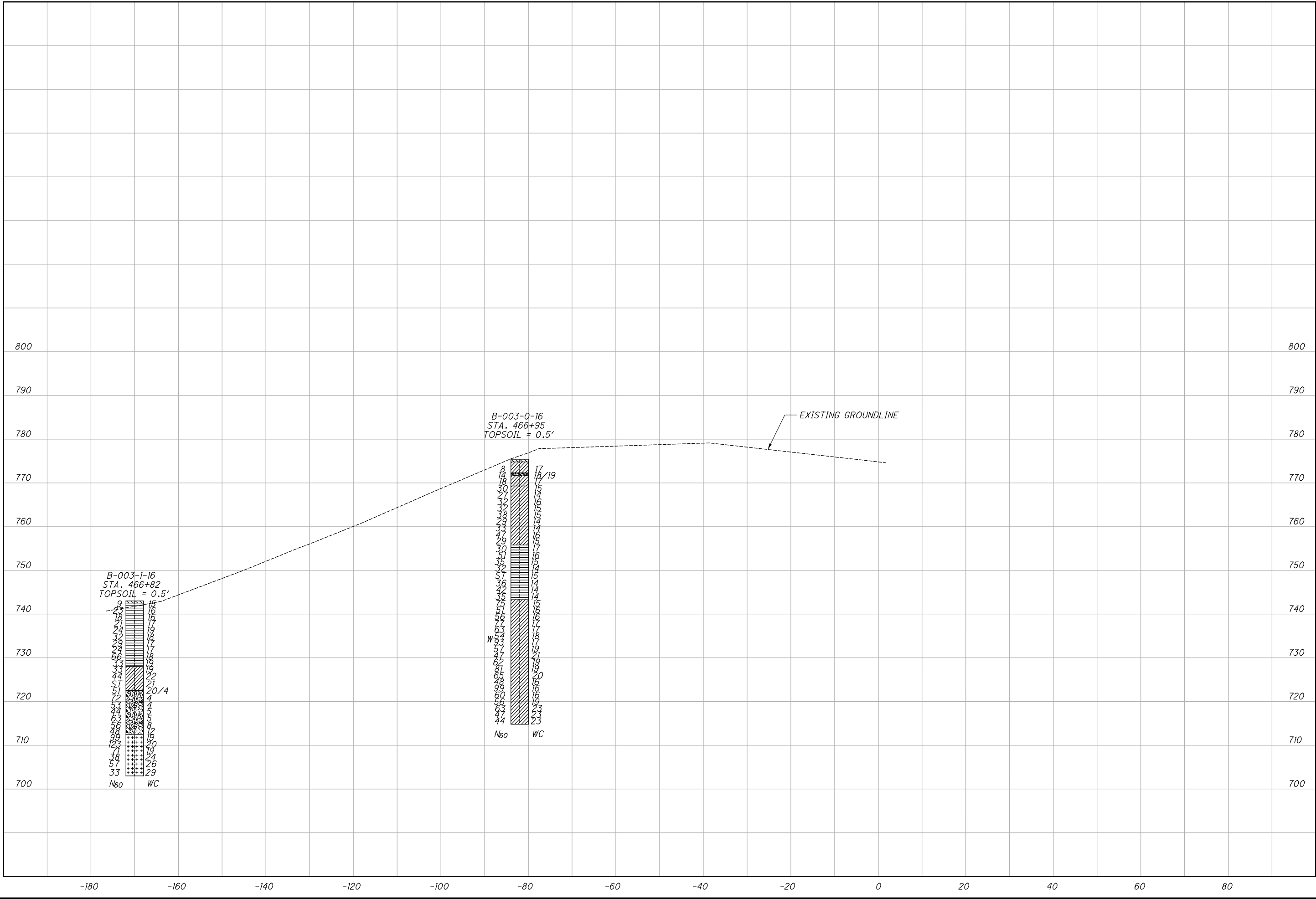
NOTES:
FOR ADDITIONAL BORING INFORMATION AT
STATION 465+50, SEE CROSS SECTION
SHEET 465+50 SHEET NO. 3.
FOR ADDITIONAL BORING INFORMATION AT
STATION 467+00, SEE CROSS SECTION
SHEET 467+00 SHEET NO. 4.



U:\175527006\SUM\103930\Design\Geotechnical\Sheets\103930YX465+50.dgn Sheet 1/11/2019 8:37:45 AM Mlenings



