OHIO ARMY NATIONAL GUARD

ITAM TRAINING AREA IMPROVEMENT AND TRAIL CREATION

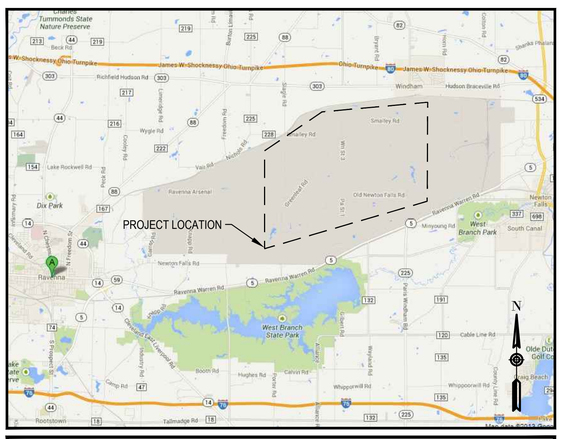
CAMP RAVENNA JOINT MILITARY TRAINING CENTER - RAVENNA, OHIO

CONTRACT NUMBER: #W91364-12-D-0003

TASK ORDER: # 0004

FINAL CONSTRUCTION DOCUMENTS

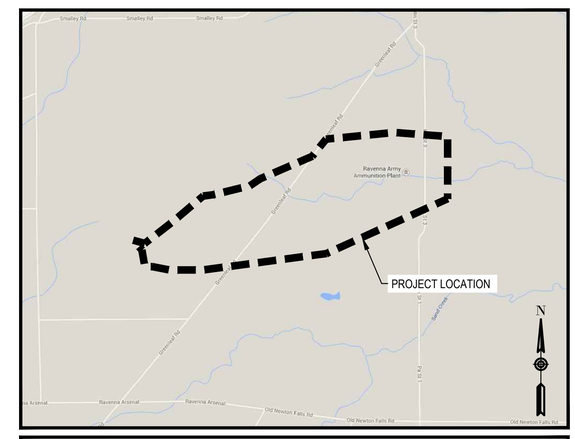
JUNE, 2017



VICINITY MAP (RAVENNA, OHIO)

SIGNATURE BLOCK

DEPARTMENT	NAME	SIGNATURE	DATE



PROJECT LOCATION

DATE	REVISION MADE	BY	AUTHORIZED

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CAMP RAVENNA JOINT MILITARY TRAINING CENTER
RAVENNA, OHIO

STATE OF OHIO — WILLIAM D. SAVICH — E-65002 — REGISTERED — PROFESSIONAL ENGINEER — 6-9-17

OHIO NATIONAL GUARD — SINCE 1788

ITAM TRAINING AREA IMPROVEMENT AND TRAIL CREATION

COVER SHEET

DATE: 06-09-17	DES BY: WDN	BAKER PROJECT NUMBER 156220	SHEET NO: G-001
SCALE: AS NOTED	DWN BY: MJL		
SIZE: ANSI D	CHK BY: SMS	GOV. CONTRACT NUMBER #W91364-12-D-0003	1 OF 89

\\MONPA1CL1.bkr.mbakercorp.com\wo\2_projects\Ohio NG IDIQ\156220 Tank Trails Camp Ravenna\05_Deliverables\Drawings\05 C_Civil\Sheet Files\G-001 TITLE SHEET.dwg Jun06,2017 - 2:35pm Plotted By: WNeider

SHEET NO.	SHEET TITLE	35% SUBMISSION	65% SUBMISSION	95% SUBMISSION	100% SUBMISSION
GENERAL					
G-001	COVER SHEET	X	X	X	X
G-002	SHEET INDEX	X	X	X	X
G-003	GENERAL NOTES		X	X	X
G-004	GENERAL NOTES				X
CIVIL					
V-101	OVERALL EXISTING CONDITIONS	X	X	X	X
					X
C-101	TASK 1 & 2 GROUP 7 TA 71 SOUTH SERVICE ROAD PLAN AND PROFILE (OPTION 1)		X	X	X
C-102	TASK 1 & 2 GROUP 7 TA 71 SOUTH SERVICE ROAD CROSS SECTIONS (OPTION 1)		X	X	X
C-103	TASK 1 & 2 GROUP 7 TA 71 SOUTH SERVICE ROAD CROSS SECTIONS (OPTION 1)		X	X	X
C-104	TASK 1 & 2 GROUP 7 TA 71 SOUTH SERVICE ROAD PLAN AND PROFILE (OPTION 2)		X	X	X
C-105	TASK 1 & 2 GROUP 7 TA 71 SOUTH SERVICE ROAD PLAN AND PROFILE (OPTION 2)		X	X	X
C-106	TASK 1 & 2 GROUP 7 TA 71 SOUTH SERVICE ROAD CROSS SECTIONS (OPTION 2)		X	X	X
C-107	TASK 1 & 2 GROUP 7 TA 71 SOUTH SERVICE ROAD CROSS SECTIONS (OPTION 2)		X	X	X
C-108	TASK 1 & 2 GROUP 7 TA 71 SOUTH SERVICE ROAD CROSS SECTIONS (OPTION 2)			X	X
C-109	TASK 1 & 2 GROUP 7 TA 71 MANEUVER TRAIL PLAN AND PROFILE	X	X	X	X
C-110	TASK 1 & 2 GROUP 7 TA 71 MANEUVER TRAIL PLAN AND PROFILE	X	X	X	X
C-111	TASK 1 & 2 GROUP 7 TA 71 MANEUVER TRAIL PLAN AND PROFILE	X	X	X	X
C-112	TASK 1 & 2 AREA B TA 71 BYPASS PLAN AND PROFILE	X	X	X	X
C-113	TASK 1 & 2 GROUP 7 TA 71 MANEUVER TRAIL EXISTING CULVERT PROFILES		X	X	X
C-114	TASK 1 & 2 GROUP 7 TA 71 MANEUVER TRAIL PROPOSED CULVERT PROFILES		X	X	X
C-115	TASK 1 & 2 GROUP 7 TA 71 MANEUVER TRAIL PROPOSED CULVERT PROFILES			X	X
C-116	TASK 1 & 2 GROUP 7 TA 71 MANEUVER TRAIL PROPOSED CULVERT PROFILES			X	X
C-117	TASK 1 & 2 GROUP 7 TA 71 MANEUVER TRAIL CROSS SECTIONS		X	X	X
C-118	TASK 1 & 2 GROUP 7 TA 71 MANEUVER TRAIL CROSS SECTIONS		X	X	X
C-119	TASK 1 & 2 GROUP 7 TA 71 MANEUVER TRAIL CROSS SECTIONS		X	X	X
C-120	TASK 1 & 2 GROUP 7 TA 71 MANEUVER TRAIL CROSS SECTIONS		X	X	X
C-121	TASK 1 & 2 GROUP 7 TA 71 MANEUVER TRAIL CROSS SECTIONS			X	X
C-122	TASK 1 & 2 TA 71 AREA B BYPASS TRAIL CROSS SECTIONS		X	X	X
C-123	TASK 3 & 4 TVMA / TVML PLAN AND PROFILE	X	X	X	X
C-124	TASK 3 & 4 TVMA / TVML PLAN AND PROFILE	X	X	X	X
C-125	TASK 3 & 4 TVMA / TVML PLAN AND PROFILE	X	X	X	X
C-126	TASK 3 & 4 TVMA / TVML PLAN AND PROFILE	X	X	X	X
C-127	TASK 3 & 4 TVMA / TVML PLAN AND PROFILE	X	X	X	X
C-128	TASK 3 & 4 TVMA / TVML PLAN AND PROFILE	X	X	X	X
C-129	TASK 3 & 4 TVMA / TVML PLAN AND PROFILE	X	X	X	X
C-130	TASK 3 & 4 TVMA / TVML PLAN AND PROFILE	X	X	X	X
C-131	TASK 3 & 4 TVMA / TVML EXISTING CULVERT PROFILES		X	X	X
C-132	TASK 3 & 4 TVMA / TVML EXISTING CULVERT PROFILES		X	X	X
C-133	TASK 3 & 4 TVMA / TVML PROPOSED CULVERT PROFILES		X	X	X
C-134	TASK 3 & 4 TVMA / TVML PROPOSED CULVERT PROFILES			X	X
C-135	TASK 3 & 4 TVMA / TVML PROPOSED CULVERT PROFILES		X	X	X
C-136	TASK 3 & 4 TVMA / TVML MANEUVER AREA A TRAIL CROSS SECTIONS		X	X	X
C-137	TASK 3 & 4 TVMA / TVML MANEUVER AREA A TRAIL CROSS SECTIONS		X	X	X
C-138	TASK 3 & 4 TVMA / TVML MANEUVER AREA A TRAIL CROSS SECTIONS		X	X	X
C-139	TASK 3 & 4 TVMA / TVML MANEUVER AREA A TRAIL CROSS SECTIONS		X	X	X
C-140	TASK 3 & 4 TVMA / TVML MANEUVER AREA A TRAIL CROSS SECTIONS		X	X	X
C-141	TASK 3 & 4 TVMA / TVML MANEUVER AREA A TRAIL CROSS SECTIONS		X	X	X
C-142	TASK 3 & 4 TVMA / TVML MANEUVER AREA A TRAIL CROSS SECTIONS		X	X	X
C-143	TASK 3 & 4 TVMA / TVML MANEUVER AREA A TRAIL CROSS SECTIONS		X	X	X
C-144	TASK 3 & 4 TVMA / TVML MANEUVER AREA A TRAIL CROSS SECTIONS		X	X	X
C-145	TASK 3 & 4 TVMA / TVML MANEUVER AREA A TRAIL CROSS SECTIONS				X

SHEET NO.	SHEET TITLE	35% SUBMISSION	65% SUBMISSION	95% SUBMISSION	100% SUBMISSION
C-146	TASK 3 & 4 TVMA / TVML MANEUVER AREA B TRAIL CROSS SECTIONS	X	X	X	X
C-147	TASK 5 TA-29 ASSEMBLY AREA PLAN AND PROFILE		X	X	X
C-148	TASK 5 TA-29 ASSEMBLY AREA CROSS SECTIONS AND PROFILES				X
C-201	INTERSECTION GEOMETRY DETAIL SOUTH SERVICE ROAD AND GROUP 7 STA 0+00 OPTION 1			X	X
C-202	INTERSECTION GEOMETRY DETAIL SOUTH SERVICE ROAD AND GROUP 7 STA 0+00 OPTION 2			X	X
C-203	INTERSECTION GEOMETRY DETAILS GROUP 7 MANEUVER TRAIL AND AREA B BYPASS			X	X
C-204	INTERSECTION GEOMETRY DETAILS AREA B BYPASS AND THOMPSON TRAIL			X	X
C-205	INTERSECTION GEOMETRY DETAILS TACTICAL VEHICLE MANEUVER AREA A STA. 0+00			X	X
C-206	INTERSECTION GEOMETRY DETAILS TACTICAL VEHICLE MANEUVER AREA A AND SMALLEY ROAD			X	X
C-207	INTERSECTION GEOMETRY DETAILS TACTICAL VEHICLE MANEUVER AREA A AND PARIS WINDHAM ROAD			X	X
C-208	INTERSECTION GEOMETRY DETAILS TACTICAL VEHICLE MANEUVER AREA B AND TRACK 30			X	X
C-301	PAVEMENT JOINT DETAIL SOUTH SERVICE ROAD AND GROUP 7 STA. 0+00 OPTION 1			X	X
C-302	PAVEMENT JOINT DETAIL SOUTH SERVICE ROAD AND GROUP 7 STA. 0+00 OPTION 2			X	X
C-303	PAVEMENT JOINT DETAIL GROUP 7 MANEUVER TRAIL AND AREA B BYPASS			X	X
C-304	PAVEMENT JOINT DETAIL AREA B BYPASS AND THOMPSON TRAIL			X	X
C-305	PAVEMENT JOINT DETAIL TACTICAL VEHICLE MANEUVER AREA A STA. 0+00			X	X
C-306	PAVEMENT JOINT DETAIL TACTICAL VEHICLE MANEUVER AREA A AND SMALLEY ROAD			X	X
C-307	PAVEMENT JOINT DETAIL TACTICAL VEHICLE MANEUVER AREA A AND PARIS WINDHAM RD			X	X
C-308	PAVMENT JOINT DETAIL TACTICAL VEHICLE MANEUVER AREA B AND TRACK 30			X	X
C-401	TYPE B PREFABRICATED CONCRETE CROSSING DETAILS				X
C-501	TYPICAL SECTIONS	X	X	X	X
C-502	TYPICAL SECTIONS		X	X	X
C-503	CONSTRUCTION DETAILS			X	X
C-504	CONSTRUCTION DETAILS			X	X
C-505	CONSTRUCTION DETAILS			X	X
C-506	CONSTRUCTION DETAILS			X	X
C-507	CONSTRUCTION DETAILS			X	X
C-508	CONSTRUCTION DETAILS			X	X
C-509	CONSTRUCTION DETAILS			X	X
C-510	CONSTRUCTION DETAILS			X	X
C-511	CONSTRUCTION DETAILS			X	X
C-512	CONSTRUCTION DETAILS			X	X
C-513	CONSTRUCTION DETAILS			X	X
C-514	CONSTRUCTION DETAILS			X	X
C-515	CONSTRUCTION DETAILS			X	X
C-516	CONSTRUCTION DETAILS				X
C-517	SUPPLEMENTAL SPECIFICATIONS			X	X
C-518	SUPPLEMENTAL SPECIFICATIONS			X	X
C-519	SUPPLEMENTAL SPECIFICATIONS			X	X

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INDEX SHEET

DATE: 06-09-17	DES BY: WDN	BAKER PROJECT NUMBER 156220	SHEET NO: G-002
SCALE: AS NOTED	DWN BY: MJL		
SIZE: ANSI D	CHK BY: SMS	GOV. CONTRACT NUMBER #W91364-12-D-0003	2 OF 89

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GENERAL

1. ALL CONSTRUCTION SHALL BE PERFORMED AND MATERIALS PROVIDED IN ACCORDANCE WITH OHIO DEPARTMENT OF TRANSPORTATION, CONSTRUCTION AND MATERIAL SPECIFICATIONS (ODOT CMS), CURRENT EDITION.

2. THE OHIO ARMY NATIONAL GUARD (OHARNG) IS COMMITTED TO ENVIRONMENTAL STEWARDSHIP AT ALL OF OUR FACILITIES AND WITHIN OUR COMMUNITIES AS A WHOLE. THE ADJUTANT GENERAL'S DEPARTMENT MAINTAINS AN ENVIRONMENTAL MANAGEMENT SYSTEM (EMS) IN ACCORDANCE WITH (IAW) ISO 14000 STANDARDS. CONTRACTORS PERFORMING WORK ON BEHALF OF THE DEPARTMENT, WITH THE EXCEPTION OF CONTRACTORS PROVIDING GOODS AND SERVICES THROUGH STATE TERM SCHEDULES OR PURCHASE ORDERS, ARE REQUIRED TO BE FAMILIAR WITH THE ADJUTANT GENERAL'S EMS POLICY AND TO COMPLY WITH THIS POLICY WHERE APPLICABLE AND PRACTICABLE. IF IMPLEMENTED ACCORDINGLY, FOLLOWING THE GUIDELINES OUTLINED IN THE FOLLOWING SUPPLEMENTAL CONDITIONS WILL ENSURE CONTRACTOR COMPLIANCE WITH THE EMS POLICY.

3. ALL CONTRACTORS MUST COMPLY WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL ENVIRONMENTAL REQUIREMENTS TO INCLUDE APPLICABLE ARMY AND OHARNG REGULATIONS. THIS INCLUDES, BUT IS NOT LIMITED TO, THE PROPER CHARACTERIZATION, MANAGEMENT AND DISPOSAL OF WASTES; PROPER STORAGE, USE AND TRANSPORTATION OF HAZARDOUS MATERIALS; SPILL PREVENTION AND CLEAN UP; OBTAINING PROPER PERMITS AND SUBMITTING PROPER NOTIFICATIONS AS APPLICABLE TO THE WORK BEING CONDUCTED; AND PROTECTION OF SURFACE WATER AND NATURAL RESOURCES.

4. NO CONTRACTOR WILL CORRESPOND WITH ANY REGULATORY AGENCY ON BEHALF OF THE OHARNG WITHOUT APPROVAL OF THE OHARNG. THIS INCLUDES MEETINGS, PHONE CALLS, EMAILS, OR OTHER WRITTEN OR VERBAL COMMUNICATIONS. THE OHARNG WILL REVIEW AND APPROVE ALL CORRESPONDENCE, TO INCLUDE PERMIT APPLICATIONS, BEFORE IT IS SENT TO A REGULATORY AGENCY TO INCLUDE BUT NOT LIMITED TO THE FEDERAL OR OHIO ENVIRONMENTAL PROTECTION AGENCY (EPA), THE US FISH AND WILDLIFE SERVICE, THE OHIO HISTORIC PRESERVATION OFFICE, AND THE US ARMY CORPS OF ENGINEERS.

5. ALL CONTRACTOR ARE RESPONSIBLE FOR PAYING ALL FEES AND ACQUIRING ALL APPLICABLE PERMITS OR REGULATORY APPROVALS ASSOCIATED WITH THE WORK THEY ARE PERFORMING. DEPENDING UPON THE PERMIT/NOTIFICATION, IT MAY NEED TO BE ISSUED IN THE OHARNG'S NAME. COORDINATION WILL BE DONE WITH THE OHARNG TO DETERMINE THIS AND THE CONTRACTOR WILL COMPLETE THE APPLICATION/NOTIFICATION FOR OHARNG SIGNATURE AND SUBMIT THE APPLICATION AND ASSOCIATED FEES. ALL PERMIT SUBMITTALS WILL BE COORDINATED, REVIEWED AND APPROVED BY THE OHARNG REGARDLESS WHO SIGNS THE APPLICATION.

6. GENERAL CONTRACTORS (OR THE CONTRACTOR) WILL DEVELOP AN ENVIRONMENTAL WORK PLAN THAT PROVIDES DETAILS ON THE WORK TO BE PERFORMED AND HOW IT WILL BE PERFORMED TO ENSURE COMPLIANCE WITH APPLICABLE ENVIRONMENTAL REQUIREMENTS (WETLAND PERMITS, ENDANGERED SPECIES RESTRICTIONS, EROSION CONTROL, HAZARDOUS WASTE GENERATION, ETC.). TOPICS ADDRESSED WITHIN THE ENVIRONMENTAL WORK PLAN WILL INCLUDE AS APPLICABLE: HAZARDOUS MATERIALS TO BE USED; THE QUALIFIED PERSONNEL RESPONSIBLE FOR WASTE MANAGEMENT; WASTE TO BE GENERATED (HAZARDOUS AND NON-HAZARDOUS WASTE); MATERIALS TO BE RECYCLED; METHODS TO BE USED TO MINIMIZE HAZARDOUS WASTE GENERATION; METHODS AND LABORATORIES TO BE USED TO CHARACTERIZE THE WASTE; DRMO APPROVED WASTE HAULERS AND TSDF'S TO BE USED; PROPOSED ON SITE WASTE STORAGE LOCATIONS; ON SITE WASTE MANAGEMENT AND INSPECTION PROCEDURES TO BE IMPLEMENTED TO INCLUDE MAXIMUM STORAGE TIME/PROPOSED WASTE PICKUP/TRANSPORT DATE; EMERGENCY PLAN AND EMERGENCY CONTACT INFORMATION; DISCHARGES FROM SECONDARY CONTAINMENT AND DE-WATERING ACTIVITIES; AND ANY OTHER INFORMATION PERTINENT TO ENVIRONMENTAL COMPLIANCE AND THE GENERATION AND MANAGEMENT OF WASTE DURING PROJECT IMPLEMENTATION. THE ENVIRONMENTAL WORK PLAN WILL BE REVIEWED BY THE ENVIRONMENTAL OFFICE AND EDITED BY THE CONTRACTOR AS NECESSARY TO CORRECT DEFICIENCIES. WORK MAY NOT BEGIN UNTIL THIS WORK PLAN HAS BEEN APPROVED BY THE ENVIRONMENTAL OFFICE. A COPY OF THE FINAL WORK PLAN WILL BE PROVIDED TO THE CONTRACTING OFFICE, THE APPROPRIATE OHARNG ENVIRONMENTAL OFFICE, THE OHARNG TECHNICAL REPRESENTATIVE AND ONE WILL BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES.

7. EXECUTIVE ORDER (EO) 13693, PLANNING FOR FEDERAL SUSTAINABILITY IN THE NEXT DECADE, ESTABLISHES A FEDERAL INTEGRATED STRATEGY TOWARD SUSTAINABILITY INCLUDING EFFORTS TO "ELIMINATE WASTE, RECYCLE, AND PREVENT POLLUTION." ADDITIONALLY, EO 13693 ESTABLISHES TARGETS TO DIVERT AT LEAST 50% OF NON-HAZARDOUS SOLID WASTE, INCLUDING CONSTRUCTION AND DEMOLITION DEBRIS, FROM THE WASTE STREAM. THE CONTRACTOR WILL UTILIZE THE MOST CURRENT WASTE PREVENTION, WASTE DIVERSION (SALVAGE, REUSE, RECYCLE), AND WASTE MINIMIZATION GUIDELINES TO ENSURE THIS TARGET IS MET.

8. BURNING OF WASTE, BRUSH, RUBBISH, AND/OR ANY OTHER DEBRIS IS NOT PERMITTED. IF BRUSH OR VEGETATION BURNING IS DESIRED, A REQUEST TO DO SO MUST BE SUBMITTED TO THE OHARNG FOR REVIEW. IF THE OHARNG CONCURS THAT BURNING IS NEEDED, THE CONTRACTOR IS REQUIRED TO SUBMIT A BURN PERMIT TO THE OHIO EPA ALONG WITH ANY ASSOCIATED FEE. IF THE OHIO EPA APPROVES THE APPLICATION AND ISSUES A PERMIT, THE CONTRACTOR IS REQUIRED TO COMPLY WITH ALL CONDITIONS OF THE PERMIT. UPON RECEIPT OF THE OHIO EPA BURN PERMIT THE CONTRACTOR WILL OBTAIN ANY ADDITIONAL PERMITS REQUIRED BY THE OHARNG AND/OR LOCAL FIRE DEPARTMENTS/DISTRICTS, IF ANY.

9. FOR PROJECTS THAT DISTURB ONE (1) OR MORE ACRES OF GROUND (OR OTHERWISE MEET THE OHIO EPA CRITERIA FOR PERMIT COVERAGE), THE ARCHITECT AND ENGINEER (A/E) WILL COMPLETE A DRAFT NOTICE OF INTENT (NOI) FOR COVERAGE UNDER THE OHIO EPA GENERAL NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH THE CONSTRUCTION ACTIVITY ON BEHALF OF THE ADJUTANT GENERAL'S DEPARTMENT. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR PREPARING THE DRAFT NOI IN THE ABSENCE OF AN A/E. THE NOI WILL BE FILLED OUT WITH THE OHIO ARMY NATIONAL GUARD - "LOCATION" SUCH AS CAMP RAVENNA OR CAMP PERRY, ETC.) AS THE OWNER AND THE SPECIFIC PROJECT IDENTIFIED AS THE FACILITY NAME (SUCH AS CAMP RAVENNA BARRACKS III). THE GENERAL CONTRACTOR WILL FINALIZE THE NOI FOR SUBMISSION TO THE OHIO EPA ON BEHALF OF THE ADJUTANT GENERAL'S DEPARTMENT. THE NOI MUST BE MUST BE REVIEWED AND APPROVED BY THE LOCAL OHARNG ENVIRONMENTAL OFFICE PRIOR TO SUBMISSION AND SIGNED BY AN AUTHORIZED OHARNG EMPLOYEE. THE GENERAL CONTRACTOR WILL SUBMIT THE APPROVED NOI AND PAY THE ASSOCIATED FEE. AFTER THE OHIO EPA ISSUES AN AUTHORIZATION LETTER AND PERMIT NUMBER TO THE OHARNG, THE GENERAL CONTRACTOR AND APPLICABLE SUB-CONTRACTORS WILL COMPLETE AND SUBMIT CO-PERMITTEE NOI'S AND WILL OBTAIN COVERAGE AS CO-PERMITTEES UNDER THE OHARNG PERMIT. THE GENERAL CONTRACTOR WILL UTILIZE THE INFORMATION ON THE OHARNG APPROVED NOI AND OHIO EPA PERMIT WHEN COMPLETING THE CO-PERMITTEE NOI. THE CONTRACTOR WILL SIGN AND SUBMIT THE OHARNG APPROVED CO-PERMITTEE NOI.

10. WHEN AN OHIO EPA CONSTRUCTION STORM WATER PERMIT IS NEEDED, THE A/E WILL DEVELOP EROSION AND STORM WATER CONTROL PLANS AND DETAILS TO SUPPORT THE DEVELOPMENT OF A STORM WATER POLLUTION PREVENTION PLAN (SWP3) WHICH WILL BE PREPARED BY THE GENERAL CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS CONTAINED IN THE OHIO EPA GENERAL NPDES PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY. THE PLANS AND DETAILS MUST BE REVIEWED AND APPROVED BY THE LOCAL OHARNG ENVIRONMENTAL OFFICE PRIOR TO DESIGN COMPLETION. THE GENERAL CONTRACTOR WILL PREPARE A DRAFT SWP3 BASED ON THE PLANS AND DETAILS PROVIDED BY THE A/E THAT MEETS THE STANDARDS OUTLINED IN THE LATEST VERSION OF THE OHIO DEPARTMENT OF NATURAL RESOURCES PUBLICATION TITLED "RAINWATER AND LAND DEVELOPMENT - OHIO'S STANDARDS FOR STORMWATER MANAGEMENT AND LAND DEVELOPMENT AND URBAN STREAM PROTECTION". THE DRAFT SWP3 WILL BE PROVIDED TO THE LOCAL OHARNG ENVIRONMENTAL OFFICE FOR REVIEW AND APPROVAL. ONCE APPROVED BY THE ENVIRONMENTAL OFFICE, THE SWP3 WILL BE PROVIDED TO THE LOCAL SOIL AND WATER CONSERVATION DISTRICT (SWCD) AND LOCAL COUNTY ENGINEER (IF REQUIRED BY COUNTY OR OTHER REGULATIONS) FOR THEIR REVIEW AND APPROVAL. THE GENERAL CONTRACTOR WILL MAKE CORRECTIONS TO THE SWP3 BASED UPON OHARNG, SWCD AND ENGINEER COMMENTS. THE SWP3 WILL BE SIGNED BY THE LOCAL OHARNG ENVIRONMENTAL OFFICE AND THE GENERAL CONTRACTOR. THE FINAL COPY OF THE SWP3 WILL BE IN A THREE RING BINDER AND A SIGNED COPY OF THE SWP3 WILL BE GIVEN TO THE LOCAL OHARNG ENVIRONMENTAL OFFICE AND A COPY WILL REMAIN AT THE WORK SITE DURING PROJECT EXECUTION. IN THE ABSENCE OF AN A/E THE GENERAL CONTRACTOR WILL BE RESPONSIBLE FOR THE DEVELOPMENT OF EROSION AND STORM WATER CONTROL PLANS AND DETAILS AND THE SUBSEQUENT DEVELOPMENT, REVISION, AND SUBMISSION OF THE SWP3.

11. THE GENERAL CONTRACTOR IS NOT PERMITTED TO DISTURB OR FILL ANY WETLANDS, STREAMS, OR OTHER SURFACE WATERS WHILE PERFORMING TASKS WITHIN THIS SCOPE OF WORK UNLESS SUCH DISTURBANCE OR FILL IS SPECIFICALLY IDENTIFIED AS A TASK IN THE SCOPE AND APPLICABLE PERMITS AND AUTHORIZATIONS HAVE BEEN OBTAINED. THE CONTRACTOR WILL MAINTAIN A 30 FOOT UNDISTURBED BUFFER AROUND WETLANDS AND DEPRESSIONAL AREAS THAT HOLD WATER AND KEEP ALL EQUIPMENT, MATERIALS, VEHICLES, DEBRIS, WASTE, AND PERSONNEL OUT OF THIS BUFFER AND PREVENT DISCHARGES OF ANY TYPE (CHEMICAL OR SOIL) FROM ENTERING SUCH AREAS.

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.

UTILITIES

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

- GAS
  EAST DOMINION GAS
  ADAM HEBEBRAND
  adam.m.hebebrand@ dom.com
  320 SPRINGSIDE DRIVE, AKRON, OH 44333
- WATER
  NATIONAL GUARD DPW
  CHUCK LANE
  SUPERINTENDENT
  O: (330) 872-5656
- ELECTRIC
  NATIONAL GUARD DPW
  WILLIAM GEORGE
  SUPERINTENDENT
  O: (330) 872-7711
- SANITARY SEWER
  NATIONAL GUARD DPW
  MIKE NOVOTNY
  SUPERINTENDENT
  O: (330) 872-5150

THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS AS REQUIRED BY SECTION 153.64 O.R.C.

DOMINION EAST OHIO GAS COMPANY REQUIREMENTS

- IN THE CASE OF NEW DEVELOPMENT OR IMPROVEMENTS TO EXISTING ROADS WITHIN DOMINION EAST OHIO'S EASEMENT AREAS, THE DEVELOPER SHALL PREPARE PLAN, PROFILE AND CROSS SECTION PLANS OF THE IMPROVEMENTS, SHOWING DOMINION EAST OHIO'S PIPELINE'S; PLUS EXISTING AND PROPOSED GRADE, SEWERS, UTILITIES, ROAD IMPROVEMENTS, ETC. FOR DOMINION EAST OHIO TO REVIEW. FOR NEW CONSTRUCTION ANY VIOLATION OF THESE RESTRICTIONS WILL BE SUBJECT TO DENIAL OF GAS SERVICE. NO CONSTRUCTION ON SUCH IMPROVEMENTS MAY BEGIN UNTIL DOMINION EAST OHIO HAS PROVIDED WRITTEN APPROVAL TO THE DEVELOPER.
- CONTRACTOR SHALL COMPLETE THE SURFACE LOADING ASSESSMENT FORM AND SUBMIT TO DOMINION EAST OHIO FOR REVIEW.
- THE CROSSING PARTY MUST VERIFY DEPTH OF DEO'S PIPELINES BY EXCAVATING TEST PITS (OR HAND DIGGING TO TEMPORARILY EXPOSE THE PIPELINE. CONTACT THE OHIO UTILITY PROTECTION SERVICE (OUPS) (1-800-362-2764) AT LEAST TWO DAYS PRIOR TO EXCAVATION TO SUBMIT AN EXCAVATION TICKET. A DEO INSPECTOR WILL MEET THE CROSSING PARTY ONSITE TO OVERSEE DEPTH VERIFICATION.

TREE AND WOODY VEGETATION CLEARING (CLEARING AND GRUBBING)

1. SHALL BE DONE IN ACCORDANCE WITH ODOT CMS 201.01 THROUGH 201.04. 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.

2. TREE AND VEGETATION CLEARING HAS THE POTENTIAL TO IMPACT PROTECTED WILDLIFE SPECIES AND THEIR HABITAT. THERE MAY BE SEASONAL OR OTHER LIMITATIONS IMPOSED ON VEGETATION AND LAND CLEARING OPERATIONS. MORE DETAILS ON THIS ARE PROVIDED IN THE WILDLIFE SECTION. ANY SUCH LIMITATIONS WILL BE INCORPORATED INTO THE PROJECT SPECIFICATIONS AND MUST BE IDENTIFIED IN THE PROJECT ENVIRONMENTAL WORK PLAN.

3. THEN CLEARING TREES THE SPECIFICATION WILL IDENTIFY IF THE TREES MUST BE REMOVED AND HAULED OFF SITE BY THE CONTRACTOR OR WILL BE SALVAGED BY THE GOVERNMENT. THE GOVERNMENT WILL SALVAGE TREES WHEN THEY HAVE COMMERCIAL VALUE AS SAW TIMBER OR ANOTHER COMMERCIAL FOREST PRODUCT.

4. WHEN TREES ARE SALVAGED AS SAW TIMBER, ALL 8 FOOT AND LONGER STRAIGHT PORTIONS OF THE TREES FROM AN 18" STUMP HEIGHT TO A 10" DIAMETER OUTSIDE BARK TOP THAT ARE FELLED WILL BE LIMBED AND NEATLY STACKED IN A LOCATION DESIGNATED BY THE OHARNG. LIMBING WILL CONSIST OF CUTTING LIMBS FLUSH TO THE BOLL OF THE TREES. BRANCH STUBS ARE NOT PERMITTED. TREES WILL BE KEPT AND STACKED IN AS LONG OF LENGTHS AS POSSIBLE AND UNDER NO CIRCUMSTANCE LESS THAN 8'6" LONG. PIECES SHORTER THAN 8'6" ARE NOT SUITABLE FOR SAW TIMBER SALVAGE.

5. WHEN TREES ARE SALVAGED FOR FIREWOOD AND/OR BIOMASS, ALL PORTIONS OF THE TREES DOWN TO 4" IN DIAMETER WILL BE CUT INTO 4.5 TO 9 LENGTHS AND NEATLY STACKED IN AN AREA DESIGNATED BY THE OHARNG. FIREWOOD SALVAGE WILL INCLUDE SAW TIMBER SIZED TREES THAT ARE TOO SHORT TO BE SAW TIMBER AND SAW TIMBER TOP WOOD.

6. LIMBS, BRANCHES, BRUSH AND TREE PARTS NOT SALVAGED SHALL BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF OFFSITE. THIS MATERIAL MAY BE CHIPPED PRIOR TO REMOVAL. IF ONLY A SMALL AMOUNT OF CHIPS ARE GENERATED AND THE WORK IS NOT WITHIN A CANTONMENT OR OTHER MAINTAINED AREA, THE CHIPS MAY BE BLOWN/SCATTERED IN ADJACENT UNIMPROVED AREAS/WOODLANDS. PILES OF CHIPS ARE NOT PERMITTED AND CHIPS MAY NOT BE PLACED IN WETLANDS.

7. STUMPS WILL BE GROUND OR EXCAVATED IN ACCORDANCE WITH CONTRACT SPECIFICATION REQUIREMENTS. STUMPS THAT ARE OR ABOVE 24" HIGH MAY NOT BE GROUND OR REMOVED BETWEEN 1 APRIL AND 30 SEPTEMBER. GRINDING OF ALL STUMPS (TO INCLUDE MAJOR ROOTS) WILL BE TO A MINIMUM DEPTH OF 6 INCHES BELOW GROUND SURFACE. GRINDINGS WILL MANAGED AS DIRECTED BY THE PROJECT SPECIFICATIONS. IF LEFT ON SITE, THEY WILL BE SPREAD ON SITE ADJACENT TO THE STUMP IF IN AN UPLAND AREA. GRINDINGS MAY NOT BE SPREAD IN WETLANDS. IF THE AREA IS NOT BEING LEVELED AND RE-GRADED, STUMP HOLES MUST LEVELED AND FILLED WITH CLEAN FILL DIRT AND TOP SOIL. PILES OF GRINDING AND CHIPS MAY NOT BE LEFT ON THE PROJECT AREA OR ANYWHERE IN A MOWING ZONE.

8. THE CONTRACTOR SHALL NOT PLACE CHIPS OR ANY PARTS OF TREES OR BRUSH OR PUT ANY TYPE OF FILL INTO ANY WETLAND INCLUDING BUT NOT LIMITED TO DITCHES, STREAMS, FLOODPLAIN AREAS, WET SPOTS OR LOW AREAS. STUMPS IN WETLANDS MAY NOT BE GROUND OR EXCAVATED WITHOUT A WETLAND PERMIT AND PRIOR APPROVAL OF THE OHARNG ENVIRONMENTAL OFFICE.

9. IF STUMPS ARE EXCAVATED, THE CONTRACTOR IS REQUIRED TO REMOVE AND PROPERLY DISPOSED OF BY THE STUMPS OFF SITE OR TO DISPOSE OF THEM AS OTHERWISE SPECIFIED WITHIN THE PROJECT SPECIFICATIONS. SURFACE DISPOSAL ON OHARNG PROPERTY IS NOT PERMITTED.

THREATENED AND ENDANGERED SPECIES

1. THE NORTHERN LONG EARED BAT (NLEB) A FEDERALLY THREATENED SPECIES AS OF APRIL 5, 2015) BEING RECORDED AT CAMP PERRY, CAMP RAVENNA AND TARLTON AND POTENTIALLY PRESENT AT OTHER OHARNG TRAINING SITES. IN ADDITION, THE MIGRATORY BIRD TREATY ACT PROHIBITS HARM TO NESTING MIGRATORY BIRDS (WITH THE EXCEPTION OF INTRODUCED SPECIES). BASED ON THESE CONSIDERATIONS, BRUSH CUTTING, TREE CUTTING (HEIGHT EQUAL TO OR GREATER THAN 24" ABOVE GROUND) AND TREE TRIMMING OF ANY BRANCHES AND ANY OTHER PART OF THE TREE THAT IS AT LEAST THREE INCHES IN DIAMETER, CAN ONLY OCCUR BETWEEN 1 OCTOBER - 31 MARCH. ALL PROJECTS INVOLVING BRUSH OR TREE CLEARING MUST BE CLEARED THROUGH THE OHARNG ENVIRONMENTAL OFFICE. THE OHARNG TREATS ABANDONED WOOD UTILITY POLES AS TREES IN THE SENSE THAT THEY CAN ONLY BE FELLED 1 OCTOBER - 31 MARCH.

2. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR DOING EVERYTHING POSSIBLE SO AS TO NOT INTENTIONALLY OR UNINTENTIONALLY HARM ANY FEDERALLY LISTED OR PROTECTED SPECIES AT ANY OHARNG FACILITY. IMMEDIATELY PRIOR TO THE ACTION COMMENCING, THE CONTRACTOR WILL PERFORM A THOROUGH INSPECTION FOR NESTING BIRDS AND INHABITING BATS WITHIN THE STRUCTURE'S) UNDERGOING EXTERIOR MAINTENANCE OR DEMOLITION. THIS THOROUGH SEARCH SHALL BE TO DETERMINE IF ANY BATS, BIRDS, OR OTHER ANIMALS ARE PRESENT WITHIN THE WORK AREA (UNDER ROOF FLASHING, UNDER SIDING, NESTING IN BRUSH, ETC.) THE CONTRACTOR WILL THOROUGHLY LOOK FOR BIRDS, BATS, NESTS, OR ANY OTHER SIGN OF ACTIVE PRESENCE OF SAID SPECIES WITHIN THE RESPECTIVE STRUCTURE'S) IF ANY ANIMALS ARE FOUND, THE CONTRACTOR WILL IMMEDIATELY NOTIFY THE PROJECT MANAGER AND THE OHARNG ENVIRONMENTAL OFFICE.

ITEM 204 - SUBGRADE COMPACTION AND PROOF ROLLING

CONSTRUCT THE SUBGRADE AS FOLLOWS AND IN THE FOLLOWING SEQUENCE:

1. SHAPE THE SUBGRADE TO WITHIN 0.2 FEET OF THE PLAN SUBGRADE ELEVATION.

2. EXCAVATE AND REPLACE UNSUITABLE SUBGRADE BEFORE PROOF ROLLING. THE EXCAVATION LIMITS ARE SHOWN AND LABELED ON THE CROSS SECTIONS AS UNSUITABLE SUBGRADE. UNSUITABLE SUBGRADE INCLUDES UNSUITABLE SOIL (A-4B, A-2-5, A-5, A-7-5, AND SOIL WITH A LIQUID LIMIT GREATER THAN 65) AND ANY COAL, SHALE, OR ROCK WHICH NEEDS TO BE REMOVED ACCORDING TO ODOT CMS 204.05.

   IF THERE IS UNSUITABLE SUBGRADE IN A SHALLOW FILL LOCATION, EXCAVATE AND REPLACE THE UNSUITABLE SUBGRADE BEFORE CONSTRUCTING THE SHALLOW FILL AND SHAPING THE SUBGRADE.

3. COMPACT THE SUBGRADE ACCORDING TO ODOT CMS 204.03.

4. APPROXIMATE LIMITS FOR EXCAVATION OF UNSTABLE SUBGRADE ARE SHOWN AND LABELED ON THE CROSS SECTIONS AS UNSTABLE SUBGRADE. THE ENGINEER WILL IDENTIFY THE ACTUAL LIMITS OF EXCAVATION FOR UNSTABLE SUBGRADE BASED ON THE PROOF ROLLING RESULTS AND VISUAL OBSERVATIONS.

   PROOF ROLL THE COMPACTED SUBGRADE ACCORDING TO ODOT CMS 204.06.

5. EXCAVATE UNSTABLE SUBGRADE AS DIRECTED BY THE ENGINEER AND STABILIZE BY REPLACING WITH THE SPECIFIED MATERIALS ACCORDING TO ODOT CMS 204.07. EXCAVATIONS WILL EXTEND 18 INCHES BEYOND THE EDGE OF THE SURFACE OF THE PAVEMENT, PAVED SHOULDERS, OR PAVED MEDIANS.

6. PROOF ROLL THE STABILIZED AREAS ACCORDING TO ODOT CMS 204.06 TO VERIFY STABILITY.

7. FINE GRADE THE SUBGRADE TO THE SPECIFIED GRADE.

THE QUANTITIES FOR EXCAVATING THE UNSUITABLE SUBGRADE AND UNSTABLE SUBGRADE ARE BOTH PAID UNDER ITEM 204 EXCAVATION OF SUBGRADE.

PAVING AT RAILROAD CROSSING

WORK THE CROWN OUT OF THE PROPOSED PAVEMENT ON EACH SIDE OF THE RAILROAD CROSSING, BEGINNING 50 FEET FROM THE NEAREST RAIL, BY RAISING THE EDGES OF THE NEW PAVEMENT TO MEET THE PLATFORM ELEVATION.

CONTRACTION AND/OR EXPANSION JOINTS

ALTHOUGH SPECIFIC LOCATIONS OF CERTAIN CONTRACTION AND EXPANSION JOINTS HAVE BEEN DETAILED ON THIS PLAN, NO WAIVER OF THE SPECIFICATIONS IS INTENDED. IN ALL CASES, THE PROVISION OF EXPANSION JOINTS AT ALL MAJOR STRUCTURES INCLUDING THE MAXIMUM SPACING BETWEEN CONTRACTION JOINTS IS IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING BP-2.2 AND THE SPECIFICATIONS.

CONTRACTION JOINTS IN CONCRETE PAVEMENT OR BASE WIDENING

WHERE NEW CONCRETE IS PLACED ADJACENT TO EXISTING CONCRETE, PROVIDE CONTRACTION JOINTS IN THE NEW CONCRETE TO FORM CONTINUOUS JOINTS WITH THOSE IN THE EXISTING CONCRETE.

THE MAXIMUM DISTANCE BETWEEN THE JOINTS IN THE NEW CONCRETE ARE IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING BP-2.2, IF NECESSARY, ADDITIONAL JOINTS MAY BE PROVIDED IN THE NEW CONCRETE AT APPROXIMATELY EQUAL INTERVALS BETWEEN EXISTING JOINTS THAT EXCEED THE MAXIMUM SPACING.

WHERE NEW CONCRETE IS PLACED ADJACENT TO AND TIED TO EXISTING CONCRETE, THE CONTRACTION JOINT SPACING REQUIRED IN STANDARD CONSTRUCTION DRAWING BP-2.2 WILL BE WAIVED. CONSTRUCT CONTRACTION JOINTS IN THE NEW CONCRETE PAVEMENT TO FORM A CONTINUOUS LINE WITH ALL CONTRACTION JOINTS IN THE EXISTING CONCRETE PAVEMENT. INSTALL EXPANSION JOINTS IN THE NEW CONCRETE PAVEMENT TO FORM A CONTINUOUS LINE WITH ALL EXPANSION JOINTS IN THE EXISTING CONCRETE PAVEMENT.

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CAMP RAVENNA JOINT MILITARY TRAINING CENTER
RAVENNA, OHIO

OHIO NATIONAL GUARD SINCE 1788

ITAM TRAINING AREA IMPROVEMENT AND TRAIL CREATION

GENERAL NOTES

DATE: 06-09-17	DES BY: WDN	BAKER PROJECT NUMBER 156220	SHEET NO: G-003
SCALE: AS NOTED	DWN BY: MJL		
SIZE: ANSI D	CHK BY: SMS	GOV. CONTRACT NUMBER #W91364-12-D-0003	3 OF 89

I:\Ohio NG ID\Q156220 Tank Trails Camp Ravenna\05_Deliverables\Drawings\05 C_Civil\Sheet Files\G-003-004 GENERAL NOTES.dwg Sep 13,2017 - 11:29am Plotted By: Nicole Miller

CULVERTS

1. REINFORCED CONCRETE CIRCULAR PIPE (RCP) SHALL BE PROVIDED IN ACCORDANCE WITH ODOT CMS 706.02.
2. ALL RCP PIPES SHALL BE TYPE A CONDUIT (ODOT CMS 611.02).
3. ALL RCP PIPES SHALL HAVE A CLASS III D-LOAD RATING UNLESS OTHERWISE INDICATED IN THE PLANS (ODOT CMS 706.02).
4. CULVERTS SHALL HAVE A STANDARD TYPE 2 INSTALLATION, PER ASCE 15-98 AND IN ACCORDANCE WITH ODOT CMS 611.

REVIEW OF DRAINAGE FACILITIES

BEFORE ANY WORK IS STARTED ON THE PROJECT AND AGAIN BEFORE FINAL ACCEPTANCE BY THE OHIO NATIONAL GUARD, THE STATE, REPRESENTATIVES OF THE STATE AND THE CONTRACTOR, ALONG WITH LOCAL REPRESENTATIVES, SHALL MAKE AN INSPECTION OF ALL EXISTING SEWERS WHICH ARE TO REMAIN IN SERVICE AND WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDUITS AND THEIR APPURTENANCE SHALL BE DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTION SHALL BE KEPT IN WRITING BY THE STATE.

ALL NEW CONDUITS, INLETS, CATCH BASINS, AND MANHOLES CONSTRUCTED AS A PART OF THE PROJECT SHALL BE FREE OF ALL FOREIGN MATTER AND IN A CLEAN CONDITION BEFORE THE PROJECT WILL BE ACCEPTED BY THE STATE.

ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE MENTIONED PARTIES SHALL BE MAINTAINED AND LEFT IN A CONDITION REASONABLY COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. ANY CHANGE IN THE CONDITION RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER .

ITEM 511 WINGWALLS OR HEADWALLS FOR 611 ITEMS

FOR ITEMS ODOT CMS 706.05, 706.051, 706.052 AND 706.053 WITH A CAST-IN-PLACE WINGWALL OR HEADWALL A PRECAST ALTERNATIVE MAY BE FURNISHED PER 602.03. THE PRECAST ALTERNATIVE WILL MEET THE CAST-IN-PLACE STRUCTURAL DESIGN LOADINGS, DESIGN HEIGHT, AND DESIGN LENGTH DIMENSIONS.

EMERGENCY SPILL RESPONSE AND PETROLEUM, OIL, AND LUBRICANT (POL) MANAGEMENT

1. THE GENERAL CONTRACTOR MUST IMPLEMENT THE LOCAL OHARNG SPILL CONTINGENCY PLAN NOTIFICATION/REPORTING PROCEDURES UPON DISCOVERY OF A SPILL, LEAK OR OTHER RELEASE TO THE ENVIRONMENT. THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING SPILL RESPONSE AND CLEAN UP ALL SPILLS/LEAKS WITHIN THE PROJECT AREA IMMEDIATELY UPON DISCOVERY. CLEAN UP MUST BE SATISFACTORY TO THE OHARNG AND/OR THE OHIO EPA OR OTHER REGULATORY AGENCY. WASTES WILL BE MANAGED AS DESCRIBED IN THE WASTE MANAGEMENT SECTION OF THESE SUPPLEMENTAL CONDITIONS. ANY SPILL OF PETROLEUM PRODUCTS OVER 25 GALLONS, OR A SPILL OF ANY AMOUNT INTO A BODY OF WATER, MUST BE REPORTED TO THE OHARNG ENVIRONMENTAL OFFICE IMMEDIATELY. ALL OTHER SPILLS WILL BE REPORTED IN WRITING ON THE OHARNG SPILL REPORT FORM TO THE OHARNG WITHIN 24 HOURS. THE CONTRACTOR WILL BE PROVIDED WITH A COPY OF THE OHARNG SPILL REPORT FORM AND A POINT OF CONTACT FOR SUBMITTING SUCH REPORTS/NOTIFICATIONS.
2. THE GENERAL CONTRACTOR IS REQUIRED TO HAVE A SPILL KIT WITH APPROPRIATE ABSORBENTS, PLASTIC BAGS, DRUMS, SHOVELS, AND OTHER SUPPLIES AND EQUIPMENT SUITABLE TO CLEAN UP ANY RELEASES OR SPILLS FROM THEIR ACTIVITIES.
3. GENERAL CONTRACTOR FUEL PODS (FUEL CANS AND OTHER POL AND LIQUID HAZARDOUS MATERIALS MUST BE IN/ON SECONDARY CONTAINMENT WITH STORAGE CAPACITY LARGE ENOUGH TO STORE THE CONTENTS OF THE CONTAINERS. RELEASES OF RAIN WATER FROM SECONDARY CONTAINMENT CAN ONLY BE INITIATED AFTER APPROVAL FROM THE OHARNG ENVIRONMENTAL OFFICE AND AFTER INSPECTION AND VERIFICATION/ABSORPTION OF ALL POL AND/OR OTHER CONTAMINANTS IN THE WATER BY THE CONTRACTOR. DISCHARGE OF POL OR OTHER CONTAMINANTS/POLLUTANTS FROM SECONDARY CONTAINMENT IS NOT PERMITTED. AT MINIMUM, DISCHARGING THROUGH AN OIL ONLY BOOM/FILTER OR AN OIL ABSORPTION FILTER BAG IS REQUIRED. IF THE CONTRACTOR CANNOT SHOW PROOF OF LACK OF CONTAMINANTS, THE WATER WILL NEED TO BE SAMPLED AND CHARACTERIZE TO DETERMINE THE PROPER DISCHARGE/DISPOSAL METHOD. THE CONTRACTOR WILL DOCUMENT ALL DISCHARGES/DISPOSAL FROM SECONDARY CONTAINMENTS TO INCLUDE NAME AND SIGNATURE OF PERSON CONDUCTING DISCHARGE/DISPOSAL, DATE OF DISCHARGE/DISPOSAL, VOLUME DISCHARGED/DISPOSED, METHOD OF DISCHARGE/DISPOSAL, METHOD OF DETERMINING WATER WAS CLEAN TO DISCHARGE (ANALYTICAL RESULT IF APPLICABLE), AND A STATEMENT THAT ANY DISCHARGE DID NOT CONTAIN POL OR OTHER CONTAMINANTS. DISCHARGES FROM SECONDARY CONTAINMENT WILL BE ADDRESSED IN THE ENVIRONMENTAL WORK PLAN.

