

Summit Metro Parks

CASCADE VALLEY METRO PARK VALLEY VIEW AREA PHASE 2 RESTORATION DESIGN

1212 CUYAHOGA STREET
AKRON, OHIO 44313

MARCH 2020

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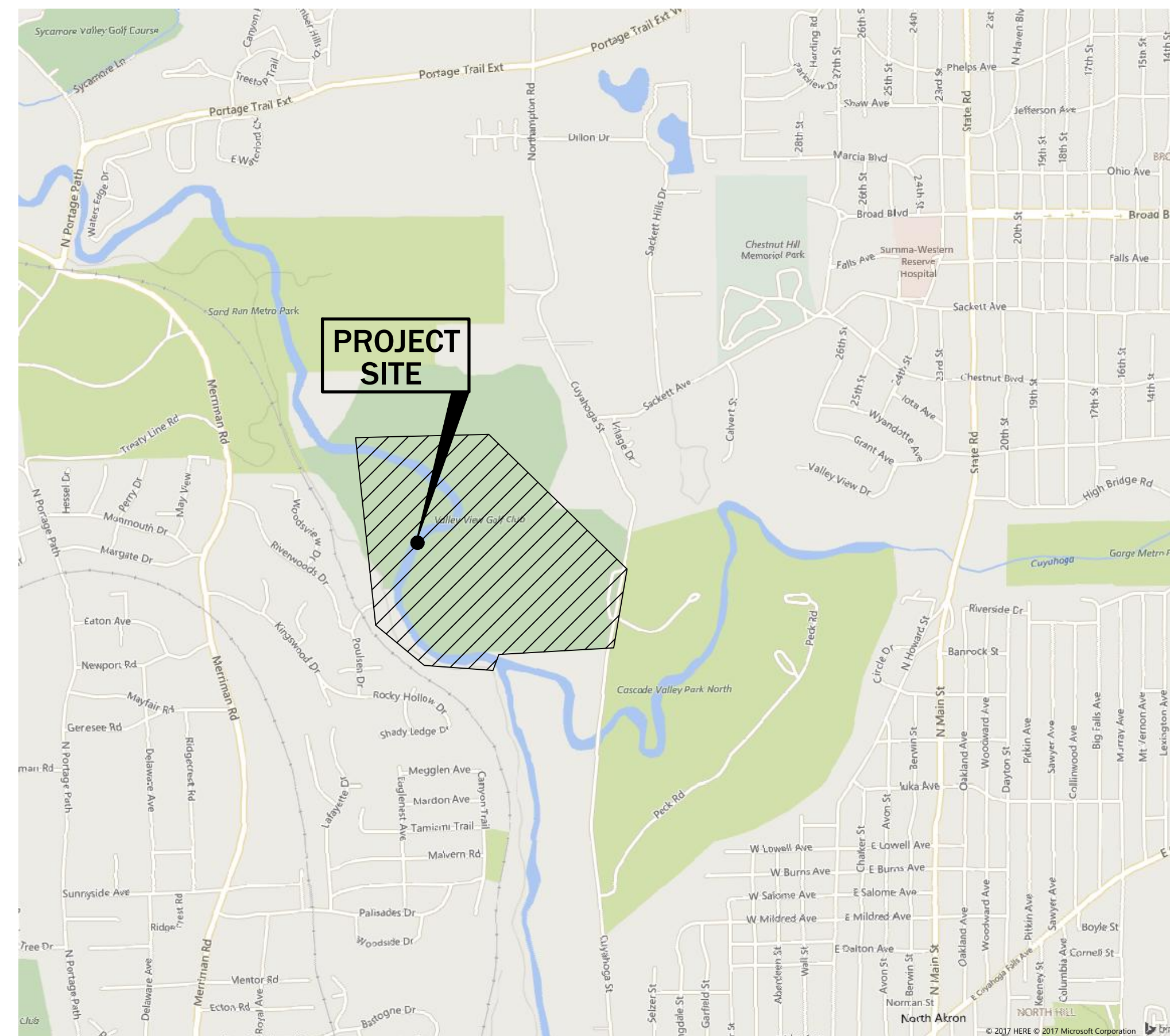
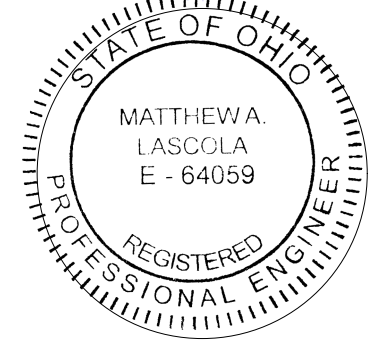
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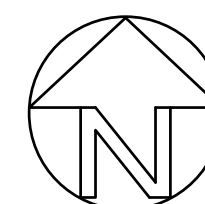
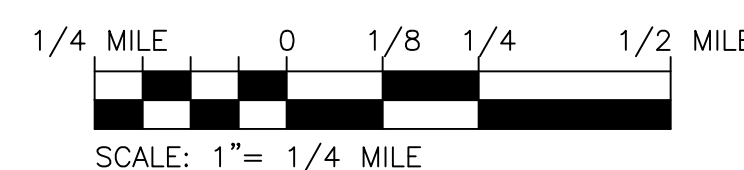
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LOCATION MAP



PROJECT DESCRIPTION:

PROPOSED WORK CONSISTS OF PROVIDING EARTHWORK NECESSARY TO CONSTRUCT FLOODPLAIN, WETLANDS, AND DRAINAGE IMPROVEMENTS. THE TOTAL PROJECT AREA DEFINED BY THE LIMITS OF DISTURBANCE IS APPROXIMATELY 57 ACRES.

ALL WORK AND MATERIALS SHALL COMPLY WITH THESE DRAWINGS AND BE SUPPLEMENTED BY THE ODOT 2016 CONSTRUCTION AND MATERIAL SPECIFICATIONS AND THE CITY OF AKRON AND SUMMIT COUNTY ENGINEER REQUIREMENTS AS APPLICABLE.

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SUPPLEMENTAL DRAWINGS:

- DOMINION ENERGY - CUYAHOGA RIVER DIRECTIONAL DRILL PLAN
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GENERAL NOTES CON'T

STREAM & WETLAND RESTORATION PROJECT DESCRIPTION

THE VALLEY VIEW PHASE 2 RESTORATION PROJECT IS LOCATED WITHIN THE VALLEY VIEW AREA OF SUMMIT METRO PARKS. THE SITE, WHICH WAS PREVIOUSLY VALLEY VIEW GOLF COURSE PRIOR TO BEING PURCHASED BY SUMMIT METRO PARKS, IS LOCATED ALONG THE CUYAHOGA RIVER, DOWNSTREAM OF ITS CONFLUENCE WITH THE LITTLE CUYAHOGA RIVER, BETWEEN THE OHIO & ERIE CANAL TOWPATH TRAIL AND CUYAHOGA STREET IN AKRON, OHIO. THE PROJECT OBJECTIVES INCLUDE:

- INCREASED RIVER CAPACITY AND FLOODPLAIN RESTORATION VIA REMOVAL OF BERMS AND EXCAVATION OF A NEW FLOODPLAIN ALONG AN APPROXIMATELY 5000 LF STRETCH OF THE CUYAHOGA RIVER MAINSTEM.
- INSTALLATION OF IN-STREAM HABITAT FEATURES INCLUDING WOODY AND ROCK STRUCTURES TO IMPROVE HABITAT AND SPAWNING CONDITIONS FOR FISH.
- REFORESTATION OF APPROXIMATELY 50 ACRES OF RESTORED FLOODPLAIN AND 5000 LINEAR FEET OF THE CUYAHOGA RIVER.

RESTORATION CONSTRUCTION GENERAL SEQUENCE

RESTORATION CONSTRUCTION WILL FOLLOW THE GENERAL SEQUENCE OF:

- SECURE NECESSARY PERMITS
- MOBILIZE;
- INSTALL EROSION AND SEDIMENT CONTROLS;
- CONSTRUCT TEMPORARY ACCESS ROADS AND STAGING AREAS; INSTALL PERIMETER SEDIMENT CONTROLS AROUND STAGING AREA;
- TREE AND VEGETATION CLEARING AND GRUBBING; VEGETATION WILL BE CLEARED DURING APPROPRIATE TIMEFRAME FROM OCTOBER 1ST TO MARCH 31ST;
- SITE LAYOUT;
- INITIATE WATER CONTROL PROCEDURES AS NECESSARY; ANY DEWATERING REQUIRED MUST BE COMPLETED IN ACCORDANCE WITH OEPA GUIDELINES FOR CONSTRUCTION STORMWATER DISCHARGE;
- STRIP AND STOCKPILE TOPSOIL TO AREAS DESIGNATED ON PLAN ONLY
- INSTALL EROSION AND SEDIMENT CONTROLS AS AREAS BECOME DISTURBED;
- BEGIN EARTHMOVING CUT AND FILL ACTIVITIES ON WETLAND AND FLOODPLAIN AREAS TO ACHIEVE SUBGRADE;
- IMPORT ROCK MATERIAL AND INSTALLATION TO ACHIEVE FINISH GRADES;
- INCORPORATE WOODY AND BOULDER HABITATS, BRUSH LAYERING, STANDING DEADWOOD, ETC. INTO PROJECT COMPONENTS;
- PLACE AND RESPREAD TOPSOIL TO FINISH GRADE;
- CONDUCT MILESTONE WALK THROUGH (SEE NOTE THIS SHEET);
- SEED (TEMPORARY AND FINAL), STABILIZE, AND INSTALL EROSION CONTROL FABRIC AND SWPPP BMP'S AS AREAS REACH FINAL GRADE OR REMAIN UNWORKED;
- INSTALL PLANTINGS AT APPROPRIATE SEASONAL TIMEFRAME;
- REMOVE TEMPORARY EROSION AND SEDIMENT CONTROLS ONCE 70% STABILIZATION OF DISTURBED AREAS HAS BEEN ACHIEVED;
- DEMOBILIZE FOLLOWING SITE APPROVAL BY METRO PARKS

PERMITS

THE FOLLOWING PERMITS APPLY TO THIS PROJECT:

- OHIO EPA NPDES CONSTRUCTION GENERAL PERMIT, NO. 3GC09618*AG.
- FLOODPLAIN PERMIT, CITY OF AKRON
- NATIONWIDE PERMIT (NWP) 27, U.S. ARMY CORPS OF ENGINEERS (USACE).
- USFWS INCIDENTAL TAKE PERMIT, #MB70957D (REFER TO SUPPLEMENTAL DRAWING FOR REQUIREMENTS).

QUALITY ASSURANCE AND QUALITY CONTROL

FIELD OBSERVATION/CONSTRUCTION OVERSIGHT WILL BE CONDUCTED BY SUMMIT METRO PARKS CONSTRUCTION REPRESENTATIVE. A SUMMIT METRO PARKS EMPLOYEE OR ITS DESIGNATED REPRESENTATIVE SHALL BE CONSULTED WITH PRIOR TO THE CONSTRUCTION AND PLACEMENT OF RESTORATION FEATURES. CONTRACTOR SHALL COORDINATE WITH THE CONSTRUCTION REPRESENTATIVE FOR EVALUATION OF GRADING, ANY TEMPORARY STREAM CROSSINGS, SUBGRADES, SUBSTRATES INCLUDING BANK RUN, GRAVELS, COBBLES AND BOULDERS, AND ANY BOULDER AND WOODY 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. THE CONTRACTOR SHALL REPLACE DESTROYED OR DAMAGED MONUMENTS AND SHALL FURNISH A CERTIFICATION BY A REGISTERED SURVEYOR THAT THE MONUMENTS HAVE BEEN RESTORED.

ALL MATERIALS MUST COMPLY WITH THE SPECIFICATIONS ON THE PLANS. MATERIALS THAT DO NOT MEET THE SPECIFICATIONS SHOWN ON THE PLANS SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR AT NO COST TO METRO PARKS. SHOP DRAWINGS, TICKETS, PACKING SLIPS AND OTHER INFORMATION SHALL BE SUBMITTED TO METRO PARKS FOR REVIEW.

WATER MANAGEMENT

THE CONTINUATION OF STREAM FLOW FROM UPSTREAM TO DOWNSTREAM BEYOND THE PROJECT LIMITS 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 NOT EXPECTED TO BE NECESSARY. IF NECESSARY FOR CULVERT INSTALLATION AT EXISTING FORD (SEE SHEETS 30-31), BYPASS PUMPING IS PERMITTED AS LONG AS PROPER EROSION AND SEDIMENT CONTROL BMP'S ARE FOLLOWED, MAINTAIN FLOW THROUGH EXISTING DRAINAGE INFRASTRUCTURE UNTIL RESTORATION IS COMPLETE. AN ALLOWANCE WILL BE PROVIDED FOR BYPASS PUMPING IF DEEMED NECESSARY BY THE CONTRACTOR, CONSTRUCTION REPRESENTATIVE, AND OWNER.

DRAINAGE INFRASTRUCTURE SHALL BE REMOVED OR DISABLED ACCORDING TO DEMOLITION PLAN UPON COMPLETION OF STREAMBANK, FLOODPLAIN, AND WETLAND RESTORATION.

IN RIVER WORK, SUCH AS BANK STABILIZATION ROCK INSTALLATION SHALL ATTEMPT TO MINIMIZE WORKING IN FLOWING WATER BY OFFERING OR DIVERSION OF WATER AWAY FROM THE ACTIVE WORK AREA AS MUCH AS POSSIBLE. IN RIVER WORK ASSOCIATED WITH BOULDER AND WOODY HABITAT PLACEMENT, THESE MEASURES ARE NOT NECESSARY.

FLOODPLAIN SUBGRADE

THIS WORK SHALL INCLUDE ALL LABOR, MATERIAL, AND EQUIPMENT NECESSARY TO PRODUCE FLOODPLAIN GRADES AS DETAILED IN THE PLANS. THIS SHALL INCLUDE EARTHWORK CONSTRUCTION WITHIN THE NEW FLOODPLAIN CORRIDOR PER GRADING PLAN, AND CROSS-SECTIONS. FLOODPLAIN GRADING SHALL BE PERFORMED TO ESTABLISH STABLE EARTHEN BANK ALONG THE EXISTING STREAM 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 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 FLOODPLAIN CONSTRUCTION SHOWN ON PLAN, PROFILE AND CROSS-SECTIONS. OVERCOMPACTION IS NOT DESIRABLE BECAUSE IT WILL LIMIT PLANT GROWTH AND ROOT DEVELOPMENT. IF SUBGRADES IN FLOODPLAIN AREAS ARE DEEMED TO BE OVERCOMPACTED BY CONSTRUCTION REPRESENTATIVE, THEN AREA SHALL BE SCORED BY MECHANICAL MEANS USING EXCAVATOR, DOZER OR SKID STEER TO LOOSEN SOIL PRIOR TO APPLICATION OF TOPSOIL TO ACHIEVE FINISH GRADE. THIS INCLUDES ALL HAUL ROADS THAT ARE WITHIN THE RESTORATION AREA.

THE CONTRACTOR SHALL LEAVE EXISTING BANK VEGETATION UNDISTURBED TO THE MAXIMUM EXTENT POSSIBLE. IF BANKS ARE DISTURBED TO ACCESS STREAM FOR WOODY OR BOULDER HABITAT INSTALLATIONS, THE CONTRACTOR SHALL REGRADE THE BANKS TO ITS PREVIOUS EXISTING CONDITION (INCLUDING DE-COMPACTION), REPLACE VEGETATION AND PROTECT WITH EROSION FABRIC.

TIER 1 FLOODPLAIN

TIER 1 FLOODPLAIN IS DEFINED AS THE LOWEST TIER FLOODPLAIN. THIS AREA IS FREQUENTLY FLOODED BY 1.1-1.5 YR MAGNITUDE STORMS. SAND DEPOSITION AND DEEP FLOODWATERS ARE ANTICIPATED OVER THESE AREAS. PROTECTION OF WORK FOR BOTH SUBGRADE AND FINISH GRADES ARE REQUIRED. SEE STANDARD DETAIL SHEETS FOR INSTALLATION LOCATIONS OF EROSION FABRIC, THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY LOSS OF SOIL PRIOR TO SWPPP APPROVED STABILIZATION. AREA SHALL BE SEED WITH BOTH ANNUAL COVER CROP OF OATS AND NATIVE FLOODPLAIN / RIPARIAN SEED MIX. TOPSOIL WILL BE REPLACED IN TIER 1 FLOODPLAIN AREAS AT A MINIMUM DEPTH OF 5-IN.

TIER 2 FLOODPLAIN

TIER 2 FLOODPLAIN IS DEFINED AS A FLOODPLAIN AT A HIGHER ELEVATION THAN TIER 1, TYPICALLY 1.5-2.0FT HIGHER IN ELEVATION. THIS AREA WILL BE FLOODED BUT NOT AS FREQUENTLY AS TIER 1. THIS ELEVATION IS ASSOCIATED WITH ~1.5 - 2YR OR GREATER MAGNITUDE STORMS. TO PROMOTE WOODY TREE RECRUITMENT AND LIMIT COMPETITION FROM HERBACEOUS SPECIES, TOPSOIL IS NOT TO BE REPLACED ON THIS TIER. HOWEVER, A MINIMUM OF 12 INCHES OF LOOSE NON-COMPACTED SOIL SHALL REMAIN. HAROPAN OR COHESIVE CLAY LAYERS SHALL NOT BE LEFT AS FINISH GRADE. CONSULTATION WITH OWNER AND CONSTRUCTION REPRESENTATIVE IS NECESSARY TO VERIFY SUITABLE MATERIAL TO BE LEFT IN PLACE. AREA IS TO BE SEED WITH ANNUAL COVER CROP OF OATS AND NATIVE GRASS MIX FOR REFORESTATION.

WETLAND GRADING

EXISTING GROUND ELEVATION MAY BE SUITABLE TO ACHIEVE FINISH GRADES PER PLAN WITH MINIMAL OR NO GRADING. IF MINOR GRADING (3 - 6 INCHES) TO CREATE MICROTOPOGRAPHY OR DEPRESSIONS WILL RESULT IN A FINAL TOPSOIL DEPTH GREATER THAN 6 INCHES WITHOUT STRIPPING, MINOR GRADING WITHOUT STRIPPING/STOCKPILING MAY BE PERFORMED. AREAS THAT REQUIRE MORE THAN MINIMAL GRADING AS DESCRIBED ABOVE SHALL FOLLOW THIS GENERAL SEQUENCE. TOPSOIL SHALL BE STRIPPED AND STOCKPILED FOR ALL PROPOSED WETLANDS THAT REQUIRED GRADING. TOPSOIL SHALL BE EVALUATED FOR APPROPRIATE CHARACTERISTICS BY ENVIRONMENTAL REPRESENTATIVE. TOPSOIL NOT SUITABLE FOR WETLAND DEVELOPMENT SHOULD BE AMENDED OR SOIL SHOULD BE IMPORTED FROM ELSEWHERE ON SITE. SUBGRADE EXCAVATION SHOULD THEN BE PERFORMED AND SUBSOIL SHOULD BE SPOILED IN APPROPRIATE LOCATIONS. FINISH GRADE ELEVATIONS SHALL BE ESTABLISHED WITH A MINIMUM OF 5 INCHES OF TOPSOIL. MICROTOPOGRAPHY, RUTS (<0.5 FT DEPTH), AND IMPERFECTIONS IN BOTH THE SUBGRADE AND FINISH GRADES ARE DESIRABLE.

TRASH AND DEBRIS

TRASH AND DEBRIS INCLUDING BUT NOT LIMITED TO TIRES, BROKEN CONCRETE, GLASS, METAL, AND PLASTICS SHALL BE REMOVED BY THE CONTRACTOR WHEN ENCOUNTERED. IN AREAS WHERE BROKEN CONCRETE IS ALREADY PRESENT ON STREAMBANKS AND WHERE PROPOSED BANK STABILIZATION IS PLANNED, CONCRETE SHALL BE LEFT IN PLACE IF IT IS ALREADY LOCATED AT THE CORRECT SUBGRADE ELEVATION. THE EXISTING CONCRETE SHALL THEN BE COVERED WITH IMPORTED MATERIAL TO REACH FINISHED GRADE PER THE BANK STABILIZATION SPECIFICATION. NO CONCRETE SHALL BE VISIBLE IN FINISHED GRADE.

ALL TIRES ENCOUNTERED ON SITE SHALL BE REMOVED. ALL CONCRETE CONTAINING REBAR ENCOUNTERED DURING CONSTRUCTION SHALL BE REMOVED. ALL MATERIALS SHALL BE HAULED FROM SITE AND PROPERLY DISPOSED OF BY THE CONTRACTOR. COST FOR HAULING AND DISPOSAL SHALL BE INCLUDED IN THE LUMP SUM COST FOR THE TRASH AND DEBRIS REMOVAL.

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 (CUYAHOGA ST.), EXISTING CATCH BASINS/CULVERTS, AND PROPERTIES WHERE EXISTING CONDITIONS MAY BE DISTURBED. THE FILE SHALL BE OF DIGITAL FORMAT AND BE PROVIDED TO THE OWNER PRIOR TO MOBILIZATION. COST TO BE INCLUDED IN COST FOR MOBILIZATION/DEMOLITION.

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-GRADATIONS	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

SEE SHEET 4 FOR ROCK MATERIAL SPECIFICATIONS AND PAY ITEMS.

PROTECTION OF WORK

IT IS NECESSARY FOR THE CONTRACTOR TO PROTECT BOTH THE WORK AREA AND THE COMPLETED WORK DURING THE CONSTRUCTION PROCESS. DUE TO THE POTENTIAL FOR LARGE FLOOD EVENTS, THE CONTRACTOR WILL BE RESPONSIBLE FOR REPAIRS BOTH SMALL AND LARGE IF WORK IS NOT ADEQUATELY PROTECTED. INSTALLED TOPSOIL, STREAMBANKS, STREAM SUBSTRATES AND PLANTED VEGETATION ARE OF PARTICULAR IMPORTANCE.

TOPSOIL SHALL BE PROTECTED UNTIL GRASS OF SUFFICIENT HEIGHT, THICKNESS AND COVERAGE IS PRESENT TO MEET SWPPP SPECIFICATIONS AND PROTECT TOPSOIL FROM WASHING AWAY. AREAS DETERMINED TO BE AT RISK DURING CONSTRUCTION AND ARE NOT SPECIFICALLY CALLED OUT ON PLANS DUE TO PRESENCE OF SHALES, MICROTOPOGRAPHY OR SIMILAR CONDITION THAT ELEVATES RISK OF THE AREA SHOULD BE BROUGHT TO THE ATTENTION OF THE CLIENT AND/OR THE CONSTRUCTION REPRESENTATIVE TO DISCUSS APPROPRIATE PROTECTION MEASURES. FAILURE TO PROPERLY PROTECT TOPSOIL BEFORE STABILIZATION WILL REQUIRE RE-INSTALLATION OF TOPSOIL AT THE COST OF THE CONTRACTOR. IN GENERAL, ANY AREA THAT IS SUSCEPTIBLE TO FLOODING OR FLOWING WATER SHOULD BE INSPECTED AND ANY MINOR MODIFICATIONS/REPAIRS TAKEN AS PROTECTIVE MEASURES, SUCH AS ADDITIONAL STAPLING OF EROSION CONTROL BLANKETS, ARE REQUIRED AND EXPECTED. STREAMBANKS ARE IMPORTANT TO ENSURE THAT INTEGRITY AND SHAPE IS MAINTAINED. TOPSOIL AND EROSION FABRIC ASSOCIATED WITH STREAMBANKS SHOULD BE SCRUTINIZED TO ENSURE THEY ARE ADEQUATELY PROTECTED AND STABLE. TECHNIQUES SUCH AS USING ADDITIONAL STAKES/PINS/LONGER PINS ON STREAMBANK SECTIONS THAT ARE MORE SUSCEPTIBLE TO EROSION FORCES, SUCH AS ON AN OUTSIDE MEANDER BENDS, ARE GOOD MEASURES.

MILESTONE WALK THROUGH

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

THE MAJOR MILESTONES FOR THIS PROJECT ARE:

- EXCAVATION OF TIER 1 AND TIER 2 SUBGRADE FLOODPLAINS. EACH AREA THE CONTRACTOR HAS MOBILIZED TO PERFORM FLOODPLAIN EXCAVATION SHALL BE APPROVED BEFORE MOBILIZING TO A NEW AREA OF THE FLOODPLAIN SUCH THAT ADJUSTMENTS CAN BE MADE AS NECESSARY.
- BANK STABILIZATION ROCK INSTALLATION AREAS
- PLACEMENT AND INSTALLATION OF BOULDERS, WOODY HABITAT STRUCTURES AND ROCK SPURS. EACH AREA THE CONTRACTOR HAS MOBILIZED TO PERFORM STRUCTURES SHALL BE APPROVED BEFORE MOBILIZING TO A NEW AREA OF THE RIVER SUCH THAT ADJUSTMENTS CAN BE MADE AS NECESSARY.
- INSTALLATION OF CULVERT FOR ACCESS DRIVE AT EXISTING FORD
- FINISH GRADES OF TIER 1 FLOODPLAINS; FINISH GRADES OF TIER 2 FLOODPLAINS TO DETERMINE SUITABLE MATERIAL
- BACKWATER OXBOW CHANNEL TO EXISTING POND C (STATION 13+00)
- WETLAND OUTLET FINISHED GRADES (STATION 12+00)
- FINAL SPOIL PLACEMENT OF EXCAVATED MATERIAL

THE CONTRACTOR CAN PERFORM AREAS AT THEIR DISCRETION, BUT SHALL RECEIVE APPROVAL FROM THE OWNER PRIOR TO DEMOBILIZATION. A SURVEYOR SHOULD PROVIDE AS-BUILT ELEVATIONS UPON OR PRIOR TO WALK THROUGH APPROVAL. THREE DAYS NOTICE SHALL BE GIVEN PRIOR TO THE APPROVAL WALK THROUGH OR ANY MAJOR MILESTONE.

SPECIFICATIONS

1. ITEM SPEC – BANK RUN (SAND/GRAVEL) – FURNISHED AND PLACED, AS PER PLAN

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, LUMPY LOAM, ROOTS, VEGETABLE MATTER, RUBBISH, WOOD, MULCH, OR OTHER NON-STABLE MATERIALS. CONCRETE OR CRUSHED CONCRETE IN ANY FORM SHALL NOT BE USED. LIMESTONE SHALL NOT BE USED. ADDITIONAL DESCRIPTION PROVIDED BELOW. SEE TABLE 3 FOR THE APPROXIMATE BANK RUN MATERIAL COMPOSITION PER STRUCTURE TYPE.

BANK RUN MATERIAL 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 CHOKING AND BERTING BOULDERS FOR BANK STABILIZATION STRUCTURES AND ROCK KEYS. 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.

2. ITEM SPEC – GRAVEL/COBBLE – 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 STRUCTURES. IT IS UP TO THE CONTRACTOR AND THE CONSTRUCTION REPRESENTATIVE TO WORK TOGETHER TO APPROVE THE APPROPRIATE 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. CONCRETE OR CRUSHED CONCRETE IN ANY FORM SHALL NOT BE USED. MATERIAL RANGES FROM 2.5-INCHES TO 10-INCHES, BROKEN DOWN AS FOLLOWS:

- 2.5 – 4-INCHES: 40%
- 4 – 10-INCHES: 60%

A WELL-GRADED DISTRIBUTION OF GRAVEL AND COBBLE SHOULD CONTAIN THE PERCENTAGE RANGE FOR EACH MATERIAL SUB-GRADATION RANGE LISTED IN TABLE 3 BELOW:

TABLE 3 – MATERIAL SUB-GRADATION RANGE: ODOT SIZING

STRUCTURE ID	BANK RUN	COBBLE/GRAVEL	TYPE A+	TYPE A	TYPE B	TYPE C	TYPE D
BOULDER HABITAT	SEE DETAIL SHEET 34 FOR GRADATION OF EACH BOULDER HABITAT						
ROCK KEYS*	5%	5%			45%	45%	
BANK STABILIZATION*/ROCK TOE PROTECTION*	5%	5%		25%	45%	20%	
ROCK SPUR*	10%			25%	30%	20%	15%
ROCK LINED WETLAND OUTLET (ROCK MAT)*	5%	5%		25%	45%	20%	

* ALL ROCK KEYS, BANK STABILIZATION/ROCK TOE, AND ROCK SPURS SHALL BE CHOKED WITH APPROPRIATE MATERIALS. USE A MIXTURE OF BANK RUN AND COBBLE/GRAVEL TO FILL VOIDS IN ROCK KEYS, ROCK SPURS, AND BANK STABILIZATION/ROCK TOE PROTECTION STRUCTURES BELOW THE ORDINARY HIGH WATER MARK (OHWM). ABOVE THE OHWM SOIL CAN BE USED TO FILL/CHOKE VOIDS AND TO HELP PROMOTE VEGETATION.

PRIOR TO INSTALLATION THIS MIX WILL BE VERIFIED BY THE CONSTRUCTION REPRESENTATIVE AT THE SUPPLIERS PLACE OF OPERATION OR ON-SITE BY PERFORMING A RANDOM PARTICLE ANALYSIS ON THE PROPOSED MIX BY SPREADING THE MIX OUT ON A 10 FT BY 25 FT AREA.

3. ITEM SPEC – BOULDER MATERIAL – FURNISHED AND PLACED, AS PER PLAN

DEFINED AS ANGULAR IN SHAPE AND COMPRISED OF SANDSTONE, GRANITE, OR SIMILAR HARD MATERIAL. LIMESTONE IS PERMITTED ONLY IF NOT VISIBLE AND TOPPED BY OTHER MATERIAL. FRIABLE MATERIAL OR LOW QUALITY SANDSTONE IS NOT ACCEPTABLE. CONCRETE OR CRUSHED CONCRETE IN ANY FORM SHALL NOT BE USED IN THE FINISHED GRADE MATERIALS OR IMPORTED TO THE SITE. 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 ARE SUITABLE FOR SPECIFIC HABITAT, BANK STABILIZATION, ROCK KEY AND ROCK SPUR STRUCTURES OR STRATEGICALLY POSITIONED ON OR NEAR A FLOOD AREA 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, AS LONG AS IT IS NOT VISIBLE ABOVE BASE FLOW WATER ELEVATION. OTHERWISE MUST BE TOPPED BY NATIVE SANDSTONE, SUBSTRATE OR GRANITE MATERIAL OTHER MATERIAL.

TABLE 4: BOULDER SIZES: ODOT ITEM 601

TYPE	SIZE RANGE (INCHES)
TYPE A	18" TO 30"
TYPE B	12" TO 24"
TYPE C	6" TO 18"
TYPE D	3" TO 12"

4. 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 AREAS (OR 100 LBS/ACRE IF USING FOR EROSION CONTROL ALONE). NATIVE SEED MIXES ARE TO BE INSTALLED AT THE SPECIFIED RATE IN THE APPROPRIATE AREAS (REFER TO THE PLANTING PLAN SHEETS 36 THROUGH 39). 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.

5. ITEM SPEC – EROSION CONTROL FABRIC FOR GENERAL PURPOSE – STRAW FABRIC, AS PER PLAN

FABRIC FOR GENERAL EROSION CONTROL SHALL BE AMERICAN EXCELSIOR COMPANY STRAW-COCONUT FIBRENET OR APPROVED EQUAL, FOR FLOW RATES UP TO 6.0 FPS AND SHEAR STRESS OF 1.85 LBS/SQ FT. MATS SHALL BE MADE OF ALL-NATURAL MATERIALS. MATS SHALL HAVE NETTING MADE OF JUT YARN OR OTHER BIODEGRADABLE NATURAL FIBER. MATS CONTAINING NETS MADE WITH POLYPROPYLENE, POLYMERIC PLASTIC, OR OTHER NON-NATURAL MATERIALS SHALL NOT BE USED. THIS FABRIC SHALL BE USED ON CUT SLOPES ABOVE THE FLOODPRONE AREAS TO CONTROL POTENTIAL EROSION AREAS THAT DO NOT HAVE CONCENTRATED FLOW, SUCH AS THE FLOODPLAIN TIER 1 AREAS. SEE THE STORMWATER POLLUTION PREVENTION PLAN AND STANDARD DETAIL SHEETS FOR LOCATION AND INSTALLATION OF EROSION FABRIC.

PRIOR TO INSTALLATION, THE AREA UNDER THE FABRIC SHALL BE SEEDED AS DESCRIBED IN NOTE 4 ABOVE. ALL OTHER AREAS SHALL BE SEEDED AND MULCHED, STANDARD REVEGETATION. EROSION FABRIC SHALL BE INSTALLED PER THE MANUFACTURERS INSTRUCTIONS AND IN ACCORDANCE WITH ODOT ITEM 671.

6. ITEM SPEC – TEMPORARY STREAM CROSSING

THREE LOCATIONS HAVE BEEN IDENTIFIED ON THE PLANS FOR TEMPORARY STREAM CROSSINGS. THE CONTRACTOR SHALL PROTECT SURROUNDING AREAS FROM SCOUR, AND SHOULD ANY SCOUR OCCUR IT MUST BE RESTORED TO ORIGINAL GRADE AT THE CONTRACTOR'S EXPENSE. THESE ARE PERMITTED AREAS WITH THE USAGE AS LOCATIONS WHERE CONSTRUCTION EQUIPMENT WILL CROSS THE STREAM. THE CONTRACTOR SHALL CONSTRUCT A STABLE CROSSING FROM ONE OF TWO 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.

STEEL 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.

ALL LABOR, EQUIPMENT AND MATERIAL FOR THE THREE IDENTIFIED STREAM CROSSINGS SHALL BE INCLUDED IN THE LUMP SUMP COST FOR THE SPECIAL ITEM TEMPORARY STREAM CROSSINGS.

7. POND IN-FILL AND COMPACTION

ALL EXISTING PONDS PROPOSED FOR FILL ACTIVITIES SHALL BE IN-FILLED AND GRADED IN A DRAINED DOWN CONDITION. WATER SHALL BE PUMPED FROM THE PONDS INTO AN ADJACENT WETLAND OR AS DIRECTED BY SUMMIT METRO PARKS OR THEIR CONSTRUCTION REPRESENTATIVE. WATER SHALL NOT BE PUMPED DIRECTLY INTO THE CUYAHOGA RIVER. SOILS SHOULD BE PLACED INTO THE PONDS TO WITHIN +/- 6 INCHES FROM THE SPECIFIED FINISHED GRADE FILL ELEVATION. THE VARIABILITY OF THE FILL HEIGHT TO THE TOP OF THE PONDS WILL BE INSPECTED AND APPROVED BY SUMMIT METRO PARKS OR THEIR CONSTRUCTION REPRESENTATIVE.

GROUNDWATER SEEPAGE SHALL BE MAINTAINED DURING FILL ACTIVITIES TO ENSURE PROPER COMPACTION. A COMPACTION STANDARD IS NOT REQUIRED OTHER THAN PLACED FILL BEING ABLE TO SUPPORT WEIGHT OF NECESSARY CONSTRUCTION EQUIPMENT AND THAT FILL AREAS DO NOT POSE A HAZARD TO ANYONE OR WILDLIFE DUE TO IMPROPER COMPACTION LEADING TO SINKING/ENTRAPMENT. TYPICAL COMPACTION USING 6-9 INCH LIFTS WILL HELP ENSURE THIS GOAL IS ACHIEVED BUT CONTRACTOR SHOULD KEEP IN MIND THIS IS TO ACHIEVE A NATURAL COMPACTION AND NOT FOR A BUILDING FOUNDATION. OVER COMPACTION IS NOT DESIRED SUCH THAT PLANTS GROWTH IS INHIBITED. IN PARTICULAR THE TOP 2-3FT OF SOIL SHOULD NOT BE OVER COMPACTED AND REMAIN LOOSE ENOUGH SUCH THAT A NORMAL SHOVEL SPADE CAN BE FULLY DEPRESSED UNDER THE WEIGHT OF AN AVERAGE PERSON. MICROTOPOGRAPHY AND VARIABLE FINISHED GRADE IS DESIRABLE.

8. BOULDER HABITATS (#1 – #10)

BOULDERS SHALL BE INSTALLED ACCORDING TO THE SPECIFICATIONS AND DETAILS BY NUMBERS (1-10) REFERENCED IN SHEET 34. BOULDER HABITATS ARE DESIGNED TO PROVIDE FISH AND MACROINVERTEBRATE HABITAT THROUGH FLOW VARIABILITY, LOCALIZED SCOUR AND IMPROVED SUBSTRATE STABILITY. THE LARGEST BOULDER CALLED OUT IN THE HABITAT DETAIL SHALL BE INSTALLED UPSTREAM OF THE OTHER BOULDERS. BOULDER HABITATS CAN VARY SLIGHTLY FROM THE ORIENTATION DETAIL BUT THE NUMBER AND SIZE CLASSES SHOULD REMAIN CONSISTENT.

THE COST FOR THIS ITEM IS INCLUDED UNDER ITEM SPEC – BOULDER MATERIAL.

THE CONTRACTOR SHALL ONLY USE ACCESS PATHS AND TEMPORARY CROSSING LOCATIONS IDENTIFIED IN THE PLANS TO ACCESS THE BOULDER HABITAT LOCATIONS.

9. ITEM SPEC – WOODY HABITATS (#1 – #6)

WOODY HABITATS ARE DESIGNED TO ENHANCE THE FISH AND MACROINVERTEBRATE HABITAT AS WELL AS PROVIDE BANK PROTECTION WHERE APPLICABLE. EACH HABITAT HAS A DIFFERENT INSTALLATION METHOD AND PURPOSE DETAILED IN SHEET 33. WOOD SELECTION IS IMPORTANT TO ENSURE THAT THE WOODY HABITAT FUNCTIONS AS INTENDED AND DOES NOT ADVERSELY AFFECT THE RIVER CURRENTS. IMPORTANT POINTS FOR WOOD SELECTION INCLUDE THE DIAMETER OF WOOD AND THE UNIQUE CHARACTERISTICS/VARIABILITY OF THE PIECE.

PRIOR TO INSTALLATION, EACH SITE SHOULD BE EVALUATED WITH RESPECT TO WATER DEPTH, INSTALLATION ANGLE, LOCAL CURRENT VELOCITIES/DIRECTION, AND STREAMBANK COMPOSITION AT THE TIME OF INSTALLATION TO FINALIZE THE DETAILS OF WOOD SELECTION. IT IS VERY IMPORTANT FOR THESE HABITAT STRUCTURES TO BE FUNCTIONAL AS HABITAT. THEREFORE, A MAJORITY IF NOT ALL THE WOOD DEPENDING ON HABITAT TYPE SHALL BE SUBMERGED DURING BASE FLOW. ANCHORING THE WOOD IS VERY IMPORTANT AND METHODS ARE OUTLINED IN EACH DETAIL FOR ANCHORING.

THE WOOD SHALL ONLY BE NATURAL MATERIAL FROM DOWNED TREES HARVESTED AT THE SITE OR FROM A LOCAL SOURCE WITHIN SUMMIT COUNTY. UNDER NO CIRCUMSTANCE SHALL 2'X4'S, TREATED OR UNTREATED PROCESSED LUMBER BE USED FOR ANY WOODY MATERIAL OR WOODY PINS. IN ADDITION TO WOODY PINS AND PARTIALLY BURYING LOGS, SUPPLEMENTAL BOULDERS CAN BE USED TO HELP HOLD WOOD IN PLACE.

FINAL LOCATION, AND PLACEMENT/ORIENTATION OF WOODY HABITAT STRUCTURES ARE TO BE COORDINATED AND APPROVED WITH THE CONSTRUCTION REPRESENTATIVE OR SUMMIT METRO PARKS.

THIS ITEM SHALL INCLUDE LABOR, EQUIPMENT AND MATERIALS TO CONSTRUCT WOODY HABITAT STRUCTURES AS PER PLAN.

THE CONTRACTOR SHALL ONLY USE ACCESS PATHS AND TEMPORARY CROSSING LOCATIONS IDENTIFIED IN THE PLANS TO ACCESS THE WOODY HABITAT LOCATIONS.

10. ROCK SPUR HABITAT

ROCK SPUR HABITAT IS A FEATURE THAT IS DESIGNED TO AFFECT BASE AND SMALLER FLOOD FLOW EVENTS TO CREATE FLOW VARIABILITY, LOCALIZED SCOUR AND PROTECTED BACKWATER HABITATS. THE ORIENTATION ANGLE, SLOPE OF ROCK, ROCK COMPOSITION AND HEIGHT OF THE ROCK ARE THE IMPORTANT INSTALLATION FACTORS. THE ORIENTATION ANGLE IS EVALUATED WITH RESPECT TO THE STREAMBANK. ROCK SPUR ANGLE SHALL BE IN THE RANGE OF 20-30 DEGREES FROM PERPENDICULAR TO THE STREAMBANK IN AN UPSTREAM ORIENTATION. THIS IS DESIGNED TO MOVE FLOW AWAY FROM THE STREAMBANK. THE SLOPE OF THE ROCK FROM THE BASE TO THE END SHALL BE IN THE RANGE OF 3-5% AND SHALL BE CALCULATED AT THE SITE OF INSTALLATION AND VERIFIED VIA SURVEY. SEE DETAIL ON SHEET 34 FOR SPECIFICATIONS ON LENGTH, WIDTH AND ROCK COMPOSITION. LIMESTONE CAN BE USED IN THE SUBGRADE COMPOSITION.

THE COST FOR THIS ITEM IS INCLUDED UNDER ITEM SPEC – BOULDER MATERIAL.

THE CONTRACTOR SHALL ONLY USE ACCESS PATHS AND TEMPORARY CROSSING LOCATIONS IDENTIFIED IN THE PLANS TO ACCESS THE ROCK SPUR HABITAT LOCATIONS.

11. BANK STABILIZATION

BANK STABILIZATION ARE AREAS WHERE ANGULAR BOULDERS AND RIP-RAP ARE NEEDED DUE TO EROSION AND BANK INSTABILITY. BANK STABILIZATION INSTALLATION SHALL BEGIN FROM THE LOWEST ELEVATION AND PROGRESS UPWARD IN ELEVATION. A FOUNDATION TOE SHALL BE INSTALLED TO PROTECT AGAINST SCOUR. THE TOE SHALL BE THE FURTHEST LIMIT OF ROCK IDENTIFIED ON PLANS AND CONSIST OF THE LARGEST DIAMETER MATERIAL IN THE IDENTIFIED SIZE CLASS.

ONCE THE FOUNDATION TOE IS ESTABLISHED THE BANK STABILIZATION SHALL PROGRESS IN LIFTS EQUAL TO THE C AXIS OR 'LAYING' AXIS OF THE MATERIAL SPECIFIED. IN BETWEEN LIFTS IT IS VERY IMPORTANT TO CHOKE VOIDS AND SPACES WITH BANK RUN & SAND AND GRAVEL MATERIAL, INCLUDING CAREFULLY CHOKING MATERIAL UNDERWATER. THIS MATERIAL CAN CONSIST OF APPROVED ON-SITE MATERIAL ENCOUNTERED DURING EXCAVATIONS. WORK WILL NOT BE CONSIDERED ACCEPTABLE IF VOIDS AND SPACES ARE NOT FILLED DURING INSTALLATION IN LIFTS. SAND AND GRAVEL MATERIAL ONLY SHALL BE USED AS CHOKE MATERIAL TO THE BANKFULL ELEVATION AT THE CORRESPONDING STATION OF WORK. CHOKE MATERIAL ABOVE BANKFULL ELEVATION IF APPLICABLE CAN USE APPROVED SUBSOIL OR TOPSOIL.

THE FINISH GRADE APPEARANCE OF ALL BANK STABILIZATION AREAS SHALL BE NATURAL DURABLE SANDSTONE, GRANITE, DOLOMITE ETC. OTHER THAN LIMESTONE. LIMESTONE OF MATCHING SUFFICIENT BOULDER SIZE CAN BE USED IN THE SUBGRADE, KEYS, FOUNDATION TOE OR FULLY SUBMERGED AREAS WITH NO POSSIBILITY OF EXPOSURE.

THE START AND END POINTS OF BANK STABILIZATION AREAS SHALL BE BLENDED INTO THE EXISTING GRADES SO THAT ROCK MATERIAL IS FLUSH TO THE ADJACENT EXISTING BANK. THESE TIE IN LOCATIONS TO EXISTING GRADE SHALL BE COORDINATED AND APPROVED BY THE CONSTRUCTION REPRESENTATIVE.

WOODY HABITAT #1 IS OFTEN IDENTIFIED IN BANK STABILIZATION AREAS. WOODY HABITAT SHALL BE INTEGRATED INTO THE BANK STABILIZATION LIFTS. THE FINISHED LOCATION OF THE WOODY HABITAT SHALL BE IN FRONT OF THE BANK STABILIZATION ROCK BUT ANCHORED INTO THE LIFTS OF STABILIZATION ROCK. NON-FUNCTIONAL WOOD COMPLETELY BURIED BY ROCK OR NOT INSTALLED PROPERLY IS NOT ACCEPTABLE. WOODY HABITAT FEATURES ARE PAID FOR SEPARATELY FROM THE BANK STABILIZATION ITEMS.

12. ROCK KEYS

ROCK KEYS ARE VANES OF ROCK 4-FT WIDE BY 4-FT IN DEPTH DESIGNED TO PREVENT FLANKING OF BANK STABILIZATION AND/OR OTHER STRUCTURES OR STREAM GEOMETRY. ROCK KEYS ARE TO FOLLOW THE EXISTING OR PROPOSED TOPOGRAPHY IN THE AREA. THEREFORE THE 4FT DEPTH WILL BE FROM FINISH OR EXISTING GRADE. FOR EXAMPLE IF THE STREAMBANK SLOPES UPWARD THEN THE ROCK KEY WILL SLOPE CORRESPONDINGLY SLOPE UPWARD. LIMESTONE CAN BE USED FOR ROCK KEYS BECAUSE THE MATERIAL IS BURIED. IF KEY MATERIAL WILL BE VISUALLY EXPOSED THEN SANDSTONE OR NON-LIMESTONE MATERIAL SHALL BE USED.

13. ITEM SPEC – PLANTING LIVE STAKES, AS PER PLAN

SEE SHEETS 36-37 FOR LIVE STAKE INSTALLATION NOTES, LOCATIONS, SPECIES, QUANTITIES AND PLANTING METHODS. SEE LIVE STAKE PLANTING DETAIL AND INSTALLATION SPECIFICATIONS ON SHEET 34.

14. ITEM SPEC – PLANTING TREES, 3 GAL CONTAINER WITH PROTECTION, AS PER PLAN

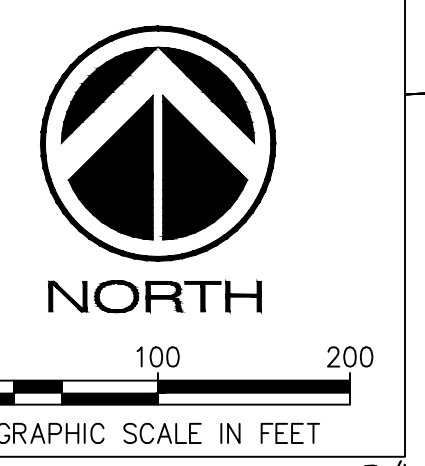
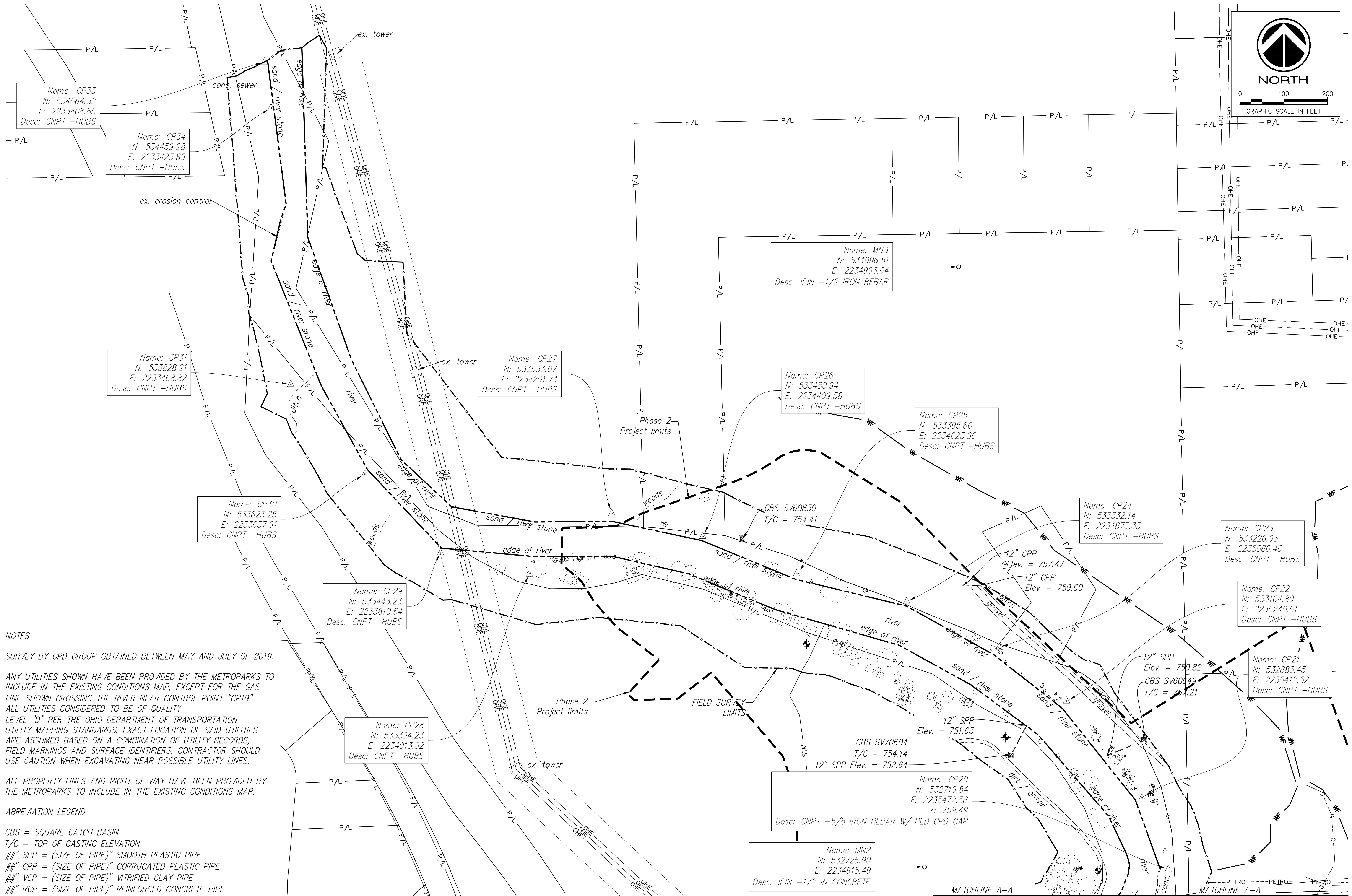
SEE SHEETS 36-37 FOR TREE INSTALLATION NOTES, LOCATIONS, SPECIES, QUANTITIES AND PLANTING METHODS. SEE THE PLANTING PLAN TO DETERMINE WHICH TREES SHALL BE INSTALLED WITH PROTECTION, SEE DETAIL ON SHEET 35.

15. TEMPORARY CONSTRUCTION FENCING

THE CONTRACTOR SHALL INSTALL TEMPORARY CONSTRUCTION FENCING AS SHOWN IN THE PLANS. THIS ITEM INCLUDED IN THE COST FOR TEMPORARY SOIL EROSION & SEDIMENT CONTROL AND INCLUDES LABOR, EQUIPMENT AND MATERIAL TO FURNISH AND INSTALL TEMPORARY ORANGE CONSTRUCTION FENCING TO PROTECT TREES OR AREAS NOT TO BE DISTURBED. SEE SWPPP, SHEETS 41-42 FOR PROPOSED LOCATIONS. SEE DETAIL ON SHEET 44.

LEGEND

	EX BOLLARD		PAVEMENT TO BE REMOVED
	EX SIGN		EX TREES TO BE REMOVED
	EX CATCH BASIN		LIMITS OF DISTURBANCE
	EX MANHOLE (STM WAT OR SAN)		PROTECTION FENCE
	EX HYDRANT		CURVE DATA
	IP/DRILL HOLE SET		COORDINATE POINT
	IP/DRILL FND		PROP CONTOUR 1'
	HUB SET		PROP CONTOUR 5'
	EXIST GUY WIRE		PROP SPOT ELEVATION
	EX LIGHT POLE		PROP SURFACE FLOW
	EX POWER POLE		PROP ROCK CHANNEL PROTECTION/WETLAND OUTLET
	EX UTILITY POLE		PROP ROCK CHECK DAM
	EX WELL COLLECTOR GAS LINE		PROP SILT FENCE
	EX GAS LINE (SALES)		PROP TIER 1 FLOODPLAIN EXPANSION
	EX GAS LINE (DEO)		PROP TIER 2 FLOODPLAIN EXPANSION
	EX OVER HD ELEC		PROP WETLAND
	EX SANITARY SEWER		PROP POND IN-FILL
	EX STORM SEWER		PROP STORM/UNDER DRAIN TO BE REMOVED
	EX TELEPHONE		EX UNDERDRAIN/FIELD TILE/IRRIGATION LINE
	EX WATER LINE		PROP BANK STABILIZATION
	EX TREES		PROP ROCK KEY
	EX CONTOUR 1'		12" GAS PIPELINE (DEO)
	EX CONTOUR 5'		PROPERTY LINE
	FIELD SURVEY LIMITS		EROSION CONTROL FABRIC
	BENCHMARK		SUMMIT METRO PARKS COVENANT AREA LIMIT
	EX RIFFLE		FUTURE PARK ROAD GRADING LIMITS
	EX WATER		
	CUYAHOGA VALLEY SCENIC RAILROAD		
	STOCKPILE/ STAGING AREA		



NOTES

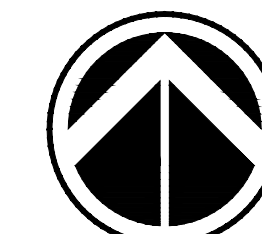
SURVEY BY GPD GROUP OBTAINED BETWEEN MAY AND JULY OF 2019.

ANY UTILITIES SHOWN HAVE BEEN PROVIDED BY THE METROPARKS TO INCLUDE IN THE EXISTING CONDITIONS MAP, EXCEPT FOR THE GAS LINE SHOWN CROSSING THE RIVER NEAR CONTROL POINT "CP19". ALL UTILITIES CONSIDERED TO BE OF QUALITY LEVEL "D" PER THE OHIO DEPARTMENT OF TRANSPORTATION UTILITY MAPPING STANDARDS. EXACT LOCATION OF SAID UTILITIES ARE ASSUMED BASED ON A COMBINATION OF UTILITY RECORDS, FIELD MARKINGS AND SURFACE IDENTIFIERS. CONTRACTOR SHOULD USE CAUTION WHEN EXCAVATING NEAR POSSIBLE UTILITY LINES.

ALL PROPERTY LINES AND RIGHT OF WAY HAVE BEEN PROVIDED BY THE METROPARKS TO INCLUDE IN THE EXISTING CONDITIONS MAP.

