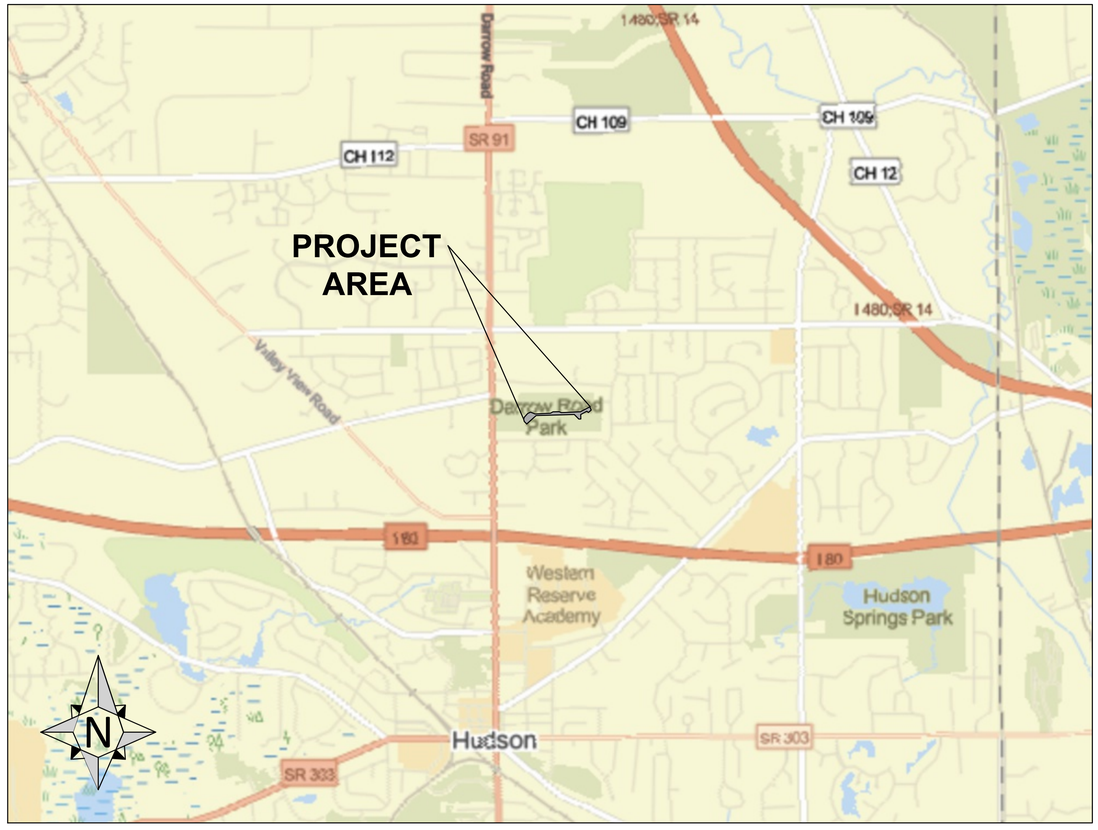
DARROW RD. PARK STREAM RESTORATION

SUMMIT COUNTY, HUDSON, OHIO 44236
DECEMBER 2024



SITE LOCATION MAP

SCALE: 1" = 2000'

INDEX SHEETS

60% DESIGN

PREPARED FOR:

TINKER'S CREEK WATERSHED PARTNERS
10075 RAVENNA RD
TWINSBURG, OH 44087

Ohio Utilities Protection Service
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PREPARED BY:

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RiverReach Construction

DECEMBER 2024
DATE

GENERAL NOTES

1. **STREAM & WETLAND RESTORATION PROJECT DESCRIPTION**

THE PROJECT IS LOCATED AT DARROW ROAD PARK IN THE CITY OF HUDSON, SUMMIT COUNTY, OHIO. THE PROJECT AREA CONSISTS OF AN APPROXIMATELY 3,000 LF REACH OF AN UNNAMED TRIBUTARY IN THE TINKERS CREEK WATERSHED (HUC 04110002-05-02). THE OBJECTIVE OF THE DARROW ROAD PARK STREAM RESTORATION PROJECT IS TO RESTORE MORE NATURAL FLOW TO APPROXIMATELY 1,209 LINEAR FEET OF STREAM USING A COMBINATION OF CHANNEL CREATION AND A RAISED GRADE APPROACH WHILE PROMOTING STORMWATER RETENTION IN THE EXISTING WETLANDS. PORTIONS OF THE EXISTING DITCH WILL BE FILLED AND RE-ROUTED IN ORDER TO RE-ATTACH THE WATER LEVEL TO THE LANDSCAPE AND TO THE EXISTING WETLAND ON-SITE. ADDITIONALLY, NATIVE PLANTINGS AND SEED WILL BE INSTALLED WITHIN THE ACTIVE WORK AREAS AND INVASIVE SPECIES WILL BE REMOVED

2. **STREAM CONSTRUCTION GENERAL SEQUENCE**

STREAM CONSTRUCTION WILL FOLLOW THE GENERAL SEQUENCE OF:

- OUPS COORDINATION;
- MOBILIZE TO SITE, ENSURE ALL EQUIPMENT BROUGHT TO THE SITE IS CLEAN. DIRTY EQUIPMENT SHALL NOT BE PERMITTED;
- INSTALL EROSION AND SEDIMENT CONTROLS;
- CONSTRUCT TEMPORARY ACCESS ROADS AND STAGING AREAS;
- TREE AND VEGETATION CLEARING AND GRUBBING; VEGETATION WILL BE CLEARED DURING APPROPRIATE TIMEFRAME FROM OCTOBER 1ST TO MARCH 31ST;
- SITE LAYOUT AND ESTABLISH WORKING LIMITS;
- INITIATE WATER CONTROL/DIVERSION PROCEDURES;
- ESTABLISH STREAM CROSSING(S);
- STRIP AND STOCKPILE TOPSOIL AS NECESSARY IN GRADING AREAS;
- BEGIN DOWNSTREAM AND WORK IN AN UPSTREAM DIRECTION;
- BEGIN EXCAVATION OF REACHES 1-4 TO ESTABLISH SUBGRADE OF NEW MEANDER GEOMETRY;
- EXCAVATE NEW STREAMBED PROFILES;
- IMPORT ROCK SUBSTRATE AND INSTALL TO FINISHED RIFFLE GRADES;
- PERFORM FINISH GRADING;
- FILL EXISTING DITCH IN ALLOCATED AREAS, INSTALL STOCKPILED TOPSOIL TO FINISH GRADE;
- SEED, STABILIZE, AND INSTALL EROSION CONTROL FABRIC;
- INSTALL NATIVE TREES, SHRUBS, AND LIVE STAKES. REMOBILIZATION MAY BE NECESSARY DEPENDING ON TIMING OF PLANTINGS;
- DEMOBILIZE.

3. **PERMITS**

WORK WITHIN PROJECT SITE/LIMITS IS SUBJECT TO U.S. ARMY CORPS OF ENGINEERS (USACE) REGULATORY JURISDICTION (I.E., JURISDICTIONAL WATERS OF THE U.S.). ANY IMPACTS AND PLACEMENT OF FILL TO JURISDICTIONAL WATERS OUTSIDE OF THE PROJECT LIMITS IS PROHIBITED. THE FOLLOWING PERMITS APPLY TO THIS PROJECT:

1. NATIONWIDE PERMIT (NWP) 27 FROM THE U.S. ARMY CORPS OF ENGINEERS (USACE).
2. OHIO EPA - NOTICE OF INTENT (NOI) FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY UNDER AN NPDES GENEAL PERMIT.

4. **QUALITY ASSURANCE, QUALITY CONTROL, AND OWNER OVERSIGHT**

FIELD OBSERVATION/CONSTRUCTION OVERSIGHT WILL BE CONDUCTED BY *ENVIROSCIENCE, INC* (ENVIROSCIENCE). A CONSTRUCTION REPRESENTATIVE OF ENVIROSCIENCE SHALL BE CONSULTED WITH PRIOR TO THE CONSTRUCTION AND PLACEMENT OF RESTORATION FEATURES. *RIVERREACH CONSTRUCTION (THE CONTRAC*TOR) SHALL COORDINATE WITH THE CONSTRUCTION REPRESENTATIVE FOR EVALUATION OF CHANNEL GRADING, ANY TEMPORARY STREAM CROSSINGS, SUBGRADES, SUBSTRATES INCLUDING BANK RUN, GRAVELS, COBBLES AND BOULDERS, AND ANY BOULDER HABITAT STRUCTURES AND PLANTINGS.

THE CONSTRUCTION REPRESENTATIVE SHALL DETERMINE THE ACCEPTABILITY OF ALL STREAM CONSTRUCTION AND ITS PROCEDURES. THERE WILL BE CONSTANT REVIEW OF ALL MATERIALS, CONSTRUCTION PRACTICES, AND THE QUALITY AND QUANTITY OF ALL PHASES OF THE RIVER RESTORATION PORTION OF THE PROJECT. THE CONSTRUCTION REPRESENTATIVE SHALL HAVE AUTHORITY TO REQUEST STREAM FEATURE ADJUSTMENTS AS MAY BE NECESSARY TO BEST MEET THE RESTORATION OBJECTIVES. EVALUATION OF CONSTRUCTED GRADES WILL DETERMINE APPROVAL. ALL RESTORATION ELEMENTS SHALL NOT BE CONSIDERED COMPLETE UNTIL APPROVED BY THE CONSTRUCTION REPRESENTATIVE.

THE CONTRACTOR SHALL PRESERVE ALL CORNERSTONES, IRON PINS, AND CONCRETE MONUMENTS, OR ANY TYPE OF LAND MONUMENT. THE CONTRACTOR SHALL HAVE ALL MONUMENTS IN THE PROXIMITY OF THE WORK REFERENCED.

5. **CLEARING AND GRUBBING**

NO TREE REMOVAL WILL BE PERMITTED OUTSIDE THE LIMITS OF WORK INDICATED ON THE PLANS UNLESS AUTHORIZED. TREE REMOVAL IS SUBJECT TO THREATENED AND ENDANGERED (T&E) BAT REQUIREMENTS. CLEARING MUST OCCUR FROM OCTOBER 1ST TO MARCH 31ST, OR AS SPECIFIED BY THE US FISH & WILDLIFE SERVICE (USFWS).

TREE CLEARING MUST BE REVIEWED BY ENVIROSCIENCE AND THE CITY OF HUDSON/TINKERS CREEK WATERSHED PARTNERS PRIOR TO CUTTING. ONLY TREES MARKED AS TO BE REMOVED SHOULD BE CUT UNLESS INSTRUCTED OTHERWISE BY ENVIROSCIENCE.

6. **WATER MANAGEMENT**

THE CONTINUATION OF STREAM FLOW FROM UPSTREAM TO DOWNSTREAM BEYOND THE END OF THE PROJECT MUST BE MAINTAINED AT ALL TIMES. TEMPORARY DAMMING TO COMPLETELY STOP FLOW IS PROHIBITED. TEMPORARY DAMMING TO FACILITATE BYPASS PUMPING IS PERMITTED. CHANNEL DIVERSION IS EXPECTED TO BE THE PRIMARY MEANS OF WATER CONTROL FOR BASE FLOW AS BYPASS PUMPING IS NOT FEASIBLE. BYPASS PUMPING IS PERMITTED AS LONG AS PROPER EROSION AND SEDIMENT CONTROL BMP'S ARE FOLLOWED.

7. **TOPSOIL AND SEED PREPARATION**

TOPSOIL SHALL BE STRIPPED AND STOCKPILED ON-SITE. TOPSOIL SHALL BE RE-SPREAD TO ACHIEVE FINISH GRADE WITH 2.5 - 5-INCHES. QUANTITY OF TOPSOIL IS ANTICIPATED TO BE A LIMITING FACTOR TO THE EXTENTS OF THE BORROW AREA AND RESTORED AREAS. PRIOR TO TOPSOIL INSTALLATION SUBGRADE SHALL BE DECOMPACTED TO A MINIMUM DEPTH OF 1 FOOT USING RIPPER ATTACHMENT. PRIOR TO SEEDING ALL AREAS MUST BE INSPECTED AND APPROVED BY ENVIROSCIENCE. AFTER TOPSOIL INSTALLATION AREAS SHALL BE PREPPED FOR SEED INSTALLATION USING A SKID STEER TILLER ATTACHMENT. NATIVE AND TEMPORARY SEED MIXES SHALL THEN BE INSTALLED.

FOLLOWING SEED APPLICATION TOPSOILS AND ALL SLOPES GREATER THAN 2:1 (AT A MINIMUM) SHALL BE PROTECTED WITH SUITABLE STRAW MULCH OR EROSION FABRIC DEEMED SUITABLE TO WITHSTAND THE LEVEL OF RISK ASSOCIATED WITH POTENTIAL FLOODING, WIND OR OTHER RISK WITH THE POTENTIAL TO THREATEN TOPSOIL OR SEED VIABILITY.

TOPSOILS SHALL NOT BE OVERCOMPACTED. OVER COMPACTED TOPSOIL OR AREAS DEEMED UNSUITABLE UPON INSPECTION SHALL BE MODIFIED TO SUITABLE GROWING CONDITIONS. TOPSOIL AND SUBGRADE MATERIAL SHOULD BE ABLE TO BE PENETRATED TO FULL SHOVEL DEPTH WITH LIGHT FORCE FROM A NORMAL SPADE SHOVEL.

8. **TEMPORARY STREAM CROSSING**

TEMPORARY STREAM CROSSING IF NECESSARY AT A LOCATION WHERE CONSTRUCTION EQUIPMENT WILL CROSS THE STREAM THE CONTRACTOR SHALL CONSTRUCT A STABLE CROSSING FROM ONE OF THREE OPTIONS.

TIMBERMAT CROSSING: USING VARIOUS COMBINATIONS AND CONFIGURATIONS OF TIMBERMATS PLACED PARALLEL AND ACROSS CHANNELS CAN BE USED AS A CROSSING(S). A SUITABLE ROCK MATTRESS CAN BE USED AS A FOUNDATION.

HDPE PIPE / ROCK CROSSING: A ROCK MATTRESS ROCK CHANNEL PROTECTION TO PROTECT THE STREAM BED AND BANKS. MATERIAL SHALL CONSIST OF NATURAL RIVER ROCK FROM SAME APPROVED AGGREGATE SOURCE FOR PROJECT. INSTALL TEMPORARY CULVERT PIPING IN ACCORDANCE WITH THE STANDARD TEMPORARY STREAM CROSSING DETAIL. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL REMOVE PIPING AND REUSE AS APPROVED BY THE CONSTRUCTION REPRESENTATIVE OR REMOVE MATERIAL FROM THE PROJECT SITE.

AT GRADE STREAM CROSSING: FORD USING THE EXISTING SAND AND GRAVEL STREAM BOTTOM.

9. **RIVERBED AND STREAMBANK SUBGRADE**

THIS WORK SHALL INCLUDE ALL LABOR, MATERIAL, AND EQUIPMENT NECESSARY TO PRODUCE CHANNEL DIMENSIONS AND PROFILE GRADES AS DETAILED IN THE STREAM REALIGNMENT PLANS. THIS SHALL INCLUDE EARTHWORK CONSTRUCTION WITHIN THE NEW FLOODPLAIN CORRIDOR PER GRADING PLAN, PROFILE AND CROSS-SECTIONS. STREAM CHANNEL AND FLOODPLAIN GRADING SHALL BE PERFORMED TO ESTABLISH STABLE EARTHEN BANK ALONG THE NEW BANKFULL ALIGNMENT BY EITHER EXCAVATION OR FILL. IF EARTHEN FILL IS NECESSARY, FILL SHALL BE PLACED IN MINIMUM 9" LOOSE LAYER LIFTS AND COMPACTED MECHANICALLY (E.G., WITH MACHINE BUCKET) FOR STREAMBANK AND/OR FLOODPLAIN CREATION. EARTHEN FILL SHALL BE COMPACTED SO THAT IT IS FIRM AND STABLE AND THERE IS NO PRESENCE OF SOIL PUMPING OR SINKING. REFER TO LIMITS OF PROPOSED STREAMBANK CONSTRUCTION SHOWN ON PLAN, PROFILE AND CROSS-SECTIONS. OVERCOMPACTION IS NOT DESIRABLE BECAUSE IT WILL LIMIT PLANT GROWTH AND ROOT DEVELOPMENT. IF SUBGRADE IN STREAMBANK AND FLOODPLAIN AREAS ARE DEEMED TO BE OVERCOMPACTED BY CONSTRUCTION REPRESENTATIVE, THEN AREA SHALL DECOMPACTED TO A MINIMUM DEPTH OF 1 FT USING A RIPPER ATTACHMENT PRIOR TO APPLICATION OF TOPSOIL TO ACHIEVE FINISH GRADE. THIS INCLUDES ALL HAUL ROADS THAT ARE WITHIN THE RESTORATION AREA.

RIVERINE SUBGRADE SHALL BE EXCAVATED OR INSTALLED PER THE LINES & GRADES ON THE PLAN AND PROFILE DRAWINGS INCLUDED HEREIN. IF EXCAVATION IS PERFORMED INTO NATURAL UNDISTURBED GROUND TO ACHIEVE THE SUBGRADE THEN COMPACTION IS NOT NECESSARY. IF FILL IS NECESSARY TO ACHIEVE SUBGRADE, THEN FILL SHALL BE COMPACTED MECHANICALLY. THE SUBGRADE SHALL BE COMPACTED SO THAT IT IS FIRM AND STABLE AND THAT THERE IS NO VISUAL PRESENCE OF SOIL PUMPING OR SINKING.

COMPACTION OF THE SUBGRADE IS NECESSARY TO CREATE THE FOUNDATION TO ACHIEVE THE FINISH GRADE OF THE STREAMBED PROFILE. A FAILURE TO PROPERLY CREATE THIS FOUNDATION WILL RESULT IN PROFILE SETTLING AND ADVERSE CHANGES IN STREAM SLOPE AND MORPHOLOGY RELATIONSHIPS.

10. **SURVEY**

THE ELEVATION DATUM OF THE DATA COLLECTED BY ENVIROSCIENCE IS NAVD88, AND THE HORIZONTAL DATUM IS NAD83, OHIO STATE PLANE, NORTH ZONE, US FOOT. DRAWINGS ARE BASED ON DATA COLLECTED BY ENVIROSCIENCE, INC IN APRIL AND MAY 2024. PARCEL BOUNDARIES AND STREETS WERE OBTAINED FROM SUMMIT COUNTY GIS TO SUPPLEMENT THE ENVIROSCIENCE DATA.

11. **EXISTING UTILITIES**

THE LOCATION OF ALL EXISTING UNDERGROUND UTILITY FACILITIES ARE SHOWN ON THE PLANS FROM DATA AVAILABLE AT THE TIME OF FIELD SURVEY IN ACCORDANCE WITH SECTION 153.64 OF THE OHIO REVISED CODE (O.R.C,). THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFICATION OF THE EXISTING UTILITY OWNERS AND UTILITY PROTECTION SERVICE LISTED BELOW IN ACCORDANCE WITH SECTION 153.64 OF THE O.R.C.. THE CONTRACTOR SHALL THOROUGHLY REVIEW THE SITE AND BECOME FAMILIAR WITH ALL UTILITIES (WATER, SANITARY, ELECTRIC, GAS, TELEPHONE, FIBER OPTIC, etc.) WITHIN THE LIMITS OF THE PROJECT, WHICH MAY INTERFERE WITH THE PROPOSED CONSTRUCTION. THE DETAILS AND DIMENSIONS SHOWN ON PLANS PERTAINING TO THE EXISTING FACILITIES HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING FACILITIES AND DO NOT NECESSARILY REPRESENT AS-BUILT CONDITIONS. THE CONTRACT GMP HAS BEEN BASED ON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON EXAMINATION OF THE WORK SITE BY THE CONTRACTOR. ALL PROJECT WORK HAS BEEN BASED UPON THE DETAILS AND DIMENSIONS PRESENTED ON THESE PLANS AND SPECIFICATIONS. UNEXPECTED UTILITY WORK SHALL BE CONTEMPLATED FOR COMPLETION AND PAID AS A PART OF THE PROJECT GENERAL ALLOWANCE.

BEFORE ANY WORK IS STARTED THAT WILL INTERFERE WITH THE EXISTING UTILITIES, THE CONTRACTOR SHALL CALL THE OHIO UTILITIES PROTECTION SERVICE, AT 1-800-362-2764, FORTY-EIGHT (48) HOURS IN ADVANCE OF THE WORK. NON-MEMBER UTILITIES MUST BE CONTACTED DIRECTLY. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS, AT NO ADDITIONAL EXPENSE TO THE PROJECT, TO AVOID DAMAGE TO EXISTING UNDERGROUND AND OVERHEAD UTILITY LINES DURING THE ENTIRE PROJECT. IN THE EVENT OF DAMAGE TO EXISTING PUBLIC AND/OR PRIVATE UTILITIES, THE AGENCY CONCERNED SHALL BE NOTIFIED IMMEDIATELY AND ALL REPAIR WORK SHALL BE EXECUTED IN ACCORDANCE WITH THE SPECIFICATIONS OF THE RESPECTIVE AGENCY AT NO ADDITIONAL EXPENSE TO THE PROJECT, INCLUDING ANY INSPECTION FEES OR MAINTENANCE CREWS.

PRIOR TO COMMENCING WORK, THE CONTRACTOR SHALL COORDINATE UTILITY SUPPORT AND/OR RELOCATION BY THE UTILITY OWNER FOR ALL EXISTING UTILITIES WHICH WILL BE AFFECTED DURING CONSTRUCTION. THE COST FOR ANY REQUIRED PROTECTION OR RELOCATION OF EXISTING UTILITIES SHALL BE RESPONSIBILITY OF THE CONTRACTOR.

WHERE EXISTING UTILITY POLES ARE IN CLOSE PROXIMITY TO WORK, THE CONTRACTOR SHALL COORDINATE HIS WORK EFFORTS WITH THOSE OF THE UTILITY COMPANIES SUCH THAT THE OPERATION OF THEIR EXISTING FACILITIES CAN BE MAINTAINED AND PROTECTED DURING THE TIME WORK IS GOING ON ADJACENT TO THE POLE.

12. **PRECONSTRUCTION VIDEO RECORDING**

THE CONTRACTOR SHALL RECORD AN AUDIOVISUAL RECORDING OF THE PROJECT LIMITS AND ADJACENT AREAS, ESPECIALLY ALONG THE EXISTING CURB NEAR THE CONSTRUCTION ENTRANCE, EXISTING CATCH BASINS/CULVERTS, AND PROPERTIES WHERE EXISTING CONDITIONS MAY BE DISTURBED. THE RECORDING SHALL BE OF DIGITAL FORMAT AND BE PROVIDED TO THE OWNER PRIOR TO MOBILIZATION.

13. **RIVERBED SUBSTRATE**

THE WENTWORTH SCALE IS USED TO DEFINE SUBSTRATE SIZES AS MEASURED ALONG THE MEDIAN AXIS OF THE SUBSTRATE. THE BROAD RANGES FOR SAND, GRAVEL, COBBLE AND BOULDERS ARE SHOWN IN TABLE 1 BELOW:

TABLE 1 - SUBSTRATE MATERIAL TYPE AND SIZE RANGES

MATERIAL TYPE	SIZE RANGE
BOULDER	GREATER THAN 10 INCHES
COBBLE	2.5 INCHES TO 10 INCHES
GRAVEL	2 MM TO 2.5 INCHES
SANDS	0.063 MM TO 2 MM
SILTS AND CLAYS	LESS THAN 0.063 MM

THE WENTWORTH SCALE MATERIAL SUB-GRADATIONS AND SIZE RANGES FOR GRAVELS AND COBBLES ARE SHOWN IN TABLE 2 BELOW:

TABLE 2 - GRAVEL AND COBBLE MATERIAL SUB-GRADATIONS AND SIZE RANGES

MATERIAL SUB-GRADTIONS	SIZE RANGE (MM)	SIZE RANGE (INCHES)
VERY FINE GRAVEL	2-4	0.08-0.15
FINE GRAVEL	4-8	0.15-0.31
MEDIUM GRAVEL	8-16	0.31-0.63
COARSE GRAVEL	16-32	0.63-1.26
VERY COARSE GRAVEL	32-64	1.26-2.52
SMALL COBBLE	64-90	2.52-3.54
MEDIUM COBBLE	90-128	3.54-5.04
LARGE COBBLE	128-180	5.04-7.09
VERY LARGE COBBLE	180-256	7.09-10.08

14. **FINAL WALK THROUGH**

A FINAL WALK THROUGH FOR EACH MAJOR COMPONENT WILL BE COMPLETED BY THE CONSTRUCTION REPRESENTATIVE. THE MAJOR COMPONENT WILL BE COMPLETED ONLY AFTER THE FINAL WALK THROUGH AND ANY ASSOCIATED PUNCH LIST ITEMS ARE CORRECTED AS REQUIRED PER THE DRAWINGS AND SPECIFICATIONS.

THE MAJOR COMPONENTS OF THIS PROJECT ARE:

- 868 LF STREAM RESTORATION
  - 439 LF (REACH 1)
  - 295 LF (REACH 2)
  - 134 LF (REACH 3)
- 341 LF PROPOSED RIFFLES IN EXISTING DITCH (9 TOTAL)
- 375 LF EARTHEN BERM
- NATIVE PLANTINGS

NOTICE OF FINAL WALK THROUGH NEEDS TO BE GIVEN 48 HOURS IN ADVANCE. CONTRACTOR SHOULD NOT DEMOBILIZE OR REMOVE ACCESS TO AREAS WITHOUT FINAL APPROVAL.

16. **IMPLEMENTATION VARIABILITY**

THE STREAM RESTORATION AND WETLAND ENHANCEMENT DETAILED IN THESE PLANS REPRESENT AND APPROACH BASED UPON FIELD SURVEY AND ASSESSMENTS COMPLETED AT AN EARLIER DATE. CONSTRUCTION WILL BE IMPLEMENTED BY THE DESIGN-BUILD TEAM AND MAY VARY FROM THE PLAN BASED ON ACTUAL AND/OR UNFORESEEN FIELD CONDITIONS. MODIFICATIONS MAY BE NECESSARY TO BEST SUIT THE NEEDS OF THE PROJECT GOALS. ALL RESTORATION/ENHANCEMENT WILL BE COMPLETED WITH THE INTENT OF PROVIDING A STABLE AND FUNCTIONAL ECOLOGICAL SYSTEM THAT IS RESILIENT OVER TIME. EVEN NATURAL STABLE SYSTEMS ARE DYNAMIC AND CONSTANTLY CHANGING, PARTICULARLY STREAMS. THEREFORE, ADJUSTMENT IS EXPECTED TO OCCUR IN VARYING DEGREES WITH THE PASSAGE OF TIME AND CHANGING SEASONS. CLIMATIC SHIFTS AND MORE INTENSE RAINFALL EVENTS ARE PLACING ADDED PRESSURE ON OUR NATURAL SYSTEMS. MOVEMENT OF SUBSTRATE, OBSTRUCTIONS TO CHANNEL FROM VEGETATION AND WOODY DEBRIS, MINOR BANK EROSION AND DEPOSITION ARE A FEW OF THE POTENTIAL CHANGES THAT MAY OCCUR BUT ARE NATURAL AND TO BE EXPECTED. IT IS IMPORTANT TO UNDERSTAND AND EVALUATE THE SCALE AND RATE OF CHANGE WITH RESPECT TO OVERALL STABILITY AND PROJECT GOALS. TYPICALLY RESTORATION PROJECTS BECOME MORE RESILIENT WITH TIME AND MATURING VEGETATION, HOWEVER OUR TEAM IS COMMITTED TO CREATING A SUSTAINABLE PROJECT. WE WILL WORK WITH THE OWNER TO UNDERSTAND ANY PERCEIVED CHANGES WITH RESPECT TO THESE GOALS.

NO.	REVISION/ISSUE	DATE

PERMIT SET

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DARROW RD. PARK STREAM RESTORATION

GENERAL NOTES & SPECIFICATIONS

DESIGNED BY: JB
DRAWN BY: BM
CHECKED BY: AH
DATE: DECEMBER 2024
VERT. SCALE: NA
HORZ. SCALE: NA

SPECIFICATIONS

1. FLOODPLAIN TOPSOIL

EXISTING TOPSOIL SHALL BE STRIPPED AND STOCKPILED ON-SITE FOR REUSE. IT IS NOT EXPECTED THAT IMPORTED MATERIAL WILL BE NECESSARY AND SUFFICIENT QUANTITIES ARE PRESENT FOR COMPLETION OF FINISHED GRADES.

2. RIVERBED BANK RUN (SAND/GRAVEL) SUBSTRATE - FURNISHED AND PLACED, AS PER PLAN

SUITABLE SUBSTRATE MATERIALS USED FOR THIS MATERIAL ARE DEFINED AS FOLLOWS:

AGGREGATE FOR THIS ITEM SHALL BE A NATURAL MATERIAL COMPOSED OF A MIXTURE OF HARD, DURABLE PARTICLES OR FRAGMENTS OF STONE OR GRAVEL AND SAND, SOME COBBLES, AND SMALL AMOUNTS OF SILT, CLAY OR OTHER SIMILAR BINDING MATERIAL, AND SHALL BE FREE OF EXCESSIVE OR DETRIMENTAL AMOUNTS OF CLAY, CLAY LUMPS, LOAM, ROOTS, VEGETABLE MATTER, RUBBISH, WOOD, MULCH, OR OTHER NON-STABLE MATERIALS. ADDITIONAL DESCRIPTION PROVIDED BELOW. IT IS ESTIMATED THAT A MIX OF SAND AND GRAVEL SIZED MATERIAL WITH A SMALL PERCENTAGE OF SMALL COBBLE (I.E., LESS THAN 5%) WOULD BE SUITABLE.

BANK RUN SUBSTRATE IS DEFINED AS NON CRUSHED SAND AND GRAVEL SUBSTRATE MATERIAL WHICH SHALL BE UNWASHED/UNSORTED RAW MATERIAL FROM A LOCAL SAND & GRAVEL OPERATION WITHIN THE WATERSHED OR GEOLOGY. THIS MATERIAL IS SUITABLE FOR THE BASE OR FIRST LAYER PLACED ON THE STREAMBED SUBGRADE IN ALL AREAS. IF MATERIAL IS OUTSIDE SPECIFICATIONS TOLERANCE, MATERIAL CAN BE APPROVED BY THE CONTRACTOR IN COORDINATION WITH CONSTRUCTION REPRESENTATIVE. ALTERNATIVE APPROVED MATERIAL WILL BE BIASED TOWARDS LESS FINES AND MORE COARSE MATERIAL. LIMESTONE SHALL NOT BE USED. SITE VISITS TO THE ACTUAL SAND & GRAVEL OPERATION SHOULD BE ARRANGED WITH THE CONSTRUCTION REPRESENTATIVE TO EVALUATE THE PROPOSED MIX PRIOR TO DELIVERY OF MATERIALS TO THE SITE.

