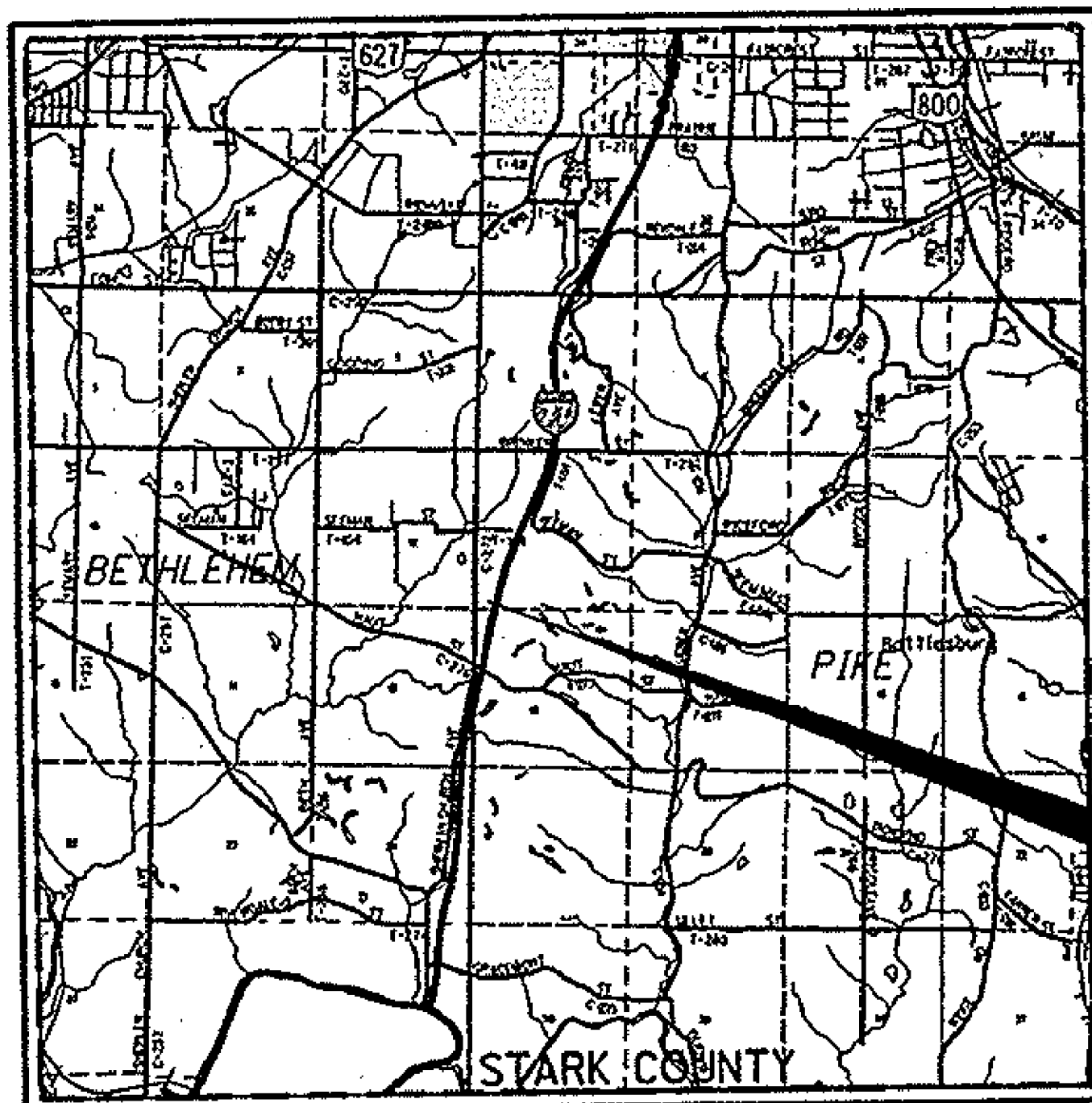


STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

STA-77-2.57

**PIKE TOWNSHIP
STARK COUNTY**



LOCATION MAP

LATITUDE: N40°41'59" LONGITUDE: W81°25'47"

SCALE IN MILES



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

DESIGN DESIGNATION

DESIGN SPEED	-----	70 MPH
LEGAL SPEED	-----	65 MPH
DESIGN FUNCTIONAL CLASSIFICATION:		
INTERSTATE (RURAL)	-----	
NHS PROJECT	-----	YES

DESIGN EXCEPTIONS

NONE

UNDERGROUND UTILITIES

CONTACT BOTH SERVICES
CALL TWO WORKING DAYS
BEFORE YOU DIG

CALL
1-800-362-2764
(TOLL FREE)

OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

OIL & GAS PRODUCERS PROTECTIVE
SERVICE CALL: 1-800-925-0988

PLAN PREPARED BY:
OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 4
OFFICE OF PRODUCTION
2088 SOUTH ARLINGTON ROAD
AKRON, OHIO 44306

INDEX OF SHEETS:

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ENGINEERS SEAL:
SHEETS 5-11

STATE OF OHIO
THOMAS
LOUIS
MONACO
E-70348
REGISTERED
PROFESSIONAL ENGINEER

SIGNED: *Thomas Monaco*
DATE: 03-05-09

ENGINEERS SEAL:
REMAINDER OF PLAN

STATE OF OHIO
THOMAS
J.
POWELL
E-61151
REGISTERED
PROFESSIONAL ENGINEER

SIGNED: *Thomas Powell*
DATE: 03-04-09

STANDARD CONSTRUCTION DRAWINGS						SUPPLEMENTAL SPECIFICATIONS	
BP-3.1	10/19/07	MT-35.10	4/20/01			800-2008	1/16/09
		MT-95.30	9/05/06			802	4/15/08
DM-1.1	4/21/06	MT-95.40	10/20/06			832	4/25/06
DM-1.2	10/21/05	MT-101.70	10/18/02				
DM-1.4	4/21/06	MT-105.10	1/16/09				
DM-4.3	7/19/02	TC-41.20	1/19/01				
DM-4.4	7/19/02	TC-42.20	7/16/04				
GR-1.1	7/16/04	TC-52.10	1/19/07				
GR-2.1	1/16/04	TC-52.20	1/19/07				
RM-4.1	10/20/06						
RM-4.2	10/19/07						
PCB-91	7/19/02						

PROJECT DESCRIPTION

SLOPE REPAIR AND RECONSTRUCTION AT SLM 2.57 ON IR-77 IN PIKE TOWNSHIP, STARK COUNTY. WORK INCLUDES PLACEMENT OF GEOSYNTHETIC REINFORCED SOIL WALL, A-FRAME MICROPILE FOUNDATION AND GUARDRAIL REPLACEMENT.

PROJECT EARTH DISTURBED AREA: 0.21 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA: 0.125 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA: N/A (NOI NOT REQUIRED)

LIMITED ACCESS

THIS IMPROVEMENT IS ESPECIALLY DESIGNED FOR THROUGH TRAFFIC AND HAS BEEN DECLARED A LIMITED ACCESS HIGHWAY OR FREEWAY BY ACTION OF THE DIRECTOR IN ACCORDANCE WITH THE PROVISIONS OF SECTION 5511.02 OF THE OHIO REVISED CODE.

2008 SPECIFICATIONS

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

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

APPROVED *E. M. Getti*
DATE 3-1-09 DISTRICT DEPUTY DIRECTOR

APPROVED *Alan M. Maltonis*
DATE 3-11-09 DIRECTOR, DEPARTMENT OF TRANSPORTATION

STA - 77 - 2.57
098014 PID 82750
DIST 04 4/15/2009

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FEDERAL PROJECT NO. NON-FEDERAL
PID NO. 82750
CONSTRUCTION PROJECT NO.
RAILROAD INVOLVEMENT NONE
STA-77-2.57

UTILITIES

THE CONTRACTOR SHALL USE THE FOLLOWING PROCEDURE AT EACH LOCATION WHERE WORK IS PERFORMED, IN ACCORDANCE WITH SECTIONS 105.07 AND 107.16 IN THE CONSTRUCTION AND MATERIALS SPECIFICATIONS.

THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER, THE OHIO UTILITIES PROTECTION SERVICE (OUPS), THE OHIO & GAS PROCEDURES UNDERGROUND PROTECTION SERVICE (OGPUPS), THE OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 4 HEAD-QUARTERS AND ALL NON REGISTERED UTILITY OWNERS AT LEAST TWO (2) WORKING DAYS PRIOR TO COMMENCING CONSTRUCTION IN ALL AREAS.

OUPS 1-800-362-2764 (CONTACT LIMITED BASIS PARTICIPANTS DIRECTLY)
OGPUPS 1-800-925-0988
ODOT 330-786-3145 KEN GREENE

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE NOT SHOWN ON THE PLANS, BUT CAN BE OBTAINED FROM THE OWNERS OF THE UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO UTILITIES.

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.

ELEVATION DATUM

ALL ELEVATIONS ARE BASED ON U.S.G.S. DATUM, NAVD 88 BASED ON GPS ORTHO HEIGHTS.

BENCHMARKS AND CENTERLINE REFERENCE TIES

BENCHMARKS AND CENTERLINE REFERENCE TIES FOR THIS PROJECT SHALL BE PROVIDED AT THE PRE-CONSTRUCTION MEETING.

CLEARING AND GRUBBING

ALTHOUGH THERE ARE NO TREES, LOGS 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.

TEMPORARY SOIL EROSION AND SEDIMENT CONTROL MEASURES

ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES AS SPECIFIED IN THE PLAN SHALL BE IN PLACE PRIOR TO ANY CLEARING AND GRUBBING, EXCAVATION, GRADING OR FILLING OPERATIONS, AND INSTALLATION OF PROPOSED STRUCTURES OR UTILITIES. THEY SHALL REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETE AND THE AREA IS STABILIZED AS ACCEPTED BY THE ENGINEER.

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 RAIL SPLICE" AS SHOWN IN AASHTO M 180. PAYMENT SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE RESPECTIVE GUARDRAIL ITEMS.

BENCHING OF FOUNDATION SLOPES

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

SEEDING AND MULCHING

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

659, SEEDING AND MULCHING	1000 SQ. YD.
659, REPAIR SEEDING AND MULCHING	50 SQ. YD.
659, COMMERCIAL FERTILIZER	0.13 TON
659, LIME	0.21 ACRE
659, WATER	5 M. GAL.

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

SHOULDER REPAIR

THE FOLLOWING QUANTITIES ARE PROVIDED TO REMOVE AND REPLACE A PORTION OF THE SHOULDER ADJACENT TO THE PLACEMENT OF THE GEOSYNTHETIC REINFORCED SOIL WALL. FINAL LOCATION SHALL BE DETERMINED BY THE ENGINEER. THE QUANTITIES BELOW ARE BASED ON A SURFACE AREA OF 250 FEET LONG BY 4 FEET WIDE.