ABBREVIATION LEGEND

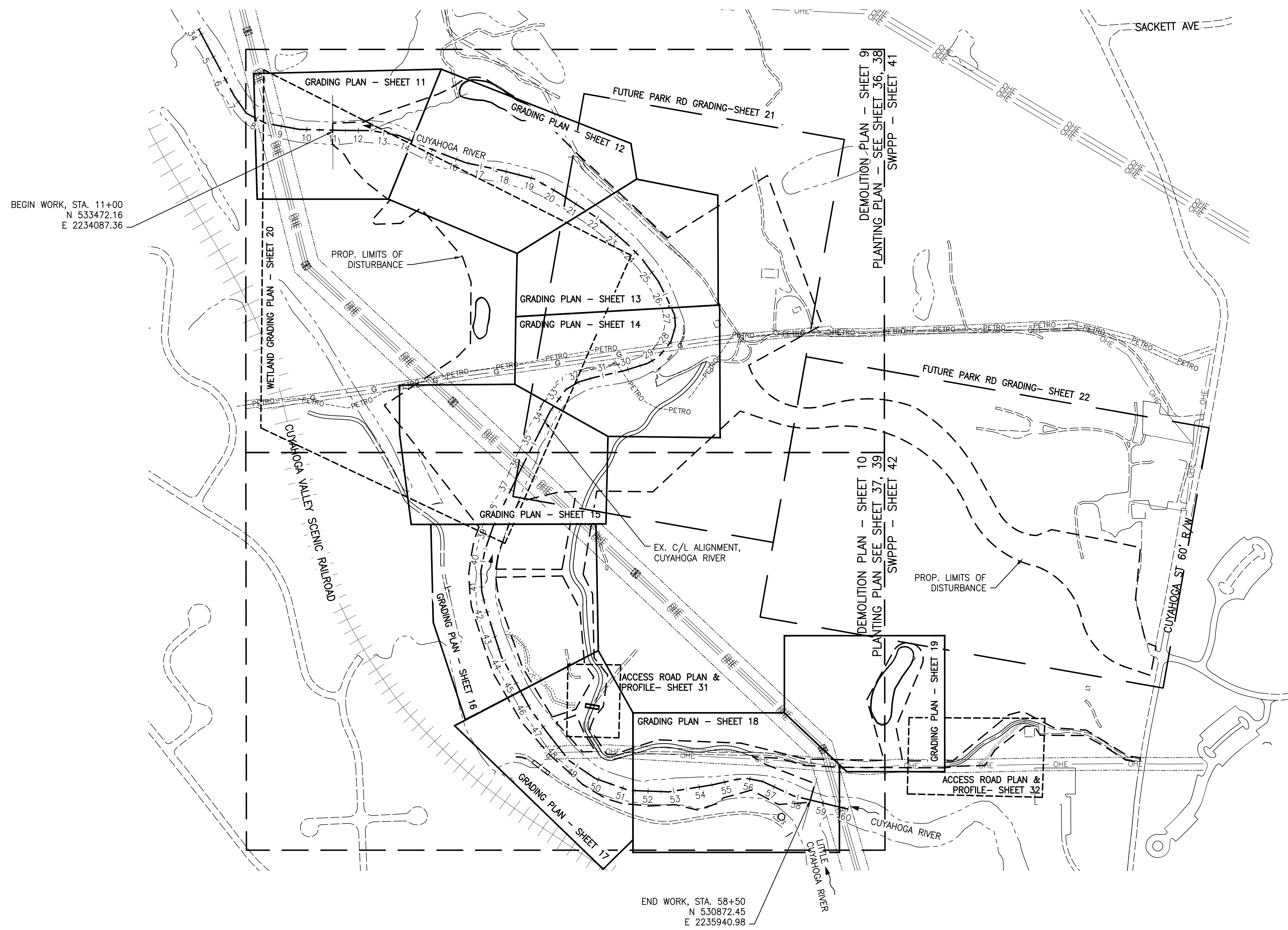
- CBS = SQUARE CATCH BASIN
- T/C = TOP OF CASTING ELEVATION
- ##" SPP = (SIZE OF PIPE)" SMOOTH PLASTIC PIPE
- ##" CPP = (SIZE OF PIPE)" CORRUGATED PLASTIC PIPE
- ##" VCP = (SIZE OF PIPE)" VITRIFIED CLAY PIPE
- ##" RCP = (SIZE OF PIPE)" REINFORCED CONCRETE PIPE



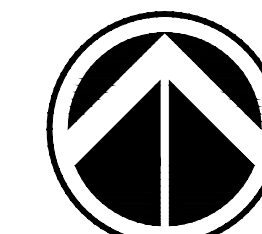
NORTH



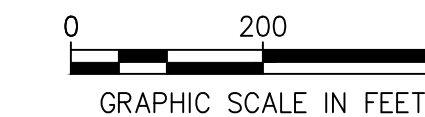
- NOTES:
- SEE SHEETS 2 - 4 FOR GENERAL NOTES AND SPECIFICATIONS.
 - SEE SHEET 4 FOR LEGEND



SCALE: 1"=200'-0"	KEY PLAN
DATE: 03/23/2020	SHEET: 7 OF 44
DESIGNED BY: ADH	REFERENCES: N/A
DRAWN BY: DG	REVISIONS: 1
SUMMIT METRO PARKS VALLEY VIEW PH 2 RESTORATION DESIGN	
975 TREATY LINE ROAD AKRON, OHIO 44313 (330) 867-5511	



NORTH



OVERALL PLAN
SHEET: 8 OF 44

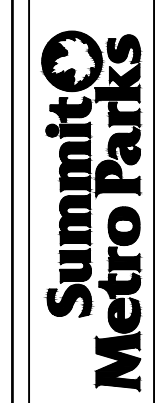
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DATE: 03/23/2020

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REVISIONS: 1

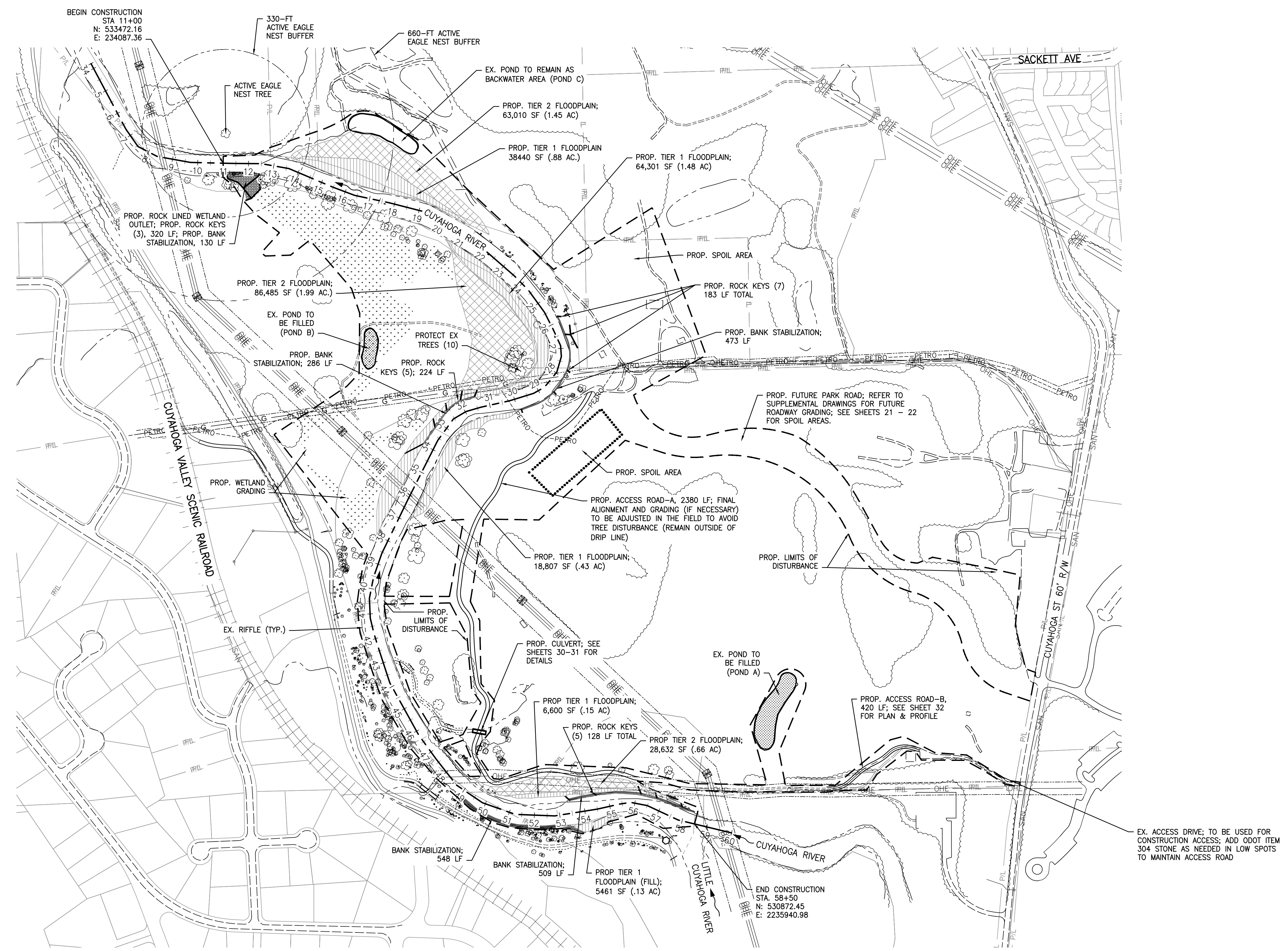
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SUMMIT METRO PARKS
VALLEY VIEW PH 2 RESTORATION DESIGN

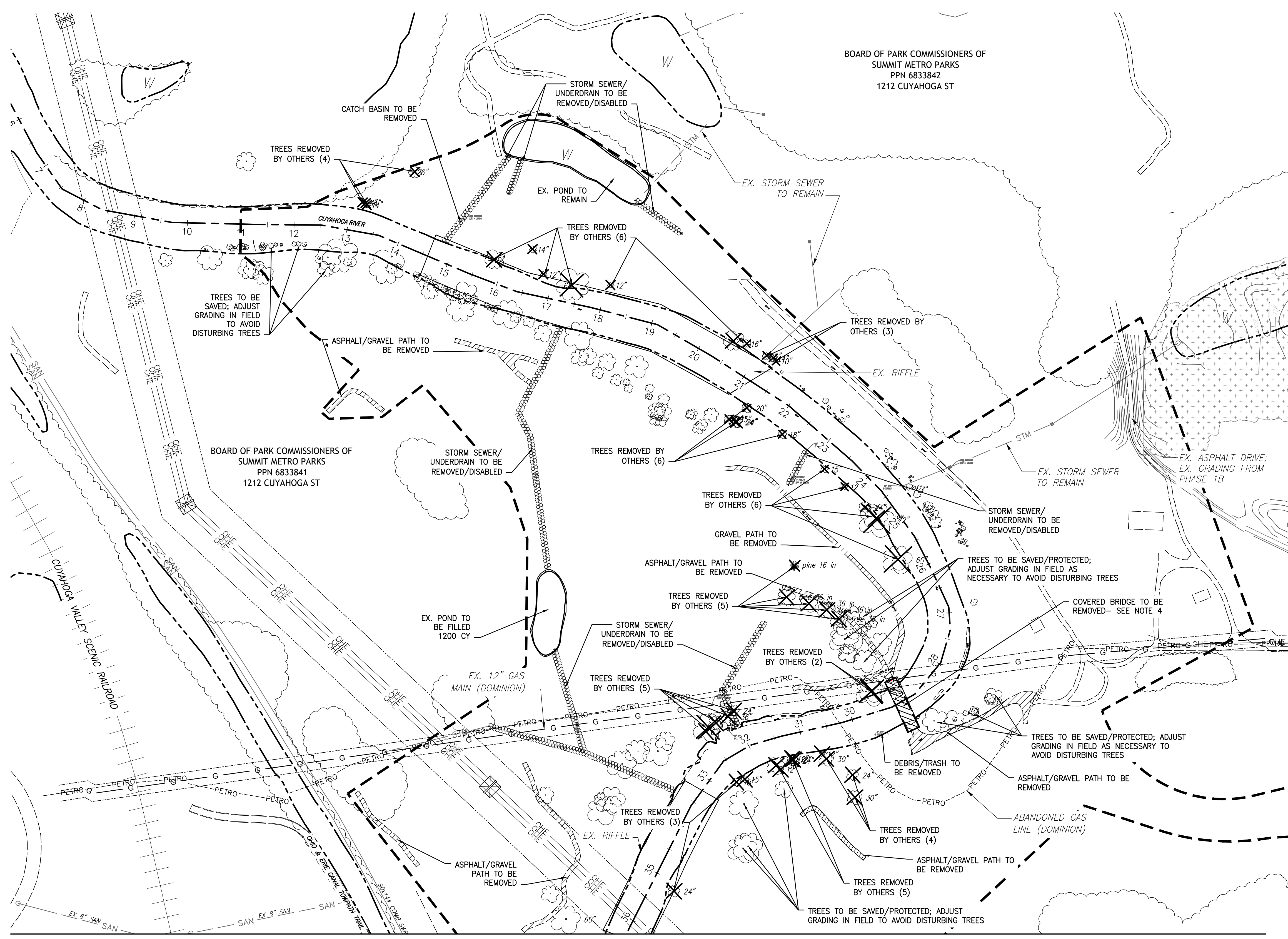
975 TREATY LINE ROAD
AKRON, OHIO 44313
(330) 867-5511



- NOTES:**
1. SEE SHEETS 2 - 4 FOR GENERAL NOTES.
 2. SEE SHEET 4 FOR LEGEND.
 3. SEE SHEETS 11-19 FOR GRADING PLANS.
 4. SEE SHEET 20 FOR PROP. WETLAND GRADING.
 5. SEE STANDARD DETAILS, SHEETS 33-35 FOR BANK STABILIZATION AND ROCK KEY DETAILS.
 6. REFER TO ACTIVE EAGLE NEST PLAN IN SUPPLEMENTAL DRAWINGS FOR WORK RESTRICTIONS AND REQUIREMENTS.

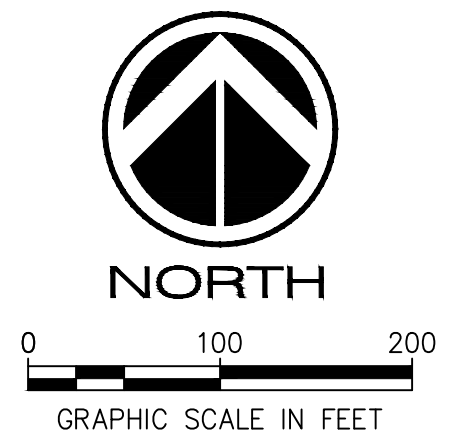


EX. ACCESS DRIVE; TO BE USED FOR CONSTRUCTION ACCESS; ADD ODOT ITEM 304 STONE AS NEEDED IN LOW SPOTS TO MAINTAIN ACCESS ROAD



BOARD OF PARK COMMISSIONERS OF
SUMMIT METRO PARKS
PPN 6833842
1212 CUYAHOGA ST

BOARD OF PARK COMMISSIONERS OF
SUMMIT METRO PARKS
PPN 6833841
1212 CUYAHOGA ST



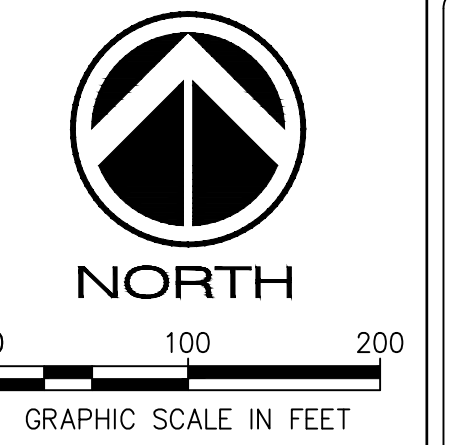
- NOTES:**
- SEE SHEETS 2 - 4 FOR GENERAL NOTES.
 - SEE SHEET 4 FOR LEGEND.
 - TREES DESIGNATED AS REMOVED BY OTHERS HAVE BEEN FELLED AND LEFT AT THE LOCATION SHOWN IN THE PLANS. THE CONTRACTOR SHALL RETRIEVE TREES FROM THESE LOCATIONS FOR USE IN WOODY HABITAT CREATION.
 - EXISTING BRIDGE, CONCRETE APPROACHES AND ABUTMENTS TO BE REMOVED PER ODOT 202.03. EXISTING PIERS TO BE REMOVED TO AN ELEVATION OF ONE FOOT BELOW PROPOSED GROUND SURFACE. ALL MATERIALS SHALL BE HAULED FROM THE SITE AND PROPERLY DISPOSED OF BY THE CONTRACTOR. COST FOR HAULING AND DISPOSAL SHALL BE INCLUDED IN THE LUMP SUM COST FOR THE BRIDGE REMOVAL.
 - THE CONTRACTOR SHALL INSTALL ORANGE CONSTRUCTION FENCE AT THE DRIP LINE AROUND TREES TO BE SAVED. SEE THE SWPPP FOR DETAILS AND THOSE AREAS TO BE PROTECTED DURING CONSTRUCTION.

MATCHLINE SEE SHEET 10

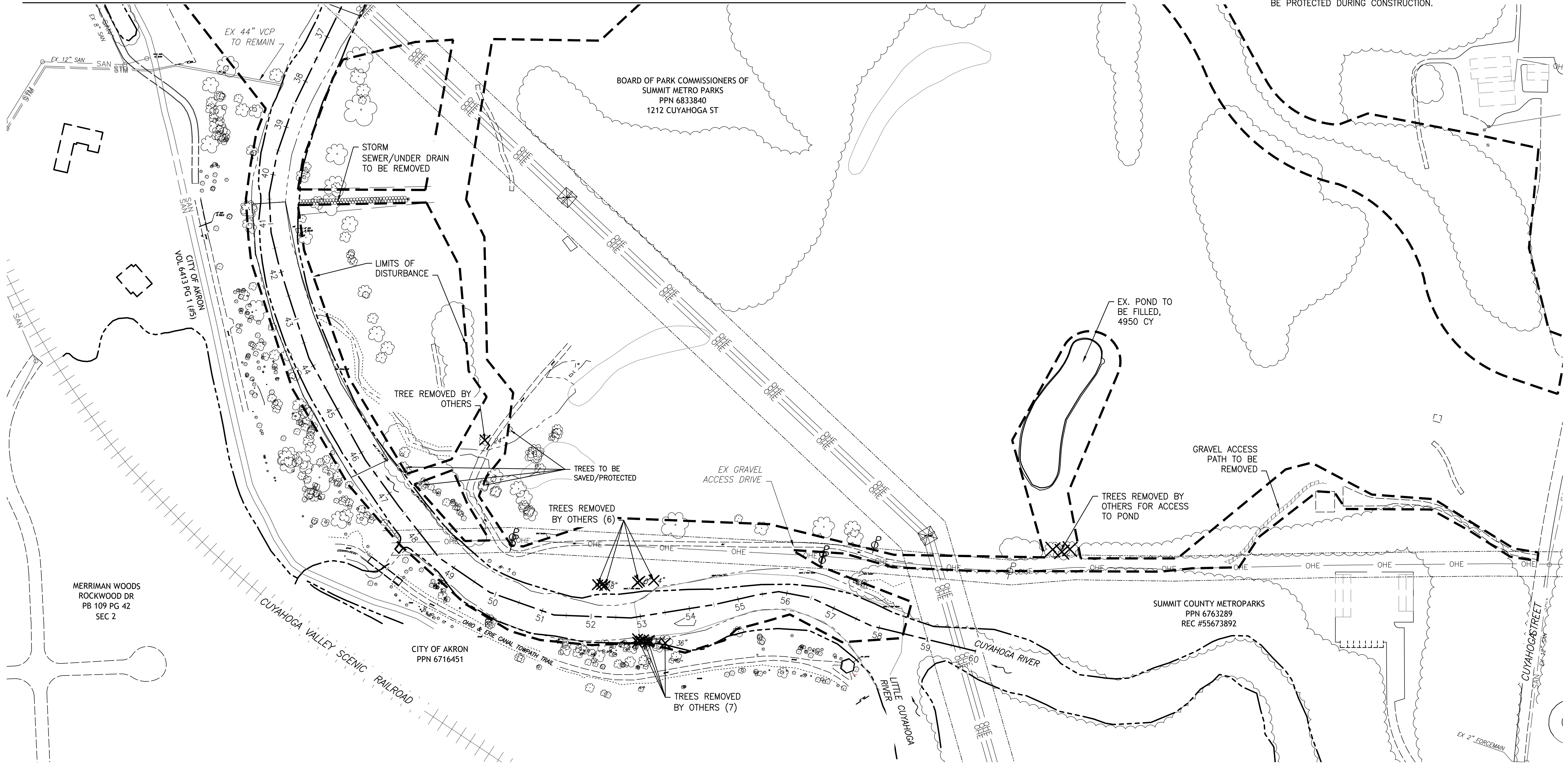
	975 TREATY LINE ROAD AKRON, OHIO 44313 (330) 867-5511	SUMMIT METRO PARKS VALLEY VIEW PH 2 RESTORATION DESIGN	SCALE: 1"=100'-0" DATE: 03/23/2020	DEMOLITION PLAN SHEET: 9 of 44
	DESIGNED BY: ADH DRAWN BY: DG	REFERENCES: N/A REVISIONS: 1	1"=100'-0" DATE: 03/23/2020	DEMOLITION PLAN SHEET: 9 of 44

NOTES:

1. SEE SHEETS 2 - 4 FOR GENERAL NOTES.
2. SEE SHEET 4 FOR LEGEND.
3. TREES DESIGNATED AS REMOVED BY OTHERS HAVE BEEN FELLED AND LEFT AT THE LOCATION SHOWN IN THE PLANS. THE CONTRACTOR SHALL RETRIEVE TREES FROM THESE LOCATIONS FOR USE IN WOODY HABITAT CREATION.
4. THE CONTRACTOR SHALL INSTALL ORANGE CONSTRUCTION FENCE AT THE DRIP LINE AROUND TREES TO BE SAVED. SEE THE SWPPP FOR DETAILS AND THOSE AREAS TO BE PROTECTED DURING CONSTRUCTION.



MATCHLINE SEE SHEET 9



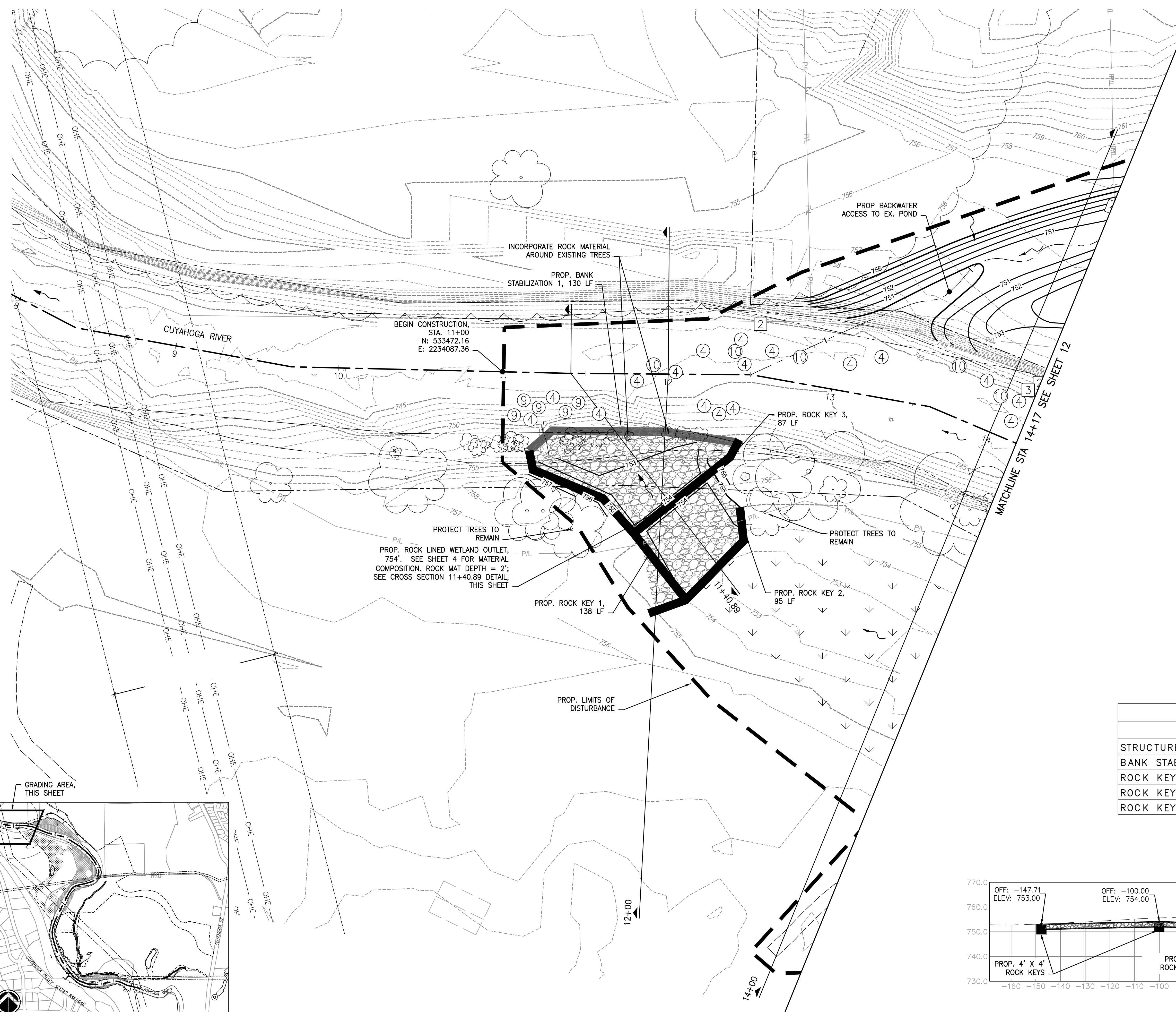
BOARD OF PARK COMMISSIONERS OF
SUMMIT METRO PARKS
PPN 6833840
1212 CUYAHOGE ST

MERRIMAN WOODS
ROCKWOOD DR
PB 109 PG 42
SEC 2

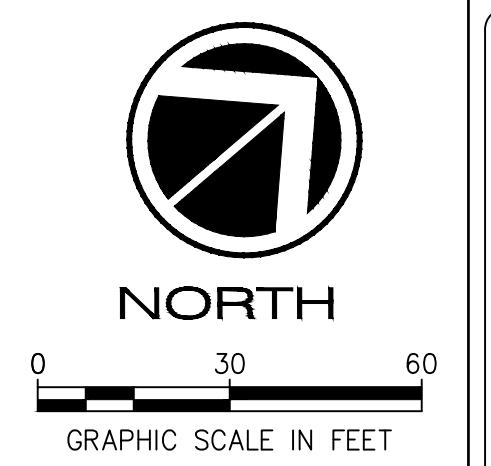
CITY OF AKRON
PPN 6716451

SUMMIT COUNTY METROPARKS
PPN 6763289
REC #55673892

	975 TREATY LINE ROAD AKRON, OHIO 44313 (330) 867-5511	DEMOLITION PLAN SHEET: 10 of 44
	SUMMIT METRO PARKS VALLEY VIEW PH 2 RESTORATION DESIGN	SCALE: 1"=100'-0" DATE: 03/23/2020
DESIGNED BY: ADH DRAWN BY: DG		



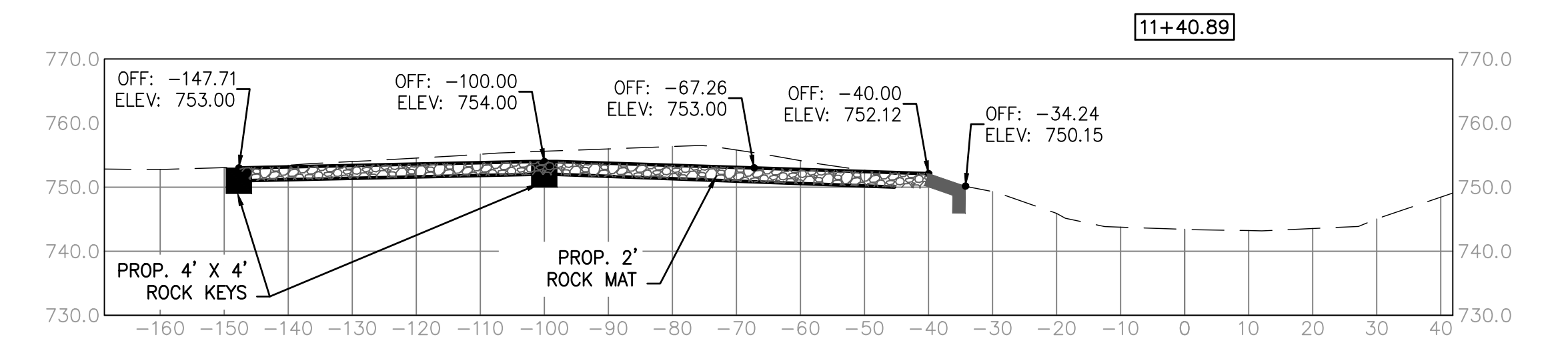
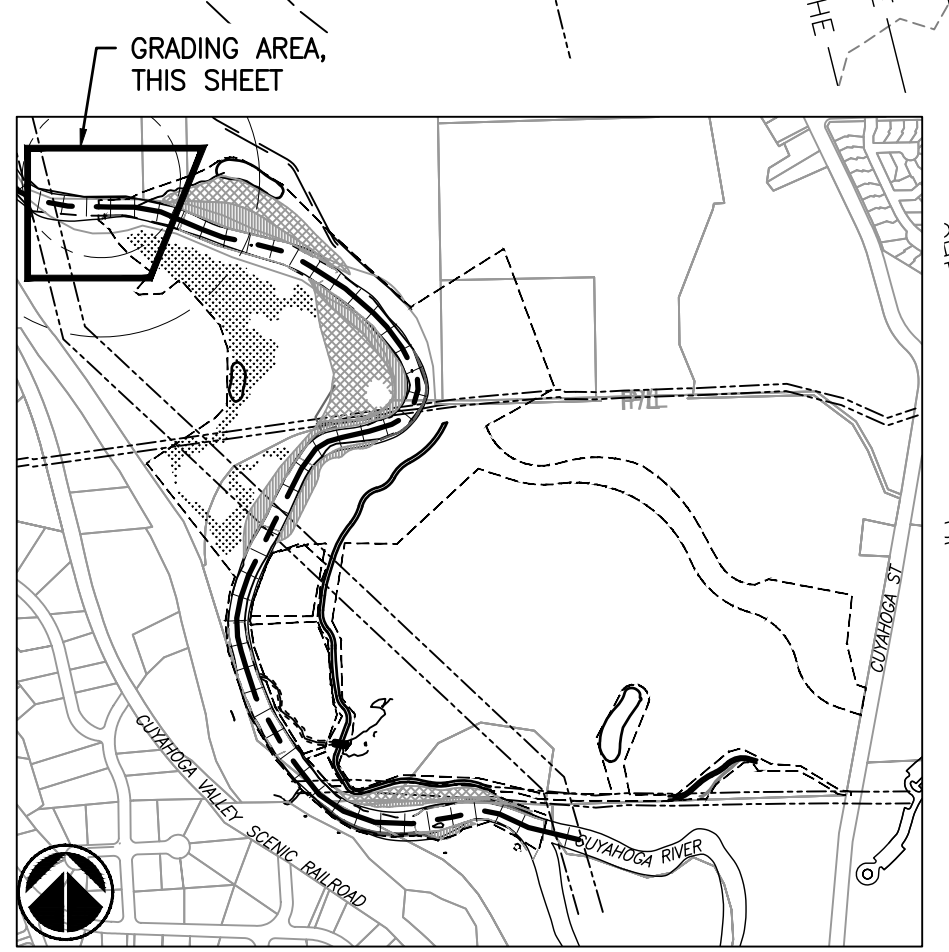
- NOTES:**
1. SEE SHEETS 2 - 4 FOR GENERAL NOTES.
 2. SEE SHEET 4 FOR LEGEND.
 3. SEE CROSS SECTION SHEETS FOR DETAILED GRADING AND PROPOSED ELEVATIONS.
 4. SEE DETAILS, SHEETS 33-35 FOR BANK STABILIZATION AND ROCK KEY DETAILS
 5. CONTRACTOR SHALL PROTECT TREES NEAR WORK AREAS WITH PROTECTIVE FENCE. SEE SWPPP SHEETS FOR LOCATIONS AND DETAIL.

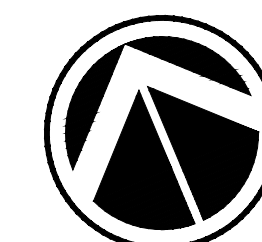


PROP. BOULDER HABITAT FEATURE SEE SHEET 34 FOR HABITAT DETAILS.		TOTAL THIS SHEET
①	SMALL-MEDIUM & SMALL BOULDER CLUSTER	0
②	SMALL-MEDIUM BOULDER CLUSTER	0
③	LARGE & SMALL-MEDIUM BOULDER CLUSTER	0
④	MEDIUM BOULDER CLUSTER	17
⑤	MEDIUM & SMALL BOULDER CLUSTER 1	0
⑥	MEDIUM, SMALL-MEDIUM & SMALL BOULDER CLUSTER	0
⑦	MEDIUM & SMALL BOULDER CLUSTER 2	0
⑧	VERY LARGE, MEDIUM & SMALL-MEDIUM BOULDER CLUSTER	0
⑨	VERY LARGE, LARGE, MEDIUM & SMALL BOULDER CLUSTER	5
⑩	LARGE & MEDIUM BOULDER CLUSTER	5

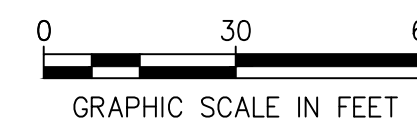
PROP. WOODY HABITAT FEATURE SEE SHEETS 33-34 FOR HABITAT DETAILS.		TOTAL THIS SHEET
①	OUTSIDE MEANDER LOG/BRANCH HABITAT	0
②	SHALLOW BANK LOG HABITAT	2
③	STREAMBED SMALL LOG DEBRIS	1
④	DEADFALL AND FLOODPLAIN TREE	0
⑤	STANDING DEAD TREE	0
⑥	STREAMBED LOG/BOULDER HABITAT	0

STRUCTURE	BEGIN		END	
	NORTHING	EASTING	NORTHING	EASTING
BANK STABILIZATION 1	533424.26	2234102.94	533429.52	2234227.66
ROCK KEY 1	533424.26	2234102.94	533333.56	2234198.31
ROCK KEY 2	533325.60	2234175.60	533389.87	2234230.83
ROCK KEY 3	533374.12	2234166.43	533431.86	2234230.36





NORTH



NOTES:

1. SEE SHEETS 2 - 4 FOR GENERAL NOTES.
2. SEE SHEET 4 FOR LEGEND.
3. SEE CROSS SECTION SHEETS FOR DETAILED GRADING AND PROPOSED ELEVATIONS.
4. SEE DETAILS, SHEETS 33-35 FOR BANK STABILIZATION AND ROCK KEY DETAILS
5. CONTRACTOR SHALL PROTECT TREES NEAR WORK AREAS WITH PROTECTIVE FENCE. SEE SWPPP SHEETS FOR LOCATIONS AND DETAIL.

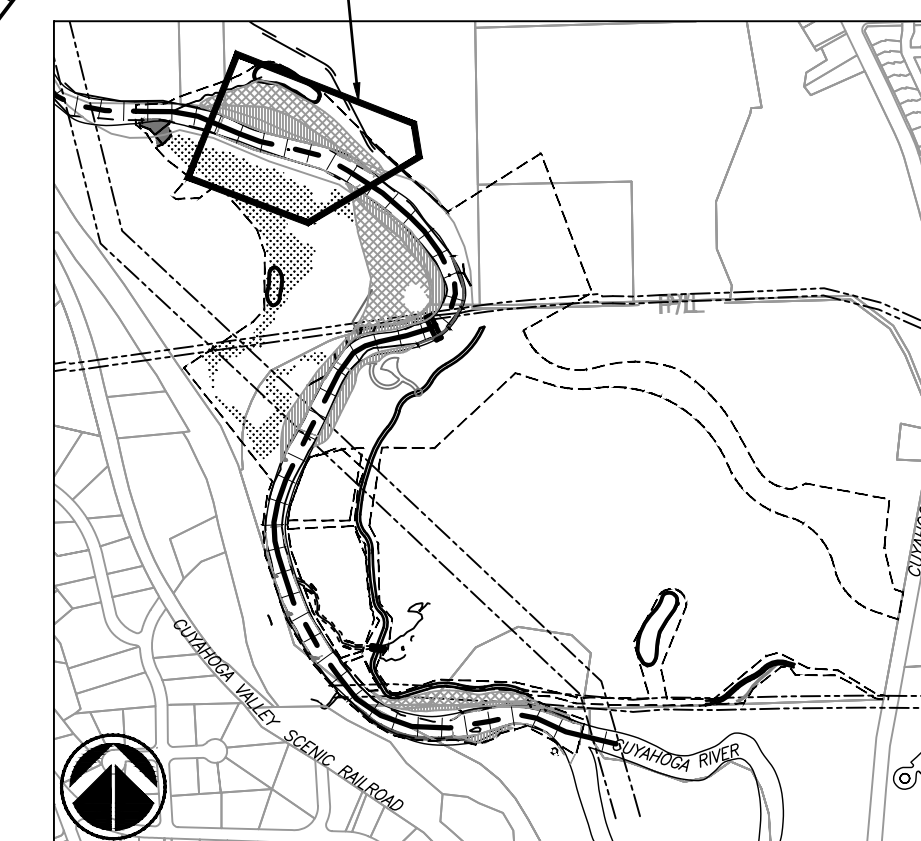


PROP. BOULDER HABITAT FEATURE
SEE SHEET 34 FOR HABITAT DETAILS.

	TOTAL THIS SHEET
① SMALL-MEDIUM & SMALL BOULDER CLUSTER	38
② SMALL-MEDIUM BOULDER CLUSTER	0
③ LARGE & SMALL-MEDIUM BOULDER CLUSTER	0
④ MEDIUM BOULDER CLUSTER	10
⑤ MEDIUM & SMALL BOULDER CLUSTER 1	0
⑥ MEDIUM, SMALL-MEDIUM & SMALL BOULDER CLUSTER	13
⑦ MEDIUM & SMALL BOULDER CLUSTER 2	3
⑧ VERY LARGE, MEDIUM & SMALL-MEDIUM BOULDER CLUSTER	0
⑨ VERY LARGE, LARGE, MEDIUM & SMALL BOULDER CLUSTER	0
⑩ LARGE & MEDIUM BOULDER CLUSTER	1

PROP. WOODY HABITAT FEATURE
SEE SHEETS 33-34 FOR HABITAT DETAILS.

	TOTAL THIS SHEET
① OUTSIDE MEANDER LOG/BRANCH HABITAT	6
② SHALLOW BANK LOG HABITAT	3
③ STREAMBED SMALL LOG DEBRIS	6
④ DEADFALL AND FLOODPLAIN TREE	5
⑤ STANDING DEAD TREE	0
⑥ STREAMBED LOG/BOULDER HABITAT	1



MATCHLINE STA 14+17 SEE SHEET 11

MATCHLINE STA 21+48 SEE SHEET 13

DESIGNED BY: ADH
DRAWN BY: DG

REFERENCES: N/A
REVISIONS: 1

SCALE: 1"=30'-0"
DATE: 03/23/2020

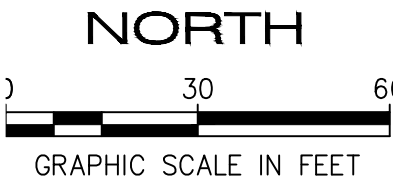
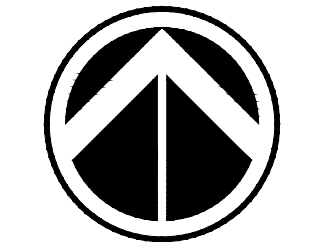
SUMMIT METRO PARKS
VALLEY VIEW PH 2 RESTORATION DESIGN

975 TREATY LINE ROAD
AKRON, OHIO 44313
(330) 867-5511

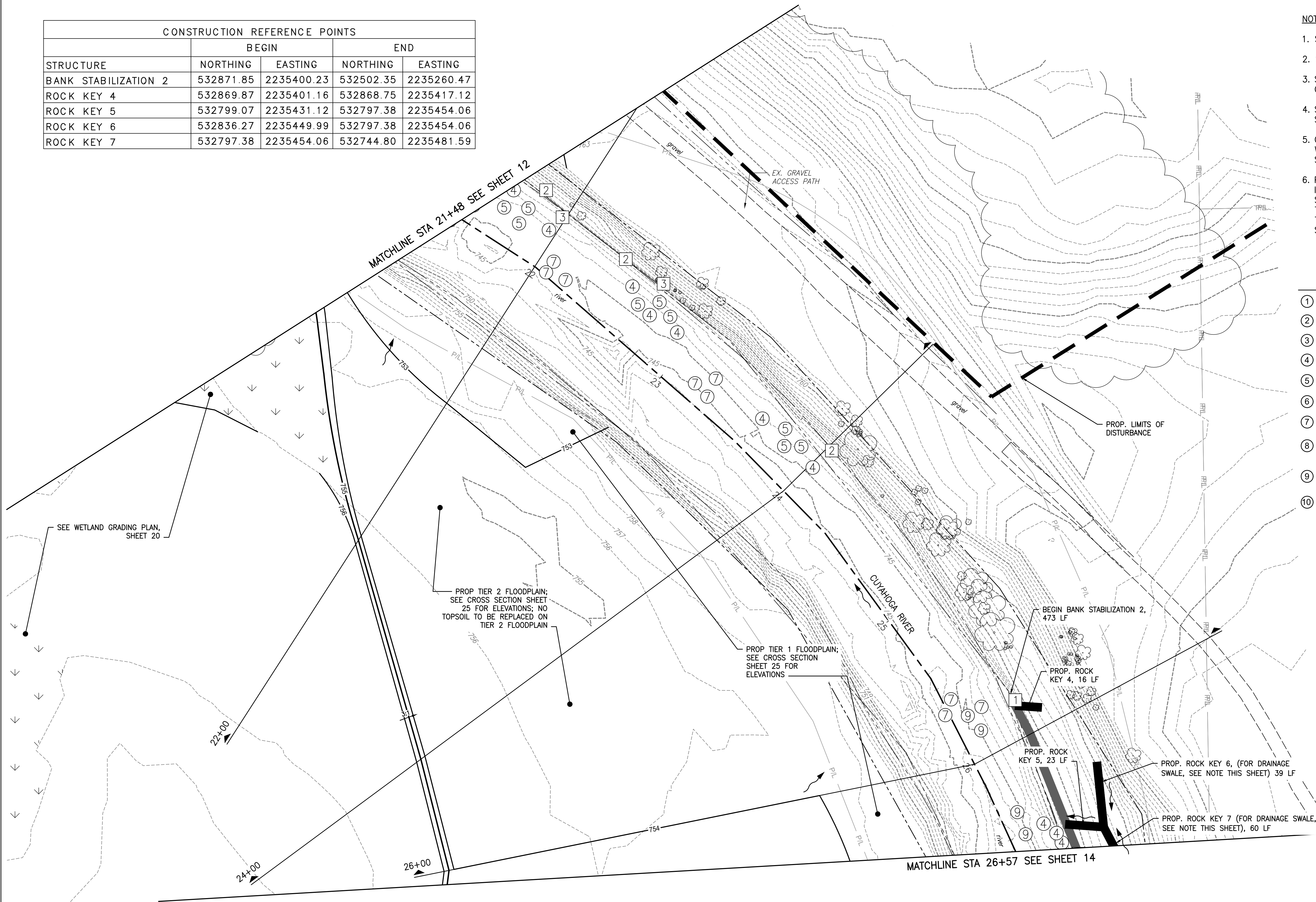
Summit Metro Parks

GRADING PLAN
SHEET: 12 of 44

CONSTRUCTION REFERENCE POINTS				
STRUCTURE	BEGIN		END	
	NORTHING	EASTING	NORTHING	EASTING
BANK STABILIZATION 2	532871.85	2235400.23	532502.35	2235260.47
ROCK KEY 4	532869.87	2235401.16	532868.75	2235417.12
ROCK KEY 5	532799.07	2235431.12	532797.38	2235454.06
ROCK KEY 6	532836.27	2235449.99	532797.38	2235454.06
ROCK KEY 7	532797.38	2235454.06	532744.80	2235481.59

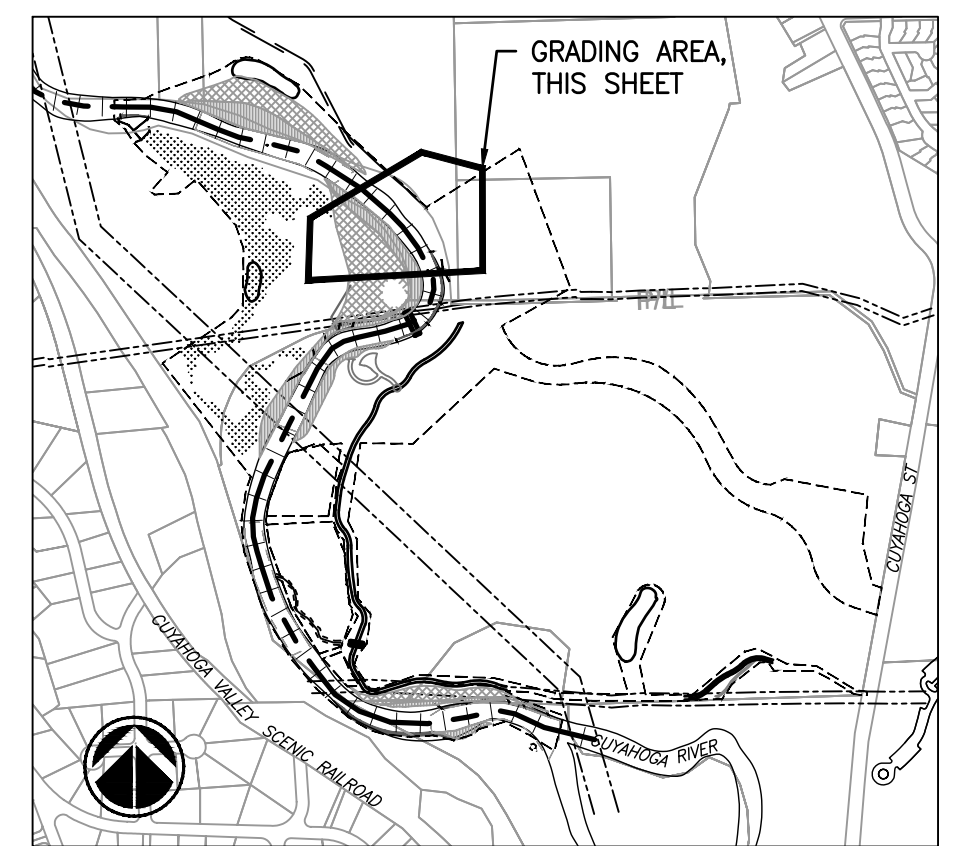


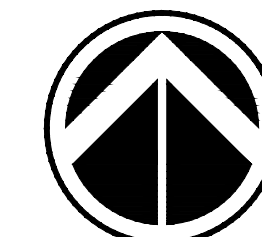
- NOTES:**
- SEE SHEETS 2 - 4 FOR GENERAL NOTES.
 - SEE SHEET 4 FOR LEGEND.
 - SEE CROSS SECTION SHEETS FOR DETAILED GRADING AND PROPOSED ELEVATIONS.
 - SEE DETAILS, SHEETS 33-35 FOR BANK STABILIZATION AND ROCK KEY DETAILS
 - CONTRACTOR SHALL PROTECT TREES NEAR WORK AREAS WITH PROTECTIVE FENCE. SEE SWPPP SHEETS FOR LOCATIONS AND DETAIL.
 - PROP. ROCK KEYS 5, 6 AND 7 SHOULD BE INSTALLED SO THAT DRAINAGE FROM SEEPAGE FLOWS ALONG KEYS AND TOWARDS THE STREAM. SLOPE KEYS 6 AND 7 IN TOWARDS KEY 5. KEY 5 SHOULD THEN SLOPE TOWARDS THE BANK STABILIZATION.



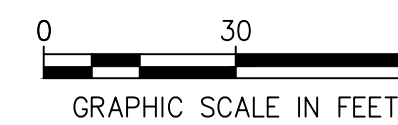
PROP. BOULDER HABITAT FEATURE SEE SHEET 34 FOR HABITAT DETAILS.	TOTAL THIS SHEET
① SMALL-MEDIUM & SMALL BOULDER CLUSTER	0
② SMALL-MEDIUM BOULDER CLUSTER	0
③ LARGE & SMALL-MEDIUM BOULDER CLUSTER	0
④ MEDIUM BOULDER CLUSTER	10
⑤ MEDIUM & SMALL BOULDER CLUSTER 1	9
⑥ MEDIUM, SMALL-MEDIUM & SMALL BOULDER CLUSTER	0
⑦ MEDIUM & SMALL BOULDER CLUSTER 2	9
⑧ VERY LARGE, MEDIUM & SMALL-MEDIUM BOULDER CLUSTER	0
⑨ VERY LARGE, LARGE, MEDIUM & SMALL BOULDER CLUSTER	4
⑩ LARGE & MEDIUM BOULDER CLUSTER	0

PROP. WOODY HABITAT FEATURE SEE SHEETS 33-34 FOR HABITAT DETAILS.	TOTAL THIS SHEET
① OUTSIDE MEANDER LOG/BRANCH HABITAT	1
② SHALLOW BANK LOG HABITAT	3
③ STREAMBED SMALL LOG DEBRIS	2
④ DEADFALL AND FLOODPLAIN TREE	0
⑤ STANDING DEAD TREE	0
⑥ STREAMBED LOG/BOULDER HABITAT	0





NORTH

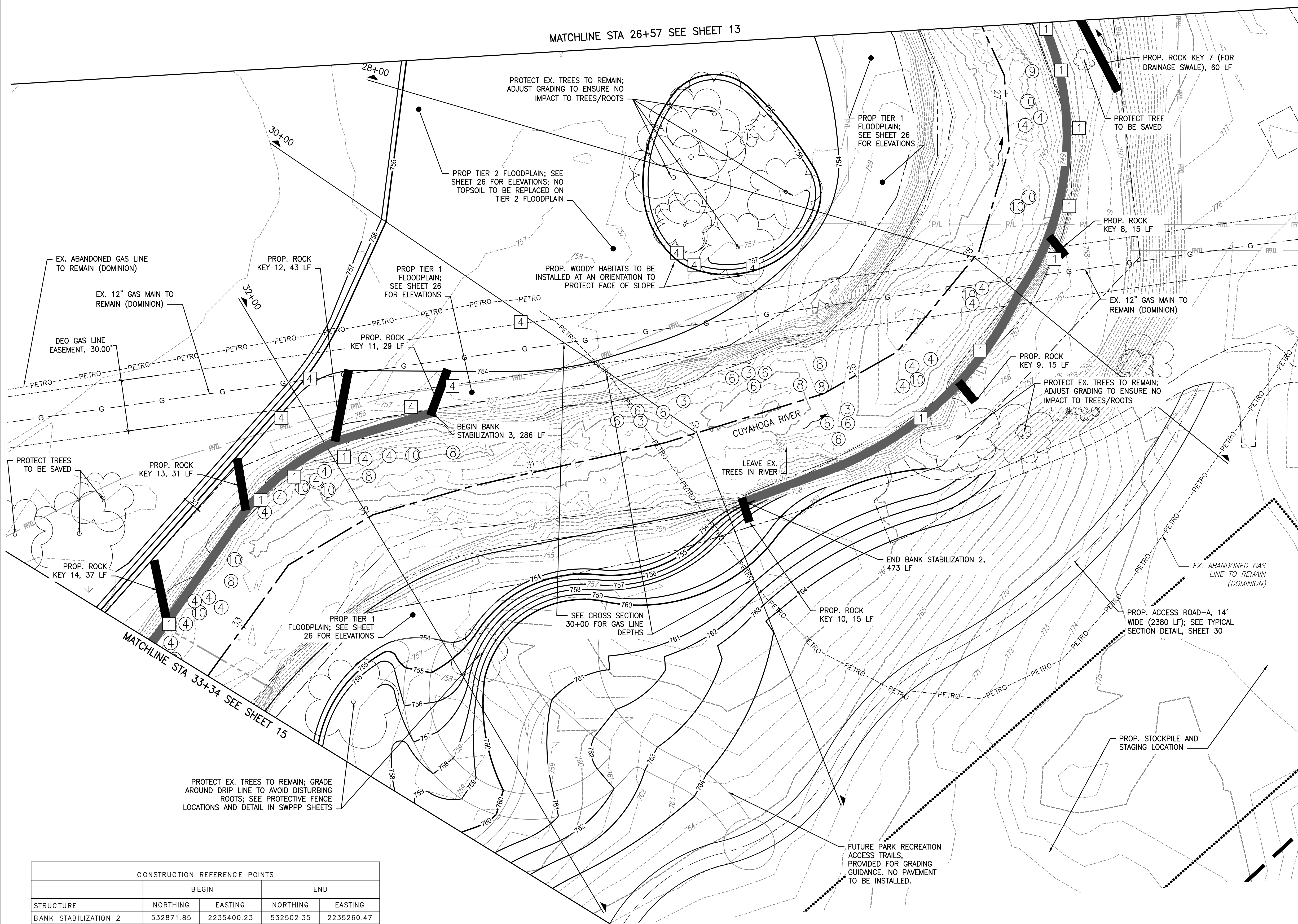


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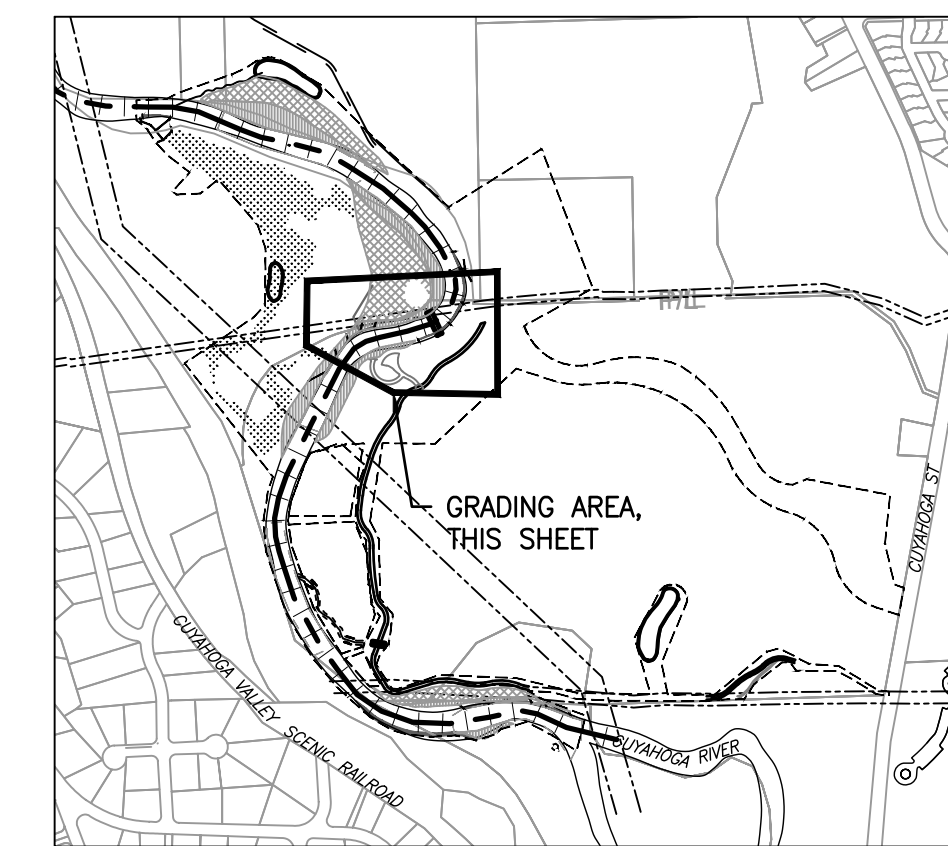
1. SEE SHEETS 2 - 4 FOR GENERAL NOTES.
2. SEE SHEET 4 FOR LEGEND.
3. SEE CROSS SECTION SHEETS FOR DETAILED GRADING AND PROPOSED ELEVATIONS.
4. SEE DETAILS, SHEETS 33-35 FOR BANK STABILIZATION AND ROCK KEY DETAILS
5. CONTRACTOR SHALL PROTECT TREES NEAR WORK AREAS WITH PROTECTIVE FENCE. SEE SWPPP SHEETS FOR LOCATIONS AND DETAIL.

