



# CITY OF DUBLIN, FRANKLIN COUNTY, OHIO MASS EXCAVATION AND GRADING PLAN FOR SFIR-COIC SITE

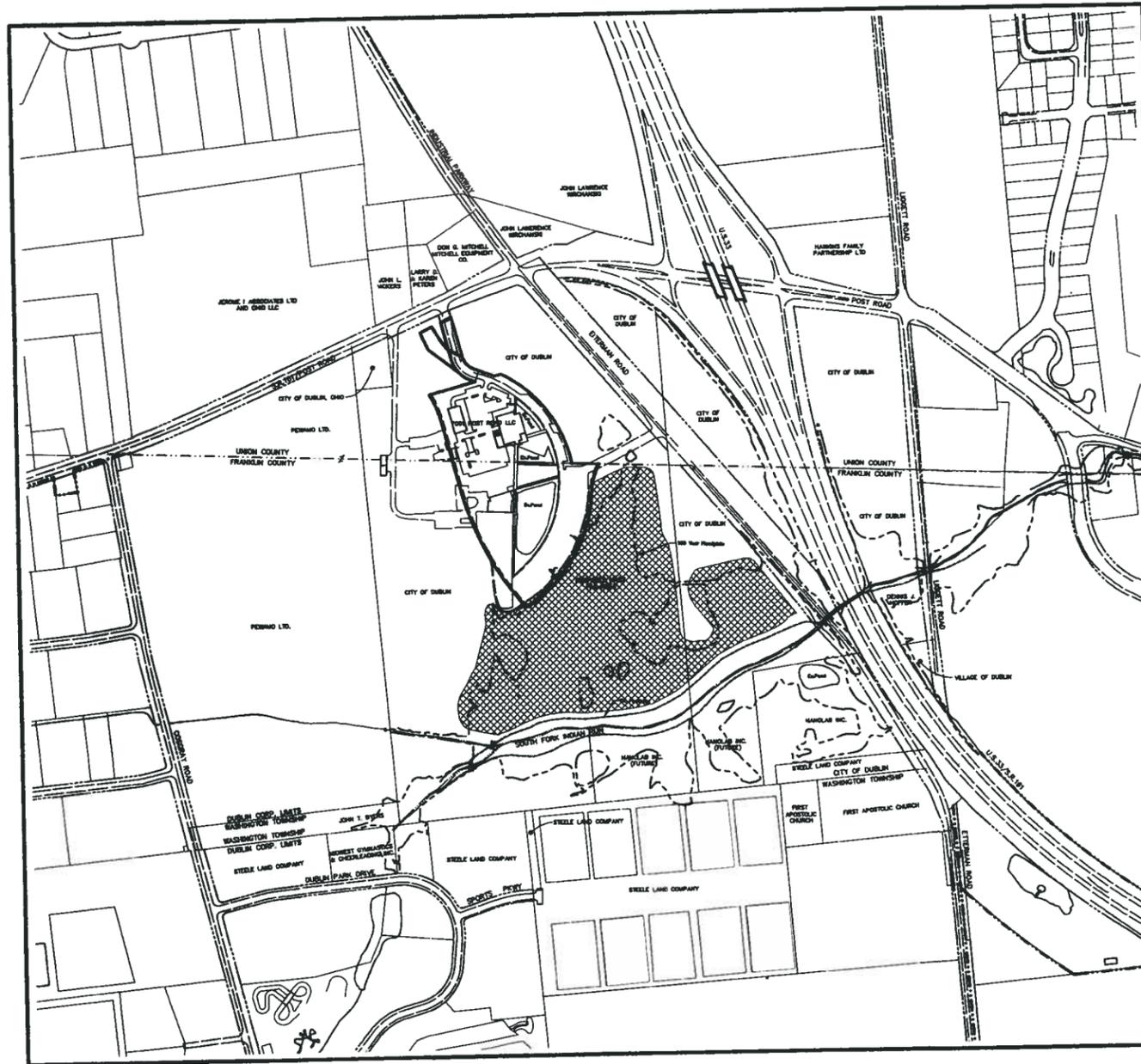
2012



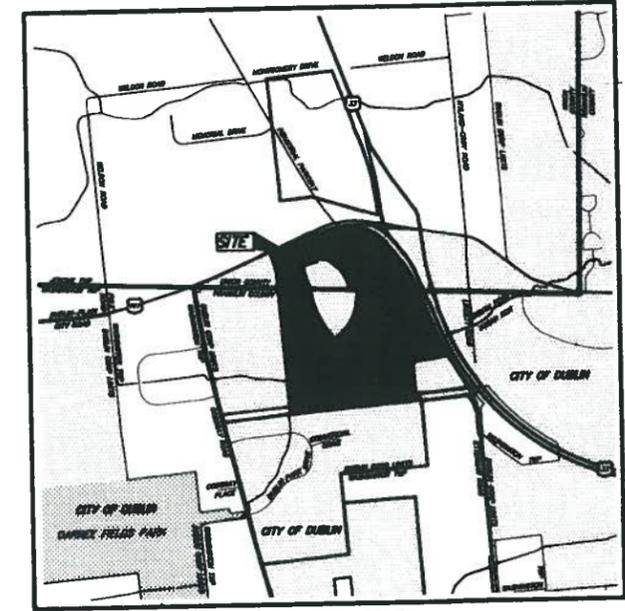
Know what's below.  
Call before you dig.

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**INDEX MAP**  
Scale: 1" = 400'



**LOCATION MAP**  
Not to Scale



**OWNER**  
City of Dublin  
5800 Shier Rings Road  
Dublin, Ohio 43018  
Tel: (614) 410-4800  
Fax: (614) 718-4346

**BENCH MARKS**  
(NAVD 1988)

- Franklin County HI-1 Aluminum plug in the southwest corner of the south headwall of the culvert was 39-4.98 over Schoby & Sharp Ditch, 0.40 miles south of the centerline of Dublin-Plain City Road, 20 feet west of the centerline of Cosgray Road.  
Elev. = 941.545
- Franklin County N 32 Brass plug on the northwest wingwall of Liggett Road bridge was 41A-0.02 over South Fork Indian Run, 0.25 miles south of Post Road, 13.6 feet west of the centerline of Liggett Road.  
Elev. = 934.118



**PREPARED BY:**  
**EMHT**  
Evans, Mechwart, Hambleton & Tron, Inc.  
Engineers • Surveyors • Planners • Scientists  
5500 New Albany Road, Columbus, OH 43254  
Phone: 614.775.4322 Tel. Fax: 614.775.3448  
emht.com