203, EXCAVATION	60 C.Y.
204, SUBGRADE COMPACTION	134 S.Y.
301, 8" ASP. CONC. BASE, PG 64-22	27 C.Y.
304, 6" AGGREGATE BASE, AS PER PLAN	23 C.Y.
407, TACK COAT FOR INTERMED. COURSE	9 GAL.
448, 1 1/4" ASP. CONC. SURFACE COURSE, TYPE 1, PG 64-22	4 C.Y.
448, 1 3/4" ASP. CONC. INTERMED. COURSE, TYPE 2, PG 64-22	6 C.Y.
603, 6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS	7 FT.
604, PRECAST REINFORCED CONCRETE OUTLET	1 EA.
605, 6" BASE PIPE UNDERDRAINS WITH FABRIC WRAP	250 FT.
618, RUMBLE STRIPS, (ASPHALT CONCRETE)	250 FT.
646, EDGE LINE	0.05 MI.

PAVING UNDER GUARDRAIL

THIS OPERATION SHALL INCLUDE PAVING UNDER THE GUARDRAIL USING 448 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, PG 64-22, UNDER GUARDRAIL, AS PER PLAN.

PAVING UNDER GUARDRAIL SHALL CONSIST OF PLACING ITEM 448 TO THE DEPTH SPECIFIED. PAVING MAY BE PLACED UNDER EXISTING OR PROPOSED GUARDRAIL USING THE FOLLOWING METHOD:

- 1) SET GUARDRAIL POSTS
- 2) PLACE ITEM 448

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 448, ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 1, PG 64-22, UNDER GUARDRAIL, AS PER PLAN.

ITEM 606 - GUARDRAIL, TYPE 5, AS PER PLAN

THIS ITEM WILL BE USED TO INSTALL GUARDRAIL WITHIN THE LIMITS OF THE GEOSYNTHETIC REINFORCED SOIL WALL.

DURING THE CONSTRUCTION OF THE GEOSYNTHETIC REINFORCED SOIL WALL THE CONTRACTOR WILL INSTALL SLEEVES INTO WHICH THE GUARDRAIL POSTS WILL BE INSERTED (DRIVING OF THE POSTS THROUGH THE GEOSYNTHETIC REINFORCED SOIL WALL WILL NOT BE PERMITTED). THE SLEEVES WILL BE 12" IN DIAMETER, CONDUIT MEETING CMS 707.41. WHERE NECESSARY, THE GEOTEXTILE FABRIC MAY BE CUT TO ALLOW THE INSTALLATION OF THE SLEEVE. THE SLEEVE WILL EXTEND TO 3" BELOW THE BOTTOM OF THE GUARDRAIL POST.

THE GUARDRAIL WITHIN THE LIMITS OF THE GEOSYNTHETIC REINFORCED SOIL WALL WILL USE STEEL POSTS INSERTED INTO THE SLEEVE AND THE VOID BETWEEN THE SLEEVE AND THE POST WILL BE FILLED WITH CLASS C CONCRETE.

ALL MATERIALS, LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THIS WORK WILL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 606, GUARDRAIL, TYPE 5, AS PER PLAN.

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. A MINIMUM OF ONE ELEVEN FOOT LANE SHALL BE MAINTAINED ON THE EXISTING PAVEMENT DURING CONSTRUCTION OF THE WORK.
2. THE CONTRACTOR SHALL INFORM THE DISTRICT OFFICE (330) 786-2211, EIGHTEEN (18) DAYS PRIOR TO THE BEGINNING OF WORK.
3. CONES SHALL NOT BE ACCEPTABLE TRAFFIC CONTROL DEVICES FOR LANE RESTRICTIONS OR LANE REDUCTIONS THAT ARE IN OPERATION ONE-HALF HOUR AFTER SUNSET OR ONE HALF-HOUR BEFORE SUNRISE. ALL NIGHTTIME LANE RESTRICTIONS SHALL REQUIRE DRUMS OR BARRICADES AT A MAXIMUM SPACING OF FIFTY (50) FEET. WEIGHTED CHANNELIZERS MAY BE USED IN ACCORDANCE WITH THE ADDITIONAL NOTE HEREIN.
4. THE CONTRACTOR SHALL FURNISH, ERECT, MAINTAIN AND SUBSEQUENTLY REMOVE ALL FLAGS, BARRICADES, SIGNS, SIGN SUPPORTS AND FURNISH AND MAINTAIN ALL FLAGGERS, WATCHERS AND INCIDENTALS RELATED THERETO.
5. A QUANTITY OF 20 CU. YDS. OF 614 ASPHALT CONCRETE FOR MAINTAINING TRAFFIC SHALL BE PROVIDED FOR USE IN MAINTAINING PAVEMENT, SHOULDERS AND OTHER LOCATIONS AS DIRECTED BY THE ENGINEER.

WINTER TRAFFIC LIMITATIONS

ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC BETWEEN NOVEMBER 15 AND APRIL 1. NOVEMBER 14 SHALL BE CONSIDERED TO CONSTITUTE AN INTERIM COMPLETION DATE AND DISINCENTIVES OF \$750.00 SHALL BE ASSESSED FOR EACH CALENDAR DAY THAT THE ROADWAY REMAINS CLOSED TO TRAFFIC BEYOND THE SPECIFIED LIMIT. THE CONTRACTOR MAY CLOSE LANES PRIOR TO APRIL 1 WITH WRITTEN APPROVAL FROM THE DISTRICT CONSTRUCTION ENGINEER.

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>

EXCEPT FOR THE TWO WEEK CLOSURE ALLOWED ELSEWHERE, SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THE REQUIREMENTS IN THE CHART, THE CONTRACTOR SHALL BE ASSESSED LIQUIDATED DAMAGES IN THE AMOUNT OF \$2000.00 PER HOUR OR PORTION THEREOF THAT THE LANE REDUCTION REMAINS BEYOND THE SPECIFIED LIMIT.

CLOSURE OF SOUTHBOUND DRIVING LANE

THE SOUTHBOUND DRIVING LANE MAY BE CLOSED FOR TWO CONSECUTIVE WEEKS IN JULY, 2009, DURING CONSTRUCTION. THE DRIVING LANE WILL BE CLOSED IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING MT-95.40 FOR A 65MPH SPEED LIMIT. (TWO WEEKS = 14 DAYS)

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

614, WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL), FOR 24" HAZARD 2 EACH
614, WORK ZONE EDGE LINE, CLASS 1, 740.06, TYPE I 0.37 MILE
622, PORTABLE CONCRETE BARRIER, 32" 750 FT

SHOULDER CLOSURE USING PORTABLE CONCRETE BARRIER

THE SHOULDER WILL BE CLOSED IN ACCORDANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, FIGURE 6H-5 (TA-5) USING PORTABLE CONCRETE BARRIER (PCB) AND A WORK ZONE IMPACT ATTENUATOR.

DIMENSIONS FOR FIGURE 6H-5 ARE AS FOLLOWS:

A = 1000 FT
B = 1500 FT
1/3 L = 220 FT MINIMUM OR A DRUM TAPER RATE OF 22:1,
WHICHEVER IS LONGER
PCB TAPER RATE = 19:1

THE BARRIER SHALL BE OFFSET 2 FT MINIMUM FROM THE EDGE LINE ONTO THE SHOULDER UNLESS DIRECTED OTHERWISE BY THE ENGINEER.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

614, WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL), 1 EACH
622, PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED, 520 FT

NOTE: THE PCB WILL BE UNANCHORED.

ITEM SPECIAL - MISC.: PORTABLE CONCRETE BARRIER REMOVAL AND DELIVERY

THE CONTRACTOR IS PERMITTED TO USE THE PORTABLE CONCRETE BARRIER (PCB) WHICH ODOT INSTALLED TO CLOSE THE SHOULDER AT THE LOCATION OF THE SLIDE. THE PCB MAY BE USED FOR BOTH THE SHOULDER CLOSURE AND THE LANE CLOSURE. WHEN THE PCB IS NO LONGER BEING USED, THE CONTRACTOR WILL REMOVE THE PCB MARKED AS ODOT PROPERTY AND DELIVER ALL 29 SEGMENTS, INCLUDING HARDWARE, TO THE ODOT SUMMIT COUNTY GARAGE, 6155 CHITTENDEN ROAD, HUDSON, OHIO 44236. A MINIMUM NOTICE OF THREE (3) DAYS IS REQUIRED. CONTACT THE SUMMIT COUNTY MANAGER, FRANK PHILLIPS JR., 330-650-1300.

PAYMENT FOR THIS WORK SHALL BE INCLUDED IN ITEM SPECIAL - MISC.: PORTABLE CONCRETE BARRIER REMOVAL AND DELIVERY, LUMP SUM.

CONTRACTOR'S EQUIPMENT - OPERATION AND STORAGE

A QUALIFIED FLAGGER SHALL BE EMPLOYED WHERE THE CONTRACTOR'S EQUIPMENT MUST MERGE WITH THE TRAFFIC STREAM. THE CONTRACTOR'S EQUIPMENT SHALL BE EQUIPPED WITH AT LEAST ONE AMBER FLASHING LIGHT. PAVERS, ROLLERS AND OTHER EQUIPMENT MAY BE PARKED IN AREAS ALONG THE HIGHWAY WHEN PAVING OPERATIONS ARE SCHEDULED TO CONTINUE WITHIN THE NEXT WORKDAY. OTHERWISE THE EQUIPMENT SHALL BE STORED AT A STORAGE AREA OUTSIDE THE R/W, THE LOCATION OF WHICH SHALL HAVE PRIOR APPROVAL OF THE ENGINEER. WHEN PARKING ALONG THE HIGHWAY THE EQUIPMENT SHALL BE PLACED AND DELINEATED AS PER 614.03. NO EQUIPMENT SHALL BE PARKED IN THE MEDIAN OF THE HIGHWAY. ADEQUATE BARRICADES AND LIGHTS SHALL BE PLACED ON THE PAVEMENT SIDE OF THE EQUIPMENT TO IDENTIFY THE LIMITS OF THE EQUIPMENT. ALL OTHER EQUIPMENT, INCLUDING PRIVATE VEHICLES, SHALL BE STORED AT THE APPROVED CONTRACTOR'S STORAGE AREA. NO EQUIPMENT SHALL BE PARKED ON PRIVATE PROPERTY UNLESS PRIOR APPROVAL OF THE OWNER AND THE PROJECT ENGINEER/SUPERVISOR HAS BEEN GRANTED.

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.

ITEM 614, BARRIER REFLECTORS AND/OR OBJECT MARKERS

BARRIER REFLECTORS AND/OR OBJECT MARKERS SHALL BE INSTALLED ON ALL PORTABLE CONCRETE BARRIER USED FOR TRAFFIC CONTROL. BARRIER REFLECTORS, OBJECT MARKERS AND THEIR INSTALLATION SHALL CONFORM TO CMS 626, EXCEPT THAT THE SPACING SHALL BE 50 FEET. AN ESTIMATED QUANTITY OF 26 EACH OF ITEM 614 BARRIER REFLECTOR, TYPE B AND 26 EACH OF ITEM 614 OBJECT MARKER, ONE-WAY HAVE BEEN PROVIDED AND CARRIED TO THE GENERAL SUMMARY.

