

LOCATION MAP
Not to Scale

CITY OF DUBLIN, OHIO SANITARY SEWER IMPROVEMENT FOR DARREE FIELDS PUMP STATION UPGRADES & 4-INCH FORCE MAIN 2015



2012 SPECIFICATIONS

The Regulations and Construction Standards of the City of Dublin, together with the Construction and Material Specifications of the City of Columbus, 2012 edition, including changes and supplemental specifications, shall govern this project.

SHEET INDEX

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STANDARD CONSTRUCTION DRAWINGS

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

CITY OF COLUMBUS

1441	AA-S118
AA-S102	AA-S149
AA-S106	AA-S150
AA-S107	L-6310
AA-S117	L-6311

CITY OF DUBLIN (2014)

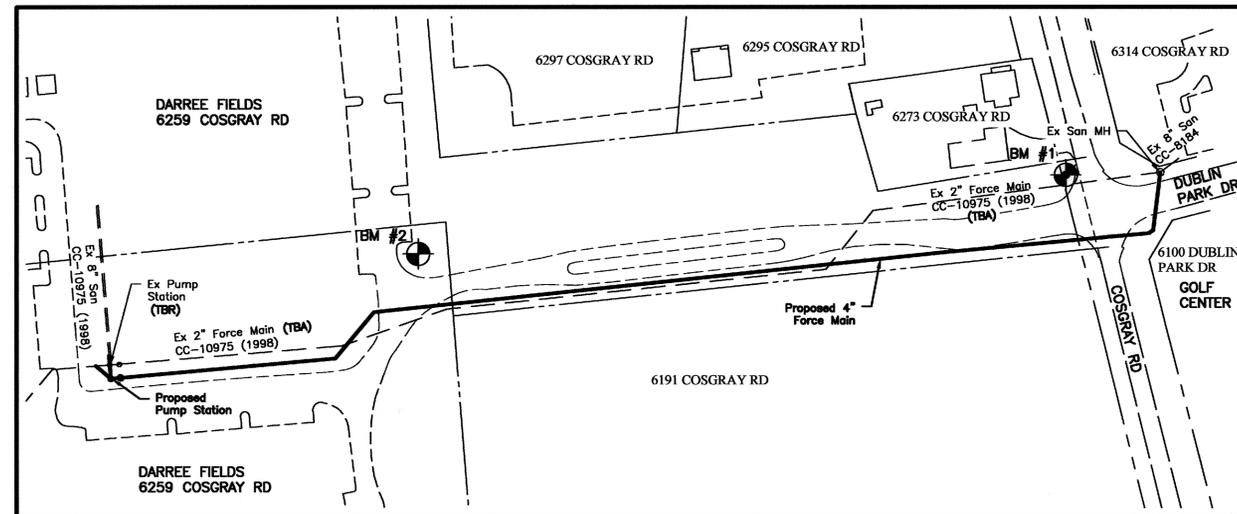
SA-01	SA-02
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VERTICAL DATUM

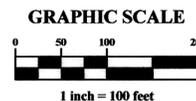
The Vertical Datum is based on the elevation established by the Franklin County Engineering Department, at monument FRANK 73, being 801.706 feet in elevation. The elevation was transferred from said Franklin County Engineering Department monuments using static GPS procedures (03Geoid) and differential leveling to the site. Monument N45, being 826.994 feet in elevation, and monument A5, being 850.413 feet in elevation were used as vertical checks. The said monuments being source bench marks with elevations that are based on the North American Vertical Datum of 1988.

BENCH MARKS
(NAVD 1988)

- BM#1 Chiseled square on the southwest corner of concrete headwall located at the northwest corner of the intersection of Cosgray Road and Dublin Park Place. Elev. = 941.92
- BM#2 Railroad spike in the west side of a wooden tornado siren pole located at southwest corner of a parking lot at Darree Fields; said pole being 750 feet west of Cosgray Road and 25 feet north of the entrance drive to Darree Fields. Elev. = 942.22



INDEX MAP
Scale: 1" = 100'



OWNER
City of Dublin
910 Dublin Road
Dublin, Ohio 43016
Tel: (614) 410-4600

PREPARED BY:



ENGINEER

EMH&T
5500 New Albany Road,
Columbus, OH 43054
Shane Spencer
614.775.482
sspencer@emht.com

Shane J. Spencer
Registered Engineer No. 71384



6/20/15
Date

APPROVALS

Signatures on this plan signify only concurrence with the general purpose and general location of the project. All technical details remain the responsibility of the Engineer preparing the plans.

CITY OF DUBLIN
Paul A. Hammersmith
City Engineer, City of Dublin, Ohio
Paul A. Hammersmith, P.E.

7-10-2015
Date

CITY OF COLUMBUS

Approval on the part of the City of Columbus is given pursuant to the provisions of the Sewer Service Agreement made between the City of Dublin and the City of Columbus, Ohio, on April 13, 1993 and all subsequent amendments thereof. The sanitary sewer meets or exceeds the City of Columbus Design Standards (including per capita flow, peaking factor, and 1/1 allowance) and material specifications.