HAZARDOUS WASTE, OTHER WASTE AND RECYCLING

1. HAZARDOUS WASTE GENERATED BY ANY CONTRACTOR WORKING ON OHARNG PROJECTS COUNTS TOWARD THE OHARNG MONTHLY GENERATION TOTAL AND IS AN OHARNG WASTE. THE CONTRACTOR IS RESPONSIBLE FOR MINIMIZING ALL WASTE GENERATION FROM OHARNG PROJECTS AND FOR PROPERLY MANAGING ALL WASTES GENERATED FROM OHARNG PROJECTS IN ACCORDANCE WITH THE OHIO ARMY NATIONAL GUARD WASTE MANAGEMENT GUIDELINES. WASTE GENERATED FROM OHARNG PROJECTS CONDUCTED AT CAMP RAVENNA MUST BE MANAGED IN ACCORDANCE WITH THE CAMP RAVENNA WASTE MANAGEMENT GUIDELINES. WASTE WILL BE MANAGED IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATES, U.S. ARMY, NGB AND OHARNG REGULATIONS AND REQUIREMENTS. OHARNG SITES MAY HAVE SPECIFIC HAZARDOUS WASTE INFORMATION/MANAGEMENT GUIDELINES THAT MUST BE FOLLOWED TO ENSURE COMPLIANCE WITH APPLICABLE REGULATIONS AND REQUIREMENTS. THE CONTRACTOR MUST INCLUDE HAZARDOUS WASTE MANAGEMENT IN THEIR ENVIRONMENTAL WORK PLAN AND COORDINATE ALL HAZARDOUS WASTE GENERATION AND MANAGEMENT ACTIVITIES WITH THE OHARNG ENVIRONMENTAL OFFICE PRIOR TO BEGINNING WORK.
2. ALL CONTRACTOR ARE RESPONSIBLE FOR CHARACTERIZING ALL WASTE GENERATED FROM A PROJECT AND NOTIFYING THE OHARNG OF ALL WASTE STREAMS, MANAGEMENT METHODOLOGY, AND DISPOSAL METHODS PRIOR TO BEGINNING WORK. IF AN ALTERNATIVE PRACTICE IS AVAILABLE THAT WILL ELIMINATE OR MINIMIZE HAZARDOUS WASTE GENERATION, THE CONTRACTOR IS REQUIRED TO IMPLEMENT SUCH PRACTICE (E.G. USING DRY ICE INSTEAD OF SAND TO SAND BLAST LEAD BASED PAINT AND MINIMIZE LEAD WASTE).
3. ALL CONTRACTORS ARE RESPONSIBLE FOR PROPERLY LABELING, STORING, AND INSPECTING NON-HAZARDOUS AND HAZARDOUS WASTE STORED AT THE PROJECT SITE PENDING DISPOSAL. ALL CONTAINERS ON THE PROJECT SITE WILL BE LABELED AS TO THE CONTENTS, WHETHER WASTE OR OTHERWISE. ALL WASTE STORED ON SITE MUST BE INSPECTED WEEKLY USING THE OHIO ARMY NATIONAL GUARD WEEKLY NON-HAZARDOUS AND HAZARDOUS WASTE INSPECTION/INVENTORY SHEET.
4. ALL CONTRACTORS ARE RESPONSIBLE FOR PROPERLY COMPLETING ALL WASTE PROFILES, WASTE MANIFESTS, AND SHIPPING DOCUMENTS (HAZARDOUS AND NON-HAZARDOUS WASTE). SUCH DOCUMENTS WILL BE REVIEWED, APPROVED, AND SIGNED BY THE OHARNG. NO WASTE MAY LEAVE THE SITE UNTIL THE SHIPPING DOCUMENTS ARE REVIEWED, APPROVED AND SIGNED BY THE OHARNG. THE CONTRACTOR IS RESPONSIBLE FOR WEIGHING AND DOCUMENTING ALL WASTE MATERIAL (REGULATED, DIVERTED, LANDFILLED) LEAVING THE SITE. THE CONTRACTOR WILL COMPLETE A CONSTRUCTION/DEMOLITION DIVERSION AND WASTE DISPOSAL FORM AND PROVIDE SUPPORTING DOCUMENTATION (WEIGHT TICKETS, MANIFESTS ETC.) PRIOR TO FINAL PAYMENT.
5. ALL CONTRACTORS MUST MANAGE USED LAMPS (INCANDESCENT, FLUORESCENT, MERCURY VAPOR, NEON, HIGH PRESSURE SODIUM AND METAL HALIDE) AND OTHER APPLICABLE WASTES AS UNIVERSAL WASTE IN ACCORDANCE WITH OHIO ADMINISTRATIVE CODE 3745-273-13(D) AND THE OHIO ENVIRONMENTAL PROTECTION AGENCY'S AUGUST 2011 UNIVERSAL WASTE GUIDELINES. FLUORESCENT LIGHT BALLASTS CONTAINING PCBS ONLY IN AN INTACT AND NON-LEAKING CAPACITOR MUST BE DISPOSED OF IN ACCORDANCE WITH 40 CFR PART 761.60 (B)(2)(II). FLUORESCENT LIGHT BALLASTS CONTAINING PCBS IN THE POTTING MATERIAL MUST BE DISPOSED OF IN ACCORDANCE WITH 40 CFR PART 761.62. FLUORESCENT LIGHT BALLASTS THAT ARE NOT MARKED SPECIFICALLY AS "NON PCB CONTAINING" MUST BE TREATED AS PCB CONTAINING BALLASTS. DISPOSITION OF USED LAMPS AND BALLASTS MUST BE NOTED ON THE CONSTRUCTION/DEMOLITION DIVERSION AND WASTE DISPOSAL FORM AS NOTED IN PARAGRAPH 4 ABOVE.
6. ALL CONTRACTORS ARE REQUIRED TO RECYCLE MATERIALS WHEN POSSIBLE AND PRACTICABLE. RECYCLED MATERIALS MUST BE TRACKED USING THE CONSTRUCTION/DEMOLITION DIVERSION AND WASTE DISPOSAL FORM. MATERIALS THAT CANNOT BE RECYCLED OR RE-PURPOSED MUST BE PROPERLY DISPOSED OF AS SOLID WASTE AT AN APPROPRIATE WASTE HANDLING FACILITY. SOLID WASTE MUST ALSO BE TRACKED USING THE CONSTRUCTION/DEMOLITION DIVERSION AND WASTE DISPOSAL FORM.
7. ALL CONTRACTORS ARE REQUIRED TO UTILIZE QUALIFIED DEFENSE LOGISTICS AGENCY (DLA) WASTE HAULERS AND TREATMENT, STORAGE, AND DISPOSAL FACILITIES (TSDFS) FOR HAZARDOUS WASTE. THE CURRENT QUALIFIED WASTE HAULER AND TSDF LIST CAN BE VIEWED BY FOLLOWING THE "QUALIFIED FACILITIES" AND "QUALIFIED TRANSPORTERS" LINKS FOUND ON THE DLA DISPOSITION SERVICES' HAZARDOUS WASTE DISPOSAL HOMEPAGE: HTTP://WWW.DLA.MIL/DISPOSITIONSERVICES/OFFERS/DISPOSAL/HAZARDOUSWASTE/HAZWASTEDISPOSAL.ASPX
8. GRAY WATER AND OTHER LIQUID WASTES (TO INCLUDE EXTRACTED GROUNDWATER AND WATER FROM DEWATERING) GENERATED BY THE CONTRACTOR SHALL BE MANAGED IN ACCORDANCE WITH THE WASTE MANAGEMENT GUIDANCE IN THIS SECTION AND APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS. LIQUID WASTE MAY NOT BE DISCHARGED TO THE LAND SURFACE, SURFACE WATER, STORM DRAIN/DITCH, OR A SANITARY SEWER UNLESS PROPERLY CHARACTERIZED AND DONE IN ACCORDANCE WITH APPLICABLE LAWS AND APPLICABLE PERMIT CONDITIONS. LIQUID WASTE WILL BE CHARACTERIZED AND PROPER MANAGEMENT AND DISPOSAL METHODS IDENTIFIED AND IMPLEMENTED. GUIDANCE ON CONSTRUCTION SITE DEWATERING IS PROVIDED IN THE SECTION ON EROSION CONTROL, STORM WATER AND OTHER SURFACE WATER MANAGEMENT.

PESTICIDE USE

1. THE GENERAL CONTRACTOR MUST POSSESS A CURRENT OHIO APPLICATOR LICENSE AS A COMMERCIAL PESTICIDE APPLICATOR CERTIFIED IN THE APPLICABLE CATEGORIES FOR THE TASKS TO BE PERFORMED. ALL INDIVIDUALS WHO APPLY HERBICIDES AT OHARNG FACILITIES MUST BE CERTIFIED BY THE STATE OF OHIO IN THE APPROPRIATE CATEGORIES. NON-CERTIFIED INDIVIDUALS MAY NOT MIX OR APPLY HERBICIDES, TO INCLUDE OPERATING VEHICLE MOUNTED EQUIPMENT, REGARDLESS IF THEY ARE SUPERVISED BY A CERTIFIED INDIVIDUAL OR NOT.
2. THE CONTRACTOR SHALL COMPLY WITH ALL U.S. ARMY, FEDERAL, STATE, AND LOCAL SAFETY REGULATIONS AND REQUIREMENTS INCLUDING FOLLOWING ALL LABEL INSTRUCTIONS OF CHEMICALS USED ON SITE. THE CONTRACTOR SHALL SUPPLY HIS PERSONNEL WITH PERSONAL PROTECTIVE EQUIPMENT AS REQUIRED BY TITLE 10 CFR, OSHA REGULATIONS, AND THE HERBICIDE LABELS.
3. THE CONTRACTOR IS RESPONSIBLE FOR SELECTING AND PROVIDING AN APPROPRIATELY LABELED PESTICIDES FOR COMPLETION OF THIS SOW. PESTICIDES LISTED ON THE OHARNG APPROVED LIST OF PESTICIDES WILL BE USED IF AT ALL POSSIBLE. HERBICIDES CONTAINING PICLORAM ARE NOT APPROVED FOR USE. THE CONTRACTOR WILL PROVIDE COPIES OF PRODUCT LABELS AND SDSS FOR HERBICIDES PRIOR TO USE. THE OHARNG WILL APPROVE ALL PESTICIDES BEFORE THEY ARE USED.
4. THE CONTRACTOR IS RESPONSIBLE TO ENSURE HIS/HER APPLICATION EQUIPMENT IS CLEAN, WELL MAINTAINED, CALIBRATED AND IN PROPER WORKING ORDER WHEN IN USE.
5. THE CONTRACTOR IS REQUIRED TO ENSURE THAT THE LEAST AMOUNT OF CHEMICAL CONSISTENT WITH THE LABEL AND MANUFACTURE RECOMMENDATIONS NECESSARY TO CONTROL THE TARGET PEST IS USED.
6. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROPERLY HANDLE, STORE, AND MIX ALL PESTICIDES BROUGHT ONTO OHARNG PROPERTY. THE CONTRACTOR IS REQUIRED TO HAVE A SPILL KIT SUITABLE FOR THE TYPES AND AMOUNTS OF PESTICIDES BEING USED. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING SAFE AND SECURE STORAGE AND TRANSPORT OF PESTICIDES AND CARRIERS ON/IN HIS VEHICLE. PESTICIDES AND CARRIES MAY NOT BE STORED ON OHARNG PROPERTY. THEY MUST BE REMOVED AT THE END OF EACH WORKDAY. ALL EMPTY PESTICIDE CONTAINERS MUST BE DISPOSED OF OFF THE INSTALLATION IN AN APPROVED MANNER.
7. THERE ARE NO PESTICIDE MIXING OR STORAGE FACILITIES AVAILABLE ON OHARNG PROPERTY FOR CONTRACTOR USE. PESTICIDE MIXING MAY BE DONE AT THE WORK SITE. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE REQUIRED WATER OR OTHER CARRIER FOR MIXING THE PESTICIDES.
8. AS APPLICABLE IN ACCORDANCE WITH THE TYPE OF APPLICATION BEING CONDUCTED, THE CONTRACTOR SHALL COMPLY WITH, AND WILL CAUSE THE OHARNG TO BE IN COMPLIANCE WITH, ALL APPLICABLE CONDITIONS OF THE CURRENT OHIO ENVIRONMENTAL PROTECTION AGENCY GENERAL PERMIT AUTHORIZATION TO DISCHARGE PESTICIDES IN, OVER, OR NEAR WATER OF THE STATE UNDER THE NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM. THE CONTRACTOR WILL COMPLETE ALL APPLICATION, MONITORING, REPORTING, AND ANY OTHER REQUIREMENTS IN THE PERMIT AND WILL CAUSE THE OHARNG TO BE IN COMPLIANCE WITH ALL APPLICABLE PERMIT CONDITIONS.

8.1. THE CONTRACTOR WILL CONDUCT VISUAL MONITORING DURING TREATMENTS TO CONSIST OF SPOT CHECKS IN THE AREA AND AROUND WHERE PESTICIDES ARE APPLIED LOOKING FOR POSSIBLE ADVERSE INCIDENTS AS DEFINED IN THE CURRENT OHIO EPA GENERAL PERMIT, CAUSED BY APPLICATION OF PESTICIDES, INCLUDING BUT NOT LIMITED TO THE UNANTICIPATED DEATH OR DISTRESS OF NON-TARGET ORGANISMS AND DISRUPTION OF WILDLIFE HABITAT, RECREATIONAL OR MUNICIPAL WATER.

8.2. THE CONTRACTOR IS RESPONSIBLE FOR IMMEDIATELY REPORTING ANY ADVERSE INCIDENTS OR SPILLS TO THE OHARNG AND THE OHIO EPA. OHIO EPA REPORTING TIME FRAMES AND FORMATS SHALL BE AS SPECIFIED IN OHIO EPA PERMIT. ANY AND ALL REPORTS TO THE OHIO EPA SHALL BE REVIEWED AND APPROVED AND WILL GO TO THE OHIO EPA THROUGH THE OHARNG. THE ONLY EXCEPTION WOULD BE THE REQUIREMENT TO REPORT TO THE OHIO EPA A SPILL OR DISCHARGE WHICH MAY ENDANGER HUMAN HEALTH OR THE ENVIRONMENT BY TELEPHONE (800-282-9378) WITHIN 30 MINUTES OF DISCOVERY.

9. THE CONTRACTOR IS REQUIRED TO PROPERLY COMPLETE THE OHARNG DAILY PEST CONTROL SUMMARY AND ASSOCIATED DD FORM 1532-1 OR EQUIVALENT, IF IN USE. THE OHARNG DAILY PEST CONTROL SUMMARY SHEET CONTAINS INFORMATION REQUIRED BY THE OHIO PESTICIDE LAW. THIS REPORT MUST BE KEPT ON A DAILY BASIS AND TURNED INTO THE OHARNG WEEKLY WITH ALL REPORTS FOR THE YEAR DUE NOT LATER THAN 10 SEPTEMBER. THE REPORT MUST BE PROPERLY COMPLETED AS DIRECTED BY THE OHARNG.
10. AS APPLICABLE, THE CONTRACTOR IS REQUIRED TO PROPERLY COMPLETE AND TURN IN TO THE OHARNG THE SUPPLEMENTAL PESTICIDE APPLICATION REPORT FOR OHIO ENVIRONMENTAL PROTECTION AGENCY GENERAL PERMIT AUTHORIZATION TO DISCHARGE PESTICIDES IN, OVER OR NEAR WATER OF THE STATE. THESE REPORTS WILL BE COMPLETED AND TURNED IN WITH THE DAILY PEST CONTROL SUMMARY REPORTS.
11. AS APPLICABLE, THE CONTRACTOR WILL SUBMIT COPIES OF ANY/ALL ADVERSE INCIDENT REPORTS/CORRECTIVE ACTION DOCUMENTATION/ AND SPILL, LEAK AND UNPERMITTED DISCHARGE DOCUMENTATION TO THE OHARNG.

ABBREVIATIONS

CMS	CONSTRUCTION AND MATERIAL SPECIFICATIONS
DLA	DEFENSE LOGISTICS AGENCY
NLEB	NORTHERN LONG EARED BAT
NOI	NOTICE OF INTENT
NPDES	NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
ODOT	OHIO DEPARTMENT OF TRANSPORTATION
OHARNG	OHIO ARMY NATIONAL GUARD
RCD	ROCK CHECK DAM
SWCD	SOIL & WATER CONSERVATION DISTRICT
SWP3	STORMWATER POLLUTION PREVENTION PLAN
TVMA	TACTICAL VEHICLE MANEUVER AREA
TVML	TACTICAL VEHICLE MANEUVER LANE

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CAMP RAVENNA JOINT MILITARY TRAINING CENTER
RAVENNA, OHIO

ITAM TRAINING AREA IMPROVEMENT AND TRAIL CREATION

GENERAL NOTES

DATE: 06-09-17	DES BY: WDN	BAKER PROJECT NUMBER 156220	SHEET NO: G-004
SCALE: AS NOTED	DWN BY: MJL		
SIZE: ANSI D	CHK BY: SMS	GOV. CONTRACT NUMBER #W91364-12-D-0003	4 OF 89

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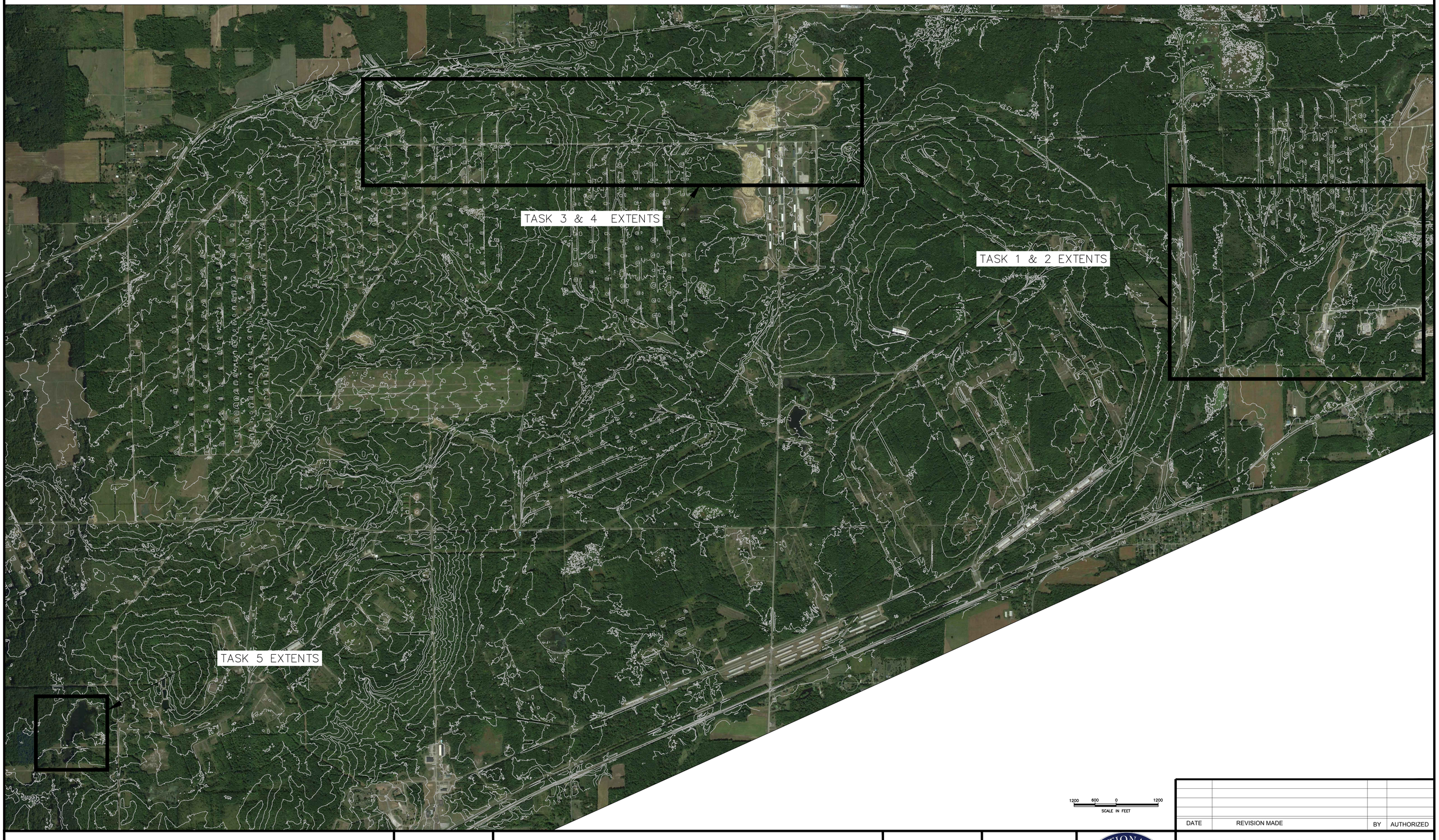


DATE	REVISION MADE	BY	AUTHORIZED

Michael Baker INTERNATIONAL

MICHAEL BAKER INTL.
100 AIRSIDE DRIVE
MOON TOWNSHIP, PA 15108

N

CAMP RAVENNA JOINT MILITARY TRAINING CENTER
RAVENNA, OHIO

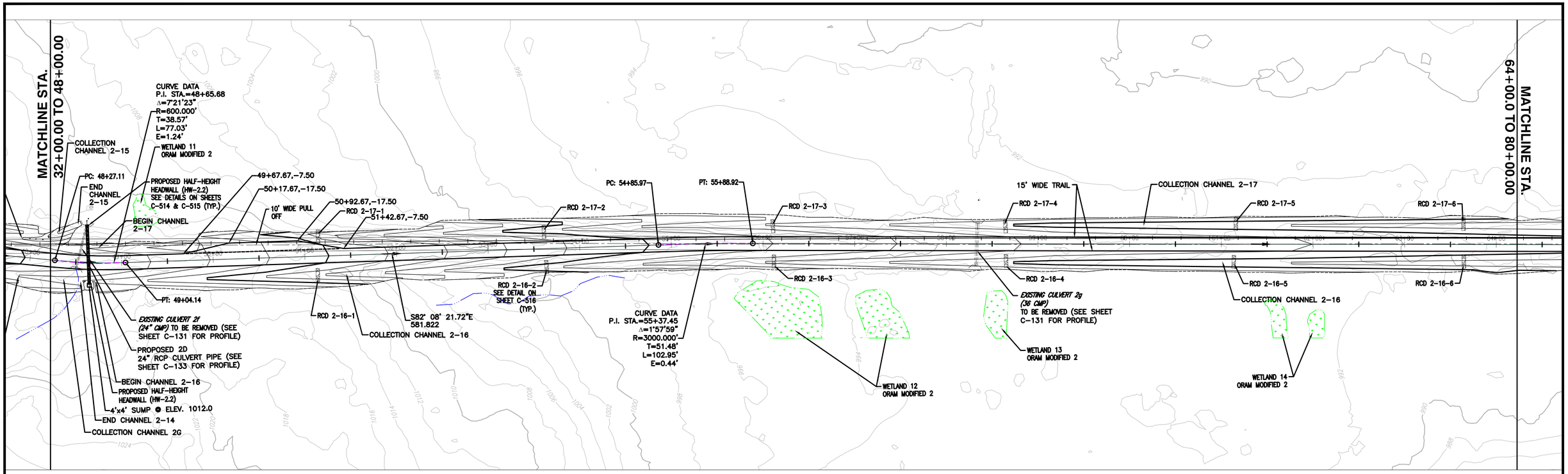
OHIO NATIONAL GUARD SINCE 1788

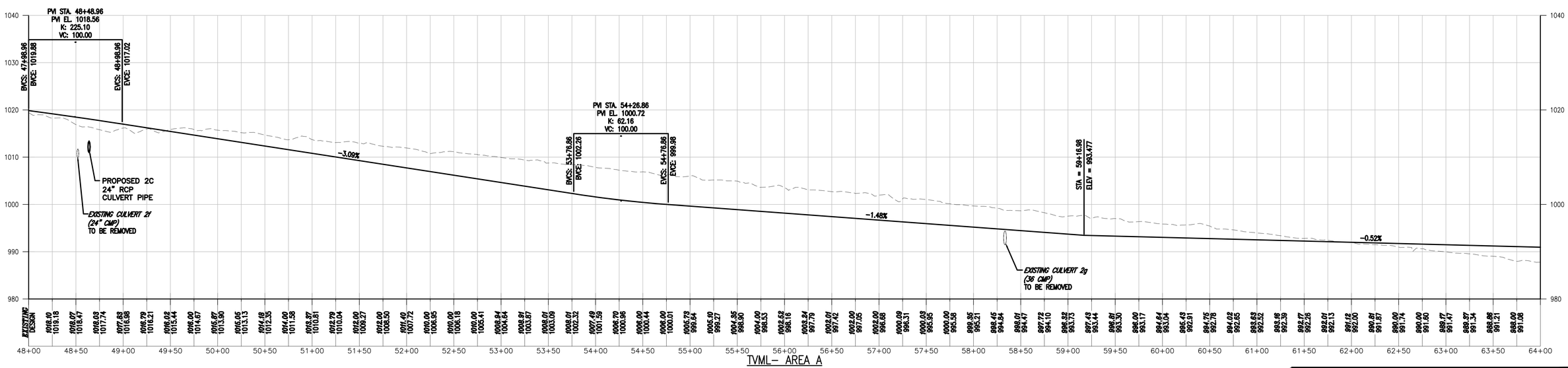
ITAM TRAINING AREA IMPROVEMENT AND TRAIL CREATION

OVERALL EXISTING CONDITIONS

DATE: 06-09-17	DES BY: WDN	BAKER PROJECT NUMBER 156220	SHEET NO: V-101
SCALE: AS NOTED	DWN BY: MJL		
SIZE: ANSI D	CHK BY: SMS	GOV. CONTRACT NUMBER #W91364-12-D-0003	5 OF 89

\\MOONPA\CL1.bk:mbakercorp.com\vol2_projects\Ohio NG ID\0156220 Tank Trails Camp Ravenna\05_Deliverables\Drawings\05 C_CivilSheet Files\V-101-OVERALL EXISTING CONDITIONS.dwg Jun06,2017 - 2:41pm Plotted By: WNeider





TVML– AREA A

1"=50 HORZ.

1"=10 VERT.

SCALE IN FEET

1"=50' HORZ.

1"=10' VERT.

DATE	REVISION MADE	BY	AUTHORIZED

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OHIO NATIONAL GUARD SINCE 1788

ITAM TRAINING AREA IMPROVEMENT AND TRAIL CREATION

TASK 3 □ 4 TVMA □TVML PLAN AND PROFILE

DATE: 06-09-17	DES BY: WDN	BAKER PROJECT NUMBER 156220	SHEET NO: C-126
SCALE: AS NOTED	DWN BY: MJL		
SIZE: ANSI D	CHK BY: SMS	GOV. CONTRACT NUMBER #W91364-12-D-0003	31 OF 89

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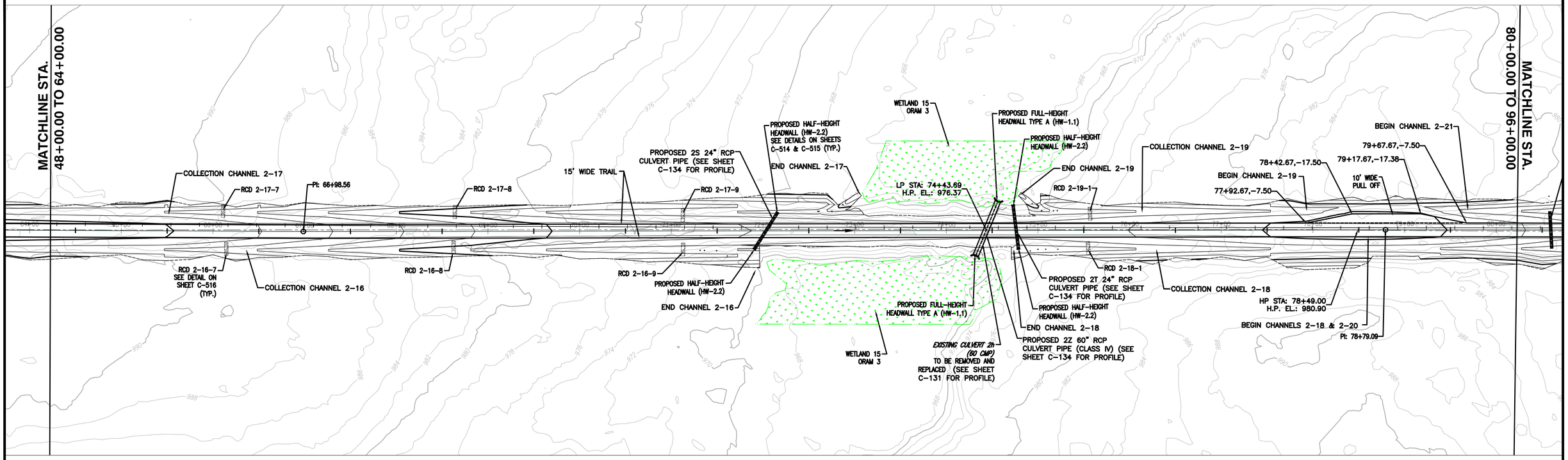

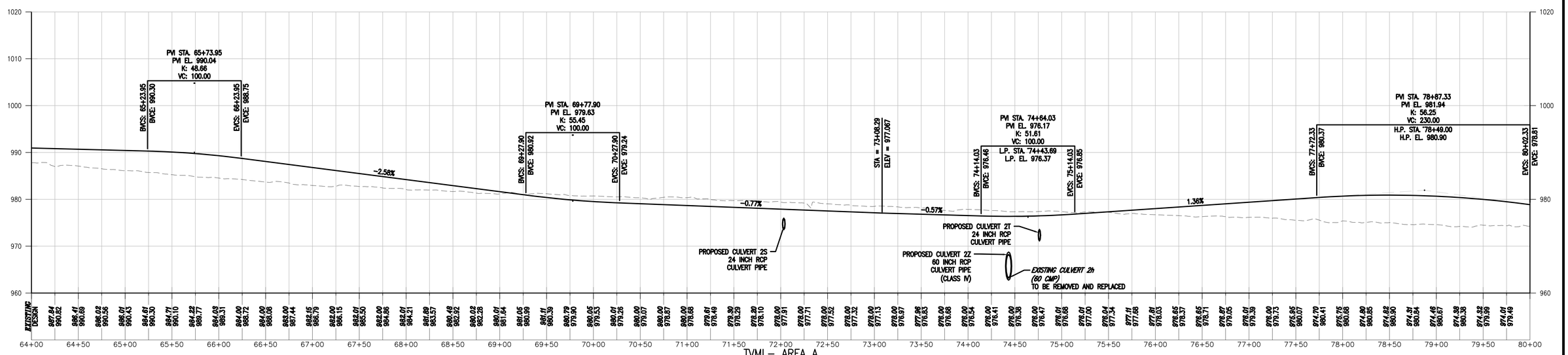

TVML- AREA A
1"=50 HORZ.
1"=10 VERT.

SCALE IN FEET
1"=50' HORZ.
1"=10' VERT.

DATE	REVISION MADE	BY	AUTHORIZED

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RAVENNA, OHIO

OHIO NATIONAL GUARD SINCE 1788

ITAM TRAINING AREA IMPROVEMENT AND TRAIL CREATION

TASK 3 & 4 TVMA TVML PLAN AND PROFILE

DATE: 06-09-17	DES BY: WDN	BAKER PROJECT NUMBER 156220	SHEET NO: C-127
SCALE: AS NOTED	DWN BY: MJL		
SIZE: ANSI D	CHK BY: SMS	GOV. CONTRACT NUMBER #W91364-12-D-0003	32 OF 89

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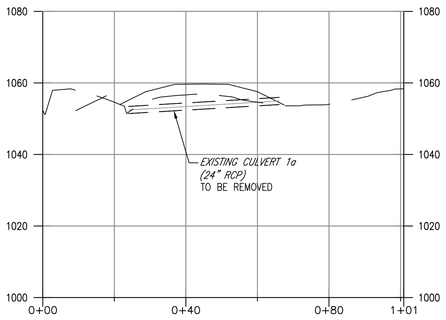

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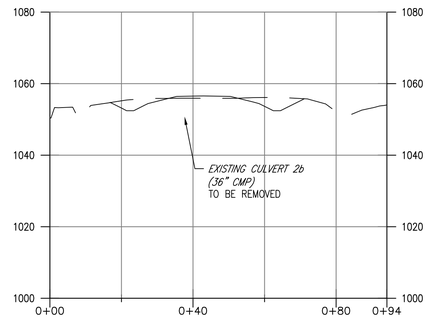

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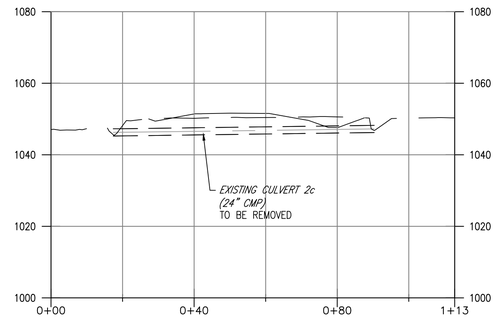

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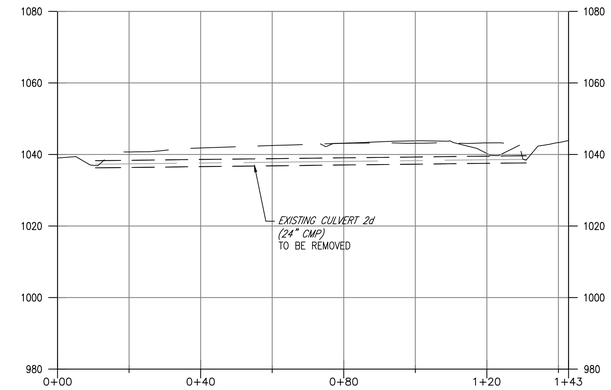

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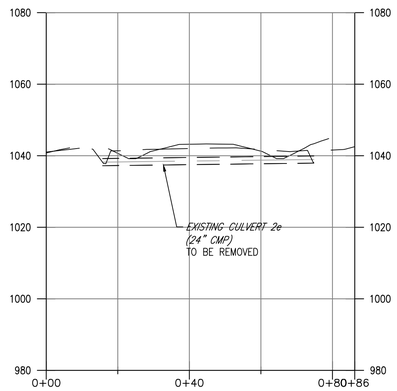

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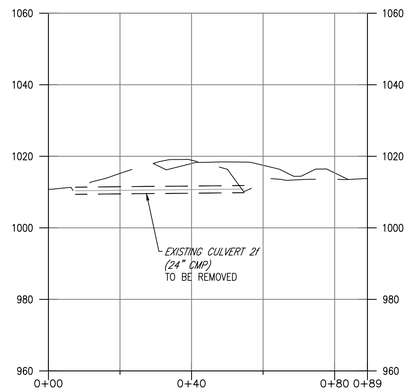

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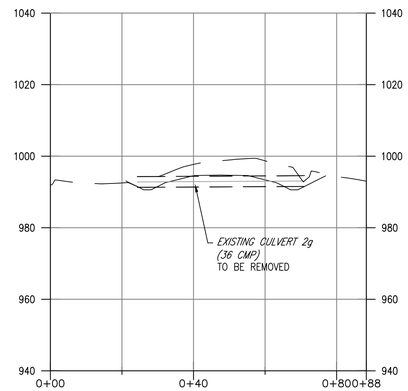

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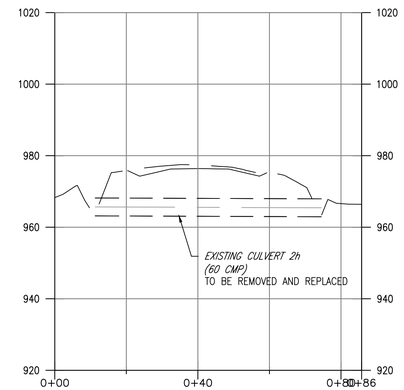

EXISTING CULVERT 2h

20 10 0 20
SCALE IN FEET
1"=20' HORZ.
1"=20' VERT.

DATE	REVISION MADE	BY	AUTHORIZED

Michael Baker INTERNATIONAL

MICHAEL BAKER INTL.
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CAMP RAVENNA JOINT MILITARY TRAINING CENTER
RAVENNA, OHIO

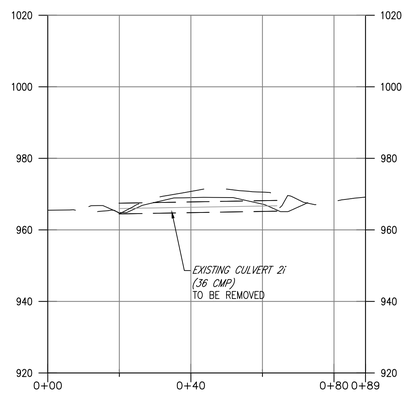
OHIO NATIONAL GUARD SINCE 1788

ITAM TRAINING AREA IMPROVEMENT AND TRAIL CREATION

TASK 3 & 4 TVMA / TVML
EXISTING CULVERT PROFILES

DATE: 06-09-17	DES BY: MJL	BAKER PROJECT NUMBER 156220	SHEET NO: C-131
SCALE: AS NOTED	DWN BY: MJL		
SIZE: ANSI D	CHK BY: SMS	GOV. CONTRACT NUMBER #W91364-12-D-0003	36 OF 89

\\MOONPA1GL1.bkr.mbakercorp.com\vol2_projects\Ohio NG IDIQ\156220 Tank Trails Camp Ravenna\05_Deliverables\Drawings\05 C_Civil\Sheet Files\C-131-135_T3_4_MAN LANE_CULVERT PROFILES.dwg Jun07,2017 - 11:13am Plotted By: VWheller



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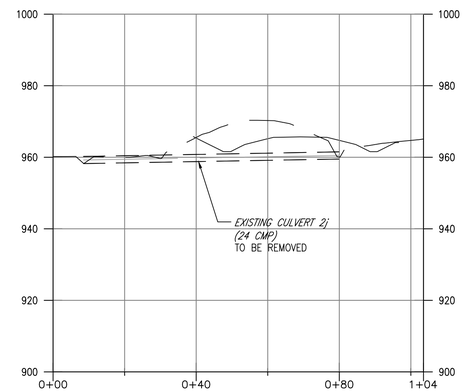

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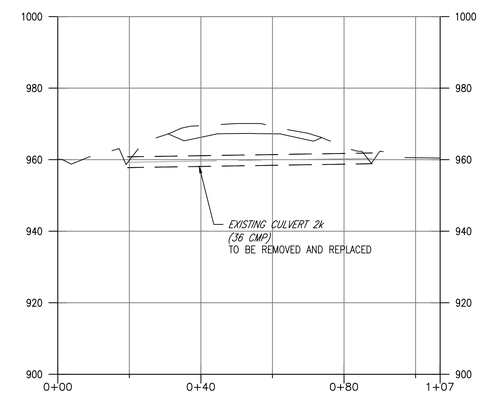

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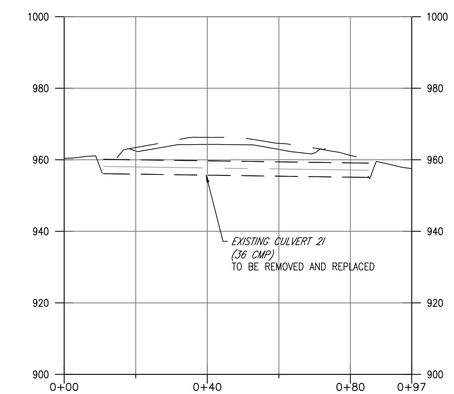

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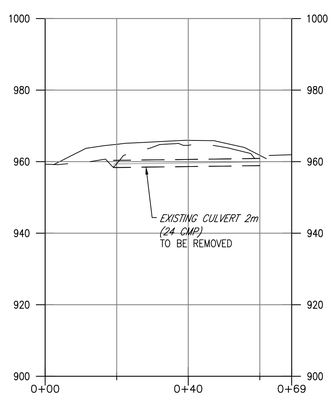

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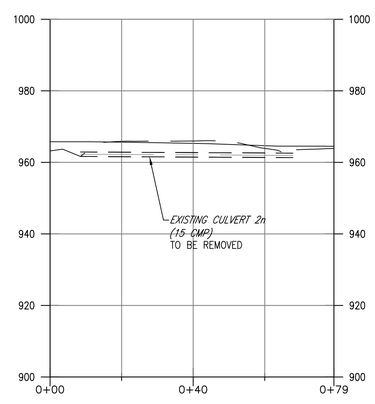
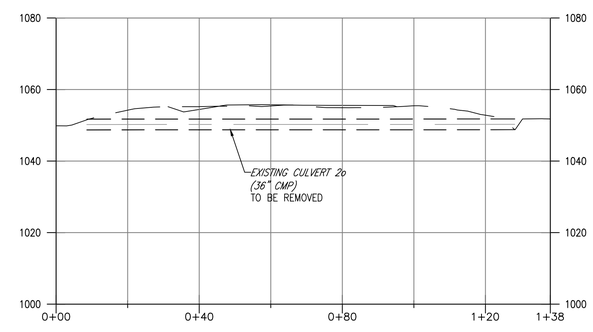


EXISTING CULVERT 2n



EXISTING CULVERT 2o

20 10 0 20
SCALE IN FEET
1"=20' HORZ.
1"=20' VERT.

DATE	REVISION MADE	BY	AUTHORIZED

Michael Baker INTERNATIONAL

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RAVENNA, OHIO

OHIO NATIONAL GUARD SINCE 1788

ITAM TRAINING AREA IMPROVEMENT AND TRAIL CREATION

TASK 3 & 4 TVMA / TVML
EXISTING CULVERT PROFILES

DATE: 06-09-17	DES BY: MJL	BAKER PROJECT NUMBER 156220	SHEET NO: C-132
SCALE: AS NOTED	DWN BY: MJL		
SIZE: ANSI D	CHK BY: SMS	GOV. CONTRACT NUMBER #W91364-12-D-0003	37 OF 89

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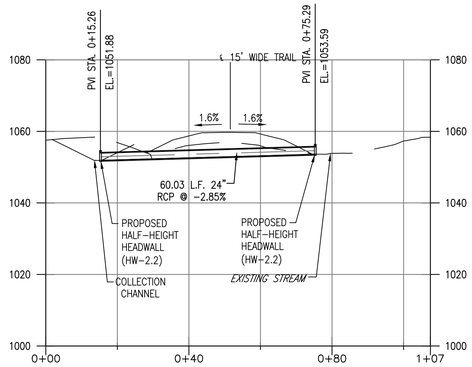
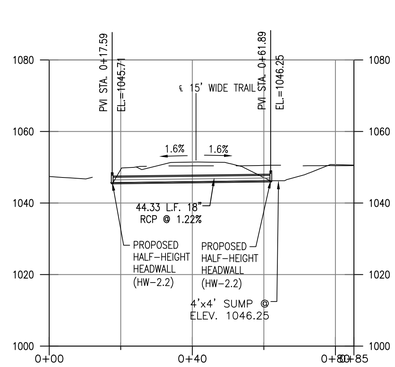
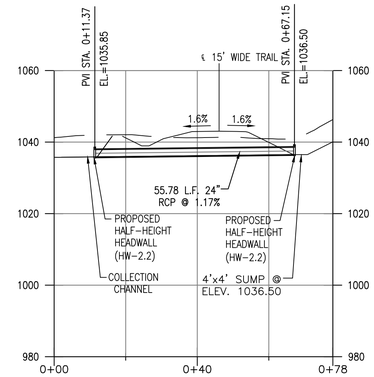


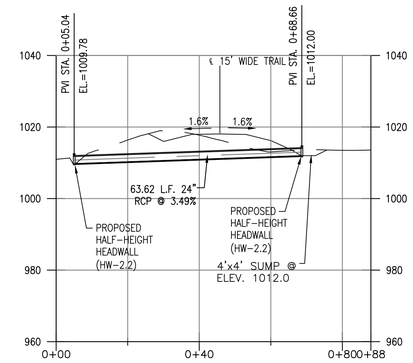
PROPOSED CULVERT 2A



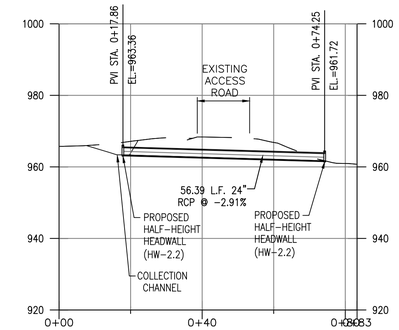
PROPOSED CULVERT 2B



PROPOSED CULVERT 2C



PROPOSED CULVERT 2D



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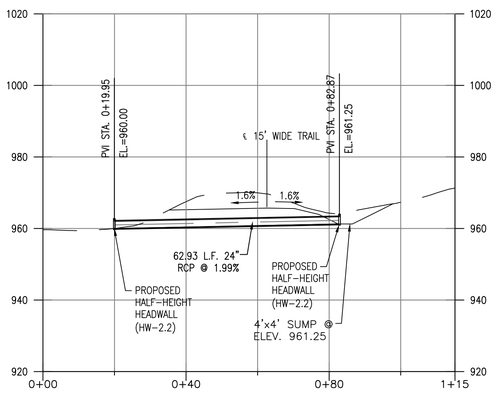

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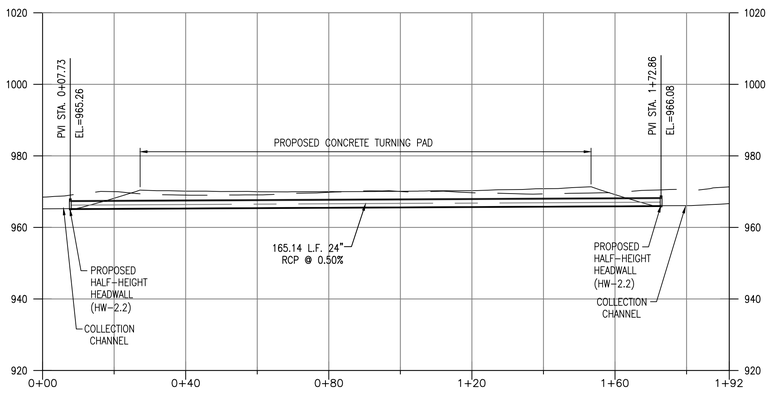
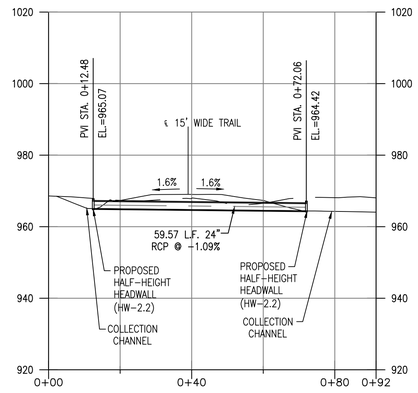


PROPOSED CULVERT 2F



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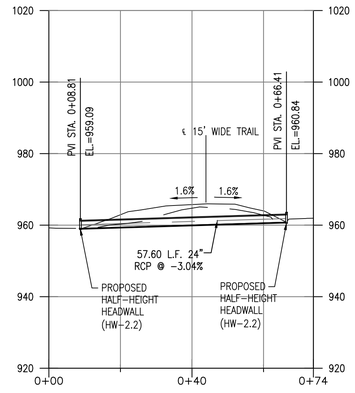

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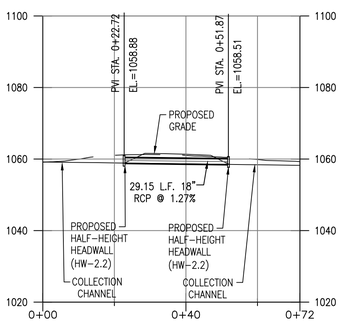

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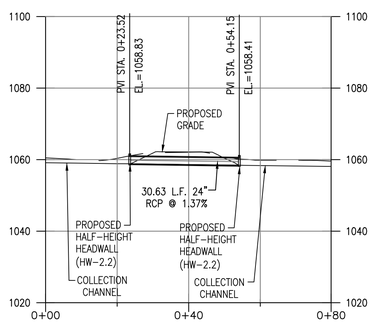

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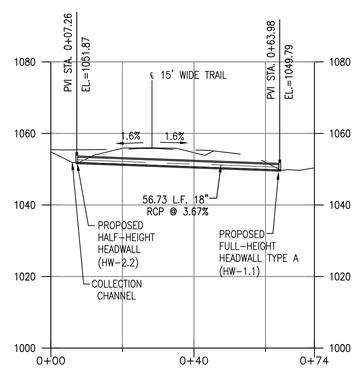

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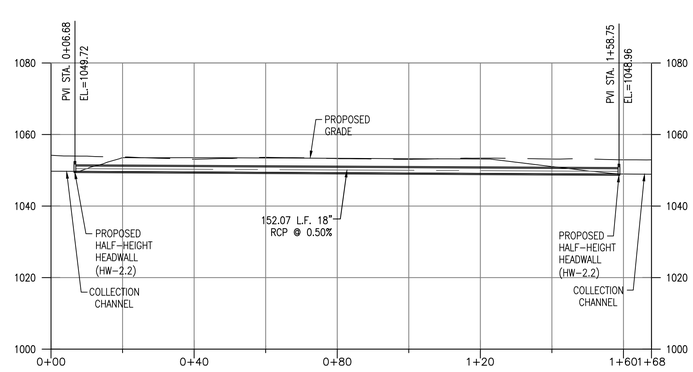

PROPOSED CULVERT 2M

20 10 0 20
SCALE IN FEET
1"=20' HORZ.
1"=20' VERT.