	3 / 12		SUM-271-8.80	LANDSLIDE EXPLORATION CROSS SECTION STATION 465+50	DRAWN MSJ CHECKED JRM	 HORIZONTAL SCALE IN FEET



LANDSLIDE EXPLORATION
CROSS SECTION STATION 467+00

SUM-271-8.80



DRAWN
MSJ
CHECKED
JRM



OHIO DEPARTMENT OF TRANSPORTATION
OFFICE OF GEOTECHNICAL ENGINEERING

LOG OF BORING

PROJECT: SUM-271-8.80 TYPE: LANDSLIDE		DRILLING FIRM / OPERATOR: STANTEC / M.M. SAMPLING FIRM / LOGGER: STANTEC / P.CICHOCKI		DRILL RIG: CME 45 TRUCK HAMMER: CME AUTOMATIC		STATION / OFFSET: 465+69, 84' LT. ALIGNMENT: I-271										EXPLORATION ID B-001-0-16								
PID: 103930 SFN:		DRILLING METHOD: 4.25" HSA		CALIBRATION DATE: 11/29/16		ELEVATION: 772.2 (MSL) EOB: 60.5 ft.										PAGE								
START: 12/1/16 END: 12/5/16		SAMPLING METHOD: SPT / ST		ENERGY RATIO (%): 90.2		LAT / LONG: 41.267082, -81.547182										1 OF 1								
MATERIAL DESCRIPTION AND NOTES				ELEV.	DEPTHS	SPT/ RQD	N _a	REC SAMPLE (%)	ID	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL			
TOPSOIL				772.2		WOH 2 3	8	47	SS-1	1.50	-	-	-	-	-	-	-	-	-	15	A-7-6 (V)			
STIFF TO VERY STIFF, BROWN MOTTLED GRAY, SILT AND CLAY, LITTLE GRAVEL, TRACE SAND, MOIST TO DAMP				770.7		3 3 3	9	67	SS-2	2.50	-	-	-	-	-	-	-	-	-	21	A-6a (V)			
						3 4	15	60	SS-3	3.75	15	4	5	35	41	32	18	14	18	14	18	A-6a (10)		
						5 5 5	15	100	SS-4	3.25-3.75	-	-	-	-	-	-	-	-	-	-	-	17	A-6a (V)	
						7 9 13	33	80	SS-5	4.5+	-	-	-	-	-	-	-	-	-	-	-	14	A-6a (V)	
						7 8 9	26	100	SS-6	4.5+	-	-	-	-	-	-	-	-	-	-	-	14	A-6a (V)	
						7 8 10	27	93	SS-7	4.50	-	-	-	-	-	-	-	-	-	-	-	14	A-6a (V)	
						7 9 9	27	100	SS-8	4.5+	-	-	-	-	-	-	-	-	-	-	-	15	A-6a (V)	
						11 17 17	51	47	SS-9	4.50	-	-	-	-	-	-	-	-	-	-	-	14	A-6a (V)	
						5 7 13	30	100	SS-10	4.5+	-	-	-	-	-	-	-	-	-	-	-	15	A-6a (V)	
						7 9 15	36	100	SS-11	4.5+	-	-	-	-	-	-	-	-	-	-	-	14	A-6a (V)	
						13 15 19	51	87	SS-12	4.5+	-	-	-	-	-	-	-	-	-	-	-	14	A-6a (V)	
						8 11 13	36	100	SS-13	4.5+	-	-	-	-	-	-	-	-	-	-	-	14	A-6a (V)	
						5 11 13	36	93	SS-14	4.5+	-	-	-	-	-	-	-	-	-	-	-	16	A-6a (V)	
						21 15 15	53	80	SS-15	4.5+	-	-	-	-	-	-	-	-	-	-	-	15	A-6a (V)	
						10 11 22	50	100	SS-16	4.5+	-	-	-	-	-	-	-	-	-	-	-	15	A-6a (V)	
						8 10 12	33	100	SS-17	4.5+	8	4	6	35	47	33	18	15	14	A-6a (10)				
						4 10 19	44	93	SS-18	4.0-4.5	-	-	-	-	-	-	-	-	-	-	-	15	A-6a (V)	
						15 20 27	71	80	SS-19	4.5+	-	-	-	-	-	-	-	-	-	-	-	13	A-6a (V)	
		10 12 19	47	100	SS-20	4.5+	-	-	-	-	-	-	-	-	-	-	-	15	A-6a (V)					
		9 11 16	41	100	SS-21	4.5+	-	-	-	-	-	-	-	-	-	-	-	16	A-6a (V)					
		18 22 30	78	93	SS-22	4.5+	-	-	-	-	-	-	-	-	-	-	-	16	A-6a (V)					
		7 13 16	44	100	SS-23	2.5-4.5	-	-	-	-	-	-	-	-	-	-	-	18	A-6a (V)					
		9 15 16	47	100	SS-24	2.25-4.5	-	-	-	-	-	-	-	-	-	-	-	19	A-6a (V)					
		16 22 35	68	67	SS-25	4.5+	-	-	-	-	-	-	-	-	-	-	-	19	A-6a (V)					
		7 9 10	29	100	SS-26	2.5-4.0	-	-	-	-	-	-	-	-	-	-	-	26	A-6b (V)					
		7 10 10	30	100	SS-27	2.50	-	-	-	-	-	-	-	-	-	-	-	22	A-6b (V)					
				95	ST-1	-	4	2	4	38	52	39	21	18	20	A-6b (11)								
		8 10 50	90	67	SS-28	1.25	-	-	-	-	-	-	-	-	-	-	-	20	A-6b (V)					
		11 20 21	62	87	SS-29	-	-	-	-	-	-	-	-	-	-	-	-	3	A-1-b (V)					
		22 34 35	104	67	SS-30	-	-	-	-	-	-	-	-	-	-	-	-	4	A-1-b (V)					
		14 19 24	65	87	SS-31	-	-	-	-	-	-	-	-	-	-	-	-	5	A-1-b (V)					
		16 19 22	62	100	SS-32	-	33	39	14	9	5	NP	NP	NP	6	A-1-b (0)								
		8 9 40	74	100	SS-33	-	-	-	-	-	-	-	-	-	-	-	-	10	A-1-b (V)					
		34 35 52	131	100	SS-34	-	-	-	-	-	-	-	-	-	-	-	-	14	A-1-b (V)					
		10 20 22	63	80	SS-35	-	-	-	-	-	-	-	-	-	-	-	-	10	A-1-b (V)					
		1 13 21	51	100	SS-36	-	-	-	-	-	-	-	-	-	-	-	-	19	A-4b (V)					
		21 29 33	93	93	SS-37	-	-	-	-	-	-	-	-	-	-	-	-	23	A-4b (V)					
		9 16 25	62	100	SS-38	-	-	-	-	-	-	-	-	-	-	-	-	21	A-4b (V)					
		4 6 9	23	100	SS-39	-	0	0	6	71	23	NP	NP	NP	24	A-4b (8)								
NOTES: NONE				711.7	EOB																			
ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH AUGER CUTTINGS; PUMPED 1 BAG BENTONITE GROUT; PUMPED 3 BAGS CEMENT																								

SUM - 271 - 8.80

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LANDSLIDE EXPLORATION
BORING LOG B-001-0-16