Don J. Blake
Administrator, Division of Sewerage & Drainage
City of Columbus

07/30/15
Date

Greg G. Davis
Director, Department of Public Utilities
City of Columbus

7-30-2015
Date

CC-17050
DUBLIN PROJECT
15-018-CIP

REVISIONS	MARK	DATE	DESCRIPTION

City of Dublin

CITY OF DUBLIN, OHIO
SANITARY SEWER IMPROVEMENT
FOR
DARREE FIELDS
PUMP STATION UPGRADES
& 4-INCH FORCE MAIN
TITLE SHEET



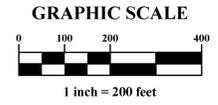
DATE
June 2015

SCALE
As Noted

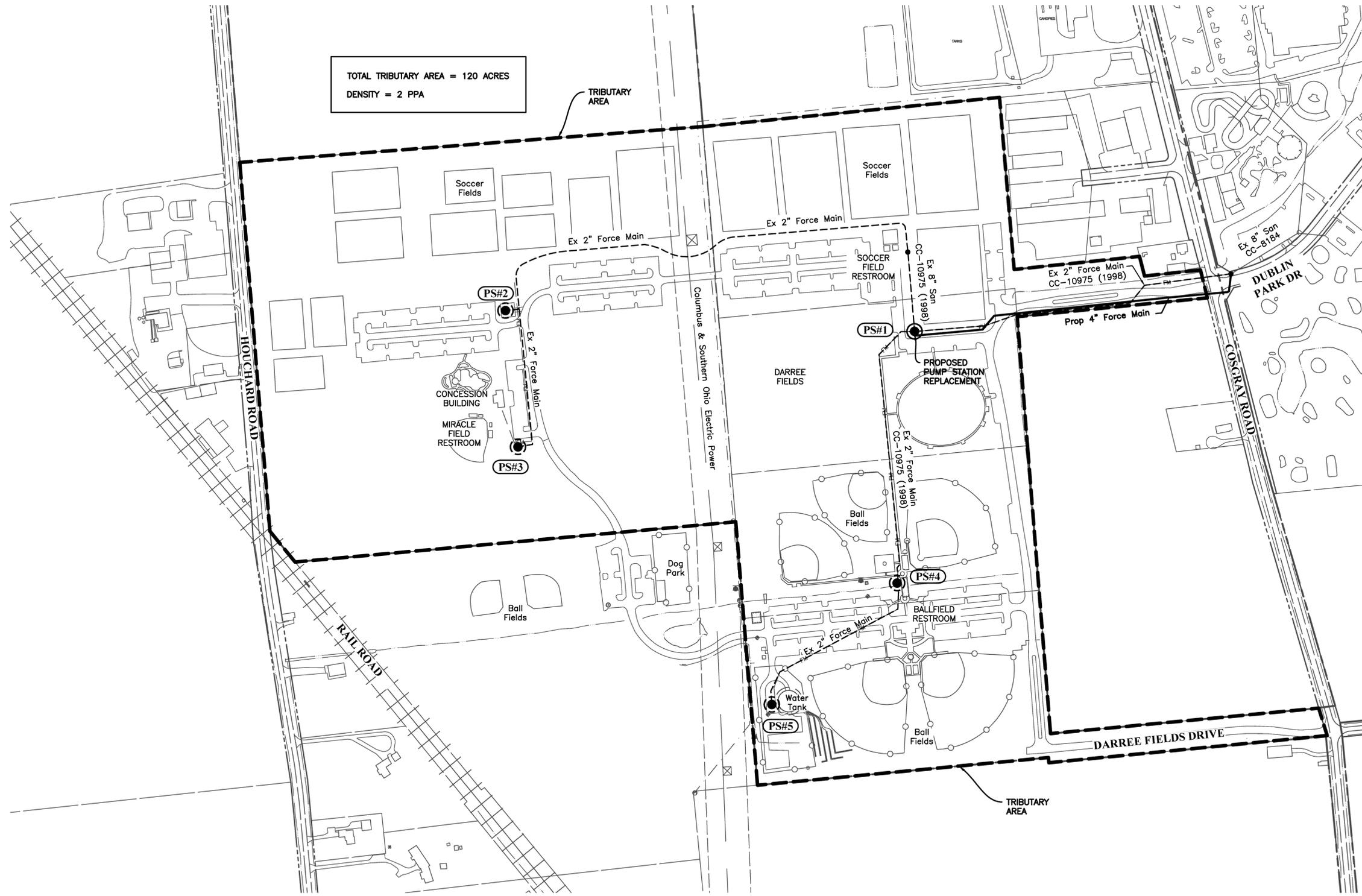
JOB NO.
2015-0044

SHEET
1/11

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TOTAL TRIBUTARY AREA = 120 ACRES
DENSITY = 2 PPA



MARK	DATE	DESCRIPTION	REVISIONS



CITY OF DUBLIN, OHIO
SANITARY SEWER IMPROVEMENT
FOR
**DARREE FIELDS
PUMP STATION UPGRADES
& 4-INCH FORCE MAIN**
TRIBUTARY AREA MAP



DATE
June 2015

SCALE
1" = 200'

JOB NO.
2015-0044

SHEET
2/11

CC-17050
DUBLIN PROJECT
15-018-CIP

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GENERAL NOTES

- City of Columbus and Ohio Department of Transportation 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 Contractor shall be responsible to obtain all necessary permits.
- 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 constructions drawings.
- 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.
- 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.
- Disposal of excess excavation within Special Flood Hazard Areas (100-year floodplain) is not permitted.
- 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.
- Not used.
- 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.

