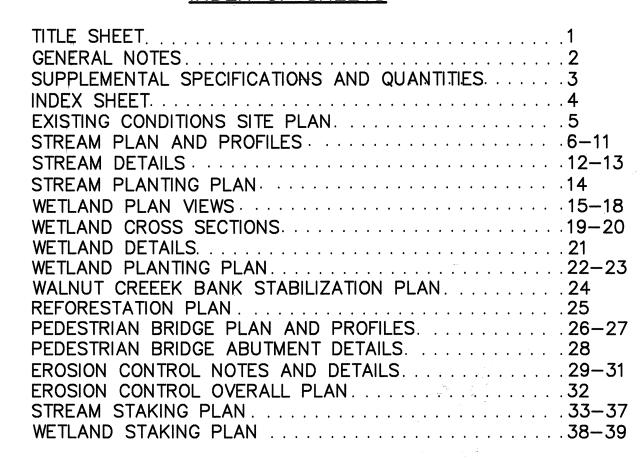
# COLUMBUS AND FRANKLIN COUNTY METRO PARKS WETLAND AND STREAM RESTORATION PLAN

## THE FORMER EASTSIDE NURSERY SITE 6723 LITHOPOLIS ROAD, CANAL WINCHESTER, OHIO 43110 2009

### INDEX OF SHEETS



COLUMBUS AND FRANKLIN COUNTY METRO PARKS 1069 WEST MAIN STREET, WESTERVILLE, OH 43081 PHONE: (614) 891-0700 FAX: (614) 895-6208

### **WORK**

PART I: WETLAND CELLS 1A AND 1B STREAM RESTORATION STA. 43+44.70 TO 70+44.70

PART II: WETLAND CELLS 2-9 STREAM RESTORATION STA. 0+00 TO 43+44.70 WALNUT CREEK BANK STABILIZATION REFORESTATION

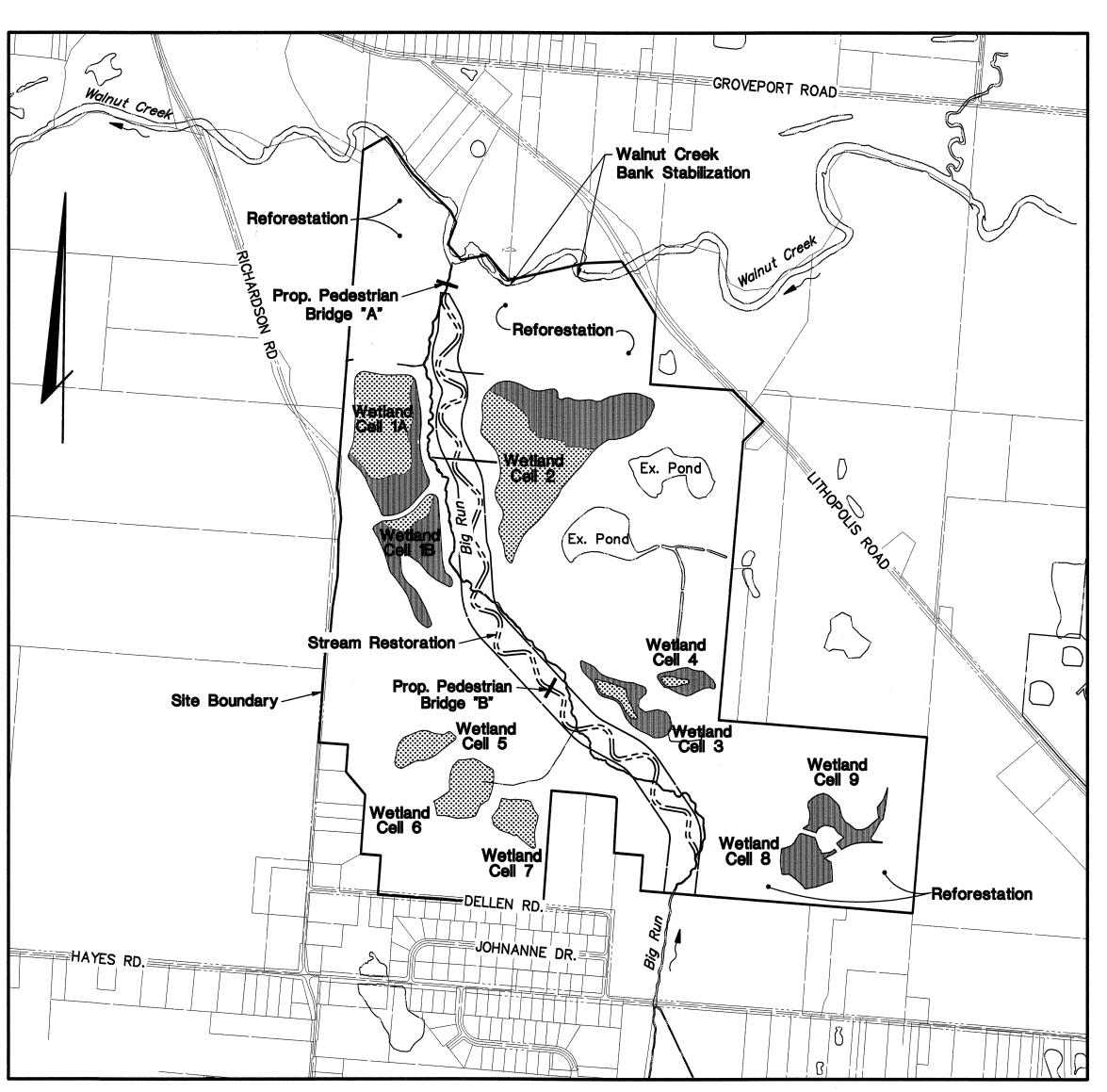
PART III: PEDESTRIAN BRIDGES

### STANDARD DRAWINGS

COLUMBUS AA-S169 (MODIFIED) ODOT TC-41.20

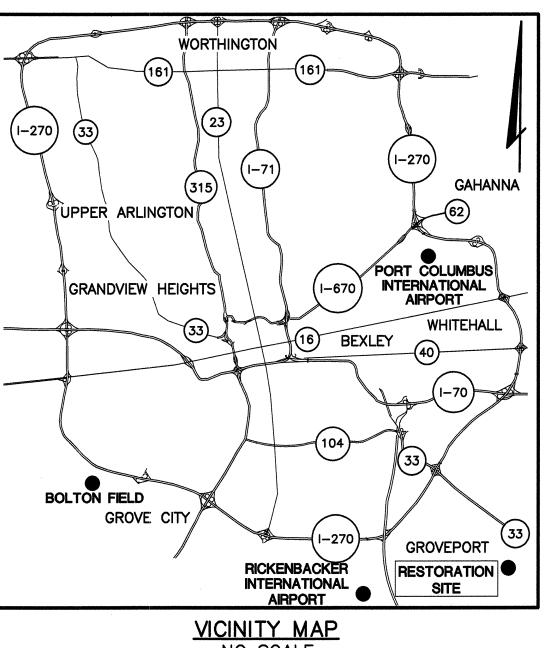
### BIG RUN STREAM DESIGN STATISTICS

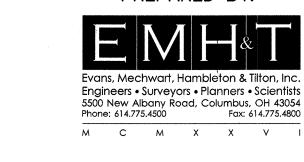
WATERSHED AREA AT DOWNSTREAM END	APPROX. 8.5 SQ. MILES
AVERAGE SINUOSITY	1.22
BANKFULL WIDTH	31.0 FEET
BANKFULL MEAN DEPTH	2.71 FEET
BANKFULI MAX DEPTH	3.5 FEET
W/D RATIO	11.44
BELTWIDTH	
ENTRENCHMENT RATIO	9.52
BANKFULLI DISCHARGE AT DOWNSTEAM END	APPROX. 337 cfs
BANKFULL VELOCITY AT DOWNSTREAM END	APPROX. 4.0 ft/s
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LOCATION MAP SCALE: 1"=800'

WETLAND SUMMARY TABLE										
	CELL 1A	CELL 1B	CELLI 2	CELL 3	CELL 4	CELL 5	CELL 6	CELL 7	CELL 8	CELL 9
NORMAL OPERATING POOL ELEV. (A)	727.5	728.5	728.5	732.5	735.5	745.5	745.5	744.5	743.5	744.5
SATURATION ELEV.	728.5	729.5	729.5	733.5	736.5	746.5	746.5	745.5	744.5	745.5
EMERGENT WETLAND AREA (AC.)	9.98	1.14	14.64	3.10	0.37	2.43	4.27	2.62		-
FORESTED WETLAND AREA (AC.)	4.98	6.36	10.80	0.98	1.53		-		3.42	3.23
TOTAL WETLAND AREA (AC.)	14.96	7.50	25.44	4.08	1.90	2.43	4.27	2.62	3.42	3.23
TRIBUTARY AREA (AC.)	110.43	93.02	114.95	204.02	178.11	13.19	21.57	14.10	10.92	54.59
RATIO (TRIB. AREA/WETLAND AREA)	7.38	12.40	4.52	50.00	93.74	5.42	5.05	5.38	3.19	16.90





PROFESSIONAL ENGINEER

10-8-09 DATE

SIGNATURES BELOW SIGNIFY ONLY CONCURRENCE WITH THE GENERAL PURPOSE AND GENERAL LOCATION OF THE PROJECT. ALL TECHNICAL DETAILS REMAIN THE RESPONSIBILITY OF THE ENGINEER PREPARING THE PLANS.

COLUMBIÚS ÁND FRANKLIN COUNTY METRO PARKS EXECUTIVE DIRECTOR
JOHN O'MEARA

METRO PARKS BOARD OF COMMISSIONERS

ELLEN L. TRIPP - GREG LASHUTKA - ROBERT JEFFREY

As-Built Plan John Eramo & Sons Inc.

January, 2011



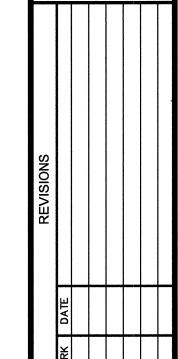












### GENERAL NOTES

The City of Columbus and Ohio Department of Transportation Construction and Material Specifications, current editions including all supplements thereto (hereafter referred to as Standard Specifications), shall govern all construction items on these plans unless otherwise noted. If conflict between specifications is found, the more strict specification will apply. CMSC item numbers listed refer to the City of Columbus Construction and Material Specifications.

### **PERMITS**

A 404/401 Permit has been obtained from the U.S. Army Corps of Engineers and Ohio EPA,respectively. A Notice of Intent (NOI) application has been approved by the Ohio EPA that provides coverage under the Ohio NPDES General Permit Number OHC000003. The Contractor shall be required to submit a NOI co-permittee application to the Ohio EPA to obtain general permit coverage under the same facility permit number associated with the site. A NFIP permit has been obtained by Franklin County for work in a designated flood hazard area. The Contractor is responsible for understanding and abiding by all conditions of these permits.

Excavation and Driveway Permit(s) for work within the public right—of—way limits shall be obtained from the County or Township as warranted.

### PLAN MODIFICATION

Any modifications to the work as shown on these drawings must have prior written approval by the Owner.

### WORKING HOURS

In accordance with CMSC Item 105.06, the Contractor shall comply with work hours being the period one—half hour before sunrise and one—half hour after sunset as sunrise and sunset are determined by the U.S. National Weather Service.

### PRE-CONSTRUCTION MEETING

A Pre—Construction conference involving a representative of the Owner Engineer, Construction Manager, Principle Contractor, and all applicable Sub—Contractors will be held prior to the start of construction.

During the conference, the Contractor shall submit his proposed schedule for controlling erosion and sediment and for temporary and permanent seeding for the improvements.

### INSPECTION

Inspection for this project will be provided by a representative of the Owner.

The Contractor shall notify the Owner and Construction Manager at least 48 hours prior to construction.

### SITE VISIT

The Contractor shall perform field reconnaissance to become acquainted with the existing site conditions and the potential effects upon the work scope. Any performance of additional site subsurface investigations (test holes) shall be coordinated in advance with the Owner and Construction Manager. Excavated material shall be replaced in a controlled manner to minimize impact on field earthwork operations.

### SAFETY REQUIREMENTS

The Contractor and Subcontractor(s) shall be solely responsible for complying with all federal, state and local safety requirements, together with exercising precautions at all times for the protection of persons (including employees) and property. It is also the sole responsibility of the Contractor and Subcontractor(s) to initiate, maintain and supervise all safety requirements, precautions, and programs in connection with the work.

The Contractor and Subcontractor(s) shall also be responsible for complying with the Metro Parks Contractor's Safety Guidelines and Site Hazard Assessment.

### RIGHTS-OF-WAY

The Contractor shall observe and conform to the specific requirements of all rights—of—way including easements, court entries, rights—of—entry or action filed in court in accordance with the code of the applicable governing agency. The cost of the operations necessary to fulfill such requirements shall be included in the price bid for the project improvement.

### ACCESS

Access to all adjoining properties shall be maintained at all times.

Access to the site shall be provided through the existing drive along Lithopolis Road. The construction exit drive shall be constructed and maintained as a part of this plan.

### CONSTRUCTION LAYOUT

General Field layout control shall be provided by the Contractor. Provisions for all other construction staking required to accomplish the improvements shall be performed in accordance with Contract Documents. All staking shall be completed by a Professional Surveyor registered within the State of Ohio.

All construction layout stakes are to be set based on the provided staking plan and away from where the excavated soil is placed. Stakes are to be preserved by Contractor. If the above is not followed, work shall be suspended until the Contractor has requested re—staking, stakes have been replaced, and revised cut sheets have been approved.

The Contractor shall be responsible to monument each corner of the conservation easement. The coordinates for each easement corner is listed in the Conservation Easement Staking Table on Sheet 4. The easement corners shall be marked with a 1/2 inch rebar and lathe identifying the easement corner. These markings shall be preserved during construction.

### NON-RUBBER TIRED VEHICLES

Non—rubber tired vehicles shall not be moved on public streets, existing private roadways or parking lots.

### SANITARY FACILITIES

The Contractor shall furnish and maintain sanitary convenience facilities for the workmen and inspectors for the duration of the work in accordance with CMSC Item 107.06. Cost shall be included in the price bid for the project improvement.

### **EXISTING UTILITIES**

The identity and location of the existing underground utility facilities known to be located in the construction area have been shown on the plans as accurately as provided by the Owner of the underground utility. The Engineer assumes no responsibility to the accuracy of the locations or the depths of the underground facilities shown on the plans.

Investigation, location, support, protection and restoration of all existing utilities and appurtenances shall be the responsibility of the Contractor. This work includes maintenance of adequate depth on all existing utility facilities. The Contractor is responsible to identify and coordinate field stakeout of all locations of possible grade conflicts with existing utilities prior to construction. The cost of this work shall be included in the price bid for the project improvements.

The Contractor is responsible for coordinating the relocation and/or protection of any utilities as required by the plan with the Owner of the affected utility.

Private utility manholes within the limits of the work shall be adjusted to grade by the respective utility.

Utility poles within the influence of the earthwork operations shall be reinforced by the utility company prior to these construction activities. Notification of the utility company prior to construction shall be the responsibility of the Contractor.

Abandonment (Capping, Etc.) of existing utility facilities (Ameritech, Columbia Gas, American Electric Power) shall be performed by the respective utility company. Upon completion of same, the Contractor shall be responsible to remove any or all of the necessary utility as required to complete the plan improvements. The cost of all removal along with the proper disposal thereof should be included in the price bid for the project improvement. The Contractor shall cause notice to be given to the Ohio Utilities Protection Service (Telephone 800–362–2764, toll—free) and to the owners of the underground utilities who are not members of a registered underground protection service in accordance with Section 153.64 of the Ohio Revised Code. The above mentioned notice shall be given at least 48 hours prior to start of construction.

### CLEARING AND GRUBBING

Clearing and grubbing within the general site limits shall be performed as a part of this plan. Any additional clearing necessary to accomplish the scope of the project shall be considered a part of this plan. The cost for the removal and disposal of trees, brush and stumps shall be included within the price bid for Item 201. Clearing and Grubbing.

Silt Fence or Snow Fence shall be used if deemed necessary to preserve the maximum amount of existing trees and vegetation.

### TEMPORARY SOIL EROSION AND SEDIMENT CONTROL

Erosion and Sediment Control measures are required as a part of this project. The Erosion and Sedimentation Control Plan reflects a schematic diagram of the intended measures for compliance with the required standards. General practice and/or site field conditions may warrant variations in the placement or use of the specified controls.

The Contractor shall be solely responsible for providing necessary and adequate measures for proper control of erosion and sediment runoff from the site along with proper maintenance and inspection in compliance with the NPDES General Permit for Storm Water Discharge associated with the Construction Activities.

The Contractor shall be responsible for supplementing and/or replacing Site Erosion and Sedimentation Control as required to accommodate construction. Temporary removal of the Erosion and Sedimentation Control features shall be coordinated with the Construction Manager.

### SEEDING

Temporary and/or permanent seeding within the designated limits of disturbance shall be completed in accordance with the specifications of the Plans for different areas of the project. All areas disturbed outside the limits of disturbance, including the stockpile areas, staging area and haul roads shall be restored to their pre—disturbed condition and stabilized with Native Grass Seeding and Mulching per the specification on sheet 3.

### DUST CONTROL

The Contractor shall be responsible for providing Dust Control measures in accordance with CMSC Item 616. Dust Control operations shall be performed on a periodic basis and/or as directed by the Construction Manager to alleviate or prevent the dust nuisance originating within the project work limits. Calcium chloride on areas to be seeded and mulched will not be permitted. The cost for all dust control measures shall be included in the price bid for the project improvements.

### EARTHWORK

Site clearing and excavation for the project shall not proceed until authorized by the Construction Manager. Surplus excavation (clean fill) can be stockpiled onsite to the extent permitted by the approved engineering plan. All trees, stumps, and other unacceptable material, as determined by the Construction Manager, shall be disposed of offsite. Tree trunks larger than four (4) inches in diameter may be disposed of within the proposed wetland cells with the Owner's approval and at the direction of the Construction Manager.

### CONCRETE PIPE AND STRUCTURE INSPECTION

All precast concrete products shall be inspected at the location of the manufacture. All concrete pipe, storm, and outlet control structures shall be stamped or have such identification noting that said pipe or structures have been inspected by City of Columbus and meets their specifications. Installation of pipe and structures without proper identification shall not be permitted.

### REMOVAL OF DRAIN TILES

This work shall include the supply of all labor, materials, and equipment required to identify and remove existing drain tiles located underneath the proposed wetland embankments. Excavation to identify tile locations shall be by trenching, or other approved methods, and shall extend no less than five (5) feet below existing grade. Identified tiles shall be marked for removal. Drain tiles shall be removed under the limits of the proposed embankment and no less than 40 feet into the proposed wetland. Both ends of the exposed field tile shall be plugged with suitable cohesive embankment material. Backfill remaining void(s) with cohesive material that is compacted to the embankment specification listed below. Identified tiles that affect the drainage from adjacent property shall not be removed until an alternate drainage method is designed and constructed, see below for the Relocation of Drain Tiles note. Mark the tile locations, and notify the Construction Manager immediately. No field tile shall be removed or plugged prior to identifying the origin of the tile. Removed materials become the property of the Contractor and shall be removed from the project site. The cost for this work shall be included in the price bid for Item 202, Removal of Drain Tiles, Complete.

### RELOCATION OF DRAIN TILES

Identified drain tiles that affect the drainage from adjacent properties shall be relocated around the wetland cells and provided an adequate outlet. All identified tiles shall be marked and the Construction Manager shall be contacted immediately. No field tile shall be removed or plugged prior to identifying the origin of the tile. Tiles that need to be relocated shall be replaced with the same quality pipe or better, maintaining a similar gradient as existing as directed by the Construction Manager. Relocated drain tiles shall be laid on compacted bedding equal in density to surrounding stratum. The cost of all labor and material associated with this work shall be included in the price bid for Item Spec., Relocation of Drain Tiles, As Per Plan.

### MAINTAIN DRAINAGE

Unless otherwise directed by the plan the flow in all sewers, drains, field tiles and watercourses encountered shall be maintained by the Contractor at his expense, and whenever such watercourses and drains are disturbed or destroyed during the prosecution of the work, they shall be restored by the Contractor at his own cost and expense to a condition satisfactory to the Construction Manager.

### RESTORATION AND CLEAN UP

Inconvenience to the adjacent property owners and to the traveling public shall be kept to an absolute minimum. All work is to continue on a uniform basis and on schedule, particularly the restoration and clean up of disturbed areas after construction. All areas disturbed outside the limits of disturbance, including the stockpile areas, staging area and haul roads shall be restored to their pre—disturbed condition and stabilized with Native Grass Seeding and Mulching per the specification on sheet 3.

The Contractor shall include provisions to clean the existing entrance road(s) in accordance with the general allowance delineated within the Contract Documents.

### STORAGE OF FOUIPMENT AND MATERIALS

No materials, including pipe, shall be stored within the public right—of—way or within one hundred (100) feet of any intersecting street or driveway. During non—working hours, storage of equipment shall comply with these same requirements. Compliance with these requirements along with additional provisions of the contract specifications shall not in any way relieve the Contractor of his legal responsibilities or liabilities for the safety of the public.

A temporary staging area is shown on this plan. The Contractor shall coordinate with Metro Parks prior to construction for final approval of the staging area and Field Office locations.

### GRADE CHECKING AND AS-BUILT SURVEY

The Contractor shall provide periodic grade checking and an as—built survey of the completed project to the Owner for verification of the grading and structures associated with this project. Grade checking shall be performed by the contractor and approved by the Owner prior to the application of any seeding. The as—built survey shall be sufficient to verify the location and elevation of all of the items shown on the plan and shall result in a topographic map representing the grading associated with the stream valley, wetland embankments and graded portions of the wetland cells. A profile of the restored stream centerline shall also be completed.

The as-built survey will be approved based on the tolerances indicated below.

- Tolerances for structures (inverts): 0.10 ft.
- Tolerances for grading: 0.3 ft.; except in the wetland shelf and stream channel, where the tolerance is 0.10 ft.

The as—built survey shall be started as progress occurs at the site and will double as grade checking during construction of the project. Grade checks shall be performed for every 500 feet of stream restoration, every 200 feet of wetland embankment, and each structure. The Contractor shall provide all grade checking surveys to the Construction Manager for approval.

The cost of all labor and materials associated with this work shall be included in the price bid for Spec., Grade Checking and As—Built Survey, As Per Plan.

### PLANTING QUALIFICATIONS

The Contractor or Subcontractor shall have on staff a wetland ecologist familiar with wetland plant installation or have at least 10 years experience with similar projects. Documentation of this status shall be provided to the Construction Manager prior to planting. A qualified individual shall be onsite at all times during planting.

### SUPPLEMENTAL SPECIFICATIONS

### ITEM 203, EXCAVATION, AS PER PLAN

The Contractor shall review the Subsurface Investigation Report prepared by Resource International to become familiar with the type of material that will be excavated. All excess material excavated from the site shall be properly disposed of at the stockpile location shown on the plan. The stockpile area shall be cleared prior to the placement of the excess material.

### ITEM 203, EMBANKMENT, AS PER PLAN

The Contractor shall review the Subsurface Investigation Report prepared by Resource International to become familiar with the onsite soils.

(a) <u>Foundation Preparation</u> — No material should be placed in any portion of the embankment until the foundation has been stripped of topsoil and surface vegetation and proof rolled with a heavily—loaded, tandem—axle dump truck to detect soft, wet or weak zones. If soft or weak zones are present, the materials contained therein should either be scarified, dried and thoroughly compacted in place or be removed and the over excavations filled in a controlled manner. If encountered during preparation of the embankment foundation, granular soils should be over excavated and replaced with cohesive soil. No fill shall occur until the foundation area has been approved by the Construction Manager. The cost of Foundation Preparation shall be included in the price bid for Item 203, Embankment.

(b) <u>Placing Embankment Material</u> — During fill and compaction operations, the suitability of all materials for use in embankment construction will be determined by the Construction Manager. No embankment material shall be placed in the embankment when either the material or the embankment on which it would be placed is frozen.

The embankments should be constructed with clean, cohesive fill free of organic matter, roots, cobbles and boulders. The fill should have a minimum of 50 percent by weight passing the No. 200 sieve and have a Plasticity Index of at least five. The Construction Manager shall determine whether the cohesive soils encountered at the site are considered suitable for construction of the proposed embankment.

(c) Compaction Requirements — The fill should be placed in uniform, thin lifts and compacted in accordance with the following guidelines. All fill should be placed in a loose lift height not to exceed 9 inches. All fill in the embankments shall be compacted to a dry unit weight equal to at least 95 percent of the maximum dry unit weight as determined by means of the Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (ASTM: D 698). The moisture content of the cohesive fill should be maintained at a level of  $\pm 2\%$  of the optimum moisture content during compaction. Bulk samples of the proposed borrow source should be obtained and tested well in advance of starting construction so that compaction criteria will be available at the time of construction. Cohesive soil fill should be compacted with a sheepsfoot roller.

Where new embankment fill is to be compacted against existing slopes steeper than 8:1, the slopes should be continuously benched in horizontal sections. Benching shall be of sufficient width to permit operations of placing and compacting equipment. Each horizontal cut should begin at the intersection of the original ground and the vertical sides of the previous cuts.

The Contractor shall coordinate with the Owner and Construction Manager to determine a method of verifying the compaction of the wetland embankments.

### ITEM SPEC, BOULDER TOE, AS PER PLAN

The Boulder Toe shall be constructed per the details and notes on sheet 12. The cost of all labor and materials associated with the structures shall be included in the price bid for Spec., Boulder Toe, As Per Plan (Pools).

### ITEM SPEC, COIR ROLLS, AS PER PLAN

The Coir Rolls shall be constructed per the details and notes on sheet 12. The cost of all labor and materials associated with the rolls shall be included in the price bid for Spec., Coir Rolls, As Per Plan (Pools).

### ITEM SPEC, ROCK RIFFLES, AS PER PLAN

The Rock Riffles shall be constructed per the details and notes on sheets 12 and 13. The cost of all labor and materials associated with the structures shall be included in the price bid for Spec., Rock Riffles, As Per Plan.

### ITEM SPEC, GOOSE FENCING, AS PER PLAN

The proposed emergent wetland and shallow depressions within Cell 1A and 1B shall be protected with goose fence. The fence shall be placed around the perimeter of emergent wetland and shallow depressions. The fence shall also be placed on a 30-foot grid within the shallow depression areas and a 100-foot grid within the emergent wetland. The fence shall be installed per the detail on Sheet 23 immediately after planting the wetland. The goose fencing shall remain installed for a minimum of one—year. The cost of all labor and materials associated with the goose fence shall be included in the price bid for Spec., Goose Fencing, As Per Plan.

### ITEM SPEC, OUTLET CONTROL STRUCTURE WITH STOPLOGS, AS PER PLAN

This work shall include the supply of all labor, material and equipment required for the installation of the outlet control structure, and all appurtenances as called for on the plans, shop drawings and manufacturer recommendations. The outlet control structure shall consist of a modified endwall (AA—S169), 5—inch high and 7—inch high stoplogs (3 each), stoplog lifting device, and appurtenances as shown on the design detail, sheet 21. The Contractor shall provide to the Construction Manager and the Owner a shop drawing supplied by the manufacturer for approval prior to shipment of the outlet structure to the site. The work shall consist of excavation, bed preparation, placement of the outlet structure, and the supply, placement and compaction of backfill to the lines and grades shown on the drawings or as specified. The outlet structure is to be in installed prior to seeding and planting in the wetland. The cost of all labor and materials associated with this work shall be included in the price bid for Spec., Outlet Control Structure with Stoplogs, As Per Plan.

ITEM SPEC, PEDESTRIAN BRIDGE SUPERSTRUCTURE, AS PER PLAN
See sheet 26—28 for the pedestrian bridge superstructure specifications. The cost of all labor and materials associated with this work, including installation, shall be included in the price bid for Spec., Pedestrian Bridge Superstructure, As Per Plan.

### ITEM SPEC, PROJECT SIGN, AS PER PLAN

An American Recovery and Reinvestment Act (ARRA) Project Sign shall be installed and removed as a part of this project. The sign shall be constructed per the sign specifications located within the bid documents. A shop drawing shall be approved by the Construction Manager in writing prior to ordering the sign. The project sign shall be located along Lithopolis Road as shown on sheet 4. The final location shall be approved by the Construction Manager and Owner prior in installation. The cost of all labor and materials associated with project sign shall be included in the price bid for Item Spec., Project Sign, As Per Plan.

January, 2011 2009 Scale Drawn By:

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AL NOTES

COLUMBUS AND FRANKLIN COUNTY MI
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GENERAL NOTES

Evans, Mechwart, Hambleton & Tilton, Inc. Engineers • Surveyors • Planners • Scientists 5500 New Albany Road, Columbus, OH 43054 Phone: 614,775,4500 Toll Free: 888.775,3648 emht.com

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COLUMBUS AND FRANKLIN COUNTY METRO PARKS 1069 WEST MAIN STREET, WESTERVILLE, OH 43081-1181 (614) 891-0700 (614) 895-6208 FAX:



MARK DATE REVISIONS

The planting of woody material shall occur between the dates of March 1 and May 15, or between September 15 and November 15. Planted material not alive at the end of the one (1) year warranty period shall be replaced in accordance with the warranty note on sheet 14. This work consists of planting all live stakes, 3 gallon shrubs, 3 gallon trees, balled and burlap trees and live stakes. The cost of all labor and materials associated with this work shall be included in the price bid for Spec., Stream Planting, As Per Plan. The Estimate of Quantities table measures the quantity of this item in terms of acres, refer to sheet 14 for actual estimated quantities of the various plant types.

### ITEM SPEC, EMERGENT WETLAND PLANTING, AS PER PLAN

The emergent wetland areas shall be planted with a variety of native, cold—hardy tree and shrub species in accordance with the planting table and notes on sheet 22 and the live stake notes on sheet 12. The area shall be planted according to the densities and sizes listed using a random or scattered method for a natural aesthetic look. Final species selection shall be approved by the Construction Manager in writing prior to purchasing the materials. The installation of each plant shall be in accordance with the supplier specifications and the Planting Details on sheet 22. Live plant materials shall be installed immediately upon delivery and shall be kept moist. All plants shall be healthy, vigorous, stress—free specimens free from harmful defects, decay, disfigured stems and roots, plant diseases, and insect pests.

The planting of woody material shall occur between the dates of March 1 and May 15, or between September 15 and November 15. The planting of herbaceous plugs shall occur between May 1 and July 1. Planted material not alive at the end of the one (1) year warranty period shall be replaced in accordance with the warranty note on sheet 22. This work consists of planting all herbaceous plugs, 3 gallon shrubs and live stakes. The cost of all labor and materials associated with this work shall be included in the price bid for Spec., Emergent Wetland Planting, As Per Plan. The Estimate of Quantities table measures the quantity of this item in terms of acres, refer to sheet 22 for actual estimated quantities of the various plant types.

### ITEM SPEC, EMERGENT WETLAND BUFFER PLANTING, AS PER PLAN

The emergent wetland buffer areas shall be planted with a variety of native, cold—hardy shrub species in accordance with the planting table and notes on sheet 22. The area shall be planted according to the densities and sizes listed using a random or scattered method for a natural aesthetic look. Final species selection shall be approved by the Construction Manager in writing prior to purchasing the materials. The installation of each plant shall be in accordance with the supplier specifications and the Planting Details on Sheet 22. Live plant materials shall be installed immediately upon delivery and shall be kept moist. All plants shall be healthy, vigorous, stress—free specimens free from harmful defects, decay, disfigured stems and roots, plant diseases, and insect pests.

The emergent wetland buffer planting shall occur within a 25 foot wide buffer adjacent to the emergent areas within wetland cells 2—7.

The planting of woody material shall occur between the dates of March 1 and May 15, or between September 15 and November 15. Planted material not alive at the end of the one (1) year warranty period shall be replaced in accordance with the warranty note on sheet 22. This work consists of planting all 3 gallon shrubs. The cost of all labor and materials associated with this work shall be included in the price bid for Spec., Emergent Wetland Buffer Planting, As Per Plan. The Estimate of Quantities table measures the quantity of this item in terms of acres, refer to sheet 22 for actual estimated quantities of the various plant types.

### ITEM SPEC, FORESTED WETLAND PLANTING, AS PER PLAN

The forested wetland areas shall be planted with a variety of native, cold—hardy tree and shrub species in accordance with the planting table and notes on sheet 22 and the live stake notes on sheet 12. The area shall be planted according to the densities and sizes listed using a random or scattered method for a natural aesthetic look. Final species selection shall be approved by the Construction Manager in writing prior to purchasing the materials. The installation of each plant shall be in accordance with the supplier specifications and the Planting Details on sheet 22. Live plant materials shall be installed immediately upon delivery and shall be kept moist. All plants shall be healthy, vigorous, stress—free specimens free from harmful defects, decay, disfigured stems and roots, plant diseases, and insect pests.

The planting of woody material shall occur between the dates of March 1 and May 15, or between September 15 and November 15. The planting of herbaceous plugs shall occur between May 1 and July 1. Planted material not alive at the end of the one (1) year warranty period shall be replaced in accordance with the warranty note on sheet 22. This work consists of planting all live stakes, 1 and 3 gallon shrubs, 3 gallon trees, and herbaceous plugs. The cost of all labor and materials associated with this work shall be included in the price bid for Spec., Forested Wetland Planting, As Per Plan. The Estimate of Quantities table measures the quantity of this item in terms of acres, refer to sheet 22 for actual estimated quantities of the various plant types.

### ITEM SPEC, FORESTED WETLAND BUFFER PLANTING, AS PER PLAN

The forested wetland buffer areas shall be planted with a variety of native, cold—hardy tree and shrub species in accordance with the planting table and notes on sheet 22. The area shall be planted according to the densities and sizes listed using a random or scattered method for a natural aesthetic look. Final species selection shall be approved by the Construction Manager in writing prior to purchasing the materials. The installation of each plant shall be in accordance with the supplier specifications and the Planting Details on sheet 22. Live plant materials shall be installed immediately upon delivery and shall be kept moist. All plants shall be healthy, vigorous, stress—free specimens free from harmful defects, decay, disfigured stems and roots, plant diseases, and insect pests.

The forested wetland buffer planting shall occur within a 25 foot wide buffer adjacent to the forested areas within wetland cells 1—4, and 8—9. The forested wetland buffer planting shall also occur within a 25' wide buffer area adjacent to the emergent portions of wetland cells 1A and 1B.

The planting of woody material shall occur between the dates of March 1 and May 15, or between September 15 and November 15. Planted material not alive at the end of the one (1) year warranty period shall be replaced in accordance with the warranty note on sheet 22. This work consists of planting all 3 gallon shrubs and 3 gallon trees. The cost of all labor and materials associated with this work shall be included in the price bid for Spec., Forested Wetland Buffer Planting, As Per Plan. The Estimate of Quantities table measures the quantity of this item in terms of acres, refer to sheet 22 for actual estimated quantities of the various plant types.

### ITEM SPEC, WALNUT CREEK BANK STABILIZATION PLANTING, AS PER PLAN

The bank stabilization areas shall be planted with a variety of native, cold—hardy tree and shrub species in accordance with the planting table and notes on sheet 24 and the live stake notes on sheet 12. The area shall be planted according to the densities and sizes listed using a random or scattered method for a natural aesthetic look. Final species selection shall be approved by the Construction Manager in writing prior to purchasing the materials. The installation of each plant shall be in accordance with the supplier specifications and the Planting Details on sheet 22. Live plant materials shall be installed immediately upon delivery and shall be kept moist. All plants shall be healthy, vigorous, stress—free specimens free from harmful defects, decay, disfigured stems and roots, plant diseases, and insect pests.

The planting of woody material shall occur between the dates of March 1 and May 15, or between September 15 and November 15. Planted material not alive at the end of the one (1) year warranty period shall be replaced in accordance with the warranty note on sheet 14. This work consists of planting all live stakes, 3 gallon shrubs, and 3 gallon trees. The cost of all labor and materials associated with this work shall be included in the price bid for Spec., Walnut Creek Bank Stabilization Planting, As Per Plan. The Estimate of Quantities table measures the quantity of this item in terms of acres, refer to sheet 24 for actual estimated quantities of the various plant types.

### ITEM SPEC, REFORESTATION PLANTING, AS PER PLAN

The reforestation areas shall be planted with a variety of native, cold—hardy tree and shrub species in accordance with the planting table and notes on sheet 25. The area shall be planted according to the densities and sizes listed using a random or scattered method for a natural aesthetic look. Final species selection shall be approved by the Construction Manager in writing prior to purchasing the materials. The installation of each plant shall be in accordance with the supplier specifications and the Planting Details on sheet 22. Live plant materials shall be installed immediately upon delivery and shall be kept moist. All plants shall be healthy, vigorous, stress—free specimens free from harmful defects, decay, disfigured stems and roots, plant diseases, and insect pests.

The planting of woody material shall occur between the dates of March 1 and May 15, or between September 15 and November 15. Planted material not alive at the end of the one (1) year warranty period shall be replaced in accordance with the warranty note on sheet 14. This work consists of planting all 3 gallon shrubs and 3 gallon trees. The cost of all labor and materials associated with this work shall be included in the price bid for Spec., Reforestation Planting, As Per Plan. The Estimate of Quantities table measures the quantity of this item in terms of acres, refer to sheet 25 for actual estimated quantities of the various plant types.

### **LEGEND** Ex. Contour Maior Ex. Bench Mark Ex. Contour Minor Ex. Stream C/L Prop. Pool Ex. Edge of Stream -Prop. Riffle Ex. Property Line Ex. Right-of-Way Prop. Point Bar Ex. Corporation limits Prop. Outlet Control Structure Fx. Treeline Prop. Emergent Wetland Ex. Site Boundary Ex. Field Tile Prop. Forested Wetland Prop. Valley C/L Prop. Reforestation Area Prop. Stream Thalwea Prop. Bankfull Temp. Stream Diversion Prop. Beltwidth Prop. Conservation Esmt. Temp. Stream Crossina Prop. Normal Operating Pool Temp. Earthen Plug Prop. Sediment Fence Soil Boring Temp. Diversion Channel Prop. Buffer (Do Not Disturb) Prop. Minor Contour Shallow Depressions Prop. Top of Embankment Prop. Limits of Disturbance Conservation Easement Prop. Soil Stockpile Stakina Point Prop. Goose Fence

### SUPPLEMENTAL SPECIFICATIONS CONT.

ITEM SPEC, NATIVE GRASS SEEDING AND MULCHING, AS PER PLAN

Native Grass Seeding and Mulching shall be completed between October 1st and May 15th. If seeding is completed outside this time frame it shall be considered temporary seeding. Seeding shall consist of the mixture and application rate specified in the Native Grass Seeding Table, sheet 23. Over seed shall be applied with the permanent seed to stabilize the site until the permanent seed germinates and establishes itself. Seeding shall consist of fertilizing, watering and mulching rates indicated under Item 659. Seed identification tags from the seed supplier shall be approved by the Construction Manager in writing prior to seeding. The cost of all labor and materials associated with this work shall be included in the price bid for Spec., Native Grass Seeding and Mulching, As Per Plan.

### ITEM SPEC, FORESTED WETLAND SEEDING, AS PER PLAN

The requirements of Item 659 shall govern the construction of this work, except as noted. This work shall consist of all labor, equipment and materials necessary to permanently seed the forested wetland areas shown on the plan. Forested Wetland Seeding shall be completed between October 1st and May 15th. Mulching is not necessary for the Forested Wetland Seeding.

The wetland seed mix shall consist of only those plants native and hardy to Ohio. All plants contained in the seed mix should have wetland indicator statures of FAC, FACW or OBL. Suggested supplier is ERNST Seeds, mix ERNMX—127 or equivalent and approved by the Construction Manager. Seed identification tags from the seed supplier shall be approved by the Construction Manager in writing prior to seeding. Application rates and methods should be at the recommendation of the seed supplier or using the following procedures:

- I. Mow down the existing vegetation as low as possible to the ground. 2. Mix together the permanent and over seed at the specified rate.
- 3. Drill the seed mix into the wetland areas per application rates listed in the seeding table.

The contractor is responsible for maintaining adequate hydric conditions to allow applied seeding to germinate. The permanent stop logs can be placed in the outlet structure only after the seed has germinated.

