| COUNTY | TOWNSHIP | BOROUGH | ROUTE | SECTION | TOTAL SHEETS |
|---|---|---|---|---|---|
| BELMONT | COLERAIN | | 433 | | 16 |

## SURVEYOR NOTES

THE LOCATIONS OF UNDERGROUND UTILITIES SHOWN HEREON ARE BASED ON ABOVE GROUND STRUCTURES AND RECORD DRAWINGS PROVIDED TO THE SURVEYOR. LOCATIONS OF UNDERGROUND UTILITIES/STRUCTURES MAY VARY FROM LOCATIONS SHOWN HEREON. ADDITIONAL BURIED UTILITIES/STRUCTURES MAY BE ENCOUNTERED. NO EXCAVATIONS WERE MADE DURING THIS SURVEY TO LOCATE BURIED UTILITIES/STRUCTURES.

DATE OF FIELD WORK: 2/28/2025
DATE OF PLAN: 5/21/2025

SUBSURFACE AND ENVIRONMENTAL CONDITIONS WERE NOT EXAMINED OR CONSIDERED AS A PART OF THIS SURVEY. NO STATEMENT IS MADE CONCERNING THE EXISTENCE OF NON-EXISTENCE OR UNDERGROUND CONTAINERS OR FACILITIES THAT MAY AFFECT THE USE OR DEVELOPMENT OF THIS TRACT.

## BASIS OF BEARINGS:

THE BEARINGS SHOWN HEREIN ARE BASED ON OHIO STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NAD83, GEOID12A.

## BENCHMARKS:

AS PER THE TOPOGRAPHIC SURVEY PREPARED BY VERDANTAS. THE CONTRACTOR AND/OR HIS SURVEYOR SHALL BE RESPONSIBLE TO CROSS CHECK ALL CONTROL PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

## CONTROL POINTS

BASIS OF BEARING: TRUE NORTH, BASED ON OBSERVATIONS, GPS DATA COLLECTED WITH TRIMBLE R12 UNIT VRS CORRECTION ON OHIO STATE PLANE SOUTH ZONE COORDINATE SYSTEM, NAD 1983 (2011), NAVD 1988, GEOID 12A

| CONTROL POINT (CP) | COORDINATES | | DESCRIPTION | ELEVATION |
|---|---|---|---|---|
| | NORTH | EAST | | |
| *1* | *772686.227* | *2421361.829* | *NAIL SET* | *841.71'* |
| *2* | *772777.832* | *2421551.117* | *NAIL SET* | *837.44'* |

| SWING TIES | | | |
|---|---|---|---|
| POINT | STA | CP #1 | CP #2 |
| BEGIN | 00+00.00 | 40.5567 | 242.3169 |
| PI | 00+86.70 | 50.7506 | 159.7297 |
| PI | 01+54.39 | 118.5864 | 96.3463 |
| END | 01+95.88 | 177.372 | 38.6134 |

BELMONT COMMUNITY PANEL NO.: 200 OF 456
MAP # 39013C0200E
FLOOD ZONE: X
EFFECTIVE DATE: 04/05/2006

| STANDARD CONSTRUCTION DRAWINGS | | |
|---|---|---|
| BELMONT COUNTY; STANDARD CONSTRUCTION DRAWINGS | ODOT STANDARD CONSTRUCTION DRAWINGS | |
| | MGS-1.1 | 11/17/2025 |
| | MGS-2.1 | 11/17/2025 |
| | MGS-2.3 | 11/20/2023 |
| | OMUTCD | 4/12/2012 |
| | HW-1.1 | 7/19/2024 |

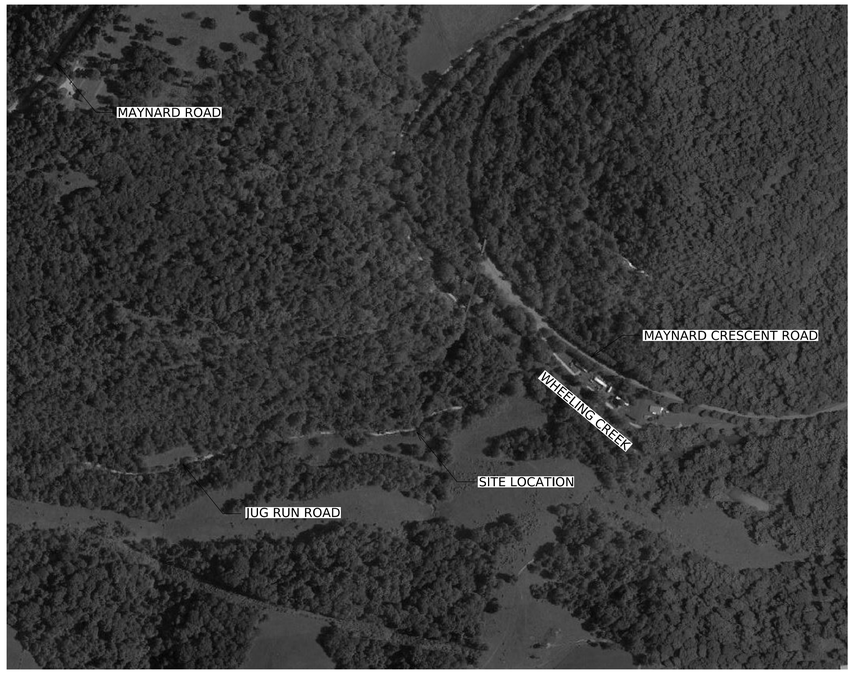
## PRE-CONSTRUCTION NOTICE

THESE PLANS HAVE BEEN PREPARED USING THE MOST ACCURATE INFORMATION AND DATA AVAILABLE AT THE TIME OF PREPARATION. FIELD CONDITIONS MAY BE ENCOUNTERED DURING CONSTRUCTION WHICH VARY FROM THOSE DEPICTED HEREIN. MODIFICATIONS TO THE DESIGN AS SHOWN MAY BE REQUIRED BASED ON FIELD CONDITIONS AT THE TIME OF CONSTRUCTION. IN ANY EVENT, THE ENGINEERING OBJECTIVES OF THE DESIGN SHALL BE MET. IF FIELD CONDITIONS ARE ENCOUNTERED PRIOR TO CONSTRUCTION OR DURING CONSTRUCTION THAT DIFFER SIGNIFICANTLY FROM THE CONDITIONS SHOWN ON THE PLANS, THE CONTRACTOR MUST STOP WORK AND NOTIFY THE OWNER AND ENGINEER IMMEDIATELY.

# SITE CONSTRUCTION DOCUMENTS FOR:

# JUG RUN CULVERT REPLACEMENT

## COLERAIN TOWNSHIP, BELMONT COUNTY, OHIO




## VICINITY MAP

LATITUDE: 40° 06' 37.43"
LONGITUDE: -80° 52' 49.58"

0 500 1000 FEET

OHIO811.org Before You Dig

## INDEX OF SHEETS:


| | |
|---|---|
| TITLE SHEET | 1 |
| GENERAL NOTES | 2 |
| TYPICAL SECTIONS | 3 |
| DETAILS | 4-11 |
| CONSTRUCTION PLAN | 12 |
| PROFILE | 13 |
| E&S PLAN | 14-15 |
| MPT PLAN | 16 |


## PROJECT DESCRIPTION:

THIS PROJECT CONSISTS OF REPLACING AN EXISTING CULVERT WITH A NEW CONCRETE BOX CULVERT, AND ASOCIATED APPROACH ROADWAY WORK.

## 2023 EDITION

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

## DESIGN SPEED

25 MPH


PREPARED BY:
VERDANTAS
7000 BROOKETREE ROAD, SUITE 310
WEXFORD, PA 15090



PLOTTED: 18-JUN-2025 10:12
OPERATOR: ajh
FILE NAME: Z:\Project Files\CA-DZ\Colerai\30447 - TWP 433 Jug Run road\CAD\Working\AJH\Copied Plans\30447_0A_TITL.dgn

PLOTTED: 18-JUN-2025 08:32

| TOWNSHIP | COUNTY | ROUTE | SECTION | SHEET |
|---|---|---|---|---|
| COLERAIN | BELMONT | 433 | | 2 OF 16 |

| REV NO | REVISIONS | DATE | BY | APPD |
|---|---|---|---|---|
| | | | | |
| | | | | |

UTILITY LOCATIONS

THE LOCATION OF UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS OF UTILITIES AS REQUIRED BY SECTION 153.64 ORC. LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AND STRUCTURES SHOWN IN THE PLANS ARE APPROXIMATE ONLY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THEIR EXACT LOCATION AND ELEVATION WHEN WORKING IN THEIR VICINITY.

WHERE POTENTIAL GRADE CONFLICTS MIGHT OCCUR WITH EXISTING UTILITIES, THE CONTRACTOR SHALL UNCOVER SUCH UTILITIES SUFFICIENTLY IN ADVANCE OF CONSTRUCTION IN ORDER THAT THE EXACT ELEVATION MAY BE DETERMINED AND THE NECESSARY ADJUSTMENTS MADE COST OF THE ABOVE, IF ANY, WILL BE INCLUDED IN THE PRICE BID FOR THE PERTINENT ITEM.

LOCATION, SUPPORT, PROTECTION AND RESTORATION OF ALL UTILITY LINES, SERVICES AND APPURTENANCES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE COST OF THIS WORK SHALL BE INCLUDED WITHIN PRICE BID FOR PERTINENT ITEM, UNLESS OTHERWISE NOTED ON PLANS. ESTIMATED QUANTITIES SHOWN ON PLANS FOR WATER AND SANITARY SEWER RELOCATIONS ARE FOR THOSE ITEMS ACTUALLY CALLED FOR AND SHOWN ON PLANS.

REVIEW OF PROJECT SITE

PRIOR TO BIDDING THE CONTRACTOR SHALL, BY PERSONAL EXAMINATION, SATISFY HIMSELF AS TO THE LOCATION OF THE PROPOSED WORK AND TO ACQUAINT HIMSELF THOROUGHLY WITH THE EXISTING CONDITIONS AND THE DIFFICULTIES THAT ARE LIKELY TO BE ENCOUNTERED IN THE PERFORMANCE OF THE PROPOSED WORK.

EMERGENCY PHONE NUMBER

THE CONTRACTOR SHALL PROVIDE THE PROJECT OWNER WITH A 24 HOUR TELEPHONE NUMBER TO READILY CONTACT A RESPONSIBLE PARTY IN THE CASE OF AN EMERGENCY. COSTS AND/OR DAMAGES INCURRED RELATED TO WORK PERFORMED BY THE CONTRACTOR IN SUCH EMERGENCIES ARE THE CONTRACTOR'S RESPONSIBILITY AND NOT THAT OF THE PROJECT OWNER.

WORK HOURS

WORK HOURS SHALL BE 7:00 A.M. TO 7:00 P.M. UNLESS OTHERWISE SPECIFICALLY APPROVED BY THE ENGINEER OR THE OWNER.

IDEMNIFICATION

THE CONTRACTOR WILL INDEMNIFY AND HOLD HARMLESS THE PROJECT OWNER AND THE ENGINEER FROM ANY AND ALL CLAIMS ARISING FROM AND AGAINST ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES INCLUDING ATTORNEYS' FEES ARISING OUT OF OR RESULTING FROM THE PERFORMANCE OF THE WORK, PROVIDED THAT ANY SUCH CLAIMS, DAMAGE, LOSS OR EXPENSE IS ATTRIBUTABLE TO BODILY INJURY, SICKNESS, DISEASE OR DEATH, INJURY TO OR DESTRUCTION OF TANGIBLE PROPERTY, INCLUDING THE LOSS OF USE RESULTING THEREFROM; AND IS CAUSED IN WHOLE OR IN PART BY ANY NEGLIGENT ACTUAL ACT OR OMISSION OF THE CONTRACTOR. ANY SUBCONTRACTOR, ANYONE DIRECTLY OR INDIRECTLY EMPLOYED BY THEM OR ANYONE FOR WHOSE ACTS THEY MAY BE LIABLE.

IN ANY AND ALL CLAIMS AGAINST THE PROJECT OWNER OR THE ENGINEER. OR ANYONE FOR WHOSE ACTS THEY MAY BE LIABLE. BY AN EMPLOYEE OF THE CONTRACTOR. ANY SUBCONTRACTOR. ANYONE FOR WHOSE ACTS THEY MAY BE LIABLE. THE INDEMNIFICATION OBLIGATION SHALL NOT BE LIMITED IN ANY WAY BY MY LIMITATION ON TILE AMOUNT OT TYPE OT DAMAGES COMPENSATION DR BENEFITS PAYABLE BY DR FOR TILE CONTRACTOR DR SUBCONTRACTOR UNDER WORKERS COMPENSATION ACTS DISABILITY BENEFIT ACTS DR OTHER EMPLOYEE BENEFIT ACTS.

THE OBLIGATION OF TILE CONTRACT UNDER THIS PARAGRAPH SHALL NOT EXTEND TO TILE LIABILITY OT TILE ENGINEER HIS AGENTS DR EMPLOYEES ARISING OUT OT PREPARATION APPROVAL OP MAP DRAWINGS OPINIONS REPORT SURVEYS CHANGE ORDERS DESIGNS OP SPECIFICATIONS

THE CONTRACT WILL BE RESPONSIBLE FOR ALL CONSTRUCTION MEANS METHODS PROCEDURES TECHNIQUES SEQUENCES

SANITARY FACILITIES

THE CONTRACTOR SHALL FURNISH AND MAINTAIN SANITARY CONVENIENCE FACILITIES FOR WORKERS INSPECTORS FOR THE DURATION OF THE WORK.