PROP. BOULDER HABITAT FEATURE SEE SHEET 34 FOR HABITAT DETAILS.	TOTAL THIS SHEET
① SMALL-MEDIUM & SMALL BOULDER CLUSTER	0
② SMALL-MEDIUM BOULDER CLUSTER	0
③ LARGE & SMALL-MEDIUM BOULDER CLUSTER	4
④ MEDIUM BOULDER CLUSTER	18
⑤ MEDIUM & SMALL BOULDER CLUSTER 1	0
⑥ MEDIUM, SMALL-MEDIUM & SMALL BOULDER CLUSTER	9
⑦ MEDIUM & SMALL BOULDER CLUSTER 2	0
⑧ VERY LARGE, MEDIUM & SMALL-MEDIUM BOULDER CLUSTER	6
⑨ VERY LARGE, LARGE, MEDIUM & SMALL BOULDER CLUSTER	1
⑩ LARGE & MEDIUM BOULDER CLUSTER	10

PROP. WOODY HABITAT FEATURE SEE SHEETS 33-34 FOR HABITAT DETAILS.	TOTAL THIS SHEET
① OUTSIDE MEANDER LOG/BRANCH HABITAT	11
② SHALLOW BANK LOG HABITAT	0
③ STREAMBED SMALL LOG DEBRIS	0
④ DEADFALL AND FLOODPLAIN TREE	8
⑤ STANDING DEAD TREE	0
⑥ STREAMBED LOG/BOULDER HABITAT	0



STRUCTURE	CONSTRUCTION REFERENCE POINTS			
	BEGIN		END	
	NORTHING	EASTING	NORTHING	EASTING
BANK STABILIZATION 2	532871.85	2235400.23	532502.35	2235260.47
BANK STABILIZATION 3	532555.30	2235077.54	532368.49	2234875.11
ROCK KEY 7	532797.38	2235454.06	532744.80	2235481.59
ROCK KEY 8	532659.26	2235441.27	532647.63	2235450.73
ROCK KEY 9	532573.32	2235387.88	532561.87	2235397.18
ROCK KEY 10	532505.16	2235259.88	532490.84	2235264.38
ROCK KEY 11	532555.30	2235077.54	532580.87	2235086.39
ROCK KEY 12	532538.37	2235020.06	532580.60	2235028.14
ROCK KEY 13	532497.79	2234967.49	532528.36	2234962.39
ROCK KEY 14	532432.09	2234921.05	532468.30	2234913.44



CONSTRUCTION REFERENCE POINTS				
STRUCTURE	BEGIN		END	
	NORTHING	EASTING	NORTHING	EASTING
BANK STABILIZATION 3	532555.30	2235077.54	532368.49	2234875.11
ROCK KEY 15	532368.49	2234875.11	532329.66	2234800.87
ROCK SPUR 1	532027.47	2234702.01	532016.55	2234714.18

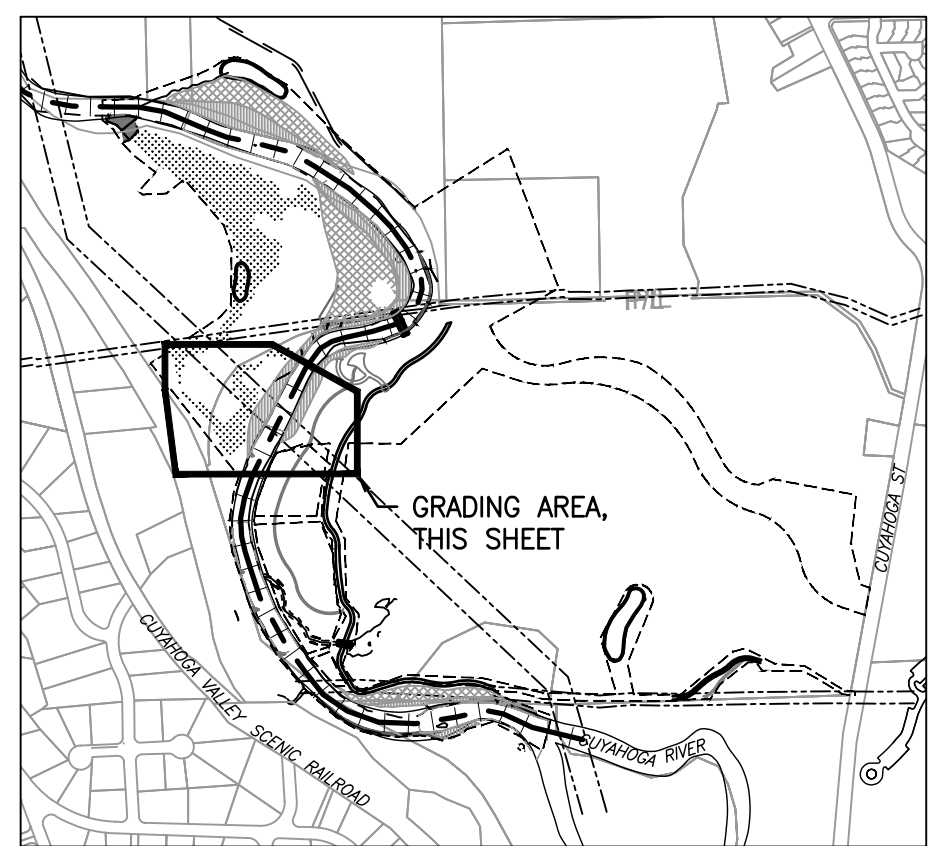
NOTES:

- SEE SHEETS 2 - 4 FOR GENERAL NOTES.
- SEE SHEET 4 FOR LEGEND.
- SEE CROSS SECTION SHEETS FOR DETAILED GRADING AND PROPOSED ELEVATIONS.
- SEE DETAILS, SHEETS 33-35 FOR BANK STABILIZATION AND ROCK KEY DETAILS
- CONTRACTOR SHALL PROTECT TREES NEAR WORK AREAS WITH PROTECTIVE FENCE. SEE SWPPP SHEETS FOR LOCATIONS AND DETAIL.



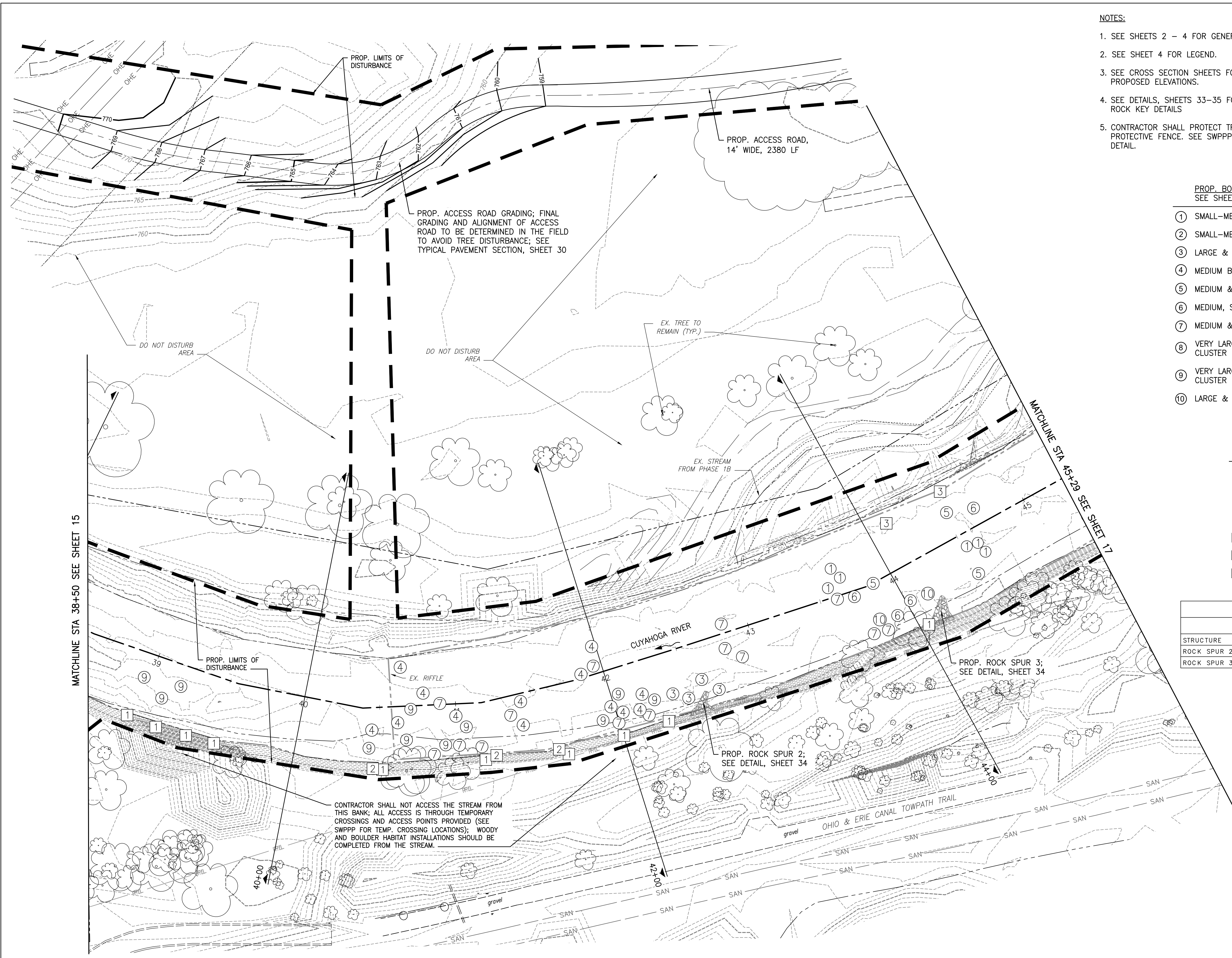
PROP. BOULDER HABITAT FEATURE SEE SHEET 34 FOR HABITAT DETAILS.	TOTAL THIS SHEET
① SMALL-MEDIUM & SMALL BOULDER CLUSTER	0
② SMALL-MEDIUM BOULDER CLUSTER	25
③ LARGE & SMALL-MEDIUM BOULDER CLUSTER	10
④ MEDIUM BOULDER CLUSTER	14
⑤ MEDIUM & SMALL BOULDER CLUSTER 1	12
⑥ MEDIUM, SMALL-MEDIUM & SMALL BOULDER CLUSTER	0
⑦ MEDIUM & SMALL BOULDER CLUSTER 2	0
⑧ VERY LARGE, MEDIUM & SMALL-MEDIUM BOULDER CLUSTER	3
⑨ VERY LARGE, LARGE, MEDIUM & SMALL BOULDER CLUSTER	2
⑩ LARGE & MEDIUM BOULDER CLUSTER	0

PROP. WOODY HABITAT FEATURE SEE SHEETS 33-34 FOR HABITAT DETAILS.	TOTAL THIS SHEET
① OUTSIDE MEANDER LOG/BRANCH HABITAT	1
② SHALLOW BANK LOG HABITAT	0
③ STREAMBED SMALL LOG DEBRIS	1
④ DEADFALL AND FLOODPLAIN TREE	6
⑤ STANDING DEAD TREE	0
⑥ STREAMBED LOG/BOULDER HABITAT	0



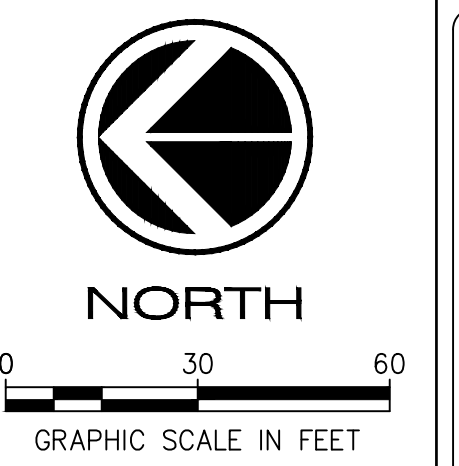
MATCHLINE STA 38+50 SEE SHEET 16





NOTES:

1. SEE SHEETS 2 – 4 FOR GENERAL NOTES.
2. SEE SHEET 4 FOR LEGEND.
3. SEE CROSS SECTION SHEETS FOR DETAILED GRADING AND PROPOSED ELEVATIONS.
4. SEE DETAILS, SHEETS 33–35 FOR BANK STABILIZATION AND ROCK KEY DETAILS
5. CONTRACTOR SHALL PROTECT TREES NEAR WORK AREAS WITH PROTECTIVE FENCE. SEE SWPPP SHEETS FOR LOCATIONS AND DETAIL.

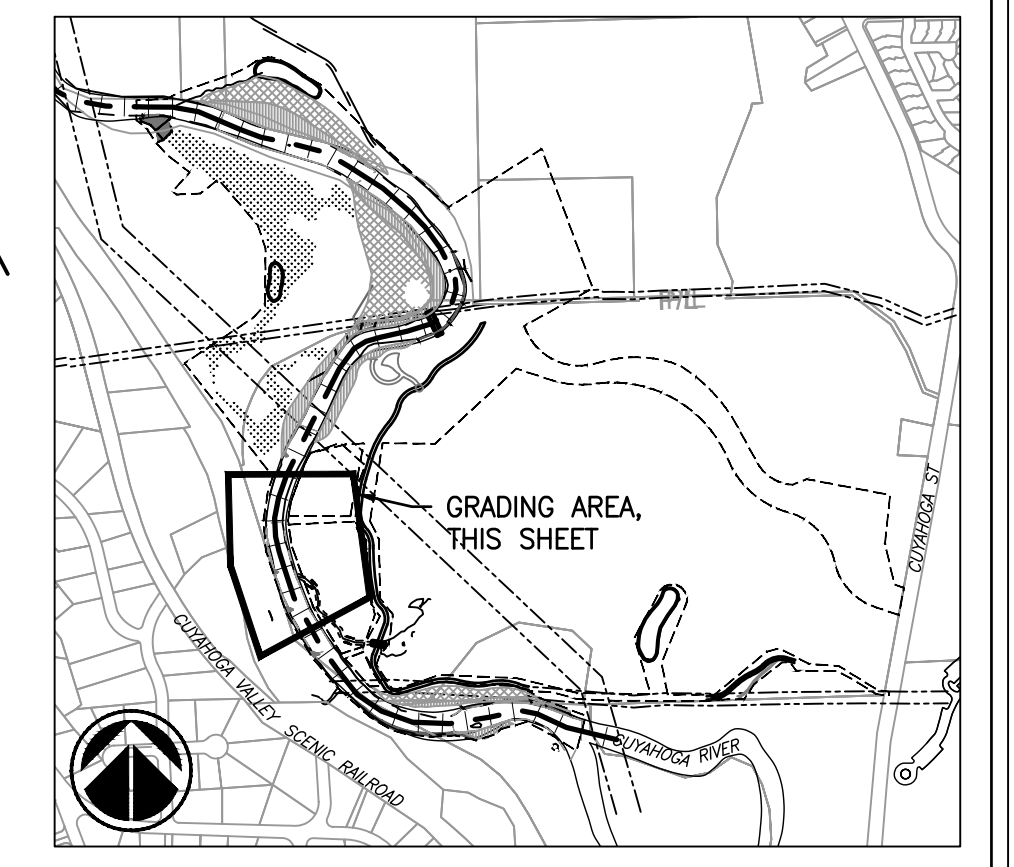


PROP. BOULDER HABITAT FEATURE SEE SHEET 34 FOR HABITAT DETAILS.	TOTAL THIS SHEET
① SMALL-MEDIUM & SMALL BOULDER CLUSTER	6
② SMALL-MEDIUM BOULDER CLUSTER	0
③ LARGE & SMALL-MEDIUM BOULDER CLUSTER	4
④ MEDIUM BOULDER CLUSTER	13
⑤ MEDIUM & SMALL BOULDER CLUSTER 1	3
⑥ MEDIUM, SMALL-MEDIUM & SMALL BOULDER CLUSTER	4
⑦ MEDIUM & SMALL BOULDER CLUSTER 2	14
⑧ VERY LARGE, MEDIUM & SMALL-MEDIUM BOULDER CLUSTER	0
⑨ VERY LARGE, LARGE, MEDIUM & SMALL BOULDER CLUSTER	11
⑩ LARGE & MEDIUM BOULDER CLUSTER	2

PROP. WOODY HABITAT FEATURE SEE SHEETS 33–34 FOR HABITAT DETAILS.	TOTAL THIS SHEET
① OUTSIDE MEANDER LOG/BRANCH HABITAT	10
② SHALLOW BANK LOG HABITAT	3
③ STREAMBED SMALL LOG DEBRIS	2
④ DEADFALL AND FLOODPLAIN TREE	0
⑤ STANDING DEAD TREE	0
⑥ STREAMBED LOG/BOULDER HABITAT	0

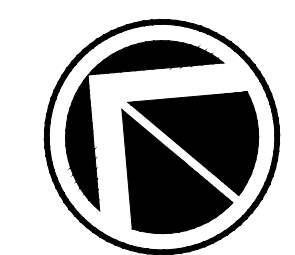
STRUCTURE	CONSTRUCTION REFERENCE POINTS			
	BEGIN		END	
	NORTHING	EASTING	NORTHING	EASTING
ROCK SPUR 2	531536.21	2234659.42	531533.59	2234673.55
ROCK SPUR 3	531378.75	2234717.73	531379.14	2234736.69

CONTRACTOR SHALL NOT ACCESS THE STREAM FROM THIS BANK; ALL ACCESS IS THROUGH TEMPORARY CROSSINGS AND ACCESS POINTS PROVIDED (SEE SWPPP FOR TEMP. CROSSING LOCATIONS); WOODY AND BOULDER HABITAT INSTALLATIONS SHOULD BE COMPLETED FROM THE STREAM.

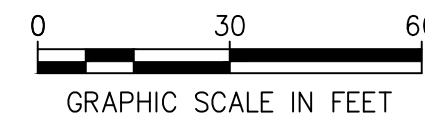


MATCHLINE STA 38+50 SEE SHEET 15

MATCHLINE STA 45+20 SEE SHEET 17

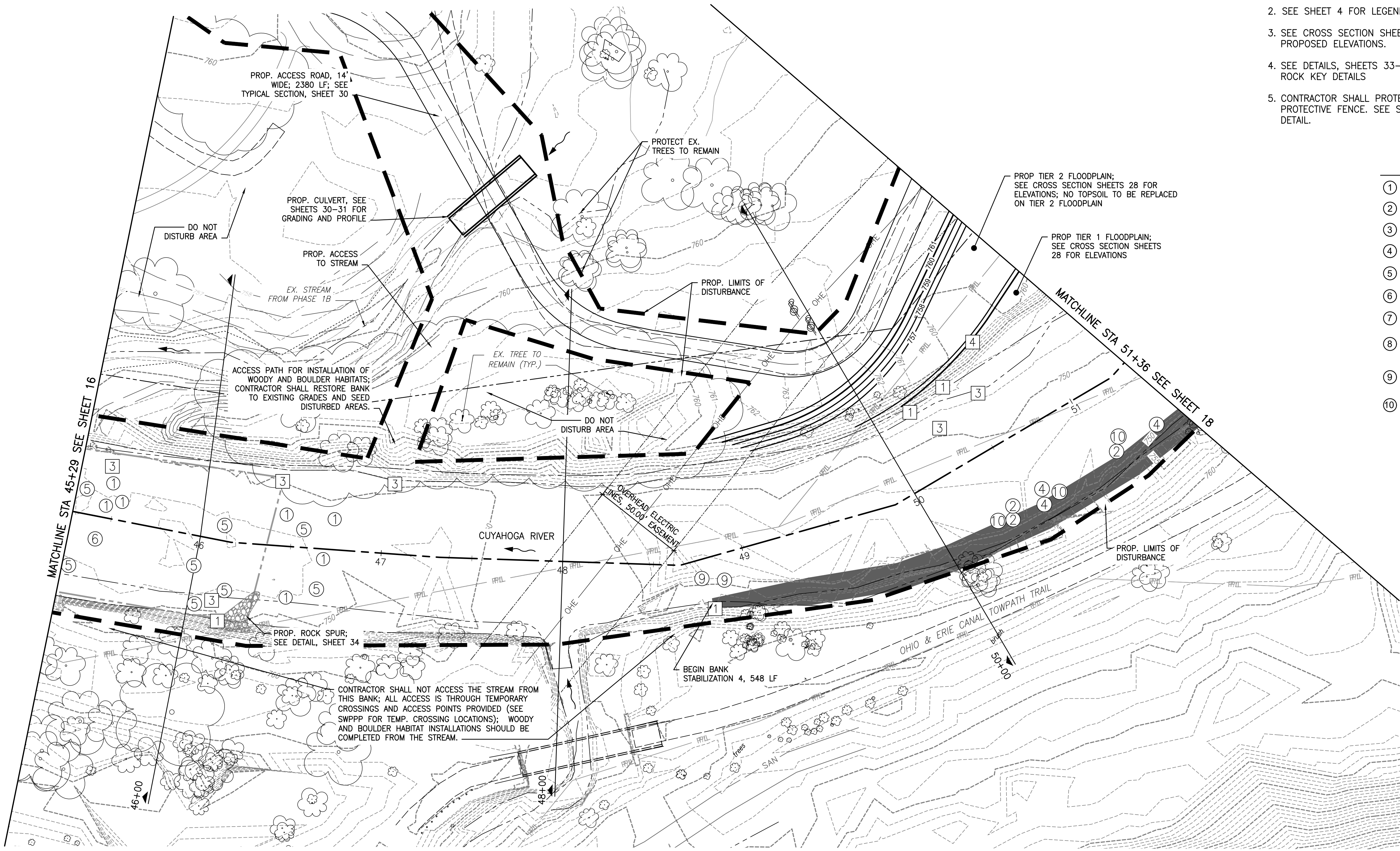


NORTH



NOTES:

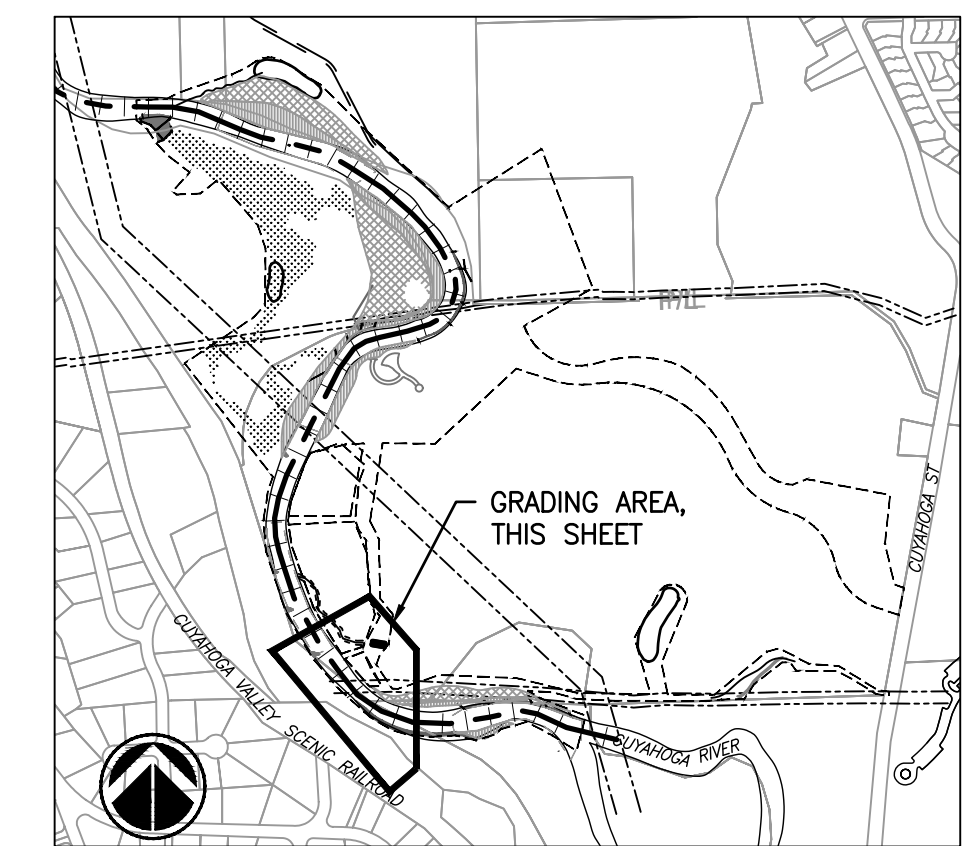
1. SEE SHEETS 2 - 4 FOR GENERAL NOTES.
2. SEE SHEET 4 FOR LEGEND.
3. SEE CROSS SECTION SHEETS FOR DETAILED GRADING AND PROPOSED ELEVATIONS.
4. SEE DETAILS, SHEETS 33-35 FOR BANK STABILIZATION AND ROCK KEY DETAILS
5. CONTRACTOR SHALL PROTECT TREES NEAR WORK AREAS WITH PROTECTIVE FENCE. SEE SWPPP SHEETS FOR LOCATIONS AND DETAIL.



PROP. BOULDER HABITAT FEATURE SEE SHEET 34 FOR HABITAT DETAILS.	TOTAL THIS SHEET
① SMALL-MEDIUM & SMALL BOULDER CLUSTER	7
② SMALL-MEDIUM BOULDER CLUSTER	3
③ LARGE & SMALL-MEDIUM BOULDER CLUSTER	0
④ MEDIUM BOULDER CLUSTER	3
⑤ MEDIUM & SMALL BOULDER CLUSTER 1	8
⑥ MEDIUM, SMALL-MEDIUM & SMALL BOULDER CLUSTER	1
⑦ MEDIUM & SMALL BOULDER CLUSTER 2	0
⑧ VERY LARGE, MEDIUM & SMALL-MEDIUM BOULDER CLUSTER	0
⑨ VERY LARGE, LARGE, MEDIUM & SMALL BOULDER CLUSTER	2
⑩ LARGE & MEDIUM BOULDER CLUSTER	3

PROP. WOODY HABITAT FEATURE SEE SHEETS 33-34 FOR HABITAT DETAILS.	TOTAL THIS SHEET
① OUTSIDE MEANDER LOG/BRANCH HABITAT	4
② SHALLOW BANK LOG HABITAT	0
③ STREAMBED SMALL LOG DEBRIS	6
④ DEADFALL AND FLOODPLAIN TREE	1
⑤ STANDING DEAD TREE	0
⑥ STREAMBED LOG/BOULDER HABITAT	0

STRUCTURE	CONSTRUCTION REFERENCE POINTS			
	BEGIN		END	
	NORTHING	EASTING	NORTHING	EASTING
BANK STABILIZATION 4	530998.17	2235001.14	530840.59	2235502.86
ROCK SPUR 4	531194.43	2234819.18	531194.43	2234834.32



MATCHLINE STA 45+29 SEE SHEET 16

MATCHLINE STA 51+36 SEE SHEET 18

PROP. ACCESS ROAD, 14' WIDE, 2380 LF; SEE TYPICAL SECTION, SHEET 30

PROP. CULVERT, SEE SHEETS 30-31 FOR GRADING AND PROFILE

DO NOT DISTURB AREA

PROP. ACCESS TO STREAM

EX. STREAM FROM PHASE 1B

ACCESS PATH FOR INSTALLATION OF WOODY AND BOULDER HABITATS; CONTRACTOR SHALL RESTORE BANK TO EXISTING GRADES AND SEED DISTURBED AREAS.

EX. TREE TO REMAIN (TYP.)

DO NOT DISTURB AREA

PROTECT EX. TREES TO REMAIN

PROP TIER 2 FLOODPLAIN; SEE CROSS SECTION SHEETS 28 FOR ELEVATIONS; NO TOPSOIL TO BE REPLACED ON TIER 2 FLOODPLAIN

PROP TIER 1 FLOODPLAIN; SEE CROSS SECTION SHEETS 28 FOR ELEVATIONS

OVERHEAD ELECTRIC EASEMENT LINES, 50'-0"

CUYAHOGA RIVER

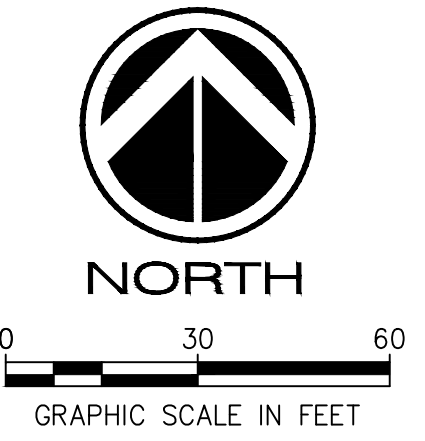
BEGIN BANK STABILIZATION 4, 548 LF

OHIO & ERIE CANAL TOWPATH TRAIL

PROP. ROCK SPUR; SEE DETAIL, SHEET 34

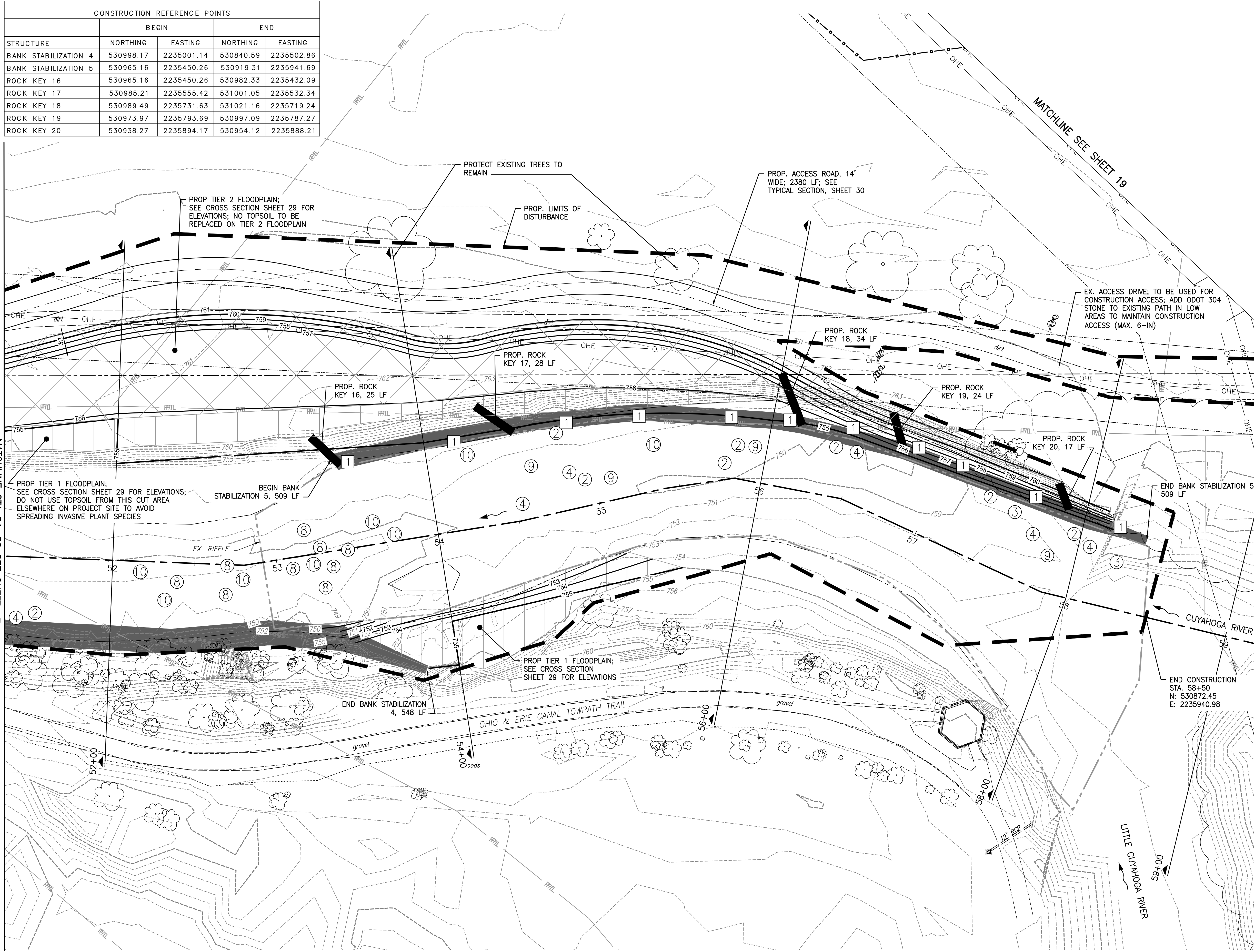
CONTRACTOR SHALL NOT ACCESS THE STREAM FROM THIS BANK; ALL ACCESS IS THROUGH TEMPORARY CROSSINGS AND ACCESS POINTS PROVIDED (SEE SWPPP FOR TEMP. CROSSING LOCATIONS); WOODY AND BOULDER HABITAT INSTALLATIONS SHOULD BE COMPLETED FROM THE STREAM.

CONSTRUCTION REFERENCE POINTS				
STRUCTURE	BEGIN		END	
	NORTHING	EASTING	NORTHING	EASTING
BANK STABILIZATION 4	530998.17	2235001.14	530840.59	2235502.86
BANK STABILIZATION 5	530965.16	2235450.26	530919.31	2235941.69
ROCK KEY 16	530965.16	2235450.26	530982.33	2235432.09
ROCK KEY 17	530985.21	2235555.42	531001.05	2235532.34
ROCK KEY 18	530989.49	2235731.63	531021.16	2235719.24
ROCK KEY 19	530973.97	2235793.69	530997.09	2235787.27
ROCK KEY 20	530938.27	2235894.17	530954.12	2235888.21



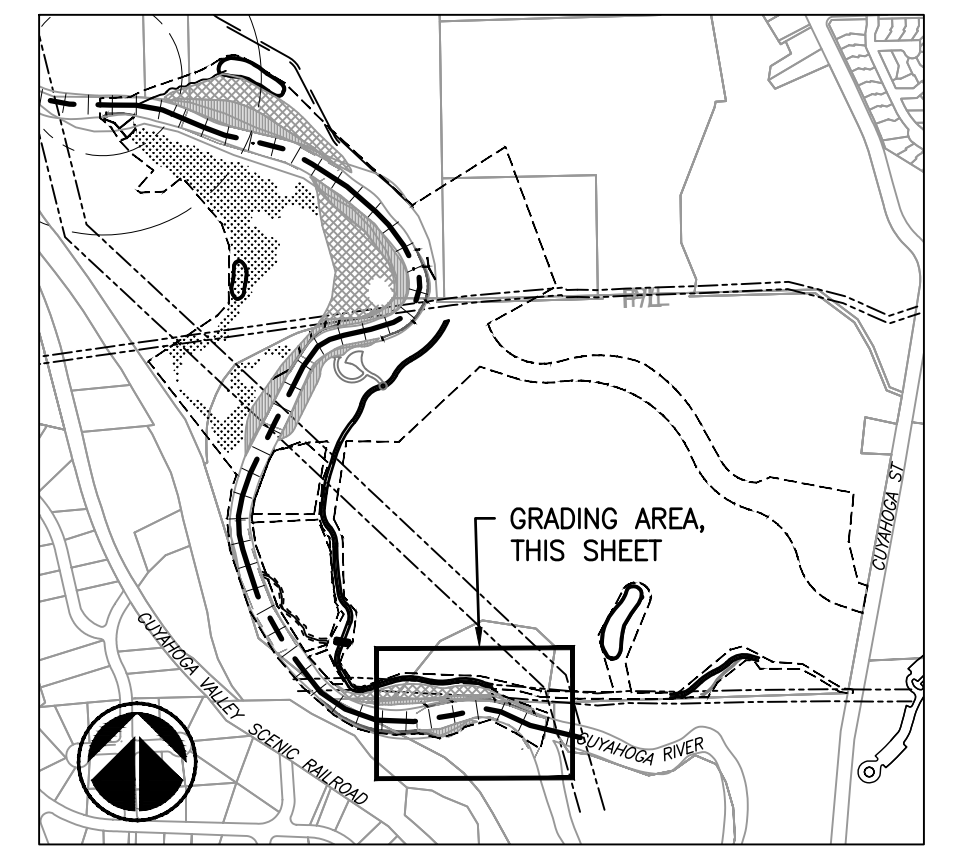
- NOTES:**
- SEE SHEETS 2 - 4 FOR GENERAL NOTES.
 - SEE SHEET 4 FOR LEGEND.
 - SEE CROSS SECTION SHEETS FOR DETAILED GRADING AND PROPOSED ELEVATIONS.
 - SEE DETAILS, SHEETS 33-35 FOR BANK STABILIZATION AND ROCK KEY DETAILS
 - CONTRACTOR SHALL PROTECT TREES NEAR WORK AREAS WITH PROTECTIVE FENCE. SEE SWPPP SHEETS FOR LOCATIONS AND DETAIL.

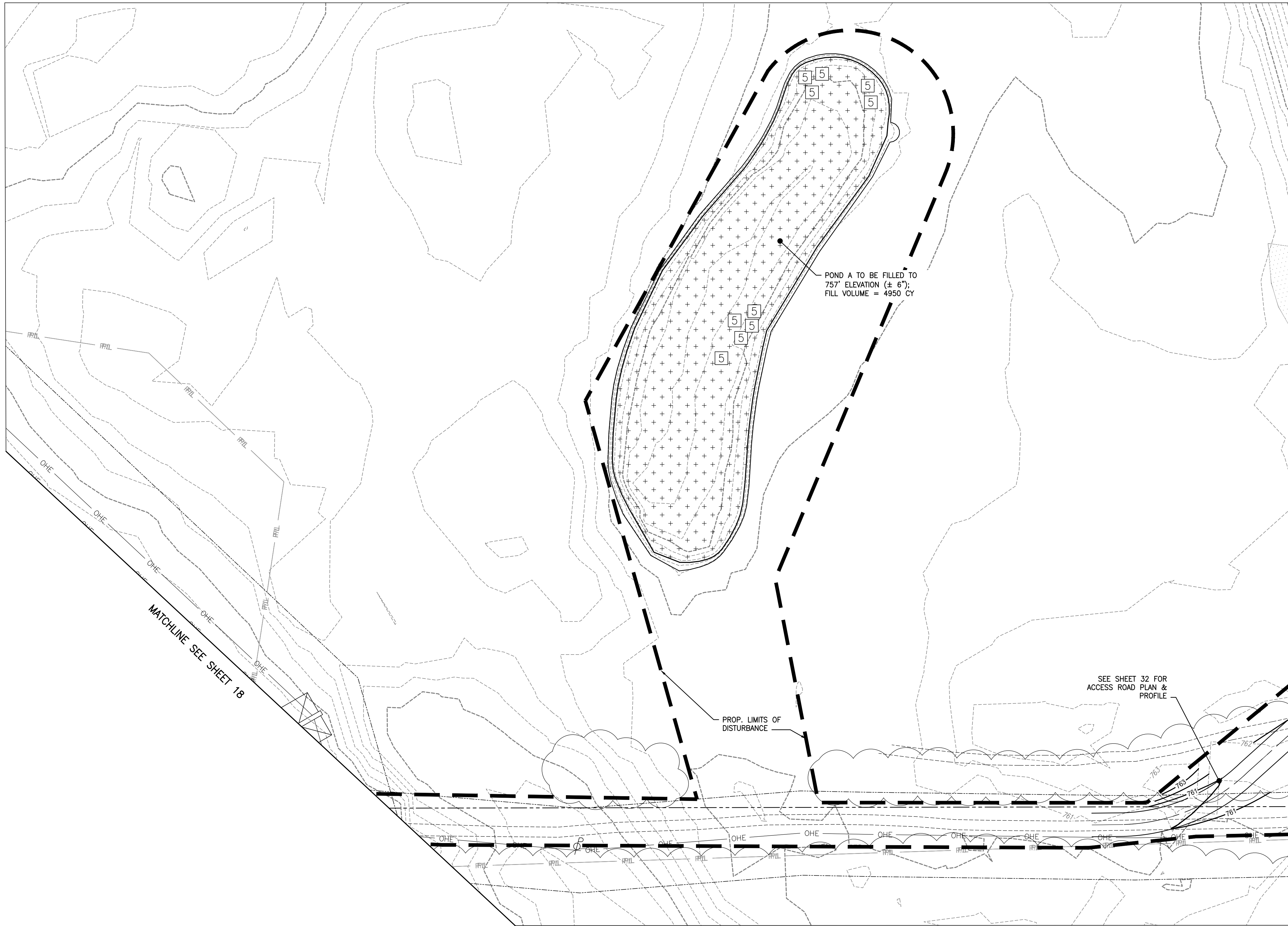
MATCHLINE STA 51+36 SEE SHEET 17



PROP. BOULDER HABITAT FEATURE SEE SHEET 34 FOR HABITAT DETAILS.	TOTAL THIS SHEET
① SMALL-MEDIUM & SMALL BOULDER CLUSTER	0
② SMALL-MEDIUM BOULDER CLUSTER	8
③ LARGE & SMALL-MEDIUM BOULDER CLUSTER	2
④ MEDIUM BOULDER CLUSTER	6
⑤ MEDIUM & SMALL BOULDER CLUSTER 1	0
⑥ MEDIUM, SMALL-MEDIUM & SMALL BOULDER CLUSTER	0
⑦ MEDIUM & SMALL BOULDER CLUSTER 2	0
⑧ VERY LARGE, MEDIUM & SMALL-MEDIUM BOULDER CLUSTER	9
⑨ VERY LARGE, LARGE, MEDIUM & SMALL BOULDER CLUSTER	4
⑩ LARGE & MEDIUM BOULDER CLUSTER	8

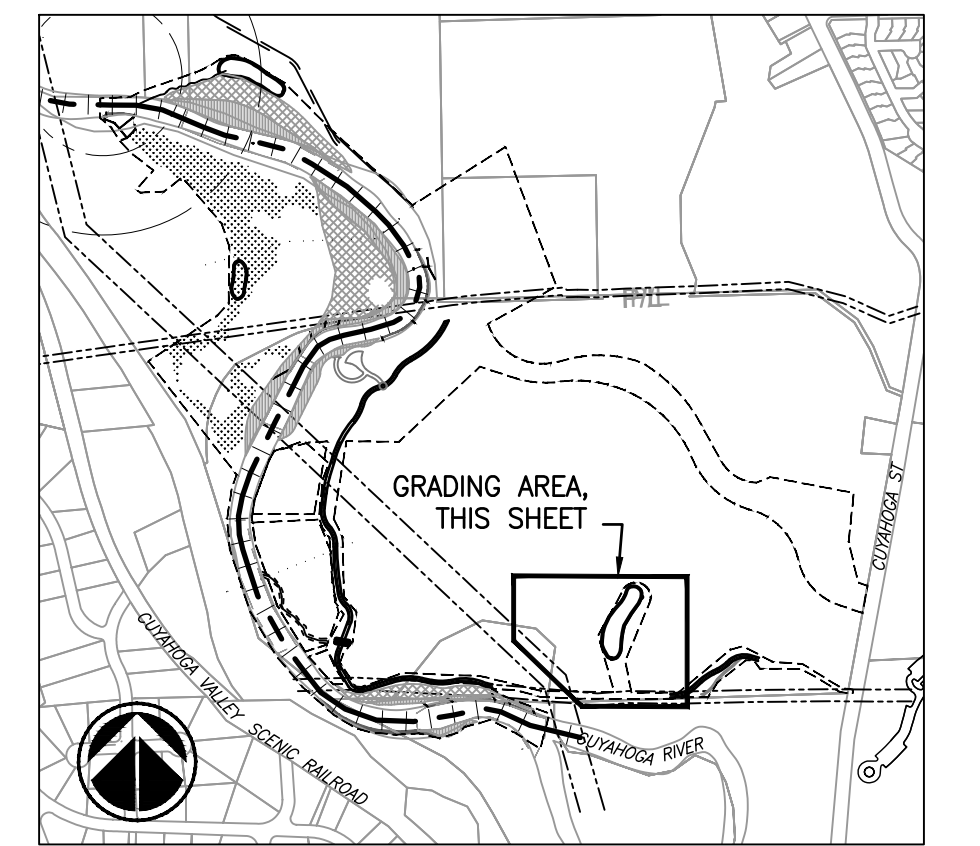
PROP. WOODY HABITAT FEATURE SEE SHEETS 33-34 FOR HABITAT DETAILS.	TOTAL THIS SHEET
① OUTSIDE MEANDER LOG/BRANCH HABITAT	11
② SHALLOW BANK LOG HABITAT	0
③ STREAMBED SMALL LOG DEBRIS	0
④ DEADFALL AND FLOODPLAIN TREE	0
⑤ STANDING DEAD TREE	0
⑥ STREAMBED LOG/BOULDER HABITAT	0

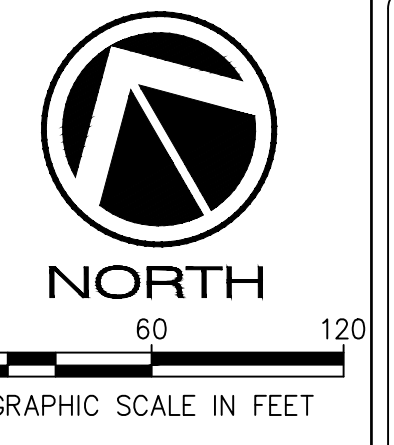




- NOTES:**
1. SEE SHEETS 2 - 4 FOR GENERAL NOTES.
 2. SEE SHEET 4 FOR LEGEND.
 3. SEE CROSS SECTION SHEETS FOR DETAILED GRADING AND PROPOSED ELEVATIONS.
 4. SEE DETAILS, SHEETS 33-35 FOR BANK STABILIZATION AND ROCK KEY DETAILS
 5. CONTRACTOR SHALL PROTECT TREES NEAR WORK AREAS WITH PROTECTIVE FENCE. SEE SWPPP SHEETS FOR LOCATIONS AND DETAIL.

PROP. WOODY HABITAT FEATURE SEE SHEETS 33-34 FOR HABITAT DETAILS.	TOTAL THIS SHEET
1 OUTSIDE MEANDER LOG/BRANCH HABITAT	0
2 SHALLOW BANK LOG HABITAT	0
3 STREAMBED SMALL LOG DEBRIS	0
4 DEADFALL AND FLOODPLAIN TREE	0
5 STANDING DEAD TREE	10
6 STREAMBED LOG/BOULDER HABITAT	0





PROP. ROCK LINED
OUTLET; OUTLET
ELEVATION = 754'

POND B TO BE FILLED
TO ELEV = 755' (± 6");
FILL VOLUME = 1200 CY

PROP. DISTURBANCE LIMITS

EX. 12" GAS MAIN
TO REMAIN
(DOMINION)

EX. ABANDONED
GAS LINE TO
REMAIN (DOMINION)

OVERHEAD ELECTRIC
LINES, 100.00' EASEMENT

DEO GAS LINE
EASEMENT, 15.00'

EX. UTILITY
TOWER, DO
NOT DISTURB

PROP. WOODY HABITAT FEATURE
SEE SHEETS 33-34 FOR HABITAT
DETAILS.

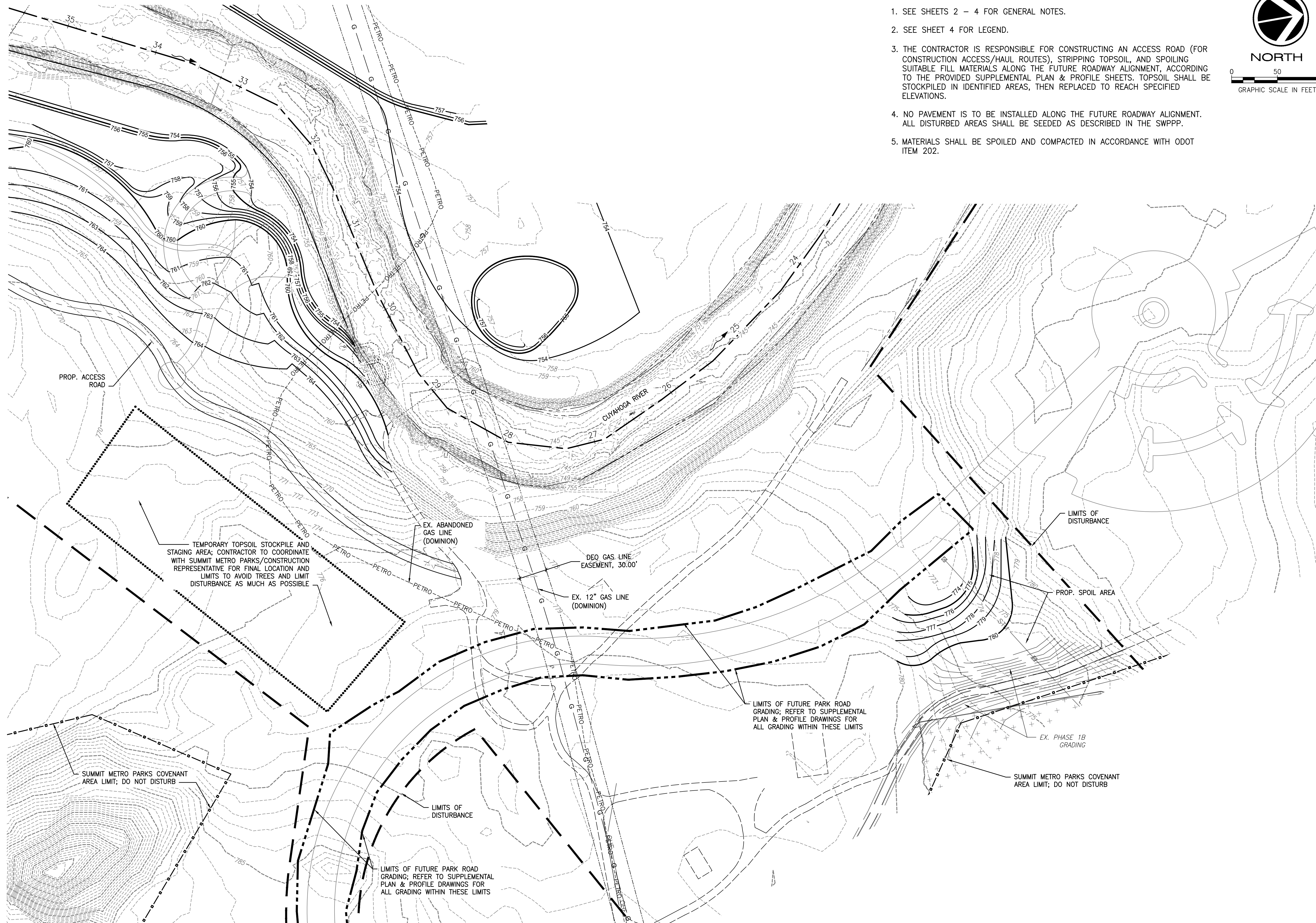
TOTAL THIS
SHEET

1	OUTSIDE MEANDER LOG/BRANCH HABITAT	0*
2	SHALLOW BANK LOG HABITAT	0*
3	STREAMBED SMALL LOG DEBRIS	0*
4	DEADFALL AND FLOODPLAIN TREE	0*
5	STANDING DEAD TREE	13*
6	STREAMBED LOG/BOULDER HABITAT	0*

*ALL OTHER WOODY HABITAT
FEATURES DEPICTED ON THIS SHEET
HAVE BEEN ACCOUNTED FOR ON
GRADING PLANS, SHEETS 11 - 19.

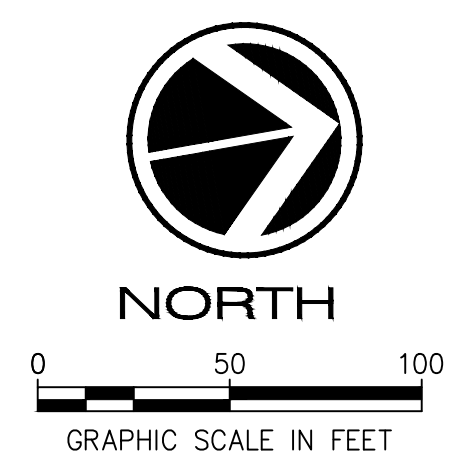
NOTES:

- SEE SHEETS 2 - 4 FOR GENERAL NOTES.
- SEE SHEET 4 FOR LEGEND.



NOTES:

1. SEE SHEETS 2 - 4 FOR GENERAL NOTES.
2. SEE SHEET 4 FOR LEGEND.
3. THE CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTING AN ACCESS ROAD (FOR CONSTRUCTION ACCESS/HAUL ROUTES), STRIPPING TOPSOIL, AND SPOILING SUITABLE FILL MATERIALS ALONG THE FUTURE ROADWAY ALIGNMENT, ACCORDING TO THE PROVIDED SUPPLEMENTAL PLAN & PROFILE SHEETS. TOPSOIL SHALL BE STOCKPILED IN IDENTIFIED AREAS, THEN REPLACED TO REACH SPECIFIED ELEVATIONS.
4. NO PAVEMENT IS TO BE INSTALLED ALONG THE FUTURE ROADWAY ALIGNMENT. ALL DISTURBED AREAS SHALL BE SEEDED AS DESCRIBED IN THE SWPPP.
5. MATERIALS SHALL BE SPOILED AND COMPACTED IN ACCORDANCE WITH ODOT ITEM 202.



PROP. ACCESS ROAD

TEMPORARY TOPSOIL STOCKPILE AND STAGING AREA; CONTRACTOR TO COORDINATE WITH SUMMIT METRO PARKS/CONSTRUCTION REPRESENTATIVE FOR FINAL LOCATION AND LIMITS TO AVOID TREES AND LIMIT DISTURBANCE AS MUCH AS POSSIBLE

EX. ABANDONED GAS LINE (DOMINION)

EX. 12" GAS LINE (DOMINION)

DEQ GAS LINE EASEMENT, 30.00'

LIMITS OF DISTURBANCE

PROP. SPOIL AREA

LIMITS OF FUTURE PARK ROAD GRADING; REFER TO SUPPLEMENTAL PLAN & PROFILE DRAWINGS FOR ALL GRADING WITHIN THESE LIMITS

EX. PHASE 1B GRADING

SUMMIT METRO PARKS COVENANT AREA LIMIT; DO NOT DISTURB

SUMMIT METRO PARKS COVENANT AREA LIMIT; DO NOT DISTURB

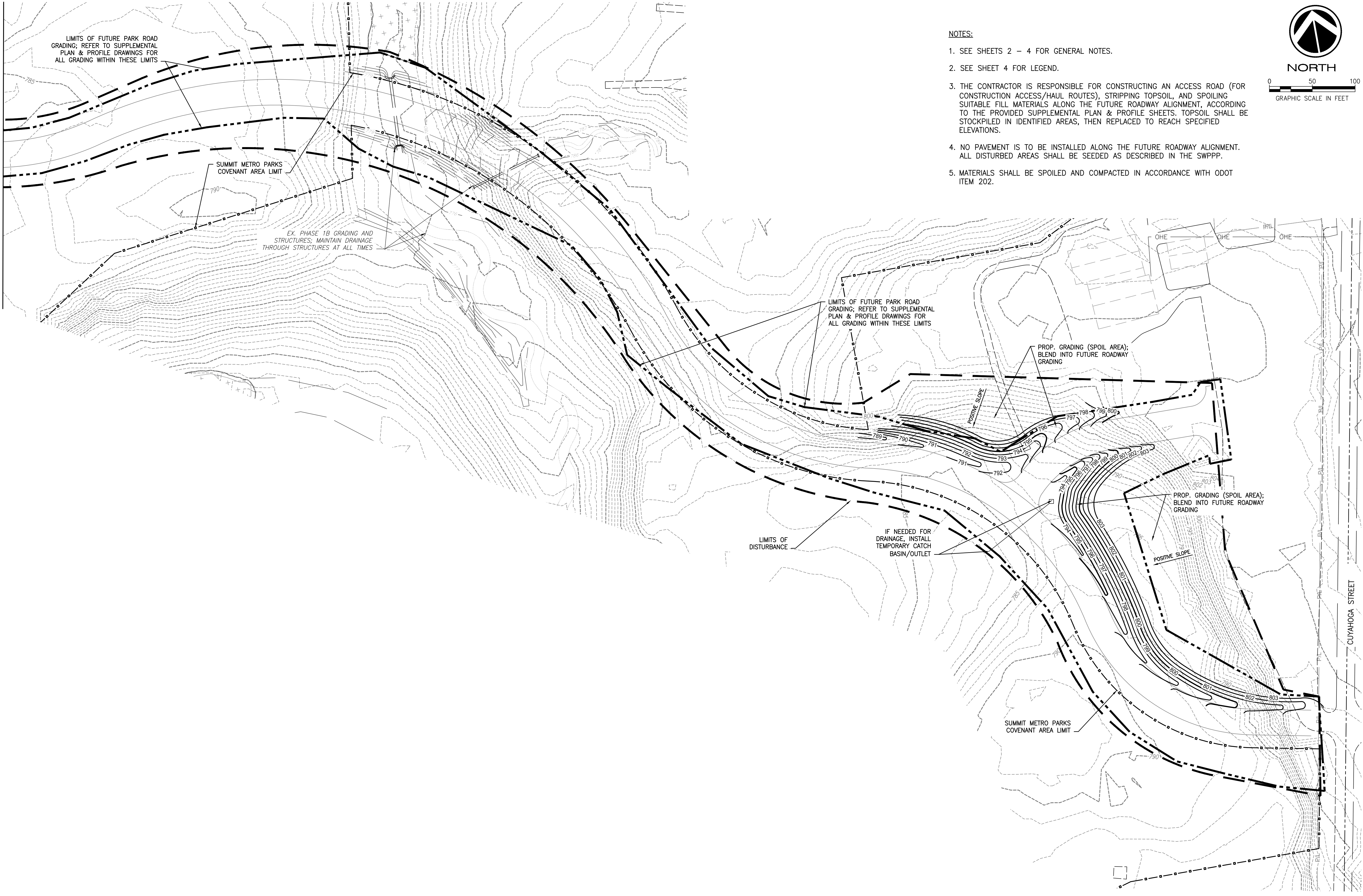
LIMITS OF DISTURBANCE

LIMITS OF FUTURE PARK ROAD GRADING; REFER TO SUPPLEMENTAL PLAN & PROFILE DRAWINGS FOR ALL GRADING WITHIN THESE LIMITS

MATCHLINE SEE SHEET 22

	SUMMIT METRO PARKS VALLEY VIEW PH 2 RESTORATION DESIGN	975 TREATY LINE ROAD AKRON, OHIO 44313 (330) 867-5511
DESIGNED BY: ADH DRAWN BY: DG	REFERENCES: N/A REVISIONS: 1	SCALE: 1"=50'-0" DATE: 03/23/2020
FUTURE PARK RD GRADING		SHEET: 21 of 44

MATCHLINE SEE SHEET 21

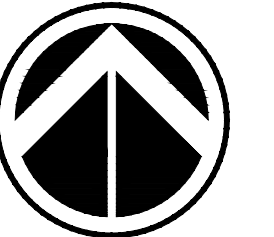


NOTES:

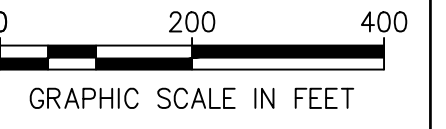
1. SEE SHEETS 2 - 4 FOR GENERAL NOTES.
2. SEE SHEET 4 FOR LEGEND.
3. THE CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTING AN ACCESS ROAD (FOR CONSTRUCTION ACCESS/HAUL ROUTES), STRIPPING TOPSOIL, AND SPOILING SUITABLE FILL MATERIALS ALONG THE FUTURE ROADWAY ALIGNMENT, ACCORDING TO THE PROVIDED SUPPLEMENTAL PLAN & PROFILE SHEETS. TOPSOIL SHALL BE STOCKPILED IN IDENTIFIED AREAS, THEN REPLACED TO REACH SPECIFIED ELEVATIONS.
4. NO PAVEMENT IS TO BE INSTALLED ALONG THE FUTURE ROADWAY ALIGNMENT. ALL DISTURBED AREAS SHALL BE SEEDED AS DESCRIBED IN THE SWPPP.
5. MATERIALS SHALL BE SPOILED AND COMPACTED IN ACCORDANCE WITH ODOT ITEM 202.