*Jud M. Hines*  
Registered Engineer No. \_\_\_\_\_

**4/30/12**  
Date

**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:**  
*Rebecca Hambleton*  
CITY ENGINEER, CITY OF DUBLIN, OHIO

**8.8.2012**  
DATE  
**11-024-CIP**

NO.	DATE	DESCRIPTION



CITY OF DUBLIN, FRANKLIN COUNTY, OHIO  
MASS EXCAVATION AND GRADING PLAN  
FOR  
SFIR-COIC SITE  
TITLE SHEET



DATE	April, 2012
SCALE	As Noted
JOB NO.	2011-1378
SHEET	1/6

4/20/12 11:29 AM D:\Projects\2011\11-024-CIP\11-024-CIP.dwg User: jmhines Plot Date: 4/20/12 11:29 AM Plot Scale: 1:1

**GENERAL NOTES**

- 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.
  - 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.
  - The Developer or 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.
  - The Contractor shall notify the City of Dublin Division of Engineering in writing at least 3 working days prior to beginning construction.
  - 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.
  - Following completion of construction of the site improvements and before requesting occupancy, a proof survey shall be provided to the Division of Engineering that documents "as-built" elevations, dimensions, slopes and alignments of all elements of this project. The proof survey shall be prepared, signed and submitted by the Professional Engineer who sealed the construction drawings.
- Deleted note 7.
- 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.
  - Non-rubber tired vehicles shall not be moved on or across public streets or highways without the written permission of the City Engineer.
  - 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.
  - 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.
- Deleted note 12.
- 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.
  - 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.
  - 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.
  - 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.
- 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.
- 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 19.
- 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.
- 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.
- 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.
  - Any modification to the work shown on drawings must have prior written approval by the City Engineer, City of Dublin.
  - All inlets shall be channelized.
  - Park areas shall be fine-graded and seeded with the following mixture:  
Improved Kentucky Bluegrass: 40% of weight (2 varieties in equal parts)  
Improved Perennial Rye: 60% of weight (2 varieties in equal parts)  
Germination Rate: 85%  
Application Rate: 7 lbs per 1000 sq ft or as directed by the Division of Parks and Recreation, City of Dublin, Ohio.
  - 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.
  - 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**

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

Columbio Gas of Ohio Attn: Tammy Schmid 200 Civic Center Dr., 4th Floor Columbus, Ohio 43215 1-800-440-6111	City of Columbus Division of Power and Water (Water) 910 Dublin Road, 2nd Floor Columbus, Ohio 43215 (614) 645-7677
American Electric Power Robin Hand Engineering Liaison Coordinator 850 Tech Center Drive Gahanna, Ohio 43230-6605 (614) 883-6829	Ohio Edison Gary Smith 1040 South Prospect Street Marian, Ohio 43302 (740) 382-7104
City of Dublin Division of Engineering Ken Richardson, P.E. 5800 Shier Rings Road Dublin, Ohio 43016 (614) 410-4631	Verizon Bill Muether / Randy Brooks 550 Leader Street Marion, Ohio 43302 (740) 383-0527
Time Warner Cable Kevin Rich 1266 Dublin Road Columbus, Ohio 43215 (614) 481-5263	Wide Open West Ken Holderfield Engineering Manager 3675 Corporate Drive Columbus, Ohio 43231 (614) 236-3922
- 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.
- 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.
- 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.
- When unknown or incorrectly located underground utilities are encountered during construction, the Contractor shall immediately notify the owner and the City Engineer.
- 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**

Deleted notes 1-5.

**EROSION AND SEDIMENT CONTROL**

- The Contractor or Developer is responsible for submitting a Notice of Intent (NOI) to be reviewed and approved by the Ohio EPA. The NOI must be submitted to ODEPA 45 days prior to the start of construction and may entitle coverage under the Ohio EPA General Permit for Stormwater Discharges associated with construction activity. A project location map must be submitted with the NOI. 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.
- The Contractor shall provide sediment control at all points where storm water runoff leaves the project, including waterways, overland sheet flow, and storm sewers.
- 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.

- The Contractor shall provide adequate drainage of the work area at all times consistent with erosion control practices.
- Disturbed areas that will remain unworked for 30 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 1-6.
- All manhole lids shall be provided with continuous self-sealing gaskets. The approved construction drawings shall show where bolt-down lids are required. Sanitary sewer manholes shall be precast concrete or as approved by the City Engineer and conform to the City of Dublin sanitary manhole standard drawing. Manhole lids shall include City of Dublin logo.
- Deleted notes 8-13.
- 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.
- 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**

- 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.
- 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.
- 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.
- 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.
- 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.
- 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 include engraved lettering: "DUMP NO WASTE; DRAINS TO RIVER."
- Storm sewer outlets greater than 18 inches in diameter accessible from stormwater management facilities or watercourses shall be provided with safety grates, as approved by the City Engineer.

**MAIL DELIVERY**

Deleted notes 1-2.

**USE OF FIRE HYDRANTS**

- 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.
- 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.

**REGULATORY COMPLIANCE NOTES**

- REASONABLY SAFE FROM FLOODING  
All future occupied structures within this development are intended to be reasonably safe from flooding, either by virtue of elevation or protective earthworks or in accordance with guidelines issued by FEMA in Technical Bulletin 10-01, dated May 2001.
- FEMA FLOOD INFORMATION  
FEMA floodplain and floodway limits shown hereon are taken from the FEMA Flood Insurance Rate Map (FIRM) panel 39049C0131K, effective dates June 17, 2008.

**3. GRADING ACTIVITIES**

Fill for building pads shall be placed in accordance with City of Columbus Construction and Materials Specifications, latest edition including all supplements thereto. The placement of fill shall not encroach within any existing drainage ditches or swales except where designated. Final grade fill slopes shall not exceed 2:1 (horizontal to vertical). No filling shall occur within the designated Regulatory floodway. Also, there shall be no storage of materials within the floodway. Existing field tile runs under the limits of the proposed fill and shall be left in place. All topsoil in the fill area shall be stripped and stockpiled for future use. A geotechnical report prepared by CTL Engineering, Inc., dated October 28, 2005 shows an average topsoil depth of 7 inches across the fill area.  
NOTE: Area to be filled is approximately 26.9± acres.  
NOTE: Vertical datum based upon NAVD 88.  
NOTE: Base (existing) topographic information was obtained from the Franklin County Auditor's database and EMH&T field survey data.