### ITEM SPEC, EMERGENT WETLAND SEEDING, AS PER PLAN

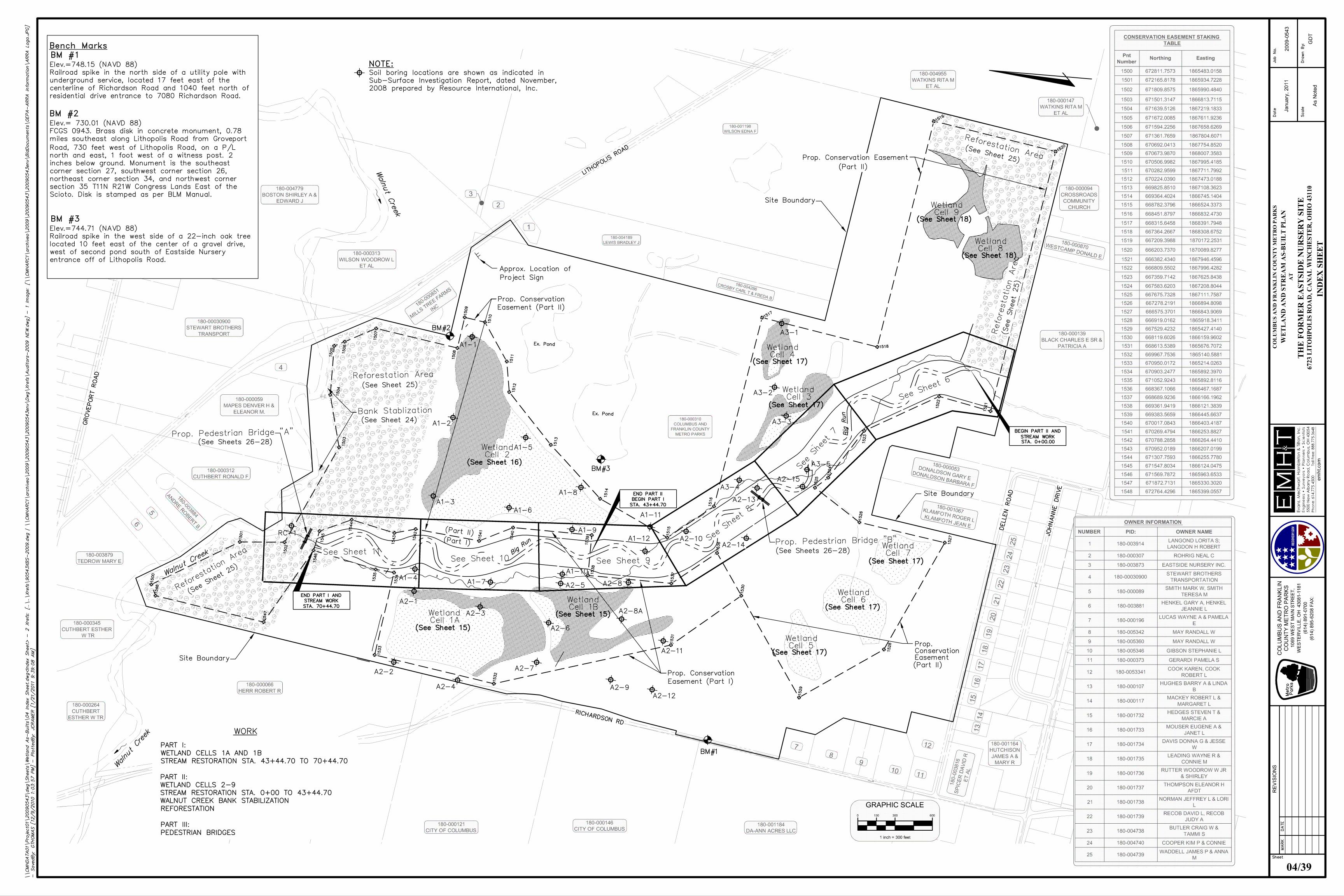
The requirements of Item 659 shall govern the construction of this work, except as noted. This work shall consist of all labor, equipment and materials necessary to permanently seed the emergent wetland areas shown on the plan. Emergent Wetland Seeding shall be completed between October 1st and May 15th. Mulching is not necessary for the Emergent Wetland Seeding.

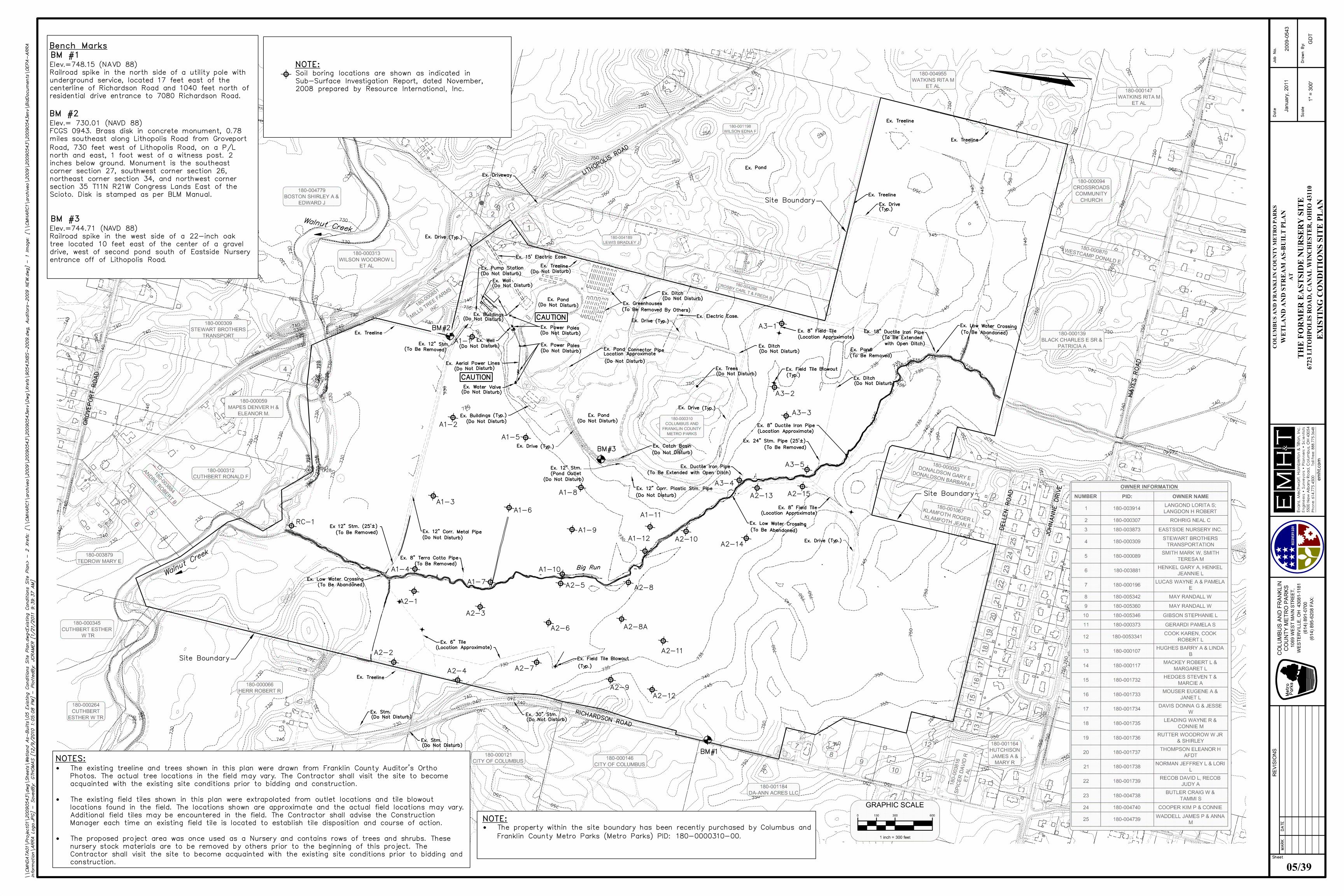
The wetland seed mix shall consist of only those plants native and hardy to Ohio. All plants contained in the seed mix should have wetland indicator statures of FAC, FACW or OBL. Suggested supplier is ERNST Seeds, mix ERNMX—120 or equivalent and approved by the Construction Manager. Seed identification tags from the seed supplier shall be approved by the Construction Manager in writing prior to seeding. Application rates and methods should be at the recommendation of the seed supplier or using the following procedures:

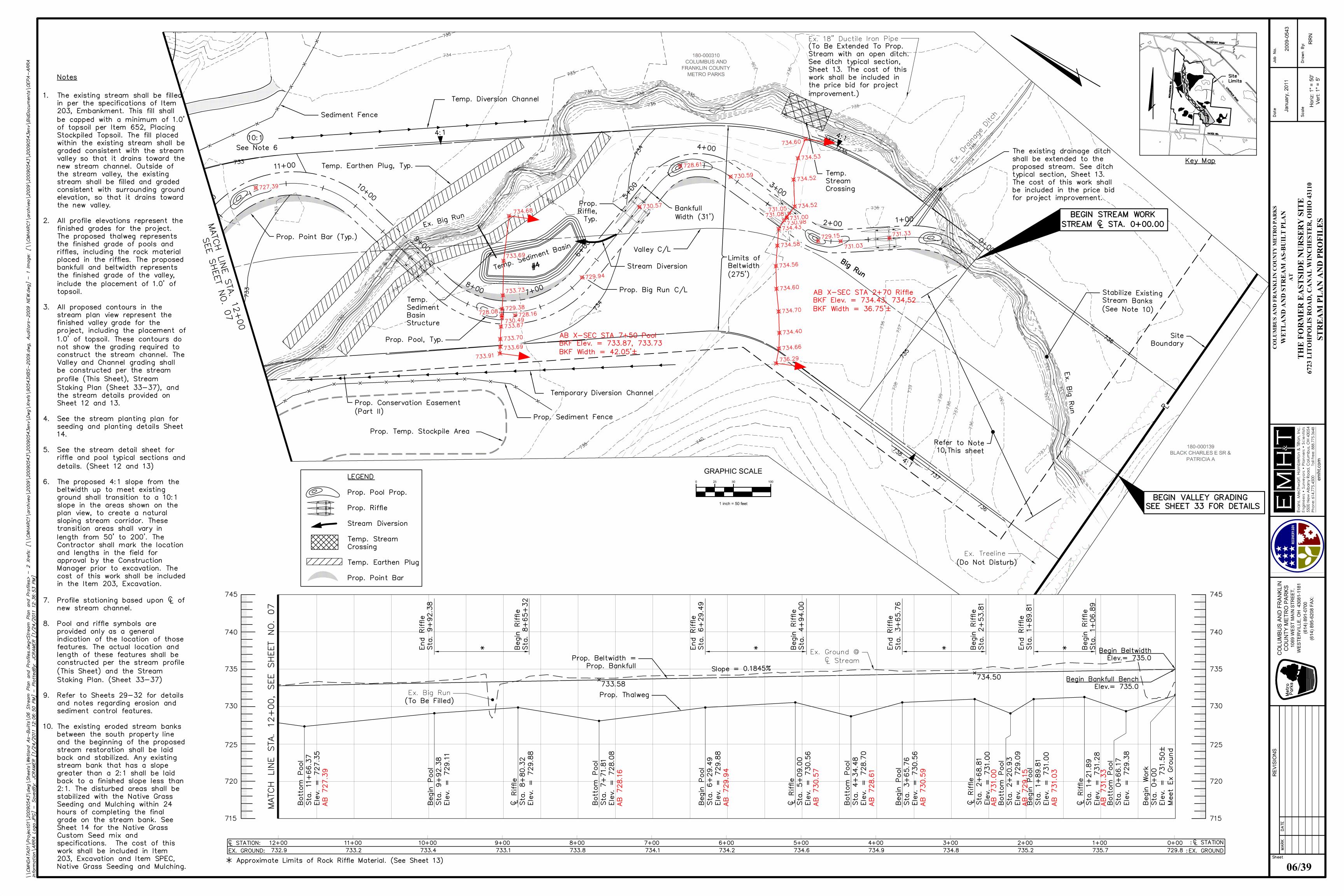
- 1. Mow down the existing vegetation as low as possible to the ground 2. Mix together the permanent and over seed as the specified rate.
- 3. Drill the seed mix into the wetland areas per application rates listed in the seeding table.

The Contractor is responsible for maintaining adequate hydric conditions to allow applied seeding to germinate. The permanent stop logs can be placed in the outlet structure only after the seed has aerminated.

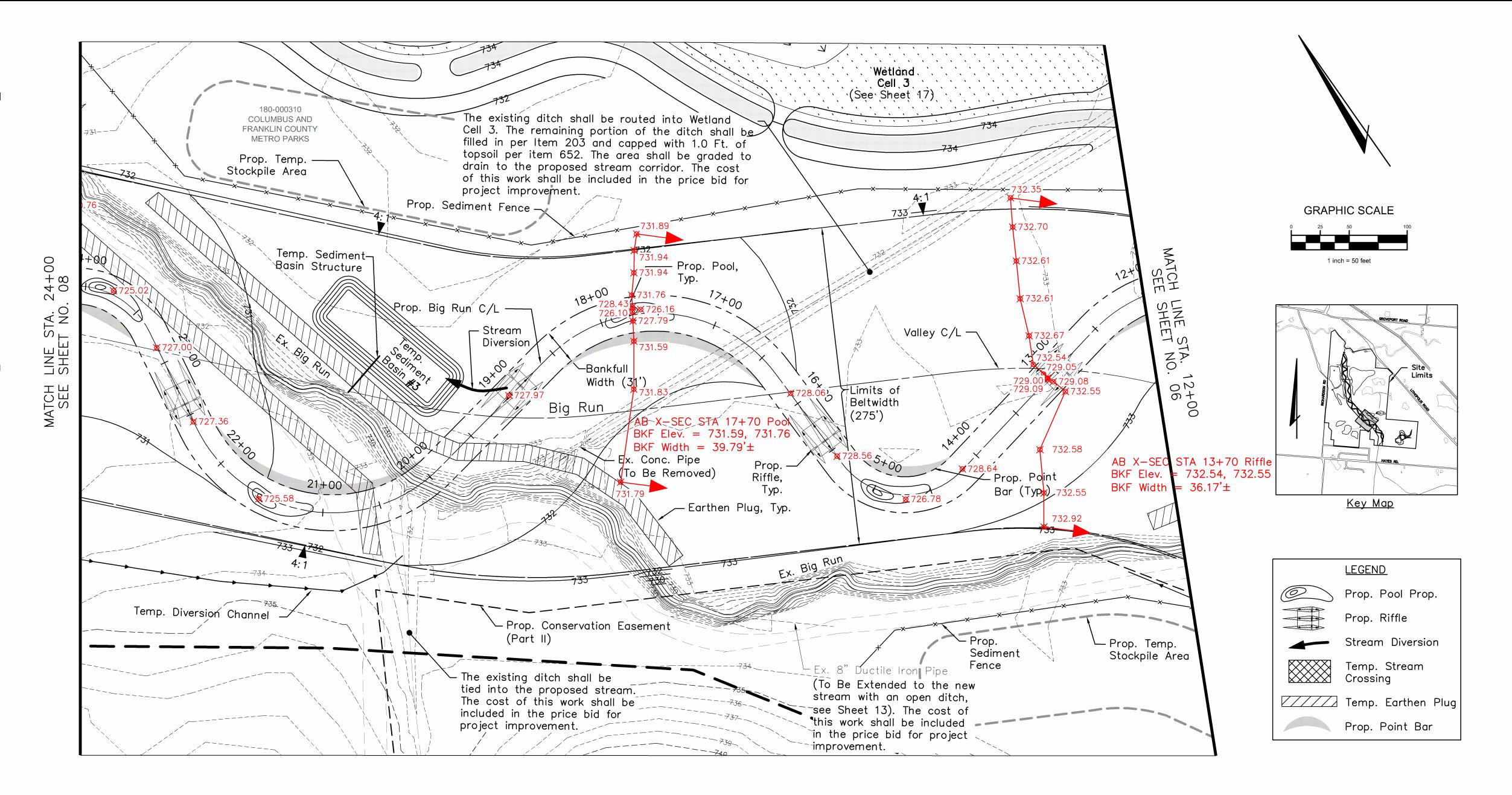
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COLUMBUS AND FRANKLIN COUNTY METRO PARKS	WETLAND AND STREAM AS-BUILT PLAN AT	THE FORMER EASTSIDE NURSERY SITE	6723 LITOHPOLIS ROAD, CANAL WINCHESTER, OHIO 43110	SUPPLEMENTAL SPECIFICATIONS AND QUANTITIES
		Evans, Mechwart, Hambleton & Tilton, Inc. Engineers • Surveyors • Planners • Scientists	5500 New Albany Road, Columbus, OH 43054 Phone: 614.775.4500 Toll Free: 888.775.3648	emht.com
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	S AND FRANKLIN METRO PARKS ST MAIN STREET,	LE, OH 43081-1181	395-6208 FAX:	



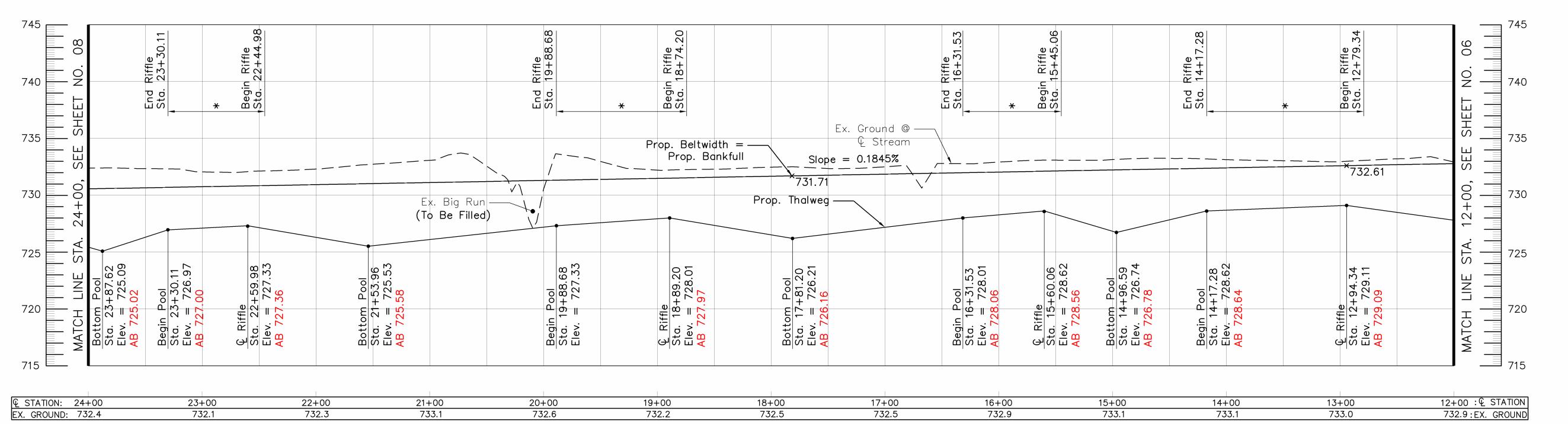




- 1. The existing stream shall be filled in per the specifications of Item 203, Embankment. This fill shall be capped with a minimum of 1.0 ' of topsoil per Item 652, Placing Stockpiled Topsoil. The fill placed within the existing stream shall be graded consistent with the stream valley so that it drains toward the new stream channel. Outside of the stream valley, the existing stream shall be filled and graded consistent with surrounding ground elevation, so that it drains toward the new valley.
- 2. All profile elevations represent the finished grades for the project. The proposed thalweg represents the finished grade of pools and riffles, including the rock material placed in the riffles. The proposed bankfull and beltwidth represents the finished grade of the valley, include the placement of 1.0' of topsoil.
- 3. All proposed contours in the stream plan view represent the finished valley grade for the project, including the placement of 1.0' of topsoil. These contours do not show the grading required to construct the stream channel. The Valley and Channel grading shall be constructed per the stream profile (This Sheet), Stream Staking Plan (Sheet 33—37), and the stream details provided on Sheet 12 and 13.
- 4. See the stream planting plan for seeding and planting details. (Sheet 14)
- 5. See the stream detail sheet for riffle and pool typical sections and details. (Sheet 12 and 13)
- 6. The proposed 4:1 slope from the beltwidth up to meet existing ground shall transition to a 10:1 slope in the areas shown on the plan view, to create a natural sloping stream corridor. These transition areas shall vary in length from 50' to 200'. The Contractor shall mark the location and lengths in the field for approval by the Construction Manager prior to excavation. The cost of this work shall be included in Item 203, Excavation.
- 7. Profile stationing based upon & of new stream
- 8. Pool and riffle symbols are provided only as a general indication of the location of those features. The actual location and length of these features shall be constructed per the stream profile (This Sheet) and the Stream Staking Plan. (Sheet 33—37)
- 9. Refer to Sheets 29—32 for details and notes regarding erosion and sediment control features.

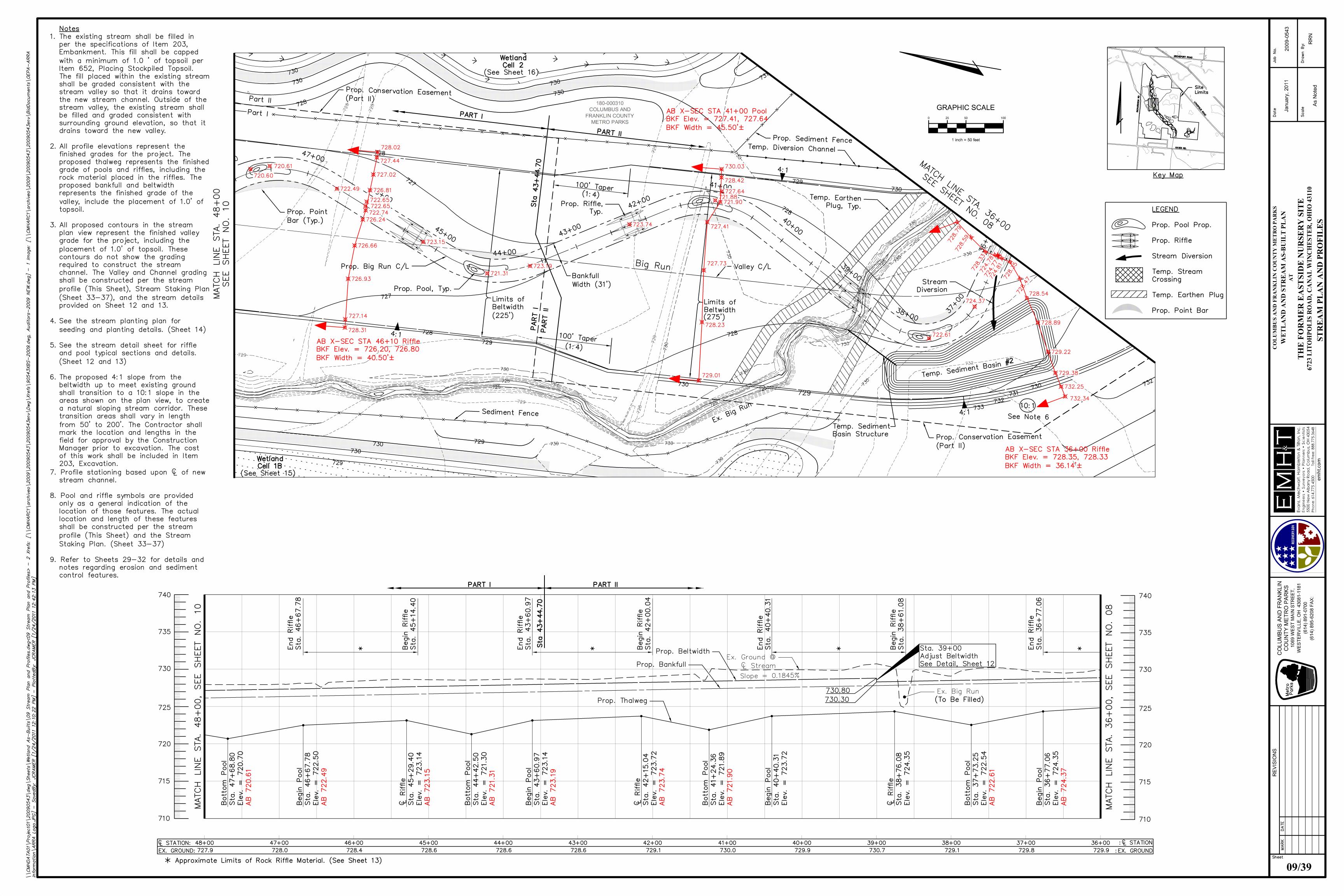


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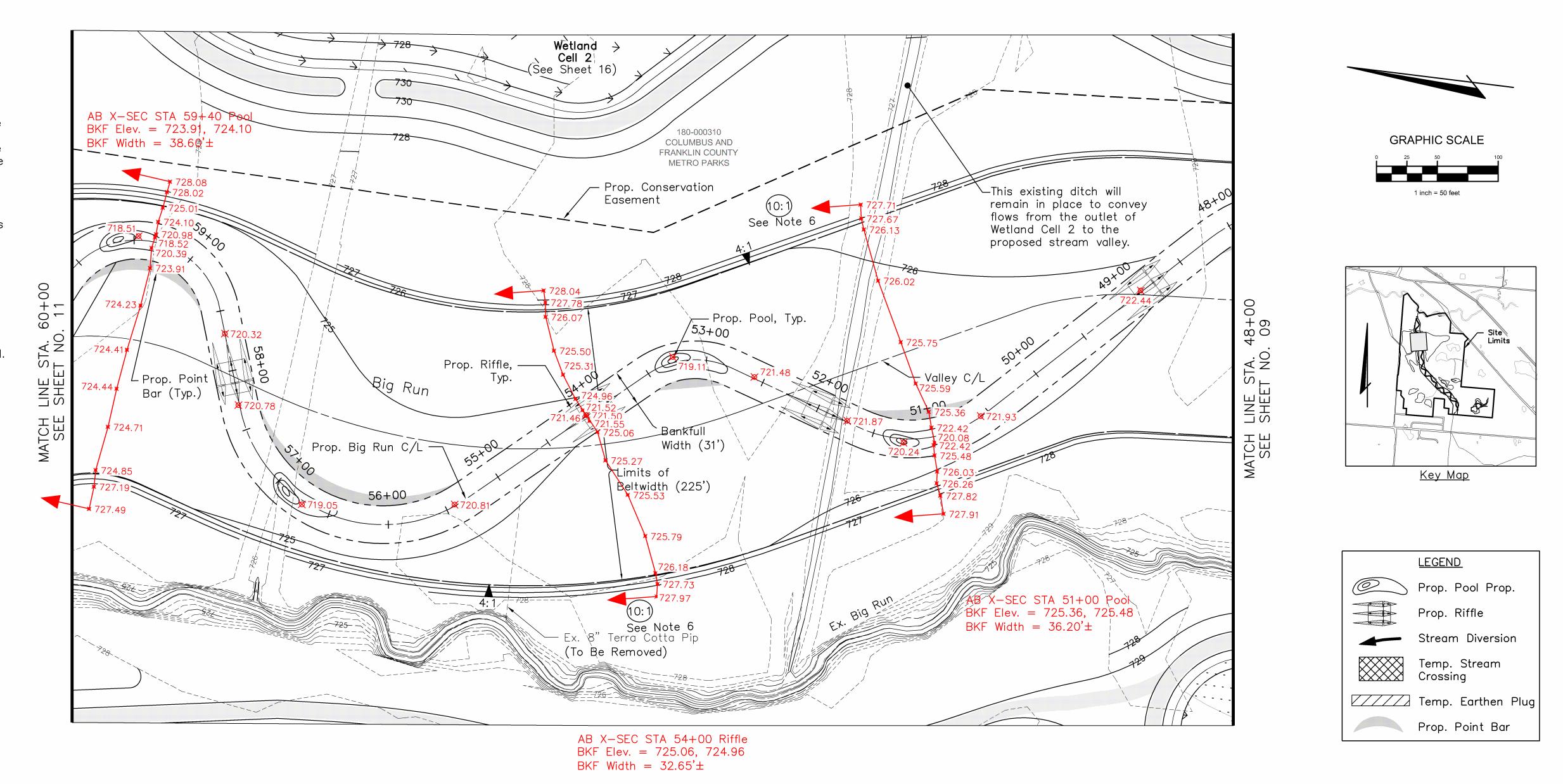


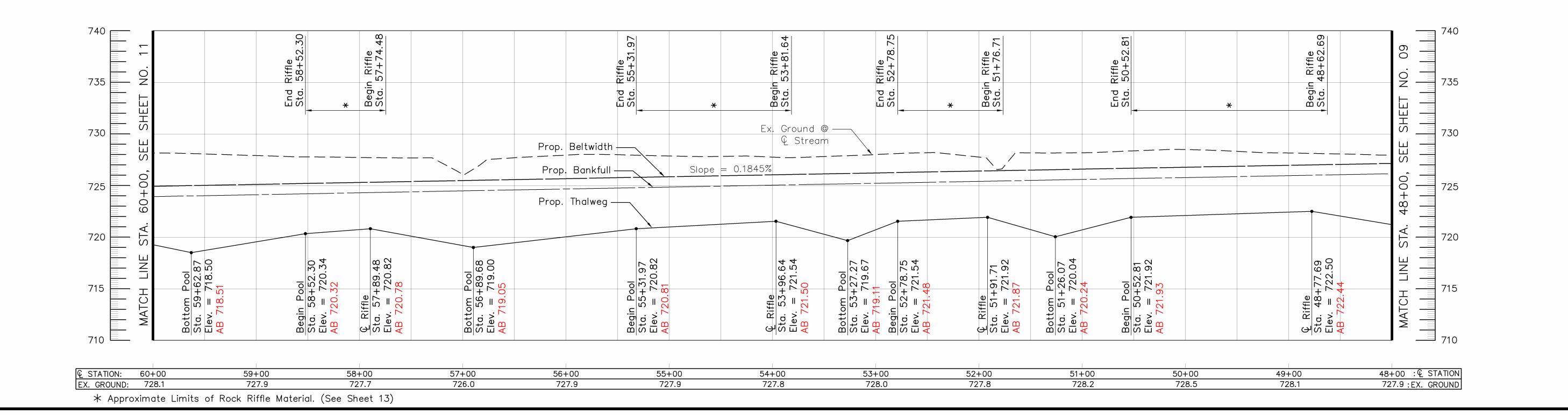
NURSERY SITE NCHESTER, OHIO 43110

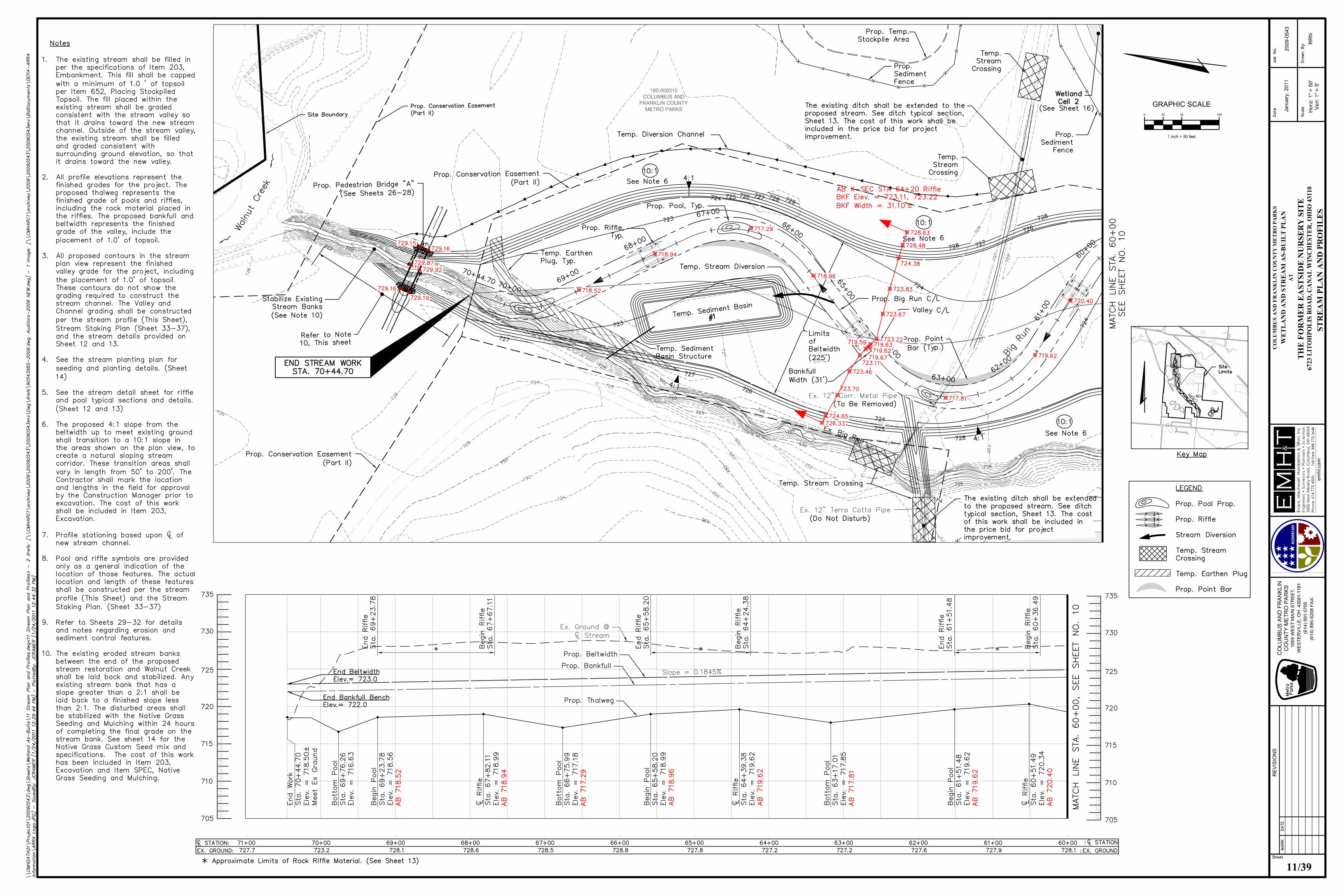
THE FORMER I



- 1. The existing stream shall be filled in per the specifications of Item 203, Embankment. This fill shall be capped with a minimum of 1.0 of topsoil per Item 652, Placing Stockpiled Topsoil. The fill placed within the existing stream shall be graded consistent with the stream valley so that it drains toward the new stream channel. Outside of the stream valley, the existing stream shall be filled and graded consistent with surrounding ground elevation, so that it drains toward the new valley.
- 2. All profile elevations represent the finished grades for the project. The proposed thalweg represents the finished grade of pools and riffles, including the rock material placed in the riffles. The proposed bankfull and beltwidth represents the finished grade of the valley, include the placement of 1.0' of topsoil.
- 3. All proposed contours in the stream plan view represent the finished valley grade for the project, including the placement of 1.0' of topsoil. These contours do not show the grading required to construct the stream channel. The Valley and Channel grading shall be constructed per the stream profile (this sheet), Stream Staking Plan (Sheet 33-37), and the stream details provided on Sheet 12 and 13.
- 4. See the stream planting plan for seeding and planting details. (Sheet 14)
- 5. See the stream detail sheet for riffle and pool typical sections and details. (Sheet 12 and 13)
- 6. The proposed 4:1 slope from the beltwidth up to meet existing ground shall transition to a 10:1 slope in the areas shown on the plan view, to create a natural sloping stream corridor. These transition areas shall vary in length from 50' to 200'. The Contractor shall mark the location and lengths in the field for approval by the Construction Manager prior to excavation. The cost of this work shall be included in Item 203, Excavation.
- 7. Profile stationing based upon & of new stream channel.
- 8. Pool and riffle symbols are provided only as a general indication of the location of those features. The actual location and length of these features shall be constructed per the stream profile (This Sheet) and the Stream Staking Plan (Sheet 33-37)
- 9. Refer to Sheets 29—32 for details and notes regarding erosion and sediment control features.







### **ROCK RIFFLES:**

Only imbedded (not visible) support and crest stone may be quarried limestone material. No construction rubble is permissible. All other material used to construct the rock riffle (all visible rock) shall be river rock, consisting of rounded stone with natural hues. The Contractor shall review samples of this material with the Construction Manager for approval prior to installation. See Riffle Materials Table for descriptions and sizes of materials.

### 1.0 CREST STONE

The crest stone shall be placed to the elevation shown and labeled on the stream profile. The crest elevation must pool water back to the base of the upstream riffle/run.

### Installation:

The crest elevation must be determined and the center weir stone installed first. Trench into the stream bed approximately 1.5 feet and place the stone(s) so that the center weir stone reaches the crest elevation. Trench and install the remaining crest stones across the stream, elevating them into the banks the specified distance. Finished elevations of the crest stone must concentrate flows through the center of the riffle.

### 2.0 SUPPORT STONE

### Installation:

Support stone must be placed tightly on both sides of the crest stone paying close attention to fit on the downstream side. Proper elevation of the support stone must be maintained and must be as high as the crest stone. Ten (10) feet downstream of the crest stone the support stone will be laid more loosely to create turbulence of flow across the riffle. At this point, the stone should start to become trenched into the streambed. At the end of the riffle, the support stone will be trenched fully into the stream bed to a depth of approximately 1.5 feet. Finished elevations of the support stone must concentrate flows across the center of the riffle and create non-laminar (turbulent) flow. Support stones will continue up the banks to the final elevation. Support stone will be trenched into the banks to support the crest stone.

### 3.0 FILL STONE

### Installation:

After the installation of the larger crest and support stones, fill all voids with Fill Stone and compact with an excavator bucket. Final grading and transition with the upper bank area can be accomplished using this stone size.

### 4.0 PAYMENT

The cost of all labor and materials associated with the construction of rock riffles as shown on this plan, including crest, support and fill stone, shall be included in the price bid for Item Spec., Rock Riffle, As Per Plan.

### BOULDER TOE:

### 1.0 Material:

The boulder toe material may consist of guarried limestone (no construction rubble is permissible). The Contractor shall review samples of this material with the Construction Manager for approval prior to installation. The size of this material shall be consistent with the gradation of Type 'C' Rock Channel Protection, per ODOT Item 601.

### 2.0 Installation:

The boulder toe material shall be imbedded into the channel bottom and channel bank to the minimum depths shown on Detail 'C'. Filter fabric material per ODOT Item 712.09, Type B, shall be included in the construction of the boulder toe reinforcement, as demonstrated on Detail 'C'. Over-excavation of the channel bank to install the boulder toe reinforcement shall be backfilled with compactable material that is placed in lifts and graded to conform to the designed channel bank, and reinforced with the geotextile material specified by this plan.

### 3.0 Payment:

The cost of all labor and materials associated with the placement of Boulder Toe. shall be included in the price bid for Item Spec., Boulder Toe, As Per Plan.

### COIR ROLL:

### 1.0 Material:

Rolls shall consist of biodegradable material 16 inches in diameter with a density of 7 lbs./cu.ft. The coir roll outer netting shall consist of a bristle coir twine with a breaking strength of 90 lbs. Hardwood stakes to anchor the coir rolls shall be 2"x2"x36" in size. The specified length is a minimum and may need to be adjusted to allow for sufficient anchoring.

The Contractor may use coir rolls manufactured by RoLanka Products (800) 760-3215, or approved equal.

### 2.0 Installation:

Refer to Detail 'A' for a schematic of the location of the coir roll material along the channel and Detail 'C' for a schematic of the location of the coir rolls with respect to the other bank reinforcement materials.

The coir rolls shall be installed after the boulder toe material is in place. The upstream and downstream ends of the coir roll shall be bent back into the channel bank to prevent stream flow from cutting behind the Rolls. The ends of abutting coir rolls shall be tied together with twine. Hardwood stakes shall be driven into the native, undisturbed soil behind the Rolls. The Rolls shall be tied to the stakes with twine. Stakes shall be placed at the beginning and end of each Roll and at a maximum spacing of 2 feet.

### 3.0 Payment:

The cost of all labor and materials associated with the installation of the coir rolls and stakes shall be included in the price bid for Item Spec., Coir Roll, As Per Plan.

### LIVE STAKES:

### 1.0 Material:

Live stake material shall be dormant and gathered locally (within or in proximity to the project site) or purchased from a reputable commercial supplier. The Contractor may use live stakes supplied by Ernst Conservation Seeds (800) 873-3321, or approved equal. This material shall be planted only during its natural dormancy period, extending from late fall through early spring. Stakes shall be 1/2 to 2 inches in diameter, 2 to 3 feet in length, and living based on the presence of young buds and green bark. Prior to installation, the stakes shall be cut so that they are angled on the bottom and flush on the top.

All harvested or purchased live stake material shall be preserved in a cool. moist environment until installation. Plant material that has been allowed to dry out or is not preserved in a dormant state prior to installation shall be discarded.

See Stream Planting Plan for Material List.

### 2.0 Installation:

Refer to Detail 'A' for a schematic of the location of the live stakes along the channel and Detail 'C' for a schematic of the location of the live stakes with respect to the other bank reinforcement materials.

Live stakes shall be installed in two (2) rows, with 2.0-foot spacing between the stakes. Three-fourths of the stake is to be imbedded within the channel bank. The angle of the imbedded stake to the channel bank shall be between 30 and 60 degrees. When installed, at least two (2) buds should remain above the ground surface and those buds shall be oriented upwards.

Live stakes that split or become bent or broken during installation shall be removed from the channel bank and discarded.

### 3.0 Payment:

The cost of all labor and materials associated with the installation of live stakes shall be included in the price bid for Item Spec., Stream Planting, As Per Plan.

### STOCKPILE COBBLE MATERIAL:

Remove and stockpile any available cobble stream bed material through the reach of the existing stream channel to be excavated/relocated. Stockpiled material shall be replaced within the excavated/relocated stream bed upon completion. Cost of this work to be included in the price bid for the various related items.

### **GEOTEXTILES:**

The specified geotextile shall meet the specifications identified on this plan, unless otherwise approved by the Construction Manager.

Geotextile shall be placed in accordance with ODOT CMS Item 671, and manufacturer's recommendations.

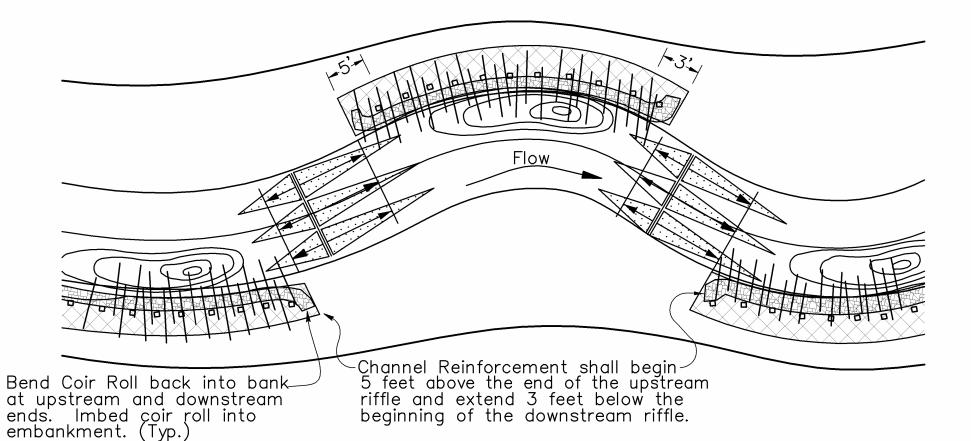
The geotextile Rolls shall be furnished with suitable wrapping for protection against moisture and extended ultraviolet exposure prior to placement. Each Roll shall be labeled or tagged to provide product identification sufficient for field inventory and quality control purposes. Rolls shall be stored in a manner which provides identification, as well as protection from the elements. If stored outdoors, the Rolls shall be elevated and protected with a waterproof

### **INSTALLATION:**

into the bank.