	975 TREATY LINE ROAD AKRON, OHIO 44313 (330) 867-5511	
	DESIGNED BY: ADH	DRAWN BY: DG
REFERENCES: N/A	REVISIONS: 1	DATE: 03/23/2020
SCALE: 1"=50'-0"	SHEET: 22 of 44	
SUMMIT METRO PARKS VALLEY VIEW PH 2 RESTORATION DESIGN		
FUTURE PARK RD GRADING		



NORTH



NOTES:

- 1. SEE CROSS SECTION SHEETS, 24 - 29 FOR DETAILED GRADING.



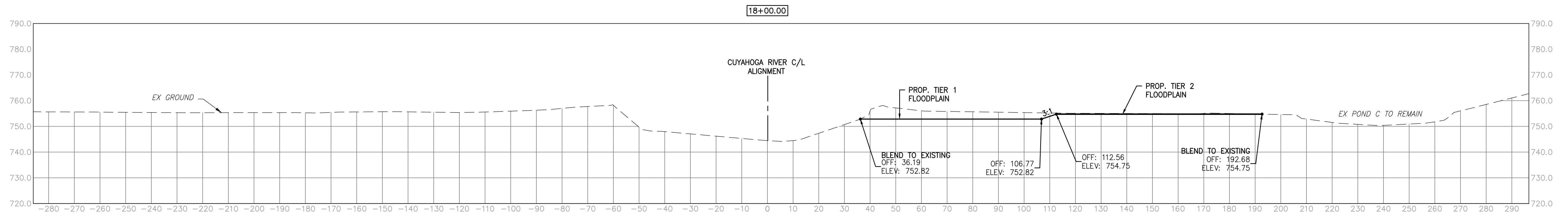
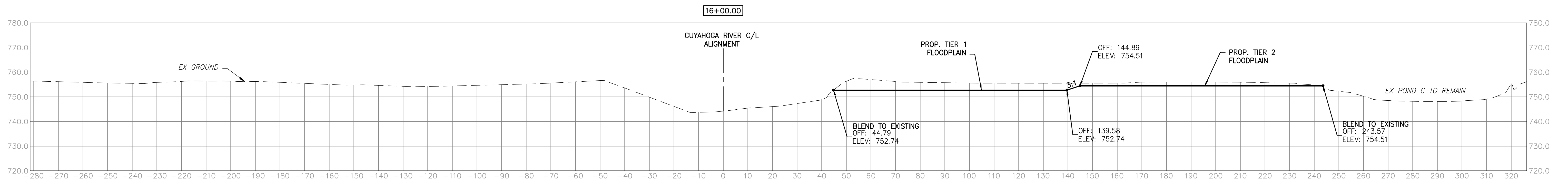
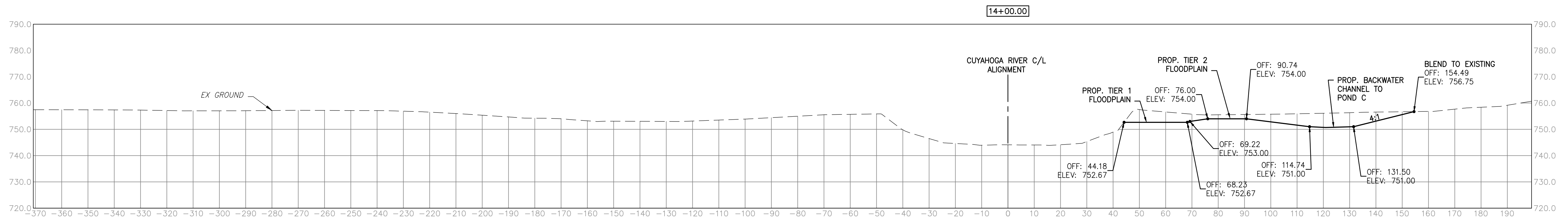
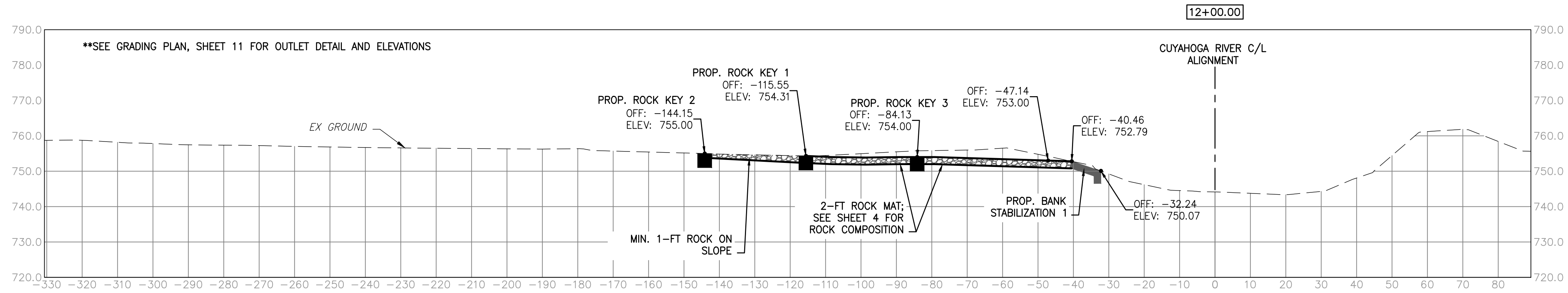
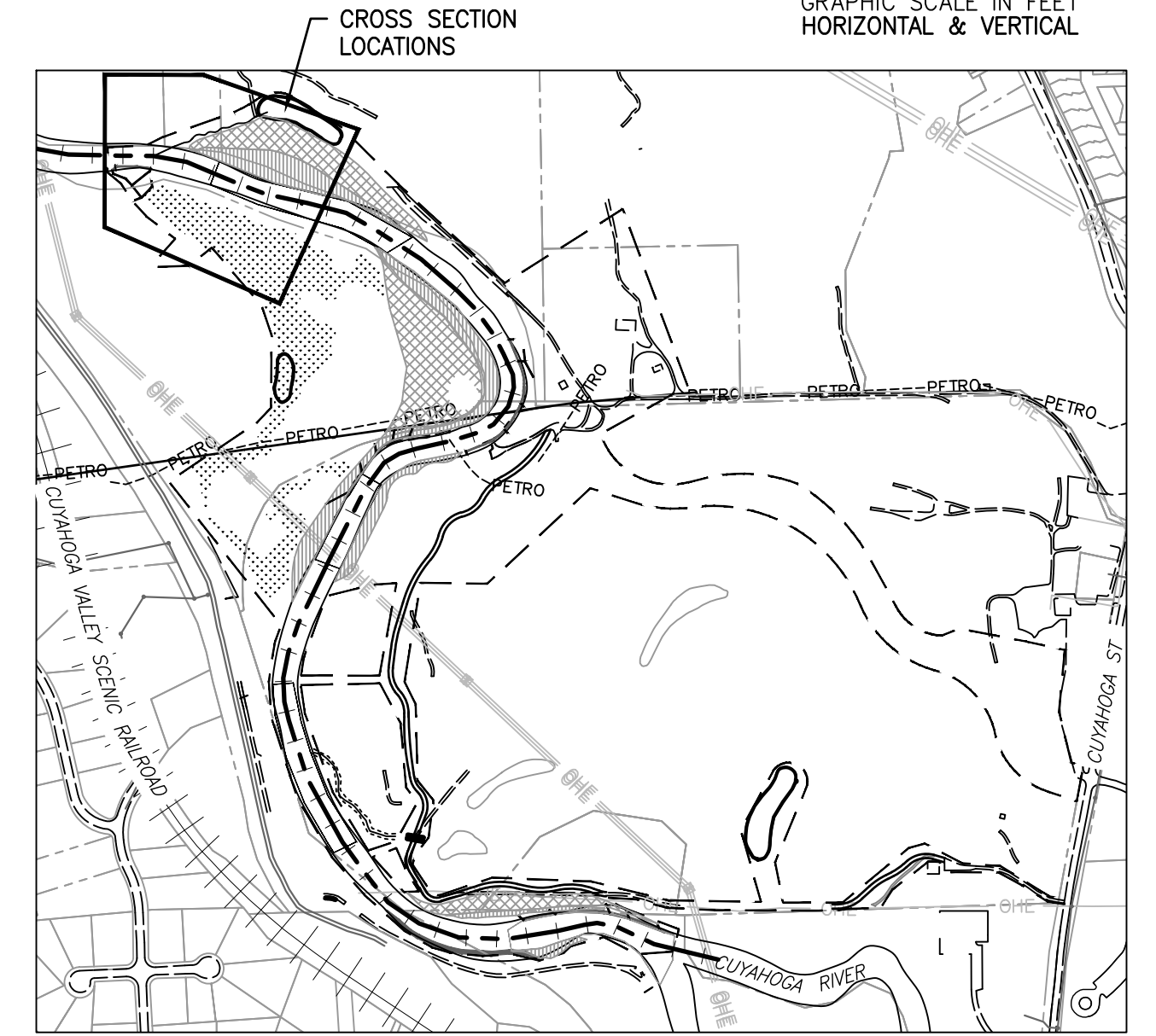
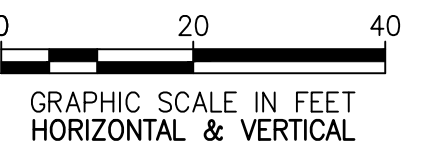
CROSS SECTION COORDINATES

STA.	LEFT		CENTER		RIGHT	
	N	E	N	E	N	E
12+00	533140.57	2234169.74	533470.76	2234187.34	533559.98	2234188.01
14+00	533092.21	2234242.48	533435.57	2234382.49	533619.03	2234460.14
16+00	533094.03	2234474.28	533359.62	2234567.47	533664.94	2234682.67
18+00	533041.44	2234666.39	533311.27	2234761.18	533596.04	2234844.20
20+00	532906.29	2234752.52	533238.98	2234945.68	533397.39	2235030.44
22+00	532846.83	2234930.76	533131.73	2235114.46	533257.80	2235195.75
24+00	532762.98	2234945.23	532997.94	2235262.98	533085.50	2235352.25
26+00	532767.36	2235042.61	532834.88	2235376.96	532914.44	2235524.58
28+00	532751.57	2235038.86	532646.88	2235396.93	532525.27	2235546.33
30+00	532714.28	2234981.78	532543.38	2235233.39	532323.42	2235318.49
32+00	532622.57	2234963.34	532493.59	2235039.92	532260.39	2235178.40
34+00	532542.52	2234596.86	532344.81	2234912.96	532233.15	2235138.99
36+00	532316.70	2234502.40	532166.26	2234822.85	532085.05	2234984.62
38+00	532125.46	2234448.42	531986.41	2234735.38	531920.99	2234870.36
40+00	531822.47	2234546.61	531798.24	2234670.06	531769.35	2234817.26
42+00	531559.56	2234551.80	531601.68	2234686.73	531644.45	2234823.76
44+00	531340.03	2234619.93	531412.66	2234751.17	531485.29	2234882.42
46+00	531165.04	2234716.77	531237.67	2234848.01	531315.60	2234970.63
48+00	530996.23	2234863.69	531076.07	2234965.55	531168.60	2235083.60
50+00	530848.82	2235082.33	530951.77	2235118.70	531126.08	2235180.58
52+00	530781.18	2235306.68	530907.19	2235311.49	531102.05	2235318.94
54+00	530786.61	2235531.72	530923.03	2235509.94	531097.96	2235481.57
56+00	530806.79	2235678.11	530954.12	2235706.32	531113.97	2235736.92
58+00	530760.54	2235847.32	530884.20	2235892.38	531030.00	2235927.62



NOTES:

1. SEE SHEETS 2 - 4 FOR GENERAL NOTES.
2. PROPOSED GRADES SHOWN ON THE CROSS SECTIONS ARE FINISHED GRADE ELEVATIONS.
3. A MINIMUM OF 5" OF TOPSOIL IS REQUIRED IN TIER 1 FLOODPLAIN AREAS. NO TOPSOIL IS TO BE REPLACED IN TIER 2 FLOODPLAIN AREAS.
4. EXISTING VEGETATION ON STREAMBANKS BELOW PROPOSED FLOODPLAIN EXCAVATION ELEVATIONS SHOULD REMAIN UNDISTURBED TO THE MAXIMUM EXTENT POSSIBLE.
5. REFER TO DETAIL SHEET 35 FOR BANK STABILIZATION AREAS.

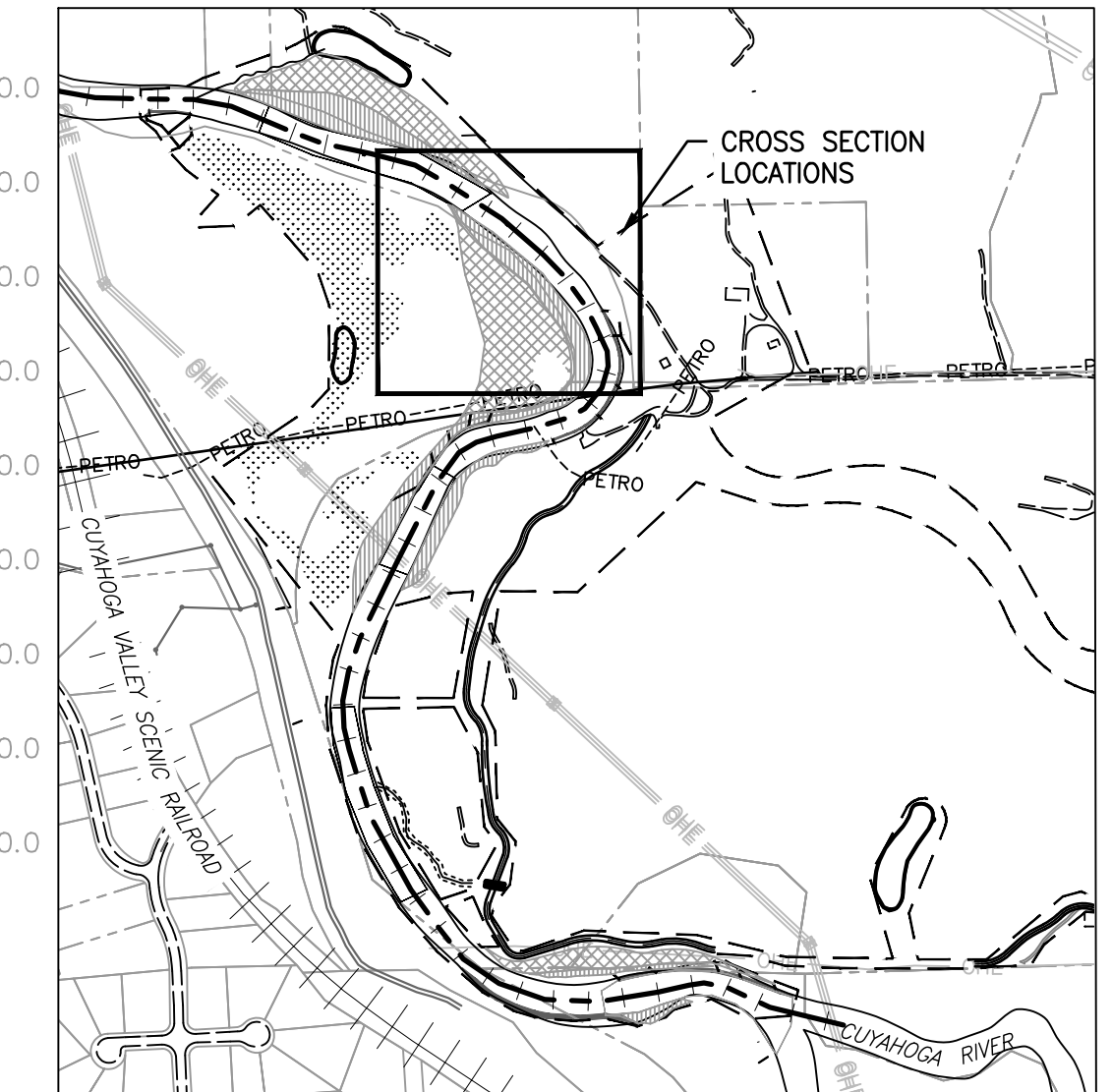
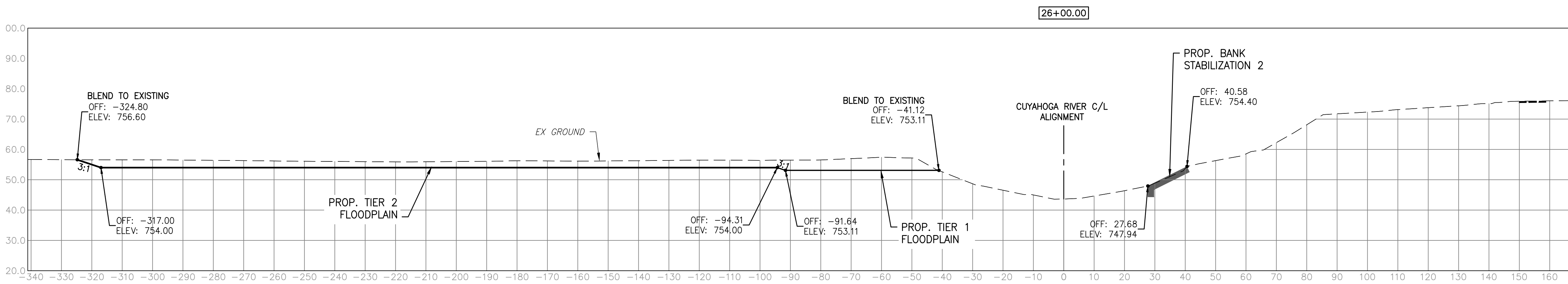
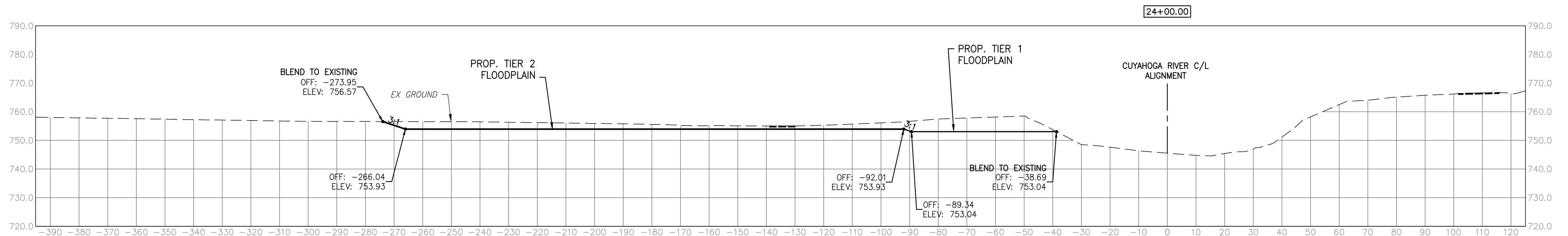
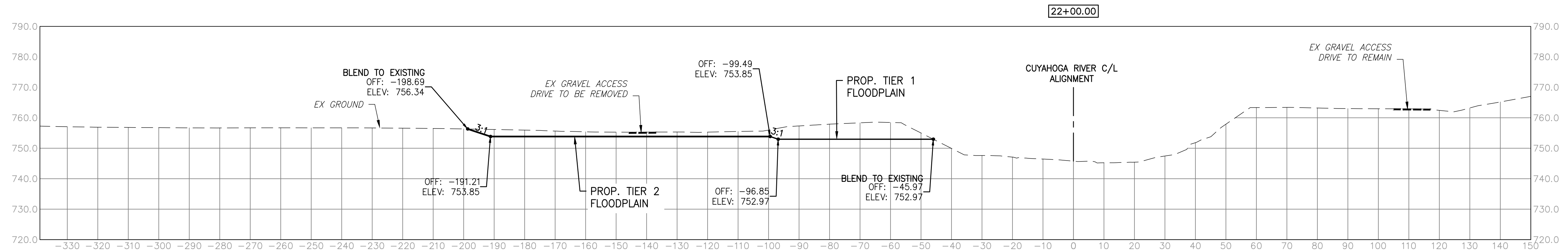
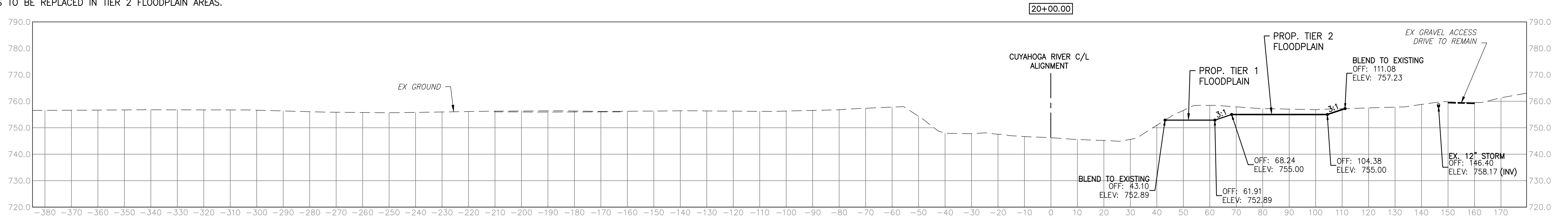
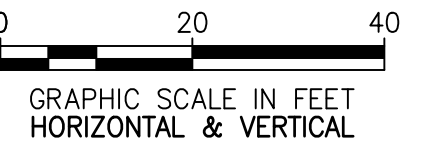


DESIGNED BY: ADH
 DRAWN BY: AW
 SCALE: 1"=20'-0"
 DATE: 03/23/20
 CROSS SECTIONS: 24 OF 44
 SHEET: 24 OF 44
 REFERENCES: N/A
 REVISIONS: 1

Summit Metro Parks
 VALLEY VIEW PH 2 RESTORATION DESIGN
 975 TREATY LINE ROAD
 AKRON, OHIO 44313
 (330) 867-5511

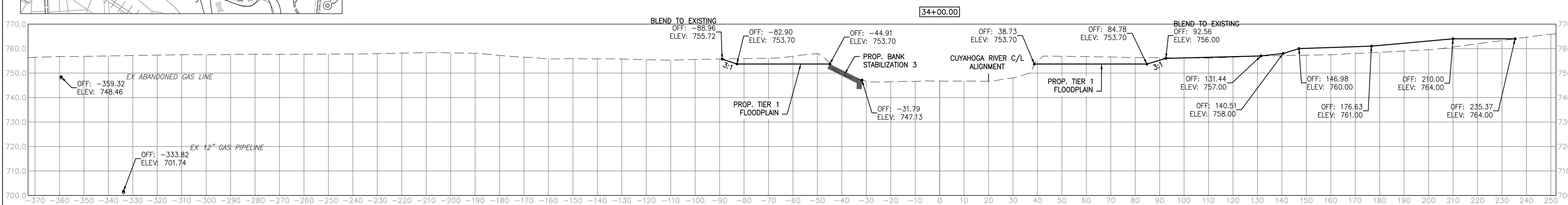
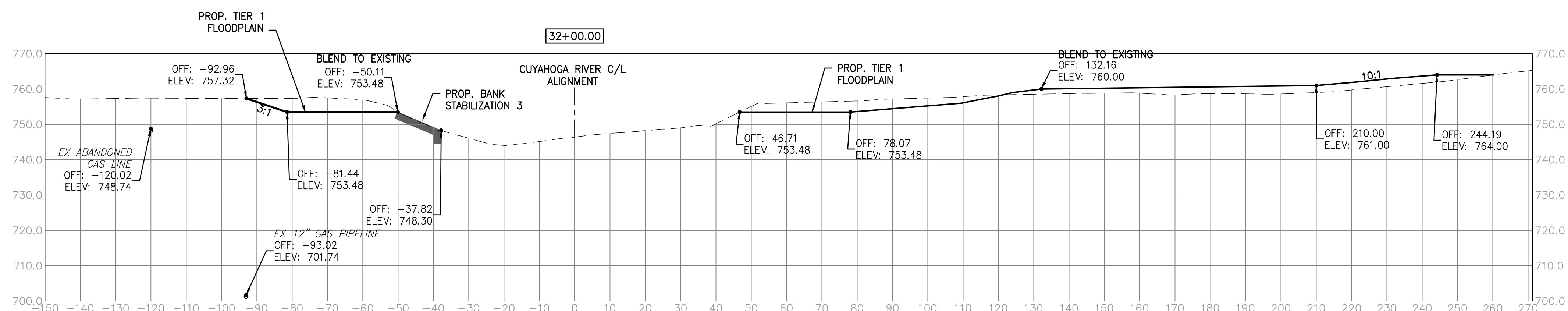
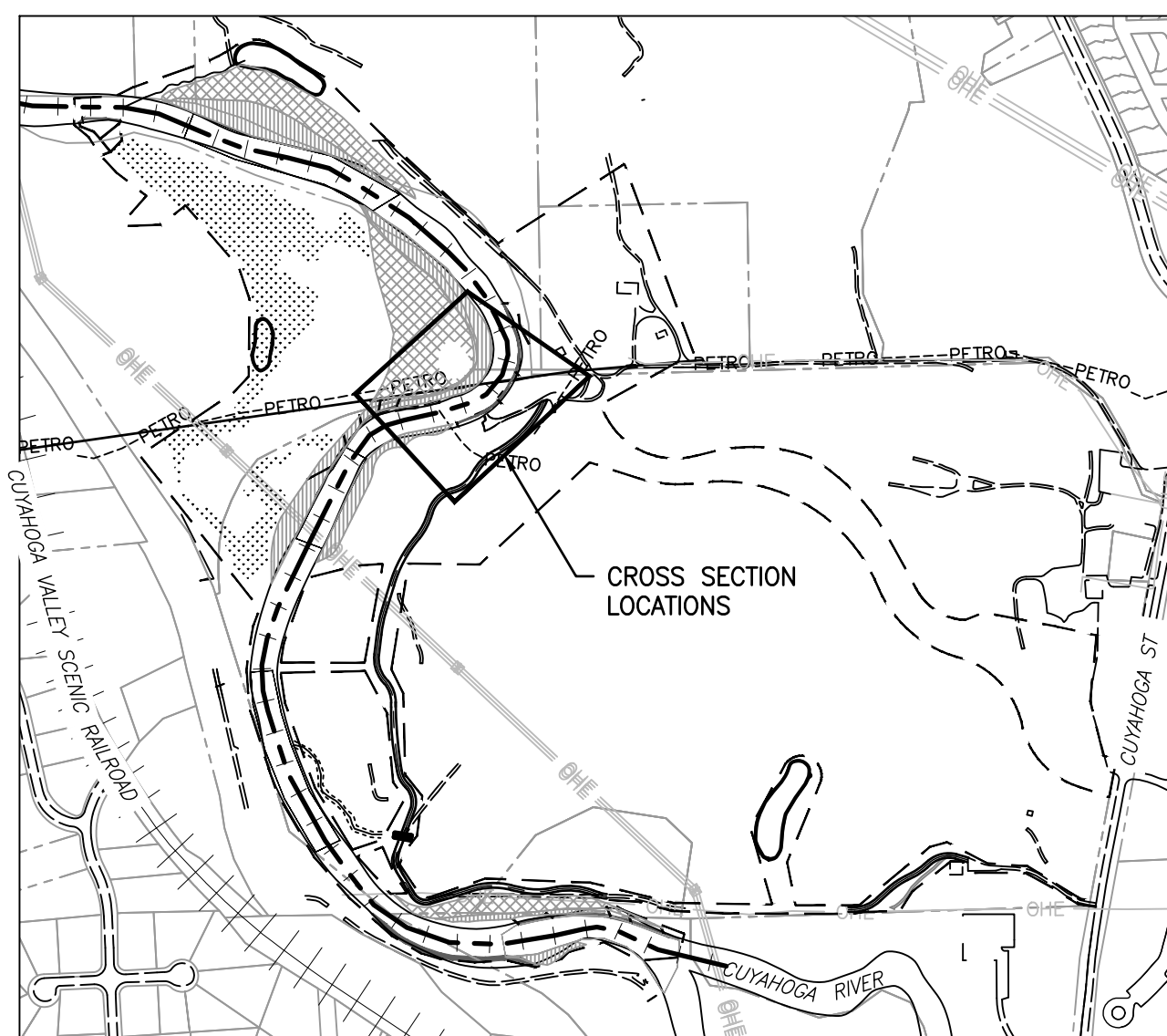
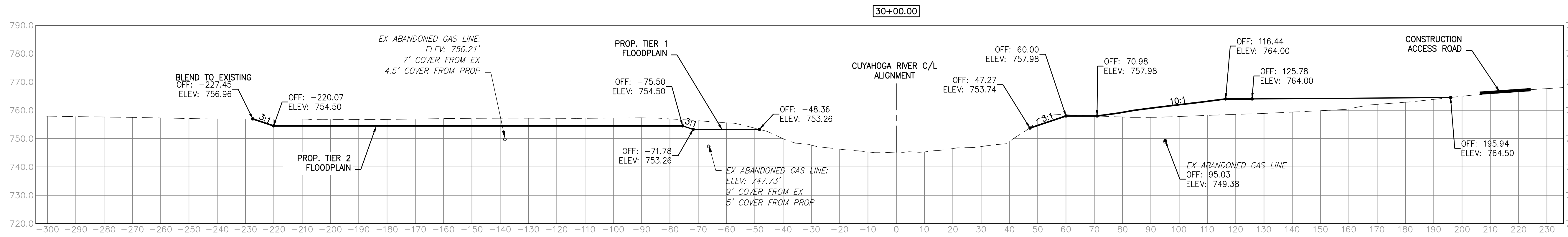
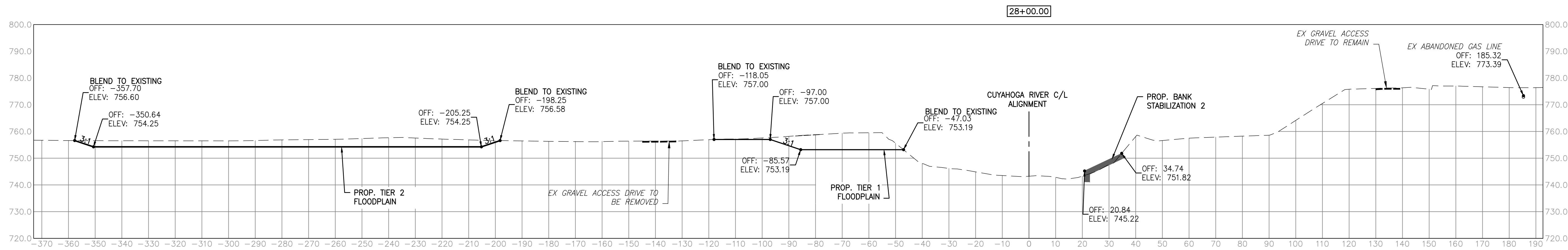
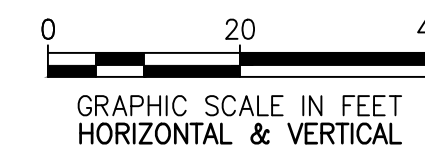
NOTES:

- SEE SHEETS 2 - 4 FOR GENERAL NOTES.
- PROPOSED GRADES SHOWN ON THE CROSS SECTIONS ARE FINISHED GRADE ELEVATIONS.
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- EXISTING VEGETATION ON STREAMBANKS BELOW PROPOSED FLOODPLAIN EXCAVATION ELEVATIONS SHOULD REMAIN UNDISTURBED TO THE MAXIMUM EXTENT POSSIBLE.
- REFER TO DETAIL SHEET 35 FOR BANK STABILIZATION AREAS.



NOTES:

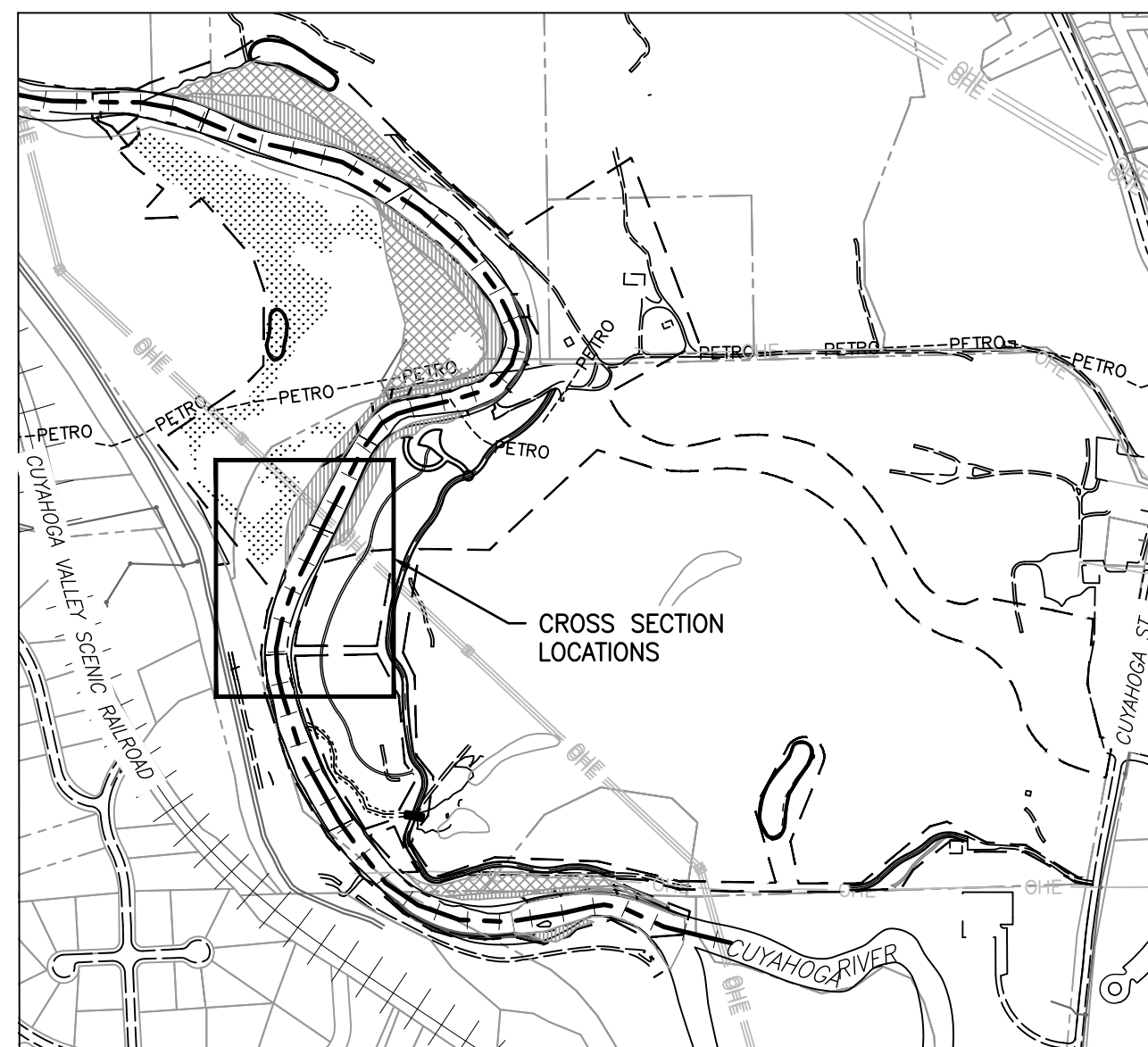
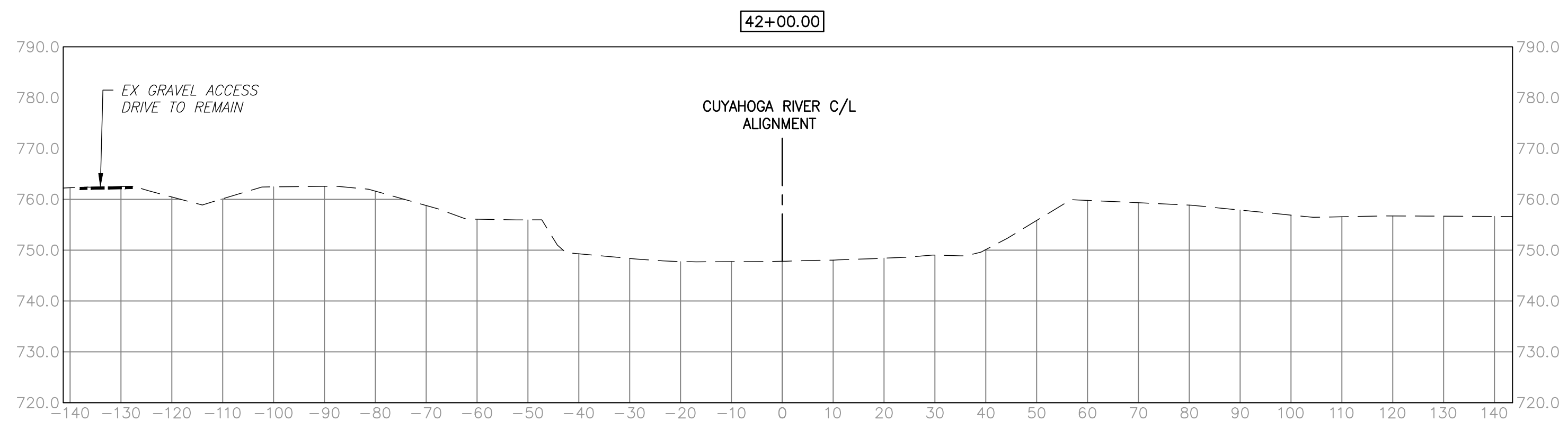
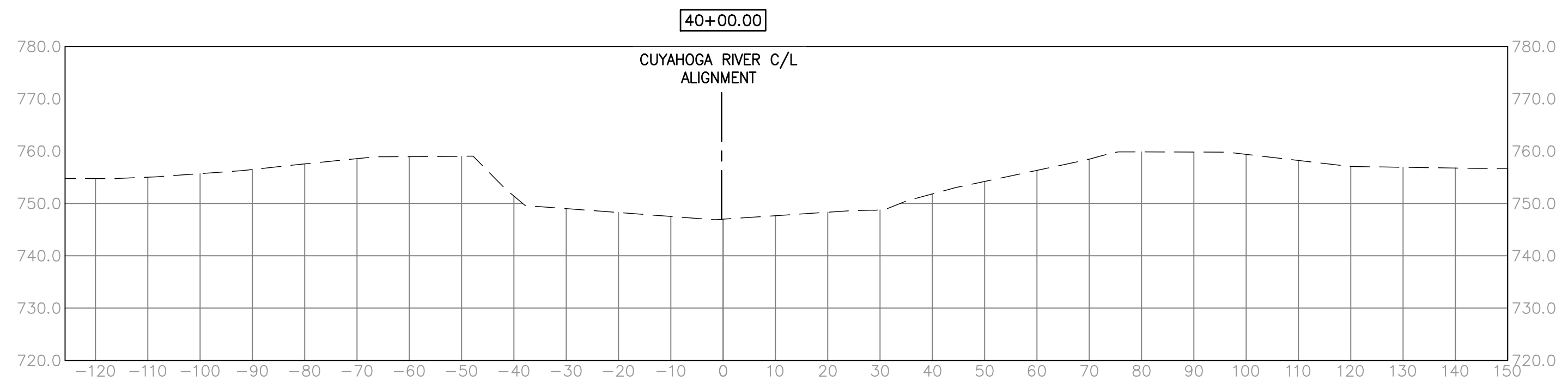
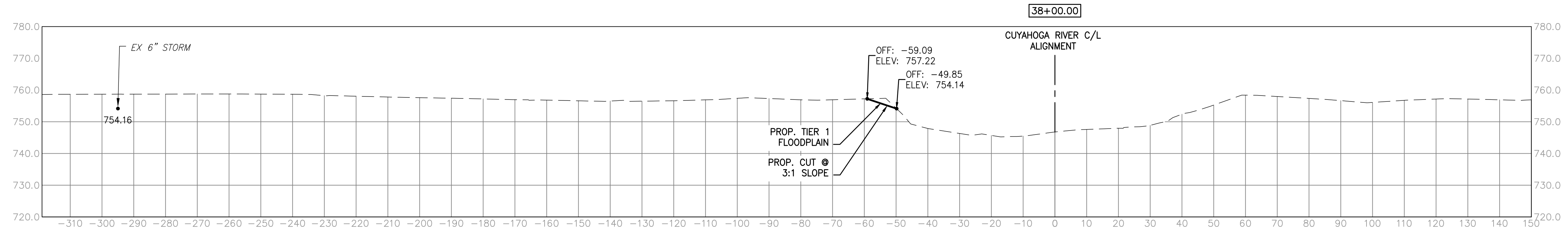
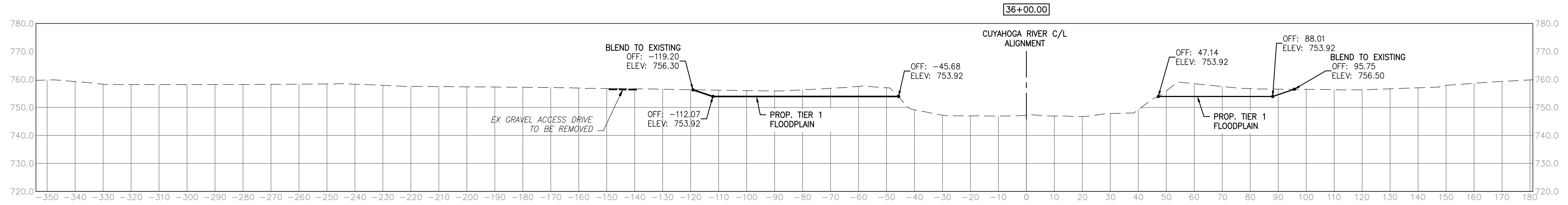
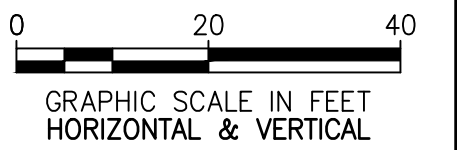
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- REFER TO DETAIL SHEET 35 FOR BANK STABILIZATION AREAS.



CROSS SECTIONS: 26 OF 44
 SCALE: 1"=20'-0"
 DATE: 03/23/20
 REFERENCES: N/A
 REVISIONS: 1
 DESIGNED BY: ADH
 DRAWN BY: AW
 SUMMIT METRO PARKS
 VALLEY VIEW PH 2 RESTORATION DESIGN
 975 TREATY LINE ROAD
 AKRON, OHIO 44313
 (330) 867-5511
Summit Metro Parks

NOTES:

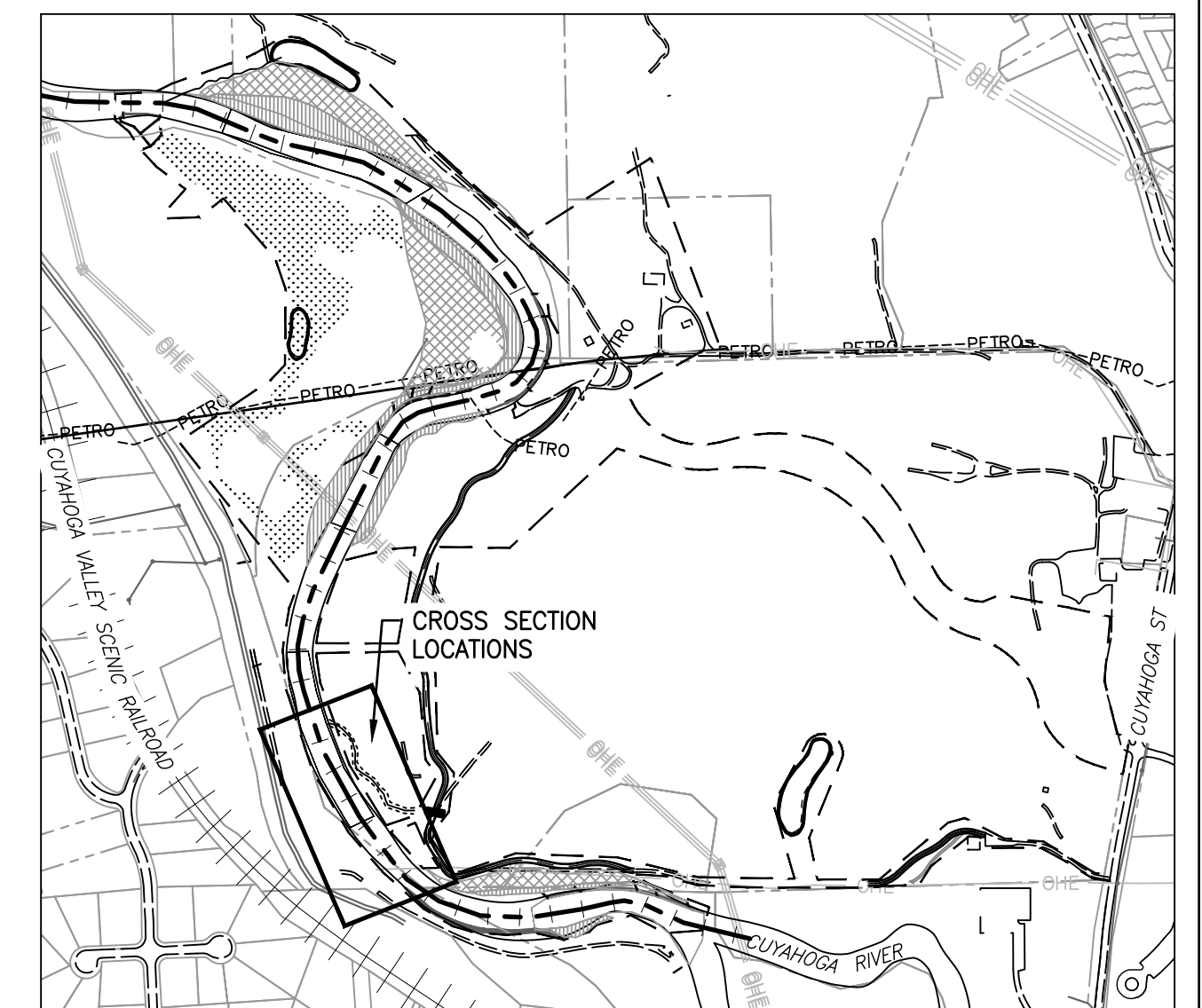
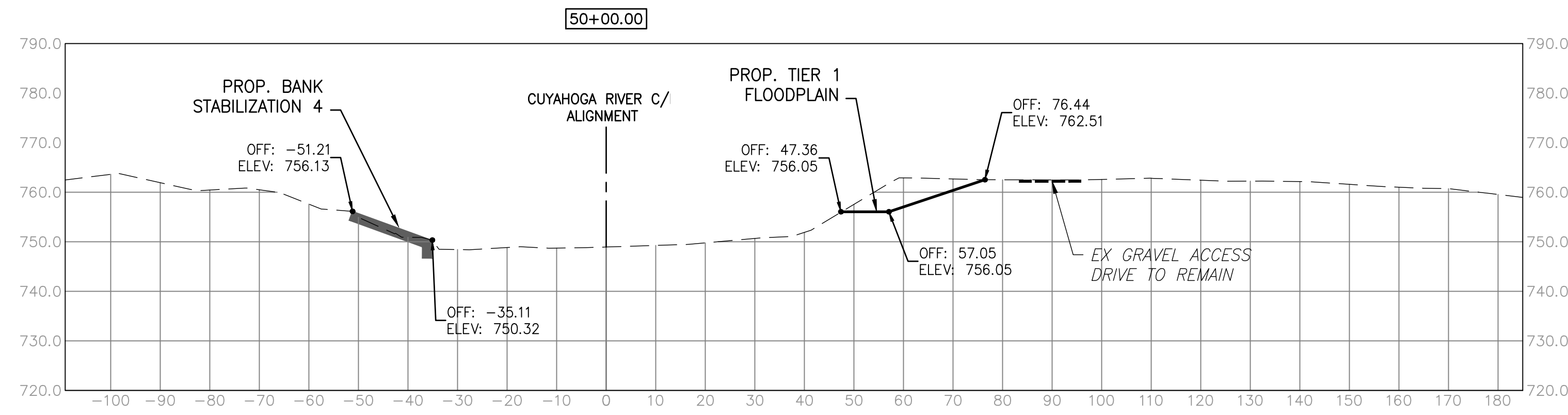
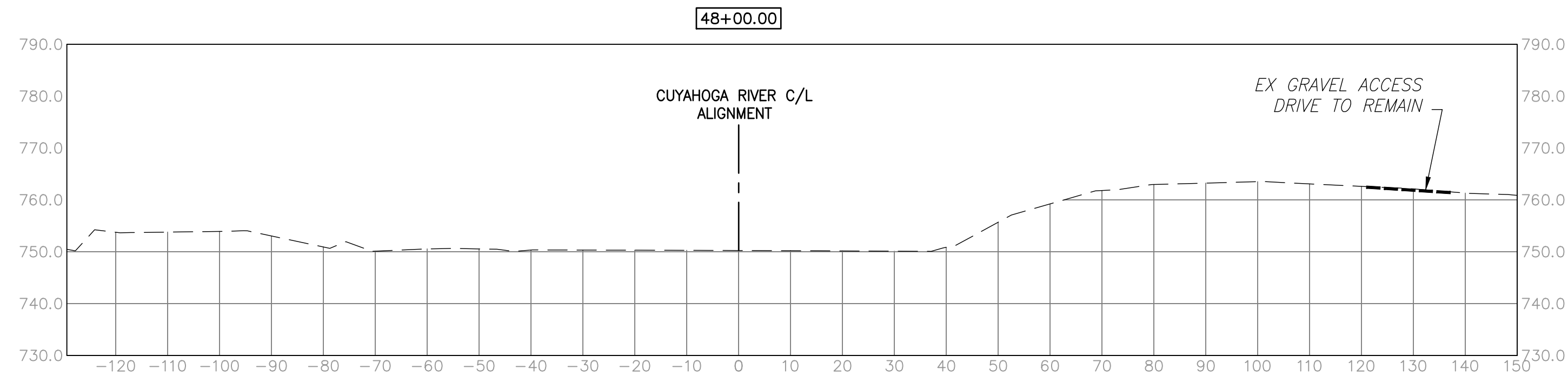
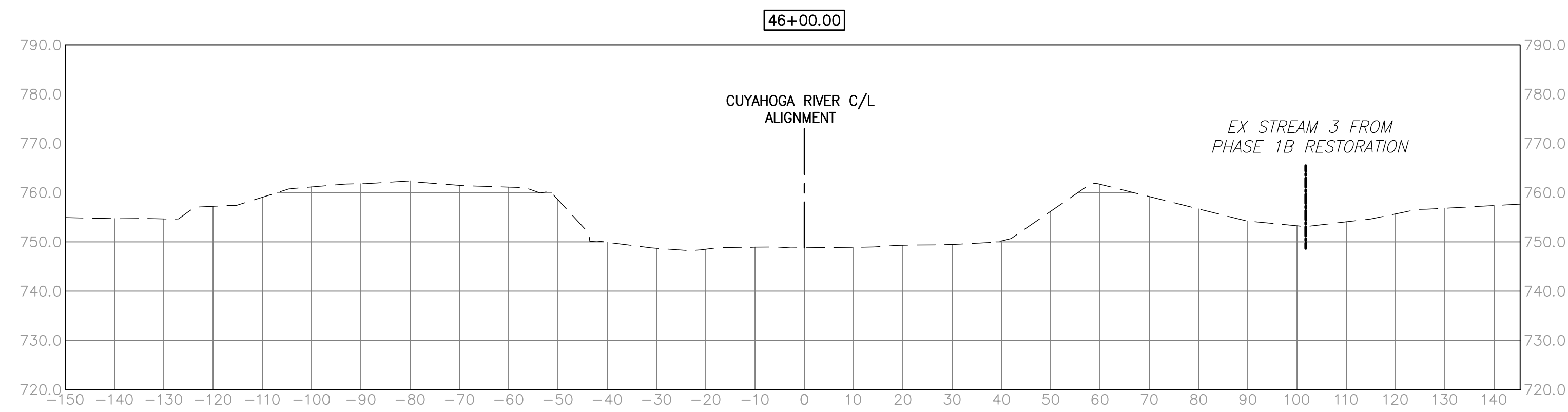
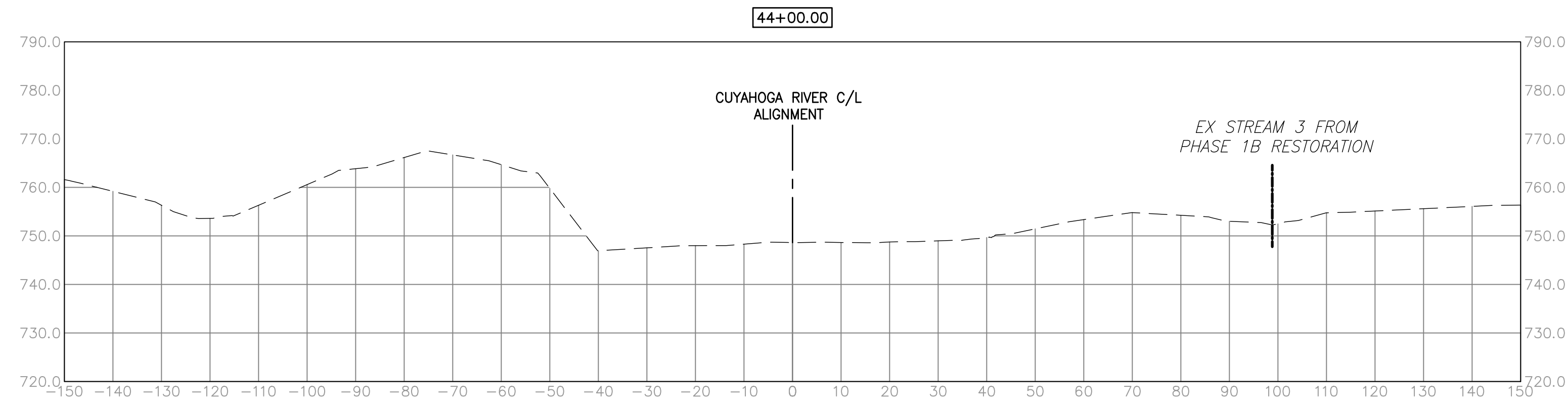
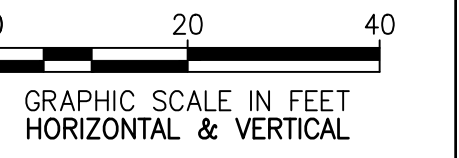
1. SEE SHEETS 2 - 4 FOR GENERAL NOTES.
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5. REFER TO DETAIL SHEET 35 FOR BANK STABILIZATION AREAS.



