

MAH - IR 680/76 - 3.32/20.50
 070234 PID - 81341
 Dist 4 5/2/2007

In_House\Geotech Project Data\24622\MAH--680--3.32\Survey\24622.dgn 25--JAN--2007 3:17PM bbaughtma



PROJECT LOCATION
 MAH-680-3.32

PROJECT LOCATION
 POR-76-20.50

LOCATION MAP

MAH-680, LATITUDE: N41°06'50" LONGITUDE: W80°41'33"
 POR-76, LATITUDE: N41°05'59" LONGITUDE: W81°00'58"

SCALE IN MILES



PORTION TO BE IMPROVED:
 INTERSTATE & DIVIDED HIGHWAY:
 UNDIVIDED STATE & FEDERAL ROUTES:
 OTHER ROADS:

DESIGN FUNCTIONAL CLASSIFICATION:
 MAH-680, URBAN INTERSTATE
 POR-76, RURAL INTERSTATE
 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

ENGINEERS SEAL:



SIGNED:
 DATE: 1-26-07

STANDARD CONSTRUCTION DRAWINGS				SUPPLEMENTAL SPECIFICATIONS	
DM-1.1	4/21/06			800	1/19/07
DM-1.2	10/21/05			832	4/25/06
DM-1.4	4/21/06				
DM-4.3	7/19/02				
DM-4.4	7/19/02				
MT-35.10	4/20/01				
MT-95.30	9/05/06				
MT-105.10	10/18/02				
MT-105.11	10/18/02				
TC-41.20	1/19/01				
TC-42.20	7/16/04				
TC-52.10	1/19/07				
TC-52.20	1/19/07				
				SPECIAL PROVISIONS	
				PERMANENT SOIL	
				NAILS	1/25/07

STATE OF OHIO

DEPARTMENT OF TRANSPORTATION

MAH/POR-680/76-3.32/20.50

CITY OF YOUNGSTOWN

PALMYRA TOWNSHIP

MAHONING & PORTAGE COUNTIES

INDEX OF SHEETS:

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PROJECT DESCRIPTION

SLOPE REPAIR AND RECONSTRUCTION AT THE
 FOLLOWING LOCATIONS:
 MAHONING COUNTY, I.R. 680, SLM 3.32 (450')
 PORTAGE COUNTY, I.R. 76, SLM 20.50 (500')

PROJECT EARTH DISTURBED AREA: 0.92 ACRES
 ESTIMATED CONTRACTOR EARTH DISTURBED AREA: 0.125 ACRES
 NOTICE OF INTENT EARTH DISTURBED AREA: 4.90 ACRES

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.

2005 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.