**4. GRADING REQUIREMENTS**

Upon completion and attainment of the final fill elevations, in conjunction with this Mass Grading Plan, an application for a Letter of Map Revision (LOMR-F) will be submitted to the Federal Emergency Management Agency (FEMA). Prior to the effective date of the LOMR-F, a building constructed within the designated fill area will be elevated and/or dry flood proofed in accordance with the requirements of Chapter 151, Flood Control, of the City of Dublin Code of Ordinances.  
Regardless of any determination issued by FEMA to remove the filled area described on this document from the designated Special Flood Hazard Area (SFHA), future development within the area of fill will be constructed with the lowest floor, including basement, elevated to or one foot above the Base Flood Elevation (BFE).

**ESTIMATE OF QUANTITIES**

SPEC.	ITEM	QUANTITY	UNIT	DESCRIPTION
				Mass Fill Activities
COC	201	1	LS	Clearing and Grubbing
COC	201	28	EA	Trees Removed - 8" to 18"
COC	201	6	EA	Trees Removed - 18" to 30"
COC	202	1	EA	Catch Basin Removed
COC	203	1,850	CY	Excavation - Permanent Diversion Ditch
COC	203	45,700	CY	Embankment (from west stockpile)
COC	203	16,900	CY	Embankment (from east stockpile)
COC	203	1,850	CY	Embankment (from diversion ditch stockpile)
COC	203	2,550	CY	Embankment (from east sediment basin)
COC	601	15	CY	Rock Channel Protection, Type C, without filter
COC	604	2	EA	Manhole Reconstructed to Grade
COC	623	1	LS	Construction Layout Stakes
COC	624	1	LS	Mobilization
COC	651	25,800	CY	Topsoil Stockpiled
COC	652	11,100	CY	Placing Stockpiled Topsoil
COC	658	197,000	SY	Seeding and Mulching
COC	661	212	EA	Replacement Deciduous Trees - 3 gallon containers
COC	671	1,015	SY	Erosion Control Mat, Type F per 712.11
				Erosion and Sedimentation Control
COC	207	2	EA	Stabilized Construction Entrance
COC	207	98,500	SY	Temporary Seeding
COC	207	4,750	LF	Sediment Fence
COC	207	14	EA	Aggregate Check Dam
COC	207	5,600	CY	Excavation - Temporary Sediment Basins
COC	207	1,575	LF	Temporary Diversion Channel
COC	207	3	EA	Temporary Sediment Basin Outlet Structure

COC - City of Columbus Construction and Materials Specification

REVISIONS	DATE	DESCRIPTION



CITY OF DUBLIN, FRANKLIN COUNTY, OHIO  
MASS EXCAVATION AND GRADING PLAN  
FOR  
SFIR-COIC SITE  
GENERAL NOTES

**EMH&T**  
Engineering, Mechanical, Hamilton & Tibbo, Inc.  
1500 New Albany Road, Columbus, OH 43204  
Phone: 614.772.6800 Fax: 614.772.3468  
emht.com

DATE  
April, 2012

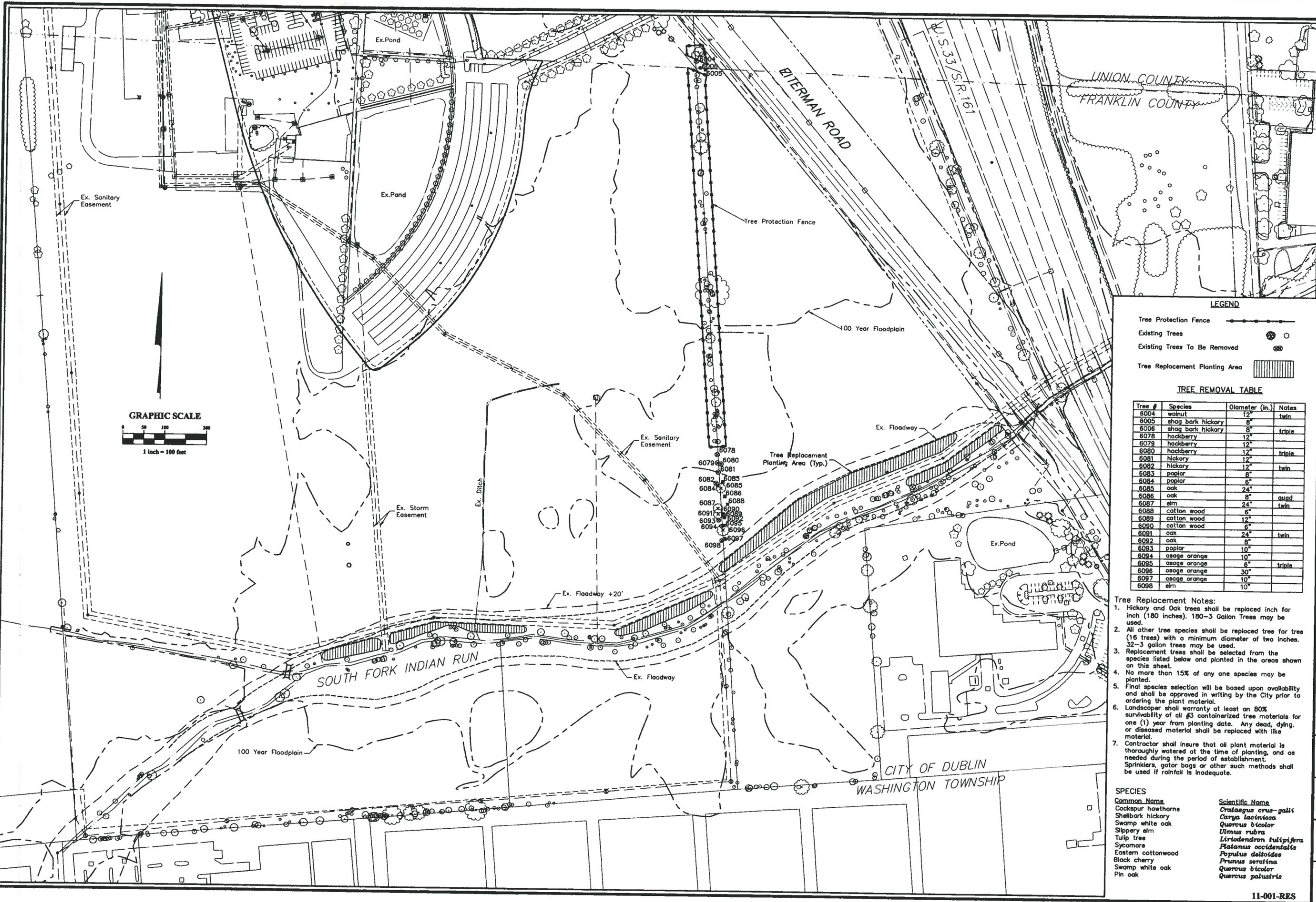
SCALE  
None

JOB NO.  
2011-1378

SHEET  
2/6

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**LEGEND**

- Tree Protection Fence
- Existing Trees
- Existing Trees To Be Removed
- Tree Replacement Planting Area