3. RIVERBED GRAVEL/COBBLE SUBSTRATE - FURNISHED AND PLACED, AS PER PLAN

DEFINED AS A MIXTURE OF GRAVEL AND COBBLE WITH A WIDE RANGE OF DIMENSIONS/SIZES AS DETAILED BELOW. THE SIZE VARIABILITY IS PARAMOUNT TO HAVE APPROPRIATE FUNCTION AND STABILITY OF THE STREAMBED. IT IS UP TO THE CONTRACTOR AND THE CONSTRUCTION REPRESENTATIVE TO WORK TOGETHER TO APPROVE THE APPROPRIATE SUBSTRATE GRAVEL/COBBLE MIX. SITE VISITS TO THE ACTUAL SAND & GRAVEL OPERATION SHOULD BE ARRANGED WITH THE CONSTRUCTION REPRESENTATIVE TO EVALUATE THE PROPOSED MIX PRIOR TO DELIVERY. MATERIAL SHALL BE FROM A LOCAL SAND & GRAVEL OPERATION. LIMESTONE SHALL NOT BE USED IN THE GRAVEL/COBBLE COMPONENTS.

THE PERCENTAGE RANGE FOR EACH MATERIAL SUB-GRADATION RANGE IS LISTED IN TABLE 3 BELOW.

4. RIVERBED BOULDER SUBSTRATE FURNISHED AND PLACED, AS PER PLAN, AS DIRECTED

DEFINED AS ANGULAR IN SHAPE AND COMPRISED OF LIMESTONE, SANDSTONE, GRANITE, OR SIMILAR HARD MATERIAL. FRIABLE MATERIAL OR LOW QUALITY SANDSTONE IS NOT ACCEPTABLE. ANGULAR MATERIAL IS PREFERRED BECAUSE IT INCREASES THE INTERLOCKING ABILITY OF THE STONE AND IS LESS LIKELY TO ROLL OR MOVE. MATERIAL SHALL BE FROM A LOCAL SAND & GRAVEL OPERATION. BOULDERS WILL BE VISUALLY ASSESSED UPON ARRIVAL TO THE SITE BY THE CONSTRUCTION REPRESENTATIVE TO ENSURE THE SIZE CLASSES ARE REPRESENTED AS SPECIFIED.

BOULDERS ARE SUITABLE FOR SPECIFIC HABITAT, GRADE CONTROL STRUCTURES OR STRATEGICALLY POSITIONED ON THE ON THE RIFFLE, RUN OR POOL AREAS TO FUNCTION AS ROUGHNESS ELEMENTS. BOULDERS ARE MEASURED ACROSS THEIR MEDIAN AXIS. LIMESTONE CAN BE USED IN STREAMBED AREAS AS WELL AS ROCK CHANNEL PROTECTION AROUND CULVERTS AND SCOUR POOLS.

ODOT SIZING IS USED TO IDENTIFY BOULDERS AS DESCRIBED IN TABLE 3 BELOW:

TABLE 3 - BOULDER SIZES, ODOT ITEM 601

TYPE	SIZE RANGE (INCHES)	DESCRIPTION
A+	>30"	VERY LARGE TO LARGE
A	18" TO 30"	MEDIUM BOULDER
B	12" TO 24"	MEDIUM TO SMALL-MEDIUM BOULDER
C	6" TO 18"	SMALL-MEDIUM TO SMALL BOULDER

THE PERCENTAGE RANGE FOR EACH MATERIAL SUB-GRADATION RANGE IS LISTED IN TABLE 4 BELOW:

TABLE 4 - MATERIAL SUB-GRADATION RANGE

COMPONENT	BANK RUN	GRAVEL (2" - 4")	COBBLE (5" - 8")	BOULDERS			
				TYPE A+	TYPE A	TYPE B	TYPE C
RIFFLE SUBSTRATE	15%	65%	20%	0%	0%	0%	0%
*RIP RAP	0%	0%	100%	0%	0%	0%	0%

*RIPRAP CONSISTS OF ODOT TYPE D SIZED MATERIAL.

SUBSTRATE COMPONENTS WILL BE VERIFIED BY THE CONSTRUCTION REPRESENTATIVE AT THE SUPPLIERS PLACE OF OPERATION OR ON-SITE. THE SUBSTRATE MIX WILL BE VERIFIED BY A CONSTRUCTION REPRESENTATIVE BY PERFORMING A RANDOM PARTICLE ANALYSIS ON THE PROPOSED MIX BY SPREADING THE MIX OUT ON A 10 FT BY 25 FT AREA. CHANGES OR APPROVAL OF THE SUBSTRATE COMPONENT MIX (I.E. FINAL PERCENTAGES) WILL BE DETERMINED BY THIS ANALYSIS. SHOULD THE EXISTING SAND AND GRAVEL BE USED INSTEAD OF IMPORTING THIS MATERIAL, THIS ANALYSIS DOES NOT NEED TO OCCUR.

5. TEMPORARY STABILIZATION AND NATIVE SEED INSTALLATION

GRAIN RYE (Secale cereale) OR OATS (Avena sativa) AT A RATE OF 30 - 50 LBS PER ACRE SHALL BE INSTALLED TO ALL DISTURBED AREA. NATIVE SEED MIXES ARE TO BE INSTALLED AT THE SPECIFIED RATE IN THE APPROPRIATE AREAS. ALL NATIVE SEED IS TO BE INSTALLED BY HAND SEEDING METHOD DUE TO VARIABILITY OF SEEDS WITHIN MIX. CONTRACTOR IS TO ESTIMATE SEEDING AREA AND WEIGH SEED IN APPROPRIATE QUANTITIES TO ENSURE APPLICATION AT THE CORRECT RATE. A STARTER FERTILIZER IS NOT REQUIRED UNLESS SITE-SPECIFIC SOIL TESTS DEEM A DEFICIENCY IN ONE OR MORE SOIL COMPONENTS. AT THAT TIME, A FERTILIZER RATE WILL BE APPLIED AS NECESSARY TO PROMOTE A HEALTHY NATIVE COMMUNITY. FOLLOWING TEMPORARY AND NATIVE SEED INSTALLATION, SEED IS TO BE LIGHTLY RAKED INTO SOIL. COVER SOIL WITH APPROPRIATE EROSION PROTECTION PER AREA.

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GENERAL NOTES & SPECIFICATIONS

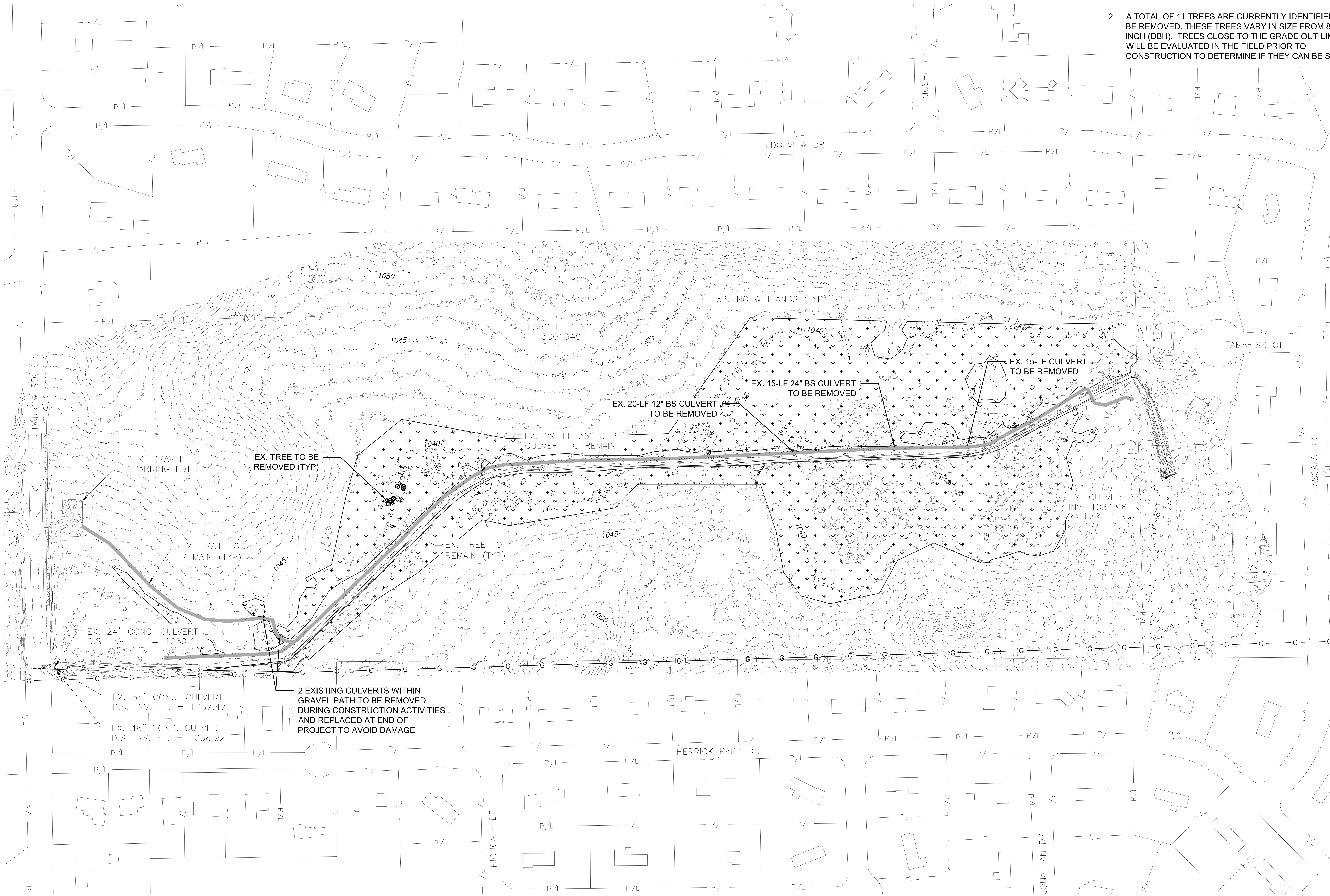
DESIGNED BY:	JB
DRAWN BY:	BM
CHECKED BY:	AH
DATE:	DECEMBER 2024
VERT. SCALE:	NA
HORZ. SCALE:	NA

SHEET: G-02

03 / 19

NOTES:

1. EX. WETLANDS WILL BE FLAGGED PRIOR TO THE START OF CONSTRUCTION.
2. A TOTAL OF 11 TREES ARE CURRENTLY IDENTIFIED AS TO BE REMOVED. THESE TREES VARY IN SIZE FROM 8-18 INCH (DBH). TREES CLOSE TO THE GRADE OUT LIMITS WILL BE EVALUATED IN THE FIELD PRIOR TO CONSTRUCTION TO DETERMINE IF THEY CAN BE SAVED.



GENERAL NOTES

LEGEND

- PROPERTY LINE
- EX. CONTOURS
- EX. TRAIL
- EX. SPOIL AREA
- EX. GRAVEL PARKING LOT
- EX. FORESTED WETLAND
- EX. CULVERT
- EX. TREE TO REMAIN
- EX. TREE TO BE REMOVED (REUSE)

0 120 240
GRAPHIC SCALE IN FEET

NO.	REVISION/ISSUE	DATE

PERMIT SET

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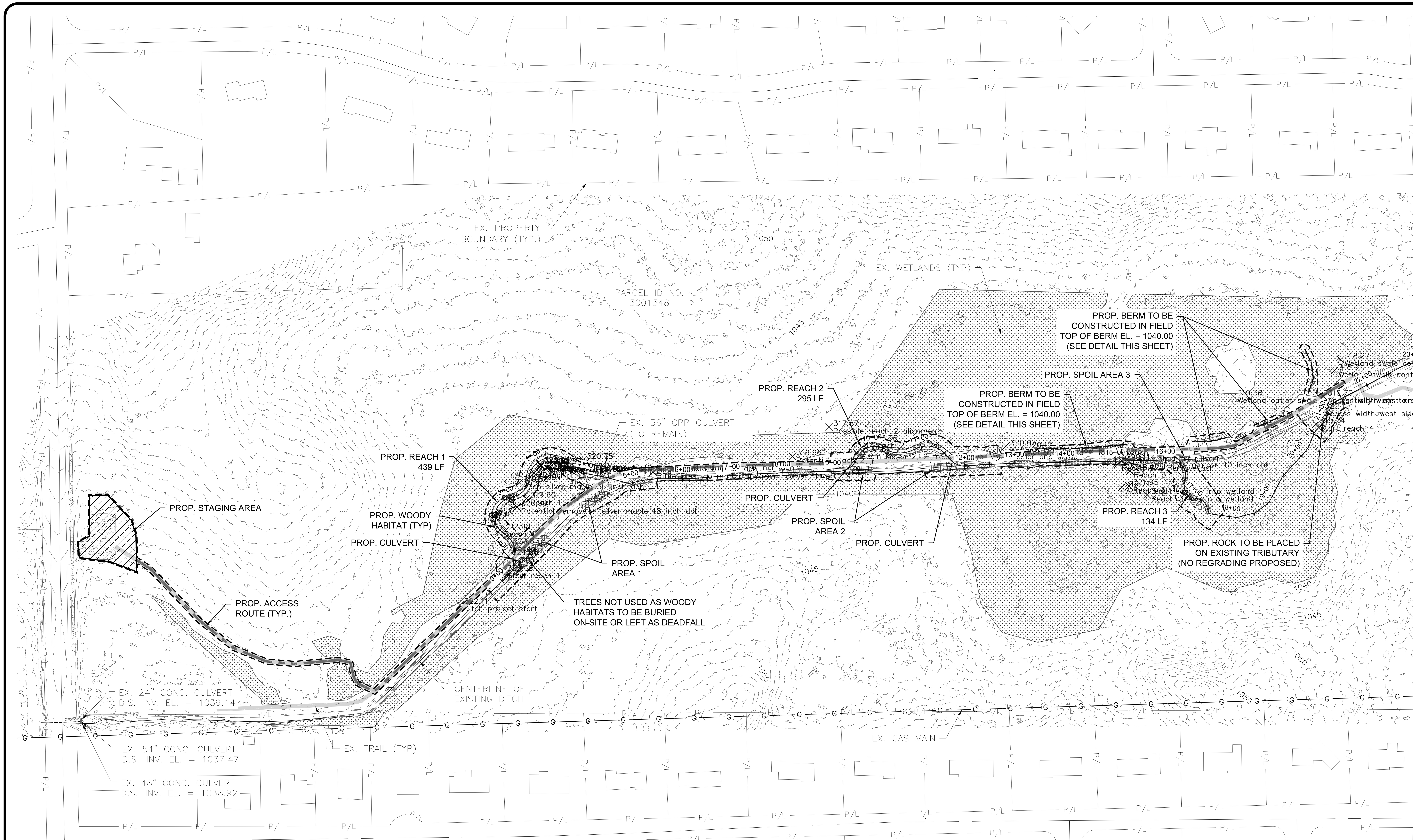
TINKER'S CREEK WATERSHED PARTNERS
10075 RAVENNA RD
TWINSBURG, OH 44087

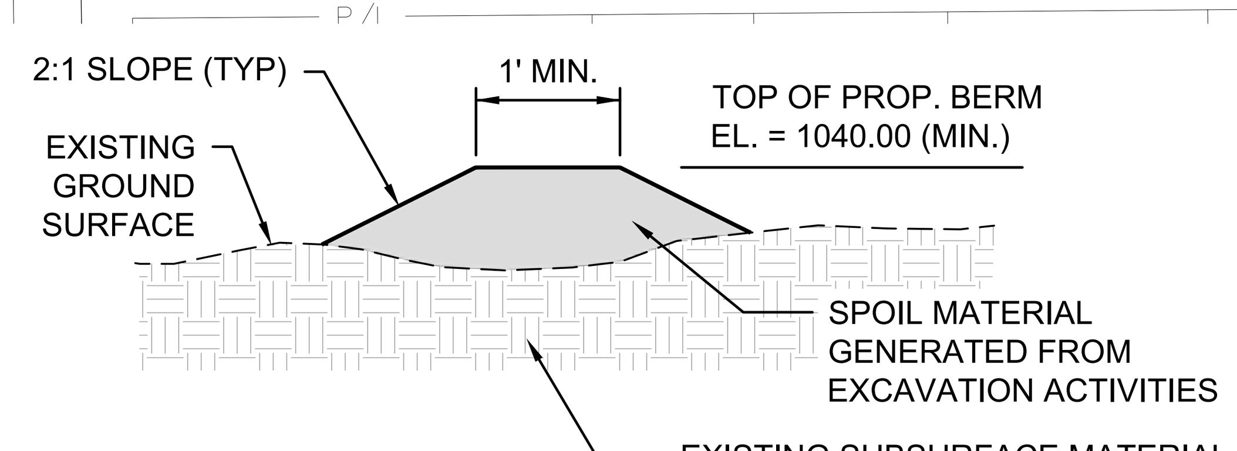
DARROW RD. PARK STREAM RESTORATION

EXISTING CONDITIONS & DEMOLITION PLAN

DESIGNED BY: JB
DRAWN BY: BM
CHECKED BY: AH
DATE: DECEMBER 2024
VERT. SCALE: NA
HORZ. SCALE: 1" = 120'

SHEET: C-01
04/19


EX. PROPERTY
BOUNDARY (TYP.)
1050
PARCEL ID NO.
3001348
EX. WETLANDS (TYP)
1045
PROP. BERM TO BE
CONSTRUCTED IN FIELD
TOP OF BERM EL. = 1040.00
(SEE DETAIL THIS SHEET)
PROP. SPOIL AREA 3
PROP. REACH 2
295 LF
PROP. BERM TO BE
CONSTRUCTED IN FIELD
TOP OF BERM EL. = 1040.00
(SEE DETAIL THIS SHEET)
EX. 36" CPP CULVERT
(TO REMAIN)
PROP. REACH 1
439 LF
PROP. STAGING AREA
PROP. WOODY
HABITAT (TYP)
PROP. CULVERT
PROP. CULVERT
PROP. SPOIL
AREA 2
PROP. CULVERT
PROP. REACH 3
134 LF
PROP. SPOIL
AREA 1
PROP. ROCK TO BE PLACED
ON EXISTING TRIBUTARY
(NO REGRADING PROPOSED)
TREES NOT USED AS WOODY
HABITATS TO BE BURIED
ON-SITE OR LEFT AS DEADFALL
PROP. ACCESS
ROUTE (TYP.)
1040
1050
1055
CENTERLINE OF
EXISTING DITCH
EX. 24" CONC. CULVERT
D.S. INV. EL. = 1039.14
EX. 54" CONC. CULVERT
D.S. INV. EL. = 1037.47
EX. TRAIL (TYP)
EX. GAS MAIN
EX. 48" CONC. CULVERT
D.S. INV. EL. = 1038.92



NOTE: TOTAL LENGTH OF PROPOSED BERM WORK AREAS IS APPROX. 375 LF

BERM CROSS SECTIONAL DETAIL

(NTS)

GENERAL NOTES

LEGEND

- P/L — PROPERTY LINE
- 960 — EX. CONTOURS
- PROP. STAGING AREA
- PROP. SPOIL AREA/ CHANNEL PLUG
- PROP. RIFFLE
- EX. WETLAND
- PROP. LIMITS OF DISTURBANCE
- PROP. SITE ACCESS
- EX. TRAIL
- PROP. BERM

0 100 200
GRAPHIC SCALE IN FEET

NO.	REVISION/ISSUE	DATE

PERMIT SET

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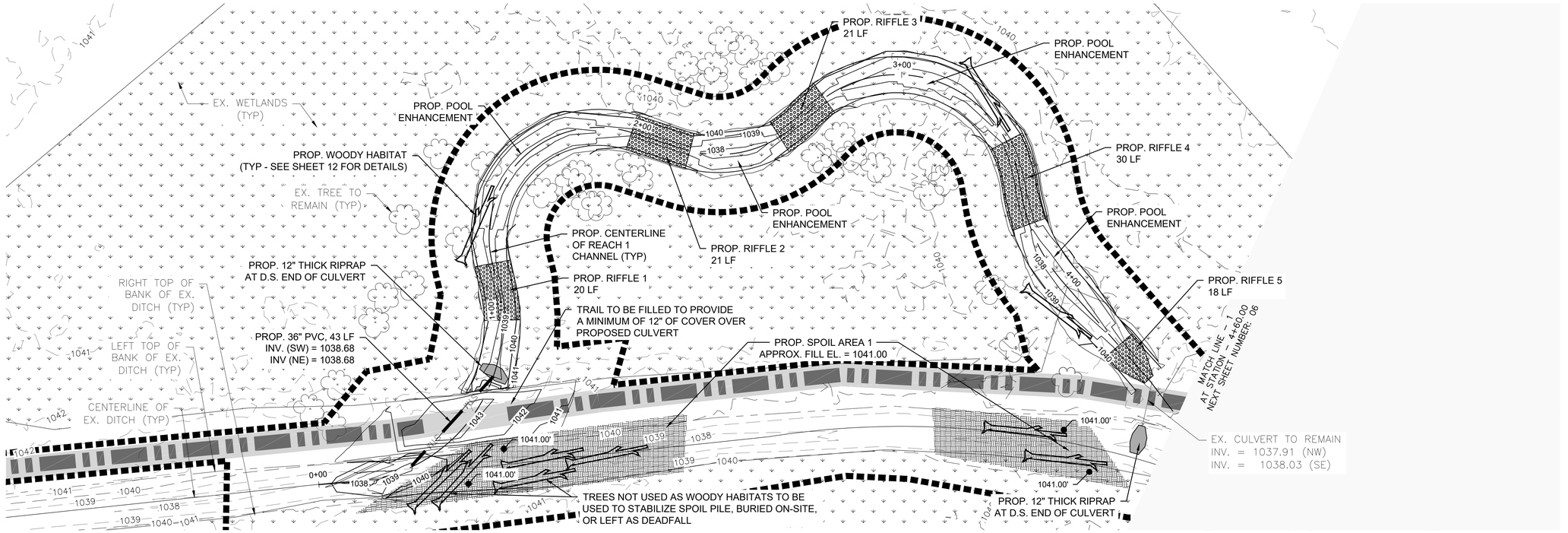
TINKER'S CREEK WATERSHED PARTNERS
10075 RAVENNA RD
TWINSBURG, OH 44087

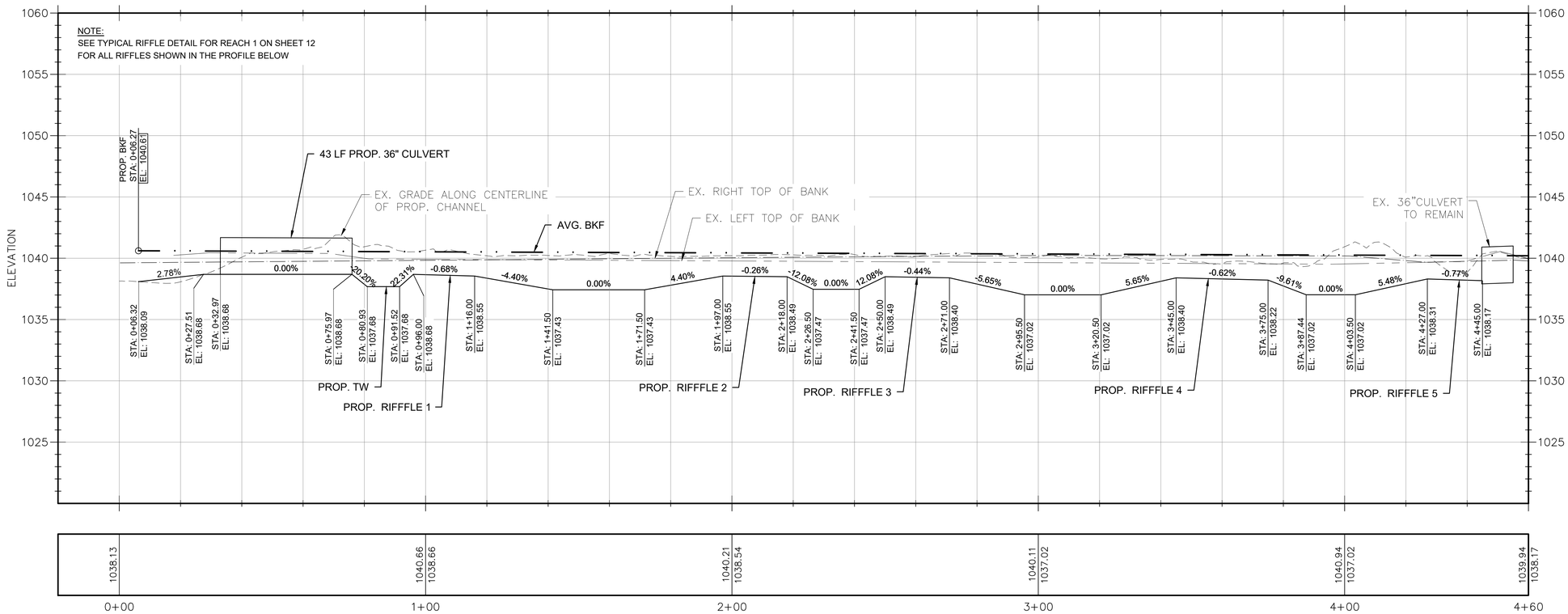
DARROW RD. PARK STREAM RESTORATION

OVERALL PLAN

DESIGNED BY: JB
DRAWN BY: BM
CHECKED BY: AH
DATE: DECEMBER 2024
VERT. SCALE: NA
HORZ. SCALE: 1" = 100'

SHEET: C-02





GENERAL NOTES

LEGEND

- P/L — PROPERTY LINE
- 960 — EX. CONTOURS
- 685 — PROP. CONTOURS
- PROP. THALWEG
- PROP. RIFFLE
- PROP. SPOIL AREA/ CHANNEL PLUG
- PROP. LIMITS OF DISTURBANCE
- PROP SITE ACCESS
- EX. TRAIL
- EX. WETLAND
- EX. TREE TO REMAIN
- 1041.00' PROP. SPOT ELEVATION

PROFILE LEGEND

- EX. GROUND SURFACE
- PROP. THALWEG
- PROP. BANKFULL
- PROP. RIFFLE ROCK
- PROP. FILL UNDER RIFFLE ROCK

0 5 10
GRAPHIC SCALE IN FEET
VERTICAL SCALE

0 20 40
GRAPHIC SCALE IN FEET
HORIZONTAL SCALE

NO.	REVISION/ISSUE	DATE

PERMIT SET

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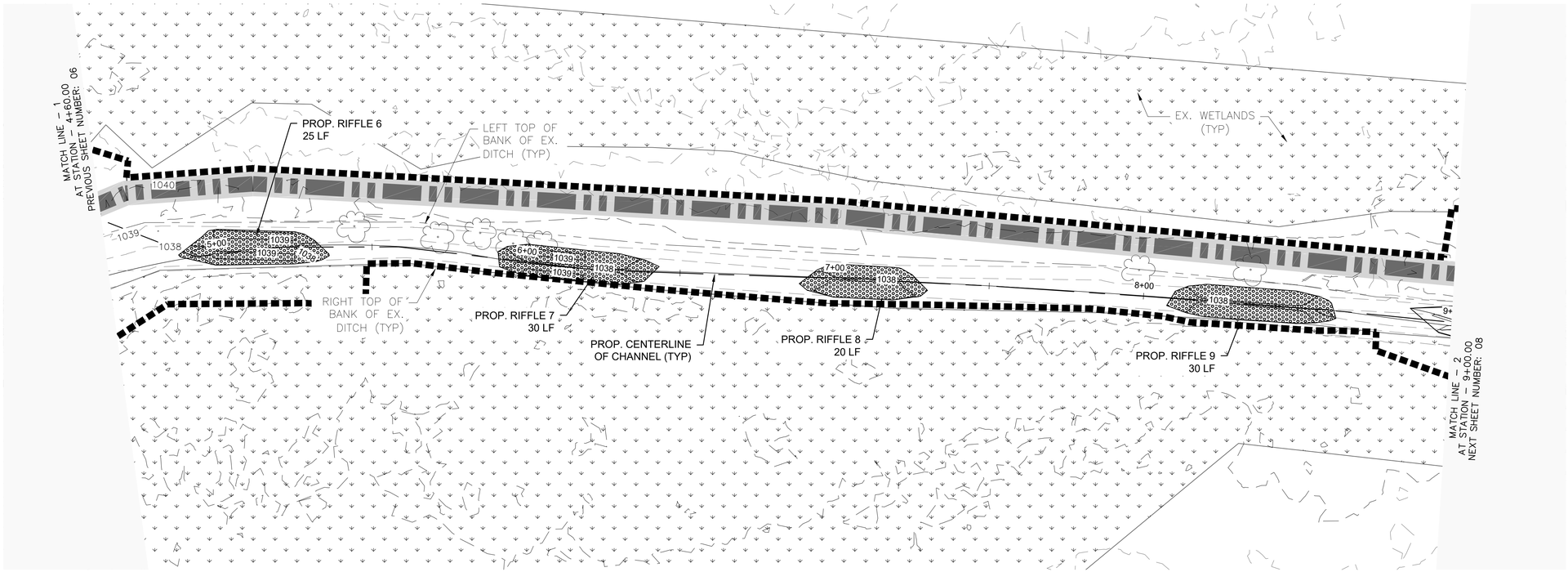
TINKER'S CREEK WATERSHED
PARTNERS
10075 RAVENNA RD
TWINSBURG, OH 44087