LEGAL DIMENSION AND WEIGHT LIMITS

PURSUANT TO SECTIONS 5577.04 AND 5577.05 OHIO REVISED CODE (ORC), LEGAL LIMITS FOR DIMENSIONS AND WEIGHTS FOR HIGHWAY VEHICLES WERE AMENDED EFFECTIVE OCTOBER 1, 1992. THE AMENDED ORC MAY AFFECT THE CONTRACTOR'S COST FOR PERFORMING THE VARIOUS ITEMS OF WORK ON THIS PROJECT. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FACTOR ANY ADDITIONAL COSTS RESULTING FROM THE AMENDED ORC INTO HIS BID PRICE FOR THE VARIOUS ITEMS OF WORK TO BE PERFORMED ON THIS PROJECT. NO ADDITIONAL REIMBURSEMENT FOR THE COSTS WILL BE PAID BY THE PROJECT OWNER.

SURVEYS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING ALL DETAIL SURVEYS NEEDED FOR CONSTRUCTION. ALL CONSTRUCTION STAKING SHALL BE DONE BY OR UNDER THE DIRECTION OF A PROFESSIONAL REGISTERED SURVEYOR.

SAFETY

THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE, AND LOCAL SAFETY REQUIREMENTS, TOGETHER WITH EXERCISING PRECAUTIONS AT ALL TIMES FOR THE PROTECTION OF PERSONS INCLUDING EMPLOYEES AND PROPERTY. IT IS ALSO THE CONTRACTOR'S RESPONSIBILITY TO INITIATE, MAINTAIN, AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS, AND PROGRAMS IN CONNECTION WITH THE WORK.

ALL CONSTRUCTION SHALL COMPLY WITH CONTRACT SPECIFICATIONS AND APPLICABLE LOCAL, STATE, FEDERAL, AND OHIO DOT STANDARDS, REGULATIONS AND LAWS.

THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SECURING THE PROJECT SITE FROM THE GENERAL PUBLIC BOTH DURING OR AFTER WORKING HOURS. THE CONTRACTOR SHALL PROVIDE, ERECT, AND MAINTAIN ALL LIGHTS, SIGNS, FENCES OR ANY OTHER SAFETY DEVICE TO PREVENT UNAUTHORIZED PERSONNEL FROM HAZARDOUS OR DANGEROUS CONDITIONS ON THE PROJECT SITE. COST OF SUCH WORK SHALL BE INCLUDED IN THE VARIOUS ITEMS BID FOR FURNISHING AND INSTALLING MATERIALS ON THIS PROJECT.

THE CONTRACTOR SHALL PROVIDE NECESSARY HEALTH AND SAFETY TRAINING FOR ALL OF THE CONTRACTOR'S ON-SITE PERSONNEL.

WEATHER CONDITIONS

ALL CONSTRUCTION AND MATERIAL USAGE SHALL BE IN ACCORDANCE WITH CLIMATIC CONDITIONS ADDRESSED IN CURRENT ISSUE OF THE OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIALS SPECIFICATIONS.

MODIFICATIONS

ANY MODIFICATIONS OR CHANGES TO THE WORK, AS SHOWN ON THE DRAWINGS, MUST HAVE PRIOR WRITTEN APPROVAL BY THE ENGINEER AND PROJECT OWNER.

WORK LIMITS

THE CONTRACTOR SHALL CONFINE HIS ACTIVITIES TO THE PROJECT SITE UNDER DEVELOPMENT OR THE EXISTING RIGHT-OF-WAYS, CONSTRUCTION AND/OR PERMANENT EASEMENTS AND SHALL NOT TRESPASS UPON OTHER PRIVATE PROPERTY WITHOUT THE WRITTEN CONSENT OF THE OWNER.

ALL ADJOINING PROPERTIES DISTURBED DURING CONSTRUCTION OPERATIONS SHALL BE RESTORED TO THE SAME OR BETTER CONDITION. THIS INCLUDES GRADING, SEEDING, AND REMOVAL OF EXCESS MATERIAL.

PROTECTION AND RESTORATION OF PROPERTY

THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION AND RESTORATION OF ALL PRIVATE PROPERTY IMPACTED BY THE CONTRACTOR'S OPERATIONS IN ACCORDANCE WITH 107.10.

IRON PINS AND MONUMENTS

THE CONTRACTOR SHALL REFERENCE ALL IRON PINS AND MONUMENTS BEFORE EXCAVATING AT OR NEAR THEM. IF ANY IRON PINS OR MONUMENTS ARE DESTROYED OR DAMAGED BY THE CONTRACTOR, THEY SHALL BE ACCURATELY REPLACED BY A REGISTERED SURVEYOR EMPLOYED BY THE CONTRACTOR AT THE COMPLETION OF THE PROJECT AND AT NO EXPENSE TO THE PROJECT OWNER OR THE PROPERTY OWNERS.

NON-RUBBER TIRE VEHICLES

NO NON-RUBBER TIRE VEHICLES SHALL BE MOVED ON ANY STREETS. EXCEPTIONS MAY BE GRANTED BY THE COUNTY ENGINEER WHERE SUCH STREETS OR SPECIAL CIRCUMSTANCES ARE INVOLVED. GRANTING OF EXCEPTIONS MUST BE IN WRITING AND SHALL DESIGNATE THE TIME AND ROUTE TO BE USED.

THE CONTRACTOR SHALL TAKE EXTREME CARE WHEN OPERATING NON-RUBBER TIRE VEHICLES ON STREETS OR DRIVEWAYS TO AVOID MARKING OR DAMAGING THE PAVEMENT. PROTECTION OF THE PAVEMENT FROM DAMAGE RESULTING FROM THE TRACKS OF NON-RUBBER TIRE VEHICLES UTILIZED IN THEIR EQUIPMENT SHALL BE REQUIRED.

WOOD PLANKS, RUBBER MATS OR OTHER MEANS AS APPROVED BY THE COUNTY ENGINEER SHALL BE USED TO PROTECT THE PAVEMENT. THE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR VARIOUS ITEMS OF THIS CONTRACT.

PAVEMENT CLEANING

THE CONTRACTOR IS HEREBY NOTIFIED THAT HE/SHE SHALL BE RESPONSIBLE FOR CLEANING OF STREETS AND ANY MUD, DIRT, SAND, GRAVEL, STONES, OR ANY KIND OF MATERIAL THAT HAVE DEPOSITED AS A RESULT OF HIS/HER SUBCONTRACTOR'S OPERATIONS. PAYMENT WILL BE CLEANED AT THE END OF EACH WORK DAY OR MORE FREQUENTLY AS DIRECTED BY COUNTY ENGINEERS OR HIS REPRESENTATIVE.

DUST CONTROL

THE CONTRACTOR IS EXPECTED TO PERFORM HIS/HER EARTHWORK OPERATIONS TO MINIMIZE DUST. WHEN CONDITIONS ARE SUCH THAT DUST BECOMES A MAJOR PROBLEM OR AS ADVISED BY THE TOWNSHIP, THE CONTRACTOR SHALL APPLY DUST PALLIATIVE PER ODOT ITEM 616.

FINAL CLEAN-UP

THE CONTRACTOR SHALL CLEAN UP ALL DEBRIS AND MATERIALS RESULTING FROM HIS OPERATIONS AND RESTORE ALL SURFACES, STRUCTURES, DITCHES, AND PROPERTY TO ITS ORIGINAL CONDITION OR PROPOSED CONDITION TO SATISFACTION OF PROJECT OWNER OR ENGINEER.

DRAINAGE

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF FLOW WITHIN THE JUG RUN CREEK. ODOT L&D VOL 2 SECTION 1012 REQUIRES THAT TEMPORARY ACTIVITY TO ACCOMMODATE A MINIMUM FLOW EQUAL TO TWICE THE HIGHEST MEAN MONTHLY FLOW WITHOUT CREATING A RISE IN BACKWATER ABOVE THE OHWM. THE MINIMUM FLOW TO BE MAINTAINED THROUGHOUT CONSTRUCTION FOR THIS LOCATION IS 17 CFS.

EXISTING SEWERS AND STRUCTURES

THE CONTRACTOR SHALL REPLACE TO THE SATISFACTION OF THE ENGINEER ALL EXISTING MANHOLES, CATCH BASINS, DRAINS, SEWERS AND STRUCTURES REMOVED OR DAMAGED DURING CONSTRUCTION.

MATERIAL TESTING AND PERMITS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED FOR THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF ALL MATERIAL TESTING.

HEALTH AND SAFETY

1. THE CONTRACTOR AND SUBCONTRACTORS SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE, AND LOCAL SAFETY REQUIREMENTS, INCLUDING WITH EXERCISE PRECAUTIONS AT ALL TIMES FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. THE CONTRACTOR SHALL COMPLY WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 DURING THE CONDUCT AND PERFORMANCE AND IN CONNECTION WITH THIS PROJECT. IT IS ALSO THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INITIATE, MAINTAIN, AND SUPERVISE ALL SAFETY PRECAUTIONS, PROCEDURES, PROGRAMS IN CONNECTION WITH THE WORK.

2. CONTRACTOR SHALL BE RESPONSIBLE FOR EXERCISING REASONABLE CARE IN OPERATING EQUIPMENT IN THE VICINITY OF UTILITIES; WHEREOVER AT GROUND LEVEL OR BURIED, AND SHALL SAVE HULL & ASSOCIATES HULL & ASSOCIATES INC., THE OWNER AND ANY OF THEIR DESIGNATED AGENTS FROM CLAIMS ARISING FROM ANY SUCH CLAIMS OR DAMAGES OF ANY KIND OF INJURY TO OR DEATH TO ANY PERSON OR PERSONS AND FROM DAMAGE TO OR LOSS OF PROPERTY ARISING OUT OF OR RELATED TO, ANY NEGLIGENCE OF CONTRACTORS.

3. THE CONTRACTOR SHALL BE THOROUGHLY FAMILIAR WITH THESE REQUIREMENTS AS SET BY U.S. DEPARTMENT LABOR OCCUPATIONAL SAFETY HEALTH ADMINISTRATION (OSHA),THE U.S. DEPARTMENT TRANSPORTATION (DOT),AND OTHER AGENCIES HAVING JURISDICTION OVER WORK BEING PERFORMED.

4. THE CONTRACTOR SHALL PROVIDE NECESSARY HEALTH SAFETY TRAINING FOR ALL ON-SITE PERSONNEL.

5. THE CONTRACTOR SHALL AT ALL TIMES MEET ALL SAFETY REQUIREMENTS SET FORTH IN THEIR HEALTH & SAFETY PLAN (HASP) FOR THIS SITE.THE CONTRACTORS SHALL BE SOLELY RESPONSIBLE FOR COMPLIANCE WITH OSHA STANDARDS BY THEIR OWN PERSONNEL WHILE PERFORMING WORK ON THIS PROJECT.CONTRACTORS ARE REQUIRED TO SUBMIT COPIES THEIR WRITTEN HASP PRIOR COMMENCEMENT FIELD ACTIVITIES.CONTRACTORS MUST ALSO PROVIDE COPIES APPLICABLE OSHA CITATIONS ISSUED DURING PAST THREE YEARS.CONTRACTORS MUST HAVE CONSTRUCTION GENERAL SAFE RULES REVIEWED BY EACH EMPLOYEE PRIOR START WORK ON SITE.CONTRACTORS ARE REQUIRED BY LAW THAT

6. WOOD AND OTHER WASTE SHALL NOT BE BURNED AT THE SITE, BUT SHALL BE REMOVED WITH OTHER DEBRIS.

7. IN ACCORDANCE WITH GENERALLY ACCEPTED PRACTICES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MATTERS RELATING TO THE HEALTH AND SAFETY OF ITS PERSONNEL AND EQUIPMENT AND THE PUBLIC IN PERFORMANCE OF THE WORK. THIS INCLUDES RECOGNITION OF THE POTENTIAL HEALTH AND SAFETY HAZARDS ASSOCIATED WITH THE WORK AND INCLUDES COMPLIANCE WITH THE MINIMUM REQUIREMENTS OF THE HEALTH AND SAFETY PLAN IN FORCE FOR THE WORK, IF APPLICABLE. IT IS UNDERSTOOD THAT PROTECTIVE MEASURES SPECIFIED IN ANY HEALTH AND SAFETY PLAN ARE MINIMUM REQUIREMENTS FOR THE WORK.