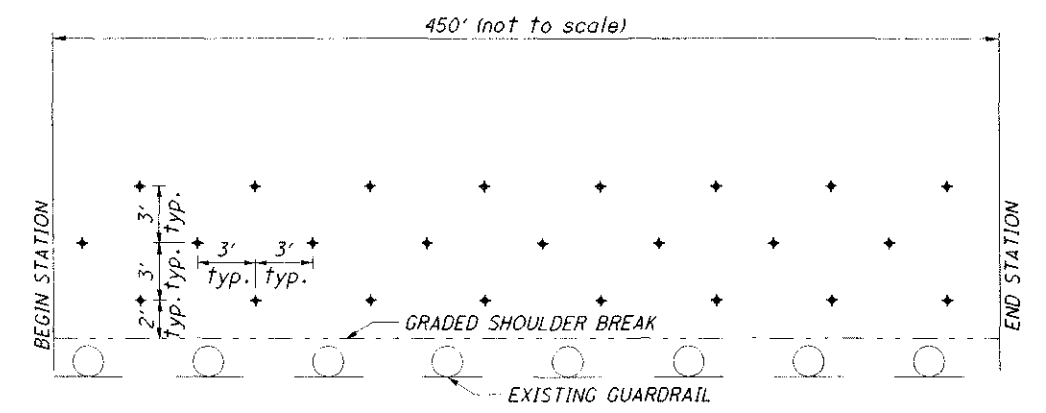
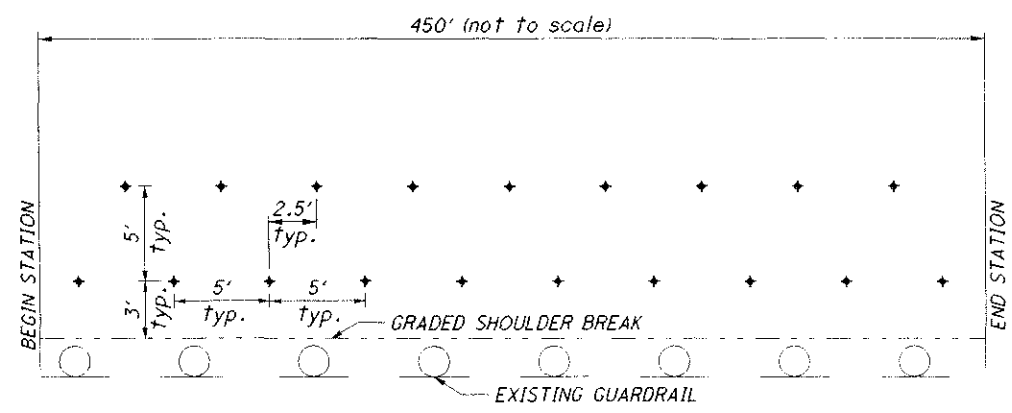
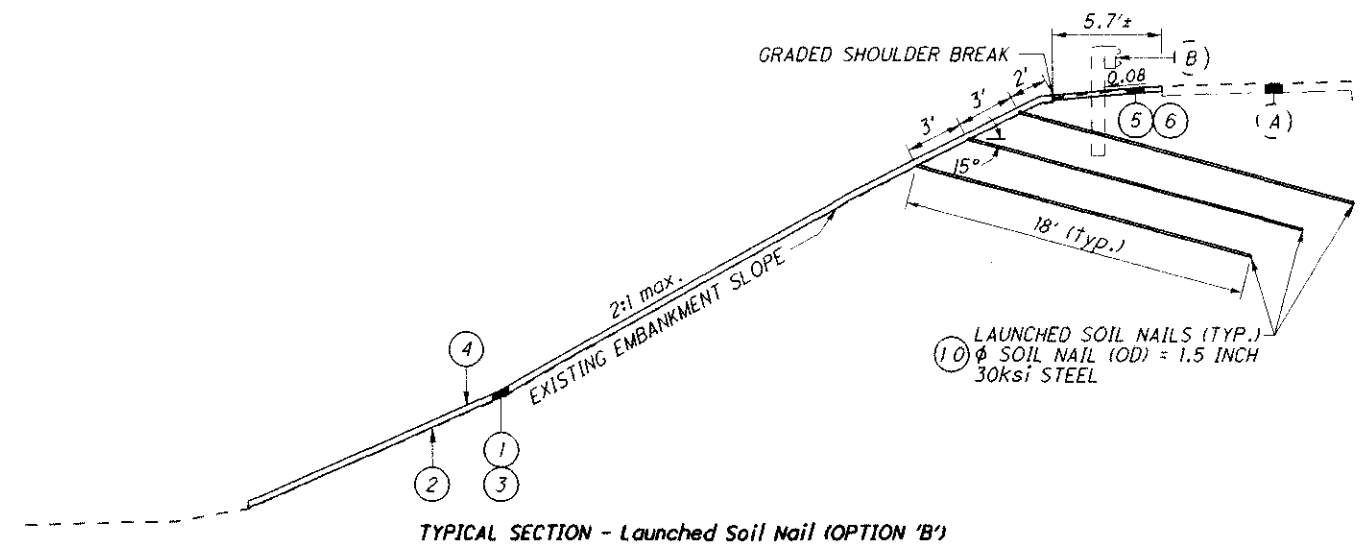
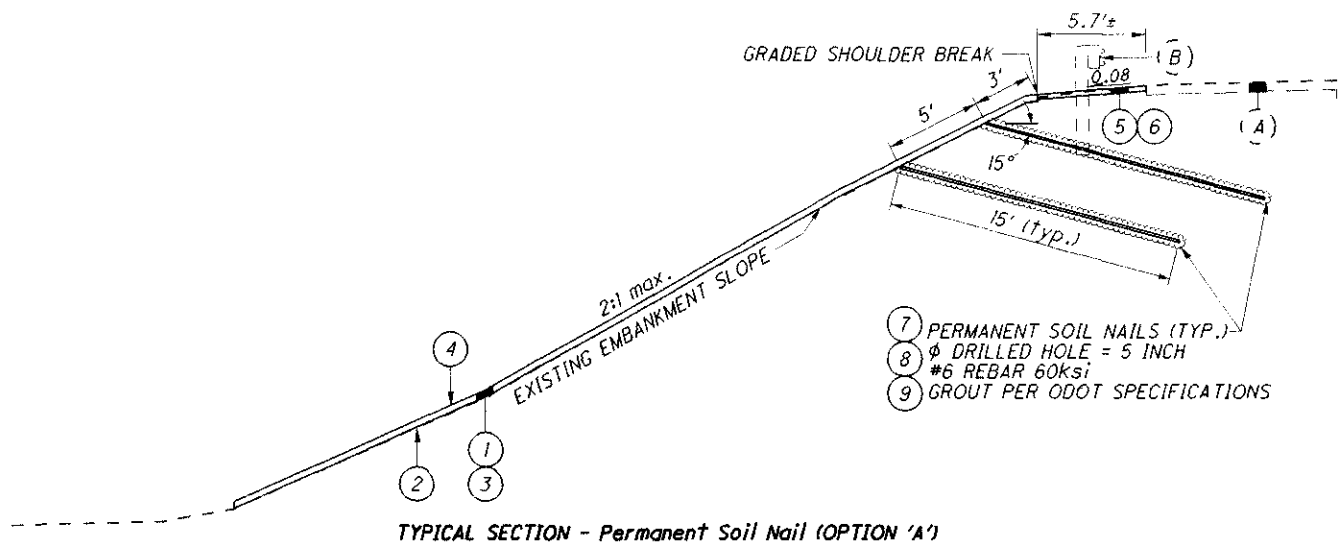
I HEREBY APPROVE THESE PLANS AND DECLARE THAT
 THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE
 THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT
 PROVISIONS FOR THE MAINTENANCE AND SAFETY OF
 TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND
 ESTIMATES.

APPROVED:
 DATE 1-26-07 DISTRICT DEPUTY DIRECTOR

APPROVED:
 DATE 2-20-07 DIRECTOR, DEPARTMENT OF
 TRANSPORTATION

FEDERAL PROJECT NO. NON-FEDERAL
 PID NO. 81341
 CONSTRUCTION PROJECT NO.
 RAILROAD INVOLVEMENT NONE
 MAH/POR-680/76-3.32/20.50
 1/9

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TYPICAL SECTION - Permanent Soil Nail (OPTION 'A')

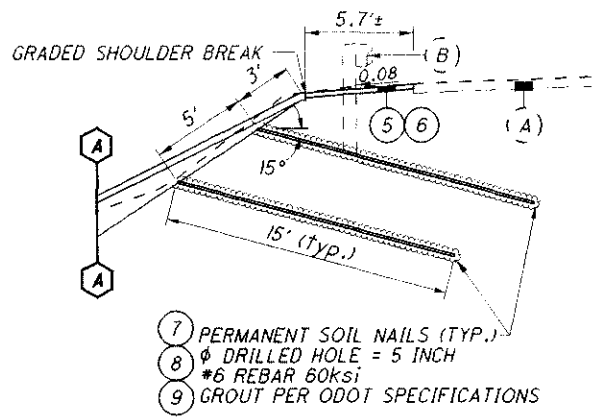
TYPICAL SECTION - Launched Soil Nail (OPTION 'B')

TYPICAL PLAN VIEW - Permanent Soil Nail (OPTION 'A')