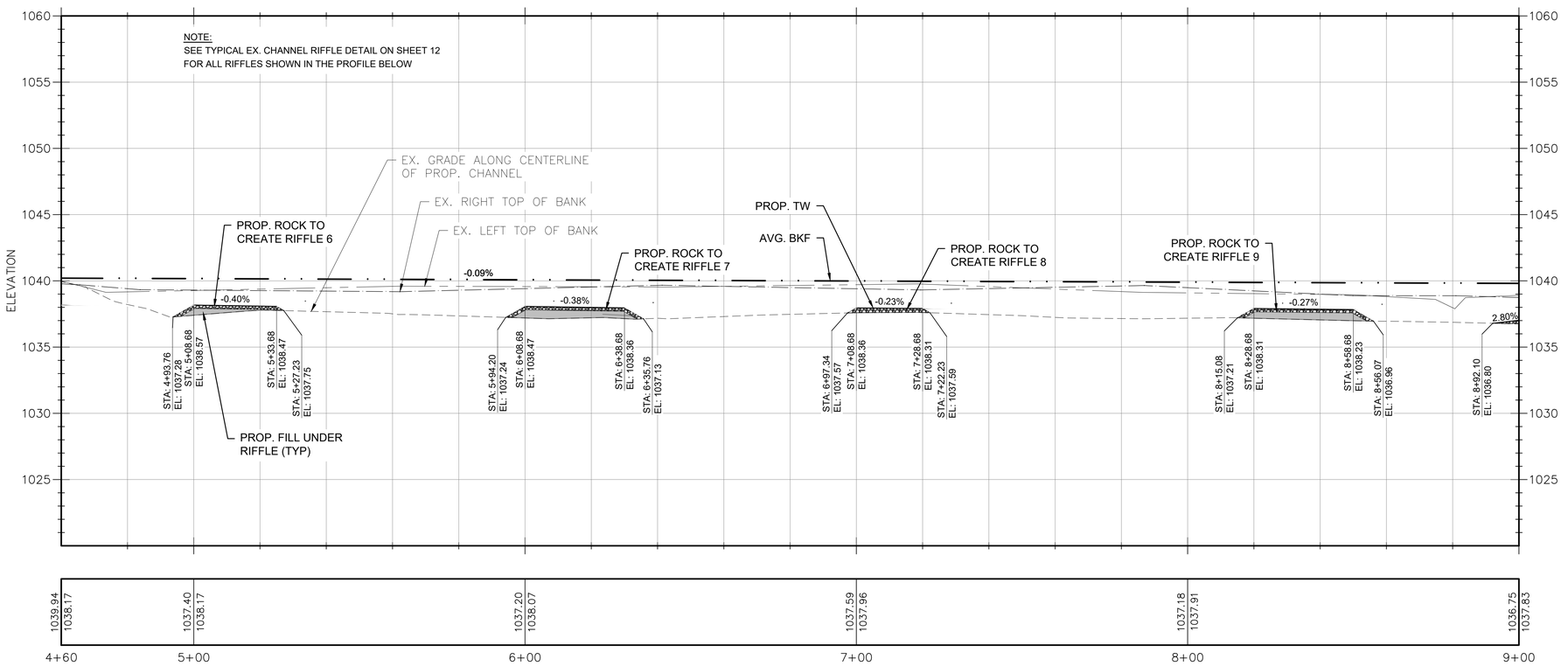
DARROW RD. PARK STREAM
RESTORATION

PLAN & PROFILE
STA. 00+00 - 4+60

DESIGNED BY:	JB
DRAWN BY:	BM
CHECKED BY:	AH
DATE:	DECEMBER 2024
VERT. SCALE:	1" = 5'
HORZ. SCALE:	1" = 20'

SHEET: PP-01
06 / 19





GENERAL NOTES

LEGEND

- P/L — PROPERTY LINE
- 960 — EX. CONTOURS
- 685 — PROP. CONTOURS
- PROP. THALWEG
- PROP. RIFFLE
- PROP. SPOIL AREA/ CHANNEL PLUG
- PROP. LIMITS OF DISTURBANCE
- PROP SITE ACCESS
- EX. TRAIL
- EX. WETLAND
- EX. TREE TO REMAIN
- 1041.00' PROP. SPOT ELEVATION

PROFILE LEGEND

- EX. GROUND SURFACE
- PROP. THALWEG
- PROP. BANKFULL
- PROP. RIFFLE ROCK
- PROP. FILL UNDER RIFFLE ROCK

0 5 10
GRAPHIC SCALE IN FEET
VERTICAL SCALE

0 20 40
GRAPHIC SCALE IN FEET
HORIZONTAL SCALE

NO.	REVISION/ISSUE	DATE

PERMIT SET

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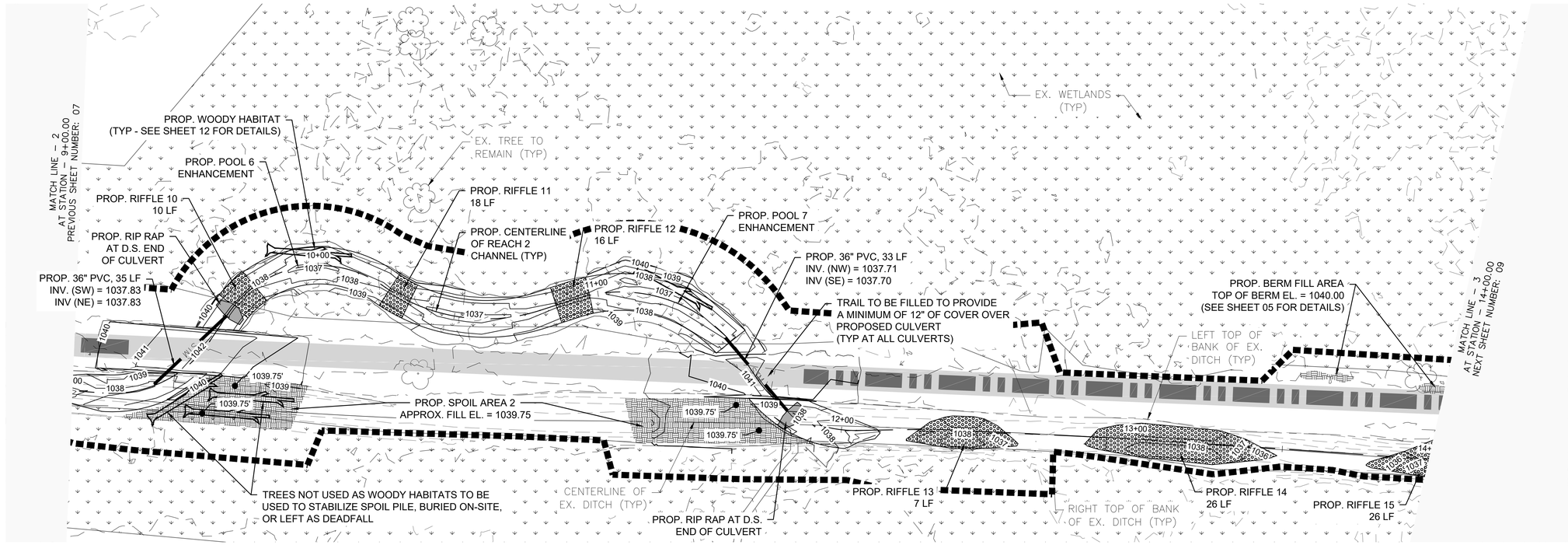
TINKER'S CREEK WATERSHED PARTNERS
10075 RAVENNA RD
TWINSBURG, OH 44087

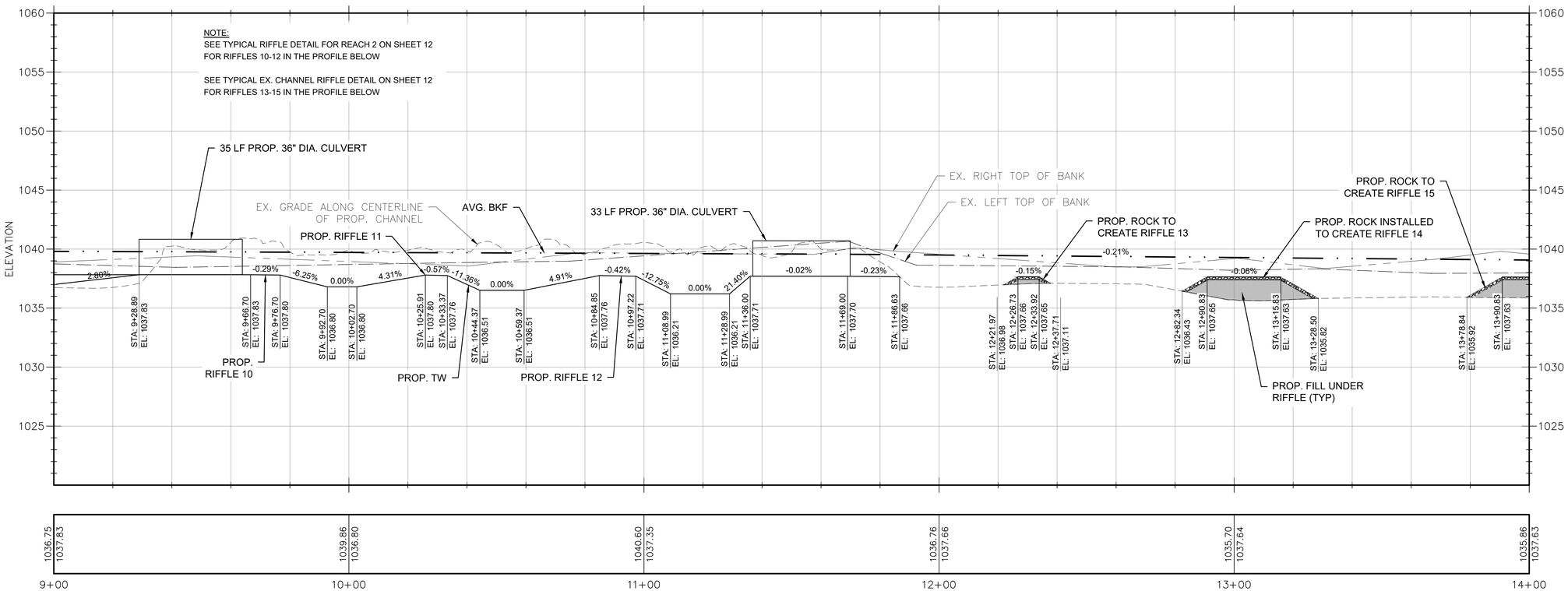
DARROW RD. PARK STREAM RESTORATION

PLAN & PROFILE
STA. 4+60 - 9+00

DESIGNED BY:	JB
DRAWN BY:	BM
CHECKED BY:	AH
DATE:	DECEMBER 2024
VERT. SCALE:	1" = 5'
HORZ. SCALE:	1" = 20'

SHEET: PP-02
07 / 19





GENERAL NOTES

LEGEND

- PROPERTY LINE
- EX. CONTOURS
- PROP. CONTOURS
- PROP. THALWEG
- PROP. RIFFLE
- PROP. SPOIL AREA/ CHANNEL PLUG
- PROP. LIMITS OF DISTURBANCE
- PROP SITE ACCESS
- EX. TRAIL
- EX. WETLAND
- EX. TREE TO REMAIN
- 1041.00' PROP. SPOT ELEVATION

PROFILE LEGEND

- EX. GROUND SURFACE
- PROP. THALWEG
- PROP. BANKFULL
- PROP. RIFFLE ROCK
- PROP. FILL UNDER RIFFLE ROCK

GRAPHIC SCALE IN FEET
VERTICAL SCALE
0 5 10

GRAPHIC SCALE IN FEET
HORIZONTAL SCALE
0 20 40

NO.	REVISION/ISSUE	DATE

PERMIT SET

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TINKER'S CREEK WATERSHED
PARTNERS
10075 RAVENNA RD
TWINSBURG, OH 44087

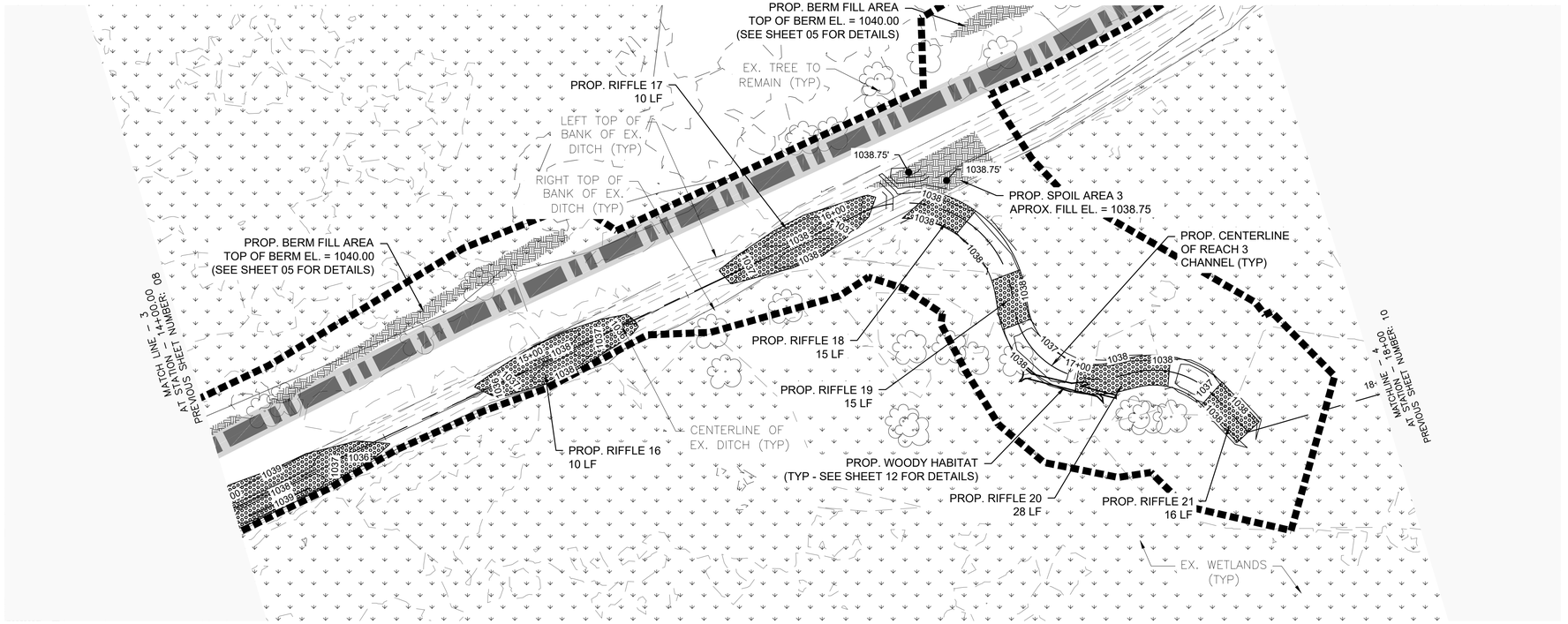
DARROW RD. PARK STREAM
RESTORATION

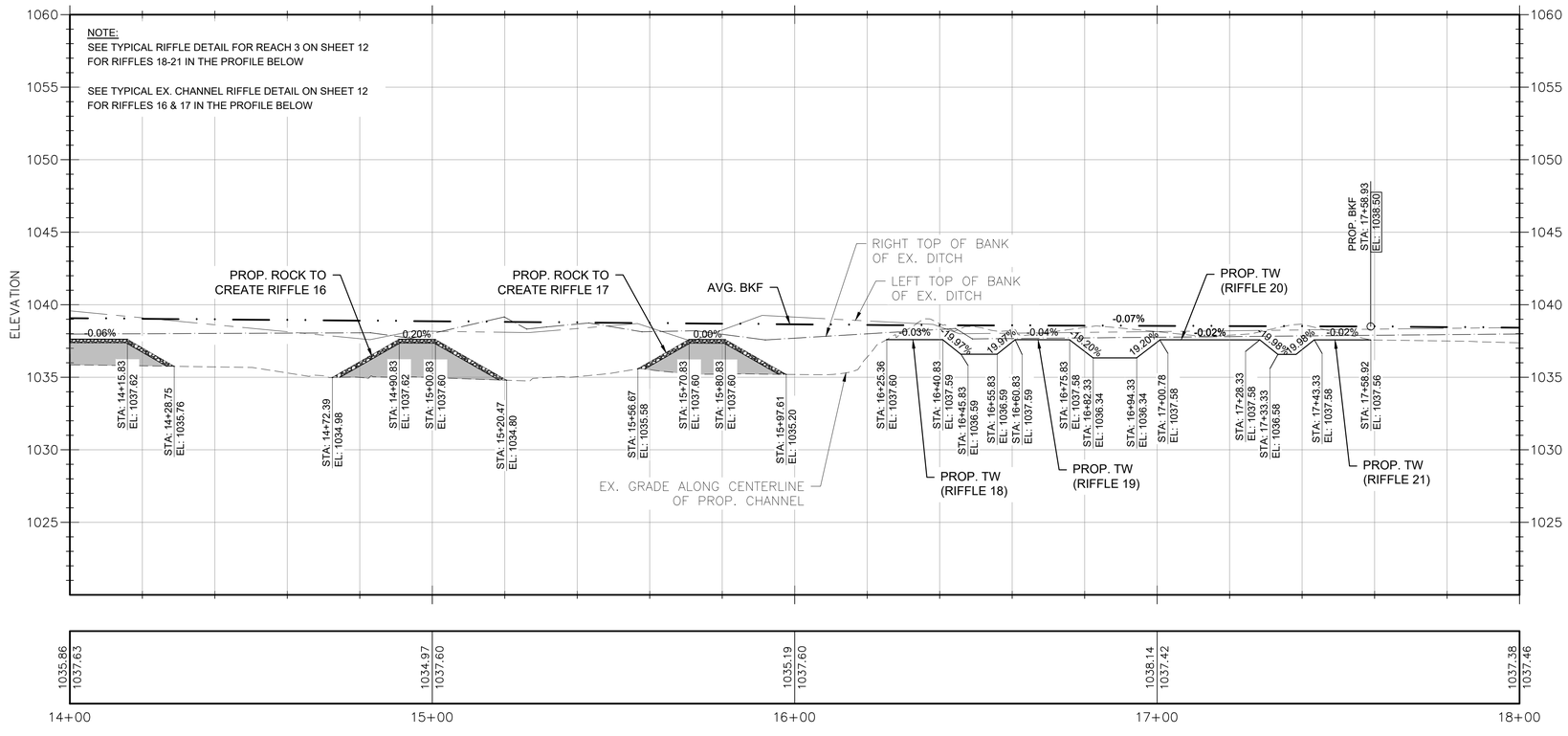
PLAN & PROFILE
STA. 9+00 - 14+00

DESIGNED BY:	JB
DRAWN BY:	BM
CHECKED BY:	AH
DATE:	DECEMBER 2024
VERT. SCALE:	1" = 5'
HORZ. SCALE:	1" = 20'

SHEET: PP-03

08 / 19





GENERAL NOTES

LEGEND

- P/L — PROPERTY LINE
- 960 — EX. CONTOURS
- 685 — PROP. CONTOURS
- PROP. THALWEG
- PROP. RIFFLE
- PROP. SPOIL AREA/ CHANNEL PLUG
- PROP. LIMITS OF DISTURBANCE
- PROP SITE ACCESS
- EX. TRAIL
- EX. WETLAND
- EX. TREE TO REMAIN
- 1041.00' PROP. SPOT ELEVATION

PROFILE LEGEND

- EX. GROUND SURFACE
- PROP. THALWEG
- PROP. BANKFULL
- PROP. RIFFLE ROCK
- PROP. FILL UNDER RIFFLE ROCK

GRAPHIC SCALE IN FEET
VERTICAL SCALE
0 5 10

GRAPHIC SCALE IN FEET
HORIZONTAL SCALE
0 20 40

NO.	REVISION/ISSUE	DATE

PERMIT SET

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TINKER'S CREEK WATERSHED PARTNERS
10075 RAVENNA RD
TWINSBURG, OH 44087

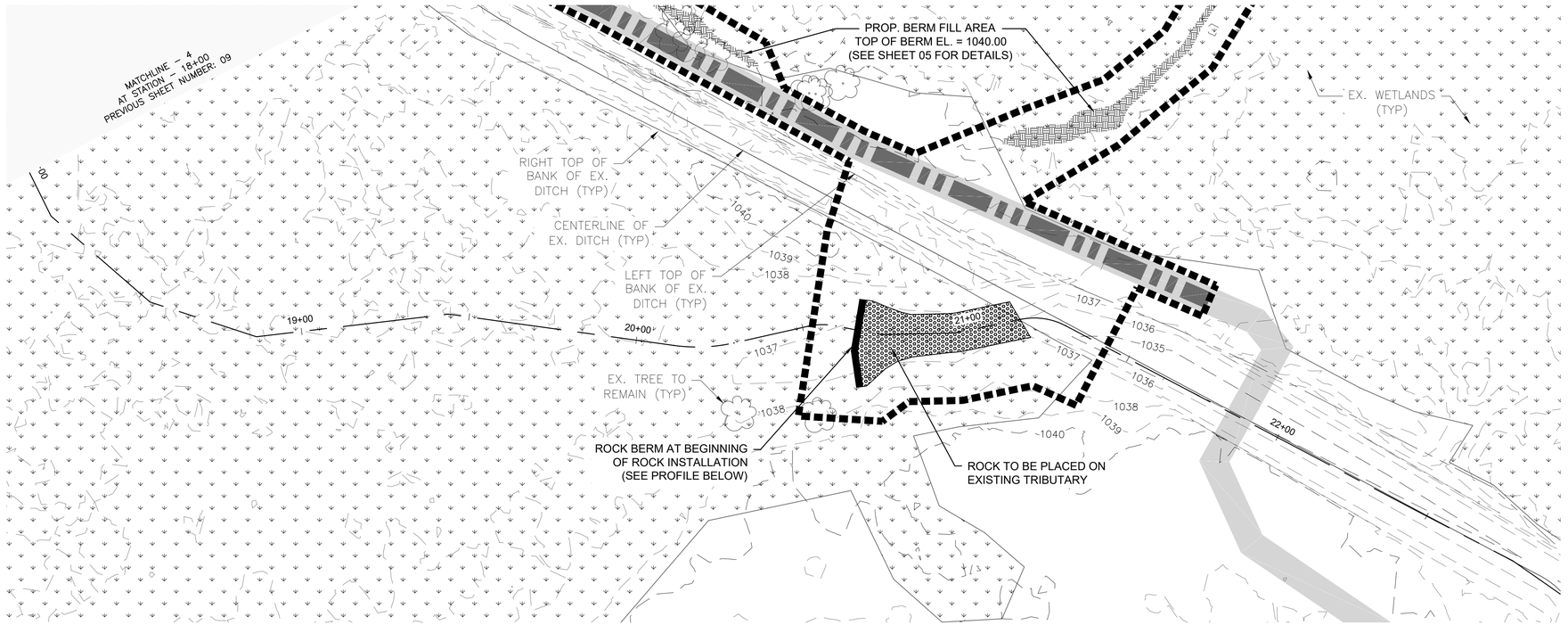
DARROW RD. PARK STREAM RESTORATION

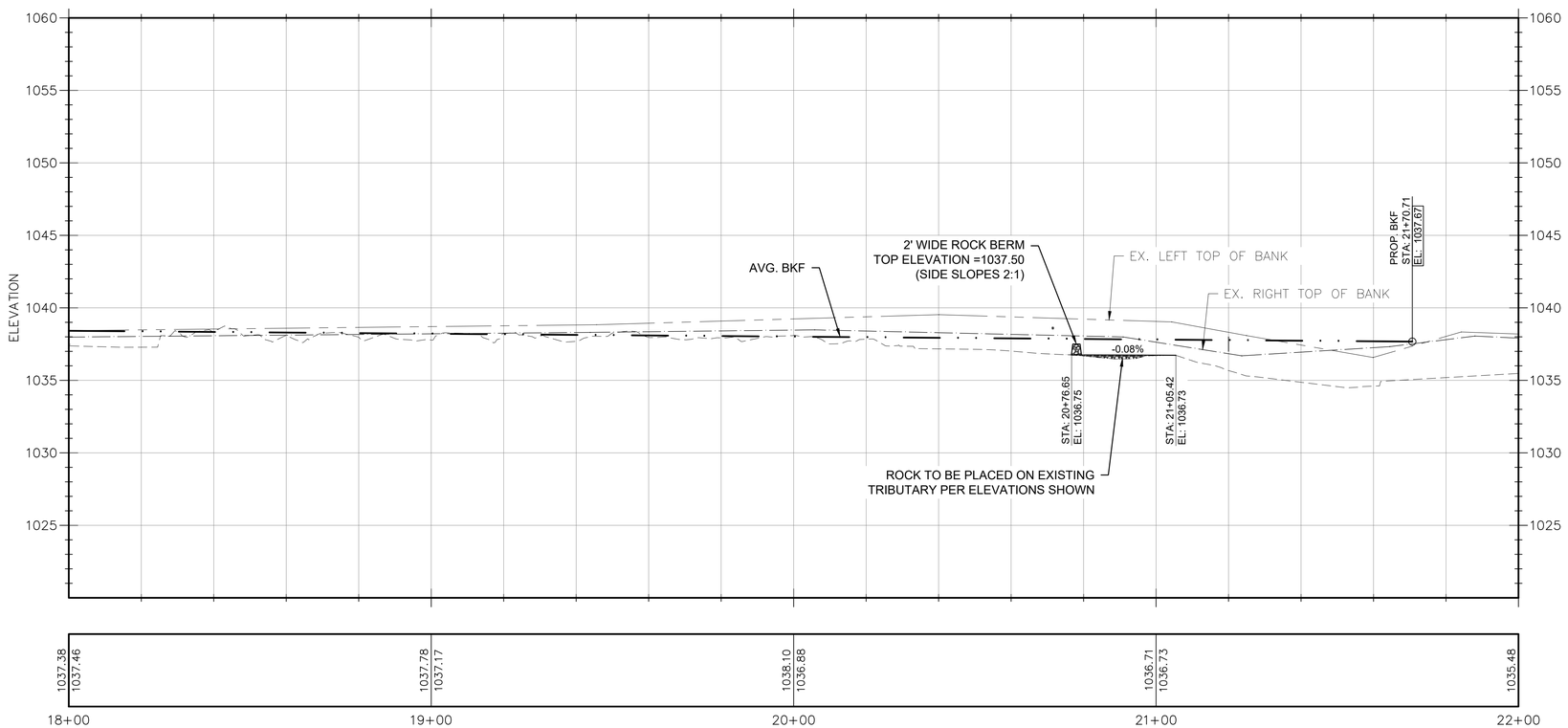
PLAN & PROFILE
STA. 14+00 - 18+00

DESIGNED BY:	JB
DRAWN BY:	BM
CHECKED BY:	AH
DATE:	DECEMBER 2024
VERT. SCALE:	1" = 5'
HORZ. SCALE:	1" = 20'

SHEET: PP-04

09 / 19





GENERAL NOTES

LEGEND

- P/L — PROPERTY LINE
- 960 — EX. CONTOURS
- 685 — PROP. CONTOURS
- PROP. THALWEG
- PROP. RIFFLE
- PROP. SPOIL AREA/ CHANNEL PLUG
- PROP. LIMITS OF DISTURBANCE
- PROP SITE ACCESS
- EX. TRAIL
- EX. WETLAND
- EX. TREE TO REMAIN
- 1041.00' PROP. SPOT ELEVATION

PROFILE LEGEND

- EX. GROUND SURFACE
- PROP. THALWEG
- PROP. BANKFULL
- PROP. RIFFLE ROCK
- PROP. FILL UNDER RIFFLE ROCK

0 5 10
GRAPHIC SCALE IN FEET
VERTICAL SCALE

0 20 40
GRAPHIC SCALE IN FEET
HORIZONTAL SCALE

NO.	REVISION/ISSUE	DATE

PERMIT SET

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TINKER'S CREEK WATERSHED PARTNERS
10075 RAVENNA RD
TWINSBURG, OH 44087

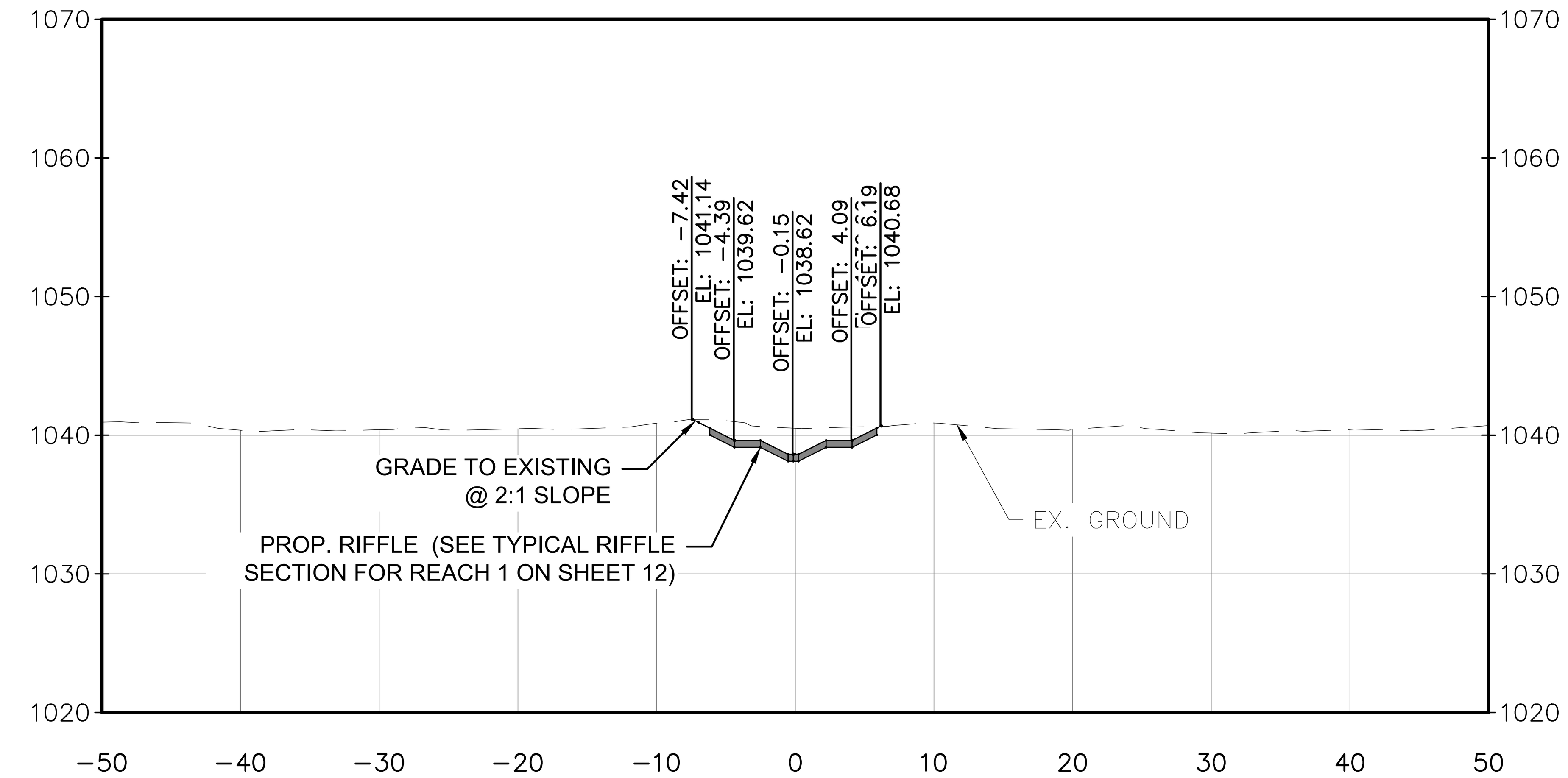
DARROW RD. PARK STREAM RESTORATION

PLAN & PROFILE
STA. 18+00 - 22+00

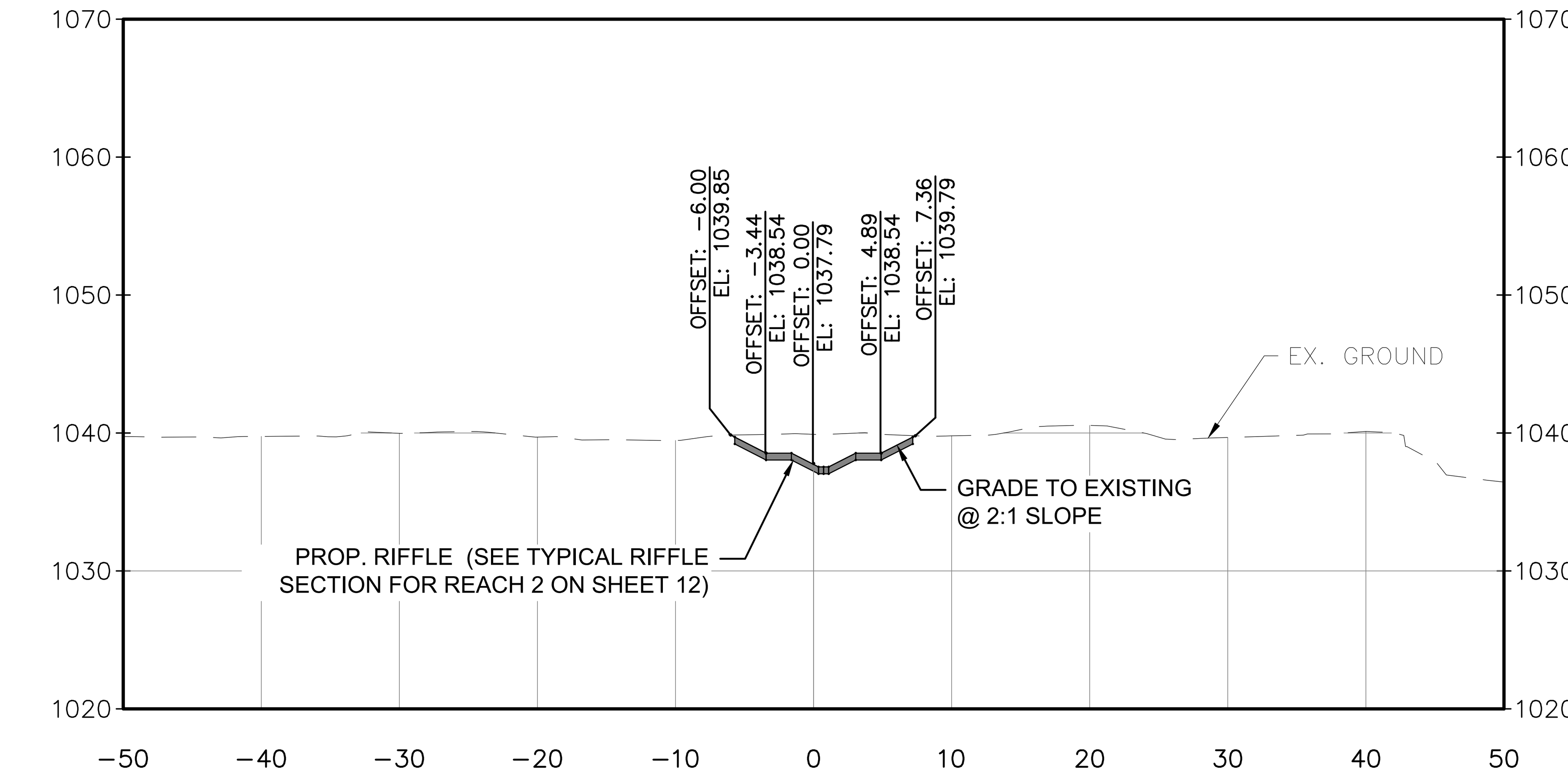
DESIGNED BY:	JB
DRAWN BY:	BM
CHECKED BY:	AH
DATE:	DECEMBER 2024
VERT. SCALE:	1" = 5'
HORZ. SCALE:	1" = 20'