- Conduit must be directionally bored across streets instead of open cut, unless specifically approved by the City Engineer. Use of pneumatic air ram devices is not permitted. Permits to construct in the right-of-way of existing streets must be obtained from the City of Dublin Division of Engineering before commencing construction. Should open cutting of existing pavement be permitted, Controlled Density Backfill (Type III) shall be used in place of compacted granular backfill, according to Item 636 of the Standard Specifications.
- 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:

City of Dublin	Parks and Open Space 6555 Shier-Rings Road Dublin Ohio 43016	614-410-4700
City of Columbus	Department of Public Utilities 910 Dublin Rd. Columbus, Ohio 43215-9053	Attn: Mark Gerhart 614-645-6726
AEP Ohio	850 Tech Center Dr Gahanna, Oh 43230	Attn: Paul Paxton (614) 883-6802
Columbia Gas of Ohio	3550 Johny Appleseed Ct, Columbus, Ohio 43215	Attn: Rob Caldwell 614-481-1057
Sunoco Pipeline L.P.	Eastern Area Headquarters 525 Fritztown Road Sinking Spring, PA 19608	Attn: Deb Schneck
Time Warner Cable	3760 Interchange Road Columbus, OH 43204	Attn: Ray Mauer 614-481-5262

- 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

- Traffic control shall be furnished, erected, maintained, and removed by the Contractor according to Ohio Manual of Uniform Traffic Control Devices (OMUTCD), current edition.
- 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.
- If the City Engineer determines that the Contractor is not providing proper provisions for traffic control, the City Engineer shall assign uniformed, off-duty police officers to the project at no cost to the City.
- Steady-burning, Type "C" lights shall be required on all barricades, drums, and similar traffic control devices in use at night.
- 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

- Not used.
- 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.

SANITARY SEWERS

- Connections to the sanitary sewer will be permitted upon receiving an OEPA Permit to Install (PTI), and upon receiving a satisfactory letter from the design engineer stating that the project has been constructed as per the plans, and all of the conditions of the PTI have been met.
- Sanitary sewage collection systems shall be constructed in accordance with the rules, regulations, standards and specifications of the City of Dublin, Ohio EPA, Ohio Department of Health and the current edition of the Great Lakes-Upper Mississippi River Board (Ten States) - Recommended Standards for Wastewater Facilities.
- The minimum requirements for sanitary sewer pipe with diameters 15 inches and smaller shall be reinforced concrete pipe ASTM C76 Class 3, or PVC sewer pipe ASTM D3034, SDR 35. Pipe for 6-inch diameter house service lines shall be PVC pipe ASTM D3034, SDR 35. PVC pipe shall not be used at depths greater than 28 feet. Pipe materials and related structures shall be shop tested in accordance with City of Columbus Construction Inspection Division quality control requirements.
- Not used.
- Not used.
- 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 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.
- All PVC sewer pipes shall be deflection tested no less than 60 days after completion of backfilling operations. All other requirements shall be according to Item 901.21 of the Standard Specifications.
- Temporary bulkheads shall be placed in pipes at locations shown on the approved construction drawings and shall remain in place until the Permit to Install (PTI) has been issued by the OEPA and the sewers have been approved for use by the City Engineer. The cost for furnishing, installing, maintaining, and removing bulkheads shall be included in the contract unit bid price for the various sanitary sewer items.

- All sanitary sewers including sanitary sewer service lines shall be subjected to and pass infiltration or exfiltration tests according to Item 901 of the Standard Specifications and must be approved for use by the City Engineer before any service connections are tapped into sewers.
- For sanitary sewer infiltration, leakage through joints shall not exceed 100 gallons per inch of tributary sewer diameter per 24 hours per mile of length or the computed equivalent. All sanitary sewers shall be tested.
- 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.
- Visible leaks or other defects observed or discovered during TV inspection shall be repaired to the satisfaction of the Engineer.
- 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.
- All water lines shall be located at least 10 feet horizontally and 18 inches vertically, from sanitary sewers and storm sewers, to the greatest extent practicable. Where sanitary sewers cross water mains or other sewers or other utilities, trench backfill shall be placed between the pipes crossing and shall be compacted granular material according to Item 912 of the Standard Specifications. In the event that a water line must cross within 18 inches of a sanitary sewer, the sanitary sewer shall be concrete encased or consist of ductile iron pipe material.
- Not used.
- Not used.
- Not used.
- 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.
- The Contractor shall furnish all material, equipment, and labor to make connections to existing manholes. The sewer pipe to manhole connections for all sanitary sewers shall be flexible and watertight. All holes shall be neatly cored. The sewer pipe barrel at the springline shall not extend more than 1 inch beyond the inside face of the manhole. To maintain flexibility in the connection, a 1-inch space shall be left between the end of the pipe inside the manhole and the concrete channel; this space shall be filled with a waterproof flexible joint filler. Any metal that is used shall be Type 300 Series Stainless Steel. The connection may be any of the following types:

- Rubber sleeve with stainless steel banding.
 - Kor-N-Seal as manufactured by National Pollution Control Systems, Inc.
 - Lock Joint Flexible Manhole Sleeve as manufactured by Interpace Corporation.
 - Or equal as approved by the City Engineer.
- Rubber gasket compression.
 - Press Wedge II as manufactured by Press-Seal Gasket Corporation.
 - Dura Seal III as manufactured by Dura Tech, Inc.
 - Link-Seal as manufactured by Thunderline Corporation.
 - Or equal as approved by the City Engineer.

The cost for this work along with a new channelized base for the manhole shall be included in the unit bid price for the related items of work.

MAIL DELIVERY

- 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.
- 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

- 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.

Continued to Sheet 4

CC-17050
DUBLIN PROJECT
15-018-CIP

MARK DATE DESCRIPTION REVISIONS



CITY OF DUBLIN, OHIO
FOR
SANITARY SEWER IMPROVEMENT
DARRREE FIELDS
PUMP STATION UPGRADES
& 4-INCH FORCE MAIN
GENERAL NOTES



DATE
June 2015

SCALE
None

JOB NO.
2015-0044

SHEET
3/11

PUMP STATION GENERAL NOTES

SPECIFICATIONS

The Contractor shall comply with material and construction requirements of the City of Dublin and the Ohio EPA. The Contractor shall obtain any and all permits required and pay the cost for all fees.

EXTRA WORK

The Contractor shall furnish all materials, labor, tools, transportation, incidentals and appurtenances to complete in every detail and leave in working order all items of work called for and shown on the accompanying drawings. Any material or work not specifically mentioned or shown on the drawings, but necessary to complete the work, shall be furnished at no additional cost.