8. ALL REQUIREMENTS DESCRIBED WITHIN THE HEALTH AND SAFETY NOTES SECTION, UNLESS OTHERWISE INDICATED, SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT WITH NO ASSOCIATED PAY ITEM AND NO ADDITIONAL COMPENSATION TO BE AWARDED TO THE CONTRACTOR.

| ITEM | DESCRIPTION | QTY | UNIT |
|---|---|---|---|
| 203 | BACKFILL | 150 | CY |
| 703 | EXCAVATION: ROADWAY, BOX CULVERT, AND WALLS | 300 | CY |
| 601 | ROADWAY MISC. ODOT #57 STONE | 60 | CY |
| 203 | ROCK, ODOT TYPE B ROCK | 37 | CY |
| 204 | SUBGRABE COMPACTION AND PROOF ROLL | 347 | SY |
| 304 | AGGREGATE BASE | 180 | CY |
| 511 | RETAINING WALL/WINGWALL INCLUDING FOOTING | 21 | CY |
| 511 | PRECAST BOX CULVERT | 1 | LS |
| 512 | WATERPROOFING, TYPE 2 MEMBRANE | 350 | SY |
| 512 | WATERPROOFING, TYPE 3 MEMBRANE | 400 | SY |
| 516 | 1" PREFORMED EXPANSION JOINT FILLER | 20 | SF |
| 518 | POROUS BACKFILL WITH FILTER FABRIC | 41 | TON |
| 606 | GUARDRAIL, TYPE MGS | 300 | LF |
| 606 | GUARDRAIL, END TREATMENT | 4 | EACH |
| 659 | SEEDING AND MULCHING, CLASS 3C | 207 | SY |
| 103 | PREMIUM FOR CONTRACT PERFORMANCE BOND AND PAYMENT | 1 | LS |
| 503 | COFFERDAMS AND EXCAVATION BRACING | 1 | LS |
| 614 | DETOUR SIGNING/MAINTAINING TRAFFIC | 1 | LS |
| 623 | CONSTRUCTON LAYOUT STAKING AND SURVEYING | 1 | LS |
| 624 | MOBILIZATION | 1 | LS |
| 832 | EROSION AND SEDIMENT CONTROL MEASURES | 1 | LS |

STATE OF OHIO
MATTHEW THOMAS NEIMAN
E-80355
REGISTERED PROFESSIONAL ENGINEER

PLOTTED: 13-JUN-2025 11:11

| TOWNSHIP | COUNTY | ROUTE | SECTION | SHEET |
|---|---|---|---|---|
| COLERAIN | BELMONT | 433 | | 3 OF 16 |

| REV NO | REVISIONS | DATE | BY | APPD |
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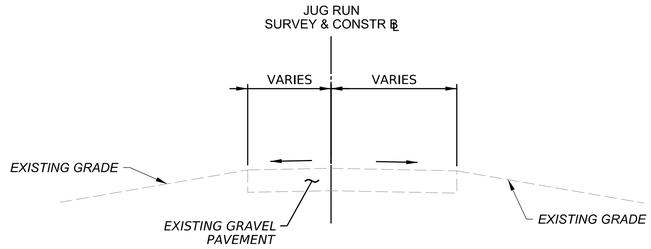
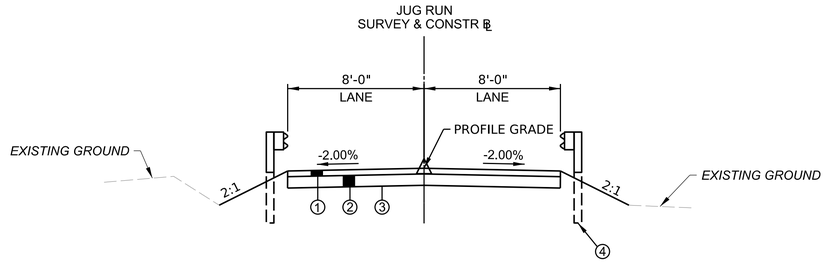



## EXISTING JUG RUN TYPICAL SECTION

STA. 0+00.00 TO STA. 1+95.88 = 196 LF
NOT TO SCALE




## PROPOSED JUG RUN TYPICAL SECTION APPROACH

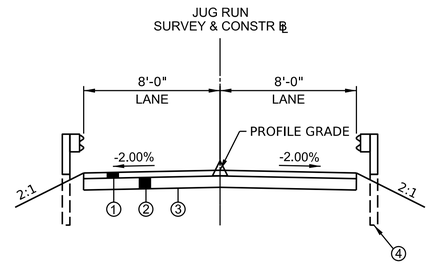
STA. 0+00.00 TO STA. 1+04.73
STA. 1+24.21 TO STA. 1+95.69
NOT TO SCALE

① ITEM 203 - 3" ROADWAY MISC.: ODOT #57 STONE

② ITEM 304 - 9" AGGREGATE BASE

③ ITEM 204 - SUBGRADE COMPACTION

④ ITEM 606 - GUARDRAIL, TYPE MGS OR TYPE MGS LONG SPAN




## PROPOSED JUG RUN TYPICAL SECTION ACROSS CULVERT

STA. 1+04.73 TO STA. 1+24.24
NOT TO SCALE

① ITEM 203 - 3" ROADWAY MISC.: ODOT #57 STONE

② ITEM 401 - VARIABLE DEPTH AGGREGATE BASE (VARIES 3" TO 9")

③ ITEM 204 - SUBGRADE COMPACTION

④ ITEM 606 - GUARDRAIL, TYPE MGS OR TYPE MGS LONG SPAN

STATE OF OHIO
MATTHEW
THOMAS
NEIMAN
E-80355
REGISTERED
PROFESSIONAL ENGINEER

TYPICAL SECTIONS

PLOTTED: 13-JUN-2025 11:11

| TOWNSHIP | COUNTY | ROUTE | SECTION | SHEET |
|---|---|---|---|---|
| COLERAIN | BELMONT | 433 | | 4 OF 16 |

| REV NO | REVISIONS | DATE | BY | APPD |
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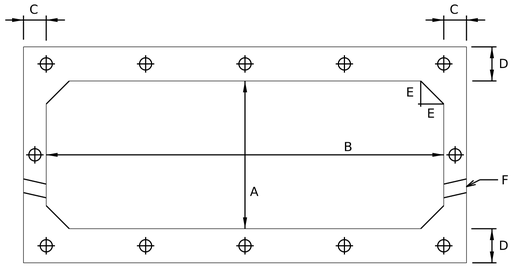
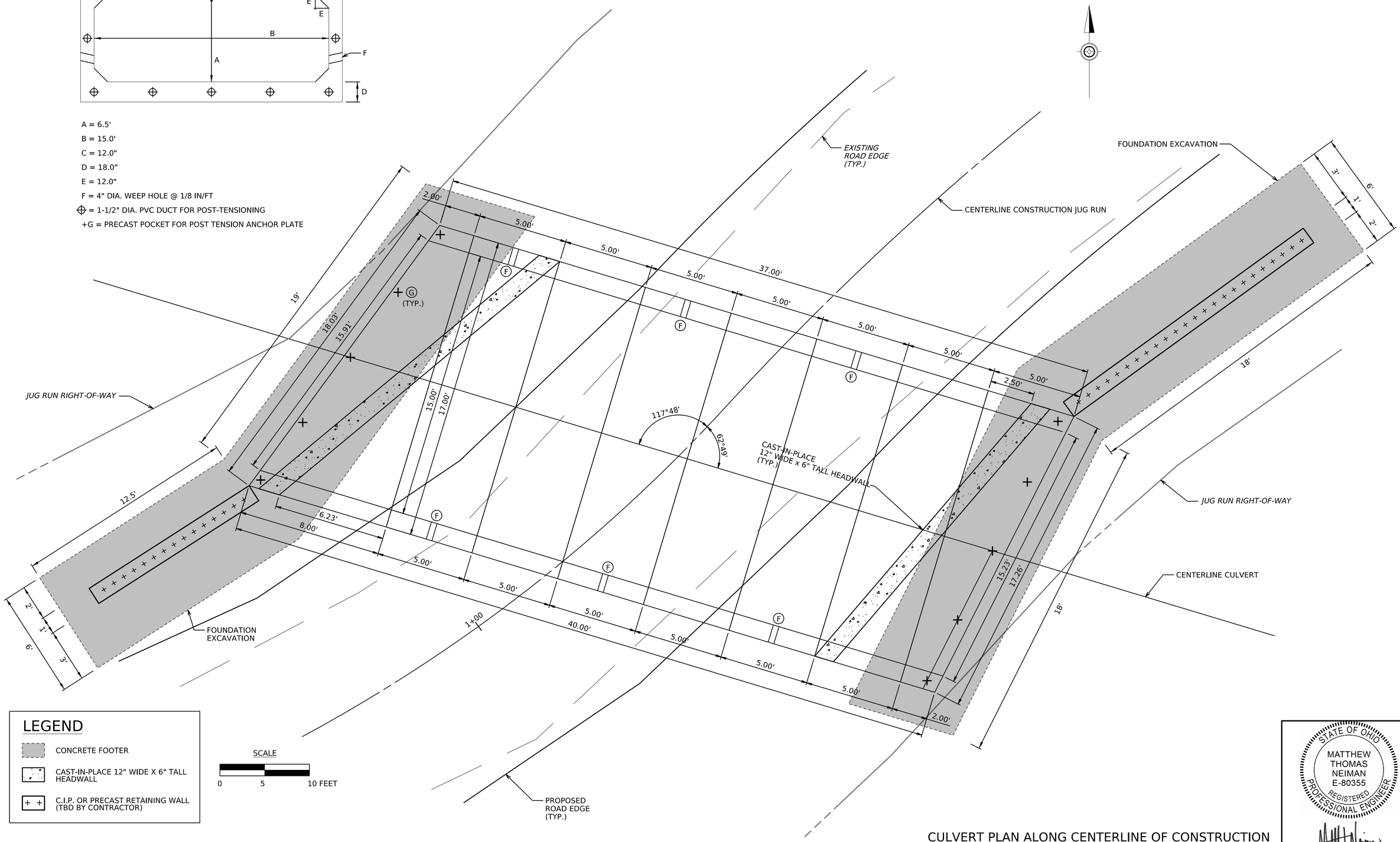



A = 6.5'
B = 15.0'
C = 12.0"
D = 18.0"
E = 12.0"
F = 4" DIA. WEEP HOLE @ 1/8 IN/FT
⊕ = 1-1/2" DIA. PVC DUCT FOR POST-TENSIONING
+G = PRECAST POCKET FOR POST TENSION ANCHOR PLATE




## LEGEND

- CONCRETE FOOTER
- CAST-IN-PLACE 12" WIDE X 6" TALL HEADWALL
- C.I.P. OR PRECAST RETAINING WALL (TBD BY CONTRACTOR)

SCALE
0 5 10 FEET

STATE OF OHIO
MATTHEW THOMAS NEIMAN
E-80355
REGISTERED PROFESSIONAL ENGINEER

CULVERT PLAN ALONG CENTERLINE OF CONSTRUCTION

PLOTTED: 13-JUN-2025 11:11

| TOWNSHIP | COUNTY | ROUTE | SECTION | SHEET |
|---|---|---|---|---|
| COLERAIN | BELMONT | 433 | | 5 OF 16 |

| REV NO | REVISIONS | DATE | BY | APPD |
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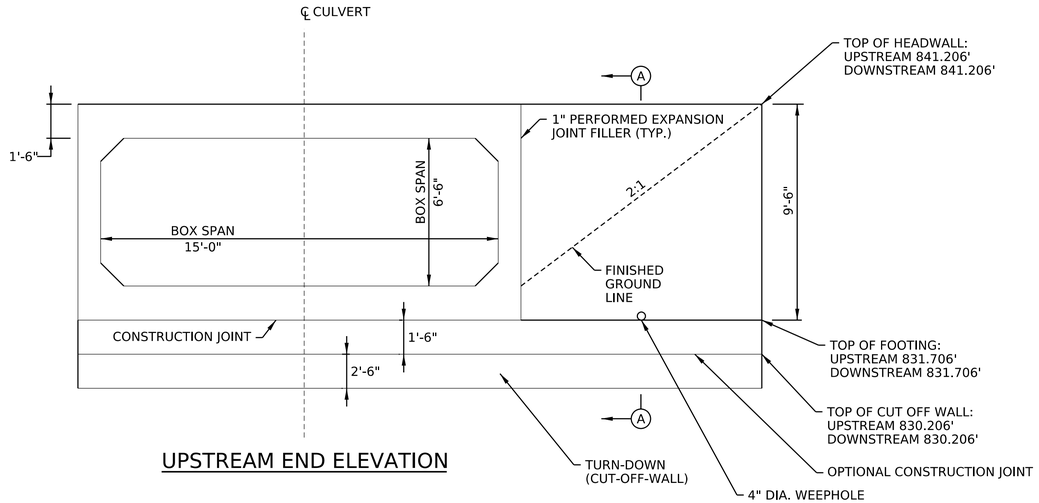
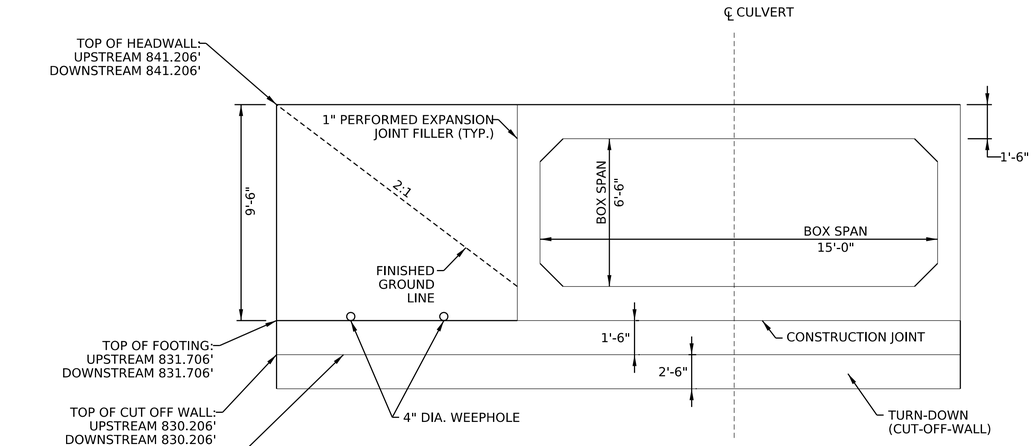
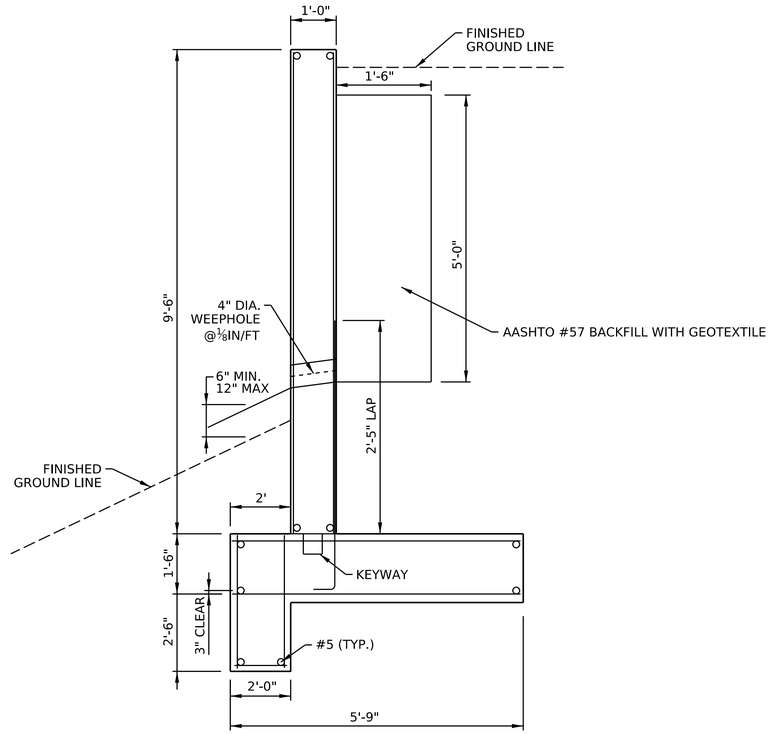