DATE	REVISION MADE	BY	AUTHORIZED

Michael Baker INTERNATIONAL

MICHAEL BAKER INTL.
100 AIRSIDE DRIVE
MOON TOWNSHIP, PA 15108

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RAVENNA, OHIO

OHIO NATIONAL GUARD SINCE 1788

ITAM TRAINING AREA IMPROVEMENT AND TRAIL CREATION

TASK 3 & 4 TVMA / TVML
PROPOSED CULVERT PROFILES

DATE: 06-09-17	DES BY: MJL	BAKER PROJECT NUMBER 156220	SHEET NO: C-133
SCALE: AS NOTED	DWN BY: MJL		
SIZE: ANSI D	CHK BY: SMS	GOV. CONTRACT NUMBER #W91364-12-D-0003	38 OF 89

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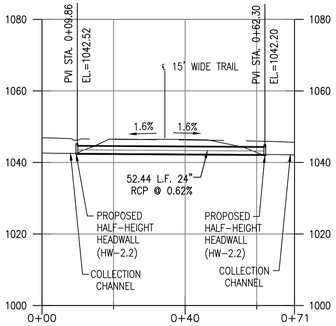

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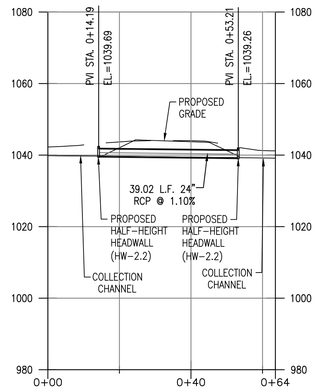

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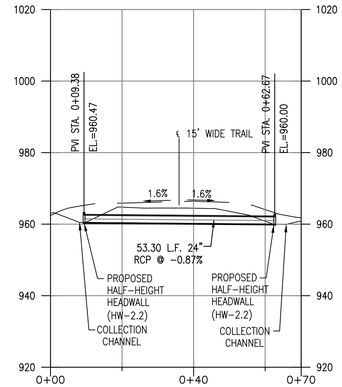

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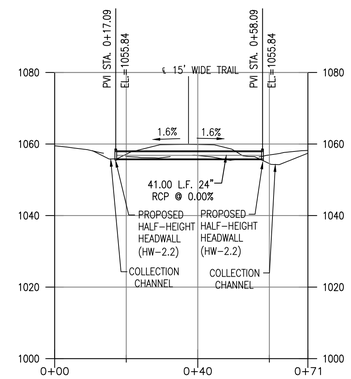

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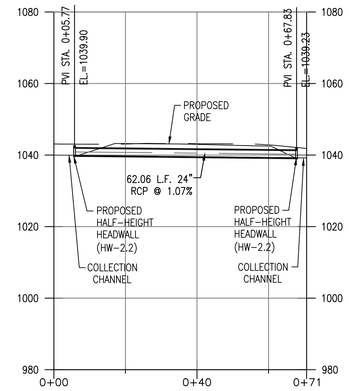

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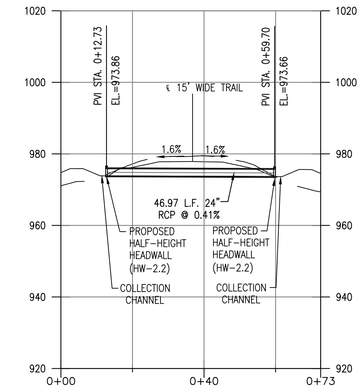
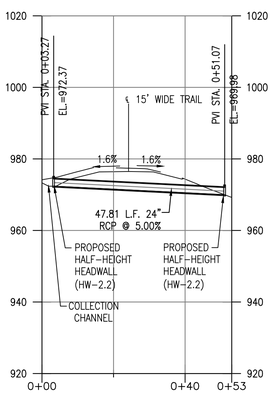
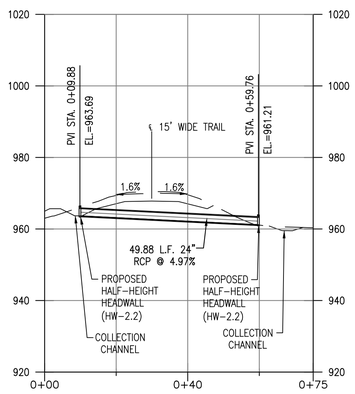


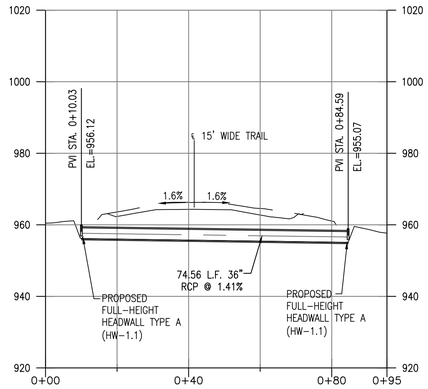
PROPOSED CULVERT 2S



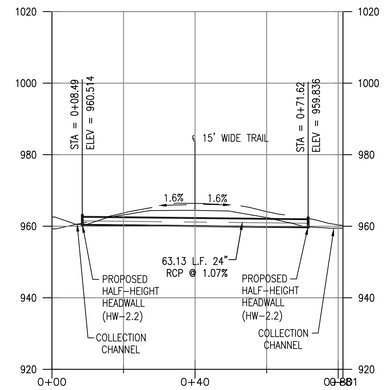
PROPOSED CULVERT 2T



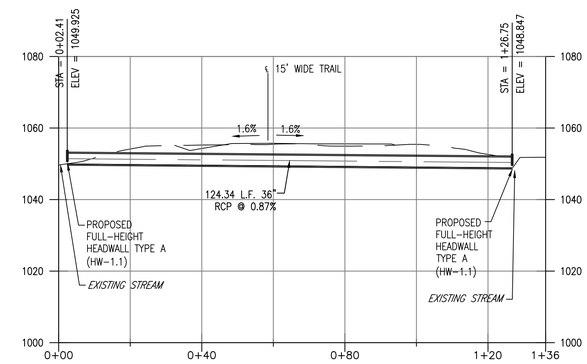
PROPOSED CULVERT 2U



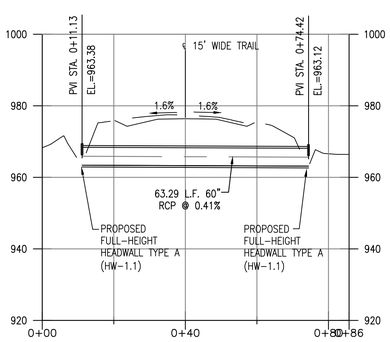
PROPOSED CULVERT 2V



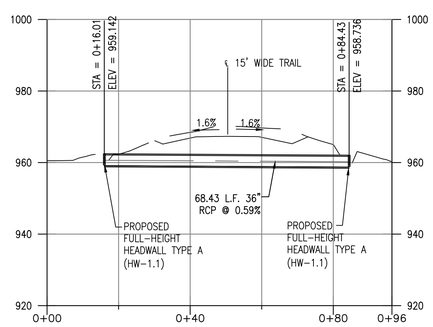
PROPOSED CULVERT 2X



PROPOSED CULVERT 2Y



PROPOSED CULVERT 2Z



PROPOSED CULVERT 2AA

20 10 0 20
SCALE IN FEET
1"=20' HORZ.
1"=20' VERT.

DATE	REVISION MADE	BY	AUTHORIZED

Michael Baker INTERNATIONAL

MICHAEL BAKER INTL.
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CAMP RAVENNA JOINT MILITARY TRAINING CENTER
RAVENNA, OHIO

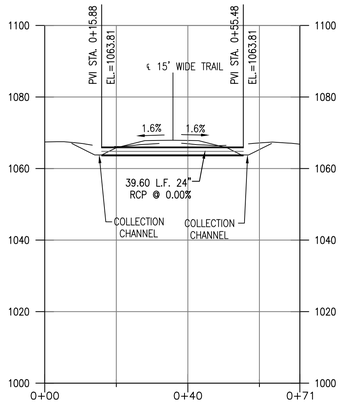
OHIO NATIONAL GUARD SINCE 1788

ITAM TRAINING AREA IMPROVEMENT AND TRAIL CREATION

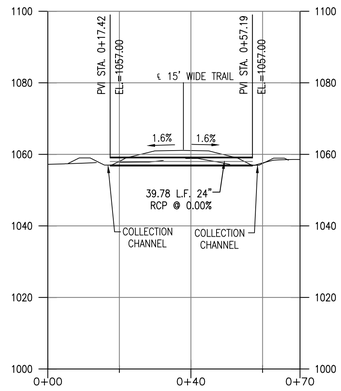
TASK 3 & 4 TVMA / TVML
PROPOSED CULVERT PROFILES

DATE: 06-09-17	DES BY: MJL	BAKER PROJECT NUMBER 156220	SHEET NO: C-134
SCALE: AS NOTED	DWN BY: MJL		
SIZE: ANSI D	CHK BY: SMS	GOV. CONTRACT NUMBER #W91364-12-D-0003	39 OF 89

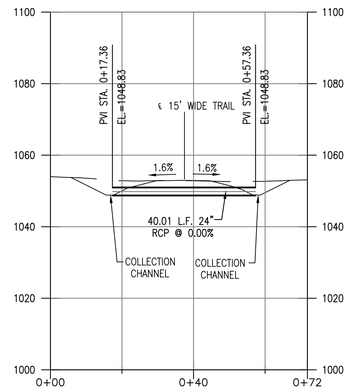
\\MOONPA1GL1.bkt.mbakercorp.com\vol2_projects\Ohio NG IDIQ\156220 Tank Trails Camp Ravenna\05_Deliverables\Drawings\05 C_Civil\Sheet Files\C-131-135_T3_4_MAIN LANE_CULVERT PROFILES.dwg Jun07,2017 - 11:09am Plotted By: WHelder



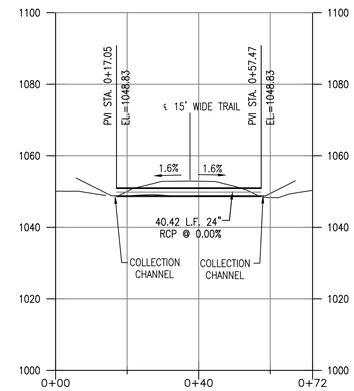
CULVERT EQ-12



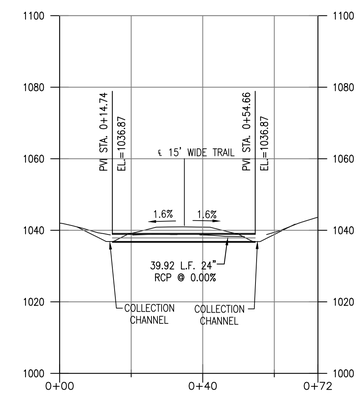
CULVERT EQ-13



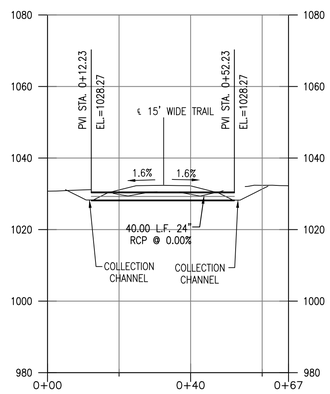
CULVERT EQ-14



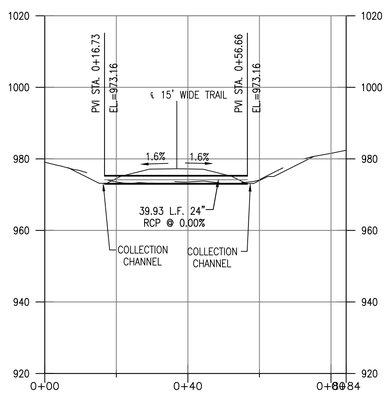
CULVERT EQ-15



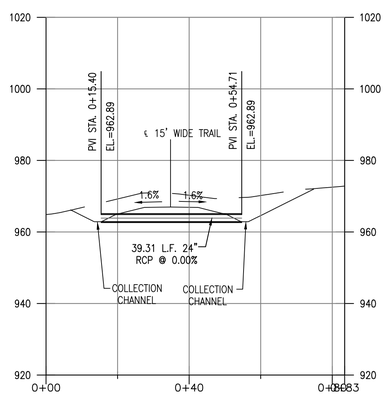
CULVERT EQ-16



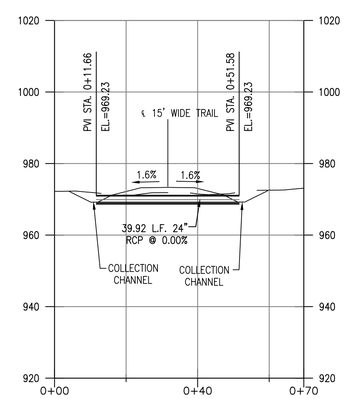
CULVERT EQ-17



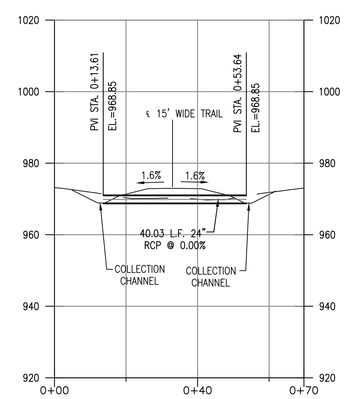
CULVERT EQ-18



CULVERT EQ-19



CULVERT EQ-20



CULVERT EQ-21

DATE	REVISION MADE	BY	AUTHORIZED

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ITAM TRAINING AREA IMPROVEMENT AND TRAIL CREATION

TASK 3 & 4 TVMA / TVML
PROPOSED CULVERT PROFILES

DATE: 06-09-17	DES BY: MJL	BAKER PROJECT NUMBER 156220	SHEET NO: C-135
SCALE: AS NOTED	DWN BY: MJL		
SIZE: ANSI D	CHK BY: SMS	GOV. CONTRACT NUMBER #W91364-12-D-0003	40 OF 89

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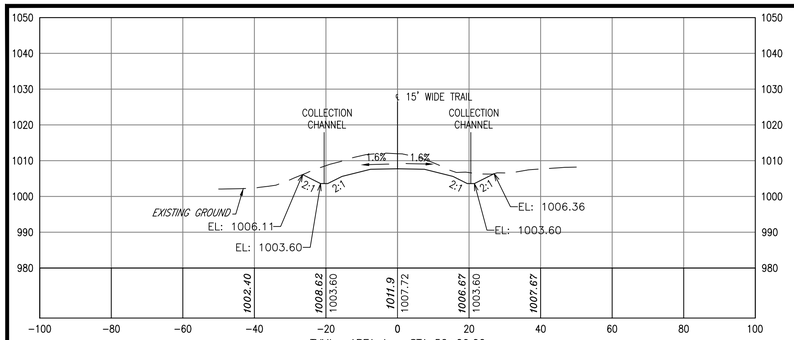
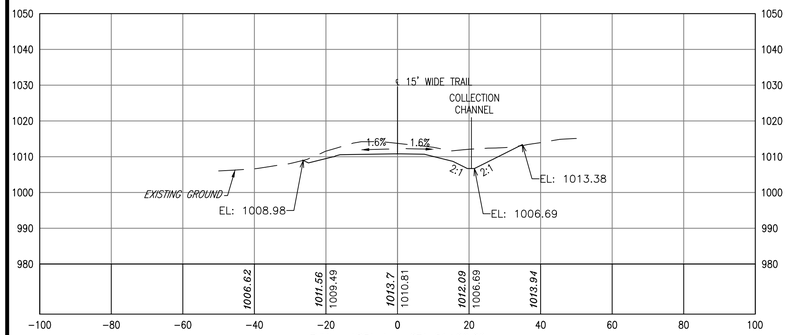


TVML– AREA A – STA 52+00.00



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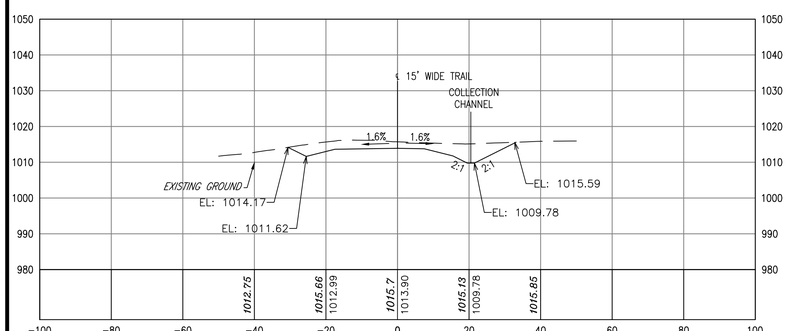

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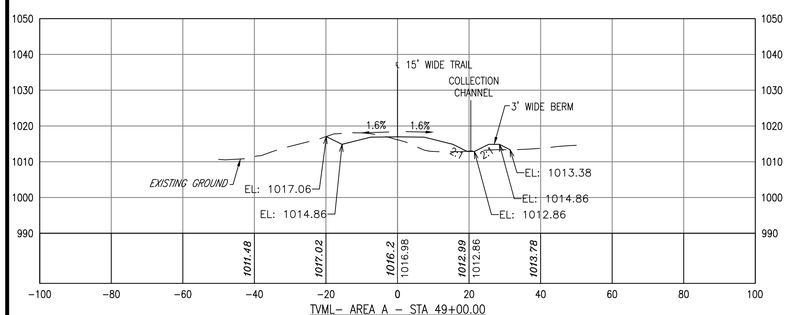

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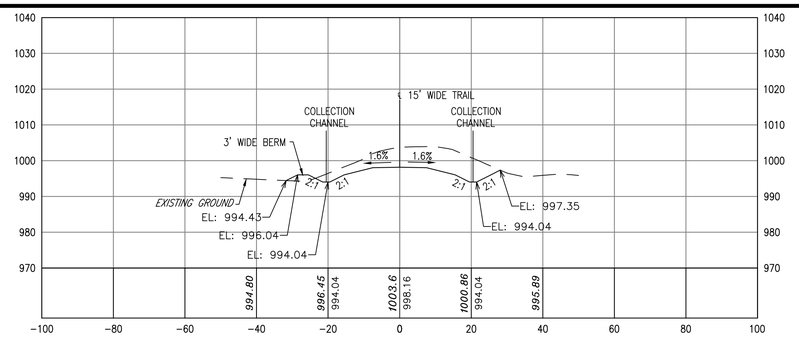

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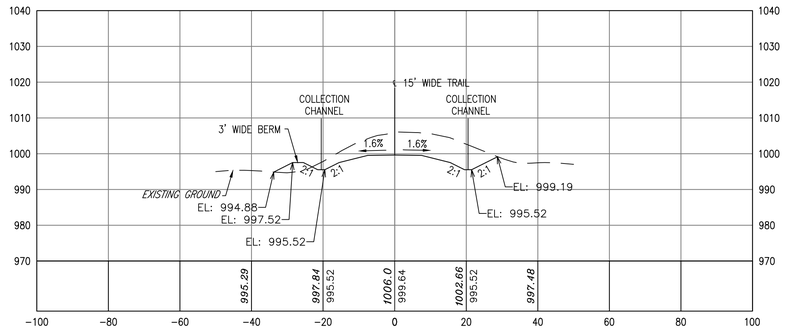

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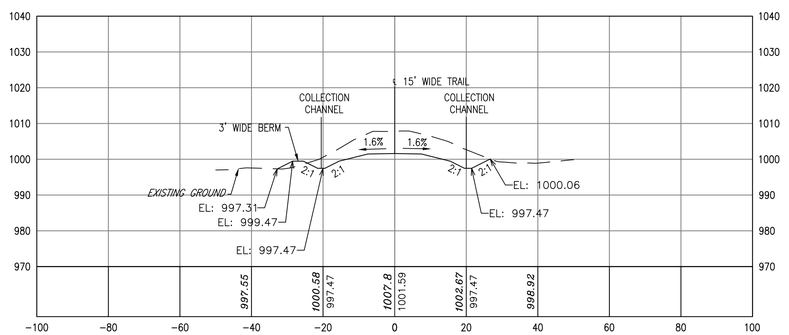

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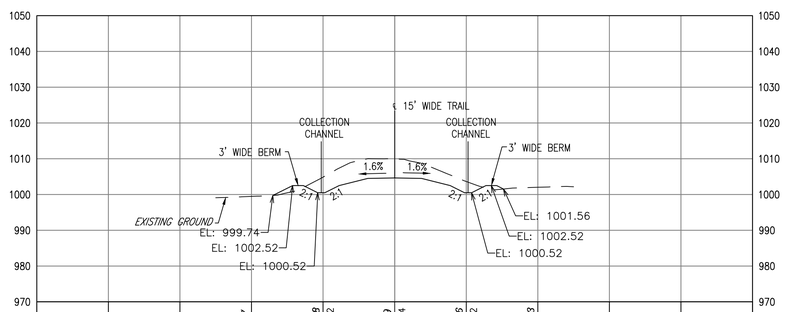

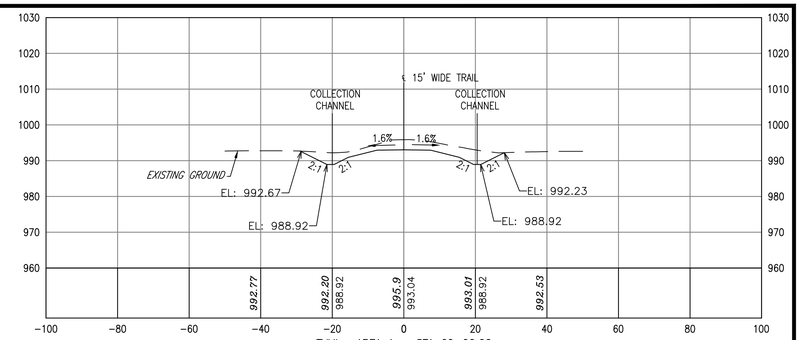

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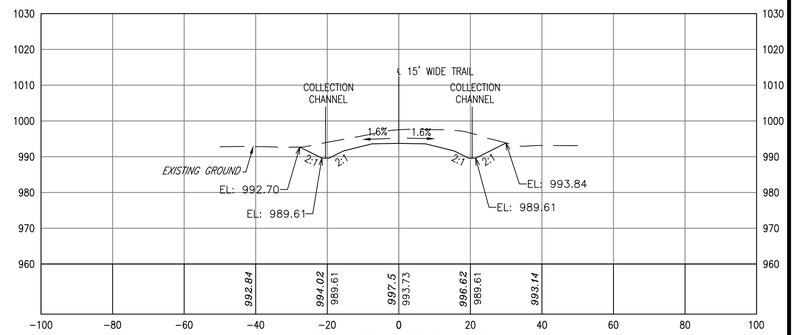

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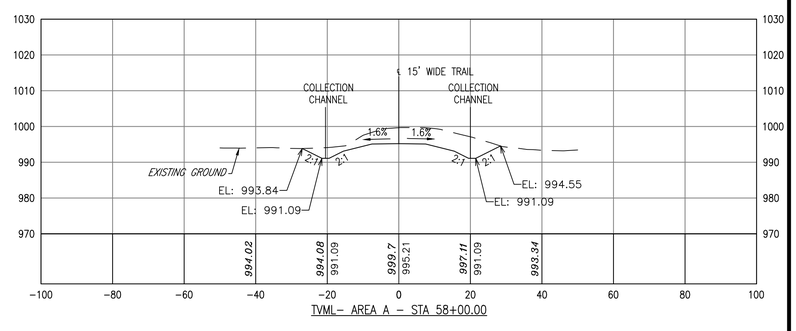

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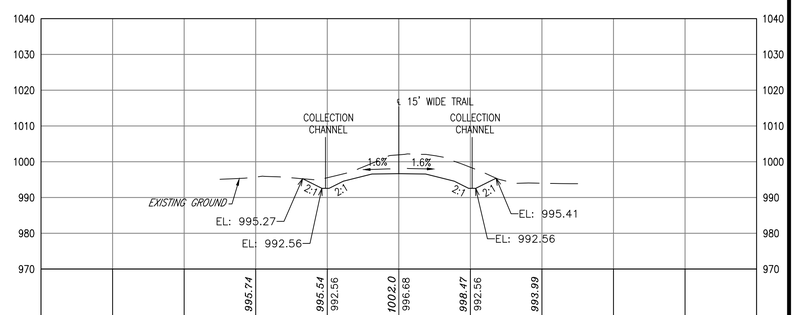

TVML– AREA A – STA 57+00.00

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ITAM TRAINING AREA IMPROVEMENT AND TRAIL CREATION

TASK 3 & 4 TVMA / TVML MANEUVER AREA A
TRAIL CROSS SECTIONS

DATE: 06-09-17	DES BY: MJL	BAKER PROJECT NUMBER 156220	SHEET NO: C-140
SCALE: 1" = 20'	DWN BY: MJL		
SIZE: ANSI D	CHK BY: SMS	GOV. CONTRACT NUMBER #W91364-12-D-0003	45 OF 89

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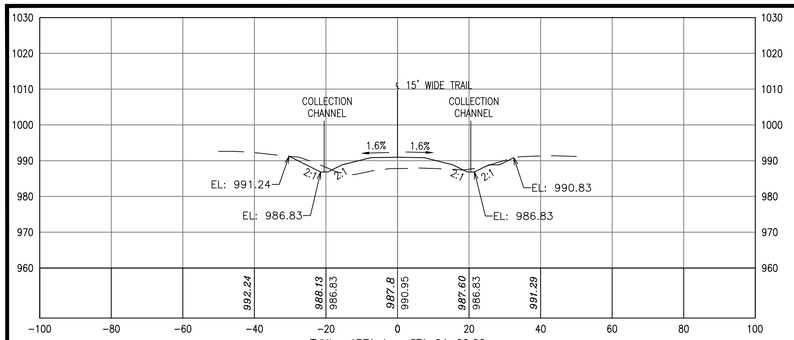

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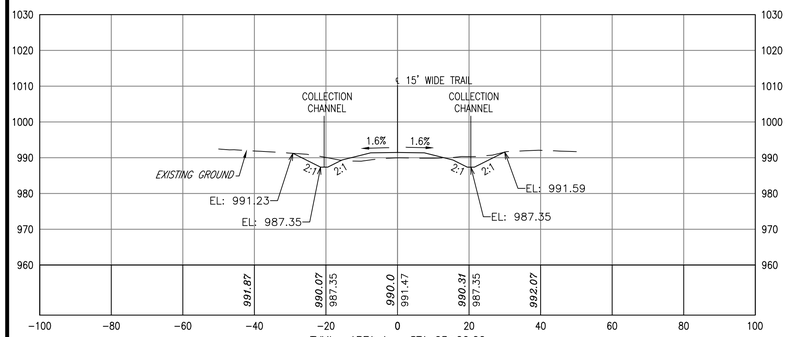

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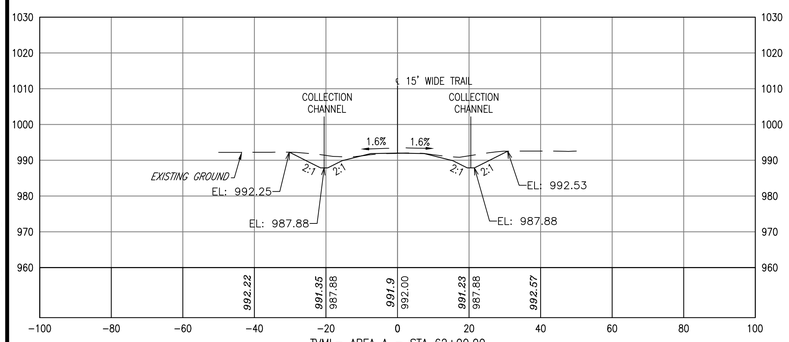

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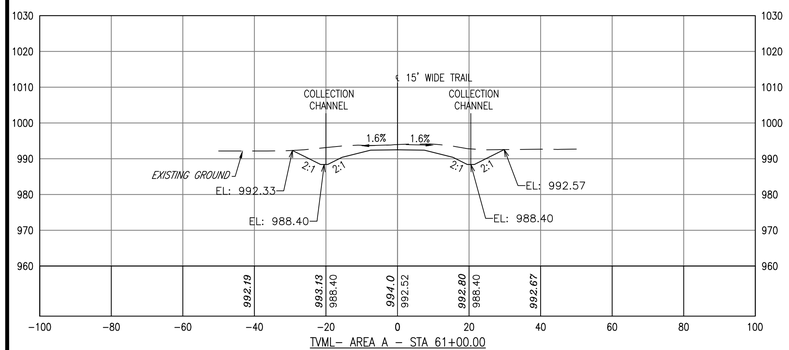

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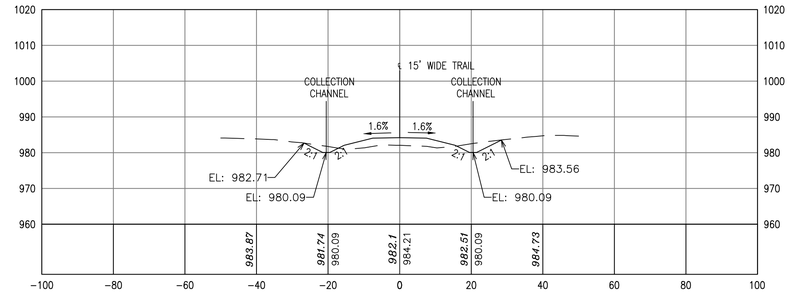

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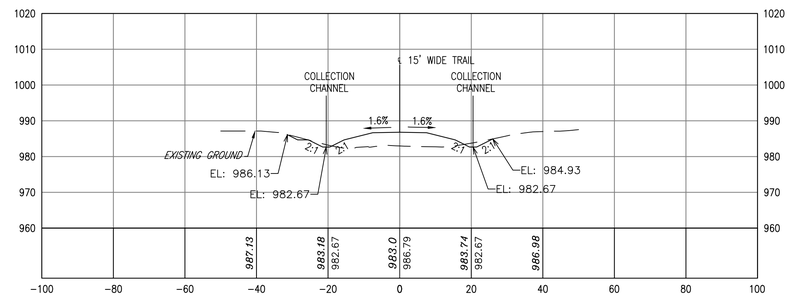

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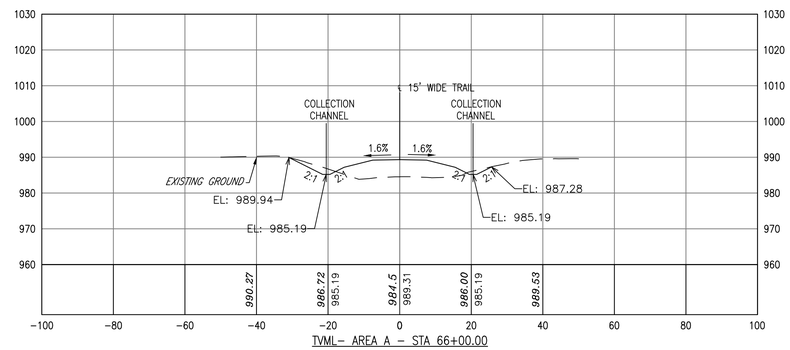

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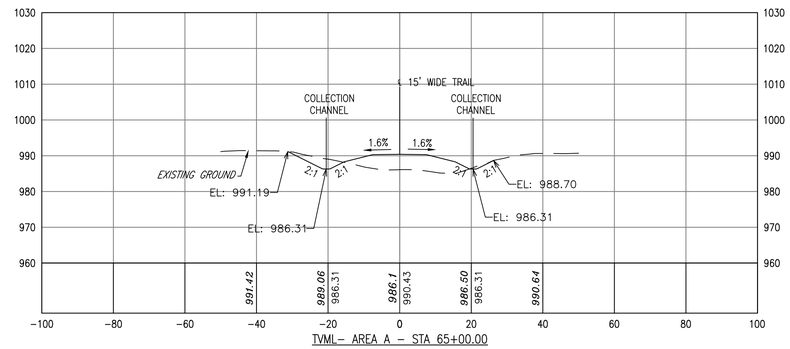

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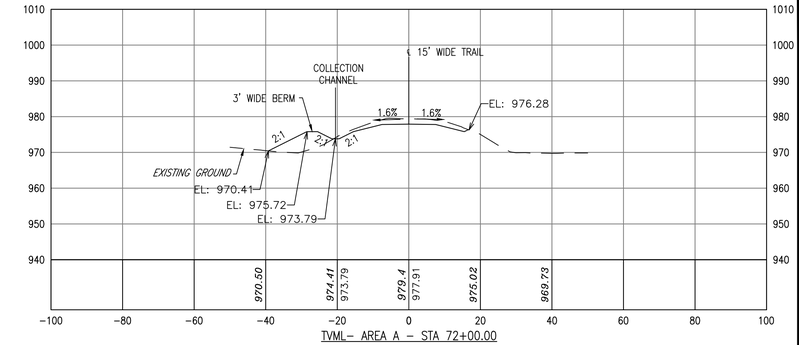
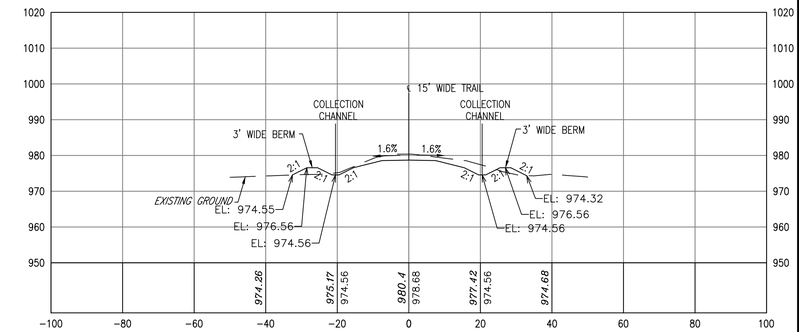
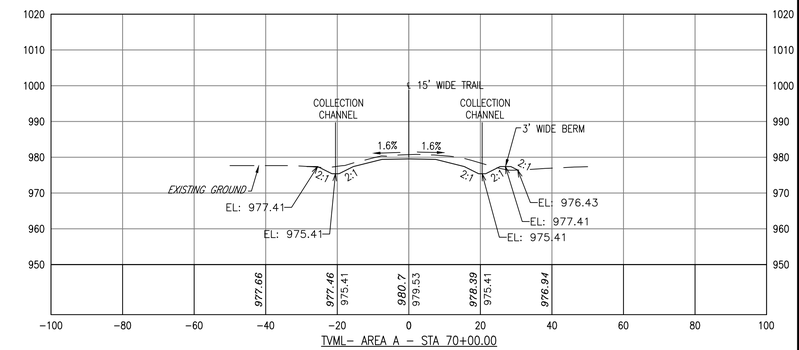


TVML– AREA A – STA 72+00.00



TVML– AREA A – STA 71+00.00



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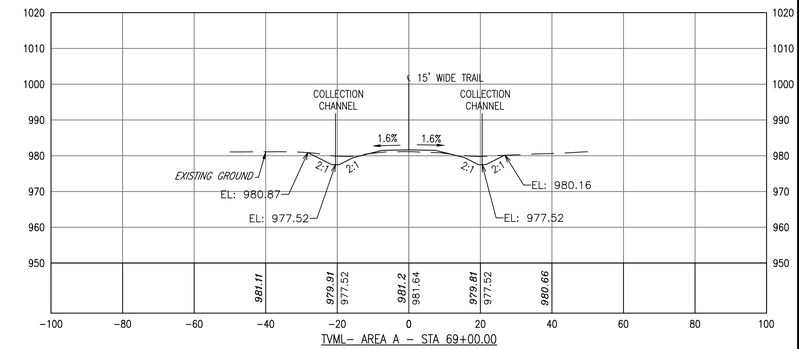

TVML– AREA A – STA 69+00.00

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TASK 3 & 4 TVMA / TVML MANEUVER AREA A
TRAIL CROSS SECTIONS

DATE: 06-09-17	DES BY: MJL	BAKER PROJECT NUMBER 156220	SHEET NO: C-141
SCALE: 1" = 20'	DWN BY: MJL		–
SIZE: ANSI D	CHK BY: SMS	GOV. CONTRACT NUMBER #W91364-12-D-0003	46 OF 89

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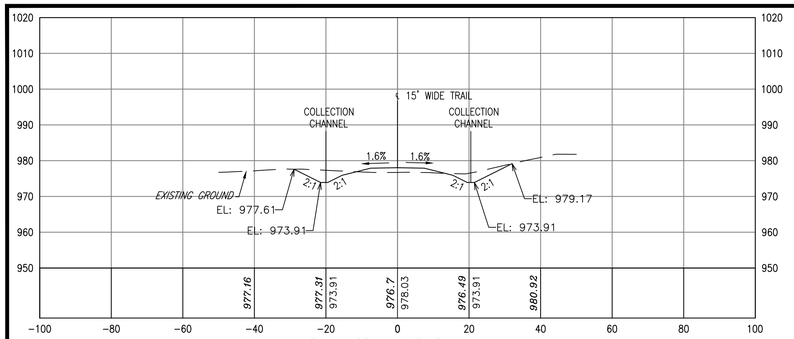
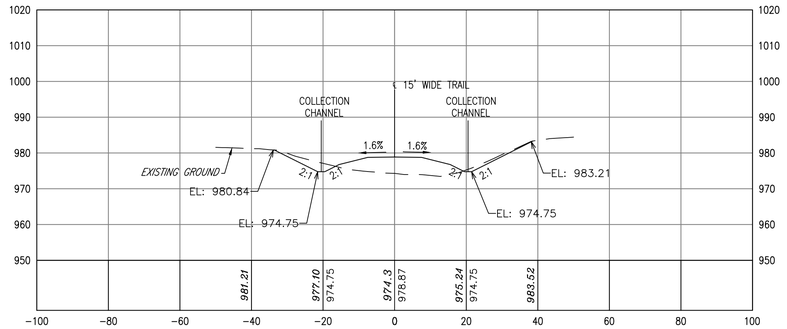


TVML– AREA A – STA 76+00.00



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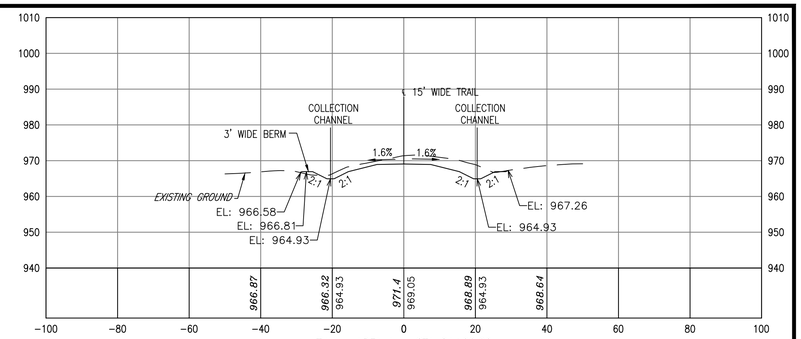
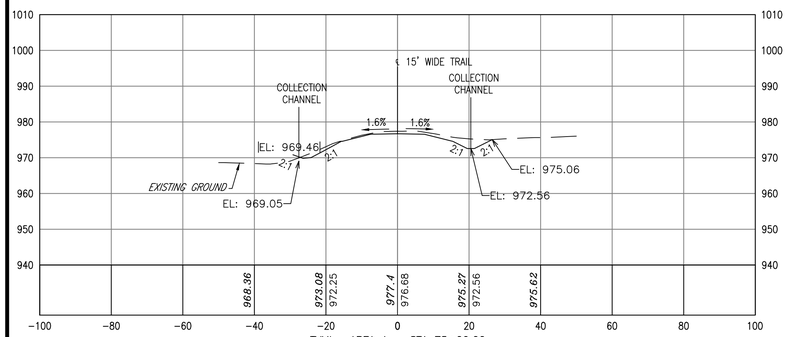
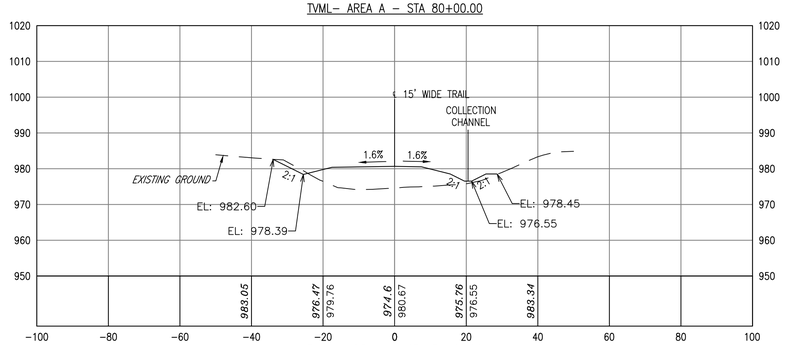


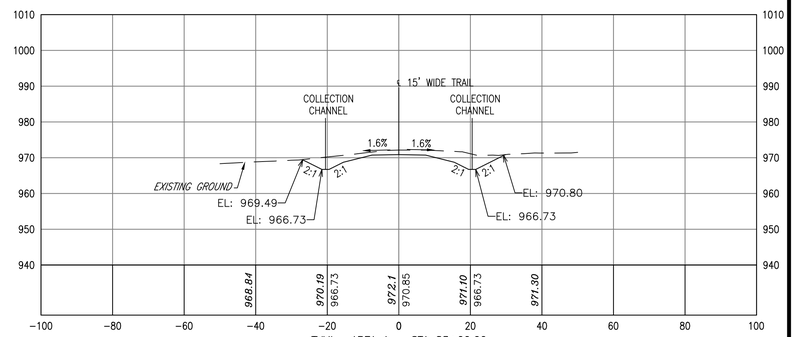
TVML– AREA A – STA 84+00.00



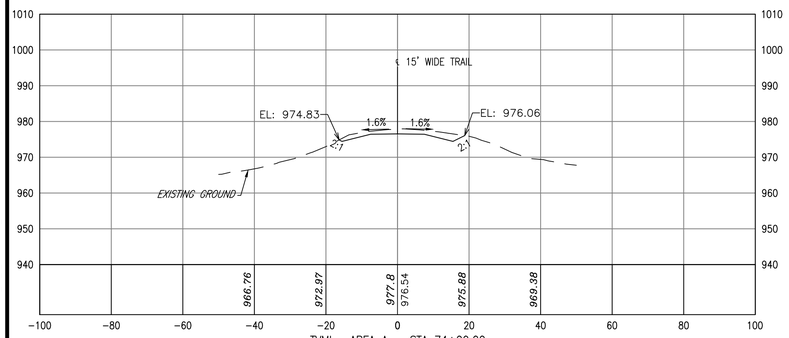
TVML– AREA A – STA 75+00.00



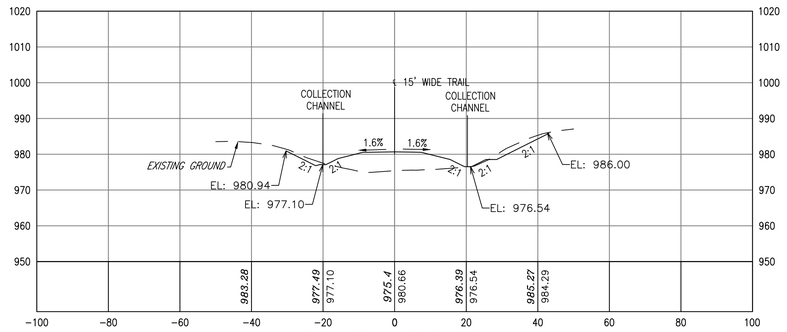
TVML– AREA A – STA 79+00.00



TVML– AREA A – STA 83+00.00



TVML– AREA A – STA 74+00.00



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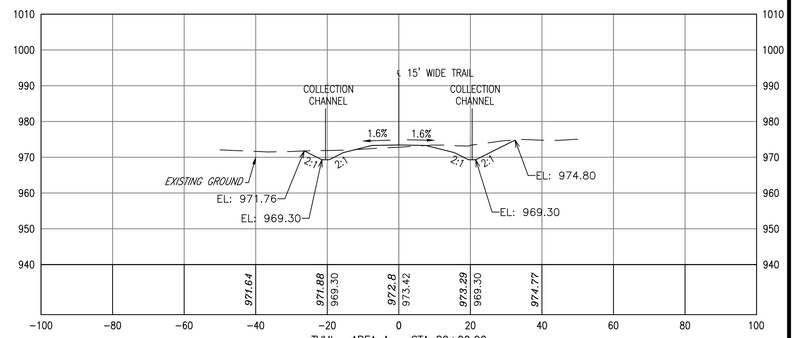

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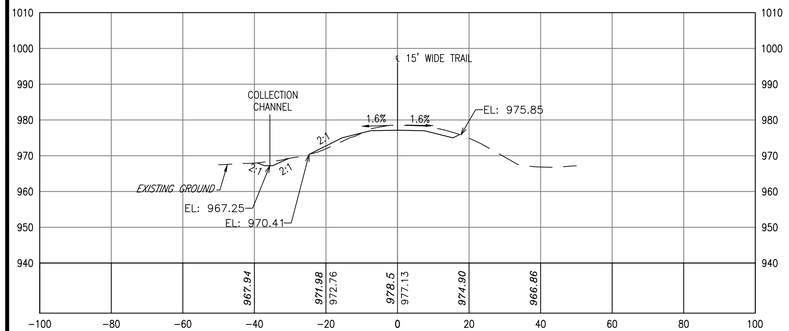

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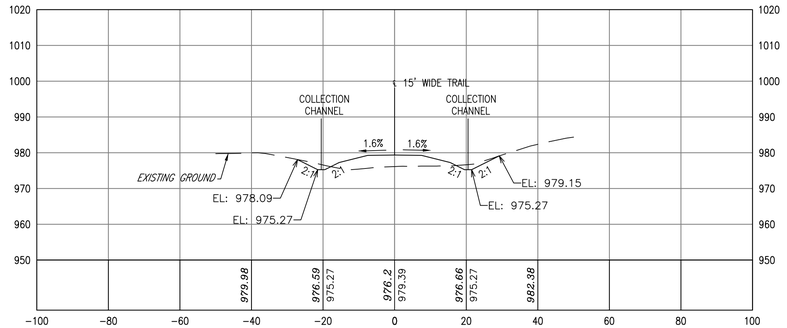

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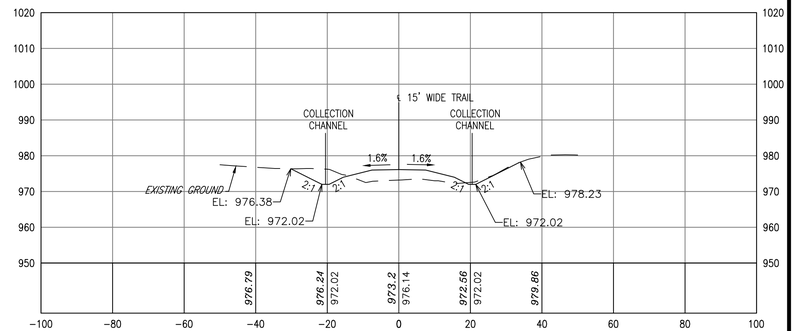

TVML– AREA A – STA 81+00.00

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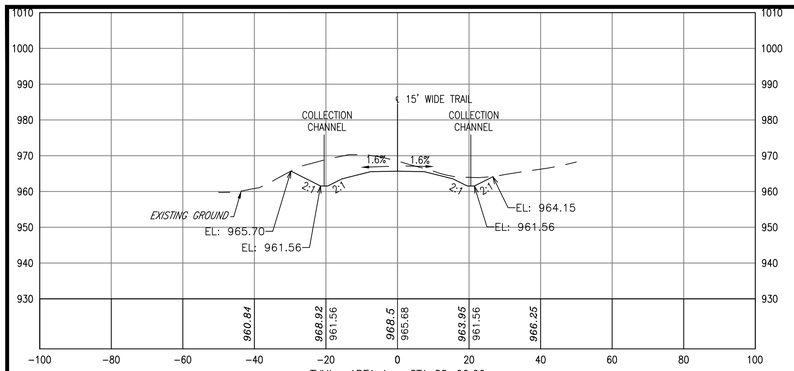
ITAM TRAINING AREA IMPROVEMENT AND TRAIL CREATION