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 1 M. GAL

ITEM 614 - LAW ENFORCEMENT OFFICER WITH PATROL CAR

USE OF LAW ENFORCEMENT OFFICERS (LEOS) BY CONTRACTORS OTHER THAN THE USES SPECIFIED IN THIS NOTE WILL NOT GENERALLY BE PERMITTED AT PROJECT COST UNLESS PRIOR APPROVAL HAS BEEN OBTAINED FROM THE ENGINEER. LEOS SHOULD NOT BE USED WHERE THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD) INTENDS THAT FLAGGERS BE USED.

IN ADDITION TO THE REQUIREMENTS OF CMS 614 AND THE OMUTCD, 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 CONTROLLING TRAFFIC FOR THE FOLLOWING TASKS:

FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED. IN GENERAL, LEOS SHOULD BE POSITIONED AT THE POINT OF LANE RESTRICTION.

FOR THE INSTALLATION OF PORTABLE CONCRETE BARRIER.

LEOS SHOULD NOT FORGO THEIR TRAFFIC CONTROL RESPONSIBILITIES TO APPREHEND MOTORISTS FOR ROUTINE TRAFFIC VIOLATIONS. HOWEVER, IF A MOTORISTS 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 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. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A LIST OF THE APPROPRIATE LAW ENFORCEMENT AGENCY(S), INCLUDING ADDRESS AND TELEPHONE NUMBER.

THE LEO SHOULD REPORT IN TO THE CONTRACTOR PRIOR TO THE START OF THE SHIFT TO RECEIVE INSTRUCTIONS REGARDING SPECIFIC WORK ASSIGNMENTS DURING THE SHIFT. THE LEO IS EXPECTED TO STAY AT THE PROJECT SITE FOR THE ENTIRE DURATION OF THE SHIFT. SHOULD IT BE NECESSARY TO LEAVE THE PROJECT SITE, THE LEO SHOULD 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 THE SHIFT.

LAW ENFORCEMENT OFFICERS (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). THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR
40 HOURS

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

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

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CALCULATED
MJH
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MAINTENANCE OF TRAFFIC GENERAL NOTES

STA-77-2.57

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

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ONE OF THE FOLLOWING IMPACT ATTENUATORS:

- 1. THE QUADGUARD CZ, (24 INCHES WIDE SIX-BAY) WORK ZONE IMPACT ATTENUATOR MANUFACTURED BY ENERGY ABSORPTION SYSTEMS, INC., 35 EAST WACKER DRIVE, CHICAGO, IL 60601 (TELEPHONE: 312-467-6750).

THE LENGTH OF THE SIX-BAY QUADGUARD CZ IS 20'-9". INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

DRAWING NUMBER: QSCZCVR-T4
 DRAWING NAME: QUADGUARD CZ SYSTEM FOR CONSTRUCTION ZONES
 REVISION DATE: 5/13/99 REV. J
 ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: 35-40-10
 DRAWING NAME: QUADGUARD SYSTEM CONCRETE PAD, CZ, QG
 REVISION DATE: 11/19/97 REV. D
 ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: 35-40-16
 DRAWING NAME: QUADGUARD SYSTEM BACKUP ASSEMBLY, CZ, QG
 REVISION DATE: 7/30/99 REV. F
 ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: 354051Z
 DRAWING NAME: QUADGUARD CZ SYSTEM NOSE ASSEMBLY, CZ, QG, 24, 30, 36
 REVISION DATE: 5/17/99
 ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: 35-40-18
 DRAWING NAME: TRANSITION ASSEMBLY, 4 OFFSET, QG
 REVISION DATE: 6/25/99 REV. F
 ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: 35400260
 DRAWING NAME: QUADGUARD SYSTEM PCMB ANCHOR ASSEMBLY
 REVISION DATE: 11/19/97 REV. C
 ODOT APPROVAL DATE: 8/27/99

- 2. THE TRACC (TRINITY ATTENUATING CRASH CUSHION) MANUFACTURED BY TRINITY INDUSTRY, 1170 N. STATE STREET, GIRARD, OHIO 44420 (TELEPHONE: 330-545-4373).

THE TRACC IS 21'-0" LONG AND 2'-7" WIDE. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

DRAWING NUMBER: SS450
 DRAWING NAME: CRASH-CUSHION ATTENUATING TERMINAL PLAN, ELEVATION & SECTIONS
 REVISION DATE: 3/12/99 REV. 1
 ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: SS455
 DRAWING NAME: TRACC TRANSITION TO W-BEAM MEDIAN BARRIER PLAN, ELEVATION & SECTIONS
 REVISION DATE: 2/18/99
 ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: SS461
 DRAWING NAME: TRACC TRANSITION TO CONCRETE SAFETY SHAPE BARRIER PLAN, ELEVATION & SECTIONS
 REVISION DATE: 6/30/99 REV. 1
 ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: SS462
 DRAWING NAME: TRACC TRANSITION TO CONCRETE BARRIER SINGLE SLOPE PLAN, ELEVATION & SECTIONS
 REVISION DATE: 6/30/99
 ODOT APPROVAL DATE: 8/27/99

- 3. THE BARRIER SYSTEMS, INC. TAU-II IMPACT ATTENUATOR, DISTRIBUTED BY ROAD SYSTEMS INC., SALES SUPPORT, 2183 ELM TRACE, AUSTINTOWN, OH 44515, (TELEPHONE 330-799-9291)

THE TAU-II FOR THIS NOTE IS A PARALLEL 8-BAY UNIT (24' LONG AND 35" WIDE). INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

DRAWING NUMBER: A040416
 DRAWING NAME: UNIVERSAL TAU-II PARTS LIST
 REVISION DATE: 4/22/04
 ODOT APPROVAL DATE: 10/16/04

DRAWING NUMBER: A040420
 DRAWING NAME: UNIVERSAL TAU-II FOUNDATION, FLUSH MOUNT BACKSTOP
 REVISION DATE: 4/28/04
 ODOT APPROVAL DATE: 10/16/04

DRAWING NUMBER: A040105
 DRAWING NAME: UNIVERSAL TAU-II FOUNDATION, PCB BACKSTOP (REFERENCED ON A04020)
 REVISION DATE: 1/07/04
 ODOT APPROVAL DATE: 10/16/04

DRAWING NUMBER: B040239
 DRAWING NAME: APPLICATION, FLUSH MOUNT BACKSTOP (TYPICAL FOR PARALLEL 60 MPH UNIT)
 REVISION DATE: 4/21/04
 ODOT APPROVAL DATE: 10/16/04

THE CONTRACTOR SHALL PROVIDE A REPLACEMENT UNIT WHEN AN IMPACT IS SEVERE ENOUGH TO REQUIRE COMPLETE REPLACEMENT OF THE ATTENUATOR. THE CONTRACTOR SHALL HAVE A SPARE PARTS PACKAGE AVAILABLE ON THE PROJECT SITE AT ALL TIMES WHEN AN ATTENUATOR IS IN PLACE. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF ONE COMPLETE SPARE PARTS PACKAGE FOR EVERY ONE TO SIX UNITS INSTALLED ON THE PROJECT SITE. FOR EXAMPLE, FIVE INSTALLED UNITS REQUIRE ONE SPARE PARTS PACKAGE AND SEVEN INSTALLED UNITS REQUIRE TWO SPARE PARTS PACKAGES.

ITEM 614 - PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE, WHEN NO LONGER NEEDED, 1 PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS), ON SITE, FOR THE DURATION OF TIME SPECIFIED IN THIS NOTE, EACH SIGN SHALL BE OF A TYPE SHOWN ON A LIST OF APPROVED PCMS UNITS MAINTAINED BY THE DIRECTOR. THIS LIST IS AVAILABLE ON THE ODOT WEBSITE AT <http://www.dot.state.oh.us/divisions/constructionmgmt/materials/pages/portable-changeable.aspx> THE CLASS I UNITS SHALL HAVE A MINIMUM LEGIBILITY DISTANCE OF 1250 FEET.

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 ON A PERMANENT BASIS BY AFFIXING RETRO-REFLECTIVE MATERIAL, IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER AS SEEN BY ONCOMING ROAD USERS.

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 SHOULD BE LOCATED BEHIND GUARDRAIL WHEREVER POSSIBLE. 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, FACING AWAY FROM ALL TRAFFIC AND SHALL DISPLAY ONE OR MORE HIGH INTENSITY 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 PRE-PROGRAMMED MESSAGES WILL BE GIVEN TO THE ENGINEER PRIOR TO CONSTRUCTION. THE SIGN SHALL HAVE TWO DIFFERENT MEMORIES (PROM AND RAM) AND CAPABILITY TO STORE UP TO 99 MESSAGES IN EACH MEMORY. 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. IN ORDER TO CONVEY A MAXIMUM OF INFORMATION AT A SINGLE GLANCE, ONLY THREE LINE PRESENTATION FORMATS WITH A MAXIMUM OF SIX MESSAGE PHASES WILL BE PERMITTED. NORMALLY, ONLY A MAXIMUM OF THREE MESSAGE PHASES SHOULD BE EMPLOYED. PCMS FORMAT SHALL PERMIT THE COMPLETE MESSAGE FOR EACH PHASE TO BE READ AT LEAST ONCE.

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. 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 AND 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 THE PHASES. 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 BID FOR EACH SIGN MONTH OF ITEM 614 PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN AND 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, 1 SIGN MONTH

USE PCMS TO NOTIFY TRAFFIC OF UPCOMING LANE CLOSURE AT LEAST ONE WEEK IN ADVANCE OF THE CLOSURE.

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HOLIDAY LANE CLOSURES

NO WORK SHALL BE PERFORMED AND ALL EXISTING LANES SHALL BE OPENED TO TRAFFIC AND ALL SIGNALS IN OPERATION DURING THE FOLLOWING DESIGNATED HOLIDAYS OR EVENTS:

CHRISTMAS	NEW YEARS
MEMORIAL DAY	FOURTH OF JULY
LABOR DAY	THANKSGIVING

DAY OF THE WEEK	TIMES ALL LANES MUST BE OPEN TO TRAFFIC
SUNDAY	12:00N FRIDAY THROUGH 12:00N MONDAY
MONDAY	12:00N FRIDAY THROUGH 12:00N TUESDAY
TUESDAY	12:00N MONDAY THROUGH 12:00N WEDNESDAY
WEDNESDAY	12:00N TUESDAY THROUGH 12:00N THURSDAY
THURSDAY	12:00N WEDNESDAY THROUGH 12:00N MONDAY
FRIDAY	12:00N THURSDAY THROUGH 12:00N MONDAY
SATURDAY	12:00N FRIDAY THROUGH 12:00N MONDAY

THERE SHALL NOT BE ANY EXTENSIONS DUE TO WEATHER OR MATERIAL DELAYS WHATSOEVER.

SHALL THE CONTRACTOR FAIL TO MEET ANY OF THESE REQUIREMENTS, DISINCENTIVES OF \$750.00 SHALL BE ASSESSED TO THE CONTRACTOR FOR EACH CALENDAR DAY THAT THE LANES REMAIN CLOSED TO TRAFFIC BEYOND THE SPECIFIED LIMIT.

