CITY OF DUBLIN, FRANKLIN COUNTY, OHIO
PUBLIC STORMWATER SYSTEM IMPROVEMENTS
FOR
BEAR RUN
2013
13-009-CIP

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STANDARD CONSTRUCTION DRAWINGS

The Standard Construction Drawings listed on these plans are to be considered a part thereof

CITY OF DUBLIN

ST-01

ST-05

CITY OF COLUMBUS

AA-S168

BENCH MARKS

(NAVD 1988)

ODOT VRS Horizontal Datum

SOURCE — The coordinates shown on this map are based on the Ohio State Plane Coordinate System, South Zone, NAD 83 (CORS96). Said coordinates are based upon positional solutions derived from RTK GPS observations using the Ohio Department of Transportation Virtual Reference System equipment and software at traverse control points. (Field survey work completed January, 2012).

ODOT VRS Vertical Datum

SOURCE — The elevations for this project are based on the North American Vertical Datum of 1988. Said elevations are based upon positional solutions derived from RTK GPS observations using the Ohio Department of Transportation Virtual Reference System equipment and software and the National Geodetic Survey's GEOID03 model at traverse control points. Elevations from said traverse control points were then transferred by conventional leveling procedures to the permanent benchmarks listed hereon. (Fieldwork Completed January, 2012).

BM#1 — Chiseled square on the southeast corner of a concrete wing wall located at the pedestrian bridge, said wing wall is on the north side of the stream and by the south parking lot of the Dublin Presbyterian Church

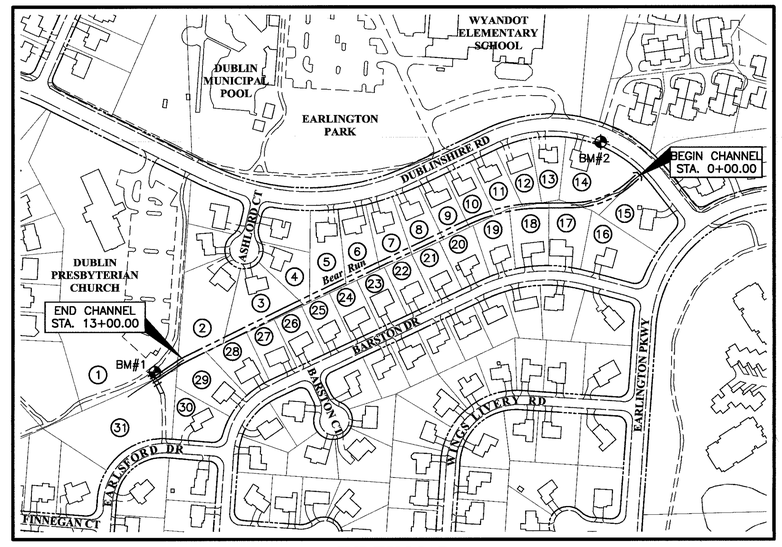
Elev. = 898.83

BM#2 — Chiseled "X" on the north bolt of a fire hydrant located on the south side of Dublinshire Drive and 300 feet west from Earlington Parkway and opposite of Villas Drive.

Elev. = 894.34

PROPERTY OWNER TABLE

1	PRESBYTERY OF SCIOTO VALLEY	17	HENSEL MARTIN X & MARTIN
2	SAGER CYNTHIA S LAUER PETER C	18	BRIGGS ROBERT W BRIGGS JULIE E
3	TAYLOR PETER J & JENNIFER L	19	SULLIVAN JOSEPH E SULLIVAN MAUREEN E
4	TALBOTT GARY W & SUSAN A	20	BALLAY JEFFREY L TR BALLAY KATHERINE A TR
5	MENDEZ-GOMEZ CONCEPCION	21	WONG CHEUK-LEUNG & SAU-HAR
6	HASH MARK S & JANET S	22	NISHIMURA TADASHI & YURIKO
7	VOGEL ANNA L	23	BLASINSKI JEFFREY J BLASINSKI ANGELA D
8	SOLOMON JEFFREY H	24	WALTI R TODD
9	TOKER REYHAN	25	KRISHNAMURTHY ASHOK K & JAYALALITHA
10	GROOTENHUIS DAVID A & LORI K	26	LAPHAM MICHAEL J
11	VOGEL ANNA L	27	BUSS BRIAN R BUSS CARRIE
12	SCHULLER ANITA J	28	COLBY FRED D & ROBIN BAIRD-COLBY
13	CANDELA NICOLE E	29	FUKUDA JEFFREY A
14	ERWIN GEORGE M ERWIN MEAGAN C	30	NOBLE JEFFREY D & JANE H
15	HUGHES PHILLIP H III HUGHES LISA	31	CITY OF DUBLIN
16	ZEPEDA LUIS L ZEPEDA ROSALBA A		



INDEX MAP

Scale: 1" = 200'

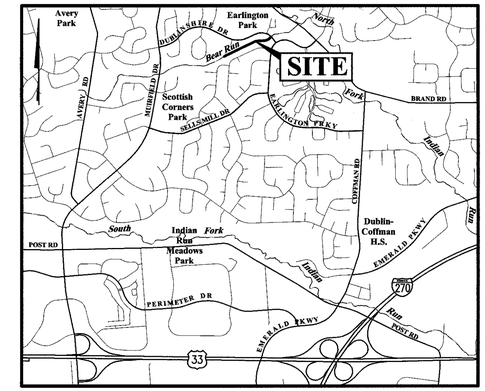
GRAPHIC SCALE

0 100 200 400

1 inch = 200 feet

OWNER

City of Dublin
5800 Shier Rings Road
Dublin, Ohio 43016
Tel: (614) 410-4600
Fax: (614) 718-4346



LOCATION MAP

SCALE: 1" = 2000'

PREPARED BY:

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STATE OF OHIO
JUD M. HINES
69840
REGISTERED
PROFESSIONAL ENGINEER

Registered Engineer No. — Date 5/16/13

CITY OF DUBLIN:

SIGNATURES BELOW SIGNIFY CONCURRENCE WITH THE GENERAL PURPOSES AND THE GENERAL LOCATION OF THE PROJECT AND DOES NOT CONSTITUTE ASSURANCE TO OPERATE AS INTENDED. ALL TECHNICAL DETAILS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL CIVIL ENGINEER PREPARING THE PLANS.

APPROVED:

CITY ENGINEER, CITY OF DUBLIN, OHIO — DATE 5.22.2013

OHIO Utilities Protection SERVICE
Call Before You Dig
800-362-2764 or 8-1-1
www.oups.org

REVISIONS

MARK	DATE	DESCRIPTION

City of Dublin

CITY OF DUBLIN, FRANKLIN COUNTY, OHIO
PUBLIC STORMWATER SYSTEM IMPROVEMENTS
FOR
BEAR RUN
TITLE SHEET

EMH&T
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

DATE: May, 2013

SCALE: As Noted

JOB NO.: 2013-0060

SHEET: 01/12

GENERAL NOTES

1. City of Columbus and Ohio Department of Transportation (ODOT) Construction and Material Specifications, current editions, and any supplements thereto (hereafter referred to as Standard Specifications), shall govern all construction items unless otherwise noted. If a conflict between specifications is found, the more strict specification will apply as decided by the City Engineer. Item Numbers listed refer to City of Columbus Item Numbers unless otherwise noted.

2. The City Engineer will not be responsible for means, methods, procedures, techniques, or sequences of construction that are not specified herein. The City Engineer will not be responsible for safety on the work site, or for failure by the Contractor to perform work according to contract documents.

3. The Contractor shall be responsible to obtain all necessary permits including but not limited to Ohio EPA Permits to Install (PTI) and Notices of Intent (NOI) Co Permittee, Building Permits, etc.

4. The Contractor shall notify the City of Dublin Division of Engineering in writing at least 3 working days prior to beginning construction.

5. The Contractor shall be solely responsible for complying with all federal, state and local safety requirements including the Occupational Safety and Health Act of 1970. The Contractor shall exercise precaution always for the protection of persons (including employees) and property. It shall also be the sole responsibility of the Contractor to initiate, maintain and supervise all safety requirements, precautions and programs in connection with the work, including the requirements for confined spaces per 29 CFR 1910.146.

Deleted note 6.

7. The Contractor shall restrict construction activity to public right–of–way and areas defined as permanent and/or temporary construction easements, unless otherwise authorized by the City Engineer.

8. The Contractor shall carefully preserve benchmarks, property corners, reference points, stakes and other survey reference monuments or markers. In cases of willful or careless destruction, the Contractor shall be responsible for restorations. Resetting of markers shall be performed by an Ohio Professional Surveyor as approved by the City Engineer.

9. Non_rubber tired vehicles shall not be moved on or across public streets or highways without the written permission of the City Engineer.

10. The Contractor shall restore all disturbed areas to equal or better condition than existed before construction. Drainage ditches or watercourses that are disturbed by construction shall be restored to the grades and cross_sections that existed before construction.

11. Tracking or spilling mud, dirt or debris upon streets, residential or commercial drives, sidewalks or bike paths is prohibited according to Section 97.38 of the Dublin Code of Ordinances. Any such occurrence shall be cleaned up immediately by the Contractor at no cost to the City. If the Contractor fails to remove said mud, dirt, debris, or spillage, the City reserves the right to remove these materials and clean affected areas, the cost of which shall be the responsibility of the Contractor.

12. Disposal of excess excavation within Special Flood Hazard Areas (100–year floodplain) is not permitted.

13. All signs, landscaping, structures or other appurtenances within right–of–way disturbed or damaged during construction shall be replaced or repaired to the satisfaction of the City Engineer. The cost of this work shall be the responsibility of the Contractor.

14. All field tile broken or encountered during excavation shall be replaced or repaired and connected to the public storm sewer system or proposed channel as directed by the City Engineer. The cost of this work shall be the responsibility of the Contractor.

15. All precast concrete products shall be inspected at the location of manufacture. Approved precast concrete products will be stamped or have such identification noting that inspection has been conducted by the City of Columbus. Precast concrete products without proof of inspection shall not be approved for installation.

16. Backfill within a 1:1 influence line of existing structures (houses, garages, etc.) or public infrastructure (pavement, curbs, sidewalks, bike paths, etc.) shall be compacted granular backfill according to Item 912 of the Standard Specifications or Flowable CDF, Type III according to Item 636. Item 911 of the Standard Specifications shall be used elsewhere.

Deleted note 17.

18. All trenches within public right–of–way shall be backfilled according to the approved construction drawings or securely plated during nonworking hours. Trenches outside these areas shall be backfilled or shall be protected by approved temporary fencing or barricades during nonworking hours. Clean up shall follow closely behind the trenching operation.

19. All trees within the construction area not specifically designated for removal shall be preserved, whether shown or not shown on the approved construction drawings. Trees to be preserved shall be protected with high visibility fencing placed a minimum 15 feet from the tree trunk. Trees 6 – inches or greater at DBH (Diameter Breast Height) must be protected with fencing placed at the critical root zone or 15 feet, whichever is greater. Trees not indicated on the approved construction drawings for removal may not be removed without prior approval of the Division of Engineering.

Deleted note 20.

21. The Contractor shall be responsible for the condition of trenches within the right–of–way and public easements for a period of one year from the final acceptance of the work, and shall make any necessary repairs at no cost to the City.

22. Pavements shall be cut in neat, straight lines the full depth of the existing pavement, or as required by the City Engineer. Pavement replacement shall be conducted according to City of Columbus Standard Drawing 1441 Dr. A and applicable City of Dublin standard drawings. The replacement of driveways, handicapped ramps, sidewalks, bike paths, parking lot pavement, etc. shall be provided according to the approved construction drawings and City of Dublin standard construction drawings.

23. Tree trimming within the construction zone is to be completed by a certified Arborist. At the completion of the project, the Arborist is to return and trim any broken branches as needed.

24. Any modification to the work shown on drawings must have prior written approval by the City Engineer, City of Dublin.

25. All inlets shall be channelized.

26. Park areas shall be fine_graded and seeded with the following mixture:

    Improved Tall Fescue: 90% of weight (3–4 varieties in equal parts)
    Improved Kentucky Bluegrass: 10% of weight
    Germination Rate: 85%
    Application Rate: 8 lbs per 1000 sq ft or as directed by the Division of Parks and Recreation, City of Dublin, Ohio.

27. Traffic control and other regulatory signs shall be Type S with a square post anchor base installation and meet all requirements of ODOT TC–41.20 and applicable City of Dublin specifications.

Deleted note 28.

UTILITIES

1. The following utilities are known to be located within the limits of this project:

Columbia Gas of Ohio Dave Kelly 200 Civic Center Dr., 4th Floor Columbus, Ohio 43215 (614) 481–1058	City of Columbus Division of Power and Water (Water) 910 Dublin Road, 2nd Floor Columbus, Ohio 43215 (614) 645–7677
American Electric Power Paul Paxton Engineering Liaison Coordinator 850 Tech Center Drive Gahanna, Ohio 43230–6605 (614) 883–6831	Frontier Communication Courtney Murphy Network Engineer Delaware, Ohio 43015 (740) 369–0826
City of Dublin Division of Engineering 5800 Shier Rings Road Dublin, Ohio 43016 (614) 410–4600	Wide Open West Danny Quinn 3675 Corporate Drive Columbus, Ohio 43231 (614) 668–7263
Time Warner Cable Ray Maurer 1266 Dublin Road Columbus, Ohio 43215 (614) 348–2979	

2. The Contractor shall give notice of intent to construct to Ohio Utilities Protection Service (telephone number 800–362–2764), Producer's Underground Protection Service (telephone number 614–587–0486), and to owners of underground utilities that are not members of a registered underground protection service. Notice shall be given at least 2 working days before start of construction.

3. The identity and locations of existing underground utilities in the construction area have been shown on the approved construction drawings as accurately as provided by the owner of the underground utility. The City of Dublin and the City Engineer assumes no responsibility for the accuracy or depths of underground facilities shown on the approved construction drawings. If damage is caused, the Contractor shall be responsible for repair of the same and for any resulting contingent damage.

4. Location, support, protection and restoration of all existing utilities and appurtenances, whether shown or not shown on the approved construction drawings, shall be the responsibility of the Contractor.

5. When unknown or incorrectly located underground utilities are encountered during construction, the Contractor shall immediately notify the owner and the City Engineer.

6. Public street lighting may be in the vicinity of this project. Contact the City of Dublin, Division of Engineering at 410–4637, two days prior to beginning work.

TRAFFIC CONTROL

1. Traffic control shall be furnished, erected, maintained, and removed by the Contractor according to Ohio Manual of Uniform Traffic Control Devices (OMUTCD), current edition.

2. All traffic lanes of public roadways shall be fully open to traffic from 7:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM unless authorized differently by the City Engineer. At all other hours the Contractor shall maintain minimum one–lane two–way traffic. Uniformed, off–duty police officers shall replace flagmen designated by the OMUTCD, and shall be present whenever one–lane, two–way traffic control is in effect. Police cruisers may be required as directed by the City Engineer.

3. If the City Engineer determines proper provisions for traffic control are not being provided by the Contractor, the City Engineer shall assign uniformed, off–duty police officers to the project at no cost to the City.

4. Steady–burning, Type "C" lights shall be required on all barricades, drums, and similar traffic control devices in use at night.

5. Access from public roadways to all adjoining properties for existing residents or businesses shall be maintained throughout the duration of the project for mail, public water and sanitary sewer service, and emergency vehicles. The Contractor shall provide a traffic control plan detailing the proposed maintenance of traffic procedures. The traffic control plan must incorporate any traffic control details contained herein. The traffic control plan proposed by the Contractor must be approved by the City Engineer prior to construction.

EROSION AND SEDIMENT CONTROL

1. The Contractor is responsible for submitting a Notice of Intent (NOI) Co–permittee application to be reviewed and approved by the Ohio EPA. A sediment and erosion control plan must be submitted to the City Engineer for approval if a sediment and erosion control plan has not already been included with the approved construction drawings. This plan must be made available at the project site at all times. The design of erosion control systems shall follow the requirements of Ohio EPA, Item 207 of Ohio Department of Transportation Standard Specifications, and the City Engineer. An individual NPDES Stormwater Discharge Permit may be required. The Contractor shall be considered the permittee.

2. The Contractor shall provide sediment control at all points where storm water runoff leaves the project, including waterways, overland sheet flow, and storm sewers.

3. Accepted methods of providing erosion/sediment control include but are not limited to: sediment basins, silt filter fence, aggregate check dams, and temporary ground cover. Hay or straw bales are not permitted.

4. The Contractor shall provide adequate drainage of the work area at all times consistent with erosion control practices.

5. Disturbed areas that will remain unworked for 14 days or more shall be seeded or protected within seven calendar days of the disturbance. Other sediment controls that are installed shall be maintained until vegetative growth has been established. The Contractor shall be responsible for the removal of all temporary sediment devices at the conclusion of construction but not before growth of permanent ground cover.

BLASTING (If Permitted)

Deleted note 1.

SANITARY SEWERS

Deleted notes 1–11.

12. At the determination of the City Engineer, the Contractor may be required to perform a TV inspection of the sanitary sewer system prior to final acceptance by the City. This work shall be completed by the Contractor at his expense.

13. Visleaks or other defects observed or discovered during TV inspection shall be repaired to the satisfaction of the Engineer.

14. Roof drains, foundation drains, field tile or other clean water connections to the sanitary sewer system are strictly prohibited according to Section 51.23 of the Dublin Code of Ordinances.

Deleted notes 15–18.

19. Existing sanitary sewer flows shall be maintained at all times. Costs for pumping and bypassing shall be included in the Contractor's unit price bid for the related items.

20. Roof drains, foundation drains, field tile or other clean water connections to the sanitary sewer system are strictly prohibited according to Section 51.23 of the Dublin Code of Ordinances.

WATER LINE

Deleted notes 1–17.

STORM SEWER

Deleted notes 1–4.

5. Headwalls and endwalls shall be required at all storm sewer inlets or outlets to and from stormwater management facilities. Natural stone and/or brick approved by the City Engineer shall be provided on all visible headwalls and/or endwalls surfaces.

Deleted notes6–7.

MAIL DELIVERY

Deleted notes 1–2.

USE OF FIRE HYDRANTS

1. The Contractor shall make proper arrangements with the Dublin Service Department and the Columbus Division of Water for the use of fire hydrants when used for work performed under this contract and provide the city of Dublin a copy of the Hydrant Usage Permit obtained from the City of Columbus. The Contractor shall also send a copies of permits obtained from Dublin and Columbus to the Washington and/or Perry Township Fire Department. Permits shall be kept at the construction site at all times.

2. Before the final estimate is paid, the Contractor shall submit a letter from the City of Columbus Division of Water to the City Engineer stating that the Contractor has returned the Siamese Valve to the City of Columbus and has paid all costs arising from the use of the fire hydrants.

SUPPLEMENTAL SPECIFICATIONS

ITEM 201, CLEARING AND GRUBBING, AS PER PLAN
Clearing and grubbing and tree removal within the general site limits shall be performed as a part of this plan. The location and extent of the clearing limits and tree removal shall be approved in the field by the City prior to removing any trees. Any additional clearing or tree removal 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 less than 12" in diameter, brush and stumps shall be included within the price bid for Item 201, Clearing and Grubbing, As Per Plan.

ITEM 201, TREE REMOVED, AS PER PLAN
Tree removal within the general site limits shall be performed as a part of this plan. The trees proposed to be removed shall be approved in the field by the City prior to removing any trees. Any additional tree removal 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 greater than 12" in diameter shall be included within the price bid for Item 201, Tree Removed, As Per Plan.

ITEM 203, EXCAVATION, AS PER PLAN
The specifications within Item 203 shall apply for this work along with the following notes: Excavation consists of removing the material necessary to construct the proposed stream channel, including over–excavation to construct the proposed riffles. All excavated material shall be removed from the site. The cost of all labor and materials associated with this work shall be included in the price bid for Item 203, Excavation, As Per Plan.

The Contractor shall dispose of all excavated materials at an offsite location determined by the Contractor. Before the offsite disposal occurs, the Contractor shall provide a copy of the signed, written agreement between the Contractor and the off–site land Owner. The agreement should clearly state the purpose of the agreement and indicate the land owners permission of such use. The Contractor is responsible for NPDES permit coverage for erosion and sediment control at the offsite location, if needed.

TEM 203, EMBANKMENT, AS PER PLAN
Embankment consists of placing fill in the void left after removing the existing 18" storm sewer. This fill shall be composed of the suitable material excavated on the site during construction of the new stream channel. Fill shall be compacted per the specifications listed under Item 203. The cost of all labor and materials necessary to complete this work shall be included in the price bid for Item 203, Embankment, As Per Plan.

ITEM 651, TOPSOIL STOCKPILED, AS PER PLAN
The specifications within Item 651 shall apply for this work along with the following notes: Topsoil shall be removed from the proposed channel area and stockpiled adjacent to the stream or in a staging area. The contractor shall take care to separate the topsoil to be re–spread onsite. The cost of all labor and materials associated with this work shall be included in the price bid for Item 651, Topsoil Stockpiled, As Per Plan.

All un–used topsoil shall be disposed offsite at a location determined by the contractor. Before the offsite disposal occurs, the Contractor shall provide a copy of the signed, written agreement between the Contractor and the off–site land Owner. The agreement should clearly state the purpose of the agreement and indicate the land owners permission of such use. The Contractor is responsible for NPDES permit coverage for erosion and sediment control at the offsite location, if needed.

ITEM 652, PLACING STOCKPILED TOPSOIL, AS PER PLAN
The specifications within Item 652 shall apply for this work along with the following notes: Stockpiled topsoil shall be placed on all proposed stream banks and any other areas that were disturbed as a part of the project. Topsoil shall be at least six (6) inches thick to promote the growth of vegetation. Topsoil does not need to be placed in the bottom of the new channel but it should be placed on the new stream banks. The cost of all labor and materials associated with this work shall be included in the price bid for Item 652, Placing Stockpiled Topsoil, As Per Plan.

ITEM 659, SEEDING AND MULCHING, AS PER PLAN
All disturbed areas shall be seeding and mulched per the specification of Item 659 and the notes listed below. The contractor shall include fertilizing and watering in the scope of work as specified in Item 659. The cost of all labor and materials necessary to complete this work shall be included in the price bid for Item 659, Seeding and Mulching, As Per Plan.

Seed – Certification of grass seed shall be provided by seed vendor for each grass–seed mixture stating the botanical and common name, percentage by weight of each species and variety; and percentage of purity, germination, and weed seed. Include the year of production and date of packaging. Furnish national turfgrass evaluation program (NTEP) data for each species to be used.

Grass seed must be fresh, clean, dry, new–crop seed complying with the A.O.S.A. ‖Journal of Seed Technology‖ rules for testing seeds for purity and germination tolerances.

Seed species shall be as follows, with not less than 90 percent germination, not less than 98 percent pure seed, and not more than 0.5 percent weed seed.

Turfgrass seed mix proportioned by weight:

A. 80 percent tall fescue (Festuca Arundinacea), with a minimum of 3 improved turf–type varieties. Kentucky–31 and Alta varieties are not approved.
B. 20 percent perennial ryegrass (Lolium Perenne).

Seeding – Sow seed at a total rate of 7–9 lb. / 1,000 SF with a spreader or seeding machine. Rake seed lightly into top 1/8 inch of soil, roll lightly, and water with fine spray. Thoroughly cover with straw and netting. Netting shall be adequately pinned to prevent the straw from being blown or washed away.

Protect seeded areas with slopes exceeding 3:1 with erosion control blankets as directed by the engineer. Cost of erosion control blankets, material, and labor shall be paid for by the city.

Hydro–seeding & hydro–mulching are not permitted.

Turf Maintenance – Maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, and replanting to establish healthy, viable turf. Roll, re–grade, and replant bare or eroded areas and re–mulch to produce a uniformly smooth turf. Provide the same materials and installation as those used in the original installation. Water turf with fine spray at a minimum rate of 1 inch per week unless rainfall precipitation is adequate.

Mow turfgrass seed mix areas as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than 1/3 of grass height. Mow areas to a height of 2 to 3 inches.

ITEM 666, PRUNING EXISTING TREES, AS PER PLAN
All existing tree branches that hang down within the project area shall be pruned per the specifications of Item 666 to provide clearance for the construction equipment. The contractor shall remove no more than is needed to complete the project improvements. The location and extent of the pruning shall be approved in the field by the City prior to removing any branches. Any additional pruning necessary to accomplish the scope of the project shall be considered a part of this plan. The cost of all labor and materials necessary to complete this work shall be included within the price bid for Item 666, Pruning Existing Trees, As Per Plan.