SHEET: PP-05

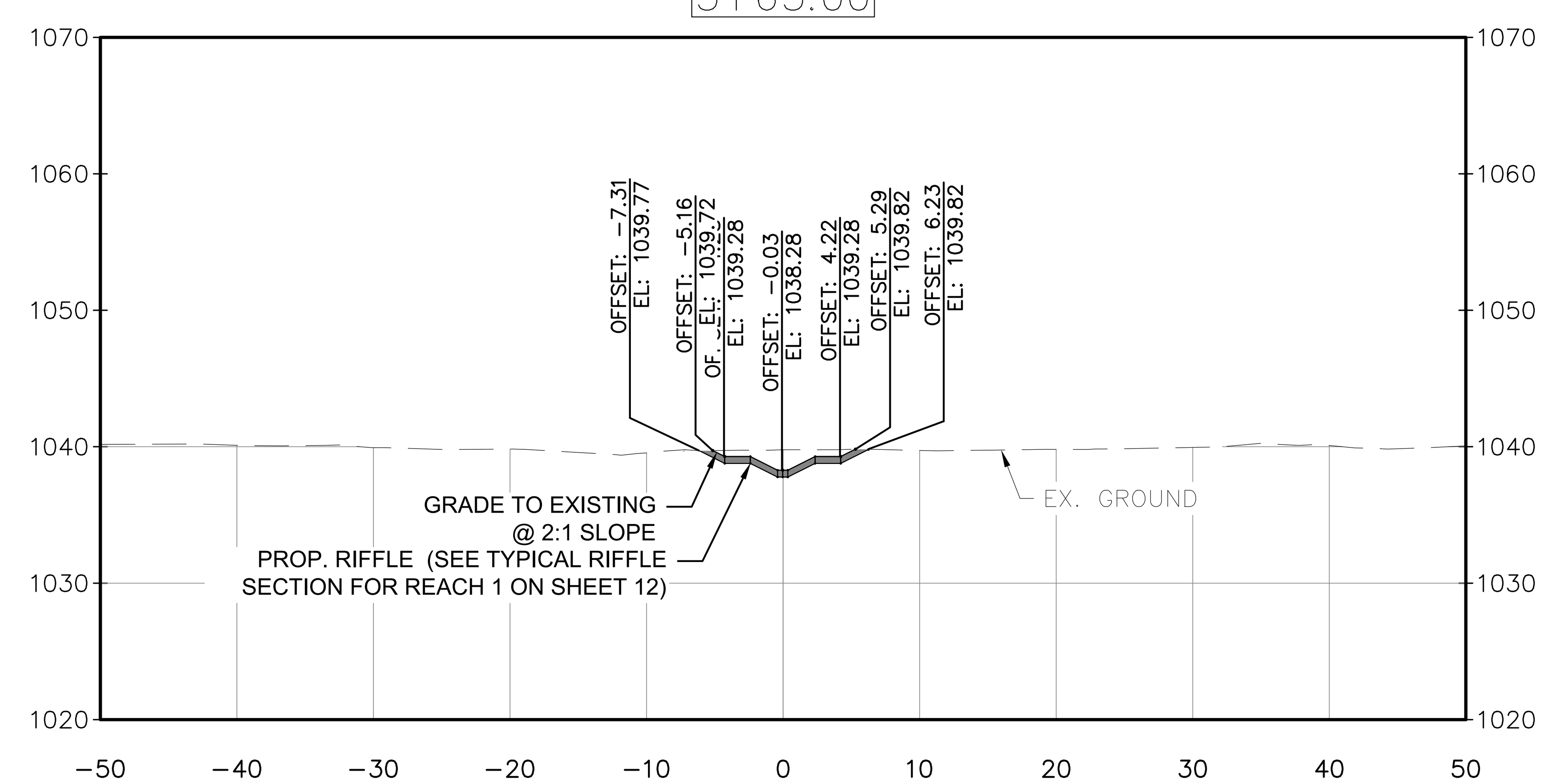
1+05.00



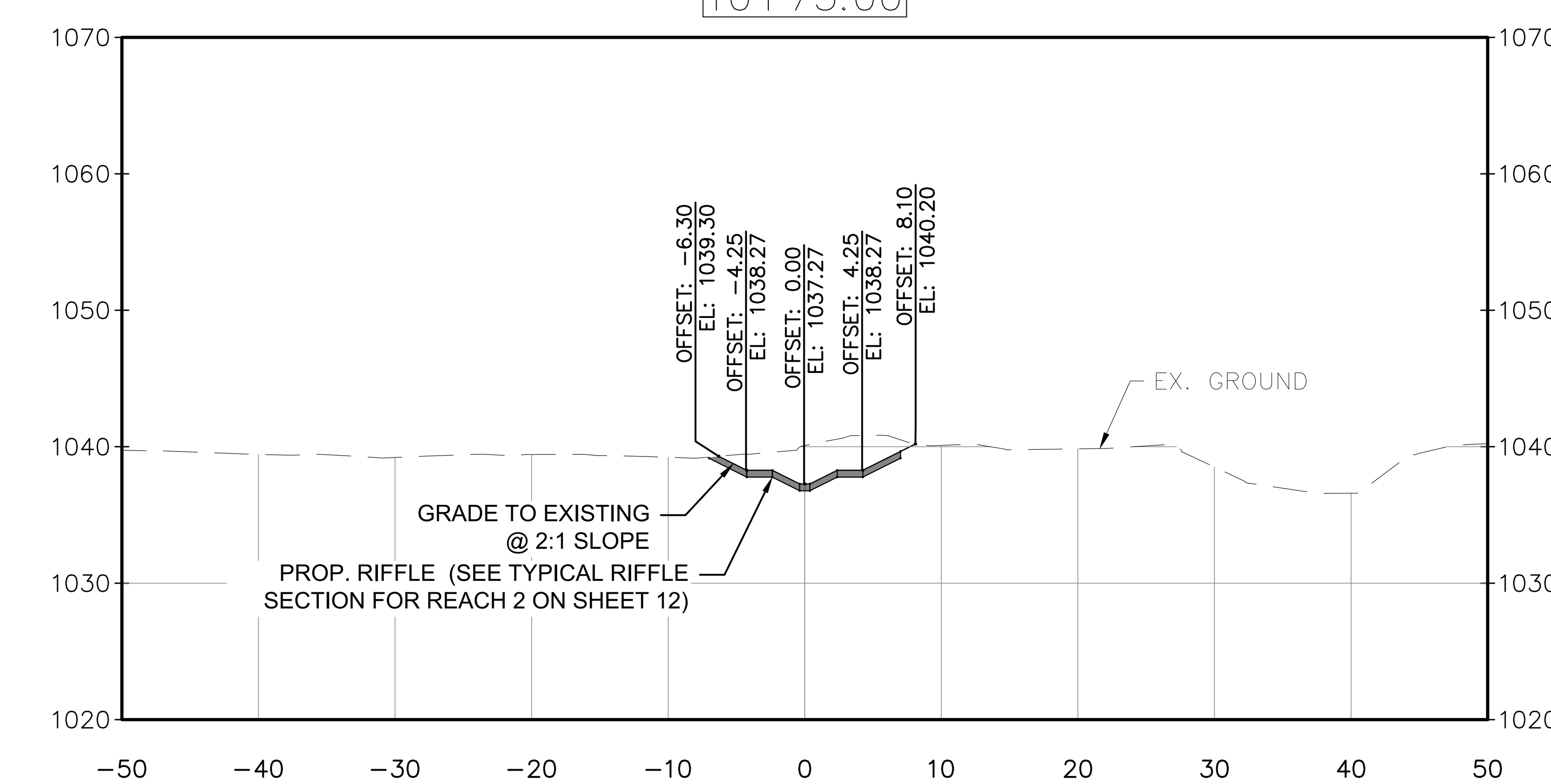
10+20.00



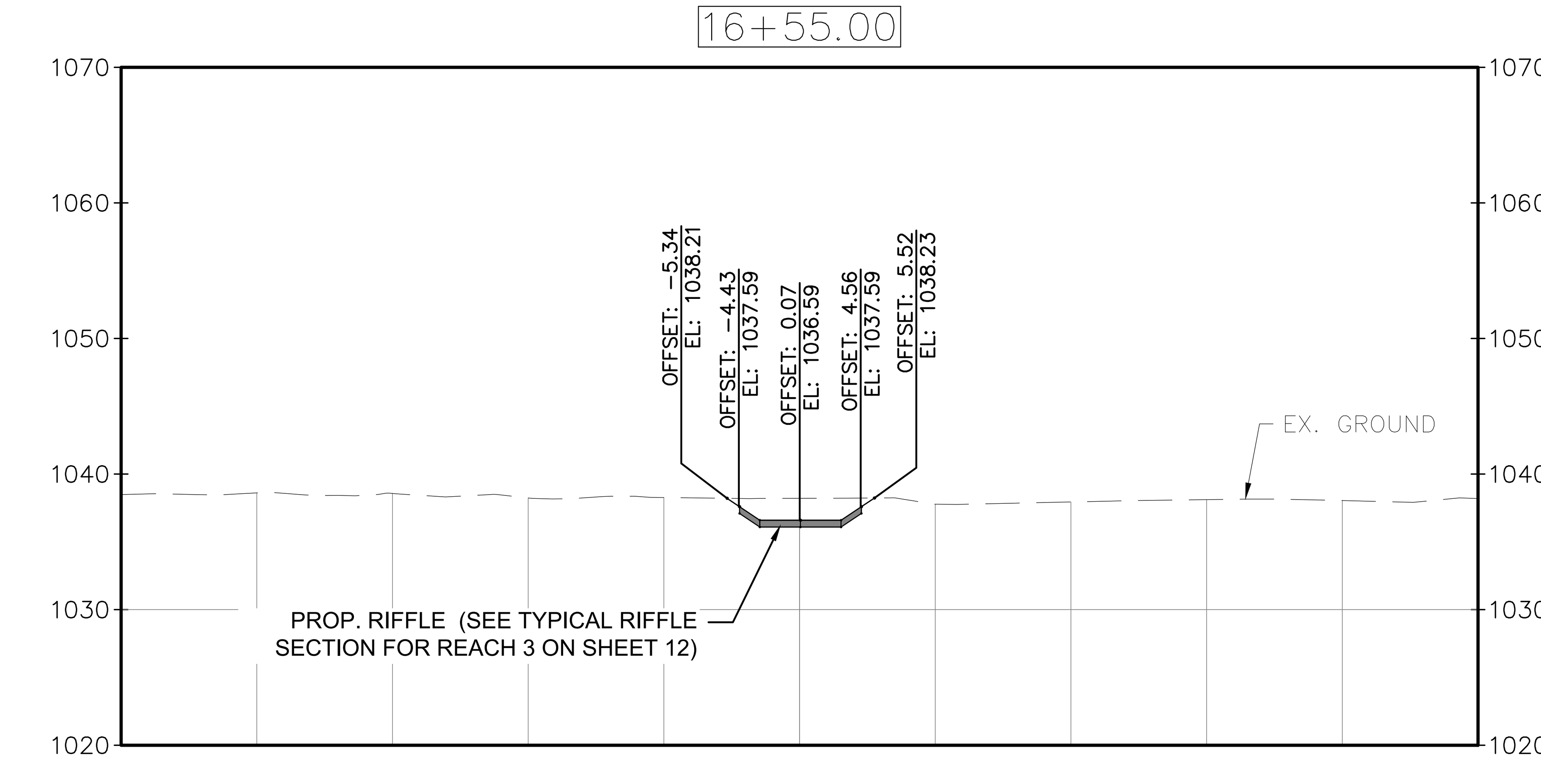
3+65.00



10+75.00



16+55.00



GENERAL NOTES

LEGEND

- EX GROUND
- PROP. GRADE
- PROP. RIFFLE SUBSTRATE

NOTES:

1. ELEVATIONS PROVIDED IN CROSS SECTIONS REPRESENT FINISHED GRADE.
2. FINAL GRADES AND SLOPES WILL BE ADJUSTED IN THE FIELD AS NECESSARY AT THE DIRECTION OF THE ENVIROSCIENCE CONSTRUCTION REPRESENTATIVE. SLOPES WILL BE GRADED TO CREATE A NATURAL APPEARANCE.

0 10 20
GRAPHIC SCALE IN FEET

NO.	REVISION/ISSUE	DATE

PERMIT SET

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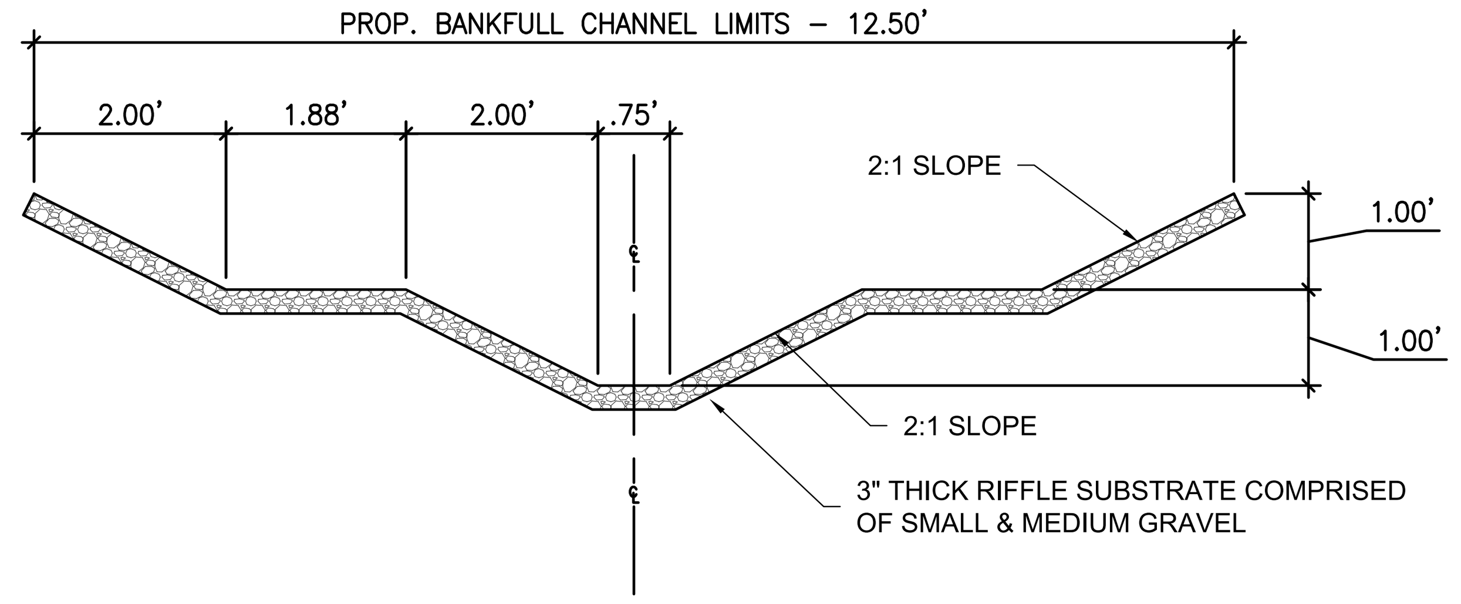
TINKER'S CREEK WATERSHED PARTNERS
10075 RAVENNA RD
TWINSBURG, OH 44087

DARROW RD. PARK STREAM RESTORATION

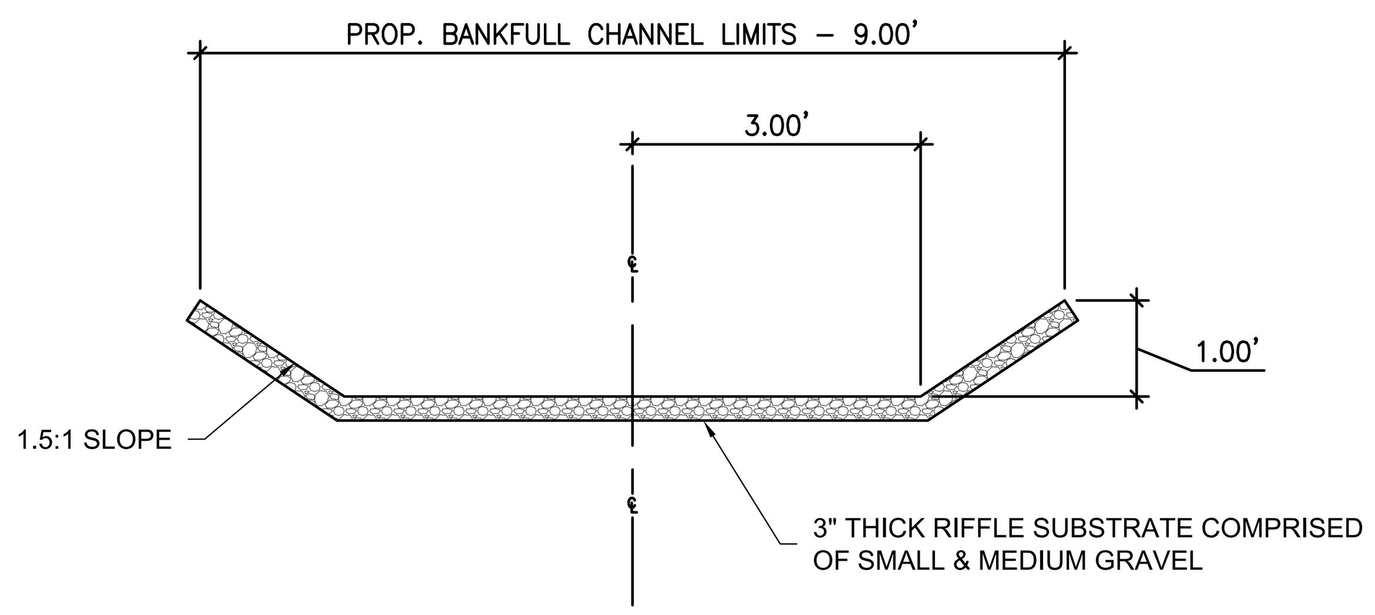
CROSS SECTIONS

DESIGNED BY: JB
DRAWN BY: BM
CHECKED BY: AH
DATE: DECEMBER 2024
VERT. SCALE: 1" = 10'
HORZ. SCALE: 1" = 10'

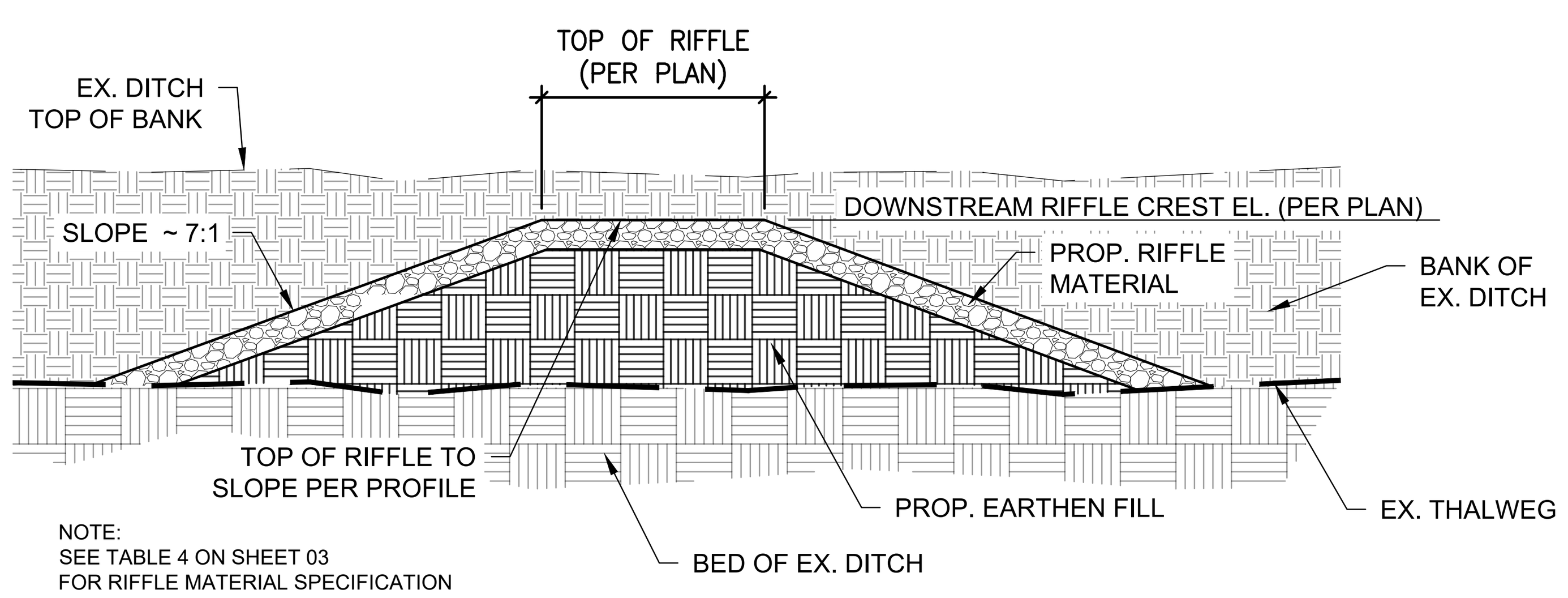
SHEET: XS-01



REACH 1 & 2 TYPICAL RIFFLE SECTION

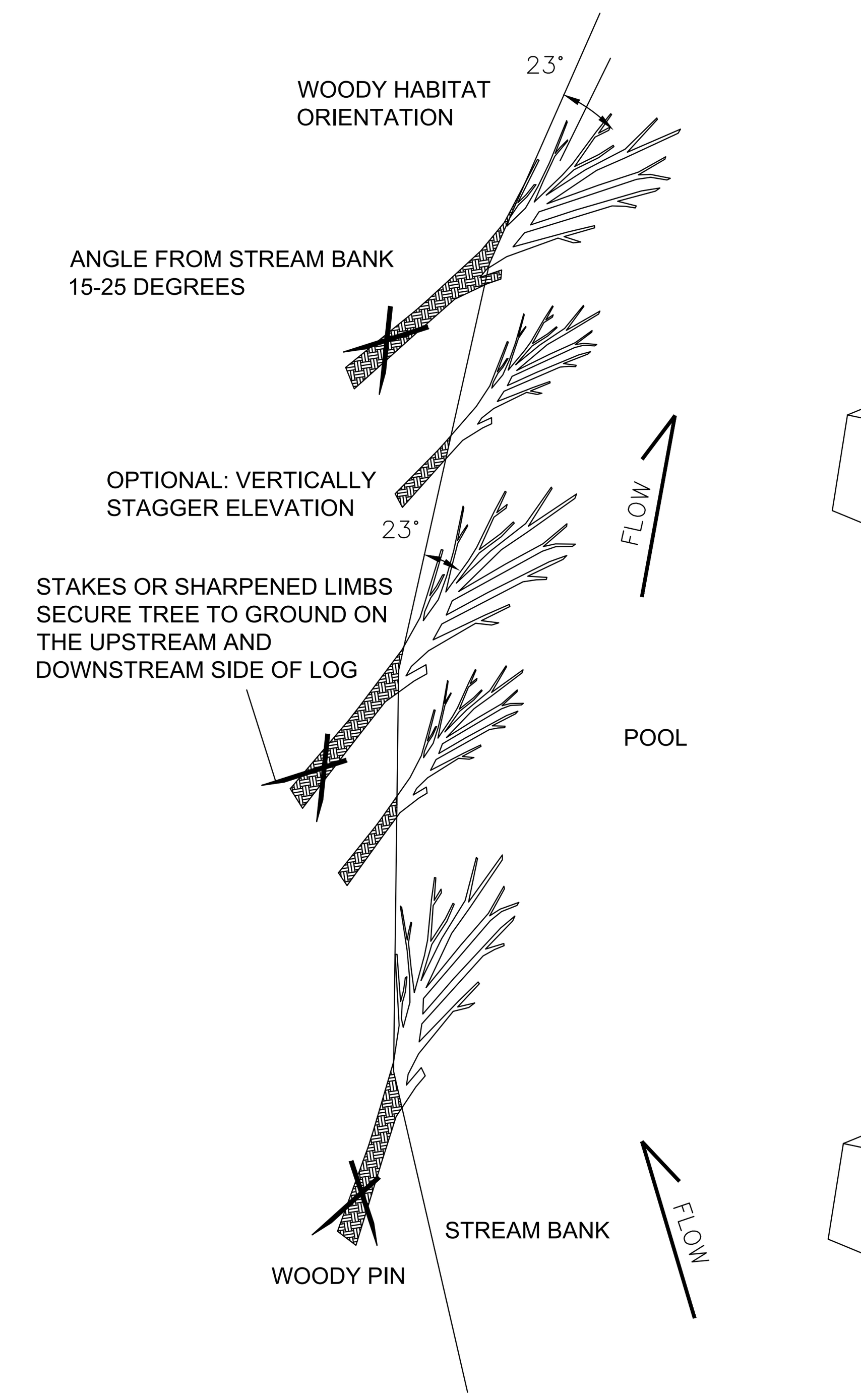


REACH 3 TYPICAL RIFFLE SECTION



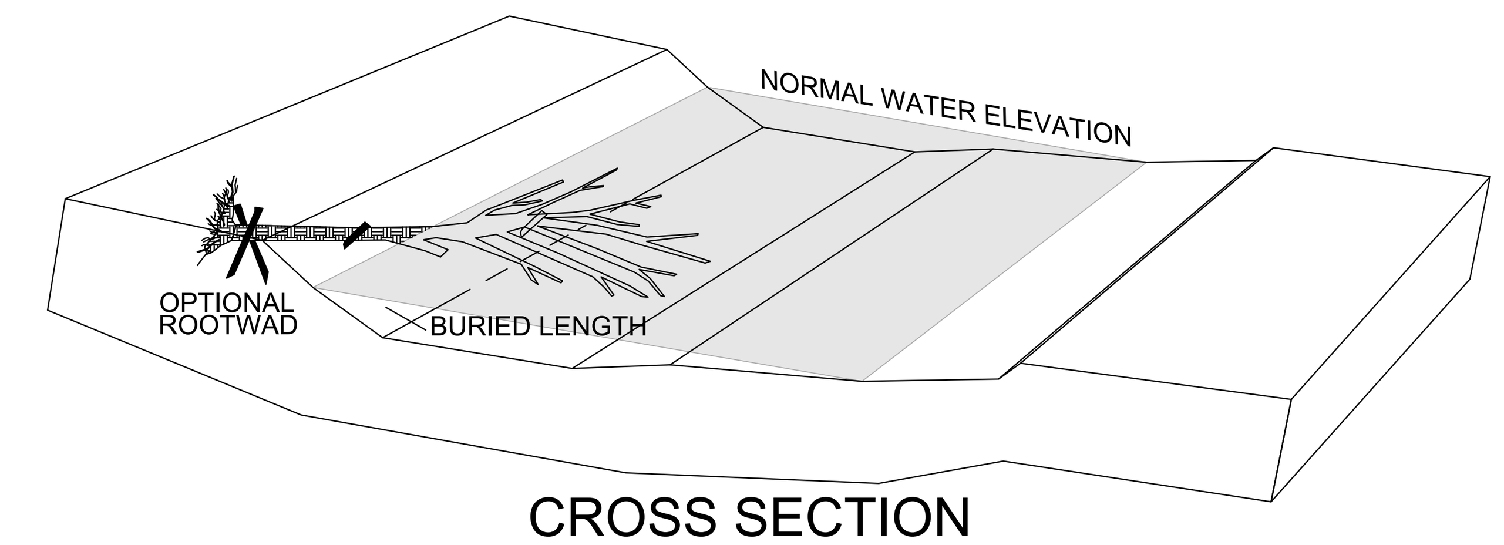
NOTE:
SEE TABLE 4 ON SHEET 03
FOR RIFFLE MATERIAL SPECIFICATION

EXISTING CHANNEL RIFFLE FILL CROSS SECTION



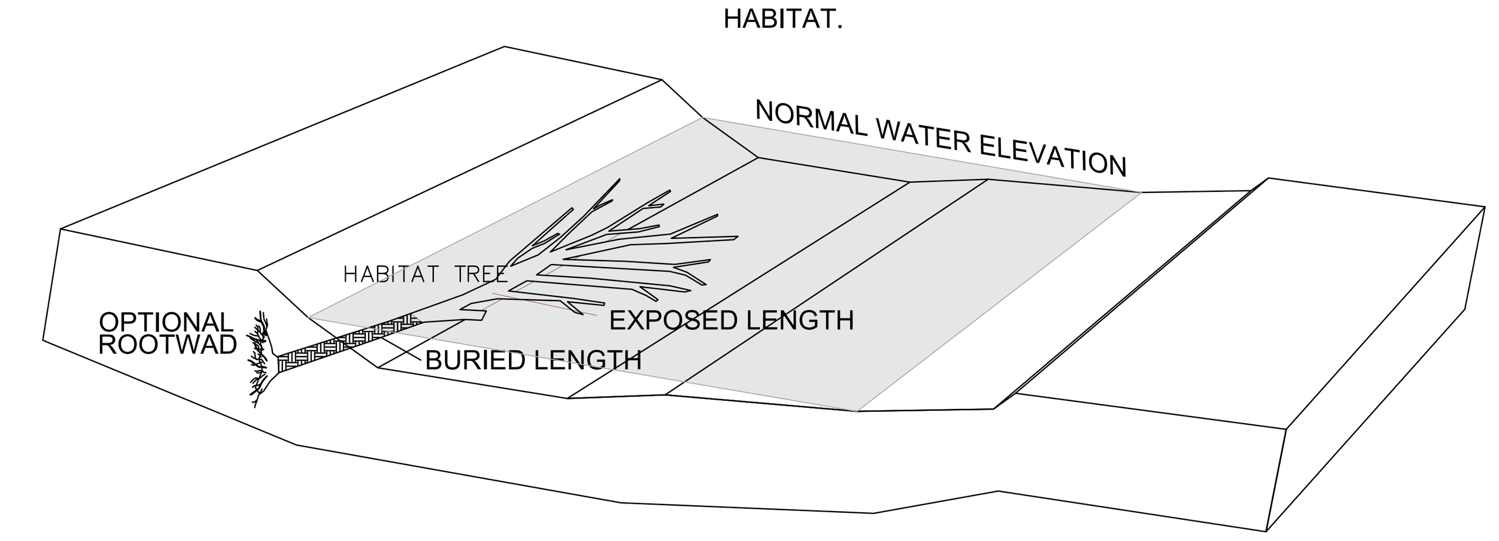
PLAN VIEW

INSTALL HABITAT TREE WITH ROOTWAD INTACT IF POSSIBLE TO PROVIDE ADDITIONAL ANCHORING. TREE CAN BE ANCHORED WITH CUT WOOD PINS PLACED AT STRATEGIC LOCATIONS