WEIGHTED CHANNELIZERS

THE WEIGHTED CHANNELIZER SHALL BE PREDOMINATELY ORANGE IN COLOR AND SHALL BE MADE OF A LIGHTWEIGHT, FLEXIBLE, AND DEFORMABLE MATERIAL. THEY SHALL BE AT LEAST 42 INCHES IN HEIGHT WITH A WEIGHTED BASE. THEY MAY HAVE A "HANDLE" OR LIFTING DEVICE WHICH EXTENDS ABOVE THE 42 INCH MINIMUM HEIGHT.

THE MARKINGS ON THE WEIGHTED CHANNELIZER SHALL BE HORIZONTAL, CIRCUMFERENTIAL, ALTERNATING ORANGE AND WHITE RETROREFLECTIVE STRIPES 6 INCHES WIDE. EACH WEIGHTED CHANNELIZER SHALL HAVE A MINIMUM OF TWO ORANGE AND TWO WHITE STRIPES. ANY NON-RETROREFLECTIVE SPACES BETWEEN THE HORIZONTAL ORANGE AND WHITE STRIPES SHALL NOT EXCEED 2 INCHES WIDE. THE WEIGHTED CHANNELIZER SHALL HAVE A 4-INCH MINIMUM WIDTH, REGARDLESS OF ORIENTATION.

ON FREEWAYS AND MULTILANE HIGHWAYS:
USE OF WEIGHTED CHANNELIZERS ON FREEWAYS AND MULTILANE HIGHWAYS SHALL BE LIMITED TO SHORT-TERM OPERATION, GENERALLY TWELVE HOURS OR LESS, FOR EITHER DAY OR NIGHT. UPON COMPLETION OF WORK WITHIN THE ABOVE NOTED TIME PERIOD, THE WEIGHTED CHANNELIZERS SHALL BE REMOVED. THE WEIGHTED CHANNELIZERS MAY AGAIN BE PLACED ON THE HIGHWAY WHEN THE WORK IS TO RESUME ON THE FOLLOWING DAY OR NIGHT. ANY LANE CLOSURE USING CHANNELIZATION DEVICES, EXPECTED TO REMAIN FOR MORE THAN TWELVE HOURS, SHALL REQUIRE THE USE OF DRUMS OR BARRIERS.

WHEN USED AT NIGHT, WEIGHTED CHANNELIZERS SHALL ONLY BE PLACED IN THE "TANGENT AREA". THE "TANGENT AREA" IS DEFINED AS THE AREA AFTER THE TRANSITION TAPER WHERE THE WORK TAKES PLACE. DRUMS SHALL BE USED IN THE TRANSITION TAPERS FOR NIGHT OPERATIONS.

ON OTHER HIGHWAYS:
THERE ARE NO DURATIONS OF WORK RESTRICTIONS FOR USE OF WEIGHTED CHANNELIZERS ON ALL OTHER TYPES OF HIGHWAYS, DAY OR NIGHT. ON THESE ROADWAYS THE WEIGHTED CHANNELIZER MAY BE USED IN THE TRANSITION TAPERS AS WELL AS IN THE TANGENT AREAS, DAY OR NIGHT.

MAXIMUM SPACING OF THE WEIGHTED CHANNELIZER SHALL BE 40 FEET.

STEPS SHOULD BE TAKEN TO ENSURE THAT THE WEIGHTED CHANNELIZERS WILL NOT BE BLOWN OVER OR DISPLACED BY WIND OR MOVING TRAFFIC. BALLASTS SHOULD NOT PRESENT A HAZARD IF THE WEIGHTED CHANNELIZERS ARE INADVERTENTLY STRUCK, NOR SHOULD THEY AFFECT THE VISIBILITY OF THE WEIGHTED CHANNELIZERS. ALL BALLASTS USED SHOULD BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

CALCULATED
MJH
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MAINTENANCE OF TRAFFIC GENERAL NOTES

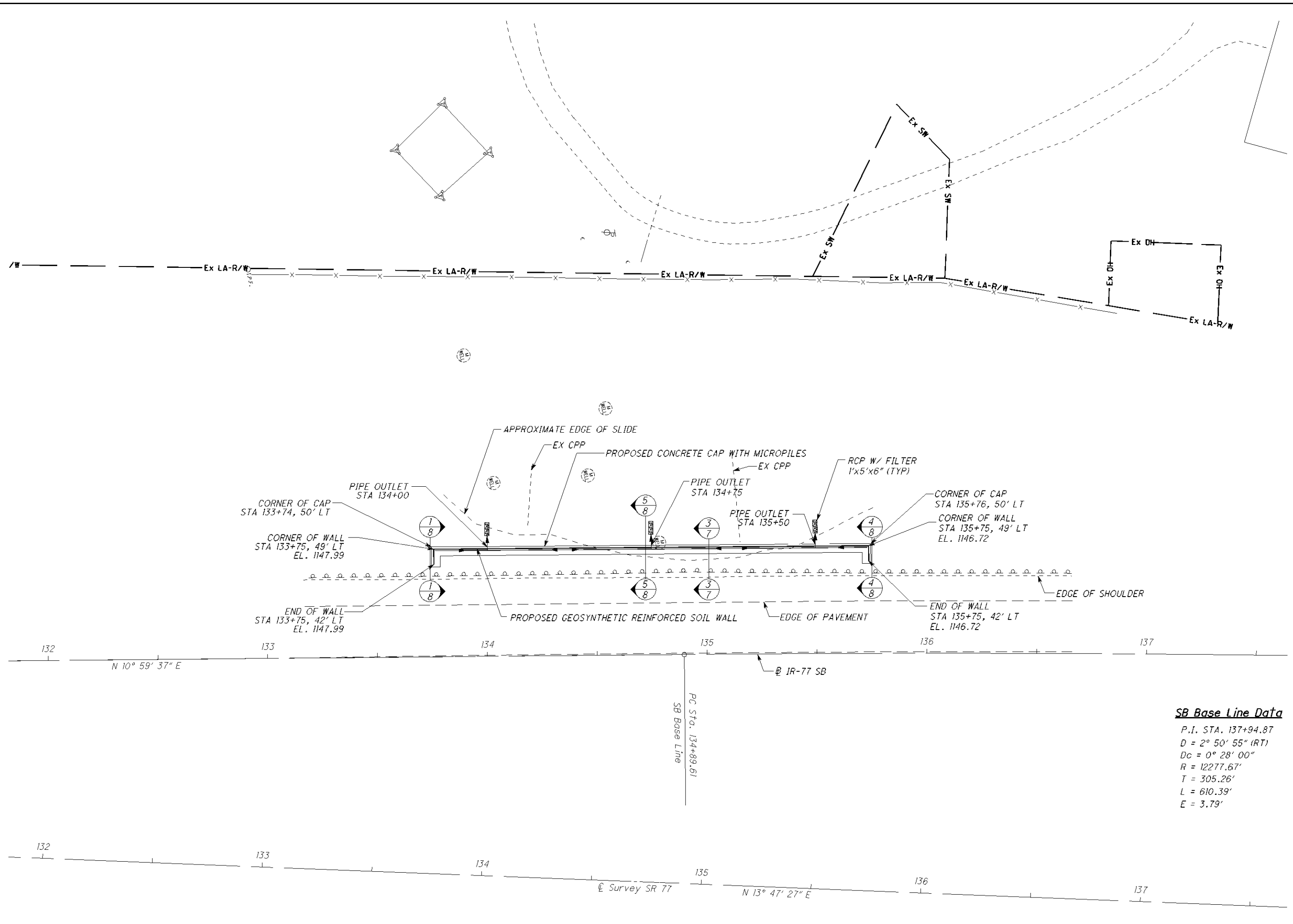
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SHEET NUMBER														ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.	
2	3	3A	6											201	11000	LUMP		ROADWAY		
														250	202	38000	250	FT	GUARDRAIL REMOVED	
60			61												203	10000	121	CU YD	EXCAVATION	
			148												203	20000	148	CU YD	EMBANKMENT	
134															204	10000	134	SQ YD	SUBGRADE COMPACTION	
			90												204	21001	90	CU YD	GRANULAR EMBANKMENT, AS PER PLAN	6
			1530												204	50000	1530	SQ YD	GEOTEXTILE FABRIC	
															606	13001	250	FT	GUARDRAIL, TYPE 5, AS PER PLAN	2
																			EROSION CONTROL	
			2												601	34300	2	CU YD	ROCK CHANNEL PROTECTION, TYPE D WITHOUT FILTER	
1000															659	10000	1000	SQ YD	SEEDING AND MULCHING	
50															659	14000	50	SQ YD	REPAIR SEEDING AND MULCHING	
0.13															659	20000	0.13	TON	COMMERCIAL FERTILIZER	
0.21															659	31000	0.21	ACRE	LIME	
5															659	35000	5	M GAL	WATER	
			1000												670	00551	1000	SQ YD	SLOPE EROSION PROTECTION MAT, TYPE E, AS PER PLAN	6
															832	30000	1000	EACH	EROSION CONTROL	
																			DRAINAGE	
			1420												602	97000	1420	SQ FT	MASONRY, MISC.: CONCRETE MASONRY BLOCKS	6
7															603	00510	7	FT	6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS	
1			3												604	36600	4	EACH	PRECAST REINFORCED CONCRETE OUTLET	
250															605	14020	250	FT	6" BASE PIPE UNDERDRAINS WITH FABRIC WRAP	
																			PAVEMENT	
27															301	46000	27	CU YD	ASPHALT CONCRETE BASE, PG64-22	
23			171												304	20001	194	CU YD	AGGREGATE BASE, AS PER PLAN	6
9															407	14000	9	GALLON	TACK COAT FOR INTERMEDIATE COURSE	
6															448	46050	6	CU YD	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-22	
													12	448	46061	12	CU YD	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, UNDER GUARDRAIL, PG64-22, AS PER PLAN	2	
4															448	47020	4	CU YD	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22	
250															618	40100	250	FT	RUMBLE STRIPS, (ASPHALT CONCRETE)	
																			TRAFFIC CONTROL	
														3	626	00100	3	EACH	BARRIER REFLECTOR	
0.05															646	10000	0.05	MILE	EDGE LINE	
																			STRUCTURES	
			2348												509	10000	2348	POUND	EPOXY COATED REINFORCING STEEL	
			32												511	46500	32	CU YD	CLASS C CONCRETE, FOOTING	
			198												518	39800	198	FT	4" PERFORATED CORRUGATED PLASTIC PIPE	
			21												518	39900	21	FT	4" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	
			200												524	95100	200	EACH	DRILLED SHAFTS, MISC.: 8" DIAMETER MICROPILES, 12' LENGTH	6
																			MAINTENANCE OF TRAFFIC	
	40														614	11100	40	hour	LAW ENFORCEMENT OFFICER WITH PATROL CAR	
	3														614	12336	3	EACH	WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL), FOR 24" WIDE HAZARD	
	20														614	13000	20	CU YD	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC	
	26														614	13300	26	EACH	BARRIER REFLECTOR, TYPE B	
	26														614	13350	26	EACH	OBJECT MARKER, ONE WAY	
															614	18601	1	SIGN MNTH	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	3A
	0.37														614	22200	0.37	MILE	WORK ZONE EDGE LINE, CLASS I, 740.06, TYPE I	
	1														616	10000	1	M GAL	WATER	
	750														622	40020	750	FT	PORTABLE CONCRETE BARRIER, 32"	
	520														622	40040	520	FT	PORTABLE CONCRETE BARRIER, 32". BRIDGE MOUNTED	
	LUMP														SPEC	69098400	LUMP		MISC.: PORTABLE CONCRETE BARRIER REMOVAL AND DELIVERY	3
															614	11000	LUMP		MAINTAINING TRAFFIC	
															619	16000	2	MONTH	FIELD OFFICE, TYPE A	
															623	10000	LUMP		CONSTRUCTION LAYOUT STAKES	
															624	10000	LUMP		MOBILIZATION	

CALCULATED RCB CHECKED TJP
GENERAL SUMMARY
STA-77-2.57
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SB Base Line Data
 P.I. STA. 137+94.87
 D = 2° 50' 55" (RT)
 Dc = 0° 28' 00"
 R = 12277.67'
 T = 305.26'
 L = 610.39'
 E = 3.79'

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GRS GENERAL NOTES

ITEM 524 - DRILLED SHAFTS, MISC.: 8" DIAMETER MICROPILES

THIS ITEM SHALL CONFORM TO ALL PROVISIONS OF ITEM 524 EXCEPT AS MODIFIED HEREIN.