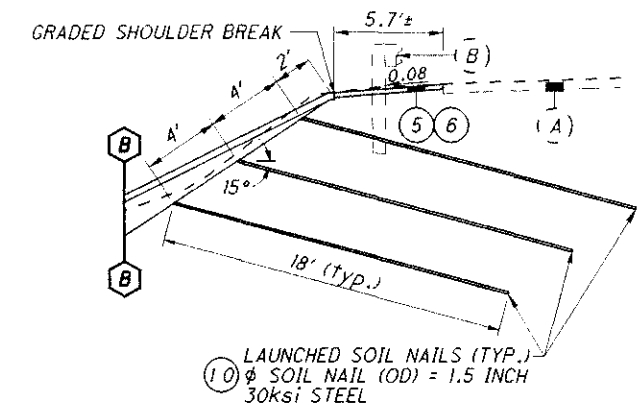
TYPICAL PLAN VIEW - Launched Soil Nail (OPTION 'B')

LEGEND

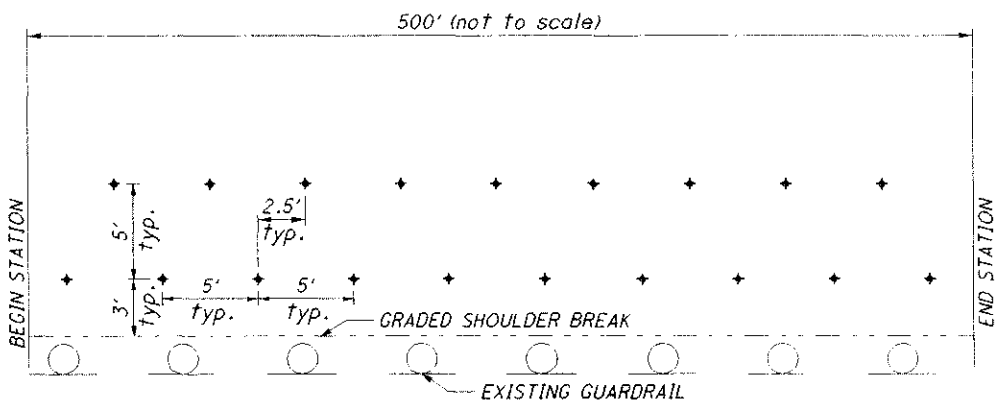
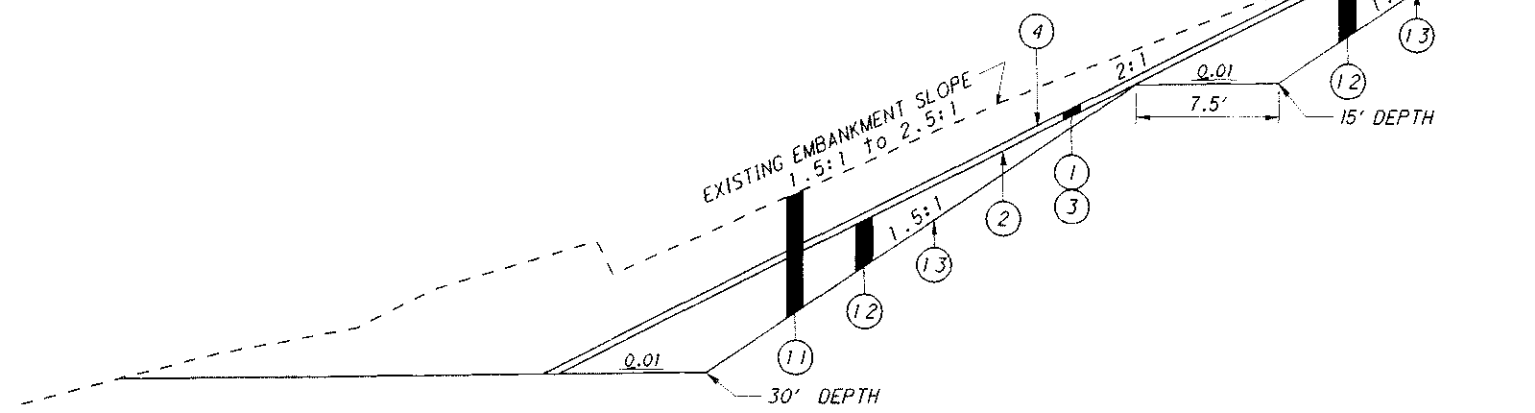
- (1) 203, GRANULAR MATERIAL, TYPE A
 - (2) 204, GEOTEXTILE FABRIC, TYPE D, NON-WOVEN
 - (3) SPECIAL, MISC.: GEOWEB SLOPE PROTECTION SYSTEM (GW30V4)
 - (4) 659, SEEDING AND MULCHING
 - (5) 209, RESHAPING UNDER GUARDRAIL, AS PER PLAN
 - (6) 448, 3" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, UNDER GUARDRAIL, PG64-22, AS PER PLAN
 - (7) SPECIAL, STRUCTURE MISC.: PERMANENT SOIL NAIL (OPTION 'A')
 - (8) SPECIAL, STRUCTURE MISC.: VERIFICATION TESTS (OPTION 'A')
 - (9) SPECIAL, STRUCTURE MISC.: PROOF TESTS (OPTION 'A')
 - (10) SPECIAL, STRUCTURE MISC.: LAUNCHED SOIL NAIL, PERFORATED HOLLOW STEEL (OPTION 'B')
- (A) EXISTING ASPHALT SHOULDER (DEPTH UNKNOWN)
 (B) EXISTING GUARDRAIL