CROSS SECTION

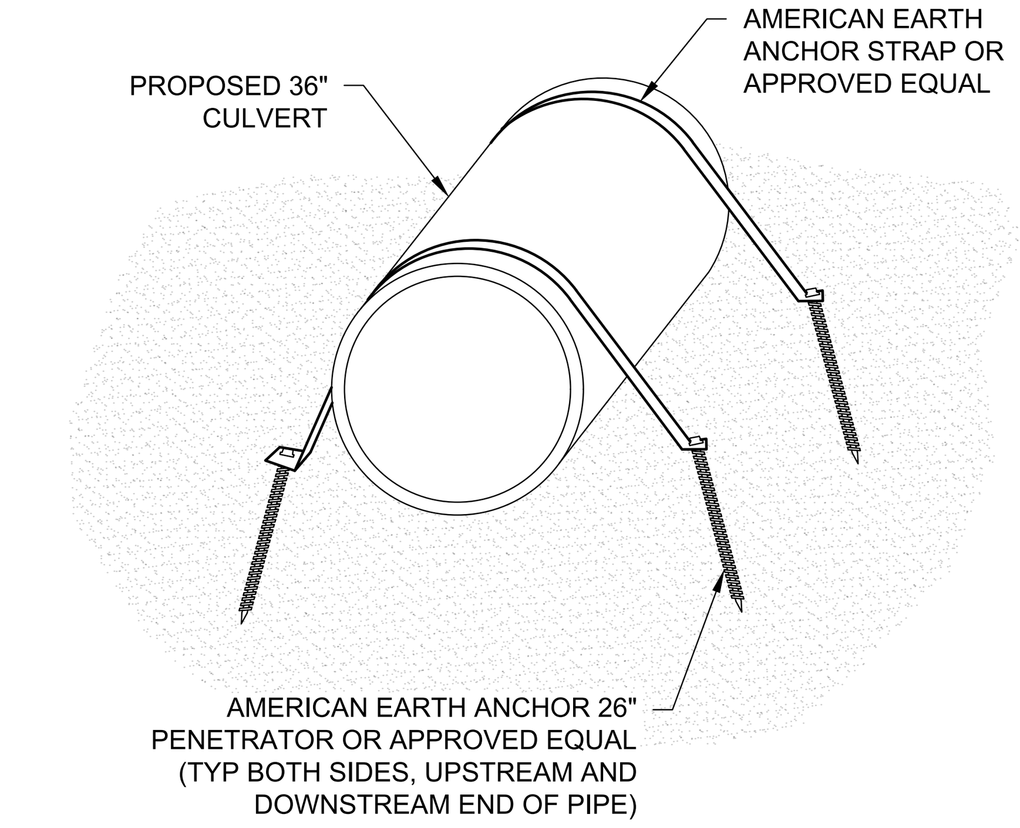
FINAL INSTALLATION SHALL RESULT IN HABITAT TREES ENTIRELY IF NOT MOSTLY SUBMERGED AT NORMAL WATER ELEVATION. CUT INSTALLATION TRENCH AND SET LOG TO ENSURE FUNCTIONAL HABITAT.

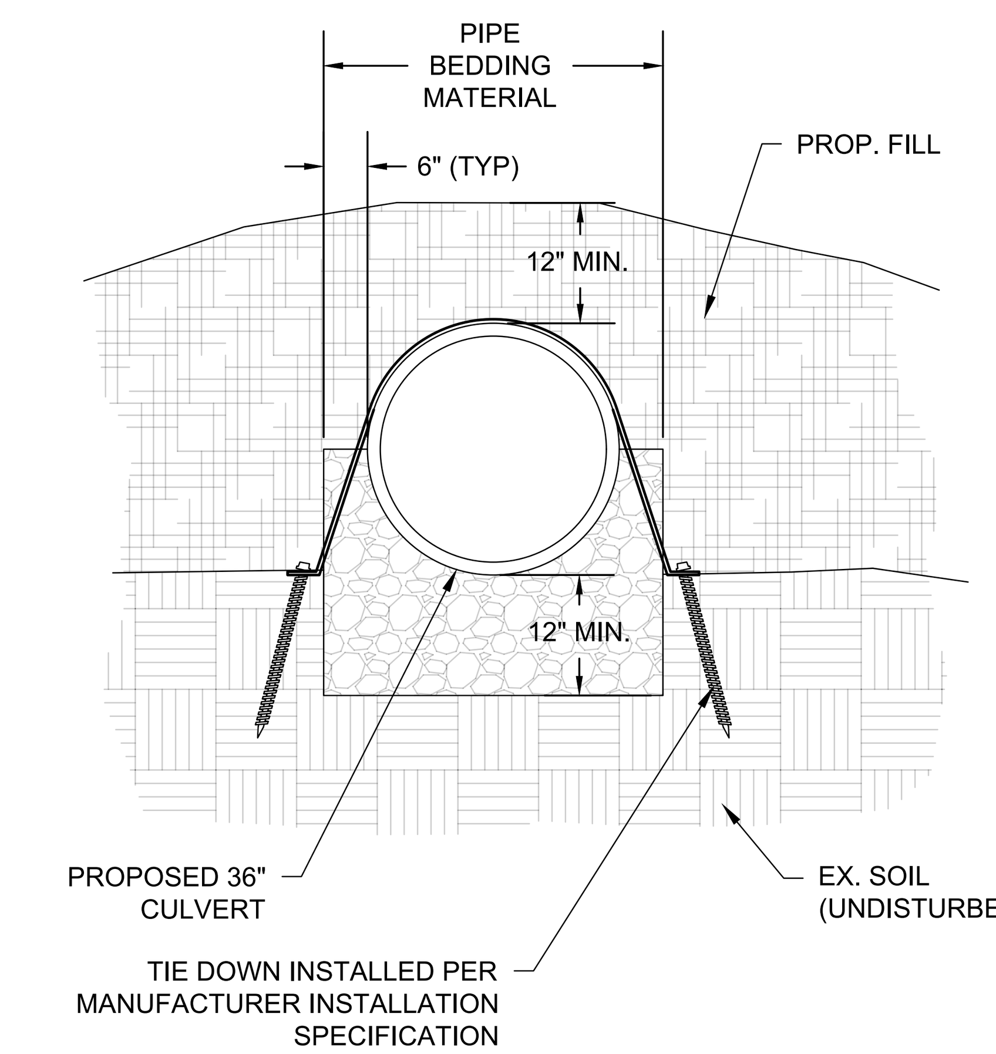


CROSS SECTION

INSTALLED WOODY HABITAT SHALL BE SIZED APPROPRIATELY FOR THE SPECIFIC MEANDER GEOMETRY, SPECIFIC LOCATION, AVAILABILITY AND DIRECTION BY CONSTRUCTION REPRESENTATIVE. THE OBJECTIVE IS TO PROVIDE ROUGHNESS AND PROTECTION FOR THE STREAMBANK AND MINIMIZE EROSION RISK. WOODY HABITAT SHALL BE INSTALLED SUCH THAT A PORTION IS BELOW NORMAL WATER LEVEL TO ENHANCE HABITAT.

WOODY HABITAT DETAIL

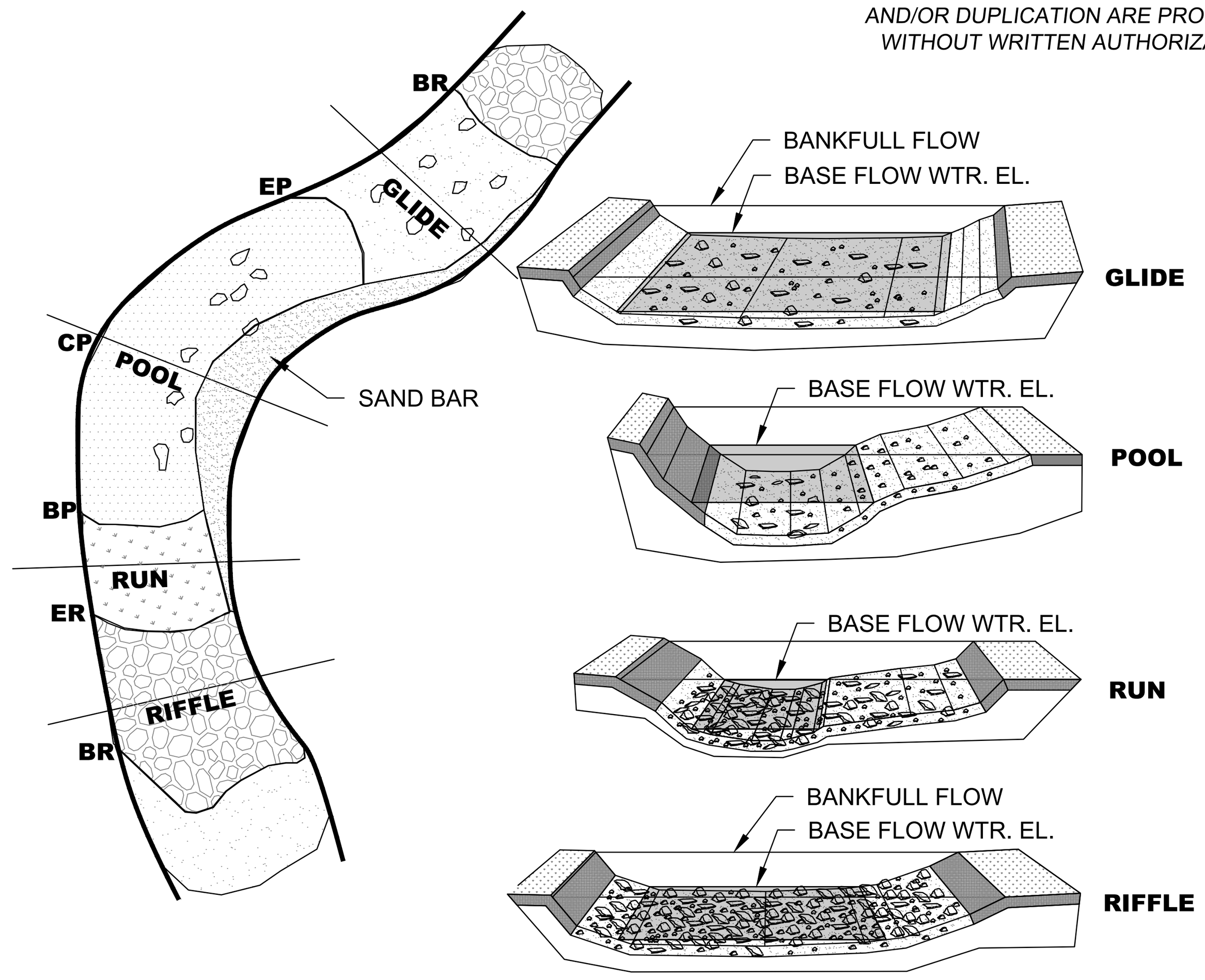




CROSS SECTION

PROPOSED CULVERT PIPE MATERIAL SHALL BE PVC SDR35, PER ASTM D3034 OR POLYPROPYLENE MEETING ASTM F2764. PIPE BEDDING MATERIAL TO BE COMPRISED OF GRAVEL (SEE TABLE 1 ON SHEET 02 FOR SIZING).

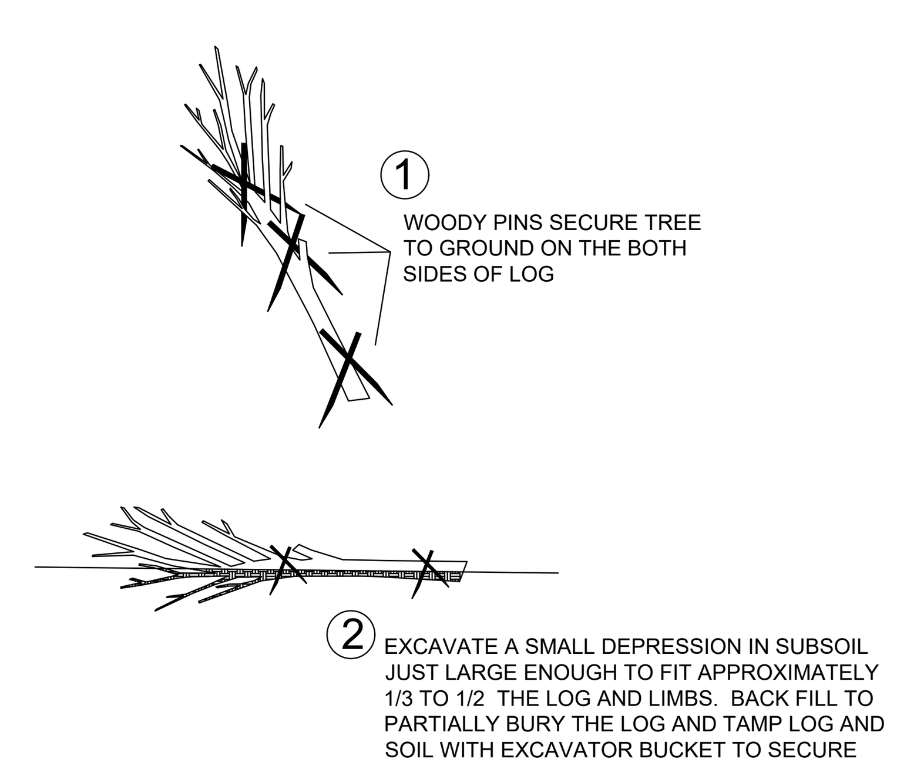
CULVERT TIE DOWN DETAIL



CHANNEL FEATURE TYPICAL SECTION

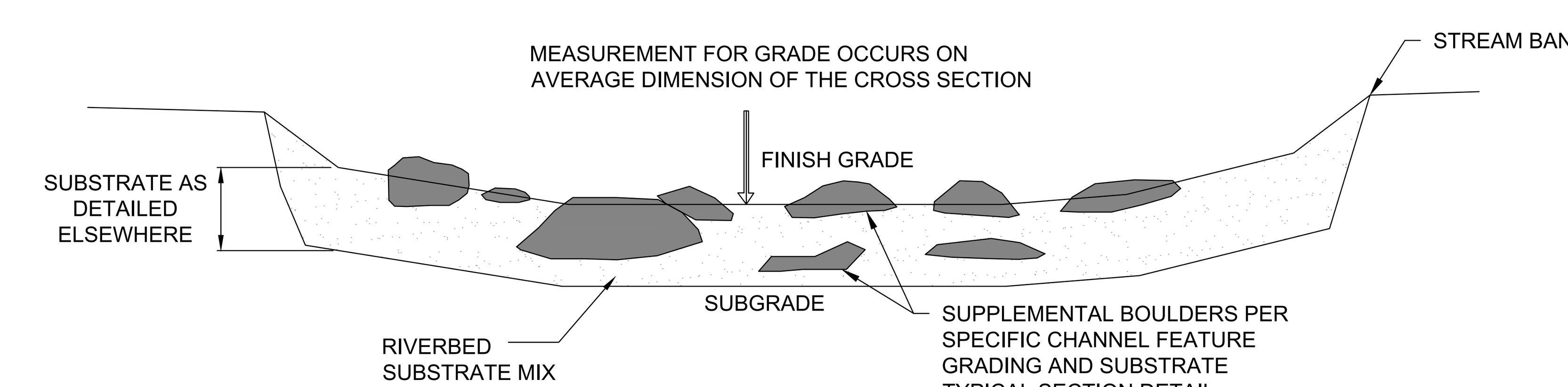
HABITAT TREE SPECIFICATIONS
TREE LENGTH 10 – 30 FT
DIAMETER 6–14 INCHES

INSTALLATION
SECURE BY ONE OF THE FOLLOWING METHODS:
1. CROSS STAKING, OR
2. PARTIALLY BURY.



CROSS SECTION

WOODY PIN DETAIL



NOTE: FINAL GRADE ELEVATION TOLERANCE SHALL NOT EXCEED A TOTAL OF ±10% CHANGE IN TOTAL GRADE ELEVATION IN RIFFLE AREAS FROM BEGINNING TO END OF THE SPECIFIC RIFFLE FEATURE. EXAMPLE: FEATURE GRADE= 0.90% (0.0090 FT/FT). FEATURE LENGTH = 50FT GRADE CHANGE= 0.45 FT TOLERANCE= 0.45*0.10= 0.045 FT. OTHER NON-RIFFLE AREAS (RUN, POOL AND GLIDE) FINAL ELEVATION GRADE TOLERANCE SHALL NOT EXCEED 25% OF THE SPECIFIC FEATURE.

FINAL GRADE VERIFICATION DETAIL

GENERAL NOTES

NO.	REVISION/ISSUE	DATE

PERMIT SET

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Headquarters: 5070 Stow Road, Stow, OH 44224
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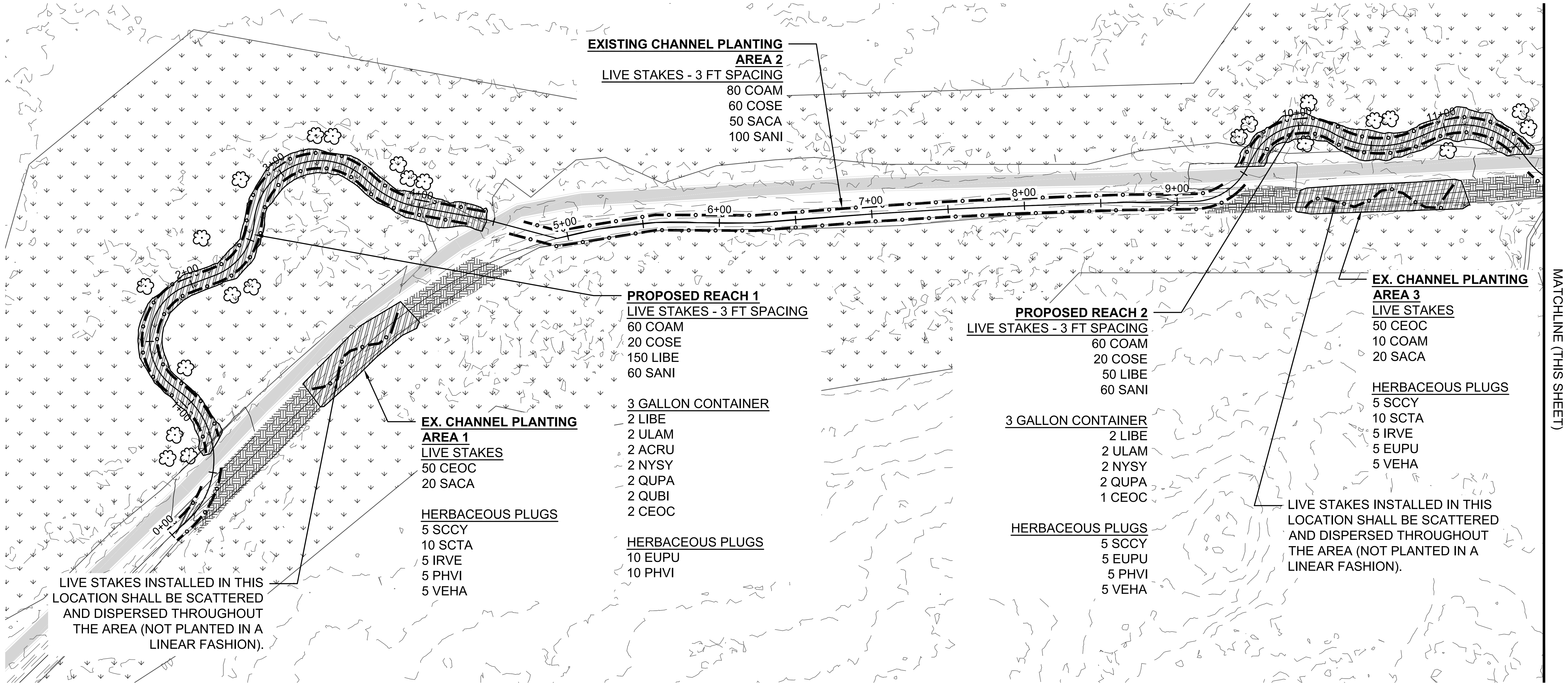
TINKER'S CREEK WATERSHED PARTNERS
10075 RAVENNA RD
TWINSBURG, OH 44087

DARROW RD. PARK STREAM RESTORATION

STANDARD DETAILS

DESIGNED BY: JB
DRAWN BY: BM
CHECKED BY: AH
DATE: DECEMBER 2024
VERT. SCALE: NA
HORZ. SCALE: NA

SHEET: D-01



NOTES:

1. THE OWNER OR THE OWNER'S CONSTRUCTION REPRESENTATIVE SHALL APPROVAL ALL TREE AND LIVE STAKE SPECIES AND SEED MIXES PRIOR TO ORDERING AND INSTALLATION.
2. INSTALL LIVE STAKES AT A RATE OF 1 PER 3 LINEAR FEET ALONG BOTH BANKS BETWEEN THE BASEFLOW WATER SURFACE ELEVATION AND BANKFULL. (1500 TOTAL LIVE STAKES)

LIVE STAKES

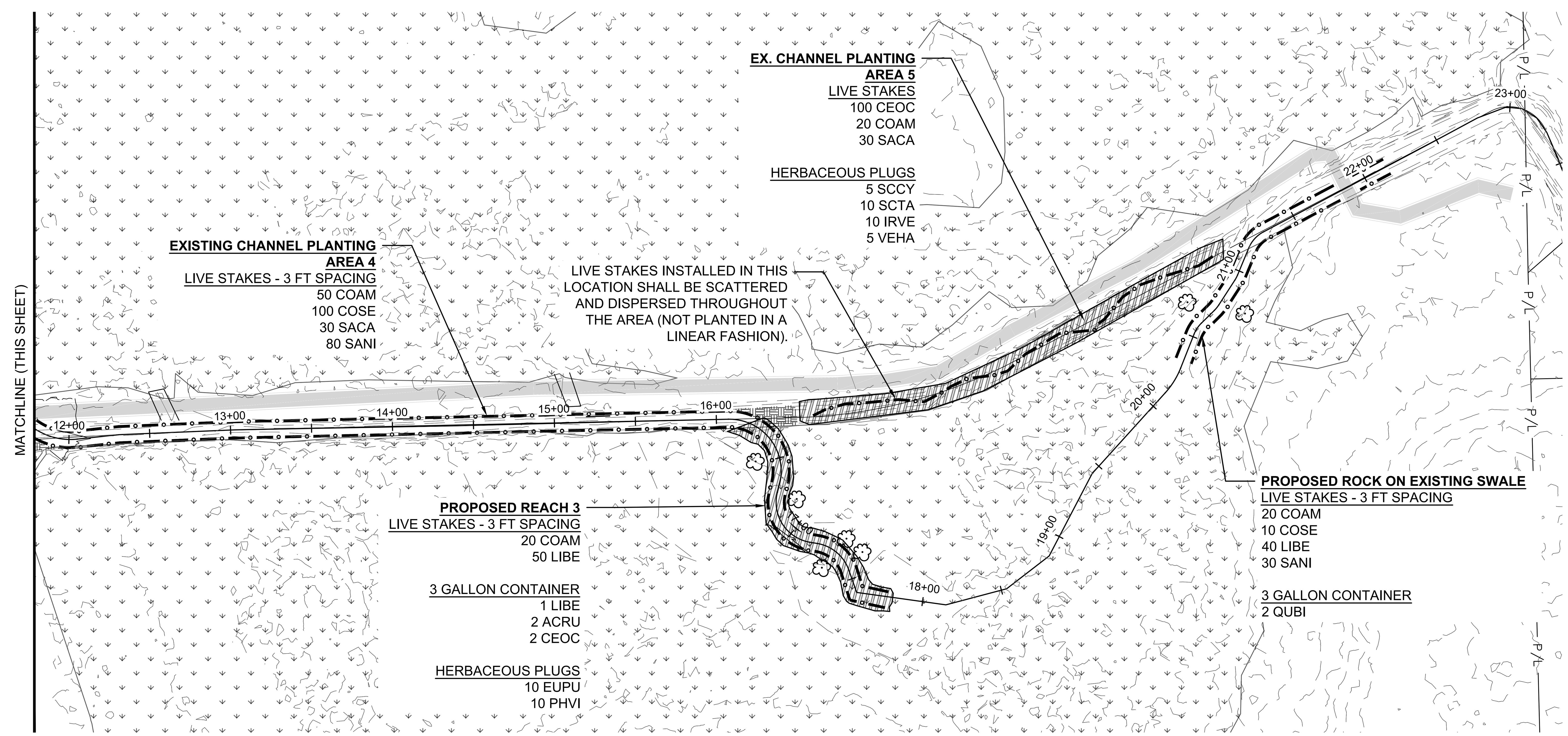
SPECIES	SCIENTIFIC NAME	SYMBOL	QUANTITY
BUTTONBUSH	*Cephalanthus occidentalis*	CEOC	200
SILKY DOGWOOD	*Cornus amomum*	COAM	320
RED OSIER DOGWOOD	*Cornus sericea*	COSE	210
ELDERBERRY	*Sambucus canadensis*	SACA	150
SPICEBUSH	*Lindera benzoin*	LIBE	290
BLACK WILLOW	*Salix nigra*	SANI	330
		TOTAL	1500

CONTAINERS - 3 GALLON

SPECIES	SCIENTIFIC NAME	SYMBOL	QUANTITY
BUTTONBUSH*	*Cephalanthus occidentalis*	CEOC	5
SPICEBUSH	*Lindera benzoin*	LIBE	5
AMERICAN ELM	*Ulmus americana*	ULAM	4
RED MAPLE	*Acer rubrum*	ACRU	4
BLACK GUM	*Nyssa sylvatica*	NYSY	4
PIN OAK	*Quercus palustris*	QUPA	4
SWAMP WHITE OAK	*Quercus bicolor*	QUBI	4
		TOTAL	30
*BUTTONBUSH SHALL ONLY BE PLANTED IN EX. DITCH WHERE NO SPOIL IS PROPOSED			

HERBACEOUS PLUGS

SPECIES	SCIENTIFIC NAME	SYMBOL	QUANTITY
WOOLGRASS	*Scirpus cyperinus*	SCCY	20
SOFTSTEM BULRUSH	*Schoenoplectus tabernaemontani*	SCTA	30
BLUE FLAG IRIS	*Iris versicolor*	IRVE	20
SWEET JOE-PYE WEED	*Eupatorium purpureum*	EUPU	30
OBEDIENT PLANT	*Physostegia virginiana*	PHVI	30
BLUE VERVAIN	*Verbena hastata*	VEHA	20
		TOTAL	150



GENERAL NOTES

LEGEND

- EX. TRAIL
- EX. WETLANDS
- PROP. LIVE STAKES
- PROP. PLUGS
- PROP. CONTAINER
- PROP. SPOIL IN EX. CHANNEL

0 50 100
GRAPHIC SCALE IN FEET

NO.	REVISION/ISSUE	DATE

PERMIT SET

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Headquarters: 5070 Stow Road, Stow, OH 44224
800-940-4025 | EnviroScienceInc.com

TINKER'S CREEK WATERSHED PARTNERS
10075 RAVENNA RD
TWINSBURG, OH 44087

DARROW RD. PARK STREAM RESTORATION

PLANTING PLAN
TREE PLAN

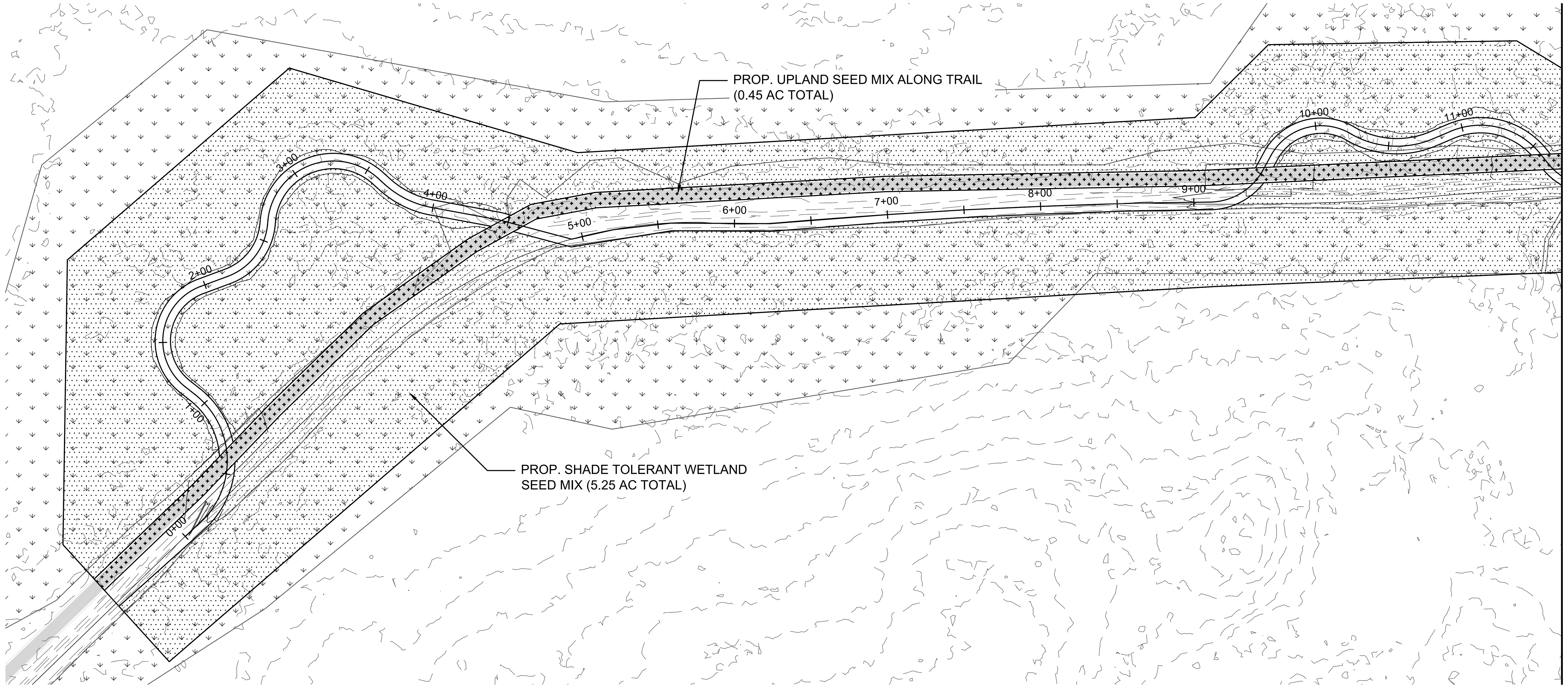
DESIGNED BY: JB
DRAWN BY: BM
CHECKED BY: AH

DATE: DECEMBER 2024

VERT. SCALE: NA
HORZ. SCALE: 1" = 50'

SHEET: PL-01

C:\USERS\BMCCROSKEY\ONEDRIVE - ACRT\430 RESTORATION CAD\18713_DARROW RD\60_DESIGN\SHEETS\18713 DARROW_PLANTINGPLAN-DETAILS.DWG - 13 PLANTING PL-01 - 11/27/2024 11:18:44 AM - BROC MCCROSKEY



NOTES:

1. COVER CROP TO BE SEEDED BY CONTRACTOR. OATS OR ANNUAL RYE GRAIN APPLIED AT RATE OF 30-50 LBS/ACRE.
2. CONTRACTOR SHALL RESEED ALL AREAS DISTURBED FOR STAGING, ACCESS, AND STORAGE, USING SEED MIX COMPLIANT WITH ODOT ITEM 659.07 4B LOW GROWING NATIVE GRASS.