SITE VISIT

The Contractor is required to visit the site and fully inform himself concerning all conditions affecting the scope of the work. Failure to visit the site shall not relieve him from any responsibility in the performance of this Contract.

UTILITIES

The Contractor shall investigate and locate all existing utilities and notify all utility companies a minimum of 48 hours prior to construction.

BEDDING

The Contractor shall provide a 6-in level and compacted granular bedding (No. 57 or No. 8 Stone) under each concrete structure and shall place concrete or granular fill as required, dependent on soil conditions.

CLEAN WATER CONNECTIONS

Roof drains, foundation drains, and other clean water connections to the sanitary system are prohibited.

WET WELL AND VALVE VAULT

All Pump Station structures shall be constructed of pre-cast concrete sections meeting the requirements of ASTM C478 and C76. All rubber ring joints shall comply with ASTM C443.

ACCESS/EQUIPMENT HATCHES

All Hatches shall be comprised of 1/4-in aluminum cover plate and be equipped with an automatically locking stainless steel hold-open arm with release handle. Access hatches shall be double leaf construction with stainless steel hinges, corrosion resistant padlock bar, recessed lifting handle, and have an extruded aluminum frame. The assembly shall have a 300 psf load rating.

PUMP STATION PIPING

PIPING

The Contractor shall supply and install all piping and valves shown on the drawings. Pump Station piping shall be flanged joint ductile iron pipe, Class 52 (min.) conforming to AWWA C-110, C-150 and C-151 with rubber gaskets per C-111.

At all wall penetrations, use a modular, mechanical seal, consisting of rubber links shaped to continuously fill the annular space between the pipe and the wall opening. Hardware shall be mild steel with a 60,000 psi minimum tensile strength and 2-part zinc dichromate coating per ASTM B-633 and organic coating, tested in accordance with ASTM B-117 to pass a 1,500-hour salt spray test (or 316 Stainless Steel).

Mechanical couplings shall be installed on all piping sections between structures. These couplings shall have a minimum working pressure of 150 psi. The middle ring shall be comprised of stainless steel or equivalent with Grade 42 Buna N gasket and bolts shall conform to ASTM A307 and A563.

PLUG VALVES

Plug valves shall be non-lubricated, eccentric plug type with resilient seats of neoprene bonded to plug for use on sewage. All flanges shall have ANSI 125# standard drilling and shall be provided with limits stops and rotate 90° from fully open to fully shut. The port area shall be at least 80% of the line size. The maximum working pressure for all valves shall be 100 psi, but the test pressure shall be 175 psi. The valve body, plug, and bonnet shall be cast iron, ASTM A-126, Class B. Shaft bearings, upper and lower, shall be sleeve type metal bearings, sintered, oil impregnated and permanently lubricated Type 316 stainless steel. Thrust bearing shall be Nyatron. Seat rings are to be solid and cast of 304 stainless steel and machined to effect drop tight shut off in either direction. The face of the plug is to be encapsulated with Buna N rubber to provide a corrosion free surface. Each valve shall be equipped with its individual operating handle, hand wheel, floor stand, wheel and extension chain, or motor operator as specified on the plans.

CHECK VALVES

Unless otherwise specified, all check valves shall be iron body, bronze mounted, swing type, supplied plain, with external lever and weight, or external lever and spring as called for on the drawings. All valves shall be suitable for use with wastewater, at a minimum rated pressure of 150 psi. Each valve to be shop tested at a minimum of 50% over rated pressure.

QUICK DISCHARGE CONNECTOR & GUIDE RAILS

A sealing flange/rail guide bracket shall be mounted on each pump discharge. It shall have a machined mating flange which matches the base elbow discharge connection. Sealing of this discharge connection shall be accomplished by a simple linear downward motion of the pump culminating with the entire weight of the pumping unit supported entirely by the base elbow.

The dual rail guide design keeps the pump in proper alignment with the stationary discharge piping. These rails shall be 2-in stainless steel pipe which bolt directly to the base elbow and to the access frame at the top of the wet-well by an upper guide rail bracket.

START-UP

The Contractor shall arrange and conduct a Pump Station start-up meeting with the City of Dublin prior to the discharge of sewerage to the Pump Station. All manufacturer representatives shall be present at the start-up meeting to provide training and technical support for the equipment items they represent.

AIR VENT

The wet well and valve vault air vents shall consist of 4-inch diameter threaded ductile iron pipe, cast into the top slab, and a weather and corrosion resistant cap. The vent cap shall be vinyl coated to prevent rusting and be equipped with a bird screen. The cap's screened area shall be greater than that of the inside diameter of the 4-in vent pipe.

SURFACE RESTORATION

All disturbed areas shall be restored with topsoil (min. depth is 3-in) conforming to CMSC Item 653, Seed and Mulch per the project requirements and Water per Item 659. Cost of said work shall be included in the price bid for the various bid items.

MANUALS

The Contractor shall provide a minimum of 3 bound copies and one electronic copy of the operation and maintenance manuals for each item of equipment installed in the pump station.

SHOP DRAWINGS

The Contractor shall submit copies of material data sheets and product cut sheets for every material or equipment item installed with the pump station to the City for review and approval prior to ordering equipment.

ANTI-FLOATATION

The Contractor shall provide whatever anti-floatation measures are necessary during construction to prevent floatation of the structure until concrete encasement and backfill is placed.

EXCAVATION

All surplus excavation shall be removed and disposed of at an offsite location. Cost of spoils removal to be included in the price bid for the pump station.

PUMP NOTES

GENERAL

Furnish Myers solids handling submersible sewage pump(s) as specified herein or approved equal. Pump shall be equipped with stainless steel nameplate, stating the unit is accepted for use in NEC class 1, division 1, groups C, D hazardous locations with third party, Factory Mutual, approval.