**TREE REMOVAL TABLE**

Tree #	Species	Diameter (in.)	Notes
6004	walnut	12"	twin
6005	shag bark hickory	8"	
6006	shag bark hickory	8"	triple
6078	hackberry	12"	
6079	hackberry	12"	
6080	hackberry	12"	triple
6081	hackberry	12"	
6082	hackberry	12"	twin
6083	poplar	8"	
6084	poplar	8"	
6085	oak	24"	
6086	oak	8"	quad
6087	elm	24"	twin
6088	cotton wood	6"	
6089	cotton wood	12"	
6090	cotton wood	6"	
6091	oak	24"	twin
6092	oak	8"	
6093	poplar	10"	
6094	osage orange	10"	
6095	osage orange	6"	triple
6096	osage orange	30"	
6097	osage orange	10"	
6098	elm	10"	

- Tree Replacement Notes:**
- Hickory and Oak trees shall be replaced inch for inch (180 inches). 180-3 Gallon Trees may be used.
  - All other tree species shall be replaced tree for tree (16 trees) with a minimum diameter of two inches. 32-3 gallon trees may be used.
  - Replacement trees shall be selected from the species listed below and planted in the areas shown on this sheet.
  - No more than 15% of any one species may be planted.
  - Final species selection will be based upon availability and shall be approved in writing by the City prior to ordering the plant material.
  - Landscaper shall warranty at least an 80% survivability of all #3 containerized tree materials for one (1) year from planting date. Any dead, dying, or diseased material shall be replaced with like material.
  - Contractor shall insure that all plant material is thoroughly watered at the time of planting, and as needed during the period of establishment. Sprinklers, gator bags or other such methods shall be used if rainfall is inadequate.

**SPECIES**

<b>Common Name</b>	<b>Scientific Name</b>
Cockspur hawthorne	<i>Crataegus crus-galli</i>
Shellbark hickory	<i>Carya laevis</i>
Swamp white oak	<i>Quercus bicolor</i>
Slippery elm	<i>Ulmus rubra</i>
Tulip tree	<i>Liriodendron tulipifera</i>
Sycamore	<i>Platanus occidentalis</i>
Eastern cottonwood	<i>Populus deltoides</i>
Black cherry	<i>Prunus serotina</i>
Swamp white oak	<i>Quercus bicolor</i>
Pin oak	<i>Quercus palustris</i>

**REVISIONS**

NO.	DATE	DESCRIPTION



CITY OF DUBLIN, FRANKLIN COUNTY, OHIO  
 MASS EXCAVATION AND GRADING PLAN  
 FOR  
**SFIR-COIC SITE**  
 TREE PROTECTION PLAN

**EMHIT**

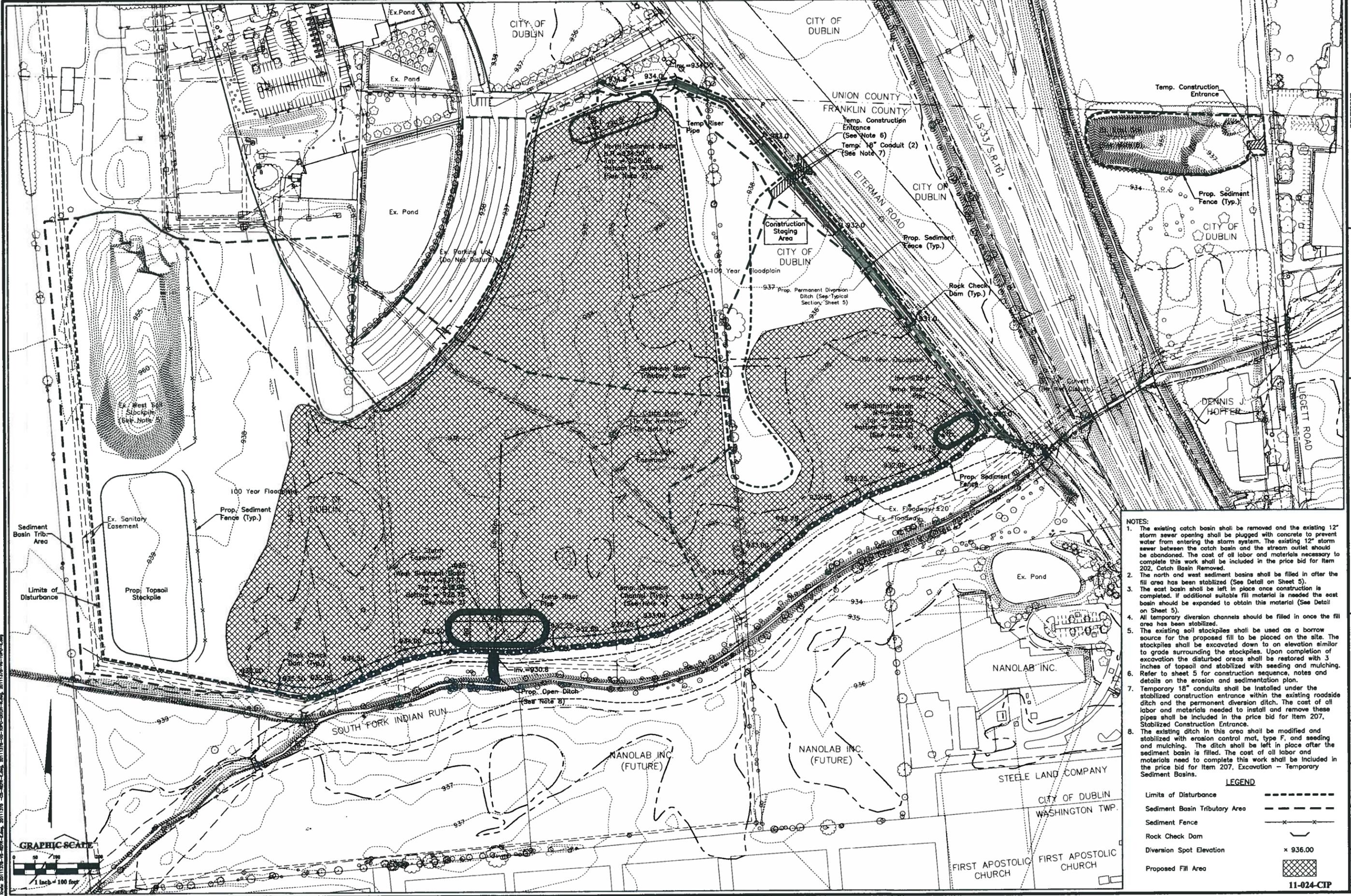
Evans, Mechwerdt, Harnish & Thon, Inc.  
 Engineers - Planners - Scientists  
 5500 New Albany Road, Columbus, OH 43221  
 Phone: 614.772.4300  
 emhit.com