SHADE-TOLERANT WETLAND SEED MIX

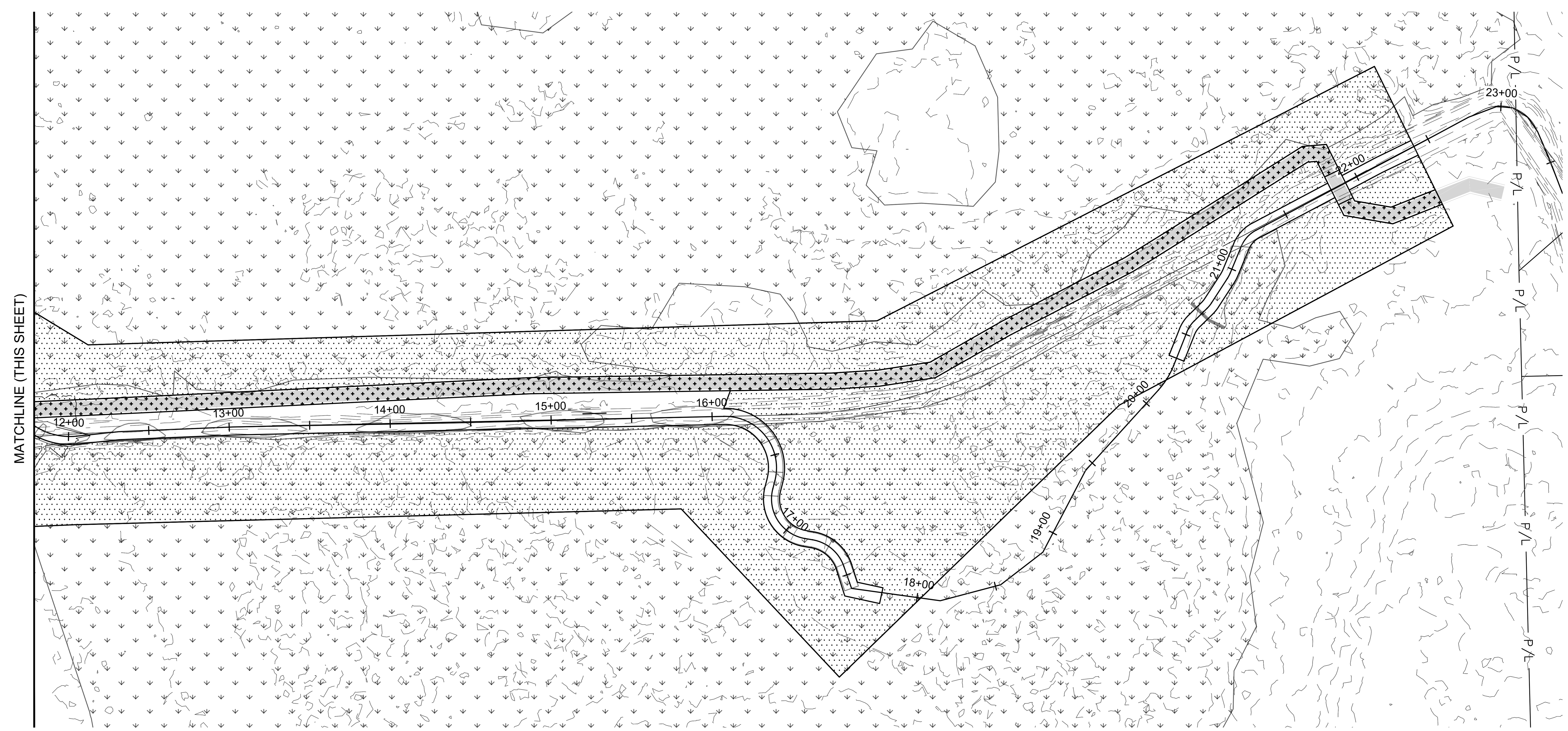
APPLICATION RATE: 15 LBS/ACRE

PERCENT	SPECIES	SCIENTIFIC NAME
26.8%	FOX SEDGE	*Carex vulpinoidea*
20.0%	VIRGINIA WILDRYE	*Elymus virginicus*
17.50%	LURID SEDGE	*Carex lurida*
17.40%	BLUNT BROOM SEDGE	*Carex scoparia*
10.00%	DEERTONGUE	*Panicum clandestinum*
2.00%	OXEYE SUNFLOWER	*Heliopsis helianthoides*
1.50%	EASTERN BUR REED	*Sparganium americanum*
1.00%	SOFT RUSH	*Juncus effusus*
1.00%	PATH RUSH	*Juncus tenuis*
0.70%	WRINKLELEAF GOLDENROD	*Solidago rugosa*
0.50%	FOWL MANNAGRASS	*Glyceria striata*
0.50%	WOOLGRASS	*Scirpus cyperinus*
0.50%	WHITE VERVAIN	*Verbena urticifolia*
0.30%	AMERICAN WATER HOREHOUND	*Lycopus americanus*
0.30%	GREEN BULRUSH	*Scirpus atrovirens*

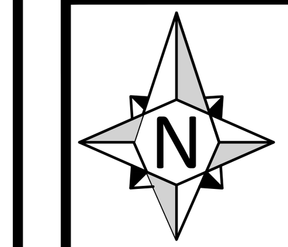
UPLAND TURF GRASS MIX

APPLICATION RATE: 15 LBS/ACRE

PERCENT	SPECIES	SCIENTIFIC NAME
30.00%	CREEPING RED FESCUE	*Festuca rubra*
20.00%	ANNUAL RYEGRASS	*Lolium multiflorum*
20.00%	PERENNIAL RYEGRASS	*Lolium perenne*
30.00%	KENTUCKY BLUEGRASS	*Poa pratensis*



GENERAL NOTES



LEGEND

- EX. TRAIL
- EX. WETLANDS
- SHADE TOLERANT WETLAND SEED MIX
- UPLAND SEED MIX

0 50 100
GRAPHIC SCALE IN FEET

NO.	REVISION/ISSUE	DATE

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TINKER'S CREEK WATERSHED PARTNERS
10075 RAVENNA RD
TWINSBURG, OH 44087

DARROW RD. PARK STREAM RESTORATION

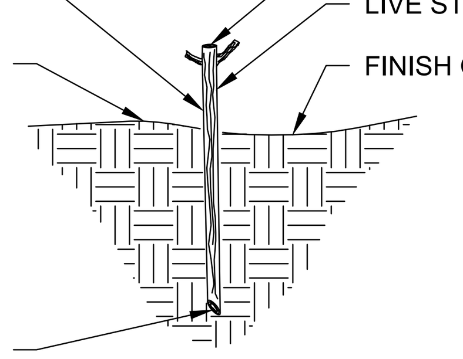
PLANTING PLAN
SEED PLAN

DESIGNED BY: JB
DRAWN BY: BM
CHECKED BY: AH

DATE: DECEMBER 2024

VERT. SCALE: NA
HORZ. SCALE: 1" = 50'

SHEET: PL-02

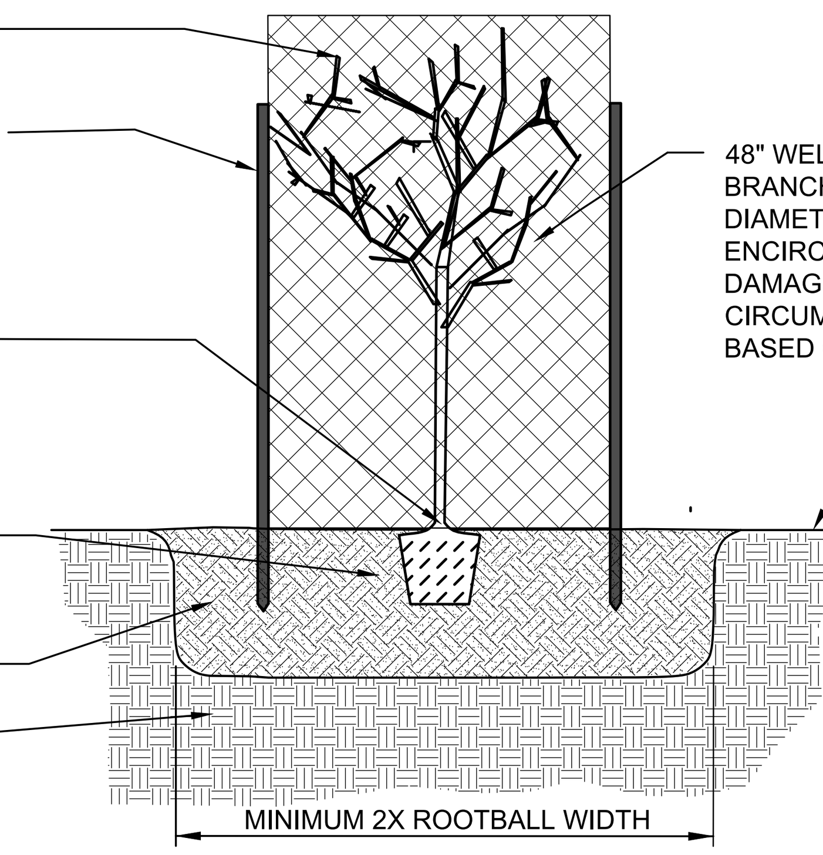


LIVE STAKE CROSS SECTION

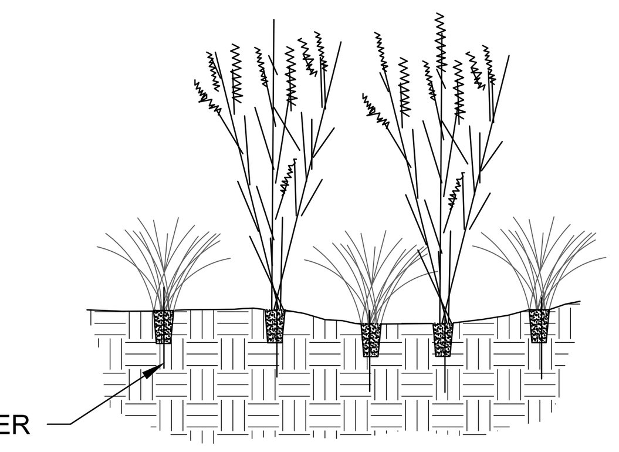
INSTALLATION SPECIFICATIONS

1. LIVE STAKES SHALL RANGE FROM 1/2" TO 1" IN DIAMETER AND BE FROM 2 TO 3 FT IN LENGTH
2. CARE SHALL BE TAKEN NOT TO DAMAGE THE LIVE STAKES DURING INSTALLATION.
3. A PILOT HOLE WILL BE REQUIRED TO ENSURE THAT THE LIVE STAKE IS NOT DAMAGED WHEN DRIVEN THROUGH THE SUBSOIL. PILOT HOLE SHALL BE MADE THROUGH THE USE OF A STEEL SPIKE, REBAR, OR SIMILAR TOOL TO WORK AN OPENING THROUGH THE SUBSOIL.
4. LIVE STAKES SHALL BE CUT TO A POINT ON THE BASAL END FOR INSERTION IN THE GROUND.
5. SEE CONTRACT DOCUMENTS FOR SPECIES, SIZE, SPACING, LOCATION, AND FINAL DETERMINATION ON USE OF LIVE STAKES.
6. USE A DEAD BLOW HAMMER TO DRIVE LIVE STAKES INTO THE PILOT HOLE.
7. LEAVE BETWEEN 4" AND 8" OF LIVE STAKE EXPOSED ABOVE FINISH GRADE.
8. TAMP SOIL AROUND LIVE STAKES.

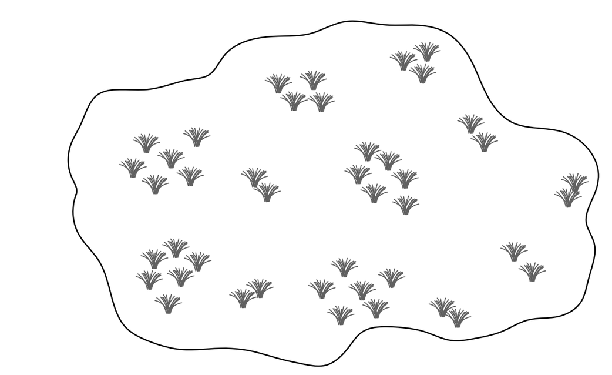
LIVE STAKE PLANTING



3 GAL. TREE PLANTING AND STAKING
TERRACE FLOODPLAIN



CROSS SECTION



PLAN VIEW

1. PREPARE HOLE FOR PLANTING BY REMOVING FINISH GRADE TOPSOIL WITH A GARDEN TROWEL OR SIMILAR TOOL. REMOVE JUST ENOUGH TOPSOIL TO FIT THE SOIL AND ROOTS OF THE PLUG INTO THE GOUND.
2. REMOVE PLUG FROM CONTAINER AND INSPECT THE ROOTS. IF THE ROOTS ARE TIGHLY WRAPPED AROUND THE SOIL, LOOSEN THEM AND SPREAD THEM OUT GENTLY. IF INSTEAD THE SOIL IS VERY LOOSE AROUND THE ROOTS, KEEP AS MUCH SOIL AS POSSIBLE AROUND THE ROOTS.
3. PLACE THE PLUG INTO THE HOLE SO THAT THE TOP OF THE SOIL PLUG IS FLUSH WITH FINISH GRADE. SECURE EACH PLUG IN PLACE WITH ONE 8 - 10" BAMBOO SKEWER. TAMP SOIL AROUND THE PLUG, AND WATER GENEROUSLY. USE ENOUGH WATER TO DISPLACE ANY TRAPPED AIR WITHIN THE HOLE.
4. HERBACEOUS PLUGS SHALL BE INSTALLED ACCORDING TO DENSITIES LISTED IN THE CONTRACT SPECIFICATIONS. PLANT PLUGS IN GROUPS OF TWO TO SIX INDIVIDUALS, RATHER THAN IN EQUAL INTERVALS.

HERBACEOUS PLUG PLANTING

GENERAL NOTES

NO.	REVISION/ISSUE	DATE

PERMIT SET

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DARROW RD. PARK STREAM RESTORATION

PLANTING PLAN DETAILS

DESIGNED BY: JB
DRAWN BY: BM
CHECKED BY: AH

DATE: DECEMBER 2024

VERT. SCALE: NA
HORZ. SCALE: NA

SHEET: PL-03

15 / 19

SWPPP NOTES

TYPE OF CONSTRUCTION ACTIVITY

1. EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES (BMP'S) SHALL BE CONDUCTED PER THIS STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AND IN ACCORDANCE WITH OHIO EPA REQUIREMENTS. THE SWPPP SHALL BE AVAILABLE AT THE PROJECT SITE FOR REFERENCE TO BMP ACTIVITY. THE VARIABILITY OF EROSION AND SEDIMENT CONTROL BMP'S MAY BE MODIFIED AS APPROPRIATE TO COMPLETE THE NECESSARY RESTORATION ACTIVITIES.

2. TOTAL AREA OF DISTURBANCE: 2.86 AC. THE TEMPORARY DISTURBANCE IS RELATED TO NATURAL STREAM RESTORATION THROUGH NEW CHANNEL EXCAVATION AND ABANDONING SECTIONS OF THE ORIGINAL CHANNEL.PROJECT ELEMENTS INCLUDE EARTHMOVING ACTIVITIES FOR STREAM REALIGNMENT, IMPORT OF ROCK FOR RIFFLE SUBSTRATE, PLUGGING OF ABANDONED REACHES OF THE EXISTING CHANNEL, AND INSTALLATION OF NEW CULVERTS FOR TRAIL CROSSINGS. ALL SPOILS WILL BE PLACED IN THE EXISTING CHANNEL AS INDICATED ON THE PLANS. NO SPOILS WILL BE REMOVED FROM THE SITE.

3. TINKERS CREEK IS THE RECEIVING STREAM FOR ALL PROJECT RUNOFF.

4. RUNOFF COEFFICIENTS/IMPERVIOUS AREA: THERE WILL BE NO INCREASE IN IMPERVIOUS AREA UPON COMPLETION OF PROJECT.

5. DESCRIPTION OF HCS SOILS: SOILS WITHIN THE STREAM, BANKS, AND IMMEDIATE FLOODPLAIN ARE BgB, BOGART LOAM, 2 TO 6% SLOPES; Ca, CANDACE SILTY CLAY LOAM; CnC, CHILI LOAM, 6 TO 12 SLOPES; EIB, ELLSWORTH SILT LOAM, 2 TO 6% SLOPES; EIC, ELLSWORTH SILT LOAM, 6 TO 12% SLOPES; EIC2, ELLSWORTH SILT LOAM, 6 TO 12% SLOPES, ERODED; EIE2, ELLSWORTH SILT LOAM, 12 TO 25% SLOPES, ERODED; Ln, LORAINE SILTY CLAY LOAM; MgA, MAHONING SILT LOAM, 0 TO 2% SLOPES, MgB, MAHONING SILT LOAM, 2 TO 6 PERCENT SLOPES; Sb, SEBRING LOAM, 2 TO 6% SLOPES; Tr, TRUMBULL SILT LOAM, 0 TO 2% SLOPES.

6. FOR DISTURBANCE AREAS REMAINING DORMANT FOR OVER 14 DAYS WITHIN 50 FEET OF A STREAM, TEMPORARY EROSION CONTROLS SHALL BE APPLIED WITHIN 2 DAYS OF DISTURBANCE. FOR DISTURBED AREAS GREATER THAN 50 FEET FROM A STREAM AND REMAINING DORMANT FOR OVER 14 DAYS, TEMPORARY EROSION CONTROLS SHALL BE APPLIED WITHIN 7-DAYS OF DISTURBANCE. ALL DISTURBED AND ERODED EARTH SHALL BE REGRADED AND SEEDED, AS DESCRIBED IN THESE DETAILS SHEET. TO ESTABLISH STABILITY AND PROVIDE SEDIMENT CONTROL WHERE POSSIBLE. REFER TO TABLE 2: TEMPORARY STABILIZATION ON SW-04.

7. FOR DISTURBED AREAS WHICH HAVE REACHED FINAL GRADE WITHIN 50 FEET OF A STREAM, PERMANENT VEGETATION SHALL BE INSTALLED WITHIN 2 DAYS OF FINAL GRADE WORK, WEATHER PERMITTING. REFER TO TABLE 1: PERMANENT STABILIZATION ON SW-04.

8. VEGETATIVE BUFFER: WHERE POSSIBLE, BUFFER STRIPS WILL BE LEFT BETWEEN TILLING AREAS AND EXISTING DRAINAGE WAYS TO USE NON-STRUCTURAL CONTROLS AND PRESERVE EXISTING VEGETATION BUFFER.

9. CONTRACTOR SHALL INSPECT ALL SWPPP MEASURES WEEKLY AND WITHIN 24 HOURS AFTER A RAIN EVENT OF 0.5 INCHES OR GREATER AND REPAIR SWPPP MEASURES AS NECESSARY TO PREVENT EROSION. SILTATION SHALL BE REMOVED FROM AREAS WHERE FAILURES HAVE OCCURRED AND CORRECTIVE ACTION TAKEN WITHIN 24 HOURS TO MAINTAIN ALL SWPP ITEMS. THE SITE SHALL BE INSPECTED PRIOR TO A FORECASTED RAIN EVENT OF 0.25 INCHES OR GREATER.

10. CONSTRUCTION ENTRANCES, AND SWPPP ITEMS SHALL REMAIN IN PLACE UNTIL EARTHWORK AND DEMOLITION OPERATIONS ARE COMPLETE AND THE SITE IS STABLE. THE SITE IS CONSIDERED STABLE WHEN 75% VEGETATIVE COVER HAS BEEN ESTABLISHED WITHIN 60 DAYS OF INITIAL SEEDING AND 90% COVERAGE AFTER ON YEAR ON ALL DISTURBED AREAS. CONTRACTOR SHALL KEEP SILT FROM ENTERING ANY STORM DRAINAGE SYSTEM.

11. IF AT ANY TIME UTILITY COMPANIES ARE REQUIRED TO PARTICIPATE IN CONSTRUCTION, UTILITY COMPANIES MUST COMPLY WITH ALL STORM WATER POLLUTION PREVENTION MEASURES AS DEFINED ON THE STORM WATER POLLUTION PREVENTION PLANS, DETAILS AND NOTES.

12. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN ALL SEDIMENTATION AND STORM WATER POLLUTION PREVENTION ITEMS AT ALL TIMES.

13. NO SOLID (OTHER THAN SEDIMENT) OR LIQUID WASTE, INCLUDING BUILDING MATERIALS, SHALL BE DISCHARGED IN STORM WATER RUNOFF. PROPERLY DISPOSE OF ANY LIQUID IN A CONCRETE WASHOUT THAT HAS NOT EVAPORATED.

14. THERE WILL BE NO OPEN BURNING.

15. PERIMETER CONTROLS SHALL BE INSTALLED/IMPLEMENTED WITHIN 7 DAYS OF GRUBBING ACTIVITIES AND PER THE CONSTRUCTION SEQUENCE IN THIS PLAN SET (AS REQUIRED). IN AREAS WHERE THE PLANS DO NOT SPECIFY, OR AREAS WHICH ARE IN ADDITION TO PLAN SPECIFICATIONS, PERIMETER CONTROLS SHALL BE INSTALLED/IMPLEMENTED WITHIN 7 DAYS OR GRUBBING ACTIVITIES AND PRIOR TO GRADING OF THE AREA THEY WILL CONTROL.

16. TRACKING OF SEDIMENTS BY VEHICLES WILL BE MINIMIZED BY UTILIZING THE CONSTRUCTION ENTRANCE AS THE ONLY ENTRANCE FOR VEHICLES. LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE SHALL BE INSPECTED FOR EVIDENCE OF OFF-SITE VEHICLE TRACKING. SEDIMENT/SOIL TRACKED OFF-SITE SHALL BE REMOVED BY CONTRACTOR AND PROPERLY DISPOSED OF.

17. THE SWPPP SHALL BE KEPT ONSITE AT ALL TIMES DURING CONSTRUCTION. IT IS THE CONTRACTORS RESPONSIBILITY TO MARK (IN A DOMINANT COLOR) DAILY ANY MINOR MODIFICATIONS MADE TO THE APPROVED SWPPP SO AS TO KEEP RECORD OF THE MODIFICATIONS MADE IN THE FIELD.

18. ALL SOIL DISTURBING ACTIVITIES AT THE SITE ARE TO RECEIVE A COMPLETE AND A UNIFORM PERENNIAL VEGETATIVE COVER (E.G., EVENLY DISTRIBUTED, WITHOUT LARGE BARE AREAS) WITH A DENSITY OF AT LEAST 75% VEGETATIVE COVER TO BE ESTABLISHED WITHIN 60 DAYS OF INITIAL SEEDING AND 90% COVERAGE AFTER ON YEAR. FOLLOWING SITE STABILIZATION, ALL TEMPORARY EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE REMOVED AND DISPOSED. ALL TRAPPED SEDIMENT SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION.

19. ALL FUEL TANKS SHALL BE STAGED WITHIN THE DESIGNATED EQUIPMENT STAGING AREAS AS SHOWN ON THE PLANS. FUELING ACTIVITIES SHALL BE VISUALLY MONITORED AT ALL TIMES TO MANAGE ACCIDENTAL SPILLAGE. IDLE EQUIPMENT, PETROCHEMICALS AND TOXIC/HAZARDOUS MATERIALS SHALL NOT BE STORED IN THE FLOODPLAIN OR NEAR DRAINAGE WAYS OR STREAMS THAT COULD CONVEY SUCH MATERIALS TO THE STREAM. PETROCHEMICALS AND TOXIC/HAZARDOUS MATERIALS SHALL NOT BE DISCHARGED INTO THE STREAM, ITS FLOODPLAIN OR ANY DRAINAGE WAYS/DITCHES. REFUELING OF EQUIPMENT SHALL NOT OCCUR IN THE FLOODPLAIN OR NEAR ANY DRAINAGE WAYS, DITCHES OR WITHIN 50 FEET OF STREAMS. FUEL TANKS SHALL BE CONTAINED OR DIKED. VISUAL MONITORING WOULD NOT BE SUFFICIENT IN THE EVENT OF A SPILL. SUBSTANCES SUCH AS OIL, DIESEL FUEL, HYDRAULIC FLUID, ANTIFREEZE, ETC. THAT IS SPILLED, LEAKED, OR RELEASED ONTO THE SOIL SHALL BE IMMEDIATELY CONTAINED USING SOIL BERMS AND/OR ABSORBENT PADS/SOCKS.

A) SPILL REQUIREMENTS IN THE EVENT OF SMALL RELEASE (<25 GALLONS): IMPACTED SOIL SHALL BE DUG UP AND FREE LIQUIDS SHALL BE COLLECTED FOR DISPOSAL AT A LICENSED SANITARY LANDFILL OR OTHER APPROVED PETROLEUM CONTAMINATED SOIL REMEDIATION FACILITY (NOT A CONSTRUCTION/DEMOLITION DEBRIS LANDFILL).

B) SPILL REQUIREMENTS IN THE EVENT OF LARGER RELEASE (>25 GALLONS): SPILLS OF 25 GALLONS OR MORE OF PETROLEUM PRODUCTS SHALL BE REPORTED TO THE OHIO EPA (1-800-282-9378), LOCAL FIRE DEPARTMENT, AND THE LOCAL EMERGENCY PLANNING COMMITTEE WITHIN 30 MINUTES OF THE DISCOVERY OF THE RELEASE.

C) ALL SPILLS WHICH RESULT IN CONTACT WITH WATERS OF THE STATE MUST BE REPORTED TO THE OHIO EPA HOTLINE (1-800-282-9378).

20. HAZARDOUS OR TOXIC WASTES SHOULD NOT BE STORED ON SITE , HOWEVER, IF THEY ARE, THE FOLLOWING PROCEDURE SHALL BE FOLLOWED:

A) ALL HAZARDOUS WASTES SUCH AS OIL FILTERS, PETROLEUM PRODUCTS. PAINT, FERTILIZERS, AND EQUIPMENT MAINTENANCE FLUIDS WILL BE STORED IN STRUCTURALLY SOUND AND SEALED STORAGE CONTAINERS, WITHIN A HAZARDOUS MATERIALS STORAGE AREA IN THE STAGING AREA. HAZARDOUS WASTE MATERIALS SHALL BE STORED IN APPROPRIATE AND CLEARLY MARKED CONTAINERS AND SEGREGATED FROM OTHER NON-HAZARDOUS MATERIALS. SECONDARY CONTAINMENT WILL BE PROVIDED FOR ALL WASTE MATERIALS IN THE HAZARDOUS MATERIALS STORAGE AREA. ADDITIONALLY, ALL HAZARDOUS WASTES SHALL BE DISPOSED OF IN ACCORDANCE WITH FEDERAL, STATE, AND MUNICIPAL REGULATIONS.

B) ALL WASTE MATERIALS WILL BE COLLECTED AND DISPOSED OF INTO A METAL TRASH DUMPSTER. THE DUMPSTER SHALL HAVE A WATERTIGHT LID AND BE PLACED AWAY FROM STORMWATER DRAINS OR CONVEYANCES AND MEET ALL FEDERAL, STATE, AND MUNICIPAL REGULATIONS. ONLY TRASH AND CONSTRUCTION DEBRIS FROM THE SITE SHALL BE DEPOSITED IN THE DUMPSTER. NO CONSTRUCTION MATERIALS SHALL BE BURIED ON-SITE.