## UPSTREAM END ELEVATION




## DOWNSTREAM END ELEVATION




## SECTION A-A

NOTES:

1. KEYWAY 1.5" DEEP BY 1.5" WIDE IN C.I.P. FOOTING

2. FOR FUTHER DETAIL AND REINFORCING SCHEDULE SEE ODOT STANDARD DRAWING "CONCRETE HEADWALLS FOR PRECAST BOX CULVERT", TYPE C HEADWALL.

STATE OF OHIO
MATTHEW THOMAS NEIMAN
E-80355
REGISTERED PROFESSIONAL ENGINEER

# BOX CULVERT AND WALL DETAILS

| TOWNSHIP | COUNTY | ROUTE | SECTION | SHEET |
|---|---|---|---|---|
| COLERAIN | BELMONT | 433 | | 6 OF 16 |

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DESIGN SPECIFICATIONS:

THIS STANDARD DRAWING CONFORMS TO THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 10TH EDITION, AND THE ODOT BRIDGE DESIGN MANUAL, 2020 EDITION.

DESIGN DATA:

THE FOLLOWING DESIGN DATA IS ASSUMED:

INTERNAL ANGLE OF FRICTION OF BACKFILL SOIL = 30^
TOTAL UNIT WEIGHT OF BACKFILL SOIL = 120 PCF
ANGLE OF FRICTION (DRAINED), FOUNDATION SOIL = 28^
UNDRAINED SHEAR STRENGTH (COHESIVE), FOUNDATION SOIL, S = 1500 PSF
UNIT WEIGHT OF CONCRETE = 150 PCF
SLOPE OF BACKFILL = 2:1 (TYPE A & B HEADWALLS)
HEIGHT OF LIVE LOAD SURCHARGE = 2 FT (TYPE C HEADWALLS)

CONCRETE CLASS QC1 - COMPRESSIVE STRENGTH 4000 PSI (FOOTING, WINGWALL AND FORE SLOPE WALL)

REINFORCING STEEL - ASTM A615, A616, OR A617 GRADE 60 MINIMUM YIELD STRENGTH Fy=60 KSI (ALL REINFORCING SHALL BE EPOXY COATED)

PRECAST CONCRETE:

AT THE OPTION OF THE CONTRACTOR, PRECAST WINGWALLS MAY BE USED IN ACCORDANCE WITH CMS 602.03E.

FORESLOPE WALL ANCHOR DOWELS: ANCHOR PER CMS 510 WITH NONSHRINK, NONMETALLIC GROUT CONFORMING TO CMS 705.20 AND TO A DEPTH SPECIFIED ON SHEET 5/15. PAYMENT FOR DOWEL HOLES, GROUT AND INSTALLATION SHALL BE INCLUDED WITH ITEM 511.

THREADED INSERTS OR NON-PROTRUDING MECHANICAL CONNECTORS CAPABLE OF DEVELOPING AT LEAST 125 PERCENT OF THE SPECIFIED YIELD STRENGTH OF THE REINFORCEMENT SHOWN ARE AN ACCEPTABLE ALTERNATIVE TO RESIN BONDING. MAINTAIN A MINIMUM COVER OF 3 INCHES AT THE BOTTOM OF THE CULVERT FLOOR. MECHANICAL CONNECTORS MUST HAVE AN "L-SHAPED" BAR INSIDE THE CULVERT WITH A MINIMUM HORIZONTAL LENGTH OF 12 INCHES. THE DEPARTMENT WILL CONSIDER PAYMENT FOR INSERTS OR MECHANICAL CONNECTORS AS INCIDENTAL TO ITEM 611.

BACKFILL LIMITATION:

WHEN THE DESIGN HEIGHT IS GREATER THAN 10 FT, THE BACKFILL BEHIND THE WINGWALLS SHALL NOT BE PLACED HIGHER THAN THE ELEVATION OF THE SOIL ABOVE THE TOE. WHEN THE SOIL ABOVE THE TOE IS AT ITS FINISHED ELEVATION, THE REMAINDER OF THE BACKFILL MAY BE PLACED.

WATERPROOFING:

TYPE 2 WATERPROOFING, PER CMS 512 AND 711.25, SHALL EXTEND VERTICALLY DOWN THE ENTIRE SIDES OF THE PRECAST CULVERT SECTIONS FOR ALL PORTIONS OF THE CULVERT WHICH SHALL BE IN CONTACT WITH THE BACKFILL. PAYMENT FOR THE MEMBRANE WATERPROOFING SHALL BE AT THE CONTRACT PRICE BID PER SQUARE YARD FOR ITEM 512 - TYPE 2 WATERPROOFING.

IF PAVEMENT IS NOT PLACED DIRECTLY ON TOP OF THE CULVERT, TYPE 2 WATERPROOFING, PER CMS 512 AND 711.25 SHALL BE APPLIED TO THE ENTIRE TOP SURFACE OF THE PRECAST CULVERT SECTIONS AND SHALL EXTEND ONE FOOT VERTICALLY DOWN FROM THE SIDES FOR ALL PORTIONS OF THE CULVERT WHICH SHALL BE IN CONTACT WITH BACKFILL. PAYMENT FOR MEMBRANE WATERPROOFING SHALL BE AT CONTRACT PRICE BID PER SQUARE YARD FOR ITEM 512 - TYPE 2 WATERPROOFING.

IF PAVEMENT IS TO BE USED DIRECTLY ON TOP OF THE CULVERT, TYPE 3 WATERPROOFING, PER CMS 512 AND 711.29 SHALL BE APPLIED TO THE ENTIRE TOP SURFACE OF THE PRECAST CULVERT SECTIONS AND SHALL EXTEND ONE FOOT VERTICALLY DOWN THE SIDES FOR ALL PORTIONS OF THE CULVERT WHICH SHALL BE IN CONTACT WITH BACKFILL. PAYMENT FOR THE MEMBRANE WATERPROOFING SHALL BE AT THE CONTRACT PRICE BID PER SQUARE YARD FOR ITEM 512 - TYPE 3 WATERPROOFING.

POROUS BACKFILL WITH FILTER FABRIC 1'-6" THICK SHALL BE PLACED BEHIND THE WINGWALLS ONLY AND SHALL EXTEND TO 12" BELOW THE EMBANKMENT SURFACE. GEOTEXTILE FABRIC TYPE A SHALL BE PLACED BETWEEN THE POROUS BACKFILL AND REPLACED EXCAVATION ADJACENT TO THE STRUCTURE. IT SHALL TURN UNDER THE BOTTOM OF THE POROUS BACKFILL AND RETURN 6" ABOVE THE TOP ELEVATION OF THE WEEPHOLE.

WEEPHOLES SHALL BE SPACED 6' TO 12' ABOVE NORMAL WATER ELEVATION OR GROUND WATER TABLE AND SHALL HAVE A MAXIMUM SPACING OF 10'-0". A MINIMUM OF ONE WEEPHOLE SHALL BE PROVIDED PER WINGWALL.

PREFORMED EXPANSION JOINT FILLER:

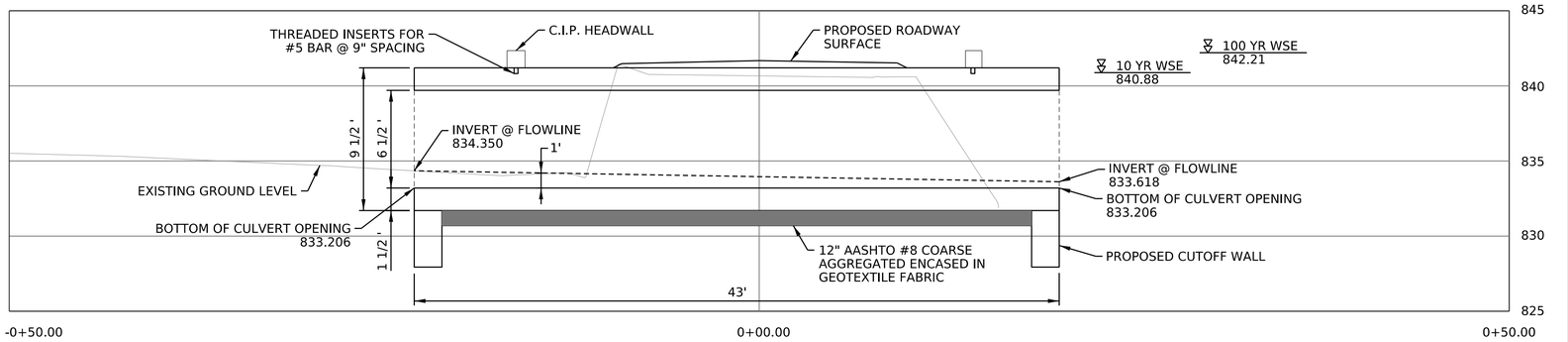
PREFORMED EXPANSION JOINT FILLER (PEJF) CONFORMING TO CMS 705.03, 1 INCH THICK, SHALL BE PLACED ABOVE THE FOOTING BETWEEN THE SIDES OF THE BOX CULVERT AND THE ENDS OF THE WINGWALLS. PAYMENT FOR MATERIALS AND INSTALLATION SHALL BE INCLUDED WITH ITEM 516 - 1" PREFORMED EXPANSION JOINT FILLER.

SEALING OF FORESLOPE WALL AND WINGWALLS:

ALL EXPOSED FORESLOPE WALL AND WINGWALL CONCRETE SHALL BE SEALED WITH EPOXY-URETHANE SEALER. THE LIMITS SHALL BE AS SHOWN IN THE DIAGRAMS BELOW. PAYMENT FOR THE EPOXY-URETHANE SEALER SHALL BE PER ITEM 512 - SEALING OF CONCRETE SURFACES.

BASIS OF PAYMENT:

ALL LABOR, EQUIPMENT AND INCIDENTALS REQUIRED TO CONSTRUCT THE FOOTING, CUTOFF WALL, WINGWALLS AND FORESLOPE WALL SHALL BE INCLUDED WITH ITEM 511 - CLASS QC1 CONCRETE, RETAINING/WINGWALL INCLUDING FOOTING. PAYMENT FOR REINFORCING STEEL SHALL BE INCLUDED WITH ITEM 509 - EPOXY COATED REINFORCING STEEL.




PROPOSED CULVERT CROSS SECTION AT CENTERLINE OF CULVERT

BOX CULVERT AND WALL DETAILS

STATE OF OHIO
MATTHEW THOMAS NEIMAN
E-80355
REGISTERED PROFESSIONAL ENGINEER

PLOTTED: 13-JUN-2025 11:12

| TOWNSHIP | COUNTY | ROUTE | SECTION | SHEET |
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## TEMPORARY AND PERMANENT CONTROL MEASURES

THE TEMPORARY CONTROL MEASURES USED DURING THE CONSTRUCTION PERIOD INCLUDE COMPOST FILTER SOCKS (IF NECESSARY). DETAILS FOR THESE CONTROLS ARE SHOWN IN THE PLAN OR OHIO EPA RAINWATER AND LAND DEVELOPMENT GUIDANCE MANUAL.

PERMANENT CONTROL MEASURES INCLUDE PERMANENT SEEDING AND MULCHING.

## SEQUENCE OF CONSTRUCTION ACTIVITIES

ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE. EACH STAGE OF THE CONSTRUCTION SEQUENCE MUST BE COMPLETED PRIOR TO INITIATION OF SUBSEQUENT STAGES OF THE CONSTRUCTION SEQUENCE. CLEARING AND GRUBBING SHALL BE LIMITED ONLY TO THOSE AREAS DESCRIBED IN EACH STAGE.

SWALES AND STORM PIPES SHALL BE CONSTRUCTED FROM DOWNSTREAM TO UPSTREAM. FOR UTILITY INSTALLATION, DAILY TRENCH EXCAVATION SHALL BE LIMITED TO THE LENGTH OF PIPE PLACEMENT AND BACKFILL THAT CAN BE COMPLETED IN ONE DAY.