DESIGNED BY: ADH	REFERENCES: N/A	SCALE: 1"=20'-0"	CROSS SECTIONS
DRAWN BY: AW	REVISIONS: 1	DATE: 03/23/20	SHEET: 27 OF 44
SUMMIT METRO PARKS VALLEY VIEW PH 2 RESTORATION DESIGN			
975 TREATY LINE ROAD AKRON, OHIO 44313 (330) 867-5511			
Summit Metro Parks			

NOTES:

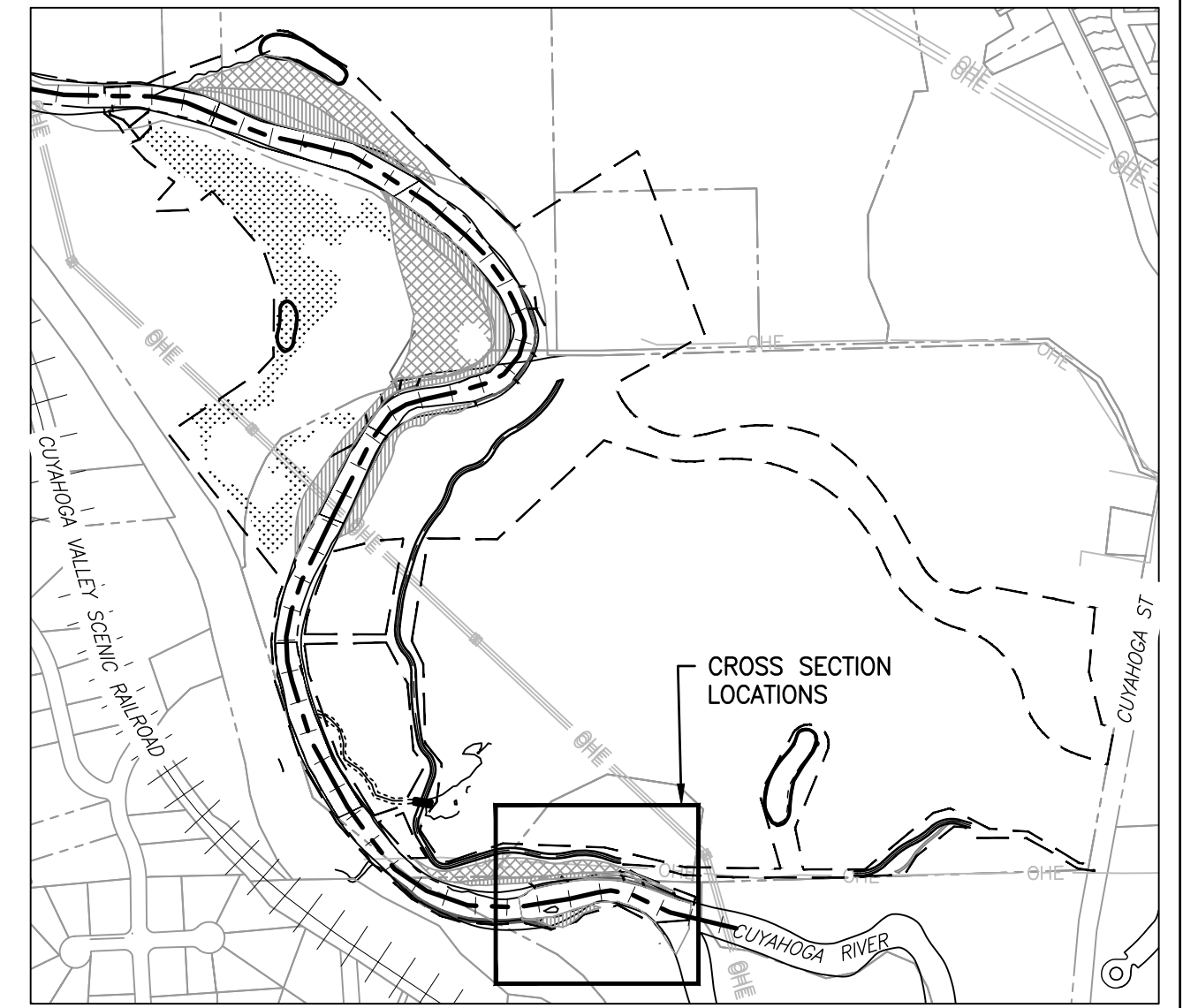
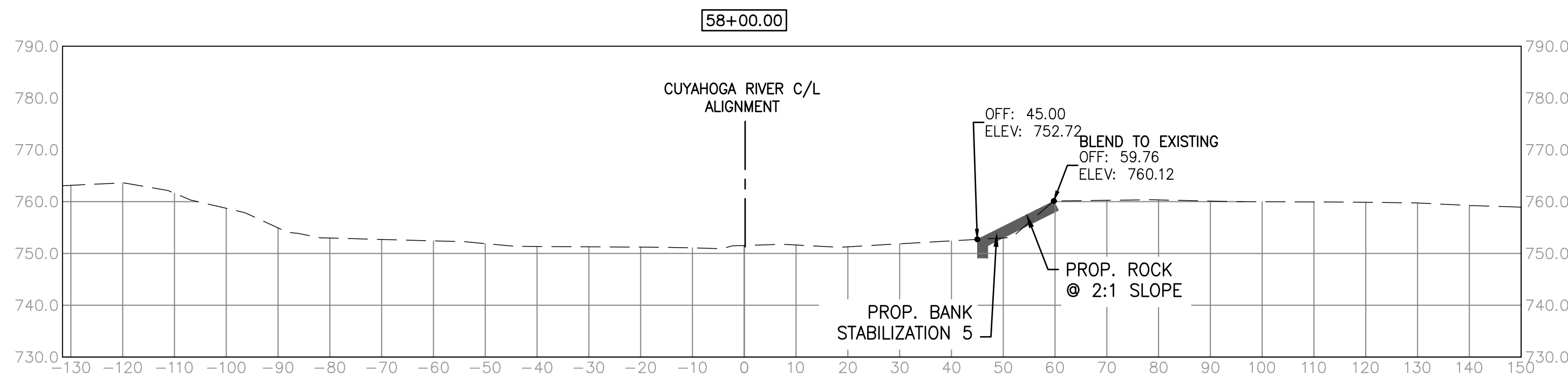
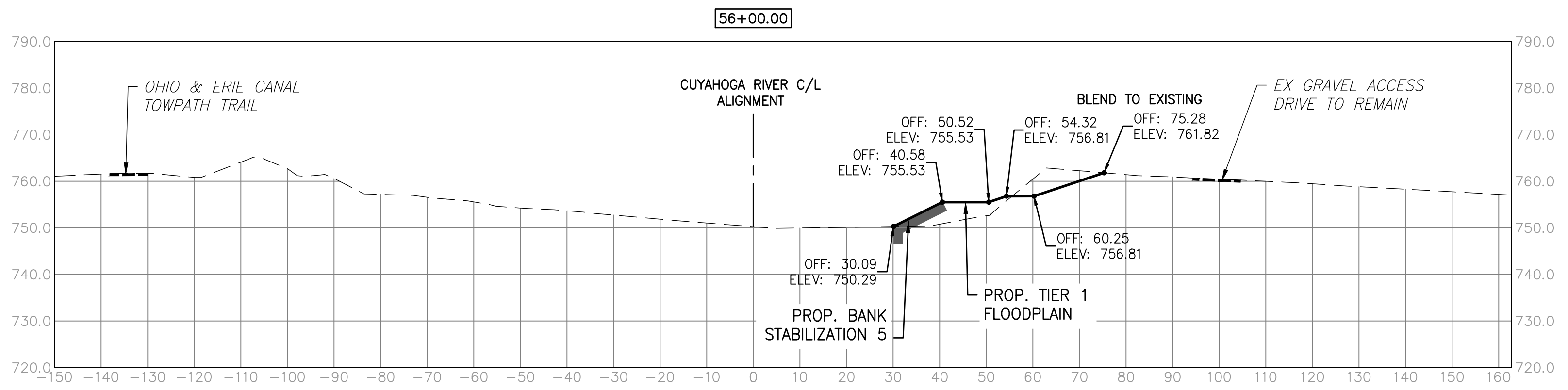
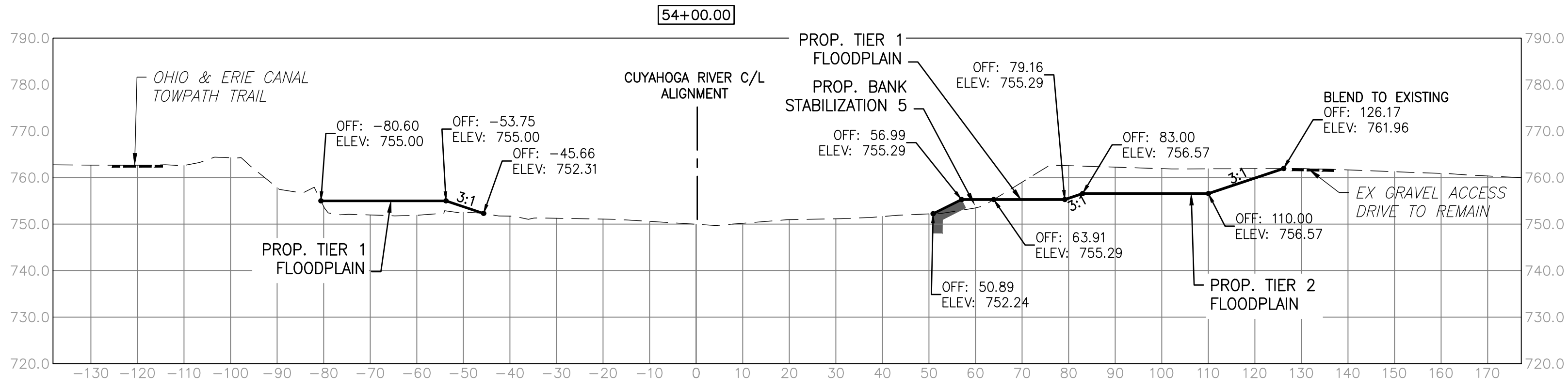
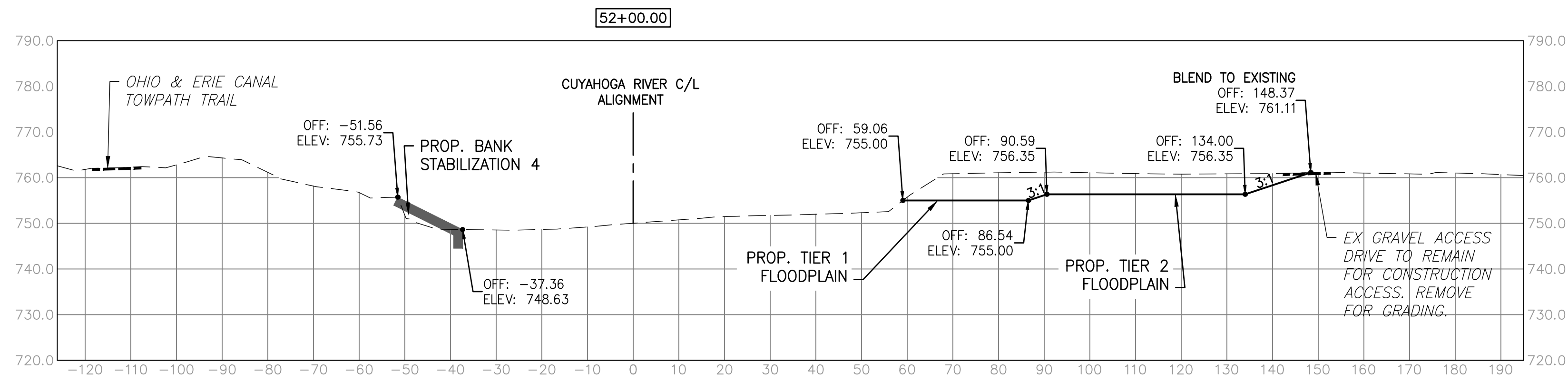
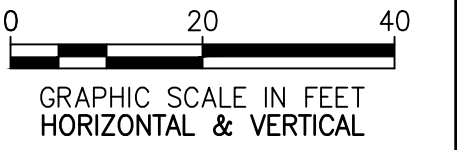
1. SEE SHEETS 2 - 4 FOR GENERAL NOTES.
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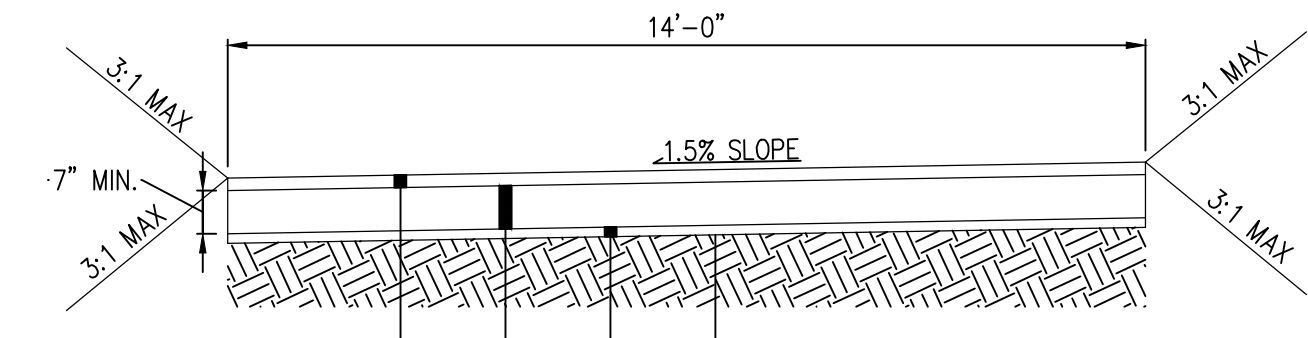
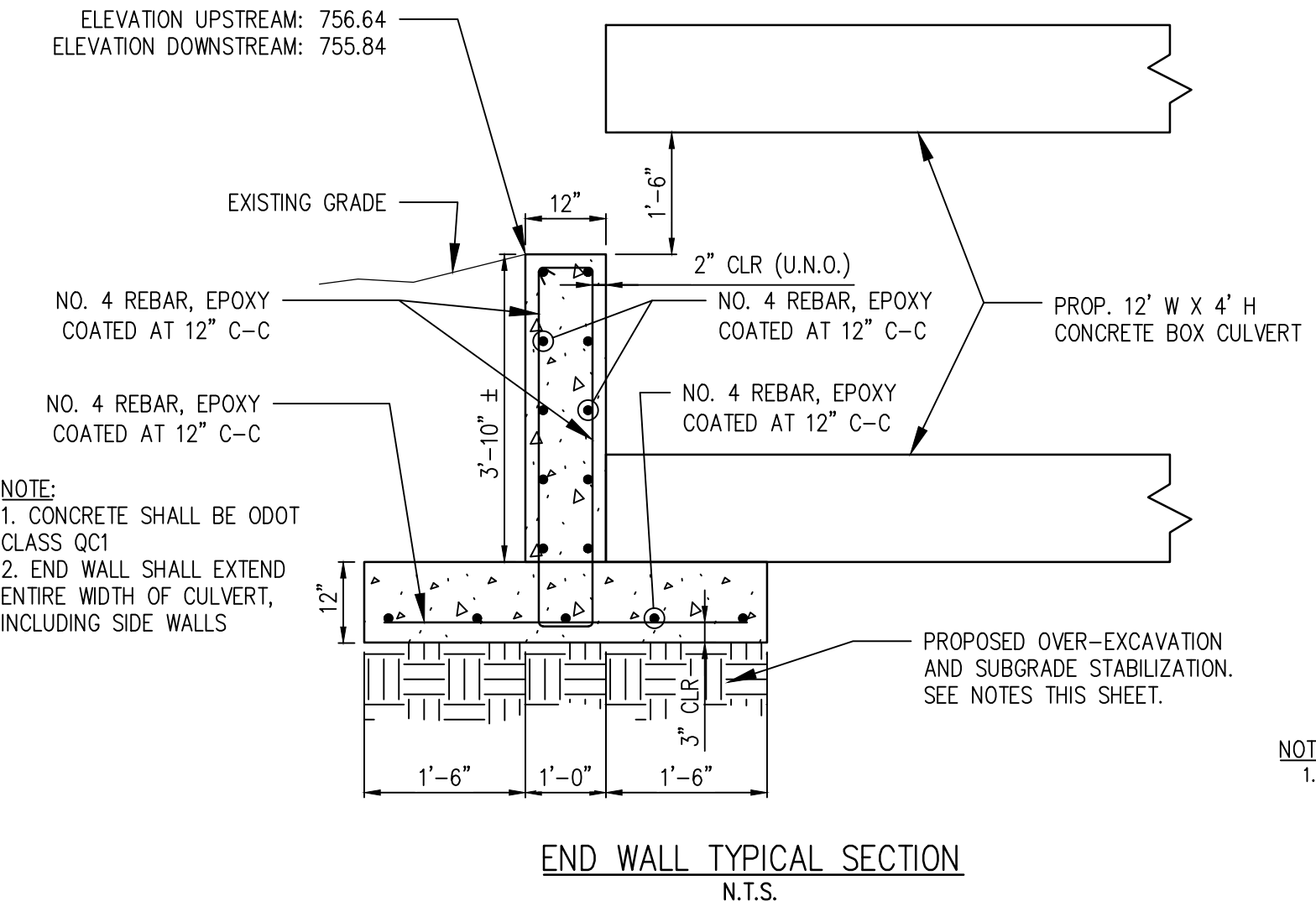
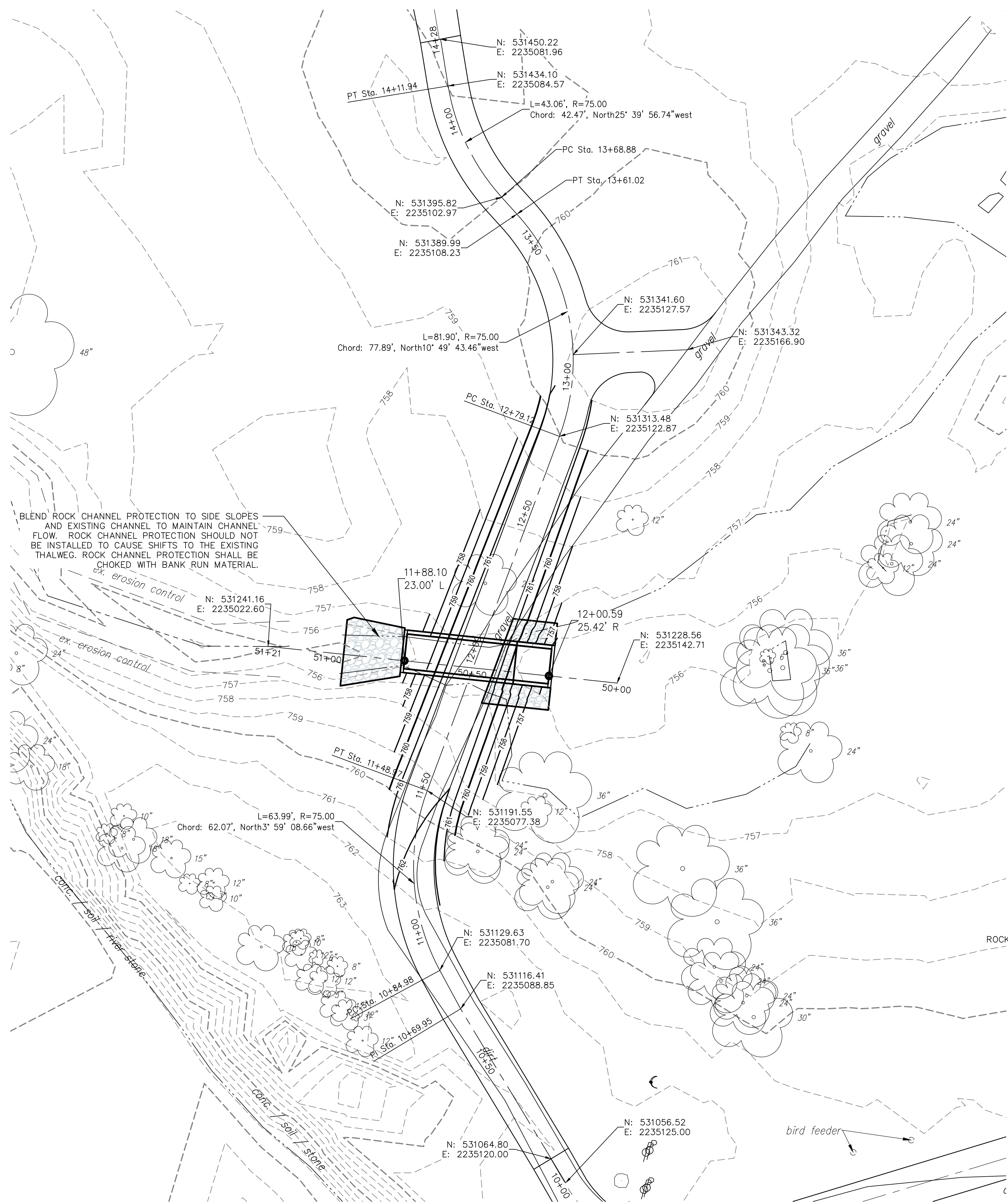
DESIGNED BY: ADH	REFERENCES: N/A	SCALE: 1"=20'-0"	CROSS SECTIONS
DRAWN BY: AW	REVISIONS: 1	DATE: 03/23/20	SHEET: 28 OF 44
SUMMIT METRO PARKS VALLEY VIEW PH 2 RESTORATION DESIGN			
975 TREATY LINE ROAD AKRON, OHIO 44313 (330) 867-5511			
Summit Metro Parks			

NOTES:

1. SEE SHEETS 2 - 4 FOR GENERAL NOTES.
2. PROPOSED GRADES SHOWN ON THE CROSS SECTIONS ARE FINISHED GRADE ELEVATIONS.
3. A MINIMUM OF 5" OF TOPSOIL IS REQUIRED IN TIER 1 FLOODPLAIN AREAS. NO TOPSOIL IS TO BE REPLACED IN TIER 2 FLOODPLAIN AREAS.
4. EXISTING VEGETATION ON STREAMBANKS BELOW PROPOSED FLOODPLAIN EXCAVATION ELEVATIONS SHOULD REMAIN UNDISTURBED TO THE MAXIMUM EXTENT POSSIBLE.
5. REFER TO DETAIL SHEET 35 FOR BANK STABILIZATION AREAS.

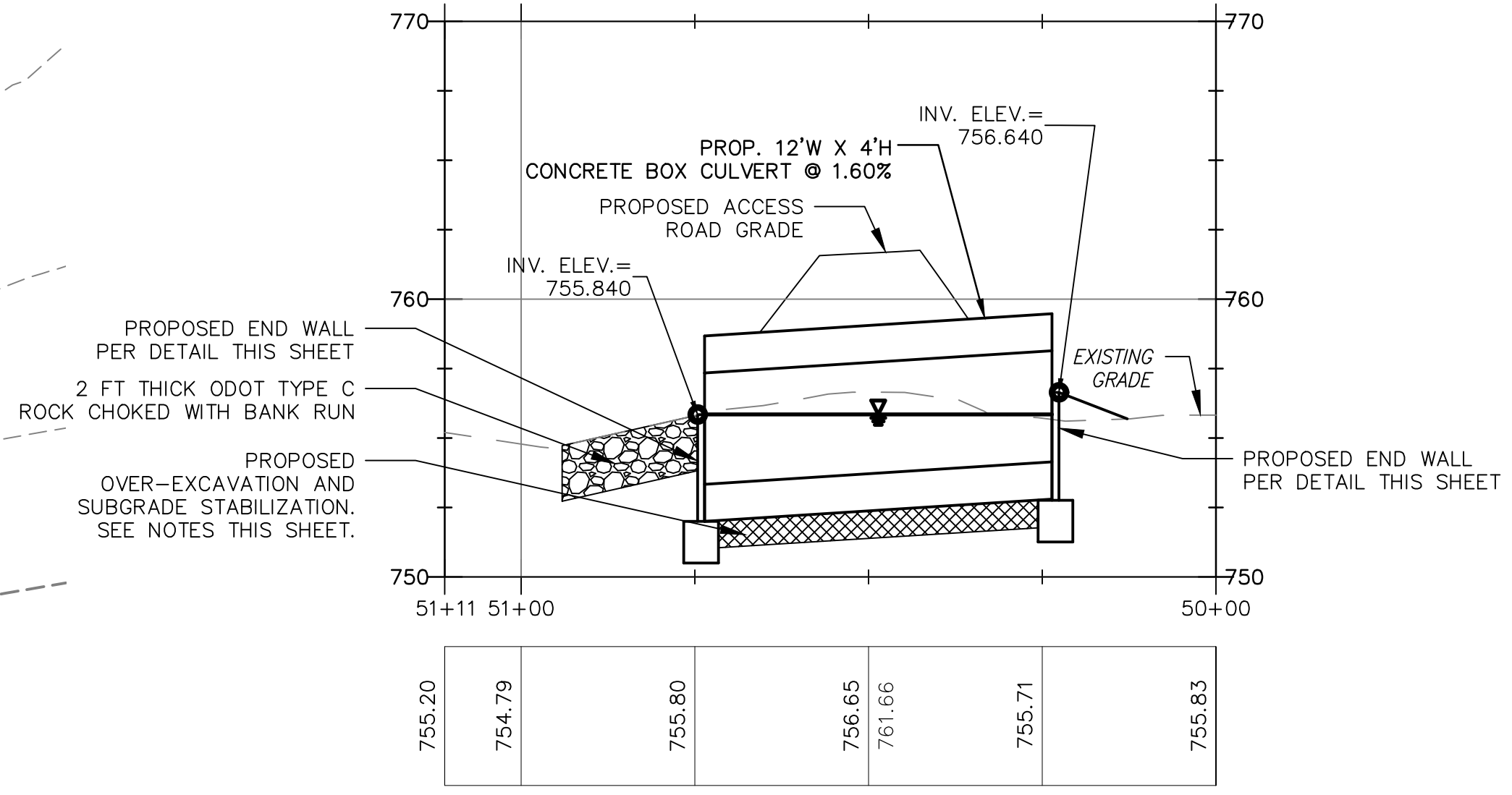


DESIGNED BY: ADH	REFERENCES: N/A	CROSS SECTIONS: 29 OF 44
DRAWN BY: AW	REVISIONS: 1	SHEET: 29 OF 44
SUMMIT METRO PARKS		
VALLEY VIEW PH 2 RESTORATION DESIGN		
975 TREATY LINE ROAD AKRON, OHIO 44313 (330) 867-5511		

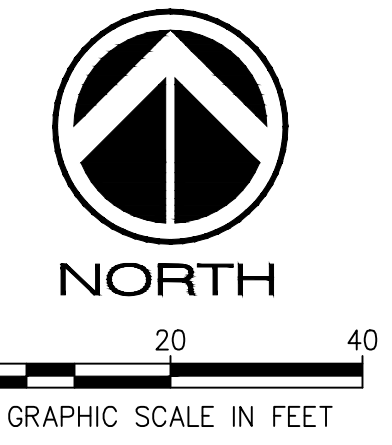


- KEYNOTE LEGEND:**
- ① ITEM SPEC - 1" MINIMUM OF NO. 9 NATURAL GRAVEL SCREENINGS BLENDED WITH CONCRETE SAND/CRUSHED SANDSTONE. LIMESTONE IS NOT ACCEPTABLE
 - ② ITEM 304 - 7" MINIMUM AGGREGATE BASE
 - ③ ITEM 204 - GEOGRID (TENSAR TX160 OR APPROVED EQUAL)
 - ④ ITEM 204 - COMPACTION OF THE SUBGRADE AND PROOF ROLLING
 - ⑤ ALTERNATE BID ITEM 204 - GEOTEXTILE FABRIC, 712.09 TYPE D

NOTES:
 1. THE SURFACE LAYER ① SHALL NOT BE INSTALLED UNTIL CONSTRUCTION IS COMPLETE AND TRACKED SOIL HAS BEEN REMOVED FROM THE ACCESS ROAD.



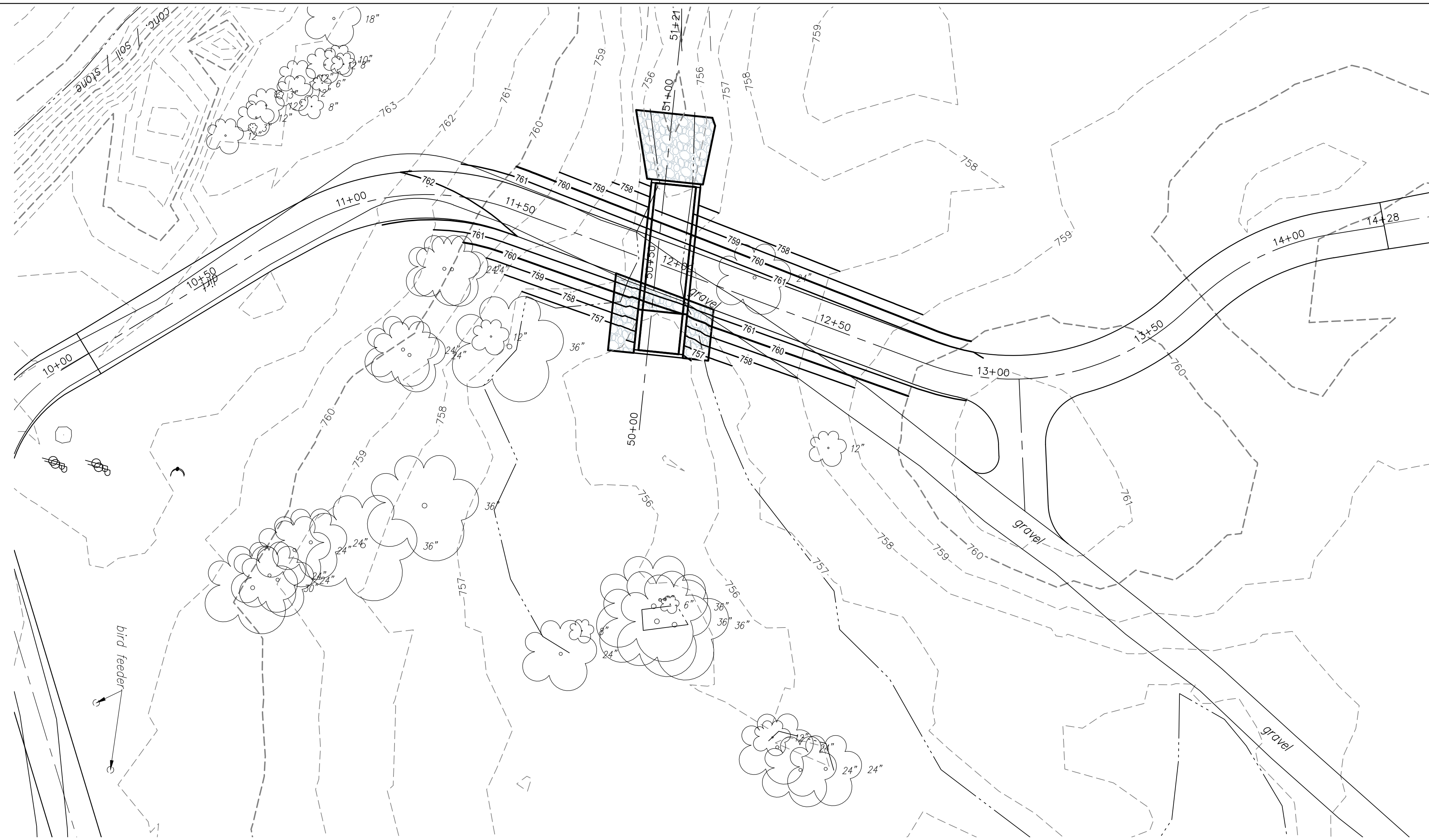
PROP. CULVERT
 SCALE VER.: 1"=5'
 SCALE HOR.: 1"=20'



PLAN LEGEND

	EXISTING CONTOUR
	PROPOSED CONTOUR
	EXISTING EDGE OF WATER
	PROPOSED 2 FT. THICK ODOT TYPE C ROCK CHANNEL PROTECTION (SANDSTONE) W/ AGGREGATE FILTER

NOTES:
 1. IT IS EXPECTED THAT THE PROPOSED CULVERT STRUCTURE WILL BEAR ON A SAND TYPE MATERIAL AND LIKELY WILL BE BELOW THE GROUNDWATER LEVEL. THE CONTRACTOR SHALL EXCAVATE 1' BELOW THE PROPOSED STRUCTURE AND FOUNDATION DEPTHS AND DEWATER THE EXPOSED SAND SUBGRADE TO ALLOW IT TO DRY AND FIRM UP. ONCE THE SUBGRADE HAS BEEN DRIED SUFFICIENTLY, THE CONTRACTOR SHALL PLACE NO. 57 TO THE BOTTOM OF THE PROPOSED STRUCTURE AND FOUNDATION AND BEGIN INSTALLATION OF THE PROPOSED CULVERT STRUCTURE AND ENDWALLS. THE GROUNDWATER LEVEL MUST BE MAINTAINED AS INDICATED PREVIOUSLY, UNTIL THE CULVERT STRUCTURE HAS BEEN INSTALLED.
 2. THE PROCEDURE LISTED ABOVE SHALL BE VERIFIED BY AN ONSITE GEOTECHNICAL ENGINEER THROUGHOUT THE EXCAVATION, PLACEMENT OF MATERIAL, AND INSTALLATION OF THE PROPOSED CULVERT STRUCTURE.

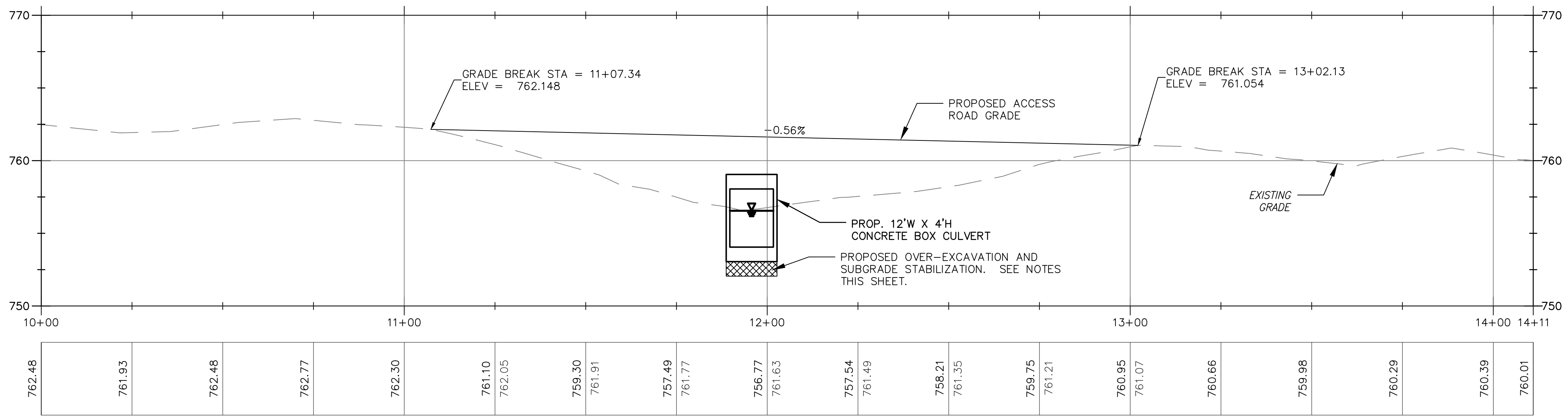


PLAN LEGEND

---000---	EXISTING CONTOUR
—000—	PROPOSED CONTOUR
---	EXISTING EDGE OF WATER
	PROPOSED 2 FT. THICK ODOT TYPE C ROCK CHANNEL PROTECTION (SANDSTONE) W/ AGGREGATE FILTER

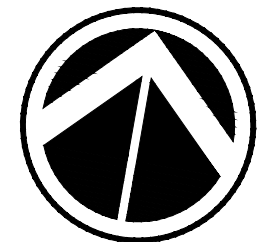
NOTES:

- IT IS EXPECTED THAT THE PROPOSED CULVERT STRUCTURE WILL BEAR ON A SAND TYPE MATERIAL AND LIKELY WILL BE BELOW THE GROUNDWATER LEVEL. THE CONTRACTOR SHALL EXCAVATE 1' BELOW THE PROPOSED STRUCTURE AND FOUNDATION DEPTHS AND DEWATER THE EXPOSED SAND SUBGRADE TO ALLOW IT TO DRY AND FIRM UP. ONCE THE SUBGRADE HAS BEEN DRIED SUFFICIENTLY, THE CONTRACTOR SHALL PLACE NO. 57 TO THE BOTTOM OF THE PROPOSED STRUCTURE AND FOUNDATION AND BEGIN INSTALLATION OF THE PROPOSED CULVERT STRUCTURE AND ENDWALLS. THE GROUNDWATER LEVEL MUST BE MAINTAINED AS INDICATED PREVIOUSLY, UNTIL THE CULVERT STRUCTURE HAS BEEN INSTALLED.
- THE PROCEDURE LISTED ABOVE SHALL BE VERIFIED BY AN ONSITE GEOTECHNICAL ENGINEER THROUGHOUT THE EXCAVATION, PLACEMENT OF MATERIAL, AND INSTALLATION OF THE PROPOSED CULVERT STRUCTURE.

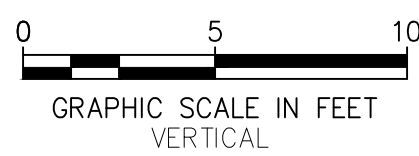
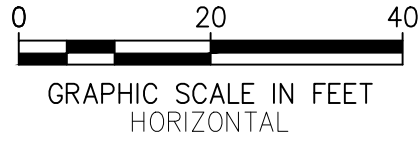


762.48	761.93	762.48	762.77	762.30	761.10	762.05	759.30	761.91	757.49	761.77	756.77	761.63	757.54	761.49	758.21	761.35	759.75	761.21	760.95	761.07	760.66	759.98	760.29	760.39	760.01
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PROP. CULVERT
 SCALE VER.: 1"=5'
 SCALE HOR.: 1"=20'



NORTH

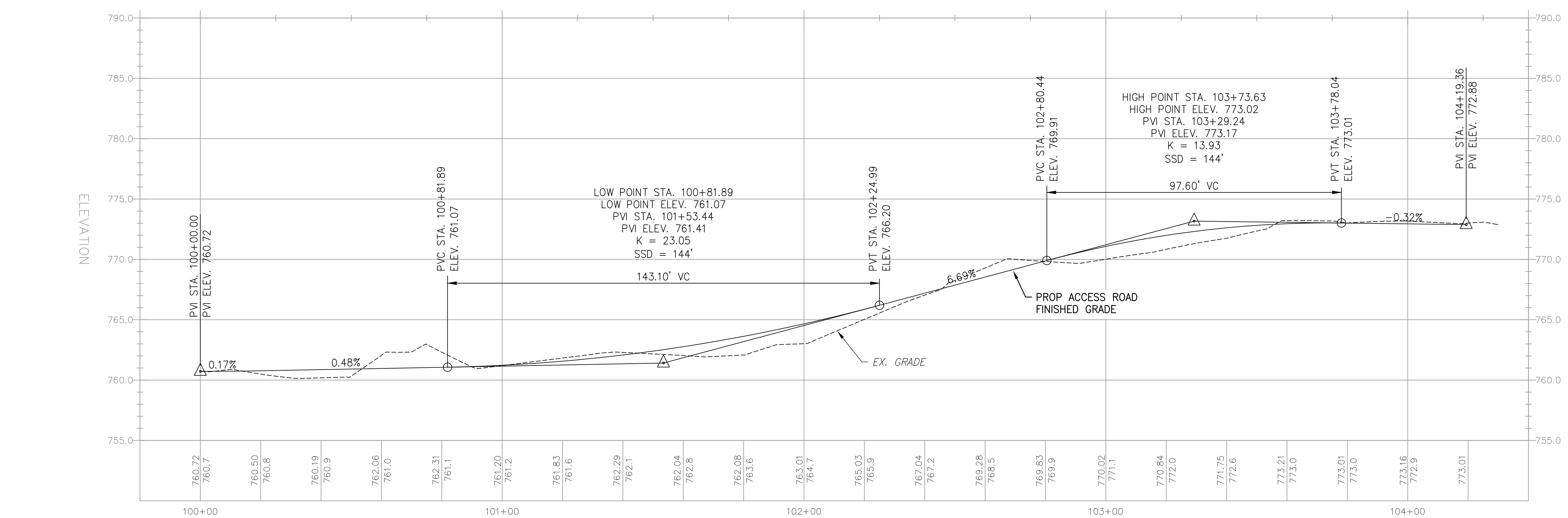
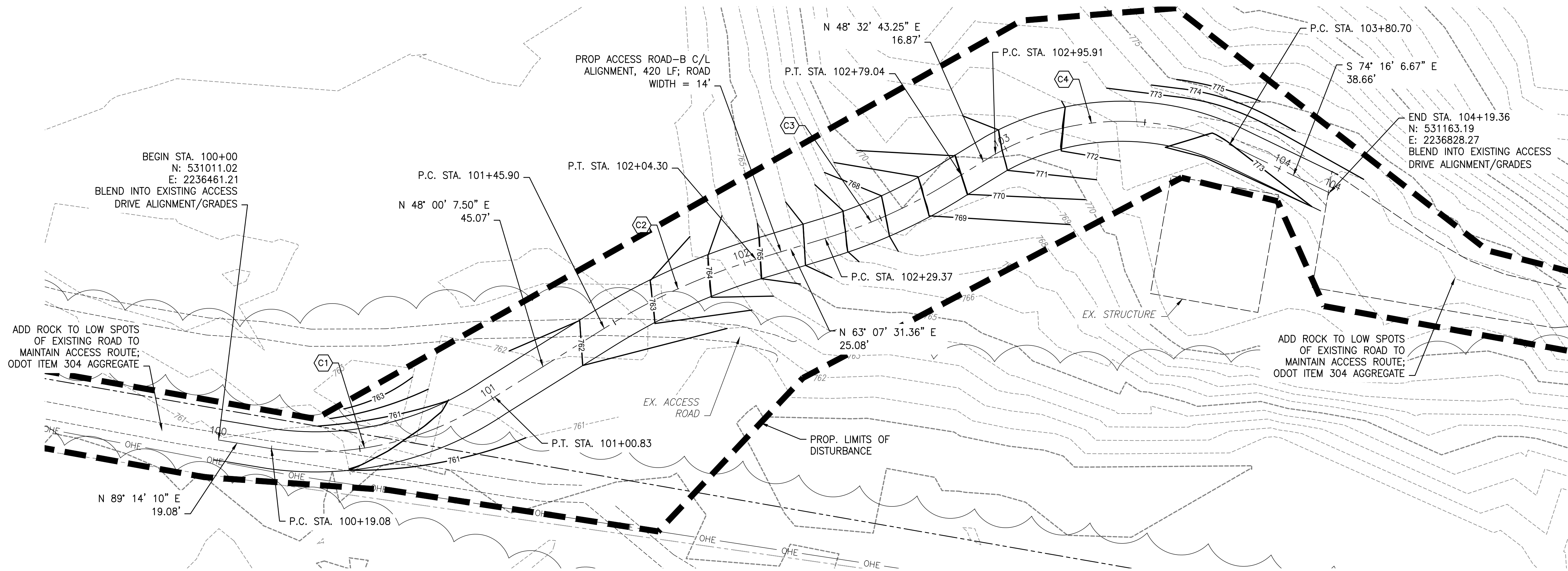


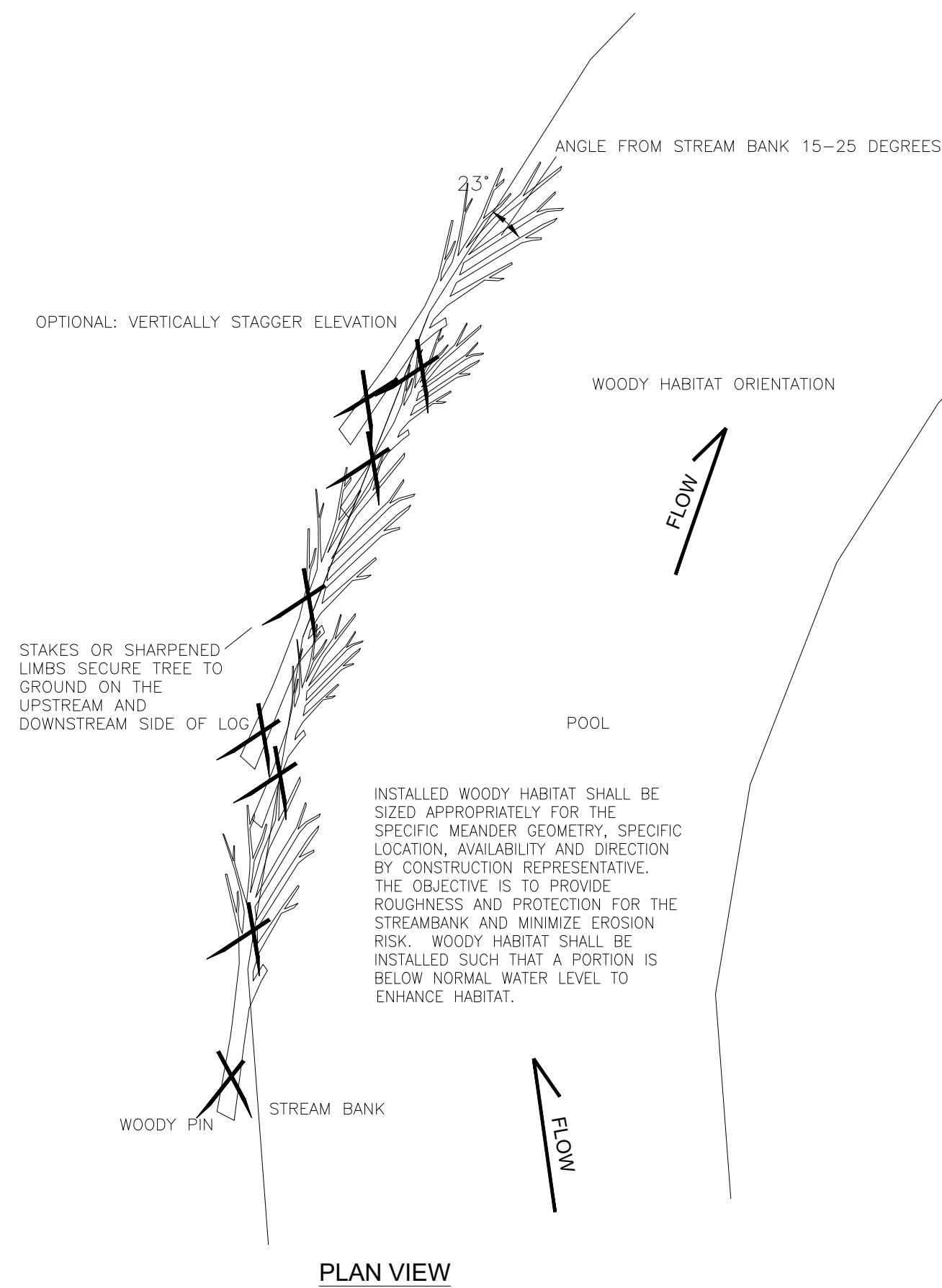
NOTES:

1. SEE SHEETS 2 - 4 FOR GENERAL NOTES AND SPECIFICATIONS.
2. SEE SHEET 4 FOR LEGEND.
3. SEE TYPICAL ROAD SECTION DETAIL, SHEET 30.

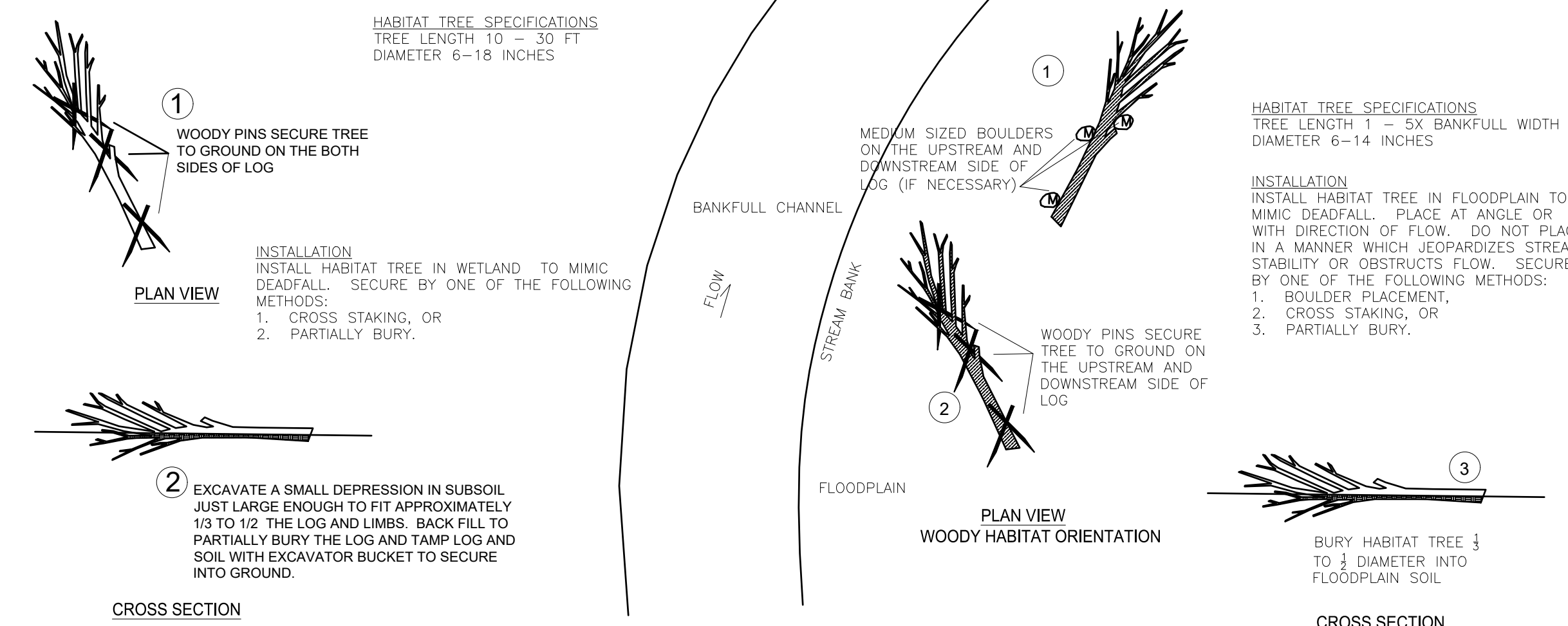
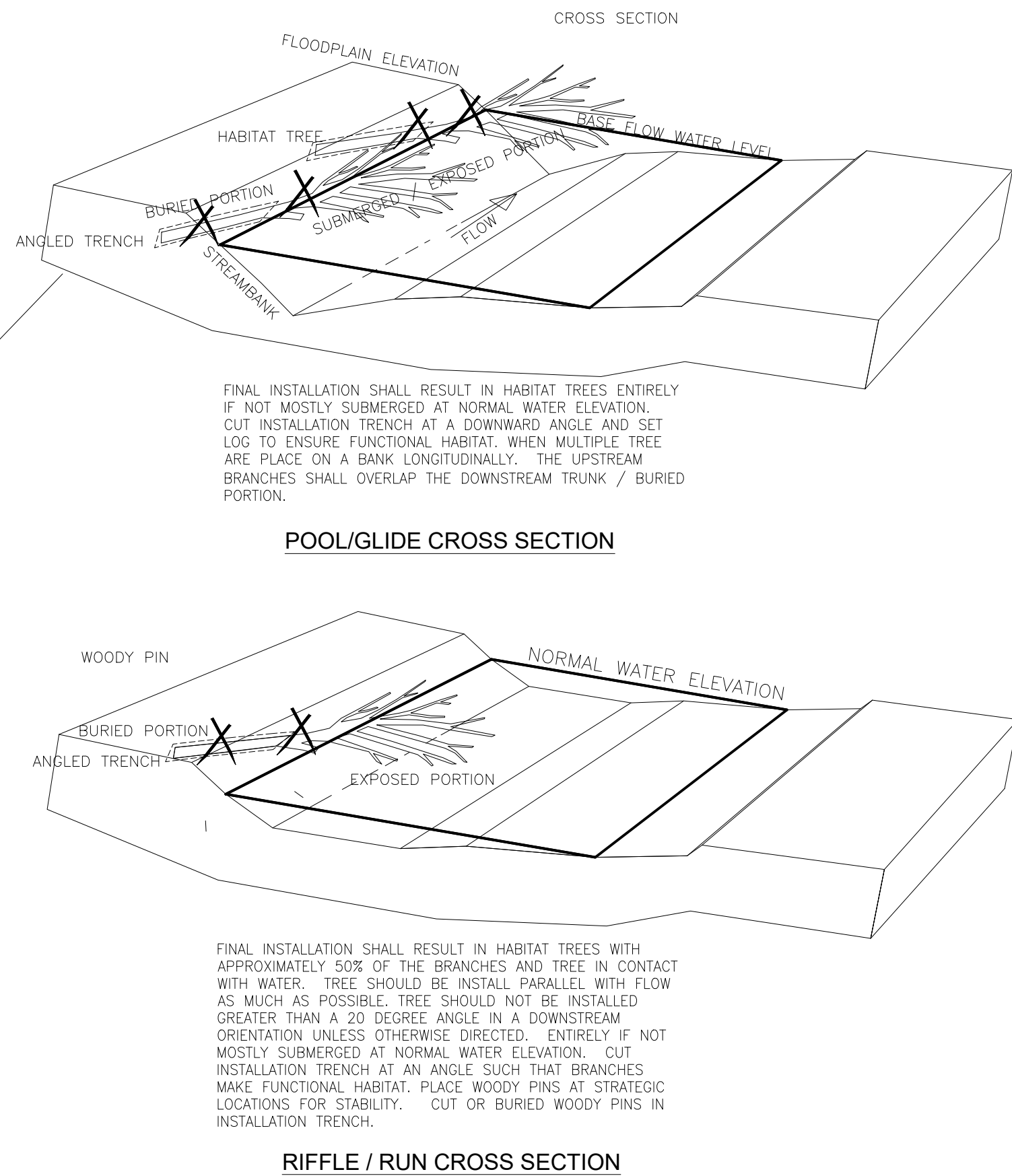
PROPOSED ACCESS ROAD-B: CENTERLINE CONSTRUCTION HORIZONTAL CURVE DATA

- C1 P.I. STA. 100+61.90
 $\Delta = 42^\circ 06' 27''$
 $D_c = 51' 30' 33''$
 $R = 111.23'$
 $T = 42.82'$
 $L = 81.75'$
 $E = 7.96'$
- C2 P.I. STA. 101+75.27
 $\Delta = 15^\circ 07' 24''$
 $D_c = 25' 53' 57''$
 $R = 221.23'$
 $T = 29.37'$
 $L = 58.39'$
 $E = 1.94'$
- C3 P.I. STA. 102+54.36
 $\Delta = 15^\circ 36' 28''$
 $D_c = 31' 25' 32''$
 $R = 182.32'$
 $T = 24.99'$
 $L = 49.67'$
 $E = 1.70'$
- C4 P.I. STA. 103+41.68
 $\Delta = 53^\circ 31' 54''$
 $D_c = 63' 08' 11''$
 $R = 90.75'$
 $T = 45.77'$
 $L = 84.79'$
 $E = 10.89'$