- Over-excavation of the channel bank may be necessary to accomplish the installation of the boulder toe protection. The boulder toe protection shall be imbedded into the bottom of the channel to the depth specified on Detail C. this sheet.
- The live stakes shall be placed on top of the imbedded boulder toe
- material protruding into the native, undisturbed soil of the channel bank. - Soil material, including the specified topsoil, shall be placed to backfill the over-excavated channel bank.
- The specified seeding shall be applied to the disturbed/restored soil
- The first (lowest) row of the geotextile material shall be anchored to the restored soil material
- The coir roll material shall be installed and secured with the hardwood
- stakes protruding into the native, undisturbed soil of the channel bank. Any remaining rows of geotextile material shall be installed and anchored to the channel bank, with the last (highest) row "trenched"

	F	RIFFLE MATERIAL TABLE	
I.D.	DESCRIPTION	SIZE	% OF RIFFL VOLUME
Crest Stone	Stone to establish the crest and footing of the Riffle	Rock Channel Protection, Type C Type C shall consist of sizes such that at least 85 percent of the total material by weight shall be larger than 6 inches but less than an 18—inch square opening. At least 50 percent of the total material by weight shall be larger than 12—inch square opening.	30%
Support Stone	Stone to transition upstream and down stream of the crest	Rock Channel Protection, Type D Support Stone shall have a gradation of sizes such that at least 85% of the material by weight shall be between 4" and 8" in diameter, 50% of which shall be larger than 6" in diameter.	50%
Fill Stone	Stone that fills the voids between the larger stone: Cobble— rounded river rock	Fill stone shall have a gradation of sizes such that at least 85% of the material by weight shall be between 1" and 6" in diameter, 50% of which shall be larger than 3" in diameter.	20%



TYPICAL GEOTEXTILE LOCATION PLAN- DETAIL 'A' Not to Scale

### LEGEND

Limits of boulder toe, coir roll, \*\* Geotextile shall be an Erosion Control Mat, and geotextile reinforcement\*\*; refer to Detail "C", (This Sheet).

Riffle-Run Complex

Pool

Live Stake-

(Typ.)

Limits of boulder toe. coir roll & live stakes.

-Hardwood Stake (Typ.) (Typ.)

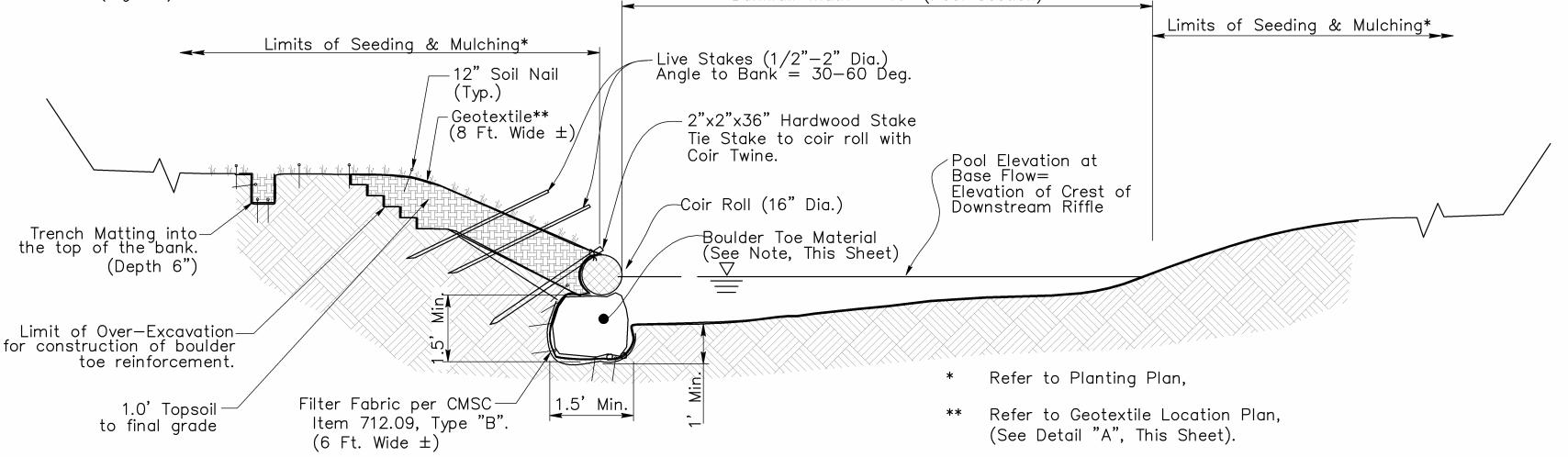
**NOTES** 

- 70% Straw/30% Coconut Fiber

Type C per 712.11 or approved equivalent:

- Photodegradable Polypropylene Netting

Bankfull Width = 40' (Pool Section)



CHANNEL REINFORCEMENT DETAIL - DETAIL 'C'

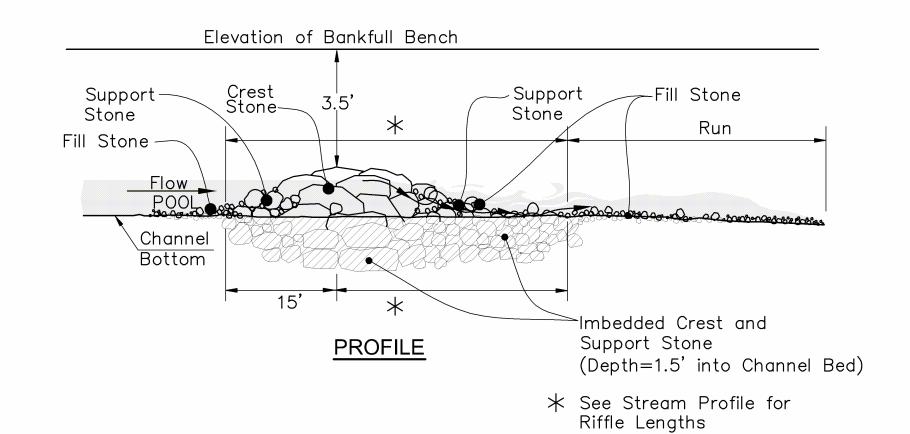
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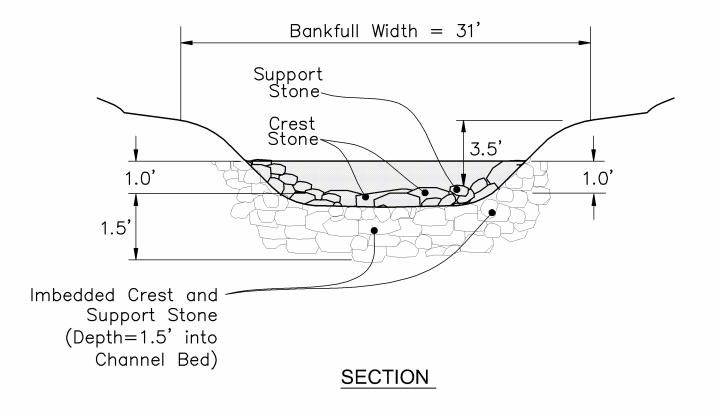
SIDE NURSERY SITE AL WINCHESTER, OHIO 431

THE FORMER
3 LITOHPOLIS ROA

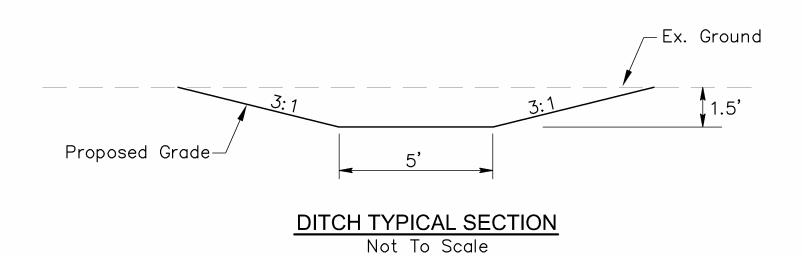
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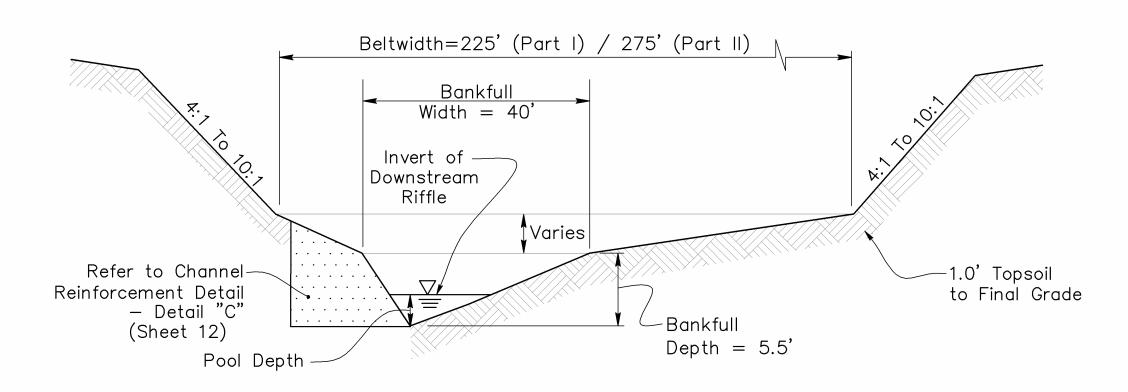




ROCK RIFFLE DETAIL - DETAIL 'B'
Not to Scale

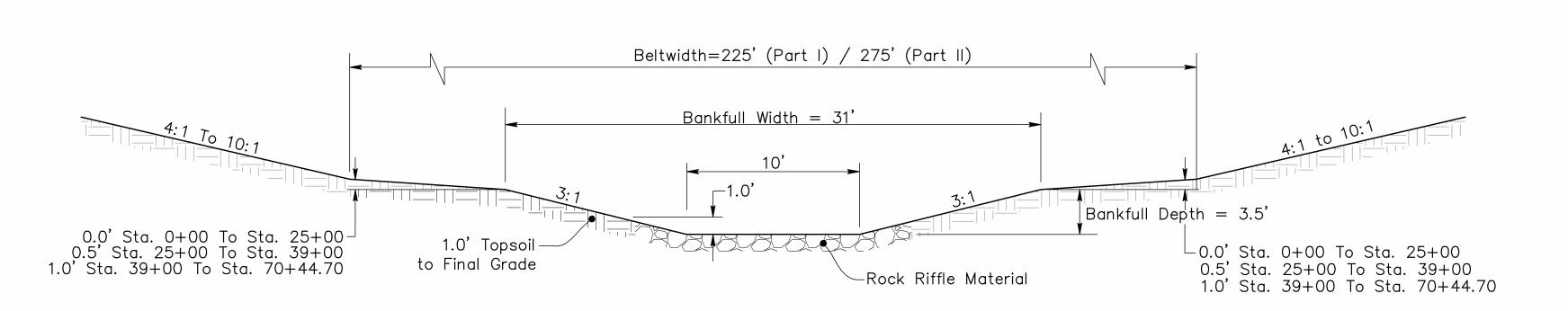


NOTE:
The proposed ditch shall be stabilized with Native Grass Seeding and Mulching immediately after construction. See Native Grass Seeding specifications on sheet 2 and seeding table on sheet 14.

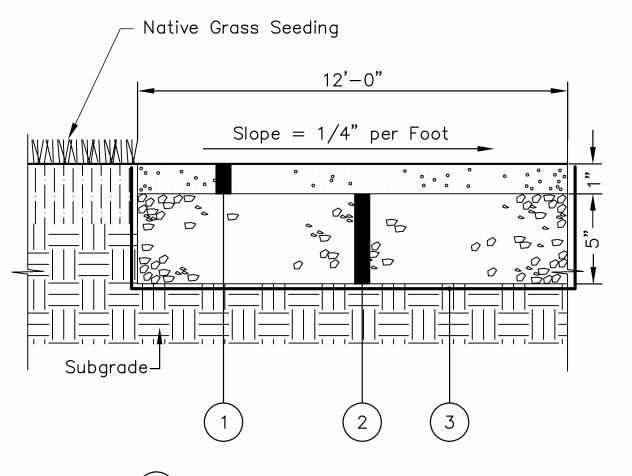


TYPICAL POOL SECTION (See Detail 'C', Sheet 12)

Not to Scale



TYPICAL RIFFLE SECTION (See Detail 'B')
Scale: 1"=5'



- 1) #10 Limestone Screenings with Dust Surface Course
- No. 57 Limestone Compacted
- Filter Fabric, Type B

PEDESTRIAN PATH DETAIL

Not To Scale

Scale Scale Drawn By:

ER, OHIO 43110

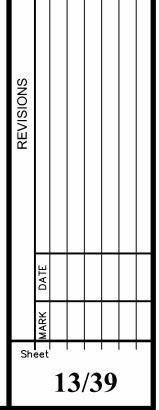
Scale Scale As Noted GDT

COLUMBUS AND FRANKLIN COUNTY METRO PARKS
WETLAND AND STREAM AS-BUILT PLAN
AT
THE FORMER EASTSIDE NURSERY SITE
723 LITOHPOLIS ROAD, CANAL WINCHESTER, OHIO 43110
STREAM DETAILS

Evans, Mechwart, Hambleton & Tilton, Inc. Engineers • Surveyors • Planners • Scientists 5500 New Albany Road, Columbus, OH 43054 Phone: 614,775,4500 Toll Free: 888,775,3648 emht.com

LUMBUS AND FRANKLIN OUNTY METRO PARKS 1069 WEST MAIN STREET, ESTERVILLE, OH 43081-1181 (614) 891-0700 (614) 895-6208 FAX:





### <u>Live Stakes</u>

Scientific Name Common Name Silky dogwood Cornus amomum Red-osier dogwood Cornus sericea Peachleaved willow Salix amygdaloides Salix discolor Pussy willow Sandbar willow Salix interior Black willow Salix nigra Silky Willow Salix sericea Physocarpus opulifolius Ninebark

<u>Zone 2</u> - <u>Streamside Shrubs & Trees</u>

### <u>Shrubs</u>

Common Name Black chokeberry Rough leaf dogwood Gray dogwood Red-osier dogwood Smooth alder Southern arrowwood Blackhaw Elderberry American hazelnut

Scientific Name Aronia melanocarpaCornus drummondii Cornus racemosa Cornus sericea Alnus serrulata Viburnum dentatum Viburnum prunifoluim Sambucas canadensis Corylus americana

### <u>Trees</u>

Common Name Cockspur hawthorne Shellbark hickory Swamp white oak Slippery elm Tulip tree Sycamore Eastern cottonwood Black cherry Swamp white oak Pin oak

Scientific Name Crataegus crus-galli Carya laciniosa Quercus bicolor Ulmus rubra Liriodendron tulipifera Platanus occidentalis Populus deltoides Prunus serotina Quercus bicolor Quercus palustris

### =Balled and burlap trees

\* Balled and burlap trees to be minimum 1" caliper diameter. #10 or #15 containerized trees may be substituted. Park grade trees may be used.

Balled and burlap trees to be planted at pools, 2 trees per pool, 5' from edge of bank, 1 tree per side (see plan view locations). Contractor to mark planting locations after construction of pools for approval by Construction Manager.

Remaining portion of Zone planted with 3—gallon trees as specified in stream planting table.

Zone 3 - Floodprone Area/Buffer

### <u>Trees</u>

Common Name Red maple Sugar maple Common hackberry Eastern redbud Cockspur hawthorne Tulip tree Black cherry Shaqbark hickory Red oak Bur oak Pin oak Slippery elm Beech Black walnut Black gum Pignut hickory White oak

Scientific Name Acer rubrum Acer saccharum Celtis occidentalis Cercis canadensis Crataegus crus-galli Liriodendron tulipifera Prunus serotina Carya ovata Quercus rubra Quercus macrocarpa Quercus palustris Ulmus rubra Fagus gandifolia Juglans nigra Nyssa sylvatica Carya glabra

Quercus alba

	STREAM PI	LANTING TABLE			
ZONE	MATERIAL	DENSITY	SPECIES	QUA	VTITY
				PART I	PART II
Zone 1	Live Stakes	2 rows with 2' spacing	7	3,380	5,260
Zone 2	3 Gallon Shrubs 3 Gallon Trees Balled & Burlap Trees*	20'x20' Centers 20'x20' Centers 2 per pool as indicated	7 7 7	1,268 1,268 18	2,247 2,247 30
Zone 3	3 Gallon Trees	16'x16' Centers	10	442	837

The species column designates the minimum number of species that shall be selected from each planting list.

	NATIVE GRA	ASS SEEDING	TABLE	
TYF	PE		APPLICATION RATES	APPLICATION DATES
OVER SEED: Annual Rye (Grain) or Winter Rye (Grain) or Oats (Grain)	(Lolium multiflorum) (Secale cereale) (Avena sativa)		40 lbs/acre 40 lbs/acre 15 lbs/acre	March — October October — February March — October
PERMANENT SEED: Native Grass Custom Seed Mi	x:			
<u>Common Name</u>	<u>Scientific Name</u>	<u>Percentage</u>	7 lbs/acre	October 1st — May 15th
Little bluestem Big bluestem Riverbank wild rye Silky wild rye Virginia wild rye Indian grass Switchgrass Black—eyed susan Ox—eye sunflower Gray—headed coneflower Cup plant Tall white bread tongue Ohio spiderwort Joe pye weed Wild bergamot	Andropogon scoparius Angropogon gerardii Elymus riparius Elymus villosus Elymus virginicus Sorghastrum nutans Panicum virgatum Rudbeckia hirta Heliopsis helianthoides Ratibida pinnata Silphium perfoliatum Penstemon digitalis Tradescantia ohioensis Eupatorium fistulosum Monarda fistulosa	15 10 10 10 10 7 7 6 4 4 3 2 1		

Over seed shall be applied with the permanent seed to quickly stabilize the site.

This is required because the permanent seed takes much longer to germinate than the over seed.

### LANDSCAPING WARRANTY

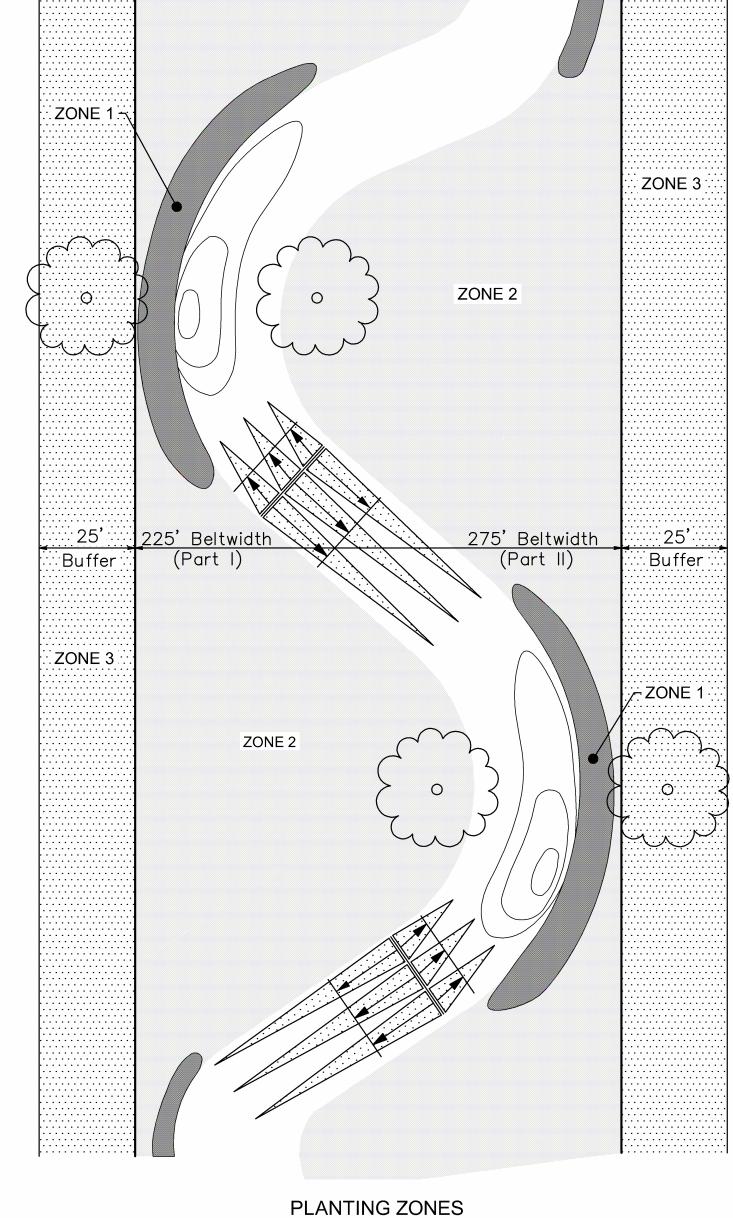
Landscaper shall warranty at least an 80% survivability of all #3 containerized shrub and tree materials for one (1) year from planting date. Any dead, dying, or diseased material shall be replaced with like material.

Landscaper shall warranty 100% of all balled and burlap and #10 and larger containerized tree materials for one (1) year from planting date. Any dead, dying, or diseased plants shall be replaced with like species.

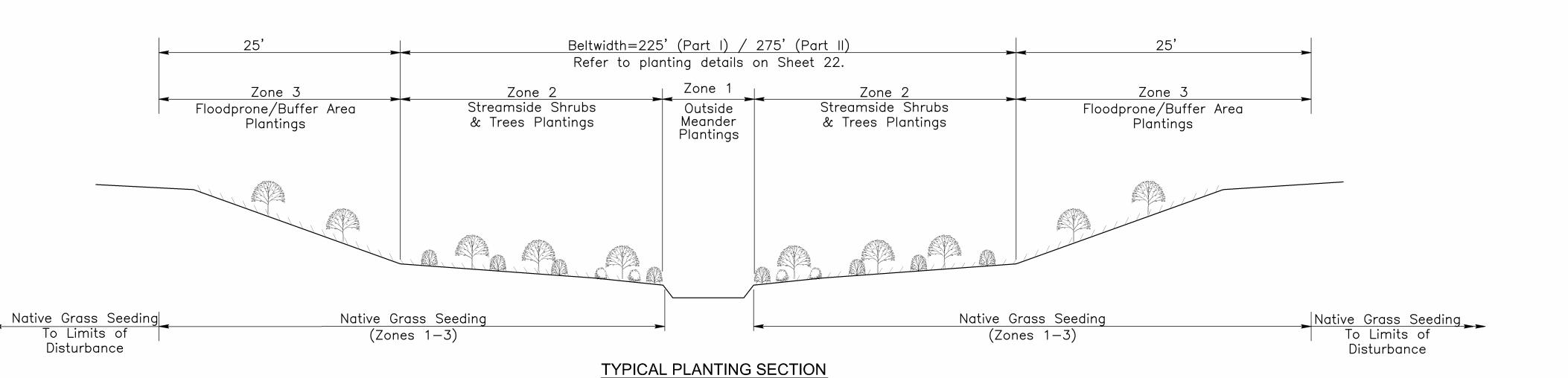
Contractor shall insure that all material is thoroughly watered at time of planting, and once every week during the period of establishment. Sprinklers, gator bags or other such methods shall be used if rainfall is inadequate.

Final species selection will be based upon availability shall be approved in writing by the Construction Manager prior to ordering the plant material.

Permanent Seed and Over Seed to occur in Zones 1, 2, & 3 — See Table above.



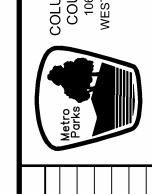
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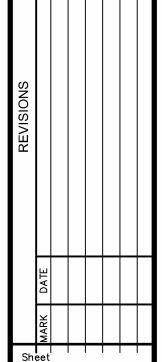


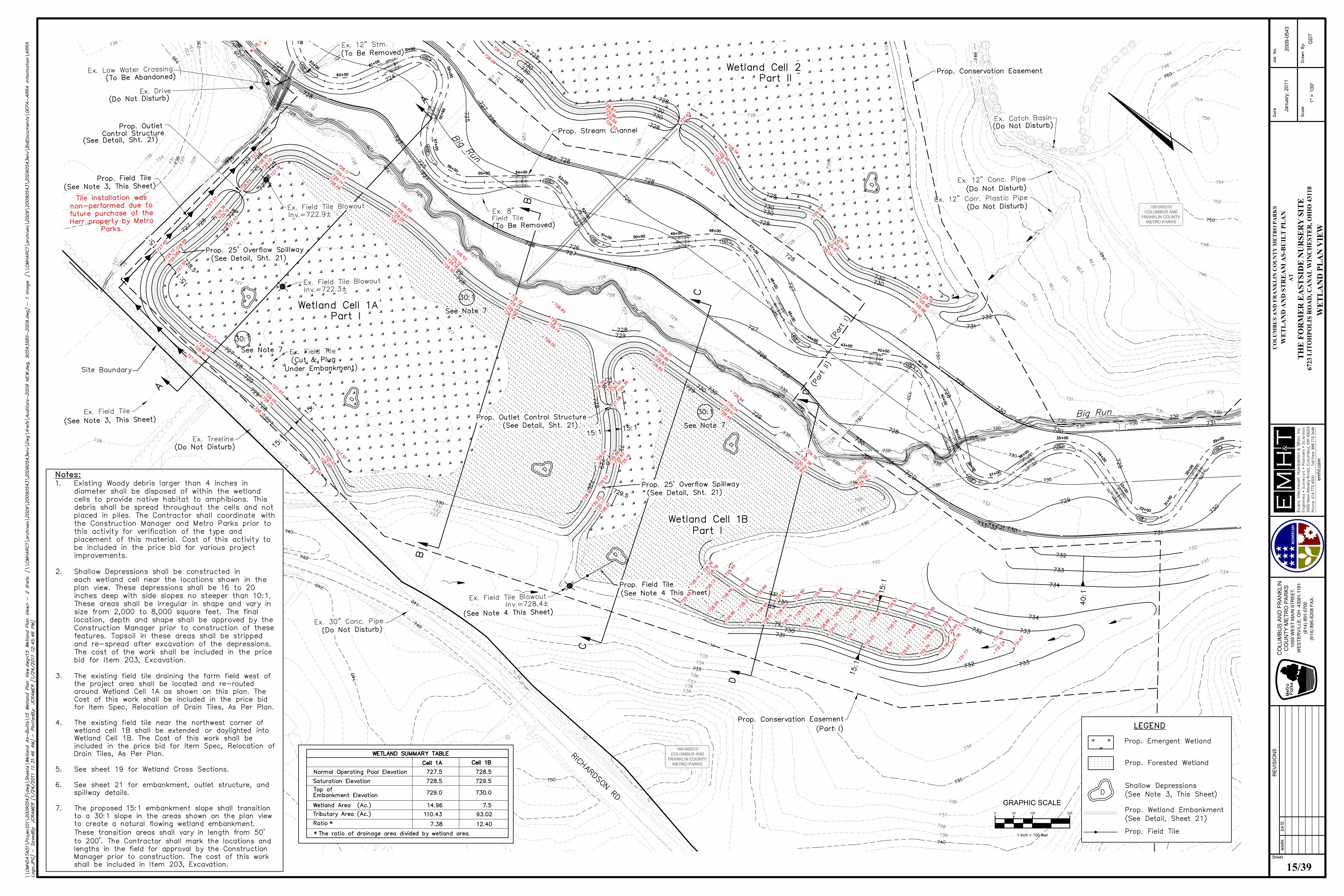
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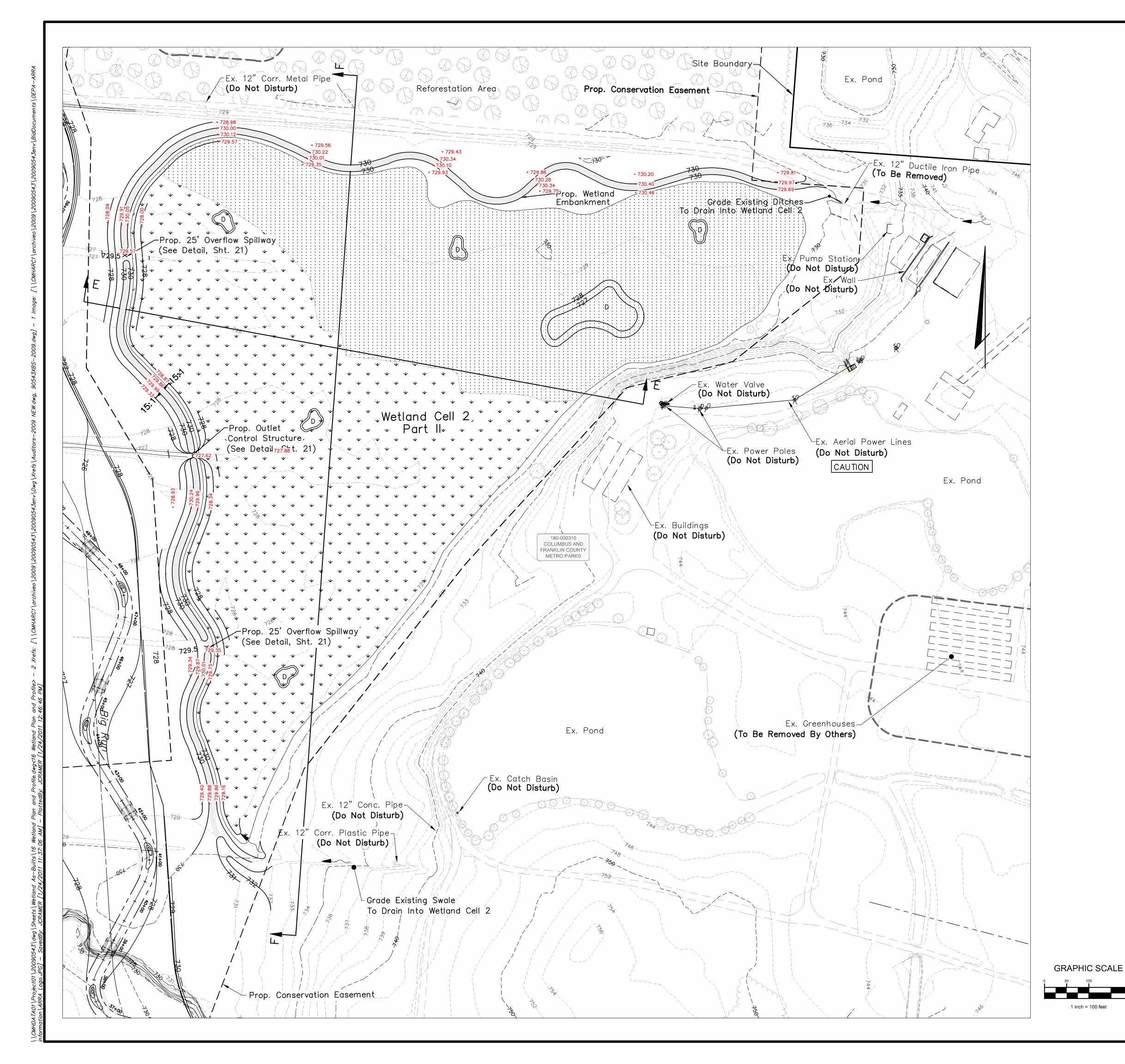
THE FORMER EAS' 23 LITOHPOLIS ROAD, CA

M









### Notes:

- Existing Woody debris larger than 4 inches in diameter shall be disposed of within the wetland cells to provide native habitat to amphibians. This debris shall be spread throughout the cells and not placed in piles. The Contractor shall coordinate with the Construction Manager and Metro Parks prior to this activity for verification of the type and placement of this material. Cost of this activity to be included in the price bid for various project improvements.
- Shallow Depressions shall be constructed in each wetland cell near the locations shown in the plan view. These depressions shall be 16 to 20 inches deep with side slopes no steeper than 10:1. These areas shall be irregular in shape and vary in size from 2,000 to 8,000 square feet. The final location, depth and shape shall be approved by the Construction Manager prior to construction of these features. Topsoil in these areas shall be stripped and re-spread after excavation of the depressions. The cost of the work shall be included in the price bid for Item 203, Excavation.
- The existing ditches near the southwest and northeast corners of Wetland Cell 2 shall be graded to drain into Wetland Cell 2. The cost of this activity to be included in the price bid for the various project improvements.
- See sheets 19-20 for Wetland Cross Sections.
- See sheet 21 for embankment, outlet structure, and spillway details.



Prop. Forested Wetland

Prop. Emergent Wetland



Prop. Reforestation Area



Shallow Depressions (See Note 2, This Sheet)

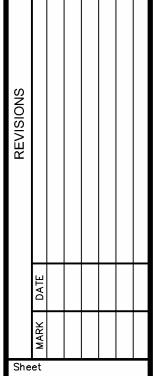
Prop. Wetland Embankment (See Detail, Sheet 21)

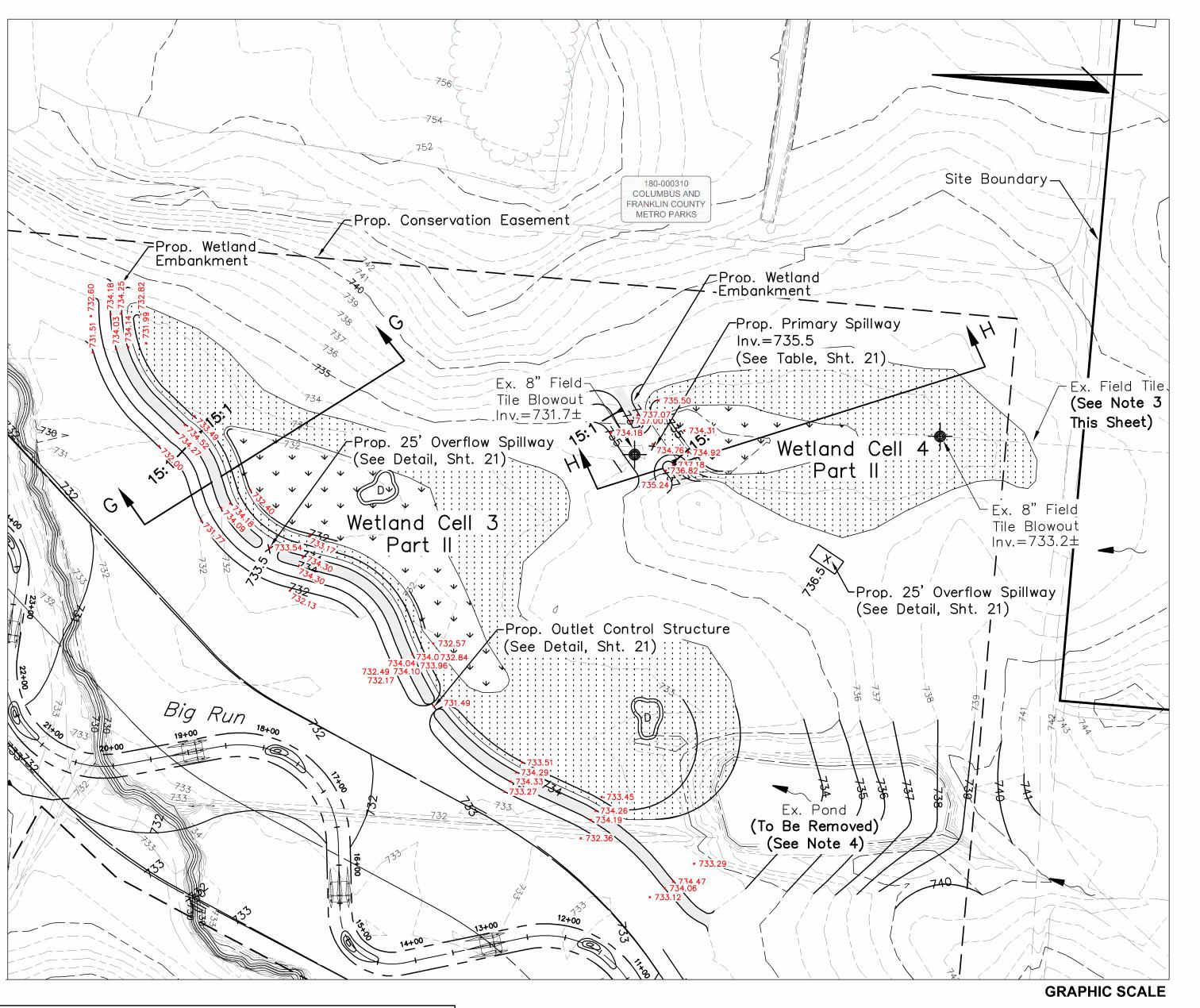
WETLAND SUMMARY TABLE							
	Cell 2						
ormal Operating Pool Elevation	728.5						
aturation Elevation	729.5						
op of mbankment Elevation	730.0						
etland Area (Ac.)	25.44						
ibutary Area (Ac.)	114.95						
atio *	4.52						
The ratio of drainage area divid	ded by wetland area.						

THE FORMER EAST 5723 LITOHPOLIS ROAD, CAN WETLAN







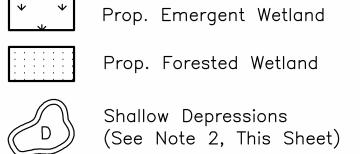


1 inch = 100 feet

### Notes:

Existing Woody debris larger than 4 inches in diameter shall be disposed of within the wetland cells to provide native habitat to amphibians. This debris shall be spread throughout the cells and not placed in piles. The Contractor shall coordinate with the Construction Manager and Metro Parks prior to this activity for verification of the type and placement of this material. Cost of this activity to be included in the price bid for various project improvements.

- Shallow Depressions shall be constructed in each wetland cell near the locations shown in the plan view. These depressions shall be 16 to 20 inches deep with side slopes no steeper than 10:1. These areas shall be irregular in shape and vary in size from 2,000 to 8,000 square feet. The final location, depth and shape shall be approved by the Construction Manager prior to construction of these features. Topsoil in these areas shall be stripped and re-spread after excavation of the depressions. The cost of the work shall be included in the price bid for Item 203, Excavation.
- The existing field tile near Wetland Cell 4 shall be cut in place under the proposed embankment per the embankment detail on sheet 21. Cost to be included in the price bid for Item 202, Removal of Drain Tile, Complete.
- The existing pond near the southern end of Wetland Cell 3 shall be filled per the embankment specifications, graded to drain into Wetland 3, and capped with topsoil. The cost of this work should be included in the price bid for Items 203 and 652.
- See sheet 20 for Wetland Cross Sections.
- See sheet 21 for embankment, outlet structure, and spillway details.



Tributary Area (Ac.)

Prop. Wetland Embankment

204.02

\* The ratio of drainage area divided by wetland area.