ITEM 671, EROSION CONTROL MAT, TYPE B, PER 712.11, AS PER PLAN
The specifications within Item 671 shall apply for this work along with the following notes. Erosion Control Mat shall be placed on the proposed stream banks and all areas disturbed as a part of this project, as shown on the detail on sheet 9. Matting does not need to be placed where rock has been placed on the stream banks. The matting shall be installed per the manufacturers recommendations and all exposed edges shall be trenched in to the soil to hold it in place. The cost of all labor and materials associated with this work shall be included in the price bid for Item 671, Erosion Control Mat, Type B, per 712.11, As Per Plan.

ITEM SPEC., ROCK RIFFLES, AS PER PLAN
The Rock Riffles shall be constructed per the details and notes on sheet 9. The cost of all labor and materials associated with the structures shall be included in the price bid for Item Spec., Rock Riffles, As Per Plan.

ITEM SPEC., EXISTING CHANNEL MAINTENANCE, AS PER PLAN
The existing stone lined channel between Station 13+00 and the existing pedestrian bridge shall be cleaned out and restored as a part of this project, as shown on sheet 6. All woody debris and garbage shall be removed from this area. The stone lined channel shall be repaired and all loose stones shall be mortored back in place. All existing trees growing in the bottom of the channel shall be removed. The rock lined channel shall be restored to direct flow over the top of the proposed headwall at Station 13,00. The cost of all materials and labor necessary to complete this work shall be included in the price bid for Item Spec., Existing Channel Maintenance, As Per Plan.

ITEM SPEC., STONE VENEER, AS PER PLAN
All exposed sides of the proposed and existing headwalls shall have a stone veneer facing. Manufactured synthetic stone veneer shall be great lakes limestone as manufactured by Dutch Quality Stone, Inc. (330–359–7866) or an approved alternative. Mortar and grouting type shall be per the manufacturer's instructions. Use type "S" mortar. A scratch course of mortar shall be applied and cured before placement of the stone. The stone shall be placed in a random pattern. The stone must cover all exposed surfaces and shall extend 6 inches below final grade. This work includes both ends of the existing culvert under Dublinshire Drive, the existing 36 inch headwall near station 7+25, and the proposed 18" headwall at station 13+00. The cost of all labor and materials necessary to complete this work shall be included in the the price bid for Item Spec, Stone Veneer, As Per Plan.

ITEM SPEC, FILL STONE IN POOLS, AS PER PLAN
Fill Stone shall be placed 6 inches thick in all pool areas as shown in the stream profiles and details on sheet 9. The fill stone shall be native cobbles or rounded river rock as described in the riffle material table on sheet 9. The new channel shall be over–excavated by six inches in the pools to account for the placement of this stone. The fill stone shall be placed across the entire channel and extend up the channel banks to the bankfull elevation. After placement the stone shall be compacted with the back of a backhoe bucket to slightly embed the stone into the native soil and chink it together. The cost of all labor and materials associated with this work shall be included in the price bid for Item Spec, Fill Stone in Pools, As Per Plan

ESTIMATE OF QUANTITIES

SPEC.	ITEM	QUANTITY	UNIT	DESCRIPTION
				General Site Work
COC	201	1	LS	Clearing and Grubbing, As Per Plan
COC	201	2	Each	Tree Removed, As Per Plan
COC	202	1,110	LF	Pipe Removed – 24" and under
COC	202	6	Each	Structures Removed – Catch Basins
COC	202	1	Each	Structures Removed – 12" Headwall
COC	203	55	LF	Concrete Channel Removed
COC	623	1	LS	Construction Layout Stakes
COC	624	1	LS	Mobilization
COC	666	1	LS	Pruning Existing Trees, As Per Plan
	SPEC	1	LS	Staging Area, inc'l restoration, As Per Plan
				Stream Restoration
COC	203	2,650	CY	Excavation, As Per Plan
COC	203	200	CY	Embankment, As Per Plan
COC	601	20	CY	RCP, Type B with Filter
COC	601	25	CY	RCP, Type C with Filter
COC	601	10	CY	Grouted RCP, Type D
COC	604	1	Each	Headwall for 18" pipe
COC	604	1	Each	Flared End Section for 12" Pipe
COC	651	820	CY	Topsoil Stockpiled, As Per Plan
COC	652	200	CY	Placing Stockpiled Topsoil, As Per Plan
COC	659	7,000	SY	Seeding and Mulching, As Per Plan
COC	671	3,500	SY	Erosion Control Mat, Type B, per 712.11, As Per Plan
	SPEC	750	CY	Rock Riffles, As Per Plan
	SPEC	150	CY	Fill Stone in Pools, As Per Plan
	SPEC	1	LS	Existing Channel Maintenance, As Per Plan
	SPEC	415	SF	Stone Veneer, As Per Plan
	SPEC	20	SF	16" Wall Cap, As Per Plan
				Erosion and Sediment Control
COC	207	2,800	LF	Construction Fence
COC	207	6	Each	Inlet Protection – Dandy Bags
COC	207	1	LS	Dewatering and Pump Around
COC	207	5	Each	Dewatering Sedement Trap or Filter Bag
COC	207	6	Each	Rock Check Dam
COC	207	1	Each	Stabilized Construction Entrance
COC	207	7,000	SY	Temporary Seeding and Mulching
				Contingency Items
COC	660	7,000	SY	Sodding staked

REVISIONS

MARK	DATE	DESCRIPTION

City of Dublin

CITY OF DUBLIN, FRANKLIN COUNTY, OHIO
PUBLIC STORMWATER SYSTEM IMPROVEMENTS
FOR
BEAR RUN
GENERAL NOTES AND QUANTITIES

EMH&T
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

DATE
May, 2013

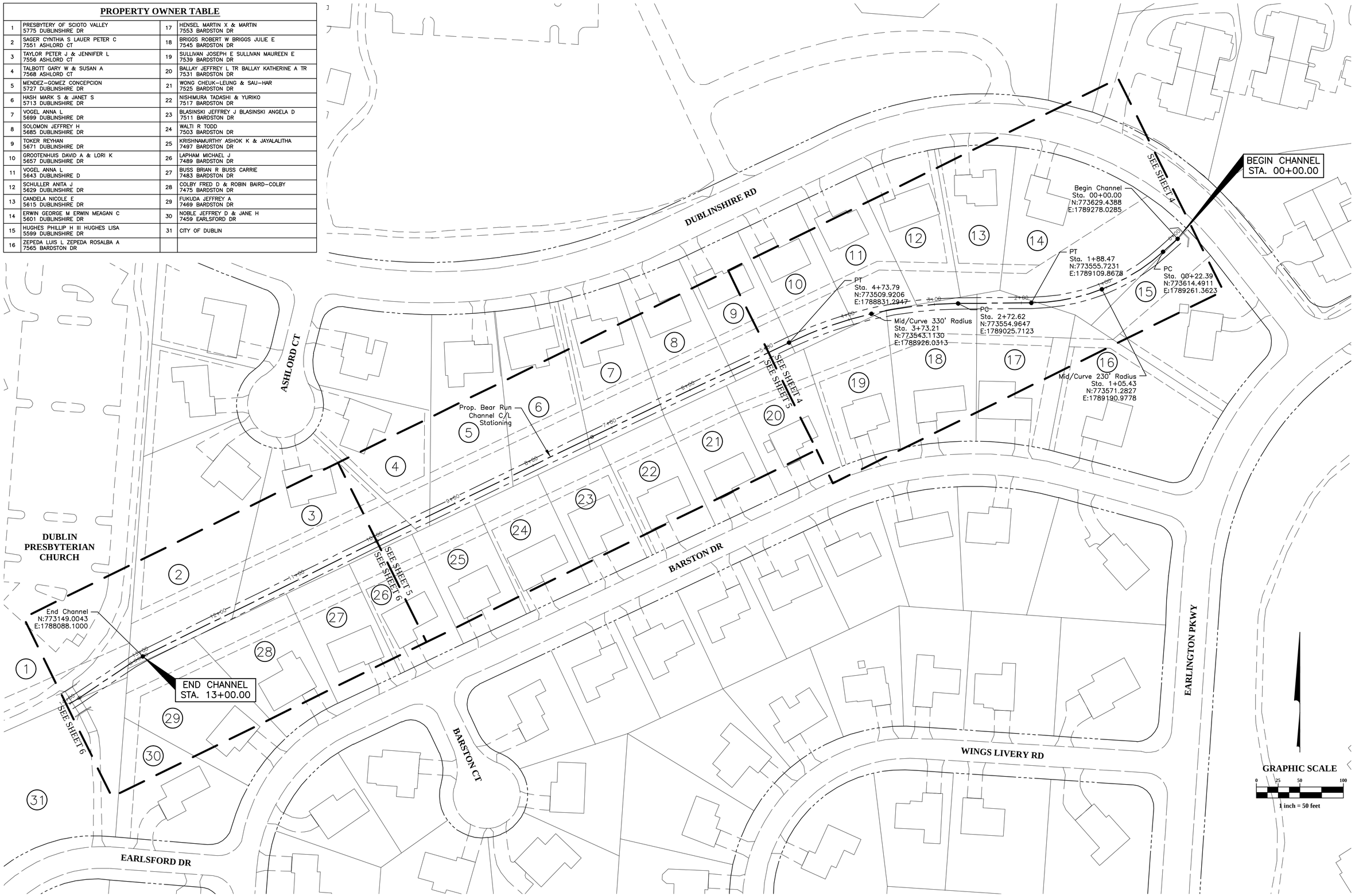
SCALE
As Noted

JOB NO.
2013-0060

SHEET
02/12

PROPERTY OWNER TABLE

1	PRESBYTERY OF SCIOTO VALLEY 5775 DUBLINSHIRE DR	17	HENSEL MARTIN X & MARTIN 7553 BARDSTON DR
2	SAGER CYNTHIA S LAUER PETER C 7551 ASHLORD CT	18	BRIGGS ROBERT W BRIGGS JULIE E 7545 BARDSTON DR
3	TAYLOR PETER J & JENNIFER L 7556 ASHLORD CT	19	SULLIVAN JOSEPH E SULLIVAN MAUREEN E 7539 BARDSTON DR
4	TALBOTT GARY W & SUSAN A 7568 ASHLORD CT	20	BALLAY JEFFREY L TR BALLAY KATHERINE A TR 7531 BARDSTON DR
5	MENDEZ-GOMEZ CONCEPCION 5727 DUBLINSHIRE DR	21	WONG CHEUK-LEUNG & SAU-HAR 7525 BARDSTON DR
6	HASH MARK S & JANET S 5713 DUBLINSHIRE DR	22	NISHIMURA TADASHI & YURIKO 7517 BARDSTON DR
7	VOGEL ANNA L 5699 DUBLINSHIRE DR	23	BLASINSKI JEFFREY J BLASINSKI ANGELA D 7511 BARDSTON DR
8	SOLOMON JEFFREY H 5685 DUBLINSHIRE DR	24	WALTI R TODD 7503 BARDSTON DR
9	TOKER REYHAN 5671 DUBLINSHIRE DR	25	KRISHNAMURTHY ASHOK K & JAYALALITHA 7497 BARDSTON DR
10	GROOTENHUIS DAVID A & LORI K 5657 DUBLINSHIRE DR	26	LAPHAM MICHAEL J 7489 BARDSTON DR
11	VOGEL ANNA L 5643 DUBLINSHIRE D	27	BUSS BRIAN R BUSS CARRIE 7483 BARDSTON DR
12	SCHULLER ANITA J 5629 DUBLINSHIRE DR	28	COLBY FRED D & ROBIN BAIRD-COLBY 7475 BARDSTON DR
13	CANDELA NICOLE E 5615 DUBLINSHIRE DR	29	FUKUDA JEFFREY A 7469 BARDSTON DR
14	ERWIN GEORGE M ERWIN MEAGAN C 5601 DUBLINSHIRE DR	30	NOBLE JEFFREY D & JANE H 7459 EARLSFORD DR
15	HUGHES PHILLIP H III HUGHES LISA 5599 DUBLINSHIRE DR	31	CITY OF DUBLIN
16	ZEPEDA LUIS L ZEPEDA ROSALBA A 7565 BARDSTON DR		



REVISIONS

MARK	DATE	DESCRIPTION

City of Dublin

CITY OF DUBLIN, FRANKLIN COUNTY, OHIO
PUBLIC STORMWATER SYSTEM IMPROVEMENTS
FOR
BEAR RUN
INDEX SHEET AND STAKING COORDINATES

EMH&T
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Engineers • Surveyors • Planners • Scientists
5500 New Albany Road, Columbus, OH 43054
Phone: 614.775.4500 Toll Free: 888.775.3648
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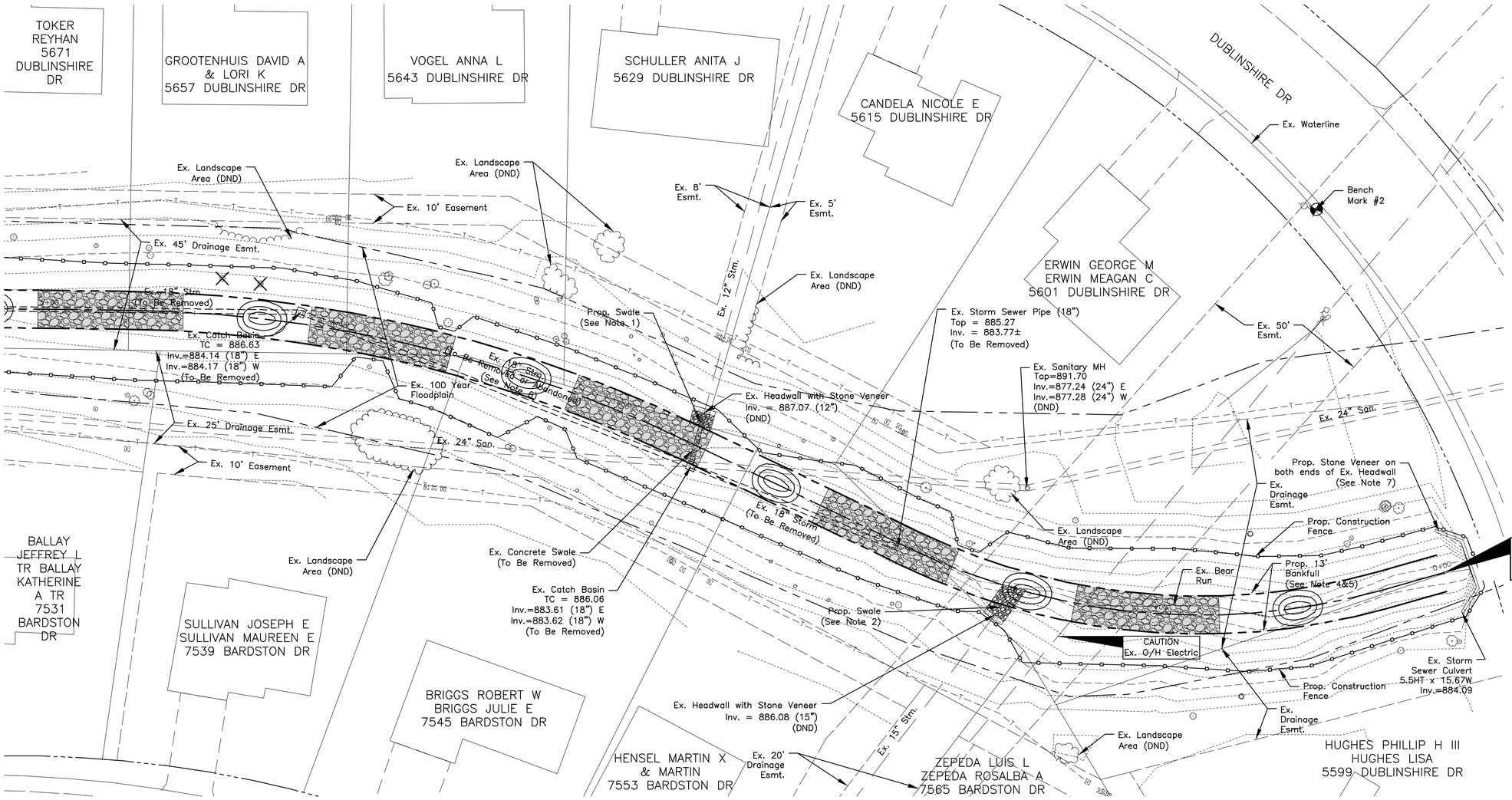
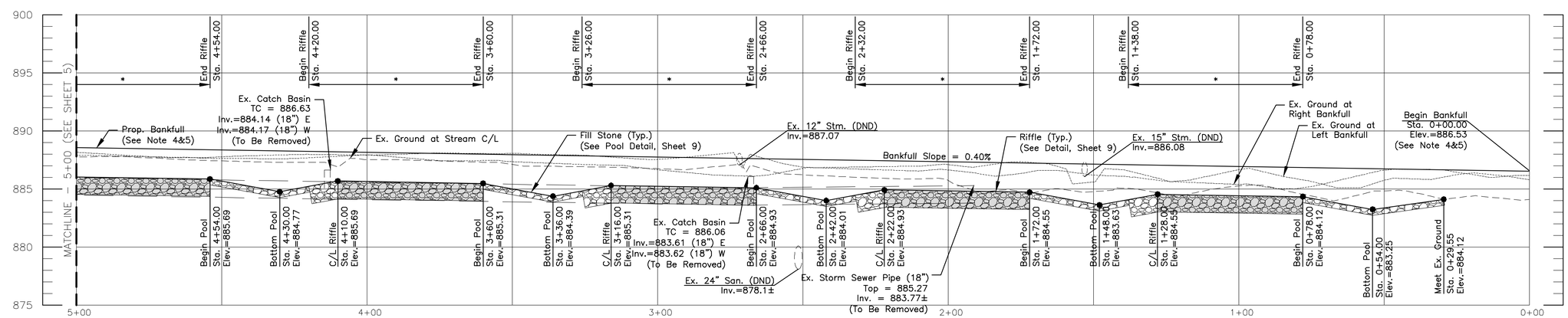
DATE
May, 2013

SCALE
1" = 50'

JOB NO.
2013-0060

SHEET
03/12





* Denotes Limits of Rock Riffle Material (See Detail, Sheet 9)

GRAPHIC SCALE

0 10 20 40

1 inch = 20 feet

LEGEND

- Ex. Property Line
- Ex. Edge of Pavement
- Ex. Right of Way
- Ex. Hydrography
- Ex. Easement
- Ex. Storm Sewer
- Ex. Sanitary Sewer
- Ex. Communications
- Ex. 100 Year Floodplain
- Ex. Electric Transformer
- Ex. Electric Pedestal Box
- Ex. Telephone Pedestal Box
- Ex. Telephone Pull Box
- Ex. Tree (DND)
- Ex. Tree (To Be Removed)
- Prop. Construction Fence
- Prop. Riffle
- Prop. Pool

Notes:

1. A proposed swale shall be constructed between the existing headwall and the proposed channel. The swale shall be constructed and stabilized with RCP, Type B and Fill Stone per the Detail on sheet 9.
2. A proposed swale shall be constructed between the existing headwall and the proposed channel. The swale shall be constructed and stabilized with RCP, Type B and Fill Stone per the Detail on sheet 9.
3. An excavated bankfull bench shall be constructed in areas where the bankfull elevation is higher than the existing ground. The bankfull bench shall have a 6:1 slope that drains toward the proposed channel. The bench shall be capped with six inches of topsoil and stabilized per the details on sheet 7. The cost of all labor and materials necessary to complete this work shall be included in the priced bid for Item 203 and 652.
4. The bankfull width shown in the plan view is a constant 13 feet wide to match the riffle typical section. The bankfull width in a pool section should be 17 feet wide per the pool typical section on sheet 9. The pool width should transition from 13 feet at the CL and End riffle locations to 17 feet at the bottom of pool locations.
5. the existing ground elevation is lower than the proposed bankfull elevation in many areas of the proposed channel in these areas the proposed channel banks shall only extend up to the elevation of the existing ground. Fill is not needed to bring the existing ground up to the proposed bankfull elevation.
6. The existing 18" storm sewer that is located outside of the proposed bankfull channel can be removed or abandoned in place. If the pipe is to be abandoned it shall be filled with controlled density fill. The cost of this work shall be included in the price bid for Item 202, Pipe Removed.
7. Both ends of the existing headwall under Dublinshire Drive shall be capped with stone veneer on all exposed sides. The stone shall be installed per the specification on sheet 2.

REVISIONS

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PUBLIC STORMWATER SYSTEM IMPROVEMENTS
FOR
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PLAN AND PROFILE

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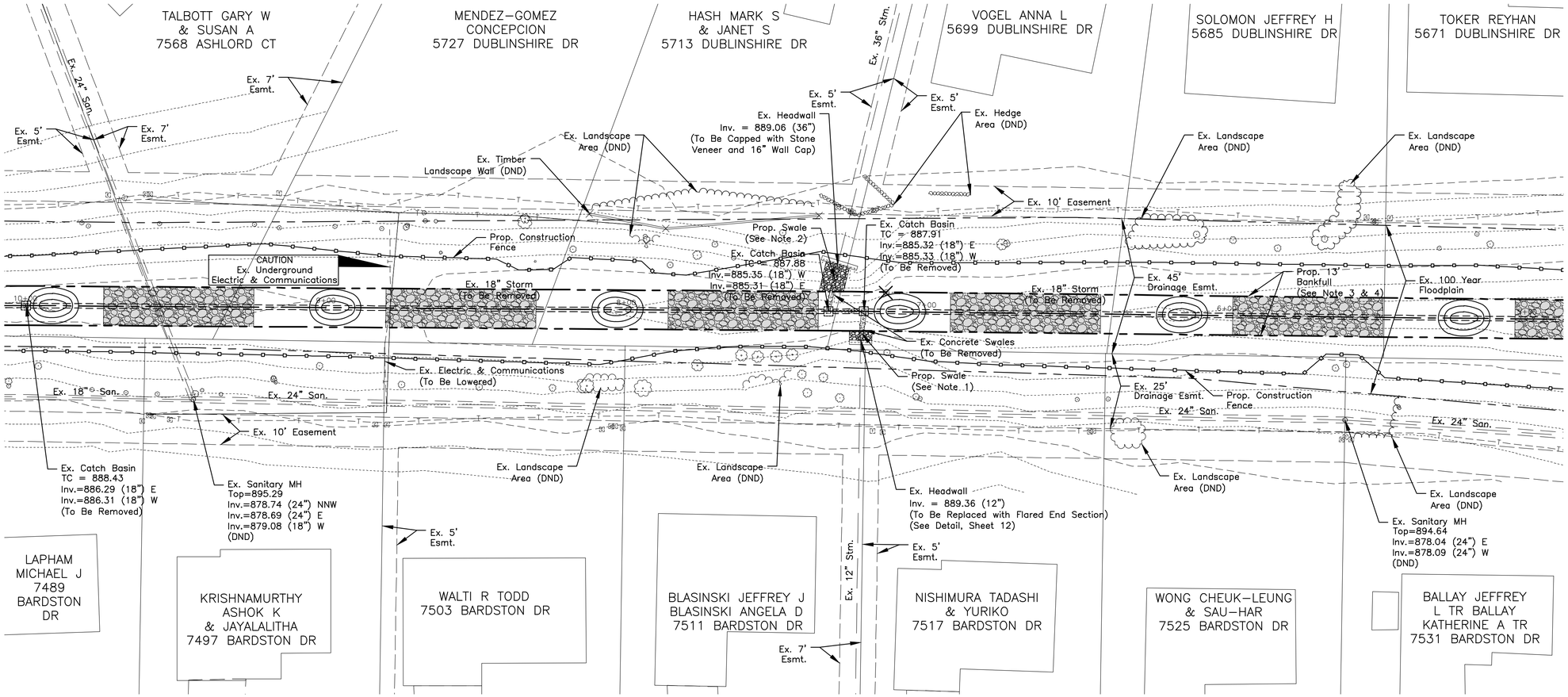
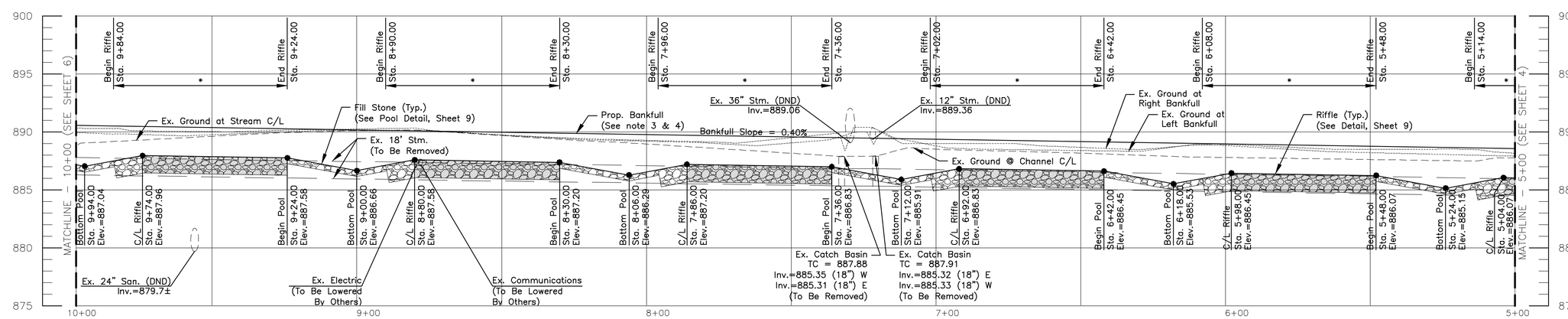
DATE
May, 2013

SCALE
Horiz: 1" = 20'
Vert: 1" = 5'

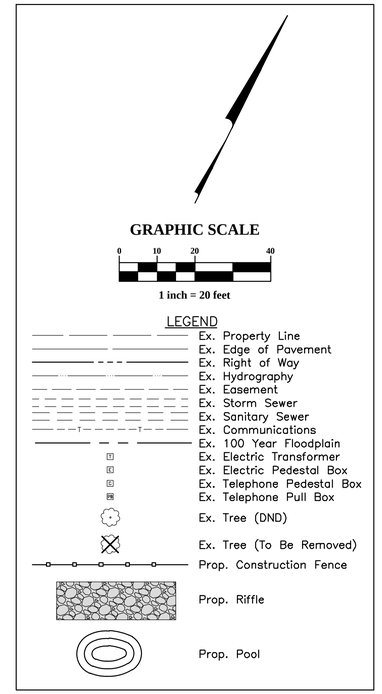
JOB NO.
2013-0060

SHEET
04/12





* Denotes Limits of Rock Riffle Material (See Detail, Sheet 9)



Notes:

1. A proposed swale shall be constructed between the existing headwall and the proposed channel. The swale shall be constructed per the detail on sheet 9. The swale shall be stabilized with RCP Type B that is 8' wide and 8' long.
2. A proposed swale shall be constructed between the existing headwall and the proposed channel. The swale shall be constructed per the detail on sheet 9. The swale shall be stabilized with RCP Type B that is 12' wide and 16' long.
3. The bankfull width shown in the plan view is a constant 13 feet wide to match the riffle typical section. The bankfull width in a pool section should be 17 feet wide per the pool typical section on sheet 9. The pool width should transition from 13 feet at the CL and End riffle locations to 17 feet at the bottom of pool locations.
4. The existing ground elevation is lower than the proposed bankfull elevation in many areas of the proposed channel. In these areas the proposed channel banks shall only extend up to the elevation of the existing ground. Fill is not needed to bring the existing ground up to the proposed bankfull elevation.
5. The existing 36" headwall near Station 7+25 shall be capped with stone veneer on all exposed sides and a 16" wall cap. The stone veneer and wall cap shall be installed per the specifications.