The pump shall be non-overloading throughout the entire range of operation without employing service factor. The pump shall reserve a minimum service factor of 1.30. The performance curve submitted for approval shall state in addition to head and capacity performance, the pump efficiency, solid handling capacity, and reflect motor service factor.

Job Name: Darree Fields - City of Dublin

- Pump: MYERS 4VX10M6-21
- Number of Pumps: 2
- Impeller: 6.50" impeller
- Discharge: Shall be 4" ANSI flange.
- Motor: Shall be 1 HP 230 V 60 Hz 1 Phase, Oil Filled Design. Motor shall be Explosion Proof listed.
- Power Cord: Shall be epoxy potted and equipped with a minimum of 25' of power cord.
- Pump Operating Characteristics: Each pump shall have factory performance test with individual pump performance curve. Pump shall operate at following conditions;
 - > 8Q GPM at 12.9 TDH

FORCE MAIN NOTES

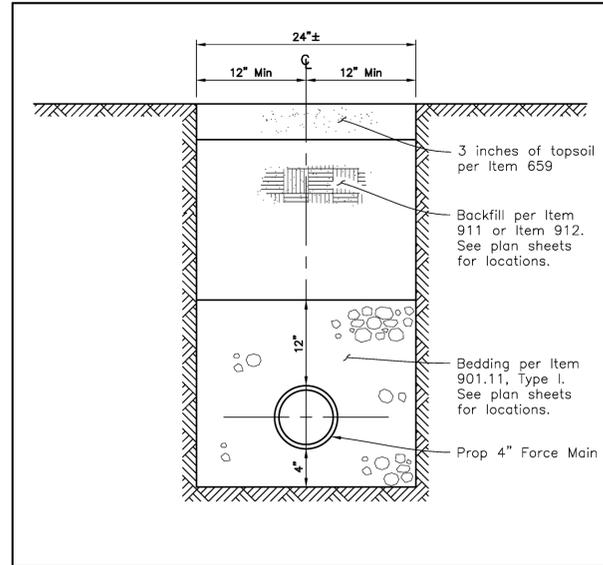
FORCE MAIN PIPE MATERIAL SPECIFICATION

Sanitary pipe installed as part of this pump station and force main shall conform to CMS 901 and the requirements outlined in the following standards:

PIPE MATERIAL					
REF. NO.	TYPE	PIPE MATERIAL	MATERIAL SPECIFICATION	JOINT SPECIFICATION	INSTALLATION SPECIFICATION
1	FORCE MAIN	HDPE	AWWA C906	ASTM F2620	ASTM D2321
2	FORCE MAIN	PVC	ASTM D22414	ASTM D3139	ASTM D2321
2	HORIZONTAL DIRECTIONAL DRILLING	HDPE (DR11)	AWWA C906	ASTM F2620	ASTM F1962
3	GRAVITY SEWER	PVC	ASTM D3034	ASTM D3212	ASTM D2321

ITEM SPECIAL - 4-INCH FORCE MAIN, DIRECTIONALLY DRILLED, COMPLETE

Within the plan, sections of the proposed force main are defined to be installed only by Horizontal Directional Drilling (HDD) methods so as to mitigate surface impacts at those locations. This item is all inclusive and shall include costs to install the force main by HDD including all labor, materials, excavation of bore/receiving/splice pits, pipe joining, bedding, backfill, compaction, topsoil, and surface restoration. Payment for this item shall be on a linear foot basis for Item Special - 4 Inch Force Main, Directional Drilled, Complete.



DETAIL - FORCE MAIN TRENCH
Not To Scale

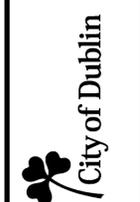
LEGEND			
— Ex WM —	Existing Water Main	⊗	Existing Fire Hydrant
— Ex Strm —	Existing Storm Sewer	⊙	Existing Water Valve
— Ex San —	Existing Sanitary Sewer	○	Existing Storm Sewer Manhole
— Ex FM —	Existing Force Main	□	Existing Storm Sewer Catch Basin
— Ex Gas —	Existing Gas Line	○	Existing Sanitary Manhole
— Ex Elec —	Existing Electric	⊙	Existing Gas Valve
— Ex Tele —	Existing Telephone/Communications	⊗	Existing Telephone Pedestal Box
— Ex Fiber —	Existing Fiber Optic	⊗	Existing Telephone Pull Box
— Ex CATV —	Existing Cable Television	⊗	Existing Telephone Manhole
— X —	Existing Fence	⊗	Existing Fiber Optic Pull Box
—	Tree Row	⊗	Existing Telephone Pole
—	Guardrail	⊗	Existing Transformer
		⊗	Existing Power Pole
		⊗	Existing Landscaping/Flood Light
		⊗	Existing Traffic Signal Pole

LEGEND - PROPOSED	
—	Proposed 4" Force Main
▨	Proposed Sidewalk Replacement

LEGEND - ABBREVIATIONS	
(TBA)	To Be Abandoned
(TBR)	To Be Removed
(TBRLT)	To Be Relocated
(TBRR)	To Be Removed and Replaced
(R&R)	Remove and Re-Erect
(DND)	Do Not Disturb
Comm	Ex Communication
OHU	Ex Overhead Utility Line
UGE	Ex Under Ground Electricity

ESTIMATE OF QUANTITIES					
Ref	Spec	Item No.	Description	Quantity	Units
1	CMSC	201	Clearing and Grubbing	1	L.S.
2	CMSC	202	Sidewalk Removed	120	S.F.
3	CMSC	202	Valve Vault Removed	1	Ea.
4	CMSC	202	Wet Well Removed	1	Ea.
5	CMSC	207	Erosion Control	1	L.S.
6	CMSC	608	Concrete Walk (4")	120	S.F.
7	CMSC	614	Maintenance of Traffic, Including Pedestrians	1	L.S.
8	CMSC	901	8-in Sanitary Pipe, with Type 1 Bedding, with Item 911 Compacted Backfill	25	L.F.
9		SPEC	Pump Station Including - Excavation, Shoring, Dewatering, Structures including Valve Vault, Pumps, Equipment, Electrical Controls, Piping and Backfill, Complete in Place	1	L.S.
10		SPEC	4-Inch Force Main, Directionally Drilled, Complete	1,215	L.F.
11		SPEC	2-Inch Force Main, Complete	25	L.F.
12		SPEC	Electric Service Extension	1	L.S.
13		SPEC	By-pass Pumping	1	L.S.