PERMITS

WORK WITHIN PROJECT SITE/LIMITS IS SUBJECT TO U.S. ARMY CORPS OF ENGINEERS (USACE) REGULATORY JURISDICTION (I.E., JURISDICTIONAL WATERS OF THE U.S.). ANY IMPACTS AND PLACEMENT OF FILL TO JURISDICTIONAL WATERS OUTSIDE OF THE PROJECT LIMITS IS PROHIBITED. THE FOLLOWING PERMITS APPLY TO THIS PROJECT:

1. NATIONWIDE PERMIT (NWP) 27 FROM THE U.S. ARMY CORPS OF ENGINEERS (USACE).
   1.1. THIS PROJECT WILL BE SUBJECT TO AN IN-WATER WORK WAIVER FOR SEASONAL SALMONID FROM SEPTEMBER 15TH TO JUNE 30TH. AN IN-WATER WORK WAIVER FOR THE PERIOD OF MAY 3 - JUNE 30, 2021 WAS GRANTED BY ODNR.
2. OHIO EPA NOI

INSPECTION REQUIREMENTS

1. FOLLOWING EACH INSPECTION A CHECKLIST MUST BE COMPLETED AND SIGNED BY THE QUALIFIED INSPECTION PERSONNEL REPRESENTATIVE. AT A MINIMUM, THE INSPECTION REPORT MUST INCLUDE:
   a) THE INSPECTION DATE
   b) NAMES, TITLES, AND QUALIFICATIONS OF PERSONNEL MAKING THE INSPECTION
   c) WEATHER INFORMATION FOR THE PERIOD SINCE THE LAST INSPECTION (OR SINCE COMMENCEMENT OF CONSTRUCTION ACTIVITY IF THE FIRST INSPECTION) INCLUDING A BEST ESTIMATE OF THE BEGINNING OF EACH STORM EVENT, DURATION OF EACH STORM EVENT, APPROXIMATE AMOUNT OF RAINFALL FOR EACH STORM EVENT (IN INCHES), AND WHETHER ANY DISCHARGES OCCURRED;
   d) WEATHER INFORMATION AND A DESCRIPTION OF ANY DISCHARGES OCCURRING AT THE TIME OF THE INSPECTION
   e) LOCATION(S) OF DISCHARGES OF SEDIMENT OR OTHER POLLUTANTS FROM THE SITE
   f) LOCATION(S) OF BMPS THAT NEED TO 0E MAINTAINED
   g) LOCATION(S) OF BMPS THAT FAILED TO OPERATE AS DESIGNED OR PROVED INADEQUATE FOR A PARTICULAR LOCATION
   h) LOCATION(S) WHERE ADDITIONAL BMPS ARE NEEDED THAT DID NOT EXIST AT THE TIME OF THE INSPECTION
   i) CORRECTIVE ACTION REQUIRED INCLUDING ANY CHANGES TO THE SWPPP NECESSARY AND IMPLEMENTATION DATES.

2. DISTURBED AREAS AND AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION SHALL BE INSPECTED FOR EVIDENCE OF OR THE POTENTIAL FOR POLLUTANTS ENTERING THE DRAINAGE SYSTEM. EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE SWPPP SHALL BE OBSERVED TO ENSURE THAT THOSE ARE OPERATING CORRECTLY. DISCHARGE LOCATIONS SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION AND SEDIMENT CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO THE RECEIVING WATERS. LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE SHALL BE INSPECTED FOR EVIDENCE OF OFF-SITE VEHICLE TRACKING. ALL SEDIMENT/SOIL TRACKED OFF-SITE SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR.

3. INSPECTION: AT A MINIMUM, ALL CONTROLS ON THE SITE WILL BE INSPECTED AT LEAST ONCE EVERY SEVEN CALENDAR DAYS , PRIOR TO ANY FORECASTED RAIN EVENT OF 0.25 INCHES OR GREATER, AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN ONE-HALF INCH OF RAIN PER 24HOUR PERIOD. THE INSPECTION FREQUENCY MAY BE REDUCED TO AT LEAST ONCE EVERY MONTH IF THE ENTIRE SITE IS TEMPORARILY STABILIZED OR RUNOFF IS UNLIKELY DUE TO WEATHER CONDITIONS (E.G., SITE IS COVERED WITH SNOW, ICE, OR THE GROUND IS FROZEN). A WAIVER OF INSPECTION REQUIREMENTS IS AVAILABLE UNTIL ONE MONTH BEFORE THAWING CONDITIONS ARE EXPECTED TO RESULT IN A DISCHARGE IF ALL OF THE FOLLOWING CONDITIONS ARE MET: THE PROJECT IS LOCATED IN AN AREA WHERE FROZEN CONDITIONS ARE ANTICIPATED TO CONTINUE FOR EXTENDED PERIODS OF TIME (I.E., MORE THAN ONE MONTH); LAND DISTURBANCE ACTIVITIES HAVE BEEN SUSPENDED; AND THE BEGINNING AND ENDING DATES OF THE WAIVER PERIOD ARE DOCUMENTED IN THE SWP3. ONCE A DEFINABLE AREA IS FINALLY STABILIZED, THE AREA MAY BE MARKED ON THE SWP3 AND NO FURTHER INSPECTION REQUIREMENTS APPLY TO THAT PORTION OF THE SITE. THE PERMITTEE SHALL ASSIGN "QUALIFIED INSPECTION PERSONNEL" TO CONDUCT THESE INSPECTIONS TO ENSURE THAT THE CONTROL PRACTICES ARE FUNCTIONAL AND TO EVALUATE WHETHER THE SWP3 IS ADEQUATE AND PROPERLY IMPLEMENTED IN ACCORDANCE WITH THE SCHEDULE PROPOSED IN PART III.G.1.G OF THIS PERMIT OR WHETHER ADDITIONAL CONTROL MEASURES ARE REQUIRED.

4. BMP'S SHALL BE REPAIRED/ MAINTAINED/INSTALLED WITHIN THREE (3) DAYS OF INSPECTION FOR NON-SEDIMENT BASIN BMP'S AND TEN (10) DAYS OF INSPECTION FOR SEDIMENT PONDS.

5. INSPECTION RECORDS WILL BE KEPT FOR UP TO THREE (3) YEARS AFTER TERMINATION OF CONSTRUCTION ACTIVITIES.

6. ALL DISCHARGERS REGULATED UNDER THE GENERAL PERMIT MUST COMPLY, EXCEPT THOSE EXEMPTED UNDER STATE LAW, WITH THE LAWFUL REQUIREMENTS OF MUNICIPALITIES, COUNTIES AND OTHER LOCAL AGENCIES REGARDING DISCHARGES OF STORM WATER.

CONTACT INFORMATION

OWNER(S)
ORGANIZATION NAME: TINKERS CREEK WATERSHED PARTNERS
ADDRESS: 10075 RAVENNA RD, TWINSBURG, OH 44087
POINT OF CONTACT: HARRY STARK
EMAIL: HARRY@TINKERS CREEK.ORG
PHONE: 234-837-5100

PROJECT ENGINEER/CONSTRUCTION REPRESENTATIVE
COMPANY NAME: ENVIROSCIENCE INC.
ADDRESS: 5070 STOW RD.STOW, OH 44224
POINT OF CONTACT: ANGELINA HOTZ, P.E.
EMAIL: AHOTZ@ENVIROSCIENCEINC.COM
PHONE: 330-502-3361

GENERAL CONTRACTOR
COMPANY NAME: RIVER REACH
ADDRESS: 91 31st ST. NW
POINT OF CONTACT: SHANNON CARNEAL
EMAIL: BSCARNEAL@RIVERREACHCONSTRUCTION.COM
PHONE: 330-715-0756

CONSTRUCTION START DATE: MARCH 2024
CONSTRUCTION DURATION: 6 WEEKS

SUGGESTED GENERAL SEQUENCE OF CONSTRUCTION

CONSTRUCTION SHALL NOT BEGIN UNTIL ALL SEDIMENT AND EROSION CONTROL MEASURES HAVE BEEN INSTALLED. THE CONTRACTOR SHALL MINIMIZE DISTURBANCE WITHIN THE WORKING AREA WHEREVER POSSIBLE.

STREAM CONSTRUCTION WILL FOLLOW THE GENERAL SEQUENCE OF:

- OUPS COORDINATION;
- MOBILIZE TO SITE, ENSURE ALL EQUIPMENT BROUGHT TO THE SITE IS CLEAN. DIRTY EQUIPMENT SHALL NOT BE PERMITTED;
- INSTALL EROSION AND SEDIMENT CONTROLS;
- CONSTRUCT TEMPORARY ACCESS ROADS AND STAGING AREAS;
- TREE AND VEGETATION CLEARING AND GRUBBING; VEGETATION WILL BE CLEARED DURING APPROPRIATE TIMEFRAME FROM OCTOBER 1ST TO MARCH 31ST;
- SITE LAYOUT AND ESTABLISH WORKING LIMITS;
- INITIATE WATER CONTROL/DIVERSION PROCEDURES;
- ESTABLISH STREAM CROSSING(S);
- STRIP AND STOCKPILE TOPSOIL AS NECESSARY IN GRADING AREAS;
- BEGIN DOWNSTREAM AND WORK IN AN UPSTREAM DIRECTION;
- BEGIN EXCAVATION OF REACHES 1-4 TO ESTABLISH SUBGRADE OF NEW MEANDER GEOMETRY;
- EXCAVATE NEW STREAMBED PROFILES;
- IMPORT ROCK SUBSTRATE AND INSTALL TO FINISHED RIFFLE GRADES;
- PERFORM FINISH GRADING;
- FILL EXISTING DITCH IN ALLOCATED AREAS, INSTALL STOCKPILED TOPSOIL TO FINISH GRADE;
- SEED, STABILIZE, AND INSTALL EROSION CONTROL FABRIC;
- INSTALL NATIVE TREES, SHRUBS, AND LIVE STAKES. REMOBILIZATION MAY BE NECESSARY DEPENDING ON TIMING OF PLANTINGS;
- DEMOBILIZE.

DUST CONTROL

1. VEGETATIVE COVER AND MULCH - APPLY TEMPORARY OR PERMANENT SEEDING AND MULCH TO AREA THAT WILL REMAIN IDLE FOR OVER 14 DAYS. TO THE EXTENT POSSIBLE, EXISTING TREES AND LARGE SHRUBS SHALL REMAIN IN PLACE TO REDUCE SOIL AND AIR MOVEMENT ACROSS DISTURBED AREAS. SEE TEMPORARY SEEDING, PERMANENT SEEDING, AND MULCHING PRACTICES.

2. WATERING - SPRAY SITE WITH WATER UNTIL THE SURFACE IS WET BEFORE AND DURING GRADING AND REPEAT AS NEEDED TO PREVENT GENERATION OF VISIBLE AIRBORNE DUST. ESPECIALLY ON HAUL ROADS AND OTHER HEAVY TRAFFIC ROUTE. 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. CHEMICAL AND ORGANIC AGENTS SHOULD NOT BE APPLIED UNDER FROZEN CONDITIONS, RAINY CONDITIONS, OR WHEN THE TEMPERATURE IS BELOW 40-DEGREES (F). THESE AGENTS WILL NOT BE USED IN THE FLOODPLAIN.

3. STONE - GRADED ROADWAYS AND OTHER SUITABLE AREAS WILL BE STABILIZED USING CRUSHED STONE OR COARSE GRAVEL AS SOON AS PRACTICAL 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.

4. 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. THIS MATERIAL WILL NOT BE USED IN THE FLOODPLAIN.

5. 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 HIGH AS TO CAUSE WATER POLLUTION OR PLANT DAMAGE. APPLICATION RATES SHOULD BE STRICTLY IN ACCORDANCE WITH SUPPLIERS SPECIFIED RATES. THIS MATERIAL WILL NOT BE USED IN THE FLOODPLAIN OR NEAR CATCH BASINS, STORM SEWERS, OR OTHER DRAINAGE WAYS.

6. OPERATION AND MAINTENANCE - SITE SHALL BE CONTINUOUSLY MONITORED TO VERIFY EFFECTIVENESS OF DUST CONTROL MEASURES. WHEN TEMPORARY DUST CONTROL MEASURES ARE USED, REPETITIVE TREATMENT SHOULD BE APPLIED AS NEEDED TO ACCOMPLISH CONTROL.

CERTIFICATION

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

INSPECTION CHECKLIST

INSPECTIONS SHALL BE MADE ONCE EVERY SEVEN (7) CALENDAR DAYS, PRIOR TO ANY FORECASTED RAIN EVENT OF 0.25 INCHES OR GREATER, AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN ONE-HALF INCH OF RAIN PER 24 HOUR PERIOD

DATE	INSPECTOR	WEATHER CONDITIONS	RAINFALL AMOUNT	SEDIMENT DISCHARGE	DISCHARGE LOCATION	BMPS FAILED	ADDITIONAL BMPS NEEDED	CORRECTION MADE

GENERAL NOTES

NO.	REVISION/ISSUE	DATE

PERMIT SET

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800-940-4025 | EnviroScienceInc.com

TINKER'S CREEK WATERSHED PARTNERS
10075 RAVENNA RD
TWINSBURG, OH 44087

DARROW RD. PARK STREAM RESTORATION

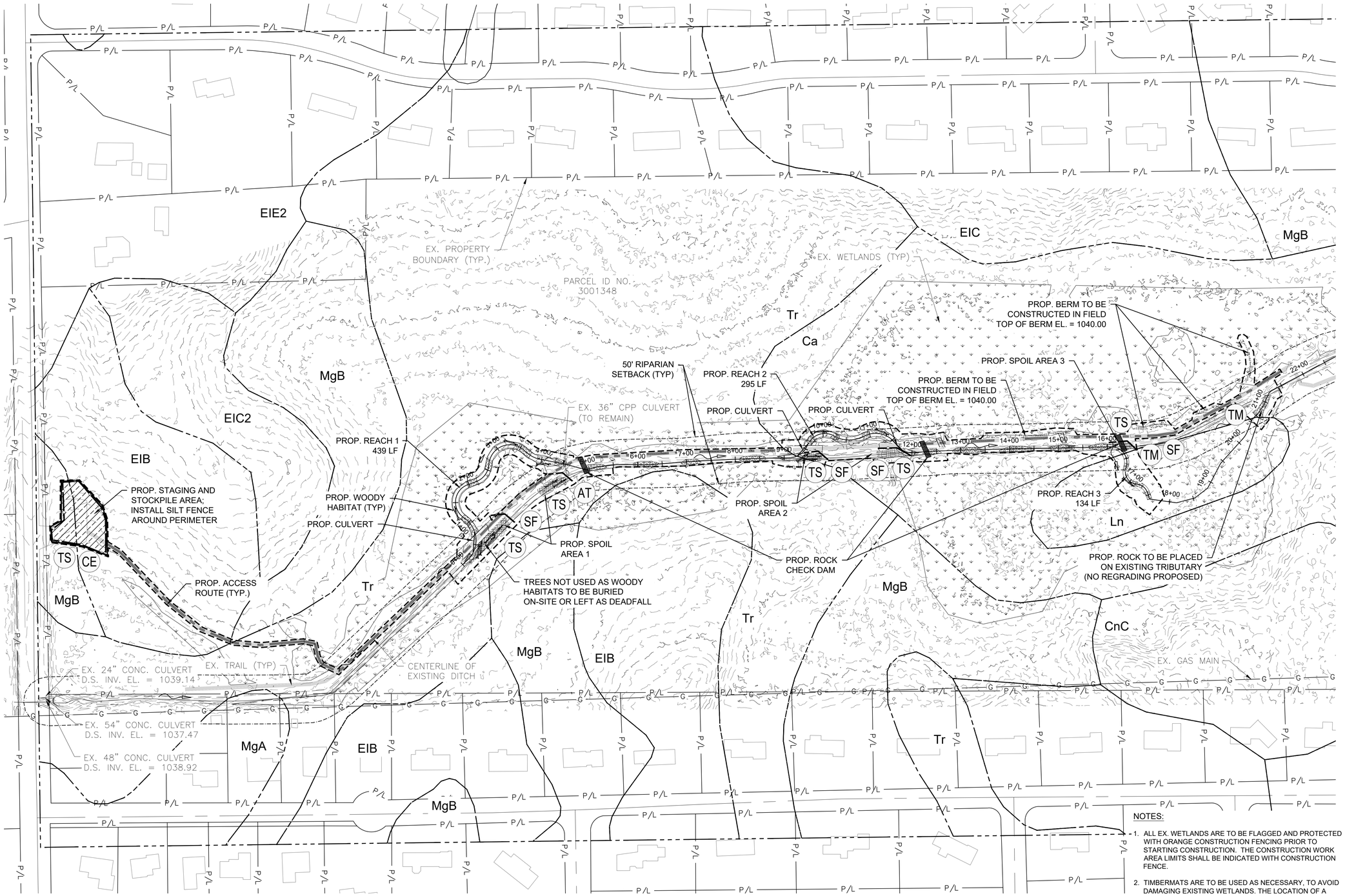
SWPPP
GENERAL NOTES

DESIGNED BY: JB
DRAWN BY: BM
CHECKED BY: AH

DATE: DECEMBER 2024

VERT. SCALE: NA
HORZ. SCALE: NA

SHEET: SW-01
16 / 19



NOTES:

1. ALL EX. WETLANDS ARE TO BE FLAGGED AND PROTECTED WITH ORANGE CONSTRUCTION FENCING PRIOR TO STARTING CONSTRUCTION. THE CONSTRUCTION WORK AREA LIMITS SHALL BE INDICATED WITH CONSTRUCTION FENCE.
2. TIMBERMATS ARE TO BE USED AS NECESSARY, TO AVOID DAMAGING EXISTING WETLANDS. THE LOCATION OF A TIMBERMAT CROSSING WILL BE DETERMINED IN THE FIELD, IF NECESSARY FOR CONSTRUCTION.
3. ALL DISTURBED / GRADED AREAS REQUIRE SEED AND STRAW TO PREVENT EROSION. SEE PLANTING PLAN FOR SEED MIXES AND LOCATIONS.

GENERAL NOTES

LEGEND

- P/L — PROPERTY LINE
- 960 — EX. CONTOURS
- PROP. STAGING AREA
- PROP. SPOIL AREA/ CHANNEL PLUG
- PROP. RIFFLE
- EX. WETLAND
- PROP. LIMITS OF DISTURBANCE
- PROP. SITE ACCESS
- EX. TRAIL
- PROP. SILT FENCE
- RIPARIAN SETBACK
- EuA — SOIL IDENTIFIER / BOUNDARY
- TS — PROP. TEMPORARY SEEDING
- CE — PROP. CONSTRUCTION ENTRANCE
- SF — PROP. SILT FENCE
- TM — PROP. TIMBER MAT
- AT — PROP. AIRBRIDGE TIMBERMET EQUIPMENT CROSSING

0 100 200
GRAPHIC SCALE IN FEET

NO.	REVISION/ISSUE	DATE

PERMIT SET

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TINKER'S CREEK WATERSHED PARTNERS
10075 RAVENNA RD
TWINSBURG, OH 44087

DARROW RD. PARK STREAM RESTORATION

SWPPP

DESIGNED BY:	JB
DRAWN BY:	BM
CHECKED BY:	AH
DATE:	DECEMBER 2024
VERT. SCALE:	NA
HORZ. SCALE:	1" = 100'

SHEET: SW-02
17 / 19

SPECIFICATIONS FOR SILT FENCE

1. SILT FENCE SHALL BE CONSTRUCTED BEFORE UPSLOPE LAND DISTURBANCE BEGINS.
2. ALL SILT FENCE SHALL BE PLACED AS CLOSE TOTHE CONTOUR AS POSSIBLE SO THAT WATER WILL NOT CONCENTRATE AT LOW POINTS IN THE FENCE AND SO THAT SMALL SWALES OR DEPRESSIONS THAT 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 WILL 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. A MINIMUM OF 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 SECTIONS OF SILT FENCE SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST WITH A MINIMUM OF 6-IN. 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 OVER-TOPS THE SILT FENCE, FLOWS UNDER THE FABRIC OR AROUND THE FENCE ENDS, OR IN ANY OTHER WAY ALLOWS 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.
11. SEDIMENT DEPOSITS SHALL BE ROUTINELY REMOVED WHEN THE DEPOSIT REACHES APPROXIMATELY ONE-HALF OF THE HEIGHT OF THE SILT FENCE. SILT FENCES 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

FENCE POST - THE LENGTH SHALL BE A MINIMUM OF 32 INCHES. WOOD POSTS WILL BE 2-BY-2-IN. 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 10FT. POSTS SHALL BE DRIVEN A MINIMUM 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.

SILT FENCE FABRIC CHART

TABLE 6.3.2 MINIMUM CRITERIA FOR SILT FENCE FABRIC (ODOT, 2002)

[redacted]

SILT FENCE AND DIVERSIONS:

SHEET FLOW RUNOFF FROM DENUDED AREAS SHALL BE INTERCEPTED BY SILT FENCE OR DIVERSIONS TO PROTECT ADJACENT PROPERTIES, WATER RESOURCES, AND WETLANDS FROM SEDIMENT TRANSPORTED VIA SHEET FLOW. WHERE INTENDED TO PROVIDE SEDIMENT CONTROL, SILT FENCE SHALL BE PLACED ON A LEVEL CONTOUR AND SHALL BE CAPABLE OF TEMPORARILY PONDING RUNOFF. THE RELATIONSHIP BETWEEN THE MAXIMUM DRAINAGE AREA TO SILT FENCE FOR A PARTICULAR SLOPE RANGE IS SHOWN IN TABLE 3 BELOW. STORM WATER DIVERSION PRACTICES SHALL BE USED TO KEEP RUNOFF AWAY FROM DISTURBED AREAS AND SLEEP SLOPES. SUCH DEVICES, WHICH INCLUDE SWALES, DIKES OR BERMS, MAY RECEIVE STORM WATER RUNOFF FROM AREAS UP TO 10 ACRES. PLACING SILT FENCE IN PARALLEL DOES NOT EXTEND THE PERMISSIBLE DRAINAGE AREA WHICH IS SERVED BY THE SILT FENCE.

MAXIMUM DRAINAGE AREA TO SILT FENCE

TABLE 3

[redacted]

SALVAGING AND STOCKPILING

1. DETERMINE THE DEPTH AND SUITABILITY OF TOPSOIL AT THE SITE. REFER TO THE COUNTY SOIL SURVEY REPORT OF CONTACT LOCAL SWCD.
2. PRIOR TO STRIPPING TOPSOIL, INSTALL APPROPRIATE DOWNSLOPE EROSION AND SEDIMENTATION CONTROLS SUCH AS SEDIMENT TRAPS AND BASINS.
3. REMOVE THE SOIL MATERIAL NO DEEPER THAN WHAT THE COUNTY SOIL SURVEY DESCRIBES AS 'SURFACE SOIL' (ie. A OR AP HORIZON)
4. CONSTRUCT STOCKPILES IN ACCESSIBLE LOCATIONS THAT DO NOT INTERFERE WITH NATURAL DRAINAGE. INSTALL APPROPRIATE SEDIMENT CONTROLS TO TRAP SEDIMENT SUCH AS SILT FENCE IMMEDIATELY ADJACENT TO THE STOCKPILE OR SEDIMENT TRAPS OR BASINS DOWNSTREAM OF THE STOCKPILE. STOCKPILE SIDE SLOPES SHALL NOT EXCEED A RATION OF 2:1.
5. IF TOPSOIL IS STORED FOR MORE THAN 14 DAYS, IT SHOULD BE TEMPORARY SEEDED, OR COVERED WITH A TARP.

SPREADING THE TOPSOIL

1. PRIOR TO APPLYING TOPSOIL, THE TOPSOIL SHOULD BE PULVERIZED.
2. TO ENSURE BONDING, GRADE THE SUBSOIL AND ROUGHEN THE TOP 3-4 INCHES BY DISKING.
3. DO NOT APPLY WHEN SITE IS WET, MUDDY, OR FROZEN, BECAUSE IT MAKES SPREADING DIFFICULT, CAUSES COMPACTION PROBLEMS, AND INHIBITS BONDING WITH SUBSOIL.
4. APPLY TOPSOIL EVENLY TO A DEPTH OF AT LEAST 4 INCHES AND COMPACT SLIGHTLY TO IMPROVE CONTACT AND SUBSOIL.
5. AFTER SPREADING, GRADE AND STABILIZE WITH SEEDING OR APPROPRIATE VEGETATION.

TP **TOPSOILING**
NOT TO SCALE

TEMPORARY SEEDING

1. STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS AND SEDIMENT TRAPS SHALL BE INSTALLED AND STABILIZED WITH TEMPORARY SEEDING PRIOR TO GRADING THE REST OF THE CONSTRUCTION-SITE.
2. TEMPORARY SEED SHALL BE APPLIED BETWEEN CONSTRUCTION OPERATIONS ON SOIL THAT WILL NOT BE GRADED OR REWORKED FOR 14 DAYS OR GREATER. THESE IDLE AREAS SHALL BE SEEDED WITHIN 7 DAYS AFTER GRADING. SEVERAL APPLICATIONS OF TEMPORARY SEEDING ARE NECESSARY ON TYPICAL CONSTRUCTION PROJECTS.
3. THE SEEDBED SHALL BE PULVERIZED AND LOOSE TO ENSURE THE SUCCESS OF ESTABLISHING VEGETATION. TEMPORARY SEEDING SHALL NOT BE POSTPONED IF IDEAL SEEDBED PREPARATION IS NOT POSSIBLE.
4. SOIL AMENDMENTS--APPLICATIONS OF TEMPORARY VEGETATION SHALL ESTABLISH ADEQUATE STANDS OF VEGETATION WHICH MAY REQUIRE THE USE OF SOIL AMENDMENTS. SOIL TESTS SHOULD BE TAKEN ON THE SITE TO PREDICT THE NEED FOR LIME AND FERTILIZER. BASE RATES FOR LIME AND FERTILIZER SHALL BE USED.
5. SEEDING METHOD--SEED SHALL BE APPLIED UNIFORMLY WITH A CYCLONE SPREADER, DRILL, CULTIPACKER SEEDER, OR HYDROSEEDER. WHEN FEASIBLE, SEED THAT HAS BEEN BROADCAST SHALL BE COVERED BY RAKING OR DRAGGING AND THEN LIGHTLY TAMPED INTO PLACE USING A ROLLER OR CULTIPACKER. IF HYDROSEEDING IS USED, THE SEED AND FERTILIZER WILL BE MIXED ON-SITE AND THE SEEDING SHALL BE DONE IMMEDIATELY AND WITHOUT INTERRUPTION.

MULCHING TEMPORARY SEEDING:

1. APPLICATIONS OF TEMPORARY SEEDING SHALL INCLUDE MULCH WHICH SHALL BE APPLIED DURING OR IMMEDIATELY AFTER SEEDING. SEEDINGS MADE DURING OPTIMUM SEEDING DATES ON FAVORABLE SOIL CONDITIONS AND ON VERY FLAT AREAS MAY NOT NEED MULCH TO ACHIEVE ADEQUATE STABILIZATION. FOLLOWING SEED APPLICATION TOPSOILS AND ALL SLOPES GREATER THAN 2:1 SHALL BE PROTECTED WITH SUITABLE FOR THE PROJECT, SEE GENERAL NOTES, SHEET 3.
2. MATERIALS:
   STRAW--IF STRAW IS USED, IT SHALL BE UNROTTED SMALL-GRAIN STRAW APPLIED AT 2 TONS/AC. OR 90 LB. / 1,000 SQ. FT. (TWO TO THREE BALES). THE MULCH SHALL BE SPREAD UNIFORMLY BY HAND OR MECHANICALLY SO THE SOIL SURFACE IS COVERED. FOR UNIFORM DISTRIBUTION OF HAND-SPREAD MULCH, DIVIDE AREA INTO APPROXIMATELY 1,000 SQ. FT. SECTIONS AND SPREAD TWO 45 LB. BALES OF STRAW IN EACH SECTION.

   HYDROSEEDERS--IF WOOD CELLULOSE FIBER IS USED, IT SHALL BE USED AT 2,000 LB. / AC. OR 46 LB. /1,000 SQ. FT.

   OTHER--OTHER ACCEPTABLE MULCHES INCLUDE MULCH MATTINGS APPLIED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS OR WOOD CHIPS APPLIED AT 6 TONS / AC.
3. STRAW MULCH SHALL BE ANCHORED IMMEDIATELY TO MINIMIZE LOSS BY WIND OR WATER. ANCHORING METHODS:

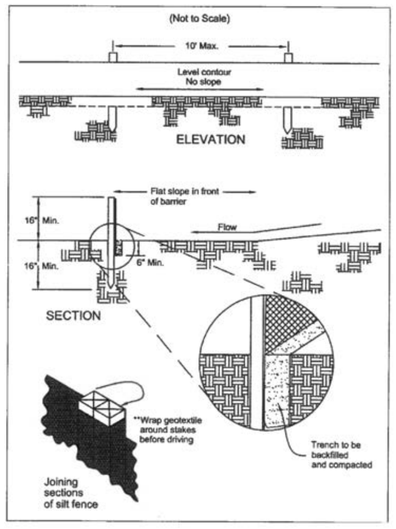
   MECHANICAL--A DISK, CRIMPER OR SIMILAR TYPE TOOL SHALL BE SET STRAIGHT TO PUNCH OR ANCHOR THE MULCH MATERIAL INTO THE SOIL. STRAW MECHANICAL ANCHORED SHALL NOT BE FINELY CHOPPED BUT, GENERALLY BE LEFT LONGER THAN 6 IN.

   MULCH NETTINGS--NETTINGS SHALL BE USE ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. NETTING MAY BE NECESSARY TO HOLD MULCH IN PLACE IN AREAS OF CONCENTRATED RUNOFF AND ON CRITICAL SLOPES. NETTING SHALL BE BIODEGRADABLE JUTE, NO PLASTIC. SEE SPECIFICATION FOR EROSION FABRIC ON SHEET 3, AND DETAILS FOR INSTALLATION LOCATION ON STANDARD DETAIL SHEETS.

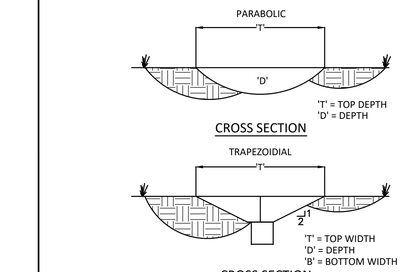
   SYNTHETIC BINDERS--SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRI-TAC), DCA-70, PETROSET, TERRA-TACK OR EQUAL MAY BE USED AT RATES RECOMMENDED BY THE MANUFACTURER.

   WOOD-CELLULOSE FIBER--WOOD-CELLULOSE FIBER BINDER SHALL BE APPLIED AT A NET DRY WEIGHT OF 750 LB. /AC. THE WOOD-CELLULOSE FIBER SHALL BE MIXED WITH WATER AND THE MIXTURE SHALL CONTAIN A MAXIMUM OF 50 LB. / 100 GAL.