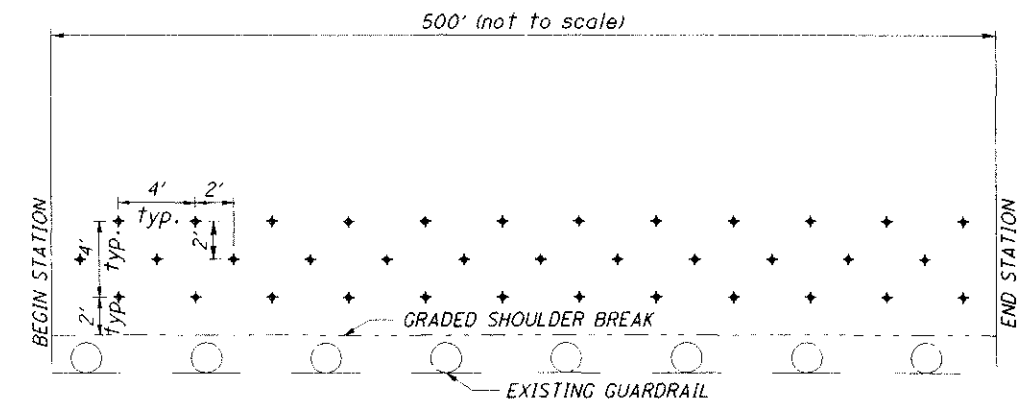
TYPICAL SECTION - Permanent Soil Nail (OPTION 'A')



TYPICAL SECTION - Launched Soil Nail (OPTION 'B')



TYPICAL PLAN VIEW - Permanent Soil Nail (OPTION 'A')



TYPICAL PLAN VIEW - Launched Soil Nail (OPTION 'B')

LEGEND

- (1) 203, GRANULAR MATERIAL, TYPE A
 - (2) 204, GEOTEXTILE FABRIC, TYPE D, NON-WOVEN
 - (3) SPECIAL, MISC.: GEOWEB SLOPE PROTECTION SYSTEM (GW30V4)
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 - (7) SPECIAL, STRUCTURE MISC.: PERMANENT SOIL NAIL (OPTION 'A')
 - (8) SPECIAL, STRUCTURE MISC.: VERIFICATION TESTS (OPTION 'A')
 - (9) SPECIAL, STRUCTURE MISC.: PROOF TESTS (OPTION 'A')
 - (10) SPECIAL, STRUCTURE MISC.: LAUNCHED SOIL NAIL, PERFORATED HOLLOW STEEL (OPTION 'B')
 - (11) 203, EXCAVATION, AS PER PLAN
 - (12) 203, EMBANKMENT
 - (13) SPECIAL, MISC.: GEOCOMPOSITE DRAIN LAYER
- (A) EXISTING ASPHALT SHOULDER (DEPTH UNKNOWN)
 (B) EXISTING GUARDRAIL

TYPICAL SECTIONS (POR-76-20.50)

MAH/POR-680/76-3.32/20.50



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OPTIONAL BID ITEMS

THE GENERAL SUMMARY INCLUDES A NUMBER OF PAY ITEMS LISTED AS OPTIONS FOR SOIL NAILING THE EXISTING EMBANKMENT SOLPES.

THE CONTRACTOR SHALL BID ONLY ONE OF THE OPTIONS FOR SOIL NAILS. THE OPTION SHALL BE EITHER OPTION 'A' OR OPTION 'B', AS DETAILED ON THE TYPICAL SECTIONS SHEET.

THE CONTRACTOR SHALL BID ONLY ONE OF THE DESIGN OPTIONS FOR SOIL NAILS. THE DESIGN OPTION SHALL BE EITHER:

OPTION 'A' - PERMANENT SOIL NAIL

OPTION 'B' - LAUNCHED SOIL NAIL

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.

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.

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.

SEEDING AND MULCHING

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

MAH-680-3.32

659, SEEDING AND MULCHING	2500 SO. YD.
659, REPAIR SEEDING AND MULCHING	125 SO. YD.
659, COMMERCIAL FERTILIZER	0.34 TON
659, LIME	0.52 ACRES
659, WATER	14 M. GAL.

POR-76-20.50

659, SEEDING AND MULCHING	4445 SO. YD.
659, REPAIR SEEDING AND MULCHING	223 SO. YD.
659, COMMERCIAL FERTILIZER	0.60 TON
659, LIME	0.92 ACRES
659, WATER	24 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.

ITEM SPECIAL - MISC.: GEOCOMPOSITE DRAIN LAYER

THIS ITEM SHALL BE USED TO INSTALL THE SLOPE DRAINAGE LAYER ACCORDING TO THE DETAILS AS SHOWN IN THE PLANS AND IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS. THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING THE GSE PERMANET HL GEOCOMPOSITE (DOUBLE-SIDED) (8 OZ/SO YD) MANUFACTURED BY GSE LINING TECHNOLOGY, INC., 19103 GUNDLE ROAD, HOUSTON, TX 77073, 800-435-2008.

HORIZONTAL SEAMS (PARALLEL TO THE CENTERLINE OF THE ROADWAY) SHALL NOT BE PERMITTED.

ALL MATERIALS, LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THIS WORK SHALL BE INCLUDED IN THE UNIT BID PRICE. THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

SPECIAL, MISC.: GEOCOMPOSITE DRAIN LAYER 4445 SO YD

ITEM 203 - EXCAVATION, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF REMOVING AND DISPOSING OF ALL EXCAVATED MATERIALS, AS SHOWN ON TYPICAL SECTION SHEET 3, ACCORDING TO CMS 105.16 AND 105.17.

ALL MATERIALS, LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THIS WORK SHALL BE INCLUDED IN THE UNIT BID PRICE. THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

203, EXCAVATION, AS PER PLAN	3630 CU YD
203, EMBANKMENT	1982 CU YD

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.

RESHAPING UNDER GUARDRAIL

THE INTENT OF THESE ITEMS IS TO RESHAPE GRADED SHOULDERS WITHOUT DISTURBING EXISTING GUARDRAIL TO ENSURE A SMOOTH DRAINABLE SURFACE FREE OF ALL IRREGULARITIES AND SLOPED TO DRAIN AWAY FROM THE POSTS.

THIS OPERATION SHALL INCLUDE PREPARATION OF THE GRADED SHOULDER USING 209, RESHAPING UNDER GUARDRAIL, AS PER PLAN, AND PAVING UNDER THE EXISTING GUARDRAIL USING 448 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, PG 64-22, UNDER GUARDRAIL, AS PER PLAN.