(See Detail, Sheet 21)

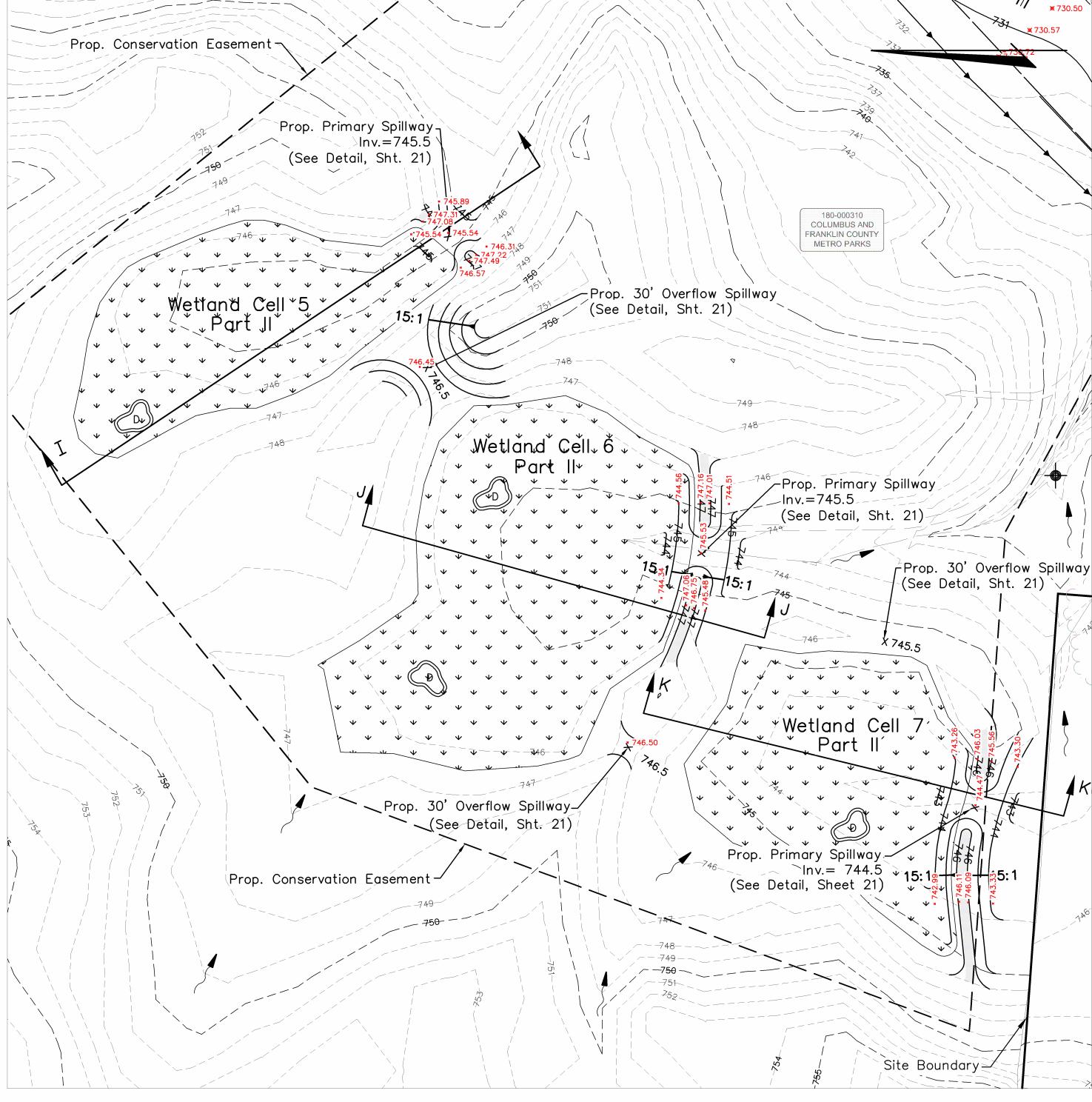
<u>LEGEND</u>

WETLAND SUMMARY TABLE										
	Cell 3 Cell 4 Cell 5 Cell 6									
Normal Operating Pool Elevation	<del>732.5</del> 732.0	<del>735.5</del> 734.7	745.5	745.5	744.5					
Saturation Elevation	<del>733.5</del> 733.0	<del>736.5</del> 735.7	746.5	746.5	745.5					
Top of Embankment Elevation	734.0	737.0	747.0	747.0	746.0					
Wetland Area (Ac.)	4.08	1.90	2.43	4.27	2.62					

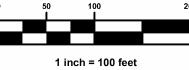
178.11

13.19 21.57

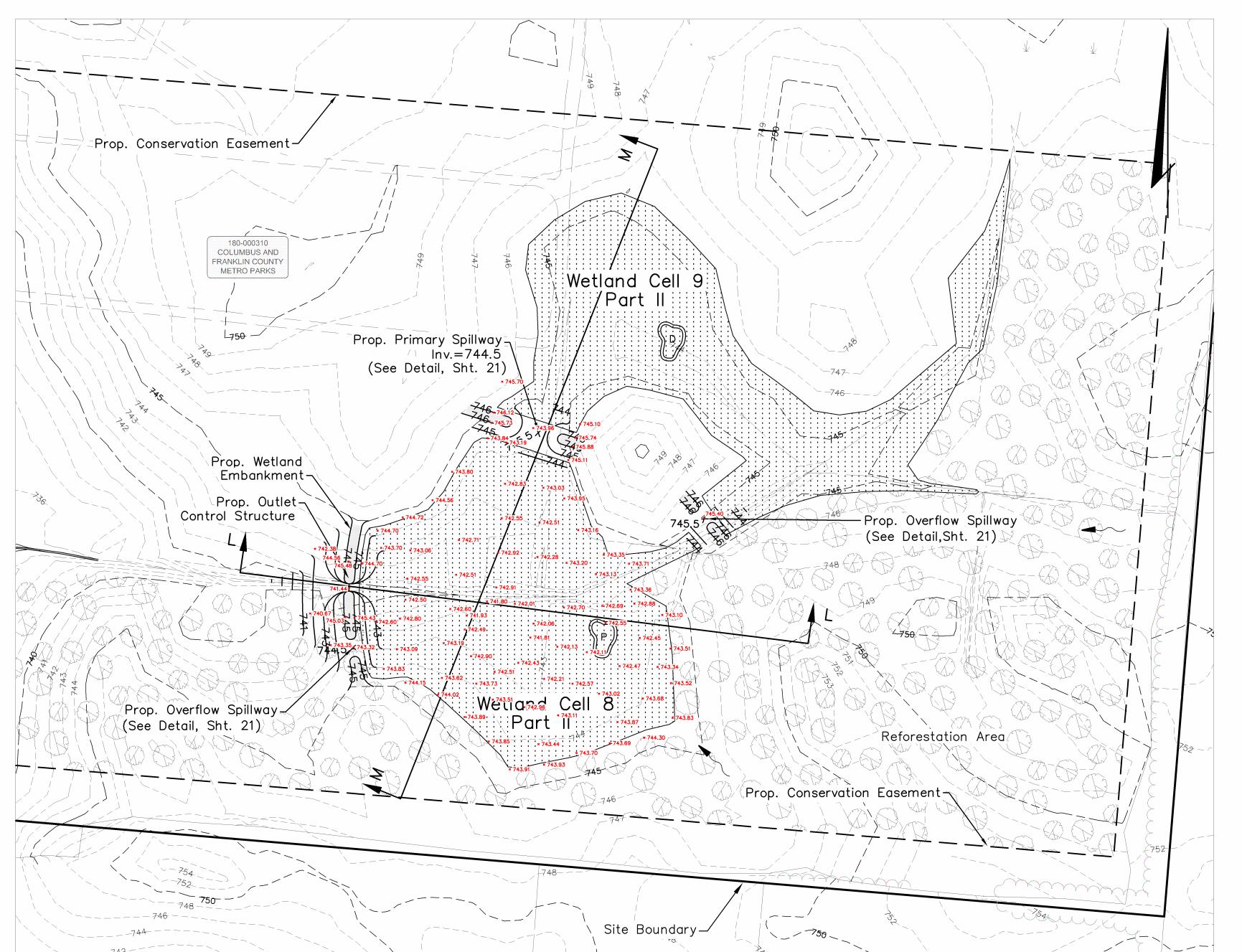
50.00 93.74 5.42 5.05 5.38



**GRAPHIC SCALE** 



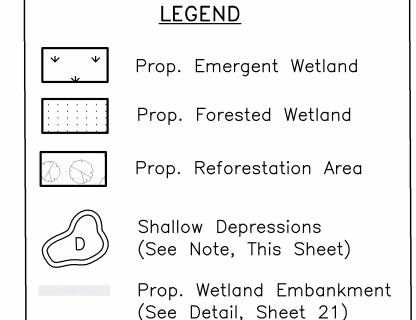
DATE		•	Metro			
DATE	REVISIONS					
		DATE				



Notes:

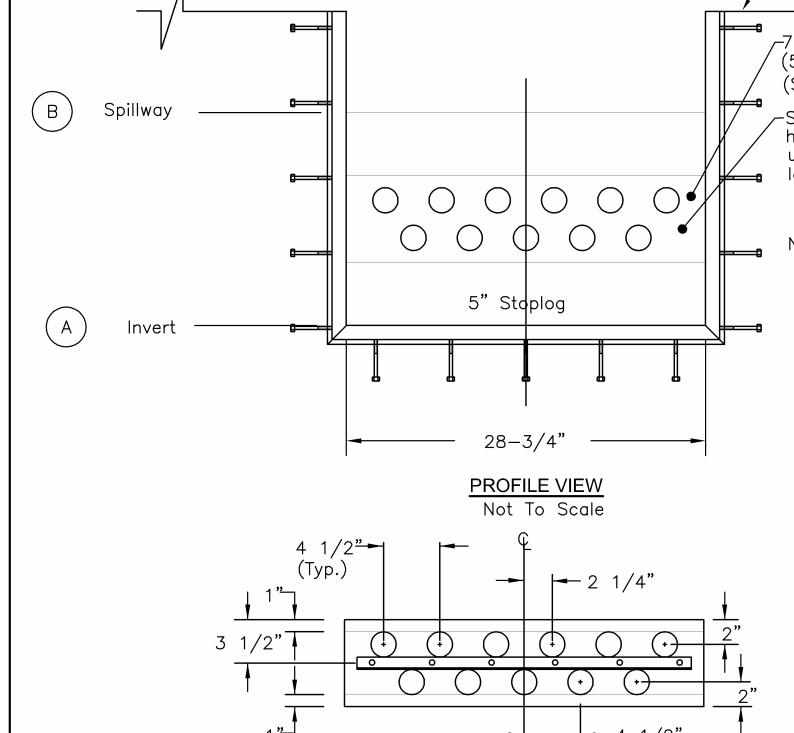
1. Existing Woody debris larger than 4 inches in diameter shall be disposed of within the wetland cells to provide native habitat to amphibians. This debris shall be spread throughout the cells and not placed in piles. The Contractor shall coordinate with the Construction Manager and Metro Parks prior to this activity for verification of the type and placement of this material. Cost of this activity to be included in the price bid for various project improvements.

- 2. Shallow Depressions shall be constructed in each wetland cell near the locations shown in the plan view. These depressions shall be 16 to 20 inches deep with side slopes no steeper than 10:1. These areas shall be irregular in shape and vary in size from 2,000 to 8,000 square feet. The final location, depth and shape shall be approved by the Construction Manager prior to construction of these features. Topsoil in these areas shall be stripped and re—spread after excavation of the depressions. The cost of the work shall be included in the price bid for Item 203, Excavation.
- 3. The existing ditch and low areas within Wetland Cell 8 shall be filled per the embankment specifications to an elevation of 743.0. The topsoil in the fill areas shall be stripped and stockpiled prior to placing the fill and restored upon completion. The cost of this work shall be included within Item 651, 652 and 203.
- 4. The existing ditch and low areas within Wetland Cell 9 shall be filled per the embankment specifications to anelevation of 744.0. The topsoil in the fill areas shall be stripped and stockpiled prior to placing the fill and restored upon completion. The cost of this work shall be included within Item 651, 652 and 203.
- 5. See sheet 20 for Wetland Cross Sections.
- 6. See sheet 21 for embankment, outlet structure, and spillway details.



**GRAPHIC SCALE** 

WETLAND SUMMARY TABLE								
	Cell 8	Cell 9						
Normal Operating Pool Elevation	<del>743.5</del> 742.5	<del>744.5</del> 744.0						
Saturation Elevation	<del>744.5</del> 743.5	<del>745.5</del> 745.0						
Top of Embankment Elevation	745.0	746.0						
Wetland Area (Ac.)	3.42	3.23						
Tributary Area (Ac.)	10.92	54.59						
Ratio *	3.19	16.90						
*The ratio of drainage area divided by wetland area.								



7" Stoplog with 2 rows of 2" dia. holes (11 Total) (5 holes at Elev. A + 6", 6 holes at Elev. A + 10") (See Baffle Stoplog Detail Below)

Stoplog shall be double wrapped with filter fabric to have AOS of 20 to 40 sieve and be resistant to ultraviolet decay. See detail below for hole drilling locations.

### NOTES

Top of Endwall (C)

- 1. The outlet control structure with stoplogs (See detail sheet 21) shall be constructed at the location and elevation shown on these plans as early as possible in the construction sequence. (Refer to sheet 29).
- 2. The temporary baffle stoplogs shall be placed in the outlet structure as shown on this detail.
- 3. The basin shall be dewatered to the invert of the proposed wetlands after each rainfall to maintain the appropriate basin volume.
- 4. The sediment control structure shall be removed only after the upstream drainage area is stabilized. Dewatering and removal shall not cause sediment to be discharged.
- 5. Apply temporary baffle stoplogs to outlet control structures at wetland cells 1B, 8 and 9.

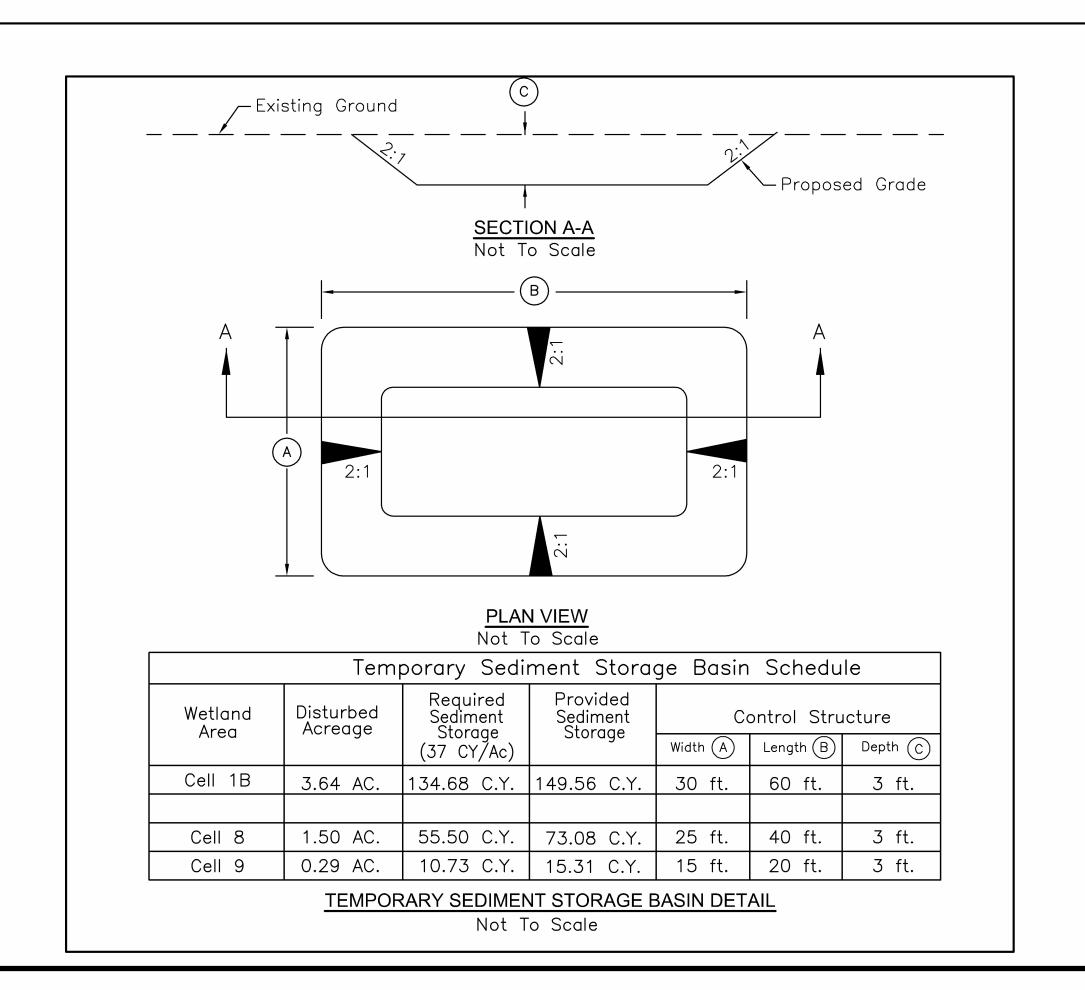
	Temporary Sediment Outlet Control Structure Schedule										
Wetland Area	Tributary Acreage	Required Basin Volume (67 CY/Ac)	Provided Basin Volume (C.Y.)		Structure  Spillway  B	Elevations Top of Endwall (C)					
Cell 1B	93.02	6,232.34	9,371.92 C.Y.	727.50	729.00	729.00					
Cell 8	10.92	731.64	1,637.83 C.Y.	742.50	743.58	745.00					
Cell 9	54.59	3,657.53	4,430.72 C.Y.	743.50	745.58	746.00					

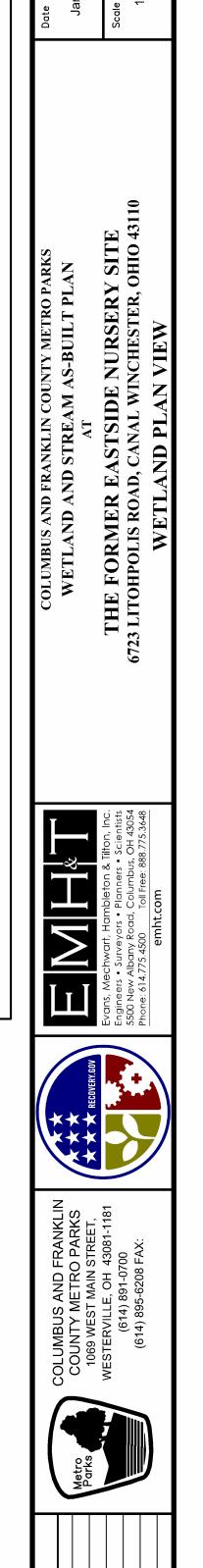
BAFFLE STOPLOG DETAIL

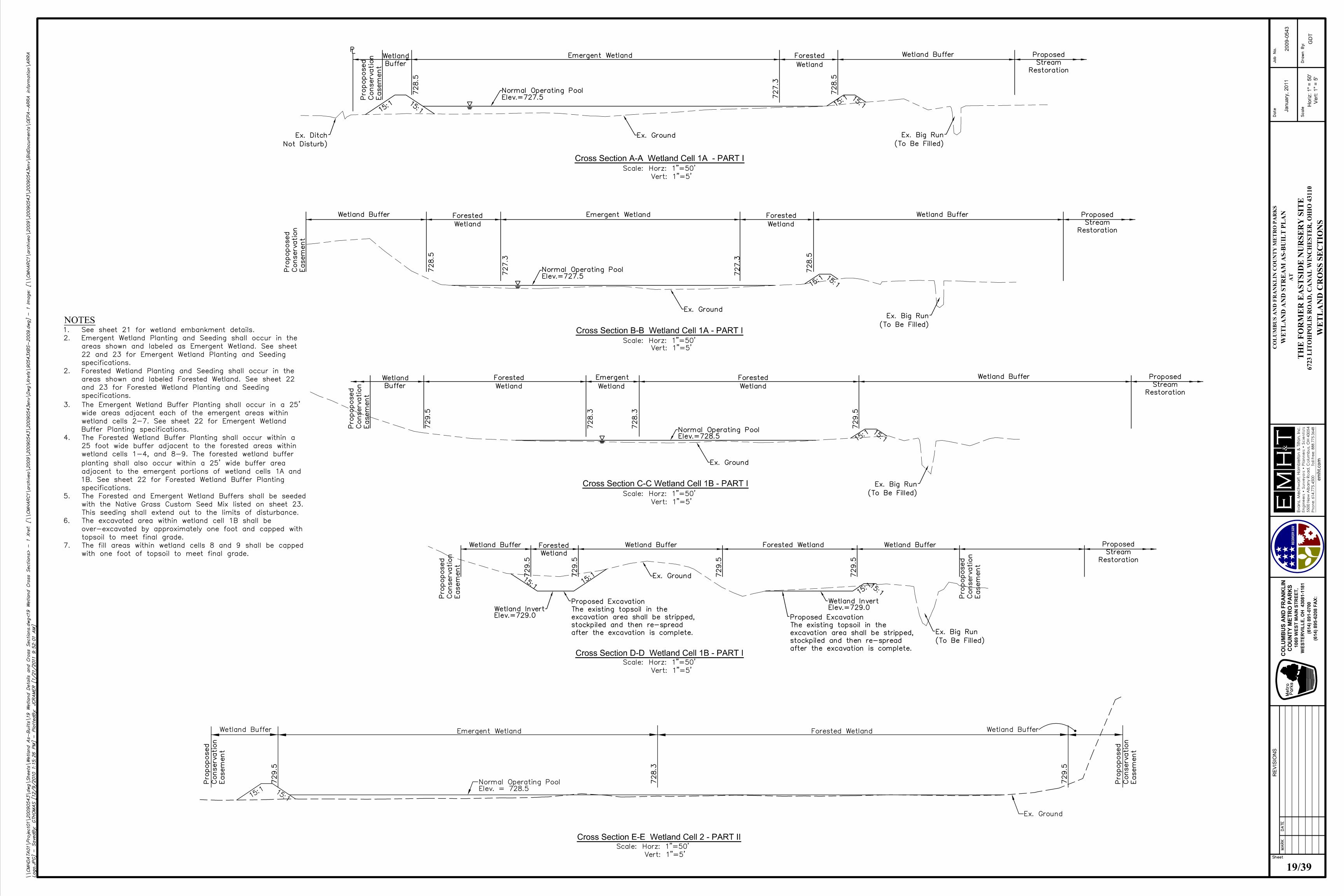
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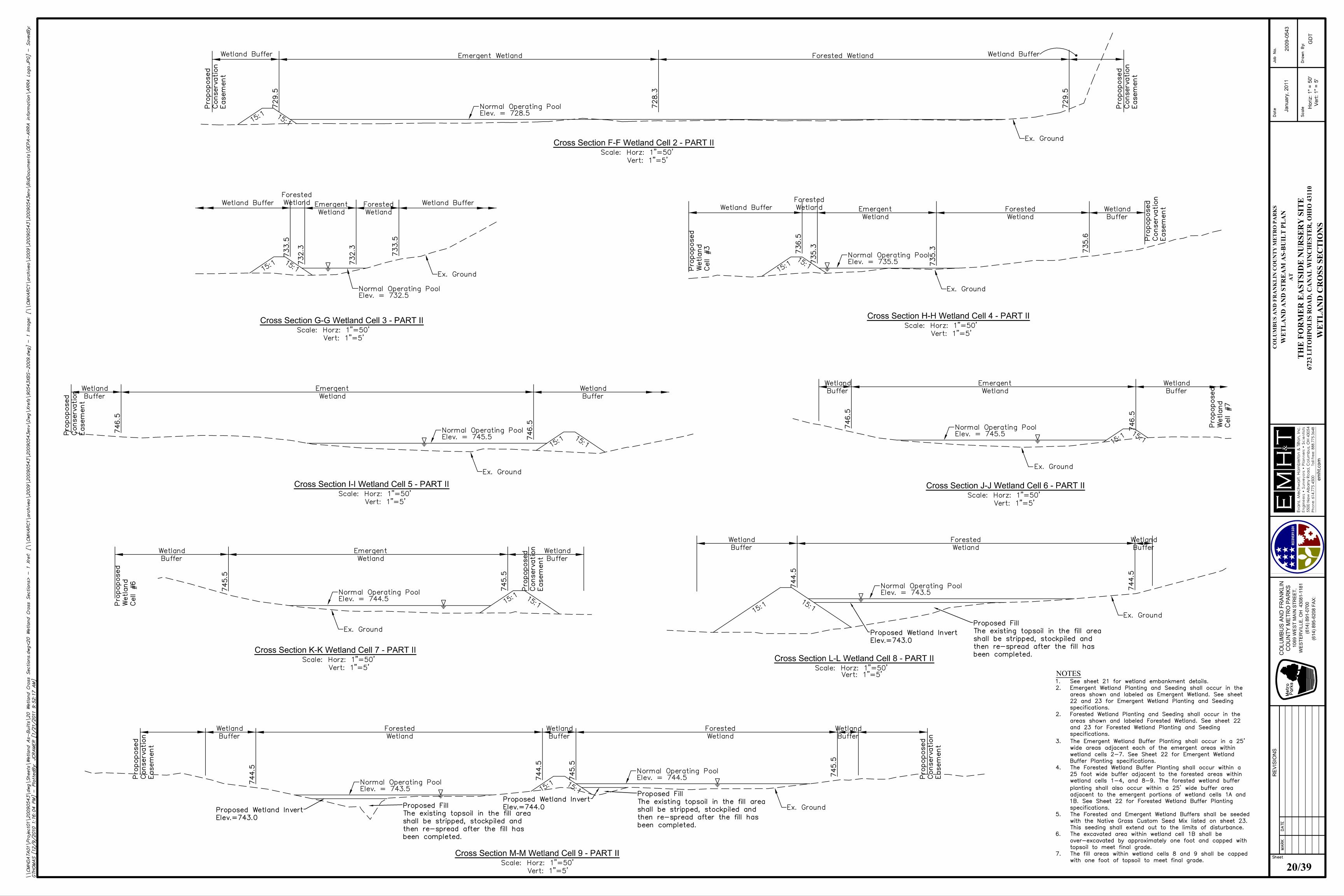
TEMPORARY BAFFLE STOPLOGS SEDIMENT OUTLET CONTROL STRUCTURE DETAIL

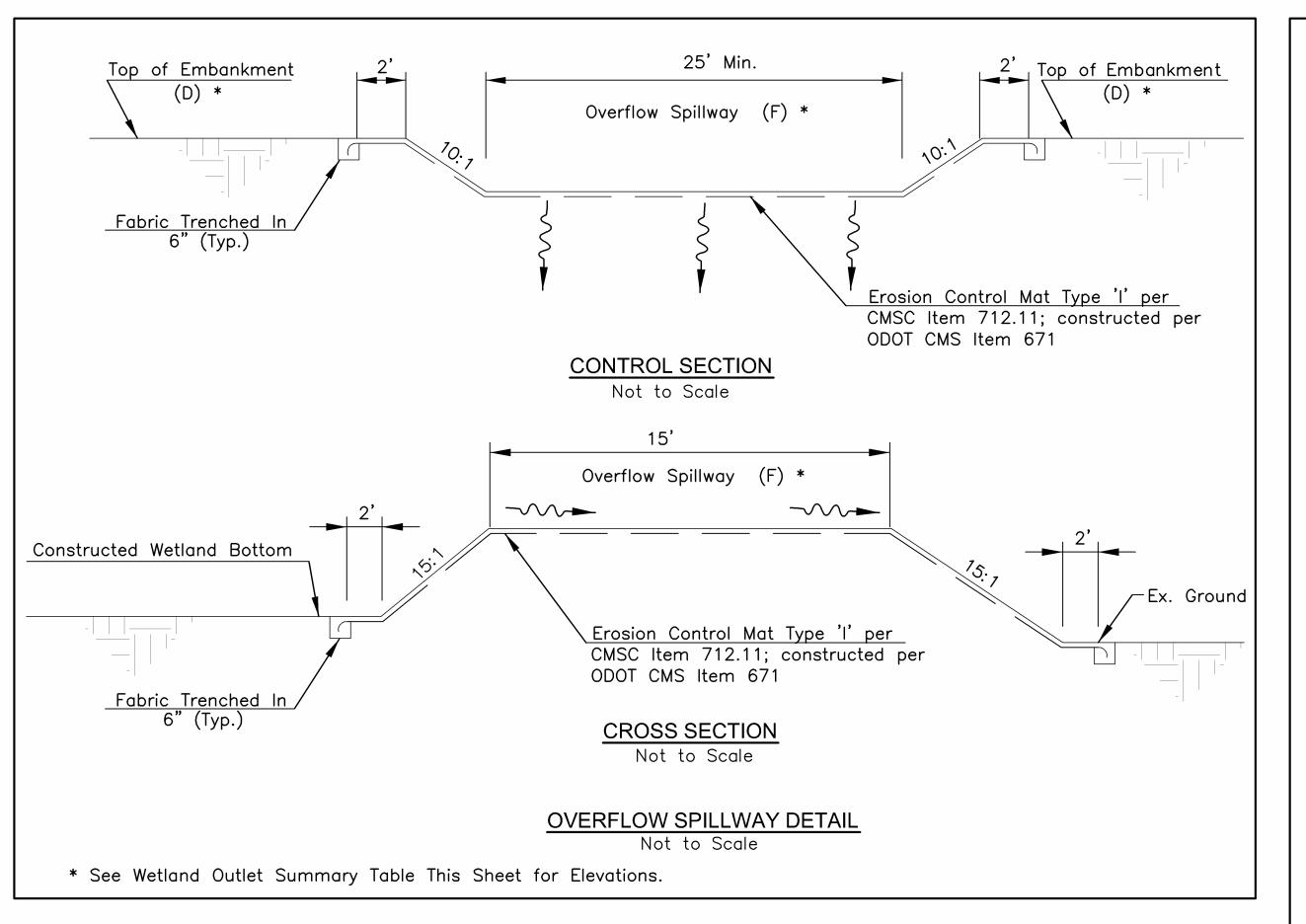
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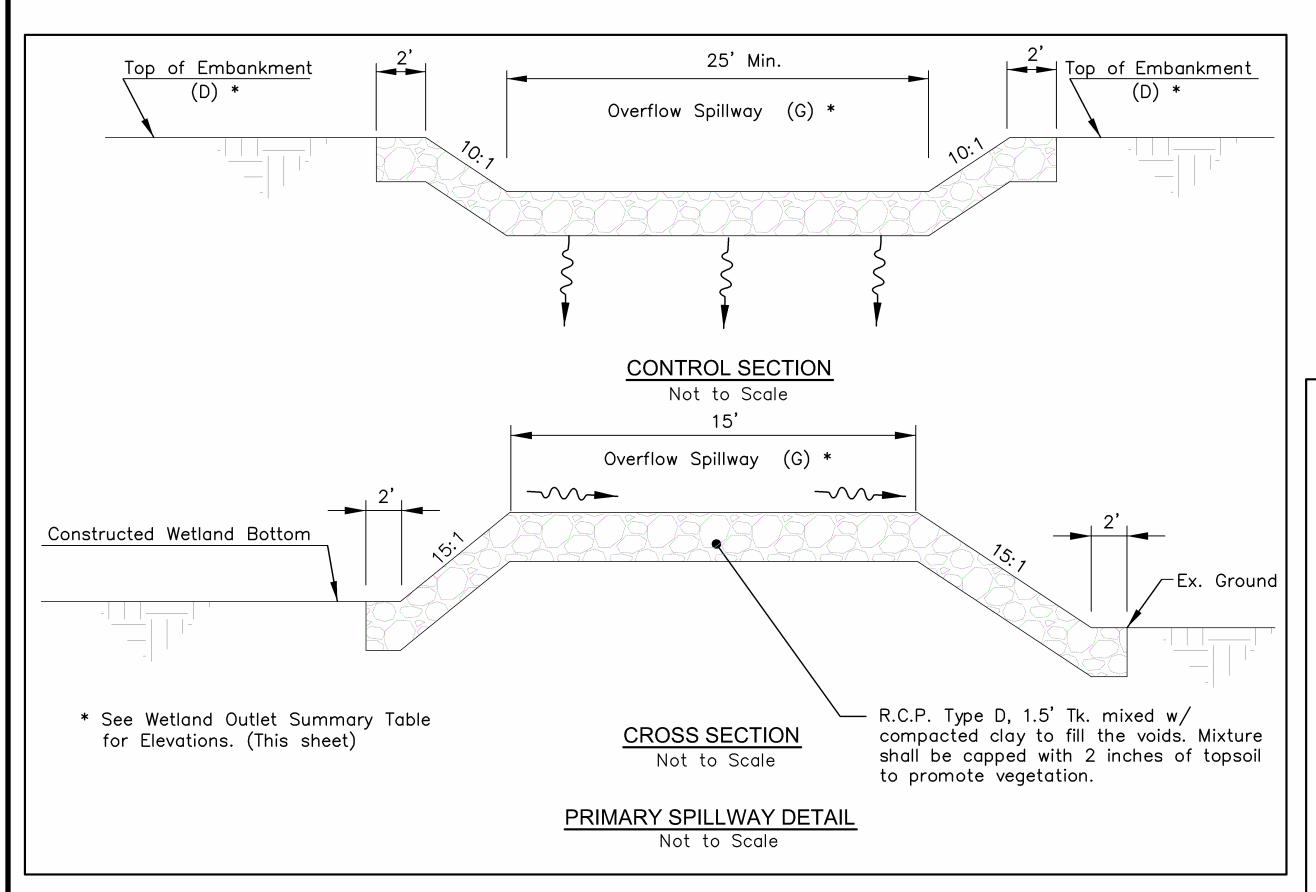




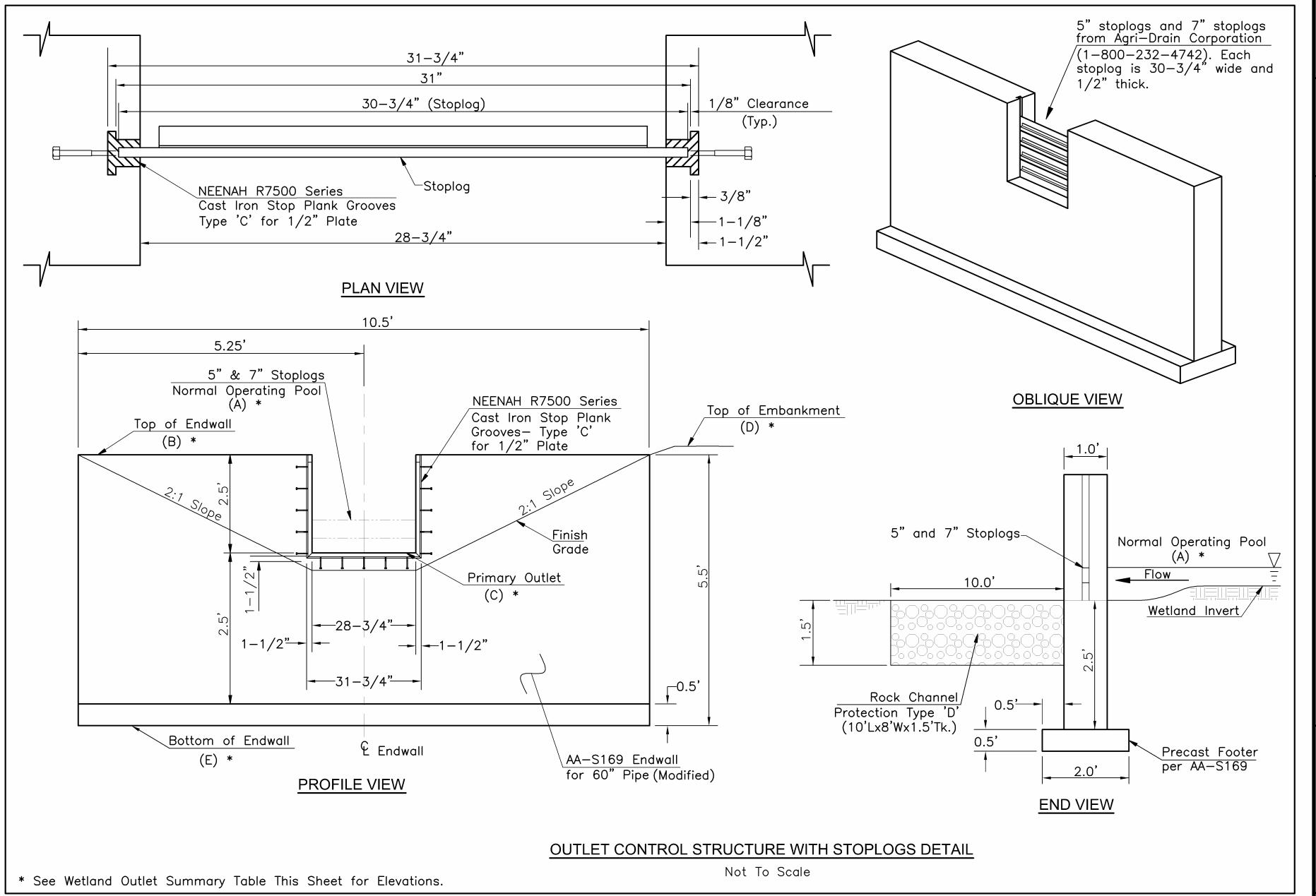




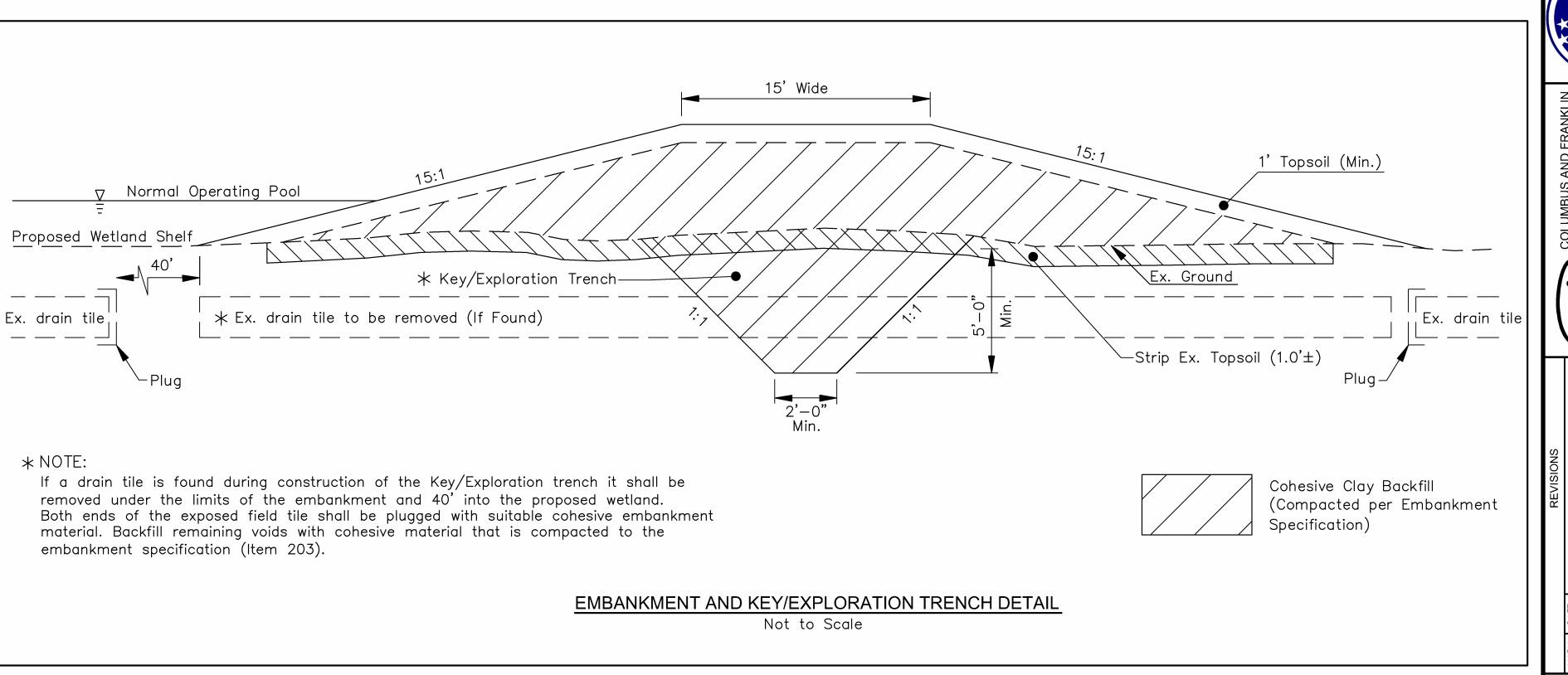




WETLAND OUTLET SUMMARY TABLE										
	Cell 1A	Cell 1B	Cell 2	Cell 3	Cell 4	Cell 5	Cell 6	Cell 7	Cell 8	Cell 9
Normal Operating Pool Elev. (A)	727.5	728.5	728.5	732.0 -732.5	_	-	_	_	743.5	_
Top of Endwall Elev. (B)	728.0	729.0	729.0	734.0	_	_	_	_	745.0	_
Primary Outlet Elev. (C)	726.5 726.64	727.5 727.58	727.5 727.62	731.5 731.49	1	_	-	_	741.5 742.5 741.44	_
Top of Embankment Elev. (D)	729.0	730.0	730.0	734.0	737.0	747.0	747.0	746.0	745.0	746.0
Bottom of Endwall (E)	722.5	723.5	723.5	728.5	_	_	_	_	739.5	_
Overflow Spillway Elev. (F)	728.5 728.69	729.5 729.53	729.5 729.57	733.5 733.54	736.5	746.5 746.46	746.5 746.50	745.5	743.5 <del>744.5</del> 743.32	745.5 745.40
Primary Spillway Elev. (G)	_	_	_	_	734.7 -735.5 -734.76	745.5 745.54	745.5 745.33	744.5 744.47	_	744.0 744.5 743.96



AT
THE FORMER EASTSIDE NURSERY SITE
723 LITOHPOLIS ROAD, CANAL WINCHESTER, OHIO 43110



Scientific Name Acer rubrum Acer saccharum Aesculus glabraCarya ovata Fagus grandifolia Liriodendron tulipifera Prunus serotina Quercus alba Quercus macrocarpa

Shrubs (3 gal.)

Common Name Gray dogwood Spicebush Smooth rose Pasture rose Southern arrowwood Rough leaf dogwood Black chokeberry American hazelnut

Scientific Name Cornus racemosa Lindera benzoin Rosa blanda Rosa carolina Viburnum dentatum Cornus drummondii Aronia melanocarpa Corylus americana

Ψ Ψ

Scientific Name

Acorus americanus

Alisma subcordatum

Asclepias incarnata

Aster lanceolatus

Emergent Wetland Area

<u>Herbs</u> (Plugs)

<u>Common Name</u> American sweet flag Broad-leaf water plantain Swamp milkweed Panicled aster New England aster Swamp aster River bulrush Marsh marigold Water sedge Emory's sedge Stalk-grain sedge Lesser spikerush Creeping spikerush Small spikerush Boneset Fowl manna grass Swamp rose\_mallow Blue flag iris Canada rush Torrey's rush Great blue lobelia Virginia bugleweed Arrow arum Water smartweed Mild water pepper

Aster novae-angliae Aster puniceus Bolboschoenus fluviatilis Caltha palustris Carex aquatilis Carex emorui Carex stipata Eleocharis acicularis Eleocharis palustris Eleocharis parvula Eupatorium perfoliatum Glyceria striata Hibiscus moscheutos Iris versicolor Juncus canadensis Juncus torreyi Lobelia siphilitica Lycopus virginicus Peltandra virginica Polygonum amphibium Polygonum hydropiperoides Pontederia cordata Schoenoplectus tabernaemontani Verbena hastata Soft stem bulrush American water horehound Lycopus americanus

Scientific Name

Cornus sericea

Salix discolor

Cornus amomum Ilex verticillata

Cornus racemosa

Cephalanthus occidentalis

Viburnum cassinoides

Viburnum dentatum

Cornus drummondii

Sambucus canadensis

Shrubs (3 Gal.)

Pickerelweed

Blue vervain

<u>Common Name</u> Buttonbush Red osier dogwood Silky dogwood Winterberry Pussy willow Witherod Southern arrowwood Gray dogwood Rough leaf dogwood Elderberry

<u>Live Stakes</u>

Common Name Buttonbush Red osier dogwood Silky dogwood Pussy willow Silky willow Shining willow Black willow Elderberry Sandbar willow Ninebark

<u>Scientific Name</u> Cephalanthus occidentalis Cornus sericea Cornus amomum Salix discolor Salix sericea Salix lucide Salix nigra Sambucus canadensis Salix interior

Physocarpus opulifolius

Forested Wetland Area

Trees (3 gal.)

Common Name

Silver maple Blue beech Black gum Swamp white oak Bur oak Pin oak Red maple Eastern cottonwood Black willow Peachleaf willow

Shrubs (1 and 3 gal.)