1. DURING A PERIOD OF NO OR LOW FLOW, REPLACE STORM PIPES WITH PROPOSED BOX CULVERT AS SHOWN ON THE PLANS IN ACCORDANCE WITH THE TYPICAL STREAM BYPASS PROCESS. DEWATER FOUNDATION EXCAVATIONS AS REQUIRED INTO THE FILTER BAG. INSTALL AND MAINTAIN BY-PASS PUMPING DURING PIPE REPLACEMENT IF REQUIRED.
2. COMPLETE THE PAVEMENT FOR PROCESS.
3. APPLY PERMANENT SEEDING AND MULCH TO ALL DISTURBED AREAS. REMOVE BMPS UPON COMPLETION AND STABILIZATION OF THE DISTURBED AREA TRIBUTARY TO EACH BMP. STABILIZATION IS DEFINED AS VEGETATED AREAS ACHIEVING

## STANDARD SEEDING FORMULAS

| FORMULA AND SPECIES | % BY WEIGHT | MINIMUM % | | MAX. % WEED SEED | SEEDING RATE LBS. PER 1000 SY |
|---|---|---|---|---|---|
| | | PURITY | GERMINATION | | |
| FORMULA B MIX<br>PERENNIAL RYEGRASS MIXTURE (LOLIUM PERENNE). A COMBINATION OF IMPROVED CERTIFIED VARIETIES WITH NO ONE VARIETY EXCEEDING 50% OF THE TOTAL RYEGRASS COMPONENT. | 20 | 97 | 90 | 0.10 | 42.0 TOTAL<br>8.5 |
| CREEPING RED FESCUE OR CHEWINGS FESCUE (FESTUCA RUBRA OR SSP COMMUTATE) (IMPROVED AND CERTIFIED) | 30 | 97 | 85 | 0.10 | 12.5 |
| KENTUCKY BLUEGRASS MIXTURE (POA PRATENSIS) A COMBINATION OF IMPROVED CERTIFIED VARIETIES WITH NO ONE VARIETY EXCEEDING 50% OF THE TOTAL BLUEGRASS COMPONENT. | 50 | 97 | 80 | 0.15 | 21.0 |
| FORMULA E<br>ANNUAL RYEGRASS (LOLIUM MULTIFLORUM) | 100 | 95 | 90 | 0.10 | 10.0 TOTAL<br>10.0 |

*INCLUDING HARDSEED AND NORMAL SEEDLINGS.

| SEEDING, FERTILIZER, AND MULCHING | PERMANENT DISTURBED NON-CHANNEL AREAS FORMULA B | PERMANENT CHANNEL STABILIZATION FORMULA D | TEMPORARY FORMULA B |
|---|---|---|---|
| | ( LB/ 1000 SY) | ( LB/ 1000 SY) | ( LB/ 1000 SY) |
| APPLICATION RATE: | 42 | 42 | 10 |
| FERTILIZER TYPE: 10-20-20 COMMERCIAL FERTILIZER | 140 | 140 | - |
| FERTILIZER TYPE: 38-0-0 UREAFORM FERTILIZER | 50 | 50 | - |
| FERTILIZER TYPE: 10-10-10 | 50 | 50 | 10 |
| LIMING RATE: | 800 | 800 | 410 |
| MULCH TYPE; STRAW. MULCHING RATE: | 1200 | 1200 | - |
| MULCH TYPE; HAY. MULCHING RATE: | - | - | 1200 |
| ANCHOR MATERIAL: RECYCLED CELLULOSE FIBER | RECYCLED CELLULOSE FIBER | RECYCLED CELLULOSE FIBER | - |
| ANCHORING METHOD: | MECHANICAL BLOWER | MECHANICAL BLOWER | - |
| RATE OF ANCHOR MATERIAL APPLICATION RATE: | 160 | 160 | - |
| SEEDING SEASON DATES: | MAR. 15 TO JUN 1 & AUG. 1 TO OCT. 15 | MAR. 15 TO JUN 1 & AUG. 1 TO OCT. 15 | MAR 15 TO OCT 15 |

| | STANDARD HIGHWAY SEEDING MIXTURE USES |
|---|---|
| FORMULA B | NON-STEEP, HIGHLY MAINTAINED SURFACE - LAWN |
| FORMULA E | TEMPORARY SEEDING |

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## EROSION AND SEDIMENT (E&S) POLLUTION CONTROL NOTES, SEQUENCE & DETAILS

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| TOWNSHIP | COUNTY | ROUTE | SECTION | SHEET |
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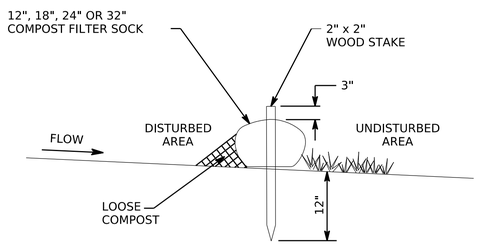
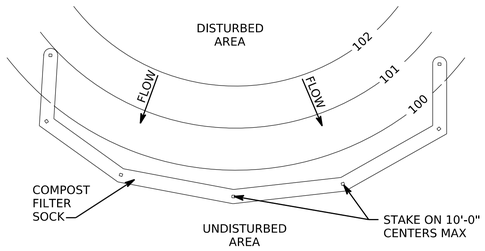
# COMPOST FILTER SOCK




SECTION VIEW




PLAN VIEW

1. SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4. 1. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2.
2. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE SOCK SHALL BE EXTENDED AT LEAST 8' -0" UP SLOPE AT 45 DEGREES TO THE MAIN SOCK ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOCK AND THE SLOPE OF ITS TRIBUTARY AREA. STAKES MAY BE INSTALLED IMMEDIATELY DOWNSLOPE OF THE SOCK IF SO SPECIFIED BY THE MANUFACTURER.
3. TRAFFIC SHALL NOT BE PERMITTED TO CROSS FILTER SOCKS.
4. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE ABOVEGROUND HEIGHT OF THE SOCK AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.
5. SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION,
6. BIODEGRADABLE FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS! PHOTODEGRADABLE SOCKS AFTER ONE YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS,
7. UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.
8. BMP INSTRUCTIONS

A. INSPECTION: WEEKLY AND AFTER EACH RUNOFF EVENT.

B. MAINTENANCE: REMOVE SEDIMENT WHEN IT REACHES 1/2 OF THE SOCK HEIGHT.

C. REPAIR OR REPLACE COMPOST FILTER SOCK IF ANY PORTION OF THE FILTER SOCK HAS BEEN UNDERMINED OR OVERTOPPED

TABLE 4.1
COMPOST FILTER SOCK MINIMUM SPECIFICATIONS

| | |
|---|---|
| MATERIAL TYPE | 5 mil HDPE |
| MATERIAL CHARACTERISTICS | PHOTODEGRADABLE |
| SOCK DIAMETERS | 12" |
| | 18" |
| | 24" |
| | 32" |
| MESH OPENING | 1200 |
| TENSILE STRENGTH | - |
| ULTRAVIOLET STABILITY %<br>ORIGINAL STRENCH (ASTM G-155) | 23% AT 1000 HOURS |
| MINIMUM FUNCTIONAL LONGEVITY | 9 MONTHS |
| TWO-PLY SYSTEMS | |
| INNER CONTAINMENT NETTING | HDPT BIAXIAL NET |
| | CONTINUOUSLY WOOD |
| | FUSION-WELDED JUNCTURES |
| | 0.75" X 0.75" MAX. APERTURE SIZE |
| OUTER FILTRATION MESH | COMPOSITE POLYPROPYLENE FABRIC (WOVEN LAYER AND NON-WOVEN FLEECE MECHANICALLY FUSED VIA NEEDLE PUNCH) |
| | 3/16" MAX. APERTURE SIZE |

TABLE 4.2
COMPOST STANDARDS

| | |
|---|---|
| ORGANIC MATTER CONTENT | 25% - 100% (DRY WEIGHT BASIS) |
| ORGANIC PORTION | FIBROUS AND ELONGATED |
| pH | 5.5 TO 8.5 |
| MOISTURE CONTENT | 30% TO 60% |
| PARTICLE SIZE | 30% TO 50% PASS THROUGH 3/8" SCREEN |
| SOLUBLE SALT CONCENTRATION | 5.0 dS/m (mmhos/cm) MAX. |

COMPOST SHOULD BE A WELL DECOMPOSED, WEED-FREE ORGANIC MATTER DERIVED FROM AGRICULTURE, FOOD, STUMP GRINDINGS, AND YARD OR WOOD/BARK ORGANIC MATTER SOURCES. THE COMPOST SHOULD BE AEROBICALLY COMPOSTED. THE COMPOST SHOULD POSSESS NO OBJECTIONABLE ODORS AND SHOULD BE REASONABLY FREE ((11/. BY DRY WEIGHT) OF MAN-MADE FOREIGN MATTER. THE COMPOST PRODUCT SHOULD NOT RESEMBLE THE RAW MATERIAL FROM WHICH IT WAS DERIVED. WOOD AND BARK CHIPS, GROUND CONSTRUCTION DEBRIS OR REPROCESSED WOOD PRODUCTS ARE NOT ACCEPTABLE AS THE ORGANIC COMPONENT OF THE MIX.

## EROSION AND SEDIMENT (E&S) POLLUTION CONTROL NOTES, SEQUENCE & DETAILS

STATE OF OHIO
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THOMAS
NEIMAN
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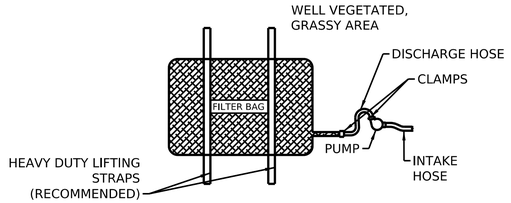
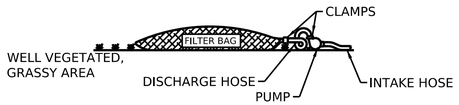



PLAN VIEW




ELEVATION VIEW

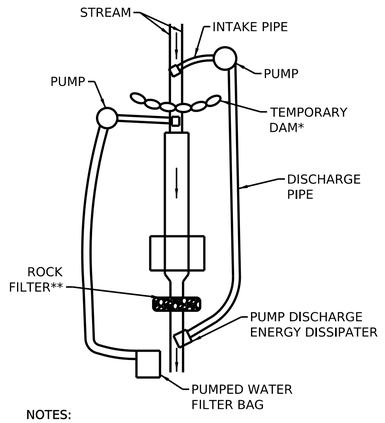
NOTES:

1. LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

| PROPERTY | TEST METHOD | MIN. STANDARD |
|---|---|---|
| AVG. WIDE WIDTH STRENGTH | ASTM D-4884 | 60 LB/IN |
| GRAB TENSILE | ASTM D-4632 | 205 LB |
| PUNCTURE | ASTM D-4833 | 110 LB |
| MULLEN BURST | ASTM D-3786 | 350 PSI |
| UV RESISTANCE | ASTM D-4355 | 70% |
| AOS % RETAINED | ASTM D-4751 | 80 SIEVE |

2. A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.
3. BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%. FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.
4. NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR GRASSY AREA IS NOT AVAILABLE.
5. THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.
6. THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.
7. FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

## PUMPED WATER FILTER BAG

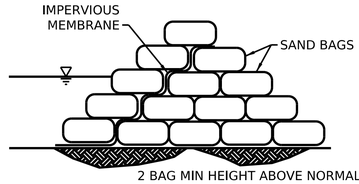


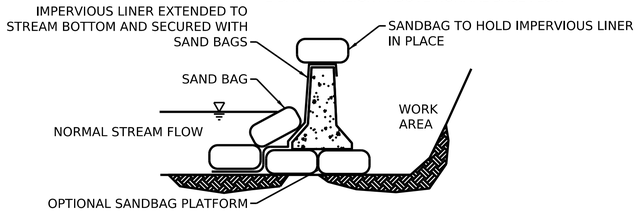

NOTE: PUMP INTAKE SHALL BE MAINTAINED A SUFFICIENT DISTANCE FROM BOTTOM TO PREVENT SEDIMENT FROM ENTERING THE SYSTEM

NOTES:

1. PUMP INTAKE SHALL BE MAINTAINED A SUFFICIENT DISTANCE FROM BOTTOM TO PREVENT SEDIMENT FROM ENTERING THE SYSTEM.
2. BYPASS PUMP SHALL BE CAPABLE OF PUMPING THE BASE STREAM
3. DO NOT SCHEDULE IN-STREAM WORK DURING PERIODS IN WHICH RAINFALL IS FORECASTED.
4. DURATION OF BYPASS PUMPING SHOULD BE LIMITED TO TWO WEEKS.
5. PLACE PUMP IN CONTAINMENT TO PREVENT SPILLAGE OR LEAKAGE OF FUEL INTO THE STREAM