ITEM 209, RESHAPING UNDER GUARDRAIL, AS PER PLAN, SHALL CONSIST OF EXCAVATING TOPSOIL, PLACING GRANULAR MATERIAL AND APPLYING HERBICIDE AS SPECIFIED IN THE PLANS AND IN ACCORDANCE WITH THE FOLLOWING:

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.

HERBICIDE SHALL BE EPA APPROVED FOR PAVING UNDER GUARDRAIL. IT SHALL BE APPLIED TO THE PREPARED AREA AFTER FINAL LEVELING AND GRADING HAS BEEN COMPLETED. THE APPLICATION SHALL BE JUST PRIOR TO PAVING AND SHALL STRICTLY ADHERE TO THE MANUFACTURER'S INSTRUCTIONS.

EACH SUCCESSFUL BIDDER MUST BE LICENSED BY THE OHIO DEPARTMENT OF AGRICULTURE AS A COMMERCIAL APPLICATOR AND ALL PERSONS INVOLVED IN THE ACTUAL SPRAYING SHALL BE LICENSED AS COMMERCIAL OPERATORS IN THE APPROPRIATE SPRAY CATEGORY.

HERBICIDE LABEL, MATERIAL SAFETY DATA SHEET AND COPY OF APPLICATORS LICENSES SHALL BE SUBMITTED TO THE ENGINEER FOR VERIFICATION PRIOR TO COMMENCING WORK.

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

PAVING UNDER GUARDRAIL SHALL CONSIST OF PLACING ITEM 448 TO THE DEPTH SPECIFIED.

ALL EQUIPMENT, MATERIALS AND LABOR REQUIRED TO PERFORM THE WORK SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 448, ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 1, PG 64-22, UNDER GUARDRAIL, AS PER PLAN.

LAUNCHED SOIL NAIL (OPTION 'B')

DESCRIPTION. THIS WORK CONSISTS OF LAUNCHING SOIL NAILS BY HIGH-PRESSURE AIR TO REINFORCE UNSTABLE SOIL MASSES.

CONTRACTOR QUALIFICATION. AT THE PRECONSTRUCTION CONFERENCE, SPECIFIED IN 108.02, SUBMIT PROOF OF TWO PROJECTS IN WHICH THE SOIL NAIL LAUNCHING CONTRACTOR OR SUBCONTRACTOR HAS SUCCESSFULLY INSTALLED LAUNCHED SOIL NAILS WITHIN THE PAST FIVE YEARS.

MATERIALS. FOR THE SOIL NAIL, FURNISH A STEEL BAR WITH A SMOOTH OUTER SURFACE AT THE LENGTH SPECIFIED AND A NOMINAL OUTSIDE DIAMETER OF 1.5 INCHES (38 mm). PROVIDE CERTIFICATION THAT THE TENSILE STRENGTH OF THE SOIL NAILS IS A MINIMUM OF 30,000 psi (413 MPa).

PROVIDE PERFORATED HOLLOW STEEL SOIL NAILS WITH A MINIMUM WALL THICKNESS OF 0.12 INCHES (3.05 mm) AND TWO 1/8-INCH (3.175 mm) HOLES EVERY 6 INCHES (150 mm) ON THE BOTTOM 8 FEET (2.4 m).

EQUIPMENT. PROVIDE A PNEUMATIC LAUNCHER CAPABLE OF LAUNCHING AN 18-FOOT (5.5 m) STEEL BAR AT A VELOCITY IN EXCESS OF 200 mph (322 km/h).

CONSTRUCTION DETAILS. LAUNCH SOIL NAILS AT LOCATIONS DETAILED IN THE PLANS. OFFSET EACH ROW OF NAILS FROM THE PREVIOUS ROW.

REMOVE SOIL NAILS THAT DO NOT PENETRATE A MINIMUM OF 10 FEET (3.0 m) FROM THE SLOPE SURFACE. INSTALL AN ADDITIONAL NAIL WITHIN THE AREA ENCOMPASSED BY THE ADJACENT NAIL PATTERN.

CUT OFF THE EXPOSED PORTION OF THE INSTALLED SOIL NAILS AS SPECIFIED. IF THE CUT LENGTH IS NOT SPECIFIED, CUT THE EXPOSED PORTION OF THE INSTALLED SOIL NAIL FLUSH WITH GROUND LEVEL. DO NOT LEAVE AN EXPOSED SHARP, POINTED END.

METHOD OF MEASUREMENT. THE DEPARTMENT WILL MEASURE THE QUANTITY OF LAUNCHED SOIL NAILS BY THE ACTUAL NUMBER IN THE COMPLETE AND ACCEPTED WORK.

BASIS OF PAYMENT. PAYMENT IS FULL COMPENSATION FOR FURNISHING ALL LABOR, MATERIALS, AND EQUIPMENT REQUIRED TO INSTALL THE LAUNCHED SOIL NAILS TO THE MINIMUM EMBEDMENT.

THE DEPARTMENT WILL NOT PAY FOR SOIL NAILS THAT DO NOT PENETRATE A MINIMUM OF 10 FEET (3.0 m) FROM THE SLOPE SURFACE.

THE DEPARTMENT WILL PAY FOR ACCEPTED QUANTITIES AT THE CONTRACT PRICES AS FOLLOWS:

<u>MAH-680-3.32</u>	
SPECIAL, LAUNCHED SOIL NAIL, PERFORATED HOLLOW STEEL (OPTION 'B')	223 EACH

<u>POR-76-20.50</u>	
SPECIAL, LAUNCHED SOIL NAIL, PERFORATED HOLLOW STEEL (OPTION 'B')	373 EACH

GENERAL NOTES

MAH / POR - 680 / 76 - 3.32 / 20.50

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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 IN EACH DIRECTION 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.

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. 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.