Common Name Speckled alder Hazel alder Black chokeberry Buttonbush Red-osier dogwood Winterberry Spicebush Ninebark Pussywillow Elderberry Withe rod Nannyberry Silky dogwood Gray dogwood Rough leaf dogwood American cranberry bush

<u>Live Stakes</u>

Common Name Buttonbush Silky dogwood Red osier dogwood Black willow Pussy willow Silky willow Shining willow Elderberry Sandbar willow Ninebark

Herbs (Plugs)

Common Name Lizard's tail Hop sedge Bottlebrush sedge Pointed broom sedge Canada wild rye Riverbank wild rye Virginia wild rye Crested sedge Porcupine sedge Tussock sedge American water horehound Great blue lobelia Seedbox Fringed Sedge Bristly cattail Sedge Fox Sedge

Scientific Name

Acer saccharinum Carpinus caroliniana Nyssa sylvatica Quercus bicolor Quercus macrocarpa Quercus palustris Acer rubrum Populus deltoides Salix nigra Salix amygdaloides

Scientific Name Alnus incana Alnus serrulata Aronia melanocarpa Cephalanthus occidentalis Cornus sericea Ilex verticillata Lindera benzoin Physocarpos opulifolius Salix discolor Sambucus canadensis Viburnum cassinoides Viburnum lentago Cornus amomum Cornus racemosa Cornus drummondii Viburnum opulus var. Americana

Scientific Name Cephalanthus occidentalis Cornus amomum Cornus sericea Salix nigra Salix discolor Salix sericea Salix lucide Sambucus canadensis Salix interior Physocarpus opulifolius

Scientific Name Saururus cernuus Carex lupulina Carex lurida Carex scoparia Elymus canadensis Elymus riparius Elymus virginicus Carex cristatella Carex hystericina Carex stricta Lycopus americana Lobelia siphilitica Penthorum sedoides Carex crinita Carex frankii

Carex vulpinoid

WETLAND PLANTING TABLE								
ZONE	MATERIAL	DENSITY	SPECIES	QUANTI	ITY			
				PART I	PART II			
Forested Wetland Area	3 Gallon Trees	18'x18' Centers	7	1.525	2,684			
	3 Gallon Shrubs	30'x30' Centers	10	0	966			
	1 Gallon Shrubs	30'x30' Centers	10	549	0			
	Herbaceous Plugs	15'x15' Centers	10	2,195	3,864			
	Live Stakes	25'x25' Centers	7	790	1,391			
Emergent Wetland Area	Herbacious Plug	6'x6' Centers	20 7	13,455	33,190			
	3 Gallon Shrubs	30'x30' Centers	7	538	1,328			
	Live Stakes	20'x20' Centers	/	1,211	2,987			
Forested Wetland Buffer Area	3 Gallon Trees	20'x20' Centers	7	454	807			
	3 Gallon Shrubs	30'x30' Centers	7	202	359			
Emergent Wetland Buffer Area	3 Gallon Shrubs	16'x16' Centers	7	0	579			
			·					

The species column designates the minimum number of species that shall be selected from each planting list.

LANDSCAPING WARRANTY

Landscaper shall warranty at least an 80% survivability of all #1 and #3 containerized shrub and tree materials for one (1) year from planting date. Any dead, dying, or diseased material shall be replaced with like material.

Tree Bark Protector per —

A.M. Leonard or equal

and rope on 3 sides—

Anchor Tree with stakes

6"-12"min. beyond diameter of root ball-

Contractor shall insure that all material is thoroughly watered at time of planting, and once every week during the period of establishment. Sprinklers, gator bags or other such methods shall be used if rainfall is inadequate.

-Existing Slope

--3" mulch minimum

back filling.

—Set plant at original grade

-Undisturbed earth (typ.)

to prevent settling (6"min.)

—4" min. soil saucer & fill as needed

25% organic humus or Com-Til)

Compact subsoil to form pedestal

Prepared topsoil mix (75% Native Soil,

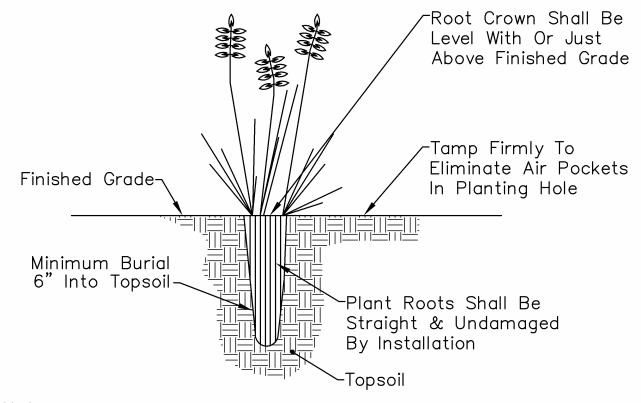
Do not allow air pockets to form when

All plantings shall be selected from the species lists provided and approved in writing by the Construction Manager prior to ordering the plants.

Herbaceous Material shall not be installed until water reaches the wetland normal pool elevation and the basin area in fully stabilized. Under no circumstance should wetland plants be installed while the basin is being used for temporary sediment storage during site construction.

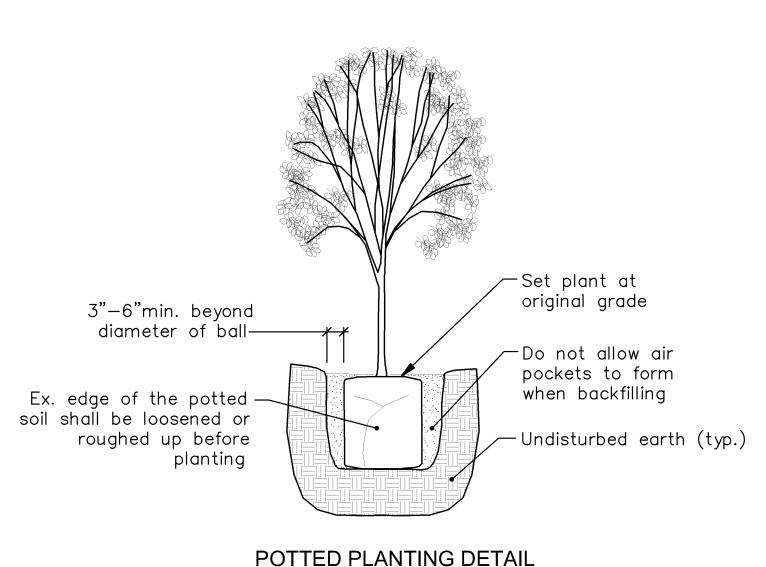
Herbaceous Material shall be planted between May 1 and July 1. Planting beyond these dates shall be approved in writing by the Owner and Construction Manager.

Under no circumstance should herbaceous material be planted such that the entire plant is below the water surface.



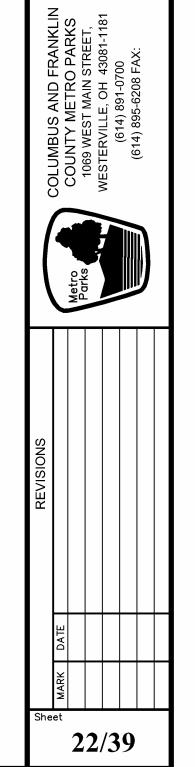
Leaves & Root Crown Shall Remain Undamaged During Planting

> PLUG PLANTING DETAIL Not To Scale



Not to Scale





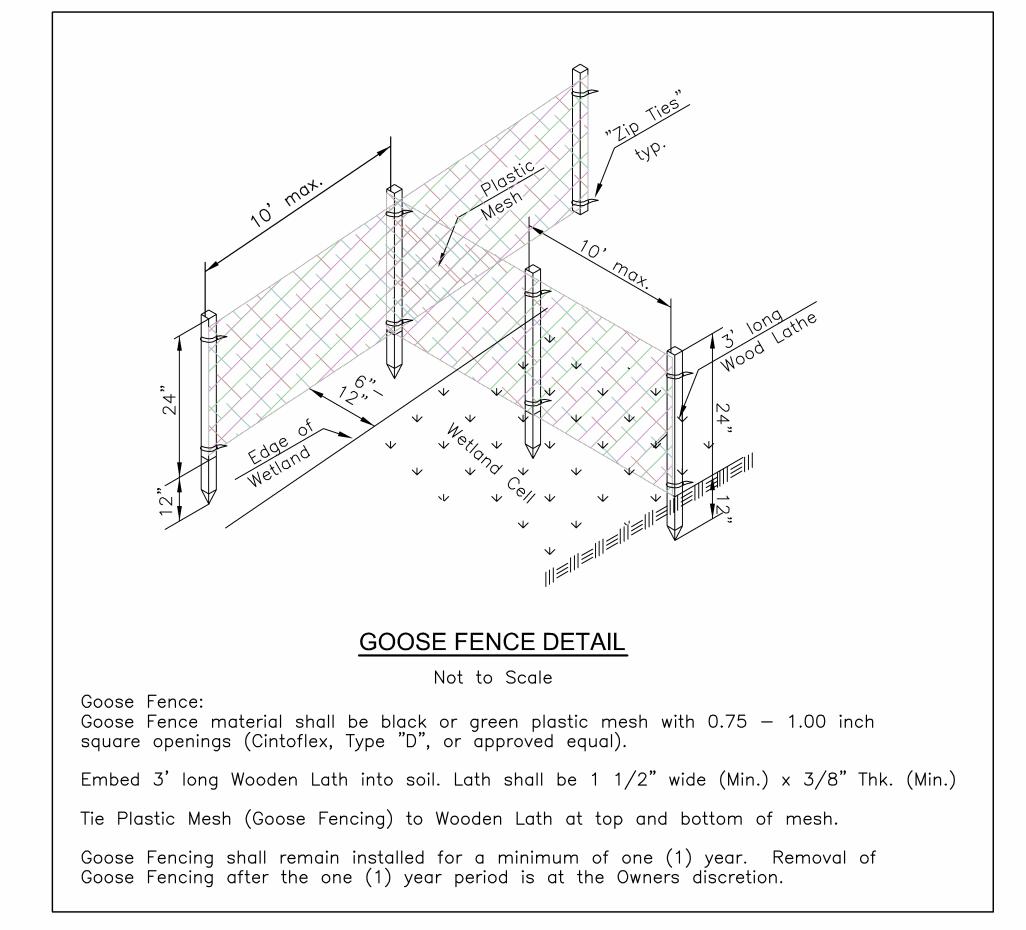
THE FORMER EASTSIDE NURSERY SITE
3 LITOHPOLIS ROAD, CANAL WINCHESTER, OHIO 431
WETLAND PLANTING PLAN

UMBUS AND FRANKLIN COUNTY METRO PARTICAND AND STREAM AS-BUILT PL

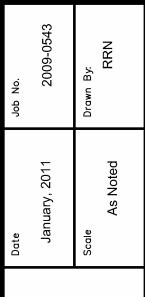
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	WETLAND SEE	DING TABLE		
TYPE			APPLICATION RATES	APPLICATION DATES
OVER SEED: Annual Ryegrass or Oats (Grain) or Winter Rye (Grain)	(Lolium multiflorum) (Secale cereale) (Avena sativa)		40 Lbs./Acre 15 Lbs./Acre 40 Lbs./Acre	March to October March to October October to February
(Forested/Emergent Wetland PERMANENT SEED: Native Grass Custom Seed M	·			
Common Name Little bluestem Big bluestem Riverbank wild rye Silky wild rye Virginia wild rye Indian grass Switchgrass Black—eyed susan Ox—eye sunflower Gray—headed coneflower Cup plant Tall white bread tongue Ohio spiderwort Joe pye weed Wild bergamot	Scientific Name Andropogon scoparius Angropogon gerardii Elymus riparius Elymus villosus Elymus virginicus Sorghastrum nutans Panicum virgatum Rudbeckia hirta Heliopsis helianthoides Ratibida pinnata Silphium perfoliatum Penstemon digitalis Tradescantia ohioensis Eupatorium fistulosum Monarda fistulosa	15 10 10 10 10 10 7 7 6 4 4 3 2 1	7 lbs/acre	October 1st — May 15th
(Forested Wetland Area) PERMANENT SEED: Ernst Seeds ERNMX—127 or c	approved equal			
Common Name Fowl Bluegrass Virginia Wild Rye Fox Sedge Ticklegrass (Rough Bentgrass) Giant Bur Reed Blue Vervain Soft Rush Green Bulrush Wool Grass Many Leaved Bulrush Blunt Broom Sedge Common Sneezeweed Blue Flag Path Rush Square Stemmed Monkey Flow	Sparganium eutycarpum Verbena hastata Juncus effusus Scirpus atrovirens Scirpus cyperinus Scirpus polyphyllus Carex scoparia Helenium autumnale Iris versicolor Juncus tenuis	Percentage 25 25 25 6 3 2 2 2 1 1 1 1	7 Lbs./Acre	Oct. 1st to May 15th
(Emergent Wetland Area) PERMANENT SEED: Ernst Seeds ERNMX—120 or of Common Name Virginia Wild Rye Fox Sedge Soft Rush Giant Bur Reed Blue Vervain Wool Grass New England Aster American Mannagrass Eastern Bur Reed Green Bulrush Cosmos (Bristly) Sedge Lurid (Shallow) Sedge Rattlesnake Grass Hop Sedge Nodding Sedge Wild Brome Grass	Scientific Name Elymus virginicus Carex vulpinoidea Juncus effusus Sparganium eurycarpum Verbena hastata Scirpus cyperinus Aster novae—angliae Glyceria grandis Sparganium americanum Scirpus atrovirens Carex comosa Carex lurida Glyceria candensis Carex lupulina Carex gynandra Bromus latiglumis	8 6 5 5	15 Lbs./Acre	Oct. 1st to May 15th

Over seed shall be applied with the permanent seed to quickly stabilize the site. This is required because the permanent seed takes much longer to germinate than the over seed.



Goose Fence shall only be installed in Wetland Cell 1A and 1B. See Specification an Sheet 2.



URSERY SITE HESTER, OHIO 43110

WETLAND AND STREAM AS-BUILT PLA

AT

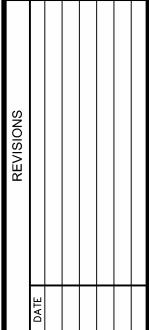
THE FORMER EASTSIDE NURSERY
723 LITOHPOLIS ROAD, CANAL WINCHESTER, O

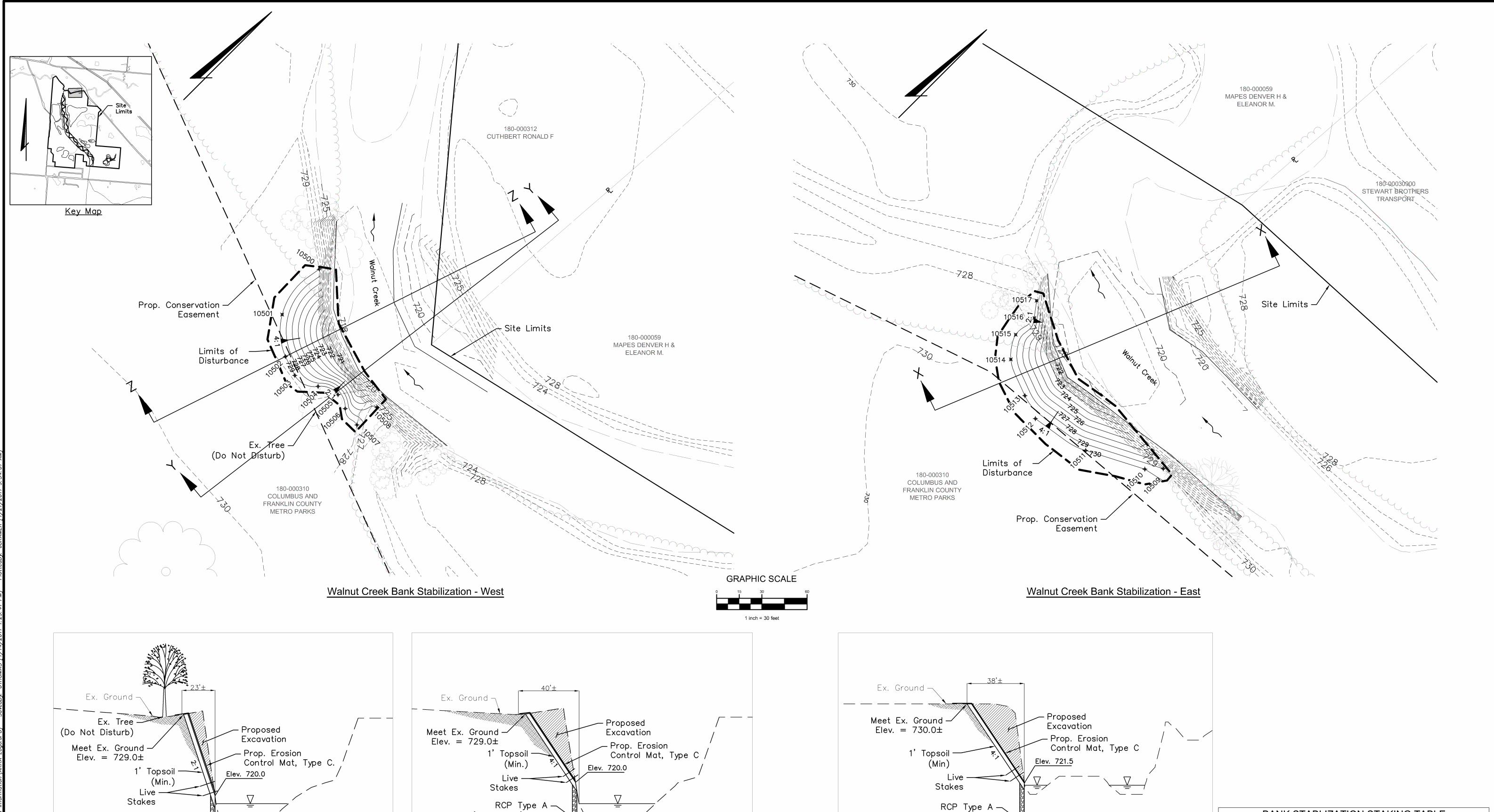
ns, Mechwart, Hambleton & Tilton, Inc.
Ineers • Surveyors • Planners • Scientists
I) New Albany Road, Columbus, OH 43054
Ie: 614.775.4500 Toll Free: 888.775.3648

emht.com









Cross Section Y-Y	
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RCP Type A —

w/ Filter

3' Wide x 5' Deep

BANK STABILIZATION PLANTING TABLE								
ZONE	MATERIAL	DENSITY	SPECIES	QUANTITY				
All Disturbed Areas	Live Stakes 3 Gallon Shrubs 3 Gallon Trees	2 rows with 2' spacing 25'x25' Centers 18'x18' Centers	7 7 7	230 14 27				

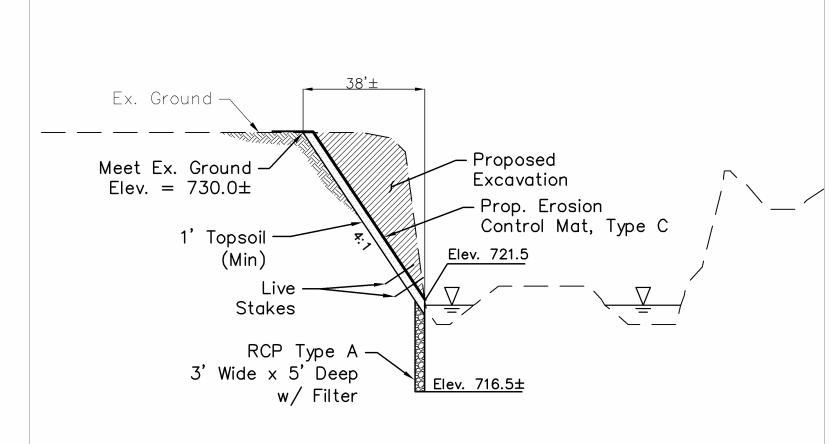
The species column designates the minimum number of species that shall be selected from each planting list.

3' Wide x 5' Deep

w/ Filter

Elev. 715.0±

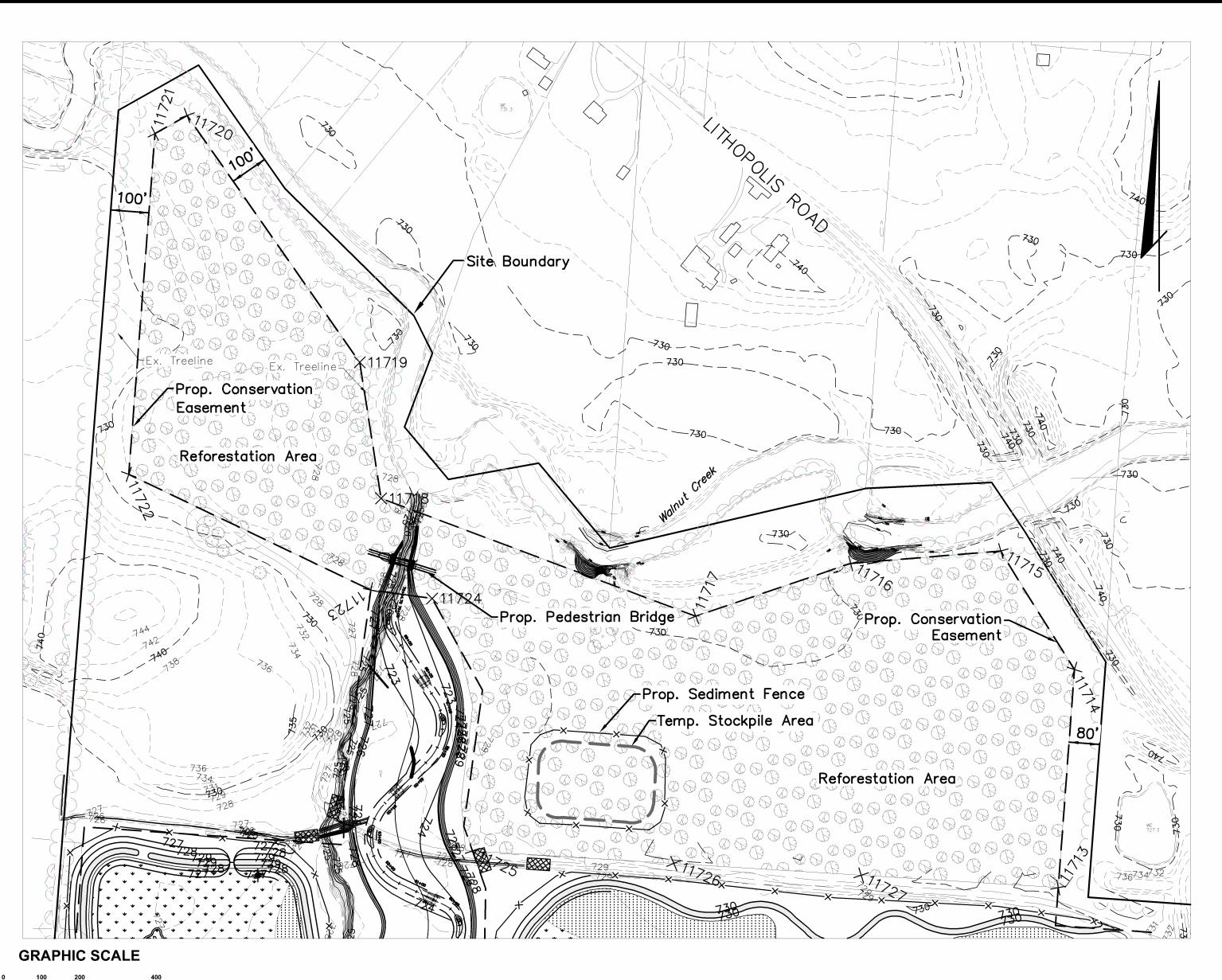
Cross Section Z-Z



### Cross Section X-X

- NOTES:
  All disturbed areas shall be planted per the planting table on this sheet and the zone 1 and 2 species list on sheet 14.
  All disturbed areas shall be seeded with a native grass seed mix. The seed mix and specifications are listed in the Native Grass Seeding Table on sheet 14.
  The toe of the excavation shall begin above the ordinary high water mark or no lower than the elevations listed in the cross sections.
  All disturbed areas shall be stabilized with an Erosion Control Mat, Type C. This mat shall be installed per item 671 using 12 inch staples, minimum.
  All existing trees >12" in diameter shall be preserved.
- All existing trees ≥12" in diameter shall be preserved.

BANK STABLIZATION STAKING TABLE								
PNT # NORTHING EASTING ELEVATION DESCRIPTION								
10500	671662.7612	1866500.3784	729.00	Top of Embankment				
10501	671624.1060	1866504.3263	729.00	Top of Embankment				
10502	671605.9228	1866525.5500	729.00	Top of Embankment				
10503	671601.4927	1866538.8197	729.00	Top of Embankment				
10504	671607.2202	1866554.8569	729.00	Top of Embankment				
10505	671612.7130	1866568.0659	729.00	Top of Embankment				
10506	671609.5576	1866578.0263	728.00	Top of Embankment				
10507	671607.4134	1866591.1750	728.00	Top of Embankment				
10508	671624.9779	1866592.3238	726.00	Top of Embankment				
10509	671675.1785	1867345.7794	729.00	Top of Embankment				
10510	671666.3250	1867337.3973	730.00	Top of Embankment				
10511	671647.3772	1867300.8731	730.00	Top of Embankment				
10512	671638.6989	1867262.3622	730.00	Top of Embankment				
10513	671644.5459	1867246.6050	729.00	Top of Embankment				
10514	671654.9491	1867223.0265	729.00	Top of Embankment				
10515	671668.8369	1867213.7121	729.00	Top of Embankment				
10516	671685.4292	1867214.6315	729.00	Top of Embankment				
10517	671694.6000	1867207.5784	729.00	Top of Embankment				



1 inch = 200 feet

### REFORESTATION SPECIES LIST <u>Shrubs</u>

<u>Common Name</u> Blackhaw \*\*Ninebark Gray dogwood Spicebush Smooth rose Pasture rose Southern arrowwood Rough leaf dogwood Black chokeberry
\*\*American hazelnut

<u>Scientific Name</u> Viburnum prunifoluim
Physocarpus opulifolius
Cornus racemosa Lindera benzoin Rosa blanda Rosa carolina Viburnum dentatum Cornus drummondii Aronia melanocarpa Corylus americana

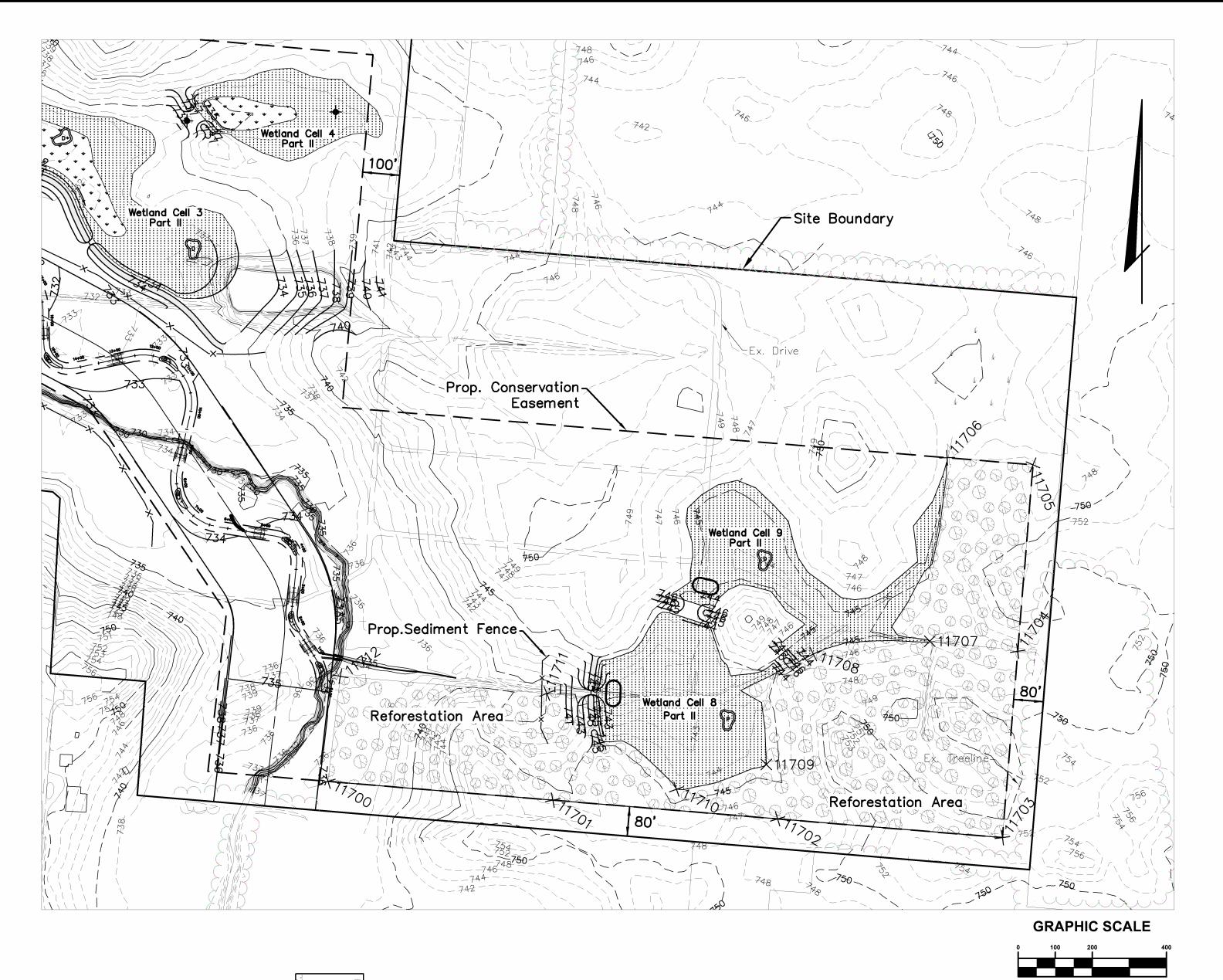
### <u>Trees</u>

Common Name
Shellbark hickory
\*\*Swamp white oak Slippery elm Tulip tree \*\*Sycamore Eastern cottonwood Black cherry Red maple Sugar maple Common hackberry Eastern redbud Black cherry Red oak Bur oak \*\*Pin oak Beech Black walnut \*Pignut hickory \*White oak

\*Shagbark hickory

Scientific Name Carya laciniosa Quercus bicolor Ülmus rubra Liriodendron tulipifera
Platanus occidentalis
Populus deltoides
Prunus serotina Acer rubrum Acer saccharum Celtis occidentalis Cercis canadensis Prunus serotina Quercus rubra Quercus ruora
Quercus macrocarpa
Quercus palustris
Fagus grandifolia
Juglans nigra
Carya glabra
Quercus alba
Carya ovata

	REFORESTATION LIMITS STAKING TABLE								
PNT #	NORTHING	EASTING	DESCRIPTION						
11700	666355.4168	1868270.5154	Limits of Reforestation						
11701	666304.8569	1868876.9528	Limits of Reforestation						
11702	666254.2969	1869483.3903	Limits of Reforestation						
11703	666203.7370	1870089.8277	Limits of Reforestation						
11704	666706.5679	1870131.0404	Limits of Reforestation						
11705	667209.3988	1870172.2531	Limits of Reforestation						
11706	667228.6664	1869940.3990	Limits of Reforestation						
11707	666733.6414	1869893.7736	Limits of Reforestation						
11708	666698.7703	1869579.4642	Limits of Reforestation						
11709	666401.0659	1869452.8479	Limits of Reforestation						
11710	666334.3167	1869210.4625	Limits of Reforestation						
11711	666592.6848	1868860.6337	Limits of Reforestation						
11712	666638.9107	1868303.6815	Limits of Reforestation						
11713	670791.3902	1867762.2328	Limits of Reforestation						
11714	671361.7659	1867804.6071	Limits of Reforestation						
11715	671672.0085	1867611.9236	Limits of Reforestation						
11716	671639.5126	1867219.1833	Limits of Reforestation						
11717	671501.3147	1866813.7115	Limits of Reforestation						
11718	671809.8575	1865990.4840	Limits of Reforestation						
11719	672165.8178	1865934.7228	Limits of Reforestation						
11720	672811.7573	1865483.0158	Limits of Reforestation						
11721	672764.4296	1865399.0557	Limits of Reforestation						
11722	671872.7131	1865330.3020	Limits of Reforestation						
11723	671569.7872	1865963.6533	Limits of Reforestation						
11724	671547.8034	1866124.0475	Limits of Reforestation						
11725	670887.4754	1866229.6553	Limits of Reforestation						
11726	670854.4611	1866756.2401	Limits of Reforestation						
11727	670823.7207	1867246.5547	Limits of Reforestation						



Prop. Reforestation Area

REFORESTATION PLANTING TABLE							
ZONE MATERIAL DENSITY SPECIES QUANTITY							
Reforestation Areas	3 Gallon Shrubs 3 Gallon Trees	20'x20' Centers 15'x15' Centers	7 10	6,125 10,888			

The species column designates the minimum number of species that shall be selected from each planting list.

NOTES
Final species selection will be based upon availability and shall be approved in writing by the Construction Manager prior to ordering the plants.

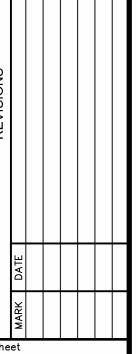
- \* Species only to be planted on top of hills and slopes.
  \*\* Species only to be planted in saturated areas near proposed wetland cells 8 and 9.

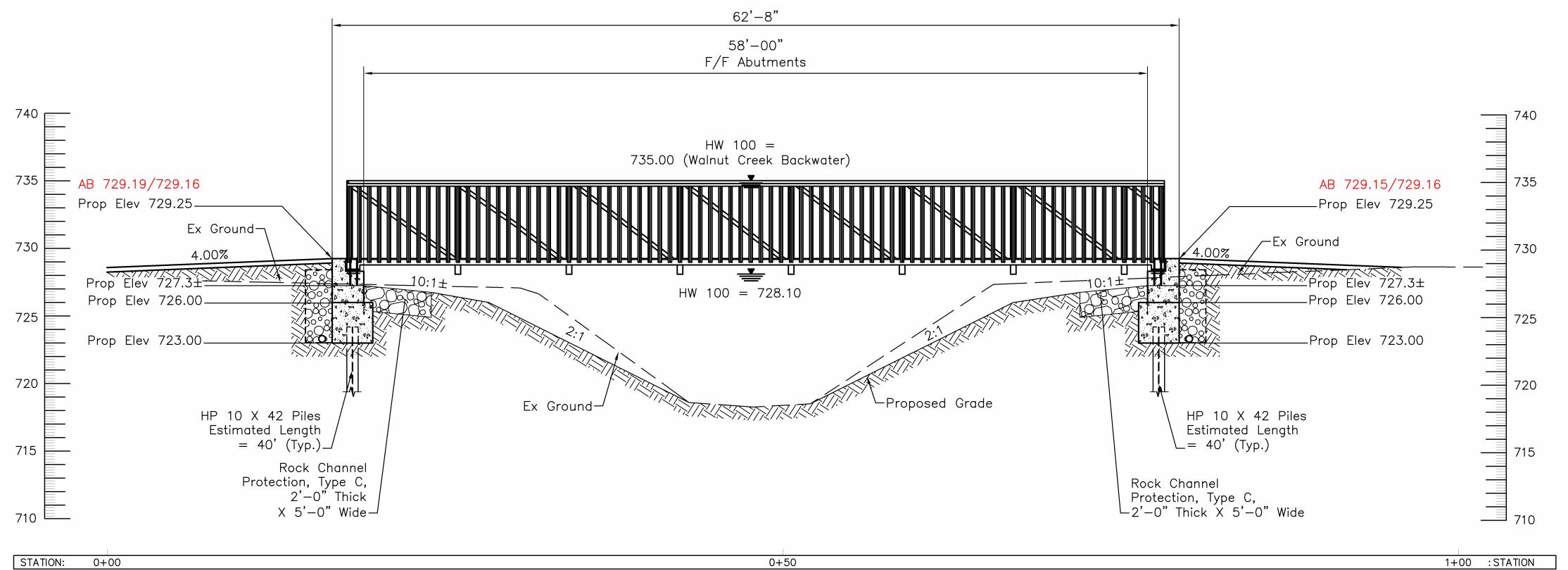
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1 inch = 200 feet







PROFILE ALONG Ç BRIDGE "A"

GENERAL NOTES - PEDESTRIAN BRIDGE "A" (60.5')

All labor, material, and equipment necessary to construct the pedestrian bridge as detailed on these plans, including excavation, backfill, abutment construction, superstructure procurement and installation is included in the quantities listed on sheet 03. All work to be performed by EMH&T's plans represents substructure work only.

The proposed superstructure is a "Pony Truss System", 12'-0" wide face to face of rail, 68'-6" span as manufactured by Contech Bridge Solutions, Inc., Alexandria, MN per manufacturer's detail sheets or structural/geometric equivalent. All labor, material, and equipment necessary to install the superstructure shall be included in the lump sum price bid for Item Spec., Pedestrian Bridge Superstructure "A", As

### SHOP DRAWINGS:

Six (6) sets of shop drawings shall be submitted to EMH&T for review. Upon approval, five (5) sets will be returned for distribution.

### MAINTAINING DRAINAGE COURSES:

All existing drainage courses shall be maintained during construction and placement of proposed structure. The Contractor shall submit to Metro Parks a Schedule of Sequence and Method of maintaining the watercourse. Special attention shall be observed to insure that all erosion control features are installed and maintained throughout the duration of the project.

### DESIGN SPECIFICATIONS:

Substructure construction shall conform to the ODOT Construction and Material Specifications (CMS), 2008.

### DESIGN LOADING:

Wind Load = 35 psf Vehicle Load = 10,000 lbs. Note: Bridge Lifting Weight = 25,000 lbs.

### DESIGN DATA:

Concrete Class C — compressive strength 4000 psi Reinforcing steel — ASTM A615 or A996 Grade 60 minimum yield strength 60,000

Steel for piling — ASTM A572 Grade 50 or A572M Grade 345

### PILE DESIGN LOADS (ULTIMATE BEARING VALUE):

The Ultimate Bearing Value is 33 tons per pile for the abutment piles. 6 — Steel HP 10x42 piles 45 feet long, order length.

### PILE SLICES:

In lieu of using the full penetration butt welds specified in CMS 507.09 to splice steel H—piles (if necessary), the Contractor may use a manufactured H—pile splicer. Furnish splicers from the following manufacturer or manufacturer of a structural equivalent:

Associated Pile and Fitting Corporation

262 Rutherford Blvd.

Clifton, New Jersey 07014

Install and weld the splicer to the pile sections in accordance with the manufacturer's written assembly procedure supplied to the Owner before the welding is performed.

### BRIDGE SEAT REINFORCING, SETTING ANCHORS:

Accurately place reinforcing steel in the vicinity of the bridge seat to avoid interference with the pre-setting of bearing anchors.

### CONCRETE PLACEMENT:

All exposed non-reentrant corners of concrete shall be cast with a 34" x 34" chamfer.

Concrete shall not be poured above the bridge seat construction joint elevations until all superstructure dimensions are verified and the superstructure has been installed. This will assure adequate clearance between the ends of the bridge and the abutment backwall/sidewalls.

### POROUS BACKFILL WITH FILTER FABRIC:

Porous Backfill with Filter Fabric, 2 feet thick shall extend up to the plane of the subgrade, to 1 foot below the embankment surface, and laterally to the ends of the abutments.

### PEDESTRIAN PATH

The proposed pedestrian path shall be constructed a distance of 50 feet from each bridge abutment. The actual location of the path shall be coordinated and approved by the Owner prior to construction. The path shall be constructed per the detail on sheet 13.

### **BIG RUN**

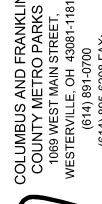
HYDRAULIC DATA  $V_{100} = 4.24 \text{ FPS}$ 

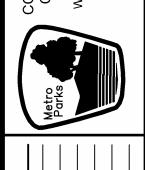
 $Q_{100} = 1375 \text{ CFS}$  $HW_{100} = 728.10$ HW100 = 735.00 (Walnut Creek Backwater)

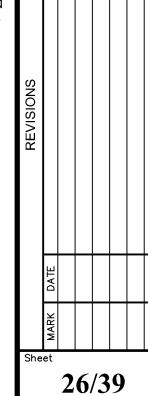
**LEGEND** = Centerline = Diameter Elev. = Elevation Ex. = ExistingHW = High Water Sta. = Station Typ. = Typical Min. = Minimum C.J. = Construction Joint F/F = Face to FaceSpa. = Spaced E.F. = Each FaceBot. = Bottom Clr. = Clear

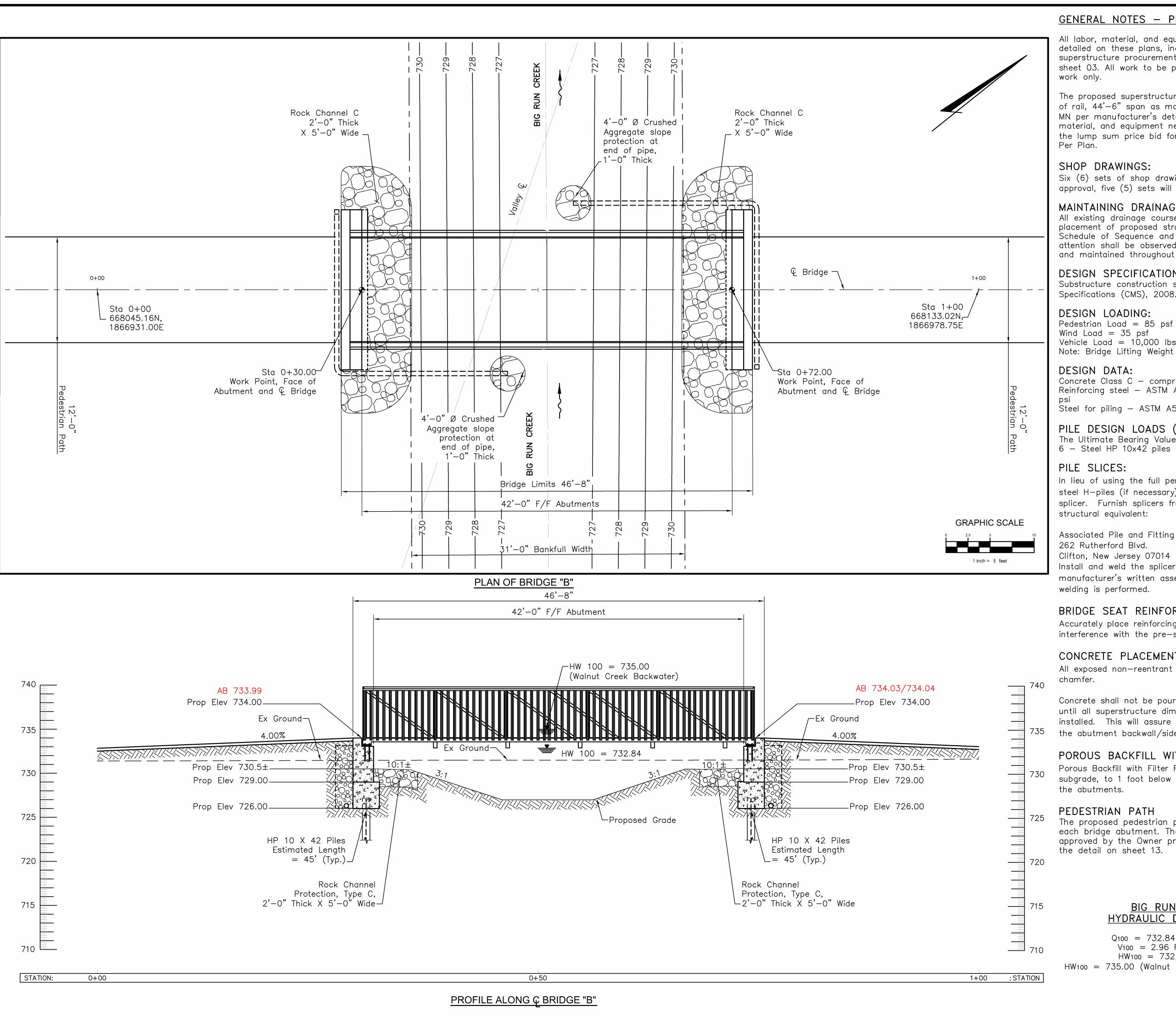












### GENERAL NOTES - PEDESTRIAN BRIDGE "B" (44.5')

All labor, material, and equipment necessary to construct the pedestrian bridge as detailed on these plans, including excavation, backfill, abutment construction, superstructure procurement and installation is included in the quantities listed on sheet 03. All work to be performed by EMH&T's plans represents substructure

The proposed superstructure is a "Pony Truss System", 12'-0" wide face to face of rail, 44'-6" span as manufactured by Contech Bridge Solutions, Inc., Alexandria, MN per manufacturer's detail sheets or structural/geometric equivalent. All labor, material, and equipment necessary to install the superstructure shall be included in the lump sum price bid for Item Spec., Pedestrian Bridge Superstructure "B", As

### SHOP DRAWINGS:

Six (6) sets of shop drawings shall be submitted to EMH&T for review. Upon approval, five (5) sets will be returned for distribution.