DRAWN
MSJ

CHECKED
JRM

OHIO DEPARTMENT OF TRANSPORTATION
OFFICE OF GEOTECHNICAL ENGINEERING

LOG OF BORING

PROJECT: SUM-271-8.80 TYPE: LANDSLIDE PID: 103930 SFN: START: 11/29/16 END: 11/29/16			DRILLING FIRM / OPERATOR: STANTEC / M.M. SAMPLING FIRM / LOGGER: STANTEC / P.CICHOCKI DRILLING METHOD: 4.25" HSA SAMPLING METHOD: SPT / ST			DRILL RIG: CME 45 TRUCK HAMMER: CME AUTOMATIC CALIBRATION DATE: 11/29/16 ENERGY RATIO (%): 90.2			STATION / OFFSET: 465+69, 148' LT. ALIGNMENT: I-271 ELEVATION: 743.0 (MSL) EOB: 40.0 ft. LAT / LONG: 41.267199, -81.547352						EXPLORATION B-001-1-16												
MATERIAL DESCRIPTION AND NOTES						ELEV. 743.0	DEPTHS	SPT/ RQD	N _s	REC SAMPLE (%)	HP (tsf)	GRADATION (%)				ATTERBERG	WC	PI	ODOT CLASS (GI)	BACK FILL							
TOPSOIL MEDIUM STIFF TO STIFF, BROWN MOTTLED GRAY, SILTY CLAY, TRACE SAND, DAMP						742.5		1	3	11	100	SS-1	3.75- 4.25	-	-	-	-	-	-	17	A-6b (V)						
									5	6	21	60	SS-2	2.75	-	-	-	-	-	-	-	19	A-6b (V)				
									3	3	12	100	SS-3	3.50	-	-	-	-	-	-	-	18	A-6b (V)				
									4	3	5																
									5	2	3	5															
								737.0	6	5	7	8	23	93	SS-5	4.00	-	-	-	-	-	-	-	22	A-6b (V)		
									8	3	5	20	100	SS-6	4.00	4	3	6	37	50	37	19	18	20	A-6b (11)		
									9	4	4	17	93	SS-7	3.50	-	-	-	-	-	-	-	-	20	A-6b (V)		
									10	4	7																
									11	4	7	29	100	SS-8	4.00	-	-	-	-	-	-	-	-	20	A-6b (V)		
STIFF TO VERY STIFF, BROWN MOTTLED GRAY, SILTY CLAY, TRACE SAND AND GRAVEL, DAMP						720.5	12	13	14	47	93	SS-9	3.5- 4.5+	-	-	-	-	-	-	21	A-6b (V)						
							13	14	17																		
							14	4	6	8	21	100	SS-10	2.50	-	-	-	-	-	-	-	-	21	A-6b (V)			
							15	5	7	30	100	SS-11	3.25	-	-	-	-	-	-	-	-	-	21	A-6b (V)			
							16	7	13	53	93	SS-12	4.5+	-	-	-	-	-	-	-	-	-	18	A-6b (V)			
							17	13	16	19	100	SS-13	3.25	-	-	-	-	-	-	-	-	-	21	A-6b (V)			
							18	4	8	29	100	SS-13	3.25	-	-	-	-	-	-	-	-	-	21	A-6b (V)			
							19	5	9	29	100	SS-14	3.75	-	-	-	-	-	-	-	-	-	23	A-6b (V)			
							20	12	12	41	87	SS-15	-	-	-	-	-	-	-	-	-	-	27	A-6b (V)			
							21	12	15																		
STIFF, GRAY, SILT AND CLAY, AND GRAVEL, SOME SAND, DAMP TO MOIST						703.0	23	4	15	100	SS-16	1.75- 2.25	-	-	-	-	-	-	-	27	A-6a (V)						
							24	6			55	ST-1	-	36	15	11	17	21	31	18	13	11	A-6a (1)				
							25																				
							26	4	5	15	100	SS-17	-	-	-	-	-	-	-	-	-	-	11	A-6a (V)			
							27	5																			
							28	4	7	21	87	SS-18	-	-	-	-	-	-	-	-	-	-	14	A-3a (V)			
							29	4	7	7																	
							30	4	5	20	100	SS-19	0.25	-	-	-	-	-	-	-	-	-	26	A-4b (V)			
							31	4	5	21	100	SS-20	>.25	-	-	-	-	-	-	-	-	-	23	A-4b (V)			
							32	10	14	50	100	SS-21	0.25	0	15	68	17	NP	NP	NP	NP	25	A-4b (8)				
MEDIUM DENSE, BROWN AND GRAY, COARSE AND FINE SAND, LITTLE SILT AND CLAY, DAMP TO MOIST						715.5	33	19																			
							34																				
							35																				
							36	4	4	15	100	SS-22	0.50	-	-	-	-	-	-	-	-	-	24	A-4b (V)			
							37	3	6	26	100	SS-23	0.75	-	-	-	-	-	-	-	-	-	25	A-4b (V)			
							38	5	6	11																	
							39	5	5	18	100	SS-24	0.50	-	-	-	-	-	-	-	-	-	25	A-4b (V)			
							40	7																			
							STIFF TO VERY STIFF, BROWN AND GRAY, SILT, LITTLE CLAY AND SAND, VERY FINE GRAINED, MOIST TO WET						714.0	41													
														42													
43																											
44																											
45																											
46																											
47																											
48																											
49																											
50																											
NOTES: NONE																											
ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH SOIL CUTTINGS																											

OHIO DEPARTMENT OF TRANSPORTATION
OFFICE OF GEOTECHNICAL ENGINEERING

LOG OF BORING

PROJECT: SUM-271-8.80	DRILLING FIRM / OPERATOR: STANTEC / M.M.	DRILL RIG: CME 45 TRUCK	STATION / OFFSET: 466+47, 121' LT.	EXPLORATION ID
TYPE: LANDSLIDE	SAMPLING FIRM / LOGGER: STANTEC / P.CICHOCKI	HAMMER: CME AUTOMATIC	ALIGNMENT: I-271	B-002-0-16
PID: 103930 SFN:	DRILLING METHOD: 4.25" HSA	CALIBRATION DATE: 11/29/16	ELEVATION: 758.8 (MSL) EOB: 47.0 ft.	PAGE
START: 12/5/16 END: 12/7/16	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 90.2	LAT / LONG: 41.267304, -81.547093	1 OF 1

MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ WOH	N _a	REC (%)	SAMPLE ID	HP (tsf)	GR	CS	FS	SI	OL	PL	PI	WC	ODOT CLASS (GI)	INCL.
TOPSOIL		758.8		1	6	67	SS-1	2.5-	-	-	-	-	-	-	-	-	24	A-6a (V)
		757.3		2	15	60	SS-2	1.75	-	-	-	-	-	-	-	-	18	A-6a (V)
				3	21	100	SS-3	1.5-	-	-	-	-	-	-	-	-	20	A-6a (V)
				4	21	100	SS-4	3.75-	-	-	-	-	-	-	-	-	16	A-6a (V)
				5	24	87	SS-5	3.25-	8	3	7	38	44	31	18	13	16	A-6a (9)
				6	18	80	SS-6	2.5-	-	-	-	-	-	-	-	-	17	A-6a (V)
				7	27	100	SS-7	4.50	-	-	-	-	-	-	-	-	14	A-6a (V)
				8	35	100	SS-8	4.50	-	-	-	-	-	-	-	-	15	A-6a (V)
				9	57	100	SS-9	4.50	-	-	-	-	-	-	-	-	14	A-6a (V)
				10	36	93	SS-10	4.50	-	-	-	-	-	-	-	-	15	A-6a (V)
				11	36	100	SS-11	4.25-	-	-	-	-	-	-	-	-	15	A-6a (V)
				12	83	73	SS-12	4.5+	-	-	-	-	-	-	-	-	14	A-6a (V)
				13	51	100	SS-13	4.5+	-	-	-	-	-	-	-	-	15	A-6a (V)
				14	41	93	SS-14	4.5+	-	-	-	-	-	-	-	-	15	A-6a (V)
				15	53	67	SS-15	4.5+	-	-	-	-	-	-	-	-	15	A-6b (V)
				16	41	100	SS-16	4.50	-	-	-	-	-	-	-	-	14	A-6b (V)
				17	24	100	SS-17	2.75-	-	-	-	-	-	-	-	-	17	A-6b (V)
				18	8	95	ST-1	-	8	4	6	34	48	39	19	20	19	A-6b (12)
				19	18	100	SS-18	2.50	-	-	-	-	-	-	-	-	19	A-6b (V)
				20	21	93	SS-19	2.25-	-	-	-	-	-	-	-	-	19	A-6b (V)
				21	18	87	SS-20	3.25-	-	-	-	-	-	-	-	-	20	A-6b (V)
				22	39	87	SS-21	4.50	-	-	-	-	-	-	-	-	20	A-6b (V)
				23	50	100	SS-22	4.5+	-	-	-	-	-	-	-	-	19	A-6b (V)
				24	35	100	SS-23	3.75-	-	-	-	-	-	-	-	-	23	A-6b (V)
				25	69	80	SS-24	4.50	-	-	-	-	-	-	-	-	19	A-6b (V)
				26	59	100	SS-25	4.5+	-	-	-	-	-	-	-	-	18	A-6b (V)
				27	50	100	SS-26	3.75	-	-	-	-	-	-	-	-	20	A-6b (V)
				28	66	100	SS-27	2.75-	-	-	-	-	-	-	-	-	24	A-6a (V)
				29	30	100	SS-28	2.5-	-	-	-	-	-	-	-	-	34	A-6a (V)
				30	50	100	SS-29	1.50	17	13	15	29	26	37	22	15	19	A-6a (6)
				31	36	87	SS-30	-	-	-	-	-	-	-	-	-	17	A-1-b (V)
				32	10	717.8												
				33	15	713.3												
				34	21	711.8												
				35	23													
				36	10													
				37	16													
				38	23													
				39	11													
				40	18													
				41	20													
				42	21													
				43	7													
				44	10													
				45	12													
				46	26													
				47	14													
			EOB	47														