MARK	DATE	DESCRIPTION



CITY OF DUBLIN, OHIO
FOR
SANITARY SEWER IMPROVEMENT
DARREE FIELDS
PUMP STATION UPGRADES
& 4-INCH FORCE MAIN
GENERAL NOTES & ESTIMATE OF QUANTITIES



DATE
June 2015

SCALE
None

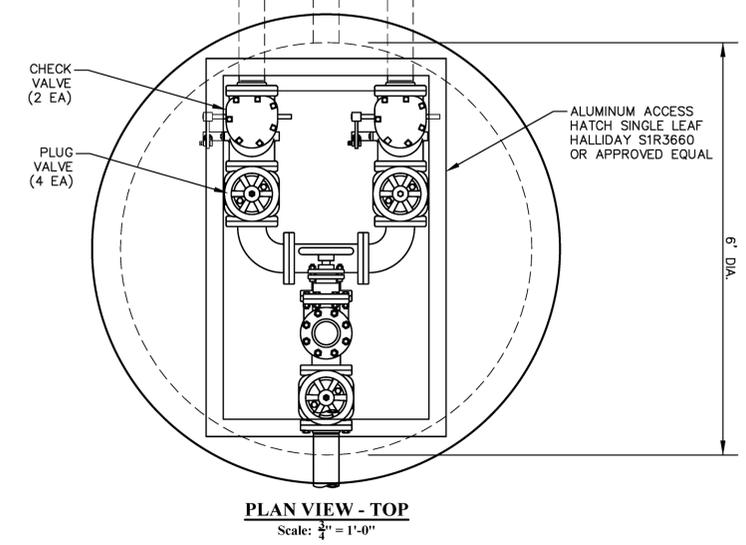
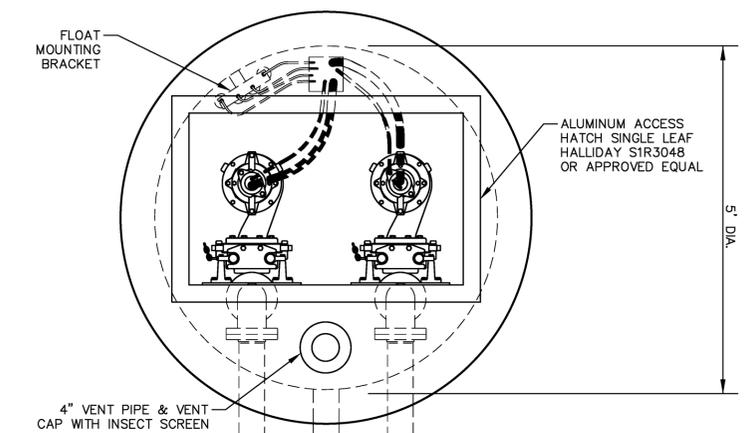
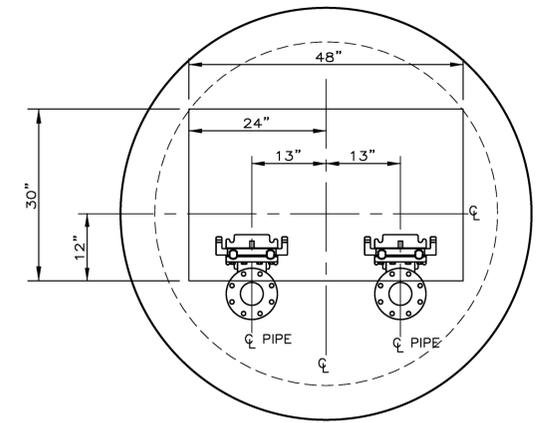
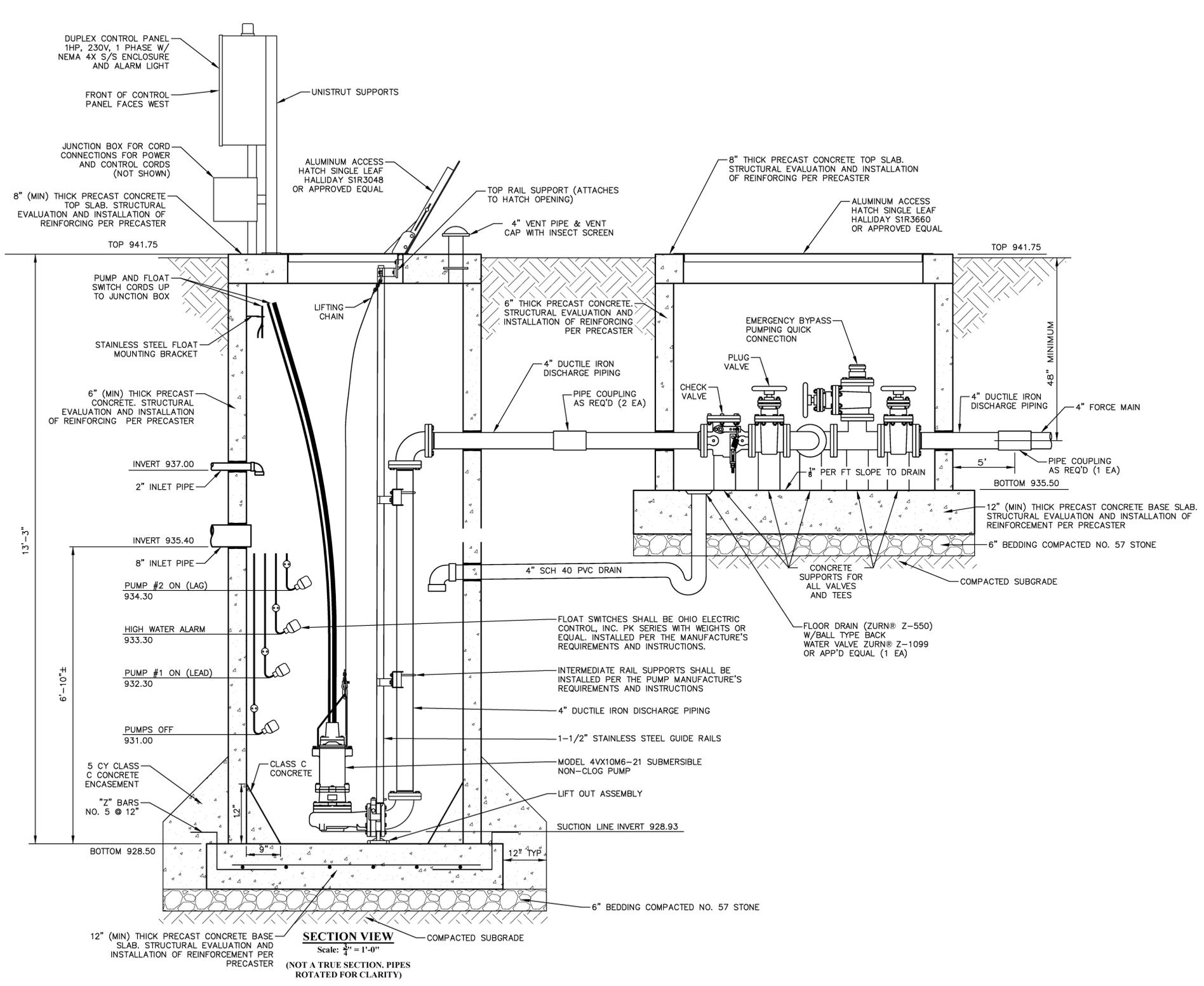
JOB NO.
2015-0044