REVISIONS

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May, 2013

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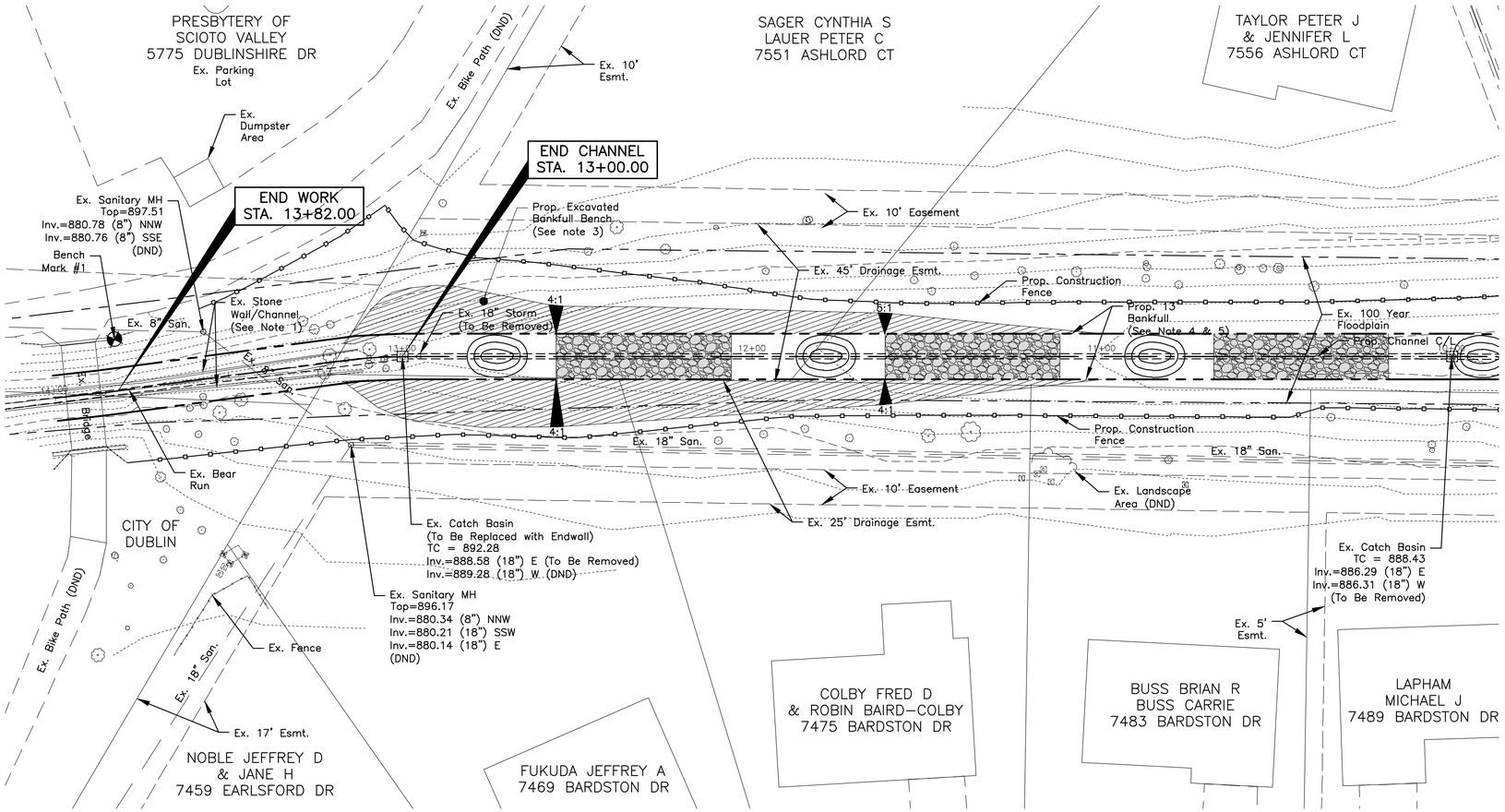
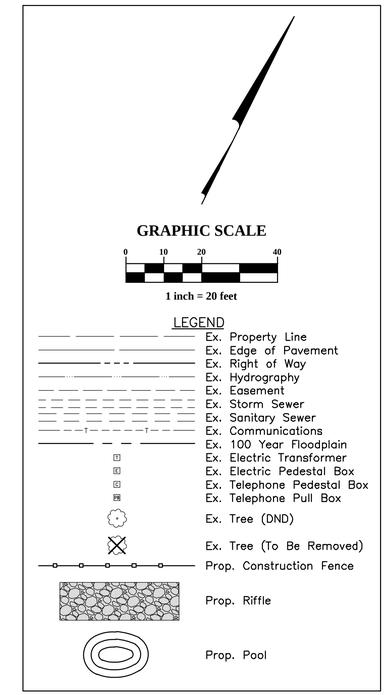
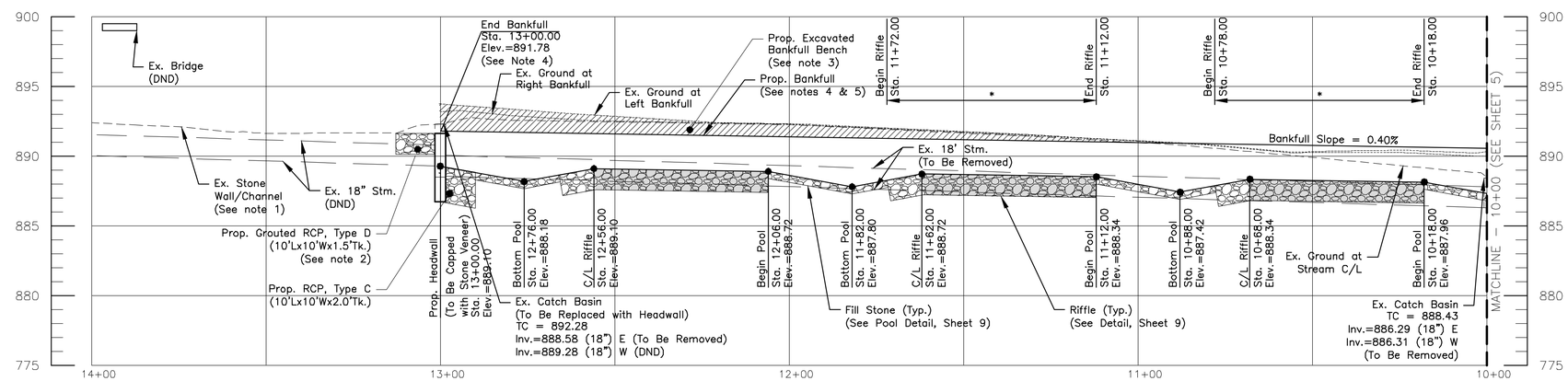
JOB NO.
2013-0060

SHEET
05/12







* Denotes Limits of Rock Riffle Material (See Detail, Sheet 9)

Notes:

1. The existing stone lined channel shall be cleaned out between the proposed channel and the existing pedestrian bridge. All woody debris and garbage shall be removed from this area. The stone walls shall be repaired and all loose stones shall be mortored back in place. All existing trees within the bottom of the channel shall be removed. The cost of all materials and labor necessary to complete this work shall be included in the price bid for Item Spec., Existing Channel Maintenance, As Per Plan.

2. A shallow swale shall be constructed between the proposed headwall at station 13+00 and the existing stone lined channel. This swale shall be reinforced with RCP, Type D, grouted in place to provide stability. The reinforcement shall extend up the side slopes to route floodwater over the center of the proposed headwall. The cost of all materials and labor necessary to complete this work shall be included in the price bid for Item 601, Grouted RCP, Type D.

3. An excavated bankfull bench shall be constructed in areas where the bankfull elevation is higher than the existing ground. The bankfull bench shall have a 4:1 max. slope that drains toward the proposed channel. The bench shall be capped with six inches of topsoil and stabilized per the details on sheet 9. The cost of all labor and materials necessary to complete this work shall be included in the priced bid for Item 201, 651 and 652.

4. The bankfull width shown in the plan view is a constant 13 feet wide to match the riffle typical section. The bankfull width in a pool section should be 17 feet wide per the pool typical section on sheet 9. The pool width should transition from 13 feet at the CL and End riffle locations to 17 feet at the bottom of pool locations.

5. The existing ground elevation is lower than the proposed bankfull elevation in many areas of the proposed channel. In these areas the proposed channel banks shall only extend up to the elevation of the existing ground. Fill is not needed to bring the existing ground up to the proposed bankfull elevation.

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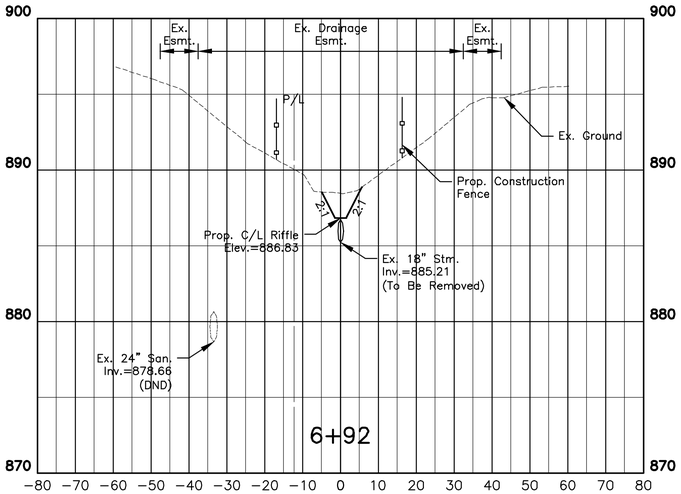
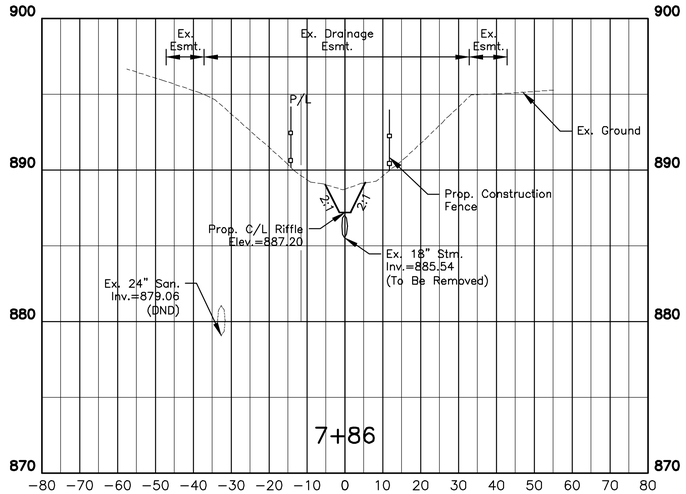
DATE
May, 2013

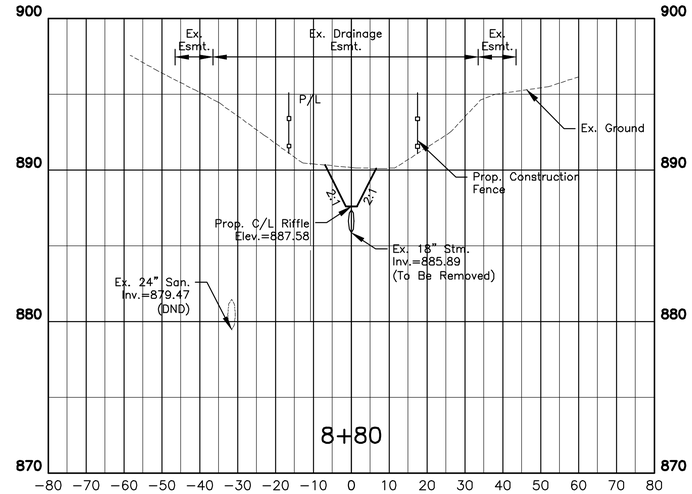
SCALE
Horiz: 1" = 20'
Vert: 1" = 5'

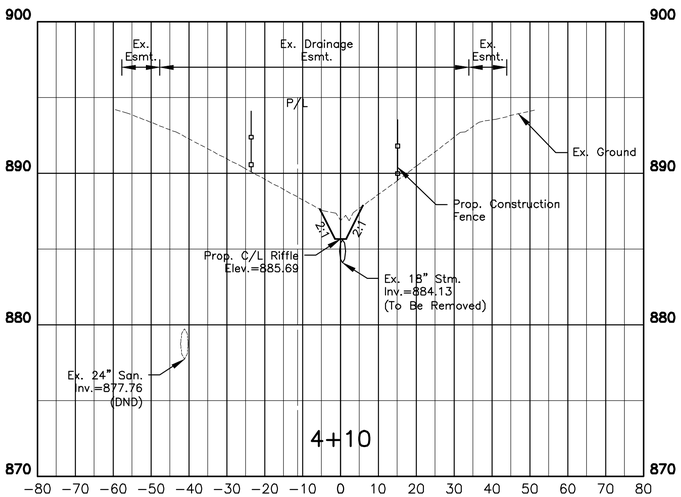
JOB NO.
2013-0060

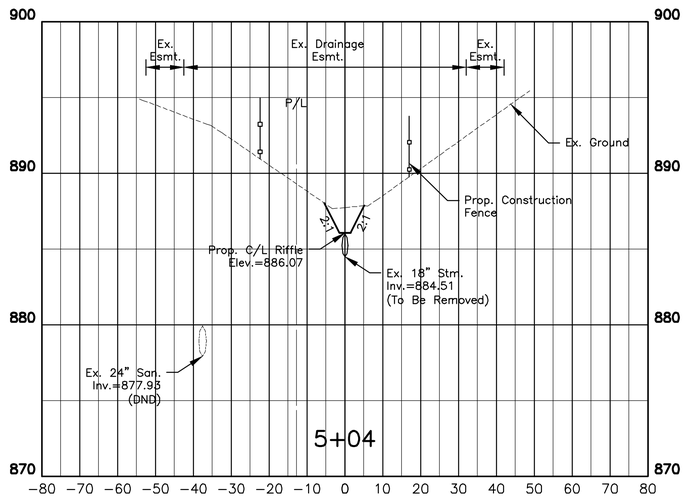
SHEET
06/12

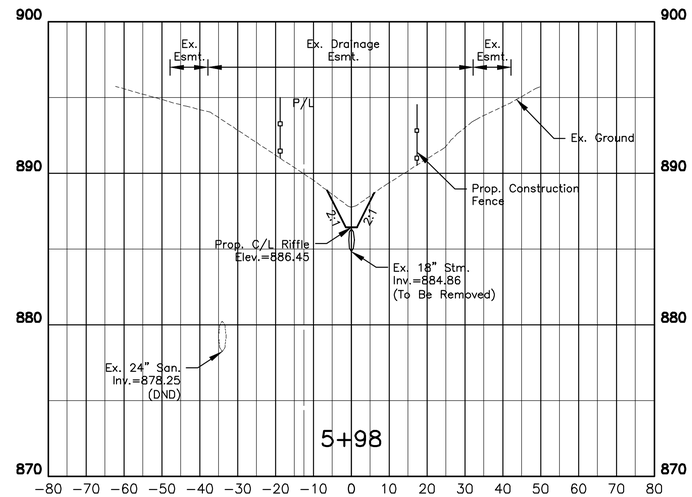


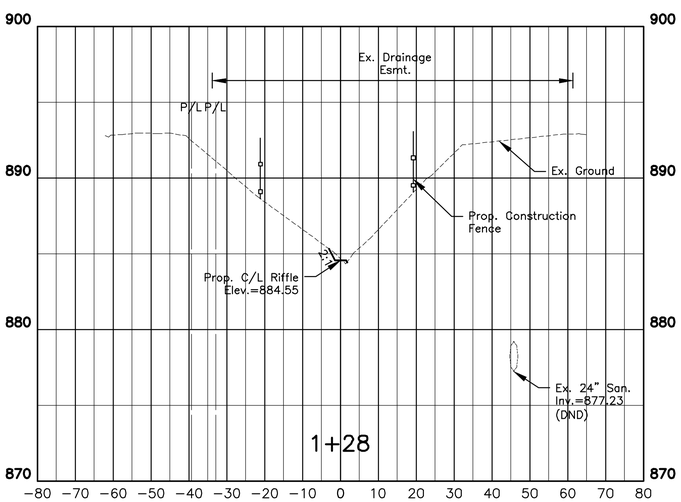


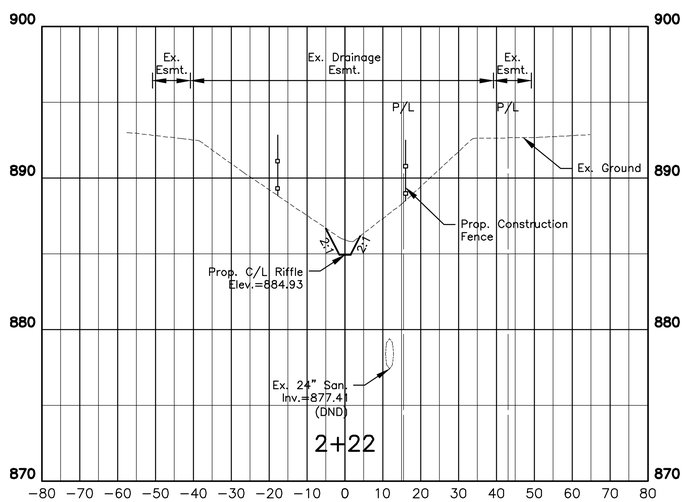


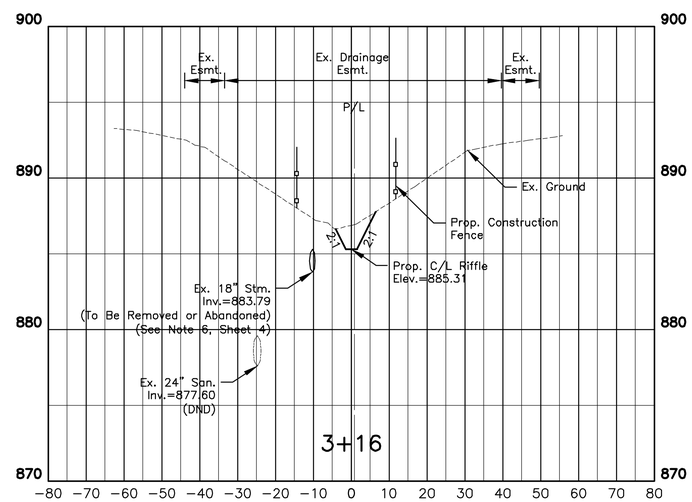












REVISIONS

MARK	DATE	DESCRIPTION

City of Dublin

CITY OF DUBLIN, FRANKLIN COUNTY, OHIO
PUBLIC STORMWATER SYSTEM IMPROVEMENTS
FOR
BEAR RUN
CROSS SECTIONS

EMH&T
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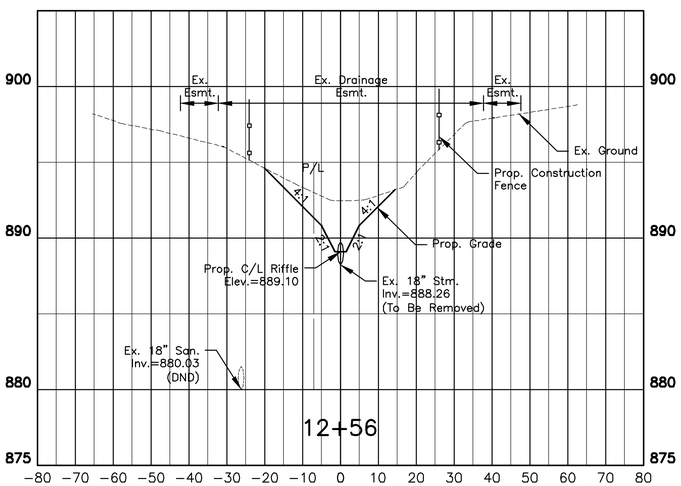
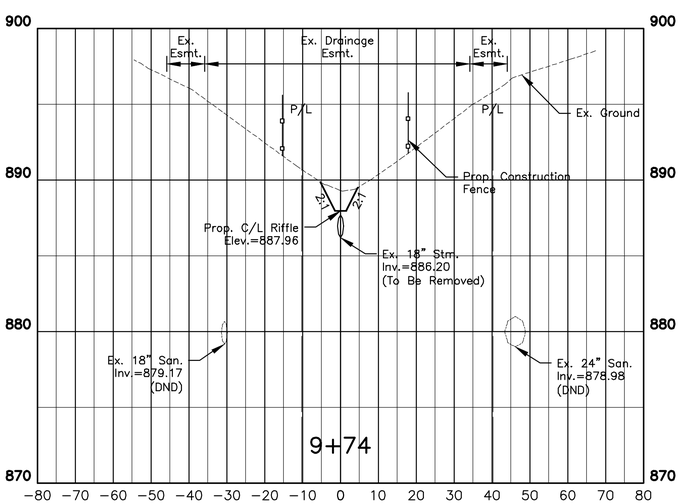
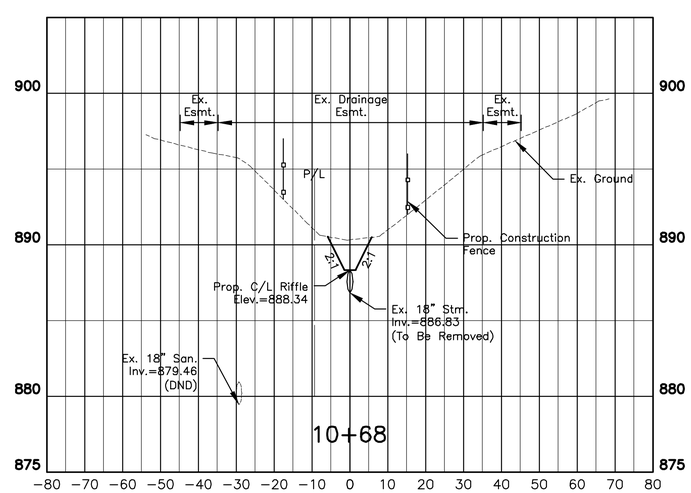
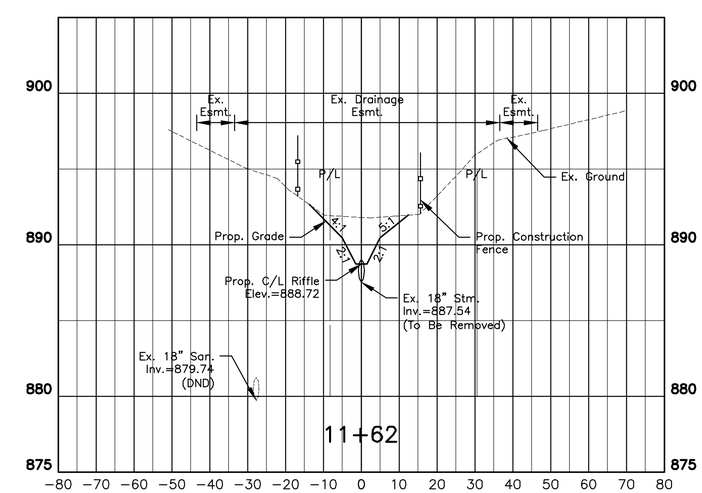
JOB NO.
2013-0060