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PUMPED 1 BAG BENTONITE GROUT; PUMPED 5 BAGS CEMENT

OHIO DEPARTMENT OF TRANSPORTATION
OFFICE OF GEOTECHNICAL ENGINEERING

LOG OF BORING

PROJECT: SUM-271-8.80			DRILLING FIRM / OPERATOR: STANTEC / M/M			DRILL RIG: CME 45 TRUCK			STATION / OFFSET: 466+95, 82' LT.										EXPLORATION		
TYPE: LANDSLIDE			SAMPLING FIRM / LOGGER: STANTEC / P.CIGIOCKI			HAMMER: CME AUTOMATIC			ALIGNMENT: I-271										B-003-0-16		
PID: 103930 SFN:			DRILLING METHOD: 4.25" HSA			CALIBRATION DATE: 11/29/16			ELEVATION: 775.3 (MSL) EOB: 60.5 ft.										PAGE		
START: 11/30/16 END: 12/1/16			SPT / ST			ENERGY RATIO (%): 90.2			LAT / LONG: 41.267331, -81.546875										1 OF 1		
MATERIAL DESCRIPTION AND NOTES			ELEV.	DEPTHS	SPT/ RQD	N _a	REC SAMPLE ID	HP (tsf)	GR	CS	FS	SI	QL	LL	PL	PI	WC	ODOT CLASS (GI)	INCL.		
TOPSOIL MEDIUM STIFF, BROWN, SILT AND CLAY, TRACE TO LITTLE SAND, DAMP			775.3	1																	
			774.8	2	3	8	80	SS-1	3.00	-	-	-	-	-	-	-	-	-			
			772.3	3																	
			771.6	4	5	14	100	SS-2A	-	43	11	12	22	12	25	16	9	18	A-2-4 (O)		
				5	7	18	100	SS-2B	4.00	-	-	-	-	-	-	-	-	-	19	A-6a (V)	
			769.3	6	8	30	87	SS-3	4.00	-	-	-	-	-	-	-	-	-	17	A-6a (V)	
				7	12	30	87	SS-4	4.5+	-	-	-	-	-	-	-	-	-	15	A-6a (V)	
				8	11	27	100	SS-5	4.5+	-	-	-	-	-	-	-	-	-	14	A-6a (V)	
				9	13	32	100	SS-6	4.5+	7	2	5	44	42	32	18	14	16	A-6a (10)		
				10	14	32	100	SS-7	4.5+	-	-	-	-	-	-	-	-	-	15	A-6a (V)	
VERY STIFF TO HARD, BROWN MOTTLED GRAY, SILTY CLAY, LITTLE GRAVEL, TRACE TO LITTLE SAND, DAMP TO MOIST			755.8	11	13	38	87	SS-8	4.5+	-	-	-	-	-	-	-	15	A-6a (V)			
				12	13	38	87	SS-9	4.5+	-	-	-	-	-	-	-	-	-	14	A-6a (V)	
				13	29	100	SS-10	4.5+	-	-	-	-	-	-	-	-	-	-	14	A-6a (V)	
				14	33	100	SS-11	4.5+	-	-	-	-	-	-	-	-	-	-	16	A-6a (V)	
				15	47	100	SS-12	4.5+	-	-	-	-	-	-	-	-	-	-	15	A-6a (V)	
				16	29	100	SS-13	4.5+	-	-	-	-	-	-	-	-	-	-	15	A-6a (V)	
				17	36	100	SS-14	4.5+	-	-	-	-	-	-	-	-	-	-	14	A-6b (V)	
				18	42	80	SS-15	4.5+	-	-	-	-	-	-	-	-	-	-	14	A-6b (V)	
				19	35	93	SS-16	4.5+	-	-	-	-	-	-	-	-	-	-	14	A-6b (V)	
				20	51	73	SS-17	4.50	-	-	-	-	-	-	-	-	-	-	15	A-6b (10)	
HARD, BROWN MOTTLED GRAY, SILT AND CLAY, TRACE SAND AND GRAVEL, DAMP TO MOIST			743.3	21	14	51	73	SS-18	4.50	-	-	-	-	-	-	-	14	A-6b (V)			
				22	17	36	100	SS-19	4.50	-	-	-	-	-	-	-	-	-	14	A-6b (V)	
				23	42	80	SS-20	4.50	-	-	-	-	-	-	-	-	-	-	15	A-6a (V)	
				24	35	80	SS-21	4.50	-	-	-	-	-	-	-	-	-	-	16	A-6a (V)	
				25	14	51	100	SS-22	4.50	-	-	-	-	-	-	-	-	-	16	A-6a (V)	
				26	18	75	93	SS-23	4.50	-	-	-	-	-	-	-	-	-	17	A-6a (V)	
				27	22	51	100	SS-24	4.50	-	-	-	-	-	-	-	-	-	17	A-6a (V)	
				28	16	56	100	SS-25	3.75	5	3	5	38	49	34	19	15	18	A-6a (10)		
				29	28	93	80	SS-26	4.50	-	-	-	-	-	-	-	-	-	17	A-6a (V)	
				30	34	57	100	SS-27	4.50	-	-	-	-	-	-	-	-	-	19	A-6a (V)	
MEDIUM DENSE, BROWN, GRAVEL AND STONE FRAGMENTS WITH SAND, SILT, AND CLAY, TRACE TO LITTLE SAND, DAMP TO MOIST			771.6	31	18	48	100	SS-28	4.50	-	-	-	-	-	-	-	21	A-6a (V)			
				32	20	62	100	SS-29	4.50	-	-	-	-	-	-	-	-	-	19	A-6a (V)	
				33	24	81	100	SS-30	4.50	-	-	-	-	-	-	-	-	-	19	A-6a (V)	
				34	65	100	SS-31	4.00	-	-	-	-	-	-	-	-	-	-	20	A-6a (V)	
				35	48	100	SS-32	4.50	-	-	-	-	-	-	-	-	-	-	16	A-6a (V)	
				36	99	80	SS-33	4.5+	-	-	-	-	-	-	-	-	-	-	16	A-6a (V)	
				37	60	100	SS-34	4.5+	-	-	-	-	-	-	-	-	-	-	16	A-6a (V)	
				38	56	100	SS-35	4.25	-	-	-	-	-	-	-	-	-	-	19	A-6a (V)	
				39	63	73	SS-36	4.25	-	-	-	-	-	-	-	-	-	-	23	A-6a (V)	
				40	47	87	SS-37	1.00	-	-	-	-	-	-	-	-	-	-	23	A-6a (V)	
MEDIUM STIFF, BROWN, SILT AND CLAY, TRACE TO LITTLE SAND, DAMP			774.8	41	11	44	100	SS-38	1.00	-	-	-	-	-	-	-	23	A-6a (V)			
				42	21	734.3	EOB														
				43	28																
				44	34																
				45	18																
				46	20																
				47	21																
				48	30																
				49	17																
				50	26																
MEDIUM DENSE, BROWN, GRAVEL AND STONE FRAGMENTS WITH SAND, SILT, AND CLAY, TRACE TO LITTLE SAND, DAMP TO MOIST			771.6	51	14	48	100	SS-39	4.50	-	-	-	-	-	-	-	16	A-6a (V)			
				52	18																
				53	36																
				54	22																
				55	15																
				56	22																
				57	11																
				58	26																
				59	19																
				60	18																

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Unconfined Compressive Strength
of Cohesive Soil
ASTM D 2166

Project NameSUM-271 LandslidesProject Number175526009

SourceB-001-0-16, 40.5'-42.5'Lab ID28

Visual DescriptionLean Clay (CL), light brown, moist, firm

Recovered1.8'

Test Interval40.5' - 41.0'

Specimen Type: UndisturbedLL39PL21PI18

Date Extruded12/19/2016Date Tested12/19/2016

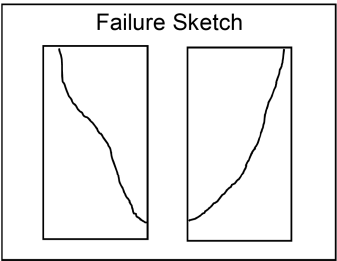
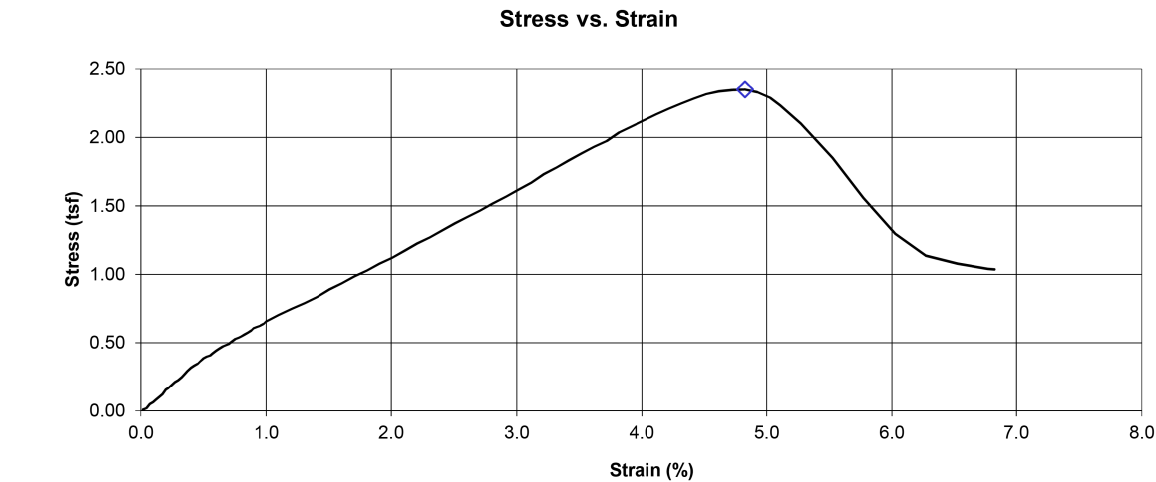
Initial Wet Density (pcf)131.0Initial Moisture Content (%)20.0Initial Dry Density (pcf)109.2