### MAINTAINING DRAINAGE COURSES:

All existing drainage courses shall be maintained during construction and placement of proposed structure. The Contractor shall submit to Metro Parks a Schedule of Sequence and Method of maintaining the watercourse. Special attention shall be observed to insure that all erosion control features are installed and maintained throughout the duration of the project.

### DESIGN SPECIFICATIONS:

Substructure construction shall conform to the ODOT Construction and Material Specifications (CMS), 2008.

### DESIGN LOADING:

Wind Load = 35 psf Vehicle Load = 10,000 lbs. Note: Bridge Lifting Weight = 19,000 lbs.

### DESIGN DATA:

Concrete Class C — compressive strength 4000 psi Reinforcing steel — ASTM A615 or A996 Grade 60 minimum yield strength 60,000

Steel for piling — ASTM A572 Grade 50 or A572M Grade 345

### PILE DESIGN LOADS (ULTIMATE BEARING VALUE):

The Ultimate Bearing Value is 32 tons per pile for the abutment piles. 6 - Steel HP 10x42 piles 50 feet long, order length.

### PILE SLICES:

In lieu of using the full penetration butt welds specified in CMS 507.09 to splice steel H-piles (if necessary), the Contractor may use a manufactured H-pile splicer. Furnish splicers from the following manufacturer or manufacturer of a structural equivalent:

Associated Pile and Fitting Corporation

262 Rutherford Blvd.

Clifton, New Jersey 07014

Install and weld the splicer to the pile sections in accordance with the manufacturer's written assembly procedure supplied to the Owner before the welding is performed.

### BRIDGE SEAT REINFORCING, SETTING ANCHORS:

Accurately place reinforcing steel in the vicinity of the bridge seat to avoid interference with the pre-setting of bearing anchors.

### CONCRETE PLACEMENT:

All exposed non-reentrant corners of concrete shall be cast with a 34" x 34"

Concrete shall not be poured above the bridge seat construction joint elevations until all superstructure dimensions are verified and the superstructure has been installed. This will assure adequate clearance between the ends of the bridge and the abutment backwall/sidewalls.

### POROUS BACKFILL WITH FILTER FABRIC:

Porous Backfill with Filter Fabric, 2 feet thick shall extend up to the plane of the subgrade, to 1 foot below the embankment surface, and laterally to the ends of the abutments.

### PEDESTRIAN PATH

The proposed pedestrian path shall be constructed a distance of 50 feet from each bridge abutment. The actual location of the path shall be coordinated and approved by the Owner prior to construction. The path shall be constructed per the detail on sheet 13.

> **BIG RUN** HYDRAULIC DATA

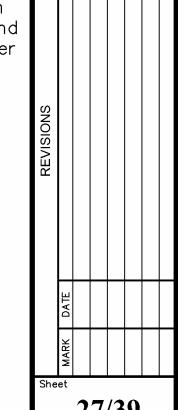
 $Q_{100} = 732.84 \text{ CFS}$  $V_{100} = 2.96 \text{ FPS}$  $HW_{100} = 732.84$ HW100 = 735.00 (Walnut Creek Backwater)

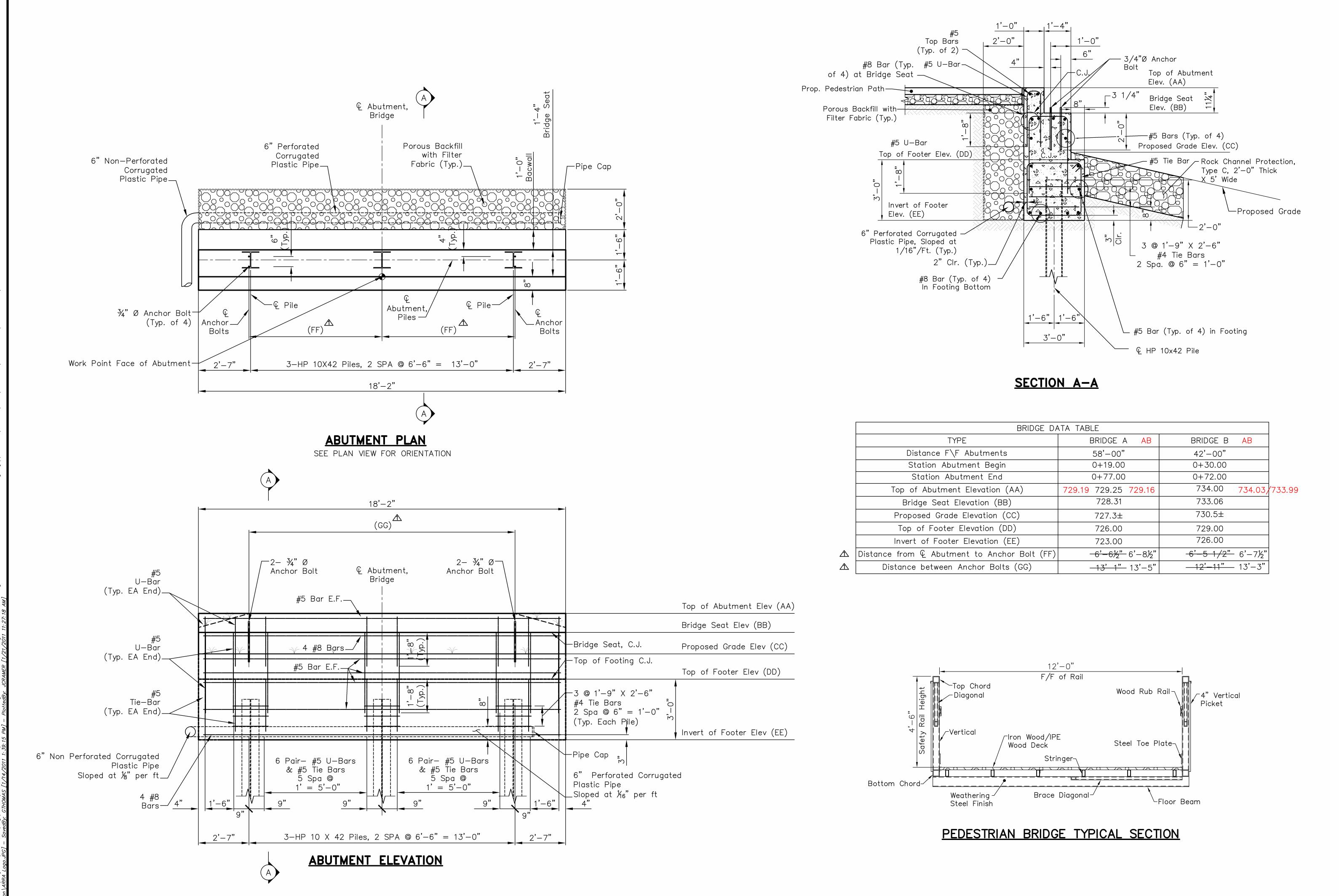
**LEGEND** = Centerline = Diameter Elev. = Elevation Ex. = ExistingHW = High Water Sta. = Station Typ. = TypicalMin. = Minimum C.J. = Construction Joint F/F = Face to FaceSpa. = Spaced E.F. = Each Face Bot. = Bottom Clr. = Clear











Σ





DATE
4-15 Revised width between an to match shop drawings

Phone: (614)775-4500 Fax: (614)775-4800

PROJECT OWNER:
Columbus and Franklin County Metro Parks
1069 West Main St.
Westerville, Ohio 43081—1181
Phone: (614) 891—0700
Fax: (614) 895—6208

SITE CONTACT: John Watts (Metro Parks) (614) 891-0700

PROJECT LOCATION:

The project is located within Madison Township, Franklin County, southeast of Groveport Ohio.

### PROJECT DESCRIPTION:

The project consists of the restoration and stabilization of the Big Run stream channel and the construction of wetland cells that will be adjacent to the newly constructed channel. The existing stream channel will be filled upon the completion of the new channel. Big Run flows into Walnut Creek. The existing eroded stream banks of Walnut Creek will be stabilized. Additionally, the stream buffer corridors of the watercourses shall be planted with a variety of trees, shrubs and seedings as indicated on the planting plan.

AREA OF PROJECT SITE & AREAS OF DISTURBANCE: Project Area: 482 Acres

Estimated Area of Disturbance: 90 Acres

### EXISTING SITE CONDITIONS:

The project area consists of an existing stream that flows from the south to the north through an area that has been used as nursery fields. The Big Run corridor predominately consists of a narrow degraded riparian buffer with adjoining fields.

### ADJACENT AREAS:

The adjacent areas are predominately open fields that were used for nursery crops. Walnut Creek is located along the northern boundary of the site.

### DESCRIPTION OF SOILS:

The predominate soils located on the site consist of Sloan Silt Loam (So) and Algiers Silt Loam (Ag) per the Franklin County Soil Survey. These soils are very poorly drained and are located on floodplains. Permeability is moderately slow and stormwater runoff typically is very slow or ponded. The soils are frequently flooded. Muddy water encountered during construction activities are required to be routed to the temporary sediment basins. Muddy water that can't be routed to the basins shall be pumped into the filter bags prior to flowing into surface waters. Details of the sediment basins and filter bags are provided on the erosion control plan.

### RECEIVING STREAM/SURFACE WATER:

Stormwater runoff from the site predominately flows into Big Run. Big Run is a tributary stream of Walnut Creek which is located along the northern perimeter of the site.

### STORM WATER POLLUTION PREVENTION PLAN

A storm water pollution prevention plan (SWPPP) has been completed for this project. The Contractor shall become familiar with and follow the specifications outlined in the manual. All changes made to the erosion and sediment control measures shall be documented in accordance with the SWPPP.

### EROSION CONTROL SCHEDULE

- 1. Establish a designated stabilized construction exit. Construct a stabilized exit if the existing drives are not used.
- 2. Install perimeter sediment fence adjacent to the proposed wetland embankments.
- 3. Determine the location of the temporary stream crossings and install.
  4. Determine the temporary sediment basin locations. Excavate the temporary basins and install the riser and outlet pipes. Ensure to leave an earthen plug between the basins and the existing stream channel.
  - Do not excavate the proposed stream channel adjacent to the temporary sediment basin between the existing stream channel and the temporary diversion channel that will be used to route runoff from the proposed stream channel into the sediment basins. Route runoff from the proposed stream valley into the temporary sediment basins.

Do not construct the proposed channel between the following stations:

<u>Sediment Basin</u>	Proposed Stream Channel Station
1	65+00 to 69+50
2	36+50 to 38+50
3	19+00 to 19+75
4	5+70 to 9+00

- 5. Construct the temporary diversion channels to route clean runoff to the existing stream. Seed and install erosion control matting.
- 6. Establish the temporary topsoil stockpile locations and install perimeter sediment fence.
- 7. Strip the topsoil from the proposed stream corridor and wetland embankment areas and stockpile for later re—spread.
- 8. Commence with the stream corridor valley excavation starting at the downstream end of the proposed channel near the temporary sediment basins. Route runoff from the proposed stream valley into the temporary sediment basins.
- 9. Use fill from the excavated areas to construct the wetland embankments. Excess fill material shall be stockpiled on—site at the location specified on the plans and approved by the Construction Manager. Cross the existing stream channel at the designated temporary crossings.
- 10.Install the wetland outlet structures and modify with temporary baffle stoplogs per the detail, shown on sheet 18. The wetland cells will be used as sediment basins during construction activities.
- 11.Re—spread topsoil along the constructed wetland embankments and stabilize. Remove the temporary baffle logs used as sediment control outlet structures and replace with the permanent logs per the plan upon the stabilization of the contributing areas.
- 12.Construct the stream channel per the plan. Do not construct the streambed adjacent to the sediment basins at this time. Ensure that an earthen plug is left in place between the proposed channel and the existing stream at all crossing locations.
- 13.Re—spread topsoil within the stream corridor and stabilize per the planting plan.
- 14. Upon stabilization of the stream corridors, muck out the sediment basins, remove the temporary riser pipes, and fill in the basins. Temporarily block the existing stream channel with check dams comprised of non-erodible material. Pump clean water around the intersection area of the streams. Establish a filter bag per the detail within the erosion control plan. The bag shall be installed within an area of existing vegetation. Pump muddy water from the newly constructed channel to the filter bag. Proceed with the construction of the new channel across the existing channel area. Stabilize the new channel and connect the existing channel into the new channel at the upstream end of the channel. Proceed with the pumping procedures at all crossing areas until the existing stream is abandoned.
- 15. Fill in the existing stream bed, remove the temporary stream crossings, and stabilize the disturbed areas.
- 16.Remove the sediment fence upon the stabilization of the disturbed areas.
- 17.Stabilize the streambanks along Walnut Creek per the details indicated on the plan.
- Note: The filling of the existing pond to the east of proposed wetland cell 3 shall proceed prior to the excavation of the proposed stream valley and channel between stations 9+50 to 20+00.
  - 1. Install aggregate check dams within the ditch downstream of the basin outlet.
  - 2. Install a dewatering bag per the detail within an area of undisturbed vegetation.
  - 3. Pump water from the pond into the dewatering bag.
  - 4. Begin filling the pond from east to west and continue to pump muddy water into the dewatering bag as needed.
  - 5. Grade the area and stabilize with seed and mulch.
    6. Remove the aggregate check dams.

### CONTRACTOR RESPONSIBILITIES

Details have been provided on this plan in an effort to help the Contractor provide erosion and sedimentation control. The details shown on the plan shall be considered a minimum. Erosion and sediment control features indicated on the plan shall be installed per the ODNR "Rainwater and Land Development Manual" details. The Contractor shall be solely responsible for providing necessary and adequate measures for proper control of erosion and sediment runoff from the site along with proper maintenance and inspection in compliance with the NPDES General Permit for Storm Water Discharge associated with construction activities.

The Contractor shall provide a schedule of operations to the Owner. The schedule should include a sequence of the placement of the sedimentation and erosion control measures that provides for continual protection of the site throughout the earth moving activities.

Prior to Construction Operations in a particular area, all sedimentation and erosion control features shall be in place. Field adjustments with respect to locations and dimensions may be made by the Engineer, Construction Manager and/or Ohio EPA.

It may become necessary to remove portions of sedimentation controls during construction to facilitate the grading operations in certain areas. However, the controls shall be replaced upon completion of grading or during any inclement weather.

The Contractor shall be responsible to have the current Erosion Control Plan immediately available or posted on site.

The Contractor shall be responsible to ensure that off—site tracking of sediments by vehicles and equipment is minimized. All such off—site sediment shall be cleaned up daily.

The Contractor shall be responsible to ensure that no solid or liquid waste is discharged into the stream tributaries. Untreated sediment—laden runoff shall not flow off of site without being directed through a sediment control practice.

### INSPECTIONS

The Contractor shall provide qualified personnel to conduct site inspections ensuring proper functionality of the erosion and sedimentation controls. All erosion and sedimentation controls are to be inspected once every seven (7) calendar days or within 24 hours of a 1/2 inch storm event or greater. Records of the site inspections shall be kept and made available to jurisdictional agencies if requested.

### MAINTENANCE

It is the Contractor's responsibility to maintain the sedimentation and erosion control features on this project. Any sediment or debris that has reduced the efficiency of a control shall be removed immediately. Upon conducting an erosion control inspection, the Contractor shall repair or replace structures if it is determined that the structure is damaged and/or overwhelmed with sediment.

### SOIL STABILIZATION

All areas not designated to be disturbed shall remain under natural ground cover. Those areas disturbed as a result of construction activities shall be stabilized per the temporary and permanent stabilization requirements. The proposed stream corridor, channel, wetlands and buffer areas shall be stabilized with vegetation as indicated on the Planting Plan. All other areas are required to be stabilized per ODOT Item 659.

### TEMPORARY SEEDING

Any area which will be left dormant (undisturbed) for more than 21 days shall be seeded within 7 days of terminated work. Disturbed areas within 50 feet of a stream, first order or larger, shall be stabilized within 2 days of inactivity. Temporary seeding consists of seedbed preparation and application of seed, fertilizer, and water. Soil test is recommended to determine proper application rate of fertilizer and if lime is necessary.

### PERMANENT SEEDING

Any area that is at final grade shall be seeded within 7 days of terminated work. Permanent seeding consists of seedbed preparation and application of seed, fertilizer, and water. Soil test is recommended to determine proper application rate of fertilizer and if lime is necessary. Ideal conditions for permanent seeding is March 1—May 31 and August 1—September 30.

### EROSION AND SEDIMENT CONTROL PRACTICES

Temporary Diversion Channel (Runoff Control):

Diversion channels will be constructed above the cut slopes associated with the stream corridor construction. The purpose of the diversions are to route clean runoff to the existing stream. Construction of these diversions should take place before any construction activities begin for the proposed stream excavation. These channels should be seeded and stabilized with erosion control matting after they are constructed. See detail on sheet 31.

### Temporary Sediment Basins:

Temporary sediment basins will be utilized within the proposed stream corridor during the construction of the proposed stream. The temporary basins will be located near the downstream end of the proposed channel prior to the existing stream. An earthen plug will be left in place to separate the sediment basin and channel construction from the existing channel. Sediment laden runoff from the channel/valley construction will accumulate in the temporary basins. The basins will contain a temporary riser pipe to manage the runoff and release the calculated dewatering volume over a minimum 48 hour period. Any accumulated sediment will be removed before the completion of the stream corridor construction. See details on sheet 31.

The proposed outlet structures associated with the construction of the wetland cells will be temporarily modified during construction activities to create sediment basins. Temporary orifice holes will be provided within the stop—logs associated with the structures to meet the 48 hour minimum drawdown times associated with sediment basins. The outlet structures will manage the runoff from the disturbed areas within the wetland cells during construction activities. See detail on sheet 18.

### Temporary Stream Crossings:

Temporary stream crossings will be installed across the existing Big Run channel and ditches within the fields during grading activities. The crossings will be comprised of temporary culverts and non-erodible fill material. See detail on sheet 31.

### Sediment Fence:

Sediment fence will be placed along the proposed wetland embankments and the soil stockpiles before construction begins to prevent sediment laden runoff from flowing into the surface waters. See detail on sheet 30.

### Dewatering Filter Bags:

Dewatering filter bags shall be used to dewater excavation areas when the runoff can't flow to the proposed sediment basins. Sediment laden water within the work area will be pumped into the bags. The bags should be located so that filtered water flows through existing vegetation before re—entering the existing stream downstream of the work area. Additional perimeter controls such as straw bale barriers or sediment fence shall be installed downstream of the bags. These sediment bags will be abandoned once the work area is stabilized. Any accumulated sediment will be removed or stabilized in—place. See detail on sheet 30.

### <u>DEWATERING</u>

The Contractor is responsible to provide all dewatering operations as required to accomplish the proposed cut and fill operations. The Contractor shall be responsible to place and maintain the necessary sediment control measures to filter the dewatering discharge.

Dewatering within excavated areas shall be performed in accordance with the details shown on this plan. Alternative methods of dewatering may require prior approval of the Ohio EPA. Dewatering through well points shall account for the groundwater considerations provided below.

### WELL POINTS

Any contractor installing any well, well point, well pit, or other device used for the purpose of removing ground water from an aquifer shall complete and file a Well Log and Drilling Report with the Ohio Department of Natural Resources, Division of Water, within 30 days of the well completion in accordance with the Ohio Revised Code Section 1521.01 and 1524.05. In addition, any such facility shall be completed in accordance with Section 1521.16 of the Ohio Revised Code: For copies of the necessary well log, drilling report, or registration forms, please contact: Ohio Department of Natural Resources, Division of Water Fountain Square, Columbus, Ohio 43224—1387 (614) 265—6717.

The outlet for the well shall be directed into a suitable erosion control device as approved by the Construction Manager.

Any well, well point, pit, or other device installed for the purpose of lowering the groundwater to facilitate construction of this project shall be properly abandoned in accordance with the provisions of Section 3745—9—10 of the Ohio Administrative Code or in accordance with the provisions of this plan as directed by the Director or his representative.

The Contractor shall be solely responsible to the O.D.N.R. for the Registry, Maintenance and Abandonment of any withdrawal device used in the construction of this project.

If during construction, the water wells belonging to nearby residences are dewatered, the Contractor shall provide potable water to the residents and if the well is unable to be recommissioned after construction, a tap to a waterline shall be provided if available or another well dug, at no extra cost to the residents or Owner.

Cost for all the above shall be included in the price bid for the project improvement.

January, 2011 2009-0543

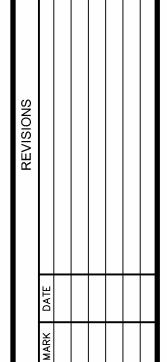
ale Drawn By:
GDT

THE FORMER EASTSIDE NURSERY SITE

SILITOHPOLIS ROAD, CANAL WINCHESTER, OHIO 4311

ans, Mechwart, Hambleton & Tilton, Inc. gineers • Surveyors • Planners • Scientists to New Albany Road, Columbus, OH 43054 one: 614,775,4500 Toll Free: 888,775,3648 emht.com





# FABRIC PROPERTIES VALUES TEST METHOD Grab Tensile Strength 90 lb. Minimum ASTM 1682 Mullen Burst Strength 190 psi Minimum ASTM 3786 Slurry Flow Rate 0.3 gal./min./f² Maximum Equivalent Opening Size 40-80 U.S. Std. Sieve CW-02215

Ultraviolet Radiation Stability\_\_\_\_\_90% Minimum\_\_\_\_\_ASTM-G-26

### SEDIMENT FENCE:

This sediment barrier utilizes standard strength or extra strength synthetic filter fabrics. It is designed for situations in which only sheet or overland flows are expected.

### MATERIAL PROPERTIES ARE:

- 1. The height of a sediment fence shall not exceed 36—inches (higher fences may impound volumes of water sufficient to cause failure of the structure).
- 2. The filter fabric shall be purchased in a continuous roll cut to the length of the barrier to avoid the use of joints. When joints are necessary, filter cloth shall be spliced together only at a support post, with a minimum of a 6 inch overlap, and securely sealed.
- 3. Posts shall be spaced a maximum of 10 feet apart at the barrier location and driven securely into the ground (minimum of 12—inches). Wood posts will be a minimum of 32" long.
- 4. A trench shall be excavated approximately 6 inches wide and 6 inches deep along the line of posts and upslope from the barrier.
- 5. The standard strength filter fabric shall be stapled to the posts, and 8—inches of the fabric shall be extended into the trench. The fabric shall not extend more than 36—inches above the original ground surface. Filter fabric shall not be stapled to existing trees.
- 6. The trench shall be backfilled and soil compacted over the filter fabric. Sediment fences shall be removed when they have served their useful purpose, but not before the upslope area has been permanently stabilized.
- 7. Sediment fences and filter barriers shall be inspected immediately after each rainfall and at least daily during prolonged rainfall. Any required repairs shall be made immediately.
- 8. To prevent water ponded by the silt fence from flowing around the ends, each end shall be constructed upslope so that the ends are at a higher elevation.

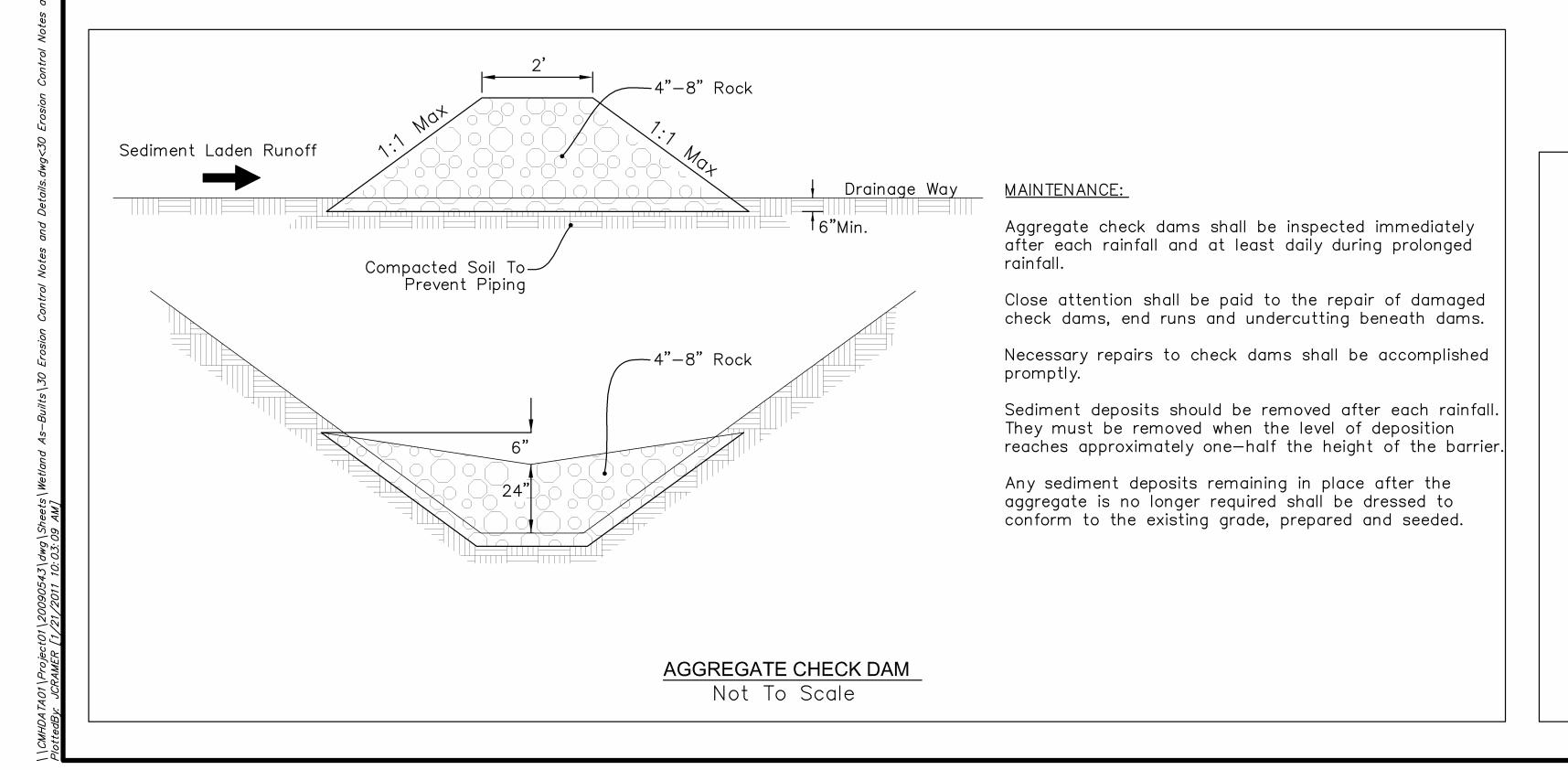
### MAINTENANCE:

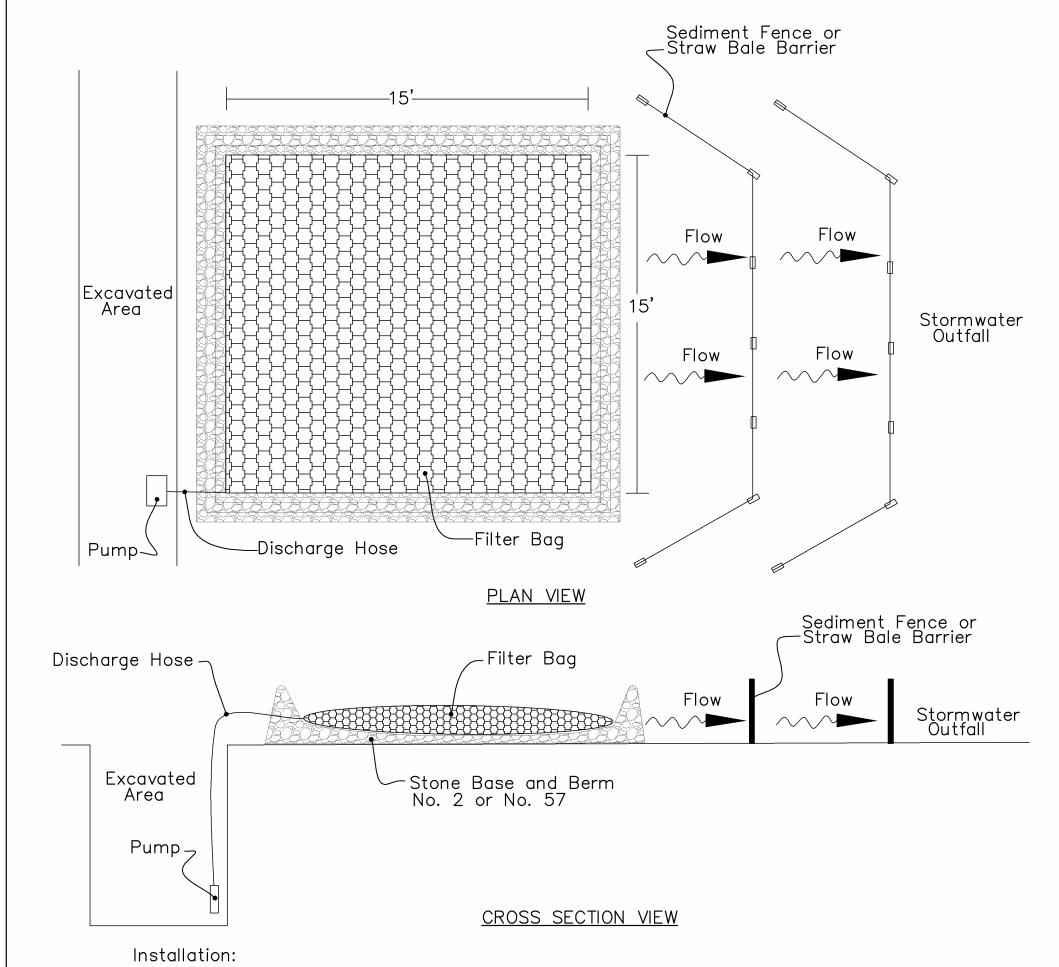
Should the fabric on a sediment fence or filter barrier decompose or become ineffective prior to the end of the expected usable life and the barrier is still necessary, the fabric shall be replaced promptly.

Sediment deposits should be removed after each storm event. They must be removed when deposits reach approximately one—half the height of the barrier.

Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required shall be dressed to conform with the existing grade, prepared and seeded

### SEDIMENT FENCE BARRIER DETAIL Not To Scale





The Contractor shall pump muddy water encountered within excavated areas that are not tributary to sediment basins into a filter fabric bag. The bag shall be placed within a level undisturbed area as far away from the stormwater outfall as possible. The bag shall be placed on top of a aggregate pad. Additionally, a perimeter aggregate berm shall be constructed around the bag. Perimeter controls such as straw bale barriers or sediment fence shall be utilized along the downstream side of the bag. The perimeter controls shall be installed to ensure that the water flowing out of the bag does not flow around the ends of the controls. Upon completion, the bag shall be removed to an area away from the stormwater outfall and opened. The accumulated sediment shall be spread out to allow to dry and stabilized with vegetation. Filterbag shall be JMD Enviro—Protection Filter Bag, size is 15'x15' or equal.

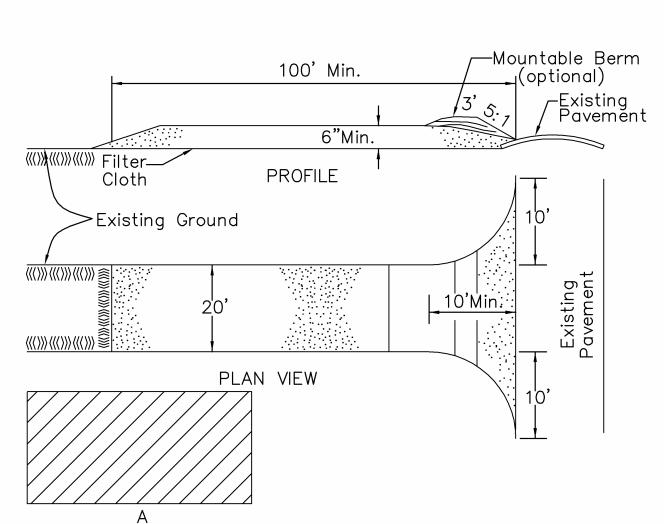
### Maintenace:

The filter bag shall be replaced when the bag is half filled with sediment.

The Contractor shall contact the project inspector/engineer for consultative services if dewatering activities overwhelm the filter bag and perimeter controls.

### DEWATERING FILTER BAG

Not To Scale



- A: Contractor Laydown Area (Dumpster, Cement Truck Washout, Vehicle Fueling) Location to be determined in the field by Contractor.
- 1. Stone Size Use 2" stone, or reclaimed or recycled concrete equivalent.
- 2. Length As required.
- 3. Thickness Not less than six (6) inches.
- 4. Width Twenty (20) foot minimum, but not less than the full width at points where ingress or egress occurs.
  5. Filter Cloth will be placed over the entire area prior to placing of stone.
- 6. Surface Water All surface water flowing or diverted toward construction entrances shall be piped across the entrance. If piping is impractical, a mountable berm with 5:1 slopes will be permitted.
- 7. Maintenance The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public right—of—way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights—of—way must be removed immediately.
- 8. Washing Wheels shall be cleaned to remove sediment prior to entrance onto public right—of—way. When washing is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.
- 9. Periodic inspection and needed maintenance shall be provided after each rain.

STABILIZED CONSTRUCTION EXIT

Not To Scale

Date Job No.

January, 2011 2009-(
Scale By:

GD

Not to Scale

CTLAND AND STREAM AS-BUILT PLAN

AT

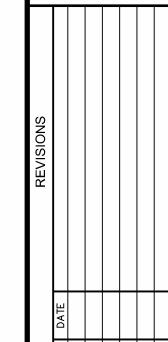
ORMER EASTSIDE NURSERY SITE

POLIS ROAD, CANAL WINCHESTER, OHIO 4311

ns, Mechwart, Hambleton & Tilton, Inc.
neers • Surveyors • Planners • Scientists
New Albany Road, Columbus, OH 43054
ne: 614,775,4500 Toll Free: 888,775,3648
emht.com



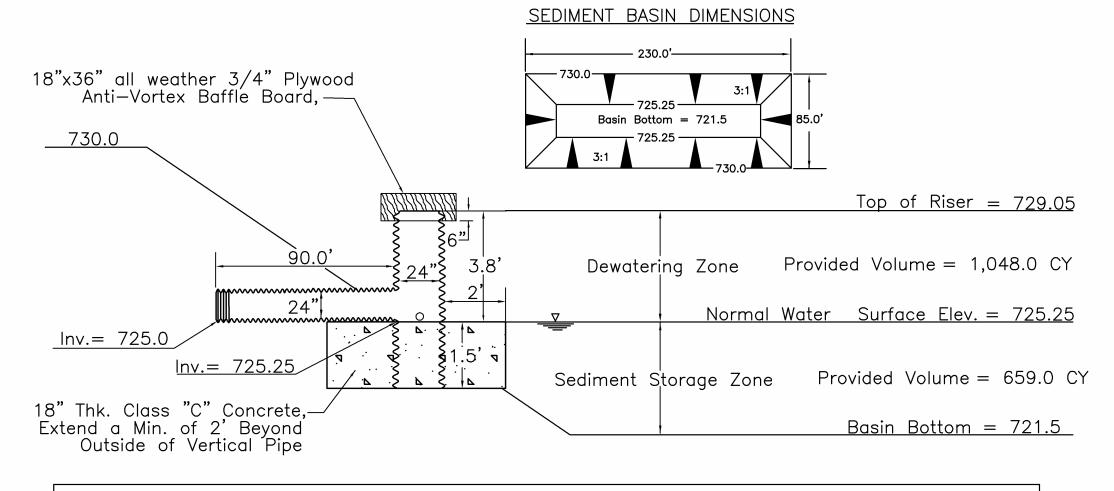
COLUMBUS AND FRA
COUNTY METRO PA
1069 WEST MAIN STRE
WESTERVILLE, OH 4308
(614) 895-6208 FAX:



TRIBUTARY ACREAGE	DISTURBED ACREAGE	REQUIRED DEWATERING ZONE VOLUME 22.5 AC * 67 CY	REQUIRED STORAGE ZONE VOLUME 22.5 AC * 37 CY	DEWATERING HOLES	DEWATERING ZONE DRAWDOWN
22.5 AC.	22.5 AC.	1,507.5 CY	832.5 CY	(1) 3" @ 718.75	50 HRS.

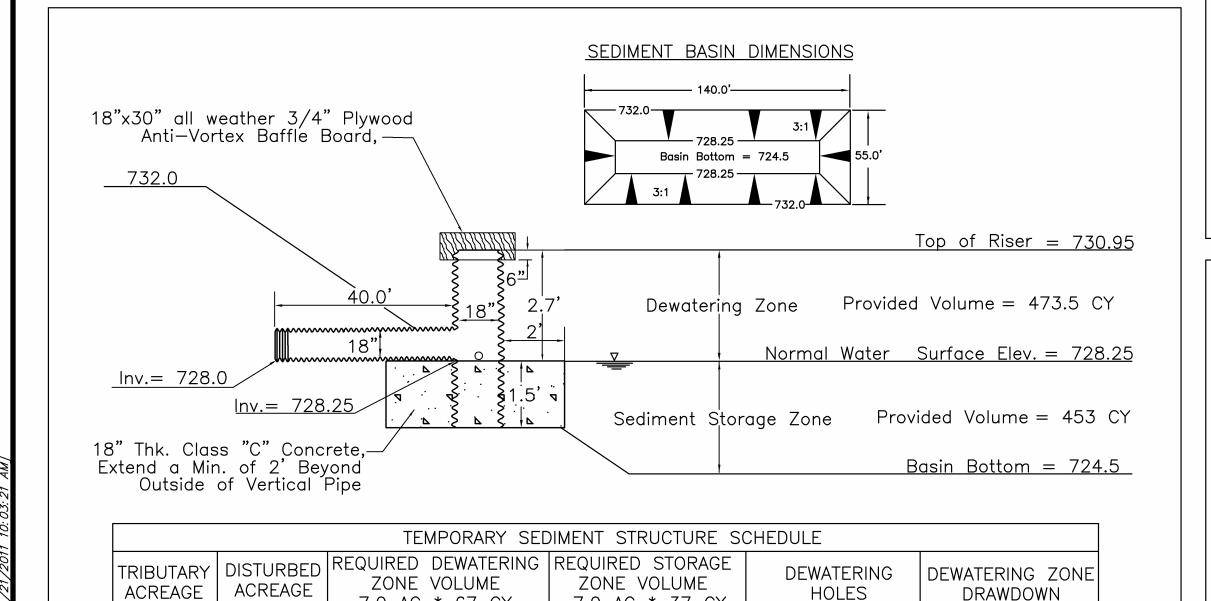
Note: Corrugated Polyethylene Pipe May be Used In Lieu Of CMP.

### **TEMPORARY SEDIMENT BASIN #1**



TEMPORARY SEDIMENT STRUCTURE SCHEDULE								
TRIBUTAR ACREAGE	·	REQUIRED DEWATERING ZONE VOLUME 15.5 AC * 67 CY	REQUIRED STORAGE ZONE VOLUME 15.5 AC * 37 CY	DEWATERING ZONE DRAWDOWN				
15.5 AC	. 15.5 AC.	1,038.5 CY	573.5 CY	(1)2.5" @ 725.25	55 HRS.			