**DATE**  
April, 2012

**SCALE**  
1" = 100'

**JOB NO.**  
2011-1378

**SHEET**  
3/6



- NOTES:**
- The existing catch basin shall be removed and the existing 12" storm sewer opening shall be plugged with concrete to prevent water from entering the storm system. The existing 12" storm sewer between the catch basin and the stream outlet should be abandoned. The cost of all labor and materials necessary to complete this work shall be included in the price bid for Item 202, Catch Basin Removed.
  - The north and west sediment basins shall be filled in after the fill area has been stabilized (See Detail on Sheet 5).
  - The east basin shall be left in place once construction is completed. If additional suitable fill material is needed the east basin should be expanded to obtain this material (See Detail on Sheet 5).
  - All temporary diversion channels should be filled in once the fill area has been stabilized.
  - The existing soil stockpiles shall be used as a borrow source for the proposed fill to be placed on the site. The stockpiles shall be excavated down to an elevation similar to grade surrounding the stockpiles. Upon completion of excavation the disturbed areas shall be restored with 3 inches of topsoil and stabilized with seeding and mulching.
  - Refer to sheet 5 for construction sequence, notes and details on the erosion and sedimentation plan.
  - Temporary 18" conduits shall be installed under the stabilized construction entrance within the existing roadside ditch and the permanent diversion ditch. The cost of all labor and materials needed to install and remove these pipes shall be included in the price bid for Item 207, Stabilized Construction Entrance.
  - The existing ditch in this area shall be modified and stabilized with erosion control mat, type F, and seeding and mulching. The ditch shall be left in place after the sediment basin is filled. The cost of all labor and materials needed to complete this work shall be included in the price bid for Item 207, Excavation - Temporary Sediment Basins.

**LEGEND**

Limits of Disturbance	-----
Sediment Basin Tributary Area	-----
Sediment Fence	-x-x-
Rock Check Dam	~
Diversion Spot Elevation	x 936.00
Proposed Fill Area	[Hatched Box]



REVISIONS	DATE	DESCRIPTION

**EMHIT**  
 Erosion Management & Hydrology, Inc.  
 5200 New Albany Road, Columbus, OH 43254  
 Phone: 614.775.6500 Fax: 614.775.3445  
 emhit.com

**CITY OF DUBLIN, FRANKLIN COUNTY, OHIO  
 MASS EXCAVATION AND GRADING PLAN  
 FOR  
 SFIR-COIC SITE  
 EROSION AND SEDIMENT CONTROL PLAN**

DATE	April, 2012
SCALE	1" = 100'
JOB NO.	2011-1378
SHEET	4/6

**SWPPP NARRATIVE**

**PLAN DESIGNER**  
Evans, Mechwart, Hambleton, & Tilton, Inc.  
5500 New Albany Road  
Columbus, Ohio 43054  
Phone: (614)471-5150 Fax: (614)470-9530

**PROJECT OWNER/SITE CONTACT**  
City of Dublin  
5800 Shier Ringe Road  
Dublin, Ohio 43016  
Contact: Barb Cox  
Tel: (614) 410-4600  
Fax: (614) 718-4348

**PROJECT DESCRIPTION**  
This project shall consist of the mass excavation and filling of the site to raise it out of the existing floodplain.

**AREA OF PROJECT SITE**  
Estimated Disturbance Area = 40.7 Acres.

**EXISTING SITE CONDITIONS**  
The site currently consists of open field, brush, and wooded areas. South Fork Indian Run drains from west to east across the southern limits of the project.

**ADJACENT AREAS**  
The site is bound by S.R.161 to the north, U.S.33/S.R.161 to the east, existing commercial development to the south and west.

**RECEIVING STREAM/SURFACE WATER**  
The general drainage is from north to south to the South Fork Indian Run which flows west to east across the southern portion of the site.

**CRITICAL AREAS**  
Contractor shall ensure that the storm water runoff is routed through the on-site sediment basins.

**EROSION & SEDIMENT CONTROL MEASURES**  
Sediment shall be controlled by on-site sediment basins. Sediment Fence shall be utilized in areas where sheet flow can be collected. Temporary and permanent seeding procedures shall be utilized to prevent erosion.

**MAINTENANCE**  
It is the Contractor's responsibility to maintain the sedimentation and erosion control features on this project. Any sediment or debris that has reduced the efficiency of a control shall be removed immediately. Should a structure or feature become damaged, the Contractor shall repair or replace it at no cost to the Owner.

Weekly street cleaning is required through the duration of the construction project. This includes sweeping, power cleaning and manual (if necessary) removal of dirt or mud in the street gutters.

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

**TEMPORARY AND PERMANENT SEEDING**  
The limits of seeding and mulching are as shown within the plan as designated by the 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 and permanent seeding shall be provided per item 659.

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

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

**CONTRACTOR RESPONSIBILITIES**  
Details have been provided on this plan in an effort to help the Contractor provide erosion and sedimentation control. The details shown on the plan shall be considered a minimum. Additional or alternative 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 Discharges Associated with Construction Activity.

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

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

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

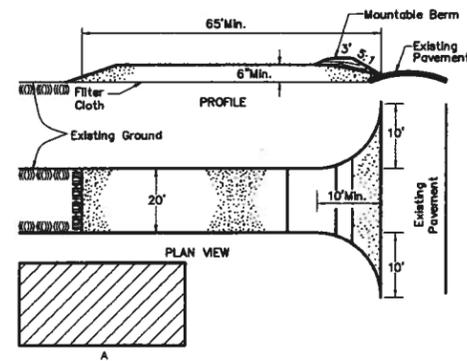
The Contractor shall be responsible to have the current Storm Water Pollution Prevention Plan immediately available or posted on site.