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:
https://dotaw100.dot.state.oh.us/plcm/plcm_web.jsp

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THE REQUIREMENTS IN THE CHART, THE CONTRACTOR SHALL BE ASSESSED LIQUIDATED DAMAGES IN THE AMOUNT OF \$ 3000 PER HOUR OR PORTION THEREOF THAT THE LANE REDUCTION REMAINS BEYOND THE SPECIFIED LIMIT.

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, MAINTAINING TRAFFIC (LANES OPEN DURING HOLIDAYS OR SPECIAL EVENTS)

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

CHRISTMAS	FOURTH OF JULY
NEW YEARS	LABOR DAY
MEMORIAL DAY	THANKSGIVING

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

DAY OF THE WEEK	TIME ALL LANES MUST BE OPEN TO TRAFFIC
SUNDAY	12:00N FRIDAY THROUGH 6:00 AM MONDAY
MONDAY	12:00N FRIDAY THROUGH 6:00 AM TUESDAY
TUESDAY	12:00N MONDAY THROUGH 6:00 AM WEDNESDAY
WEDNESDAY	12:00N TUESDAY THROUGH 6:00 AM THURSDAY
THURSDAY	12:00N WEDNESDAY THROUGH 6:00 AM MONDAY
FRIDAY	12:00N THURSDAY THROUGH 6:00 AM MONDAY
SATURDAY	12:00N FRIDAY THROUGH 6:00 AM MONDAY

NO EXTENSIONS OF TIME SHALL BE GRANTED FOR DELAYS IN MATERIAL DELIVERIES, UNLESS SUCH DELAYS ARE INDUSTRY-WIDE, OR FOR LABOR STRIKES, UNLESS SUCH STRIKES ARE AREA-WIDE.

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THESE REQUIREMENTS, THE CONTRACTOR SHALL BE ASSESSED LIQUIDATED DAMAGES IN ACCORDANCE WITH CMS 108.07.

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.

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DATE PREPARED
MJH
CHECKED

MAINTENANCE OF TRAFFIC GENERAL NOTES

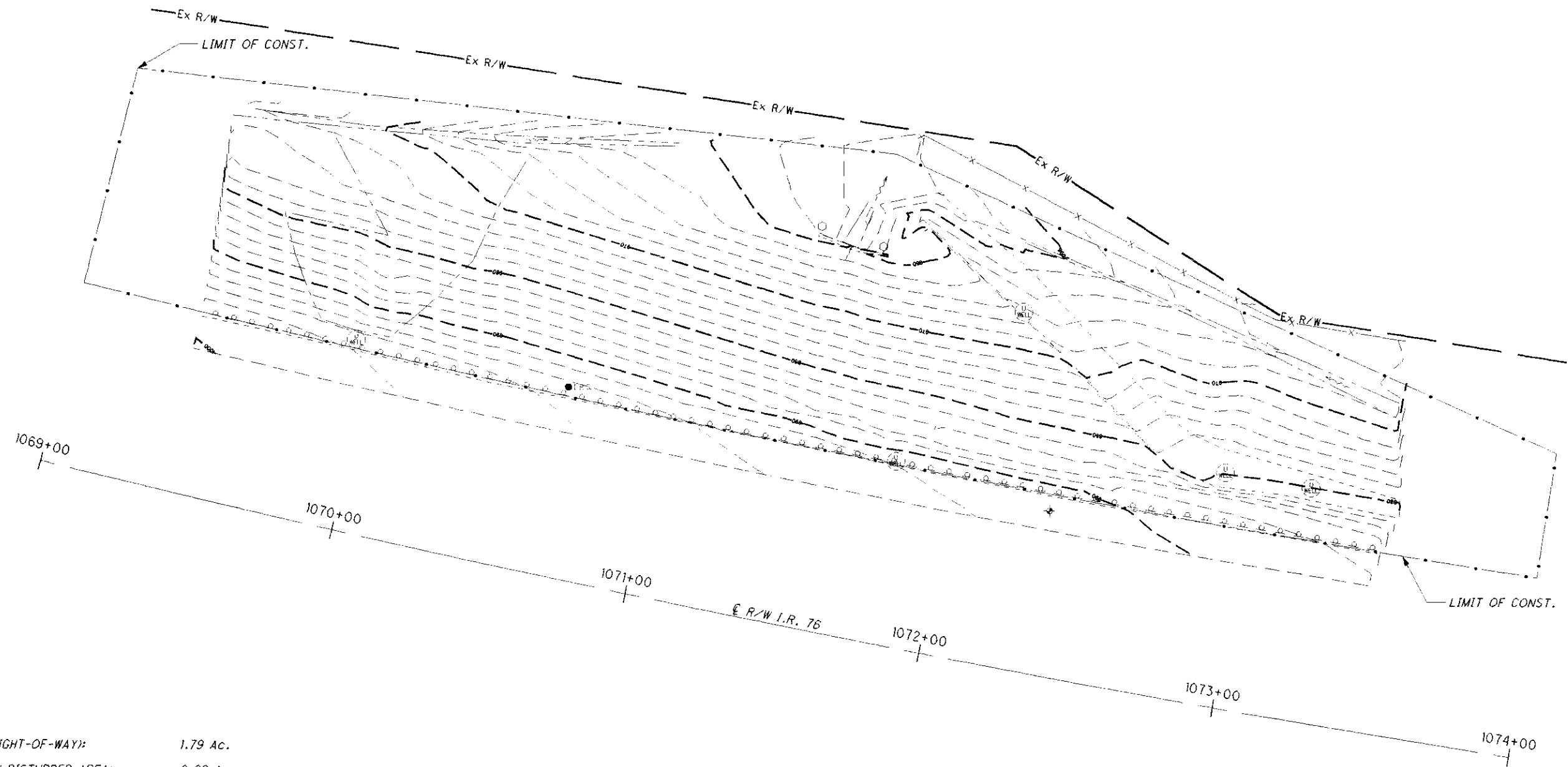
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SLM	TYPICAL SECTION	SIDE	DISTANCE (D)	AVERAGE WIDTH (W)	AREA (A) A=DxW	CADD GENERATED AREA (A)	209 RESHAPING UNDER GUARDRAIL, APP D/100	448 (3') INT. COURSE UNDER GUARDRAIL, APP (A*(3/12))/27	* SPECIAL - STRUCT. MISC.: PERMANENT SOIL NAIL (OPTION 'A')	* SPECIAL - STRUCT. MISC.: VERIFICATION TESTS (OPTION 'A')	* SPECIAL - STRUCT. MISC.: PROOF TESTS (OPTION 'A')										
			FT	FT	SQ FT	SQ FT	STATION	CU. YD.	EACH	EACH	EACH										
I.R. 680 3.32	SHT. 2	LEFT	450.00	5.70	2565.00																
ESTIMATED QUANTITIES I.R. 680			SHT. 2	LEFT	450.00				179	9	5										
* SPECIAL PROVISIONS SHALL APPLY TO THESE PAY ITEMS (SEE SPECIAL PROVISIONS)																					
I.R. 76 20.50	SHT. 3	LEFT	500.00	5.70	2850.00		5.00	26.39													
ESTIMATED QUANTITIES I.R. 76			SHT. 3	LEFT	500.00				199	10	5										
* SPECIAL PROVISIONS SHALL APPLY TO THESE PAY ITEMS (SEE SPECIAL PROVISIONS)																					
SUBTOTALS							9.50	50.14		378	19	10									
TOTALS CARRIED TO GENERAL SUMMARY							10	51		378	19	10									