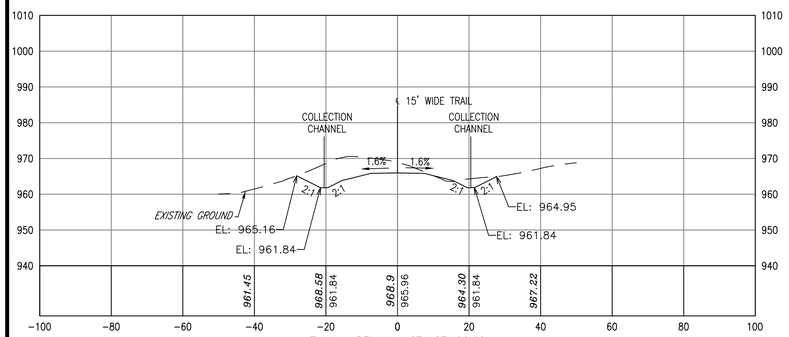
TASK 3 & 4 TVMA / TVML MANEUVER AREA A
TRAIL CROSS SECTIONS

DATE: 06-09-17	DES BY: MJL	BAKER PROJECT NUMBER 156220	SHEET NO: C-142
SCALE: 1" = 20'	DWN BY: MJL		
SIZE: ANSI D	CHK BY: SMS	GOV. CONTRACT NUMBER #W91364-12-D-0003	47 OF 89

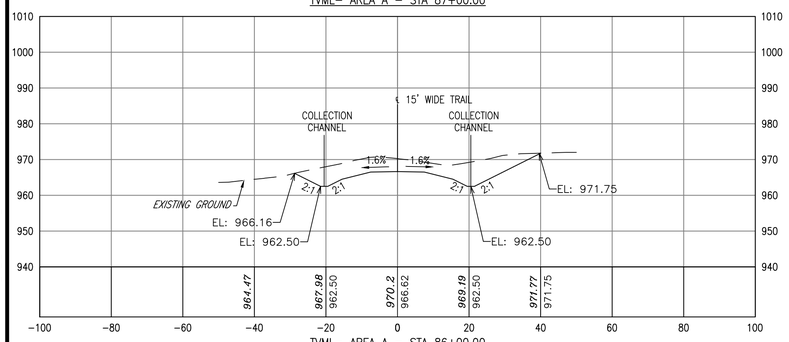
\\MOONPA1CL1.bkr.mbakercorp.com\vol2_projects\Ohio NG\DIQ\156220 Tank Trails Camp Ravenna\05_Deliverables\Drawings\05 C_Civil\Sheet Files\C-139-146_T3_4_MAN LANE_CROSS SECTIONS.dwg Jun07,2017 - 10:45am Plotted By: Wheider



TVML– AREA A – STA 88+00.00



TVML– AREA A – STA 87+00.00



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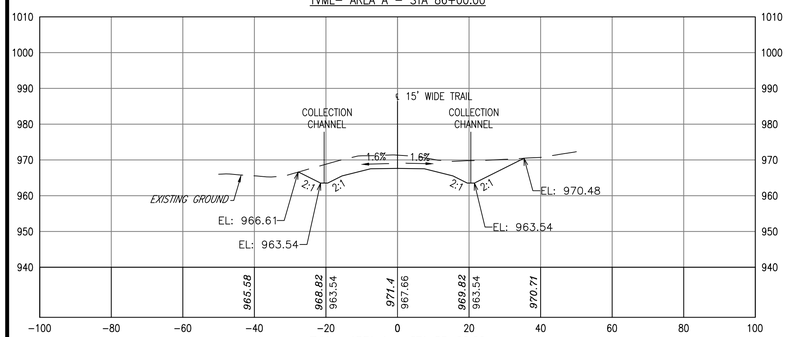
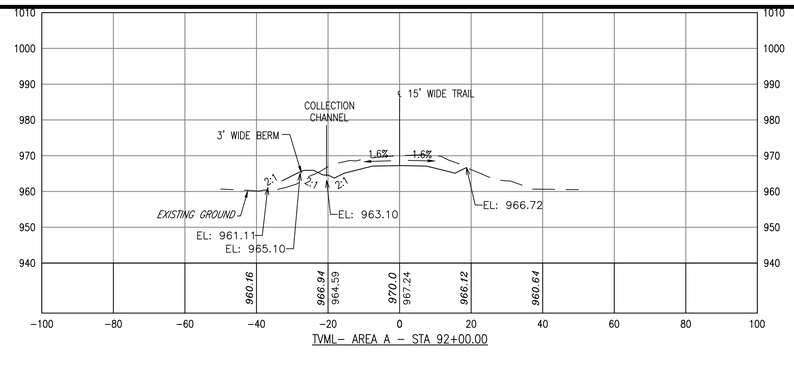


TVML– AREA A – STA 85+00.00



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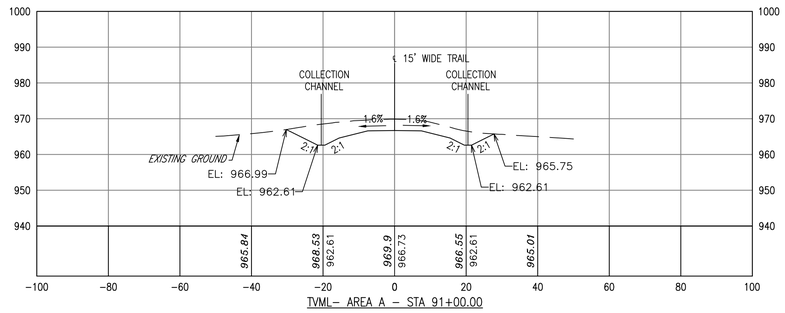

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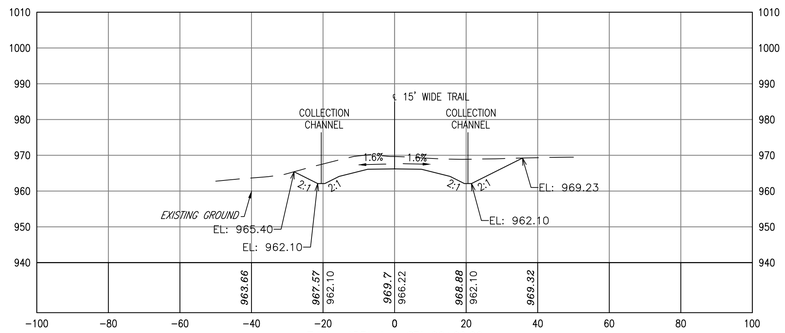

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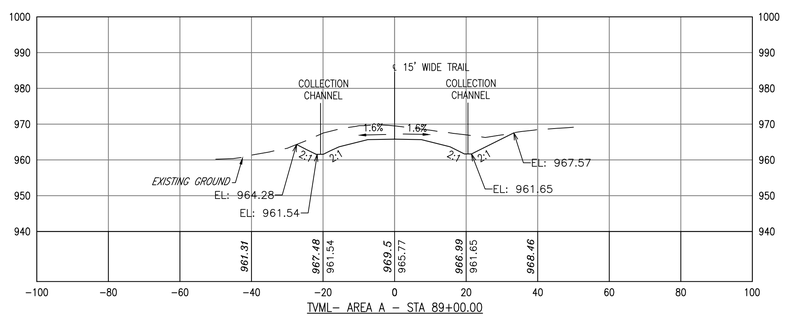

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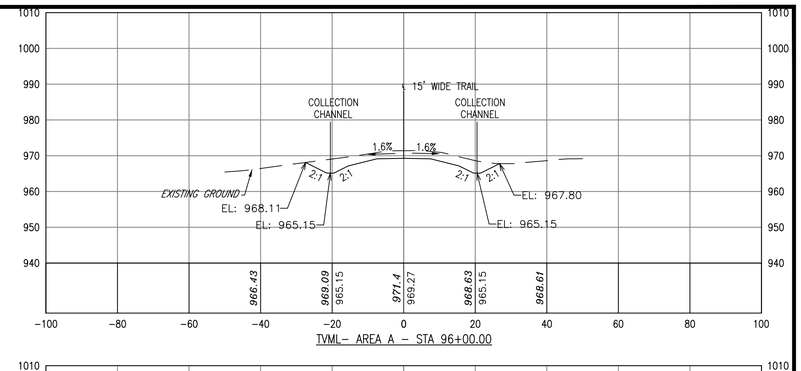

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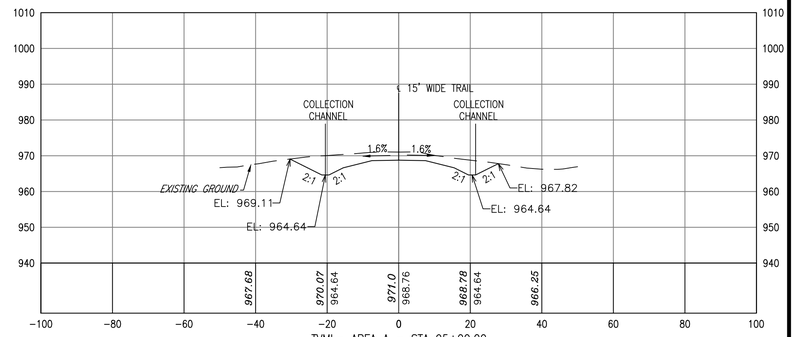

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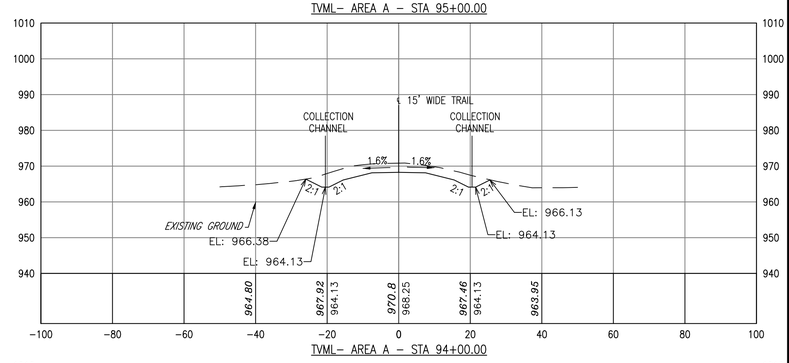

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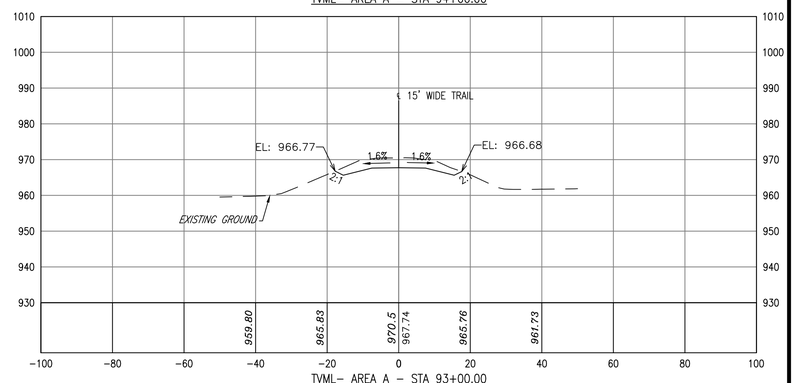

TVML– AREA A – STA 93+00.00

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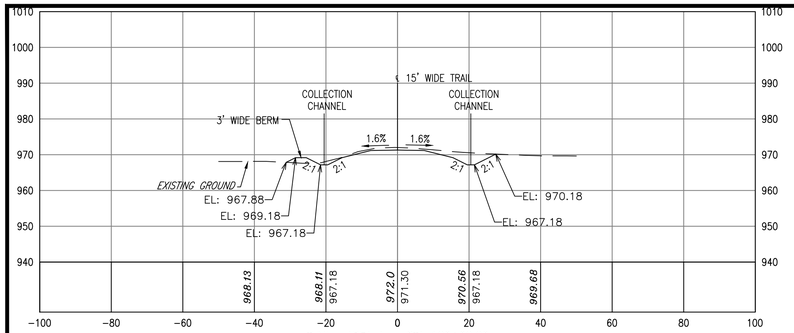
ITAM TRAINING AREA IMPROVEMENT AND TRAIL CREATION

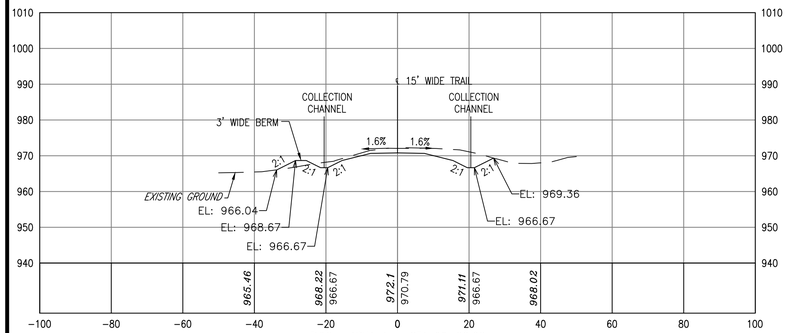
TASK 3 & 4 TVMA / TVML MANEUVER AREA A
TRAIL CROSS SECTIONS

DATE: 06-09-17	DES BY: MJL	BAKER PROJECT NUMBER 156220	SHEET NO: C-143
SCALE: 1" = 20'	DWN BY: MJL		
SIZE: ANSI D	CHK BY: SMS	GOV. CONTRACT NUMBER #W91364-12-D-0003	48 OF 89

\\MOONPA1C1.bkr.mbakercorp.com\vol2_projects\Ohio NG ID\0159220 Tank Trails Camp Ravenna\05_Deliverables\Drawings\05 C_Civil\Sheet Files\C-136-146_T3_4_MAN LANE_CROSS SECTIONS.dwg Jun07,2017 - 10:38am Plotted By: WNeider



TVML- AREA A - STA 100+00.00



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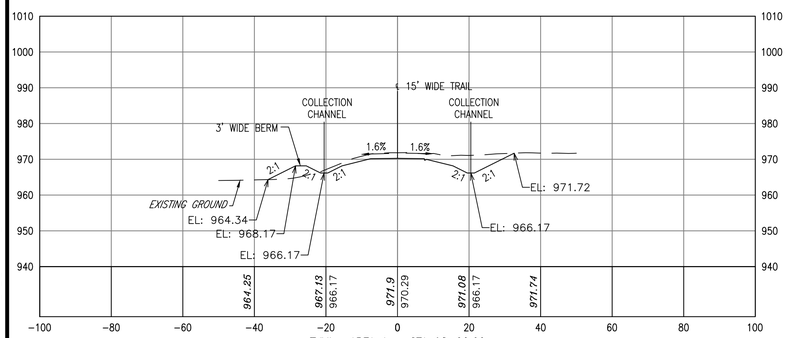

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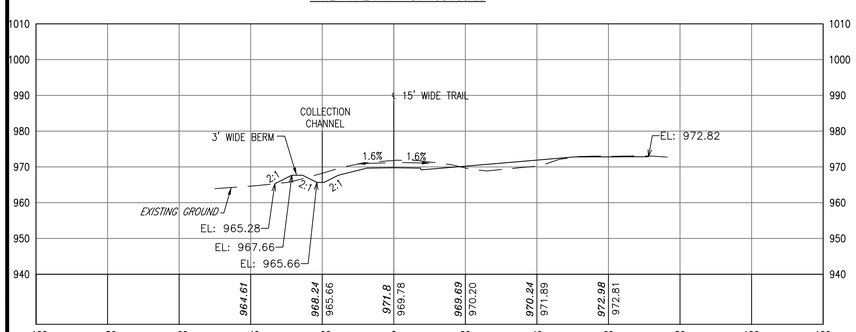

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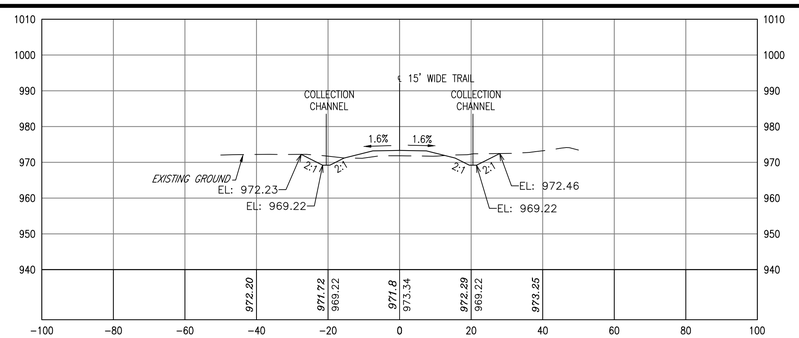

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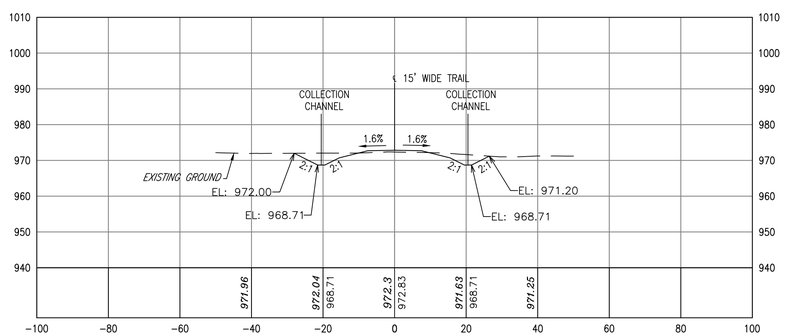

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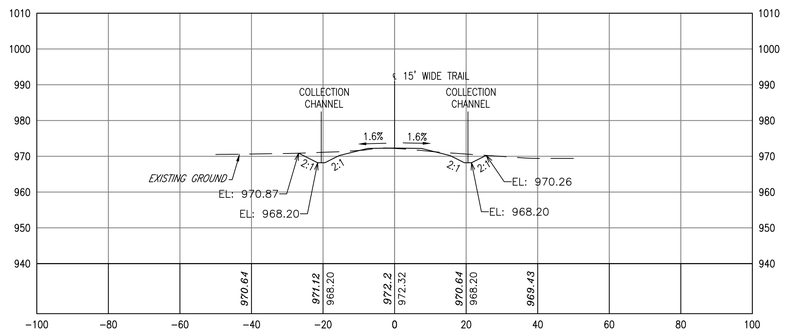

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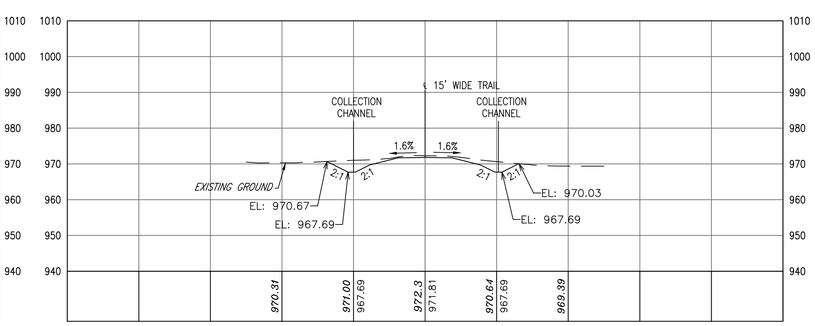

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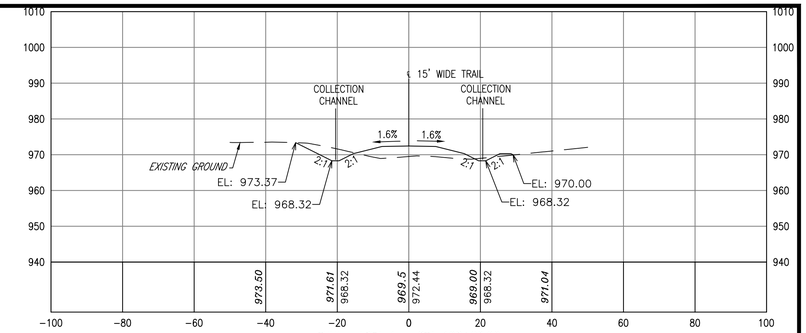

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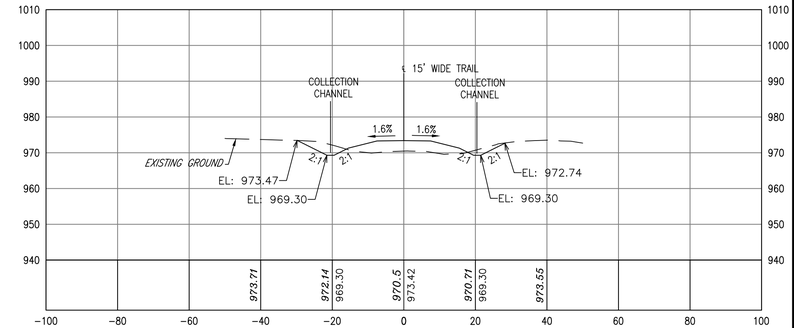

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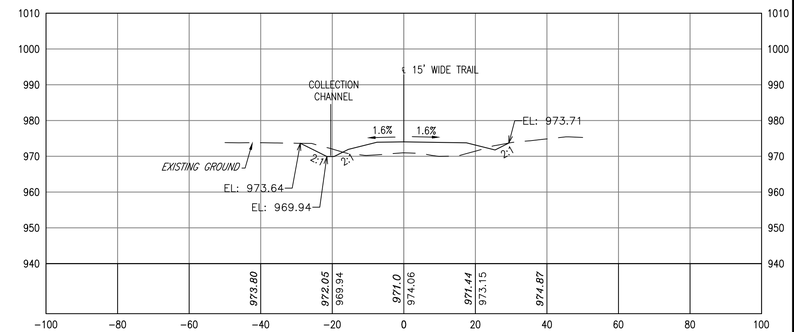

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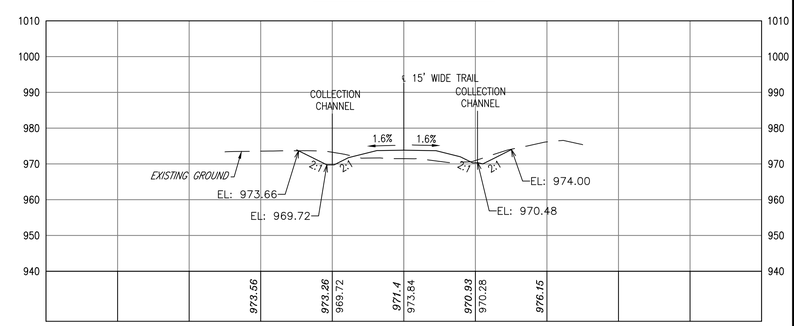

TVML- AREA A - STA 105+00.00

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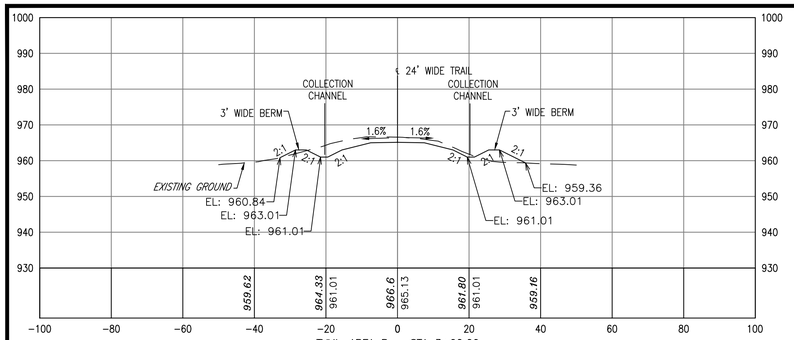
ITAM TRAINING AREA IMPROVEMENT AND TRAIL CREATION

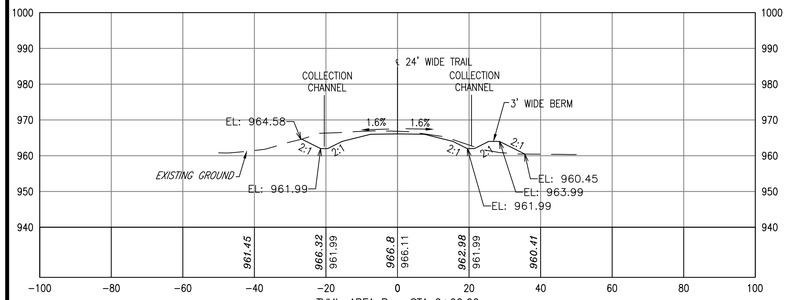
TASK 3 & 4 TVMA / TVML MANEUVER AREA A
TRAIL CROSS SECTIONS

DATE: 06-09-17	DES BY: MJL	BAKER PROJECT NUMBER 156220	SHEET NO: C-144
SCALE: 1" = 20'	DWN BY: MJL		
SIZE: ANSI D	CHK BY: SMS	GOV. CONTRACT NUMBER #W91364-12-D-0003	49 OF 89

\\MOONPA1GL1 bkt.mbakercorp.com\vol2_projects\Ohio NG ID\Q156220 Tank Trails Camp Ravenna\05_Deliverables\Drawings\05 C_Civil\Sheet Files\C-136-146_T3_4_MAN LANE_CROSS SECTIONS.dwg Jun07 2017 - 10:25am Plotted By: Wheider



TVML–AREA B – STA 3+00.00



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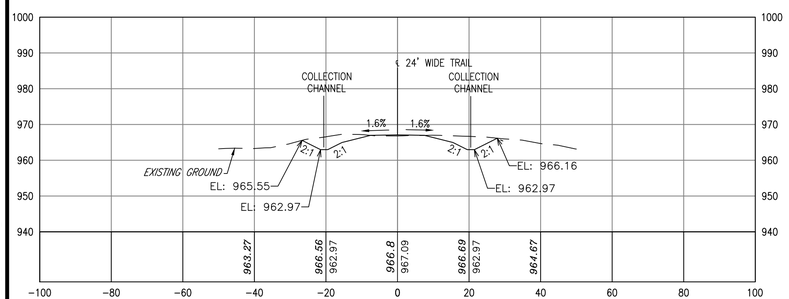

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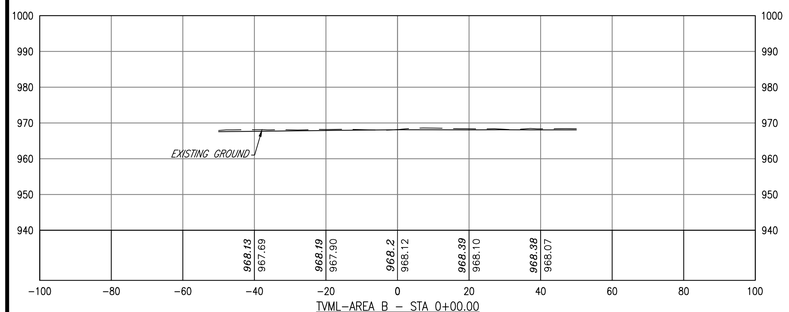

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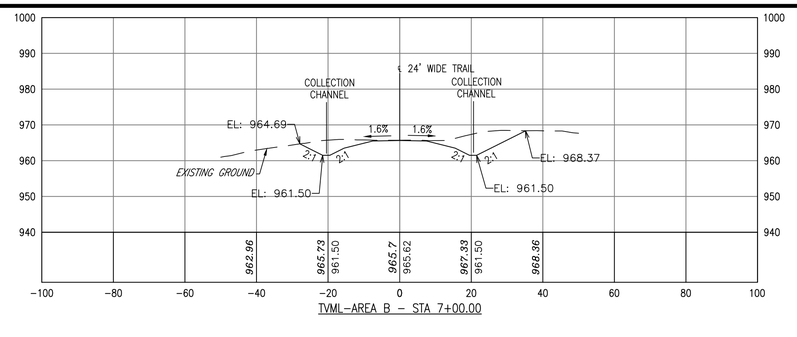

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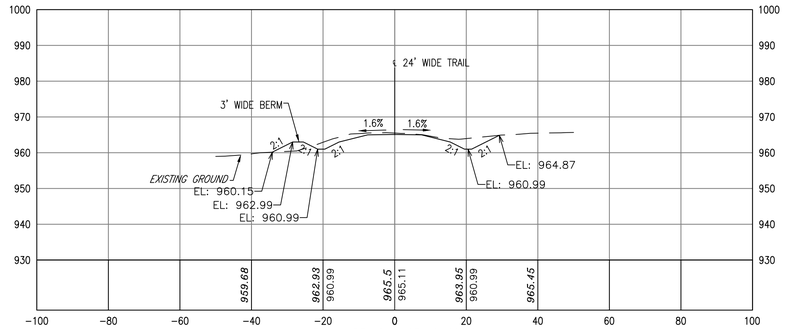
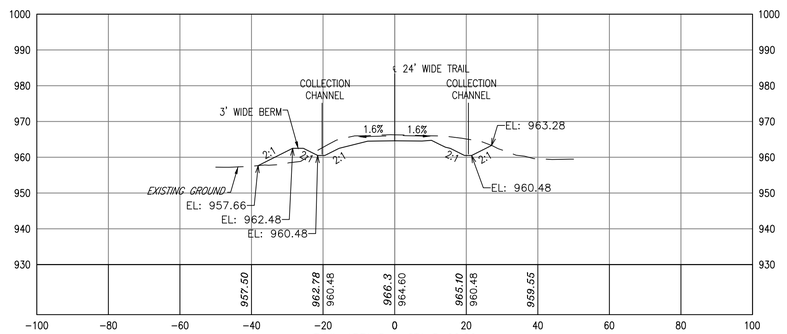
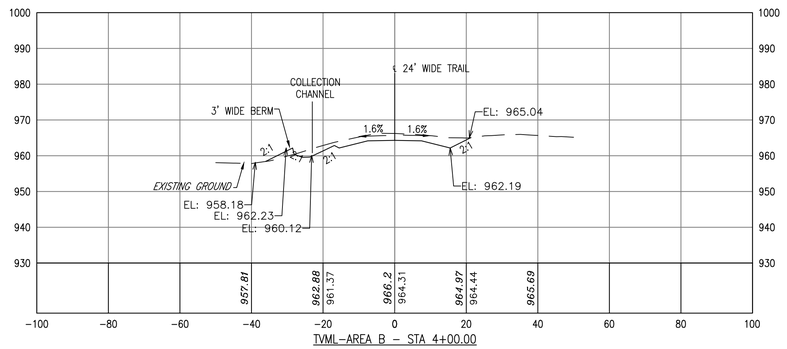


TVML–AREA B – STA 6+00.00



TVML–AREA B – STA 5+00.00



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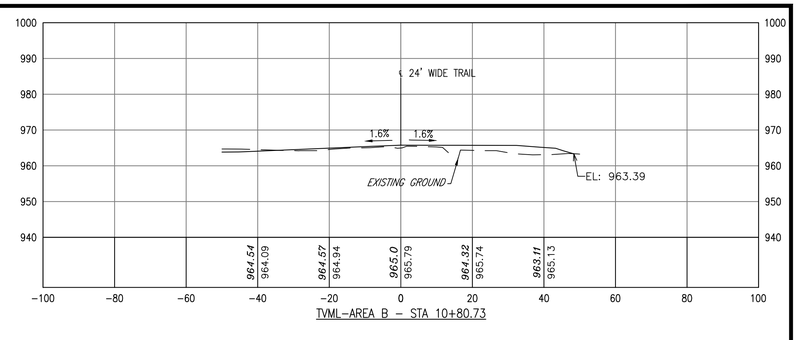
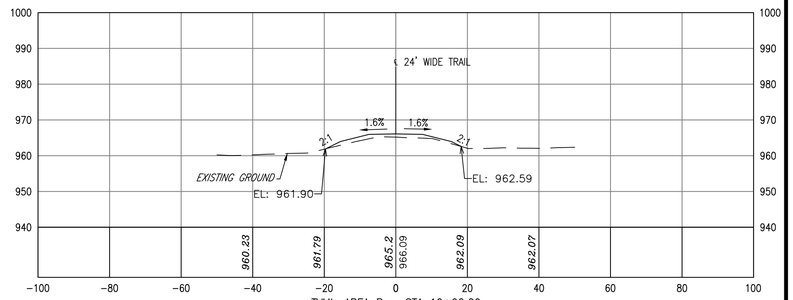
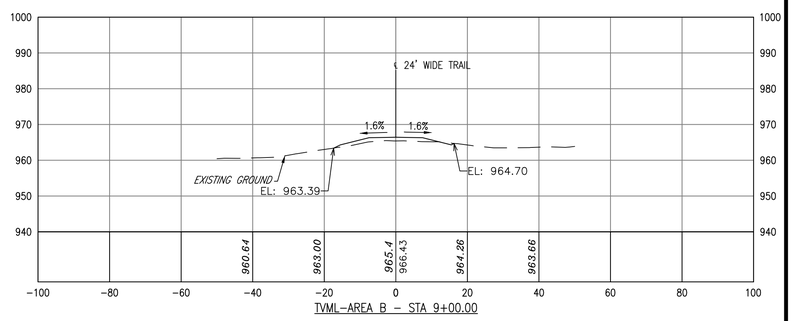


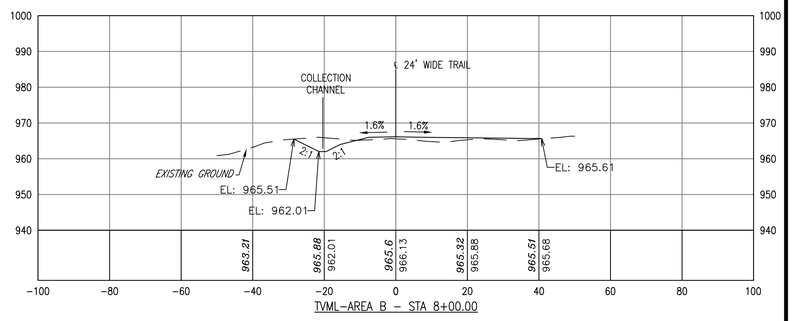
TVML–AREA B – STA 10+80.73



TVML–AREA B – STA 10+00.00



TVML–AREA B – STA 9+00.00



TVML–AREA B – STA 8+00.00

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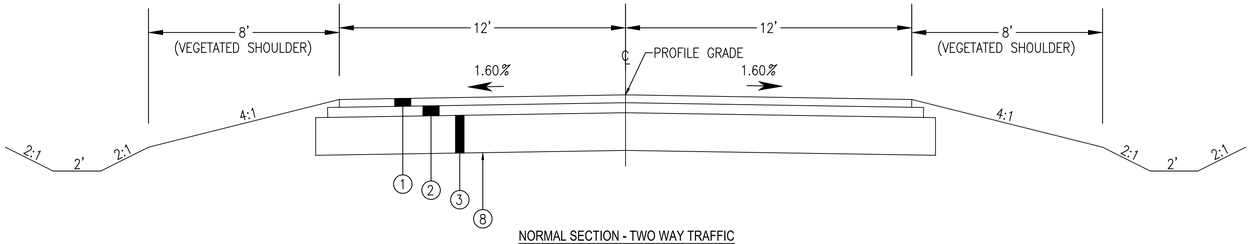
ITAM TRAINING AREA IMPROVEMENT AND TRAIL CREATION

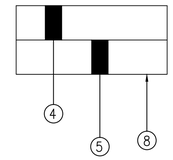
TASK 3 & 4 TVMA / TVML MANEUVER AREA B
TRAIL CROSS SECTIONS

DATE: 06-09-17	DES BY: MJL	BAKER PROJECT NUMBER 156220	SHEET NO: C-146
SCALE: 1" = 20'	DWN BY: MJL		
SIZE: ANSI D	CHK BY: SMS	GOV. CONTRACT NUMBER #W91364-12-D-0003	51 OF 89

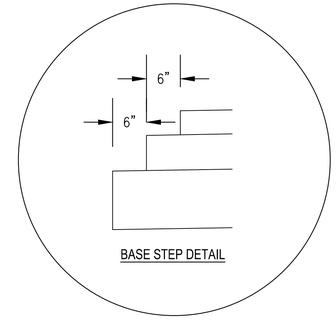
\\MOONPA1CL1.bkr.mbakercorp.com\vol2_projects\Ohio NG (ID)\156220 Tank Trails Camp Ravenna\05_Deliverables\Drawings\05 C_Civil\Sheet Files\C-136-146_T3_4_MAN LANE_CROSS SECTIONS.dwg Jun07,2017 - 10:22am Plotted By: Wheider



NORMAL SECTION - TWO WAY TRAFFIC
GROUP 7 S. SERVICE CONNECTOR STA. 0+00 TO STA. 15+20.30 (OPT. 1)
GROUP 7 S. SERVICE CONNECTOR STA. 12+25.56 TO STA. 24+28 (OPT. 2)



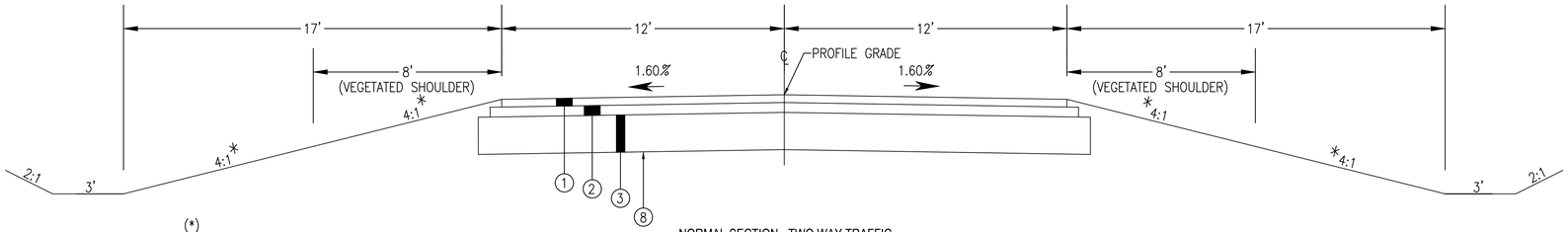
TURN PAD CONCRETE
PAVEMENT SECTION



BASE STEP DETAIL

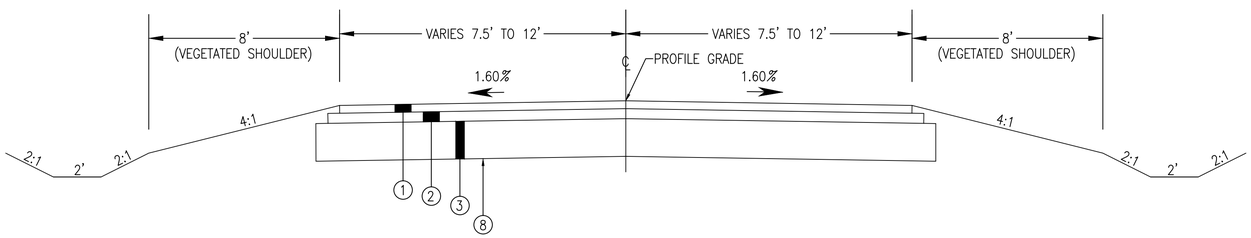
LEGEND

1. 4" ODOT ITEM 617 AGGREGATE SURFACE COURSE (ODOT CMS 703.18)
2. 5" ODOT ITEM 304 AGGREGATE BASE (ODOT CMS 703.17)
3. 19" WELL GRADED SAND(ODOT CMS 703.02.A OR 703.05.A)
4. 8" ODOT ITEM 451 REINFORCED CONCRETE (ODOT CMS 451.02)
5. 6" ODOT ITEM 304 AGGREGATE BASE (ODOT CMS 703.17)
6. 1 ½" ODOT ITEM 441 ASPHALT CONCRETE SURFACE COURSE, TYPE 1 (ODOT CMS 441)
7. 4 ½" ODOT ITEM 441 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2 (ODOT CMS 441)
8. ODOT ITEM 204 SUBGRADE COMPACTION (ODOT CMS 204)



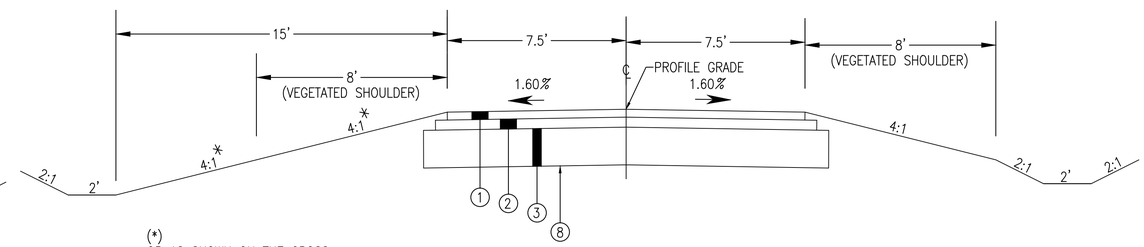
(*)
OR AS SHOWN ON THE CROSS SECTIONS.

NORMAL SECTION - TWO WAY TRAFFIC
AREA B BYPASS TRAIL STA. 0+65 TO STA. 4+06
GROUP 7 MANEUVER TRAIL STA. 0+00 TO STA. 49+15



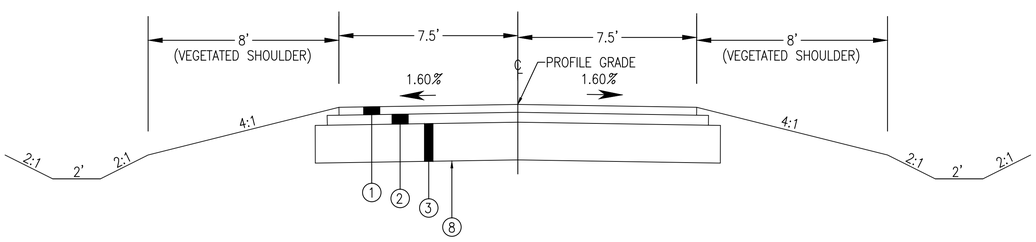
TRANSITION SECTION - TWO WAY TO ONE WAY TRAFFIC

GROUP 7 S. SERVICE CONNECTOR STA. 11+87.84 TO STA. 12+25.56 (OPT. 2)

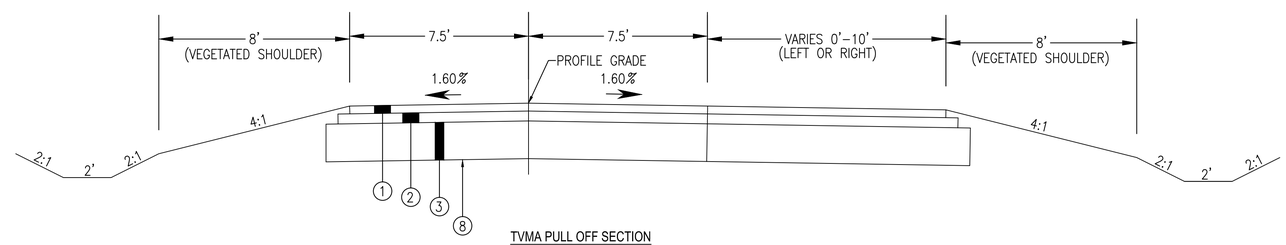


(*)
OR AS SHOWN ON THE CROSS SECTIONS.

NORMAL SECTION - ONE WAY TRAFFIC
GROUP 7 MANEUVER TRAIL STA. 50+24 TO STA. 53+61



NORMAL SECTION - ONE WAY TRAFFIC
GROUP 7 S. SERVICE CONNECTOR STA. 0+00 TO 11+87.84 (OPT. 2)
TVMA STA. 0+63 TO STA. 13+50
TVMA STA. 15+25 TO STA. 49+50
TVMA STA. 51+25 TO STA. 77+75
TVMA STA. 79+50 TO STA. 104+75
TVMA STA. 106+50 TO STA. 111+18



TVMA PULL OFF SECTION
STA. 13+50 TO STA. 15+25
STA. 49+50 TO STA. 51+25
STA. 77+75 TO STA. 79+50
STA. 104+75 TO STA. 106+50

NOTE: MATERIALS BASED ON ODOT 2016 CONSTRUCTION AND MATERIAL SPECIFICATIONS (CMS).

DATE	REVISION MADE	BY	AUTHORIZED

Michael Baker INTERNATIONAL

MICHAEL BAKER INTL.
100 AIRSIDE DRIVE
MOON TOWNSHIP, PA 15108

N

CAMP RAVENNA JOINT MILITARY TRAINING CENTER
RAVENNA, OHIO

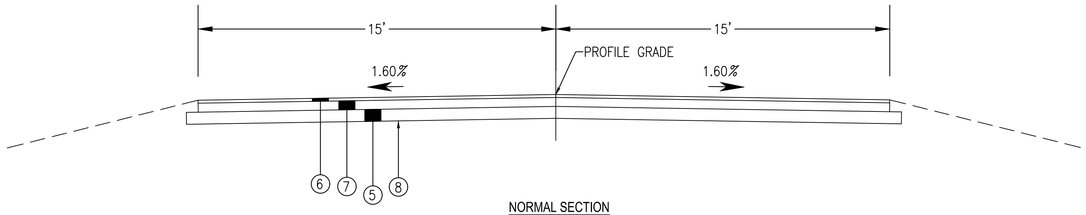
OHIO NATIONAL GUARD SINCE 1788

ITAM TRAINING AREA IMPROVEMENT AND TRAIL CREATION

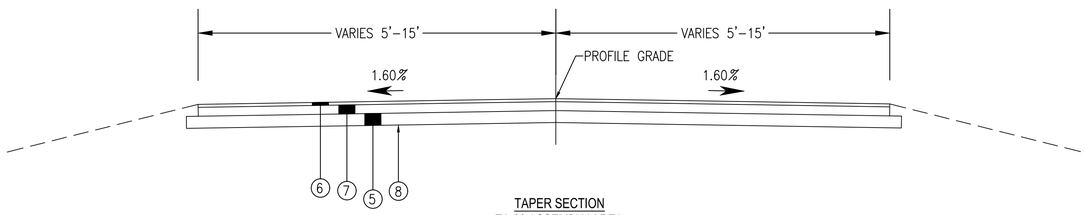
TYPICAL SECTIONS

DATE: 06-09-17	DES BY: WDN	BAKER PROJECT NUMBER 156220	SHEET NO: C-501
SCALE: NOT TO SCALE	DWN BY: MJL		
SIZE: ANSI D	CHK BY: SMS	GOV. CONTRACT NUMBER #W91364-12-D-0003	71 OF 89

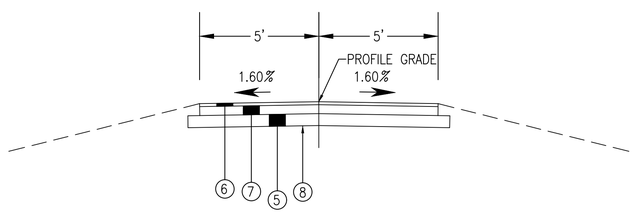
I:\Ohio NG ID\Q156220 Tank Trails Camp Ravenna\05_Deliverables\Drawings\05 C_Civil\Sheet Files\C-501_TYPICAL SECTIONS.dwg Sep15,2017 - 3:57pm Plotted By: Nicole.Miller



NORMAL SECTION
TA-29 ASSEMBLY AREA
STA. 1+25 TO STA. 3+00



TAPER SECTION
TA-29 ASSEMBLY AREA
STA. 0+75 TO STA. 1+25
STA. 3+00 TO STA. 3+50



EXISTING FULL DEPTH REPLACEMENT SECTION
TA-29 ASSEMBLY AREA
STA. 0+50 TO STA. 0+75
STA. 3+50 TO STA. 3+75

LEGEND

1. 4" ODOT ITEM 617 AGGREGATE SURFACE COURSE (ODOT CMS 703.18)
2. 5" ODOT ITEM 304 AGGREGATE BASE (ODOT CMS 703.17)
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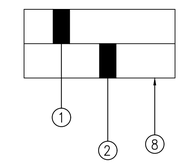

WATER PURIFICATION TRAINING
AREA AGGREGATE
PARKING PAD SECTION

NOTE: MATERIALS BASED ON ODOT 2016 CONSTRUCTION AND MATERIAL SPECIFICATIONS (CMS).