At Test Moisture Content (%)N/AAt Test MC TakenN/A

At Test Dry Density (pcf)N/ASpecific GravityN/A

Degree of Saturation (%)N/AAverage Height (in)6.026Average Diameter (in)2.864Height to Diameter Ratio2.1

Unconfined Compressive Strength (tsf)2.35Undrained Shear Strength (tsf)1.17Strain at Maximum Stress (%)4.8Strain rate to failure (% / min.)1.00



Comments

LAB TESTING

%GR	%CS	%FS	%Silt	%Clay	LL	PL	PI	WC
4	2	4	38	52	39	21	18	20

Reviewed By RJ

Unconfined Compressive Strength
of Cohesive Soil
ASTM D 2166

Project NameSUM-271 LandslidesProject Number175526009

SourceB-001-1-16, 24.0'-26.0'Lab ID128

Visual DescriptionClayey Sand with Gravel (SC), brown, moist, firm

Recovered1.1'

Test Interval24.3' - 24.9'

Specimen Type: UndisturbedLL31PL18PI13

Date Extruded12/19/2016Date Tested12/19/2016

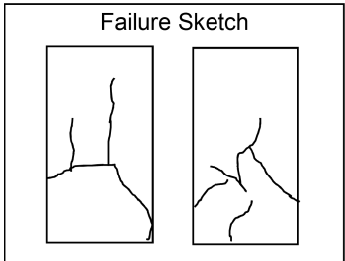
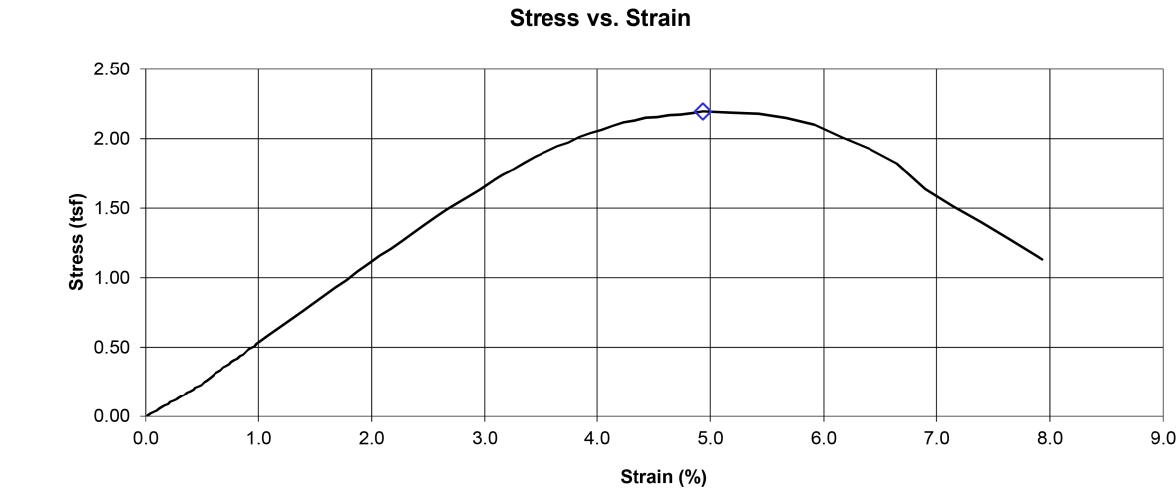
Initial Wet Density (pcf)135.2Initial Moisture Content (%)10.5Initial Dry Density (pcf)122.4

At Test Moisture Content (%)N/AAt Test MC TakenN/A

At Test Dry Density (pcf)N/ASpecific GravityN/A

Degree of Saturation (%)N/AAverage Height (in)6.105Average Diameter (in)2.886Height to Diameter Ratio2.1

Unconfined Compressive Strength (tsf)2.20Undrained Shear Strength (tsf)1.10Strain at Maximum Stress (%)4.9Strain rate to failure (% / min.)0.98



Comments

Tube had sand lenses throughout.

Multiple rock gouges from 24.0'-24.3'

Large aggregate at 24.9'

LAB TESTING

%GR	%CS	%FS	%Silt	%Clay	LL	PL	PI	WC
36	15	11	17	21	31	18	13	11

Reviewed By RJ



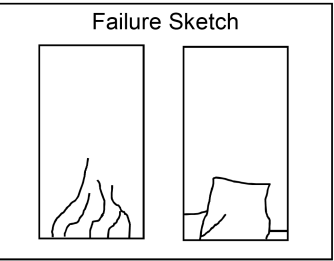
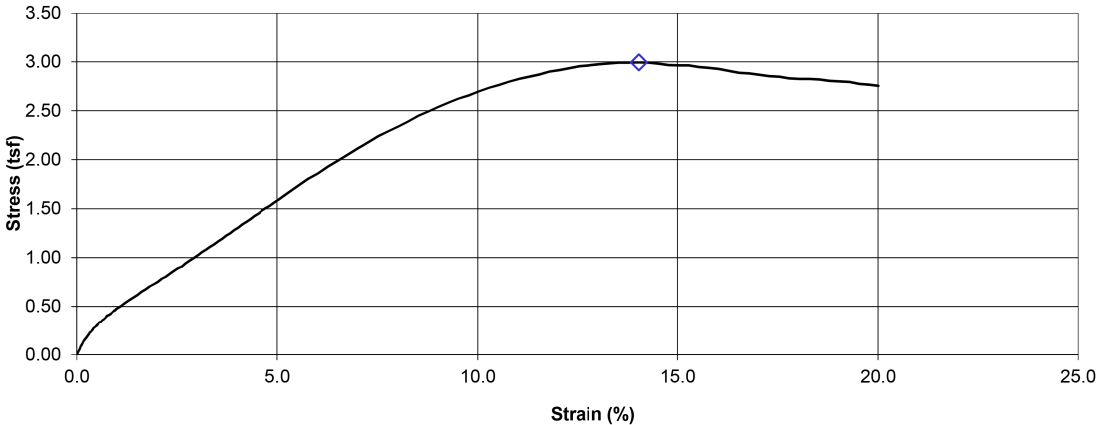
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Unconfined Compressive Strength
of Cohesive Soil
ASTM D 2166