	CALCULATED	RCB
CALCULATIONS	CHECKED	TJP
MAH/POR-680/76- 3.32/20.50	7	9

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PROJECT DATA

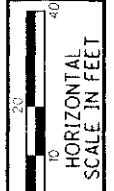
TOTAL AREA (RIGHT-OF-WAY):	1.79 Ac.
PROJECT EARTH DISTURBED AREA:	0.92 Ac.
ESTIMATED CONTRACTOR EARTH DISTURBED AREA:	0.125 Ac.
NOTICE OF INTENT EARTH DISTURBED AREA:	4.9 Ac.
IMPERVIOUS (PAVED) AREA FOR PRE-CONSTRUCTION SITE:	0 Ac.
IMPERVIOUS (PAVED) AREA FOR POST CONSTRUCTION SITE:	0 Ac.
RUNOFF COEFFICIENT FOR PRE-CONSTRUCTION SITE:	0.4
RUNOFF COEFFICIENT FOR POST CONSTRUCTION SITE:	0.4
SOIL AND WATER CONSERVATION MAPS:	48
IMMEDIATE RECEIVING WATER:	TRIBUTARY OF KALE CREEK
SUBSEQUENT RECEIVING WATER:	MAHONING RIVER

PROJECT DESCRIPTION

SLOPE REPAIR AND RECONSTRUCTION AT THE FOLLOWING LOCATIONS:
 MAHONING COUNTY, I.R. 680, SLM 3.32 (450')
 PORTAGE COUNTY, I.R. 76, SLM 20.50 (500')

USGS QUADRANGLE MAP:

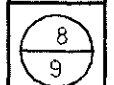
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 LONGITUDE: W81°00'58"