DATE	REVISION MADE	BY	AUTHORIZED

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RAVENNA, OHIO

OHIO NATIONAL GUARD SINCE 1788

ITAM TRAINING AREA IMPROVEMENT AND TRAIL CREATION

TYPICAL SECTIONS

DATE: 06-09-17	DES BY: WDN	BAKER PROJECT NUMBER 156220	SHEET NO: C-502
SCALE: NOT TO SCALE	DWN BY: MJL		
SIZE: ANSI D	CHK BY: SMS	GOV. CONTRACT NUMBER #W91364-12-D-0003	72 OF 89

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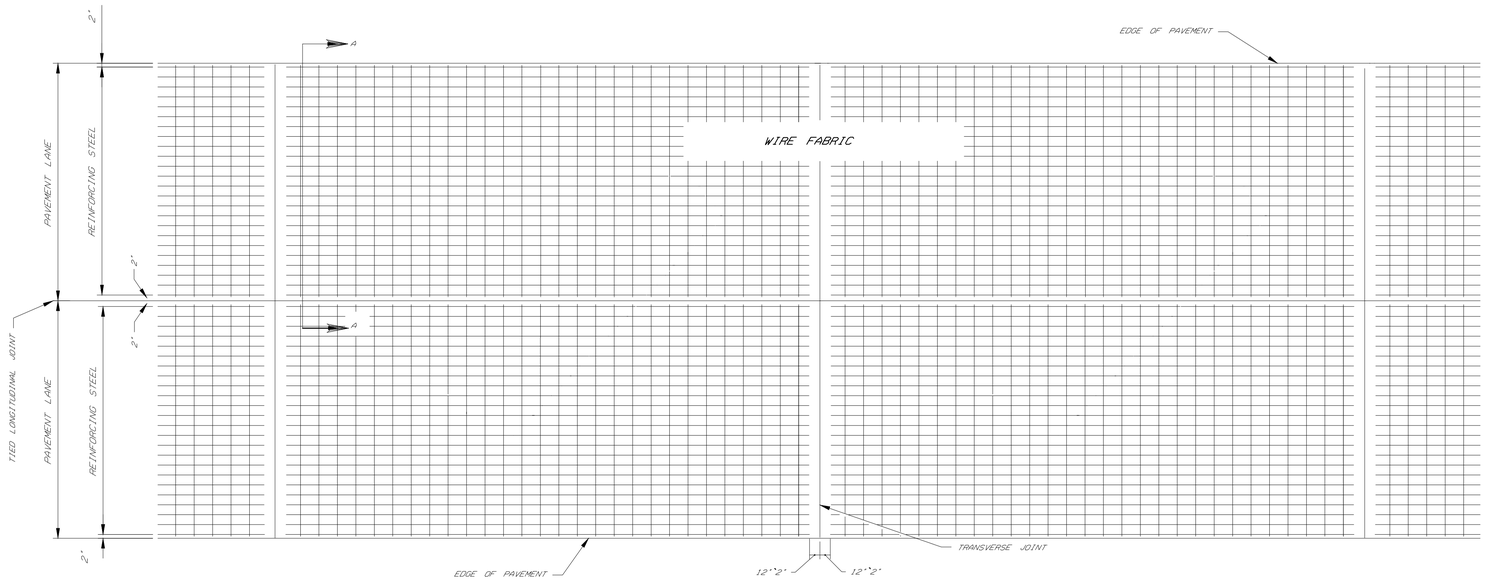
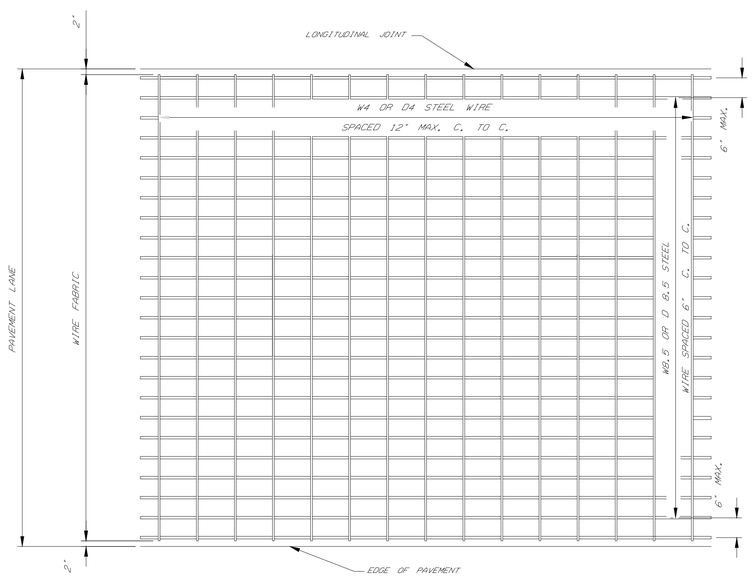
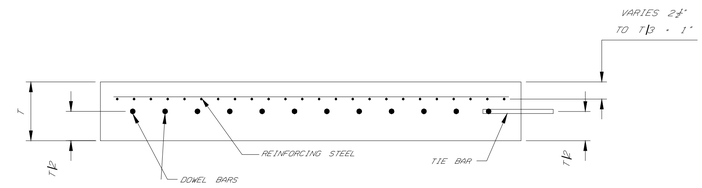


PLAN



WIRE FABRIC DETAIL



SECTION A-A

NOTES

STEEL REINFORCING: IN NORMAL OR WIDER LANE WIDTHS, REINFORCING MAY CONSIST OF TWO UNITS WITH AN APPROVED LONGITUDINAL HINGE. THE HINGE SHALLCONSIST OF W4 OR D4 STEEL WIRES CONNECTING THE TWO UNITS SUCH THAT THE LONGITUDINAL MEMBERS ON EITHER SIDE OF THE HINGE WILL BE PROPERLY SPACED WHEN THE REINFORCING IS IN THE FINAL POSTION.

REINFORCING STEEL IN FINAL POSITION SHALL NOT TOUCH EITHER THE DOWELS OR TIE BARS.

THIS DRAWING REPLACES BP-1.1 DATED 10-29-94.

NOTES:
1. ALL REINFORCING STEEL SPECIFIED SHALL BE PROVIDED IN ACCORDANCE WITH ODOT CMS 707.

REVISION DATE: 7-23-2020

STATE OF OHIO DEPARTMENT OF TRANSPORTATION ADMINISTRATOR: LARRY F. SULIVERLAND

PROJ. ENGINEER: M. EVANS

OFFICE OF PAVEMENT ENGINEERING

STANDARD, BOILERPLATE CONSTRUCTION DRAWING

CONCRETE PAVEMENT REINFORCING

STD. NUMBER: BP-1.1

1 / 1

DATE	REVISION MADE	BY	AUTHORIZED

Michael Baker INTERNATIONAL

MICHAEL BAKER INTL.
100 AIRSIDE DRIVE
MOON TOWNSHIP, PA 15108

CAMP RAVENNA JOINT MILITARY TRAINING CENTER
RAVENNA, OHIO

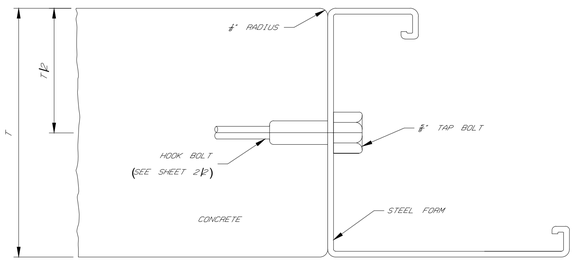
OHIO NATIONAL GUARD SINCE 1788

ITAM TRAINING AREA IMPROVEMENT AND TRAIL CREATION

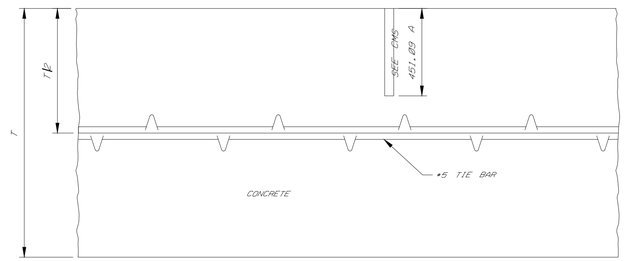
CONSTRUCTION DETAILS

DATE: 06-09-17	DES BY: WDN	BAKER PROJECT NUMBER 156220	SHEET NO: C-503
SCALE: NOT TO SCALE	DWN BY: MJL		
SIZE: ANSI D	CHK BY: SMS	GOV. CONTRACT NUMBER #W91364-12-D-0003	73 OF 89

\\MOONPA1CL1.bkr.mbakercorp.com\vol2_projects\Ohio NG ID\Q156220 Tank Trails Camp Ravenna\05_Deliverables\Drawings\05 C_Civil\Sheet Files\C-503-515_CONSTRUCTION DETAILS.dwg Jun06,2017 - 2:04pm Plotted By: WWeider



ACCEPTABLE METHOD OF FORMING JOINT



SAWED JOINT

NOTES

GENERAL: LONGITUDINAL JOINTS SHALL BE USED WHEN SPECIFIED ON THE TYPICAL SECTION AND SHALL BE CONSTRUCTED AS SHOWN ON THIS DRAWING IN ITEMS 451 AND 452 PAVEMENT AND ITEM 305 BASE.

THE JOINT SHALL BE ON THE CENTERLINE OF THE PAVEMENT UNLESS OTHERWISE SHOWN ON THE PLANS. WHERE THE PAVEMENT WIDTH EXCEEDS 16', AN ADDITIONAL LONGITUDINAL JOINT SHALL BE INTRODUCED INTO THE JOINTING DETAILS AS DIRECTED BY THE ENGINEER.

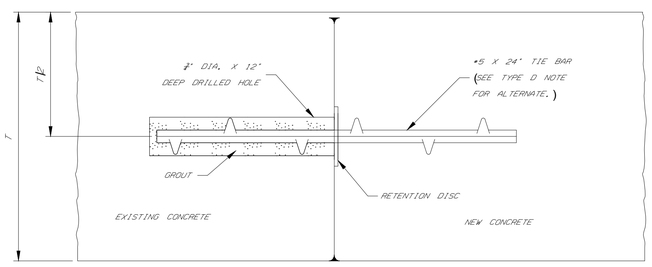
TIE BARS SHALL BE #5 DEFORMED BARS. A SATISFACTORY DEVICE SHALL BE USED TO HOLD THE TIE BARS IN PROPER POSITIONS OR THEY MAY BE INSTALLED BY A MECHANICAL INSTALLING DEVICE. TIE BARS SHALL BE CENTERED ON THE LONGITUDINAL JOINT AS NEARLY AS PRACTICAL.

BUTT JOINT: THE LONGITUDINAL JOINT BETWEEN ADJOINING SLABS POURED IN SEPARATE **BUTT JOINT:** SHALL BE BUTT JOINT WITH HOOK BOLTS OR TIE BARS, UNLESS OTHERWISE SHOWN ON THE PLANS. BENT TIE BARS SHALL NOT BE PERMITTED.

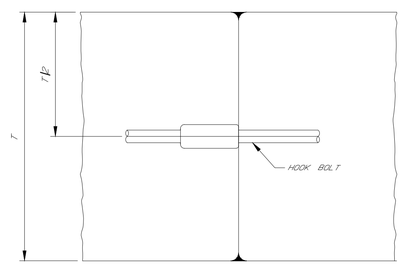
TYPE D (DRILLED TIED LONGITUDINAL) JOINT: TYPE D JOINTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CMS 255.05. THE NYLON OR PLASTIC RETENTION DISC SHALL BE CLEAR OR **TYPE D (DRILLED TIED LONGITUDINAL) JOINT:** THE REQUIREMENTS OR CMS 255.02. 3/4" EXPANSION ANCHORS, 712.01.A MAY BE USED IN LIEU OF THE #5 X 24" DEFORMED BAR AND SHALL BE INSTALLED ACCORDING TO THE MANUFACTURE'S RECOMMENDATIONS.

THE USE OF SELF DRILLING EXPANSION SHIELD ANCHORS, 712.01.B SHALL NOT BE PERMITTED.

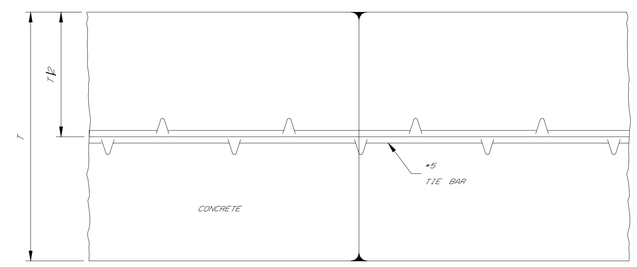
SEE SHEET 2/2 FOR ADDITIONAL DETAILS.



TYPE D DRILLED TIED LONGITUDINAL JOINT



BUTT JOINT
W/HOOK BOLT



BUTT JOINT
W/TIE BAR

THIS DRAWING REPLACES BP-2.1 DATED 7-19-13.

REVISION DATE	7-17-2015
STATE OF OHIO DEPARTMENT OF TRANSPORTATION ADMINISTRATOR	DAVID J. HUMPHREY
TITLE ENGINEER	D. MILLER
OFFICE OF PAVEMENT ENGINEERING	
TITLE	LONGITUDINAL PAVEMENT JOINTS
STD. NUMBER	BP-2.1
	1 / 2

NOTES:
1. ALL MATERIALS SPECIFIED SHALL BE PROVIDED IN ACCORDANCE WITH ODOT CMS.

DATE	REVISION MADE	BY	AUTHORIZED

Michael Baker INTERNATIONAL

MICHAEL BAKER INTL.
100 AIRSIDE DRIVE
MOON TOWNSHIP, PA 15108

CAMP RAVENNA JOINT MILITARY TRAINING CENTER
RAVENNA, OHIO

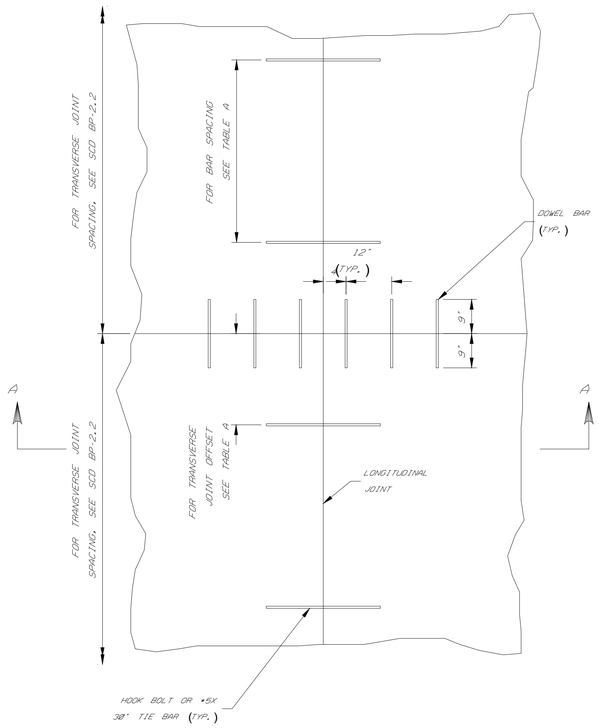
OHIO NATIONAL GUARD SINCE 1788

ITAM TRAINING AREA IMPROVEMENT AND TRAIL CREATION

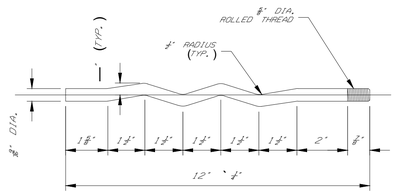
CONSTRUCTION DETAILS

DATE: 06-09-17	DES BY: WDN	BAKER PROJECT NUMBER 156220	SHEET NO: C-504
SCALE: NOT TO SCALE	DWN BY: MJL		
SIZE: ANSI D	CHK BY: SMS	GOV. CONTRACT NUMBER #W91364-12-D-0003	74 OF 89

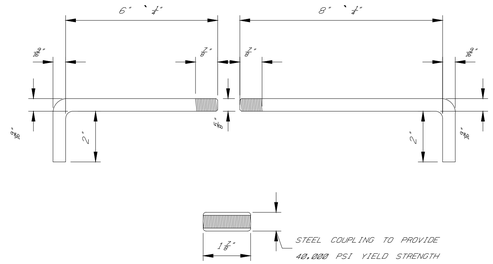
\\MOONPA1CL1.bkr.mbakercorp.com\vol2_projects\Ohio NG (DIQ)\156220 Task Trails Camp Ravenna\05_Deliverables\Drawings\05 C_Civil\Sheet Files\C-503-515_CONSTRUCTION DETAILS.dwg Jun/06,2017 - 2:01pm Plotted By: VWeider



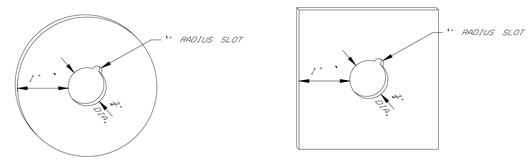
PLAN



HOOK BOLT ALTERNATE



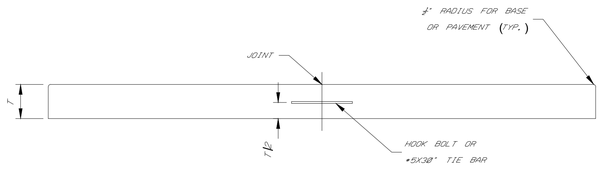
HOOK BOLT



NYLON OR PLASTIC GROUT RETENTION DISCS FOR DOWEL TIE BARS

1/8" MIN. THICK

TABLE A			
TRANSVERSE JOINT SPACING	NUMBER OF TIE BARS PER SLAB	MAX. SPACING BETWEEN TIE BARS	MINIMUM OFFSET TO TRANSVERSE JOINT
15'	6	30"	15"
21'	8	30"	21"



SECTION A-A

TIE BAR OR HOOK BOLT SPACING

EDGING: EDGE BUTT JOINTS WITH A THIN METAL EDGER HAVING A RADIUS OF 1/4". FINISH THE FREE EDGES OF THE PAVEMENT WITH A THIN METAL EDGER HAVING A RADIUS OF 1/4". ANY IMPRESSION LEFT IN THE SURFACE OF THE PAVEMENT BY THE FLAT PART OF THE EDGING TOOL SHALL BE ELIMINATED.

HOOK BOLTS: THREADED HOOK BOLTS AND ALTERNATES SHALL BE TURNED TO A TIGHT FIT WHEN INSTALLED IN COUPLINGS. ENSURE THE COUPLING IS LOCATED ON THE SAME SIDE OF THE JOINT AS THE SHORTER (6" ± 1/4") HOOK BOLT.

METAL STRENGTH: TIE BARS, HOOK BOLTS ASSEMBLIES, AND THE HOOK BOLT ALTERNATE SHALL HAVE A MINIMUM YIELD STRENGTH OF 40,000 PSI.

SPACING: TIE BARS SHALL NOT BE LOCATED WITHIN 15" OF ANY TRANSVERSE JOINT.

THIS DRAWING REPLACES BP-2.1 DATED 7-19-13.

STATE MAINTENANCE STANDARDS CONSTRUCTION SPECIFICATIONS

LONGITUDINAL PAVEMENT JOINTS

BP-2.1

2 / 2

STATE OF OHIO DEPARTMENT OF TRANSPORTATION ADMINISTRATOR: DAVID J. HUMPHREY

TOTAL ENGINEER: D. MILLER

OFFICE OF PAVEMENT ENGINEERING

REVISION DATE: 7-17-2015

NOTES:
1. ALL MATERIALS SPECIFIED SHALL BE PROVIDED IN ACCORDANCE WITH ODOT CMS.

DATE	REVISION MADE	BY	AUTHORIZED

Michael Baker INTERNATIONAL

MICHAEL BAKER INTL.
100 AIRSIDE DRIVE
MOON TOWNSHIP, PA 15108

CAMP RAVENNA JOINT MILITARY TRAINING CENTER
RAVENNA, OHIO

OHIO NATIONAL GUARD SINCE 1788

ITAM TRAINING AREA IMPROVEMENT AND TRAIL CREATION

CONSTRUCTION DETAILS

DATE: 06-09-17	DES BY: WDN	BAKER PROJECT NUMBER 156220	SHEET NO: C-505
SCALE: NOT TO SCALE	DWN BY: MJL	GOV. CONTRACT NUMBER #W91364-12-D-0003	75 OF 89
SIZE: ANSI D	CHK BY: SMS		

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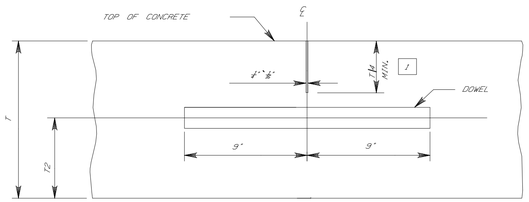
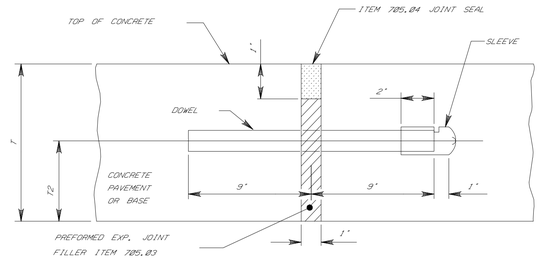


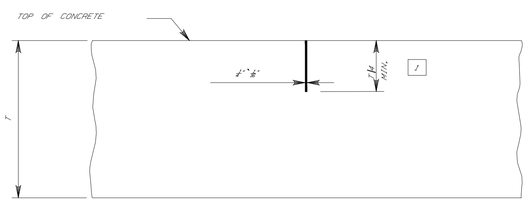
ITEM 451, 452 & 305



SECTION THROUGH EXP. JOINT

LEGEND

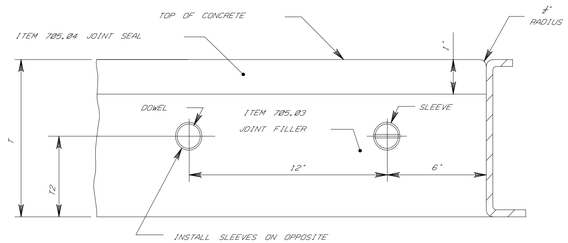
1 WHERE T >10", THE SAWCUT DEPTH SHALL BE T/3. IF USING EARLY ENTRY SAWS, CUT JOINTS 2¼" TO 2½" DEEP AND ⅛" WIDE.



ITEM 452 AND 305

FOR SHOULDERS, ALLEYS, DRIVEWAYS, ETC.

CONTRACTION JOINTS SECTIONS



SIDE ELEVATION OF EXP. JOINT

THROUGH CONCRETE PAVEMENT OR BASE

EXPANSION JOINTS

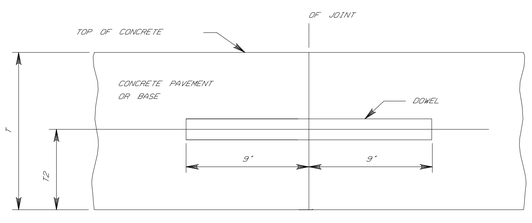
NOTES

GENERAL, NOTES AND DETAILS SHOWN ON THIS DRAWING SHALL BE CONSIDERED IN CONJUNCTION WITH AND SUPPLEMENTAL TO THE PERTINENT SPECIFICATIONS FOR PORTLAND CEMENT CONCRETE PAVEMENT AND BASES, AND RELATED INCIDENTALS.

JOINT COMPONENTS, THIS DRAWING IS INTENDED FOR USE WITH A UNIFORM DEPTH PAVEMENT. WHEN THE PROJECT INVOLVES THE PLACING OF VARIABLE DEPTH PAVEMENT, THE JOINT COMPONENTS SHALL BE HELD IN PLACE IN ACCORDANCE WITH THE METHOD SHOWN IN THE PLANS OR AS APPROVED BY THE ENGINEER.

CONTRACTION JOINTS, CONTRACTION JOINTS IN ITEMS 452 AND 305 SHALL NOT BE DOWELLED IN ALLEYS, PRIVATE DRIVES, OR COMMERCIAL DRIVES.

CONTRACTION JOINTS OF THE TYPE SPECIFIED SHALL BE SPACED IN ACCORDANCE WITH THE CONTRACTION JOINT SPACING TABLE.



SECTION THROUGH CONSTRUCTION JOINT

CONSTRUCTION JOINT

CONTRACTION JOINT SPACING

TYPES OF PAVEMENT OR BASE	MAXIMUM SPACING BETWEEN JOINTS
ITEM 451 REINFORCED CONCRETE PAVEMENT	21'
ITEM 452 NON-REINFORCED CONCRETE PAVEMENT	15'
ITEM 305 CONCRETE BASE	15'

THIS SHEET REPLACES BP-2.2 DATED 7-15-04.

NOTES:
1. ALL MATERIALS SPECIFIED SHALL BE PROVIDED IN ACCORDANCE WITH ODOT CMS.

REVISION DATE 7-17-2015

STATE OF OHIO DEPARTMENT OF TRANSPORTATION ADMINISTRATOR DAVID J. HUMPHREY

PROJ. ENGINEER D. MILLER

OFFICE OF PAVEMENT ENGINEERING

STATE HIGHWAY CONSTRUCTION DRAWING

LONGITUDINAL PAVEMENT JOINTS

STD. NUMBER BP-2.1

1 / 2

DATE	REVISION MADE	BY	AUTHORIZED

ITAM TRAINING AREA IMPROVEMENT AND TRAIL CREATION

CONSTRUCTION DETAILS

Michael Baker INTERNATIONAL

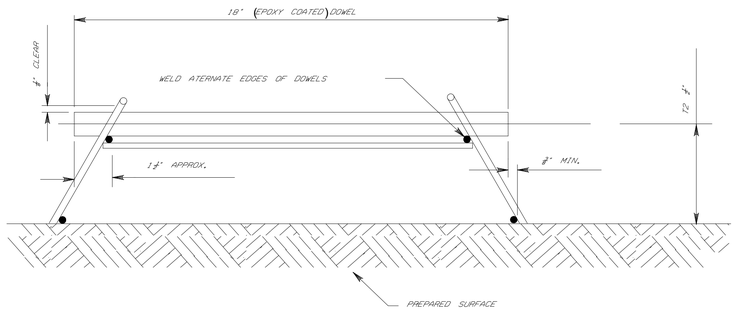
MICHAEL BAKER INTL.
100 AIRSIDE DRIVE
MOON TOWNSHIP, PA 15108

CAMP RAVENNA JOINT MILITARY TRAINING CENTER
RAVENNA, OHIO

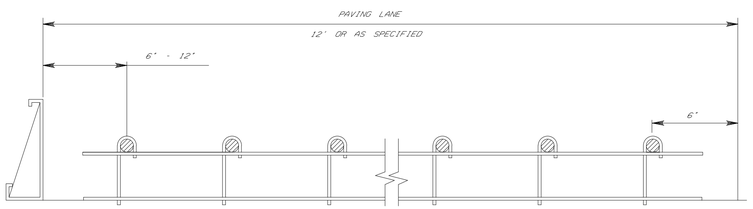
OHIO NATIONAL GUARD SINCE 1788

DATE: 06-09-17	DES BY: WDN	BAKER PROJECT NUMBER 156220	SHEET NO: C-506
SCALE: NOT TO SCALE	DWN BY: MJL		
SIZE: ANSI D	CHK BY: SMS	GOV. CONTRACT NUMBER #W91364-12-D-0003	76 OF 89

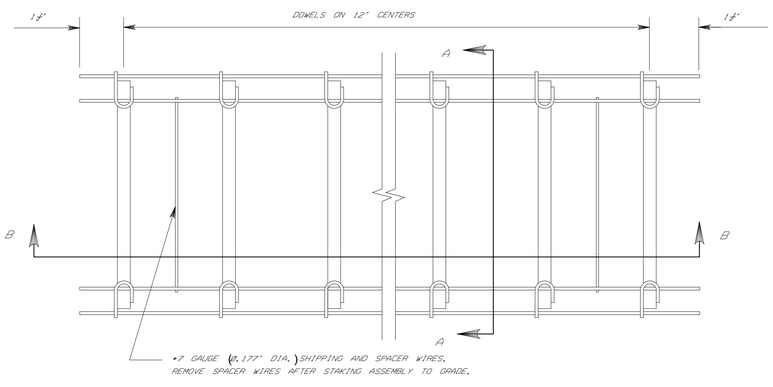
\\MONPA1CL1.bkr.mbakercorp.com\wd2_projects\Ohio NG IDIQ\156220 Talk Trails Camp Ravenna\05_Deliverables\Drawings\05 C_Civil\Sheet Files\C-503-515_CONSTRUCTION DETAILS.dwg Jun08,2017 - 1:59pm Plotted By: WNeider



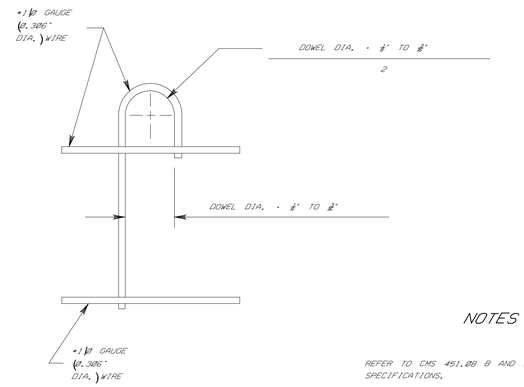
SECTION A-A



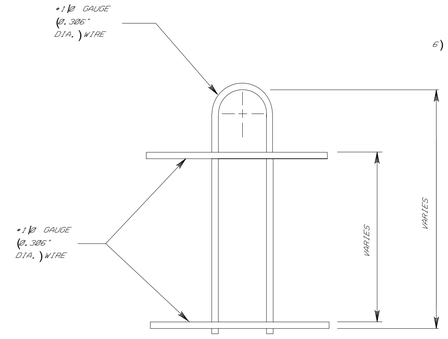
SECTION B-B



PLAN VIEW



J-LEG DETAIL
(ALTERNATE)



U-LEG DETAIL

NOTES

REFER TO CMS 451.08 B AND 709.13 FOR DOWEL SPECIFICATIONS.

WIRE SIZES SHOWN ARE MINIMUM REQUIRED.

1) ALL WIRE INTERSECTIONS ARE TO BE WELDED.

2) STAKES TYPICALLY APPLIED AT WORKING ENDS OF DOWEL.

3) TOLERANCES:

4) A) ⅛" PER FOOT UNLESS OTHERWISE SPECIFIED.

5) B) CENTERLINE OF INDIVIDUAL DOWELS SHALL BE PARALLEL TO EACH OTHER, THE SURFACE AND THE CENTERLINE OF THE SLAB.

C ON CENTERS SHOULD BE ¼".

D DOWELS SHOULD BE PLACED AT MID-DEPTH OF SLAB.

6) J-LEG OR U-LEG TO BE INSTALLED ON INSIDE OR OUTSIDE OF SUBFRAME.

THIS SHEET REPLACES BP-2.2 DATED 7-16-04.

REVISION DATE: 7-17-2015

STATE OF OHIO DEPARTMENT OF TRANSPORTATION ADMINISTRATOR: DAVID J. HUMPHREY

TITLE ENGINEER: D. MILLER

OFFICE OF PAVEMENT ENGINEERING

TITLE: LONGITUDINAL PAVEMENT JOINTS

STANDARD DRAWING CONSTRUCTION DRAWING

SHEET NUMBER: BP-2.1

2 / 2

NOTES:
1. ALL MATERIALS SPECIFIED SHALL BE PROVIDED IN ACCORDANCE WITH ODOT CMS.

DATE	REVISION MADE	BY	AUTHORIZED

Michael Baker INTERNATIONAL

MICHAEL BAKER INTL.
100 AIRSIDE DRIVE
MOON TOWNSHIP, PA 15108

CAMP RAVENNA JOINT MILITARY TRAINING CENTER
RAVENNA, OHIO

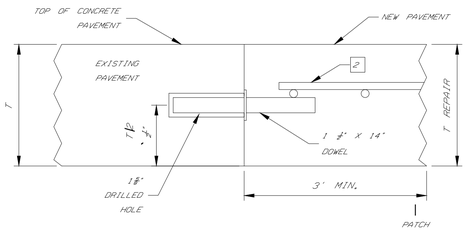
OHIO NATIONAL GUARD SINCE 1788

ITAM TRAINING AREA IMPROVEMENT AND TRAIL CREATION

CONSTRUCTION DETAILS

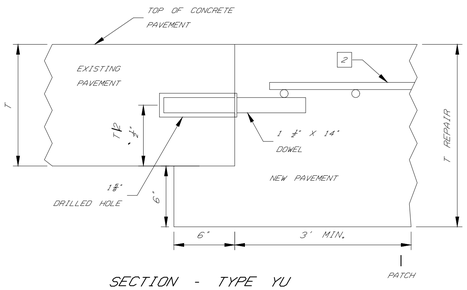
DATE: 06-09-17	DES BY: WDN	BAKER PROJECT NUMBER 156220	SHEET NO: C-507
SCALE: NOT TO SCALE	DWN BY: MJL		
SIZE: ANSI D	CHK BY: SMS	GOV. CONTRACT NUMBER #W91364-12-D-0003	77 OF 89

\\MOONPA1CL1.bkr.mbakercorp.com\vol2_projects\Ohio NG (DIO)\156220 Task Trails Camp Ravenna\05_Deliverables\Drawings\05 C_Civil\Sheet Files\C-503-515_CONSTRUCTION DETAILS.dwg Jun/06,2017 - 1:58pm Plotted By: VWeider



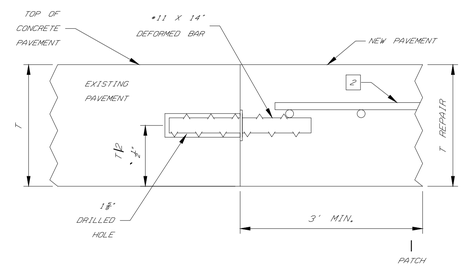
SECTION - TYPE Y

CONTRACTION



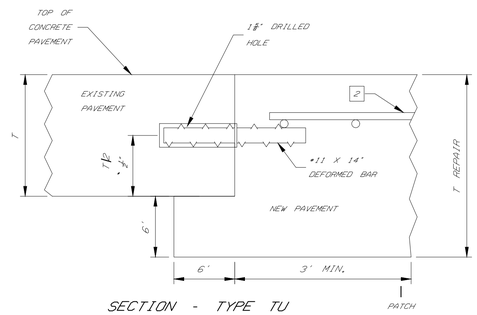
SECTION - TYPE YU

UNDERCUT , CONTRACTION



SECTION - TYPE T

TIED



SECTION - TYPE TU

UNDERCUT , TIED

NOTES

GENERAL, ALL JOINTS SHALL BE CONSTRUCTED NORMAL TO THE CENTERLINE OF THE PAVEMENT LANE UNLESS OTHERWISE SPECIFIED IN THE PLANS.

ALL DOWEL HOLES SHALL BE DRILLED BY A MECHANICAL DEVICE THAT WILL ALLOW INDEPENDENT ADJUSTMENT OF ALL DRILL SHAFTS IN THE HORIZONTAL AND VERTICAL DIRECTION. THE DEVICE SHALL BE CAPABLE OF DRILLING A MINIMUM OF THREE HOLES AT A TIME.

ALL SMOOTH DOWELS SHALL BE COATED WITH A BOND BREAKING MATERIAL CONFORMING TO 451.03 B AFTER THEY HAVE BEEN INSTALLED IN THE EXISTING PAVEMENT AND JUST PRIOR TO PLACING THE PATCH. ALL DOWELS SHALL BE PLACED PARALLEL TO THE PAVEMENT SURFACE AND THE CENTERLINE OF THE PAVEMENT LANE.

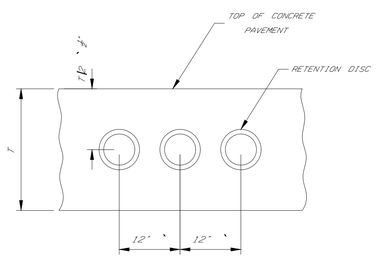
THIS STANDARD DRAWING IS INTENDED FOR USE IN REPAIRING BOTH CONCRETE AND COMPOSITE PAVEMENTS. FOR CLARITY, ASPHALT OVERLAYS ARE NOT SHOWN.

WHEN PREFABRICATED EDGE DRAINS ARE USED, THEY SHALL BE PLACED AFTER JOINT REPAIRS ARE COMPLETED.

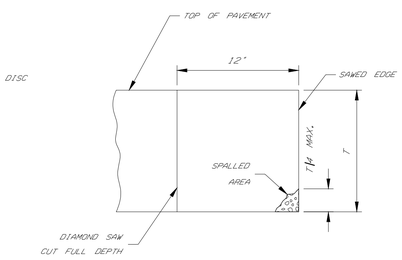
TYPE N JOINT, JOINTS REFERRED TO AS TYPE N JOINTS ON THE PLAN SHALL BE CONSTRUCTED AS CONTRACTION JOINTS PER SCD BP-2.2.

ADDITIONAL PAVEMENT REMOVAL, IF, AFTER THE SAWING AND REMOVAL OF THE PAVEMENT FROM THE AREA TO BE REPAIRED, THE FACE OF THE REMAINING PAVEMENT IS SPALLED OR DETERIORATED FOR A HEIGHT GREATER THAN ONE-FOURTH THE THICKNESS OF THE RIGID PAVEMENT, AN ADDITIONAL SAW CUT SHALL BE MADE AS SHOWN AND AS DIRECTED BY THEENGINEER. THIS ADDITIONAL WORK SHALL BE MEASURED FOR ADDITIONAL PAYMENT FOR FULL DEPTH PAVEMENT SAWING. RIGID PAVEMENT REMOVAL AND REPLACEMENT.

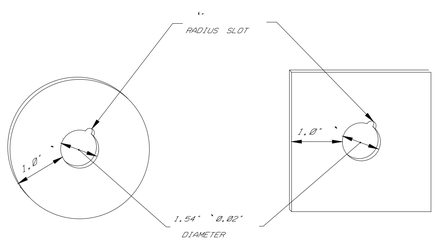
LONGITUDINAL JOINT, FOR PATCHES 10' OR GREATER IN LENGTH, THE LONGITUDINAL JOINT SHALL BE CONSTRUCTED PER SCD BP-2.1. THE TIE BARS OR HOOK BOLTS SHALL BE SPACED ACCORDING TO SCD BP-2.1.



HOLE DRILLING DETAILS

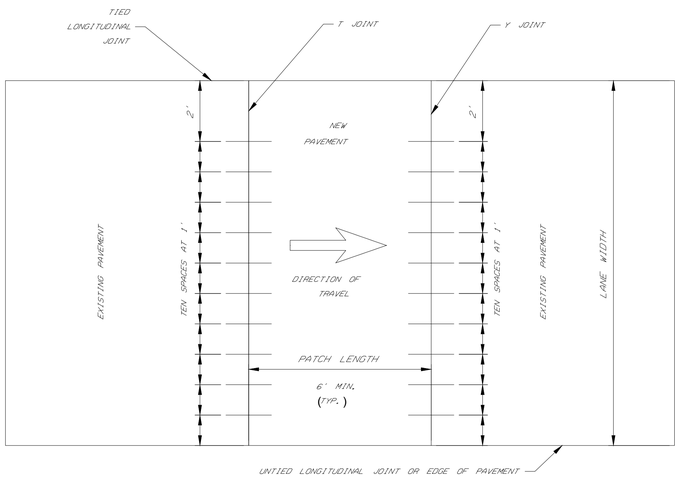


ADDITIONAL PAVEMENT REMOVALS



NYLON OR PLASTIC GROUT RETENTION DISCS FOR DOWEL/TIE BARS 3

1/16" MIN. THICKNESS



TIE/DOWEL BAR PLACEMENT DETAIL

SEE 1 FOR BAR PLACEMENT

LEGEND

1 BARS SHALL BE PLACED 2' FROM ALL TIED LONGITUDINAL JOINTS AND CONTINUE ACROSS WITH A 1' SPACING TO THE EDGE OF PAVEMENT OR AN UNTIED LONGITUDINAL JOINT. WHERE LANE WIDTHS ARE BETWEEN TWO TIED LONGITUDINAL JOINTS, BEGIN BARS 2' FROM EACH TIED LANGITUDINAL JOINT AND CONTINUE ACROSS WITH A 1' SPACING.

2 REINFORCEMENT WILL BE REQUIRED FOR ALL REPAIRS GREATER THAN 10' IN LENGTH OR FOR CLASS FS REPAIRS THAT WILL BE OPENED TO TRAFFIC WITHIN 24 HOURS OF PLACEMENT. THE FABRIC SHALL CONSIST OF W8.5 OR D8.5 LONGITUDINAL WIRES SPACED 6" C/C AND W4 OR D4 TRANSVERSE WIRES SPACED 12" C/C. THE CLEARANCE FROM THE END OF THE WIRE FABRIC TO THE EDGE OF PAVEMENT OR NEW TRANSVERSE JOINT SHALL BE 4" `2".

3 NYLON OR PLASTIC GROUT RETENTION DISCS SHALL BE CLEAR OR OPAQUE WHITE IN COLOR.

NOTES:

1. ALL MATERIALS SPECIFIED SHALL BE PROVIDED IN ACCORDANCE WITH ODOT CMS.

REVISION DATE 7-23-2020

STATE OF OHIO DEPARTMENT OF TRANSPORTATION ADMINISTRATOR LARRY F. SUTHERLAND

ROAD ENGINEER M. EVANS

OFFICE OF PAVEMENT ENGINEERING

STANDARDS, ROADWAY CONSTRUCTION DRAWING

CONCRETE PAVEMENT REINFORCING

THIS DRAWING REPLACES BP-2.5 DATED 7-19-88

ROAD NUMBER BP-1.1

1 / 1

DATE	REVISION MADE	BY	AUTHORIZED

Michael Baker INTERNATIONAL

MICHAEL BAKER INTL.
100 AIRSIDE DRIVE
MOON TOWNSHIP, PA 15108

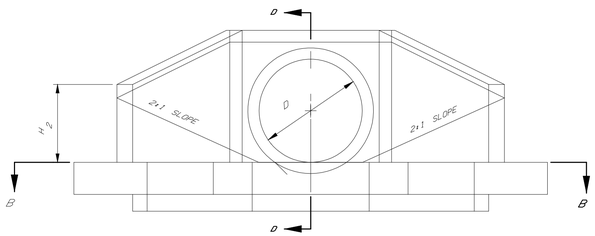
CAMP RAVENNA JOINT MILITARY TRAINING CENTER
RAVENNA, OHIO

ITAM TRAINING AREA IMPROVEMENT AND TRAIL CREATION

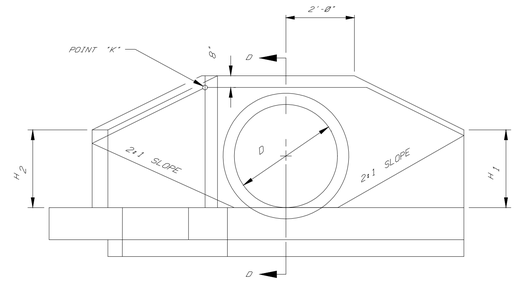
CONSTRUCTION DETAILS

DATE: 06-09-17	DES BY: WDN	BAKER PROJECT NUMBER 156220	SHEET NO: C-508
SCALE: NOT TO SCALE	DWN BY: MJL	GOV. CONTRACT NUMBER #W91364-12-D-0003	78 OF 89
SIZE: ANSI D	CHK BY: SMS		

\\MONPA1CL1.bkr.mbakercorp.com\vol2_projects\Ohio NG ID\Q156220 Tank Trails Camp Ravenna\05_Deliverables\Drawings\05 C_Civil\Sheet Files\C-503-515_CONSTRUCTION DETAILS.dwg Jun08,2017 - 1:57pm Plotted By: WNeidler



ELEVATION



ELEVATION

NOTES

APPLICATION: PROVIDE FULL HEIGHT HEADWALLS FOR SKEWED AND NON-SKEWED CULVERTS HAVING A DIAMETER OR RISE OF 42" TO 84" INCLUSIVE. USE TYPE 'A' WHEN THE SKEW ANGLE (℄) IS TEN DEGREES OR LESS AND TYPE 'B' WHEN THE SKEW ANGLE IS OVER TEN DEGREES.

CONCRETE: USE 4000 PSI COMPRESSIVE STRENGTH CONCRETE.

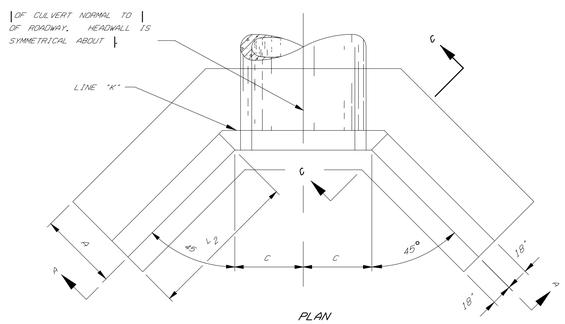
REINFORCING STEEL: PROVIDE EPOXY COATED #5 BARS.

DETAILS AND QUANTITIES: ARE SHOWN FOR CIRCULAR SECTIONS ONLY. WHEN USED WITH REINFORCED ELLIPTICAL CONCRETE PIPE OR CORRUGATED METAL PIPE ARCHES, ADJUST DIMENSIONS AND QUANTITIES TO CONFORM TO THOSE LISTED FOR THE NEAREST SIZE CIRCULAR PIPE. APPLY THE DIMENSIONS ESTABLISHED BY VERTICAL DIAMETER TO SPAN. ROUND ALL CALCULATED DIMENSIONS ESTABLISHED BY HORIZONTAL DIAMETER TO THE NEAREST 1'. CHAMFER ALL EXPOSED CORNERS ¾".

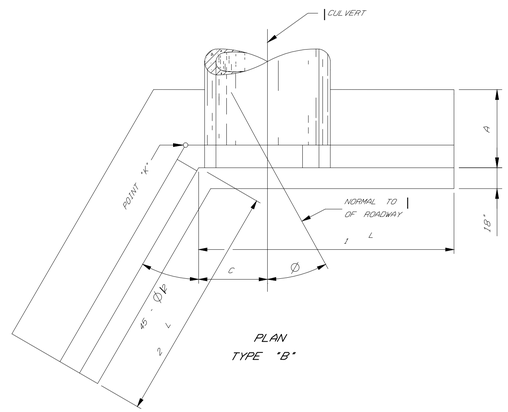
FOUNDATION: WHERE THE SOIL BORINGS INDICATE A BEARING CAPACITY OF LESS THAN 2,600 POUNDS PER SQUARE FOOT, INCREASE THE WIDTH OF THE FOOTING.

HEADWALL LOCATION: DETERMINE BY THE INTERSECTION OF THE EMBANKMENT SLOPE AT THE BACK OF THE HEADWALL AT POINT 'K'. PROVIDE 2:1 SLOPES ADJACENT TO THE HEADWALL.

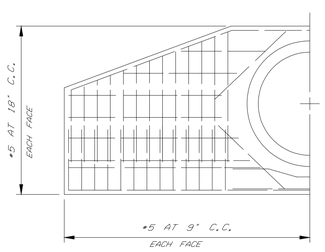
PAYMENT: ITEM 602 CONCRETE MASONRY INCLUDES REINFORCING.



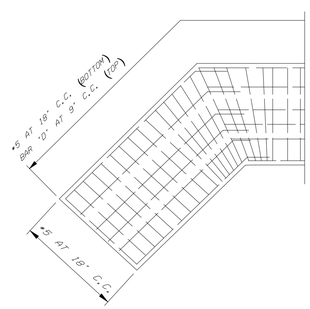
PLAN
TYPE 'A'



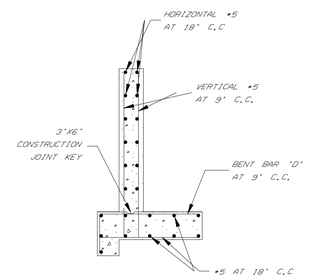
PLAN
TYPE 'B'



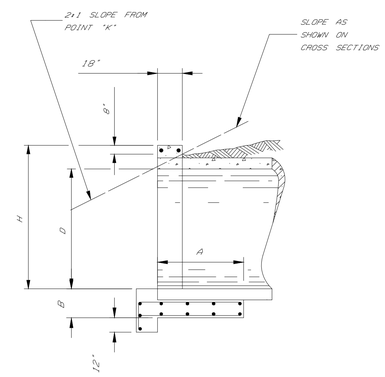
HALF SECTION A-A



HALF-SECTION B-B



SECTION C-C



SECTION D-D

NOTES:
1. ALL MATERIALS SPECIFIED SHALL BE PROVIDED IN ACCORDANCE WITH ODOT CMS.

STATE OF OHIO DEPARTMENT OF TRANSPORTATION HYDRAULIC ENGINEER
JEFFERY E. SYARK

REVISIONS

RESIDENT HYDRAULIC ENGINEER
M. COTIOLA

OFFICE OF HYDRAULICS ENGINEERING

STANDARD HYDRAULIC CONSTRUCTION DRAWING
FULL-HEIGHT HEADWALLS
SCD HYDRAULICS_2_12378

SCD NUMBER
HW-1.1

1 / 2

DATE	REVISION MADE	BY	AUTHORIZED

Michael Baker INTERNATIONAL

MICHAEL BAKER INTL.
100 AIRSIDE DRIVE
MOON TOWNSHIP, PA 15108

CAMP RAVENNA JOINT MILITARY TRAINING CENTER
RAVENNA, OHIO

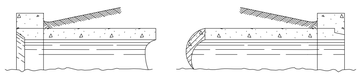
OHIO NATIONAL GUARD SINCE 1788

ITAM TRAINING AREA IMPROVEMENT AND TRAIL CREATION

CONSTRUCTION DETAILS

DATE: 06-09-17	DES BY: WDN	BAKER PROJECT NUMBER 156220	SHEET NO: C-509
SCALE: NOT TO SCALE	DWN BY: MJL		
SIZE: ANSI D	CHK BY: SMS	GOV. CONTRACT NUMBER #W91364-12-D-0003	79 OF 89

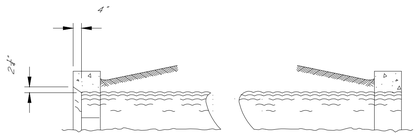
\\MOONPA1CL1.bkr.mbakercorp.com\vol2_projects\Ohio ING (DIO)\156220 Task Trails Camp Ravenna\05_Deliverables\Drawings\05 C_Civil\Sheet Files\C-503-515_CONSTRUCTION DETAILS.dwg Jun08,2017 - 1:52pm Plotted By: WWelder



INLET END
GROOVE OR BELL UPSTREAM

OUTLET END

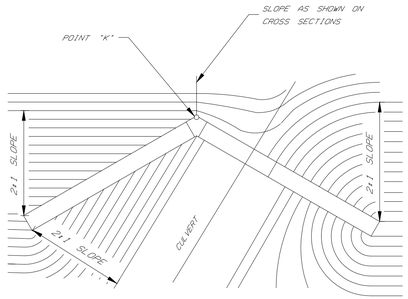
RIGID PIPE



INLET END

OUTLET END

CORRUGATED PIPE
END TREATMENT OF HEADWALL



LOCATION AND GRADING PLAN FOR
SKEWED PIPE CULVERT - TYPE B

NOTES:
1. ALL MATERIALS SPECIFIED SHALL BE PROVIDED IN ACCORDANCE WITH ODOT CMS.