CONSTRUCT THE HOLE FOR THE OUTER (DOWNSLOPE) MICROPILE AT A BATTERED ANGLE OF 1:4 (HORIZONTAL TO VERTICAL) AND TOWARD THE SLOPE FACE. DRILLING CAN BE PERFORMED BY MEANS OF SINGLE TUBE ADVANCEMENT, ROTARY DUPLEX, ROTARY PERCUSSIVE CONCENTRIC DUPLEX, ROTARY PERCUSSIVE ECCENTRIC DUPLEX, "DOUBLE HEAD" DUPLEX, HOLLOW STEM AUGER, OR SONIC DRILLING.

AS SOON AS POSSIBLE UPON COMPLETION OF THE HOLE, FILL THE HOLE WITH CEMENT GROUT AND PLACE THE REINFORCEMENT. PLACE THE CEMENT GROUT INTO THE CLEAN, DRILLED HOLE USING A TREMIE PIPE THAT EXITS THROUGH THE BOTTOM OF THE HOLE. PUMP THE GROUT INTO THE BOTTOM OF THE HOLE UNTIL GROUT OF SIMILAR QUALITY TO THAT BEING INJECTED IS FREELY FLOWING FROM THE TOP OF THE HOLE. THE REINFORCING STEEL SHALL BE PLACED SO THAT 6 TO 8 INCHES OF THE BAR PROTRUDES FROM THE TOP OF THE HOLE.

REPEAT THE ABOVE PROCESS TO INSTALL THE INNER (UPSLOPE) MICROPILE, WITH A BATTERED ANGLE OF 1:4 (HORIZONTAL TO VERTICAL) AND TOWARD THE CENTERLINE OF IR-77.

FILL THE DRILLED HOLES WITH A STABLE, HOMOGENOUS, CEMENT GROUT AND FINE AGGREGATE WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI, MEETING THE REQUIREMENTS OF ITEM 499. CEMENT MAY BE TYPE I, II, OR III MANUFACTURED IN ACCORDANCE TO ASTM C150. PROVIDE A SLUMP BETWEEN 6 AND 8 INCHES WITH THE USE OF A SUPERPLASTICIZER. ADMIXTURES SHALL CONFORM TO ITEM 499; ACCELERATORS WILL NOT BE PERMITTED. SUBMIT A GROUT MIX DESIGN, MEETING THE REQUIREMENTS OF THIS NOTE, TO THE ENGINEER FOR APPROVAL AT LEAST 14 DAYS PRIOR TO PLACING ANY GROUT.

INSTALLATION OF GEOSYNTHETIC REINFORCED SOIL WALL

IF ADDITIONAL EXCAVATION IS REQUIRED TO ENABLE THE PLACEMENT OF THE AGGREGATE OR GEOTEXTILE FABRIC, THE EXCAVATION MUST BE PERFORMED PRIOR TO THE INSTALLATION OF THE WALL FOUNDATION.

RUBBER Tired EQUIPMENT AND EQUIPMENT WITH A GROSS VEHICLE WEIGHT RATING GREATER THAN 4000 POUNDS ARE NOT PERMITTED TO BE ON THE SLOPE.

AFTER THE INSTALLATION OF THE WALL FOUNDATION, PLACE THE FIRST ROW OF MASONRY BLOCK WITH THE FACE AT THE LOCATION SHOWN IN THE PLANS, ALONG WITH THE DRAINAGE PIPE AND THE GEOTEXTILE FABRIC THAT WILL BE USED TO WRAP THE NO. 57 AGGREGATE. PLACE THE NO. 57 AGGREGATE IN MAXIMUM COMPACTED LIFTS EQUAL TO THE HEIGHT OF THE MASONRY BLOCK. CARE MUST BE TAKEN TO PREVENT MOVEMENT OF THE BLOCK DURING COMPACTION. COMPACT THE AGGREGATE IN ACCORDANCE WITH ITEM 204.

PLACE THE REINFORCEMENT GEOTEXTILE FABRIC WITH THE OUTER EDGE OF THE FABRIC ALIGNED TO THE FACE OF THE MASONRY BLOCK (AS PER THE PLAN DETAILS). THE FABRIC MUST BE PLACED WITHOUT FOLDS OR TEARS AND WITH AN 18 INCH OVERLAP BETWEEN PIECES.

THE NEXT BLOCK IS PLACED WITH ITS FACE 1/2 INCH BACK FROM THE LOWER BLOCKS FACE, COVERING THE GEOTEXTILE FABRIC. NEXT, PLACE ITEM 304 TO THE LENGTH OF THE OVERLAYING GEOTEXTILE, AND THEN PLACE A 12 INCH WIDTH OF NO. 57 AGGREGATE WRAPPED IN GEOTEXTILE FABRIC BEHIND THE ITEM 304 AGGREGATE BASE. PLACE EACH LIFT OF THE ITEM 304 AND NO. 57 AGGREGATE IN MAXIMUM COMPACTED LIFTS EQUAL TO THE HEIGHT OF THE MASONRY BLOCK. CARE MUST BE TAKEN TO PREVENT MOVEMENT OF THE BLOCK DURING COMPACTION. COMPACT THE AGGREGATE IN ACCORDANCE WITH ITEM 204.

PLACE THE NEXT LAYER OF GEOTEXTILE FABRIC WITH THE OUTER EDGE OF THE FABRIC ALIGNED TO THE FACE OF THE MASONRY BLOCK (AS PER THE PLAN DETAILS) AND REPEAT THE ABOVE PROCESS UNTIL THE FULL HEIGHT OF THE WALL IS ACHIEVED. THE GEOTEXTILE FABRIC WRAP OF THE NO. 57 AGGREGATE MUST OVERLAP THE REINFORCING GEOTEXTILE FABRIC ON THE SECOND TO LAST LIFT. NO GEOTEXTILE FABRIC IS PLACED ON THE FINAL GRADE.

ITEM 204 - GRANULAR EMBANKMENT, AS PER PLAN

THE MATERIAL FURNISHED SHALL BE DURABLE, NATURAL AGGREGATES NO. 57 SIZE.

ITEM 304 AGGREGATE BASE, AS PER PLAN

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

ITEM 602, MASONRY MISC.: CONCRETE MASONRY BLOCKS

FURNISH AND INSTALL CONCRETE MASONRY BLOCK CONFORMING TO SPECIFICATION 704.03 WITH A NOMINAL 8"x8"x16" DIMENSION. INCLUDED WITH THIS ITEM IS THE #6 BARS AND GROUT SHOWN.

ITEM 670, SLOPE EROSION PROTECTION MAT, TYPE E, AS PER PLAN

THIS ITEM WILL BE INSTALLED TO PREVENT EROSION OF THE SLOPE ON THE DOWNHILL SIDE OF THE FOUNDATION CAP. INSTALL TOPSOIL TO GRADES AND LINES SHOWN ON THE CROSS SECTIONS (THE COST OF INSTALLATION AND MATERIAL IS INCLUDED WITH THIS ITEM FOR PAYMENT). ON TOP OF THE TOPSOIL INSTALL THE EROSION PROTECTION MAT.

PAYMENT WILL BE BASED ON THE ACTUAL NUMBER OF SQUARE YARDS OF EROSION CONTROL MAT INSTALLED.

ESTIMATED QUANTITIES AND LEGEND

MARK	ITEM	EXT.	QUANTITY	UNIT	DESCRIPTION
④					EXISTING PAVEMENT
①	204	50000	1530	SQ YD	GEOTEXTILE FABRIC
②	304	20001	171	CU YD	AGGREGATE BASE, AS PER PLAN
③	204	21001	90	CU YD	GRANULAR EMBANKMENT, AS PER PLAN
④	203	10000	61	CU YD	EXCAVATION
⑤	670	00551	1000	SQ YD	SLOPE EROSION PROTECTION, TYPE E, AS PER PLAN
⑥	601	34300	2	CU YD	ROCK CHANNEL PROTECTION, TYPE D WITHOUT FILTER
⑦	524	95100	200	EACH	DRILLED SHAFTS, MISC.: 8" DIAMETER MICROPILES, 12' LENGTH
	509	10000	2348	POUND	EPOXY COATED REINFORCING STEEL
⑧	511	46500	32	CU YD	CLASS C CONCRETE, FOOTING
⑨	602	97000	1420	SQ FT	MASONRY, MISC.: CONCRETE MASONRY BLOCKS
⑩	518	39800	198	FT	4" PERFORATED CORRUGATED PLASTIC PIPE
⑪	518	39900	21	FT	4" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS
⑫	604	36600	3	EACH	PRECAST REINFORCED CONCRETE OUTLET
⑬	606	13001	250	FT	GUARDRAIL, TYPE 5, AS PER PLAN