Project Name SUM-271 Landslides Project Number 175526009
Source B-003-1-16, 18.0'-20.0' Lab ID 149
Visual Description Lean Clay (CL), brown, moist, firm

Recovered		1.7'	
Test Interval		18.0' - 18.5'	
Specimen Type: Undisturbed	LL	35	PL 20
	PI	15	
Date Extruded		12/19/2016	
Date Tested		12/19/2016	
Initial Wet Density (pcf)		130.7	
Initial Moisture Content (%)		21.1	
Initial Dry Density (pcf)		107.9	
At Test Moisture Content (%)		N/A	
At Test MC Taken		N/A	
At Test Dry Density (pcf)		N/A	
Specific Gravity		N/A	
Degree of Saturation (%)		N/A	
Average Height (in)		6.041	
Average Diameter (in)		2.869	
Height to Diameter Ratio		2.1	
Unconfined Compressive Strength (tsf)		2.99	
Undrained Shear Strength (tsf)		1.50	
Strain at Maximum Stress (%)		14.0	
Strain rate to failure (% / min.)		1.00	

Stress vs. Strain



Comments
LAB TESTING
%GR %CS %FS %Silt %Clay LL PL PI WC
1 0 2 37 60 35 20 15 21

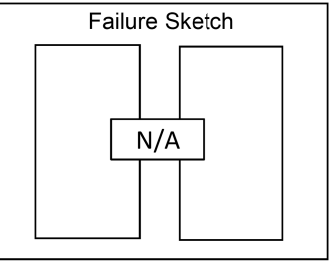
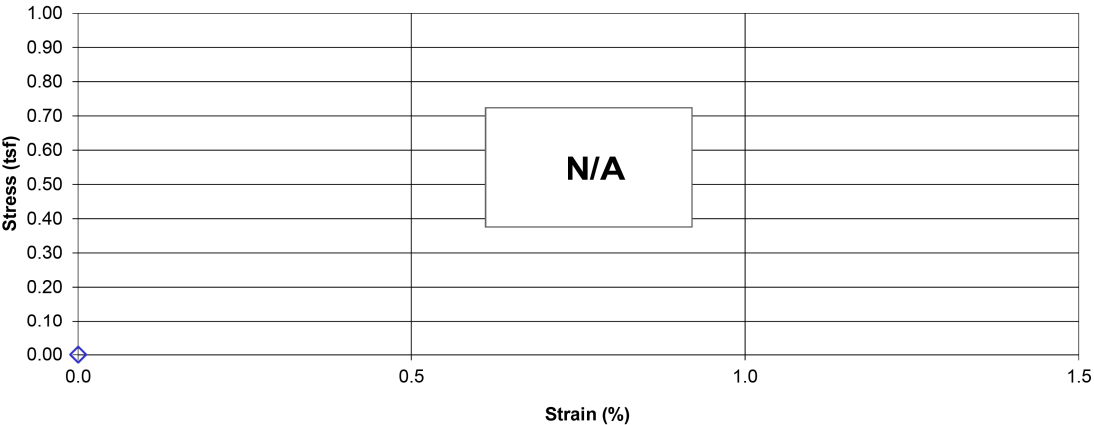
Reviewed By RJ

Unconfined Compressive Strength
of Cohesive Soil
ASTM D 2166

Project Name SUM-271 Landslides Project Number 175526009
Source B-003-0-16, 25.5'-27.5' Lab ID 58B
Visual Description Lean Clay with Sand (CL), brown, moist, firm

Recovered		1.7'	
Test Interval		26.1' - 26.6'	
Specimen Type: Undisturbed	LL	34	PL 18
	PI	16	
Date Extruded		12/19/2016	
Date Tested		N/A	
Initial Wet Density (pcf)		138.4	
Initial Moisture Content (%)		15.0	
Initial Dry Density (pcf)		120.4	
At Test Moisture Content (%)		N/A	
At Test MC Taken		N/A	
At Test Dry Density (pcf)		N/A	
Specific Gravity		N/A	
Degree of Saturation (%)		N/A	
Average Height (in)		6.110	
Average Diameter (in)		2.874	
Height to Diameter Ratio		2.1	
Unconfined Compressive Strength (tsf)		N/A	
Undrained Shear Strength (tsf)		N/A	
Strain at Maximum Stress (%)		N/A	
Strain rate to failure (% / min.)		N/A	

Stress vs. Strain



Comments
LAB TESTING
%GR %CS %FS %Silt %Clay LL PL PI WC
13 4 6 33 44 34 18 16 15