SHEET
07/12









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JOB NO.
2013-0060

SHEET
08/12

Notes:

1. An excavated bankfull bench shall be constructed in areas where the bankfull elevation is higher than the existing ground. The bankfull bench shall have a 4:1 max. slope that drains toward the proposed channel. The bench shall be capped with six inches of topsoil and stabilized per the details on sheet 9. The cost of all labor and materials necessary to complete this work shall be included in the priced bid for Item 203, 651, and 652.
2. The bankfull width shown in the plan view is a constant 13 feet wide to match the riffle typical section. The bankfull width in a pool section should be 17 feet wide per the pool typical section on sheet 9. The pool width should transition from 13 feet at the CL and End riffle locations to 17 feet at the bottom of pool locations.
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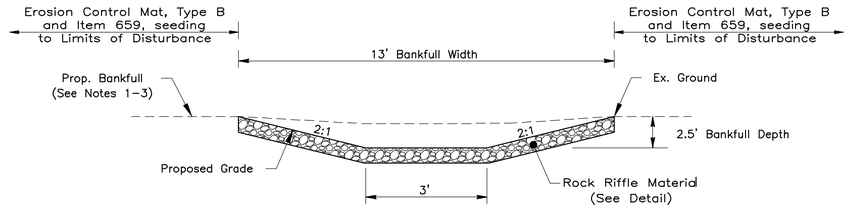
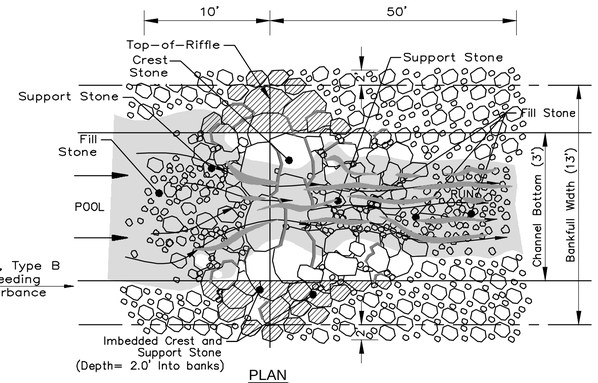
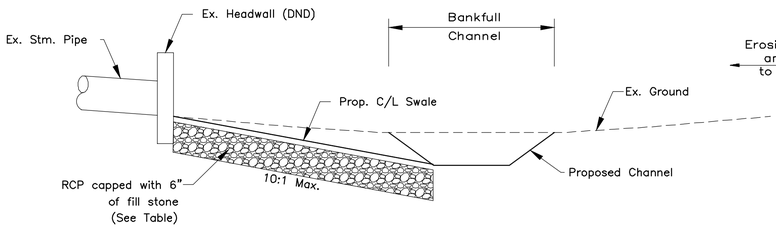


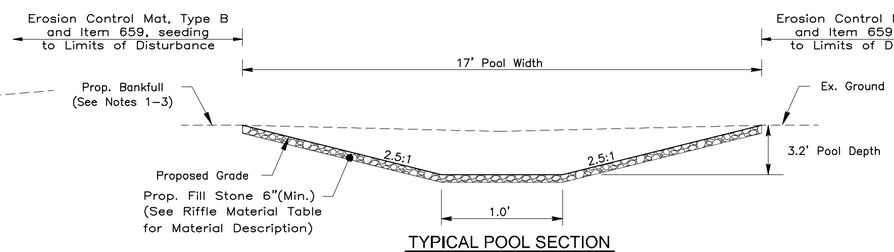
TYPICAL RIFFLE SECTION
Not To Scale



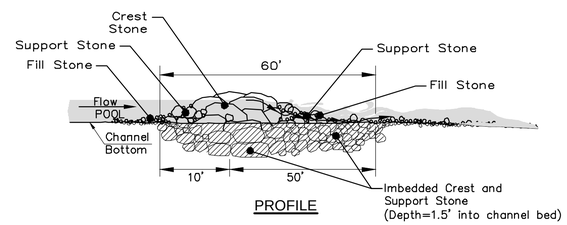
PLAN



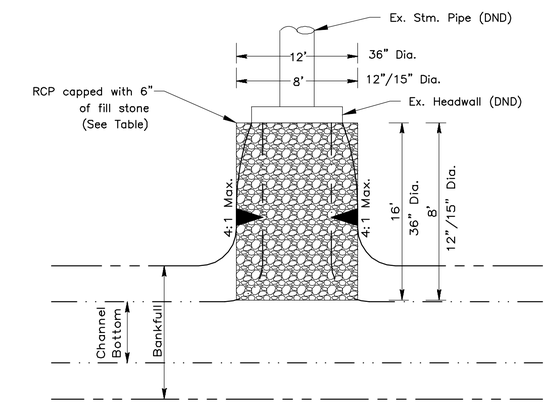
PROFILE



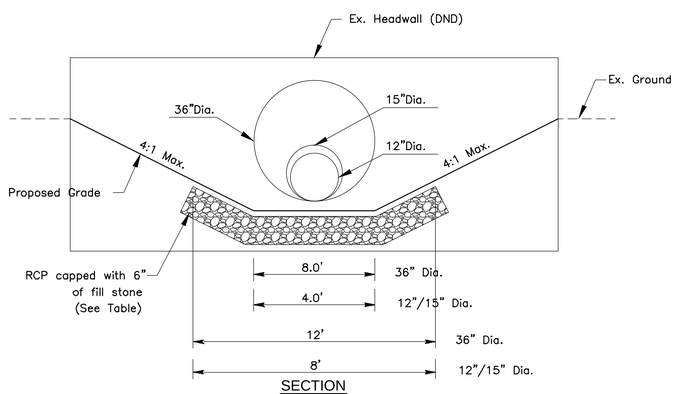
TYPICAL POOL SECTION
Not To Scale



PROFILE



PLAN



SECTION

SWALE DETAIL
Not To Scale

ROCK CHANNEL PROTECTION TABLE				
PIPE OUTLET SIZE	RCP TYPE	DIMINSIONS		
		WIDTH	LENGTH	DEPTH
36"	B	12'	16'	30"
12"/15"	C	8'	8'	24"

ROCK RIFFLES SPECS:

Only embedded (not visible) support and crest stone may be quarried limestone material. No construction rubble is permissible. All Fill Stone used to finish 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 City of Dublin for approval prior to delivery of materail. See Riffle Materials Table for descriptions and sizes of materials.

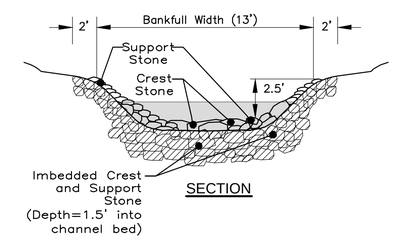
1.0 CREST STONE
The crest stone shall be placed to the elevation shown and labeled on the stream profile. The crest elevation must pool water back to the base of the upstream riffle.

Installation:
The crest elevation must be determined and the center stone installed first. Trench into the stream bed approximately 1.5' feet and place the stone(s) so that the center 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. 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. The fill stone shall hide all of larger crest and support stone to create a natural stream look. 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.



SECTION

ROCK RIFFLE DETAIL
Not to Scale

RIFFLE MATERIAL TABLE			
I.D.	DESCRIPTION	SIZE	% OF RIFFLE 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.	20%
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 3" and 12" in diameter, 50% of which shall be larger than 6" in diameter.	60%
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%

REVISIONS

MARK	DATE	DESCRIPTION

City of Dublin

CITY OF DUBLIN, FRANKLIN COUNTY, OHIO
PUBLIC STORMWATER SYSTEM IMPROVEMENTS
FOR
BEAR RUN
STREAM DETAILS AND TYPICAL SECTIONS

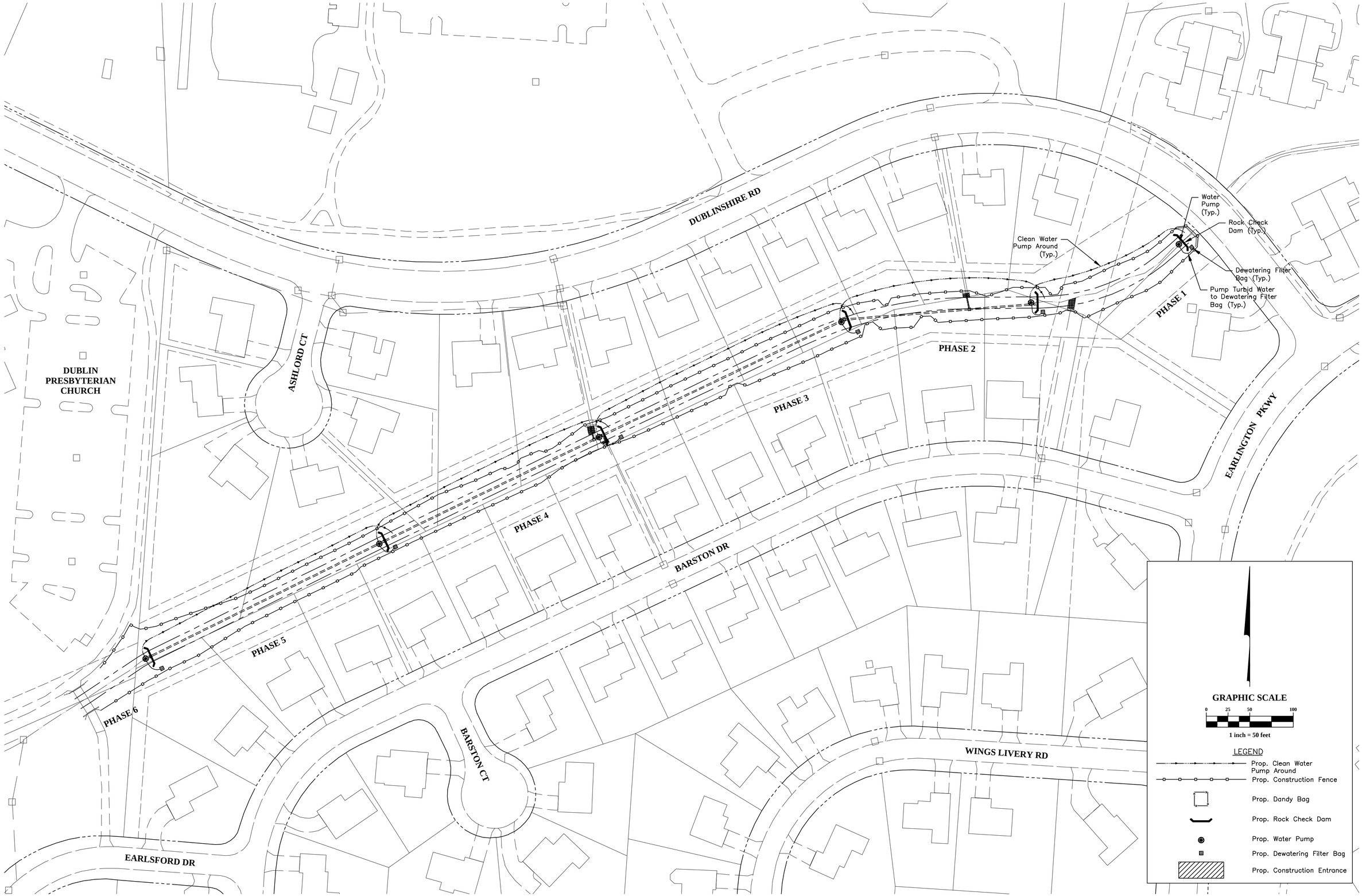
EMH&T
Evans, Mechwart, Hambleton & Tilton, Inc.
Engineers • Surveyors • Planners • Scientists
5500 New Albany Road, Columbus, OH 43054
Phone: 614.775.4500 Toll Free: 888.775.3648
emht.com

DATE
May, 2013

SCALE
As Noted

JOB NO.
2013-0060

SHEET
09/12



REVISIONS

MARK	DATE	DESCRIPTION

City of Dublin

CITY OF DUBLIN, FRANKLIN COUNTY, OHIO
PUBLIC STORMWATER SYSTEM IMPROVEMENTS
FOR
BEAR RUN
EROSION CONTROL PLAN

EMH&T
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

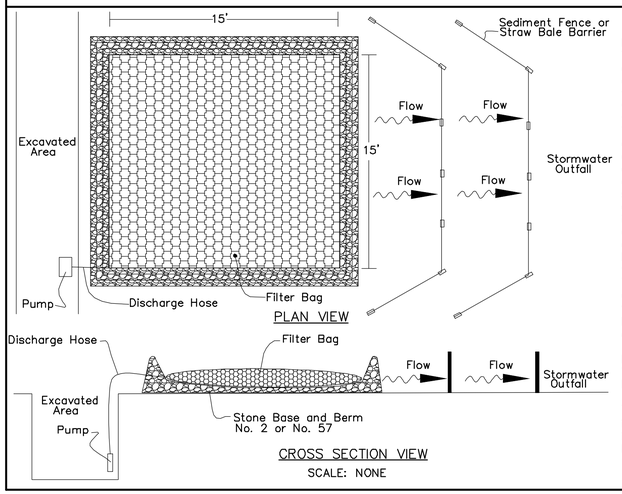
DATE
May, 2013

SCALE
1" = 50'

JOB NO.
2013-0060

SHEET
10/12

DEWATERING FILTER BAG

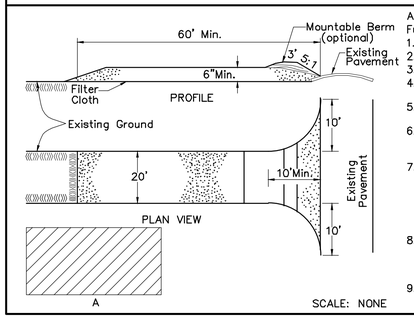


Installation:
The Contractor shall pump muddy water encountered within excavated areas that are not tributary to sediment basins into a filter fabric bag. The bag shall be placed within a level undisturbed area as far away from the stormwater outfall as possible. The bag shall be placed on top of a aggregate 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.

STABILIZED CONSTRUCTION ENTRANCE



A: Contractor Staging 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 – 60' Min.
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 rights-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 rights-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.

DEWATERING
Dewatering within excavated areas, if required, shall be performed in accordance with the details shown on this plan. Alternative methods of dewatering may require prior approval from the City of Gahanna. 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: Division of Water, Ohio Department of Natural Resources, Fountain Square, Columbus, Ohio 43224-1387, (614)265-6717.

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.

CONTRACTOR RESPONSIBILITY: Details have been provided on the plans in an effort to help the Contractor provide erosion and sedimentation control. The details shown on the plan shall be considered a minimum. Additional or alternate details may be found in the O.D.N.R. Manual "Rainwater and Land Development." 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 Discharges Associated with Construction Activity.

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 requested by the Engineer.

Permanent seeding shall be done between October 1st and November 15th or April 15th and May 15th. If seeding is done after May 15, it shall be classified as "Temporary Seeding". Reference the Planting Plan for permanent seed mixes and application rates.

SEDIMENT AND EROSION CONTROL MAINTENANCE:
It is the Contractor's responsibility to maintain the sediment control features used on this project. The site shall be inspected once every seven calendar days or within 24 hours of a 0.5" rainfall event or greater. Records of these inspections shall be kept and made available to jurisdictional agencies, if requested. Any sediment or debris which has reduced the efficiency of a structure shall be removed immediately. Should a structure or feature become damaged, the Contractor shall repair or replace at no additional cost to the Owner or the Municipality.

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. Construction of stabilized construction entrances are a part of that responsibility.

The Contractor shall be responsible to ensure that no solid or liquid waste is discharged into stormwater runoff. Sediment-laden water shall be filtered through the use of sediment filtering fences or sedimentation basins prior to discharge to surface waters. Concrete trucks will not be allowed to wash out or discharge surplus concrete into or along-side rivers, streams, and creeks or into natural or man-made channels or swales leading thereto. Concrete truck wash water and surplus concrete shall be confined to areas approved by the Engineer; after solidifying, these waste materials shall be removed from the site.

The Contractor shall be responsible to have the current "Plan", including this narrative, immediately available or posted on the site.

The Contractor shall be responsible to delineate, on the "Plan", all erosion and sedimentation control work actually performed; and to amend the "Plan" as required as a result of his work.

The Contractor shall be responsible to perform the required maintenance procedures and document them as required by the NPDES General Permit and the "Plan".

All Erosion & Sediment Control practices are subject to Field Modification at the direction of the Owner, City of Dublin, Design Engineer, and/or Ohio EPA.

SITE NARRATIVE

PLAN DESIGNER: EMH&T, INC.
Engineers, Surveyors, Planners & Scientists
5500 New Albany Rd.
Columbus, OH 43054
Phone: (614)-775-4500
Fax: (614)-775-4800

OWNER: City of Dublin
5800 Shier Rings Road
Dublin, Ohio 43016
Tel: (614) 410-4600
Fax: (614) 761-6506

PROJECT DESCRIPTION: The Project consists of approximately 1300' linear feet of restoring the Bear Run stream channel. An estimated 1.1± Acres will be disturbed onsite.

EXISTING SITE CONDITIONS: Pre-development conditions at this site consist of an existing storm sewer and shallow swale through a residential area

RECEIVING STREAM: Bear Run drains into North Fork Indian Run which drains into the Scioto River.

ADJACENT AREAS: The project corridor is within an existing residential area.

CRITICAL AREAS: Work will occur within an existing stream, which serves approximately 550 acres upstream. The contractor shall route clean water from upstream of the project area around the proposed area of disturbance per the recommended construction sequence.

PERMANENT STABILIZATION: All disturbed areas shall be stabilized with seeding and mulching and a geotextile material. Channel bank reinforcement will consist of both hardened and vegetative lining applications.

CONSTRUCTION SEQUENCE:

Phase 1
1. Establish a temporary stabilized construction entrance, complete with a 12" temporary drive pipe.
2. Determine the limits of disturbance associated with the construction staging area and install perimeter sediment fence, if needed and a construction fence around the area.
3. Establish a temporary construction drive from the staging area to the work limits.
3. Install construction fence along the perimeter of the work limits as shown in the plan views.
4. Install inlet protection or Dandy Bags as shown on sheet 10.
5. Construct a rock check dam near station 0+00 and upstream of the proposed phase 1 improvements near station 1+90.
6. Pump clean water from upstream of the rock check dam near station 1+90 around the proposed work area and back into the existing stream channel downstream of the rock check dam installed near station 0+00.
7. Pump muddy water encountered within the phase 1 stream channel work limits into a geotextile filter bag.
8. Construct the stream channel from station 0+00 to station 1+90. This phase includes excavation, topsoil, riffles, pools, storm outlet stabilization and final grading.
9. Stabilize the newly constructed stream channel and over-bank areas out to the limits of disturbance with seeding and matting.
10. Remove the rock check dam and pumping operations near station 0+00 and stabilize the remaining disturbed areas within phase 1.

Phase 2
1. Maintain the rock check dam near station 1+90 that was constructed with Phase 1.
2. Construct a rock check dam upstream of the proposed phase 2 improvements near station 4+10.
3. Pump clean water from upstream of the rock check dam near station 4+10 around the proposed work area and back into the new stream channel downstream of the rock check dam installed near station 1+90.
4. Pump muddy water encountered within the phase 2 stream channel work limits into a geotextile filter bag.
5. Remove the existing 18" storm sewer and construct the stream channel from station 1+90 to station 4+10. This phase includes excavation, topsoil, riffles, pools, storm outlet stabilization and final grading.
6. Stabilize the newly constructed stream channel and over-bank areas out to the limits of disturbance with seeding and matting.
7. Remove the rock check dam and pumping operations near station 1+90 and stabilize the remaining disturbed areas within phase 1.

Phase 3-4-5
Phases 3, 4 and 5 should be constructed using the same process as described in Phase 2.

Phase 6
3. Maintain the rock check dam near station 13+00 that was constructed with Phase 1.
4. Construct the outlet stabilization and endwall near station 13+00.
3. Complete the existing channel maintenance upstream of station 13+00.
4. Remove the rock check dam near station 13+00.
5. Stabilize all disturbed areas that have not been seeded and matted.
6. Remove the construction fence upon the City of Dublin's written approval.
7. Remove all remaining staging and erosion control items.

RESTORED CHANNEL MAINTENANCE: Once the newly constructed channel section is operating, all components, including lining and vegetative materials, shall be inspected by the Contractor on a monthly basis and after significant rainfalls for a period of one year. Any damaged or impaired items are to be reported to the city and replaced or repaired immediately.

SCHEDULE: The Contractor shall provide a schedule of operations to the Owner. Sedimentation and erosion control features shall be placed and maintained in accordance with this schedule.

SITE CONTACT: City of Dublin
Barb Cox
5800 Shier Rings Road
Dublin, Ohio 43016
Tel: (614) 410-4600
Fax: (614) 761-6506

SEDIMENT FENCE BARRIER DETAIL

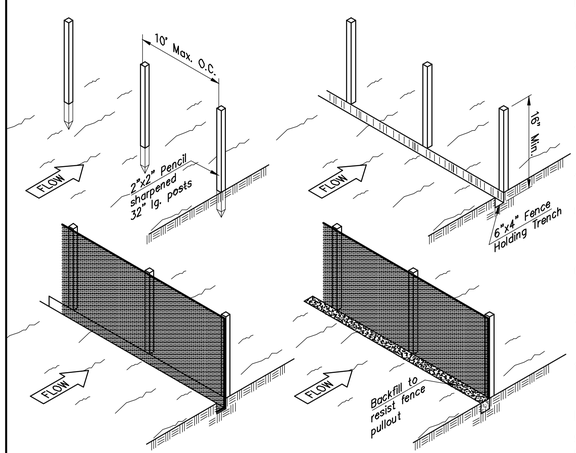


Table 6.3.2 Minimum criteria for Silt Fence Fabric (ODOT, 2002)

FABRIC PROPERTIES	VALUES	TEST METHOD
Minimum Tensile Strength	120 lbs. (535 N)	ASTM D 4632
Maximum Elongation at 60 lbs	50%	ASTM D 4632
Minimum Puncture Strength	50 lbs. (220 N)	ASTM D 4833
Minimum Tear Strength	40 lbs (180 N)	ASTM D 4533
Apparent Opening Size	≤ 0.84 mm	ASTM D 4751
Minimum Permittivity	1X10-2 sec.-1	ASTM D 4491
UV Exposure Strength Retention	70%	ASTM G 4355

MATERIAL PROPERTIES ARE:

1. The height of a silt fence shall not exceed 16-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 16-inches). Wood posts will be a minimum of 32" long.
4. A trench shall be excavated approximately 4-inches wide and 6 inches deep along the line of posts and upslope from the barrier.
5. The filter fabric shall be stapled or wired to the fence, and 8-inches of the fabric shall be extended into the trench. The fabric shall not extend more than 16-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. Silt fences shall be removed when they have served their useful purpose, but not before the upslope area has been permanently stabilized.
7. Silt 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.
10. 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 silt 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.