SHEET
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DUBLIN PROJECT
15-018-CIP

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MARK	DATE	DESCRIPTION



CITY OF DUBLIN, OHIO
 SANITARY SEWER IMPROVEMENT
 FOR
DARRIE FIELDS
PUMP STATION UPGRADES
& 4-INCH FORCE MAIN
 PUMP STATION DETAILS



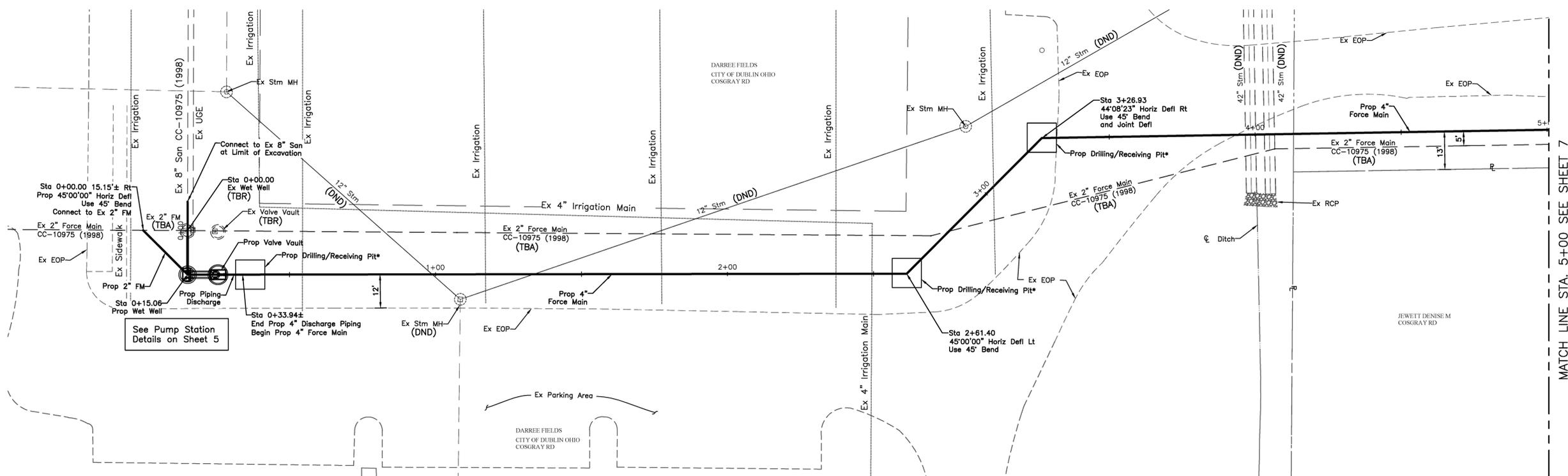
DATE	June 2015
SCALE	As Noted
JOB NO.	2015-0044
SHEET	5/11