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

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

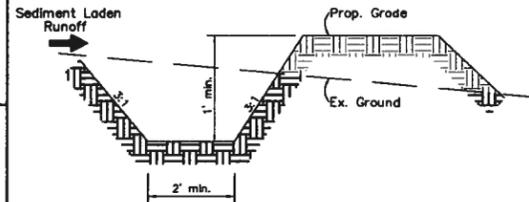
**SEQUENCE OF EROSION & SEDIMENT CONTROL IMPLEMENTATION**

1. Establish a stabilized construction entrance off of Eterman Road, complete with temporary culverts placed within the existing roadside ditch and the permanent diversion ditch.
2. Determine the location of the stream riparian protection zone (Floodway +20 Ft.) and install all perimeter sediment fence.
3. Construct the permanent diversion ditch along the eastern perimeter of the site. Permanently stabilize the swale per the detail on sheet 3 and install rock check dams.
4. Excavate the proposed sediment basins and install the temporary riser pipes, outlet pipes, and rock channel protection.
5. Construct the temporary west basin outlet channel, install rock channel protection, and stabilize the disturbed channel side slopes.
6. Construct the temporary diversion channels along the southern perimeter of the site to route the stormwater runoff into the sediment basins.
7. Remove the existing catch basin structure located within the central portion of the site and permanently block the existing 12" storm sewers.
8. Strip the topsoil (7" average depth) from the areas to be filled and stockpile the topsoil. Temporary stabilize the stockpile if it is to remain idle for more than 21 days.
9. Establish a stabilized construction entrance off of Liggett Road and install perimeter sediment fence at the existing offsite soil stockpile.
10. Commence with filling and grading activities and adjust the location and elevation of the temporary diversion channels as necessary to properly route the stormwater runoff to the sediment basins.
11. Enlarge the east sediment basin if additional fill material is necessary to bring the site to proposed grades.
12. Re-spread topsoil from the stockpile across the filled areas to a depth of 3" and permanently stabilize the filled areas and the onsite and offsite soil stockpiles.
13. Remove the temporary riser pipes, outlet pipes, and rock channel protection from the north and west sediment basins.
14. Fill the north and west sediment basins to proposed grades and permanently stabilize the disturbed areas.
15. Fill the west and east temporary sediment basin diversion channels to proposed grade and permanently stabilize the disturbed areas.
16. Remove the perimeter sediment fence and temporary construction entrances and permanently stabilize the resulting disturbed areas.



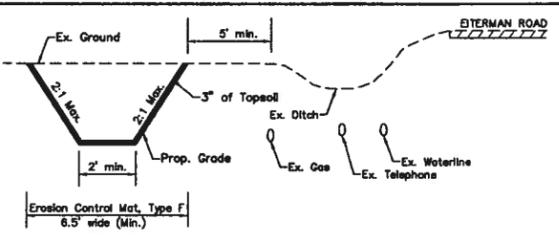
- A: Contractor Laydown Area (Dumpster, Vehicle Fueling)**  
Location to be determined in the field by Contractor.
1. Stone Size - Use 2" stone, or reclaimed or recycled concrete equivalent.
  2. Length - 65' Min.
  3. Thickness - Not less than six (6) inches.
  4. Width - Twenty (20) foot minimum, but 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 3:1 slopes will be permitted.
  7. Maintenance - The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public right-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanup of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately.
  8. Washing - Wheels shall be cleaned to remove sediment prior to entrance onto public right-of-ways. When washing is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.
  9. Periodic inspection and needed maintenance shall be provided after each rain.

**STABILIZED CONSTRUCTION ENTRANCE**  
SCALE: NONE

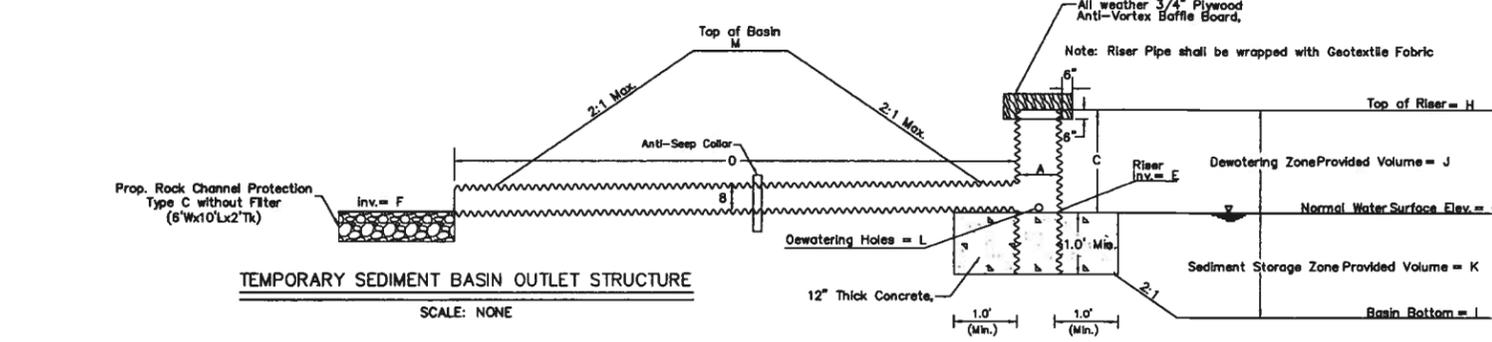


**MAINTENANCE:**  
All channels shall be seeded and mulched immediately following their construction. The Contractor shall be held responsible for maintenance of the channel prior to completion of the project. The slope of the channel shall be such to provide adequate drainage throughout the entire length of the channel.

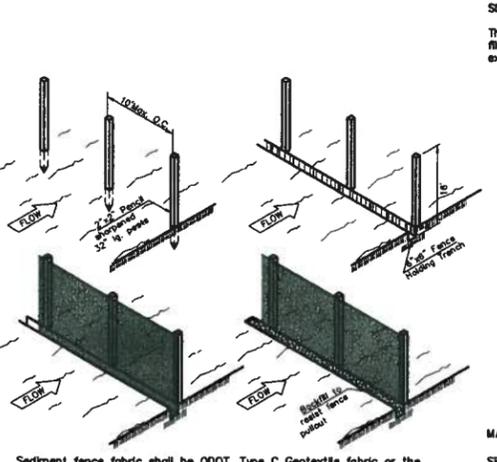
**TEMPORARY DIVERSION CHANNEL**  
SCALE: NONE