Reviewed By RJ

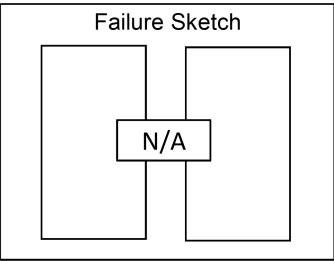
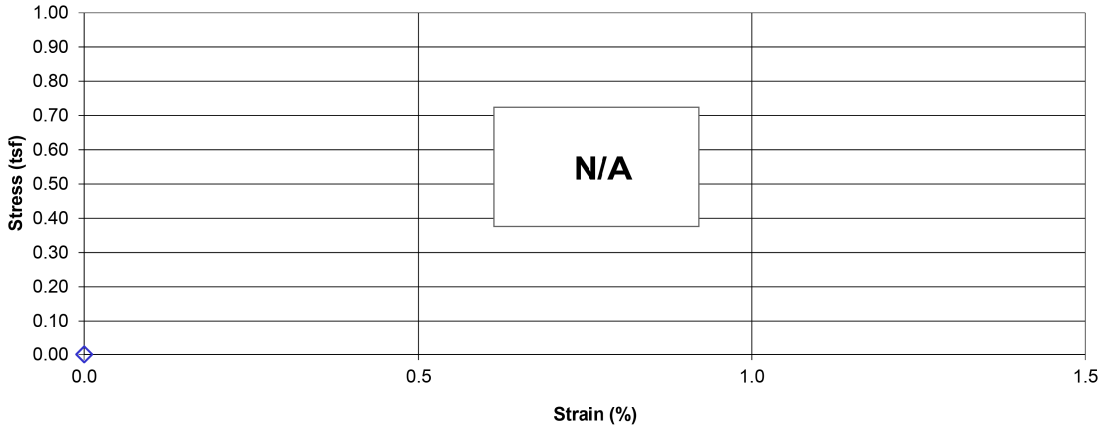


Unconfined Compressive Strength
of Cohesive Soil
ASTM D 2166

Project Name SUM-271 Landslides Project Number 175526009
Source B-002-0-16, 25.5'-27.5' Lab ID 98B
Visual Description Lean Clay with Sand (CL), brown, moist, firm

Recovered 1.4'		Test Interval 26.1' - 26.6'	
Specimen Type: Undisturbed	LL 39	PL 19	
		PI 20	
Initial Wet Density (pcf)	132.8	Date Extruded	12/19/2016
Initial Moisture Content (%)	18.9	Date Tested	N/A
Initial Dry Density (pcf)	111.7	Initial MC Taken	Before Test, From Trimmings
At Test Moisture Content (%)	N/A	At Test MC Taken	N/A
At Test Dry Density (pcf)	N/A		
Specific Gravity	N/A		
Degree of Saturation (%)	N/A	Unconfined Compressive Strength (tsf)	N/A
Average Height (in)	6.064	Undrained Shear Strength (tsf)	N/A
Average Diameter (in)	2.876	Strain at Maximum Stress (%)	N/A
Height to Diameter Ratio	2.1	Strain rate to failure (% / min.)	N/A

Stress vs. Strain



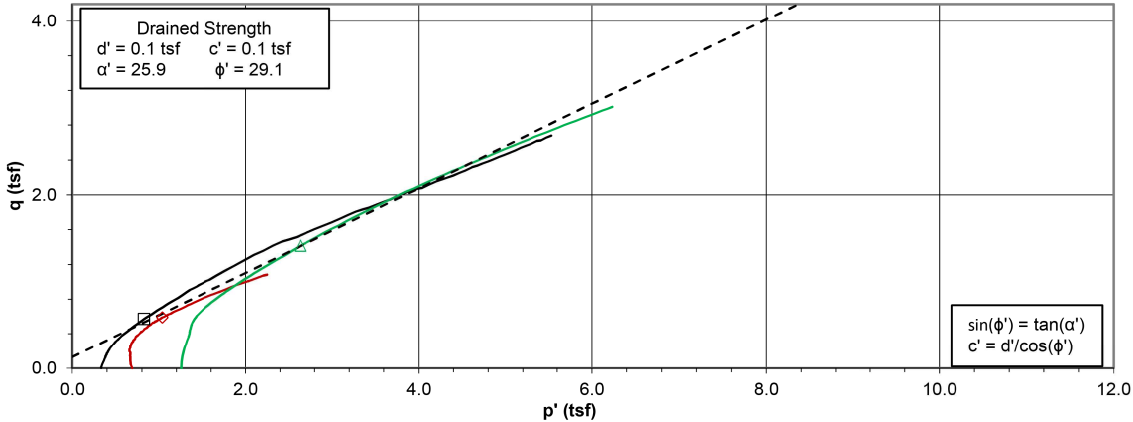
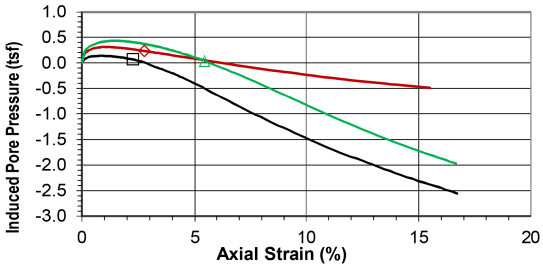
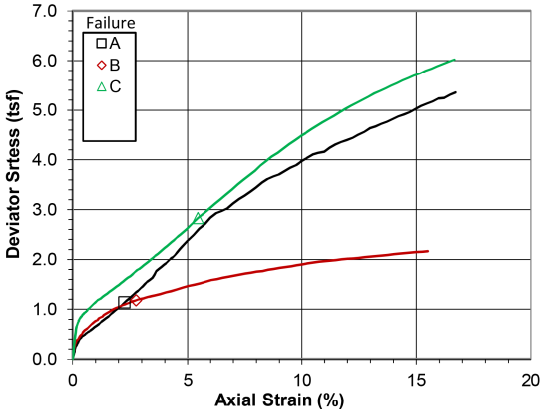
Comments
LAB TESTING
%GR %CS %FS %Silt %Clay LL PL PI WC
8 4 6 34 48 39 19 20 19

Reviewed By RJ

Consolidated Undrained Triaxial Compression
ASTM D 4767

Project Name SUM-271 Landslides Project 175526009
Set ID 1

Test	Lab ID	Source	Description	Gs	LL	PL	PI
A	58B	B-003-0-16, 26.1'-26.6'	Lean Clay with Sand (CL), brown, moist, firm	2.73	34	18	16
B	98B	B-002-0-16, 26.1'-26.6'	Lean Clay with Sand (CL), brown, moist, firm	2.77	39	19	20
C	58A	B-003-0-16, 25.5'-26.0'	Lean Clay with Sand (CL), brown, moist, firm	2.73	34	18	16



Comments Specimen A and C classification data from ST-1 (A-6b, GR=13, CS=4, FS=6, SI=33, CL=44)
Specimen B classification data from ST-1 (A-6b, GR=8, CS=4, FS=6, SI=34, CL=48)

Reviewed By KG