## TEMPORARY COFFERDAM AND PUMP BYPASS AROUND IN-CHANNEL WORK AREAS




## SANDBAG DIVERSION DAM OR COFFERDAM

# EROSION AND SEDIMENT (E&S) POLLUTION CONTROL NOTES, SEQUENCE & DETAILS

STATE OF OHIO
MATTHEW
THOMAS
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REGISTERED
PROFESSIONAL ENGINEER

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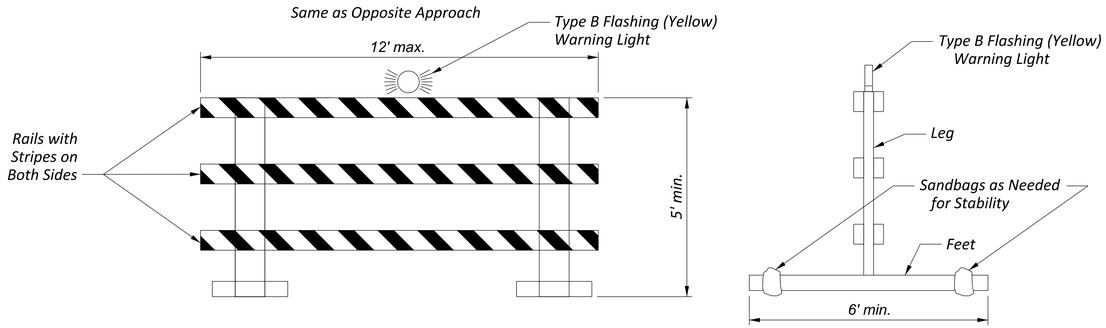
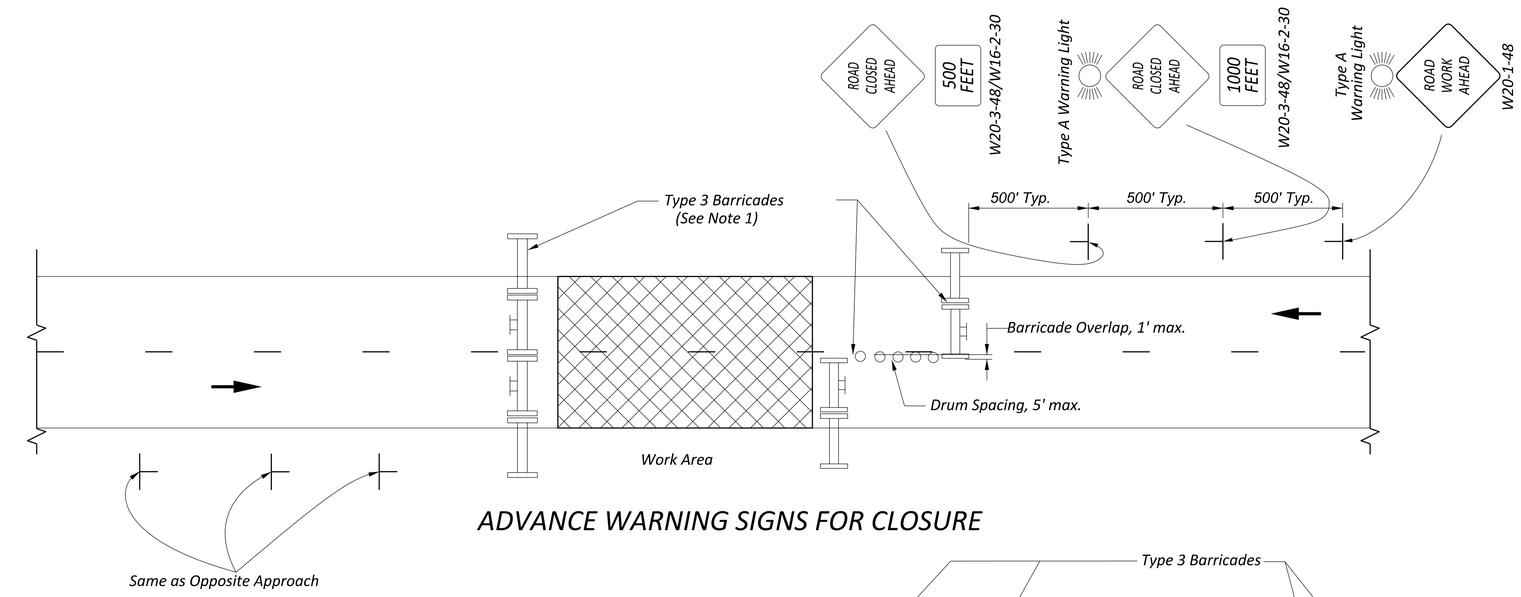
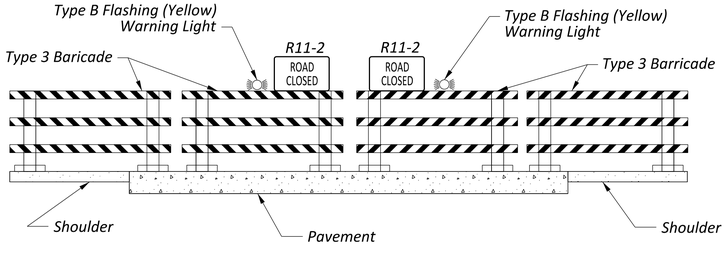


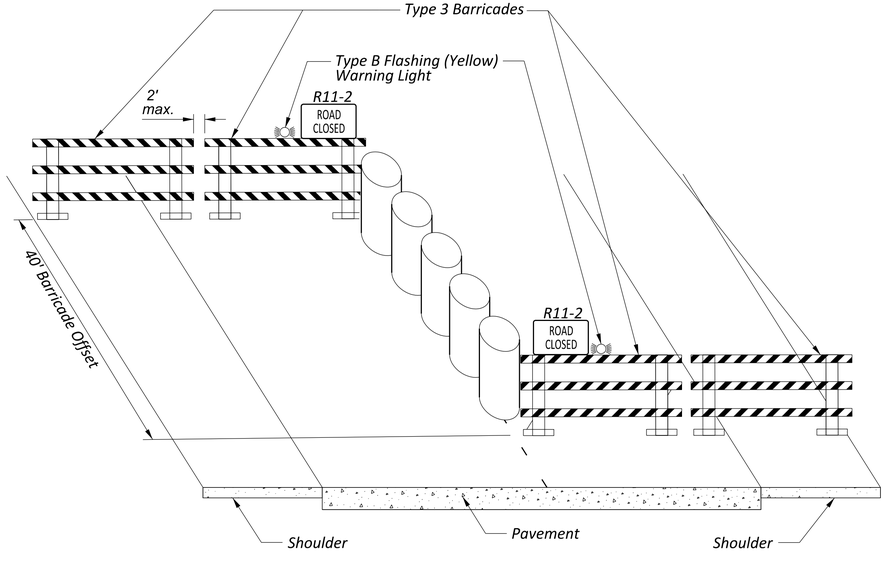

## TYPE 3 BARRICADE DETAIL




## ADVANCE WARNING SIGNS FOR CLOSURE




## BARRICADE CLOSURE PROFILE




## BARRICADE CLOSURE OFFSET OPTION

## NOTES:

*BARRICADE USE*

1A. Barricades shall be MASH compliant (or NCHRP 350 compliant if used on or before 12/31/2024) and shall be erected according to details shown. When the road is closed to traffic, barricades shall be used to effectively close the entire roadway, including the paved or aggregate shoulder.

1B. Barricades along adjacent lanes may be offset from each other as shown, with drums used to close the resulting gap. Maximum drum spacing shall be 5'.

*BARRICADE REFLECTORIZATION AND COLOR*

2A. In construction or maintenance areas, all rails of the barricades shall be reflectorized with orange and white Type XI retroreflective sheeting (CMS 730.194) in 6" wide alternate stripes which slope downward toward the center line of the road at an angle of 45 degrees. All three rails of the barricade shall be striped on both sides. Legs and feet shall be either all white or may display the natural color of the material used.

2B. Barricades used in permanent or semi-permanent application shall differ only in that they shall use red and white stripes.

*SIGNS*

3A. Where the road is closed to traffic by the erection of barricades, ROAD CLOSED (R11-2) signs shall be mounted laterally as shown.

3B. The advance warning signs shown on this drawing are intended for use when the traveled way is brought to an end with no direction given to traffic. Where traffic has been directed from the permanent roadway at or just in advance of the barricades, advance signing should be provided as shown in Standard Construction Drawing MT-95.70 or Ohio Manual of Uniform Traffic Control Devices Figure 6H-7 as appropriate.

3C. Advance warning signs approaching a lane closure, as shown on these plans, shall consist of two ROAD CLOSED AHEAD (W20-3) signs with distance plaques placed about 500' and 1000' from the closure, and a ROAD WORK AHEAD (W20-1) sign placed about 1500' from the closure. The signs shall be placed on both sides of the roadway for multi-lane divided highways or when required by the plans.

*FLASHING WARNING LIGHTS*

4A. Type A flashing warning lights are required on the ROAD WORK AHEAD (W20-1) sign and on the first ROAD CLOSED AHEAD (W20-3) sign.

4B. Type B flashing warning lights shall be provided on Type 3 Barricades, one light per each closed lane. Each light shall be conspicuously visible at all distances up to 1000' under normal atmospheric conditions. The light shall be in operation at all times during the period the highway is closed.

*OPERATION ON 2-LANE, 2-WAY ROADWAYS*

5A. Where the barricade runs across the entire roadway without longitudinally offsetting sections, the Contractor will normally open only the left side of the barricade as necessary to allow the construction vehicle to enter, and then shall immediately close it. The entire barricade will not normally be opened at the same time. The Contractor shall assign an employee to assure that the barricade is closed at the end of each workday.

5B. Where the sections of the barricade are offset from each other with drums provided to close the gap (see note 1B), the Contractor may move the drums as necessary to allow the construction vehicle to enter, and then shall immediately replace the drums. The Contractor shall assign an employee to assure that the drums are in place at the end of each workday.

## ROAD CLOSURE USING TYPE 3 BARRICADES

## MAINTENANCE AND PROTECTION OF TRAFFIC

| SCD NUMBER | |
|---|---|
| MT-101.60 | |
| SHEET | TOTAL |
| P.1 | 1 |

STATE OF OHIO
MATTHEW THOMAS NEIMAN
E-80355
REGISTERED PROFESSIONAL ENGINEER

PLOTTED: 13-JUN-2025 11:14

| TOWNSHIP | COUNTY | ROUTE | SECTION | SHEET |
|---|---|---|---|---|
| COLERAIN | BELMONT | 433 | | 11 OF 16 |

| REV NO | REVISIONS | DATE | BY | APPD |
|---|---|---|---|---|
| | | | | |
| | | | | |

# LOG OF BORING NO. JR-1



PROJECT: **Jug Run Culvert Replacement**
PROJECT NO.: **31250374**
PROJECT LOCATION: **Jug Run Rd Saint Clairsville, OH, 43950**

WATER LEVEL (ft): Dry | Dry |
DATE: 3/13/25 | 3/13/25 |
CAVED (ft): | | |

DATE STARTED: **3/13/25**
DATE COMPLETED: **3/13/25**
DRILLING CONTRACTOR: **Pennsylvania Drilling Co.**
DRILLER: **Evan**
DRILLING METHOD: **3.25" Hollow Stem Augers**
SOIL SAMPLING METHOD: **24" Split Spoon Sampler**
ROCK SAMPLING METHOD: **N/A**

WATER ENCOUNTERED DURING DRILLING (ft.): **Dry**
GROUND SURFACE ELEVATION: **841'**
DATUM: **.KMZ**
DRILL MODEL: **CME**
DRILL CARRIER: **Truck Mounted**
LOGGED BY: **Jack McGuane**
CHECKED BY: **Tyler Furr, P.G.**

| SAMPLE NUMBER | SAMPLE DEPTH (ft.) | SAMPLE RECOVERY (in.) | SAMPLE BLOWS/6 inches | N (blows/ft.) | ELEVATION (ft.) | DEPTH (ft.) | USCS | GRAPHIC SYMBOL | DESCRIPTION | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 841.0 | 0 | SC | | Gray, dry, dense, Clayey SAND with rock fragments | |
| 1 | 0.0 | 16 | 17-23-3-9 | 26 | 839.0 | | CL | | Brown, moist, soft to stiff, LEAN CLAY with rock fragments | |
| 2 | 2.0 | 9 | 8-7-3-4 | 10 | | 5 | | | | |
| 3 | 4.0 | 6 | 4-2-2-2 | 4 | 835.0 | | | | | |
| 4 | 6.0 | 18 | 2-4-6-6 | 10 | | | CL-ML | | Brown, wet, stiff, SILTY CLAY | |
| 5 | 8.0 | 13 | 8-9-10-11 | 19 | 833.0 | | CL | | Brown and black, moist, very stiff, LEAN CLAY with rock fragments | Trace carbonaceous material |
| 6 | 10.0 | 16 | 7-10-13-22 | 23 | 831.0 | 10 | SC | | Gray, dry, medium dense, Clayey SAND with rock fragments | |
| 7 | 12.0 | 19 | 23-25-28-50/4 | 50/4 | 829.0 | | HW | | Gray, dry, Highly Weathered CLAYSTONE | Augered to 14.0' |
| 8 | 14.0 | 4 | 50/4 | 50/4 | 826.7 | 15 | | | Boring terminated at 14.3' | |
| | | | | | | 20 | | | | |
| | | | | | | 25 | | | | |

NOTES:

GEO-TECHNOLOGY ASSOCIATES, INC.
206 Bursca Dr
Bridgeville, PA, 15017

LOG OF BORING NO. JR-1



# LOG OF BORING NO. JR-2



PROJECT: **Jug Run Culvert Replacement**
PROJECT NO.: **31250374**
PROJECT LOCATION: **Jug Run Rd Saint Clairsville, OH, 43950**

WATER LEVEL (ft): Dry | Dry |
DATE: 3/13/25 | 3/13/25 |
CAVED (ft): | | |

DATE STARTED: **3/13/25**
DATE COMPLETED: **3/13/25**
DRILLING CONTRACTOR: **Pennsylvania Drilling Co.**
DRILLER: **Evan**
DRILLING METHOD: **3.25" Hollow Stem Augers**
SOIL SAMPLING METHOD: **24" Split Spoon Sampler**
ROCK SAMPLING METHOD: **N/A**