TS **TEMPORARY SEEDING**
NOT TO SCALE



SF **SILT FENCE**
NOT TO SCALE



CROSS SECTION

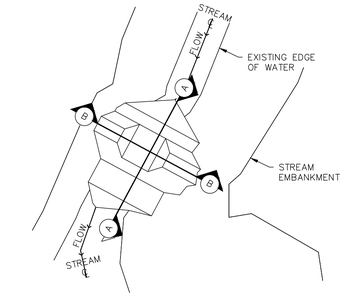
CROSS SECTION

1. ALL TREES, BRUSH, STUMPS, AND OTHER UNSUITABLE MATERIAL SHALL BE REMOVED FROM THE SITE
2. THE CHANNEL SHALL BE EXCAVATED AND SHAPED TO THE PROPER GRADE AND CROSS SECTION
3. FILL MATERIAL USED IN THE CONSTRUCTION OF THE CHANNEL SHALL BE WELL COMPACTED IN UNIFORM LAYERS NOT EXCEEDING 9 INCHES USING THE WHEEL TREADS OR TRACKS OF THE CONSTRUCTION EQUIPMENT TO PREVENT UNEQUAL SETTLEMENT.
4. EXCESS EARTH SHALL BE GRADED OR DISPOSED OF SO THAT IT WILL NOT RESTRICT FLOW TO THE CHANNEL OR INTERFERE WITH ITS FUNCTIONING.
5. STABILIZATION SHALL BE DONE ACCORDING TO THE APPROPRIATE SPECIFICATIONS FOR PERMANENT SEEDING, VEGETATIVE PRACTICES, SODDING AND MATTING.
6. CONSTRUCTION SHALL BE SEQUENCED SO THAT NEWLY CONSTRUCTED CHANNELS ARE STABILIZED PRIOR TO BECOMING OPERATIONAL. TO AID IN THE ESTABLISHMENT OF VEGETATION, SURFACE WATER MAY BE PREVENTED FROM ENTERING THE NEWLY CONSTRUCT CHANNEL THROUGH THE ESTABLISHMENT PERIOD.
7. GULLIES THAT MAY FORM IN THE CHANNEL OR OTHER EROSION DAMAGE THAT OCCURS BEFORE THE GRASS LINING BECOMES ESTABLISHED SHALL BE REPAIRED WITHOUT DELAY.

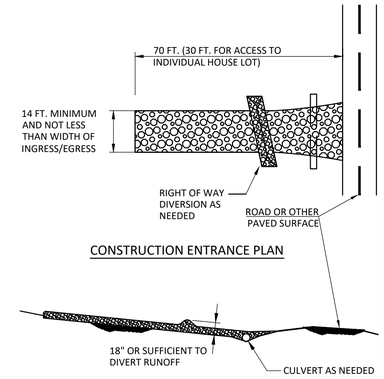
GS **GRASS SWALE DETAIL**
NOT TO SCALE

NOTES:

1. THE CHECK DAM SHALL BE CONSTRUCTED OF 4-8 INCH DIAMETER OR ODOT TYPE D 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 SUITABLE FILTER FABRIC.
2. THE UPSTREAM SIDE OF THE CHECK DAM SHALL HAVE A LAYER OF ODOT #57 AGGREGATE.
3. SEDIMENT SHALL BE REMOVED FROM BEHIND THE DAM WHEN IT REACHES ½ THE HEIGHT OF THE CHECK DAM.
4. MAXIMUM HEIGHT OF CHECK DAM SHALL NOT EXCEED 3.0 FEET.
5. THE MIDPOINT OF THE ROCK CHECK DAM SHALL BE A MINIMUM OF 6 INCHES LOWER THAN THE SIDES IN ORDER TO DIRECT FLOW ACROSS THE CENTER AND AWAY FROM THE CHANNEL SIDES.
6. THE BASE OF THE CHECK DAM SHALL BE ENTRENCHED APPROXIMATELY 6 INCHES WHEN FEASIBLE.
7. 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 IN. THICK AND ITS LENGTH TWO TIMES THE HEIGHT OF THE DAM.
8. 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.
9. SIDE SLOPES SHALL BE A MINIMUM OF 2:1.



CD **TEMPORARY ROCK SILT DAM**
NOT TO SCALE



CONSTRUCTION ENTRANCE PLAN

CONSTRUCTION ENTRANCE PROFILE
NOT TO SCALE

1. STONE SIZE--ODOT #2 (1.5 - 2.5 INCH) STONE SHALL BE USED, OR RECYCLED CONCRETE PAVEMENT.
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 LOT).
3. THICKNESS--THE STONE LAYER SHALL BE AT LEAST 6-IN. THICK FOR LIGHT DUTY ENTRANCES OR AT LEAST 10-IN. FOR HEAVY DUTY USE.
4. WIDTH--THE ENTRANCE SHALL BE AT LEAST 14-FT. WIDE, BUT 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:

GEOTEXTILE SPEC. 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 < 0.60 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 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.
9. MAINTENANCE--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 CHECK BY SEDIMENT CONTROLS, SHALL BE REMOVED IMMEDIATELY. REMOVAL SHALL BE ACCOMPLISHED BY SCRAPING OR SWEEPING.
10. 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.
11. REMOVAL--THE ENTRANCE SHALL REMAIN IN PLACE UNTIL THE DISTURBED AREA IS STABILIZED OR REPLACED WITH A PERMANENT ROADWAY OR ENTRANCE.

CE **CONSTRUCTION ENTRANCE**
NOT TO SCALE

GENERAL NOTES

NO.	REVISION/ISSUE	DATE

PERMIT SET

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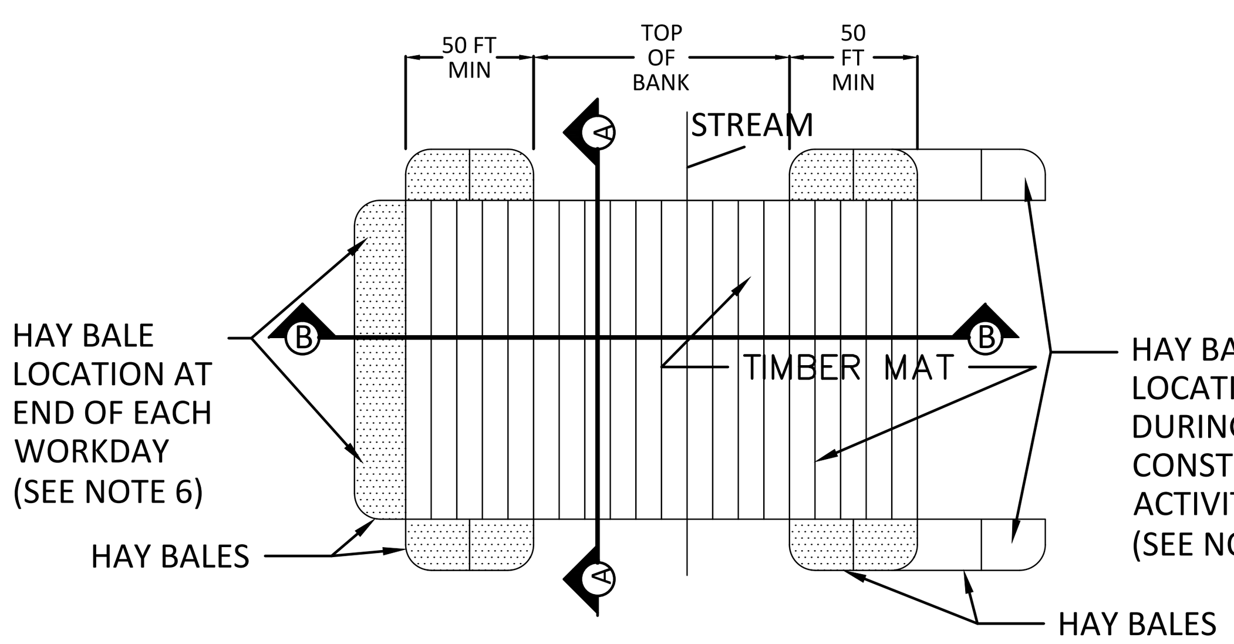
TINKER'S CREEK WATERSHED PARTNERS
10075 RAVENNA RD
TWINSBURG, OH 44087

DARROW RD. PARK STREAM RESTORATION

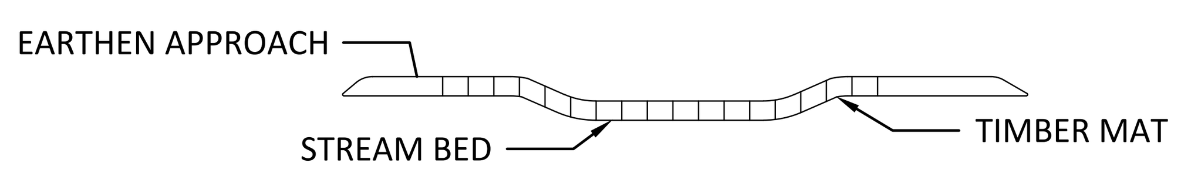
SWPPP DETAILS

DESIGNED BY:	JB
DRAWN BY:	BM
CHECKED BY:	AH
DATE:	DECEMBER 2024
VERT. SCALE:	NA
HORZ. SCALE:	NA

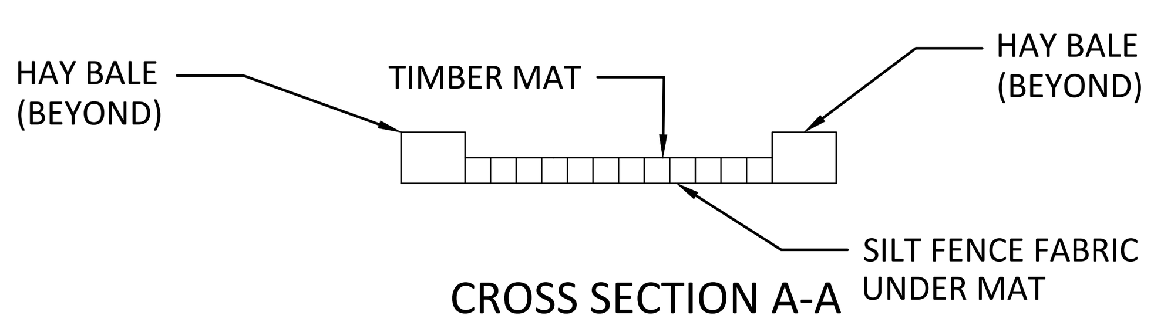
SHEET: SW-03
18 / 19



PLAN VIEW



CROSS SECTION B-B



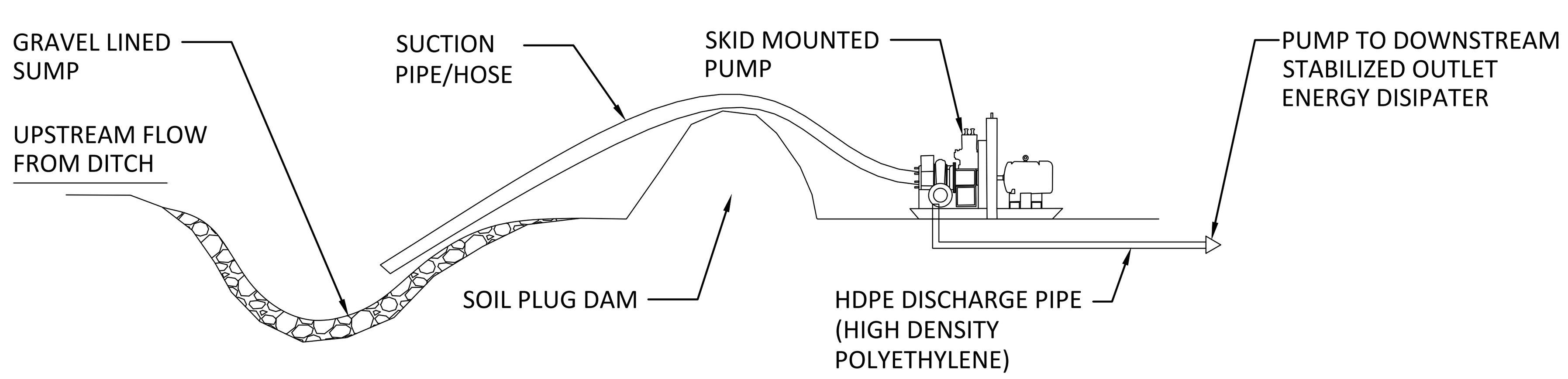
CROSS SECTION A-A

THIS TYPE OF CROSSING IS GENERALLY USED FOR SMALL STREAM CROSSINGS LESS THAN 30 FEET IN WIDTH AND A PROPER STREAM BANK CONFIGURATION

1. EXTEND TIMBER MAT 50 FEET, FROM TOP OF BANK, ON BOTH SIDES OF STREAM CROSSING IN ORDER TO MINIMIZE DISTURBANCE OF STREAM BANKS AND RIPARIAN AREAS.
2. TIMBER MAT WILL BE TEMPORARILY REMOVED IF HIGH WATER RENDERS IT UNSAFE FOR CROSSING.
3. TIMBER MAT IS TO REMAIN IN PLACE UNTIL COMPLETION OF FINAL RESTORATION.
4. A SKIRT FORMED OF SILT FENCE, GEOTEXTILE FABRIC, OR EQUIVALENT SHALL BE PLACED ON THE BOTTOM OF THE BRIDGE TO TRAP SEDIMENT AS NECESSARY.
5. INDIVIDUAL MATS SHALL BE ANCHORED AND BUTTED TIGHTLY TO MINIMIZE THE INTRODUCTION OF SEDIMENT TO THE WATERBODY.
6. HAY BALES WILL BE PLACED AT THE EDGE OF THE TIMBER MAT AT THE END OF EACH WORK DAY TO PREVENT EROSION, BUT WILL BE REMOVED DURING CONSTRUCTION ACTIVITY.
7. TEMPORARY STREAM CROSSING SHALL BE INSPECTED ON A DAILY BASIS.
8. DAMAGED CROSSING SHALL BE REPAIRED WITHIN 24 HOURS OF THE INSPECTION, AND BEFORE ANY SUBSEQUENT USE.
9. SEDIMENT DEPOSITS ON THE CROSSING OR ITS APPROACHES SHALL BE REMOVED WITHIN 24 HOURS OF INSPECTION.
10. ANCHOR TIMBER MAT TO A TREE, OR OTHER PERMANENT OBJECT WITH SUFFICIENT STRENGTH, USING STEEL CHAIN OR CABLE.

TM TIMBER MAT EQUIPMENT CROSSING OVER STREAM

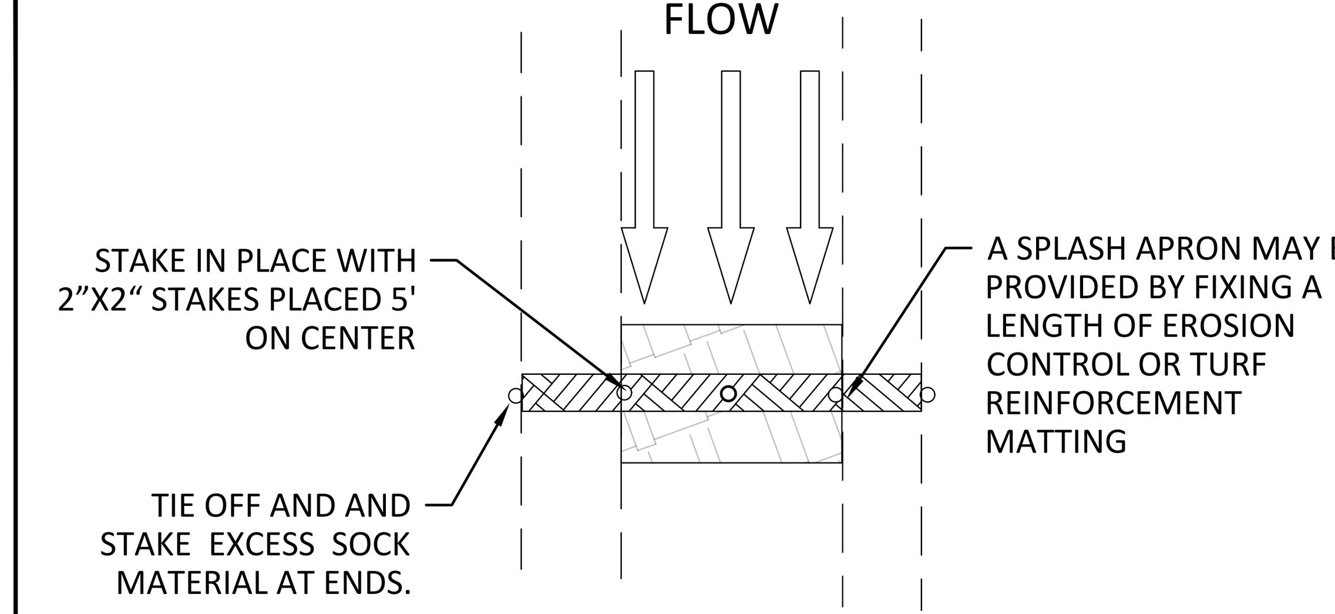
NOT TO SCALE

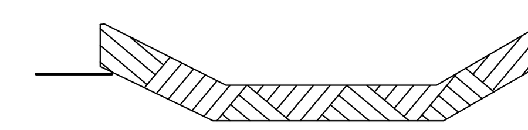


1. A DE-WATERING PLAN SHALL BE DEVELOPED PRIOR TO THE COMMENCEMENT OF ANY PUMPING ACTIVITIES.
2. THE DE-WATERING PLAN SHALL INCLUDE ALL PUMPS AND RELATED EQUIPMENT NECESSARY FOR THE DEWATERING ACTIVITIES AND DESIGNATE AREAS FOR PLACEMENT OF PRACTICES. OUTLETS FOR PRACTICES SHALL BE PROTECTED FROM SCOUR EITHER BY RIPRAP PROTECTION, FABRIC LINER, OR OTHER ACCEPTABLE METHOD OF OUTLET PROTECTION.
3. WATER THAT IS NOT DISCHARGED INTO A SETTLING/TREATMENTBASIN BUT DIRECTLY INTO WATERS OF THE STATE SHALL BE MONITORED HOURLY. DISCHARGED WATER SHALL BE WITHIN +/- 5° F OF THE RECEIVING WATERS.
4. SETTLING BASINS SHALL NOT BE GREATER THAN FOUR (4) FEET IN DEPTH. THE BASIN SHALL BE CONSTRUCTED FOR SEDIMENT STORAGE AS OUTLINED IN CHAPTER 6, SEDIMENT BASIN OR SEDIMENT TRAP. THE INLET AND OUTLET FOR THE BASIN SHALL BE LOCATED AT THE FURTHEST POINTS OF THE STORAGE. A FLOATING OUTLET SHALL BE USED TO ENSURE THAT SETTLED SOLIDS DO NOT RE-SUSPEND DURING THE DISCHARGE PROCESS. THE SETTLING BASIN SHALL BE CLEANED OUT WHEN THE STORAGE HAS BEEN REDUCED BY 50% OF ITS ORIGINAL CAPACITY.
5. ALL NECESSARY NATIONAL, STATE AND LOCAL PERMITS SHALL BE SECURED PRIOR TO DISCHARGING INTO WATERS OF THE STATE.

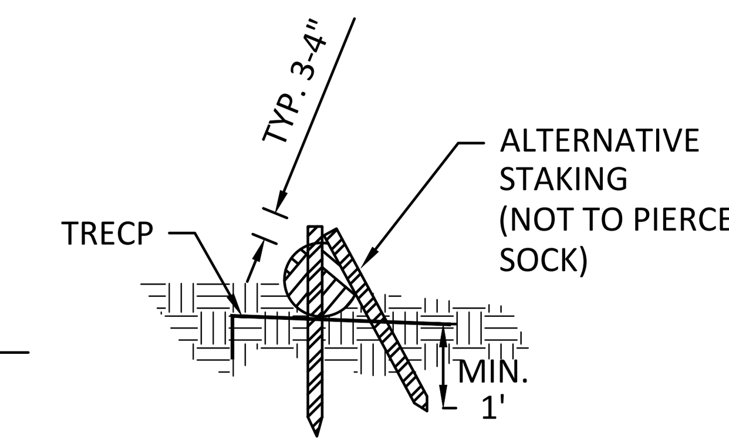
BP BY-PASS PUMPING/ STREAM FLOW DIVERSION DETAIL

NOT TO SCALE





PLAN VIEW

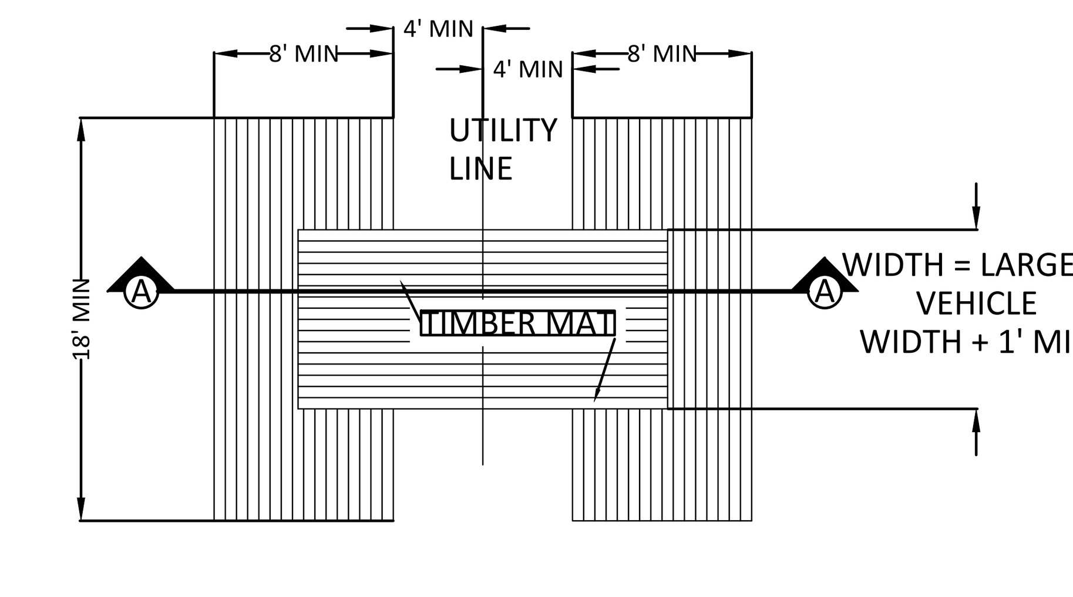


TYPICAL STAKE

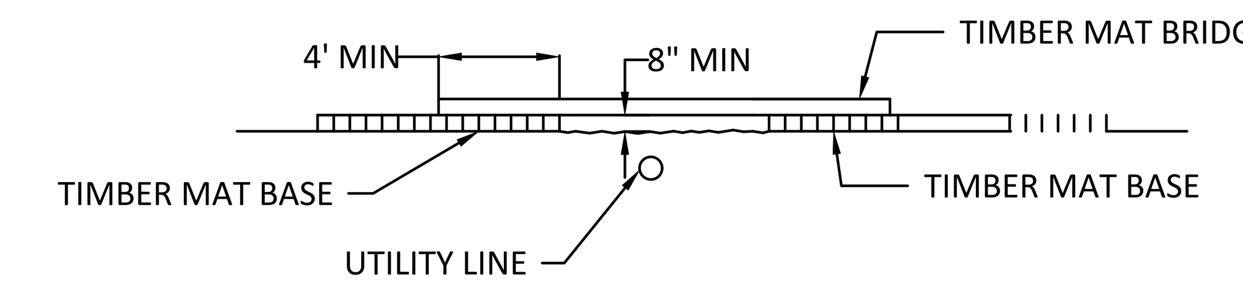
1. COMPOST SOCK NETTING SHALL USE A KNITTED MESH FABRIC WITH 1/8-3/8 INCH OPENINGS, AND COMPOST MEDIA WITH PARTICLE SIZES 99% < 3 INCHES, AND 60% > 3/8 INCHES (CONFORMING TO MEDIA DESCRIBED IN THE RWLDM, CHAPTER 6 FILTER SOCK).
2. COMPOST SOCK CHECK DAMS SHALL BE USED IN AREAS THAT DRAIN 5 ACRES OR LESS.
3. SEDIMENT SHALL BE REMOVED FROM BEHIND THE SOCK WHEN IT REACHES / THE HEIGHT OF THE CHECK DAM.
4. COMPOST SOCK CHECK DAMS SHALL BE CONSTRUCTED WITH 12, 18, OR 24 IN DIAMETER COMPOST SOCKS, AND SHALL COMPLETELY COVER THE WIDTH OF THE CHANNEL. THE MIDPOINT OF THE COMPOST SOCK CHECK DAM SHALL BE A MINIMUM OF 6 INCHES LOWER THAN THE SIDES IN ORDER TO DIRECT FLOW ACROSS THE CENTER AND AWAY FROM THE CHANNEL SIDES. FILTER SOCK CHECK DAMS SHALL BE FILLED TO A DENSITY SUCH THAT THEY SHALL REACH THEIR INTENDED HEIGHT (DIAMETER). AFTER INSTALLATION AND USE, THEY SHALL BE CONSIDERED UNSUITABLE AND IN NEED OF REPLACEMENT AFTER FALLING BELOW 80% OF THEIR MINIMUM REQUIRED HEIGHT (DIAMETER).
5. ALTHOUGH NO TRENCHING IS NECESSARY, COMPOST SOCK CHECK DAMS SHALL BE PLACED ON A GRADED SURFACE WHERE CONSISTENT CONTACT WITH THE SOIL SURFACE IS MADE WITHOUT BRIDGING OVER GAPS, RILLS, GULLIES, STONES OR OTHER IRREGULARITIES.
6. PLACE COMPOST SOCK CHECK DAMS SO THAT THE ENDS EXTEND TO THE TOP OF BANK. STAKING FOR COMPOST SOCK CHECK DAMS SHALL USE 2 INCH X 2 INCH WOODEN STAKES, PLACED 5 FOOT ON CENTER. STAKE LENGTH SHALL ALLOW THEM TO BE DRIVEN 12 INCHES INTO EXISTING SOIL AND ALLOW AT LEAST 2 INCHES ABOVE THE SOCK.
7. SPACE COMPOST SOCK CHECK DAMS SO THAT THE TOE OF THE UPSTREAM DAM IS AT THE SAME ELEVATION OR LOWER ELEVATION AS THE TOP OF THE DOWNSTREAM COMPOST SOCK CHECK DAM (AT THE CENTER OF THE CHANNEL). THIS WILL BE INFLUENCED BY THE HEIGHT OF THE SOCK AND GRADIENT OF THE WATERWAY.
8. A SPLASH APRON MAY BE NEEDED WHERE FLOWS OVER THE SOCK MAY ERODE THE CHANNEL AND UNDERCUT THE COMPOST SOCK CHECK DAM. CREATE THE APRON BY FIXING A LENGTH OF TEMPORARY ROLLED EROSION CONTROL PRODUCT (EROSION CONTROL MATTING) OR TURF REINFORCEMENT MATTING STARTING UPSTREAM OF THE SOCK A DISTANCE EQUAL TO THE SOCK HEIGHT AND EXTENDING A LENGTH TWO TIMES THE HEIGHT OF THE COMPOST SOCK CHECK DAM. SEE CHAPTER 7 FOR INFORMATION REGARDING THESE MATERIALS. MATERIALS USED SHOULD BE ABLE TO BE LEFT IN PLACE (E.G. BIODEDEGRADABLE/PHOTODEGRADABLE TRECP) WITHOUT CREATING PROBLEMS FOR FUTURE MOWING OR MAINTENANCE OF THE CHANNEL.

SD COMPOST SOCK CHECK DAM

NOT TO SCALE



PLAN VIEW



CROSS SECTION A-A

THIS TYPE OF CROSSING IS GENERALLY USED FOR UNDERGROUND UTILITY LINE CROSSINGS.

1. PLACE TIMBER MAT BASES 4 FEET MIN FROM UTILITY OR IRRIGATION LINE WITH AN 8 INCH MIN CLEARANCE FROM GROUND LEVEL OVER LINE.
2. TIMBER MAT BRIDGE SHALL BE PLACED WITH A 4 FEET MIN OVERLAP OF BASE TIMBER MATS.
3. TIMBER MAT IS TO REMAIN IN PLACE UNTIL COMPLETION OF FINAL RESTORATION.
4. INDIVIDUAL MATS SHALL BE ANCHORED AND BUTTED TIGHTLY TO MINIMIZE MOVEMENT OF MATS DURING EQUIPMENT CROSSINGS.
5. TEMPORARY CROSSINGS SHALL BE INSPECTED ON A DAILY BASIS.
6. DAMAGED CROSSINGS SHALL BE REPAIRED WITHIN 24 HOURS OF THE INSPECTION, AND BEFORE ANY SUBSEQUENT USE.

AT AIRBRIDGE TIMBERMAT EQUIPMENT CROSSING

NOT TO SCALE

TABLE 1: PERMANENT STABILIZATION

AREA REQUIRING PERMANENT STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS
ANY AREAS THAT WILL LIE DORMANT FOR ONE YEAR OR MORE	WITHIN SEVEN DAYS OF THE MOST RECENT DISTURBANCE
ANY AREAS WITHIN 50 FEET OF A SURFACE WATER OF THE STATE AND AT FINAL GRADE	WITHIN TWO DAYS OF REACHING FINAL GRADE
OTHER AREAS AT THE FINAL GRADE	WITHIN SEVEN DAYS OF REACHING FINAL GRADE WITHIN THAT AREA

TABLE 2: TEMPORARY STABILIZATION

AREA REQUIRING TEMPORARY STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS
ANY DISTURBED AREAS WITHIN 50 FEET OF A SURFACE WATER OF THE STATE AND NOT AT FINAL GRADE	WITHINTWO DAYS OF THE MOST RECENT DISTURBANCE IF THE AREA WILL REMAIN IDLE FOR MORE THAN 14 DAYS
ANY DISTURBED AREAS THAT WILL BE DORMANT FOR MORE THAN 14 DAYS BUT LESS THAN ONE YEAR, AND NOT WITHIN 50 FEET OF A SURFACE WATER OF THE STATE	WITHIN SEVEN DAYS OF THE MOST RECENT DISTURBANCE WITHIN THE AREA. FOR RESIDENTIAL SUBDIVISIONS, DISTURBED AREAS MUST BE STABILIZED AT LEAST SEVEN DAYS PRIOR TO TRANSFER OF PERMIT COVERAGE FOR THE INDIVIDUAL LOT(S).
DISTURBED AREAS THAT WILL BE IDLE OVER WINTER	WITHIN SEVEN DAYS OF REACHING FINAL GRADE WITHIN THAT AREA

GENERAL NOTES

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PERMIT SET

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DARROW RD. PARK STREAM RESTORATION

SWPPP DETAILS

DESIGNED BY: JB
DRAWN BY: BM
CHECKED BY: AH

DATE: DECEMBER 2024

VERT. SCALE: NA
HORZ. SCALE: NA

SHEET: SW-04