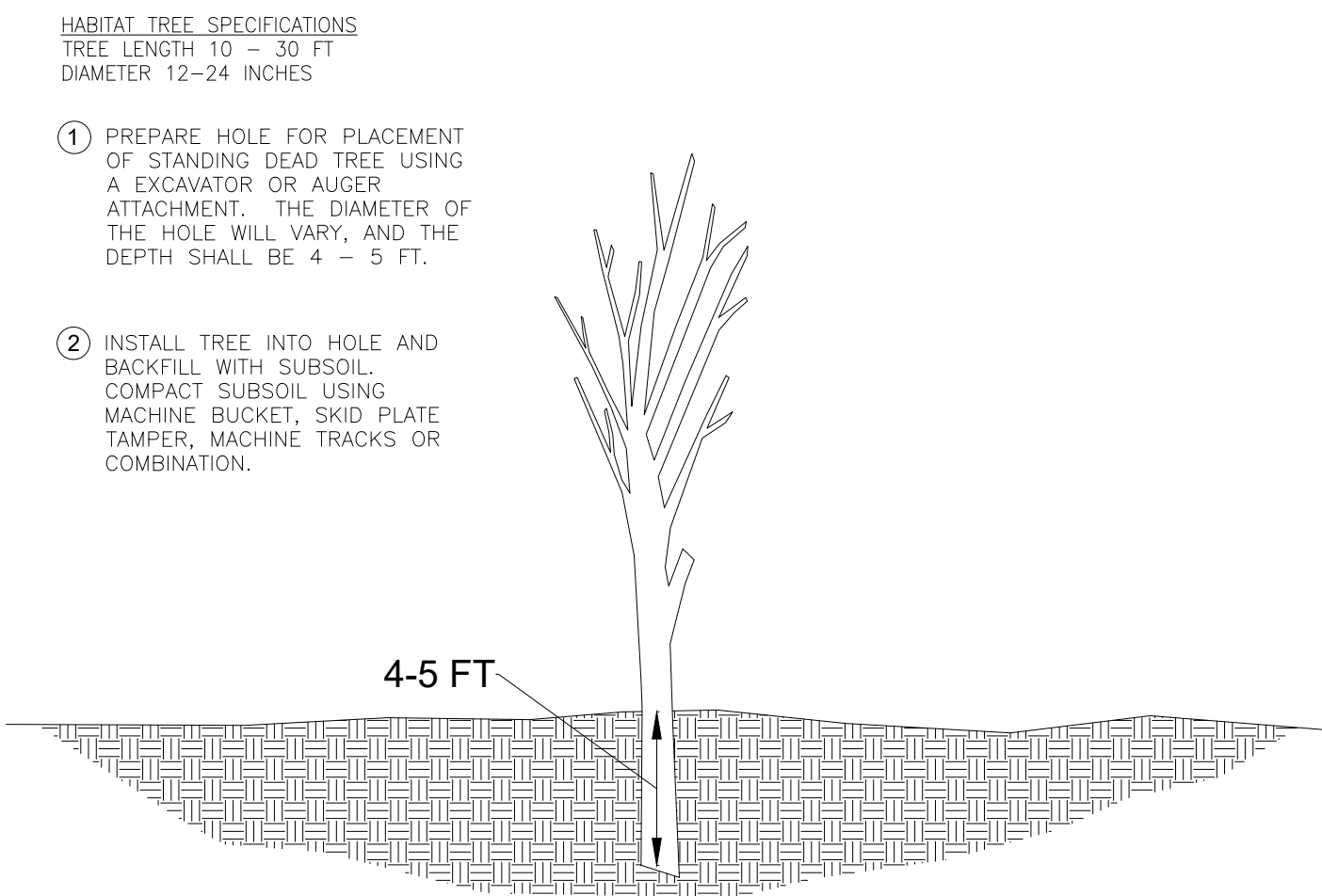




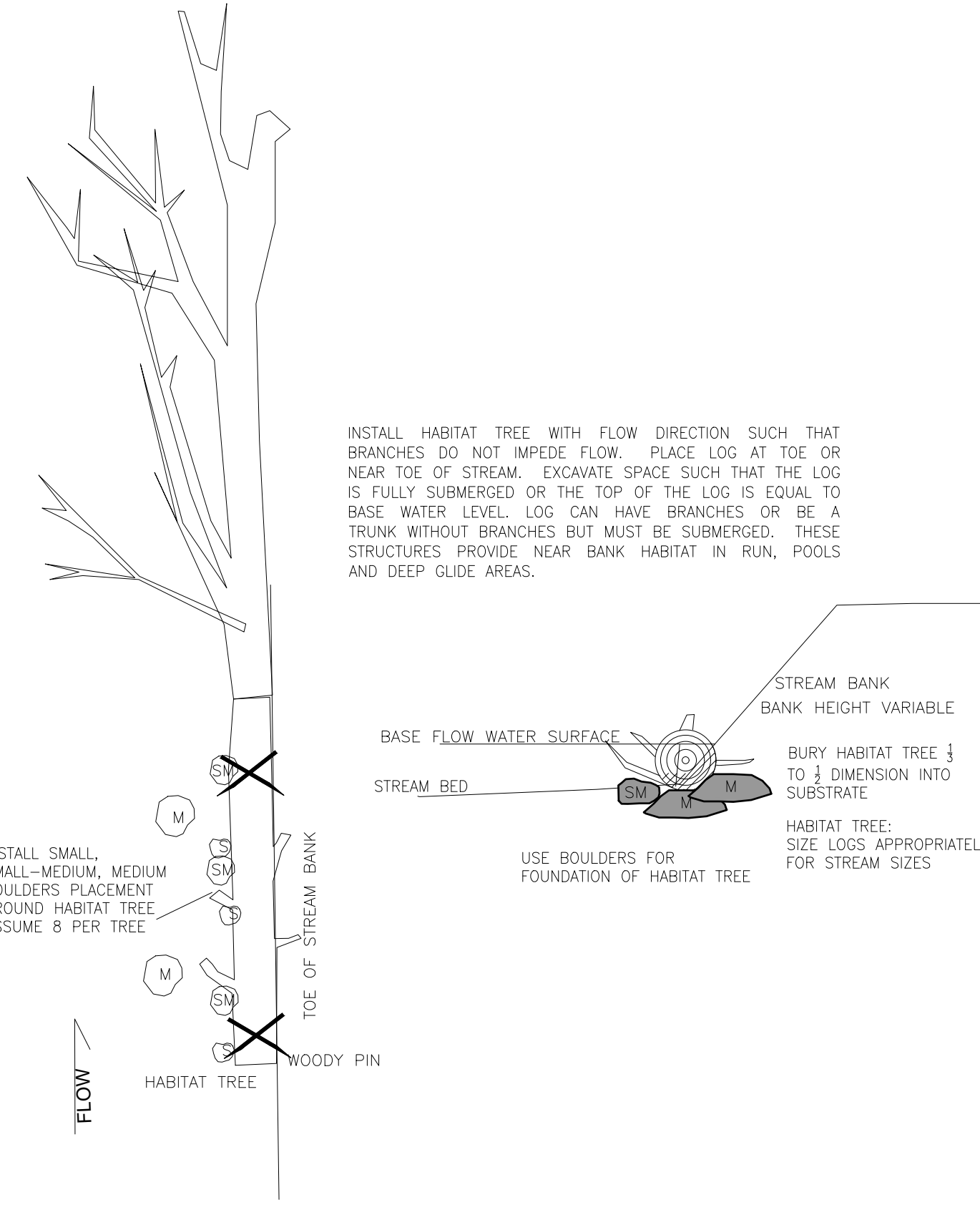
WOODY HABITAT #1
OUTSIDE MEANDER LOG/BRANCH HABITAT
 PROJECT TOTAL: 44



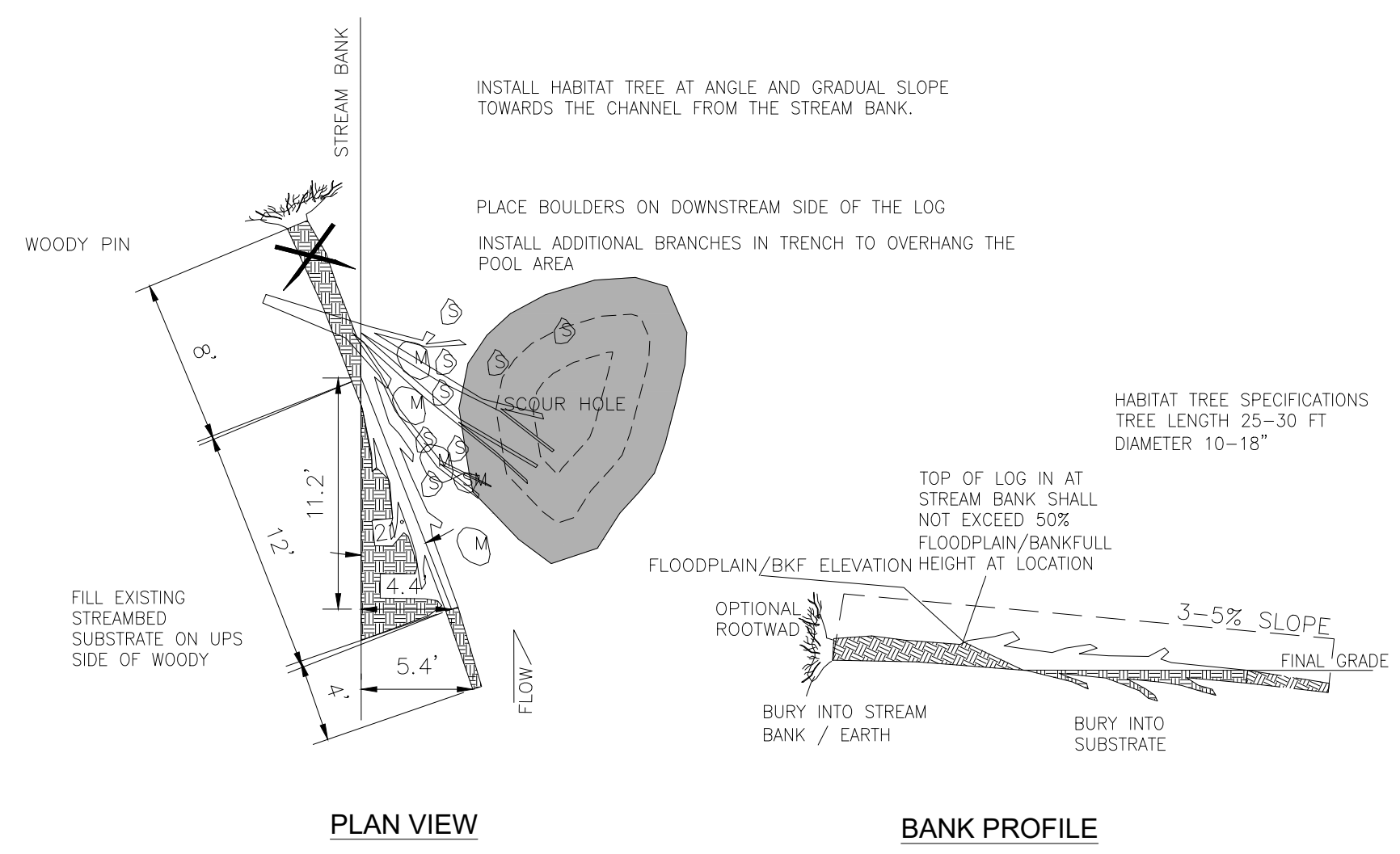
WOODY HABITAT #4
DEADFALL AND FLOODPLAIN TREE
 PROJECT TOTAL: 20



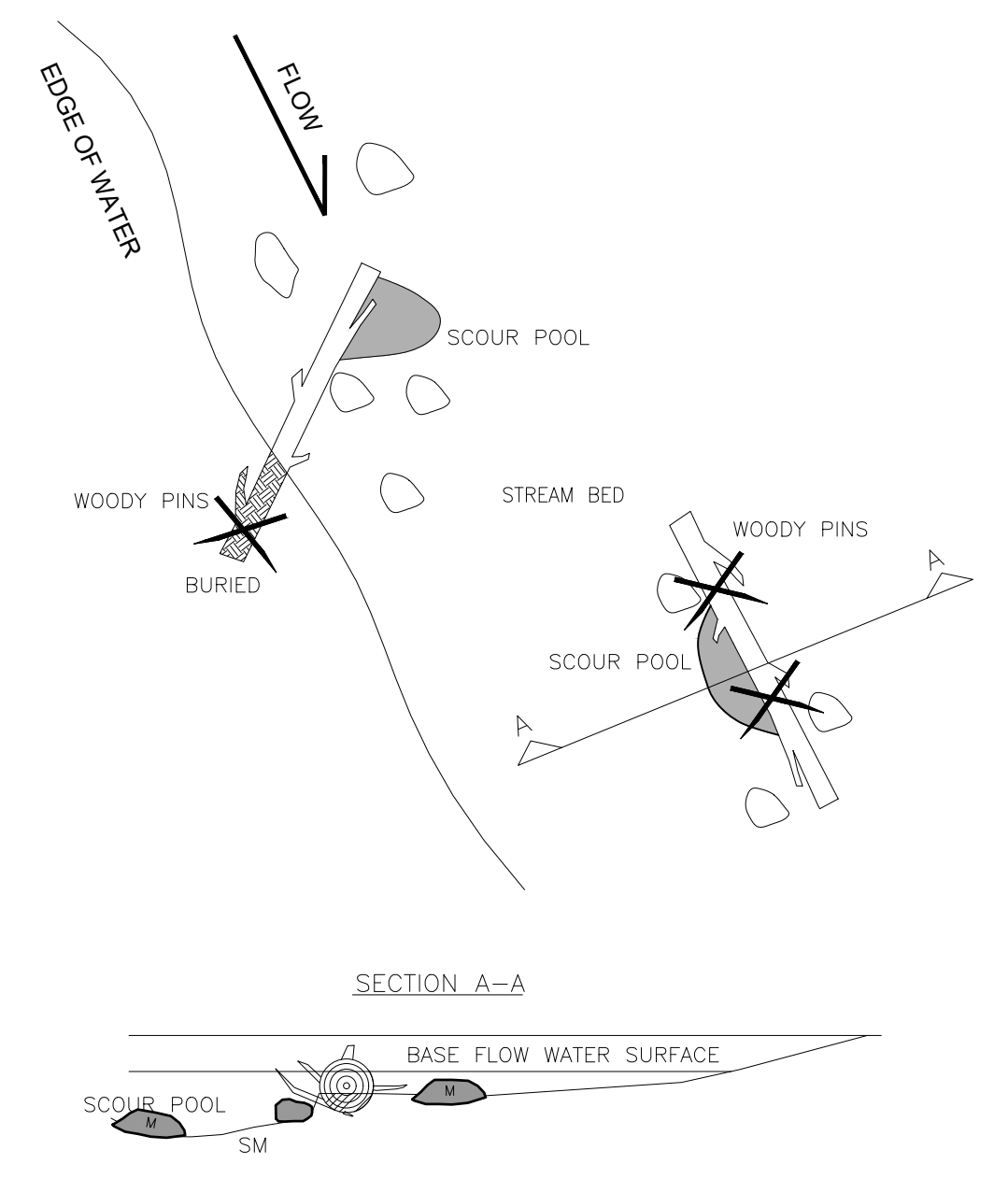
WOODY HABITAT #5
STANDING DEAD
 PROJECT TOTAL: 23



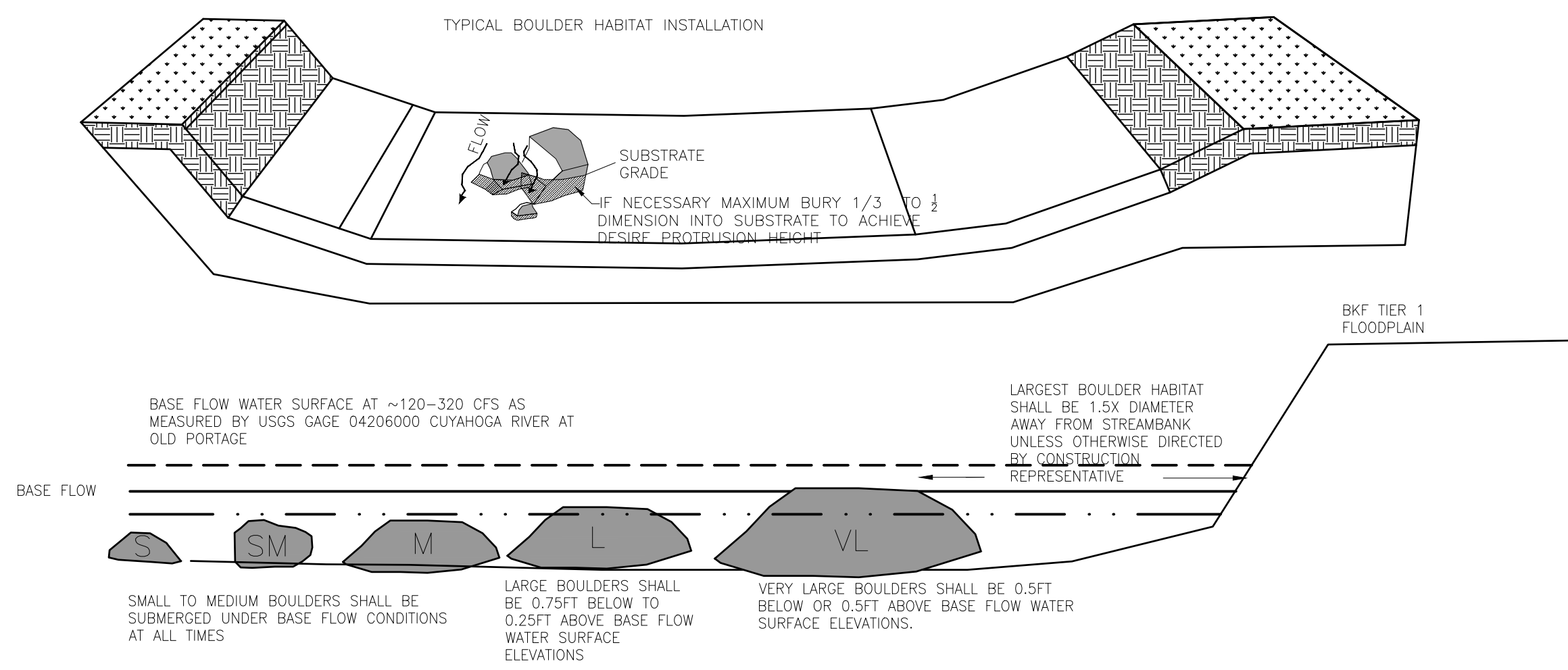
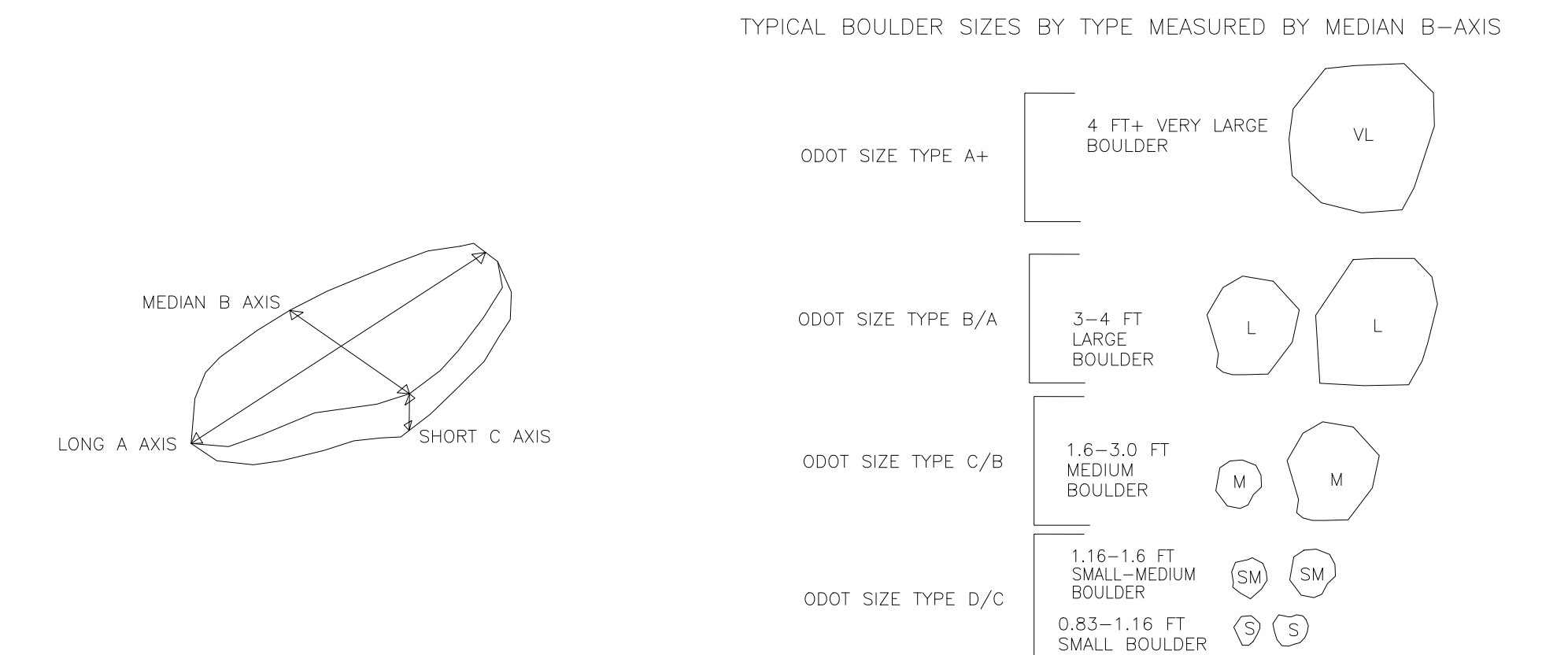
WOODY HABITAT #2
SHALLOW BANK LOG HABITAT
 PROJECT TOTAL: 11



WOODY HABITAT #6
STREAMBED LOG/BOULDER HABITAT
 PROJECT TOTAL: 1

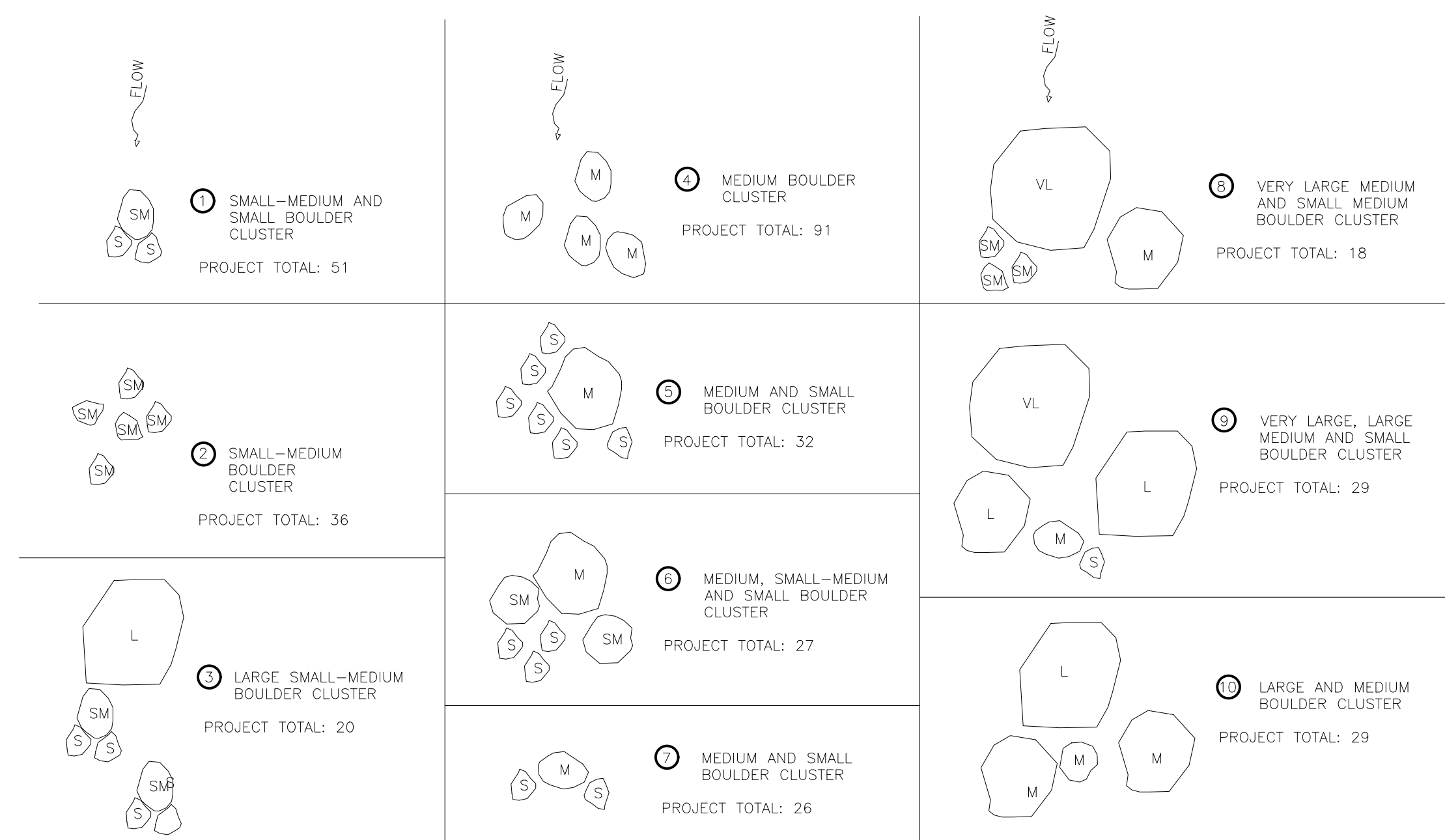


WOODY HABITAT #3
STREAMBED SMALL LOG DEBRIS
 PROJECT TOTAL: 18

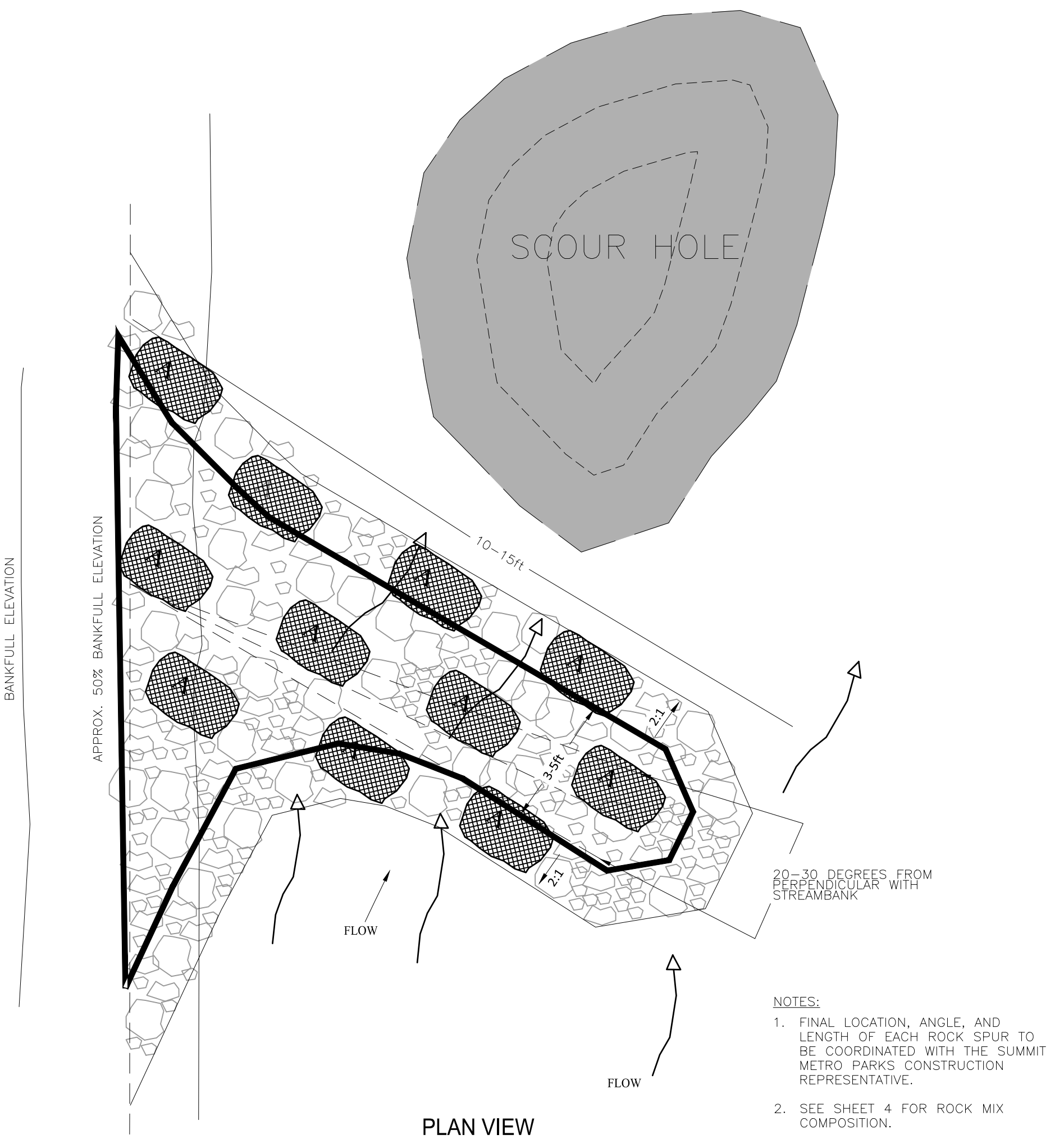


RIFFLE, RUN, GLIDE BOULDER HABITAT STREAMBED PROTRUSION DETAIL

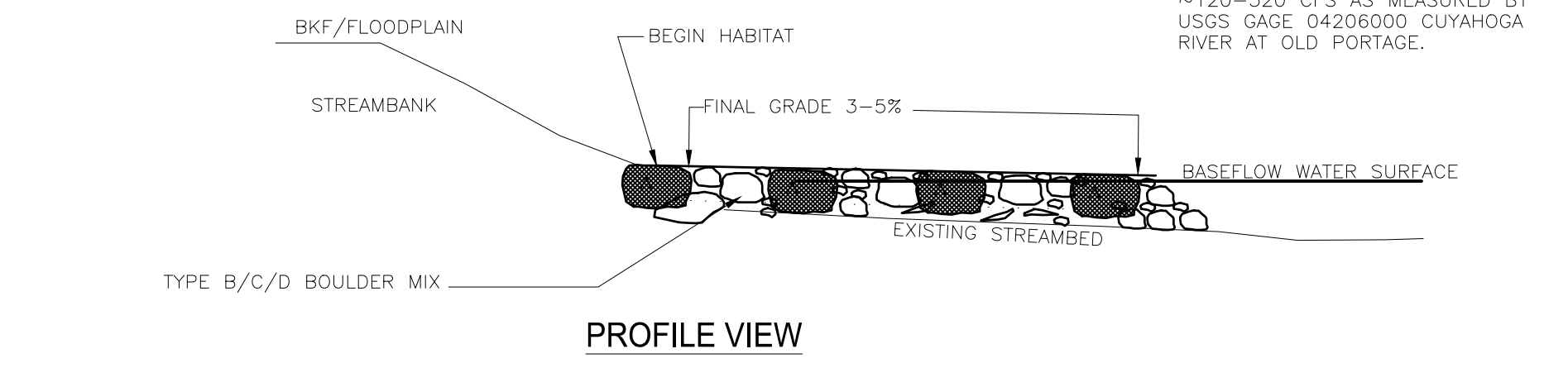
NOTE: ALL BOULDER HABITAT TYPES SHALL BE FULLY SUBMERGED 1.5 FT MINIMUM BELOW WATER SURFACE ELEVATION IN POOL AREAS.



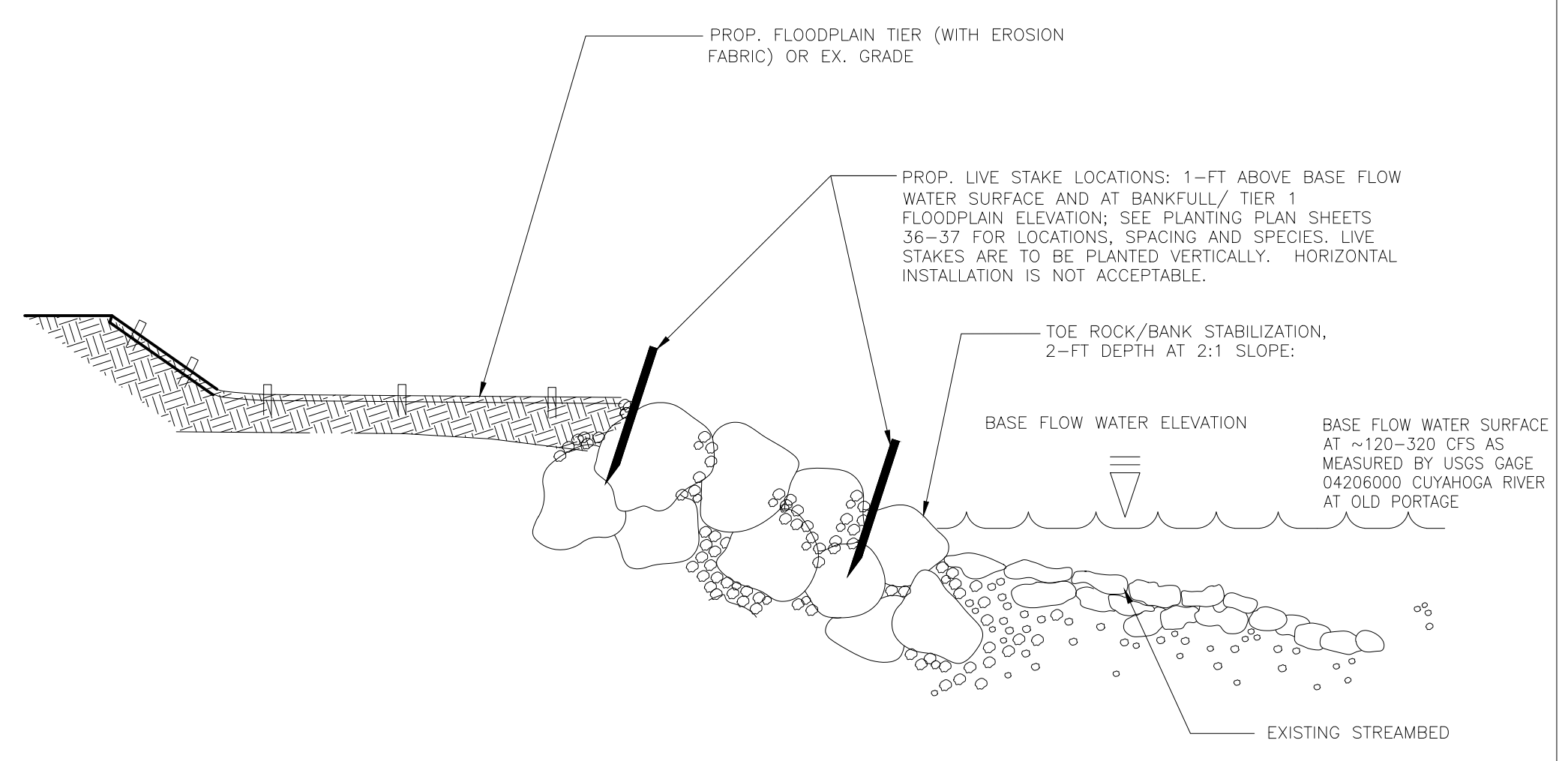
BOULDERS HABITATS ARE TO BE PLACED PER PLAN AND AT THE DISCRETION OF THE CONSTRUCTION REPRESENTATIVE. BOULDERS SHALL BE PLACED SUCH THAT THEIR PROTRUSION HEIGHT IS LESS THAN 1/3 BANKFULL HEIGHT IN A RIFFLE. BOULDERS PLACED INTO POOL HABITATS SHALL NOT PROTRUDE MORE THAN 1FT FROM FINISH GRADE ELEVATION UNLESS OTHERWISE DIRECTED. FLAT OR ANGULAR BOULDERS ARE PREFERRED TO ROUNDED BOULDERS. BOULDERS SHALL NOT BE PLACED IN A POSITION THAT CAUSES LATERAL SCOUR INTO A STREAMBANK. BOULDERS PLACED NEAR STREAMBANKS SHALL BE AT LEAST 1.5 BOULDER DIAMETER OF EXPOSED SURFACE FROM STREAMBANK.



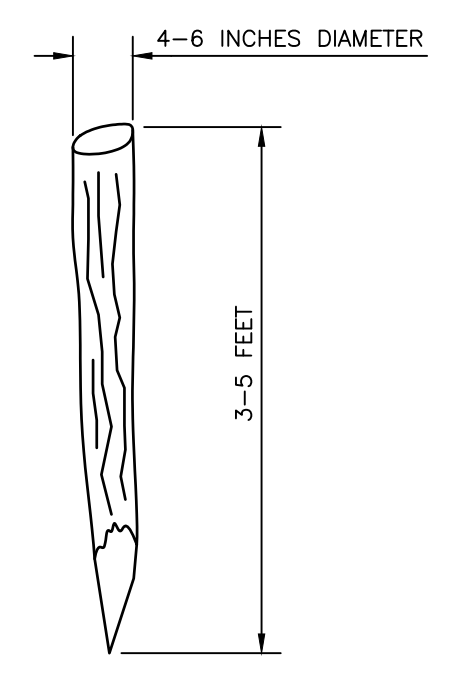
PLAN VIEW



ROCK SPUR DETAIL



LIVE STAKE LOCATION DETAIL

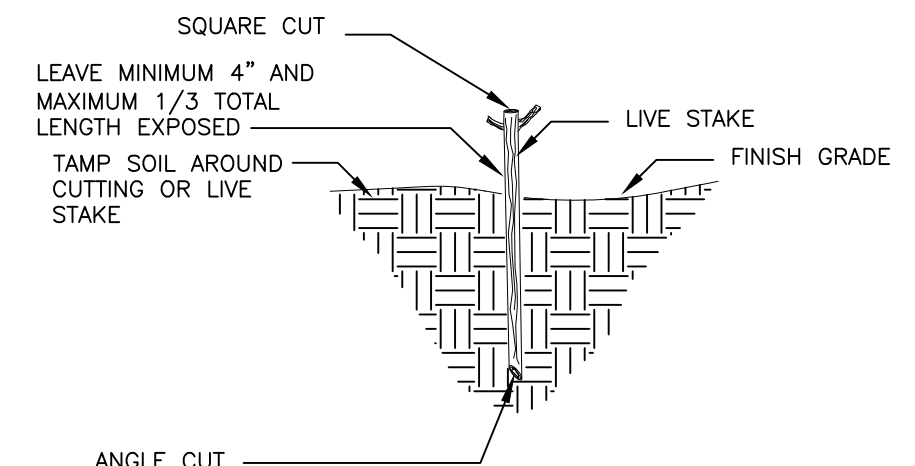


WOODY PINS SHALL BE USED TO SECURE WOODY HABITATS INTO STREAMBED, STREAMBANKS AND FLOODPLAINS. AN EXCAVATOR BUCKET IS USED TO DRIVE PINS INTO KEY LOCATIONS ON THE WOODY HABITAT TO LOCK INTO PLACE. THIS COULD INCLUDE Y-S, BENDS OR CURVES BUT A SECOND PIN AT A MINIMUM SHOULD ALWAYS BE INSTALLED IN THE OPPOSITE DIRECTION OR ANGLE TO COUNTERACT THE FIRST PIN. IF WOODY HABITAT IS SUBJECT TO LIFTING FORCES THEN PINS PLACED HORIZONTALLY WILL HELP STABILIZE. TYPICALLY A MINIMUM OF FOUR PINS INSTALLED IN AN X-PATTERN ARE PLACED ON A WOODY HABITAT PER 8-10FT. PINS SHALL BE INSTALLED ON PARTIALLY BURIED OR WOODY HABITATS THAT ARE TRENCHED PRIOR TO BEING BACKFILLED.

PINS SHALL BE MADE FROM DURABLE, RECENTLY CUT OR HARDENED WOOD. ROTTEN WOOD IS NOT PERMITTED AND TYPICALLY WILL BREAK UNDER PRESSURE OF THE MACHINE. PINS SHALL BE CUT INTO 3-6FT LENGTHS DEPENDING ON SPECIFIC NEEDS. COMMON DIAMETER OF MATERIAL IS 3-8 INCHES. A SHARPENED POINT SHALL BE CUT AT ONE END USING ONE OR MULTIPLE ANGLED CUTS. ABSOLUTELY NO PROCESSED WOOD OR LUMBER 2X4'S CUT WITH POINTS ARE PERMITTED.

***PINS CUT FROM CERTAIN SPECIES PRESENT OPPORTUNITY TO CREATE MODIFIED LIVE STAKE POSTS. GENUS AND SPECIES IN THE FOLLOWING INCLUDING SYCAMORE, ELM, BIRCH, WILLOW, BOX ELDER AND COTTONWOOD SHOULD BE PROCESSED SUCH THAT THE POINTED END OF THE WOODY PIN IS FACING DOWNWARD IN THE DIRECTION OF ROOT GROWTH. THIS WOULD GENERALLY MEAN THE THICKER END OF THE PIN RECEIVED THE ANGLED TIP.

WOODY PIN DETAIL

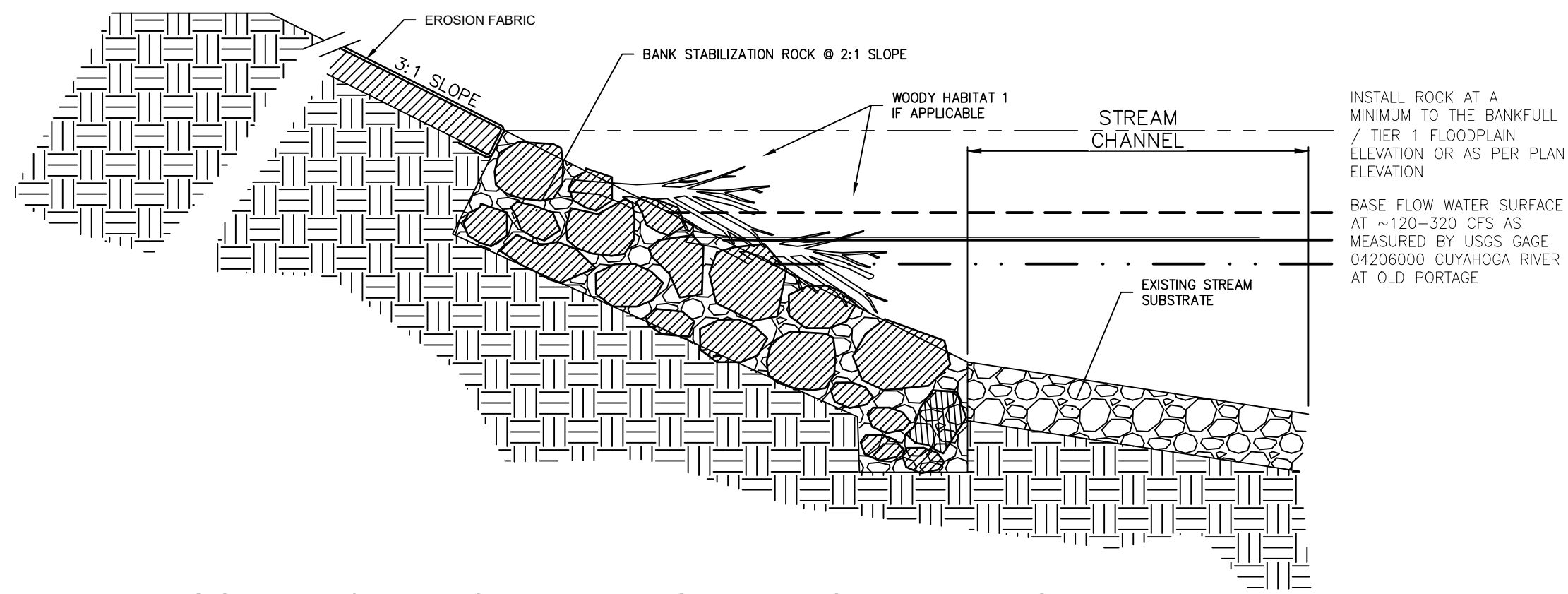


LIVE STAKE CROSS SECTION NOT TO SCALE

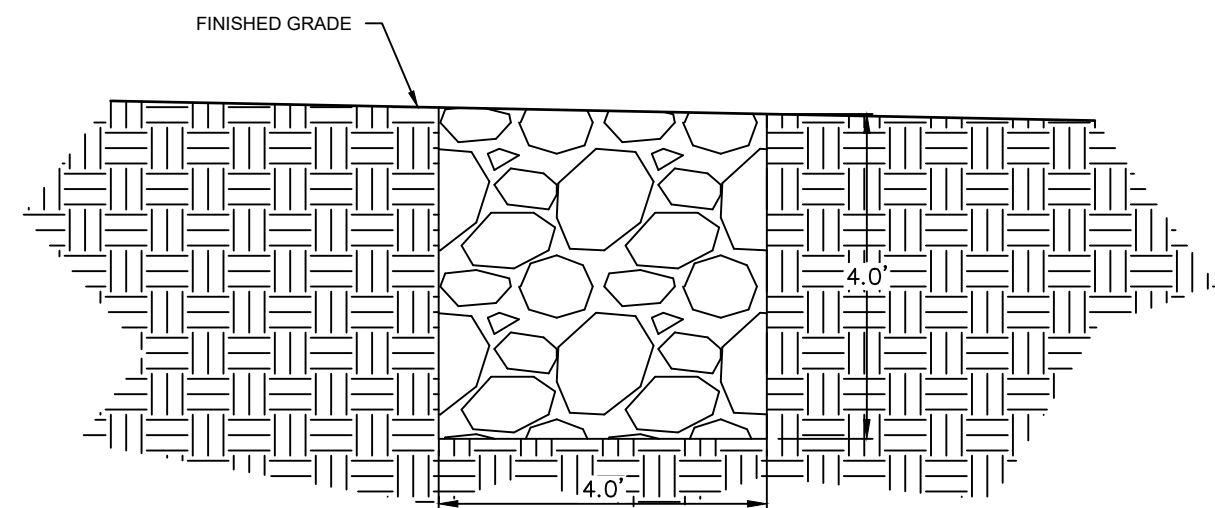
INSTALLATION SPECIFICATIONS

- LIVE STAKES SHALL RANGE FROM 1/2" TO 1" IN DIAMETER AND BE FROM 2 TO 3 FT IN LENGTH
- CARE SHALL BE TAKEN NOT TO DAMAGE THE LIVE STAKES DURING INSTALLATION.
- 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.
- LIVE STAKES SHALL BE CUT TO A POINT ON THE BASAL END FOR INSERTION INTO THE GROUND.
- SEE CONTRACT DOCUMENTS FOR SPECIES, SIZE, SPACING, LOCATION, AND FINAL DETERMINATION ON USE OF LIVE STAKES.
- USE A DEAD BLOW HAMMER TO DRIVE LIVE STAKES INTO THE PILOT HOLE.
- LEAVE BETWEEN 4" AND 8" OF LIVE STAKE EXPOSED ABOVE FINISH GRADE.
- TAMP SOIL AROUND LIVE STAKES.

LIVE STAKE PLANTING



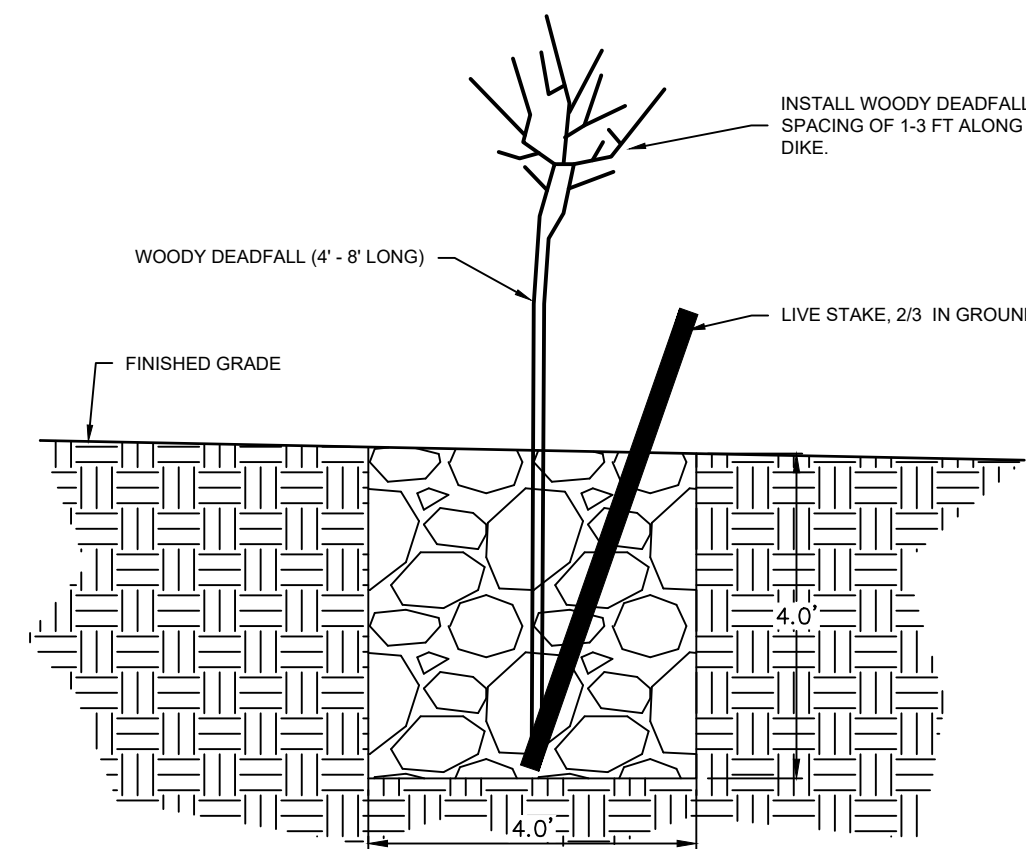
ROCK KEY / BANK STABILIZATION BRANCH LAYERING DETAIL



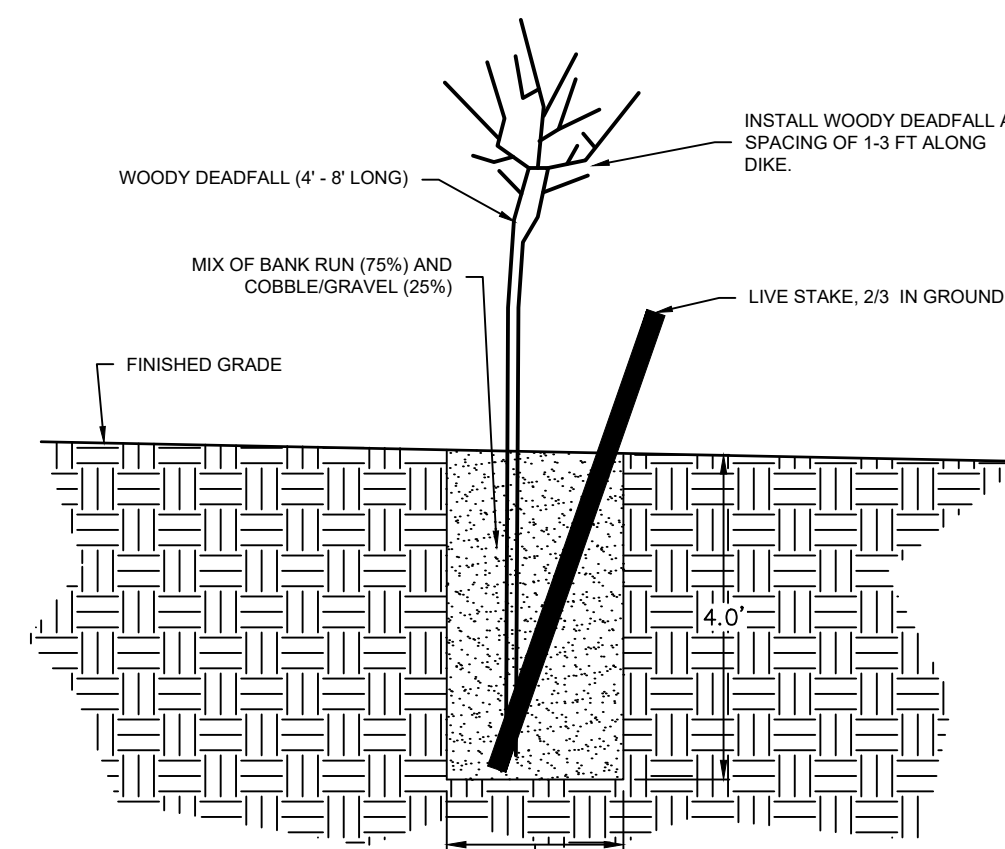
TYPICAL ROCK KEY MIX	
ROCK SIZE B	45%
ROCK SIZE C	45%