FULL-HEIGHT HEADWALLS ENGLISH

PIPE DIA. D	H	A	B	C	BAR# D	Ø ≈ 0					Ø ≈ 15							Ø ≈ 30							Ø ≈ 45							PIPE DIA. D
						L_2	H_2	CONC. CMP CY	CONC. RCP CY	STEEL LBS.	L_1	L_2	H_1	H_2	CONC. CMP CY	CONC. RCP CY	STEEL LBS.	L_1	L_2	H_1	H_2	CONC. CMP CY	CONC. RCP CY	STEEL LBS.	L_1	L_2	H_1	H_2	CONC. CMP CY	CONC. RCP CY	STEEL LBS.	
42"	4'-11"	3'-3"	1'-6"	2'-6"	#5	3'-7"	3'-1"	7.0	6.7	598	8'-9"	4'-6"	3'-8"	3'-2"	7.3	7.1	619	7'-10"	5'-9"	3'-2"	3'-3"	7.5	7.3	633	7'-10"	7'-9"	3'-2"	3'-3"	8.7	8.5	718	42"
48"	5'-5"	3'-6"	1'-6"	2'-9"	#5	4'-4"	3'-4"	8.5	8.2	793	10'-0"	5'-4"	4'-1"	3'-5"	9.0	8.7	776	8'-9"	6'-10"	3'-5"	3'-6"	9.1	8.8	801	8'-9"	9'-2"	3'-5"	3'-7"	10.6	10.3	925	48"
54"	5'-11"	3'-9"	1'-6"	3'-0"	#5	5'-2"	3'-8"	10.3	10.0	1.069	11'-4"	6'-3"	4'-6"	3'-8"	10.9	10.5	1.026	9'-8"	7'-11"	3'-8"	3'-9"	10.8	10.5	1.024	9'-8"	10'-7"	3'-8"	3'-10"	12.6	12.2	1.188	54"
60"	6'-6"	4'-0"	1'-6"	3'-3"	#5	5'-11"	3'-11"	12.3	11.8	1.149	12'-7"	7'-2"	4'-10"	4'-0"	12.9	12.4	1.174	10'-7"	9'-0"	3'-10"	4'-1"	12.7	12.3	1.157	10'-7"	12'-0"	3'-10"	4'-1"	14.8	14.3	1.354	60"
72"	7'-7"	4'-6"	1'-7"	3'-9"	#7	7'-5"	4'-5"	17.0	16.2	1.783	15'-1"	8'-11"	5'-7"	4'-6"	17.8	17.1	1.811	12'-5"	11'-2"	4'-3"	4'-7"	17.3	16.6	1.788	12'-5"	14'-10"	4'-3"	4'-8"	20.2	19.6	2.076	72"
84"	8'-8"	5'-0"	1'-10"	4'-3"	#8	9'-0"	5'-0"	23.7	22.8	2.595	17'-7"	10'-9"	6'-4"	5'-1"	24.8	23.9	2.596	14'-7"	13'-4"	4'-10"	5'-2"	24.1	23.3	2.511	14'-3"	17'-8"	4'-8"	5'-2"	27.9	27.0	2.990	84"

STATE OF OHIO DEPARTMENT OF TRANSPORTATION HYDRAULIC ENGINEER
JEFFERY E. SYAR

REVISIONS

HIGHWAY HYDRAULIC ENGINEER
M. COTIOLA

OFFICE OF HYDRAULICS ENGINEERING

O:\HEADWS HYDRAUL\C CONSTRUCT\SHA HEADWALL

FULL-HEIGHT HEADWALLS
SCD HYDRAULICS.312422

SCD. THROUGH
HW-1.1

2 / 2

DATE	REVISION MADE	BY	AUTHORIZED

Michael Baker INTERNATIONAL

MICHAEL BAKER INTL.
100 AIRSIDE DRIVE
MOON TOWNSHIP, PA 15108

CAMP RAVENNA JOINT MILITARY TRAINING CENTER
RAVENNA, OHIO

OHIO NATIONAL GUARD SINCE 1788

ITAM TRAINING AREA IMPROVEMENT AND TRAIL CREATION

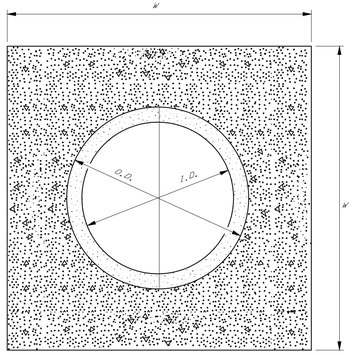
CONSTRUCTION DETAILS

DATE: 06-09-17 | DES BY: WDN
SCALE: NOT TO SCALE | DWN BY: MJL
SIZE: ANSI D | CHK BY: SMS

BAKER PROJECT NUMBER 156220
GOV. CONTRACT NUMBER #W91364-12-D-0003

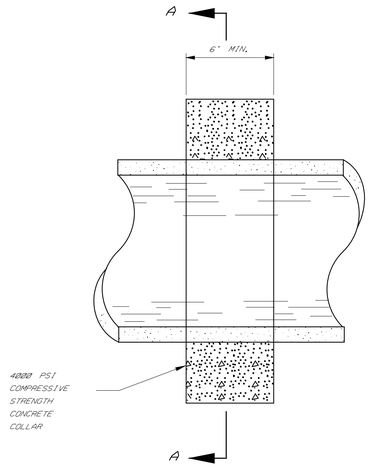
SHEET NO: C-510
80 OF 89

\\MOONPA1\Cl.1.bkr.mbakercorp.com\vol2_projects\Ohio NG ID\Q156220 Tank Trails Camp Ravenna\05_Deliverables\Drawings\05 C_Civil\Sheet Files\C-503-515_CONSTRUCTION DETAILS.dwg Jun06,2017 - 1:51pm Plotted By: VWeider



SECTION A-A

NTS



ANTI-SEEP COLLAR

NTS

DIAMETER I.D.	CONCRETE C.Y.		
	DIMENSION OF COLLAR W X W (FT.)		
FT.	3X3	4X4	5X5
1	0.15	0.28	0.45
2	NA	0.24	0.40
3	NA	NA	0.33

NOTES

ANTI-SEEP COLLARS. PROVIDE AN ANTI-SEEP COLLAR AS SHOWN IN THE PLANS. PAYMENT FOR THE COLLAR IS AT THE CONTRACT PRICE FOR **ITEM 602. CONCRETE MASONRY.**

OBSERVATION WELL. CONSTRUCT THE OBSERVATION WELL TO A DEPTH AND LOCATION AS SHOWN IN THE PLANS. ALL MATERIALS AND LABOR INCLUDING EXCAVATION AND BACKFILL ARE PAID FOR AT THE CONTRACT PRICE FOR **ITEM 611. OBSERVATION WELL.**

INFILTRATION TRENCH. CONSTRUCT THE INFILTRATION TRENCH TO THE DIMENSIONS SHOWN ON THE PLAN. THE TOP 6 INCH COVERING IS PAID FOR AT THE CONTRACT PRICE FOR **ITEM 601. INFILTRATION BASIN AGGREGATE.**

ALL OTHER MATERIALS AND LABOR, INCLUDING EXCAVATION, GEOTEXTILE FABRIC, AND BACKFILL ARE PAID FOR AT THE CONTRACT PRICE FOR **ITEM 601 SPECIAL. INFILTRATION TRENCH.**

NOTES:
1. ALL MATERIALS SPECIFIED SHALL BE PROVIDED IN ACCORDANCE WITH ODOT CMS.

STATE OF OHIO DEPARTMENT OF TRANSPORTATION HYDRAULIC ENGINEER
JEFFERY E. SYAR

REVISIONS

SUPERVISING HYDRAULIC ENGINEER
MUNDY/PREY'S

OFFICE OF HYDRAULICS ENGINEERING

S:\HAGARD, W\SHAA\SC, C\SHO\TRACT\TCN, SHAA\TKS.

WATER QUALITY- MISCELLANEOUS
SCD_HYDRAULICS_12993

SCD. NUMBER
WQ-1.2

1 / 1

DATE	REVISION MADE	BY	AUTHORIZED

Michael Baker INTERNATIONAL

MICHAEL BAKER INTL.
100 AIRSIDE DRIVE
MOON TOWNSHIP, PA 15108

CAMP RAVENNA JOINT MILITARY TRAINING CENTER
RAVENNA, OHIO

OHIO NATIONAL GUARD SINCE 1788

ITAM TRAINING AREA IMPROVEMENT AND TRAIL CREATION

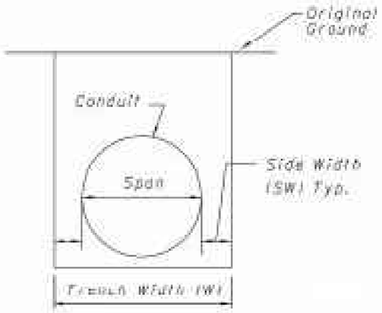
CONSTRUCTION DETAILS

DATE: 06-09-17	DES BY: WDN	BAKER PROJECT NUMBER 156220	SHEET NO: C-511
SCALE: NOT TO SCALE	DWN BY: MJL		
SIZE: ANSI D	CHK BY: SMS	GOV. CONTRACT NUMBER #W91364-12-D-0003	81 OF 89

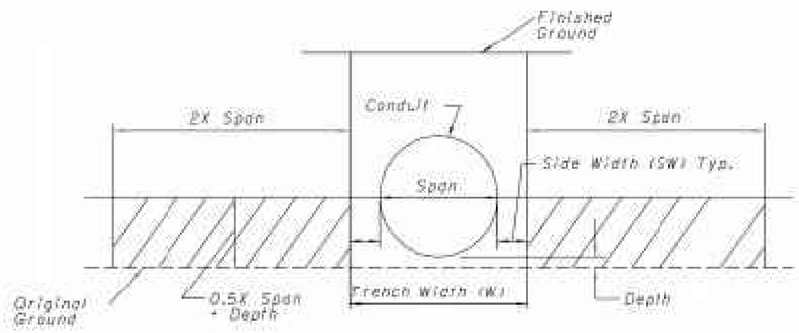
\\MONPA1CL1.bkr.mbakercorp.com\vol2_projects\Ohio NG IDIQ\156220 Tank Trails Camp Ravenna\05_Deliverables\Drawings\05 C_Civil\Sheet Files\C-503-515_CONSTRUCTION DETAILS.dwg Jun08,2017 - 1:49pm Plotted By: WWeider

NOTES:
1. ALL MATERIALS SPECIFIED SHALL BE PROVIDED IN ACCORDANCE WITH ODOT CMS.

Excavation Methods



METHOD A-CUT



METHOD B-FILL

Minimum Constructed Embankment

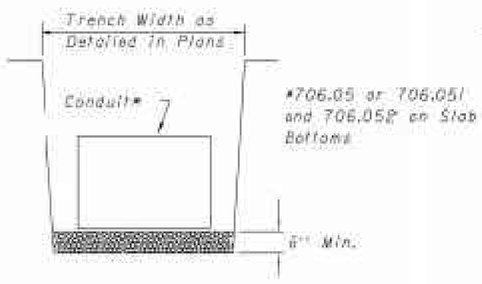
Trench Dimensions

MATERIAL	SW	WIDTH (W)
Long Span	2'	Span+2(2)
Concrete & Metal	0.165X Span	1.33X Span
Plastic	0.5+0.125X Span	1.25X Span+1

NOTES

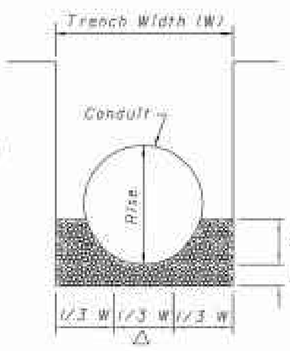
Use Structural Backfill Type 1 or 2 as per CMS 703.11.
Use Embankment as per CMS 203.

Bedding Types



TYPE 1 BEDDING

Structural Backfill



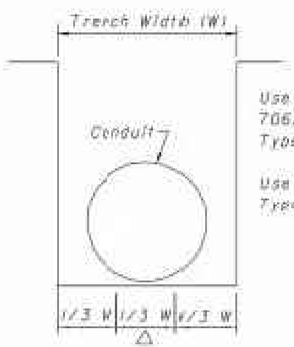
Use Type 2 Bedding for Type A, B, C & D Conduit's Except For Long Span and Conduits Requiring Type 3 Bedding.

0.10 X Rise (Min.)

Depth = 3" Min. for All 706 Conduits
6" Min. for All Other Conduits

TYPE 2 BEDDING

△ The Middle 1/3 W Under the Conduit Shall Be Uncompacted



Use Type 3 Bedding for 706.01, 706.02, or 706.03 Type C & D Conduits

Use Type 4 Bedding for Type E & F Conduits

TYPE 3 & 4 BEDDING

△ Scarify and Loosen the Middle 1/3 W Under the Conduit for Type 3 Bedding

OHIO DEPARTMENT OF TRANSPORTATION
ENGINEER OF BRIDGES
DATE 7-19-02
HIGHWAY ENGINEER J. Syar
All metric dimensions are presented in mm (millimeters) unless otherwise noted.
OFFICE OF STRUCTURAL ENGINEERING
STANDARD HIGHWAY CONSTRUCTION DRAWING
CONDUIT INSTALLATION
SHEET OW-1-00
1/2

DATE	REVISION MADE	BY	AUTHORIZED

Michael Baker INTERNATIONAL

MICHAEL BAKER INTL.
100 AIRSIDE DRIVE
MOON TOWNSHIP, PA 15108

CAMP RAVENNA JOINT MILITARY TRAINING CENTER
RAVENNA, OHIO

OHIO NATIONAL GUARD SINCE 1788

ITAM TRAINING AREA IMPROVEMENT AND TRAIL CREATION

CONSTRUCTION DETAILS

DATE: 06-09-17	DES BY: WDN	BAKER PROJECT NUMBER 156220	SHEET NO: C-512
SCALE: AS NOTED	DWN BY: MJL		
SIZE: ANSI D	CHK BY: SMS	GOV. CONTRACT NUMBER #W91364-12-D-0003	82 OF 89

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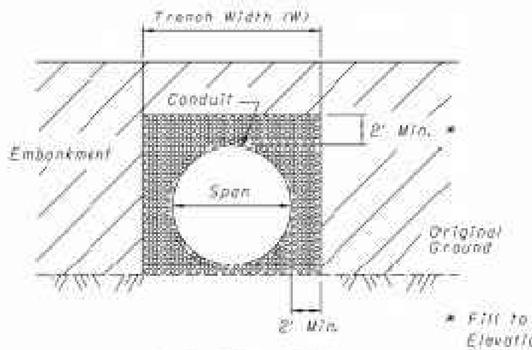
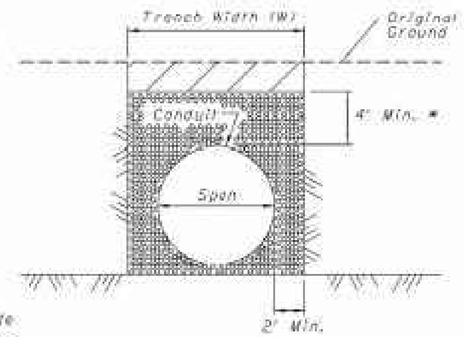
NOTES:
1. ALL MATERIALS SPECIFIED SHALL BE PROVIDED IN ACCORDANCE WITH ODOT CMS.

Backfill Conditions

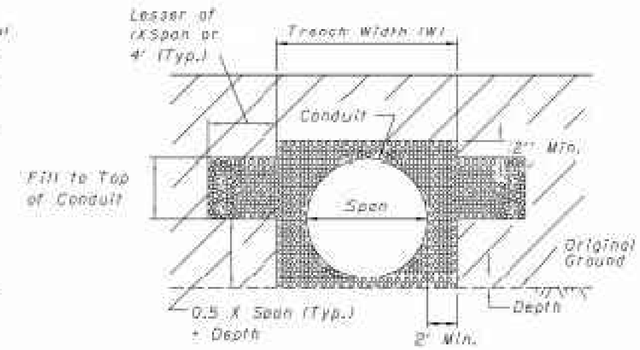


LONG SPAN-FILL

* Fill to Subgrade Elevation If Less Than Min.

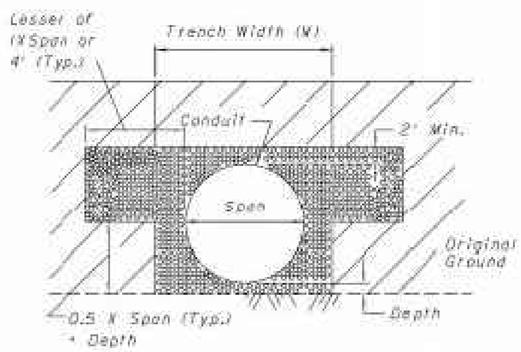


LONG SPAN-CUT

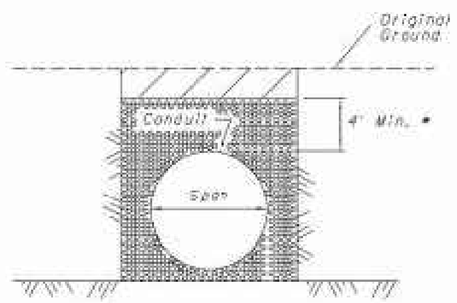


** PLASTIC CONDUIT, TYPE C-FILL

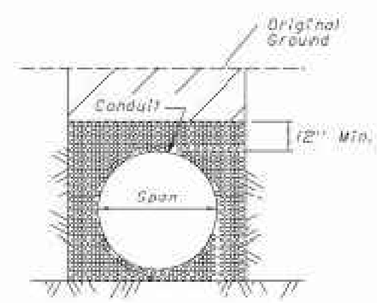
** For All Other Type C Conduits Place & Compact Backfill on Top of Bedding.



CONDUIT, TYPE A & B-FILL



CONDUIT TYPE A & B-CUT



** PLASTIC CONDUIT, TYPE C-CUT

NOTES

Backfill Conduits as per CMS 601.08.

-Construction Embankment

-Structural Backfill

OHIO DEPARTMENT OF TRANSPORTATION
ENGINEER OF BRIDGES

DATE 7-19-02

HYDRAULIC ENGINEER J. Sykes

All metric dimensions are shown in millimeters unless otherwise noted.

OFFICE OF STRUCTURAL ENGINEERING

STANDARD HYDRAULIC CONSTRUCTION DRAWING
CONDUIT INSTALLATION

NUMBER BM-1.4

1/2

DATE	REVISION MADE	BY	AUTHORIZED

Michael Baker INTERNATIONAL

MICHAEL BAKER INTL.
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MOON TOWNSHIP, PA 15108

CAMP RAVENNA JOINT MILITARY TRAINING CENTER
RAVENNA, OHIO

OHIO NATIONAL GUARD SINCE 1788

ITAM TRAINING AREA IMPROVEMENT AND TRAIL CREATION

CONSTRUCTION DETAILS

DATE: 06-09-17	DES BY: WDN	BAKER PROJECT NUMBER 156220	SHEET NO: C-513
SCALE: AS NOTED	DWN BY: MJL		
SIZE: ANSI D	CHK BY: SMS	GOV. CONTRACT NUMBER #W91364-12-D-0003	83 OF 89

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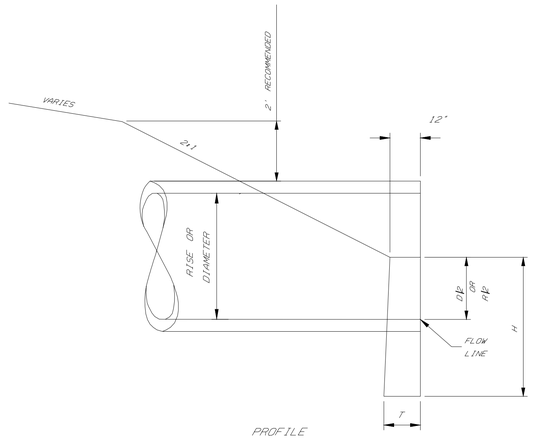
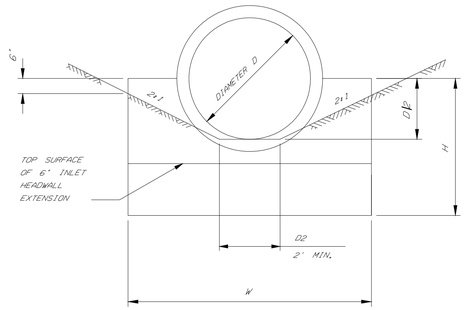
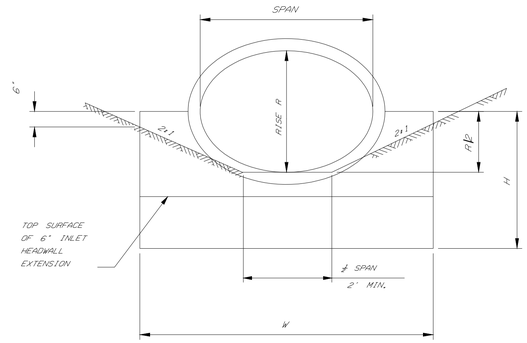


PROFILE



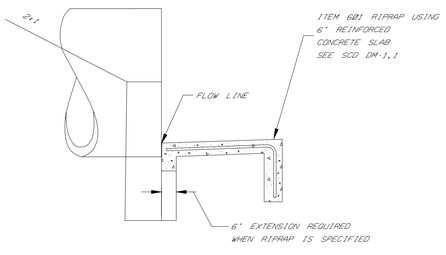
CIRCULAR



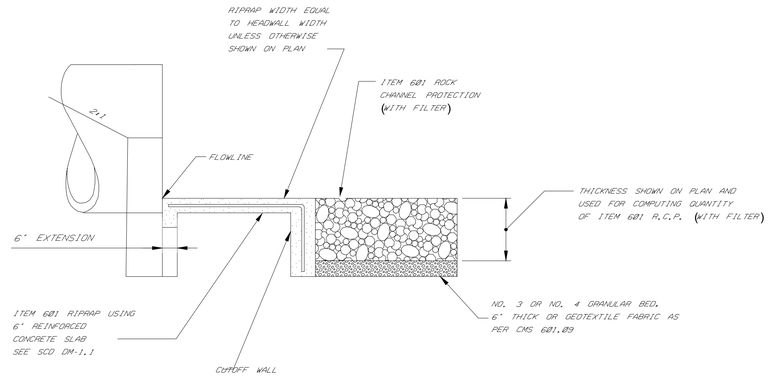
ELLIPTICAL

CONCRETE PIPE

SEE SHEET 2 OF 2 FOR PIPE TABLES AND NOTES.



INLET CHANNEL PROTECTION DETAIL



OUTLET CHANNEL PROTECTION DETAIL

NOTES:
1. ALL MATERIALS SPECIFIED SHALL BE PROVIDED IN ACCORDANCE WITH ODOT CMS.

STATE OF OHIO DEPARTMENT OF TRANSPORTATION HYDRAULIC ENGINEER
JEFFERY E. SYAR

HIGHWAY HYDRAULIC ENGINEER
M. COTIOLA

OFFICE OF HYDRAULICS ENGINEERING

S:\HIGHWAYS\ HYDRAULICS\ CONSTRUCTION\ SPANNING

HALF-HEIGHT HEADWALLS FOR CONCRETE PIPE
SCD HYDRAULICS 21805-7

SCD NUMBER
HW-2.2

1 / 2

DATE	REVISION MADE	BY	AUTHORIZED

Michael Baker INTERNATIONAL

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100 AIRSIDE DRIVE
MOON TOWNSHIP, PA 15108

CAMP RAVENNA JOINT MILITARY TRAINING CENTER
RAVENNA, OHIO

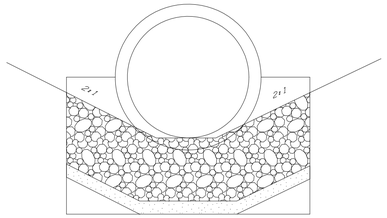
OHIO NATIONAL GUARD SINCE 1788

ITAM TRAINING AREA IMPROVEMENT AND TRAIL CREATION

CONSTRUCTION DETAILS

DATE: 06-09-17	DES BY: WDN	BAKER PROJECT NUMBER 156220	SHEET NO: C-514
SCALE: AS NOTED	DWN BY: MJL	GOV. CONTRACT NUMBER #W91364-12-D-0003	84 OF 89
SIZE: ANSI D	CHK BY: SMS		

\\MONPA1CL1.bkr.mbakercorp.com\vol2_projects\Ohio NG IDIQ\156220 Talk Trails Camp Ravenna\05_Deliverables\Drawings\05 C_Civil\Sheet Files\C-503-515_CONSTRUCTION DETAILS.dwg Jun06,2017 - 1:35pm Plotted By: VWeider



RIPRAP AND ROCK CHANNEL PROTECTION WIDTH EQUAL TO HEADWALL WIDTH UNLESS OTHERWISE SHOWN ON THE PLANS. (MINIMUM WIDTH 4'-0".)

NOTES

GENERAL: PROVIDE A RIPRAP REINFORCED CONCRETE SLAB ACCORDING TO SCD DM-1.1 IF THE PIPE IS DEPRESSED OR IT IS SPECIFIED IN THE PLAN. PAYMENT FOR THE SLAB IS MADE PER SQUARE YARD OF **ITEM 601 RIPRAP USING 6" REINFORCED CONCRETE** SLAB AND INCLUDES THE COST OF THE CUTOFF WALL.

THIS DRAWING IS FOR CAST IN PLACE HALF-HEIGHT CONCRETE HEADWALLS. WHEN FURNISHING PRECAST HALF-HEIGHT HEADWALLS, CONFORM TO PRE-APPROVED DESIGNS ON FILE WITH THE OFFICE OF MATERIALS MANAGEMENT. PRECAST HALF-HEIGHT HEADWALLS ARE ONLY APPROVED FOR ROUND CONDUITS WITH A MAXIMUM CONDUIT DIAMETER OF 78".

CONCRETE: USE 4000 PSI COMPRESSIVE STRENGTH CONCRETE FOR HEADWALLS.

CONCRETE QUANTITIES ARE BASED ON HEADWALLS WITHOUT THE 6" EXTENSION UNDER THE CHANNEL PROTECTION.

C.I.P. HEADWALL FOR CONCRETE PIPE ENGLISH

CIRCULAR					ELLIPTICAL					
D	W	H	T	CONC. CU. YDS.	RISE	SPAN	W	H	T	CONC. CU. YDS.
12"	2'-0"	3'-0"	12"	0.20	--	--	--	--	--	--
15"	2'-6"	3'-2"	12"	0.25	--	--	--	--	--	--
18"	3'-0"	3'-3"	12"	0.31	14"	23"	3'-0"	3'-2"	12"	0.29
21"	3'-6"	3'-4"	12"	0.37	19"	30"	3'-7"	3'-4"	12"	0.35
24"	4'-0"	3'-6"	12"	0.43	22"	34"	3'-11"	3'-5"	12"	0.38
27"	4'-6"	3'-8"	12"	0.49	24"	38"	4'-6"	3'-6"	12"	0.44
30"	5'-0"	3'-9"	12"	0.56	27"	42"	4'-8"	3'-7"	12"	0.45
33"	5'-6"	3'-10"	12"	0.62	29"	45"	5'-2"	3'-8"	12"	0.49
36"	6'-0"	4'-0"	12"	0.69	32"	49"	5'-5"	3'-10"	12"	0.52
39"	6'-6"	4'-2"	12"	0.77	34"	53"	5'-11"	4'-0"	14"	0.66
42"	7'-0"	4'-3"	12"	0.84	38"	60"	6'-10"	4'-2"	14"	0.92
48"	8'-0"	4'-6"	14"	1.09	43"	68"	8'-0"	4'-4"	16"	1.01
54"	9'-3"	4'-9"	14"	1.32	48"	76"	9'-2"	5'-0"	16"	1.34
60"	10'-6"	5'-6"	16"	1.93	53"	83"	10'-4"	5'-2"	18"	1.65
66"	11'-9"	5'-9"	18"	2.42	58"	91"	11'-6"	5'-5"	18"	1.97
72"	13'-0"	6'-0"	18"	2.77	63"	98"	12'-7"	5'-7"	20"	2.38
78"	14'-3"	6'-3"	20"	3.37	68"	106"	13'-9"	5'-10"	20"	2.69
84"	15'-6"	6'-6"	22"	4.05	72"	113"	14'-9"	6'-0"	22"	3.14
90"	16'-9"	6'-9"	22"	4.51	77"	121"	15'-11"	6'-3"	22"	3.49
96"	18'-0"	7'-0"	24"	5.31	82"	128"	17'-0"	6'-5"	24"	4.04
102"	19'-3"	7'-3"	26"	6.20	87"	136"	18'-2"	6'-8"	24"	4.84
108"	20'-6"	7'-6"	26"	6.78	92"	143"	19'-4"	6'-10"	26"	5.12
114"	21'-9"	7'-9"	28"	7.81	97"	151"	20'-6"	7'-1"	26"	5.42
120"	23'-0"	8'-0"	30"	8.93	106"	166"	22'-7"	7'-5"	28"	6.60
126"	24'-3"	8'-3"	30"	9.57	116"	180"	24'-10"	7'-10"	30"	7.99
132"	25'-6"	8'-6"	32"	10.84	--	--	--	--	--	--
144"	28'-8"	9'-0"	34"	13.00	--	--	--	--	--	--

NOTES:
1. ALL MATERIALS SPECIFIED SHALL BE PROVIDED IN ACCORDANCE WITH ODOT CMS.

STATE OF OHIO DEPARTMENT OF TRANSPORTATION HYDRAULIC ENGINEER
JEFFERY E. SYAR

HIGHWAY HYDRAULIC ENGINEER
M. COTIOLA

OFFICE OF HYDRAULICS ENGINEERING

STANDARD HYDRAULIC CONSTRUCTION DRAWING
HALF-HEIGHT HEADWALLS FOR CONCRETE PIPE

SCD HW-2.2

2 / 2

DATE	REVISION MADE	BY	AUTHORIZED

Michael Baker INTERNATIONAL

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100 AIRSIDE DRIVE
MOON TOWNSHIP, PA 15108

CAMP RAVENNA JOINT MILITARY TRAINING CENTER
RAVENNA, OHIO

OHIO NATIONAL GUARD SINCE 1788

ITAM TRAINING AREA IMPROVEMENT AND TRAIL CREATION

CONSTRUCTION DETAILS

DATE: 06-09-17	DES BY: WDN	BAKER PROJECT NUMBER 156220	SHEET NO: C-515
SCALE: AS NOTED	DWN BY: MJL		
SIZE: ANSI D	CHK BY: SMS	GOV. CONTRACT NUMBER #W91364-12-D-0003	85 OF 89

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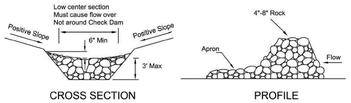
CHECK DAMS (CD)

DESCRIPTION

CHECK DAMS ARE SMALL ROCK DAMS CONSTRUCTED IN SWALES, GRASSED WATERWAYS OR DIVERSIONS. THEY REDUCE THE VELOCITY OF CONCENTRATED FLOWS, THEREBY REDUCING EROSION WITHIN THE SWALE OR WATERWAY. WHILE THIS PRACTICE OFTEN TRAPS SOME SEDIMENT, ITS TRAPPING EFFICIENCY IS EXTREMELY POOR, THUS, IT SHOULD NOT BE USED AS A PRIMARY SEDIMENT–TRAPPING PRACTICE.

SPECIFICATIONS FOR GRASS LINED CHANNEL

(Not to Scale)



INSTALLATION

1. THE CHECK DAM SHALL BE CONSTRUCTED OF 4–8 INCH DIAMETER STONE, PLACED SO THAT IT COMPLETELY COVERS THE WIDTH OF THE CHANNEL. ODOT TYPE D STONE IS ACCEPTABLE, BUT SHOULD BE UNDERLAIN WITH A GRAVEL FILTER CONSISTING OF ODOT NO. 3 OR 4 OR SUITABLE FILTER FABRIC.
2. MAXIMUM HEIGHT OF CHECK DAM SHALL NOT EXCEED 3.0 FEET.
3. THE MIDPOINT OF THE ROCK CHECK DAM SHALL BE A MINIMUM OF 6 INCHES LOWER THAN THE SIDES IN ORDER TO DIRECT ACROSS THE CENTER AND AWAY FROM THE CHANNEL SIDES.
4. THE BASE OF THE CHECK DAM SHALL BE ENTRENCHED APPROXIMATELY 6 INCHES.
5. SPACING OF CHECK DAMS SHALL BE IN A MANNER SUCH THAT THE TOE OF THE UPSTREAM DAM IS AT THE SAME ELEVATION AS THE TOP OF THE DOWNSTREAM DAM.
6. A SPLASH APRON SHALL BE CONSTRUCTED WHERE CHECK DAMS ARE EXPECTED TO BE IN USE FOR AN EXTENDED PERIOD OF TIME, A STONE APRON SHALL BE CONSTRUCTED IMMEDIATELY DOWNSTREAM OF THE CHECK DAM TO PREVENT FLOWS FROM UNDERCUTTING THE STRUCTURE. THE APRON SHOULD BE 6 INCHES THICK AND ITS LENGTH TWO TIMES THE HEIGHT OF THE DAM.
7. STONE PLACEMENT SHALL BE PERFORMED EITHER BY HAND OR MECHANICALLY AS LONG AS THE CENTER OF CHECK DAM IS LOWER THAN THE SIDES AND EXTENDS ACROSS ENTIRE CHANNEL.
8. SIDE SLOPES SHALL BE A MINIMUM OF 2:1

NOTES:

1. ALL MATERIALS SPECIFIED SHALL BE PROVIDED IN ACCORDANCE WITH ODOT CMS.

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CAMP RAVENNA JOINT MILITARY TRAINING CENTER
RAVENNA, OHIO

OHIO NATIONAL GUARD SINCE 1788

ITAM TRAINING AREA IMPROVEMENT AND TRAIL CREATION

CONSTRUCTION DETAILS

DATE: 06-09-17	DES BY: WDN	BAKER PROJECT NUMBER 156220	SHEET NO: C-516
SCALE: AS NOTED	DWN BY: MJL	GOV. CONTRACT NUMBER #W91364-12-D-0003	86 OF 89
SIZE: ANSI D	CHK BY: SMS		

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OHIO ARMY NATIONAL GUARD WASTE MANAGEMENT GUIDELINES

PURPOSE: Guidelines to be followed by contractors working at military installations owned by the Ohio Army National Guard (OHARNG) who are generating/shipping Hazardous or Non-Hazardous Waste.

POLICY: The policy of the OHARNG is to comply with all local, state, federal and installation requirements.

Coordination:

- Coordinate all waste generation and shipments with Shane Mathey, OHARNG Hazardous Waste Manager, at (614) 336-7394 or the Environmental Supervisor in his absence at (614) 336-7395.
- Notify Shane Mathey prior to waste sampling for characterization. Details about sampling activities must be included (i.e., number of sample, analyticals, etc.).
- All Hazardous and Non-Hazardous waste management storage locations must be pre-approved prior to generation.
- Insure all labels include: Date, Contractor, and Waste Type.
- When contractors have waste onsite, a weekly Inspection inventory must be completed and submitted to Shane Mathey.

Hazardous Waste Treatment, Storage and Disposal Facilities and Waste Haulers: Contractors are required to utilize qualified Defense Logistics Agency (DLA) waste haulers and Treatment, Storage, and Disposal Facilities (TSDFs). The current qualified waste hauler and TSDF list can be viewed by following the "Qualified Facilities" and "Qualified Transporters" links found on the DLA Hazardous Waste Disposal Homepage, http://www.dispositionservices.dla.mil/newenv/hwdisposal.shtml.

Hazardous or Non-Hazardous manifest form, the following must be included:

- Generator is the Ohio Army National Guard, 2825 W. Dublin Granville Rd., Columbus, Ohio, 43235, (614) 336-7394.
- Ohio EPA identification number for each facility will be provided upon request.
- Contractor's shipping Hazardous Waste must provide a Land Disposal Restriction (LDR) in accordance with 40 CFR Part 268.
- Profiling:
  - The required shipping documentation (i.e. waste profile and executive summary of lab reports (if available)) need to be submitted to Shane Mathey, OHARNG Hazardous Waste Manager, or designee(s) for approval and signature prior to shipping.
  - Results of characterization must be submitted to Shane Mathey within 30 days after collecting sample.
- Manifests - Hazardous and Non-Hazardous:
  - The waste carrier/transporter provides appropriate manifest to the contractor.
  - The contractor is required to:
    - Insure that Shane Mathey or designee(s) is available to sign the manifest on the scheduled day of shipment;
    - Verify that each manifest is properly completed and signed by Shane Mathey or designee(s);
    - Provide the Generator copy of the manifest to Shane Mathey or designee(s); and
    - Insure that the original Generator copy of the manifest signed by the treatment storage disposal facility is returned to OHARNG within 30 days of the shipping date for Hazardous and Non-Hazardous Waste.
    - The use of a Bill of Lading, in lieu of a waste manifest, must be approved by the OHARNG environmental office.

All satellite accumulation storage sites and containers will comply with 40CFR 262.34(c)(1):

- Any Material that is subject to Hazardous Waste Manifest Requirements of the US Environmental Protection Agency must comply with 40 CFR Part 262.
- From the time any waste is placed in a satellite storage container, proper labeling must be on the container (proper labeling includes date, contractors name and product type).
- Pending analysis label is to be used from the time the sample is taken or until the results are received.
- In no case will waste labeled pending analysis exceed 45 days.

All OHARNG Hazardous and Non-Hazardous records are maintained at the Columbus environmental office, point of contact is Shane Mathey at (614)-336-7394.

DATE	REVISION MADE	BY	AUTHORIZED

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CAMP RAVENNA JOINT MILITARY TRAINING CENTER
RAVENNA, OHIO

OHIO NATIONAL GUARD SINCE 1788

ITAM TRAINING AREA IMPROVEMENT AND TRAIL CREATION

SUPPLEMENTAL SPECIFICATIONS

DATE: 06-09-17	DES BY: WDN	BAKER PROJECT NUMBER 156220	SHEET NO: C-517
SCALE: AS NOTED	DWN BY: MJL	GOV. CONTRACT NUMBER #W91364-12-D-0003	87 OF 89
SIZE: ANSI D	CHK BY: SMS		

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CAMP RAVENNA WASTE MANAGEMENT GUIDELINES

PURPOSE: Guidelines to be followed by contractors working at Camp Ravenna Joint Military Training Center who are generating/shipping Hazardous, Non-Hazardous, Special or Universal Waste.

POLICY: The policy at Camp Ravenna is to comply with all local, state, federal and installation requirements. Contractor is responsible for waste minimization and is required to recycle materials if possible.

Restoration Program POC: Katie Tait (614) 336-6136 Military & Non-Restoration POC: Brad Kline (614) 336-4918

Coordination:

- Coordinate all waste generation and shipments with the appropriate Camp Ravenna POC listed above or the Environmental Supervisor in their absence at (614) 336-6568.
- Notify Camp Ravenna POC prior to waste sampling for characterization. Details about sampling activities must be included (i.e., number of sample, analyticals, etc.).
- All Hazardous and Non-Hazardous waste management storage locations must be pre-approved prior to generation.
- Ensure all labels include: Date, Contractor, and Waste Type.
- When contractors have waste onsite, a weekly Inspection inventory must be completed and submitted to the appropriate POC in the Camp Ravenna environmental office.
- All wastes shall be tracked and logged throughout the duration of the project. Contractor will provide Camp Ravenna POC with a monthly rollup report of all waste and recycled streams generated by no later than the 10th day of the following month.

Hazardous Waste Treatment, Storage and Disposal Facilities and Waste Haulers: Contractors are required to utilize hazardous waste haulers and Treatment, Storage, and Disposal Facilities on the latest Defense Reutilization Marketing Office (DRMO) approved list. The current qualified waste hauler and TSDF list can be viewed by following the "Qualified Facilities" and "Qualified Transporters" links found on the DLA Hazardous Waste Disposal Homepage, http://www.dispositionservices.dla.mil/newenv/hwdisposal.shtml.

Hazardous or Non-Hazardous manifest form, the following must be included:

- Military and non-restoration operations waste Site Name = Camp Ravenna Joint Military Training Center. Mailing and Site address: Camp Ravenna ENV, 1438 State Route 534 SW, Newton Falls, Ohio 44444, (614) 336-4918. Ohio EPA ID # – OHD981192925.
- Restoration Program waste Site Name = Former Ravenna Army Ammunition Plant. Mailing address is same as address above. Site address: 8451 State Route 5, Ravenna, Ohio 44266, (614) 336-6136. Ohio EPA ID # – OH5210020736.
- Contractor's shipping Hazardous Waste must provide a Land Disposal Restriction (LDR) in accordance with 40 CFR Part 268.
- Profiling:
  - The required shipping documentation (i.e. waste profile and executive summary of lab reports (if available)) need to be submitted to appropriate Camp Ravenna POC or designee(s) for approval and signature prior to shipping.
  - Results of characterization must be submitted to appropriate Camp Ravenna POC within 30 days after collecting sample.
- Manifests - Hazardous and Non-Hazardous:
  - The waste carrier/transporter provides appropriate manifest to the contractor.
  - The contractor is required to:
    - Ensure that Camp Ravenna POC or designee(s) is available to sign the manifest on the scheduled day of shipment;
    - Verify that each manifest is properly completed and signed by Camp Ravenna POC or designee(s);
    - Provide the Generator copy of the manifest to Camp Ravenna POC or designee(s); and
    - Ensure that the original Generator copy of the manifest signed by the treatment storage disposal facility is returned to Camp Ravenna within 30 days of the shipping date for Hazardous and Non-Hazardous Waste.
    - The use of a Bill of Lading, in lieu of a waste manifest, must be approved by the Camp Ravenna environmental office.

All satellite accumulation storage sites and containers will comply with 40CFR 262.34(c)(1):

- Any material that is subject to Hazardous Waste Manifest Requirements of the US Environmental Protection Agency must comply with 40 CFR Part 262.
- From the time any waste is placed in a satellite storage container, proper labeling must be on the container (proper labeling includes date, contractors name and product type).
- Pending analysis label is to be used from the time the sample is taken until the results are received.
- In no case will waste labeled pending analysis exceed 45 days.

All Camp Ravenna Hazardous and Non-Hazardous records are maintained at the Camp Ravenna environmental office, point of contacts are Katie Tait at (614) 336-6136 and Brad Kline at (614) 336-4918.

Appendix A
Construction/Demolition Diversion and Waste Disposal Form

Project Title _____

Date	Material Type*	Material Description**	Total Quantity of Material	Tons/lbs/CY/each	Total Number of Manifest/Disposal Tickets Attached

***Material Type:** C&D Debris, Recyclable/Reutilized Material, Universal Waste, TSCA Regulated Waste

****Material Description:** C&D Debris (wood, glass, asphalt, concrete, soil, plastic etc…)
Recyclable Material (scrap metal and concrete etc….)
Universal Waste (bulbs, mercury containing devices, used batteries)
TSCA Waste (asbestos, PCB's, lead based paints)

DATE	REVISION MADE	BY	AUTHORIZED

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CAMP RAVENNA JOINT MILITARY TRAINING CENTER
RAVENNA, OHIO

OHIO NATIONAL GUARD SINCE 1788

ITAM TRAINING AREA IMPROVEMENT AND TRAIL CREATION

SUPPLEMENTAL SPECIFICATIONS

DATE: 06-09-17 | DES BY: WDN | BAKER PROJECT NUMBER 156220 | SHEET NO: C-518
SCALE: AS NOTED | DWN BY: MJL
SIZE: ANSI D | CHK BY: SMS | GOV. CONTRACT NUMBER #W91364-12-D-0003

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OHIO ARMY NATIONAL GUARD WEEKLY NON-HAZARDOUS & HAZARDOUS WASTE INSPECTION/INVENTORY SHEET

Contractor: _____ Month: _____ Year: _____ Waste Description: _____
Container Nos. _____

	WEEK 1	WEEK 2	WEEK 3	WEEK 4
	Date: Time:	Date: Time:	Date: Time:	Date: Time:
Point of Contact (Name / Number)				
Project Name:				
Contracting Agency and POC:				
***Location on installation:**				
Date Generated:				
Projected date of disposal:				
Satellite or 90 day storage are:				
Waste generation site:				
Number of Containers (size / type):				
Condition of Container:				
Containers closed, no loose lids, no loose bungs?	yes / no	yes / no	yes / no	yes / no
Waste labeled properly and visible (40 CFR 262.34 (c) (1):	yes / no	yes / no	yes / no	yes / no
Secondary containment	yes / no	yes / no	yes / no	yes / no
Incompatibles stored together?	yes / no	yes / no	yes / no	yes / no
Any spills?	yes / no	yes / no	yes / no	yes / no
Spill kit available?	yes / no	yes / no	yes / no	yes / no
Fire extinguisher present and chanrged?	yes / no	yes / no	yes / no	yes / no
Containers grounded if ignitables?	yes / no	yes / no	yes / no	yes / no
Emergency notification form/info present?	yes / no	yes / no	yes / no	yes / no
Container log binder present?	yes / no	yes / no	yes / no	yes / no
Signs posted if required?	yes / no	yes / no	yes / no	yes / no
Photo's submitted	yes / no	yes / no	yes / no	yes / no
Printed Name:				
Signature:				

This form is required for Non-Hazardous and Hazardous waste including PCB and special waste.

CONTRACTORS ARE REQUIRED TO SUBMIT THIS FORM WEEKLY TO THE COLUMBUS ENV OFFFICE WHEN WASTE IS STORED ON SITE.

CONTRACTORS ARE ENCOURAGED TO INCLUDE PHOTOS WITH EACH WEEKLY INSPECTION SHEET WHEN WASTE IS STORED ON SITE.