WATER ENCOUNTERED DURING DRILLING (ft.): **Dry**
GROUND SURFACE ELEVATION: **843'**
DATUM: **.KMZ**
DRILL MODEL: **CME**
DRILL CARRIER: **Truck Mounted**
LOGGED BY: **Jack McGuane**
CHECKED BY: **Tyler Furr, P.G.**

| SAMPLE NUMBER | SAMPLE DEPTH (ft.) | SAMPLE RECOVERY (in.) | SAMPLE BLOWS/6 inches | N (blows/ft.) | ELEVATION (ft.) | DEPTH (ft.) | USCS | GRAPHIC SYMBOL | DESCRIPTION | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.0 | 7 | 3-5-5-3 | 10 | 843.0 | 0 | CL | | Brown and dark gray, damp to moist, soft to stiff, Sandy LEAN CLAY with rock fragments | |
| 2 | 2.0 | 12 | 2-2-2-3 | 4 | | | | | | |
| 3 | 4.0 | 17 | 10-9-5-4 | 14 | | 5 | | | | |
| 4 | 6.0 | 16 | 2-2-8-27 | 10 | 835.5 | | SC | | Gray, dry, dense, Clayey SAND with rock fragments | |
| 5 | 8.0 | 21 | 29-29-23-20 | 52 | 835.0 | | HW | | Gray, dry, Highly Weathered CLAYSTONE | |
| 6 | 10.0 | 24 | 16-24-20-50 | 44 | 833.0 | 10 | SC | | Gray, dry, dense, Clayey SAND with rock fragments | |
| 7 | 12.0 | 1 | 50/2 | 50/2 | 831.0 | | HW | | Black, damp, Highly Weathered SHALE and COAL | Augered to 14.0' |
| 8 | 14.0 | 1 | 50/3 | 50/3 | 829.0 | | HW | | Gray, dry, Highly Weathered SANDSTONE | |
| | | | | | 828.8 | 15 | | | Boring terminated at 14.2' | |
| | | | | | | 20 | | | | |
| | | | | | | 25 | | | | |

NOTES:

GEO-TECHNOLOGY ASSOCIATES, INC.
206 Bursca Dr
Bridgeville, PA, 15017

LOG OF BORING NO. JR-2



BORING LOGS

STATE OF OHIO
MATTHEW THOMAS NEIMAN
E-80355
REGISTERED PROFESSIONAL ENGINEER

| TOWNSHIP | COUNTY | ROUTE | SECTION | SHEET |
|---|---|---|---|---|
| COLERAIN | BELMONT | 433 | | 12 OF 16 |

| REV NO | REVISIONS | DATE | BY | APPD |
|---|---|---|---|---|
| | | | | |
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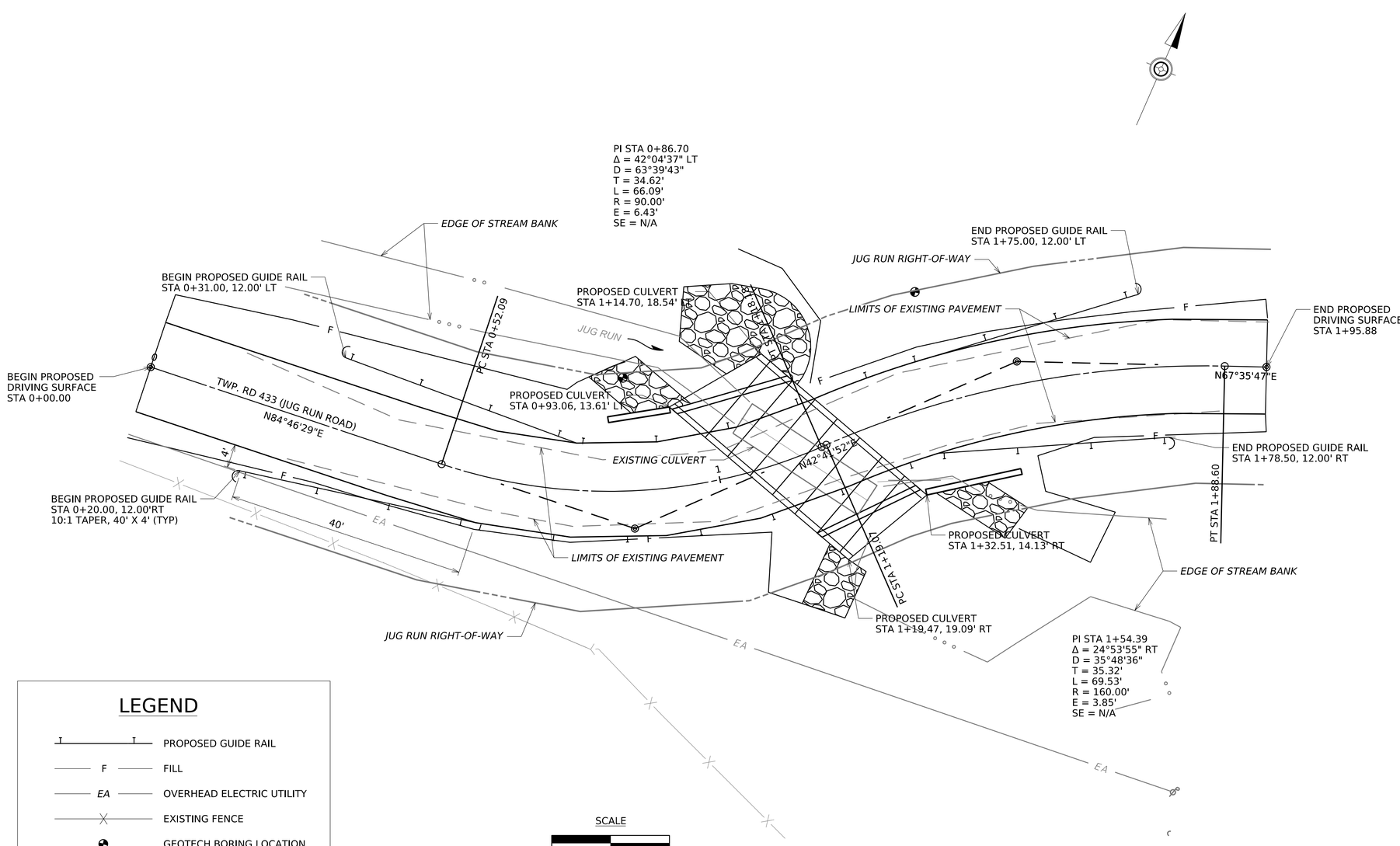


## LEGEND

- PROPOSED GUIDE RAIL
- FILL
- OVERHEAD ELECTRIC UTILITY
- EXISTING FENCE
- GEOTECH BORING LOCATION
- ROCK, R-6*

*ROCK R-6:
ROCK SIZE 6" TO 24"
15 TO 50% PASSING 12" SIEVE
0–15% PASSING 6" SIEVE

SCALE
0 10 20 FEET

NOTE:
THE PROPOSED BOX-CULVERT IS SIZED TO CARRY THE 10-YEAR STORM EVENT. THE ROADWAY APPROACH ELEVATION WILL NOT BE OVERTOPPED DURING THE 5-YEAR STORM EVENT.

STATE OF OHIO
MATTHEW THOMAS NEIMAN
E-80355
REGISTERED PROFESSIONAL ENGINEER

# ROAD PLAN

PLOTTED: 13-JUN-2025 11:14
OPERATOR: ahall
FILE NAME: Z:\Project Files\CA-DZ\Colera\30447 - TWP 433 Jug Run road\CAD\Sheets and Plans\Construction\30477_7A_PLAN.dgn

| TOWNSHIP | COUNTY | ROUTE | SECTION | SHEET |
|---|---|---|---|---|
| COLERAIN | BELMONT | 433 | | 13 OF 16 |

| REV NO | REVISIONS | DATE | BY | APPD |
|---|---|---|---|---|
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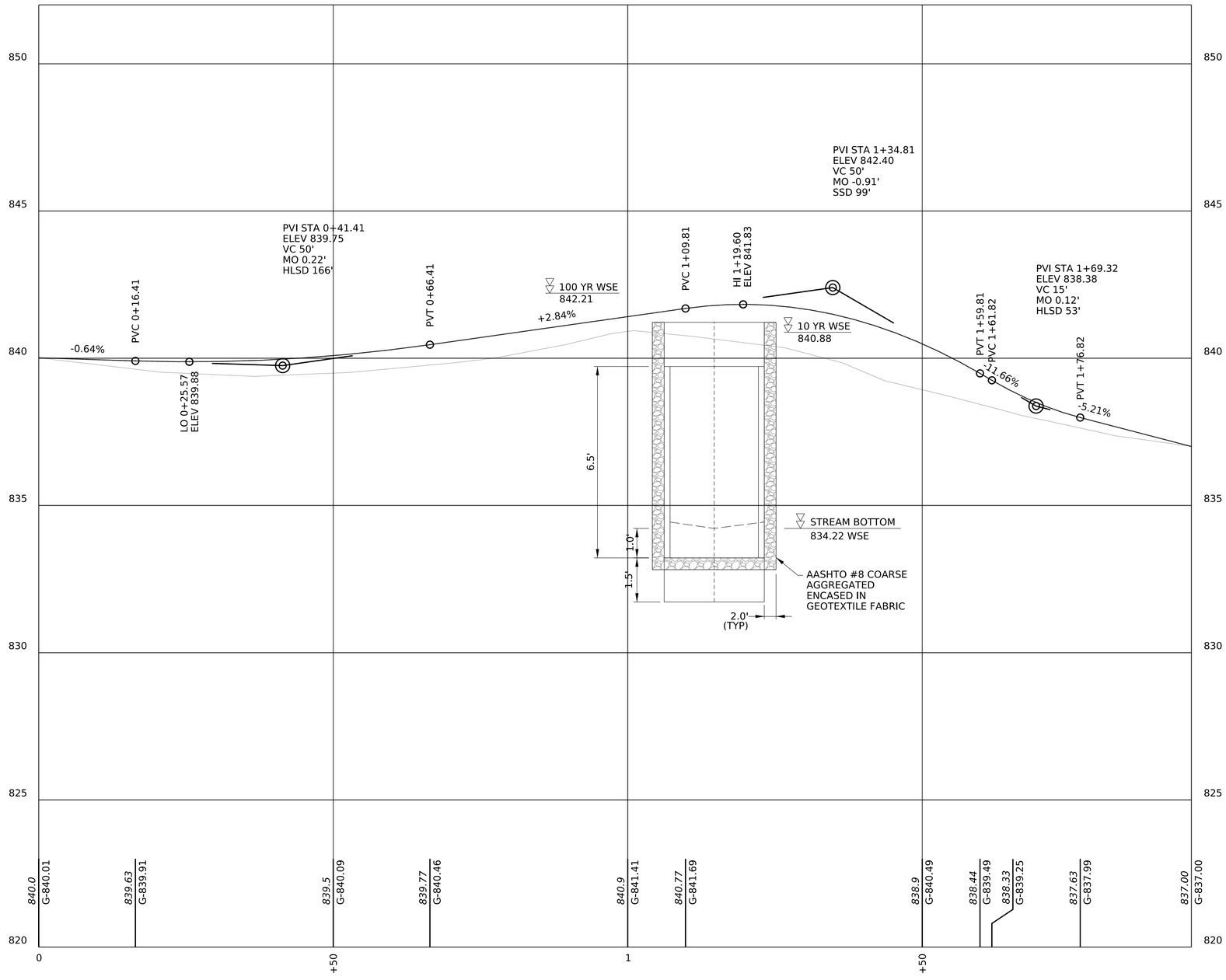