Note: Corrugated Polyethylene Pipe May be Used In Lieu Of CMP. TEMPORARY SEDIMENT BASIN #2



Note: Corrugated Polyethylene Pipe May be Used In Lieu Of CMP. **TEMPORARY SEDIMENT BASIN #3** 

7.0 AC \* 37 CY

259 CY

(1) 2" @ 728.25

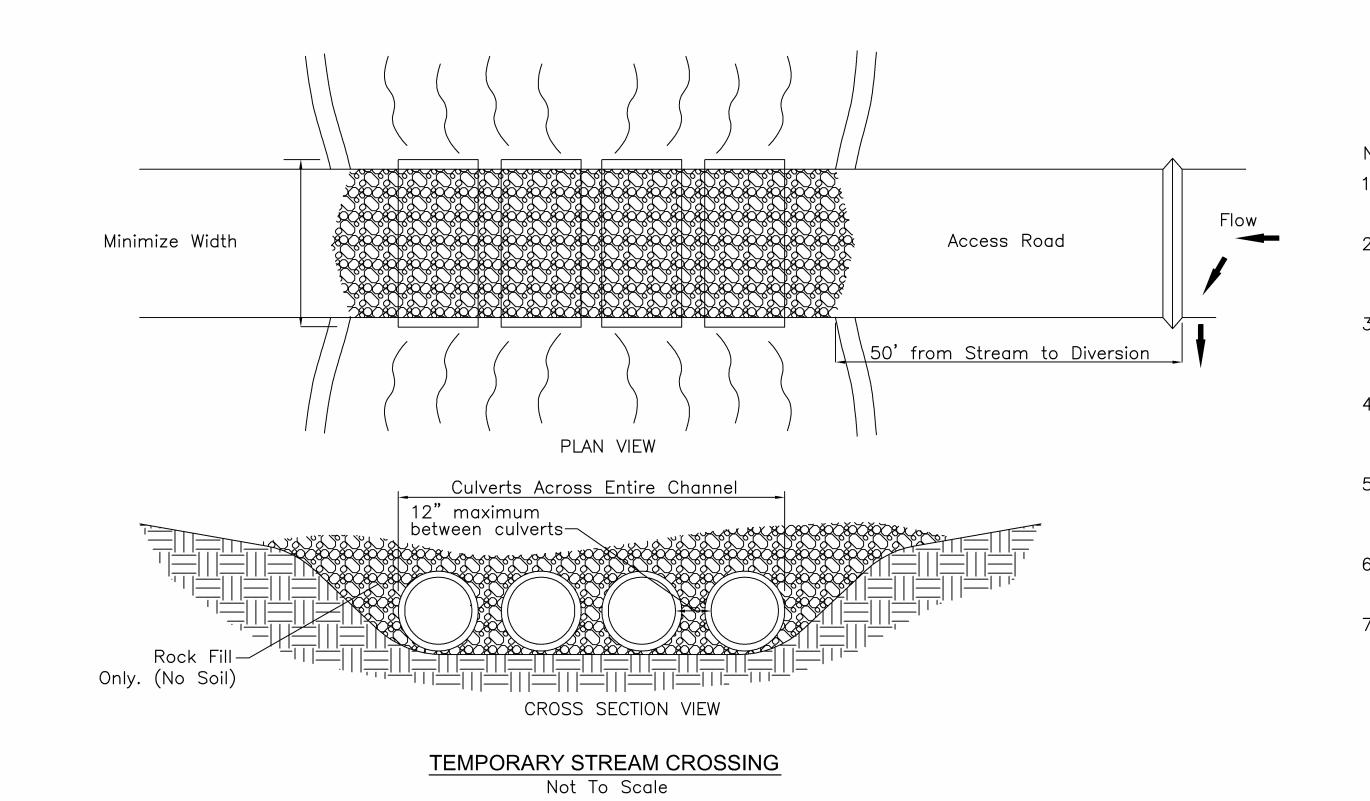
50 HRS.

7.0 AC \* 67 CY

469 CY

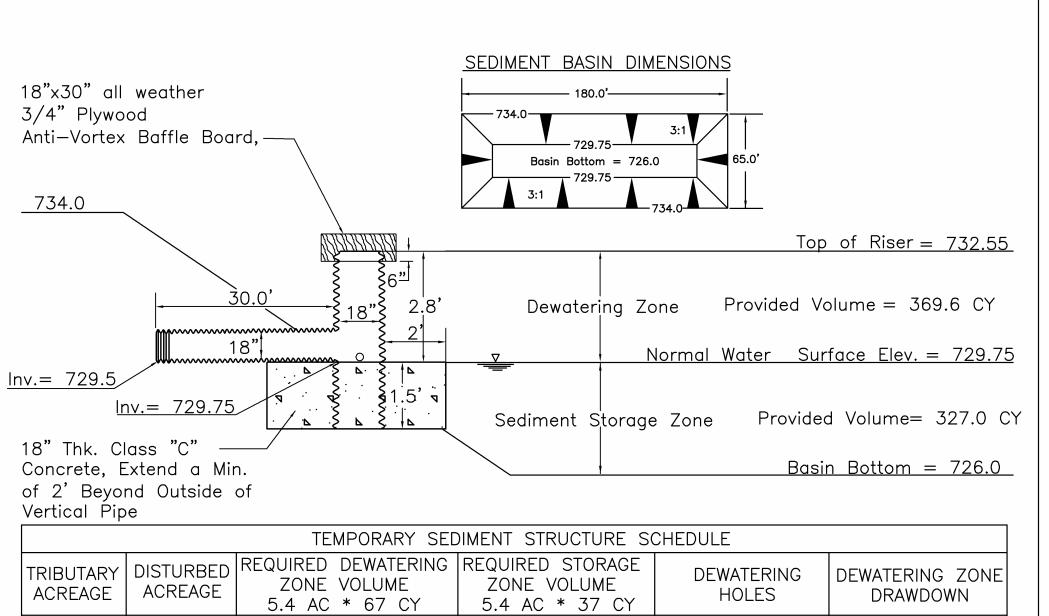
7.0 AC.

7.0 AC.



### NOTES:

- 1. Culverts should be placed on existing streambed.
- 2. Culvert size should be at least three times the stream depth, during normal flow, at the crossing. Minimum culvert size is 18 inches.
- 3. Culverts should be spaced along the entire width of the stream channel with no more than 12 inches of spacing between each one.
- 4. Rock, stone, or aggregate is the only material to be placed around culverts. Minimum size accepted is ODOT No. 1.
- 5. Stormwater runoff from construction road shall be diverted to a sediment control structure prior to reaching crossing.
- 6. Streambanks shall be stabilized upon removal of culverts to prevent erosion.
- 7. Size and number of culverts to vary based on crossing location. Contractor to verify locations of crossing, size and number of culverts with Construction Manager prior to placement.



ACREAGE	5.4 AC * 67 CY	5.4 AC * 37 CY	HOLES	DRAWDOWN				
5.4 AC.	362 CY	200 CY	(1)1.5" @ 729.75	55 HRS.				
 Note: Corrugated Polyethylene Pipe May be Used In Lieu Of CMP.  TEMPORARY SEDIMENT BASIN #4								

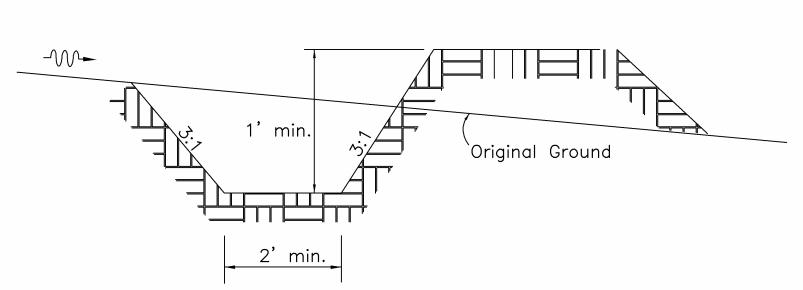
- 1. Sediment basins shall be constructed and operational before upslope land disturbance begins.
- 2. RISER PIPE BASE: The riser pipe shall be set at a minimum of 6 inches in the concrete
- 3. TRASH RACKS: The top of the riser shall be fitted with trash racks firmly fastened to the riser pipe.
- 4. SEDIMENT CLEANOUT:
- Sediment shall be removed and the sediment basin restored to its original dimensions when the sediment has filled to one—half the sediment storage zone. Sediment removed from the basin shall be placed so that it will not erode and stabilized similar to other fill material placed on the site.
- 5. FINAL REMOVAL:

5.4 AC.

The sediment control structure shall be removed only after the upstream drainage area is stabilized.

### TEMPORARY SEDIMENT BASIN STRUCTURE NOTES

Not To Scale



MAINTENANCE: All channels shall be seeded and

stabilized with erosion control matting, The purpose of the channels is to convey clean runoff around the disturbed areas. The Contractor shall be held responsible for maintenance of the channel prior to completion of the project. The slope of the channel shall be such to provide adequate drainage throughout the entire length of the channel.

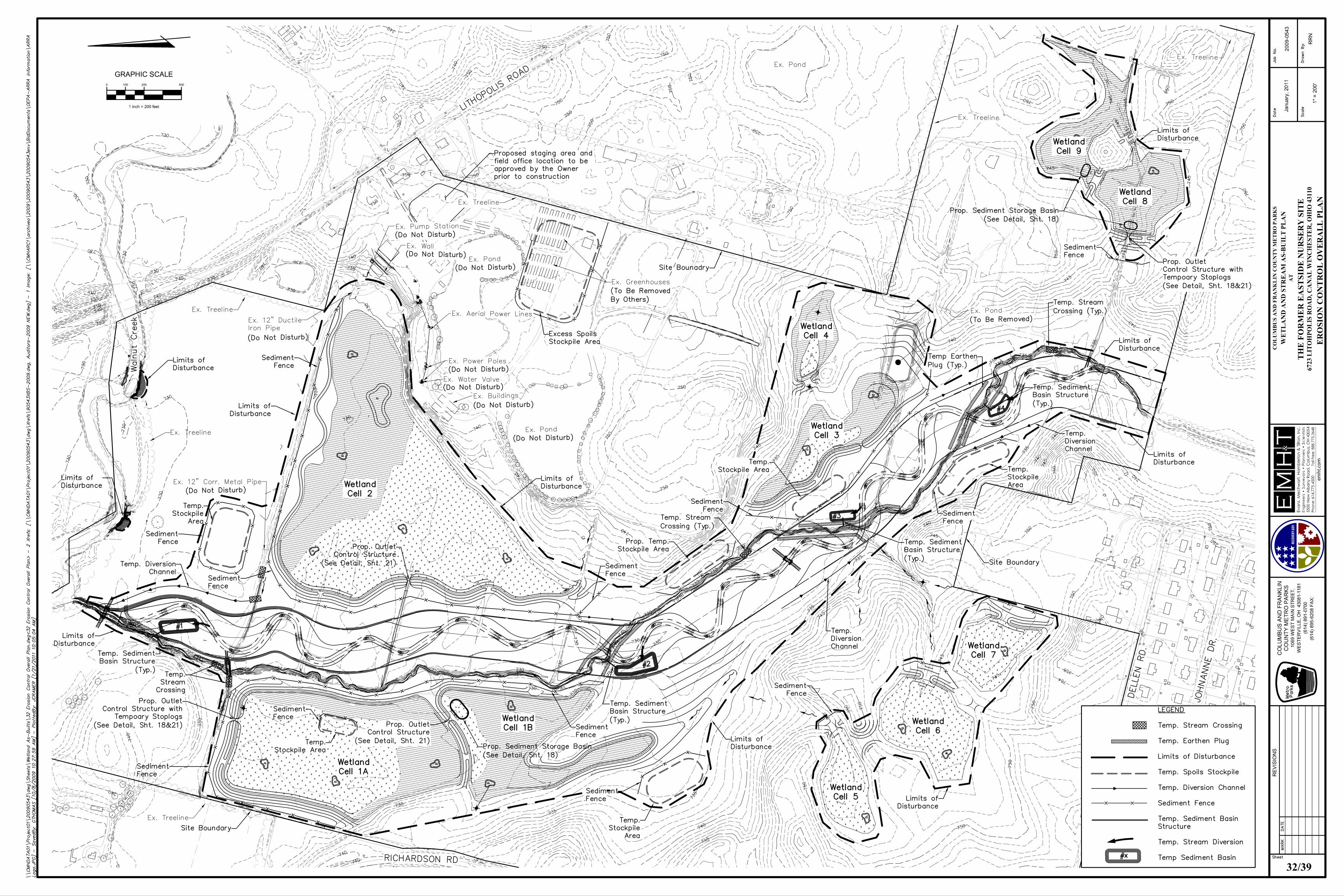
Erosion control matting shall be ODOT Item 670, Ditch Erosion Protection Mat Type B.

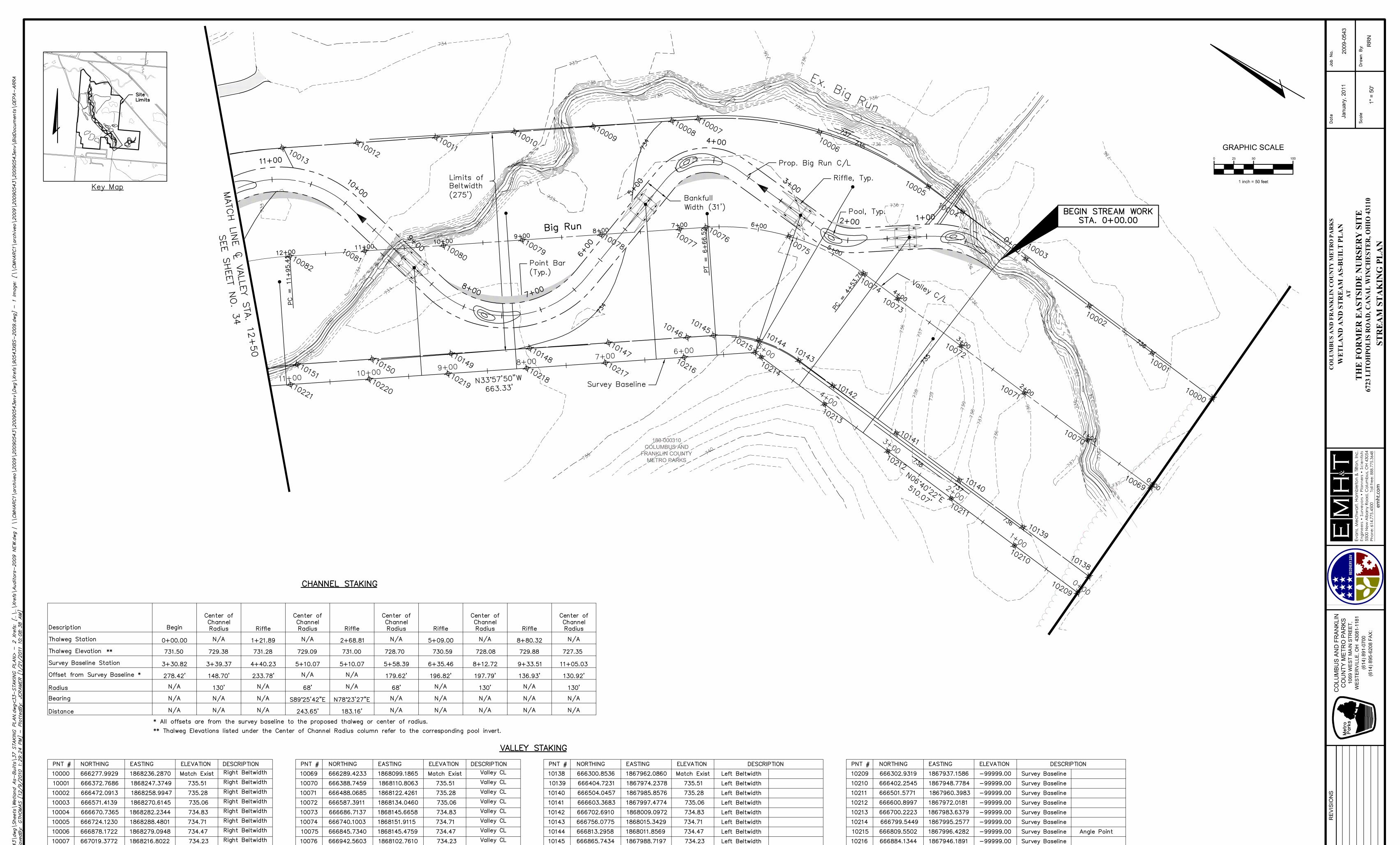
The temporary channels are to be filled in by the Contractor and stabilized upon the completion of grading activities, within the tributary area.

TEMPORARY DIVERSION CHANNEL

Not To Scale

DLUMBUS AND FRANKLIN WETLAND AND STREA 31/39





Right Beltwidth

Right Beltwidth

Right Beltwidth

Right Beltwidth

Right Beltwidth

Right Beltwidth

10077 | 666970.3259

10078 | 667053.2650

10079 | 667136.2041

10080 | 667219.1432

10081 | 667302.0823

10082 | 667381.2115

1868084.0584

1868028.1915

1867972.3247

1867916.4578

1867860.5910

1867807.2904

734.15

733.93

733.70

733.48

733.25

733.03

734.15

733.93

733.70

733.48

733.25

733.03

10008

10009

667047.1428

667130.0819

10013 | 667458.0285 | 1867921.3316

10010 | 667213.0210

10011 | 667295.9601

10012 | 667378.8992

1868198.0997

1868142.2328

1868086.3659

1868030.4991

1867974.6322

Valley CL

Valley CL

Valley CL

Valley CL

Valley CL

Valley CL

10146 | 666893.5089

10147 | 666976.4480 |

10148 | 667059.3871

10149 667142.3262

10150 | 667225.2653 | 1867746.5497

10151 | 667304.3946 | 1867693.2491

1867970.0171

1867914.1503

1867858.2834

1867802.4166

734.15

733.93

733.70

733.48

733.25

733.03

Left Beltwidth

Left Beltwidth

Left Beltwidth

Left Beltwidth

Left Beltwidth

Left Beltwidth

10217 | 666967.0735

10218 | 667050.0126

10219 667132.9517

10220 | 667215.8908 | 1867722.7217

10221 | 667298.8299 | 1867666.8548 |

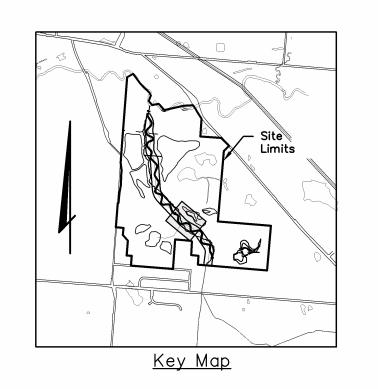
1867890.3223

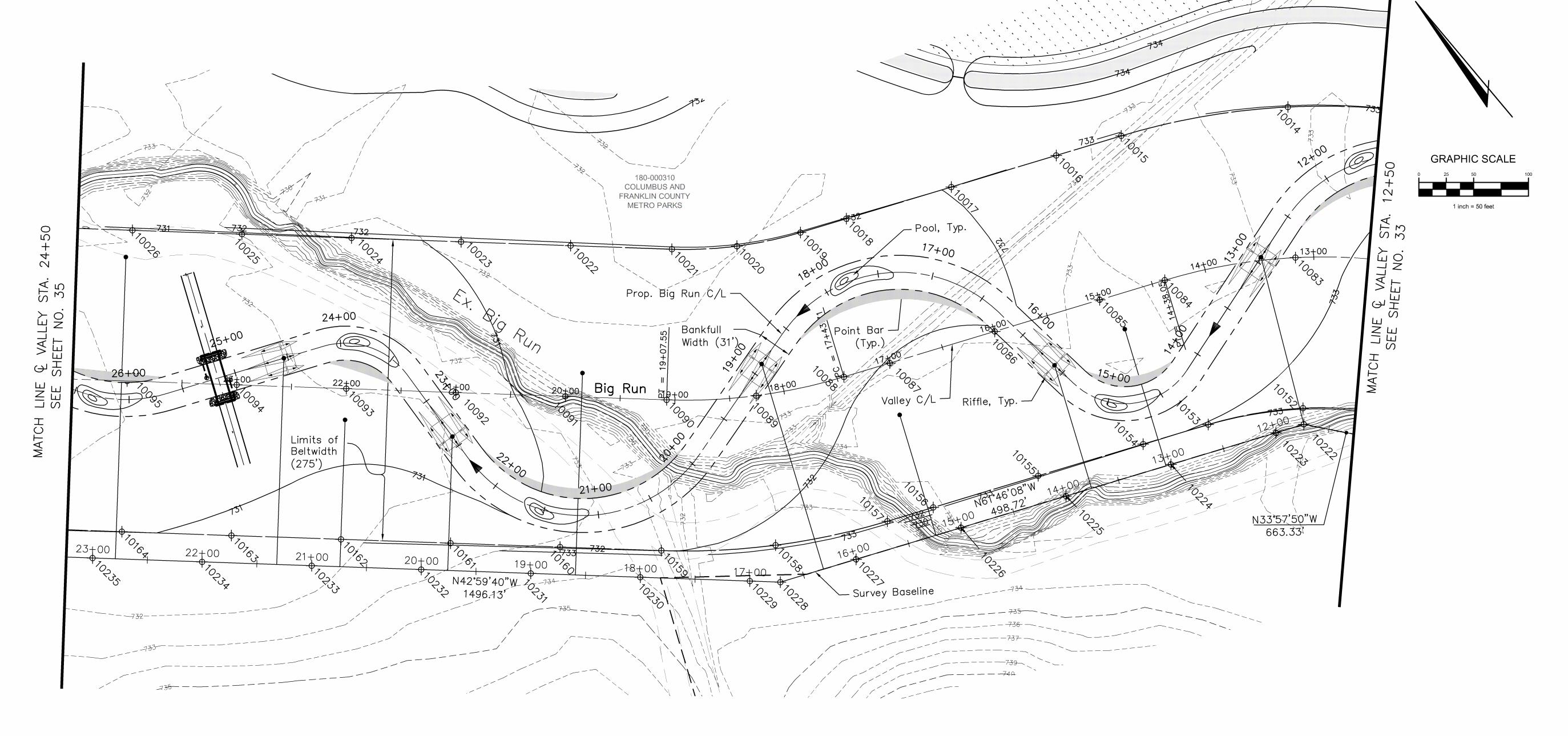
1867834.4554

1867778.5885

-99999.00 | Survey Baseline

ARK DATE





### CHANNEL STAKING

Description	Riffle	Center of Channel Radius	Riffle	Center of Channel Radius	Riffle	Center of Channel Radius	Riffle	Center of Channel Radius	Riffle	Center of Channel Radius
Thalweg Station	12+94.34	N/A	15+60.06	N/A	18+89.20	N/A	22+59.98	N/A	24+53.49	N/A
Thalweg Elevation **	729.11	726.74	728.62	726.21	728.01	725.53	727.33	725.09	726.97	724.64
Survey Baseline Station	11+73.41	13+04.69	13+75.55	15+23.88	16+31.04	18+59.22	19+75.83	20+74.21	21+31.95	22+79.26
Offset from Survey Baseline *	N/A	130.26'	117.19'	114.71'	195.43'	184.26'	122.22'	134.02'	188.32'	275.43'
Radius	N/A	68'	N/A	130'	N/A	130'	N/A	70'	N/A	130'
Bearing	N30°38'19"E	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Distance	157.31'	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

- \* All offsets are from the survey baseline to the proposed thalweg or center of radius.
- \*\* Thalweg Elevations listed under the Center of Channel Radius column refer to the corresponding pool invert.

### VALLEY STAKING

				_
PNT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
10014	667574.6356	1867820.2697	732.76	Right Beltwidth
10015	667663.5446	1867694.1509	732.49	Right Beltwidth
10016	667692.8478	1867639.5718	732.35	Right Beltwidth
10017	667740.1507	1867551.4671	732.12	Right Beltwidth
10018	667787.4536	1867463.3624	731.89	Right Beltwidth
10019	667808.1298	1867424.8518	731.79	Right Beltwidth
10020	667840.3751	1867375.0552	731.61	Right Beltwidth
10021	667880.3108	1867331.1849	731.42	Right Beltwidth
10022	667947.9316	1867268.1398	731.22	Right Beltwidth
10023	668021.0737	1867199.9472	730.99	Right Beltwidth
10024	668094.2157	1867131.7545	730.76	Right Beltwidth
10025	668167.3578	1867063.5618	730.54	Right Beltwidth
10026	668240.4998	1866995.3691	730.81	Right Beltwidth

PNT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
10083	667472.6681	1867728.0261	732.76	Valley CL
10084	667542.4007	1867629.1094	732.49	Valley CL
10085	667571.7039	1867574.5303	732.35	Valley CL
10086	667619.0068	1867486.4256	732.12	Valley CL
10087	667666.3097	1867398.3209	731.89	Valley CL
10088	667686.9858	1867359.8103	731.79	Valley CL
10089	667731.4622	1867291.1253	731.61	Valley CL
10090	667786.5459	1867230.6146	731.42	Valley CL
10091	667854.1667	1867167.5695	731.22	Valley CL
10092	667927.3087	1867099.3768	730.99	Valley CL
10093	668000.4508	1867031.1842	730.76	Valley CL
10094	668073.5928	1866962.9915	730.54	Valley CL
10095	668146.7349	1866894.7988	730.31	Valley CL

PNT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
10152	667370.7006	1867635.7825	732.76	Left Beltwidth
10153	667421.2567	1867564.0679	732.49	Left Beltwidth
10154	667450.5599	1867509.4888	732.35	Left Beltwidth
10155	667497.8628	1867421.3841	732.12	Left Beltwidth
10156	667545.1657	1867333.2794	731.89	Left Beltwidth
10157	667565.8419	1867294.7688	731.79	Left Beltwidth
10158	667622.5492	1867207.1955	731.61	Left Beltwidth
10159	667692.7810	1867130.0442	731.42	Left Beltwidth
10160	667760.4018	1867066.9992	731.22	Left Beltwidth
10161	667833.5438	1866998.8065	730.99	Left Beltwidth
10162	667906.6859	1866930.6138	730.76	Left Beltwidth
10163	667979.8279	1866862.4212	730.54	Left Beltwidth
10164	668052.9700	1866794.2285	730.81	Left Beltwidth

NORTHING	EASTING	ELEVATION	DESCRI	PTION
667359.7142	1867625.8438	-99999.00	Survey Baseline	
667372.2928	1867602.4154	-99999.00	Survey Baseline	
667419.5957	1867514.3108	-99999.00	Survey Baseline	
667466.8986	1867426.2061	-99999.00	Survey Baseline	
667514.2015	1867338.1014	-99999.00	Survey Baseline	
667561.5044	1867249.9967	-99999.00	Survey Baseline	
667595.6241	1867186.4466	-99999.00	Survey Baseline	Angle Point
667616.0086	1867167.4415	-99999.00	Survey Baseline	
667689.1507	1867099.2488	-99999.00	Survey Baseline	
667762.2927	1867031.0561	-99999.00	Survey Baseline	
667835.4348	1866962.8634	-99999.00	Survey Baseline	
667908.5768	1866894.6708	-99999.00	Survey Baseline	
667981.7189	1866826.4781	-99999.00	Survey Baseline	
668054.8609	1866758.2854	-99999.00	Survey Baseline	
	667359.7142 667372.2928 667419.5957 667466.8986 667514.2015 667561.5044 667595.6241 667616.0086 667689.1507 667762.2927 667835.4348 667908.5768 667981.7189	667359.71421867625.8438667372.29281867602.4154667419.59571867514.3108667466.89861867426.2061667514.20151867338.1014667561.50441867249.9967667595.62411867186.4466667616.00861867167.4415667689.15071867099.2488667762.29271867031.0561667835.43481866962.8634667908.57681866894.6708667981.71891866826.4781	667359.7142       1867625.8438       -99999.00         667372.2928       1867602.4154       -99999.00         667419.5957       1867514.3108       -99999.00         667466.8986       1867426.2061       -99999.00         667514.2015       1867338.1014       -99999.00         667561.5044       1867249.9967       -99999.00         667595.6241       1867186.4466       -99999.00         667616.0086       1867167.4415       -99999.00         667689.1507       1867099.2488       -99999.00         667762.2927       1867031.0561       -99999.00         667835.4348       1866962.8634       -99999.00         667908.5768       1866894.6708       -99999.00         667981.7189       1866826.4781       -99999.00	667359.7142         1867625.8438         -99999.00         Survey Baseline           667372.2928         1867602.4154         -99999.00         Survey Baseline           667419.5957         1867514.3108         -99999.00         Survey Baseline           667466.8986         1867426.2061         -99999.00         Survey Baseline           667514.2015         1867338.1014         -99999.00         Survey Baseline           667561.5044         1867249.9967         -99999.00         Survey Baseline           667595.6241         1867186.4466         -99999.00         Survey Baseline           667616.0086         1867167.4415         -99999.00         Survey Baseline           667689.1507         1867099.2488         -99999.00         Survey Baseline           667835.4348         1866962.8634         -99999.00         Survey Baseline           667908.5768         1866894.6708         -99999.00         Survey Baseline           667981.7189         1866826.4781         -99999.00         Survey Baseline

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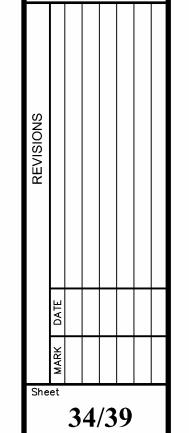
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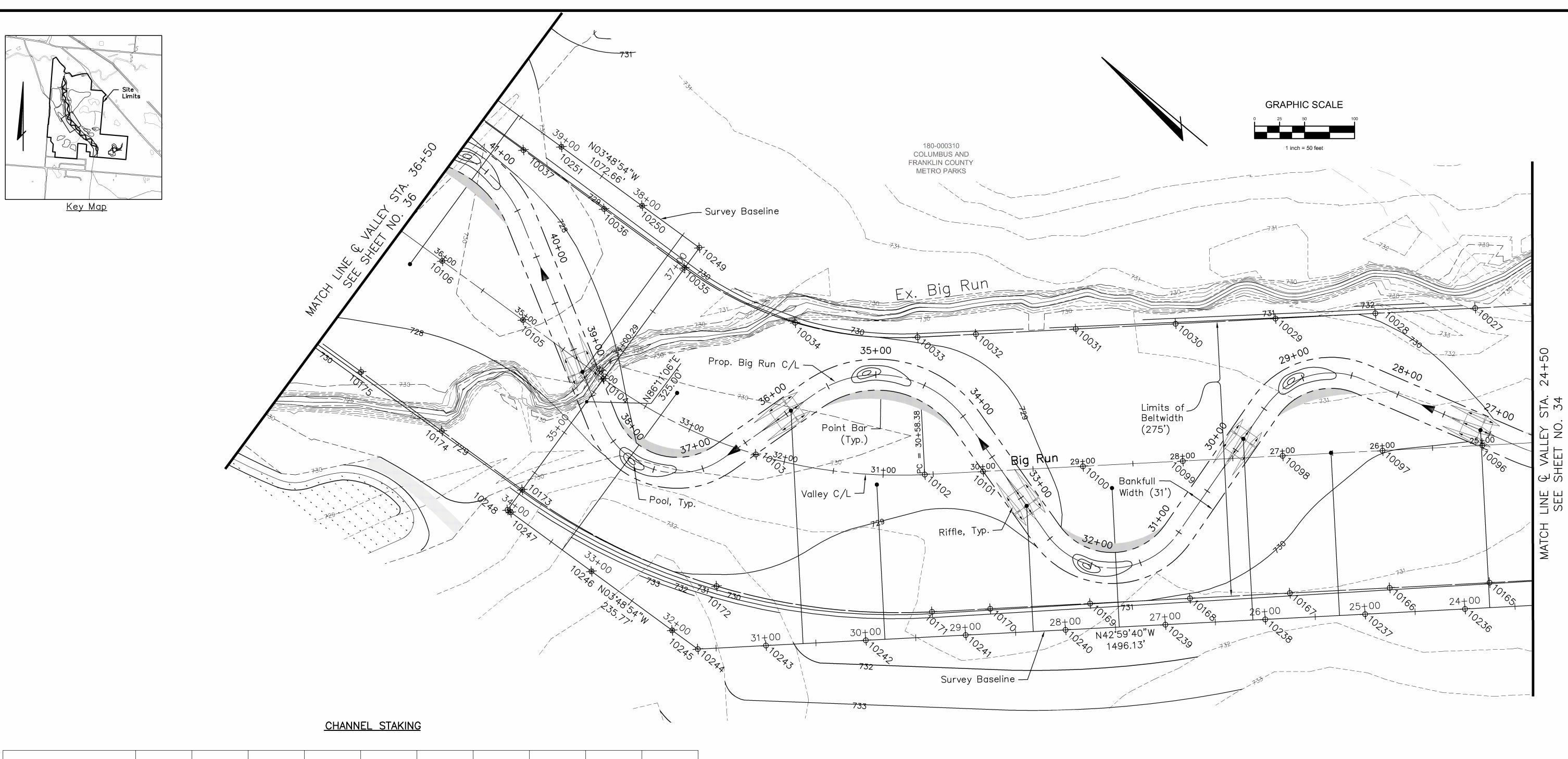
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Description	Riffle	Center of Channel Radius								
Thalweg Station	27+10.01	N/A	29+86.51	N/A	32+90.03	N/A	35+94.20	N/A	38+76.08	N/A
Thalweg Elevation **	726.50	724.13	725.99	723.59	725.43	723.03	724.87	722.54	724.35	721.89
Survey Baseline Station	23+75.22	25+25.69	26+12.48	27+46.21	28+32.35	29+80.86	30+62.81	33+36.25	37+50.05	39+52.91
Offset from Survey Baseline *	177.87	163.03'	181.53'	139.24'	125.82'	154.98'	233.37'	194.59'	169.28'	184.09'
Radius	N/A	80'	N/A	80'	N/A	110'	N/A	80'	N/A	120'
Bearing	N/A	N/A								
Distance	N/A	N/A								

- \* All offsets are from the survey baseline to the proposed thalweg or center of radius.
- \*\* Thalweg Elevations listed under the Center of Channel Radius column refer to the corresponding pool invert.

### VALLEY STAKING

PNT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
10027	668313.6419	1866927.1765	730.59	Right Beltwidth
10028	668386.7839	1866858.9838	730.36	Right Beltwidth
10029	668459.9260	1866790.7911	730.13	Right Beltwidth
10030	668533.0680	1866722.5984	729.91	Right Beltwidth
10031	668606.2101	1866654.4058	729.68	Right Beltwidth
10032	668679.3521	1866586.2131	729.46	Right Beltwidth
10033	668722.0537	1866546.4011	729.32	Right Beltwidth
10034	668825.2587	1866478.8668	729.44	Right Beltwidth
10035	668945.3362	1866449.7734	729.05	Right Beltwidth
10036	669044.7082	1866443.2616	728.33	Right Beltwidth
10037	669144.4043	1866436.5562	728.60	Right Beltwidth

PNT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
10096	668219.8769	1866826.6061	730.09x	Valley CL
10097	668293.0190	1866758.4135	729.86	Valley CL
10098	668366.1610	1866690.2208	729.63	Valley CL
10099	668439.3031	1866622.0281	729.41	Valley CL
10100	668512.4451	1866553.8355	729.18	Valley CL
10101	668585.5872	1866485.6428	728.96	Valley CL
10102	668628.2887	1866445.8308	728.82	Valley CL
10103	668770.6405	1866352.6800	728.44	Valley CL
10104	668935.9844	1866312.6490	728.08	Valley CL
10105	669035.4772	1866306.0145	727.85	Valley CL
10106	669135.2556	1866299.3609	727.63	Valley CL

10165				
	668126.1120	1866726.0358	730.59	Left Beltwidth
10166	668199.2541	1866657.8432	730.36	Left Beltwidth
10167	668272.3961	1866589.6505	730.13	Left Beltwidth
10168	668345.5382	1866521.4578	729.91	Left Beltwidth
10169	668418.6802	1866453.2651	729.68	Left Beltwidth
10170	668491.8223	1866385.0725	729.46	Left Beltwidth
10171	668534.5238	1866345.2604	729.32	Left Beltwidth
10172	668716.0223	1866226.4932	729.44	Left Beltwidth
10173	668926.8358	1866175.4537	729.05	Left Beltwidth
10174	669026.2501	1866168.8245	728.33	Left Beltwidth
10175	669126.1070	1866162.1656	728.60	Left Beltwidth

PNT #	NORTHING	EASTING	ELEVATION	DESCRI	PTION
10236	668128.0030	1866690.0928	-99999.00	Survey Baseline	
10237	668201.1450	1866621.9001	-99999.00	Survey Baseline	
10238	668274.2871	1866553.7074	-99999.00	Survey Baseline	
10239	668347.4291	1866485.5147	-99999.00	Survey Baseline	
10240	668420.5712	1866417.3221	-99999.00	Survey Baseline	
10241	668493.7132	1866349.1294	-99999.00	Survey Baseline	
10242	668566.8553	1866280.9367	-99999.00	Survey Baseline	
10243	668639.9973	1866212.7440	-99999.00	Survey Baseline	Angle Point
10244	668689.9236	1866166.1962	-99999.00	Survey Baseline	
10245	668721.5939	1866164.0843	-99999.00	Survey Baseline	
10246	668821.3723	1866157.4308	-99999.00	Survey Baseline	
10247	668921.1507	1866150.7772	-99999.00	Survey Baseline	
10248	668925.1724	1866150.5091	-99999.00	Survey Baseline	Angle Point
10249	668946.7964	1866474.7889	-99999.00	Survey Baseline	Angle Point
10250	669017.6086	1866470.0669	-99999.00	Survey Baseline	
10251	669117.3870	1866463.4134	-99999.00	Survey Baseline	

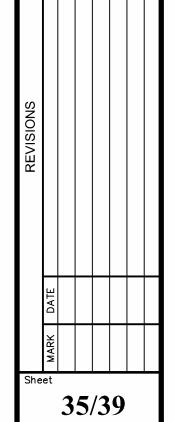
COLUMBUS AND FRANKLIN COUNTY METRO PARKS
WETLAND AND STREAM AS-BUILT PLAN
AT
THE FORMER EASTSIDE NURSERY SITE
6723 LITOHPOLIS ROAD, CANAL WINCHESTER, OHIO 43110
STREAM STAKING PLAN

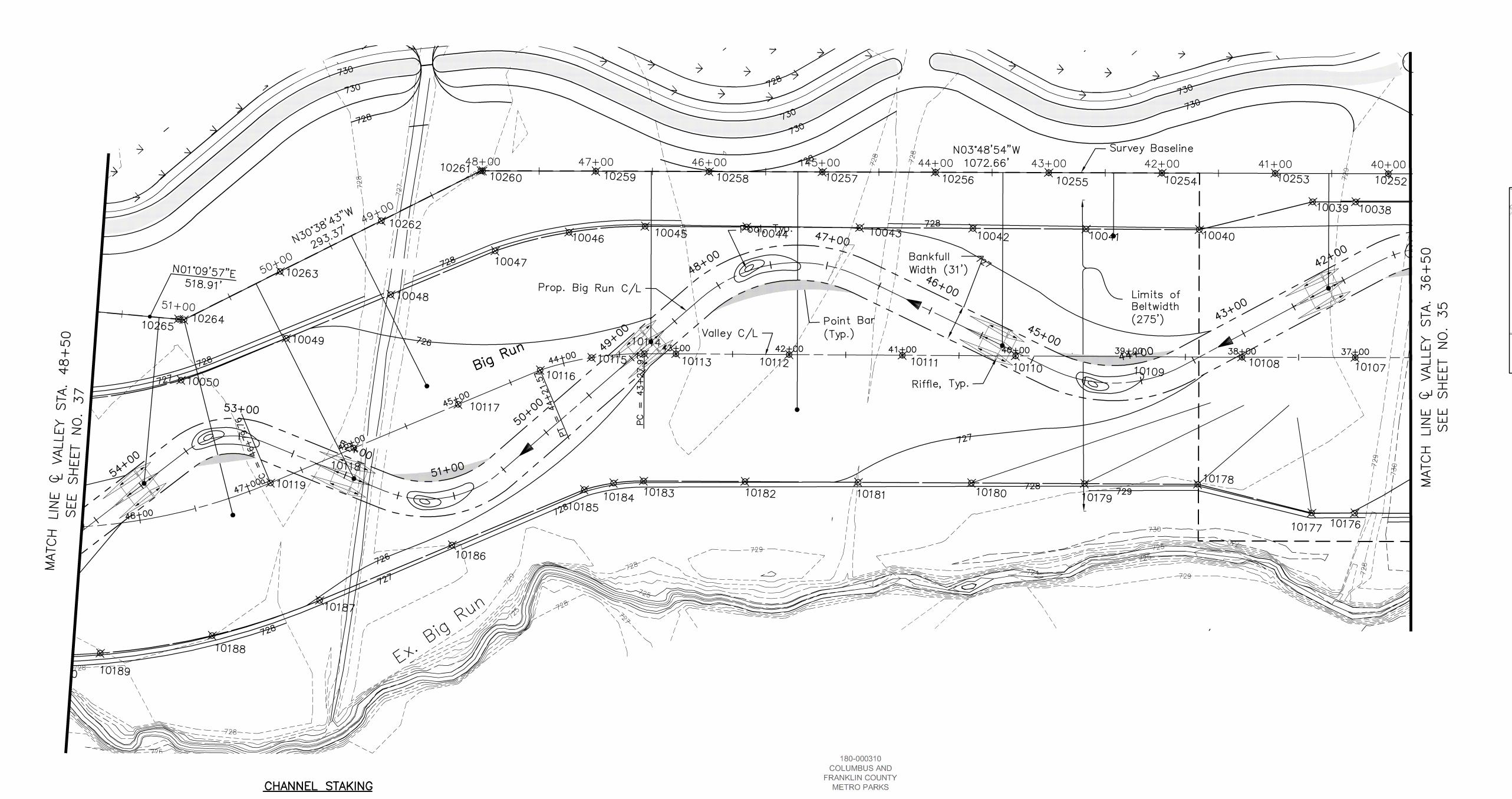
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COLUMBUS AND FRANKLIN COUNTY METRO PARKS 1069 WEST MAIN STREET, WESTERVILLE, OH 43081-1181 (614) 895-6208 FAX:







Description	Riffle	Center of Channel Radius	Riffle						
Thalweg Station	42+15.04	N/A	45+29.40	N/A	48+77.69	N/A	51+91.71	N/A	53+96.64
Thalweg Elevation **	723.72	721.30	723.14	720.70	722.50	720.04	721.92	719.67	721.54
Survey Baseline Station	40+52.52	42+42.57	43+40.49	45+21.54	46+50.99	49+29.54	50+23.81	50+95.06	51+17.09
Offset from Survey Baseline *	101.36'	55.81'	152.97'	210.16'	150.57	148.64'	192.85	N/A	147.17'
Radius	N/A	130'	N/A	130'	N/A	100'	N/A	70'	N/A
Bearing	N/A	N/A	N/A	N/A	N/A	N/A	N/A	S71°56'33"W	N/A
Distance	N/A	N/A	N/A	N/A	N/A	N/A	N/A	177.96'	N/A

- \* All offsets are from the survey baseline to the proposed thalweg or center of radius.
- \*\* Thalweg Elevations listed under the Center of Channel Radius column refer to the corresponding pool invert.