**PERMANENT DIVERSION DITCH TYPICAL SECTION**  
SCALE: NONE



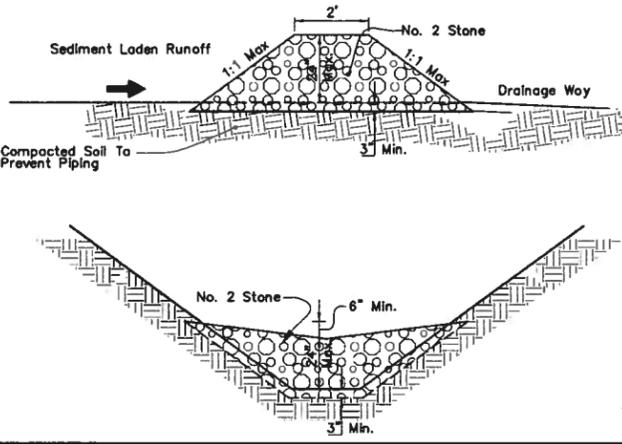
**TEMPORARY SEDIMENT BASIN OUTLET STRUCTURE**  
SCALE: NONE



Sediment fence fabric shall be ODOT, Type C Geotextile fabric or the equivalent to the following properties:

MATERIAL PROPERTIES	
MAXIMUM TENSILE STRENGTH	120 lbs
MAXIMUM ELONGATION AT 50 LBS.	50%
MINIMUM PUNCTURE STRENGTH	50 lbs
MINIMUM TEAR STRENGTH	40 lbs
MINIMUM BURST STRENGTH	200 psi
APPARENT OPENING SIZE	0.075 mm
MINIMUM PERMEABILITY	1 x 10 <sup>-3</sup> sec. <sup>-1</sup>
ULTRAVIOLET EXPOSURE STRENGTH RETENTION	70%

**SEDIMENT FENCE BARRIER DETAIL**  
SCALE: NONE



**TEMPORARY ROCK CHECK DAM**  
SCALE: NONE

- SILT FENCE:**  
This sediment barrier utilizes standard strength synthetic filter fabrics. It is designed for situations in which only sheet or overland flows are expected. Material Properties are listed in the provided table.
1. The height of a silt fence shall not exceed 18-inches (higher fences may impound volumes of water sufficient to cause failure of the structure).
  2. The filter fabric shall be purchased in a continuous roll cut to the length of the barrier to avoid the use of joints. When joints are necessary, filter cloth shall be spliced together only at a support post, with a minimum of a 6 inch overlap, and securely sealed.
  3. Posts shall be spaced a maximum of 10 feet apart at the barrier location and driven securely into the ground (minimum of 12-inches). Wood posts will be a minimum of 3/2" long when extra strength fabric is used without the wire support fence, post spacing shall not exceed 10 feet.
  4. A trench shall be excavated approximately 6-inches wide and 6-inches deep along the line of posts and upslope from the barrier.
  5. The standard strength filter fabric shall be extended into the trench, and 8-inches of the fabric shall be stapled or wired to the trench. The fabric shall not extend more than 18-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.
  7. Silt fences shall be removed when they have served their useful purpose, but not before the upslope area has been permanently stabilized.
  8. To prevent water ponded by the silt fence from flowing around the ends, each end shall be constructed upslope so that the ends are at a higher elevation.
- MAINTENANCE:**  
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.  
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.

**Maintenance**  
Aggregate check dams 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, and ends 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.

- GENERAL NOTES:**
1. Sediment basins shall be constructed and operational before upslope land disturbance begins.
  2. **RISER PIPE BASE:** The riser pipe shall be set at a minimum of 12 in. in the concrete base.
  3. **TRASH RACKS:** The top of the riser shall be fitted with trash racks firmly fastened to the riser pipe.
  4. **SEDIMENT CLEANOUT:** Sediment shall be removed and the sediment basin restored to its original dimensions when the sediment has filled to one-half the sediment storage zone. Sediment removed from the basin shall be placed so that it will not erode and stabilized similar to other fill material placed on the site.
  5. **FINAL REMOVAL:** The sediment control structure shall be removed only after the upstream drainage area is stabilized.
  6. **PAYMENT:** The cost of all labor and materials needed to complete the basin outlet structure shall be included in the price bid for item 207, Sediment Basin Outlet Structure. This work shall include the installation and removal of the pipe, riser, baffle board, concrete, geotextile and anti-seep collar.

SEDIMENT BASIN	TRIBUTARY ACREAGE (AC)	REQUIRED DEWATERING ZONE VOLUME AC * 67 CY	DISTURBED ACREAGE (AC)	REQUIRED STORAGE ZONE VOLUME AC * 37 CY	A	B	C	D	E	F	G	H	I	J	K	L	M
EAST	8.0	538.0 CY	5.7	211.0 CY	12"	12"	3.0'	30.0'	930.00	929.80	930.00	933.00	928.50	568.2 CY	218.0 CY	(4) 1" HOLES @ 930.00 (4) 1" HOLES @ 931.00 (4) 1" HOLES @ 932.00	INITIAL = 933.00 FINAL = 935.00
WEST	INITIAL = 38.3 FINAL = 28.8	INITIAL = 2,633.1 CY FINAL = 1,929.6 CY	INITIAL = 32.3 FINAL = 25.8	INITIAL = 1,195.1 CY FINAL = 954.6 CY	24"	24"	4.0'	30.0'	931.00	930.80	931.00	935.00	928.75	2645.0 CY	1196.2 CY	(8) 1" HOLES @ 931.00 (8) 1" HOLES @ 932.00 (8) 1" HOLES @ 933.00 (8) 1" HOLES @ 934.00	INITIAL = 935.00 FINAL = 936.20
NORTH	10.5	703.5 CY	6.6	244.2 CY	12"	12"	1.5'	30.0'	934.50	934.50	934.50	936.00	933.90	718.4 CY	262.9 CY	(6) 1" HOLES @ 934.50 (6) 1" HOLES @ 935.00 (6) 1" HOLES @ 935.50	FINAL = 936.00

NOTE: The West Basin "Initial" design is associated with the tributary area resulting from the initial clearing and grading activities. The West Basin "Final" design is associated with the tributary area resulting from the proposed filling activities.