## ROAD PROFILE

STATE OF OHIO
MATTHEW
THOMAS
NEIMAN
E-80355
REGISTERED
PROFESSIONAL ENGINEER

PLOTTED: 13-JUN-2025 11:14

OPERATOR: ahall
FILE NAME: Z:\Project Files\CA-DZ\Colerai\30447 - TWP 433 Jug Run road\CAD\Sheets and Plans\Construction\C-BLN0 - Profile 1.dgn

| TOWNSHIP | COUNTY | ROUTE | SECTION | SHEET |
|---|---|---|---|---|
| COLERAIN | BELMONT | 433 | | 14 OF 16 |

| REV NO | REVISIONS | DATE | BY | APPD |
|---|---|---|---|---|
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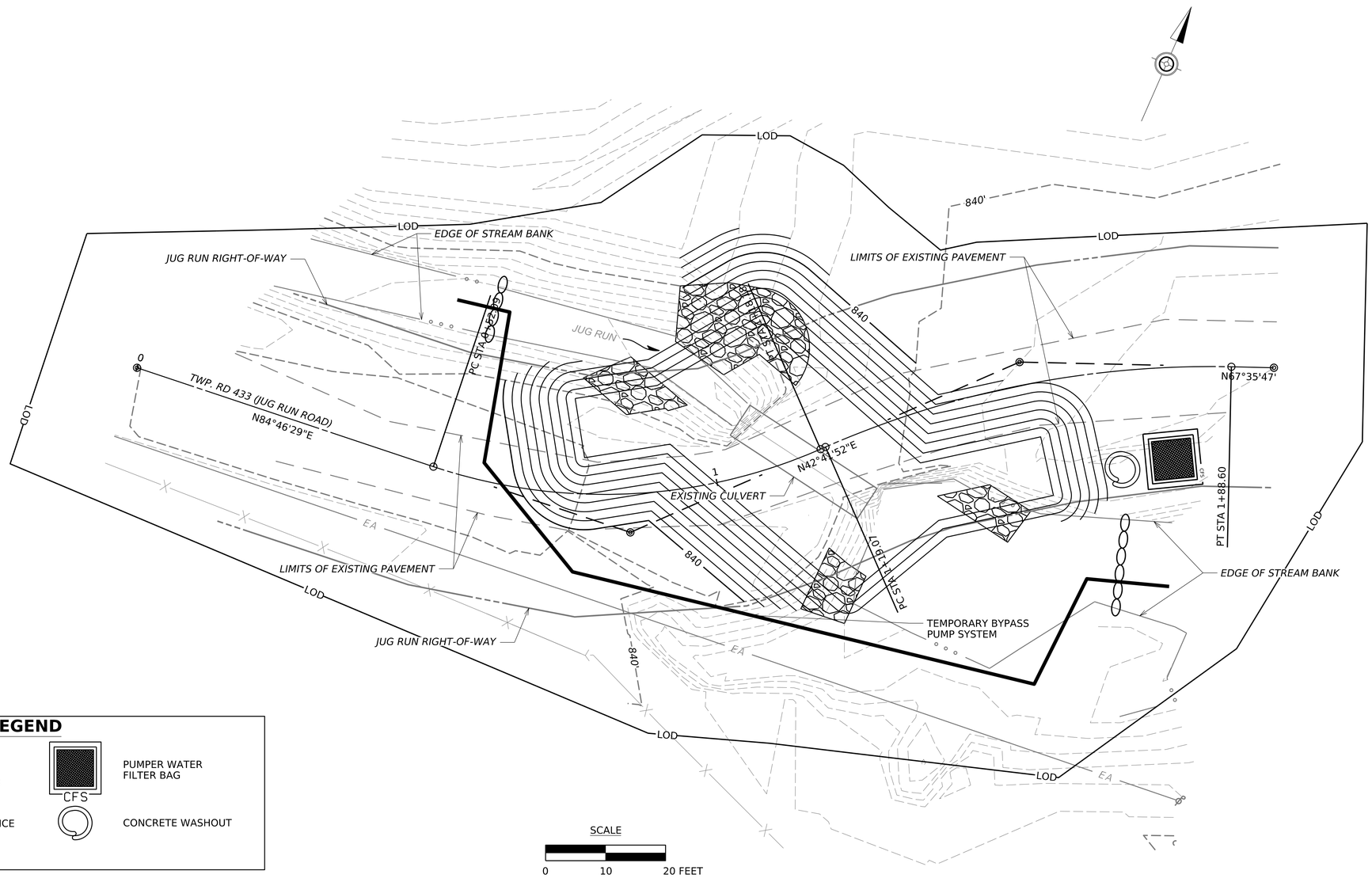


## LEGEND

- SANDBAG DAM
- TEMPORARY BYPASS PUMP SYSTEM PIPE
- LOD — LIMIT OF DISTURBANCE
- PUMPER WATER FILTER BAG
- CONCRETE WASHOUT

# EROSION AND SEDIMENT (E&S) POLLUTION PLAN - STAGE 1

STATE OF OHIO
MATTHEW THOMAS NEIMAN
E-80355
REGISTERED PROFESSIONAL ENGINEER

PLOTTED: 13-JUN-2025 11:14

OPERATOR: ahall
FILE NAME: Z:\Project Files\CA-DZ\Colerain\30447 - TWP 433 Jug Run road\CAD\Sheets and Plans\E&S\30477_7E_PLAN 1.dgn

| TOWNSHIP | COUNTY | ROUTE | SECTION | SHEET |
|---|---|---|---|---|
| COLERAIN | BELMONT | 433 | | 15 OF 16 |

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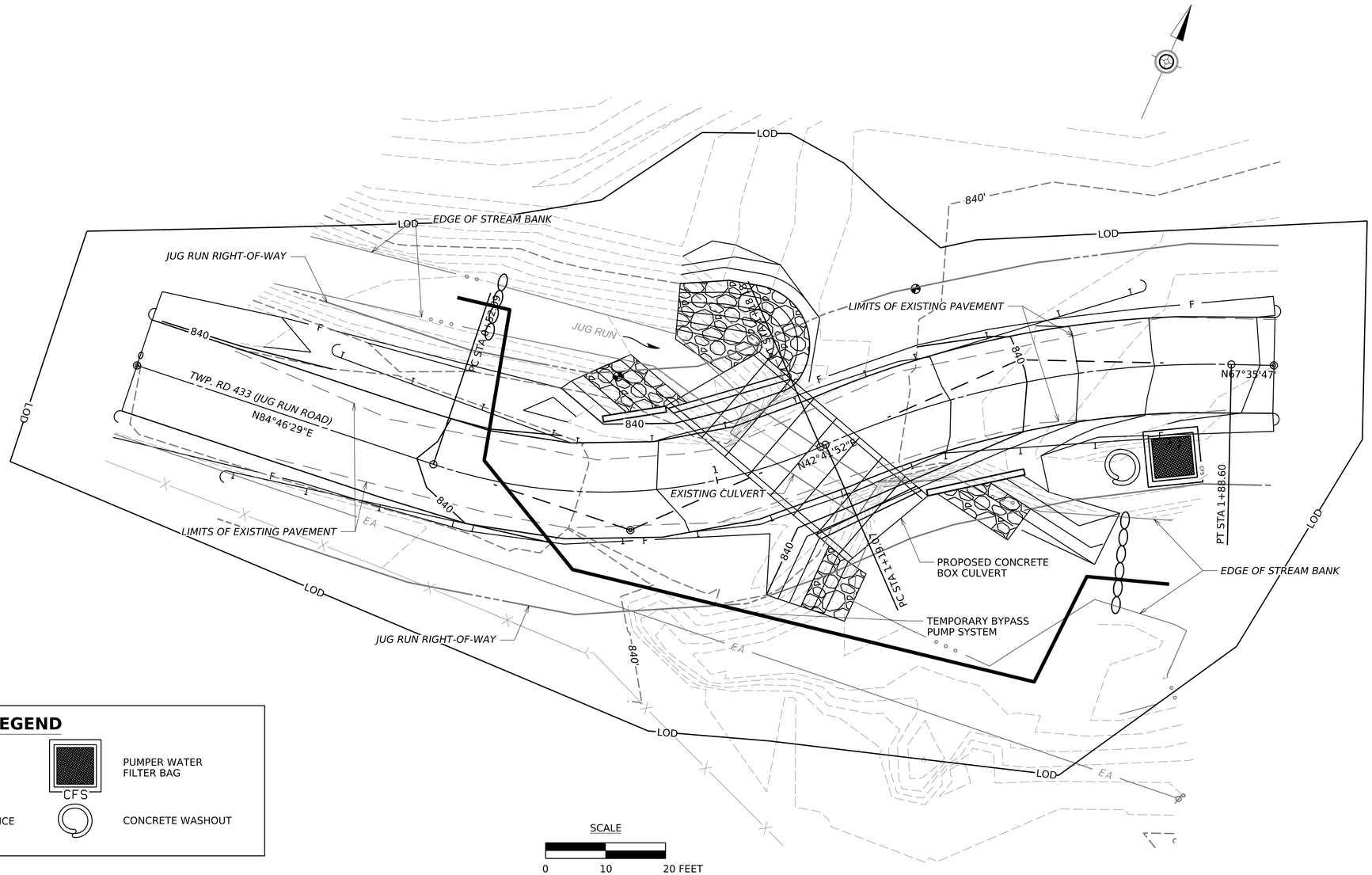


## LEGEND

- SANDBAG DAM
- TEMPORARY BYPASS PUMP SYSTEM PIPE
- LOD — LIMIT OF DISTURBANCE
- PUMPER WATER FILTER BAG (CFS)
- CONCRETE WASHOUT

SCALE

0 10 20 FEET

# EROSION AND SEDIMENT (E&S) POLLUTION PLAN - STAGE 2

STATE OF OHIO
MATTHEW THOMAS NEIMAN
E-80355
REGISTERED PROFESSIONAL ENGINEER

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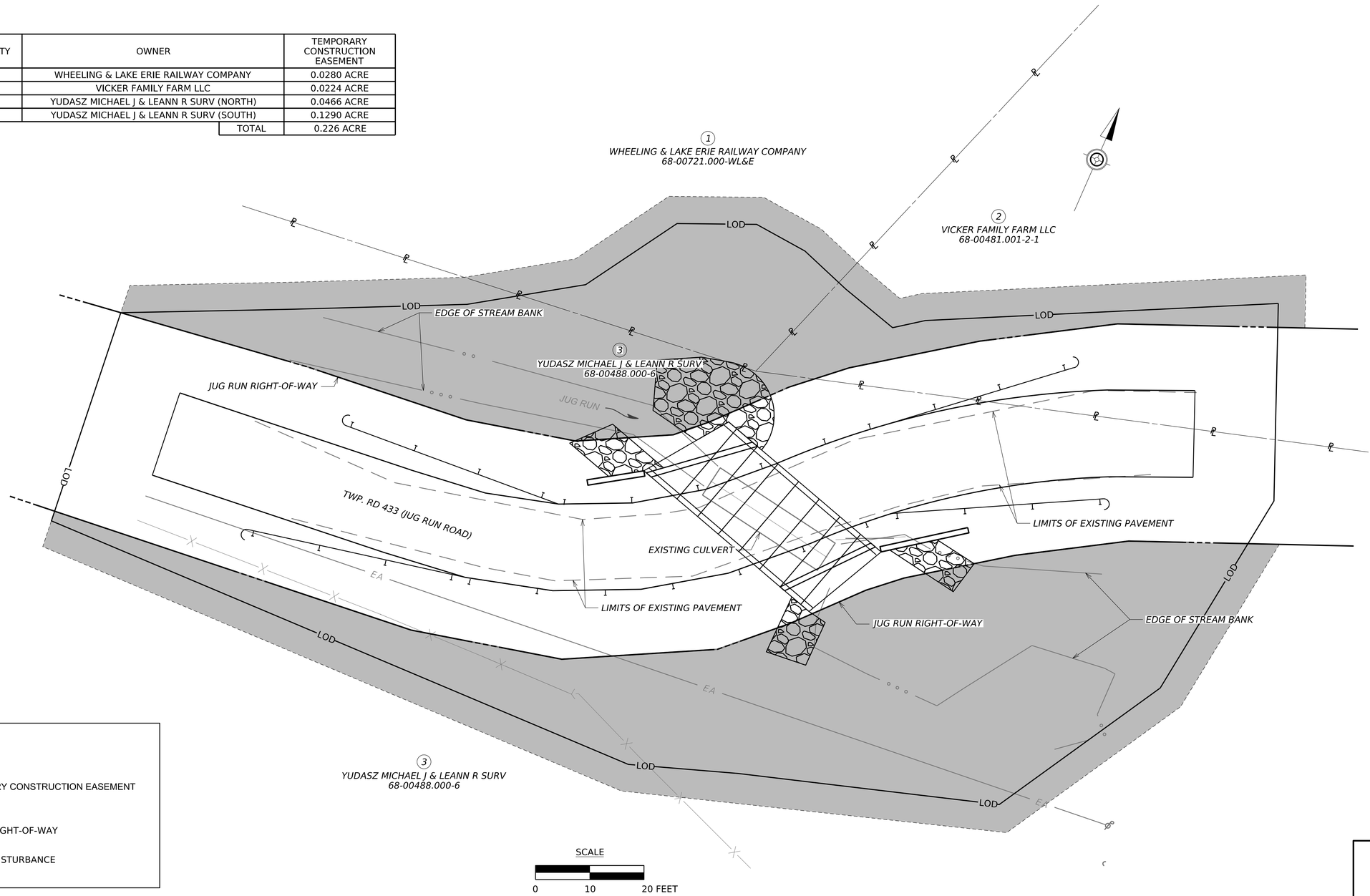
OPERATOR: ahall
FILE NAME: Z:\Project Files\CA-DZ\Colerain\30447 - TWP 433 Jug Run road\CAD\Sheets and Plans\E&S\30477_7E_PLAN 2.dgn

| TOWNSHIP | COUNTY | ROUTE | SECTION | SHEET |
|---|---|---|---|---|
| COLERAIN | BELMONT | 433 | | 16 OF 16 |

| REV NO | REVISIONS | DATE | BY | APPD |
|---|---|---|---|---|
| | | | | |
| | | | | |

| PROPERTY | OWNER | TEMPORARY CONSTRUCTION EASEMENT |
|---|---|---|
| 1 | WHEELING & LAKE ERIE RAILWAY COMPANY | 0.0280 ACRE |
| 2 | VICKER FAMILY FARM LLC | 0.0224 ACRE |
| 3-1 | YUDASZ MICHAEL J & LEANN R SURV (NORTH) | 0.0466 ACRE |
| 3-2 | YUDASZ MICHAEL J & LEANN R SURV (SOUTH) | 0.1290 ACRE |
| | TOTAL | 0.226 ACRE |




**LEGEND**

- TEMPORARY CONSTRUCTION EASEMENT
- JUG RUN RIGHT-OF-WAY
- LOD — LIMIT OF DISTURBANCE

SCALE

0 10 20 FEET

RIGHT-OF-WAY PLAN

STATE OF OHIO
MATTHEW THOMAS NEIMAN
E-80355
REGISTERED PROFESSIONAL ENGINEER

PLOTTED: 13-JUN-2025 11:14

OPERATOR: ahall
FILE NAME: Z:\Project Files\CA-DZ\Colerain\30447 - TWP 433 Jug Run road\CAD\Sheets and Plans\E&S\30477_7E_TCE PLAN.dgn