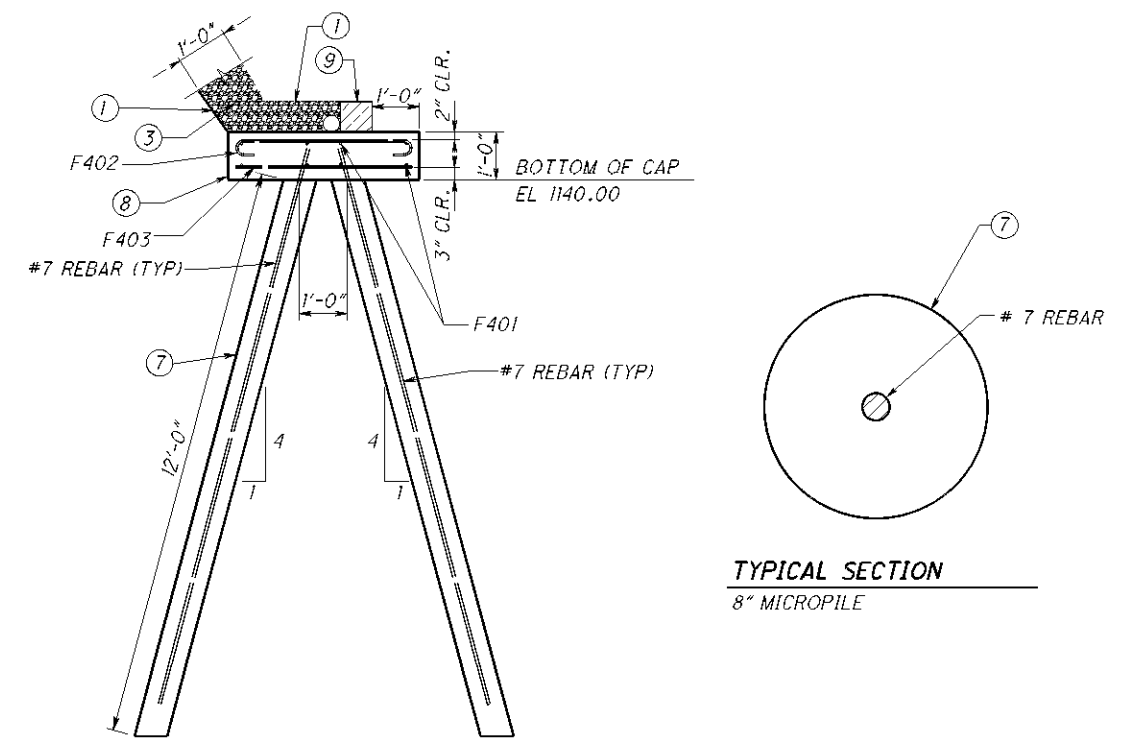
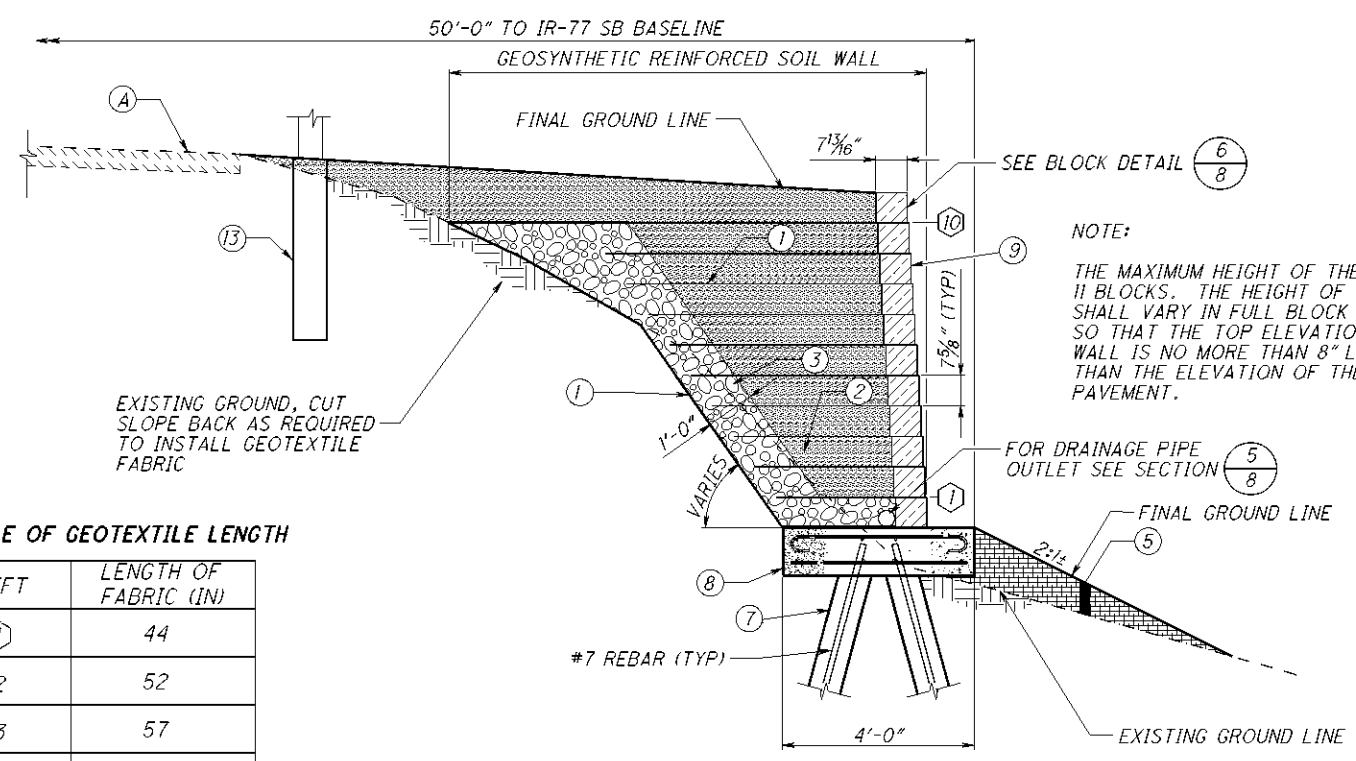
QUANTITIES CARRIED TO GENERAL SUMMARY

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GRS GENERAL NOTES AND QUANTITIES

STA-77-2.57

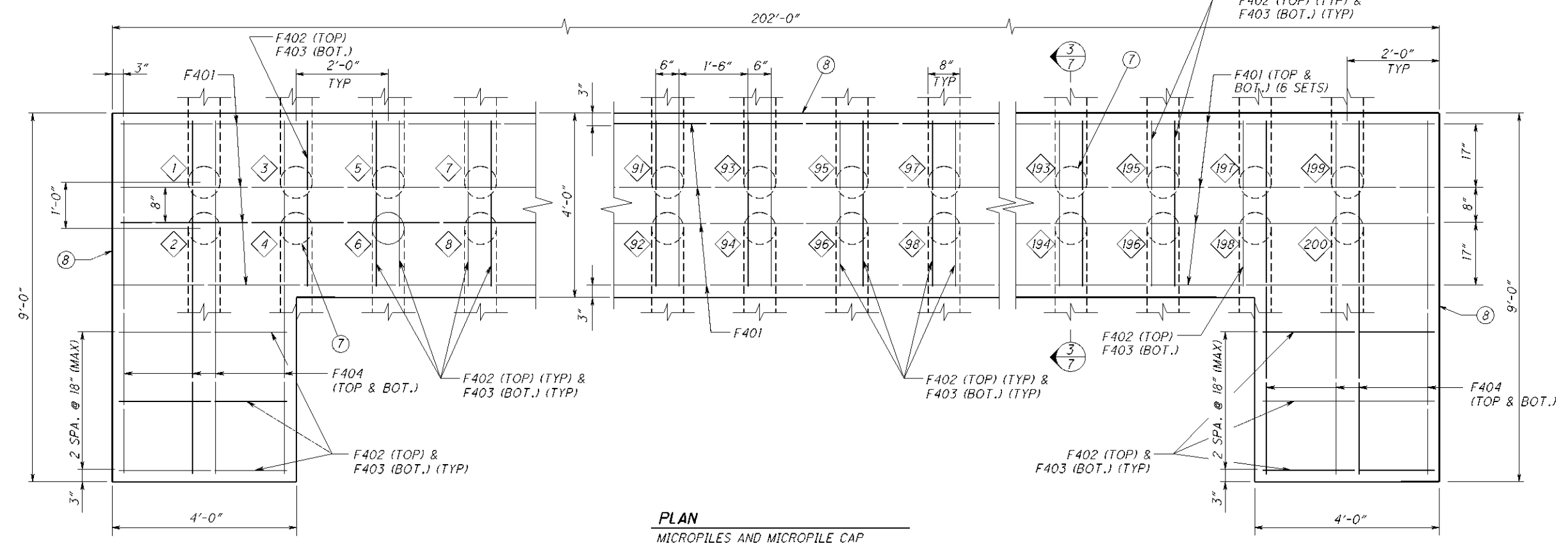
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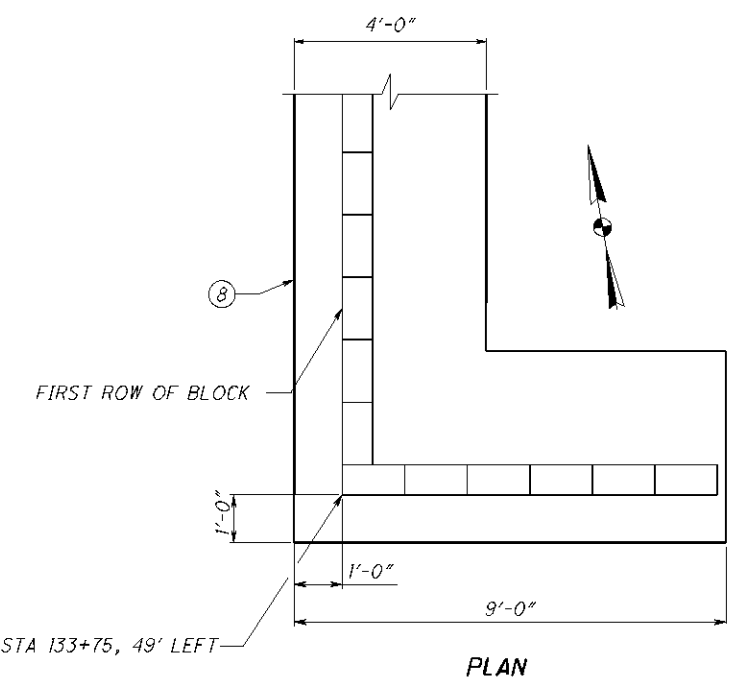
SCHEDULE OF GEOTEXTILE LENGTH

LIFT	LENGTH OF FABRIC (IN)
1	44
2	52
3	57
4	62
5	67
6	72
7	77
8	82
9	87
10	92

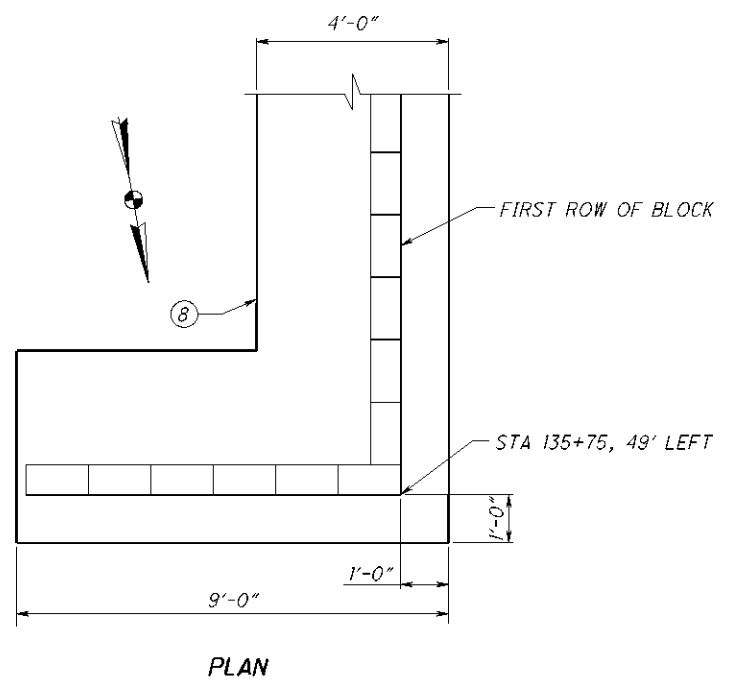
LEGEND
 # - ITEM NUMBER, SEE SHEET 6
 # - PILE NUMBER
 * - LIFT NUMBER