SCALE: NONE

TEMPORARY SEEDING

The limits of seeding and mulching are as shown within the plan as indicated by the proposed limits of disturbance. All areas not designated to be seeded shall remain under natural ground cover. Those areas disturbed outside the seeding limits shall be seeded and mulched at the Contractor's expense.

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 and mulch cover.

TEMPORARY SEEDING

SEEDING DATES	SPECIES	lb./1000 sq. ft.	Per acre
March 1 to August 15	Oats	3	4 bushel
	Tall Fescue	1	40 lb.
	Annual Ryegrass	1	40 lb.
	Perennial Ryegrass	1	40 lb.
	Tall Fescue	1	40 lb.
	Annual Ryegrass	1	40 lb.
August 16 to November 1	Rye	3	2 bushel
	Tall Fescue	1	40 lb.
	Annual Ryegrass	1	40 lb.
	Wheat	3	2 bushel
	Tall Fescue	1	40 lb.
	Annual Ryegrass	1	40 lb.
	Perennial Ryegrass	1	40 lb.
	Tall Fescue	1	40 lb.
	Annual Ryegrass	1	40 lb.
Nov. 1 to Spring Seeding	Use mulch only, sodding practices or dormant seeding		
NOTE: Other approved seed species may be substituted.			

MULCH COVER	APPLICATION RATE
Straw Mulch	2 tons/acre

REVISIONS

MARK	DATE	DESCRIPTION

City of Dublin

CITY OF DUBLIN, FRANKLIN COUNTY, OHIO
PUBLIC STORMWATER SYSTEM IMPROVEMENTS
FOR
BEAR RUN
EROSION CONTROL DETAILS

EMH&T
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

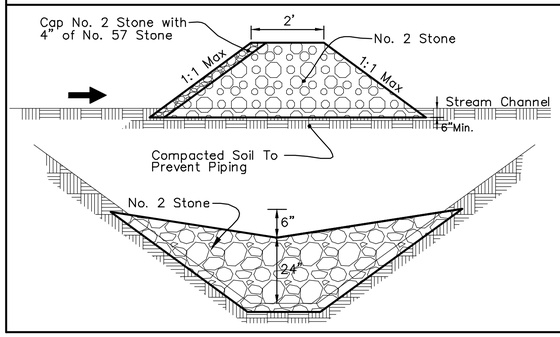
DATE
May, 2013

SCALE
As Noted

JOB NO.
2013-0060

SHEET
11/12

ROCK CHECK DAM



MAINTENANCE:
Rock check dam shall be inspected immediately after each rainfall and at least daily during prolonged rainfall.

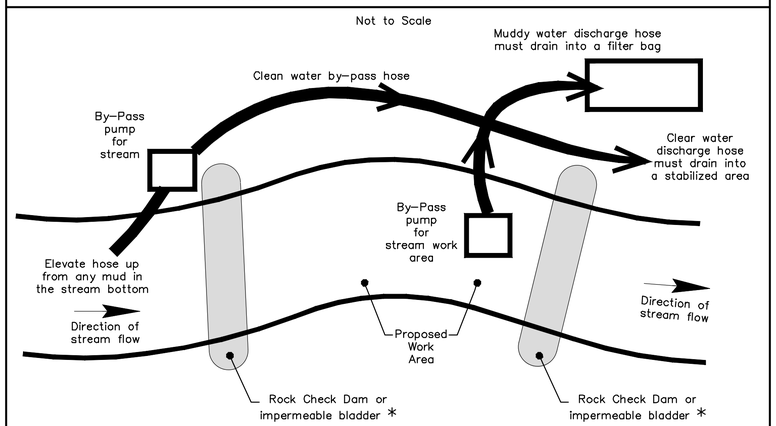
Close attention shall be paid to the repair of damaged check dams, end runs and undercutting beneath dams.

Necessary repairs to check dams shall be accomplished promptly.

Sediment deposits should be removed after each rainfall. They must be removed when the level of deposition reaches approximately one-half the height of the barrier.

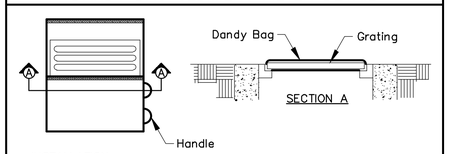
Any sediment deposits remaining in place after the aggregate is no longer required shall be dressed to conform to the existing grade, prepared and seeded.

STREAM DAM AND BY-PASS PUMP DETAIL



* Non-erodable material only

DANDY BAG SEDIMENT FILTER DETAIL



INSTALLATION:

Stand grate on end. Place Dandy Bag over grate. Roll grate over so that open end is up. Pull up slack. Tuck flap in. Be sure end of grate is completely covered by flap or Dandy Bag will not fit properly. Holding handles, carefully place Dandy Bag with grate inserted into catch basin frame so that red dot on the top of the Dandy Bag is visible.

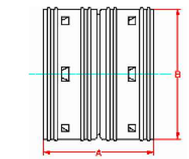
MAINTENANCE:

With a stiff bristle broom or square point shovel remove silt & other debris off surface after each event.

FLARED END SECTION DETAIL*

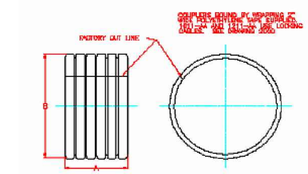
EXTERNAL SNAP COUPLER

PART #	PIPE SIZE	A	B
0312AA	3 in (75 mm)	4.0 in (102 mm)	4.0 in (102 mm)
0412AA*	4 in (100 mm)	4.3 in (108 mm)	5.1 in (130 mm)
0512AA	5 in (125 mm)	4.4 in (111 mm)	6.3 in (159 mm)
0612AA	6 in (150 mm)	5.6 in (143 mm)	7.4 in (187 mm)
0812AA	8 in (200 mm)	6.0 in (152 mm)	10.0 in (254 mm)
1012AA	10 in (250 mm)	10.3 in (260 mm)	12.5 in (318 mm)



SINGLE WALL SPLIT COUPLER

PART #	PIPE SIZE	A	B
0311AA	3 in (75 mm)	3.0 in (76 mm)	4.0 in (102 mm)
0411AA	4 in (100 mm)	3.8 in (95 mm)	5.1 in (130 mm)
0511AA	5 in (125 mm)	4.0 in (102 mm)	6.3 in (159 mm)
0611AA	6 in (150 mm)	4.0 in (102 mm)	7.4 in (187 mm)
0811AA*	8 in (200 mm)	6.0 in (152 mm)	10.0 in (254 mm)
1011AA*	10 in (250 mm)	5.5 in (140 mm)	12.5 in (318 mm)
1211AA	12 in (300 mm)	8.3 in (210 mm)	15.5 in (394 mm)



* DENOTES PARTS THAT CAN ALSO BE USED ON DUAL WALL PIPE

NOTE: ALL DIMENSIONS ARE NOMINAL

DRAWING #1	1000	
DRAWN BY	KRJ	08.11.06
APPROVED BY	KRJ	08.29.07
REVISIONS	NJP	06.12.07

* Flared End Section shall be provided by ADS, or approved equal.

REVISIONS

MARK	DATE	DESCRIPTION

CITY OF DUBLIN

CITY OF DUBLIN, FRANKLIN COUNTY, OHIO
PUBLIC STORMWATER SYSTEM IMPROVEMENTS
FOR
BEAR RUN
EROSION CONTROL DETAILS

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emht.com

DATE
May, 2013

SCALE
As Noted

JOB NO.
2013-0060

SHEET
12/12

CITY OF DUBLIN, FRANKLIN COUNTY, OHIO
PUBLIC STORMWATER SYSTEM IMPROVEMENTS
FOR
AMBERLEIGH PARK
2013
13-010-CIP

SHEET INDEX

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General Notes and Quantities	02
Index Sheet and Staking Coordinates	03
Plan and Profile – North Area	04
Plan and Profile – South Area	05
Cross Sections	06
Details	07
Details	08
Erosion Control Plan and Details	09
Erosion Control Plan and Details	10

STANDARD CONSTRUCTION DRAWINGS

The Standard Construction Drawings listed on these plans are to be considered a part thereof

CITY OF DUBLIN	CITY OF COLUMBUS	
ST–01	AA–S168	1441 Dr. A
ST–03	AA–S102	
ST–05	AA–S166	

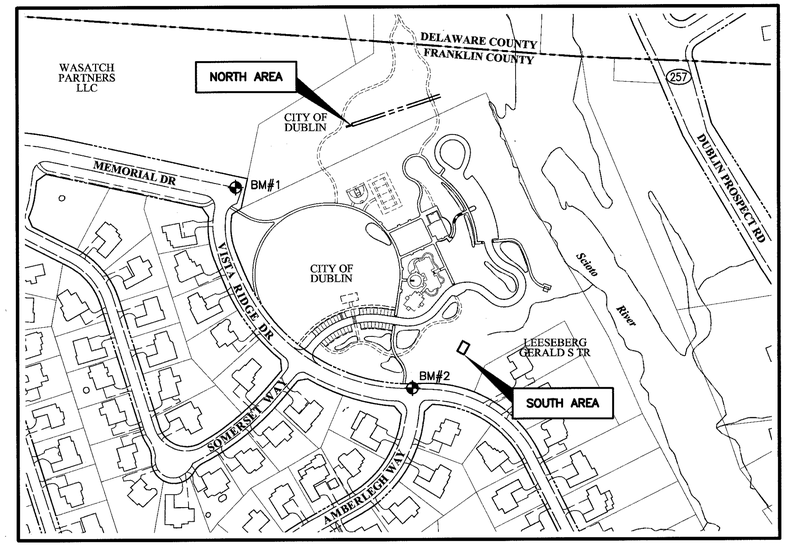
BENCH MARKS
(NAVD 1988)

SOURCE — ODOT VRS Horizontal Datum
The coordinates shown on this map are based on the Ohio State Plane Coordinate System, South Zone, NAD 83 (CORS96). Said coordinates are based upon positional solutions derived from RTK GPS observations using the Ohio Department of Transportation Virtual Reference System equipment and software at traverse control points. (Field survey work completed January, 2012).

SOURCE — ODOT VRS Vertical Datum
The elevations for this project are based on the North American Vertical Datum of 1988. Said elevations are based upon positional solutions derived from RTK GPS observations using the Ohio Department of Transportation Virtual Reference System equipment and software and the National Geodetic Survey's GEOID03 model at traverse control points. Elevations from said traverse control points were then transferred by conventional leveling procedures to the permanent benchmarks listed hereon. (Fieldwork Completed January, 2012).

BM#1 — Chiseled "X" on the south bolt of a Fire Hydrant located on the north side of Memorial Drive and at the northeast intersection of Memorial Drive and Vista Ridge Drive.
Elev. = 847.40

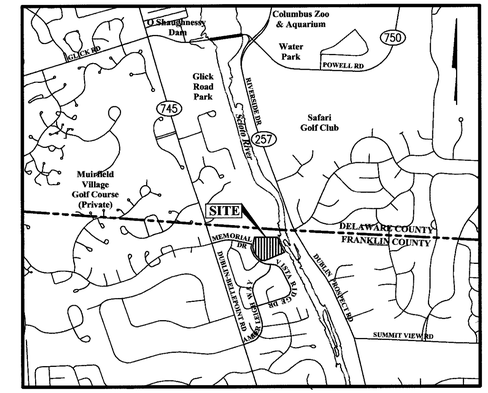
BM#2 — Chiseled "X" on the south bolt of a Fire Hydrant on north side of Vista Ridge Drive at the north intersection of Amberleigh Way and Vista Ridge Drive.
Elev. = 841.06



INDEX MAP
Scale: 1" = 200'

GRAPHIC SCALE
0 100 200 400
1 inch = 200 feet

OWNER
City Of Dublin
5800 Shier Rings Road
Dublin, Ohio 43016
Tel: (614) 410–4600
Fax: (614) 718–4346



LOCATION MAP
SCALE: 1" = 2000'

PREPARED BY:

EMH&T
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

STATE OF OHIO
JUD M. HINES
69840
REGISTERED
PROFESSIONAL ENGINEER

Registered Engineer No. — Date 5/16/13

CITY OF DUBLIN:
SIGNATURES BELOW SIGNIFY CONCURRENCE WITH THE GENERAL PURPOSES AND THE GENERAL LOCATION OF THE PROJECT AND DOES NOT CONSTITUTE ASSURANCE TO OPERATE AS INTENDED. ALL TECHNICAL DETAILS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL CIVIL ENGINEER PREPARING THE PLANS.
APPROVED:

CITY ENGINEER, CITY OF DUBLIN, OHIO — DATE 5·22·2013

OHIO Utilities Protection SERVICE
Call Before You Dig
800-362-2764 or 8-1-1
www.oups.org

REVISIONS

MARK	DATE	DESCRIPTION

City of Dublin

CITY OF DUBLIN, FRANKLIN COUNTY, OHIO
PUBLIC STORMWATER SYSTEM IMPROVEMENTS
FOR
AMBERLEIGH PARK
TITLE SHEET

EMH&T
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Phone: 614.775.4500 Toll Free: 888.775.3648
emht.com

DATE: May, 2013
SCALE: As Noted
JOB NO.: 2013-0059
SHEET: 01/10

GENERAL NOTES

1. City of Columbus and Ohio Department of Transportation (ODOT) Construction and Material Specifications, current editions, and any supplements thereto (hereafter referred to as Standard Specifications), shall govern all construction items unless otherwise noted. If a conflict between specifications is found, the more strict specification will apply as decided by the City Engineer. Item Numbers listed refer to City of Columbus Item Numbers unless otherwise noted.

2. The City Engineer will not be responsible for means, methods, procedures, techniques, or sequences of construction that are not specified herein. The City Engineer will not be responsible for safety on the work site, or for failure by the Contractor to perform work according to contract documents.

3. The Contractor shall be responsible to obtain all necessary permits including but not limited to Ohio EPA Permits to Install (PTI) and Notices of Intent (NOI), Building Permits, etc.

4. The Contractor shall notify the City of Dublin Division of Engineering in writing at least 3 working days prior to beginning construction.

5. The Contractor shall be solely responsible for complying with all federal, state and local safety requirements including the Occupational Safety and Health Act of 1970. The Contractor shall exercise precaution always for the protection of persons (including employees) and property. It shall also be the sole responsibility of the Contractor to initiate, maintain and supervise all safety requirements, precautions and programs in connection with the work, including the requirements for confined spaces per 29 CFR 1910.146.

Deleted note 6.

7. The Contractor shall restrict construction activity to public right–of–way and areas defined as permanent and/or temporary construction easements, unless otherwise authorized by the City Engineer.

8. The Contractor shall carefully preserve benchmarks, property corners, reference points, stakes and other survey reference monuments or markers. In cases of willful or careless destruction, the Contractor shall be responsible for restorations. Resetting of markers shall be performed by an Ohio Professional Surveyor as approved by the City Engineer.

9. Non rubber tired vehicles shall not be moved on or across public streets or highways without the written permission of the City Engineer.

10. The Contractor shall restore all disturbed areas to equal or better condition than existed before construction. Drainage ditches or watercourses that are disturbed by construction shall be restored to the grades and cross sections that existed before construction.

11. Tracking or spilling mud, dirt or debris upon streets, residential or commercial drives, sidewalks or bike paths is prohibited according to Section 97.38 of the Dublin Code of Ordinances. Any such occurrence shall be cleaned up immediately by the Contractor at no cost to the City. If the Contractor fails to remove said mud, dirt, debris, or spillage, the City reserves the right to remove these materials and clean affected areas, the cost of which shall be the responsibility of the Contractor.

12. Disposal of excess excavation within Special Flood Hazard Areas (100–year floodplain) is not permitted.

13. All signs, landscaping, structures or other appurtenances within right–of–way disturbed or damaged during construction shall be replaced or repaired to the satisfaction of the City Engineer. The cost of this work shall be the responsibility of the Contractor.

14. All field tile broken or encountered during excavation shall be replaced or repaired and connected to the public storm sewer system as directed by the City Engineer. The cost of this work shall be the responsibility of the Contractor.

15. All precast concrete products shall be inspected at the location of manufacture. Approved precast concrete products will be stamped or have such identification noting that inspection has been conducted by the City of Columbus. Precast concrete products without proof of inspection shall not be approved for installation.

16. Backfill within a 1:1 influence line of existing structures (houses, garages, etc.) or public infrastructure (pavement, curbs, sidewalks, bike paths, etc.) shall be compacted granular backfill according to Item 912 of the Standard Specifications or Flowable CDF, Type III according to Item 636. Item 911 of the Standard Specifications shall be used elsewhere.

Deleted note 17.

18. All trenches within public right–of–way shall be backfilled according to the approved construction drawings or securely plated during nonworking hours. Trenches outside these areas shall be backfilled or shall be protected by approved temporary fencing or barricades during nonworking hours. Clean up shall follow closely behind the trenching operation.

19. All trees within the construction area not specifically designated for removal shall be preserved, whether shown or not shown on the approved construction drawings. Trees to be preserved shall be protected with high visibility fencing placed a minimum 15 feet from the tree trunk. Trees 6 – inches or greater at DBH (Diameter Breast Height) must be protected with fencing placed at the critical root zone or 15 feet, whichever is greater. Trees not indicated on the approved construction drawings for removal may not be removed without prior approval of the Division of Engineering.

Deleted note 20.

21. The Contractor shall be responsible for the condition of trenches within the right–of–way and public easements for a period of one year from the final acceptance of the work, and shall make any necessary repairs at no cost to the City.

22. Pavements shall be cut in neat, straight lines the full depth of the existing pavement, or as required by the City Engineer. Pavement replacement shall be conducted according to City of Columbus Standard Drawing 1441 Dr. A and applicable City of Dublin standard drawings. The replacement of driveways, handicapped ramps, sidewalks, bike paths, parking lot pavement, etc. shall be provided according to the approved construction drawings and City of Dublin standard construction drawings.

23. Tree trimming within the construction zone is to be completed by a certified Arborist. At the completion of the project, the Arborist is to return and trim any broken branches as needed.

24. Any modification to the work shown on drawings must have prior written approval by the City Engineer, City of Dublin.

25. All inlets shall be channelized.

26. Park areas shall be fine_graded and seeded with the following mixture:

    Improved Tall Fescue: 90% of weight (3–4 varieties in equal parts)
    Improved Kentucky Bluegrass: 10% of weight
    Germination Rate: 85%
    Application Rate: 8 lbs per 1000 sq ft or as directed by the Division of Parks and Recreation, City of Dublin, Ohio.

27. Traffic control and other regulatory signs shall be Type S with a square post anchor base installation and meet all requirements of ODOT TC–41.20 and applicable City of Dublin specifications.

28. Street signs shall meet all City of Dublin specifications with lettering colored in white displayed over a brown background. Sign tubing shall be brown in color and conform with the Type S, square post anchor base installation requirements of ODOT TC–41.20.

UTILITIES

1. The following utilities are known to be located within the limits of this project:

Columbia Gas of Ohio
Dave Kelly
200 Civic Center Dr., 4th Floor
Columbus, Ohio 43215
(614) 481–1058

City of Columbus Division of Power and Water (Water)
910 Dublin Road, 2nd Floor
Columbus, Ohio 43215
(614) 645–7677

American Electric Power
Paul Paxton
Engineering Liaison Coordinator
850 Tech Center Drive
Gahanna, Ohio 43230–6605
(614) 883–6831

Frontier Communication
Courtney Murphy
Network Engineer
Delaware, Ohio 43015
(740) 369–0826

City of Dublin Division of Engineering
5800 Shier Rings Road
Dublin, Ohio 43016
(614) 410–4600

Wide Open West
Danny Quinn
3675 Corporate Drive
Columbus, Ohio 43231
(614) 668–7263

Time Warner Cable
Ray Maurer
1266 Dublin Road
Columbus, Ohio 43215
(614) 348–2979

2. The Contractor shall give notice of intent to construct to Ohio Utilities Protection Service (telephone number 800–362–2764), Producer's Underground Protection Service (telephone number 614–587–0486), and to owners of underground utilities that are not members of a registered underground protection service. Notice shall be given at least 2 working days before start of construction.

3. The identity and locations of existing underground utilities in the construction area have been shown on the approved construction drawings as accurately as provided by the owner of the underground utility. The City of Dublin and the City Engineer assumes no responsibility for the accuracy or depths of underground facilities shown on the approved construction drawings. If damage is caused, the Contractor shall be responsible for repair of the same and for any resulting contingent damage.

4. Location, support, protection and restoration of all existing utilities and appurtenances, whether shown or not shown on the approved construction drawings, shall be the responsibility of the Contractor.

5. When unknown or incorrectly located underground utilities are encountered during construction, the Contractor shall immediately notify the owner and the City Engineer.

6. Public street lighting may be in the vicinity of this project. Contact the City of Dublin, Division of Engineering at 410–4637, two days prior to beginning work.

TRAFFIC CONTROL

1. Traffic control shall be furnished, erected, maintained, and removed by the Contractor according to Ohio Manual of Uniform Traffic Control Devices (OMUTCD), current edition.

2. All traffic lanes of public roadways shall be fully open to traffic from 7:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM unless authorized differently by the City Engineer. At all other hours the Contractor shall maintain minimum one–lane two–way traffic. Uniformed, off–duty police officers shall replace flagmen designated by the OMUTCD, and shall be present whenever one–lane, two–way traffic control is in effect. Police cruisers may be required as directed by the City Engineer.

3. If the City Engineer determines proper provisions for traffic control are not being provided by the Contractor, the City Engineer shall assign uniformed, off–duty police officers to the project at no cost to the City.

4. Steady–burning, Type "C" lights shall be required on all barricades, drums, and similar traffic control devices in use at night.

5. Access from public roadways to all adjoining properties for existing residents or businesses shall be maintained throughout the duration of the project for mail, public water and sanitary sewer service, and emergency vehicles. The Contractor shall provide a traffic control plan detailing the proposed maintenance of traffic procedures. The traffic control plan must incorporate any traffic control details contained herein. The traffic control plan proposed by the Contractor must be approved by the City Engineer prior to construction.

EROSION AND SEDIMENT CONTROL

Deleted note 1.

2. The Contractor shall provide sediment control at all points where storm water runoff leaves the project, including waterways, overland sheet flow, and storm sewers.

3. Accepted methods of providing erosion/sediment control include but are not limited to: sediment basins, silt filter fence, aggregate check dams, and temporary ground cover. Hay or straw bales are not permitted.

4. The Contractor shall provide adequate drainage of the work area at all times consistent with erosion control practices.

5. Disturbed areas that will remain unworked for 14 days or more shall be seeded or protected within seven calendar days of the disturbance. Other sediment controls that are installed shall be maintained until vegetative growth has been established. The Contractor shall be responsible for the removal of all temporary sediment devices at the conclusion of construction but not before growth of permanent ground cover.

BLASTING (If Permitted)

Deleted note 1.

SANITARY SEWERS

Deleted notes 1–11.

12. At the determination of the City Engineer, the Contractor may be required to perform a TV inspection of the sanitary sewer system prior to final acceptance by the City. This work shall be completed by the Contractor at his expense.

13. Visleaks or other defects observed or discovered during TV inspection shall be repaired to the satisfaction of the Engineer.

14. Roof drains, foundation drains, field tile or other clean water connections to the sanitary sewer system are strictly prohibited according to Section 51.23 of the Dublin Code of Ordinances.

Deleted 15–18.

19. Existing sanitary sewer flows shall be maintained at all times. Costs for pumping and bypassing shall be included in the Contractor's unit price bid for the related items.

Deleted note 20.

WATER LINE

Deleted notes 1–17.

STORM SEWER

1. All storm water detention and retention areas and major flood routing swales shall be constructed to finish grade and hydro_seeded and hydro–mulched according to Items 203 and 659 of the Standard Specifications.

2. Where private storm sewers connect to public storm sewers, the last run of private storm sewer connecting to the public storm sewer shall be Reinforced Concrete Pipe conforming to ASTM Designation C76, Wall B, Class IV for pipe diameters 12 inches to 15 inches, Class III for 18 inches to 24 inch pipes, and 27 inches and larger pipe shall be Class II, unless otherwise shown on the approved construction drawings. Inspection is required by the City of Dublin's Division of Engineering.