NOTE: FILL VOIDS (REMAINING 10%) WITH BANK RUN (5%) AND COBBLE/GRAVEL (5%) MIX

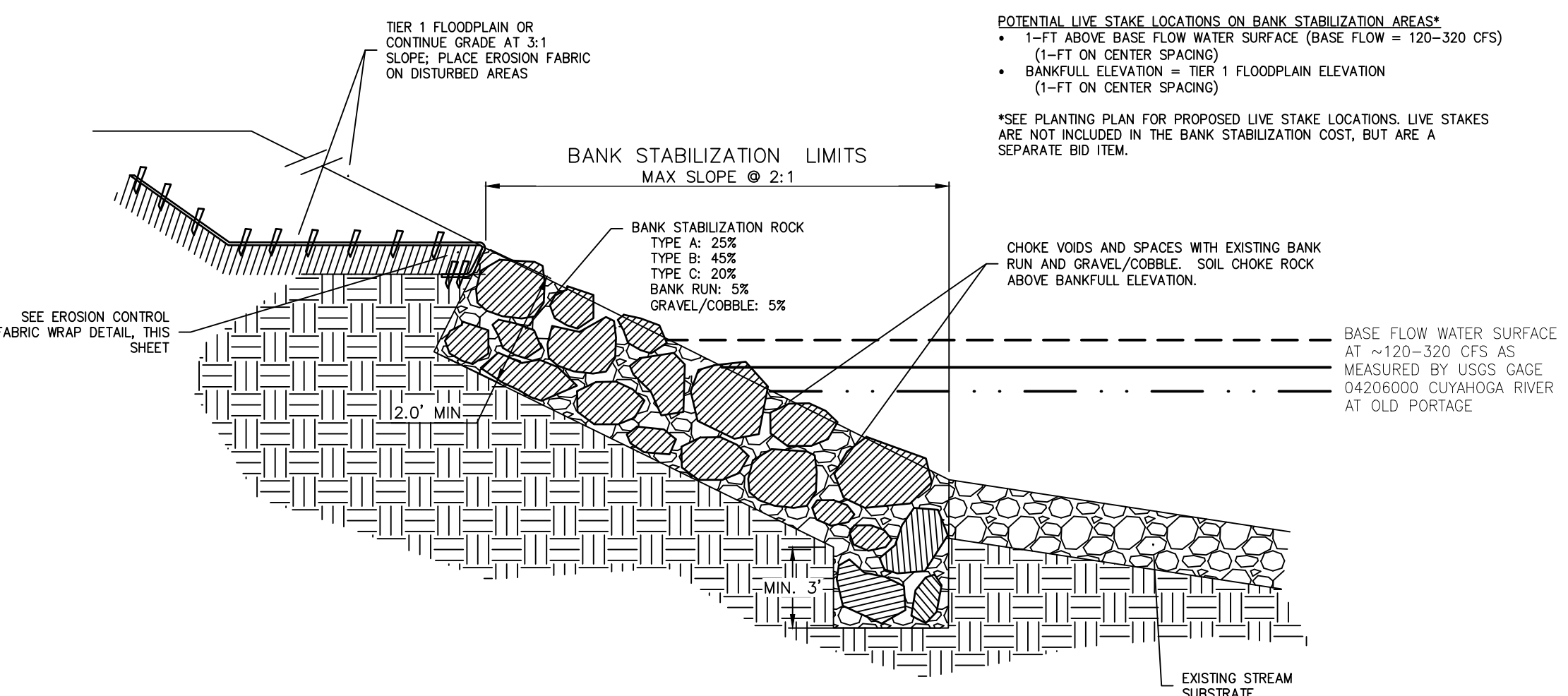
ROCK KEY DETAIL



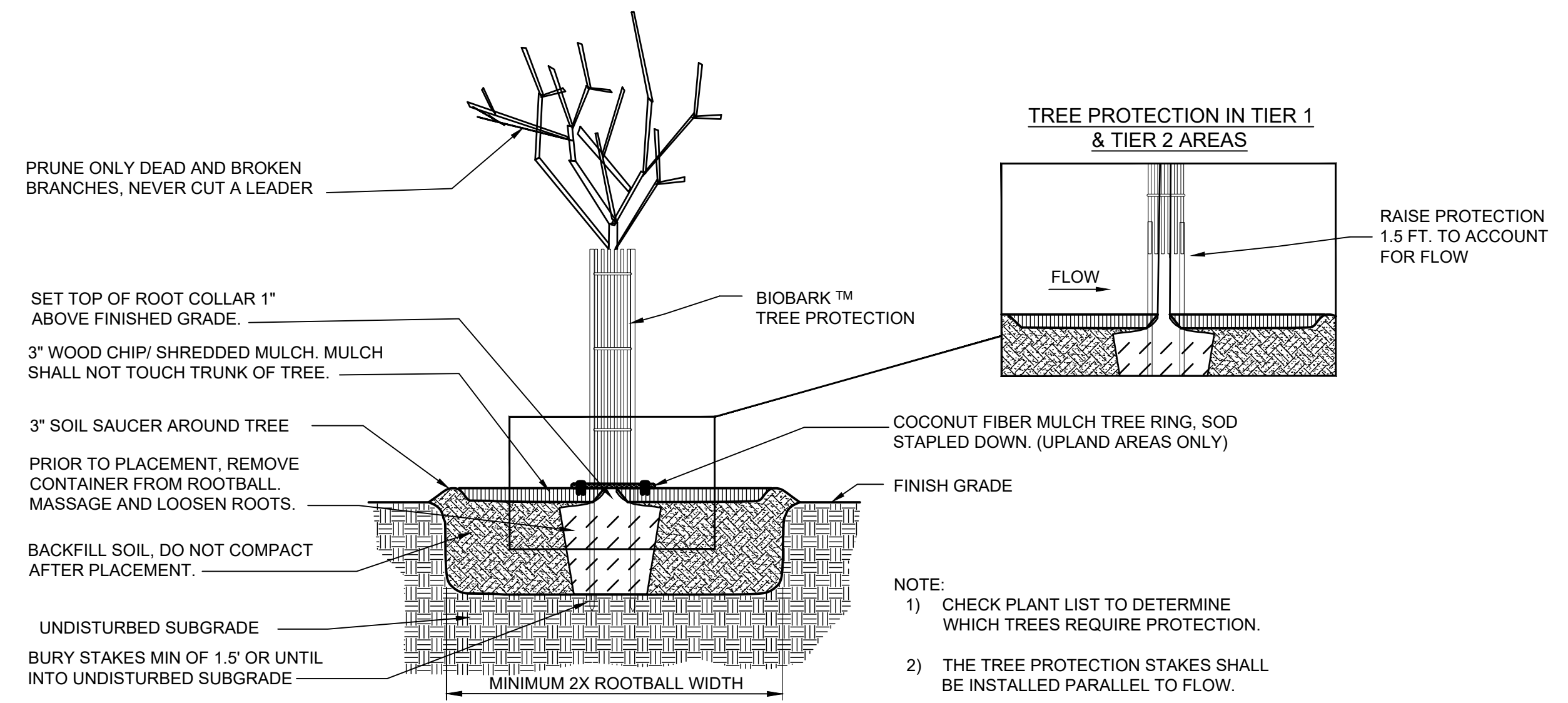
LIVING DIKE IN ROCK KEY DETAIL



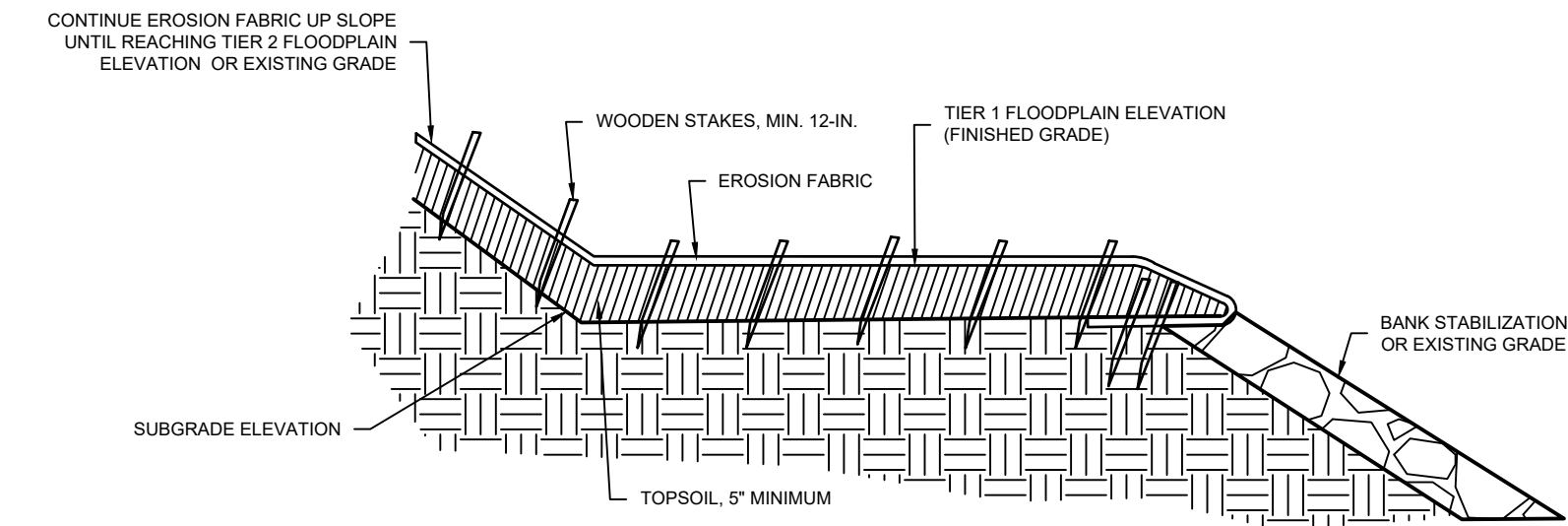
LIVING DIKE DETAIL



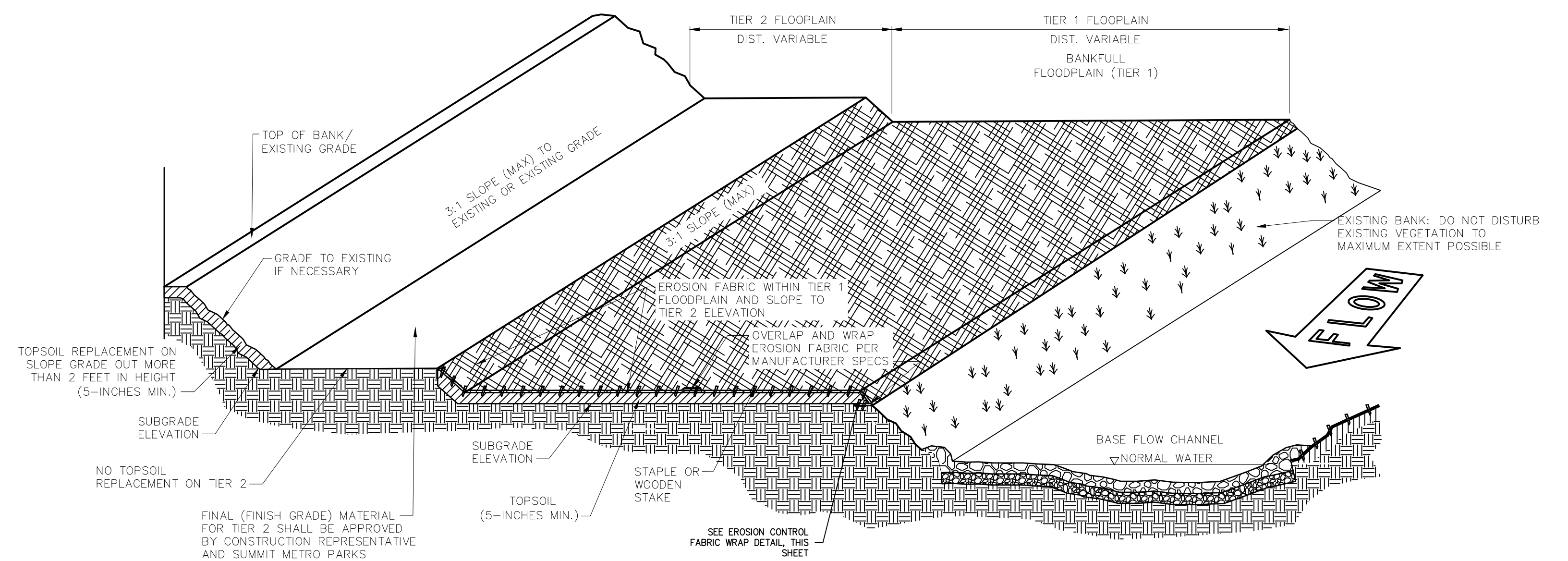
BANK STABILIZATION



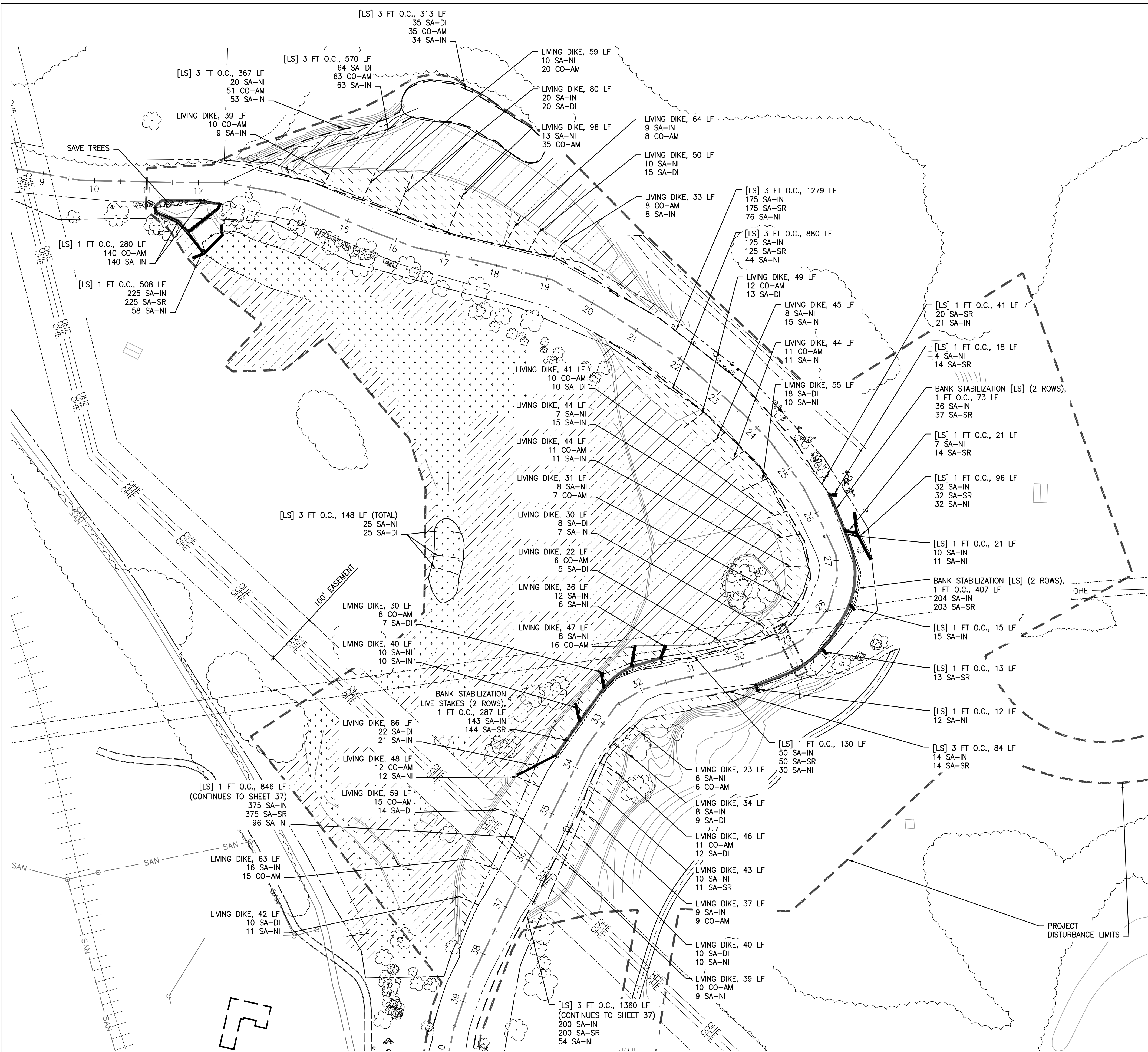
3 GAL. TREE PLANTING AND PROTECTION



EROSION CONTROL FABRIC WRAP DETAIL



STREAMBANK AND FLOODPLAIN SCHEMATIC

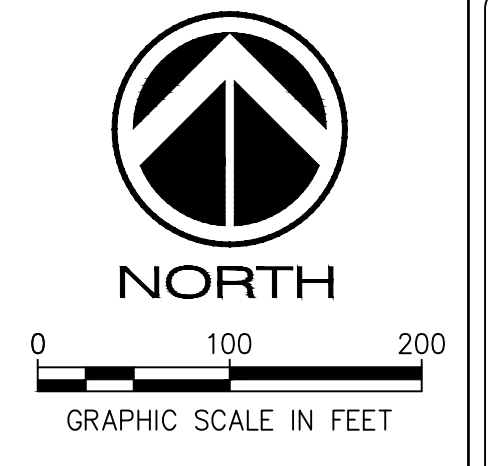


LEGEND:

- WETLAND FOREST
- FLOODPLAIN FOREST - TIER 1 & SLOPE TO TIER 2
(OR TO EXISTING GRADE IF NO TIER 2)
- FLOODPLAIN FOREST - TIER 2 & SLOPES TO EXISTING GRADE
- UPLAND FOREST
- 1 FT. O.C. LIVE STAKES
- 2 FT. O.C. LIVE STAKES
- 3 FT. O.C. LIVE STAKES

NOTES:

1. TREES ARE TO BE PLANTED AT 10'-15' O.C. SEE DETAIL ON SHEET 35 FOR TREE PLANTING AND STAKING.
2. EACH AREA IS TO BE PLANTED AT A MINIMUM DENSITY OF 200 TREES PER ACRE.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR A 1-YEAR REPLACEMENT WARRANTY OF ALL TREES PLANTED.
4. LIVE STAKES ALONG STREAMBANKS ARE TO BE INSTALLED AT 3 FT. O.C. IN THE STREAM BED WITH THE EXCEPTION OF AREAS IDENTIFIED ON THE PLANS TO BE INSTALLED AT A 1 FT. O.C.
5. LIVING DIKE LIVE STAKES ARE TO BE INSTALLED AT A 2 FT. O.C.
6. NO TREES ARE TO BE PLANTED WITHIN THE OVERHEAD POWER LINE EASEMENT (100 FT).
7. LIVESTAKES INSTALLED IN BANK STABILIZATION ROCK SHALL HAVE TWO ROWS OF 1 FT. O.C. LIVE STAKES. THE FIRST ROW SHALL BE LOCATED 1 FT. ABOVE BASE FLOW WATER SURFACE, AND THE SECOND ROW LOCATED AT THE BANKFULL ELEVATION. SEE DETAIL, SHEET 34.



WETLAND TREES

SYMBOL	NUMBER	SPECIES	SCIENTIFIC NAME	CONT. SIZE	PROTECT
AC-SI	153	SILVER MAPLE	ACER SACCHARINUM	3 GAL.	YES
PL-OC	153	AMERICAN SYCAMORE	PLATANUS OCCIDENTALIS	3 GAL.	NO
QU-BI	154	SWAMP WHITE OAK	QUERCUS BICOLOR	3 GAL.	YES
QU-PA	154	PIN OAK	QUERCUS PALUSTRIS	3 GAL.	YES
UL-AP	154	AMERICAN ELM	ULMUS AMERICANA	3 GAL.	YES
	768	TOTAL			

FLOODPLAIN TREES

SYMBOL	NUMBER	SPECIES	SCIENTIFIC NAME	CONT. SIZE	PROTECT
AC-NE	177	BOXELDER	ACER NEGUNDO	3 GAL.	YES
AC-RU	177	RED MAPLE	ACER RUBRUM	3 GAL.	NO
BE-AL	178	YELLOW BIRCH	BETULA ALLEGHANIENSIS	3 GAL.	NO
BE-PO	178	GRAY BIRCH	BETULA POPULIFOLIA	3 GAL.	YES
CA-CA	178	AMERICAN HORNBEAM	CARNUS CAROLINIANA	3 GAL.	YES
PL-OC	178	AMERICAN SYCAMORE	PLATANUS OCCIDENTALIS	3 GAL.	NO
NY-SY	178	BLACK GUM	NYSSA SYLVATICA	3 GAL.	YES
QU-PA	178	PIN OAK	QUERCUS PALUSTRIS	3 GAL.	YES
QU-MA	178	BUR OAK	QUERCUS MACROCARPA	3 GAL.	YES
	1600	TOTAL			

UPLAND TREES

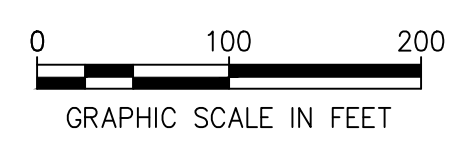
SYMBOL	NUMBER	SPECIES	SCIENTIFIC NAME	CONT. SIZE	PROTECT
AC-SA	225	SUGAR MAPLE	ACER SACCHARUM	3 GAL.	NO
JU-NI	225	BLACK WALNUT	JUGLANS NIGRA	3 GAL.	NO
LI-TU	225	TULIP POPLAR	LIRIODENDRON TULIPIFERA	3 GAL.	NO
PO-TR	225	QUAKING ASPEN	POPULUS TREMULOIDES	3 GAL.	YES
QU-RU	225	NORTHERN RED OAK	QUERCUS RUBRA	3 GAL.	YES
TI-AM	225	AMERICAN BASSWOOD	TILIA AMERICANA	3 GAL.	YES
OS-VI	225	HOPHORNBEAM	OSTRYA VIRGINIANA	3 GAL.	YES
JU-CI	225	BUTTERNUT	JUGLANS CINEREA	3 GAL.	YES
	1800	TOTAL			

LIVESTAKES [LS]

SYMBOL	NUMBER	SPECIES	SCIENTIFIC NAME
CO-AM	575	SILKY DOGWOOD	CORNUS AMOMUM
SA-DI	314	PUSSY WILLOW	SALIX DISCOLOR
SA-IN	2775	SANDBAR WILLOW	SALIX INTERIOR
SA-NI	830	BLACK WILLOW	SALIX NIGRA
SA-SR	2382	SILKY WILLOW	SALIX SERICEA
	6876	TOTAL	

MATCHLINE - SEE SHEET 37

PLANTING PLAN
 SHEET: 36 OF 44
 SCALE: 1"=100'-0"
 DATE: 03/23/20
 REFERENCES: N/A
 REVISIONS: 1
 DESIGNED BY: ADH
 DRAWN BY: GS
 SUMMIT METRO PARKS
 VALLEY VIEW PH 2 RESTORATION DESIGN
 975 TREATY LINE ROAD
 AKRON, OHIO 44313
 (330) 867-5511



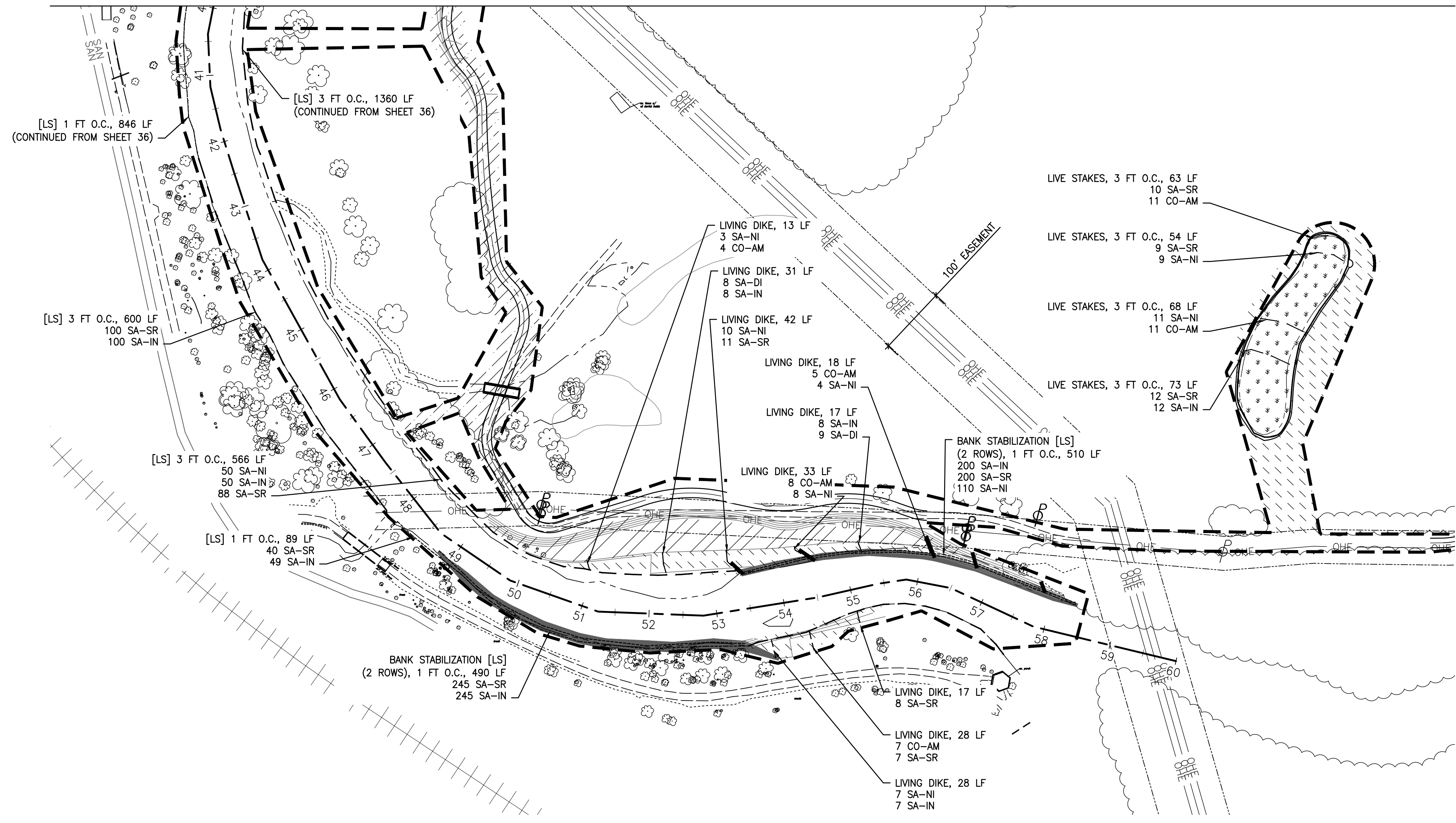
LEGEND:

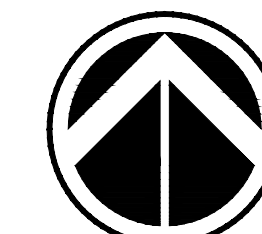
- WETLAND FOREST
- FLOODPLAIN FOREST – TIER 1 & SLOPE TO TIER 2
(OR TO EXISTING GRADE IF NO TIER 2)
- FLOODPLAIN FOREST – TIER 2 & SLOPES TO EXISTING GRADE
- UPLAND FOREST
- 1 FT. O.C. LIVE STAKES
- 2 FT. O.C. LIVE STAKES
- 3 FT. O.C. LIVE STAKES

NOTES:

1. TREES ARE TO BE PLANTED AT 10'-15' O.C. SEE DETAIL ON SHEET 35 FOR TREE PLANTING AND STAKING.
2. EACH AREA IS TO BE PLANTED AT A MINIMUM DENSITY OF 200 TREES PER ACRE.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR A 1-YEAR REPLACEMENT WARRANTY OF ALL TREES PLANTED.
4. LIVE STAKES ALONG STREAMBANKS ARE TO BE INSTALLED AT 3 FT. O.C. IN THE STREAM BED WITH THE EXCEPTION OF AREAS IDENTIFIED ON THE PLANS TO BE INSTALLED AT A 1 FT. O.C.
5. LIVING DIKE LIVE STAKES ARE TO BE INSTALLED AT A 2 FT. O.C.
6. NO TREES ARE TO BE PLANTED WITHIN THE OVERHEAD POWER LINE EASEMENT (100 FT).
7. LIVESTAKES INSTALLED IN BANK STABILIZATION ROCK SHALL HAVE TWO ROWS OF 1 FT. O.C. LIVE STAKES. THE FIRST ROW SHALL BE LOCATED 1 FT. ABOVE BASE FLOW WATER SURFACE, AND THE SECOND ROW LOCATED AT THE BANKFULL ELEVATION. SEE DETAIL, SHEET 34.

MATCHLINE – SEE SHEET 36

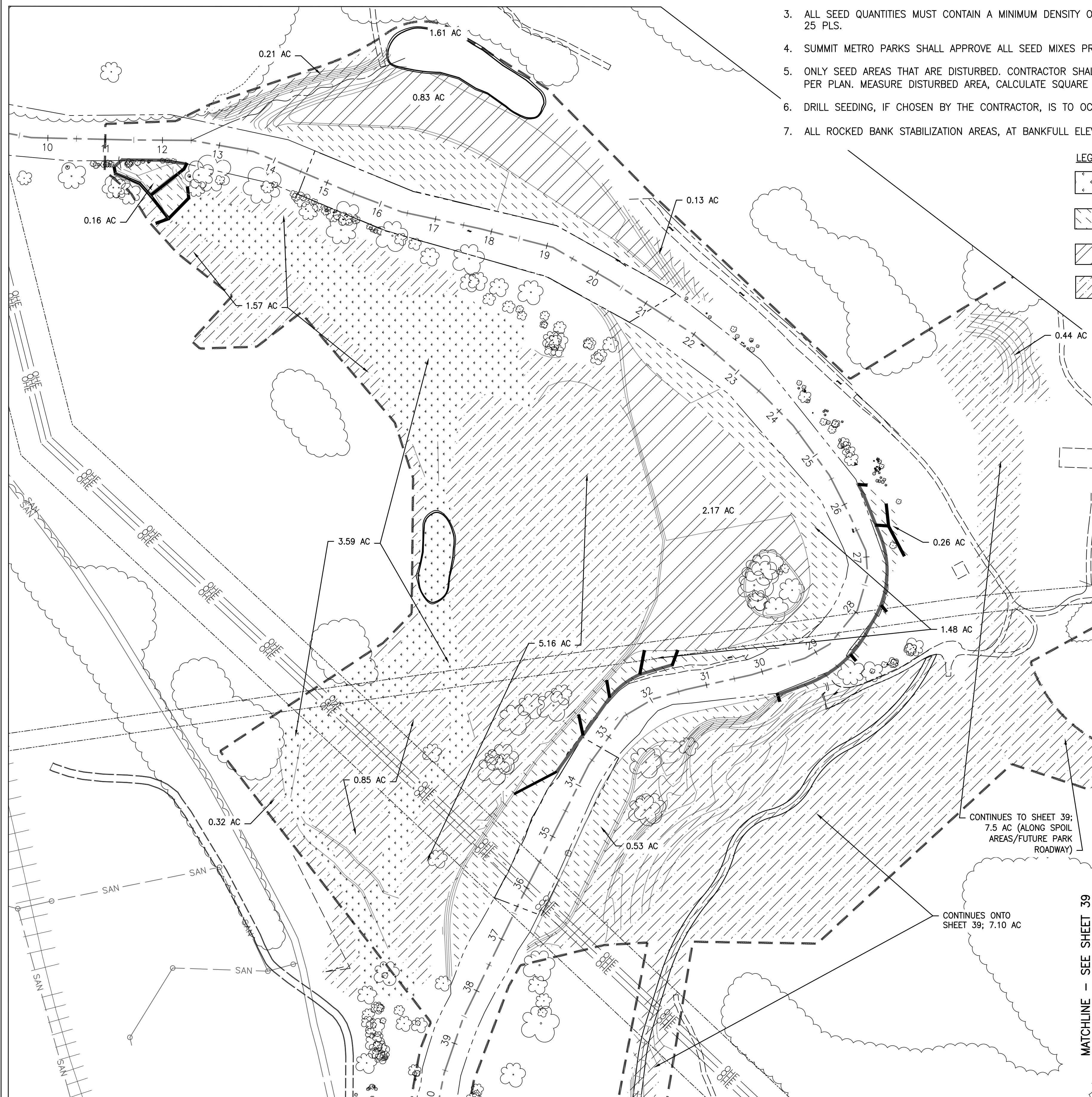




NORTH
0 100 200
GRAPHIC SCALE IN FEET

NOTES:

1. EACH SPECIES MUST BE INDIGENOUS TO THE NORTHEASTERN UNITED STATES.
2. EACH MIX MUST BE DESIGNED FOR THE APPROPRIATE HABITAT FOR WHICH IT WILL BE APPLIED AS PER PLAN (E.G. FLOODPLAIN, EMERGENT WETLAND AND/ OR UPLAND MEADOW, RESPECTIVELY) AND CONTAIN A MINIMUM OF 20 DIFFERENT SPECIES, WITH AN EXCEPTION IN THE NATIVE FLOODPLAIN/ REFORESTATION MIX.
3. ALL SEED QUANTITIES MUST CONTAIN A MINIMUM DENSITY OF 75 PURE LIVE SEED (PLS) PER SQUARE-FOOT OF SURFACE AREA TO BE APPLIED, EXCEPT FOR TIER 2 WHICH SHALL BE 25 PLS.
4. SUMMIT METRO PARKS SHALL APPROVE ALL SEED MIXES PRIOR TO ORDERING AND INSTALLATION.
5. ONLY SEED AREAS THAT ARE DISTURBED. CONTRACTOR SHALL MINIMIZE AREAS OF DISTURBANCE TO MAXIMUM EXTENT POSSIBLE. IF AN AREA IS DISTURBED, INSTALL NATIVE SEED MIX PER PLAN. MEASURE DISTURBED AREA, CALCULATE SQUARE FOOTAGE AND APPLY AT DESIGNATED LBS/AC RATE PER SEED MIX.
6. DRILL SEEDING, IF CHOSEN BY THE CONTRACTOR, IS TO OCCUR AFTER FIRST FROST THROUGH SPRING.
7. ALL ROCKED BANK STABILIZATION AREAS, AT BANKFULL ELEVATION (TIER 1 FLOODPLAIN ELEVATION) AND ABOVE SHALL BE SEEDED WITH TIER 1 NATIVE FLOODPLAIN/ RIPARIAN SEED MIX.



LEGEND:

- NATIVE EMERGENT WETLAND/ MARSH SEED MIX: APPLICATION RATE = 15 LBS/ACRE
- TIER 1 (INCLUDING SLOPE TO TIER 2 OR EXISTING GRADE) - NATIVE FLOODPLAIN/ RIPARIAN SEED MIX: APPLICATION RATE = 15 LBS/ACRE
- TIER 2 (INCLUDING SLOPE TO EXISTING GRADE) - NATIVE FLOODPLAIN/ REFORESTATION SEED MIX: APPLICATION RATE = 10 LBS/ACRE
- NATIVE UPLAND MEADOW/ SAVANNAH SEED MIX: APPLICATION RATE = 10 LBS/ACRE

NATIVE EMERGENT WETLAND/ MARSH SEED MIX

PERCENT	COMMON NAME	SCIENTIFIC NAME
1.00%	BLUE JOINT GRASS	CALAMAGROSTIS CANADENSIS
10.00%	AMERICAN MANNA GRASS	GLYCERIA GRANDIS
4.00%	FOWL MANNA GRASS	GLYCERIA STRIATA
5.00%	RICE CUT GRASS	LEERSIA ORYZOIDES
8.00%	BOTTLEBRUSH SEDGE	CAREX COMOSA
8.00%	PORCUPINE SEDGE	CAREX HYSTERICINA
0.80%	LAKE SEDGE	CAREX LACUSTRIS
4.80%	BROWN FOX SEDGE	CAREX VULPINOIDEA
0.40%	BALD SPIKE RUSH	ELEOCHARIS ERYTHROPODA
0.40%	GREAT SPIKE RUSH	ELEOCHARIS PALUSTRIS
0.80%	COMMON RUSH	JUNCUS EFFUSES
0.60%	GREEN BULRUSH	SCIRPUS ATROVIRENS
0.20%	WOOLGRASS	SCIRPUS CYPERINUS
9.60%	RIVER BULRUSH	SCIRPUS FLUVIATIS
6.40%	SOFTSTEM BULRUSH	SCIRPUS VALIDUS
8.00%	SWEET FLAG	ACORUS AMERICANUS
2.00%	WATER PLANTAIN	ALISMA TRIVALE
5.60%	SWAMP MILKWEED	ASCLEPIAS INCARNATA
0.80%	JOE PYE WEED	EUPATORIUM MACULATUM
0.40%	BONESET	EUPATORIUM PERFORIATUM
2.00%	SNEEZEWEED	HELENIUM AUTUMNALE
10.00%	SOUTHERN BLUE FLAG IRIS	IRIS VIRGINICA
0.40%	MONKEY FLOWER	MIMULUS RINGENS
1.20%	COMMON ARROWHEAD	SAGITTARIA LATIFOLIA
8.00%	GIANT BUR REED	SPARGANIUM EURYCARPUM
1.60%	BLUE VERVAIN	VERBENA HASTATA

TIER 1 - NATIVE FLOODPLAIN/ RIPARIAN SEED MIX

PERCENT	COMMON NAME	SCIENTIFIC NAME
23.00%	FOX SEDGE	CAREX VULPINOIDEA
20.50%	DEERTONGUE	PANICUM CLANDESTINIUM
20.00%	VIRGINIA WILD RYE	ELYMUS VIRGINICUS
10.00%	BIG BLUESTEM	ANDROPOGON GERARDII
4.20%	HOP SEDGE	CAREX LUPULINA
4.00%	LURID SEDGE	CAREX LUIDA
4.00%	BLUNT BROOM SEDGE	CAREX SCOPARIA
3.00%	SOFT RUSH	JUNCUS EFFUSUS
3.00%	BLUE VERVAIN	VERBENA HASTATA
2.00%	OXEYE SUNFLOWER	HELIOPSIS HELANTHODES
1.00%	SWAMP MILKWEED	ASCLEPIAS INCARNATA
1.00%	WOOD REEDGRASS	CINNA ARUNDINACEA
0.60%	BONESET	EUPATORIUM PERFORIATUM
0.40%	NEW ENGLAND ASTER	ASTER NOVAE-ANGLIAE
0.40%	FLAT TOPPED WHITE ASTER	ASTER UMBELLATUS
0.30%	MUD PLANTAIN	ALISMA SUBCORDATUM
0.30%	COMMON SNEEZEWEED	HELENIUM AUTUMNALE
0.30%	WILD BERGAMONT	MONARDA FISTULOSA
0.30%	SENSITIVE FERN	ONOCLEA SENSIBILIS
0.30%	NARROWLEAF MOUNTAINMINT	PHYCANTHEMUM TENUIFOLIUM
0.30%	GREEN BULLRUSH	SCIRPUS ATROVIRENS
0.30%	WOOLGRASS	SCIRPUS CYPERINUS
0.20%	TURTLEHEAD	CHELONE GLABRA
0.20%	DITCH STONECROP	PENTHORUM SEDOIDES
0.10%	WRINKLELEAF GOLDENROD	SOLIDAGO RUGOSA
0.10%	TUSSOCK SEDGE	CAREX STRICTA
0.10%	GREAT BLUE LOBELIA	LOBELIA SIPHILITICA

NATIVE UPLAND MEADOW/ SAVANNAH SEED MIX

PERCENT	COMMON NAME	SCIENTIFIC NAME
1.30%	YELLOW GIANT HYSSOP	AGASTACHEPETOIDES
2.59%	COLUMBINE	AQUILEGIA CANADENSIS
0.65%	YELLOW FALSE FOXGLOVE	AUREOLARIA GRANDIFLORA
0.65%	HAIRY WOOD MINT	BLEPHILIA HIRSUTA
1.94%	TALL BELLFLOWER	CAMPANULA AMERICANA
1.30%	MIDLAND SHOOTING STAR	DODECATHEON MEADIA
2.82%	PURPLE CONEFLOWER	ECHINACEA PURPUREA
0.65%	GRASS-LEAVED GOLDENROD	EUTHAMIA GRAMINIFOLIA
1.30%	CREAM GENTIAN	GENTIANA FLAVIDA
5.19%	SOLOMON'S PLUME	MAIANTHEMUM RACEMOSUM
1.30%	FOXGLOVE BEARDTONGUE	PENSTEMON DIGITALIS
1.30%	HAIRY BEARDTONGUE	PENSTEMON HIRSUTUS
1.30%	WOODLAND KNOTWEED	PERSICARIA VIRGINIANA
1.94%	JACOB'S LADDER	POLEMONIUM REPTANS
5.19%	SOLOMON'S SEAL	POLYGONATUM BIFLORUM
1.30%	HAIRY MOUNTAIN MINT	PHYCANTHEMUM VERTICILLATUM
3.24%	BLACK-EYED SUSAN	RUDBECKIA HIRTA
1.94%	BROWN-EYED SUSAN	RUDBECKIA TRILOBA
1.30%	EARLY FIGWORT	SCROPHULARIA LANCEOLATA
1.41%	STARRY CAMPION	SILENE STELLATA
0.65%	CROOKED-STEMMED ASTER	SYMPHYOTRICHUM PRENANTHOIDES
1.94%	MEADOW PARSNIP	THASPIUM TRIFOLIATUM FLAVUM
3.89%	GOLDEN ALEXANDERS	ZIZIA AUREA
0.65%	VIRGIN'S BOWER	CLEMATIS VIRGINIANA
1.94%	EARLY WILD ROSE	ROSA BLANDA
10.37%	HAIRY WOOD CHESN	BROMUS PUBESCENS
1.30%	WOOD GRAY SEDGE	CAREX GRISEA
2.59%	FIELD OVAL SEDGE	CAREX MOLESTA
1.30%	LONG-BEAKED SEDGE	CAREX SPRENGELII
5.19%	BEAK GRASS	DIARRHENA OBOVATA
5.19%	BOTTLEBRUSH GRASS	ELYMUS HYSTRIX
10.37%	SILKY WILD RYE	ELYMUS VILLOSUS
10.37%	VIRGINIA WILD RYE	ELYMUS VIRGINICUS
5.65%	LITTLE BLUESTEM	SCHIZACHYRIUM SCOPARIUM

TIER 2 - NATIVE FLOODPLAIN/ REFORESTATION SEED MIX

PERCENT	COMMON NAME	SCIENTIFIC NAME
23.00%	FOX SEDGE	CAREX VULPINOIDEA
20.00%	LITTLE BLUESTEM	SCHIZACHYRIUM SCOPARIUM
8.40%	HOP SEDGE	CAREX LUPULINA
18.00%	BLUNT BROOM SEDGE	CAREX SCOPARIA
3.00%	SOFT RUSH	JUNCUS EFFUSUS
3.00%	BLUE VERVAIN	VERBENA HASTATA
2.00%	OXEYE SUNFLOWER	HELIOPSIS HELANTHODES
1.00%	SWAMP MILKWEED	ASCLEPIAS INCARNATA
1.00%	WOOD REEDGRASS	CINNA ARUNDINACEA
0.60%	BONESET	EUPATORIUM PERFORIATUM
0.30%	MUD PLANTAIN	ALISMA SUBCORDATUM
0.30%	COMMON SNEEZEWEED	HELENIUM AUTUMNALE
0.30%	WILD BERGAMONT	MONARDA FISTULOSA
0.10%	GREAT BLUE LOBELIA	LOBELIA SIPHILITICA
19.00%	YELLOW NUTSEDGE	CYPERACEAE

SCALE: 1"=100'-0"
 DATE: 03/23/20
 SHEET: 38 OF 44
 REFERENCES: N/A
 REVISIONS: 1
 DESIGNED BY: ADH
 DRAWN BY: GS
 SUMMIT METRO PARKS
 VALLEY VIEW PH 2 RESTORATION DESIGN
 975 TREATY LINE ROAD
 AKRON, OHIO 44313
 (330) 867-5511

NATIVE EMERGENT WETLAND/ MARSH SEED MIX		
PERCENT	COMMON NAME	SCIENTIFIC NAME
1.00%	BLUE JOINT GRASS	CALAMAGROSTIS CANADENSIS
10.00%	AMERICAN MANNA GRASS	GLYCERIA GRANDIS
4.00%	FOWL MANNA GRASS	GLYCERIA STRIATA
5.00%	RICE CUT GRASS	LEERSIA ORYZOIDES
8.00%	BOTTLEBRUSH SEDGE	CAREX COMOSA
8.00%	PORCUPINE SEDGE	CAREX HYSTERICINA
0.80%	LAKE SEDGE	CAREX LACUSTRIS
4.80%	BROWN FOX SEDGE	CAREX VULPINOIDEA
0.40%	BALD SPIKE RUSH	ELEOCHARIS ERYTHROPODA
0.40%	GREAT SPIKE RUSH	ELEOCHARIS PALUSTRIS
0.80%	COMMON RUSH	JUNCUS EFFUSUS
0.60%	GREEN BULRUSH	SCIRPUS ATROVIRENS
0.20%	WOOLGRASS	SCIRPUS CYPERINUS
9.60%	RIVER BULRUSH	SCIRPUS FLUVIATIS
6.40%	SOFTSTEM BULRUSH	SCIRPUS VALIDUS
8.00%	SWEET FLAG	ACORUS AMERICANUS
2.00%	WATER PLANTAIN	ALISMA TRIVALE
5.60%	SWAMP MILKWEED	ASCLEPIAS INCARNATA
0.80%	JOE PYE WEED	EUPATORIUM MACULATUM
0.40%	BONESET	EUPATORIUM PERFOLIATUM
2.00%	SNEEZEWEEED	HELENIUM AUTUMNALE
10.00%	SOUTHERN BLUE FLAG IRIS	IRIS VIRGINICA
0.40%	MONKEY FLOWER	MIMULUS RINGENS
1.20%	COMMON ARROWHEAD	SAGITTARIA LATIFOLIA
8.00%	GIANT BUR REED	SPARGANIUM EURYCARPUM
1.60%	BLUE VERVAIN	VERBENA HASTATA

TIER 1 - NATIVE FLOODPLAIN/ RIPARIAN SEED MIX		
PERCENT	COMMON NAME	SCIENTIFIC NAME
23.00%	FOX SEDGE	CAREX VULPINOIDEA
20.50%	DEERTONGUE	PANICUM CLANDESTIUM
20.00%	VIRGINIA WILDRYE	ELYMUS VIRGINICUS
10.00%	BIG BLUESTEM	ANDROPOGON GERARDII
4.20%	HOP SEDGE	CAREX LUPULINA
4.00%	LURID SEDGE	CAREX LUIDA
4.00%	BLUNT BROOM SEDGE	CAREX SCOPARIA
3.00%	SOFT RUSH	JUNCUS EFFUSUS
3.00%	BLUE VERVAIN	VERBENA HASTATA
2.00%	OXEYE SUNFLOWER	HELIOPSIS HELANTHOIDES
1.00%	SWAMP MILKWEED	ASCLEOPIAS INCARNATA
1.00%	WOOD REEDGRASS	CINNA ARUNDINACEA
0.60%	BONESET	EUPATORIUM PERFOLIATUM
0.40%	NEW ENGLAND ASTER	ASTER NOVAE-ANGLIAE
0.40%	FLAT TOPPED WHITE ASTER	ASTER UMBELLATUS
0.30%	MUD PLANTAIN	ALISMA SUBCORDATUM
0.30%	COMMON SNEEZEWEEED	HELENIUM AUTUMNALE
0.30%	WILD BERGAMONT	MONARDA FISTULOSA
0.30%	SENSITIVE FERN	ONOCLEA SENSIBILIS
0.30%	NARROWLEAF MOUNTAINMINT	PHYCANTHEMUM TENUIFOLIUM
0.30%	GREEN BULRUSH	SCIRPUS ATROVIRENS
0.30%	WOOLGRASS	SCIRPUS CYPERINUS
0.20%	TURTLEHEAD	CHELONE GLABRA
0.20%	DITCH STONECROP	PENTHORUM SEDOIDES
0.10%	WRINKLELEAF GOLDENROD	SOLIDAGO RUGOSA
0.10%	TUSSOCK SEDGE	CAREX STRICTA
0.10%	GREAT BLUE LOBELIA	LOBELIA SIPHILITICA

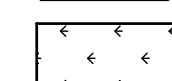
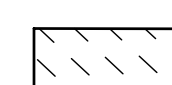
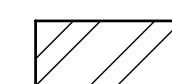

TIER 2 - NATIVE FLOODPLAIN/ REFORESTATION SEED MIX		
PERCENT	COMMON NAME	SCIENTIFIC NAME
23.00%	FOX SEDGE	CAREX VULPINOIDEA
20.00%	LITTLE BLUESTEM	SCHIZACHYRIUM SCOPARIUM
8.40%	HOP SEDGE	CAREX LUPULINA
18.00%	BLUNT BROOM SEDGE	CAREX SCOPARIA
3.00%	SOFT RUSH	JUNCUS EFFUSUS
3.00%	BLUE VERVAIN	VERBENA HASTATA
2.00%	OXEYE SUNFLOWER	HELIOPSIS HELANTHOIDES
1.00%	SWAMP MILKWEED	ASCLEOPIAS INCARNATA
1.00%	WOOD REEDGRASS	CINNA ARUNDINACEA
0.60%	BONESET	EUPATORIUM PERFOLIATUM
0.30%	MUD PLANTAIN	ALISMA SUBCORDATUM
0.30%	COMMON SNEEZEWEEED	HELENIUM AUTUMNALE
0.30%	WILD BERGAMONT	MONARDA FISTULOSA
0.10%	GREAT BLUE LOBELIA	LOBELIA SIPHILITICA
19.00%	YELLOW NUTSEDGE	CYPERACEAE

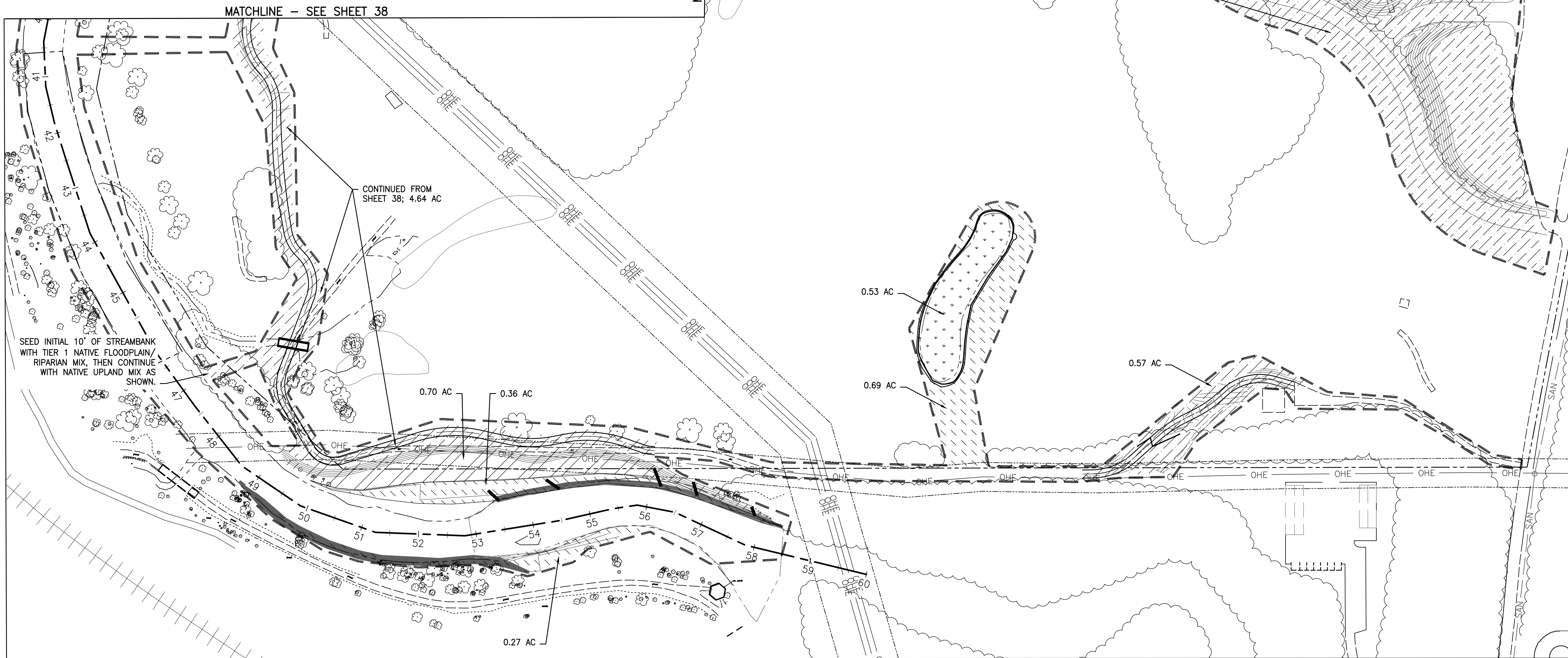
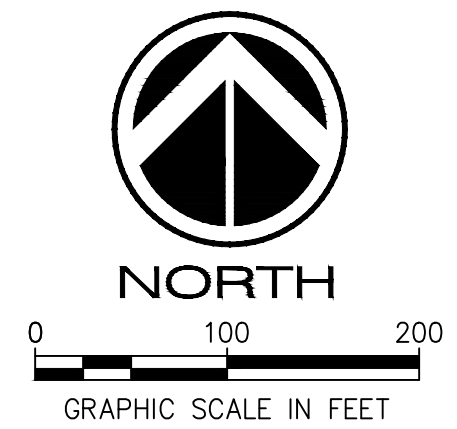
NATIVE UPLAND MEADOW/ SAVANNAH SEED MIX		
PERCENT	COMMON NAME	SCIENTIFIC NAME
1.30%	YELLOW GIANT HYSSOP	AGASTACHENEPETOIDES
2.59%	COLUMBINE	AQUILEGIA CANADENSIS
0.65%	YELLOW FALSE FOXGLOVE	AUREOLARIA GRANDIFLORA
0.65%	HAIRY WOOD MINT	BLEPHILIA HIRSUTA
1.94%	TALL BELLFLOWER	CAMPANULA AMERICANA
1.30%	MIDLAND SHOOTING STAR	DODECATHÉON MEADIA
2.82%	PURPLE CONEFLOWER	ECHINACEA PURPUREA
0.65%	GRASS-LEAVED GOLDENROD	EUTHAMIA GRAMMINIFOLIA
1.30%	CREAM GENTIAN	GENTIANA FLAVIDA
5.19%	SOLOMON'S PLUME	MAIANTHEMUM RACEMOSUM
1.30%	FOXGLOVE BEARDTONGUE	PENSTEMON DIGITALIS
1.30%	HAIRY BEARDTONGUE	PENSTEMON HIRSUTUS
1.30%	WOODLAND KNOTWEED	PERSICARIA VIRGINIANA
1.94%	JACOB'S LADDER	POLEMONIUM REPTANS
5.19%	SOLOMON'S SEAL	POLYGONATUM BIFLORUM
1.30%	HAIRY MOUNTAIN MINT	PHYCANTHEMUM VERTICILLATUM
3.24%	BLACK-EYED SUSAN	RUDBECKIA HIRTA
1.94%	BROWN-EYED SUSAN	RUDBECKIA TRILOBA
1.30%	EARLY FIGWORT	SCROPHULARIA LANCEOLATA
1.41%	STARRY CAMPION	SILENE STELLATA
0.65%	CROOKED-STEMMED ASTER	SYMPHYOTRICHUM PRENANTHOIDES
1.94%	MEADOW PARSNIP	THASPIUM TRIFOLIATUM FLAVUM
3.89%	GOLDEN ALEXANDERS	ZIZIA AUREA
0.65%	VIRGIN'S BOWLER	CLEMATIS VIRGINIANA
1.94%	EARLY WILD ROSE	ROSA BLANDA
10.37%	HAIRY WOOD CHESSE	BROMUS PUBESCENS
1.30%	WOOD GRAY SEDGE	CAREX GRISEA
2.59%	FIELD OVAL SEDGE	CAREX MOLESTA
1.30%	LONG-BEAKED SEDGE	CAREX SPRENGELII
5.19%	BEAK GRASS	DIARRHENA OBOVATA
5.19%	BOTTLEBRUSH GRASS	ELYMUS HYSTRIX
10.37%	SILKY WILD RYE	ELYMUS VILLOSUS
10.37%	VIRGINIA WILD RYE	ELYMUS VIRGINICUS
5.65%	LITTLE BLUESTEM	SCHIZACHYRIUM SCOPARIUM

NOTES:

- EACH SPECIES MUST BE INDIGENOUS TO THE NORTHEASTERN UNITED STATES.
- EACH MIX MUST BE DESIGNED FOR THE APPROPRIATE HABITAT FOR WHICH IT WILL BE APPLIED AS PER PLAN (E.G. FLOODPLAIN, EMERGENT WETLAND AND/ OR UPLAND MEADOW, RESPECTIVELY) AND CONTAIN A MINIMUM OF 20 DIFFERENT SPECIES, WITH AN EXCEPTION IN THE NATIVE FLOODPLAIN/ REFORESTATION MIX.
- ALL SEED QUANTITIES MUST CONTAIN A MINIMUM DENSITY OF 75 PURE LIVE SEED (PLS) PER SQUARE-FOOT OF SURFACE AREA TO BE APPLIED, EXCEPT FOR TIER 2 WHICH SHALL BE 25 PLS.
- SUMMIT METRO PARKS SHALL APPROVE ALL SEED MIXES PRIOR TO ORDERING AND INSTALLATION.
- ONLY SEED AREAS THAT ARE DISTURBED. CONTRACTOR SHALL MINIMIZE AREAS OF DISTURBANCE TO MAXIMUM EXTENT POSSIBLE. IF AN AREA IS DISTURBED, INSTALL NATIVE SEED MIX PER PLAN. MEASURE DISTURBED AREA, CALCULATE SQUARE FOOTAGE AND APPLY AT DESIGNATED LBS/AC RATE PER SEED MIX.
- DRILL SEEDING, IF CHOSEN BY THE CONTRACTOR, IS TO OCCUR AFTER FIRST FROST THROUGH SPRING.
- ALL ROCKED BANK STABILIZATION AREAS, AT BANKFULL ELEVATION (TIER 1 FLOODPLAIN ELEVATION) AND ABOVE SHALL BE SEED WITH TIER 1 NATIVE FLOODPLAIN/ RIPARIAN SEED MIX.

LEGEND:

-  NATIVE EMERGENT WETLAND/ MARSH SEED MIX: APPLICATION RATE = 15 LBS/ACRE
-  TIER 1 (INCLUDING SLOPE TO TIER 2 OR EXISTING GRADE) - NATIVE FLOODPLAIN/ RIPARIAN SEED MIX: APPLICATION RATE = 15 LBS/ACRE
-  TIER 2 (INCLUDING SLOPE TO EXISTING GRADE) - NATIVE FLOODPLAIN/ REFORESTATION SEED MIX: APPLICATION RATE = 10 LBS/ACRE
-  NATIVE UPLAND MEADOW/ SAVANNAH SEED MIX: APPLICATION RATE = 10 LBS/ACRE



EROSION AND STABILIZATION NOTES

THE VALLEY VIEW PHASE 2 RESTORATION PROJECT IS PRIMARILY AN EARTHMOVING AND GRADING PROJECT. EARTH MATERIALS WILL BE EXCAVATED, STOCKPILED AND RE-USED ON SITE TO CREATE NEW FLOODPLAINS AND WETLAND AREAS ADJACENT TO THE CUYAHOGA RIVER. EARTHWORK ALSO INCLUDES FILLING TWO EXISTING PONDS AND SPOILING MATERIAL ALONG A FUTURE PROPOSED PARK ROADWAY. NO EARTH MATERIAL IS PLANNED TO BE REMOVED FROM THE SITE.

FOLLOWING CONSTRUCTION OF FLOODPLAINS AND WETLANDS, OTHER REMAINING STORM SEWERS, UNDERDRAINS AND OTHER DRAINAGE STRUCTURES WILL BE REMOVED OR ABANDONED AS SHOWN IN THE DEMOLITION PLAN AND AS DIRECTED BY SUMMIT METRO PARKS.

EACH EARTHWORK AREA IS TO BE STABILIZED BY THE CONTRACTOR PRIOR TO BEGINNING EARTH MOVING ACTIVITIES ON THE NEXT AREA, TO THE EXTENT POSSIBLE.

TYPE OF CONSTRUCTION ACTIVITY

- EARTHWORK ACTIVITIES SHALL BE CONDUCTED IN ACCORDANCE WITH THE SUMMIT COUNTY SOIL AND WATER CONSERVATION DISTRICT. 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.
- TOTAL AREA OF DISTURBANCE: 57 AC. THE MAJORITY OF THE DISTURBANCE IS RELATED TO EARTH MOVING ACTIVITIES.
- THE CUYAHOGA RIVER IS THE RECEIVING STREAM FOR ALL PROJECT RUNOFF.
- RUNOFF COEFFICIENTS/IMPERVIOUS AREA: THERE WILL BE NO INCREASE IN IMPERVIOUS AREA UPON COMPLETION OF THE PROJECT.
- DESCRIPTION OF HCS SOILS: SOILS WITHIN THE PROJECT AREA ARE Ck, CHAGRIN SILT LOAM, ALKALINE; CnB, CHILI LOAM, 2 TO 6 PERCENT SLOPES; CuB, CHILI-URBAN LAND COMPLEX, UNDULATING; CuC, CHILI-URBAN LAND COMPLEX, ROLLING; Hy, HOLLY SILT LOAM, ALKALINE; OsB, OSHTEMO SANDY LOAM, 2 TO 6 PERCENT SLOPES; Od, OLMSTED LOAM; Tg, TIOGA LOAM.
- 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 PLANS, TO ESTABLISH STABILITY AND PROVIDE SEDIMENT CONTROL WHERE NECESSARY.
- 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.
- 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 BUFFERING.
- 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.
- CONSTRUCTION ENTRANCES, AND SWPPP ITEMS SHALL REMAIN IN PLACE UNTIL EARTHWORK AND RESTORATION 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 ONE YEAR ON ALL DISTURBED AREAS. CONTRACTOR SHALL KEEP SILT FROM ENTERING ANY STORM DRAINAGE SYSTEM.
- 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.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN ALL SEDIMENTATION AND STORM WATER POLLUTION PREVENTION ITEMS AT ALL TIMES.
- 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.
- THERE WILL BE NO OPEN BURNING.
- 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 OF GRUBBING ACTIVITIES AND PRIOR TO GRADING OF THE AREA THEY WILL CONTROL.
- 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.
- 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.

- 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 ONE 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.
- 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.
 - 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).
 - 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) WITHIN 30 MINUTES OF THE DISCOVERY OF THE RELEASE.
 - ALL SPILLS WHICH RESULT IN CONTACT WITH WATERS OF THE STATE MUST BE REPORTED TO THE OHIO EPA HOTLINE (1-800-282-9378).
- HAZARDOUS OR TOXIC WASTES SHOULD NOT BE STORED ON SITE, HOWEVER, IF THEY ARE, THE FOLLOWING PROCEDURE SHALL BE FOLLOWED:
 - 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.
 - 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:

- OHIO EPA NPDES CONSTRUCTION SITE STORM WATER DISCHARGE GENERAL PERMIT, NO. 3GCC09618*AG.
- FLOODPLAIN PERMIT, CITY OF AKRON
- USACE NATIONWIDE 27 PERMIT
- STORMWATER POLLUTION PREVENTION PLAN (SWPPP) APPROVED BY SCSWCD

INSPECTION REQUIREMENTS

- FOLLOWING EACH INSPECTION A CHECKLIST MUST BE COMPLETED AND SIGNED BY THE QUALIFIED INSPECTION PERSONNEL REPRESENTATIVE. AT A MINIMUM, THE INSPECTION REPORT MUST INCLUDE:
 - THE INSPECTION DATE
 - NAMES, TITLES, AND QUALIFICATIONS OF PERSONNEL MAKING THE INSPECTION
 - 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;
 - WEATHER INFORMATION AND A DESCRIPTION OF ANY DISCHARGES OCCURRING AT THE TIME OF THE INSPECTION
 - LOCATION(S) OF DISCHARGES OF SEDIMENT OR OTHER POLLUTANTS FROM THE SITE
 - LOCATION(S) OF BMPS THAT NEED TO BE MAINTAINED
 - LOCATION(S) OF BMPS THAT FAILED TO OPERATE AS DESIGNED OR PROVED INADEQUATE FOR A PARTICULAR LOCATION
 - LOCATION(S) WHERE ADDITIONAL BMPS ARE NEEDED THAT DID NOT EXIST AT THE TIME OF THE INSPECTION
 - CORRECTIVE ACTION REQUIRED INCLUDING ANY CHANGES TO THE SWPPP NECESSARY AND IMPLEMENTATION DATES.
- 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.