**REVISIONS**

MARK	DATE	DESCRIPTION

**EMHT**  
Evans, Mechwart, Hambleton & Tilton, Inc.  
5500 New Albany Road, Columbus, OH 43054  
Phone: (614) 471-5150 Fax: (614) 470-9530

**CITY OF DUBLIN, FRANKLIN COUNTY, OHIO**  
**MASS EXCAVATION AND GRADING PLAN**  
**FOR**  
**SFIR-COIC SITE**

**EROSION AND SEDIMENT CONTROL PLAN DETAILS**

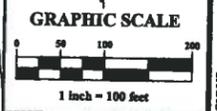
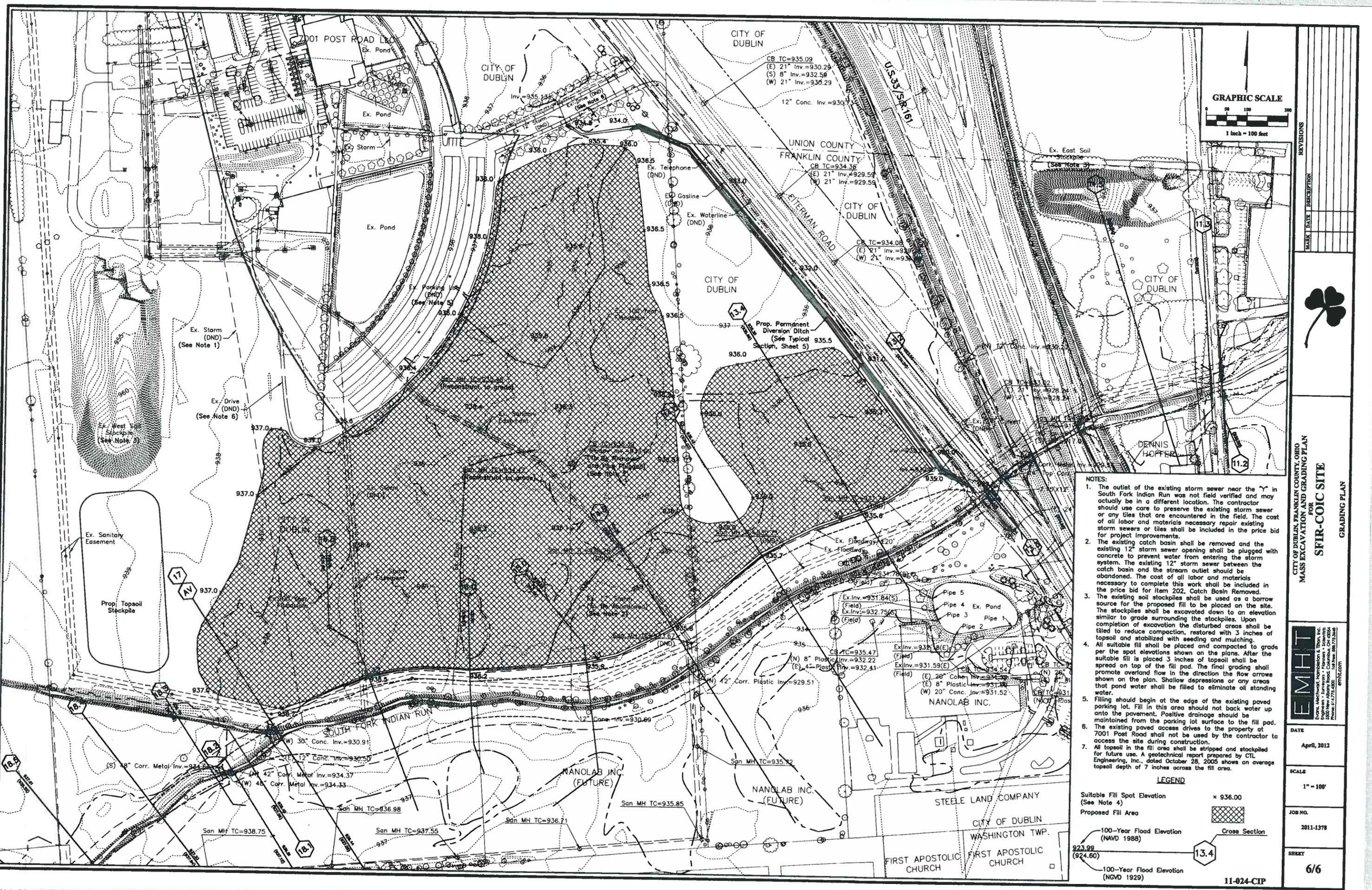
**DATE**  
April, 2012

**SCALE**  
1" = 100'

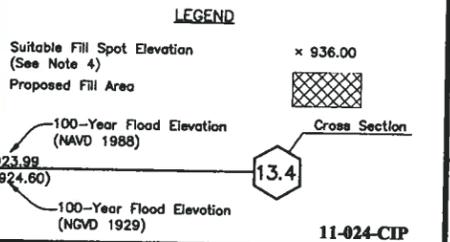
**JOB NO.**  
2011-1378

**SHEET**  
5/6

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- NOTES:**
- The outlet of the existing storm sewer near the 'Y' in South Fork Indian Run was not field verified and may actually be in a different location. The contractor should use care to preserve the existing storm sewer or any tiles that are encountered in the field. The cost of all labor and materials necessary repair existing storm sewers or tiles shall be included in the price bid for project improvements.
  - The existing catch basin shall be removed and the existing 12" storm sewer opening shall be plugged with concrete to prevent water from entering the storm system. The existing 12" storm sewer between the catch basin and the stream outlet should be abandoned. The cost of all labor and materials necessary to complete this work shall be included in the price bid for item 202, Catch Basin Removed.
  - The existing soil stockpiles shall be used as a borrow source for the proposed fill to be placed on the site. The stockpiles shall be excavated down to an elevation similar to grade surrounding the stockpiles. Upon completion of excavation the disturbed areas shall be filled to reduce compaction, restored with 3 inches of topsoil and stabilized with seeding and mulching.
  - All suitable fill shall be placed and compacted to grade per the spot elevations shown on the plans. After the suitable fill is placed 3 inches of topsoil shall be spread on top of the fill pad. The final grading shall promote overland flow in the direction the flow arrows shown on the plan. Shallow depressions or any areas that pond water shall be filled to eliminate all standing water.
  - Filling should begin at the edge of the existing paved parking lot. Fill in this area should not back water up onto the pavement. Positive drainage should be maintained from the parking lot surface to the fill pad.
  - The existing paved access drives to the property at 7001 Post Road shall not be used by the contractor to access the site during construction.
  - All topsoil in the fill area shall be stripped and stockpiled for future use. A geotechnical report prepared by CTL Engineering, Inc., dated October 28, 2005 shows an average topsoil depth of 7 inches across the fill area.



CITY OF DUBLIN, FRANKLIN COUNTY, OHIO  
 MASS EXCAVATION AND GRADING PLAN  
 FOR  
**SFIR-COIC SITE**  
 GRADING PLAN

EMHIT  
 Experts, Mechanical, Installation & More, Inc.  
 Engineers • Surveyors • Planners • Scientists  
 5800 New Albany Road, Columbus, OH 43244  
 Phone: 614.777.7333  
 Email: emhit.com

REVISIONS	MARK	DATE	DESCRIPTION

DATE	April, 2012
SCALE	1" = 100'
JOB NO.	2011-1378
SHEET	6/6