3. Granular backfill shall be compacted granular material according to Item 912 of the Standard Specifications or Controlled Density Backfill according to Item 636, Type III of the Standard Specifications as directed by the City Engineer.

4. All storm sewers shall be Reinforced Concrete Pipe conforming to ASTM Designation C76, Wall B, Class IV for pipe diameters 12 inches to 15 inches, Class III for 18 inches to 24 inch pipes, and 27 inches and larger pipe shall be Class II, unless otherwise shown on the approved construction drawings.

5. Headwalls and endwalls shall be required at all storm sewer inlets or outlets to and from stormwater management facilities. Natural stone and/or brick approved by the City Engineer shall be provided on all visible headwalls and/or endwalls surfaces.

6. Storm inlets or catch basins shall be channelized and have bicycle safe grates. Manhole lids shall include City of Dublin logo and all curb inlet and catch basin grates shall induce engraved lettering: ?DUMP NO WASTE; DRAINS TO RIVER.?

Deleted note 7.

MAIL DELIVERY

1. The Contractor shall be responsible to ensure that US Mail delivery within the project limits is not disrupted by construction operations. This responsibility is limited to relocation of mailboxes to a temporary location that will allow the completion of the work and shall also include the restoration of mailboxes to their original location or approved new location. Any relocation of mailbox services must be first coordinated with the US Postal Service and the homeowner.

2. Before relocating any mailboxes, the Contractor shall contact the U.S. Postal Service and relocate mailboxes according to the requirements of the Postal Service.

USE OF FIRE HYDRANTS

1. The Contractor shall make proper arrangements with the Dublin Service Department and the Columbus Division of Water for the use of fire hydrants when used for work performed under this contract and provide the city of Dublin a copy of the Hydrant Usage Permit obtained from the City of Columbus. The Contractor shall also send a copies of permits obtained from Dublin and Columbus to the Washington and/or Perry Township Fire Department. Permits shall be kept at the construction site at all times.

2. Before the final estimate is paid, the Contractor shall submit a letter from the City of Columbus Division of Water to the City Engineer stating that the Contractor has returned the Siamese Valve to the City of Columbus and has paid all costs arising from the use of the fire hydrants.

SUPPLEMENTAL SPECIFICATIONS

ITEM 201, CLEARING AND GRUBBING, AS PER PLAN
Clearing and grubbing and tree removal within the general site limits shall be performed as a part of this plan. The location and extent of the clearing limits and tree removal shall be approved in the field by the City prior to removing any trees. Any additional clearing or tree removal 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 less than 12" in diameter, brush and stumps shall be included within the price bid for Item 201, Clearing and Grubbing, As Per Plan.

ITEM 201, TREE REMOVED, AS PER PLAN
Tree removal within the general site limits shall be performed as a part of this plan. The trees proposed to be removed shall be approved in the field by the City prior to removing any trees. Any additional tree removal 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 greater than 12" in diameter shall be included within the price bid for Item 201, Tree Removed, As Per Plan.

ITEM 202, RIPRAP REMOVED FOR RE–USE ONSITE, AS PER PLAN
All existing riprap within the existing ditch shall be removed and stockpiled for re–use onsite. The contractor should use care to separate the riprap while removing it from the ditch so that it can be re–used. The cost of all labor and materials necessary to remove the riprap shall be included within the price bid for Item 202, Riprap Removed for re–use, As Per Plan.

ITEM 203, EXCAVATION, AS PER PLAN
The specifications within Item 203 shall apply for this work along with the following notes. Excavation consists of removing the material necessary to construct the proposed stream valley and channel. All excavated material shall be re–used as embankment on the site. The cost of all labor and materials associated with this work shall be included in the price bid for Item 203, Excavation, As Per Plan.

ITEM 203, EMBANKMENT, AS PER PLAN
The specifications within Item 203 shall apply for this work along with the following notes. Embankment consists of placing all fill as shown on the plans to fill in the existing eroded ditch or fill in above the proposed pipe. The existing ditch shall have all riprap removed for re–use in the new channel prior to placing the fill. All embankment material shall be suitable clay borrowed from the project area or imported. Topsoil shall be placed six inches thick on top of this fill. The fill area should be sloped to drain toward the new stream. The cost of all labor and materials associated with this work shall be included in the price bid for Item 203, Embankment, As Per Plan.

ITEM 601, RCP TYPE B RE–USED FROM ONSITE, AS PER PLAN
The existing riprap removed from the existing ditch should be re–used onsite. The material shall be re–used to stabilize the proposed pools on the north area and as outlet protection on the south area. The cost of all labor and materials necessary to complete this work shall be included in the price bid for Item 601, RCP Type B Re–used from onsite, As Per Plan.

ITEM 601, FILL STONE, AS PER PLAN
Fill stone shall be placed to fill in the voids in the RCP, Type B within the pools on the north area. The fill stone shall consist of material described in the riffle material table on sheet 8. This item does not include the fill stone to be place with the rock riffles. The cost of all labor and materials necessary to complete this work shall be included in the price bid for Item 601, Fill Stone, As Per Plan.

ITEM 653, TOPSOIL FURNISHED AND PLACED, AS PER PLAN
The specifications within Item 653 shall apply for this work along with the following notes. topsoil shall be placed in all areas that were filled per the embankment notes above. Topsoil shall be at least six inches thick to promote the growth of vegetation. Topsoil does not need to be placed in the bottom of the new channel but it should be placed on the new stream banks. The fill area shall be graded to drain toward the new stream. The cost of all labor and materials associated with this work shall be included in the price bid for Item 653, Topsoil Furnished and Placed, As Per Plan.

ITEM 659, NATIVE GRASS SEEDING AND MULCHING, AS PER PLAN
Native Grass Seeding and Mulching shall be completed between October 1st and November 15th or April 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 8. Over seed shall be applied with the permanent seed to stabilize the site until the permanent seed germinates and establishes itself. Seeding shall be completed per the site preparation, seeding methods, mulching, watering, repair, and performance specifications indicated in Item 659. Crimping or anchoring shall be completed per the specifications listed in the ODNR, Rainwater and land Development Manual. Seed identification tags from the seed supplier shall be approved by the City 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 659, PARK GRADE SEEDING AND MULCHING, AS PER PLAN
Park Grade Seeding and Mulching shall be completed in the areas shown on sheet 9. Seeding shall consist of the mixture and application rate specified in the General Notes, note 26, sheet 2. Seeding shall be completed per the site preparation, seeding methods, mulching, watering, repair, and performance specifications indicated in Item 659. Crimping or anchoring shall be completed per the specifications listed in the ODNR, Rainwater and land Development Manual. Seed identification tags from the seed supplier shall be approved by the City 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., Park Grade Seeding and Mulching, As Per Plan.

ITEM 901, 4 INCH DRAIN TILE, AS PER PLAN
A solid 4" drain tile shall be constructed between the existing tile outlets and the proposed stream. The tile location shall be adjusted in order to minimize disturbance to existing vegetation, including a tree that is directly downstream of the existing outlets. All fittings such as elbows and wyes shall be included as a part of this work. The cost of all labor and materials necessary to complete this work shall be included in the price bid for Item 901, 4 Inch Drain Tile, As Per Plan.

ITEM SPEC., ROCK RIFFLES, AS PER PLAN
The Rock Riffles shall be constructed per the details and notes on sheet 8. 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., ROCK SILL, AS PER PLAN
The Rock Sills shall be constructed per the details and notes on sheet 8. This work includes placing the crest stone and grouting in into place. The cost of all labor and materials associated with the structures shall be included in the price bid for Spec., Rock Rills, As Per Plan.

ITEM SPEC., ROCK STEPS, AS PER PLAN
The Rock Steps shall be constructed per the details and notes on sheet 7. This work includes the crest stone, footer stone, 4 oz. non–woven geotextile fabric, and No. 2 stone to fill the voids. The cost of all labor and materials associated with the structures shall be included in the price bid for Spec., Rock Steps, As Per Plan.

ITEM SPEC., LIVE STAKES, AS PER PLAN
Live stakes shall be installed per the details and notes on sheet 8. The species list and quantity shall be approved in writing by the City prior to ordering the stakes. The cost of all labor and materials associated with the live stakes shall be included in the price bid for Spec., Live Stakes, As Per Plan.

ESTIMATE OF QUANTITIES

SPEC.	ITEM	QUANTITY	UNIT	DESCRIPTION
		NORTH AREA		
COC	201	1	LS	Clearing and Grubbing, As Per Plan
COC	202	150	CY	Riprap Removed for re–use onsite, As Per Plan
COC	202	1	Each	Headwall for 36" storm, removed for re–used onsite
COC	203	50	CY	Excavation, As Per Plan
COC	203	350	CY	Embankment , As Per Plan
COC	601	140	CY	Riprap re–used from onsite, As Per Plan
COC	601	25	CY	Fill Stone, As Per Plan
COC	604	1	Each	Manhole, Type C
COC	604	1	Each	Headwall for 36" storm (re–used from onsite)
COC	623	1	LS	Construction Layout Stakes
COC	624	1	LS	Mobilization
COC	653	150	CY	Topsoil Furnished and Placed, As Per Plan
COC	659	2,600	SY	Native Grass Seeding and Mulching, As Per Plan
COC	659	900	SY	Park Grade Seeding and Mulching, As Per Plan
COC	671	900	SY	Erosion Control Mat, Type C
COC	901	16	LF	36" Storm Sewer
––	Spec	90	CY	Rock Riffles, As Per Plan
––	Spec	7	Each	Rock Steps, As Per Plan
––	Spec	3	Each	Rock Sills, As Per Plan
––	Spec	780	Each	Live Stakes, As Per Plan
	Spec	1	LS	Staging Area, Including Restoration, As Per Plan
		Erosion Control		
COC	207	400	LF	Construction Fence
COC	207	2	Each	Inlet Protection – Beaver Dams
COC	207	1	LS	Dewatering Pumps
COC	207	1	Each	Dewatering Sedement Trap or Filter Bag
COC	207	1	Each	Rock Check Dam
COC	207	80	LF	Sediment Fence
COC	207	1	Each	Stabilized Construction Entrance
COC	207	2,600	SY	Temporary Seeding and Mulching
		Contingency		
COC	601	20	CY	RCP, Type B
COC	604	1	Each	Headwall for 36" storm
	Spec	60	SF	Stone Veneer, As Per Plan
		SOUTH AREA		
COC	201	1	LS	Clearing and Grubbing, As Per Plan
COC	201	1	Each	Tree Removed, As Per Plan
COC	202	1	Each	Headwall for 36" storm, removed for re–use onsite
COC	202	30	CY	Riprap removed for re–use onsite, As Per Plan
COC	203	150	CY	Embankment, As Per Plan
COC	203	55	CY	Excavation
COC	601	20	CY	Riprap with Filter Fabric, re–used from onsite
COC	601	5	CY	RCP, Type C with Filter Fabric
COC	604	1	Each	Headwall for 36" storm, re–used from onsite
COC	604	1	Each	Headwall for 8" drain tile
COC	604	1	Each	Manhole, Type C
COC	623	1	LS	Construction Layout Stakes
COC	624	1	LS	Mobilization
COC	653	30	CY	Topsoil Furnished and Placed, As Per Plan
COC	659	150	SY	Native Grass Seeding and Mulching, As Per Plan
COC	659	800	SY	Park Grade Seeding and Mulching, As Per Plan
COC	901	30	LF	36" Storm Sewer
COC	901	20	LF	4 Inch Drain Tile, As Per Plan
	Spec	1	LS	Staging Area, Including Restoration, As Per Plan
		Erosion Control		
COC	207	1	LS	Dewatering Pumps
COC	207	1	Each	Dewatering Sedement Trap or Filter Bag
COC	207	1	Each	Stabilized Construction Entrance
COC	207	950	SY	Temporary Seeding and Mulching
		Contingency		
COC	604	1	Each	Headwall for 36" storm
COC	203	55	CY	Rock Excavation
	Spec	60	SF	Stone Veneer, As Per Plan

COC – City of Columbus Construction and Materials Specification

REVISIONS

MARK	DATE	DESCRIPTION

City of Dublin

CITY OF DUBLIN, FRANKLIN COUNTY, OHIO
PUBLIC STORMWATER SYSTEM IMPROVEMENTS
FOR
AMBERLEIGH PARK
GENERAL NOTES AND QUANTITIES

EMH&T
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

DATE
May, 2013

SCALE
As Noted

JOB NO.
2013-0059

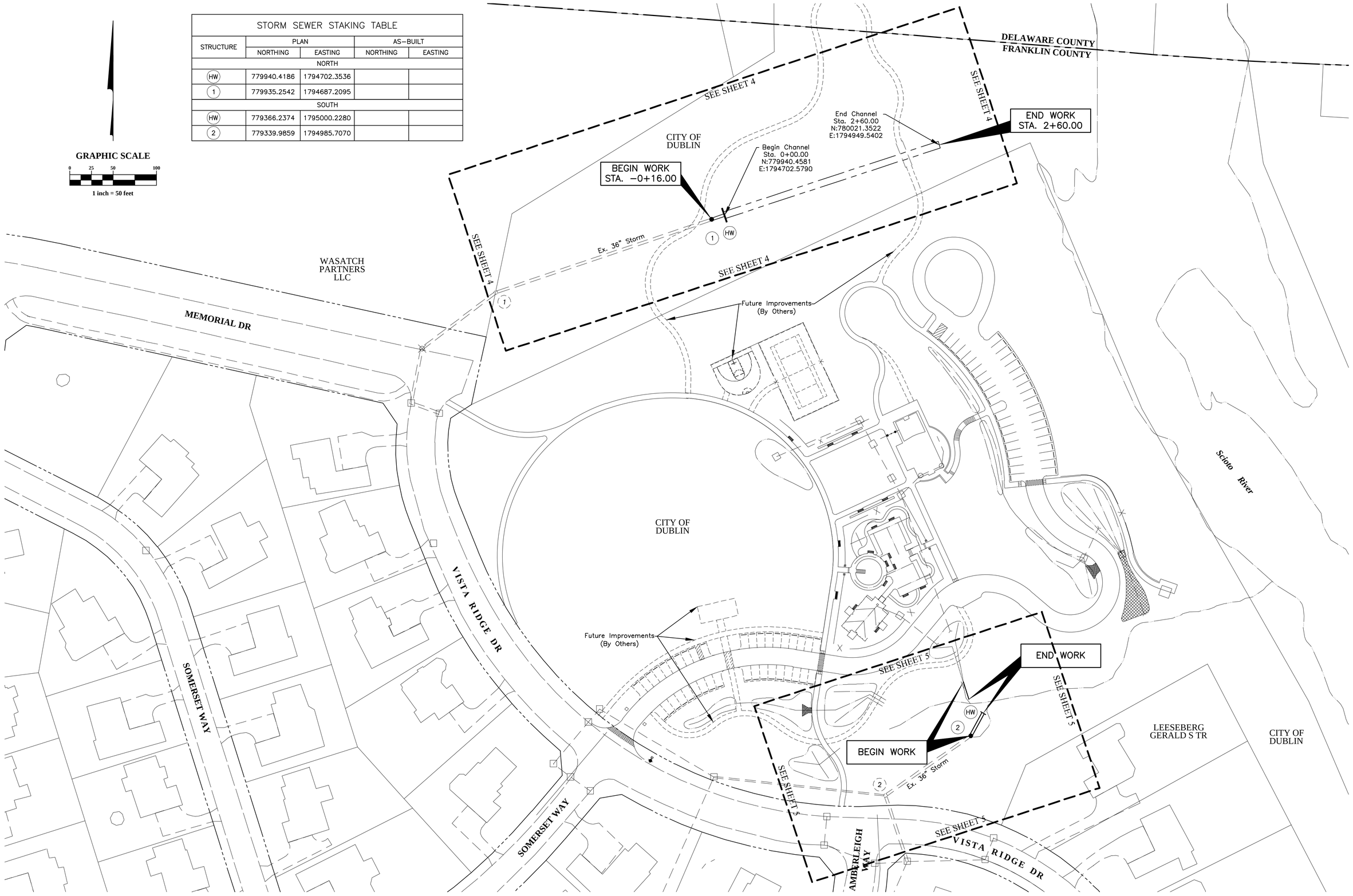
SHEET
02/10

STORM SEWER STAKING TABLE				
STRUCTURE	PLAN		AS-BUILT	
	NORTHING	EASTING	NORTHING	EASTING
NORTH				
HW	779940.4186	1794702.3536		
1	779935.2542	1794687.2095		
SOUTH				
HW	779366.2374	1795000.2280		
2	779339.9859	1794985.7070		

GRAPHIC SCALE

0 25 50 100

1 inch = 50 feet



MARK	DATE	DESCRIPTION

REVISIONS

City of Dublin

CITY OF DUBLIN, FRANKLIN COUNTY, OHIO
PUBLIC STORMWATER SYSTEM IMPROVEMENTS
FOR
AMBERLEIGH PARK
INDEX SHEET AND STAKING COORDINATES

EMH&T
Evans, Mechwart, Hambleton & Tilton, Inc.
Engineers • Surveyors • Planners • Scientists
5500 New Albany Road, Columbus, OH 43054
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2013-0059

SHEET
03/10

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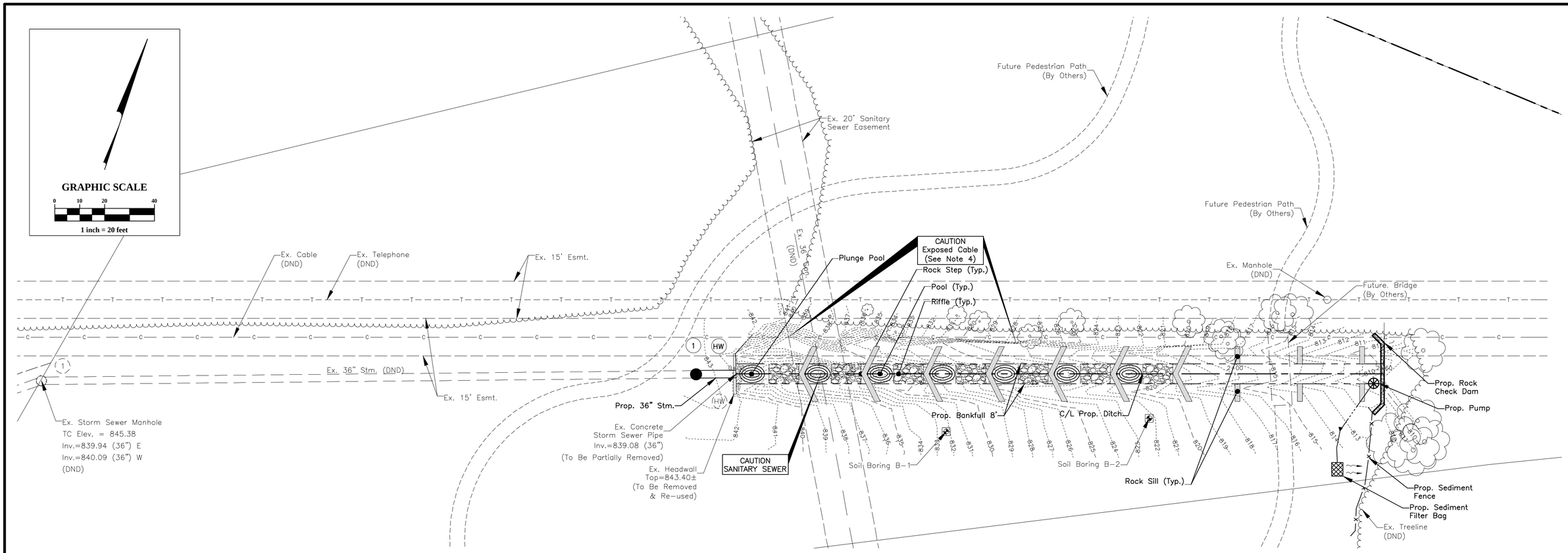

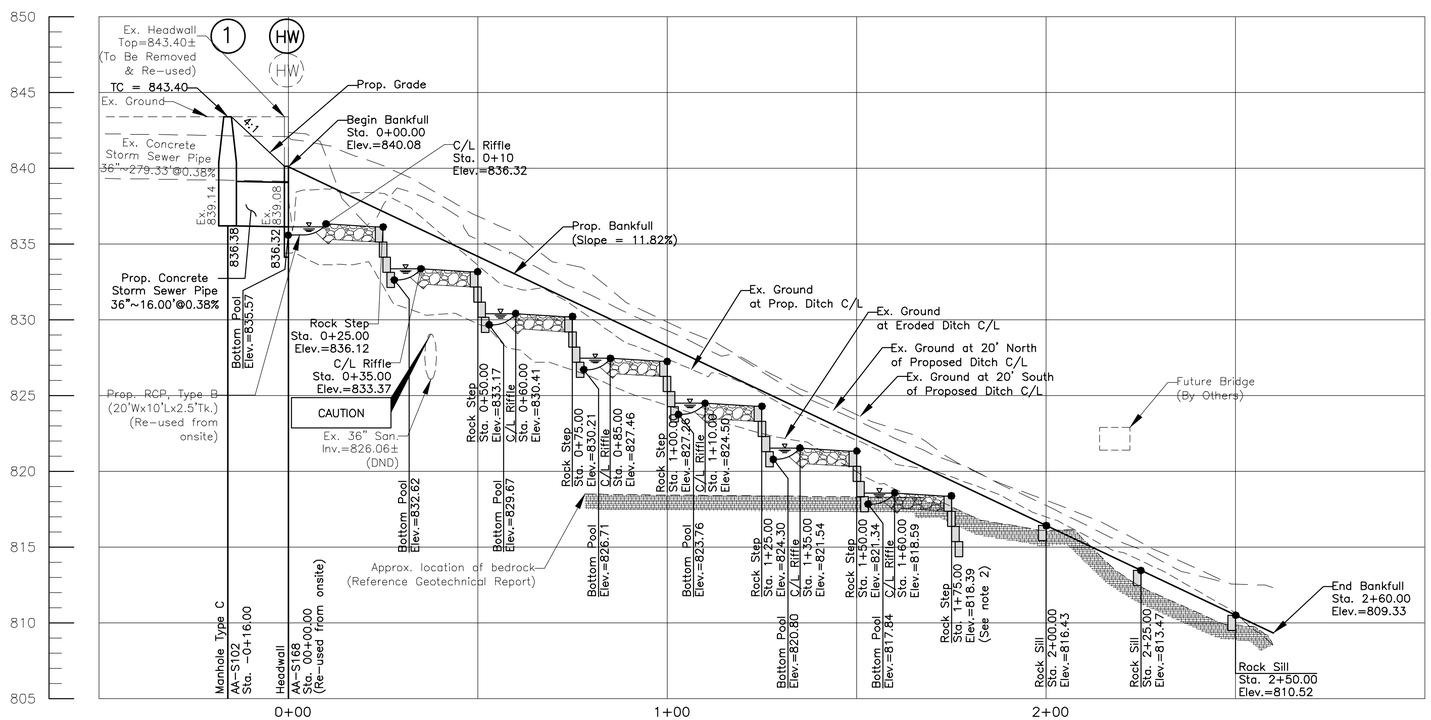

LEGEND

- Ex. Edge of Pavement
- Ex. Property Line
- Ex. Right of Way
- Ex. Hydrography
- Ex. Storm Sewer
- Ex. Sanitary Sewer
- W — Ex. Water Main
- UE — Ex. Underground Electric
- T — Ex. Telephone
- C — Ex. Cable
- Ex. Tree Line
- Ex. Tree (DND)
- Ex. Tree (To Be Removed)
- Prop. Storm Sewer
- Prop. Rock Step
- Prop. Pool
- Prop. Riffle
- Prop. Rock Sill

Notes:

1. Bedrock is very close to the surface in the location of the Rock Step at Station 1+75. A Rock Sill may be used in this location instead of a Rock Step with written approval by the City of Dublin.
2. Refer to sheet 7 & 8 for structure details and typical sections.
3. The existing eroded channel shall have all riprap material removed for re-use. The eroded channel shall be regraded to the elevations shown on the plans. All embankment shall be placed per Item 203. The cost of all labor and materials necessary to remove the riprap and re-grade the channel shall be included in the price bid for Item 202 and 203.
4. Existing exposed cable shall not be disturbed or moved as a part of this project. If the cable is damaged contact the utility owner immediately.
5. Refer to sheet 6 for cross sections.