### VALLEY STAKING

PNT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
10038	669244.1827	1866429.9027	728.38	Right Beltwidth
10039	669282.1241	1866427.3726	728.15x	Right Beltwidth
10040	669380.2391	1866395.7745	727.92×	Right Beltwidth
10041	669480.0363	1866389.4085	727.70x	Right Beltwidth
10042	669579.8334	1866383.0424	727.47x	Right Beltwidth
10043	669679.6306	1866376.6764	727.24x	Right Beltwidth
10044	669779.4278	1866370.3104	727.02	Right Beltwidth
10045	669868.8655	1866364.6052	726.88	Right Beltwidth
10046	669935.5069	1866354.6678	726.72	Right Beltwidth
10047	669999.5348	1866333.6859	726.56	Right Beltwidth
10048	670088.8626	1866288.7355	726.23	Right Beltwidth
10049	670178.1904	1866243.7850	725.24	Right Beltwidth
10050	670268.3097	1866200.4430	726.05	Right Beltwidth
10051	670365.2948	1866176.0735	726.05x	Right Beltwidth

PNT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
10107	669235.0341	1866292.7074	727.40	Valley CL
10108	669334.8125	1866286.0538	727.18	Valley CL
10109	669434.6025	1866279.5784	726.95	Valley CL
10110	669534.3996	1866273.2123	726.73	Valley CL
10111	669634.1968	1866266.8462	726.50	Valley CL
10112	669733.9940	1866260.4801	726.28	Valley CL
10113	669833.7911	1866254.1139	726.05	Valley CL
10114	669861.7038	1866252.3334	725.99	Valley CL
10115	669907.9624	1866245.5738	725.88	Valley CL
10116	669952.5140	1866231.4065	725.78	Valley CL
10117	670022.5715	1866196.1530	725.60	Valley CL
10118	670111.8993	1866151.2026	725.38	Valley CL
10119	670183.1448	1866115.3513	725.20	Valley CL
10120	670374.2714	1866062.1610	724.75	Valley CL

PNT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
10176	669225.8854	1866155.5121	728.38	Left Beltwidth
10177	669263.8269	1866152.9820	728.15	Left Beltwidth
10178	669365.9155	1866171.2309	727.92	Left Beltwidth
10179	669465.7127	1866164.8649	727.70	Left Beltwidth
10180	669565.5099	1866158.4988	727.47	Left Beltwidth
10181	669665.3070	1866152.1328	727.24	Left Beltwidth
10182	669765.1042	1866145.7668	727.02	Left Beltwidth
10183	669854.5420	1866140.0616	726.88	Left Beltwidth
10184	669880.8477	1866136.3632	726.72	Left Beltwidth
10185	669906.2907	1866128.7259	726.56	Left Beltwidth
10186	670019.4331	1866071.7917	726.23	Left Beltwidth
10187	670132.5755	1866014.8575	725.24	Left Beltwidth
10188	670225.2130	1865977.1973	726.05	Left Beltwidth
10189	670322.6711	1865954.7937	726.05	Left Beltwidth

NORTHING	EASTING	ELEVATION	DESCR	IPTION
669217.1654	1866456.7598	-99999.00	Survey Baseline	
669316.9438	1866450.1063	-99999.00	Survey Baseline	
669416.7222	1866443.4527	-99999.00	Survey Baseline	
669516.5006	1866436.7992	-99999.00	Survey Baseline	
669616.2790	1866430.1457	-99999.00	Survey Baseline	
669716.0574	1866423.4921	-99999.00	Survey Baseline	
669815.8358	1866416.8386	-99999.00	Survey Baseline	
669915.6142	1866410.1850	-99999.00	Survey Baseline	
670015.3926	1866403.5315	-99999.00	Survey Baseline	
670017.0843	1866403.4187	-99999.00	Survey Baseline	Angle Point
670101.6595	1866353.3106	-99999.00	Survey Baseline	
670187.6934	1866302.3383	-99999.00	Survey Baseline	
670269.4794	1866253.8827	-99999.00	Survey Baseline	Angle Point
670274.4158	1866253.9831	-99999.00	Survey Baseline	
	669217.1654 669316.9438 669416.7222 669516.5006 669616.2790 669716.0574 669815.8358 669915.6142 670015.3926 670017.0843 670101.6595 670187.6934 670269.4794	669217.16541866456.7598669316.94381866450.1063669416.72221866443.4527669516.50061866436.7992669616.27901866430.1457669716.05741866423.4921669815.83581866416.8386669915.61421866403.5315670017.08431866403.4187670101.65951866353.3106670269.47941866253.8827	669217.1654       1866456.7598       -99999.00         669316.9438       1866450.1063       -99999.00         669416.7222       1866443.4527       -99999.00         669516.5006       1866436.7992       -99999.00         669616.2790       1866430.1457       -99999.00         669716.0574       1866423.4921       -99999.00         669815.8358       1866416.8386       -99999.00         669915.6142       1866410.1850       -99999.00         670015.3926       1866403.5315       -99999.00         670101.6595       1866353.3106       -99999.00         670187.6934       1866302.3383       -99999.00         670269.4794       1866253.8827       -99999.00	669217.16541866456.7598-99999.00Survey Baseline669316.94381866450.1063-99999.00Survey Baseline669416.72221866443.4527-99999.00Survey Baseline669516.50061866436.7992-99999.00Survey Baseline669616.27901866430.1457-99999.00Survey Baseline669716.05741866423.4921-99999.00Survey Baseline669815.83581866416.8386-99999.00Survey Baseline669915.61421866403.5315-99999.00Survey Baseline670017.08431866403.4187-99999.00Survey Baseline670101.65951866353.3106-99999.00Survey Baseline670187.69341866302.3383-99999.00Survey Baseline670269.47941866253.8827-99999.00Survey Baseline

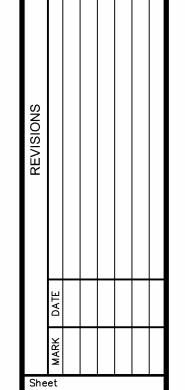
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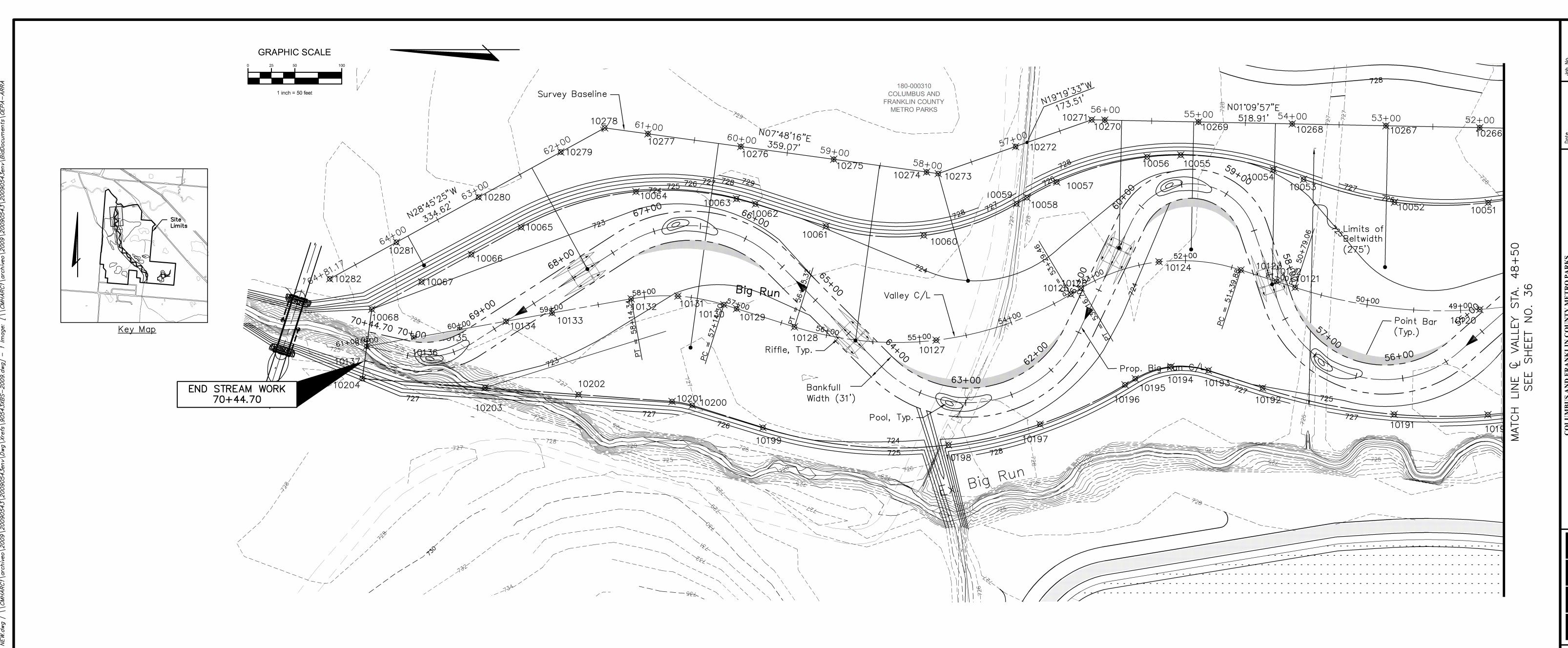
<u>Key Map</u>

THE FORMER EASTSIDE NURSERY SITE
6723 LITOHPOLIS ROAD, CANAL WINCHESTER, OHIO 43110
STREAM STAKING PLAN









### CHANNEL STAKING

Description	Center of Channel Radius	Riffle	Center of Channel Radius	End						
Thalweg Station	N/A	57+89.48	N/A	60+51.49	N/A	64+39.38	N/A	67+82.11	N/A	70+44.70
Thalweg Elevation **	719.00	720.82	718.50	720.34	717.85	719.62	717.18	718.99	716.63	718.50±
Survey Baseline Station	52+97.93	54+17.95	55+05.05	55+81.95	57+87.49	58+50.71	60+24.01	62+35.17	63+86.05	64+81.17
Offset from Survey Baseline *	150.72'	171.53'	136.03'	135.96'	N/A	188.30'	219.69'	123.07'	35.75'	81.99'
Radius	120'	N/A	70'	N/A	130'	N/A	130'	N/A	97.70'	N/A
Bearing	N/A	N/A	N/A	N/A	S74°25'41"W	N/A	N/A	N/A	N/A	N/A
Distance	N/A	N/A	N/A	N/A	118.64'	N/A	N/A	N/A	N/A	N/A

- \* All offsets are from the survey baseline to the proposed thalweg or center of radius.
- \*\* Thalweg Elevations listed under the Center of Channel Radius column refer to the corresponding pool invert.

### VALLEY STAKING

PNT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
10052	670465.2938	1866176.5216	725.66x	Right Beltwidth
10053	670562.2834	1866200.8738	725.44	Right Beltwidth
10054	670594.5209	1866211.3040	725.21	Right Beltwidth
10055	670693.3063	1866226.8426	725.00	Right Beltwidth
10056	670729.1599	1866224.7962	724.84	Right Beltwidth
10057	670825.5356	1866198.1181	724.68	Right Beltwidth
10058	670857.3380	1866181.4365	724.65	Right Beltwidth
10059	670868.2846	1866174.8863	724.43	Right Beltwidth
10060	670967.3811	1866141.1323	724.22	Right Beltwidth
10061	671071.6105	1866150.9146	724.08	Right Beltwidth
10062	671146.9567	1866174.5951	723.85	Right Beltwidth
10063	671167.2146	1866180.2377	723.75	Right Beltwidth
10064	671274.4333	1866187.7603	723.68	Right Beltwidth
10065	671396.8528	1866149.8515	723.60	Right Beltwidth
10066	671449.9873	1866120.6925	723.40	Right Beltwidth
10067	671503.1218	1866091.5336	723.18	Right Beltwidth
10068	671556.2563	1866062.3746	723.00x	Right Beltwidth

PNT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
10121	670571.2788	1866085.5425	724.30	Valley CL
10122	670591.2044	1866091.9893	724.25	Valley CL
10123	670629.1518	1866104.2668	724.16	Valley CL
10124	670716.4568	1866113.0156	724.03	Valley CL
10125	670799.5722	1866084.8996	723.77	Valley CL
10126	670810.5188	1866078.3494	723.74	Valley CL
10127	670954.2088	1866029.4061	723.39	Valley CL
10128	671105.3414	1866043.5904	723.05	Valley CL
10129	671167.0492	1866062.9845	723.90	Valley CL
10130	671180.6877	1866067.2710	722.87	Valley CL
10131	671229.7459	1866076.4000	722.76	Valley CL
10132	671279.5650	1866073.5529	722.65	Valley CL
10133	671363.8783	1866058.4178	722.45	Valley CL
10134	671413.0565	1866049.3879	722.34	Valley CL
10135	671462.3050	1866040.7491	722.23	Valley CL
10136	671511.5183	1866031.9147	722.11	Valley CL
10137	671561.6650	1866022.9128	722.99	Valley CL

PNT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
10190	670401.1826	1865956.5009	725.66	Left Beltwidth
10191	670501.1619	1865958.5356	725.44	Left Beltwidth
10192	670605.9097	1865978.5054	725.21	Left Beltwidth
10193	670663.7827	1865997.2297	725.00	Left Beltwidth
10194	670703.7536	1866001.2351	724.84	Left Beltwidth
10195	670741.8065	1865988.3628	724.68	Left Beltwidth
10196	670752.7531	1865981.8125	724.65	Left Beltwidth
10197	670843.4919	1865939.7832	724.43	Left Beltwidth
10198	671049.5295	1865917.5800	724.22	Left Beltwidth
10199	671139.0723	1865936.2662	724.08	Left Beltwidth
10200	671214.4186	1865959.9468	723.85	Left Beltwidth
10201	671235.9184	1865964.0605	723.60	Left Beltwidth
10202	671242.4812	1866029.7044	723.40	Left Beltwidth
10203	671435.3772	1865978.7638	723.18	Left Beltwidth
10204	671566.3924	1865988.4217	723.00	Left Beltwidth

PNT #	NORTHING	EASTING	ELEVATION	DESCRIP'	TION
10266	670374.3951	1866256.0178	-99999.00	Survey Baseline	
10267	670474.3744	1866258.0525	-99999.00	Survey Baseline	
10268	670574.3536	1866260.0872	-99999.00	Survey Baseline	
10269	670674.3329	1866262.1219	-99999.00	Survey Baseline	
10270	670774.3122	1866264.1566	-99999.00	Survey Baseline	
10271	670788.2858	1866264.4410	-99999.00	Survey Baseline	Angle Point
10272	670869.4208	1866235.8545	-99999.00	Survey Baseline	
10273	670952.0189	1866207.0199	-99999.00	Survey Baseline	Angle Point
10274	670964.4166	1866208.7191	-99999.00	Survey Baseline	
10275	671063.4903	1866222.2983	-99999.00	Survey Baseline	
10276	671162.5641	1866235.8774	-99999.00	Survey Baseline	
10277	671261.6378	1866249.4565	-99999.00	Survey Baseline	
10278	671307.7593	1866255.7780	-99999.00	Survey Baseline	Angle Point
10279	671354.6149	1866230.0647	-99999.00	Survey Baseline	
10280	671442.2817	1866181.9552	-99999.00	Survey Baseline	
10281	671529.9486	1866133.8458	-99999.00	Survey Baseline	
10282	671601.1113	1866094.7933	-99999.00	Survey Baseline	

WETLAND AND STREAM AS-BUILT PLAN

AT

THE FORMER EASTSIDE NURSERY SITE

23 LITOHPOLIS ROAD, CANAL WINCHESTER, OHIO 43110

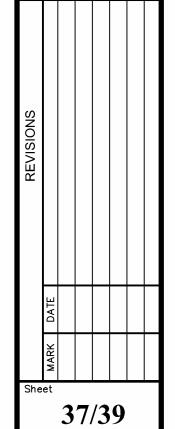
STREAM STAKING PLAN

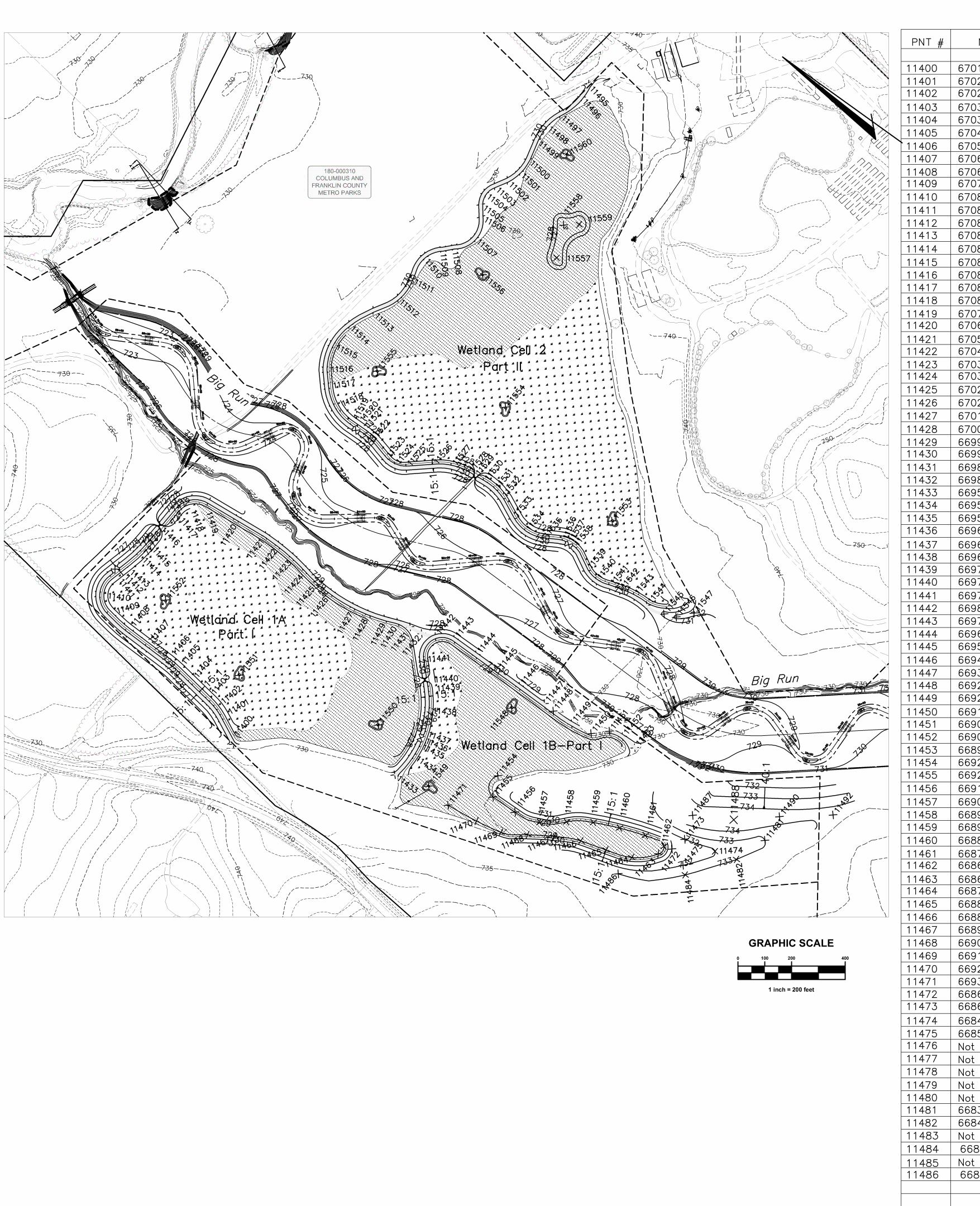
Evans, Mechwart, Hambleton & Tilton, Inc. Engineers • Surveyors • Planners • Scientists 5500 New Albany Road, Columbus, OH 43054 Phone: 614.775.4500 Toll Free: 888.775.3648 emht.com



COLUMBUS AND FRANKLIN COUNTY METRO PARKS 1069 WEST MAIN STREET, WESTERVILLE, OH 43081-1181 (614) 895-6208 FAX:



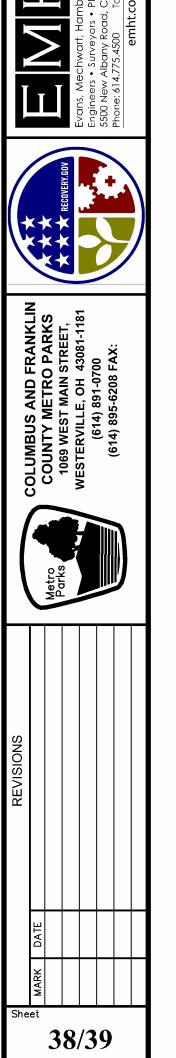


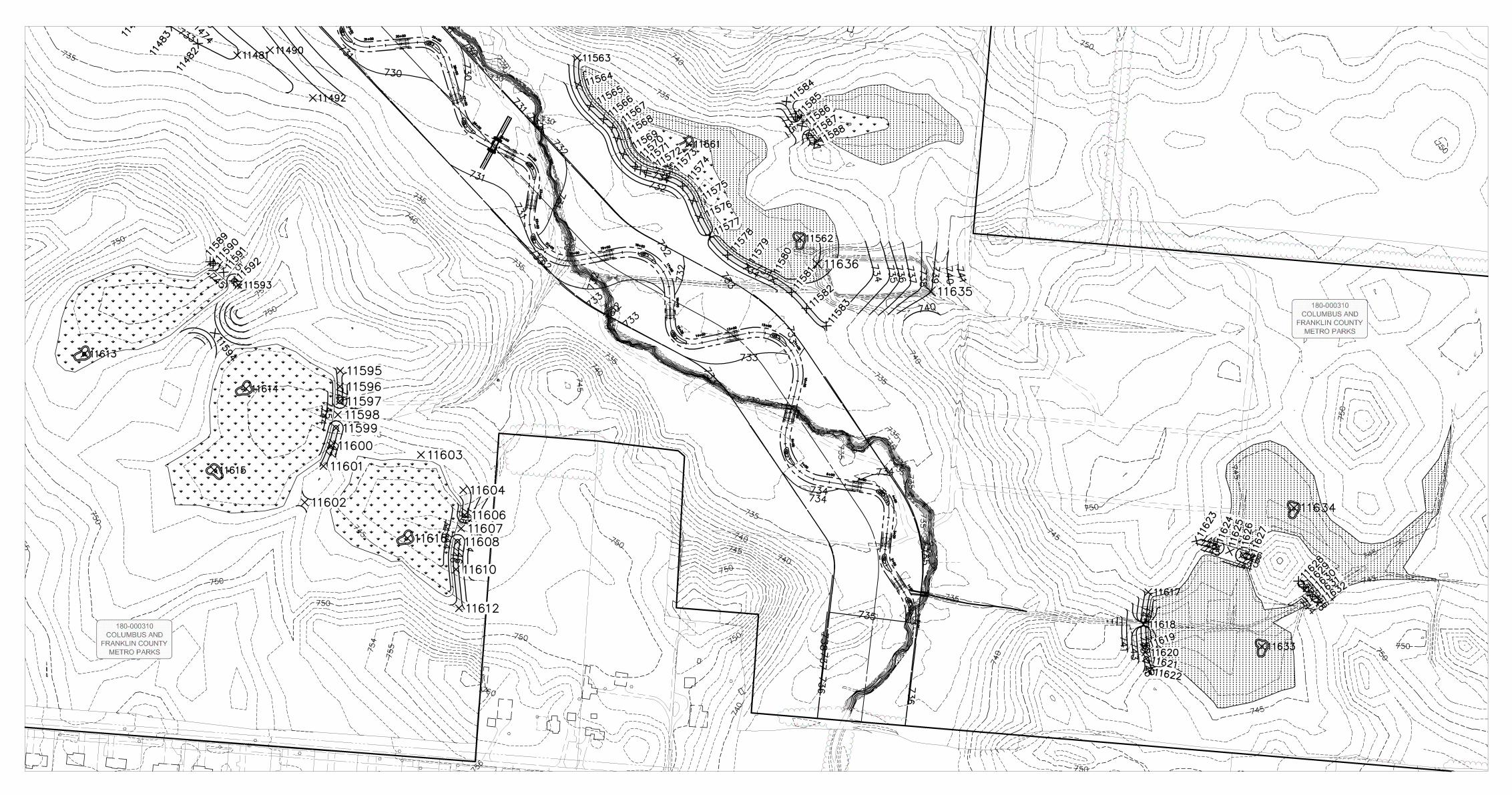


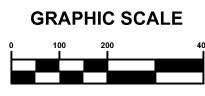
PNT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
11400	670120.8843	1865152.1100	729.00	Centerline of Embankmen
11401	670222.7309	1865193.2372	729.00	Centerline of Embankmen
11402	670261.5367	1865204.9075	729.00	Centerline of Embankmen
11403	670301.7615	1865209.8108	729.00	Centerline of Embankmen
11404	670391.7288	1865215.9964	729.00	Centerline of Embankmen
11405	670457.7400	1865220.8683	729.00	Centerline of Embankmen
11406	670508.6732	1865221.3756	729.00	Centerline of Embankmen
11407	670601.0549	1865216.4049	729.00	
				Centerline of Embankmen
11408	670693.4366	1865211.4342	729.00	Centerline of Embankmen
11409	670794.9547	1865215.6749	729.00	Centerline of Embankmen
11410	670867.5294	1865255.3173	729.00	Centerline of Embankmen
11411	670882.6653	1865349.1977	729.00	Centerline of Embankmen
11412	670878.5359	1865368.7667	728.50	CL Spillway
11413	670874.4066	1865388.3358	729.00	Centerline of Embankmen
11414	670859.2238	1865473.7160	729.00	Centerline of Embankmen
11415	670856.5962	1865526.3067	729.00	Centerline of Embankmen
11416	670856.5148	1865599.9509	726.50	Outlet Control Structure
11417	670856.9321	1865687.6847	729.00	Centerline of Embankmen
11418	670833.3369	1865752.6522	729.00	Centerline of Embankmen
11419	670773.2771	1865786.7326	729.00	Centerline of Embankmen
11420	670650.7676	1865806.8894	729.00	Centerline of Embankmen
11421	670528.2581	1865827.0463	729.00	Centerline of Embankmen
11422	670468.1486	1865830.8095	729.00	Centerline of Embankmen
11423	670399.3304	1865831.1681	729.00	Centerline of Embankmen
11424	670330.7819	1865825.0704	729.00	Centerline of Embankmen
11425	670267.4209	1865819.6822	729.00	Centerline of Embankmen
11426	670203.8404	1865820.7546	729.00	Centerline of Embankmen
11427	670106.9893	1865834.7511	729.00	Centerline of Embankmen
11428	670046.1855	1865851.1656	729.00	Centerline of Embankmen
11429	669987.9595	1865875.1714	729.00	Centerline of Embankmen
11430	669943.4154	1865895.9166	729.00	Centerline of Embankmen
11431	669896.7464	1865911.2964	729.00	Centerline of Embankmen
11432	669847.9114	1865920.1330	729.00	Centerline of Embankmen
11433	669586.2369	1865451.8096	730.00	Centerline of Embankmen
11434	669584.1426	1865551.1901	730.00	Centerline of Embankmen
11435	669594.1219	1865599.9171	730.00	Centerline of Embankmen
11436	669600.5357	1865618.8520	729.50	CL Spillway
			+	
11437	669606.9474	1865637.7877	730.00	Centerline of Embankmen
11438	669648.5558	1865713.5542	730.00	Centerline of Embankmen
11439	669701.5668	1865772.4880	730.00	Centerline of Embankmen
11440	669727.5283	1865795.2069	727.50	Outlet Control Structure
11441	669785.5286	1865845.9630	730.00	Centerline of Embankmen
11442	669800.8840	1865944.2239	730.00	Centerline of Embankmen
11443	669740.7286	1865981.5334	730.00	Centerline of Embankmen
11444	669641.0515	1865989.5637	730.00	Centerline of Embankmen
11445	669541.3046	1865996.7271	730.00	Centerline of Embankmen
11446	669441.5381	1866003.6469	730.00	Centerline of Embankmen
11447	669328.4117	1866013.9063	730.00	Centerline of Embankmen
11448	669285.6091	1866013.5548	730.00	Centerline of Embankmen
11449	669202.9693	1866021.7898	730.00	Centerline of Embankmen
			1	
11450	669123.8976	1866040.2057	730.00	Centerline of Embankmen
11451	669077.1616	1866091.1129	730.00	Centerline of Embankmen
11452	669026.3543	1866107.2076	730.00	Centerline of Embankmen
11453	668964.9926	1866104.3228	730.00	Centerline of Embankmen
11454	669289.0145	1865695.9117	729.00	Wetland Invert
11455	669252.0718	1865623.4989	729.00	Wetland Invert
	669152.5516			
11456		1865633.2834	729.00	Wetland Invert
11457	669056.9212	1865662.5206	729.00	Wetland Invert
11458	668982.0727	1865728.8359	729.00	Wetland Invert
11459	668904.0144	1865791.3411	729.00	Wetland Invert
11460	668815.9685	1865838.7534	729.00	Wetland Invert
11461	668724.4247	1865878.9992	729.00	Wetland Invert
11462	668645.1242	1865892.9377	729.00	Wetland Invert
11463	668642.9386	1865857.4176	729.00	Wetland Invert
11464	668710.4628	1865783.6579	729.00	Wetland Invert
			+	
11465	668802.1078	1865743.6431	729.00	Wetland Invert
11466	668895.8922	1865708.9374	729.00	Wetland Invert
11467	668982.1390	1865658.3262	729.00	Wetland Invert
11468	669062.4331	1865598.7204	729.00	Wetland Invert
11469	669144.5734	1865541.6856	729.00	Wetland Invert
11470	669241.0969	1865515.5472	729.00	Wetland Invert
11471	669360.8841	1865492.7863	729.00	
				Contour
11472	668615.9173	1865904.2480	731.00	Contour
11473	668602.8020	1865962.8394	732.00	Contour
11474	668487.3700	1866000.9319	732.00	Contour
11475	668545.0162	1865884.4173	732.00	Contour
11476	Not Used	. 2 2 3 3 1 1 1 7 3	, 52.00	
11477	Not Used			
11478	Not Used			
11479	Not Used			
11480	Not Used			
11481	668370.7752	1866151.9889	733.00	Contour
11482	668406.2992	1866029.3450	733.00	Contour
11483	Not Used			
11484	668515.9817	1865862.1083	733.00	Contour
	Not Used			
11485	1100 0300			
	668709.7892	1865704.7434	733.00	Contour

PNT #	NORTHING	EASTING	ELEVATIO	N DESCRIPTION
1487 1488	668637.2581 668509.1130	1866050.1559 1866135.9406	734.00 734.50	Centerline of Embankmen
1489	Not Used	1000100.0100	704.00	Certerine of Linburkmen
1490	668386.0158	1866254.6080	734.50	Centerline of Embankmen
<del>1100</del> 1491	Not Used	1000201.0000	7 0 1.00	Contornio di Empariminari
1492	668237.1693	1866388.0238	734.00	Centerline of Embankmen
1493	Not Used			
1494	Not Used			
1495	670687.9154	1867890.3760	730.00	Centerline of Embankmen
1496	670677.8079	1867837.1212	730.00	Centerline of Embankmen
1497	670699.0211	1867734.9982	730.00	Centerline of Embankmen
1498	670712.2567	1867671.0908	730.00	Centerline of Embankmen
1499	670703.8618	1867606.3693	730.00	Centerline of Embankmen
1500	670681.1906	1867531.9187	730.00	Centerline of Embankmen
1501	670676.4988	1867475.4797	730.00	Centerline of Embankmen
1502	670689.9291	1867420.4615	730.00	Centerline of Embankmen
1503	670713.4680	1867373.9567	730.00	Centerline of Embankmen
1504	670724.1605	1867329.8827	730.00	Centerline of Embankmen
1505	670707.7806	1867287.5915	730.00	Centerline of Embankmen
1506	670677.6604	1867253.5125	730.00	Centerline of Embankmen
1507	670645.2471	1867177.8367	730.00	Centerline of Embankmen
1508	670680.4141	1867103.4007	730.00	Centerline of Embankmen
1509	670708.7173	1867069.6310	730.00	Centerline of Embankmen
1510	670745.5663	1867004.9516	730.00	Centerline of Embankmen
1511	670728.7193	1866906.5385	730.00	Centerline of Embankmen
1512	670721.1281	1866821.4991	730.00	Centerline of Embankmen
1513	670761.9003	1866726.7622	730.00	Centerline of Embankmen
1514	670796.9763	1866628.9300	730.00	Centerline of Embankmen
1515	670798.9546	1866530.8956	730.00	Centerline of Embankmen
1516	670756.8595	1866442.3368	730.00	Centerline of Embankmen
1517	670712.7847	1866398.8668	730.00	Centerline of Embankmen
1518	670643.8949	1866352.9145	730.00	Centerline of Embankmen
1519	670543.2106	1866340.6933	730.00	Centerline of Embankmen
1520	670523.2870	1866342.4404	729.50	CL Spillway
1521	670503.3635	1866344.1876	730.00	Centerline of Embankmen
1522	670453.0690	1866344.5327	730.00	Centerline of Embankmen
1523	670368.7511	1866330.6268	730.00	Centerline of Embankmen
1524	670325.7777	1866333.3945	730.00	Centerline of Embankmen
1525	670288.7141	1866355.3187	730.00	Centerline of Embankmen
1526	670217.2264	1866424.5124	730.00	Centerline of Embankmen
1527	670162.1128	1866466.3095	730.00	Centerline of Embankmen
1528	670096.6855	1866488.7542	730.00	Centerline of Embankmen
1529	670071.1932	1866493.2492	727.50	Outlet Control Structure
1530	670033.1759	1866499.9526	730.00	Centerline of Embankmen
<u>1531</u>	669983.6712	1866502.5198	730.00	Centerline of Embankmen
<u>1532</u>	669943.0068	1866495.4646	730.00	Centerline of Embankmen
<u>1533</u>	669863.8684	1866465.4579	730.00	Centerline of Embankmen
1534 1535	669793.8932	1866455.6806	730.00	Centerline of Embankmen
1535	669726.8481	1866477.9763	730.00	Centerline of Embankmen
1536 1537	669660.0042	1866520.3931	730.00	Centerline of Embankmen
1537 1530	669640.8284	1866526.0005	729.50	CL Spillway
1538 1530	669620.9313	1866527.8065	730.00	Centerline of Embankmen
1539 1540	669527.6461	1866494.1061	730.00	Centerline of Embankmen
1540 1541	669474.8129	1866488.0125	730.00	Centerline of Embankmen
1541 1540	669423.8884	1866503.3478	730.00	Centerline of Embankmen
1542 1543	669385.3784	1866517.1249	730.00	Centerline of Embankmen
1543	669329.8576	1866533.8218	730.00	Centerline of Embankmen
1544 1545	669272.2230	1866540.1133	730.00	Centerline of Embankmen
1545 1546	669202.0544	1866556.8397 1866577.3833	731.00	Centerline of Embankmen  Centerline of Embankmen
	669159.8964		732.00	
1547	669119.1042 669412.1462	1866631.1078	732.00	Centerline of Embankmen Shallow Depression
1548		1865922.7247	+	ļ
1549	669461.3978	1865500.2644	727.00	Shallow Depression
<u>1550</u> 1551	669753.1479 670269.8429	1865554.0425 1865362.3980	726.00 726.00	Shallow Depression Shallow Depression
1551	670659.3869	1865401.6805	726.00	<u>'</u>
1552 1553	669573.5065	1866697.9530	726.00	<u> </u>
				<u>'</u>
1554 1555	670150.9274	1866768.0390	727.00	Shallow Depression
1555 1556	670604.2149	1866563.3967	727.00	Shallow Depression
1556	670533.1882	1867090.3995	727.00	Shallow Depression
1557	670363.3469	1867317.0142	727.00	Shallow Depression
1558 1550	670421.1726	1867427.4803	727.00	Shallow Depression
1559 1560	670378.5785 670581.4526	1867466.4471 1867637.8107	727.00	Shallow Depression
1200	0/0001.4026	100/03/.010/	727.00	Shallow Depression
				1

<sup>\*</sup> The elevation listed for the Outlet Control Structure is the Primary Outlet Elevation. See details, sheet 21.







PNT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
11561	668093.0760	1867560.5103	731.00	Shallow Depression
11562	667799.3042	1867907.6497	731.00	Shallow Depression
11563	668361.9859	1867212.9190	734.00	Centerline of Embankmen
11564	668279.2775	1867216.6335	734.00	Centerline of Embankmen
11565	668211.8714	1867253.2776	734.00	Centerline of Embankmen
11566	668171.2224	1867295.5497	734.00	Centerline of Embankmen
11567	668145.0357	1867322.7773	734.00	Centerline of Embankmen
11568	668111.1333	1867339.4421	734.00	Centerline of Embankmen
11569	668062.0644	1867358.3865	734.00	Centerline of Embankmen
11570	668022.9755	1867393.8643	734.00	Centerline of Embankmen
11571	668012.6577	1867410.9211	735.50	CL Spillway
11572	668004.1129	1867428.9965	734.00	Centerline of Embankmen
	667987.2583		734.00	
11573		1867491.8782		
11574	667962.1521	1867542.0071	734.00	Centerline of Embankmen
11575	667916.2613	1867574.2136	734.00	Centerline of Embankmen
11576	667865.8875	1867594.7485	734.00	Centerline of Embankmen
11577	667806.4120	1867626.9493	731.50	Outlet Control Structure
11578	667746.7670	1867682.3490	734.00	Centerline of Embankmen
11579	667707.0377	1867745.6791	734.00	Centerline of Embankmen
11580	667670.5712	1867824.4201	734.00	Centerline of Embankmen
11581	667631.1812	1867881.5985	734.00	Centerline of Embankmen
11582	667580.2340	1867928.7719	734.00	Centerline of Embankmen
11583	667525.3902	1867990.4779	734.00	Centerline of Embankmen
	668225.6825		737.00	
11584		1867865.9973		Centerline of Embankmen
11585	668178.0188	1867893.9540	737.00	Centerline of Embankmen
11586	668149.5362	1867914.5241	734.50	CL Primary Spillway
11587	668120.9345	1867934.5982	737.00	Centerline of Embankmen
11588	668094.4703	1867954.5953	737.00	Centerline of Embankmen
11589	667726.1880	1866067.7211	747.00	Centerline of Embankmen
	667720.7230	1866077.1324	747.00	
11590				Centerline of Embankmen
11591	667693.1011	1866109.4322	744.50	CL Primary Spillway
11592	667665.4792	1866141.7320	747.00	Centerline of Embankmen
11593	667653.6111	1866155.6101	747.00	Centerline of Embankmen
11594	667502.9908	1866082.3685	745.50	CL Spillway
11595	667386.0330	1866473.1648	747.00	Centerline of Embankmen
11596	667336.6052	1866472.7128	747.00	Centerline of Embankmen
11597	667290.8525	1866471.9972	747.00	Centerline of Embankmen
11598	667248.8311	1866466.1934	745.50	CL Primary Spillway
11599	667206.8814	1866460.2390	747.00	Centerline of Embankmen
11600	667152.0359	1866444.8269	747.00	Centerline of Embankmen
11601	667088.0540	1866421.2857	747.00	Centerline of Embankmen
11602	666975.3126	1866362.4908	745.50	CL Spillway
				• •
11603	667123.3950	1866725.1711	745.50	CL Spillway
11604	667013.3936	1866857.4958	746.00	Centerline of Embankmen
11605	Not Used			
11606	666935.5759	1866861.6708	746.00	Centerline of Embankmen
11607	666893.8960	1866850.6437	744.50	CL Primary Spillway
11608	666852.2160	1866839.6165	746.00	Centerline of Embankmen
11609	Not Used	1000000.0100	, , , , , ,	
		1866975 0000	746.00	Contarling of Freehouse
11610	666765.8890	1866835.0208	746.00	Centerline of Embankmen
11611	Not Used			
11612	666644.6374	1866844.0890	746.00	Centerline of Embankmen
11613	667438.6909	1865675.1141	744.00	Shallow Depression
11614	667329.8930	1866179.7840	744.00	Shallow Depression
11615	667075.9130	1866079.7287	744.00	Shallow Depression
11616	666863.2549	1866683.6198	743.00	Shallow Depression
			1	
11617	666695.1366	1868995.1102	745.00	Centerline of Embankmen
11618	666594.8208	1868979.8737	742.50	Outlet Control Structure
11619	666526.7508	1868982.5315	745.00	Centerline of Embankmen
11620	666506.9686	1868985.5174	744.50	CL Spillway
11621	666487.2764	1868988.5681	745.00	Centerline of Embankmen
11622	666448.9865	1868996.9456	745.00	Centerline of Embankmen
11623	666855.0882	1869145.2138	746.00	Centerline of Embankmen
11624	666835.2128	1869208.8753	746.00	Centerline of Embankmen
11625	666822.7430	1869249.4039	745.50	CL Primary Spillway
11626	666810.1424	1869289.9930	746.00	Centerline of Embankmen
11627	666802.0394	1869316.0943	746.00	Centerline of Embankmen
11628	666729.4187	1869463.5492	746.00	Centerline of Embankmen
11629	666711.2791	1869480.0760	746.00	Centerline of Embankmen
11630	666696.4950	1869493.5457	745.50	CL Spillway
11631	666681.7110	1869507.0154	746.00	Centerline of Embankmen
11632	666663.5714	1869523.5422	746.00	Centerline of Embankmen
11633	666525.5503	1869349.3289	742.00	Shallow Depression
	666958.4357	1869449.5952	742.00	Shallow Depression
1167/	- しししきしは、牛ひき/	1003443.0307	/ TU.UU	Sugnow Deblession
11634			770.00	Contour
11634 11635 11636	667633.3172 667719.3436	1868316.3405 1867692.1981	739.00 733.00	Contour Contour

<sup>&#</sup>x27;The elevation listed for the Outlet Control Structure is the Primary Outlet Elevation. See details, sheet 21.

DLUMBUS AND FRANKLIN COUNTY METRO PARKS	Date	Job No.
WETLAND AND STREAM AS-BUILT PLAN	January, 2011	2009-02
FORMER EASTSIDE NURSERY SITE	Scale	Drawn By:
OHPOLIS ROAD, CANAL WINCHESTER, OHIO 43110 WETLAND STAKING PLAN	1" = 200'	GDT

ans, Mechwart, Hambleton & Tilton, Inc. gineers • Surveyors • Planners • Scientists 00 New Albany Road, Columbus, OH 43054 one: 614.775.4500 Toll Free: 888.775.3648 emht.com