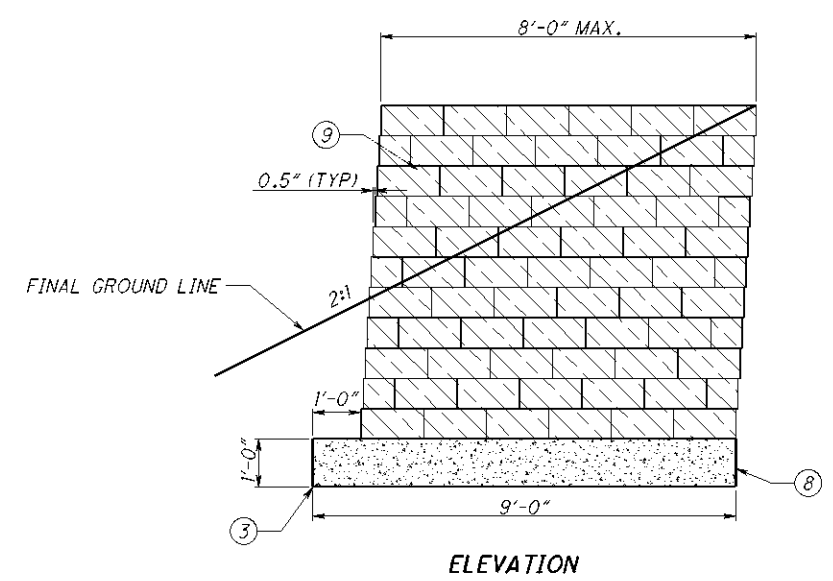
I:\Projects\STA\82750_77_257\82750_roadway\sheets\GF\files\82750WD001.dgn 05-MAR-2009 13:41PM tpowell2



PLAN

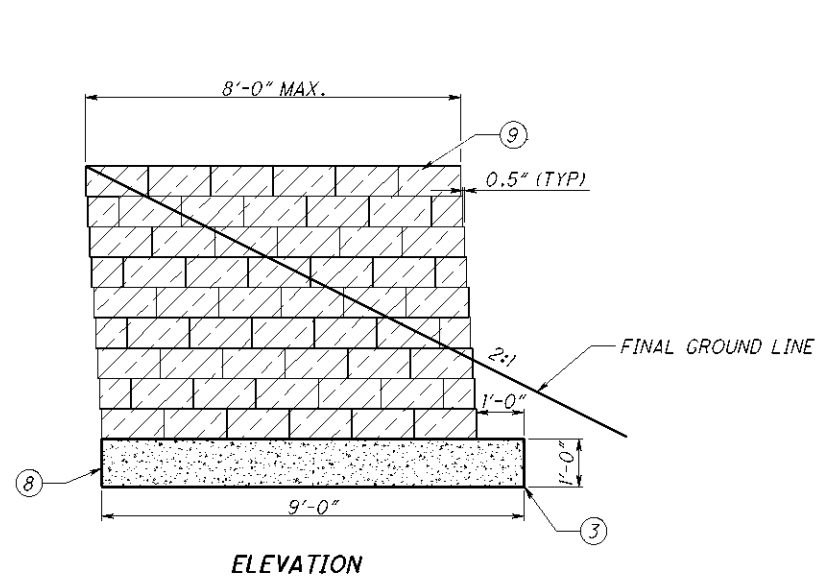


PLAN



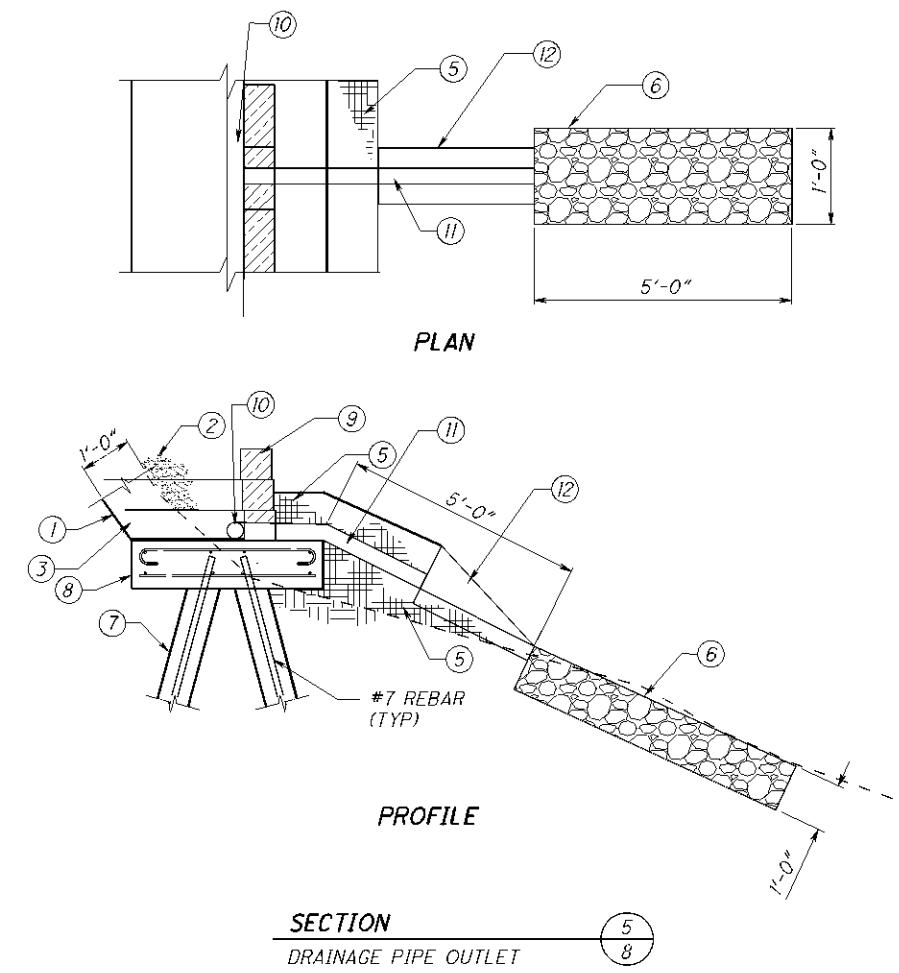
ELEVATION

GRS WALL SIDE DETAIL (1/8)



ELEVATION

GRS WALL SIDE DETAIL (4/8)



PLAN

PROFILE

SECTION

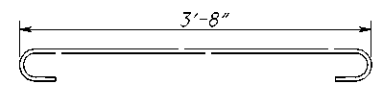
DRAINAGE PIPE OUTLET (5/8)

MARK	NUMBER	LENGTH	WEIGHT (LBS)	TYPE	DIMENSIONS				
					A	B	C	D	E
F401	48	35'-7"	1141	ST					
F402	200	4'-8"	624	17	3'-8"				
F403	200	3'-8"	490	ST					
F404	16	8'-8"	93	ST					
GRAND TOTAL			2348						

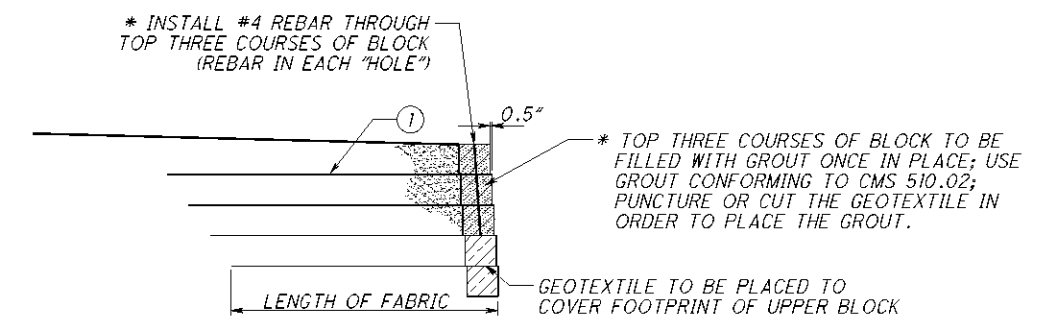
THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, P601 IS A NO. 6 BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED. R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. "STD." WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BEND AT THE END OF THE BAR.

ALL REINFORCING STEEL TO BE EPOXY COATED

#4 LAP LENGTH = 2'-3"



BENDING DETAIL (TYPE 17)



SECTION

BLOCK DETAIL (6/8)

* INCLUDE #4 REBARS AND GROUT WITH ITEM 602 FOR PAYMENT.