REVISIONS

MARK	DATE	DESCRIPTION

City of Dublin

CITY OF DUBLIN, FRANKLIN COUNTY, OHIO
PUBLIC STORMWATER SYSTEM IMPROVEMENTS
FOR
AMBERLEIGH PARK
PLAN AND PROFILE - NORTH AREA

EMH&T
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Phone: 614.775.4500 Toll Free: 888.775.3648
emht.com

DATE
May, 2013

SCALE
Horiz: 1" = 20'
Vert: 1" = 5'

JOB NO.
2013-0059

SHEET
04/10

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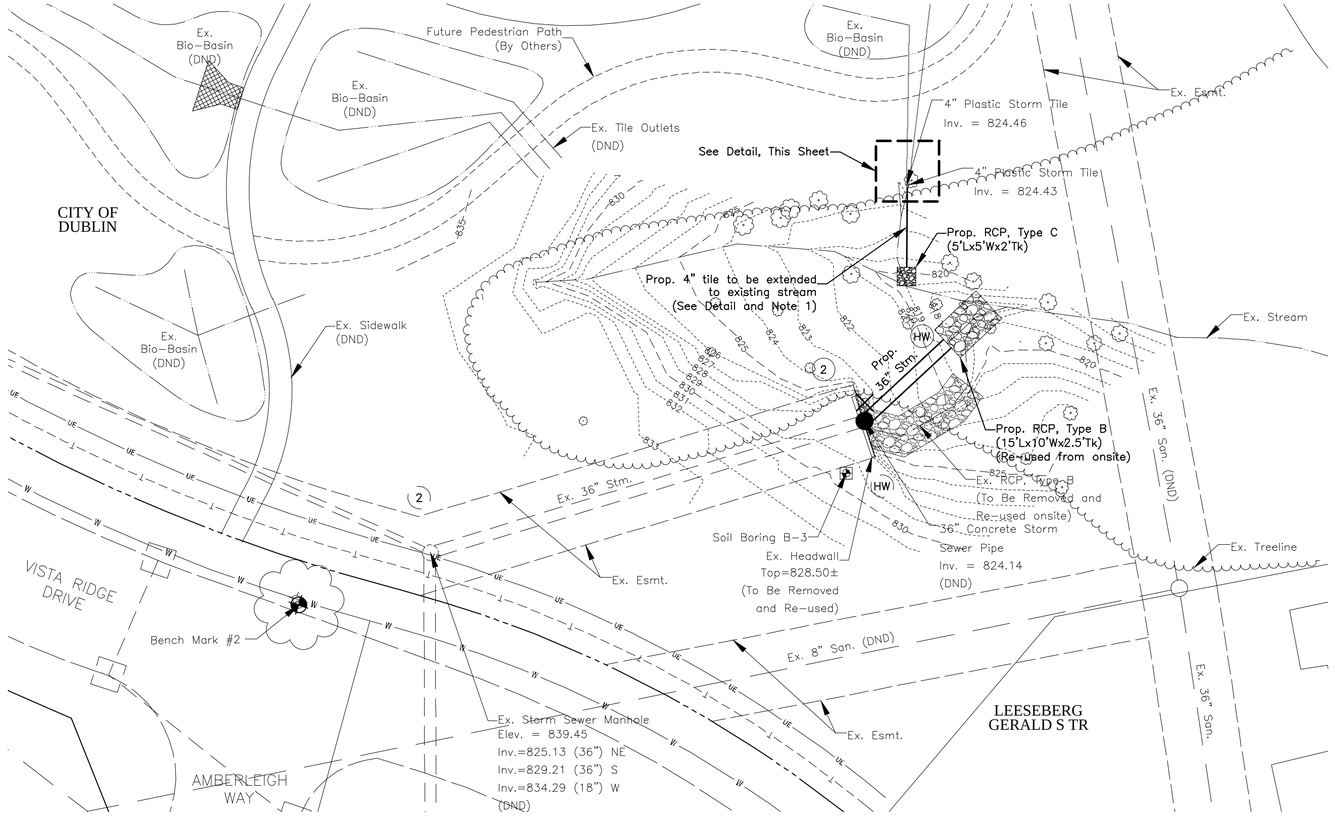
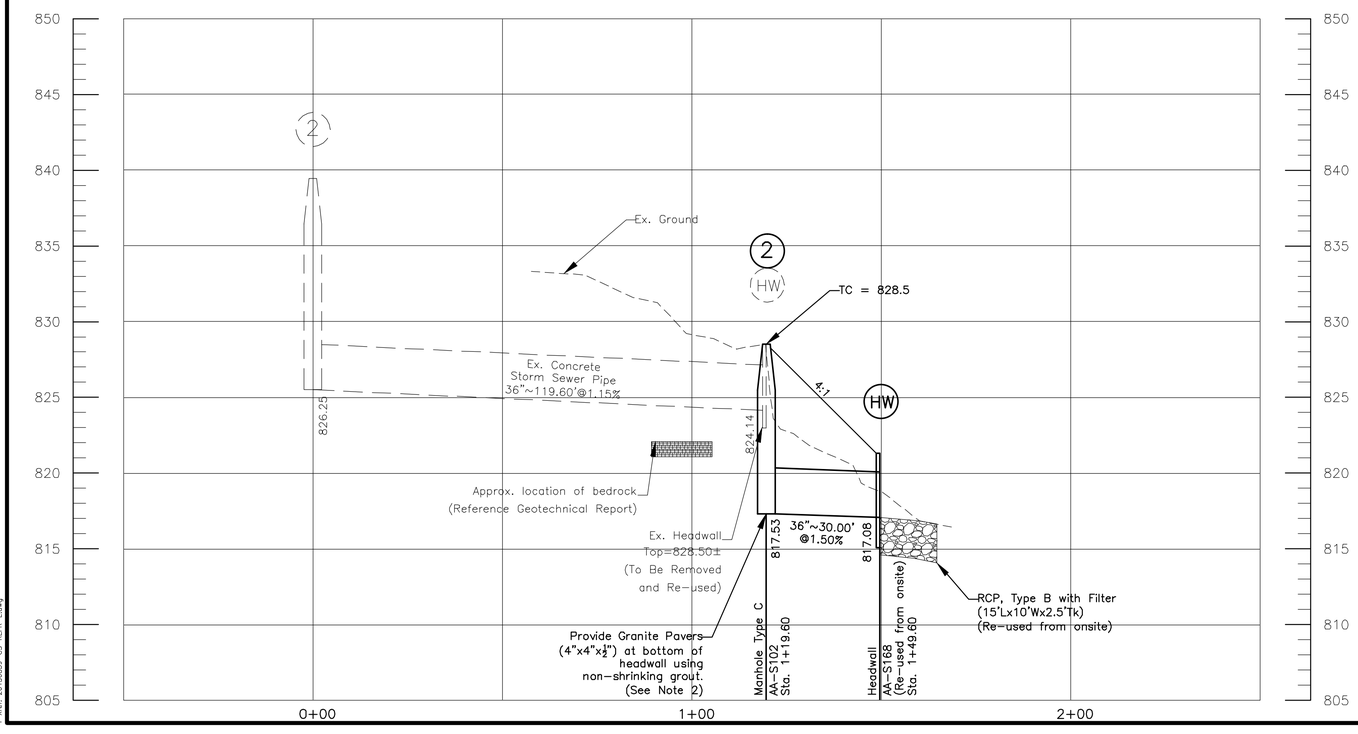
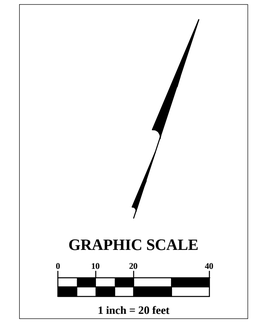
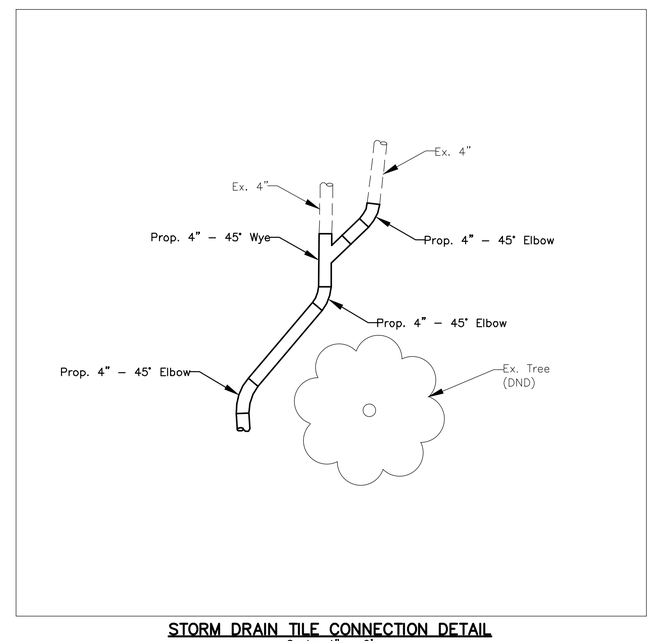




LEGEND

- Ex. Edge of Pavement
- Ex. Property Line
- Ex. Right of Way
- Ex. Hydrography
- Ex. Storm Sewer
- Ex. Sanitary Sewer
- W — Ex. Water Main
- UE — Ex. Underground Electric
- T — Ex. Telephone
- Ex. Tree Line
- Ex. Tree (DND)
- Ex. Tree (To Be Removed)
- Prop. Storm Sewer





STORM DRAIN TILE CONNECTION DETAIL
Scale: 1" = 2'

Notes:

1. A solid 4" drain tile shall be constructed between the existing tile outlets and the proposed stream. The tile location shall be adjusted in order to minimize disturbance to existing vegetation, including a tree that is directly downstream of the existing outlets. All fittings such as elbows and wyes shall be included as a part of this work. The cost of all labor and materials necessary to complete this work shall be included in the price bid for Item 901, 4 Inch Drain Tile, As Per Plan.
2. Granite Pavers shall be installed at the bottom of the proposed manhole. The cost of all pavers and grout necessary to complete this work shall be included with the price bid for Item 604, Manhole, Type B.
3. A contingency item has been included in the quantities for Rock Excavation. The contractor shall contact the City of Dublin immediately if bedrock is encountered while installing the proposed manhole or storm sewer. Field adjustments at the direction of the City may be made in order to reduce the amount of bedrock excavation needed to complete this work.

REVISIONS

MARK	DATE	DESCRIPTION

City of Dublin

CITY OF DUBLIN, FRANKLIN COUNTY, OHIO
STORMWATER IMPROVEMENT
FOR
AMBERLEIGH PARK
PLAN AND PROFILE - SOUTH AREA

EMHT
Evans, Mechwart, Hambleton & Tilton, Inc.
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5500 New Albany Road, Columbus, OH 43054
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emht.com

DATE
May, 2013

SCALE
Horiz: 1" = 20'
Vert: 1" = 5'

JOB NO.
2013-0059

SHEET
05/10

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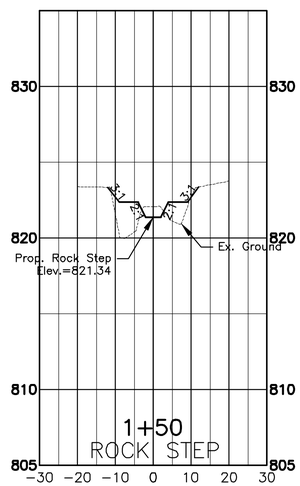

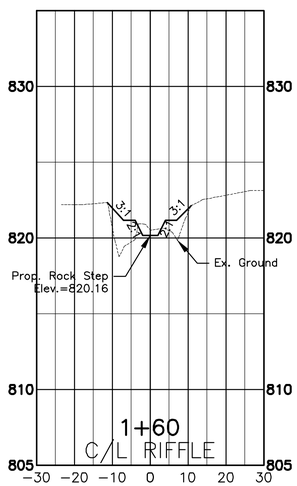

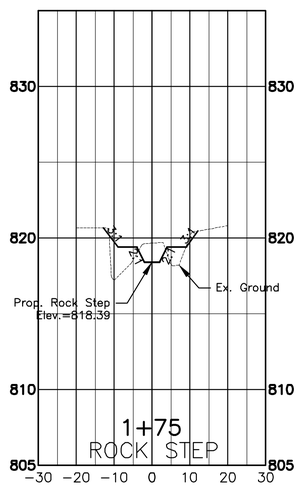

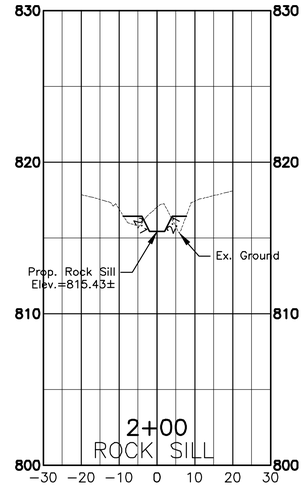

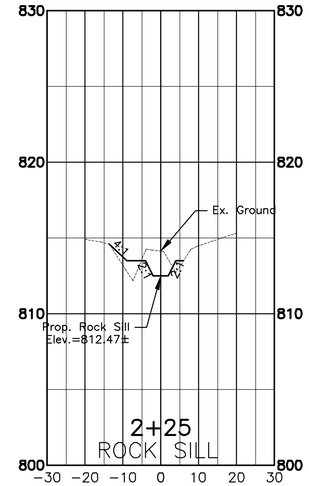

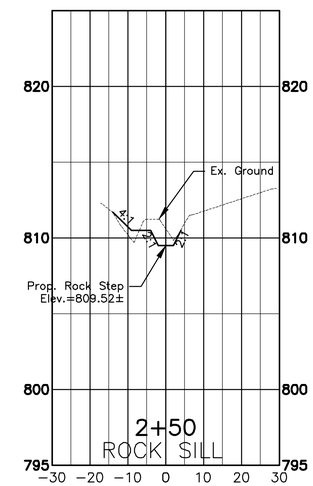

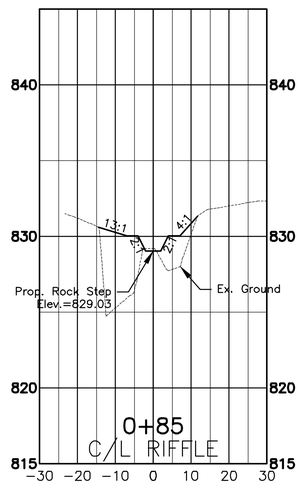

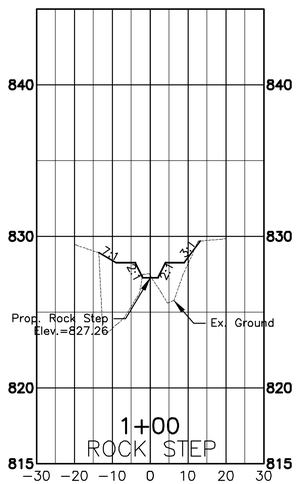

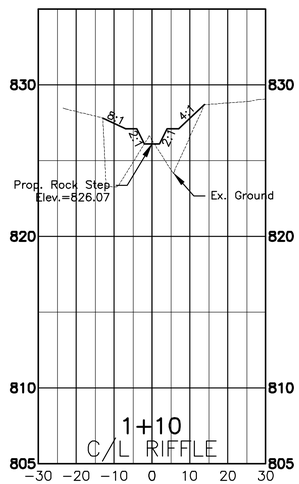

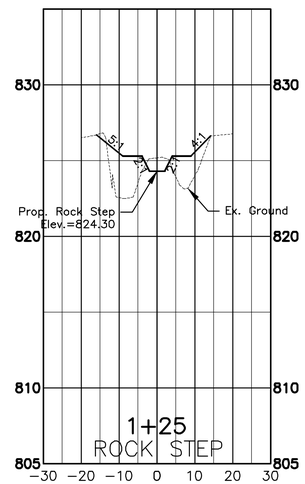

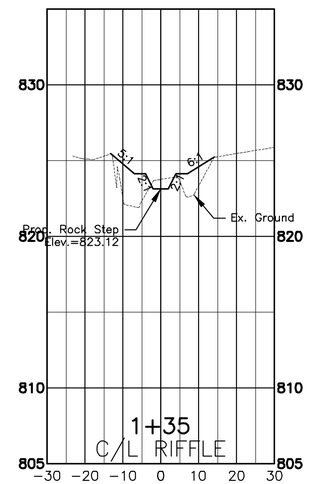

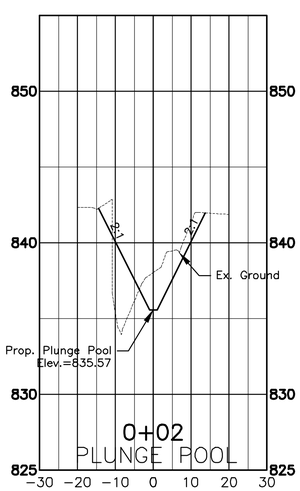

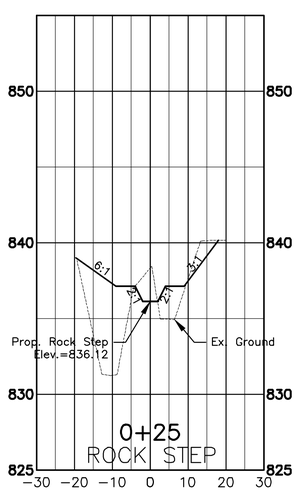

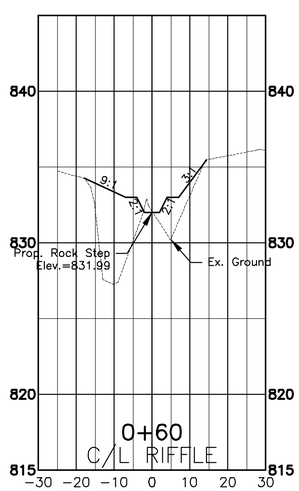

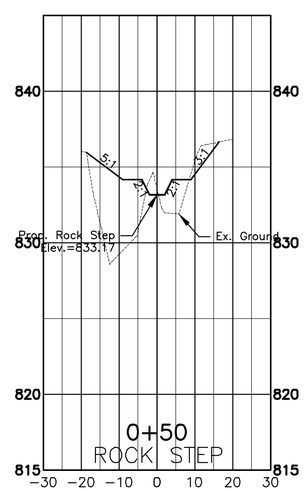

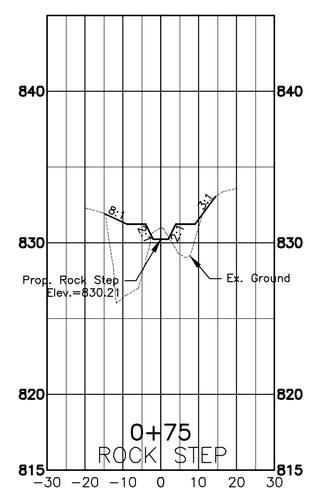

REVISIONS

MARK	DATE	DESCRIPTION

City of Dublin

CITY OF DUBLIN, FRANKLIN COUNTY, OHIO
STORMWATER IMPROVEMENT
FOR
AMBERLEIGH PARK
CROSS SECTIONS - NORTH AREA

EMH&T
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

DATE
May, 2013

SCALE
Horiz: 1" = 20'
Vert: 1" = 5'

JOB NO.
2013-0059

SHEET
06/10

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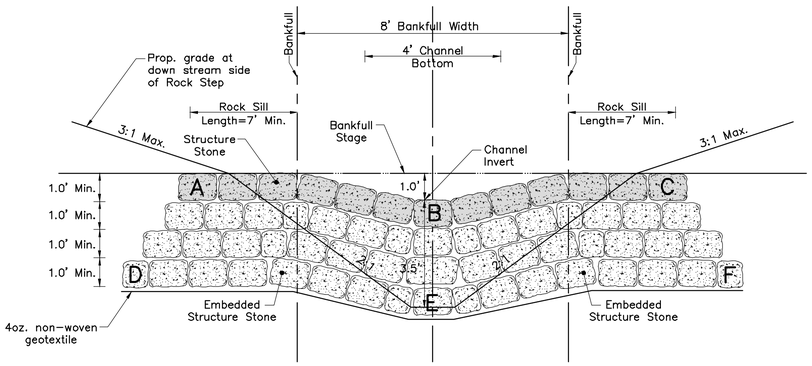

SECTION A-A
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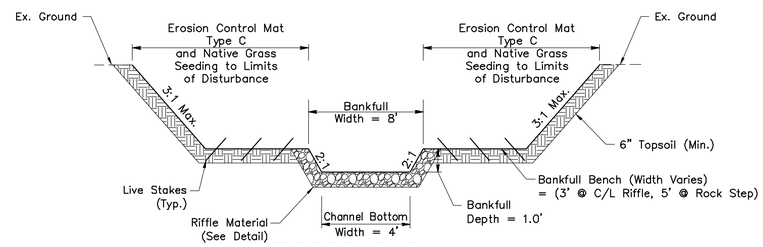
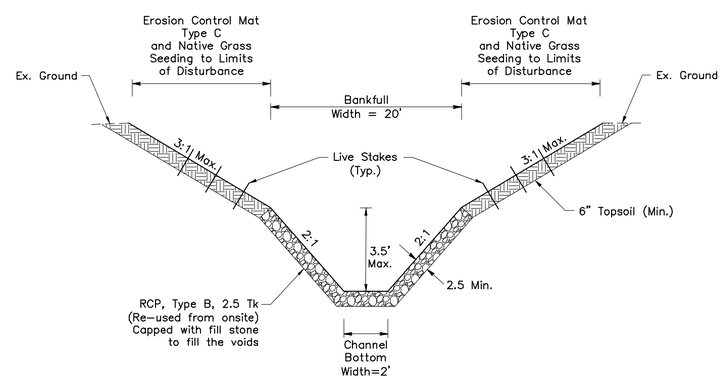
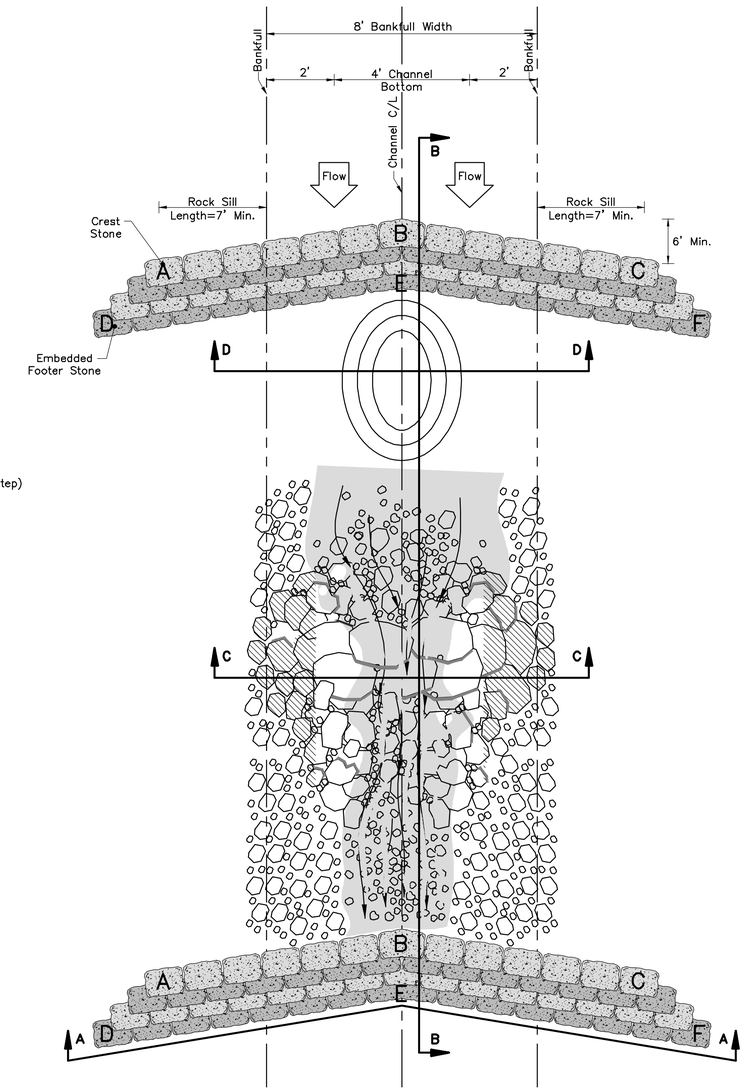


RIFFLE TYPICAL SECTION C-C
Not to Scale



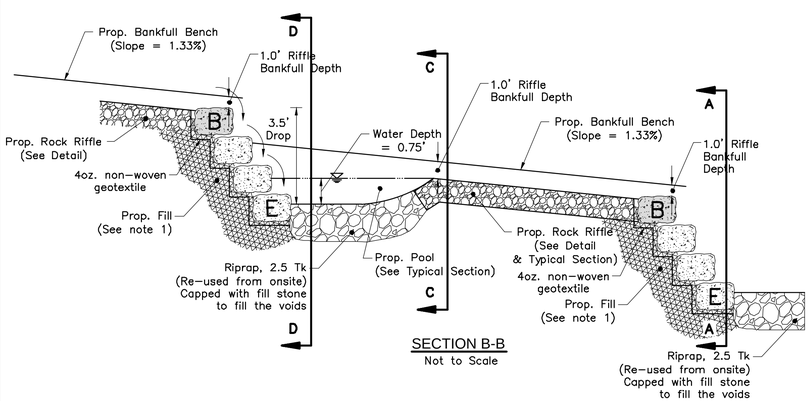
POOL TYPICAL SECTION D-D
Not to Scale

ROCK STEP DETAIL
Not to Scale



ROCK STEP MATERIAL TABLE*		
Item	Unit	Quantity
Structure Stone	CY	6.5
No. 2 Stone	CY	1.5
4oz. Non-woven Geotextile	SY	25

* Denotes the amount of material needed to construct each Rock Step Structure



SECTION B-B
Not to Scale

ROCK STEP
CONSTRUCTION SPECIFICATIONS:

1. The proposed fill area shall be filled with native soil from onsite or RCP, Type B re-used from onsite. The fill shall be compacted per Item 203. The cost of all labor and materials necessary to complete this work shall be included in the price bid for item Spec, Rock Steps, As Per Plan.
2. Dimension, slopes and deflection angles of structures may be adjusted by designer based on field conditions during construction.
3. Structure stone shall be native limestone or shot rock, cubical or rectangular in shape with a minimum width and length of 2.0 feet and a minimum thickness of 1.0 feet. (Riprap or RCP will not be allowed)
4. Gaps between boulders shall be minimized by tightly fitting stones together and chinking between structure stones using No. 2 sized rock.
5. A 4 oz. non-woven geotextile fabric shall be placed on the upstream side of the structure to prevent piping of water through the structure. Fabric shall extend from the top of the stone, down to the invert of the stone. Fabric shall be placed along the entire length of the structure, as shown on the details.
6. A 4oz. non-woven geotextile shall be placed under all embedded structure stone, as shown on the details.