*Draw detailed map showing location of waste within the site.

en_sow_appd_feb13

DATE	REVISION MADE	BY	AUTHORIZED

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CAMP RAVENNA JOINT MILITARY TRAINING CENTER
RAVENNA, OHIO

OHIO NATIONAL GUARD SINCE 1788

ITAM TRAINING AREA IMPROVEMENT AND TRAIL CREATION

SUPPLEMENTAL SPECIFICATIONS

DATE: 06-09-17 | DES BY: WDN
SCALE: AS NOTED | DWN BY: MJL
SIZE: ANSI D | CHK BY: SMS

BAKER PROJECT NUMBER 156220
GOV. CONTRACT NUMBER #W91364-12-D-0003

SHEET NO: C-519
89 OF 89

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OHIO ARMY NATIONAL GUARD

ITAM TRAINING AREA IMPROVEMENT AND TRAIL CREATION

CAMP RAVENNA JOINT MILITARY TRAINING CENTER - RAVENNA, OHIO

CONTRACT NUMBER: #W91364-12-D-0003

TASK ORDER: # 0004

PORTAGE COUNTY EROSION & SEDIMENT CONTROL PLANS

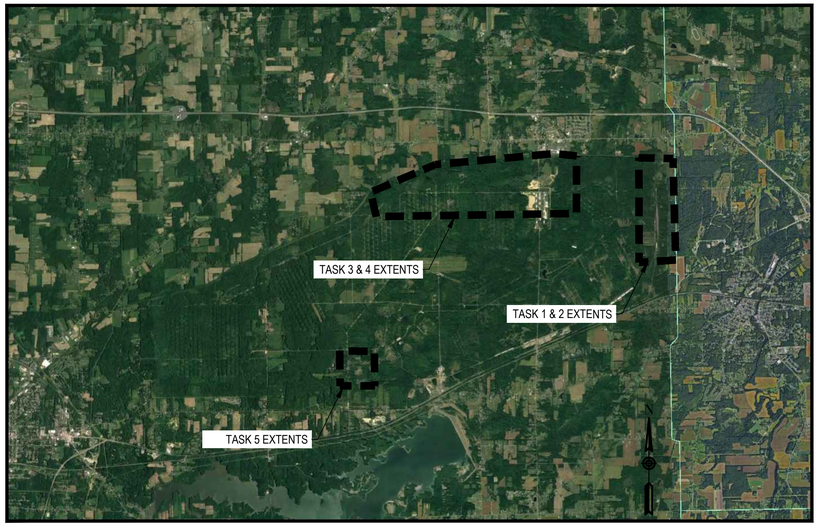
JUNE, 2017

N

VICINITY MAP - PORTAGE COUNTY

SIGNATURE BLOCK

DEPARTMENT	NAME	SIGNATURE	DATE



PROJECT LOCATION

DATE	REVISION MADE	BY	AUTHORIZED

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CAMP RAVENNA JOINT MILITARY TRAINING CENTER
RAVENNA, OHIO

OHIO NATIONAL GUARD SINCE 1788

PORTAGE COUNTY ITAM TRAINING AREA IMPROVEMENT AND TRAIL CREATION

E □ S COVER SHEET

DATE: 06-09-17	DES BY: WDN	BAKER PROJECT NUMBER 156220	SHEET NO: CE-001
SCALE: AS NOTED	DWN BY: MJL		
SIZE: ANSI D	CHK BY: SMS	GOV. CONTRACT NUMBER #W91364-12-D-0003	1 OF 18

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SHEET NO.	SHEET TITLE
GENERAL	
CE-001	COVER SHEET
CE-002	SHEET INDEX
CE-101	TASK 3 & 4 EROSION AND SEDIMENT CONTROL PLAN
CE-102	TASK 3 & 4 EROSION AND SEDIMENT CONTROL PLAN
CE-103	TASK 3 & 4 EROSION AND SEDIMENT CONTROL PLAN
CE-104	TASK 3 & 4 EROSION AND SEDIMENT CONTROL PLAN
CE-105	TASK 3 & 4 EROSION AND SEDIMENT CONTROL PLAN
CE-106	TASK 3 & 4 EROSION AND SEDIMENT CONTROL PLAN
CE-107	TASK 3 & 4 EROSION AND SEDIMENT CONTROL PLAN
CE-108	TASK 3 & 4 EROSION AND SEDIMENT CONTROL PLAN
CE-109	TASK 1 & 2 EROSION AND SEDIMENT CONTROL PLAN
CE-110	TASK 1 & 2 EROSION AND SEDIMENT CONTROL PLAN
CE-111	TASK 5 EROSION AND SEDIMENT CONTROL PLAN
CE-501	EROSION AND SEDIMENT CONTROL STNDARD DETAILS
CE-502	EROSION AND SEDIMENT CONTROL STNDARD DETAILS
CE-503	EROSION AND SEDIMENT CONTROL STNDARD DETAILS
CE-504	EROSION AND SEDIMENT CONTROL GENERAL NOTES
CE-505	EROSION AND SEDIMENT CONTROL GENERAL NOTES

DATE	REVISION MADE	BY	AUTHORIZED

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RAVENNA, OHIO

PORTAGE COUNTY ITAM TRAINING AREA
IMPROVEMENT AND TRAIL CREATION

INDEX SHEET

DATE: 06-09-17	DES BY: WDN	BAKER PROJECT NUMBER 156220	SHEET NO: CE-002
SCALE: AS NOTED	DWN BY: MJL		
SIZE: ANSI D	CHK BY: SMS	GOV. CONTRACT NUMBER #W91364-12-D-0003	2 OF 18

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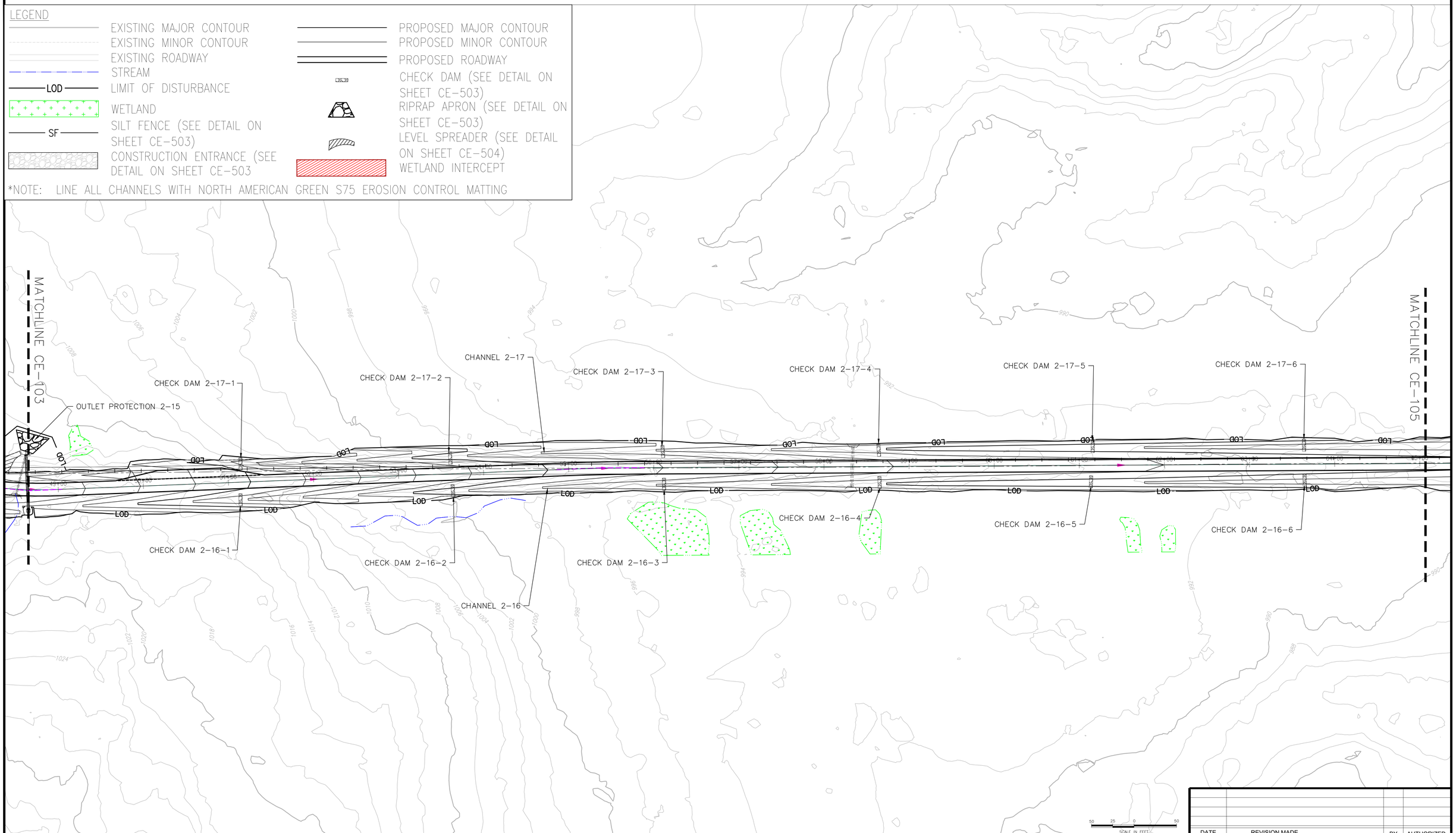
LEGEND

- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING ROADWAY
- STREAM
- LOD — LIMIT OF DISTURBANCE
- WETLAND
- SF — SILT FENCE (SEE DETAIL ON SHEET CE-503)
- CONSTRUCTION ENTRANCE (SEE DETAIL ON SHEET CE-503
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED ROADWAY
- CHECK DAM (SEE DETAIL ON SHEET CE-503)
- RIPRAP APRON (SEE DETAIL ON SHEET CE-503)
- LEVEL SPREADER (SEE DETAIL ON SHEET CE-504)
- WETLAND INTERCEPT

*NOTE: LINE ALL CHANNELS WITH NORTH AMERICAN GREEN S75 EROSION CONTROL MATTING



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RAVENNA, OHIO

OHIO NATIONAL GUARD SINCE 1788

PORTAGE COUNTY ITAM TRAINING AREA IMPROVEMENT AND TRAIL CREATION

TASK 3 □ 4
EROSION AND SEDIMENT CONTROL PLANS

DATE: 06-09-17	DES BY: WDN	BAKER PROJECT NUMBER 156220	SHEET NO: CE-104
SCALE: AS NOTED	DWN BY: MJL		
SIZE: ANSI D	CHK BY: SMS	GOV. CONTRACT NUMBER #W91364-12-D-0003	6 OF 18

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LEGEND

- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING ROADWAY
- STREAM
- LOD — LIMIT OF DISTURBANCE
- WETLAND
- SF — SILT FENCE (SEE DETAIL ON SHEET CE-503)
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- PROPOSED MAJOR CONTOUR
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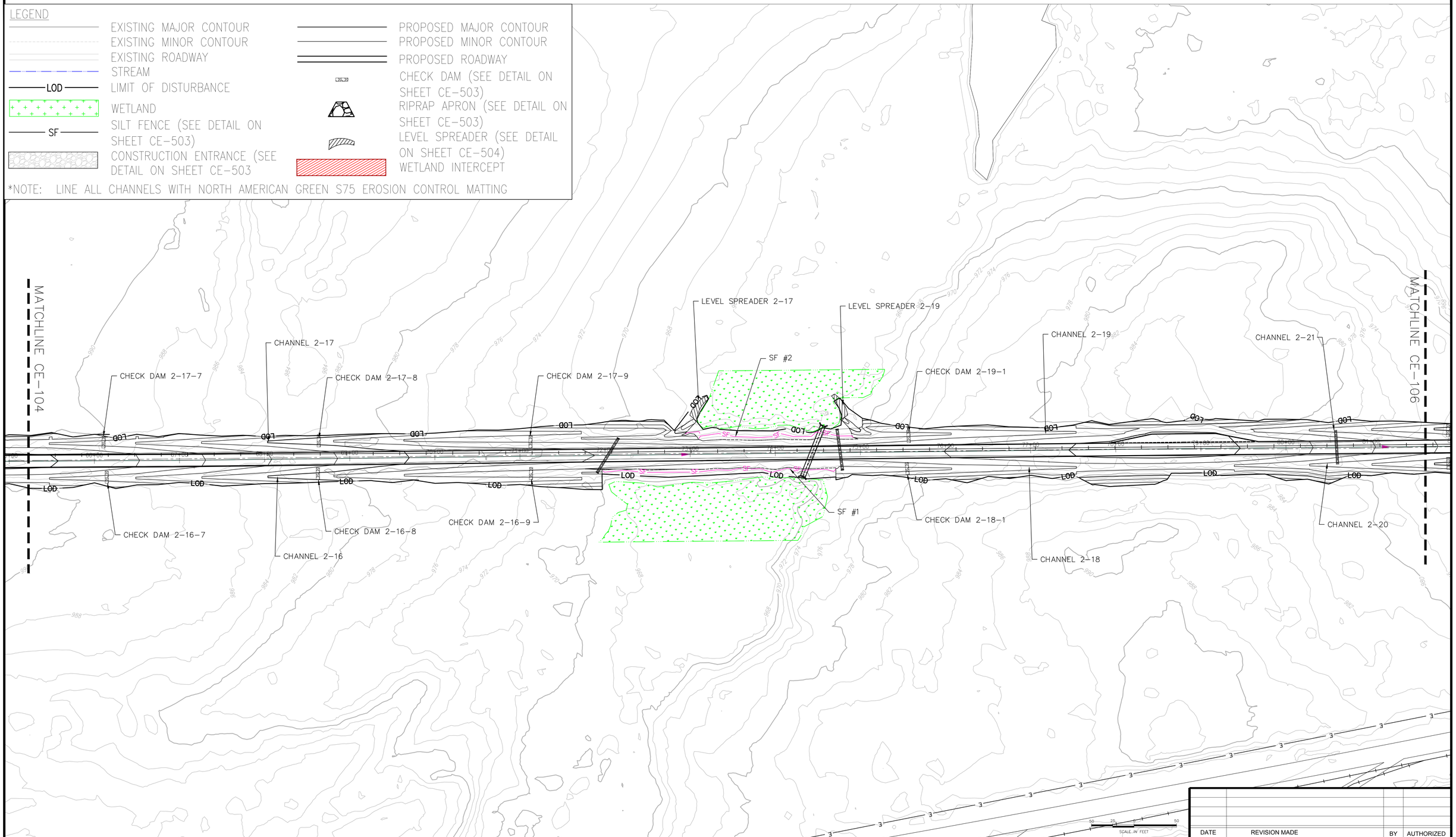
- RIPRAP APRON (SEE DETAIL ON SHEET CE-503)
- LEVEL SPREADER (SEE DETAIL ON SHEET CE-504)
- WETLAND INTERCEPT

*NOTE: LINE ALL CHANNELS WITH NORTH AMERICAN GREEN S75 EROSION CONTROL MATTING



DATE	REVISION MADE	BY	AUTHORIZED

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PORTAGE COUNTY ITAM TRAINING AREA
IMPROVEMENT AND TRAIL CREATION

TASK 3 □ 4
EROSION AND SEDIMENT CONTROL PLANS

DATE: 06-09-17	DES BY: WDN	BAKER PROJECT NUMBER 156220	SHEET NO: CE-105
SCALE: AS NOTED	DWN BY: MJL		
SIZE: ANSI D	CHK BY: SMS	GOV. CONTRACT NUMBER #W91364-12-D-0003	7 OF 18

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EROSION CONTROL NOTES:

GENERAL

1. THE OHIO ARMY NATIONAL GUARD (OHARNG) IS COMMITTED TO ENVIRONMENTAL STEWARDSHIP AT ALL OF OUR FACILITIES AND WITHIN OUR COMMUNITIES AS A WHOLE. THE ADJUTANT GENERAL'S DEPARTMENT MAINTAINS AN ENVIRONMENTAL MANAGEMENT SYSTEM (EMS) IN ACCORDANCE WITH (IAW) ISO 14000 STANDARDS. CONTRACTORS PERFORMING WORK ON BEHALF OF THE DEPARTMENT, WITH THE EXCEPTION OF CONTRACTORS PROVIDING GOODS AND SERVICES THROUGH STATE TERM SCHEDULES OR PURCHASE ORDERS, ARE REQUIRED TO BE FAMILIAR WITH THE ADJUTANT GENERAL'S EMS POLICY AND TO COMPLY WITH THIS POLICY WHERE APPLICABLE AND PRACTICABLE. IF IMPLEMENTED ACCORDINGLY, FOLLOWING THE GUIDELINES OUTLINED IN THE FOLLOWING SUPPLEMENTAL CONDITIONS WILL ENSURE CONTRACTOR COMPLIANCE WITH THE EMS POLICY.

2. ALL CONTRACTORS MUST COMPLY WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL ENVIRONMENTAL REQUIREMENTS TO INCLUDE APPLICABLE ARMY AND OHARNG REGULATIONS. THIS INCLUDES, BUT IS NOT LIMITED TO, THE PROPER CHARACTERIZATION, MANAGEMENT AND DISPOSAL OF WASTES; PROPER STORAGE, USE AND TRANSPORTATION OF HAZARDOUS MATERIALS; SPILL PREVENTION AND CLEAN UP; OBTAINING PROPER PERMITS AND SUBMITTING PROPER NOTIFICATIONS AS APPLICABLE TO THE WORK BEING CONDUCTED; AND PROTECTION OF SURFACE WATER AND NATURAL RESOURCES.

3. NO CONTRACTOR WILL CORRESPOND WITH ANY REGULATORY AGENCY ON BEHALF OF THE OHARNG WITHOUT APPROVAL OF THE OHARNG. THIS INCLUDES MEETINGS, PHONE CALLS, EMAILS, OR OTHER WRITTEN OR VERBAL COMMUNICATIONS. THE OHARNG WILL REVIEW AND APPROVE ALL CORRESPONDENCE, TO INCLUDE PERMIT APPLICATIONS, BEFORE IT IS SENT TO A REGULATORY AGENCY TO INCLUDE BUT NOT LIMITED TO THE FEDERAL OR OHIO ENVIRONMENTAL PROTECTION AGENCY (EPA), THE US FISH AND WILDLIFE SERVICE, THE OHIO HISTORIC PRESERVATION OFFICE, AND THE US ARMY CORPS OF ENGINEERS.

4. ALL CONTRACTOR ARE RESPONSIBLE FOR PAYING ALL FEES AND ACQUIRING ALL APPLICABLE PERMITS OR REGULATORY APPROVALS ASSOCIATED WITH THE WORK THEY ARE PERFORMING. DEPENDING UPON THE PERMIT/NOTIFICATION, IT MAY NEED TO BE ISSUED IN THE OHARNG'S NAME. COORDINATION WILL BE DONE WITH THE OHARNG TO DETERMINE THIS AND THE CONTRACTOR WILL COMPLETE THE APPLICATION/NOTIFICATION FOR OHARNG SIGNATURE AND SUBMIT THE APPLICATION AND ASSOCIATED FEES. ALL PERMIT SUBMITTALS WILL BE COORDINATED, REVIEWED AND APPROVED BY THE OHARNG REGARDLESS WHO SIGNS THE APPLICATION.

5. GENERAL CONTRACTORS (OR THE CONTRACTOR) WILL DEVELOP AN ENVIRONMENTAL WORK PLAN THAT PROVIDES DETAILS ON THE WORK TO BE PERFORMED AND HOW IT WILL BE PERFORMED TO ENSURE COMPLIANCE WITH APPLICABLE ENVIRONMENTAL REQUIREMENTS (WETLAND PERMITS, ENDANGERED SPECIES RESTRICTIONS, EROSION CONTROL, HAZARDOUS WASTE GENERATION, ETC.). TOPICS ADDRESSED WITHIN THE ENVIRONMENTAL WORK PLAN WILL INCLUDE AS APPLICABLE: HAZARDOUS MATERIALS TO BE USED; THE QUALIFIED PERSONNEL RESPONSIBLE FOR WASTE MANAGEMENT; WASTE TO BE GENERATED (HAZARDOUS AND NON–HAZARDOUS WASTE); MATERIALS TO BE RECYCLED; METHODS TO BE USED TO MINIMIZE HAZARDOUS WASTE GENERATION; METHODS AND LABORATORIES TO BE USED TO CHARACTERIZE THE WASTE; DRMO APPROVED WASTE HAULERS AND TSDF'S TO BE USED; PROPOSED ON SITE WASTE STORAGE LOCATIONS; ON SITE WASTE MANAGEMENT AND INSPECTION PROCEDURES TO BE IMPLEMENTED TO INCLUDE MAXIMUM STORAGE TIME/PROPOSED WASTE PICKUP/TRANSPORT DATE; EMERGENCY PLAN AND EMERGENCY CONTACT INFORMATION; DISCHARGES FROM SECONDARY CONTAINMENT AND DE–WATERING ACTIVITIES; AND ANY OTHER INFORMATION PERTINENT TO ENVIRONMENTAL COMPLIANCE AND THE GENERATION AND MANAGEMENT OF WASTE DURING PROJECT IMPLEMENTATION. THE ENVIRONMENTAL WORK PLAN WILL BE REVIEWED BY THE ENVIRONMENTAL OFFICE AND EDITED BY THE CONTRACTOR AS NECESSARY TO CORRECT DEFICIENCIES. WORK MAY NOT BEGIN UNTIL THIS WORK PLAN HAS BEEN APPROVED BY THE ENVIRONMENTAL OFFICE. A COPY OF THE FINAL WORK PLAN WILL BE PROVIDED TO THE CONTRACTING OFFICE, THE APPROPRIATE OHARNG ENVIRONMENTAL OFFICE, THE OHARNG TECHNICAL REPRESENTATIVE AND ONE WILL BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES.

6. BURNING OF WASTE, BRUSH, RUBBISH, AND/OR ANY OTHER DEBRIS IS NOT PERMITTED. IF BRUSH OR VEGETATION BURNING IS DESIRED, A REQUEST TO DO SO MUST BE SUBMITTED TO THE OHARNG FOR REVIEW. IF THE OHARNG CONCURS THAT BURNING IS NEEDED, THE CONTRACTOR IS REQUIRED TO SUBMIT A BURN PERMIT TO THE OHIO EPA ALONG WITH ANY ASSOCIATED FEE. IF THE OHIO EPA APPROVES THE APPLICATION AND ISSUES A PERMIT, THE CONTRACTOR IS REQUIRED TO COMPLY WITH ALL CONDITIONS OF THE PERMIT. UPON RECEIPT OF THE OHIO EPA BURN PERMIT THE CONTRACTOR WILL OBTAIN ANY ADDITIONAL PERMITS REQUIRED BY THE OHARNG AND/OR LOCAL FIRE DEPARTMENTS/DISTRICTS, IF ANY.

EROSION CONTROL, STORM WATER AND OTHER SURFACE WATER MANAGEMENT

7. FOR ALL PROJECTS, REGARDLESS OF THE DISTURBANCE ACREAGE, THE GENERAL CONTRACTOR SHALL USE ALL METHODS APPROPRIATE AND REQUIRED TO PREVENT SOIL FROM LEAVING THE PROJECT SITE EITHER BY WIND, WATER, OR ON VEHICLES AND EQUIPMENT. SILT FENCE AND OTHER TEMPORARY RUN OFF SOIL DETENTION METHODS WILL BE USED AS NEEDED. SPOIL PILES AND DISTURBED AREAS WILL BE MANAGED IN ACCORDANCE WITH THE STIPULATIONS IN THE OHIO EPA STORM WATER CONSTRUCTION PERMIT AND THE MOST CURRENT VERSION OF THE OHIO DEPARTMENT OF NATURAL RESOURCES' RAINWATER AND LAND DEVELOPMENT MANUAL; OHIO'S STANDARDS FOR STORMWATER MANAGEMENT, LAND DEVELOPMENT, AND URBAN STREAM PROTECTION. THE SITE MUST BE SEEDED WITH A TEMPORARY SEED MIX IF LEFT IDLE FOR OVER 14 DAYS. THE PROJECT SITE WILL BE CLOSED OUT BY PREPARING THE SOIL AS A SEED BED AND SEEDING AND MULCHING WITH THE APPROPRIATE SEED MIX. TEMPORARY EROSION CONTROL MEASURES (SILT FENCE) WILL BE REMOVED BY THE CONTRACTOR ONCE VEGETATION HAS BEEN ESTABLISHED AND SOIL ON THE PROJECT AREA IS STABILIZED.

8. THE GENERAL CONTRACTOR WILL IMPLEMENT THE SWP3 AND CONDUCT ALL INSPECTIONS AND MAINTAIN STORM WATER/EROSION CONTROLS IN ACCORDANCE WITH THE SWP3. THE CONTRACTOR WILL USE THE INSPECTION CHECKLIST FOR STORM WATER CONTROLS IN THE SWP3 AND SHALL COMPLETE AND MAINTAIN SIGNED INSPECTIONS ON SITE IN THE SWP3 BINDER. COPIES OF WEEKLY/POST STORM EVENT INSPECTIONS WILL BE PROVIDED TO THE LOCAL OHARNG ENVIRONMENTAL OFFICE MONTHLY. THE CONTRACTOR WILL NOTIFY THE LOCAL OHARNG ENVIRONMENTAL OFFICE IMMEDIATELY IF THERE IS A STORM WATER CONTROL FAILURE AND OFF SITE DISCHARGE FROM THE PROJECT AREA. ANY PROPOSED CHANGES TO THE SWPPP DEVELOPED BY THE A&E AND APPROVED BY THE OHARNG MUST BE SUBMITTED IN WRITING BY THE CONTRACTOR FOR REVIEW AND APPROVAL.

9. THE GENERAL CONTRACTOR WILL NOTIFY THE LOCAL OHARNG ENVIRONMENTAL OFFICE WITHIN 45 DAYS OF FINAL SITE STABILIZATION. THE LOCAL OHARNG ENVIRONMENTAL OFFICE WILL INSPECT THE SITE AND WILL SUBMIT A NOTICE OF TERMINATION (NOT) IF THE SITE STABILIZATION IS APPROVED. IF REQUIRED, THE CONTRACTOR IS RESPONSIBLE FOR SUBMITTING THE NOT(S) FOR TERMINATION OF THEIR CO–PERMITTEE COVERAGE AFTER THE OHARNG HAS TERMINATED THE PERMIT. THE SITE IS CONSIDERED TO HAVE REACHED FINAL STABILIZATION WHEN THE TERMS IDENTIFIED IN THE OHIO EPA PERMIT ARE MET.

EROSION CONTROL NOTES (CONTINUED) :

EROSION CONTROL, STORM WATER AND OTHER SURFACE WATER MANAGEMENT

10. THE GENERAL CONTRACTOR WILL USE BEST MANAGEMENT PRACTICES OR WHATEVER MEANS NECESSARY TO PREVENT CONTAMINATION OF STORM WATER DUE TO RUNOFF FROM WASTES, DEBRIS PILES, FUEL TANKS, MATERIALS AND EQUIPMENT, AND OTHER STORAGE/MATERIALS ON THE PROJECT SITE.

11. THE GENERAL CONTRACTOR IS NOT PERMITTED TO DISTURB OR FILL ANY WETLANDS, STREAMS, OR OTHER SURFACE WATERS WHILE PERFORMING TASKS WITHIN THIS SCOPE OF WORK UNLESS SUCH DISTURBANCE OR FILL IS SPECIFICALLY IDENTIFIED AS A TASK IN THE SCOPE AND APPLICABLE PERMITS AND AUTHORIZATIONS HAVE BEEN OBTAINED. THE CONTRACTOR WILL MAINTAIN A 30 FOOT UNDISTURBED BUFFER AROUND WETLANDS AND DEPRESSIONAL AREAS THAT HOLD WATER AND KEEP ALL EQUIPMENT, MATERIALS, VEHICLES, DEBRIS, WASTE, AND PERSONNEL OUT OF THIS BUFFER AND PREVENT DISCHARGES OF ANY TYPE (CHEMICAL OR SOIL) FROM ENTERING SUCH AREAS.

12. THE OHARNG ENVIRONMENTAL OFFICE MUST APPROVE ALL DEWATERING ACTIVITIES. DEWATERING WILL BE ADDRESSED IN THE ENVIRONMENTAL WORK PLAN IF APPLICABLE TO THE PROJECT. STANDING WATER MUST BE CHARACTERIZED TO DETERMINE IF IT IS REGULATED BEFORE DEWATERING PROCEDURES ARE IMPLEMENTED. CHARACTERIZATION MAY BE POSSIBLE BY GENERATOR KNOWLEDGE OR MAY REQUIRE SAMPLING AND ANALYSIS. FOR DEMOLITION PROJECTS THE WATER MAY CONTAIN ASBESTOS, LEAD, PCBS OR OTHER CONTAMINANTS AND WILL HAVE TO BE SAMPLED. CONSTRUCTION DEWATER WOULD MOST LIKELY ONLY CONTAIN SUSPENDED SOLIDS BUT COULD CONTAIN CONTAMINATED GROUNDWATER DEPENDING UPON WHERE THE PROJECT IS LOCATED. AT MINIMUM, DISCHARGES MUST MEET WATER QUALITY STANDARDS IDENTIFIED IN OHIO ADMINISTRATIVE CODE 3745–1. AT LOCATIONS WITH KNOWN CONTAMINATED GROUNDWATER THE OHARNG ENVIRONMENTAL OFFICE WILL PROVIDE SPECIFIC GUIDANCE ON CONTAINERIZATION, SAMPLING, AND DISPOSAL/DISCHARGE REQUIREMENTS. AT MINIMUM, WATER MUST BE DISCHARGED THROUGH AN OIL ABSORPTION AND/OR AN ACTIVATED CHARCOAL, AND/OR A SEDIMENT FILTER BAG AS APPROPRIATE, FOR THE WATER BEING DISCHARGED. DISCHARGE WILL BE DONE IN A VEGETATED UPLAND AREA THAT DRAINS AWAY FROM THE WORK SITE UNLESS OTHERWISE SPECIFIED IN THE SCOPE OF WORK OR AUTHORIZED BY THE OHARNG ENVIRONMENTAL OFFICE. DISCHARGE WILL BE DONE SO AS TO ALLOW THE DISCHARGE TO FILTER THROUGH DENSE GROUNDCOVER VEGETATION. THE DISCHARGE HOSE WILL BE SET ON A PIECE OF PLYWOOD OR RUBBER MAT TO DISPERSE THE WATER AND PREVENT A CONCENTRATED DISCHARGE THAT CAN CUT AND ERODE SOIL. DIRECT DISCHARGE TO A STREAM, POND, WETLAND, DITCH OR OTHER BODY OF WATER OR CONVEYANCE IS NOT PERMITTED.

NATURAL RESOURCES – VEGETATION

13. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR ENSURING THE ESTABLISHMENT OF VEGETATIVE COVER AND SOIL STABILIZATION OF THE PROJECT AREA AND MUST USE ALL MEANS AVAILABLE AND NECESSARY TO ACCOMPLISH THIS. STRAW EROSION MATS, RIP RAP, GEO–CELL, OR OTHER APPLICABLE SOIL STABILIZATION METHODS, WHEN NEEDED, WILL BE PROPOSED TO THE OHARNG AND APPROVED BEFORE IMPLEMENTATION. THE CONTRACTOR WILL UTILIZE NATIVE VEGETATION UNLESS NATIVE VEGETATION IS NOT APPROPRIATE FOR THE REQUIRED APPLICATION AND THE OHARNG ENVIRONMENTAL OFFICE HAS REVIEWED AND APPROVED THE USE OF NON–NATIVE SPECIES. VEGETATION TO BE USED ON A PROJECT WILL BE IDENTIFIED IN THE ENVIRONMENTAL WORK PLAN.

14. THE GENERAL CONTRACTOR IS REQUIRED TO PREPARE AN ADEQUATE SEED BED PRIOR TO SEEDING. THE SEED BED MUST CONSIST OF CLEAN, WEED FREE TOP SOIL MUST BE BROKEN UP AND LOOSE AND SUITABLE FOR SEED GERMINATION. FERTILIZATION WILL BE REQUIRED IF THE SOIL IS POOR AND/OR NUTRIENT LEVELS ARE LOW. LIME WILL BE APPLIED AS NECESSARY TO ADJUST THE SOIL PH TO THE RECOMMENDED LEVEL FOR THE SEED BEING SOWN.

15. AN APPROPRIATE TURF GRASS MIX WILL BE USED FOR HIGH TRAFFIC AND HIGH MAINTENANCE AREAS. NATIVE SEED MIXES WILL BE UTILIZED FOR AREAS THAT DO NOT REQUIRE REGULAR MOWING OR DO NOT RECEIVE FREQUENT FOOT TRAFFIC. ANNUAL RYEGRASS MAY BE ADDED TO MIXES TO PROVIDE QUICK COVER. FOR LATE SEASON SEEDING, WINTER WHEAT/RYE MAY BE ADDED TO PROVIDE A QUICK COVER. CONTRACTORS MAY USE APPROVED GRASS SEED MIXES PROVIDED BY THE OHARNG OR MAY PROPOSE ALTERNATIVE SEED MIXES. THE OHARNG ENVIRONMENTAL OFFICE MUST APPROVE ALL SEED MIXES. SEEDING MUST BE MULCHED WITH AT LEAST 2 INCHES OF STRAW MULCH IF BROADCAST SEEDED, AN APPROPRIATE FIBER MATTING, OR AN APPROPRIATE COVER IF HYDRO–SEEDED. SEED DRILLING USUALLY DOES NOT REQUIRE MULCH.

MATERIALS:

MATERIALS AND EROSION CONTROL DEVICES NECESSARY FOR THE CONTROL OF EROSION AND SEDIMENTATION DURING CONSTRUCTION WILL CONFORM TO THE APPLICABLE REQUIREMENTS OF THE CONTRACT DRAWINGS AND SPECIFICATIONS.

SPECIFICATIONS:

INCORPORATE EROSION CONTROL FEATURES INDICATED ON THE APPROVED PLAN INTO THE PROJECT AT THE EARLIEST PRACTICAL TIME.

INSPECT EROSION AND SEDIMENTATION CONTROL DEVICES ON A WEEKLY BASIS OR AS STIPULATED BY THE APPLICABLE PERMITS AND AFTER EVERY HALF INCH OF RAINFALL, UNTIL ALL EXPOSED SOILS HAVE BEEN PERMANENTLY STABILIZED. MAKE NECESSARY REPAIRS TO ENSURE THE EROSION AND SEDIMENT CONTROLS ARE IN GOOD WORKING ORDER.

CONSTRUCT, STABILIZE, AND ACTIVATE EROSION AND SEDIMENTATION CONTROLS BEFORE SITE DISTURBANCE WITHIN TRIBUTARY AREAS OF THOSE CONTROLS.

AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:

- BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED.
- A MINIMUM OF 70 PERCENT VEGETATED GROWTH HAS BEEN ESTABLISHED.
- A MINIMUM OF 3 INCHES OF NON–EROSIVE MATERIAL SUCH AS STONE, MULCH, OR RIPRAP HAS BEEN INSTALLED.
- OR, EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

SEQUENCE OF CONSTRUCTION

THE FOLLOWING IS A GENERALIZED SEQUENCE OF BMP INSTALLATION FOR THIS PROJECT. THE CONTRACTOR SHALL INSTALL ALL E&S CONTROL MEASURES IN ACCORDANCE WITH THE MANUFACTURER RECOMMENDATIONS AND/OR STANDARDS DETAILS PROVIDED IN THE E&S PLAN AND, WHERE APPLICABLE, IN ACCORDANCE WITH PRODUCT MANUFACTURER SPECIFICATIONS. CONSTRUCTION OF ALL SITE FEATURES (I.E. STRUCTURES, ROADWAYS, UTILITIES, ETC.) SHALL BE IN ACCORDANCE WITH THE APPROVED PROJECT SITE PLAN. EACH CONSTRUCTION STAGE IS INTENDED TO PROVIDE A GENERAL COURSE OF ACTION IN ORDER TO CONFORM TO THE APPLICABLE REGULATORY AGENCY REQUIREMENTS FOR TEMPORARY AND PERMANENT SOIL EROSION AND SEDIMENT POLLUTION CONTROL. ALL NECESSARY PARTS FOR PROPER AND COMPLETE EXECUTION OF WORK PERTAINING TO THIS PLAN, WHETHER SPECIFICALLY MENTIONED OR NOT, ARE TO BE PERFORMED BY THE CONTRACTOR. IT IS NOT INTENDED THAT THE PLAN DRAWINGS OR NARRATIVE SHOW EVERY DETAILED PIECE OF MATERIAL OR EQUIPMENT. THE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS LISTED IN THIS SECTION, BUT MAY BE REQUIRED TO ALTER CONTROLS BASED ON EFFECTIVENESS OR DIFFERING CONDITIONS ENCOUNTERED AND/OR INSTALL ADDITIONAL CONTROLS BASED ON UNFORESEEABLE CONDITIONS.

ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THE SEQUENCE MUST BE APPROVED IN WRITING FROM THE PORTAGE COUNTY CONSERVATION DISTRICT OR OHIO EPA NORTHEAST DISTRICT OFFICE PRIOR TO IMPLEMENTATION. EACH STEP OF THE SEQUENCE SHALL BE COMPLETED BEFORE PROCEEDING TO THE NEXT STEP EXCEPT WHERE NOTED.

CONSTRUCTION STAGE 1

1. AT LEAST TEN (10) DAYS PRIOR TO COMMENCING EARTHMOVING ACTIVITIES, THE OWNER OR OWNER'S REPRESENTATIVE SHALL NOTIFY ALL PROJECT ASSOCIATES, INCLUDING THE PORTAGE COUNTY CONSERVATION DISTRICT'S AND OHIO EPA.
2. AT LEAST THREE (3) DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE OHIO UTILITIES PROTECTION SERVICE SHALL BE NOTIFIED AT 1–800–362–2764 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
3. LAYOUT THE PROJECT NPDES PERMIT BOUNDARY AND LIMITS OF DISTURBANCE AS IDENTIFIED ON THE PLAN DRAWINGS.
4. CLEARLY MARK ALL WETLAND AREAS ADJACENT TO PROJECT AREA AS IDENTIFIED ON THE PLAN DRAWINGS.
5. PROCEED WITH MOBILIZATION OF CONSTRUCTION TRAILERS AND EQUIPMENT IN THE AREA IDENTIFIED ON THE PLAN DRAWINGS. LOCATION OF MOBILIZATION AREA MAY BE MODIFIED AS DEEMED NECESSARY BY THE CONTRACTOR WITH PRIOR APPROVAL FROM THE PORTAGE COUNTY CONSERVATION DISTRICT.
6. INSTALL COMPOST FILTER SOCKS WHERE IDENTIFIED ON THE PLAN DRAWINGS. AS NECESSARY FOR THE DURATION OF CONSTRUCTION, INSTALL A ROCK FILTER OUTLET AT ANY LOCATION WHERE A COMPOST FILTER SOCK SECTION HAS BECOME COMPROMISED BY CONCENTRATED FLOW.
7. INSTALL RIPRAP APRONS AND LEVEL SPREADERS WHERE SHOWN ON THE PLAN DRAWINGS
8. EXISTING PAVED ROADWAYS SHALL BE USED FOR ACCESS INTO THE PROJECT SITE; ACCESS INTO CONSTRUCTION AREAS WITHIN THE PROJECT SITE WHERE EARTHMOVING WILL TAKE PLACE SHALL BE VIA A ROCK CONSTRUCTION ENTRANCE. INSTALL ROCK CONSTRUCTION ENTRANCES WHERE IDENTIFIED ON THE PLAN DRAWINGS. FOR THE DURATION OF CONSTRUCTION, THE CONTRACTOR WILL MAINTAIN THE ROCK CONSTRUCTION ENTRANCES TO THE SPECIFIED DIMENSION AND THICKNESS AND IMMEDIATELY REMOVE ALL PROJECT RELATED SEDIMENT AND DEBRIS THAT BECOMES DEPOSITED ON PUBLIC ROADWAYS.
9. PROCEED WITH REMOVAL OF VEGETATION AS NECESSARY TO COMPLETE CONSTRUCTION
10. REMOVE CULVERT PIPES AS NOTED ON PLAN DRAWINGS

CONSTRUCTION STAGE 2

1. BEGIN EARTHWORK OPERATIONS IN THE AREAS IDENTIFIED ON THE PLAN DRAWINGS. TOPSOIL SHALL BE STOCKPILED IN THE LOCATION IDENTIFIED ON THE PLAN DRAWINGS. AS NECESSARY FOR THE DURATION OF CONSTRUCTION, UPON COMPLETION OR TEMPORARY CESSATION OF EARTH DISTURBANCE ACTIVITY OR ANY STAGE THEREOF, ASSOCIATED DISTURBED AREA SHALL IMMEDIATELY BE STABILIZED.
16. RELOCATE CONSTRUCTION TRAILERS AND EQUIPMENT AS NECESSARY TO FACILITATE CONSTRUCTION OF THE REMAINING IMPROVEMENTS. ESTABLISHED E&S CONTROLS SHALL REMAIN IN PLACE AND ADDITIONAL ON–SITE E&S CONTROLS SHALL BE IMPLEMENTED BY THE CONTRACTOR, AS NECESSARY, DURING CONSTRUCTION OF EACH CHANNEL. ADDITIONAL E&S MEASURES SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS SPECIFIED WITHIN THE E&S PLAN AND NOTES. THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING FINAL GRADING AND FOR MAINTENANCE OF THE ASSOCIATED ON–SITE E&S CONTROLS.
17. INSTALL TEMPORARY EROSION CONTROL MATTING ON ALL SLOPES 3:1 (H:V) AND STEEPER NOT PREVIOUSLY STABILIZED, AND APPLY SOIL SUPPLEMENTS AND PERMANENT SEED AND MULCH TO DISTURBED AREAS THAT WILL NOT BE PAVED AND WILL NO LONGER BE SUBJECTED TO CONSTRUCTION TRAFFIC.
18. REMOVE TEMPORARY E&S MEASURES ONCE ALL PREVIOUSLY DISTURBED SURFACES HAVE ESTABLISHED A UNIFORM 70% PERENNIAL COVER OF EROSION RESISTANT VEGETATION OR HAVE BEEN OTHERWISE STABILIZED WITH CONCRETE PAVING.
22. NOTIFY THE PORTAGE COUNTY CONSERVATION DISTRICT UPON COMPLETION OF CONSTRUCTION.

DATE	REVISION MADE	BY	AUTHORIZED

Michael Baker INTERNATIONAL
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CAMP RAVENNA JOINT MILITARY TRAINING CENTER
RAVENNA, OHIO

OHIO NATIONAL GUARD SINCE 1788

PORTAGE COUNTY ITAM TRAINING AREA IMPROVEMENT AND TRAIL CREATION

EROSION AND SEDIMENT CONTROL GENERAL NOTES

DATE: 06-09-17	DES BY: WDN	BAKER PROJECT NUMBER 156220	SHEET NO: CE-501
SCALE: AS NOTED	DWN BY: MJL	GOV. CONTRACT NUMBER #W91364-12-D-0003	14 OF 18
SIZE: ANSI D	CHK BY: SMS		

I:\Ohio NG ID\Q156220 Tank Trails Camp Ravenna\05_Deliverables\Drawings\05 C_Civil\Sheet Files\E S\Portage County\CE-501 Portage E S Notes.dwg Jul12,2017 - 4:47pm Plotted By: Joe Hlebic ki

SITE SOILS INFORMATION:

MAP UNIT: MgB – MAHONING SILT LOAM, 2 TO 6 PERCENT SLOPES

COMPONENT: MAHONING (85%)
SLOPE: 2 TO 6 PERCENT
DEPTH TO RESTRICTIVE FEATURE: MORE THAN 80 INCHES TO LITHIC BEDROCK
DRAINAGE CLASS: SOMEWHAT POORLY DRAINED
CAPACITY OF THE MOST LIMITING LAYER TO TRANSMIT WATER
(KSAT): VERY LOW TO MODERATELY LOW (0.00 TO 0.14 IN/HR)
DEPTH TO WATER TABLE: ABOUT 6 TO 12 INCHES
FREQUENCY OF FLOODING: NONE
FREQUENCY OF PONDING: NONE
AVAILABLE WATER CAPACITY: MODERATE (ABOUT 6.6 INCHES)

MINOR COMPONENTS (15%):
GENERATED BRIEF SOIL DESCRIPTIONS ARE CREATED FOR MAJOR COMPONENTS ONLY. BELOW IS A LIST OF THE MINOR COMPONENTS.
ELLSWORTH (10%)
TRUMBULL (5%)

MAP UNIT: BgB – BOGART SILT LOAM, 2 TO 6 PERCENT SLOPES

COMPONENT: BOGART AND SIMILAR SOILS (100%)
SLOPE: 2 TO 6 PERCENT
DEPTH TO RESTRICTIVE FEATURE: MORE THAN 80 INCHES TO LITHIC BEDROCK
DRAINAGE CLASS: MODERATELY WELL DRAINED
CAPACITY OF THE MOST LIMITING LAYER TO TRANSMIT WATER (KSAT):
MODERATELY HIGH TO HIGH (0.60
TO 6.00 IN/HR)
DEPTH TO WATER TABLE: ABOUT 18 TO 36 INCHES
FREQUENCY OF FLOODING: NONE
FREQUENCY OF PONDING: NONE
AVAILABLE WATER CAPACITY: LOW (ABOUT 5.8 INCHES)

MAP UNIT: CpB – CHILI SILT LOAM, 2 TO 6 PERCENT SLOPES

COMPONENT: CHILI AND SIMILAR SOILS (100%)
SLOPE: 2 TO 6 PERCENT
DEPTH TO RESTRICTIVE FEATURE: MORE THAN 80 INCHES TO LITHIC BEDROCK
DRAINAGE CLASS: WELL DRAINED
CAPACITY OF THE MOST LIMITING LAYER TO TRANSMIT WATER (KSAT):
MODERATELY HIGH TO HIGH (0.60
TO 6.00 IN/HR)
DEPTH TO WATER TABLE: MORE THAN 80 INCHES
FREQUENCY OF FLOODING: NONE
FREQUENCY OF PONDING: NONE
AVAILABLE WATER CAPACITY: LOW (ABOUT 5.3 INCHES)

MAP UNIT: Da – DAMASCUS LOAM, 0 TO 2 PERCENT SLOPES

COMPONENT: DAMASCUS AND SIMILAR SOILS (100%)
SLOPE: 0 TO 2 PERCENT
DEPTH TO RESTRICTIVE FEATURE: MORE THAN 80 INCHES TO LITHIC BEDROCK
DRAINAGE CLASS: POORLY DRAINED
CAPACITY OF THE MOST LIMITING LAYER TO TRANSMIT WATER (KSAT):
MODERATELY HIGH TO HIGH (0.60
TO 6.00 IN/HR)
DEPTH TO WATER TABLE: 0 TO 6 INCHES
FREQUENCY OF FLOODING: NONE
FREQUENCY OF PONDING: NONE
AVAILABLE WATER CAPACITY: MODERATE (ABOUT 6.3 INCHES)

SITE SOILS INFORMATION (CONTINUTED):

MAP UNIT: Ho – HOLLY SILT LOAM

COMPONENT: CHILI AND SIMILAR SOILS (100%)
SLOPE: 0 TO 2 PERCENT
DEPTH TO RESTRICTIVE FEATURE: MORE THAN 80 INCHES TO LITHIC
BEDROCK
DRAINAGE CLASS: POORLY DRAINED
CAPACITY OF THE MOST LIMITING LAYER TO TRANSMIT WATER (KSAT):
MODERATELY HIGH TO HIGH (0.20
TO 2.00 IN/HR)
DEPTH TO WATER TABLE: ABOUT 0 TO 6 INCHES
FREQUENCY OF FLOODING: FREQUENT
FREQUENCY OF PONDING: NONE
AVAILABLE WATER CAPACITY: HIGH (ABOUT 9.4 INCHES)

MINOR COMPONENTS (5%):
GENERATED BRIEF SOIL DESCRIPTIONS ARE CREATED FOR MAJOR COMPONENTS ONLY. BELOW IS A LIST OF THE MINOR COMPONENTS.
ORRVILLE (5%)

MAP UNIT: MnB – MAHONING–URBAN LAND COMPLEX, 2 TO 6 PERCENT SLOPES

COMPONENT: MAHONING AND SIMILAR SOILS (45%)
SLOPE: 2 TO 6 PERCENT
DEPTH TO RESTRICTIVE FEATURE: MORE THAN 80 INCHES TO LITHIC
BEDROCK
DRAINAGE CLASS: SOMEWHAT POORLY DRAINED
CAPACITY OF THE MOST LIMITING LAYER TO TRANSMIT WATER (KSAT): VERY
LOW TO MODERATELY LOW (0.00 TO 0.14 IN/HR)
DEPTH TO WATER TABLE: ABOUT 6 TO 12 INCHES
FREQUENCY OF FLOODING: NONE
FREQUENCY OF PONDING: NONE
AVAILABLE WATER CAPACITY: MODERATE (ABOUT 6.6 INCHES)

URBAN LAND (30%)

MINOR COMPONENTS (25%):
GENERATED BRIEF SOIL DESCRIPTIONS ARE CREATED FOR MAJOR COMPONENTS ONLY. BELOW IS A LIST OF THE MINOR COMPONENTS.
UDORTHENTS (10%)
ELLSWORTH (10%)
TRUMBULL (5%)

MAP UNIT: TrA – TRUMBULL SILT LOAM, 0 TO 2 PERCENT SLOPES

COMPONENT: TRUMBULL AND SIMILAR SOILS (90%)
SLOPE: 0 TO 2 PERCENT
DEPTH TO RESTRICTIVE FEATURE: MORE THAN 80 INCHES TO LITHIC
BEDROCK
DRAINAGE CLASS: POORLY DRAINED
CAPACITY OF THE MOST LIMITING LAYER TO TRANSMIT WATER (KSAT): VERY
LOW TO MODERATELY LOW (0.00 TO 0.14 IN/HR)
DEPTH TO WATER TABLE: ABOUT 0 TO 6 INCHES
FREQUENCY OF FLOODING: NONE
FREQUENCY OF PONDING: FREQUENT
AVAILABLE WATER CAPACITY: MODERATE (ABOUT 6.5 INCHES)

MINOR COMPONENTS (5%):
GENERATED BRIEF SOIL DESCRIPTIONS ARE CREATED FOR MAJOR COMPONENTS ONLY. BELOW IS A LIST OF THE MINOR COMPONENTS.
MAHONING (5%)
MINER (5%)

MAP UNIT: Ug – HOLLY SILT LOAM

COMPONENT: UDORTHENTS AND SIMILAR SOILS (100%)
SLOPE: NOT PROVIDED
DEPTH TO RESTRICTIVE FEATURE: MORE THAN 80 INCHES TO LITHIC
BEDROCK
DRAINAGE CLASS: NOT PROVIDED
CAPACITY OF THE MOST LIMITING LAYER TO TRANSMIT WATER (KSAT): NOT
PROVIDED
DEPTH TO WATER TABLE: MORE THAN 80 INCHES
FREQUENCY OF FLOODING: NONE
FREQUENCY OF PONDING: NONE
AVAILABLE WATER CAPACITY: NOT PROVIDED

DATE	REVISION MADE	BY	AUTHORIZED

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CAMP RAVENNA JOINT MILITARY TRAINING CENTER
RAVENNA, OHIO

OHIO NATIONAL GUARD SINCE 1788

PORTAGE COUNTY ITAM TRAINING AREA IMPROVEMENT AND TRAIL CREATION

EROSION AND SEDIMENT CONTROL GENERAL NOTES

DATE: 06-09-17	DES BY: WDN	BAKER PROJECT NUMBER 156220	SHEET NO: CE-502
SCALE: AS NOTED	DWN BY: MJL	GOV. CONTRACT NUMBER #W91364-12-D-0003	15 OF 18
SIZE: ANSI D	CHK BY: SMS		

I:\Ohio ND ID\Q\156220 Tank Trails Camp Ravenna\05_Deliverables\Drawings\05 C_Civil\Sheet Files\E- S\Portage County\CE-501 Portage E- S Notes.dwg Jul12,2017 - 4:47pm Plotted By: Joe Hebbe; ki

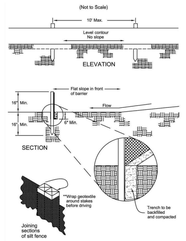
SILT FENCE (SF)

DESCRIPTION

A SILT FENCE IS A SEDIMENT–TRAPPING PRACTICE UTILIZING A GEOTEXTILE FENCE, TOPOGRAPHY AND SOMETIMES VEGETATION TO CAUSE SEDIMENT DEPOSITION. SILT FENCE REDUCES RUNOFF'S ABILITY TO TRANSPORT SEDIMENT BY PONDING RUNOFF AND DISSIPATING SMALL RILLS OF CONCENTRATED FLOW INTO UNIFORM SHEET FLOW. SILT FENCE IS USED TO PREVENT SEDIMENT–LADEN SHEET RUNOFF FROM ENTERING INTO DOWNSTREAM CREEKS AND SEWER SYSTEMS.

SPECIFICATIONS FOR SILT FENCE

(Not to Scale)



1. SILT FENCE SHALL BE CONSTRUCTED BEFORE UPSLOPE LAND DISTURBANCE BEGINS.

2. ALL SILT FENCE SHALL BE PLACED AS CLOSE TO THE CONTOUR AS POSSIBLE SO THAT WATER WILL NOT CONCENTRATE AT LOW POINTS IN THE FENCE AND SO THAT SMALL SWALES OR DEPRESSIONS WHICH MAY CARRY SMALL CONCENTRATED FLOWS TO THE SILT FENCE ARE DISSIPATED ALONG ITS LENGTH.

3. ENDS OF THE SILT FENCES SHALL BE BROUGHT UPSLOPE SLIGHTLY SO THAT WATER PONDED BY THE SILT FENCE WIL BE PREVENTED FROM FLOWING AROUND THE ENDS.

4. SILT FENCE SHALL BE PLACED ON THE FLATTEST AREA AVAILABLE.

5. WHERE POSSIBLE, VEGETATION SHALL BE PRESERVED FOR 5 FEET (OR AS MUCH AS POSSIBLE) UPSLOPE FROM THE SILT FENCE. IF VEGETATION IS REMOVED, IT SHALL BE REESTABLISHED WITHIN 7 DAYS FROM THE INSTALLATION OF THE SILT FENCE.