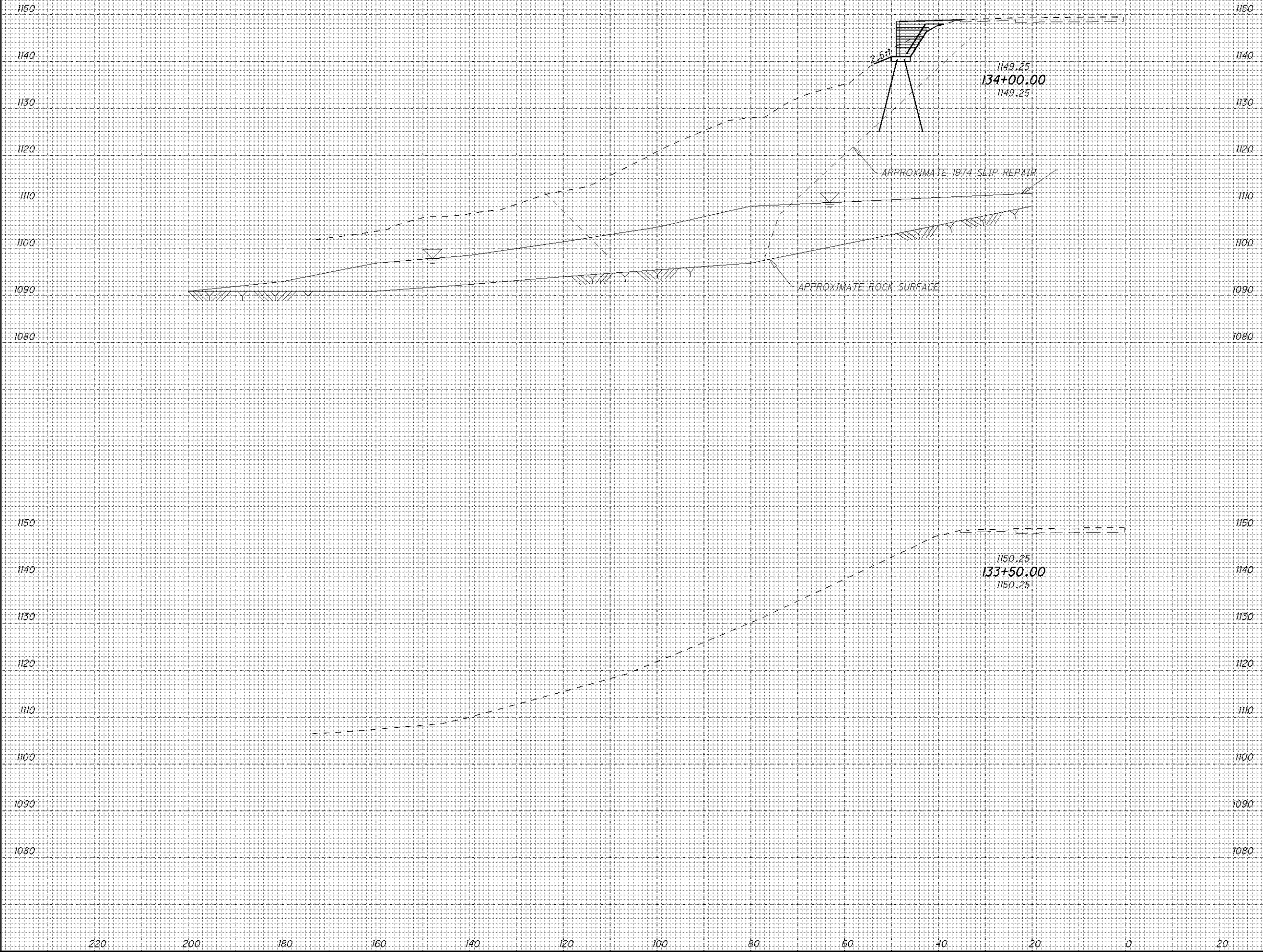
LEGEND

(*) - ITEM NUMBER, SEE SHEET 6

SEEDING

END WIDTH	SO. YDS.

END AREA		VOLUME		CALCULATED	TLM	CHECKED	PRS
CUT	FILL	CUT	FILL				



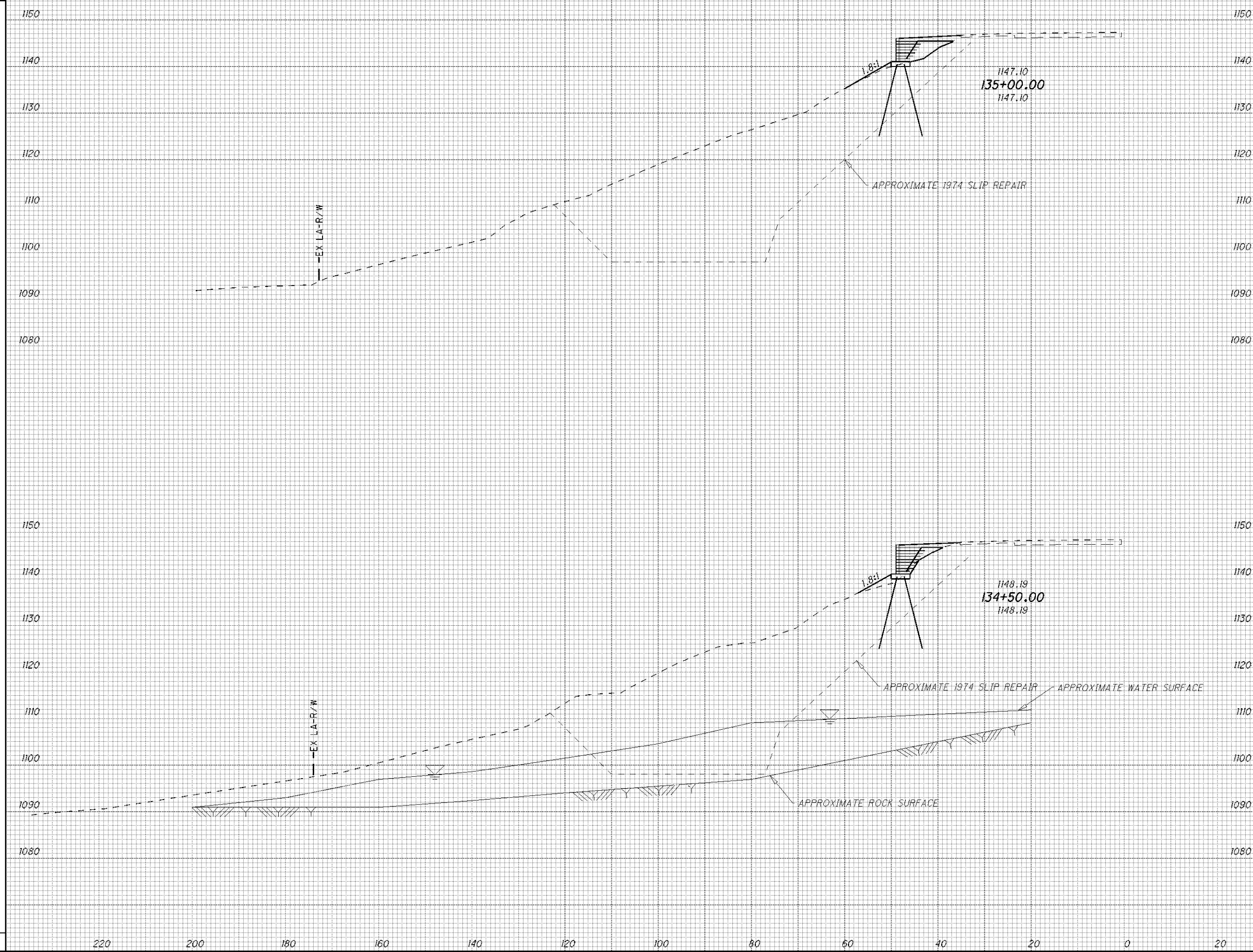
CROSS SECTIONS
STA 133+50 TO STA 134+00

STA-77-2.57

SEEDING

END WIDTH	SO. YDS.

END AREA		VOLUME		CALCULATED	TLM	CHECKED	PRS
CUT	FILL	CUT	FILL				



CROSS SECTIONS
STA 134+50 TO STA 135+00

STA-77-2.57

TIMMERMAN GEOTECHNICAL GROUP, INC.


ABBREVIATIONS AND SYMBOLS USED ON TEST BORING LOGS

Sampling Method Abbreviations

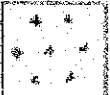
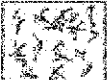


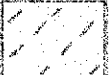
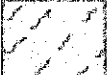






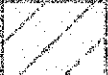

SS: Split spoon sampler, 2" O.D. by 1-3/8" I.D. (ASTM D-1586)*
 ST: Shelby tube sampler, 3" O.D. by 2-7/8" I.D. (ASTM D-1587)
 ST2: Shelby tube sampler, 2" O.D. by 1-7/8" I.D. (ASTM D-1587)
 NX: Rock core, 2-1/8" diameter (ASTM D-2113)

* ASTM D-1586, the Standard Penetration Test, utilizes a 140 lb. hammer dropped 30" to drive the split spoon sampler.

Miscellaneous Abbreviations

: Groundwater level at completion of boring
 Rec: Recovered length of sample
 Wn: Natural moisture content, ratio of the weight of water to the weight of solids in the sample (ASTM D-2216)
 ATV: All-terrain vehicle
 RQD: Rock Quality Designation, sum of core pieces 4" in length or greater, divided by the recovered core length

Soil Particle Sizes and Graphic Symbols

	Gravel: Coarse = 3/4" to 3" Fine = 4.75 mm to 3/4"		Miscellaneous Fill
	Sand: Coarse = 2.0 to 4.75mm Medium = 0.42 to 2.00mm Fine = 0.074 to 0.42mm		Peat and Organics
	Silt: 0.005 to 0.074mm		Organic Silt
	Clay: Finer than 0.005mm		Sandstone
	Sand and Gravel		Shale
	Silty Sand		
	Sandy Silt		
	Silty Clay		
	Clayey Silt		

TIMMERMAN GEOTECHNICAL GROUP, INC.

2685 Gilchrist Road ♦ Akron, Ohio 44305 ♦ (330) 733-6748

BORING NUMBER: B-1
 PAGE 1 OF 2
 DATE STARTED: 4-14-08
 DATE COMPLETED: 4-14-08

TEST BORING LOG

PROJECT: O.D.O.T. STA-77-2.57, Pike Twp., Stark Co., OH PROJECT NUMBER: 051093L
 LOCATION: S. Bound Barn, 54' N. of Control Pt. 7-10 DRILLER: N. Teter
 BORING METHOD: 3 1/4" I.D. Hollow Stem Auger DRILL USED: CME-55, Truck
 SAMPLER USED: 2.0" O.D. Split Spoon WEATHER: Sunny, 40° F
 REMARKS: Slope Tube Set GROUND ELEVATION:
 WATER ENCOUNTER DEPTH: 43.0' WATER DEPTH ON COMPLETION: 37.0' HOLE DEPTH: 41.0'

DEPTH	SAMPLE		SLOWS/6"	REC	LOG	DESCRIPTION OF MATERIALS & REMARKS
	NO	DEPTH				
0						9 1/2" ASPHALT, 7 1/2" SAND & GRAVEL.
1	1.0					Damp, medium stiff, brown & gray CLAY, minor sand & gravel. (Fill) Wn=16.6%
2	2.5	SS	4-2-3	10"		
3	3.5					
4	5.0	SS	3-5-4	10"		Damp, stiff, brown & gray CLAY, minor sand & gravel. (Fill) Wn=16.9%
5	8.5					
6	10.0	SS	3-4-8	10"		Damp, stiff, brown & gray CLAY, minor sand & gravel. (Fill) Wn=14.8%
7	13.5					
8	15.0	SS	7-7-5	10"		Damp, stiff, brown & gray CLAY, minor sand & gravel. (Fill) Wn=15.6%
9	18.5					
10	20.0	SS	4-6-7	10"		Damp, stiff, brown & gray CLAY, minor sand & gravel. (Fill) Wn=14.4%
11	23.5					
12	25.0	SS	3-5-7	10"		Damp, stiff, brown & gray CLAY, minor sand, gravel & coal. (Fill) Wn=13.3%
13	26.5					
14	30.0	SS	5-6-7	9"		Damp, stiff, brown & gray CLAY, minor gravel, sand & coal. (Fill) Wn=14.7%
15	33.5					
16	35.0	SS	2-4-5	13"		Damp, stiff, brown & gray CLAY, minor gravel. (Fill) Wn=19.3%
17	36.0					
18	38.5					
19	40.0	SS	7-11-20	14"		Damp, hard, brown & gray CLAY with shaley structure; probable severely weathered shale. Wn=19.0%