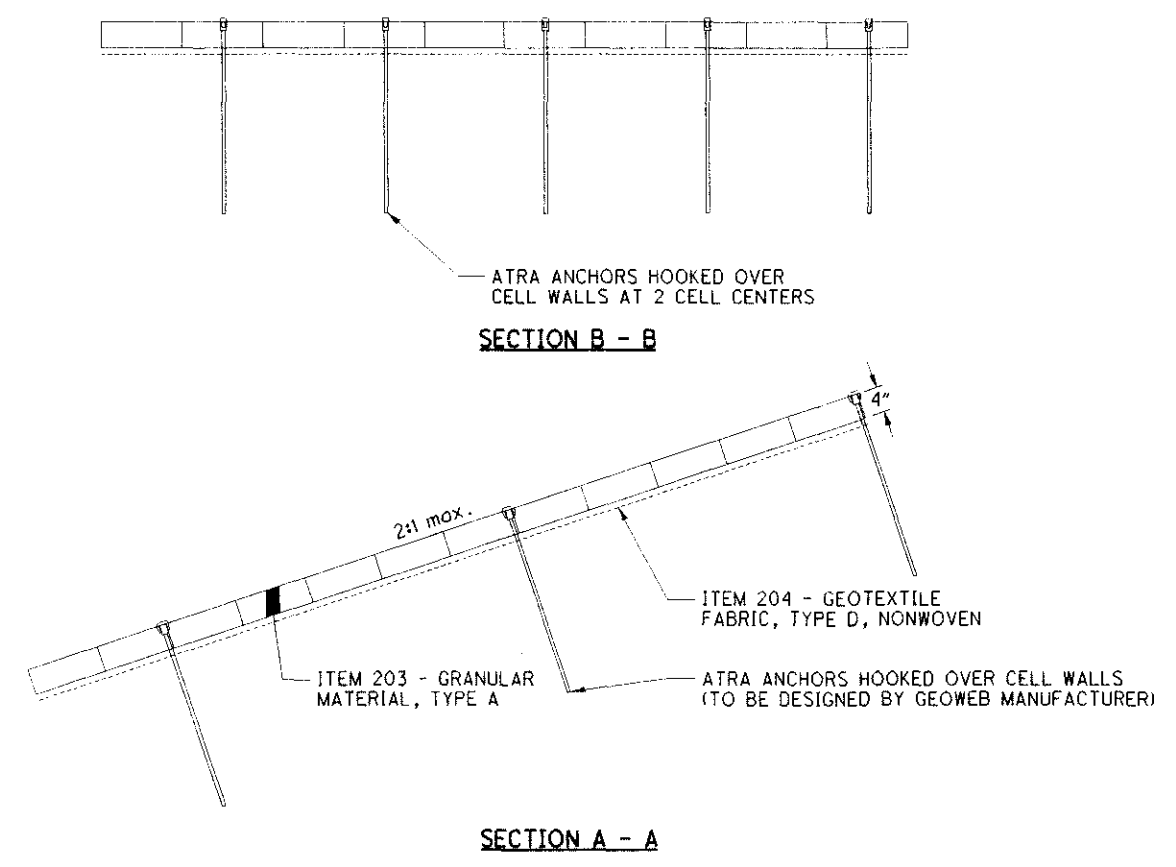
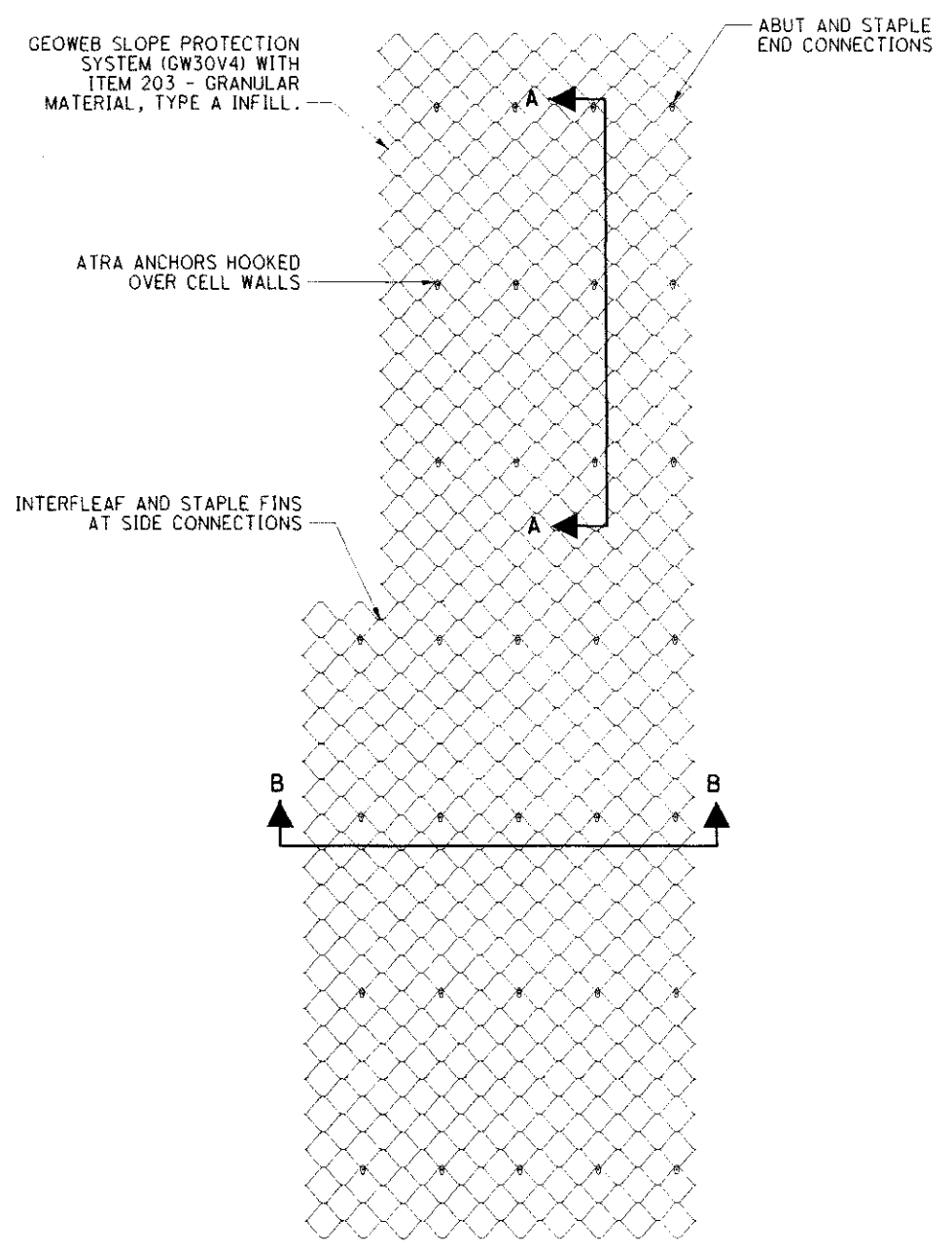
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PROJECT SITE PLAN
POR-76-20.50

MAH/POR-680/76-
3.32/20.50



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SLOPE PROTECTION SYSTEM

THE FOLLOWING ITEMS SHALL BE USED TO INSTALL THE SLOPE PROTECTION SYSTEM ACCORDING TO THE DETAILS AS SHOWN ON THIS SHEET. THE SLOPE PROTECTION SYSTEM SHALL BE INSTALLED ON THE SLOPES IDENTIFIED ON THE CROSS SECTIONS.

ALL MATERIALS, LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THIS WORK SHALL BE INCLUDED IN THE UNIT BID PRICE FOR THE PERTINENT ITEM. THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

<u>MAH-680-3.32</u>		
203, GRANULAR MATERIAL, TYPE A		280 CU YD
204, GEOTEXTILE FABRIC, TYPE D, NONWOVEN		2500 SQ YD
SPECIAL, MISC.: GEOWEB SLOPE PROTECTION SYSTEM (GW30V4)		2500 SQ YD

<u>POR-76-20.50</u>		
203, GRANULAR MATERIAL, TYPE A		500 CU YD
204, GEOTEXTILE FABRIC, TYPE D, NONWOVEN		4445 SQ YD
SPECIAL, MISC.: GEOWEB SLOPE PROTECTION SYSTEM (GW30V4)		4445 SQ YD

ITEM SPECIAL - MISC.: GEOWEB SLOPE PROTECTION SYSTEM (GW30V4)

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING THE GEOWEB SLOPE PROTECTION SYSTEM (GW30V4) MANUFACTURED BY PRESTO PRODUCTS COMPANY, PO BOX 2399, APPLETON, WI, 54912-2399, 800-558-3525. THE SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS INCLUDING, BUT NOT LIMITED TO ATRA ANCHORS.