6. THE HEIGHT OF THE SILT FENCE SHALL BE A MINIMUM OF 16 INCHES ABOVE THE ORIGINAL GROUND SURFACE.

7. THE SILT FENCE SHALL BE PLACED IN AN EXCAVATED OR SLICED TRENCH CUT A MINIMUM OF 6 INCHES DEEP. THE TRENCH SHALL BE MADE WITH A TRENCHER, CABLE LAYING MACHINE, SLICING MACHINE, OR OTHER SUITABLE DEVICE THAT WILL ENSURE AN ADEQUATELY UNIFORM TRENCH DEPTH.

8. THE SILT FENCE SHALL BE PLACED WITH THE STAKES ON THE DOWNSLOPE SIDE OF THE GEOTEXTILE AND SO THAT 8 INCHES OF GEOTEXTILE MUST BE BELOW THE GROUND SURFACE. EXCESS MATERIAL SHALL LAY ON THE BOTTOM OF THE 6 INCH DEEP TRENCH. THE TRENCH SHALL BE BACKFILLED AND COMPACTED ON BOTH SIDES OF THE FABRIC.

9. SEAMS BETWEEN SECTION OF SILT FENCE SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST WITH A MINIMUM 6 INCHES OVERLAP PRIOR TO DRIVING INTO THE GROUND. (SEE DETAILS)

10. MAINTENANCE – SILT FENCE SHALL ALLOW RUNOFF TO PASS ONLY AS DIFFUSE FLOW THROUGH THE GEOTEXTILE. IF RUNOFF OVERTOPS THE SILT FENCE, FLOWS UNDER OR AROUND THE ENDS, OR IN ANY OTHER WAY BECOMES A CONCENTRATED FLOW DISCHARGE, ONE OF THE FOLLOWING SHALL BE PERFORMED, AS APPROPRIATE: 1) THE LAYOUT OF THE SILT FENCE SHALL BE CHANGED, 2) ACCUMULATED SEDIMENT SHALL BE REMOVED, OR 3) OTHER PRACTICES SHALL BE INSTALLED.

SILT FENCE SHALL BE INSPECTED AFTER EACH RAINFALL AND AT LEAST DAILY DURING A PROLONGED RAINFALL. THE LOCATION OF EXISTING SILT FENCE SHALL BE REVIEWED DAILY TO ENSURE ITS PROPER LOCATION AND EFFECTIVENESS. IF DAMAGED, THE SILT FENCE SHALL BE REPAIRED IMMEDIATELY.

Criteria for Silt Fence Materials:

1. FENCE POSTS––THE LENGTH SHALL BE A MINIMUM OF 32 INCHES LONG. WOOD POSTS WILL BE 2–BY–2 INCH NOMINAL DIMENSIONED HARDWOOD OF SOUND QUALITY. THEY SHALL BE FREE OF KNOTS, SPLITS AND OTHER VISIBLE IMPERFECTIONS, THAT WILL WEAKEN THE POSTS. THE MAXIMUM SPACING BETWEEN POSTS SHALL BE 10 FT. POSTS SHALL BE DRIVEN A MINMUM 16 INCHES INTO THE GROUND, WHERE POSSIBLE. IF NOT POSSIBLE, THE POSTS SHALL BE ADEQUATELY SECURED TO PREVENT OVERTURNING OF THE FENCE DUE TO SEDIMENT/WATER LOADING.

2. SILT FENCE FABRIC (SEE CHART BELOW):

Fabric Properties	Values	Test Method
Minimum Tensile Strength	120 lbs. (535 N)	ASTM D 4632
Maximum Elongation at 60 lbs	50%	ASTM D 4632
Minimum Puncture Strength	50 lbs (220 N)	ASTM D 4833
Minimum Tear Strength	40 lbs (180 N)	ASTM D 4533
Apparent Opening Size	< or = 0.84 mm	ASTM D4751
Minimum Permittivity	1x10–2 sec. –1	ASTM D 4491
UV Exposure Strength Retention	70%	ASTM G 4355

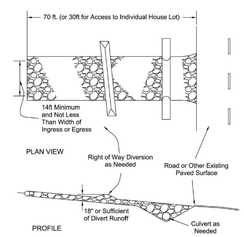
CONSTRUCTION ENTRANCE (CE)

DESCRIPTION

A CONSTRUCTION ENTRANCE IS A STABILIZED PAD OF STONE UNDERLAIN WITH GEOTEXTILE AND IS USED TO REDUCE THE AMOUNT OF MUD TRACKED OFF–SITE WITH CONSTRUCTION TRAFFIC. LOCATED AT POINTS OF INGRESS/EGRESS, THE PRACTICE IS USED TO REDUCE THE AMOUNT OF MUD TRACKED OFF–SITE WITH CONSTRUCTION TRAFFIC.

SPECIFICATIONS FOR CONSTRUCTION ENTRANCE

(Not To Scale)



1. STONE SIZE – ODOT #2 (1.5–2.5 INCH) STONE SHALL BE USED, OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH – THE CONSTRUCTION ENTRANCE SHALL BE AS LONG AS REQUIRED TO STABILIZE HIGH TRAFFIC AREAS BUT NOT LESS THAN 70 FT. (EXCEPTION: APPLY 30 FT. MINIMUM TO SINGLE RESIDENCE LOTS).
3. THICKNESS – THE STONE LAYER SHALL BE AT LEAST 6 INCHES THICK FOR LIGHT DUTY ENTRANCES OR AT LEAST 10 INCHES FOR HEAVY DUTY USE.
4. WIDTH – THE ENTRANCE SHALL BE AT LEAST 14 FEET WIDE, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
5. GEOTEXTILE – A GEOTEXTILE SHALL BE LAID OVER THE ENTIRE AREA, PRIOR TO PLACING STONE. IT SHALL BE COMPOSED OF STRONG ROT–PROOF POLYMERIC FIBERS AND MEET THE FOLLOWING SPECIFICATIONS:

FIGURE 7.4.1

GEOTEXTILE SPECIFICATION FOR CONSTRUCTION ENTRANCE	
Minimum Tensile Strength	200 lbs.
Minimum Puncture Strength	80 psi.
Minimum Tear Strength	50 lbs.
Minimum Burst Strength	320 psi.
Minimum Elongation	20%
Equivalent Opening Size	EOS < 0.6 mm.
Permittivity	1x10–3 cm/sec.

6. TIMING – THE CONSTRUCTION ENTRANCE SHALL BE INSTALLED AS SOON AS IS PRACTICABLE BEFORE MAJOR GRADING ACTIVITIES.
7. CULVERT – A PIPE OR CULVERT SHALL BE CONSTRUCTED UNDER THE ENTRANCE IF NEEDED TO PREVENT SURFACE WATER FROM FLOWING ACROSS THE ENTRANCE OR TO PREVENT RUNOFF FROM BEING DIRECTED OUT ONTO PAVED SURFACES.
8. WATER BAR – A WATER BAR SHALL BE CONSTRUCTED AS PART OF THE CONSTRUCTION ENTRANCE IF NEEDED TO PREVENT SURFACE RUNOFF FROM FLOWING THE LENGTH OF THE CONSTRUCTION ENTRANCE AND OUT ONTO PAVED SURFACES.

OPERATION & MAINTENANCE

1. TOP DRESSING OF ADDITIONAL STONE SHALL BE APPLIED AS CONDITIONS DEMAND. MUD SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADS, OR ANY SURFACE WHERE RUNOFF IS NOT CHECKED BY SEDIMENT CONTROLS, SHALL BE REMOVED IMMEDIATELY. REMOVAL SHALL BE ACCOMPLISHED BY SCRAPING OR SWEEPING.
2. CONSTRUCTION ENTRANCES SHALL NOT BE RELIED UPON TO REMOVE MUD FROM VEHICLES AND PREVENT OFF–SITE TRACKING. VEHICLES THAT ENTER AND LEAVE THE CONSTRUCTION–SITE SHALL BE RESTRICTED FROM MUDDY AREAS.

REMOVAL

1. THE ENTRANCE SHALL REMAIN IN PLACE UNTIL THE DISTURBED AREA IS STABILIZED OR REPLACED WITH A PERMANENT ROADWAY OR ENTRANCE.

DEWATERING MEASURES (DM)

DESCRIPTION

DEWATERING MEASURES PROVIDE A STABLE AREA FOR RECEIVING AND TREATING WATER PUMPED FROM EXCAVATION OR WORK AREAS PRIOR TO BEING RELEASED OFF THE SITE. THESE PRACTICES REDUCE SEDIMENT IMPACTS TO DOWNSTREAM WATER RESOURCES.

SPECIFICATIONS FOR DE–WATERING

1. A DE–WATERING PLAN SHALL BE DEVELOPED PRIOR TO THE COMMENCEMENT OF ANY PUMPING ACTIVITIES. THE OHARNG ENVIRONMENTAL OFFICE MUST APPROVE ALL DEWATERING ACTIVITIES.
2. STANDING WATER MUST BE CHARACTERIZED TO DETERMINE IF IT REGULATED BEFORE DEWATERING PROCEDURES ARE IMPLEMENTED. CHARACTERIZATION MAY BE POSSIBLE BY GENERATOR KNOWLEDGE OR MAY REQUIRE SAMPLING AND ANALYSIS.
3. AT MINIMUM, DISCHARGES MUST MEET WATER QUALITY STANDARDS IDENTIFIED IN OHIO ADMINISTRATIVE CODE 3745–1. AT LOCATIONS WITH KNOWN CONTAMINATED GROUNDWATER THE OHARNG ENVIRONMENTAL OFFICE WILL PROVIDE GUIDANCE ON CONTAINERIZATION, SAMPLING, AND DISPOSAL/DISCHARGE REQUIREMENTS.
4. AT MINIMUM, WATER MUST BE DISCHARGED THROUGH AN OIL ABSORPTION AND/OR AN ACTIVATED CHARCOAL, AND/OR A SEDIMENT FILTER BAG AS APPROPRIATE FOR THE WATER BEING DISCHARGED.
5. DISCHARGE WILL BE DONE IN A VEGETATED UPLAND AREA THAT DRAINS AWAY FROM THE WORK SITE UNLESS OTHERWISE SPECIFIED IN THE SCOPE OF WORK OR AUTHORIZED BY THE OHARNG ENVIRONMENTAL OFFICE.
6. DISCHARGE WILL BE DONE SO AS TO ALLOW THE DISCHARGE TO FILTER THROUGH DENSE GROUNDCOVER VEGETATION.
7. THE DISCHARGE HOSE WILL BE SET ON A PIECE OF PLYWOOD OR RUBBER MAT TO DISPERSE THE WATER AND PREVENT A CONCENTRATED DISCHARGE THAT CAN CUT AND ERODE SOIL.
8. DIRECT DISCHARGE TO A STREAM, POND, WETLAND, DITCH, OR OTHER BOYD OF WATER OR CONVEYANCE IS NOT PERMITTED.

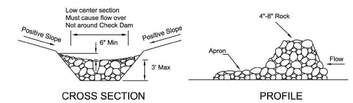
CHECK DAMS (CD)

DESCRIPTION

CHECK DAMS ARE SMALL ROCK DAMS CONSTRUCTED IN SWALES, GRASSED WATERWAYS OR DIVERSIONS. THEY REDUCE THE VELOCITY OF CONCENTRATED FLOWS, THEREBY REDUCING EROSION WITHIN THE SWALE OR WATERWAY. WHILE THIS PRACTICE OFTEN TRAPS SOME SEDIMENT, ITS TRAPPING EFFICIENCY IS EXTREMELY POOR, THUS, IT SHOULD NOT BE USED AS A PRIMARY SEDIMENT–TRAPPING PRACTICE.

SPECIFICATIONS FOR GRASS LINED CHANNEL

(Not to Scale)



INSTALLATION

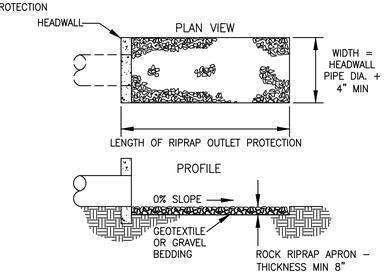
1. THE CHECK DAM SHALL BE CONSTRUCTED OF 4–8 INCH DIAMETER STONE, PLACED SO THAT IT COMPLETELY COVERS THE WIDTH OF THE CHANNEL. ODOT TYPE D STONE IS ACCEPTABLE, BUT SHOULD BE UNDERLAIN WITH A GRAVEL FILTER CONSISTING OF ODOT NO. 3 OR 4 OR SUITABLE FILTER FABRIC.
2. MAXIMUM HEIGHT OF CHECK DAM SHALL NOT EXCEED 3.0 FEET.
3. THE MIDPOINT OF THE ROCK CHECK DAM SHALL BE A MINIMUM OF 6 INCHES LOWER THAN THE SIDES IN ORDER TO DIRECT ACROSS THE CENTER AND AWAY FROM THE CHANNEL SIDES.
4. THE BASE OF THE CHECK DAM SHALL BE ENTRENCHED APPROXIMATELY 6 INCHES.
5. SPACING OF CHECK DAMS SHALL BE IN A MANNER SUCH THAT THE TOE OF THE UPSTREAM DAM IS AT THE SAME ELEVATION AS THE TOP OF THE DOWNSTREAM DAM.
6. A SPLASH APRON SHALL BE CONSTRUCTED WHERE CHECK DAMS ARE EXPECTED TO BE IN USE FOR AN EXTENDED PERIOD OF TIME, A STONE APRON SHALL BE CONSTRUCTED IMMEDIATELY DOWNSTREAM OF THE CHECK DAM TO PREVENT FLOWS FROM UNDERCUTTING THE STRUCTURE. THE APRON SHOULD BE 6 INCHES THICK AND ITS LENGTH TWO TIMES THE HEIGHT OF THE DAM.
7. STONE PLACEMENT SHALL BE PERFORMED EITHER BY HAND OR MECHANICALLY AS LONG AS THE CENTER OF CHECK DAM IS LOWER THAN THE SIDES AND EXTENDS ACROSS ENTIRE CHANNEL.
8. SIDE SLOPES SHALL BE A MINIMUM OF 2:1

OUTLET PROTECTION (OP)

DESCRIPTION

A ROCK OR RIPRAP APRON TYPICALLY NEEDED AT THE OUTLET OF STORM DRAINS, CULVERTS, OR OPEN CHANNELS. ROCK OUTLET PROTECTION PROVIDES AN EROSION RESISTANT TRANSITION AREA WHERE CONCENTRATED OR HIGH VELOCITY FLOWS ENTERS LESS MODIFIED CHANNELS OR NATURAL STREAMS.

SPECIFICATIONS FOR OUTLET PROTECTION



INSTALLATION

1. SUBGRADE FOR THE FILTER OR BEDDING AND RIPRAP SHALL BE PREPARED TO THE REQUIRED LINES AND GRADES AS SHOWN ON THE PLAN. THE SUBGRADE SHALL BE CLEARED OF ALL TREES, STUMPS, ROOTS, SOD, LOOSE ROCK, OR OTHER MATERIAL.
2. RIPRAP SHALL CONFORM TO THE GRADING LIMITS AS SHOWN ON THE PLAN.
3. GEOTEXTILE SHALL BE SECURELY ANCHORED ACCORDING TO MANUFACTURERS' RECOMMENDATIONS.
4. GEOTEXTILE SHALL BE LAID WITH THE LONG DIMENSION PARALLEL TO THE DIRECTION OF FLOW AND SHALL BE LAID LOOSELY BUT WITHOUT WRINKLES AND CREASES. WHERE JOINTS ARE NECESSARY, STRIPS SHALL BE PLACED TO PROVIDE A 12 INCHES MINIMUM OVERLAP, WITH THE UPSTREAM STRIP OVERLAPPING THE DOWNSTREAM STRIP.
5. GRAVEL BEDDING SHALL BE ODOT NO. 67'S OR 57'S UNLESS SHOWN DIFFERENTLY ON THE DRAWINGS.
6. RIPRAP MAY BE PLACED BY EQUIPMENT BUT SHALL BE PLACED IN A MANNER TO PREVENT SLIPPAGE OR DAMAGE TO THE GEOTEXTILE.
7. RIPRAP SHALL BE PLACED BY A METHOD THAT DOES NOT CAUSE SEGREGATION OF SIZES. EXTENSIVE PUSHING WITH A DOZER CAUSES SEGREGATION AND SHALL BE AVOIDED BY DELIVERING RIPRAP NEAR ITS FINAL LOCATION WITHIN THE CHANNEL.
8. CONSTRUCTION SHALL BE SEQUENCED SO THAT OUTLET PROTECTION IS PLACED AND FUNCTIONAL WHEN THE STORM DRAIN, CULVERT, OR OPEN CHANNEL ABOVE IT BECOMES OPERATIONAL.
9. ALL DISTURBED AREAS WILL BE VEGETATED AS SOON AS PRACTICAL.

TYPE OF ROCK OR RIPRAP (ODOT)	"N" VALUE	SIZE OF ROCK	
		50% by weight	85% by weight
TYPE D	.036	> 6 in.	3 – 12 in.
TYPE C	.04	> 12 in.	6 – 18 in.
TYPE B	.043	> 18 in.	12 – 24 in.
TYPE A	.045	> 24 in.	18 – 30 in.

DUST CONTROL (DC)

DESCRIPTION

DUST CONTROL INVOLVES PREVENTING OR REDUCING DUST FROM EXPOSED SOILS OR OTHER SOURCES DURING LAND DISTURBING, DEMOLITION AND CONSTRUCTION ACTIVITIES TO REDUCE THE PRESENCE OF AIRBORNE SUBSTANCES WHICH MAY PRESENT HEALTH HAZARDS, TRAFFIC SAFETY PROBLEMS OR HARM ANIMAL OR PLANT LIFE.

SPECIFICATIONS FOR DUST CONTROL

1. VEGETATIVE COVER AND/MULCH – APPLY TEMPORARY OR PERMANENT SEEDING AND MULCH TO AREAS THAT WILL REMIAN IDLE FOR OVER 21 DAYS. SAVING EXISTING TREES AND LARGE SHRUBS WILL ALSO REDUCE SOIL AND AIR MOVEMENT ACROSS DISTURBED AREAS. SEE TEMPORARY SEEDING; PERMANENT SEEDING; MULCHING PRACTICES; AND TREE AND NATURAL AREA PROTECTION PRACTICES.
2. WATERING – SPRAY SITE WITH WATER UNTIL THE SURFACE IS WET BEFORE AND DURING GRADING AND REPEAT AS NEEDED, ESPECIALLY ON HAUL ROADS AND OTHER HEAVY TRAFFIC ROUTES. WATERING SHALL BE DONE AT A RATE THAT PREVENTS DUST BUT DOES NOT CAUSE SOIL EROSION. WETTING AGENTS SHALL BE UTILIZED ACCORDING TO MANUFACTURERS INSTRUCTIONS.
3. SPRAY–ON ADHESIVES – APPLY ADHESIVE ACCORDING TO THE FOLLOWING TABLE OR MANUFACTURERS' INSTRUCTIONS.

FIGURE 7.5.1

ADHESIVE	Water Dilution (Adhesive: Water)	NOZZLE TYPE	Application Rate Gal./Ac.
Latex Emulsion	12.5:1	Fine	235
Resin in Water Acrylic Emulsion (No–traffic)	4:1	Fine	300
Acrylic Emulsion (No–traffic)	7:1	Coarse	450
Acrylic Emulsion (Traffic)	3.5:1	Coarse	350

4. STONE – GRADED ROADWAYS AND OTHER SUITABLE AREAS WILL BE STABILIZED USING CRUSHED STONE OR COARSE GRAVEL AS SOON AS PRACTICABLE AFTER REACHING AN INTERIM OR FINAL GRADE. CRUSHED STONE OR COARSE GRAVEL CAN BE USED AS A PERMANENT COVER TO PROVIDE CONTROL OF SOIL EMISSIONS.
5. BARRIERS – EXISTING WINDBREAK VEGETATION SHALL BE MARKED AND PRESERVED. SNOW FENCING OR OTHER SUITABLE BARRIER MAY BE PLACED PERPENDICULAR TO PREVAILING AIR CURRENTS AT INTERVALS OF ABOUT 15 TIMES THE BARRIER HEIGHT TO CONTROL AIR CURRENTS AND BLOWING SOIL.
6. CALCIUM CHLORIDE – THIS CHEMICAL MAY BE APPLIED BY MECHANICAL SPREADER AS LOOSE, DRY GRANULES OR FLAKES AT A RATE THAT KEEPS THE SURFACE MOIST BUT NOT SO HIGHAS TO CAUSE WATER POLLUTION OR PLANT DAMAGE. APPLICATION RATES SHOULD BE STRICTLY IN ACCORDANCE WITH SUPPLIERS' SPECIFIED RATES.

OPERATION AND MAINTENANCE

1. WHEN TEMPORARY DUST CONTROL MEASURES ARE USED; REPETITIVE TREATMENT SHOULD BE APPLIED AS NEEDED TO ACCOMPLISH CONTROL.

2. STREET CLEANING – PAVED AREAS THAT HAVE ACCUMULATED SEDIMENT FROM CONSTRUCTION SHOULD BE CLEANED DAILY, OR AS NEEDED, UTILIZING A STREET SWEEPER OR BUCKET – TYPE ENDLOADER OR SCRAPER.

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PORTAGE COUNTY ITAM TRAINING AREA IMPROVEMENT AND TRAIL CREATION

EROSION AND SEDIMENT CONTROL STANDARD DETAILS

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TEMPORARY SEEDING (TS) PERMANENT SEEDING (PS)

DESCRIPTION

TEMPORARY SEEDINGS ESTABLISH TEMPORARY COVER ON DISTURBED AREAS BY PLANTING APPROPRIATE RAPIDLY GROWING ANNUAL GRASSES OR SMALL GRAINS. TEMPORARY SEEDING PROVIDES EROSION CONTROL ON AREAS IN BETWEEN CONSTRUCTION OPERATIONS. GRASSES WHICH ARE QUICK GROWING ARE SEEDED AND USUALLY MULCHED TO PROVIDE PROMPT, TEMPORARY SOIL STABILIZATION. IT EFFECTIVELY MINIMIZES THE AREA OF A CONSTRUCTION SITE PRONE TO EROSION AND SHOULD BE USED EVERYWHERE THE SEQUENCE OF CONSTRUCTION OPERATIONS ALLOWS VEGETATION TO BE ESTABLISHED.

SEEDING

NATIVE SEED MIXES WILL BE USED WHERE SUITABLE AND COMPATIBLE WITH MAINTENANCE REQUIREMENTS. AN APPROPRIATE TURF GRASS MIX WILL BE USED FOR HIGH TRAFFIC AND HIGH MAINTENANCE AREAS. ANNUAL RYEGRASS MAY BE ADDED TO MIXES TO PROVIDE QUICK COVER. FOR LATE SEASON SEEDING, WINTER WHEAT/RYE MAY BE ADDED TO PROVIDE A QUICK COVER. GENERAL CONTRACTORS MAY USE THE BELOW LISTED APPROVED GRASS SEED MIXES PROVIDED BY THE OHARNG OR MAY PROPOSE ALTERNATIVE SEED MIXES. THE OHARNG ENVIRONMENTAL OFFICE MUST APPROVE ALL SEED MIXES. THE SEED MIXES THAT WILL BE USED WILL BE IDENTIFIED IN THE ENVIRONMENTAL WORK PLAN.

THE FOLLOWING SEED IS APPROVED FOR ESTABLISHMENT OF TEMPORARY COVER. SPECIES MAY BE MIXED IF/AS NECESSARY FOR SPECIFIC APPLICATION.

- ANNUAL RYE GRASS (LOLIUM MULTIFLORUM), BROADCAST @ 40 LBS/ACRE, DRILLED AT 30 LBS/ACRE, MULCH WITH A MINIMUM OF 3 BALES OF STRAW PER 1000 SQUARE FEET. USE MULCH NETTING OR FIBER MAT ON SLOPES GREATER THAN 6%. GROWS QUICKLY BUT OF SHORT DURATION. GOOD GROWTH DURING HOT SUMMER PERIOD.
- WINTER RYE (SECALE CEREAL) BROADCAST @ 112 LBS/ACRE, DRILLED AT 80 LBS/ACRE, MULCH WITH A MINIMUM OF 3 BALES OF STRAW PER 1000 SQUARE FEET. USE MULCH NETTING OR FIBER MAT ON SLOPES GREATER THAN 6%. GOOD FOR FALL SEEDING. SELECT A HARDY VARIETY.
- OATS (AVENA SATIVA) BROADCAST @ 80 LBS/ACRE, DRILLED AT 65 LBS/ACRE, MULCH WITH A MINIMUM OF 3 BALES OF STRAW PER 1000 SQUARE FEET. USE MULCH NETTING OR FIBER MAT ON SLOPES GREATER THAN 6%. BEST FOR SPRING SEEDING. FALL SEEDING WILL DIE WHEN WINTER SETS IN.
- 40% NODDING WILD RYE (ELYMUS CANADENSIS), 40% VIRGINIA WILD RYE (ELYMUS VIRGINICUS), 15% PARTRIDGE PEA (CHAMAECRISTA FASCICULATA), AND 5% BLACK-EYED SUSAN (RUDBECKIA HIRTA), BROADCAST @ 35 LBS/ACRE, DRILLED AT 25 LBS/ACRE, MULCH WITH A MINIMUM OF 3 BALES OF STRAW PER 1000 SQUARE FEET. ADD 20 LBS/ACRE OF ANNUAL RYE GRASS (LOLIUM MULTIFLORUM) TO THE BROADCAST MIX AND 15 LBS/ACRE TO THE DRILLED MIX. GOOD FOR AREAS THAT WILL REMAIN UNFINISHED INDEFINITELY.
- 23.5% NODDING WILD RYE (ELYMUS CANADENSIS), 25% VIRGINIA WILD RYE (ELYMUS VIRGINICUS), 18.75% PARTRIDGE PEA (CHAMAECRISTA FASCICULATA), 1.5% BLACK-EYED SUSAN (RUDBECKIA HIRTA), AND 31.25% LITTLE BLUESTEM (SCHIZACHYRIUM SCOPARIUM), BROADCAST @ 25 LBS/ACRE, DRILLED AT 18 LBS/ACRE), MULCH WITH A MINIMUM OF 3 BALES OF STRAW PER 1000 SQUARE FEET. ADD 20 LBS/ACRE OF ANNUAL RYE GRASS (LOLIUM MULTIFLORUM) TO THE BROADCAST MIX AND 15 LBS/ACRE TO THE DRILLED MIX. GOOD FOR LATE SEASON (AFTER 15 SEPTEMBER) QUICK TEMPORARY COVER.

THE FOLLOWING SEED IS APPROVED AND WILL BE USED FOR ESTABLISHMENT OF PERMANENT COVER IN AREAS THAT ARE NOT MAINTAINED AS TURF GRASS OR HIGH FOOT TRAFFIC AREAS SUCH AS RANGE IMPACT AREAS THAT ARE NOT REGULARLY MOWED, ROADSIDES OUTSIDE OF CANTONMENT AREAS, FENCE LINES OUTSIDE OF CANTONMENT AREAS, ETC. SUBSTITUTION WITH SIMILAR SPECIES IS PERMITTED BUT MUST BE APPROVED BY THE OHARNG ENVIRONMENTAL OFFICE.

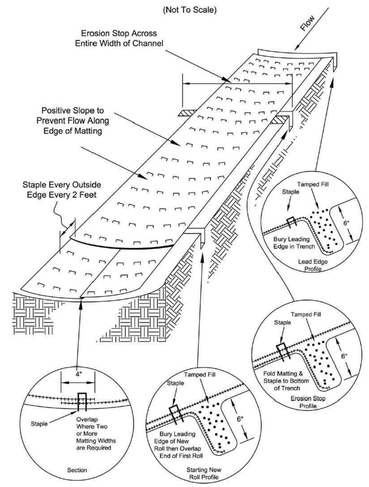
- 23.5% NODDING WILD RYE (ELYMUS CANADENSIS), 25% VIRGINIA WILD RYE (ELYMUS VIRGINICUS), 22% LITTLE BLUESTEM (SCHIZACHYRIUM SCOPARIUM), 18.75% PARTRIDGE PEA (CHAMAECRISTA FASCICULATA), 7.75% THIN-LEAVED CONEFLOWER (RUDBECKIA TRILOBA), 1.5% BROWN FOX SEDGE (CAREX VULPINOIDEA), 1.5% BLACK-EYED SUSAN (RUDBECKIA HIRTA), BROADCAST @ 18 LBS/ACRE, DRILLED AT 12 LBS/ACRE, MULCH WITH A MINIMUM OF 3 BALES OF STRAW PER 1000 SQUARE FEET. ADD 20 LBS/ACRE OF ANNUAL RYE GRASS (LOLIUM MULTIFLORUM) TO THE BROADCAST MIX AND 15 LBS/ACRE TO THE DRILLED MIX. THIS MIX IS FOR USE IN OPEN AREAS THAT RECEIVE GOOD SUNLIGHT.
- 31% DEERTONGUE (DICHANTHELIUM CLANDESTINUM), 25% VIRGINIA WILD RYE (ELYMUS VIRGINICUS), 25% NODDING WILD RYE (ELYMUS CANADENSIS), 10% BIG BLUESTEM (ANDROPOGON GERARDII), AND 9% SIDE-OATS GRAMA (BOUTELOUA CURTIPENDULA), BROADCAST @ 30 LBS/ACRE, DRILLED AT 20 LBS/ACRE), MULCH WITH A MINIMUM OF 3 BALES OF STRAW PER 1000 SQUARE FEET. ADD 20 LBS/ACRE OF ANNUAL RYE GRASS (LOLIUM MULTIFLORUM) TO THE BROADCAST MIX AND 15 LBS/ACRE TO THE DRILLED MIX. THIS MIX IS FOR USE IN SHADED AREAS, PARTIAL SUN, AND OPENINGS IN THE FOREST CANOPY.

AREAS THAT ARE MAINTAINED WITH REGULAR MOWING DURING THE GROWING SEASON AND RECEIVE HEAVY FOOT TRAFFIC WILL BE SEEDED WITH AN APPROPRIATE TURF GRASS MIX. SUCH AREAS INCLUDE LAWNS IN CANTONMENT AREAS, PARADE FIELDS, AND RANGE ROCA AREAS. TURF GRASS MIXES OF KENTUCKY BLUE GRASS, FINE FESCUE AND PERENNIAL RYEGRASS USING VARIETIES APPROPRIATE FOR THE SPECIFIC APPLICATION WILL BE IDENTIFIED BY THE CONTRACTOR AND REVIEWED AND APPROVED BY THE OHARNG PRIOR TO APPLICATION. A POTENTIAL MIX AND VARIETIES ARE AS FOLLOWS.

- 50% KENTUCKY BLUEGRASS (BLUERIDGE, ARGYL, BLUESTAR, KEN BLUE, LIMOUSINE OR BARON VARIETIES), 40% PERENNIAL RYEGRASSES (PEAK, SONATA, WIND DANCE, INTEGRA, MORNING STAR OR SHINING STAR VARIETIES), AND 10% CREEPING RED FESCUE (LUSTROUS OR BOREAL VARIETIES)

SPECIFICATIONS FOR TEMPORARY ROLLED EROSION CONTROL PRODUCT

(Not To Scale)



1. CHANNEL/SLOPE SOIL PREPARATION GRADE AND COMPACT AREA OF INSTALLATION, PREPARING SEEDBED BY LOOSENING 2"-3" OF TOPSOIL ABOVE FINAL GRADE. INCORPORATE AMENDMENTS SUCH AS LIME AND FERTILIZER INTO SOIL. REMOVE ALL ROCKS, CLODS, VEGETATION OR OTHER DEBRIS SO THAT INSTALLED RECP WILL HAVE DIRECT CONTACT WITH THE SOIL SURFACE.
2. CHANNEL/SLOPE SEEDING APPLY SEED TO SOIL SURFACE PRIOR TO INSTALLATION. ALL CHECK SLOTS, ANCHOR TRENCHES, AND OTHER DISTURBED AREAS MUSH BE RE-SEEDED. REFER TO THE PERMANENT SEEDING (PS) SPECIFICATION FOR SEEDING RECOMMENDATIONS.

SLOPE INSTALLATION

3. EXCAVATE TOP AND BOTTOM TRENCHES (12"X6"). INTERMITTENT EROSION CHECK SLOTS (6"X6") MAY BE REQUIRED BASED ON SLOPE LENGTH. EXCAVATE TOP ANCHOR TRENCH 2' X 3' OVER CREST OF THE SLOPE.
4. IF INTERMITTENT EROSION CHECK SLOTS ARE REQUIRED INSTALL RECP IN 6"X6" SLOT AT A MAXIMUM OF 30' CENTERS OR THE MID POINT OF THE SLOPE. RECP SHOULD BE STAPLED INTO TRENCH ON 12" CENTERS.
5. INSTALL RECP IN TOP ANCHOR TRENCH, ANCHOR ON 12" SPACINGS, BACKFILL AND COMPACT SOIL.
6. UNROLL RECP DOWN SLOPE WITH ADJACENT ROLLS OVERLAPPED A MINIMUM OF 3". ANCHOR THE SEAM EVERY 18". LAY THE RECP LOOSE TO MAINTAIN DIRECT SOIL CONTACT, DON NOT PULL TAUGHT.
7. OVERLAP ROLL ENDS A MINIMUM OF 12" WITH UPSLOPE RECP ON TOP FOR A SHINGLE EFFECT. BEGIN ALL NEW ROLLS IN AN EROSION CHECK SLOT IF REQUIRED, DOUBLE ANCHOR ACROSS ROLL EVERY 12".
8. INSTALL RECP IN BOTTOM ANCHOR TRENCH (12"X6"). ANCHOR EVERY 12". PLACE ALL OTHER STAPLES THROUGHOUT SLOPE AT 1 TO 2.5 SQUARE YARDS DEPENDENT ON SLOPE. REFER TO MANUFACTURER'S ANCHOR GUIDE.

CHANNEL INSTALLATION

9. EXCAVATE INITIAL ANCHOR TRENCH (12"X6") ACROSS THE LOWER END OF THE PROJECT AREA.
10. EXCAVATE INTERMITTENT CHECK SLOTS (6"X6") ACROSS THE CHANNEL AT 30' INTERVALS ALONG THE CHANNEL.
11. EXCAVATE LONGITUDINAL CHANNEL ANCHOR SLOTS (4"X4") ALONG BOTH SIDES OF THE CHANNEL TO BURY THE EDGES. WHENEVER POSSIBLE EXTEND THE RECP 2'-3' ABOVE THE CREST OF CHANNEL SIDE SLOPES.
12. INSTALL RECP IN INITIAL ANCHOR TRENCH (DOWNSTREAM) ANCHOR EVERY 12", BACKFILL AND COMPACT SOIL.
13. ROLL OUT RECP BEGINNING IN THE CENTER OF THE CHANNEL TOWARD THE INTERMITTENT CHECK SLOT. DO NOT PULL TAUGHT. UNROLL ADJACENT ROLLS UPSTREAM WITH A 3" MINIMUM OVERLAP (ANCHOR EVERY 18") AND UP EACH CHANNEL SIDE SLOPE.
14. AT TOP OF CHANNEL SIDE SLOPES INSTALL RECP IN THE LONGITUDINAL ANCHOR SLOTS, ANCHOR EVERY 18".
15. INSTALL RECP IN INTERMITTENT CHECK SLOTS. LAY INTO TRENCH AND SECURE WITH ANCHORS EVERY 12", BACKFILL WITH SOIL AND COMPACT.
16. OVERLAP ROLL ENDS A MINIMUM OF 12" WITH UPSTREAM RECP ON TOP FOR A SHINGLING EFFECT. BEGIN ALL NEW ROLLS IN AN INTERMITTENT CHECK SLOT, DOUBLE ANCHORED EVERY 12".
17. INSTALL UPSTREAM END IN A TERMINAL ANCHOR TRENCH (12"X6"); ANCHOR EVERY 12", BACKFILL AND COMPACT.
18. COMPLETE ANCHORING THROUGHOUT CHANNEL AT 2.5 PER SQUARE YARD USING SUITABLE GROUND ANCHORING DEVICES (U SHAPED WIRE STAPLES, METAL GEOTEXTILE PINS, PLASTIC STAKES, AND TRIANGULAR WOODEN STAKES). ANCHORS SHOULD BE OF SUFFICIENT LENGTH TO RESIST PULLOUT. LONGER ANCHORS MAY BE REQUIRED IN LOOSE SANDY OR GRAVELY SOILS.

INSPECTIONS & MAINTENANCE

ALL RECPS SHOULD BE INSPECTED REGULARLY AFTER INSTALLATION, ESPECIALLY AFTER STORMS TO CHECK FOR EROSION OR UNDERMINING OF THE PRODUCT. MAKE NEEDED REPAIRS IMMEDIATELY, ADDRESSING RILLS OR GULLIES THAT HAVE DEVELOPED PRIOR TO REPLACING THE RECP. IN THE CASE EROSION REPAIRS, ASSURE THAT SUBSEQUENT RUNOFF ACROSS THE AREA IS DISPERSED OR ADEQUATELY SPREAD.

GRADE TREATMENT (SURFACE ROUGHENING) (GT)

DESCRIPTION

GRADE TREATMENT OR SURFACE ROUGHENING CREATES HORIZONTAL DEPRESSIONS IN THE SOIL SURFACE THAT HELP TO REDUCE EROSION BY REDUCING RUNOFF VELOCITY AND INCREASING INFILTRATION. THESE DEPRESSIONS AID IN THE ESTABLISHMENT OF VEGETATIVE COVER AND PROVIDE LOCALIZED TRAPPING OF SEDIMENTS. GRADE TREATMENT IS TYPICALLY CREATED BY OPERATING TILLAGE IMPLEMENTS ON THE CONTOUR OR BY RUNNING TRACKED EQUIPMENT UP AND DOWN A SLOPE WITHOUT FINE GRADING THE SURFACE.

SPECIFICATIONS FOR GRADE TREATMENT

CUT SLOPES-GREATER THAN 3:1 SLOPES

1. STAIR-STEP GRADING MAY BE CARRIED OUT ON ANY MATERIAL SOFT ENOUGH TO BE RIPPED WITH A BULLDOZER. THE RATION OF THE HORIZONTAL DISTANCE TO THE VERTICAL CUT DISTANCE SHALL BE FLATTER THAN 1:1 AND THE HORIZONTAL PORTION OF THE "STEIP" SHALL SLOPE TOWARD THE VERTICAL WALL. INDIVIDUAL VERTICAL CUTS SHALL NOT BE MORE THAN 24 INCHES ON SOFT SOIL MATERIALS AND NOT MORE THAN 36 INCHES IN ROCKY MATERIALS.
2. GROOVING MAY BE MADE WITH ANY APPROPRIATE IMPLEMENT WHICH CAN BE SAFELY OPERATED ON THE SLOPE AND WHICH WILL NOT CAUSE UNDUE COMPACTION. SUGGESTED IMPLEMENTS INCLUDE DISCS, TILLERS, SPRING HARROWS, AND THE TEETH ON A FRONT-END LOADER BUCKET. SUCH GROOVES SHALL NOT BE LESS THAN 3 INCHES DEEP NOR FURTHER THAN 15 INCHES APART.

FILL SLOPES-GREATER THAN 3:1 SLOPES

FILL SLOPES STEEPER THAN 3:1 SHALL BE GROOVED OR ALLOWED TO REMAIN ROUGH AS THEY ARE CONSTRUCTED UTILIZING METHOD (1) OR (2) BELOW.

1. GROOVING MAY BE MADE WITH ANY APPROPRIATE IMPLEMENT WHICH CAN BE SAFELY OPERATED ON THE SLOPE AND WHICH WILL NOT CAUSE UNDUE COMPACTION SUCH AS DISCS, TILLERS, SPRING HARROWS, AND THE TEETH ON A FRONT-END LOADER BUCKET. GROOVES LEFT SHALL NOT BE LESS THAN 3 INCHES DEEP NORE FURTHER THAN 15 INCHES APART.
2. AS LIFTS OF THE FILL ARE CONSTRUCTED, SOIL AND ROCK MATERIALS MAY BE ALLOWED TO FALL NATURALLY ONTO THE SLOPE SURFACE. AT NO TIME SHALL SLOPES BE BLADED OR SCRAPED TO PRODUCE A SMOOTH, HARD SURFACE.

CUTS, FILLS, AND GRADED AREAS WHICH WILL BE MOWED

1. MOWED SLOPES SHOULD NOT BE STEEPER THAN 3:1 AND SHALL AVOID EXCESSIVE ROUGHNESS. THESE AREAS MAY BE ROUGHENED WITH SHALLOW GROOVES SUCH AS THOSE, WHICH REMAIN AFTER TILLING, DISCING, HARROWING, RAKING, OR USE OF A CULTIPACKER-SEEDER. THE FINAL PASS OF ANY SUCH TILLAGE IMPLEMENT SHALL BE ON THE CONTOUR (PERPENDICULAR TO THE SLOPE).
2. GROOVE FORMED BY IMPLEMENTS SHALL BE NOT LESS THAN 1 INCH DEEP AND NOT FURTHER THAN 12 INCHES APART. FILL SLOPES THAT ARE LEFT ROUGH DURING CONSTRUCTION MAY BE SMOOTHED WITH A CHAIN HARROW OR SIMILAR IMPLEMENT TO FACILITATE MOWING.

ROUGHENING WITH TRACKED MACHINERY

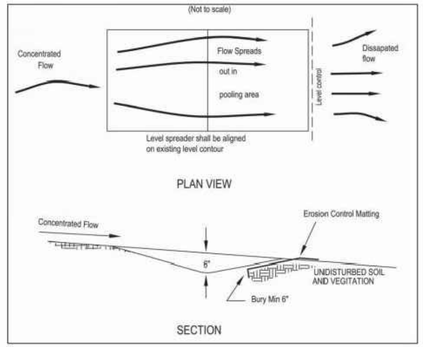
1. AVOID TRACKING CLAYED SOILS IF POSSIBLE, DUE TO THEIR POTENTIAL FOR COMPACTION. CONVERSELY SANDY SOILS WILL HAVE LOW POTENTIAL FOR COMPACTION.
2. OPERATE TRACKED MACHINERY UP AND DOWN THE SLOPE TO LEAVE HORIZONTAL DEPRESSIONS IN THE SOIL. AS FEW PASSES OF THE MACHINERY SHOULD BE MADE AS POSSIBLE TO MINIMIZE COMPACTION.

TEMPORARY ROLLED EROSION CONTROL PRODUCTS (EROSION CONTROL MATTING)

DESCRIPTION

A TEMPORARY ROLLED EROSION CONTROL PRODUCT (TRECP) IS A DEGRADABLE MANUFACTURED MATERIAL USED TO STABILIZE EASILY ERODED AREAS WHILE VEGETATION BECOMES ESTABLISHED. TEMPORARY ROLLED EROSION CONTROL PRODUCTS ARE DEGRADABLE PRODUCTS COMPOSED OF BIOLOGICALLY, PHOTO CHEMICALLY OR OTHERWISE DEGRADABLE MATERIAL. TEMPORARY RECPS CONSIST OF EROSION CONTROL NETTING, OPEN WEAVE TEXTILES, AND EROSION CONTROL BLANKETS AND MATTINGS. THESE PRODUCTS REDUCE SOIL EROSION AND ASSIST VEGETATIVE GROWTH BY PROVIDING TEMPORARY COVER FROM THE EROSIVE ACTION OF RAINFALL AND RUNOFF WHILE PROVIDING SOIL-SEED CONTACT.

LEVEL SPREADER:



SPECIFICATIONS

1. CONSTRUCT LEVEL SPREADER ON A LEVEL GRADE TO ENSURE UNIFORM SPREADING OF STORM RUNOFF.
2. LEVEL SPREADERS MUST BE CONSTRUCTED ON UNDISTURBED SOIL, NOT ON FILL.
3. THE LEVEL SPREADER MUST OUTLET TO EROSION-RESISTANT AREAS WITH ESTABLISHED EXISTING VEGETATION.
4. VEGETATED LIP SPREADERS SHALL BE PROTECTED USING AN EROSION CONTROL BLANKET INSTALLED ACCORDING TO MANUFACTURERS' RECOMMENDATIONS. THE BLANKET SHALL START A MINIMUM OF 4 FEET ABOVE THE LIP AND EXTEND AT LEAST 1 FOOT DOWNSTREAM OVER THE SPREADER LIP, SECURED WITH HEAVY-DUTY STAPLES AND THE DOWNSTREAM AND UPSTREAM ENDS BURIED AT LEAST 6 INCHES IN A VERTICAL TRENCH.
5. FERTILIZING, SEEDING, AND MULCHING SHALL CONFORM TO THE RECOMMENDATIONS IN THE APPLICABLE VEGETATIVE SPECIFICATION.

DIMENSIONS:

Flow Rate (cfs)	Minimum Depth – D (ft)	Minimum Width – W (ft)
0 – 10	0.5	10
10 – 20	0.6	20
20 – 30	0.7	30

- MINIMUM WIDTH (W) IS IN THE DIRECTION THAT IS PERPENDICULAR TO THE FLOW.
- THE MINIMUM DEPTH (D) OF THE LEVEL SPREADER SHALL BE AT LEAST 0.5 FEET MEASURED DOWN FROM THE LEVEL LIP. DEPTH MAY BE GREATER TO INCREASE TEMPORARY STORAGE CAPACITY, IMPROVE TRAPPING OF DEBRIS, AND ENHANCE SETTLING OF ANY SUSPENDED SOLIDS BASED ON EROSION POTENTIAL OR OTHER SITE CONDITIONS.
- THE LEVEL LIP OF THE SPREADER MUST BE CONSTRUCTED COMPLETELY LEVEL (0% GRADE) TO INSURE UNIFORM SPREADING OF THE RUNOFF OVER THE ENTIRE LENGTH OF THE SPREADER.
- FLOWS RELEASED FROM LEVEL SPREADERS MUST OUTLET ONTO UNDISTURBED STABLE AREAS WITH A SLOPE NOT EXCEEDING 10%, WHERE SHEET FLOW ARE MAINTAINED AND CONCENTRATED FLOW PREVENTED.
- WHEN CONSTRUCTING A LEVEL SPREADER AS AN OUTLET FOR A DIVERSION, THE LAST 20 FEET OF THE DIVERSION SHOULD BE USED TO SMOOTHLY TRANSITION THE WIDTH OF THE DIVERSION TO THE DITH OF THE SPREADER TO ENSURE UNIFORM OUTFLOW. THE GRADE OF THE CHANNEL FOR THE LAST 20 FEET OF THE DIVERSION ENTERING THE LEVEL SPREADER SHALL BE 1.0% OR LESS.

DATE	REVISION MADE	BY	AUTHORIZED

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PORTAGE COUNTY ITAM TRAINING AREA IMPROVEMENT AND TRAIL CREATION

EROSION AND SEDIMENT CONTROL STANDARD DETAILS

DATE: 06-09-17	DES BY: WDN	BAKER PROJECT NUMBER 156220	SHEET NO: CE-504
SCALE: AS NOTED	DWN BY: MJL		
SIZE: ANSI D	CHK BY: SMS	GOV. CONTRACT NUMBER #W91364-12-D-0003	17 OF 18

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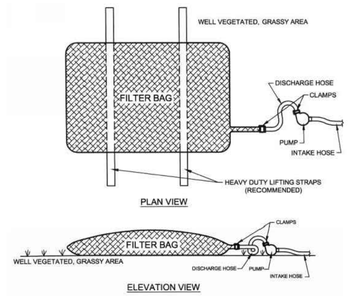
PUMPED WATER FILTER BAG (FB)

DESCRIPTION

A PUMPED WATER FILTER BAG MAY BE USED TO FILTER WATER FROM DISTURBED AREAS PRIOR TO DISCHARGING TO THE WATERS OF OHIO.

SPECIFICATIONS FOR FILTER BAG



1. FILTER BAGS SHOULD BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STICKED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS.

2. A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES MUST BE PROVIDED. FILTER BAGS SHAL BE REPLACED WHEN THEY BECOME $\frac{1}{2}$ FULL. SPARE BAGS SHALL BE KEPT ON-SITE

3. BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE FLOW PATH SHALL BE PROVIDED.

4. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%.

5. THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER. PUMPING RATES SHALL BE NO GREATER THAN 750 GPM OR $\frac{1}{2}$ THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHOULD BE FLOATING AND SCREENED.

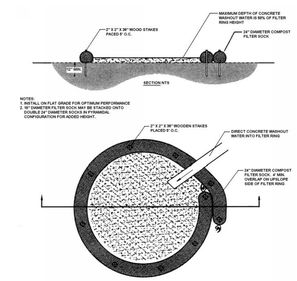
6. FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE AND NOT RESUME UNTIL THE PROBLEM IS FIXED.

CONCRETE WASH OUT (WO)

DESCRIPTION

A DESIGNATED CONCRETE WASH OUT AREA MUST BE UTILIZED TO CONTROL THE CLEANING OF CHUTES, MIXERS, AND HOPPERS OF CONCRETE DELIVERY VEHICLES.

SPECIFICATIONS FOR CONCRETE WASH OUT



A suitable impervious geomembrane shall be placed at the location of the washout prior to installing the socks.
Adapted from Filtreixx

1. WASHOUT AREA TO BE A MINIMUM OF 50 FEET FROM ANY OPEN WATER OR CHANNEL.

2. CONCRETE WASH WATER SHALL NOT BE ALLOWED TO FLOW INTO STREAMS, DITCHES, STORM DRAINS, OR ANY OTHER WATER CONVEYANCE.

3. A SUMP OR PIT WITH NO POTENTIAL FOR DISCHARGE SHALL BE CONSTRUCTED IF NEEDED TO CONTAIN CONCRETE WASH WATER.

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