- 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 SWPPP. ONCE A DEFINABLE AREA IS FINALLY STABILIZED, THE AREA MAY BE MARKED ON THE SWPPP 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 SWPPP IS ADEQUATE AND PROPERLY IMPLEMENTED IN ACCORDANCE WITH THE SCHEDULE PROPOSED IN PART III.G.1.H OF THIS PERMIT OR WHETHER ADDITIONAL CONTROL MEASURES ARE REQUIRED.
- 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.

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.

- SECURE NECESSARY PERMITS
- MOBILIZE;
- INSTALL EROSION AND SEDIMENT CONTROLS;
- CONSTRUCT TEMPORARY ACCESS ROADS AND STAGING AREAS; INSTALL PERIMETER SEDIMENT CONTROLS AROUND STAGING AREA;
- TREE AND VEGETATION CLEARING AND GRUBBING; VEGETATION WILL BE CLEARED DURING APPROPRIATE TIMEFRAME FROM OCTOBER 1ST TO MARCH 31ST;
- SITE LAYOUT;
- INITIATE WATER CONTROL PROCEDURES AS NECESSARY; ANY DEWATERING REQUIRED MUST BE COMPLETED IN ACCORDANCE WITH OEPA GUIDELINES FOR CONSTRUCTION STORMWATER DISCHARGE;
- STRIP AND STOCKPILE TOPSOIL TO AREAS DESIGNATED ON PLAN ONLY
- INSTALL EROSION AND SEDIMENT CONTROLS AS AREAS BECOME DISTURBED;
- BEGIN EARTHMOVING CUT AND FILL ACTIVITIES ON WETLAND AND FLOODPLAIN AREAS TO ACHIEVE SUBGRADE;
- IMPORT ROCK MATERIAL AND INSTALLATION TO ACHIEVE FINISH GRADES;
- INCORPORATE WOODY AND BOULDER HABITATS, BRUSH LAYERING, STANDING DEADWOOD, ETC. INTO PROJECT COMPONENTS;
- PLACE AND RESPREAD TOPSOIL TO FINISH GRADE;
- CONDUCT MILESTONE WALK THROUGH (SEE NOTE THIS SHEET);
- SEED (TEMPORARY AND FINAL), STABILIZE, AND INSTALL EROSION CONTROL FABRIC AND SWPPP BMP'S AS AREAS REACH FINAL GRADE OR REMAIN UNWORKED;
- INSTALL PLANTINGS AT APPROPRIATE SEASONAL TIMEFRAME;
- REMOVE TEMPORARY EROSION AND SEDIMENT CONTROLS ONCE 70% STABILIZATION OF DISTURBED AREAS HAS BEEN ACHIEVED;
- DEMOLITIZE FOLLOWING SITE APPROVAL BY METRO PARKS
- FILE NOTICE OF TERMINATION

DUST CONTROL

- VEGETATIVE COVER AND MULCH - APPLY TEMPORARY OR PERMANENT SEEDING AND MULCH TO AREA THAT WILL REMAIN IDLE FOR OVER 21 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.
- 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 ROUTES. WATERING SHALL BE DONE AT A RATE THAT PREVENTS

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

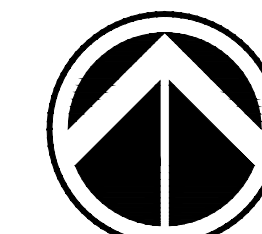
DUST BUT DOES NOT CAUSE SOIL EROSION. WETTING AGENTS SHALL BE UTILIZED ACCORDING TO MANUFACTURERS INSTRUCTIONS. CHEMICAL AND ORGANIC AGENTS SHOULD NOT BE APPLIED UNDER FROZEN CONDITIONS, RAINY CONDITIONS, OR WHEN THE TEMPERATURE IS BELOW 40° F. THESE AGENTS WILL NOT BE USED IN THE FLOODPLAIN.

- 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.
- 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.
- 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.
- 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.

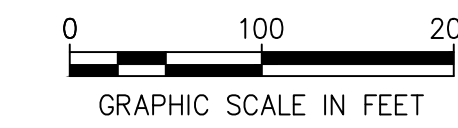
TEMPORARY STABILIZATION AND NATIVE SEED INSTALLATION

GRAIN RYE (Secale cereale) OR OATS (Avena sativa) AT A RATE OF 30 LBS PER ACRE SHALL BE INSTALLED TO ALL DISTURBED AREAS. NATIVE SEED MIXES ARE TO BE INSTALLED AT THE SPECIFIED RATE IN THE APPROPRIATE AREAS (REFER TO THE PLANTING PLAN SHEETS 36 THROUGH 39). 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.

	975 TREATY LINE ROAD AKRON, OHIO 44313 (330) 867-5511	DESIGNED BY: ADH DRAWN BY: DG	REFERENCES: N/A REVISIONS: 1	SCALE: N/A DATE: 03/23/2020	SWPPP NOTES SHEET: 40 OF 44
	SUMMIT METRO PARKS VALLEY VIEW PH 2 RESTORATION DESIGN				

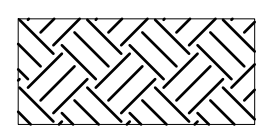
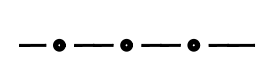
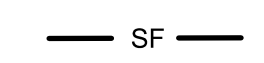
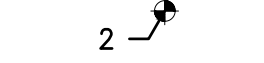


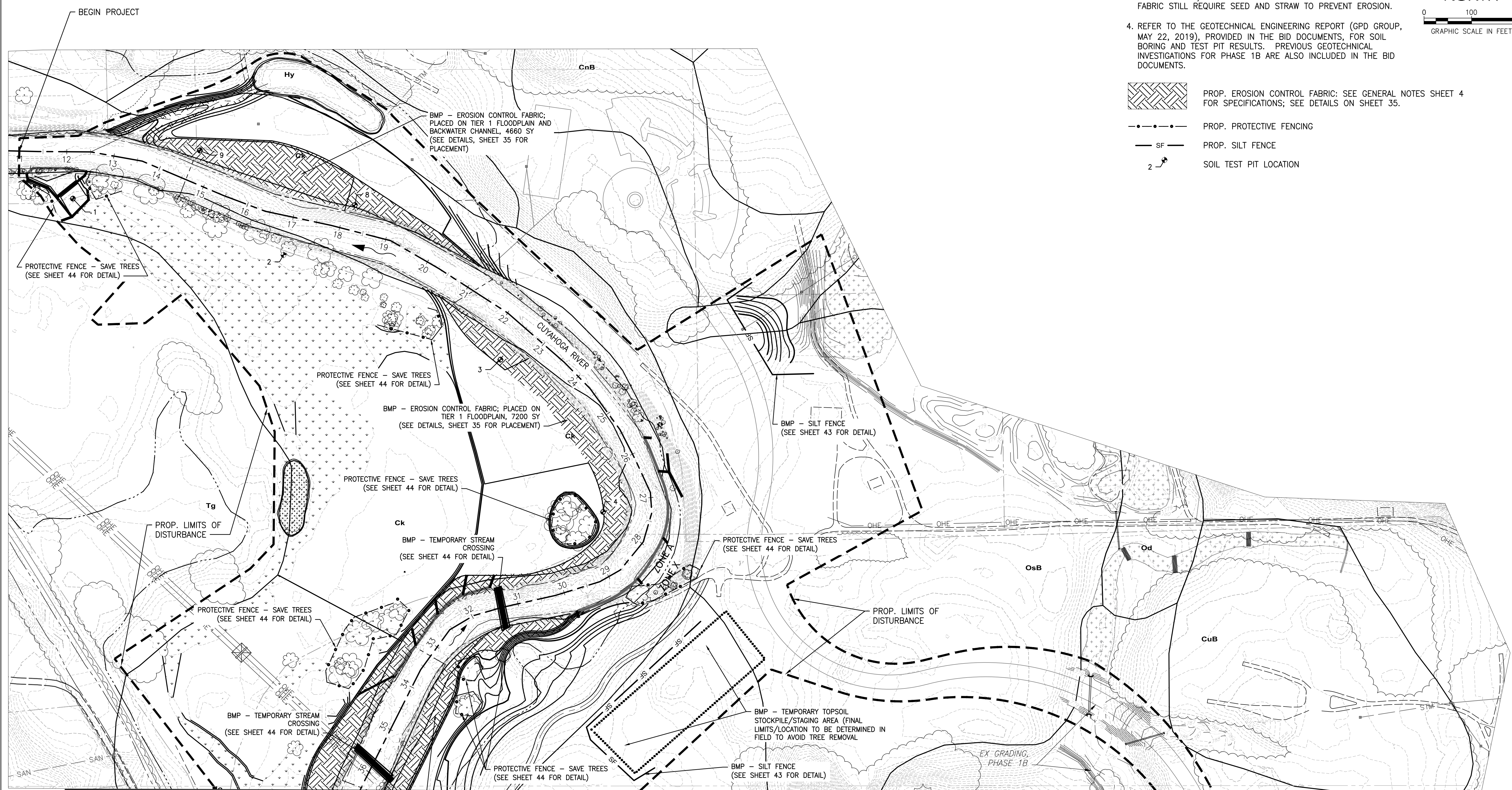
NORTH



NOTES:

1. SEE SHEETS 2 - 4 FOR GENERAL NOTES.
2. SEE SHEET 4 FOR LEGEND.
3. ALL DISTURBED/GRADED AREAS NOT RECEIVING EROSION CONTROL FABRIC STILL REQUIRE SEED AND STRAW TO PREVENT EROSION.
4. REFER TO THE GEOTECHNICAL ENGINEERING REPORT (GPD GROUP, MAY 22, 2019), PROVIDED IN THE BID DOCUMENTS, FOR SOIL BORING AND TEST PIT RESULTS. PREVIOUS GEOTECHNICAL INVESTIGATIONS FOR PHASE 1B ARE ALSO INCLUDED IN THE BID DOCUMENTS.

-  PROP. EROSION CONTROL FABRIC: SEE GENERAL NOTES SHEET 4 FOR SPECIFICATIONS; SEE DETAILS ON SHEET 35.
-  PROP. PROTECTIVE FENCING
-  PROP. SILT FENCE
-  SOIL TEST PIT LOCATION



MATCHLINE SEE SHEET 42

BMP - EROSION CONTROL FABRIC; PLACED ON TIER 1 FLOODPLAIN, 2372 SY (SEE DETAILS, SHEETS 35 FOR PLACEMENT)

975 TREATY LINE ROAD
 AKRON, OHIO 44313
 (330) 867-5511

Summit Metro Parks

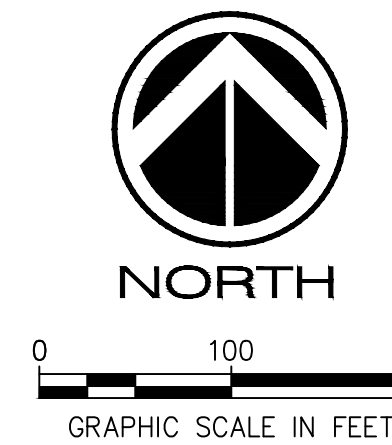
SUMMIT METRO PARKS
 VALLEY VIEW PH 2 RESTORATION DESIGN

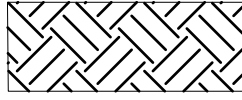
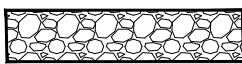
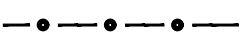


SCALE: 1"=100'-0"
 DATE: 03/23/2020
 SHEET: 41 OF 44

REFERENCES: N/A
 REVISIONS: 1
 DESIGNED BY: ADH
 DRAWN BY: DG

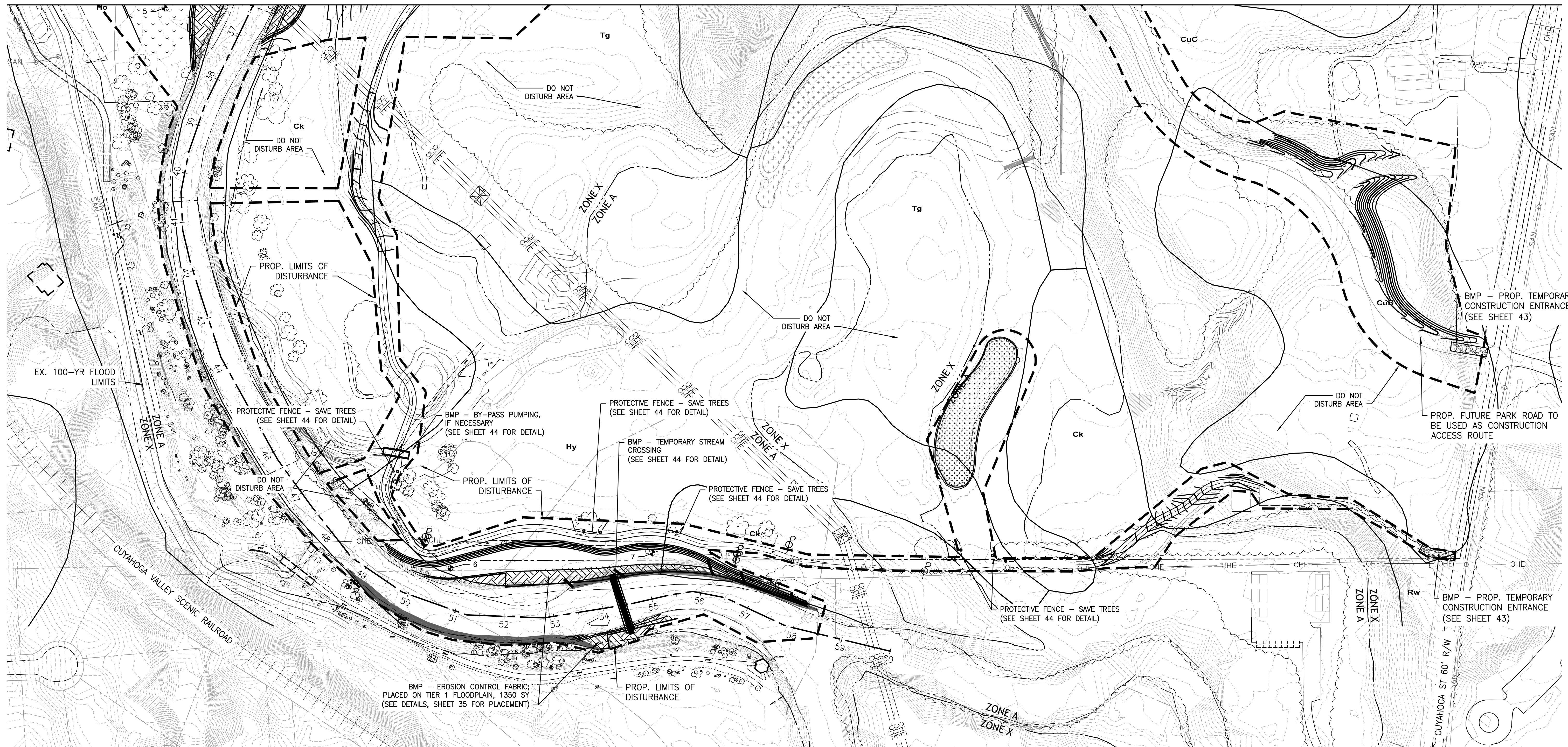
NOTES:


1. SEE SHEETS 2 - 4 FOR GENERAL NOTES.
2. SEE SHEET 4 FOR LEGEND.
3. ALL DISTURBED/GRADED AREAS NOT RECEIVING EROSION CONTROL FABRIC STILL REQUIRE SEED AND STRAW TO PREVENT EROSION.
4. REFER TO THE GEOTECHNICAL ENGINEERING REPORT (GPD GROUP, MAY 22, 2019), PROVIDED IN THE BID DOCUMENTS, FOR SOIL BORING AND TEST PIT RESULTS. PREVIOUS GEOTECHNICAL INVESTIGATIONS FOR PHASE 1B ARE ALSO INCLUDED IN THE BID DOCUMENTS.
5. IF BYPASS PUMPING IS DEEMED NECESSARY FOR CULVERT INSTALLATION AT THE EXISTING FORD LOCATION, WATER SHALL BE PUMPED INTO AN ADJACENT WETLAND OR AS DIRECTED BY SUMMIT METRO PARKS. WATER SHALL NOT BE PUMPED DIRECTLY INTO THE CUYAHOGA RIVER.



-  PROP. EROSION CONTROL FABRIC: SEE GENERAL NOTES SHEET 4 FOR SPECIFICATIONS; SEE DETAILS ON SHEET 35.
-  PROP. TEMPORARY CONSTRUCTION ENTRANCE
-  PROP. PROTECTIVE FENCING
-  PROP. SILT FENCE
-  SOIL TEST PIT LOCATION

MATCHLINE SEE SHEET 41



	975 TREATY LINE ROAD AKRON, OHIO 44313 (330) 867-5511	SUMMIT METRO PARKS VALLEY VIEW PH 2 RESTORATION DESIGN	DESIGNED BY: ADH DRAWN BY: DG
SCALE: 1" = 100' - 0"		REFERENCES: N/A REVISIONS: 1	
SWPPP		SHEET: 42 OF 44	
DATE: 03/23/2020		03/23/2020	

SPECIFICATIONS FOR SILT FENCE

- SILT FENCE SHALL BE CONSTRUCTED BEFORE UPSLOPE LAND DISTURBANCE BEGINS.
- ALL SILT FENCE SHALL BE PLACED AS CLOSE TO THE CONTOUR AS POSSIBLE SO THAT WATER WILL NOT CONCENTRATE AT LOW POINTS IN THE FENCE AND SO THAT SMALL SWALES OR DEPRESSIONS THAT MAY CARRY SMALL CONCENTRATED FLOWS TO THE SILT FENCE ARE DISSIPATED ALONG ITS LENGTH.
- 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.
- SILT FENCE SHALL BE PLACED ON THE FLATTEST AREA AVAILABLE.
- 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.
- THE HEIGHT OF THE SILT FENCE SHALL BE A MINIMUM OF 16 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
- 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.
- 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.
- SEAMS BETWEEN SECTIONS OF SILT FENCE SHALL BE SPICED TOGETHER ONLY AT A SUPPORT POST WITH A MINIMUM OF 6-IN. OVERLAP PRIOR TO DRIVING INTO THE GROUND. (SEE DETAILS).
- 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.

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 - SEE CHART BELOW.

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

FABRIC PROPERTIES	VALUES	TEST METHOD
MINIMUM TENSILE STRENGTH	120 LBS. (535 N)	ASTM D 4632
MAXIMUM ELONGATION AT 60 LBS	50%	ASTM D 4632
MINIMUM PUNCTURE STRENGTH	50 LBS (220 N)	ASTM D 4833
MINIMUM TEAR STRENGTH	40 LBS (180 N)	ASTM D 4533
APPARENT OPENING SIZE	≤ 0.84 mm	ASTM D 4751
MINIMUM PERMITIVITY	1X10 ⁻² SEC. -1	ASTM D 4491
UV EXPOSURE STRENGTH RETENTION	70%	ASTM D 4355

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 STEEP 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.

TABLE 3
MAXIMUM DRAINAGE AREA TO SILT FENCE

MAXIMUM DRAINAGE AREA (ACRES) TO 100 LINEAR FEET OF SILT FENCE	RANGE OF SLOPE FOR A DRAINAGE AREA (%)
0.5	<2%
0.25	>2% BUT <20%
0.125	>20% BUT <50%

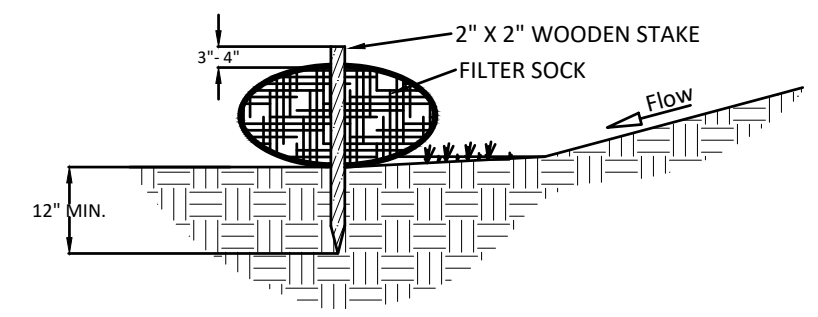
SALVAGING AND STOCKPILING

- DETERMINE THE DEPTH AND SUITABILITY OF TOPSOIL AT THE SITE. REFER TO THE COUNTY SOIL SURVEY REPORT OR CONTACT LOCAL SWCD.
- PRIOR TO STRIPPING TOPSOIL, INSTALL APPROPRIATE DOWNSLOPE EROSION AND SEDIMENTATION CONTROLS SUCH AS SEDIMENT TRAPS AND BASINS.
- REMOVE THE SOIL MATERIAL NO DEEPER THAN WHAT THE COUNTY SOIL SURVEY DESCRIBES AS 'SURFACE SOIL' (IE. A OR AP HORIZON)
- 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.
- IF TOPSOIL IS STORED FOR MORE THAN 21 DAYS, IT SHOULD BE TEMPORARY SEEDED, OR COVERED WITH A TARP.

SPREADING THE TOPSOIL

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

TOPSOILING



SECTION
FILTER SOCK PROFILE

- MATERIAL-COMPOST USED FOR FILTER SOCKS SHALL BE WEED, PATHOGEN AND INSECT FREE AND FREE OF ANY REFUSE, CONTAMINANTS OR OTHER MATERIALS TOXIC TO PLANT GROWTH. THEY SHALL BE DERIVED FROM A WELL-DECOMPOSED SOURCE OF ORGANIC MATTER AND CONSIST OF PARTICLES RANGING FROM 3/8" TO 2"
- FILTER SOCKS SHALL BE 3 OR 5 MIL CONTINUOUS, TUBULAR, HDPE 3/8" KNITTED MESH NETTING MATERIAL, FILLED WITH COMPOST PASSING THE ABOVE SPECIFICATIONS FOR COMPOST PRODUCTS.

INSTALLATION:
FILTER SOCKS WILL BE PLACED ON A LEVEL LINE ACROSS SLOPES, GENERALLY PARALLEL TO THE BASE OF THE SLOPE OR OTHER AFFECTED AREA. ON SLOPES APPROACHING 2:1 ADDITIONAL SOCKS SHALL BE PROVIDED AT THE TOP AND AS NEEDED MID-SLOPE

FILTER SOCKS INTENDED TO BE LEFT AS A PERMANENT FILTER OR PART OF THE NATURAL LANDSCAPE, SHALL BE SEEDED AT THE TIME OF INSTALLATION FOR ESTABLISHED OR PERMANENT VEGETATION.

FILTER SOCKS ARE NOT TO BE USED IN CONCENTRATED FLOW SITUATIONS OR IN RUNOFF CHANNELS.

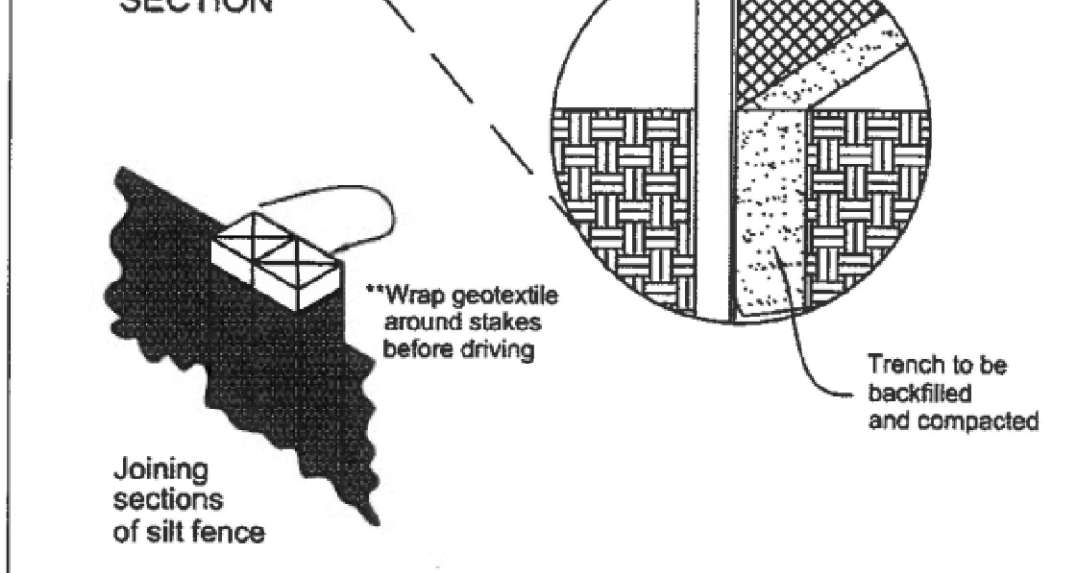
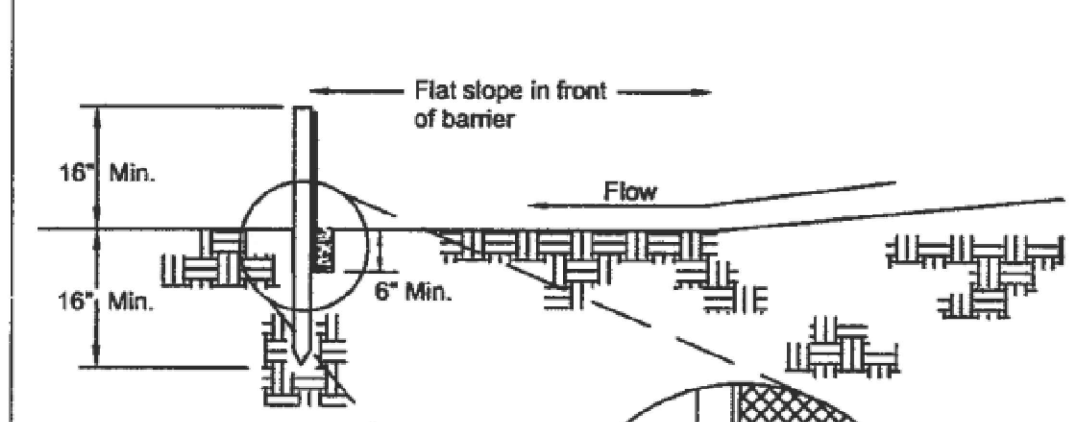
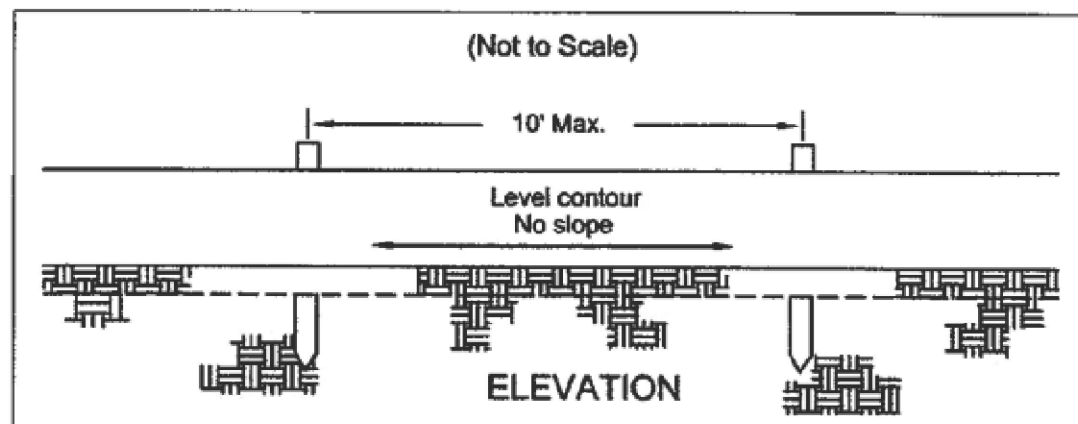
MAINTENANCE:
ROUTINELY INSPECT FILTER SOCKS AFTER EACH SIGNIFICANT RAIN, MAINTAINING FILTER SOCKS IN A FUNCTIONAL CONDITION AT ALL TIMES.

REMOVE SEDIMENTS COLLECTED AT THE BASE OF THE FILTER SOCKS WHEN THEY REACH 1/3 OF THE EXPOSED HEIGHT OF THE PRACTICE.

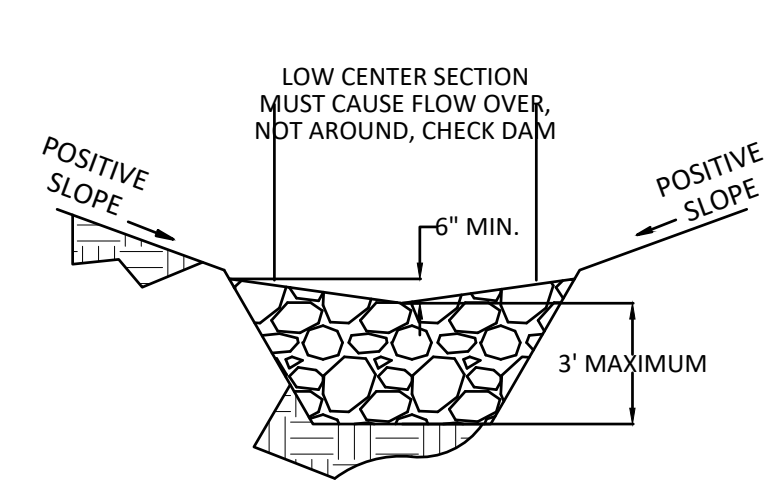
WHERE THE FILTER SOCK DETERIORATES OR FAILS, IT WILL BE REPAIRED OR REPLACED WITH A MORE EFFICIENT ALTERNATIVE.

REMOVAL - FILTER SOCKS WILL BE DISPERSED ON SITE WHEN NO LONGER REQUIRED IN SUCH A WAY AS TO FACILITATE AND NOT OBSTRUCT SEEDINGS.

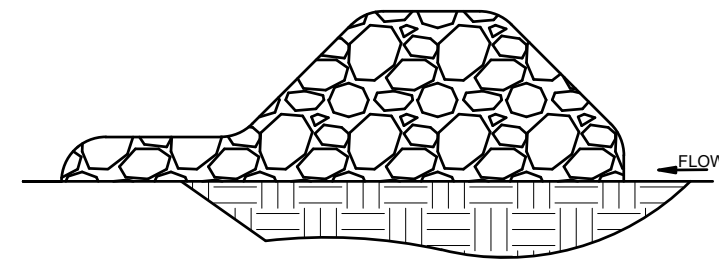
FILTER SOCK DETAIL
NOT TO SCALE



SILT FENCE
NOT TO SCALE



CHECK DAM CROSS SECTION



CHECK DAM PROFILE

- THE CHECK DAM SHALL BE CONSTRUCTED OF 4-8 INCH DIAMETER STONE, PLACED SO THAT IT COMPLETELY COVERS THE WIDTH OF THE CHANNEL. ODOT TYPE D STONE IS ACCEPTABLE, BUT SHOULD BE UNDERLAIN WITH A GRAVEL FILTER CONSISTING OF ODOT NO. 3 OR 4 OR SUITABLE FILTER FABRIC
- MAXIMUM HEIGHT OF CHECK DAM SHALL NOT EXCEED 3.0 FEET
- THE MIDPOINT OF THE ROCK CHECK DAM SHALL BE A MINIMUM OF 6 INCHES LOWER THAN THE SIDES IN ORDER TO DIRECT ACROSS THE CENTER AND AWAY FROM THE CHANNEL SIDES
- THE BASE OF THE CHECK DAM SHALL BE ENTRENCHED APPROXIMATELY 6 INCHES
- SPACING OF CHECK DAMS SHALL BE IN A MANNER SUCH THAT THE TOE OF THE UPSTREAM DAM IS AT THE SAME ELEVATION AS THE TOP OF THE DOWNSTREAM DAM.
- 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 FORM UNDERCUTTING THE STRUCTURE. THE APRON SHOULD BE 6 IN. THICK AND ITS LENGTH TWO TIMES THE EIGHT OF THE DAM.
- 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.
- SIDE SLOPES SHALL BE A MINIMUM OF 2:1

CHECK DAM SPACING

DAM HEIGHT (FT)	CHANNEL SLOPE			
	<5%	5 - 10%	10 - 15%	15 - 20%
1	65 FT	30 FT	20 FT	15 FT
2	130 FT	65 FT	40 FT	30 FT
3	200 FT	100 FT	65 FT	50 FT

ROCK CHECK DAM
NOT TO SCALE

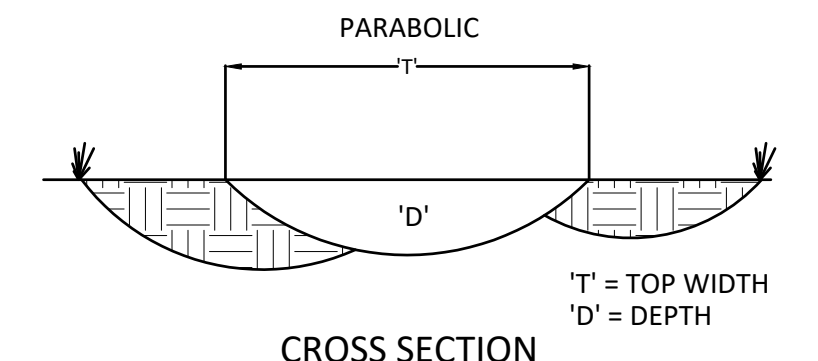
TEMPORARY SEEDING SPECIES SELECTION

SEEDING DATES	SPECIES	LB/1000 FT. ²	LB/ACRE
MARCH 1 TO AUGUST 15	OATS	3	4 BUSHEL
AUGUST 16 TO NOVEMBER 1	WHEAT	3	2 BUSHEL
NOVEMBER 1 TO FEBRUARY 29	USE MULCH ONLY OR DORMANT SEEDING		

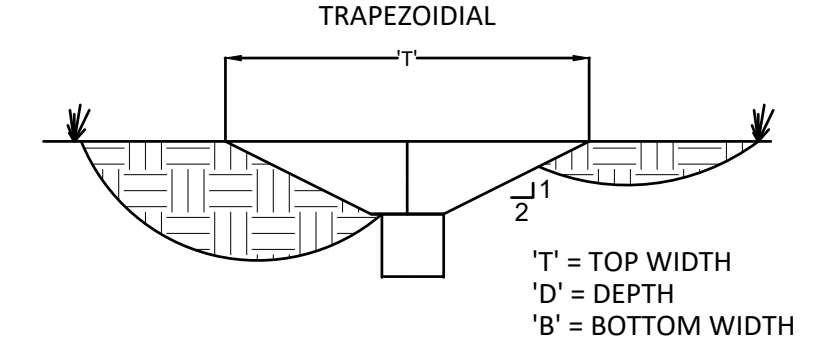
NOTE: OTHER APPROVED SEED SPECIES MAY BE SUBSTITUTED.

TEMPORARY SEEDING

SEE NOTE, SHEET 40.



CROSS SECTION



CROSS SECTION

- ALL TREES, BRUSH, STUMPS, AND OTHER UNSUITABLE MATERIAL SHALL BE REMOVED FROM THE SITE
- THE CHANNEL SHALL BE EXCAVATED AND SHAPED TO THE PROPER GRADE AND CROSS SECTION
- 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.
- EXCESS EARTH SHALL BE GRADED OR DISPOSED OF SO THAT IT WILL NOT RESTRICT FLOW TO THE CHANNEL OR INTERFERE WITH ITS FUNCTIONING.
- STABILIZATION SHALL BE DONE ACCORDING TO THE APPROPRIATE SPECIFICATIONS FOR PERMANENT SEEDING, VEGETATIVE PRACTICES, SODDING AND MATTING.
- 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 CONSTRUCTED CHANNEL THROUGH THE ESTABLISHMENT PERIOD.
- GULLIES THAT MAY FORM IN THE CHANNEL OR OTHER EROSION DAMAGE THAT OCCURS BEFORE THE GRASS LINING BECOMES ESTABLISHED SHALL BE REPAIRED WITHOUT DELAY.

GRASS SWALE DETAIL
NOT TO SCALE

TEMPORARY SEEDING (CON'T)

- 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.
- TEMPORARY SEED SHALL BE APPLIED BETWEEN CONSTRUCTION OPERATIONS ON SOIL THAT WILL NOT BE GRADED OR REWORKED FOR 21 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.
- 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.
- 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:

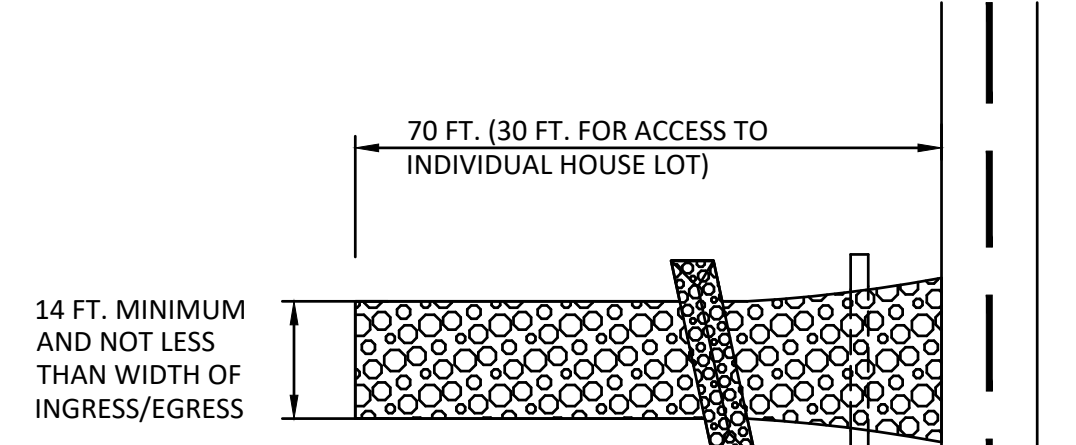
- APPLICATIONS OF TEMPORARY SEEDING SHALL INCLUDE MULCH WHICH SHALL BE APPLIED DURING OR IMMEDIATELY AFTER SEEDING. SEEDINGS MADE DURING OPTIMUM SEEDING DATES ON FAVORABLE SOIL CONDITIONS AND ON VERY FLAT AREAS MAY NOT NEED MULCH TO ACHIEVE ADEQUATE STABILIZATION.
- MATERIALS:
STRAW--IF STRAW IS USED, 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.

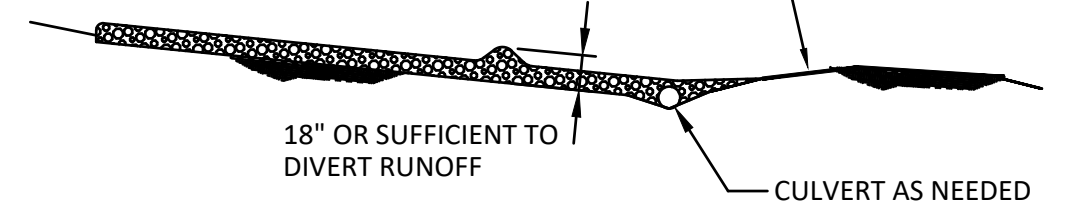
STRAW MULCH SHALL BE ANCHORED IMMEDIATELY TO MINIMIZE LOSS BY WIND OR WATER. ANCHORING METHODS:
MECHANICAL--A DISK, CRIMPER OR SIMILAR TYPE TOOL SHALL BE SET STRAIGHT TO PUNCH OR ANCHOR THE MULCH MATERIAL INTO THE SOIL. STRAW MECHANICALLY ANCHORED SHALL NOT BE FINELY CHOPPED BUT, GENERALLY BE LEFT LONGER THAN 6 IN.

MULCH NETTINGS--NETTINGS SHALL BE USED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. NETTING MAY BE NECESSARY TO HOLD MULCH IN PLACE IN AREAS OF CONCENTRATED RUNOFF AND ON CRITICAL SLOPES.

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.



CONSTRUCTION ENTRANCE PLAN



CONSTRUCTION ENTRANCE PROFILE
NOT TO SCALE

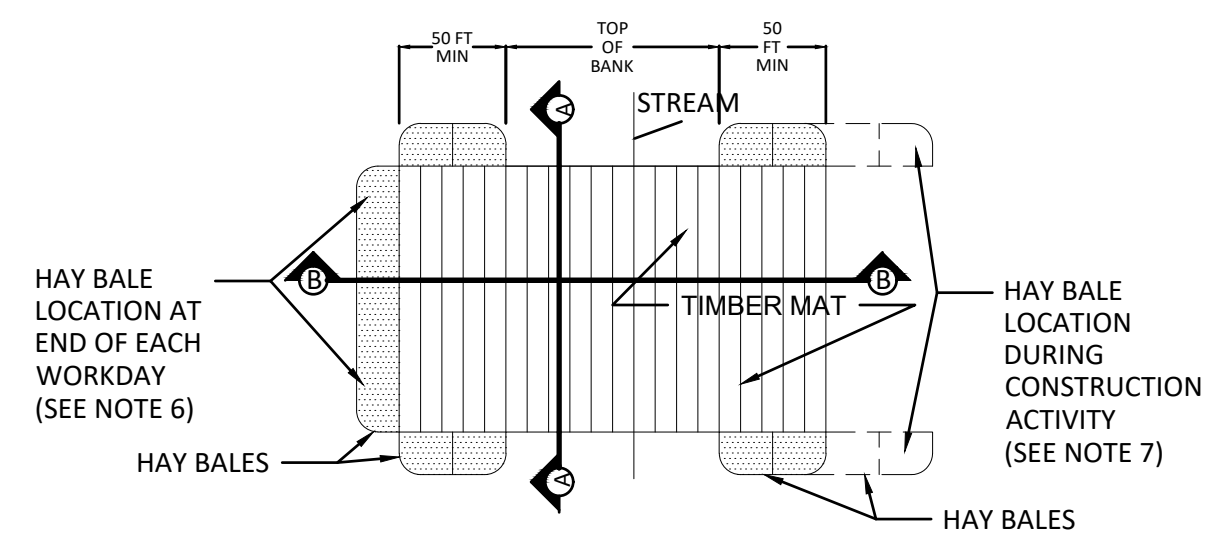
- STONE SIZE--ODOT #2 (1.5 - 2.5 INCH) STONE SHALL BE USED, OR RECYCLED CONCRETE PAVEMENT.
- LENGTH--THE CONSTRUCTION ENTRANCE SHALL BE AS LONG AS REQUIRED TO STABILIZE HIGH TRAFFIC AREAS BUT NOT LESS THAN 70 FT. (EXCEPTION: APPLY 30 FT. MINIMUM TO SINGLE RESIDENCE LOT).
- THICKNESS--THE STONE LAYER SHALL BE AT LEAST 6-IN. THICK FOR LIGHT DUTY ENTRANCES OR AT LEAST 10-IN. FOR HEAVY DUTY USE.
- WIDTH--THE ENTRANCE SHALL BE AT LEAST 14-FT. WIDE, BUT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
- 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

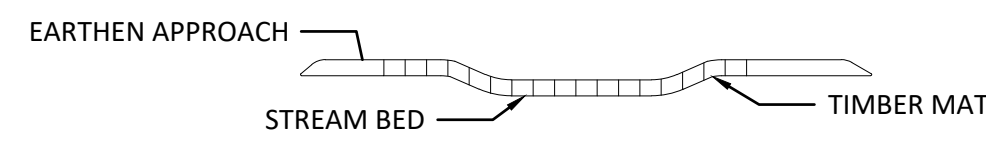
MINIMUM TENSILE STRENGTH	200 LBS.
MINIMUM PUNCTURE STRENGTH	80 PSI
MINIMUM TEAR STRENGTH	50 LBS.
MINIMUM BURST STRENGTH	320 PSI
MINIMUM ELONGATION	20%
EQUIVALENT OPENING SIZE	EO5 < 0.60 mm
PERMITTIVITY	1x10 ⁻³ CM/SEC

- TIMING--THE CONSTRUCTION ENTRANCE SHALL BE INSTALLED AS SOON AS IS PRACTICABLE BEFORE MAJOR GRADING ACTIVITIES.
- 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.
- 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.
- 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.
- CONSTRUCTION ENTRANCES SHALL NOT BE RELIED UPON TO REMOVE MUD FROM VEHICLES AND PREVENT OFF-SITE TRACKING. VEHICLES THAT ENTER AND LEAVE THE CONSTRUCTION-SITE SHALL BE RESTRICTED FROM MUDDY AREAS.
- REMOVAL--THE ENTRANCE SHALL REMAIN IN PLACE UNTIL THE DISTURBED AREA IS STABILIZED OR REPLACED WITH A PERMANENT ROADWAY OR ENTRANCE.

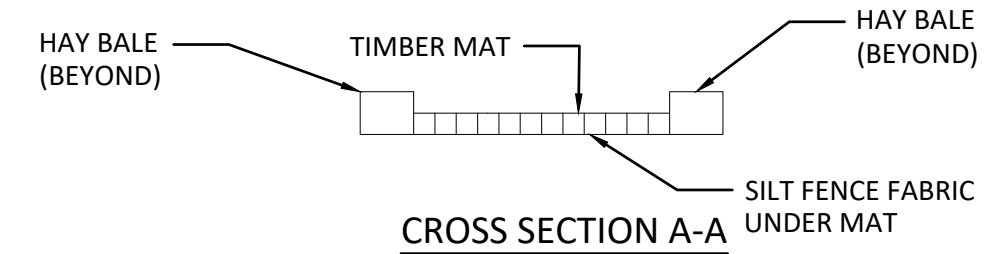
CONSTRUCTION ENTRANCE
NOT TO SCALE



PLAN VIEW



CROSS SECTION B-B

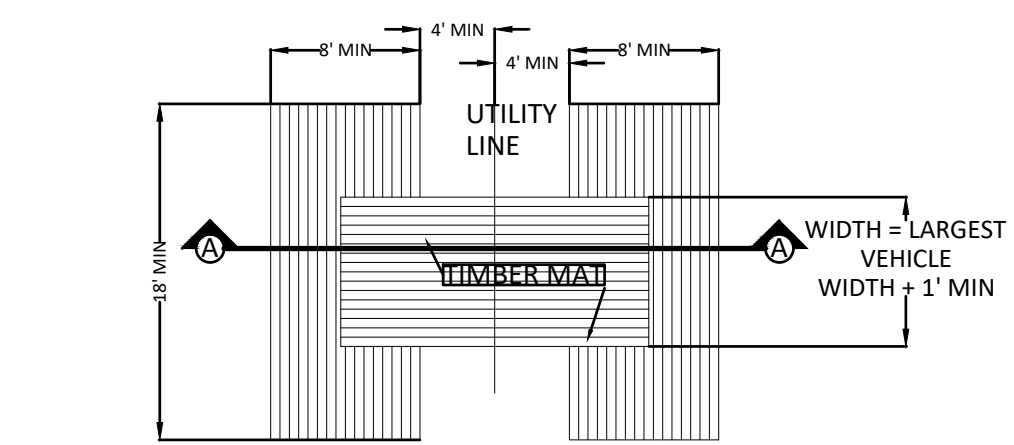


CROSS SECTION A-A

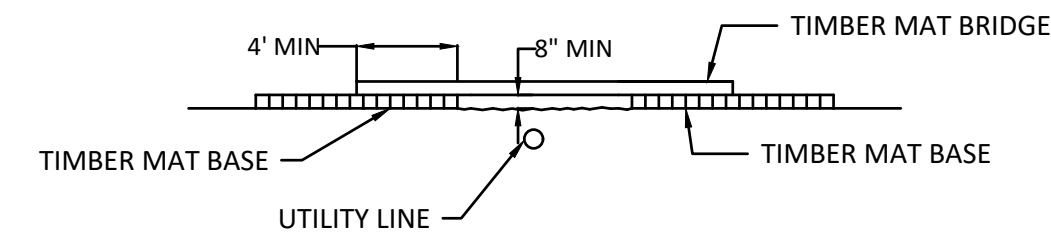
TIMBER MAT STREAM CROSSING
DETAIL
N.T.S.

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.



PLAN VIEW

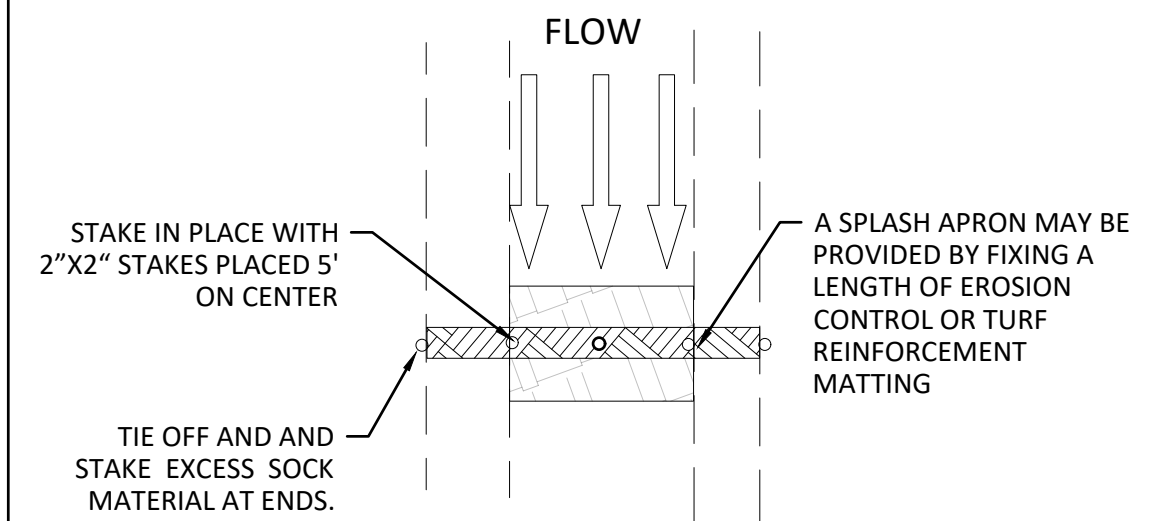


CROSS SECTION A-A

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.

TIMBER MAT UTILITY CROSSING
DETAIL
N.T.S.

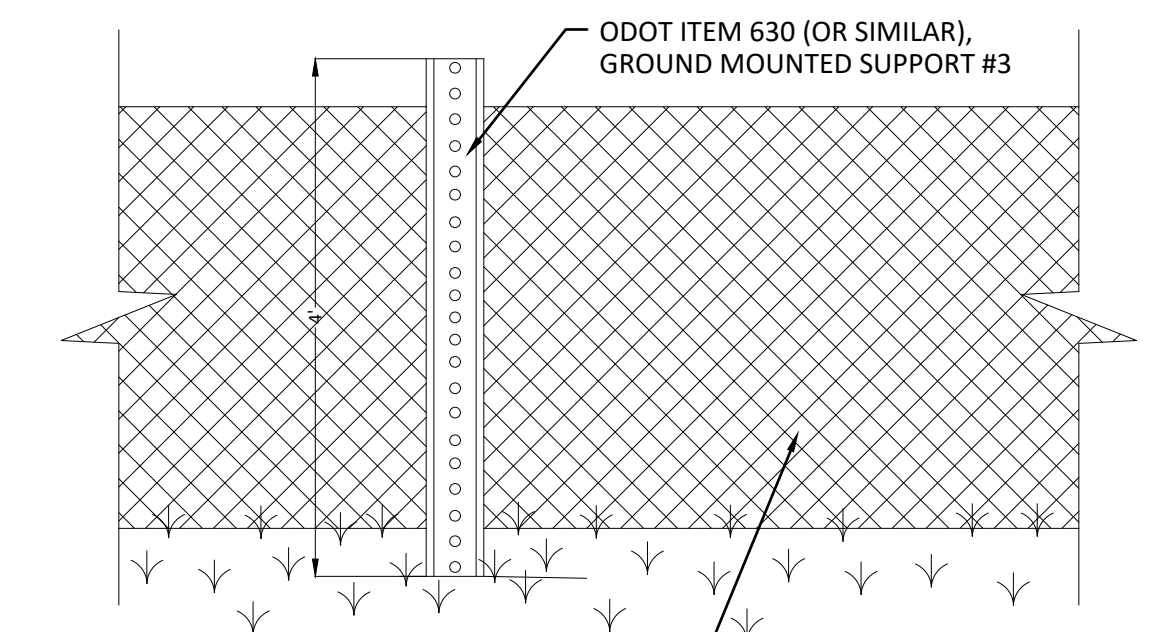


PLAN VIEW

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 1/3 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. MATERIALS USED SHOULD BE ABLE TO BE LEFT IN PLACE (E.G. BIODEGRADABLE/PHOTODEGRADABLE TRECP) WITHOUT CREATING PROBLEMS FOR FUTURE MOWING OR MAINTENANCE OF THE CHANNEL.

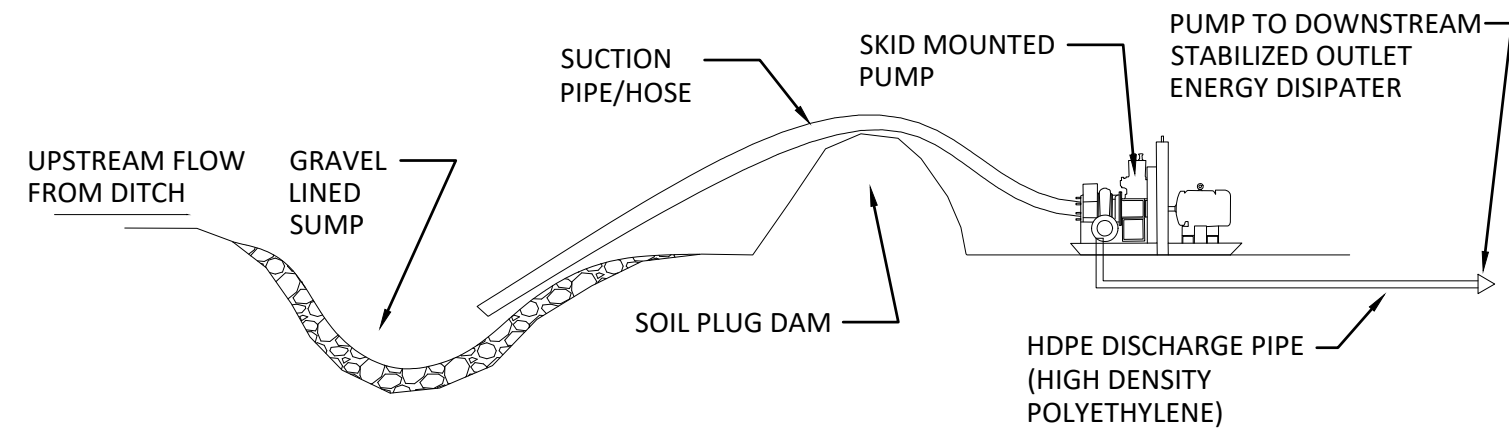
COMPOST SOCK CHECK DAM DETAIL
N.T.S.



NOTE:

1. CONTRACTOR SHALL PLACE FENCING AROUND TREES TO BE SAVED OR OTHER SENSITIVE AREAS IDENTIFIED BY THE OWNER (WETLANDS). SEE THE SWPP PLANS FOR LOCATIONS OF FENCING.
2. FENCE MATERIAL SHALL BE PLASTIC (SNOW FENCE).
3. FENCING AND POSTS SHALL BE REMOVED UPON PROJECT COMPLETION.

PROTECTION FENCING
N.T.S.



NO BY-PASS PUMPING IS PROPOSED FOR THE CUYAHOGA RIVER. IF DEEMED NECESSARY BY THE CONTRACTOR AND SUMMIT METRO PARKS, BY-PASS PUMPING MAY BE USED FOR THE INSTALLATION OF THE BOX CULVERT AT THE EXISTING FORD LOCATION. WATER SHALL BE PUMPED INTO AN ADJACENT WETLAND OR AS DIRECTED BY SUMMIT METRO PARKS. WATER SHALL NOT BE DISCHARGED DIRECTLY INTO THE CUYAHOGA RIVER.

BY-PASS PUMPING/STREAM FLOW
DIVERSION DETAIL
N.T.S.

1. A DE-WATERING PLAN SHALL BE DEVELOPED PRIOR TO THE COMMENCEMENT OF ANY PUMPING ACTIVITIES BY CONTRACTOR.
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/TREATMENT BASIN 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 OF THE ODNR RAINWATER & LAND DEVELOPMENT MANUAL. 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.