REVISIONS

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City of Dublin

CITY OF DUBLIN, FRANKLIN COUNTY, OHIO
PUBLIC STORMWATER SYSTEM IMPROVEMENTS
FOR
AMBERLEIGH PARK
DETAILS

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Phone: 614.775.4500 Toll Free: 888.775.3648
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May, 2013

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2013-0059

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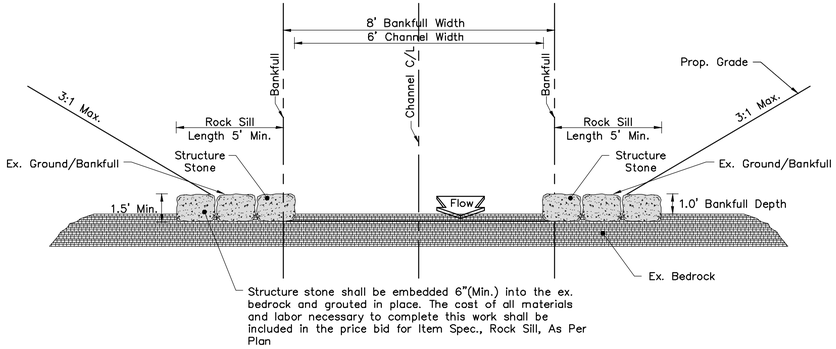
ROCK SILL DETAIL
Not to Scale



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 Live Stake Species Table below for Species List.

2.0 Installation:
Refer to Riffle and Pool Typical Sections on Sheet 7 schematic of the location of the live stakes with respect to the other bank reinforcement materials.

Live stakes shall be installed in three (3) 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., Live Stakes, As Per Plan.

4.0 Notes:
1. Final species selection will be based upon availability and shall be approved in writing by the City of Dublin prior to ordering the plant material.
2. Copies of delivery receipts and/or invoices shall be provided to the City of Dublin at the time of planting.
3. No more than 25% of any one species may be used.

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 new 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 CMSC 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 cover.

LIVE STAKE SPECIES TABLE

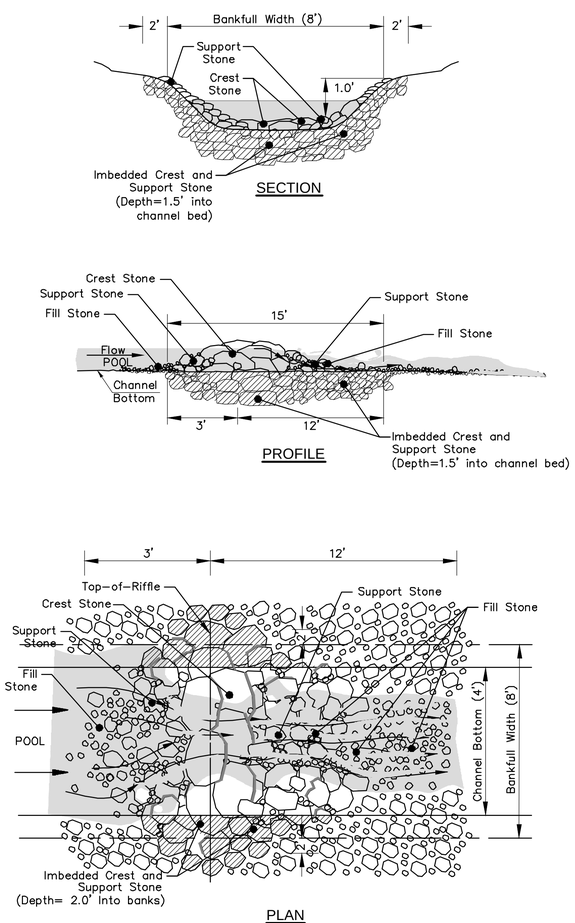
Common Name	Scientific Name
Silky dogwood	*Cornus amomum*
Red–osier dogwood	*Cornus stolonifera*
Peachleaved willow	*Salix amygdaloides*
Pussy willow	*Salix discolor*
Sandbar willow	*Salix interior*
Black willow	*Salix nigra*

NATIVE GRASS SEEDING TABLE

TYPE		APPLICATION RATES	APPLICATION DATES
TEMPORARY SEED:			
Annual Rye (Grain)	*(Lolium multiflorum)*	40 lbs/acre	March – October
Winter Rye (Grain)	*(Secale cereale)*	40 lbs/acre	October – February
Oats (Grain)	*(Avena sativa)*	15 lbs/acre	March – October
PERMANENT SEED: Native Grass Eastern Ecotype Native Grass Mix, ERNMX–177 (Ernst Seeds) (or apparent equal)		15 lbs/acre of mixture	October 1st – Nov 15th or April 1st – May 15th

– Temporary seed shall be applied with the native grass seed to quickly stabilize the site.
This is required because the native grass seed takes much longer to germinate than the temporary seed.

ROCK RIFFLE DETAIL
Not to Scale



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.

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.

RIFFLE MATERIAL TABLE

I.D.	DESCRIPTION	SIZE	% OF RIFFLE 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%

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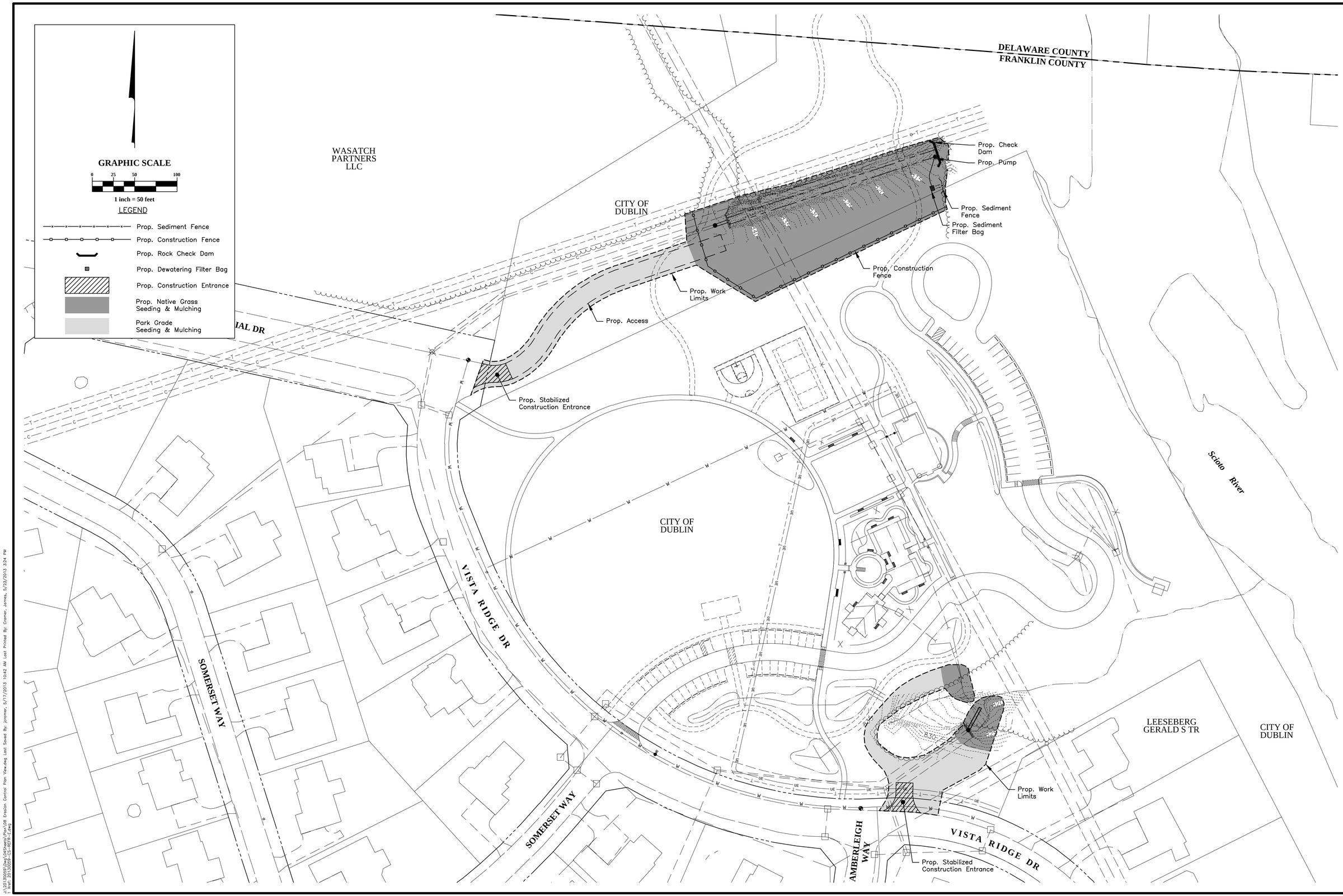

REVISIONS

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City of Dublin

CITY OF DUBLIN, FRANKLIN COUNTY, OHIO
PUBLIC STORMWATER SYSTEM IMPROVEMENTS
FOR
AMBERLEIGH PARK
EROSION CONTROL PLAN VIEW

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5500 New Albany Road, Columbus, OH 43054
Phone: 614.775.4500 Toll Free: 888.775.3648
emht.com

DATE
May, 2013

SCALE
1" = 50'

JOB NO.
2013-0059

SHEET
09/10

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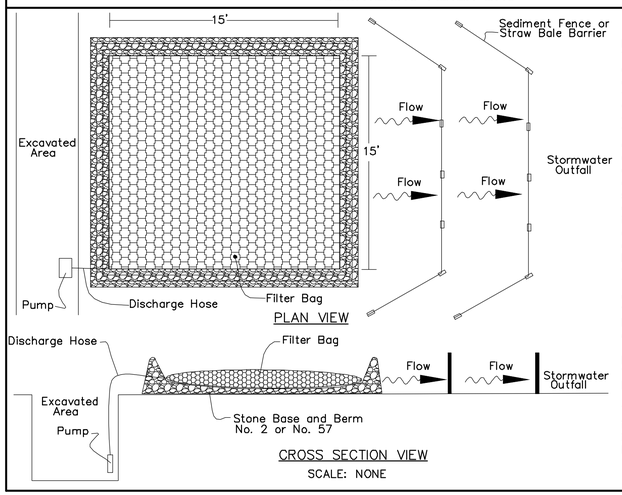
DEWATERING FILTER BAG



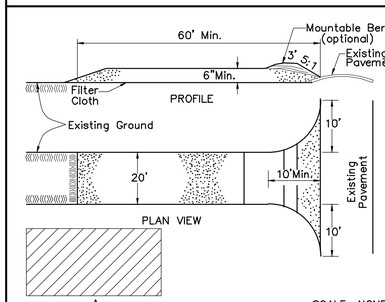
SCALE: NONE

Installation:
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.

STABILIZED CONSTRUCTION ENTRANCE



SCALE: NONE

A: Contractor Staging 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 – 60' Min.
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 rights-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 rights-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.

DEWATERING
Dewatering within excavated areas, if required, shall be performed in accordance with the details shown on this plan. Alternative methods of dewatering may require prior approval from the City of Gahanna. 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: Division of Water, Ohio Department of Natural Resources, Fountain Square, Columbus, Ohio 43224-1387, (614)265-6717.

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.

CONTRACTOR RESPONSIBILITY: Details have been provided on the plans in an effort to help the Contractor provide erosion and sedimentation control. The details shown on the plan shall be considered a minimum. Additional or alternate details may be found in the O.D.N.R. Manual "Rainwater and Land Development." 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 Discharges Associated with Construction Activity.

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 requested by the Engineer.

Permanent seeding shall be done between October 1st and November 15th or April 15th and May 15th. If seeding is done after May 15, it shall be classified as "Temporary Seeding". Reference the Planting Plan for permanent seed mixes and application rates.

SEDIMENT AND EROSION CONTROL MAINTENANCE:
It is the Contractor's responsibility to maintain the sediment control features used on this project. The site shall be unspected once every seven calendar days or within 24 hours of a 0.5" rainfall event or greater. Records of these inspections shall be kept and made available to jurisdictional agencies, if requested. Any sediment or debris which has reduced the efficiency of a structure shall be removed immediately. Should a structure or feature become damaged, the Contractor shall repair or replace at no additional cost to the Owner or the Municipality.

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. Construction of stabilized construction entrances are a part of that responsibility.

The Contractor shall be responsible to ensure that no solid or liquid waste is discharged into stormwater runoff. Sediment-laden water shall be filtered through the use of sediment filtering fences or sedimentation basins prior to discharge to surface waters. Concrete trucks will not be allowed to wash out or discharge surplus concrete into or along-side rivers, streams, and creeks or into natural or man-made channels or swales leading thereto. Concrete truck wash water and surplus concrete shall be confined to areas approved by the Engineer; after solidifying, these waste materials shall be removed from the site.

The Contractor shall be responsible to have the current "Plan", including this narrative, immediately available or posted on the site.

The Contractor shall be responsible to delineate, on the "Plan", all erosion and sedimentation control work actually performed; and to amend the "Plan" as required as a result of his work.

The Contractor shall be responsible to perform the required maintenance procedures and document them as required by the NPDES General Permit and the "Plan".

All Erosion & Sediment Control practices are subject to Field Modification at the direction of the Owner, City of Dublin, Design Engineer, and/or Ohio EPA.

SITE NARRATIVE

PLAN DESIGNER: EMH&T, INC.
Engineers, Surveyors, Planners & Scientists
5500 New Albany Rd.
Columbus, OH 43054
Phone: (614)-775-4500
Fax: (614)-775-4800

OWNER: City of Dublin
5800 Shier Rings Road
Dublin, Ohio 43016
Tel: (614) 410-4600
Fax: (614) 718-4346

PROJECT DESCRIPTION: The Project consists of stabilizing approximately 260 linear feet of an eroded ditch in the north area and extending 30 feet of storm sewer in the south area. An estimated 0.9± Acres shall be disturbed.

EXISTING SITE CONDITIONS: Pre-development conditions at this site consist of existing eroded ditches adjacent to wooded corridors within a park..

RECEIVING STREAM: Existing Unnamed Stream Tributary to Scioto River.

ADJACENT AREAS: The project corridor is within an existing park area. The site is currently bordered by residential to the west and south, the Scioto River to the east, and a wooded area to the north.

CRITICAL AREAS: Work will occur within existing ditches which are at the outlets of existing 36" storm sewers. The contractor shall only work in the dry conditions and control runoff as shown on the erosion control plan.

PERMANENT STABILIZATION: All disturbed areas shall be stabilized with seeding and mulching and/or a geotextile material. Channel bank reinforcement will consist of both hardened and vegetative lining applications.

CONSTRUCTION SEQUENCE:

North Area
1. Establish a temporary stabilized construction drive off of Memorial Drive.
2. Establish a temporary construction access from the construction entrance to the staging area.
2. Determine the limits of disturbance associated with the construction staging area and install sediment fence.
3. Install construction fence along the perimeter of the work limits as shown in the plan views.
4. Install inlet protection or Beaver Dams as shown on sheet 9.
5. Construct a rock check dam near station 2+60.
6. Pump any turbid water from upstream of the rock check dam near station 2+60 to a geotextile filter bag.
7. Construct the stream channel and storm sewer improvements. This work includes excavation, topsoil, riffles, pools, rock steps, rock sills, storm sewer, and final grading.
8. Stabilize the newly constructed stream channel and over-bank areas out to the limits of disturbance with native grass seeding and matting.
9. Remove the rock check dam and pumping operations near station 2+60 and stabilize the remaining disturbed areas.
10. Remove the site access and construction entrance.
11. Fine grade and stabilize all remaining disturbed areas with park grade seeding and mulching.

South Area
1. Establish a temporary stabilized construction drive off of Vista Ridge Drive.
2. Determine the limits of disturbance associated with the construction staging area and install sediment fence, if needed.
3. Install inlet protection or Beaver Dams as shown on sheet 9.
4. Construct the stream channel and storm sewer improvements. This work includes excavation, topsoil, storm sewer and final grading.
5. Stabilize the newly constructed stream channel and over-bank areas out to the limits of disturbance with native grass seeding and matting.
6. Remove the construction entrance.
7. Fine grade and stabilize all remaining disturbed areas with park grade seeding and mulching.

Once the stabilized channel section is operating, all components, including structures, matting and vegetative materials, shall be inspected by the Contractor on a monthly basis and after significant rainfalls for a period of one year. Any damaged or impaired items are to be replaced or repaired immediately as necessary.

SCHEDULE: The Contractor shall provide a schedule of operations to the Owner. Sedimentation and erosion control features shall be placed and maintained in accordance with this schedule.

SITE CONTACT: City of Dublin
Barb Cox
5800 Shier Rings Road
Dublin, Ohio 43016
Tel: (614) 410-4600
Fax: (614) 718-4346

SEDIMENT FENCE BARRIER DETAIL

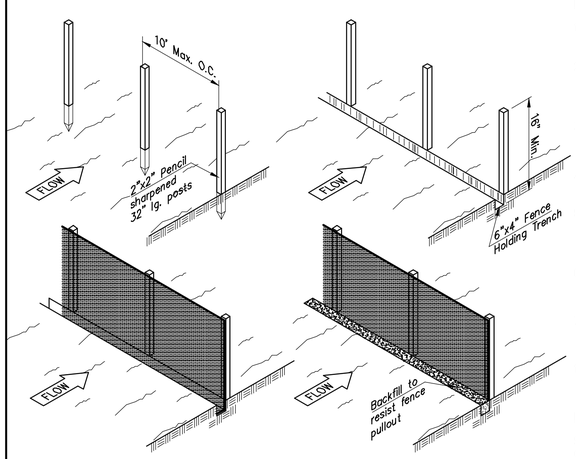


Table 6.3.2 Minimum criteria for Silt Fence Fabric (ODOT, 2002)

FABRIC PROPERTIES	VALUES	TEST METHOD
Minimum Tensile Strength	120 lbs. (535 N)	ASTM D 4632
Maximum Elongation at 60 lbs	50%	ASTM D 4632
Minimum Puncture Strength	50 lbs. (220 N)	ASTM D 4833
Minimum Tear Strength	40 lbs. (180 N)	ASTM D 4533
Apparent Opening Size	< 0.84 mm	ASTM D 4751
Minimum Permittivity	1X10-2 sec.-1	ASTM D 4491
UV Exposure Strength Retention	70%	ASTM G 4355

MATERIAL PROPERTIES ARE:

1. The height of a silt fence shall not exceed 16-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 16-inches). Wood posts will be a minimum of 32" long.
4. A trench shall be excavated approximately 4-inches wide and 6 inches deep along the line of posts and upslope from the barrier.
5. The filter fabric shall be stapled or wired to the fence, and 8-inches of the fabric shall be extended into the trench. The fabric shall not extend more than 16-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. Silt fences shall be removed when they have served their useful purpose, but not before the upslope area has been permanently stabilized.
7. Silt 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.
10. 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 silt 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.

SCALE: NONE

TEMPORARY SEEDING

The limits of seeding and mulching are as shown within the plan as indicated by the proposed limits of disturbance. All areas not designated to be seeded shall remain under natural ground cover. Those areas disturbed outside the seeding limits shall be seeded and mulched at the Contractor's expense.

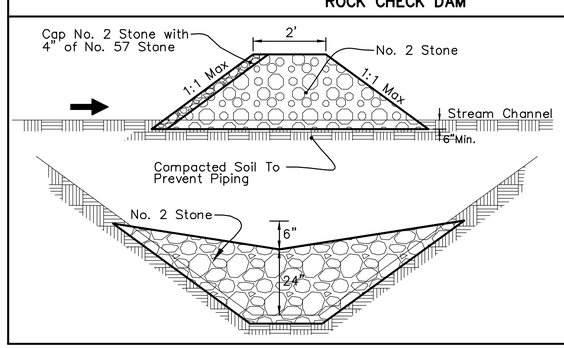
TEMPORARY SEEDING: Any area which will be left dormant (undisturbed) for more than 21 days shall be seeded within 7 days of terminated work. Disturbed areas within 50 feet of a stream, first order or larger, shall be stabilized within 2 days of inactivity. Temporary seeding consists of seedbed preparation and application of seed and mulch cover.

TEMPORARY SEEDING

SEEDING DATES	SPECIES	lb./1000 sq. ft.	Per acre
March 1 to August 15	Oats	3	4 bushel
	Tall Fescue	1	40 lb.
	Annual Ryegrass	1	40 lb.
	Perennial Ryegrass	1	40 lb.
	Tall Fescue	1	40 lb.
	Annual Ryegrass	1	40 lb.
August 16 to November 1	Rye	3	2 bushel
	Tall Fescue	1	40 lb.
	Annual Ryegrass	1	40 lb.
	Wheat	3	2 bushel
	Tall Fescue	1	40 lb.
	Annual Ryegrass	1	40 lb.
	Perennial Ryegrass	1	40 lb.
	Tall Fescue	1	40 lb.
	Annual Ryegrass	1	40 lb.
Nov. 1 to Spring Seeding	Use mulch only, sodding practices or dormant seeding		
NOTE: Other approved seed species may be substituted.			

MULCH COVER	APPLICATION RATE
Straw Mulch	2 tons/acre

ROCK CHECK DAM



MAINTENANCE:
Rock check dam shall be inspected immediately after each rainfall and at least daily during prolonged rainfall.

Close attention shall be paid to the repair of damaged check dams, end runs and undercutting beneath dams.

Necessary repairs to check dams shall be accomplished promptly.

Sediment deposits should be removed after each rainfall. They must be removed when the level of deposition reaches approximately one-half the height of the barrier.

Any sediment deposits remaining in place after the aggregate is no longer required shall be dressed to conform to the existing grade, prepared and seeded.

REVISIONS

MARK	DATE	DESCRIPTION

City of Dublin

CITY OF DUBLIN, FRANKLIN COUNTY, OHIO
PUBLIC STORMWATER SYSTEM IMPROVEMENTS
FOR
AMBERLEIGH PARK
EROSION CONTROL NOTES AND DETAILS

EMH&T
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

DATE: May, 2013

SCALE: As Noted

JOB NO.: 2013-0059

SHEET: 10/10