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 # 15-018-CIP

GRAPHIC SCALE



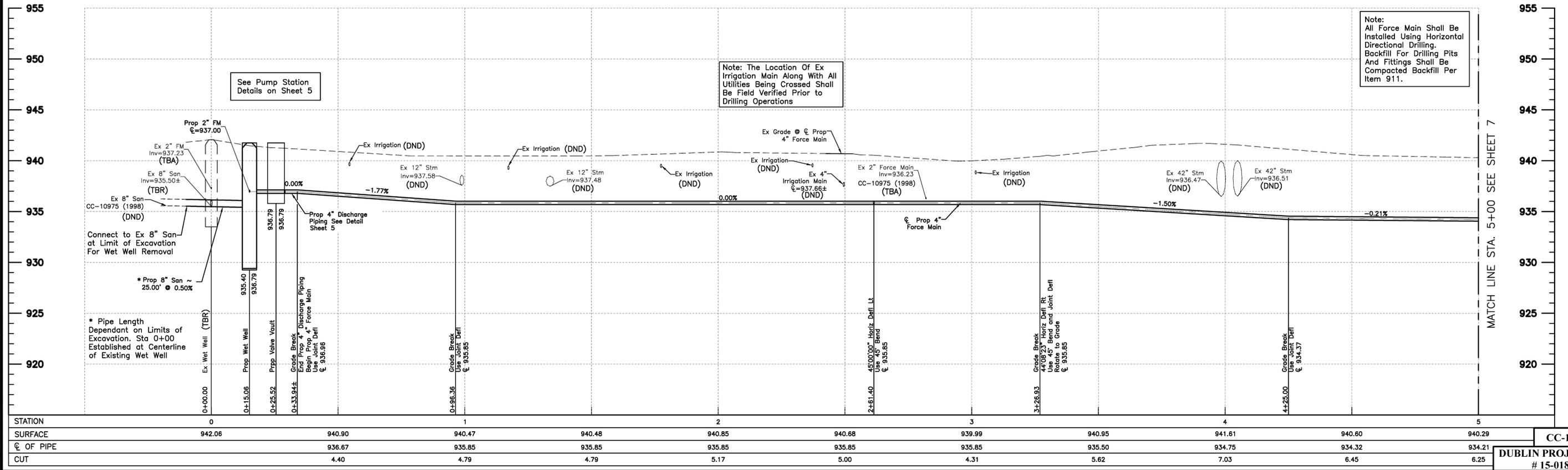
1 inch = 20 feet



NOTES:
1. EX WET WELL AND EX VALVE VAULT TO BE REMOVED IN THEIR ENTIRETY.

* DRILLING/RECEIVING PIT LOCATIONS AS SHOWN ARE APPROXIMATE. FINAL LOCATIONS TO BE DETERMINED BY THE CONTRACTOR IN COORDINATION WITH THE OWNER.

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STATION	0	1	2	3	4	5					
SURFACE	942.06	940.90	940.47	940.48	940.85	940.68	939.99	940.95	941.61	940.60	940.29
☉ OF PIPE		936.67	935.85	935.85	935.85	935.85	935.85	935.50	934.75	934.32	934.21
CUT		4.40	4.79	4.79	5.17	5.00	4.31	5.62	7.03	6.45	6.25

MARK	DATE	DESCRIPTION

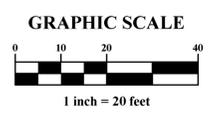
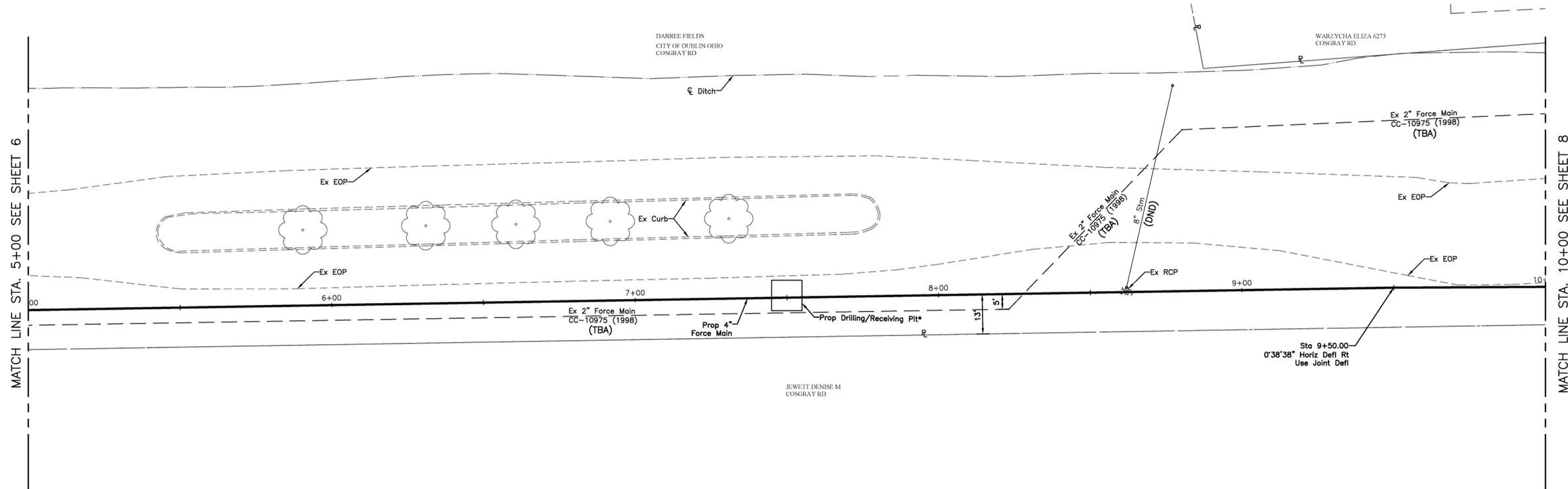


CITY OF DUBLIN, OHIO
SANITARY SEWER IMPROVEMENT
FOR
DARREE FIELDS
PUMP STATION UPGRADES
& 4-INCH FORCE MAIN
PLAN AND PROFILE

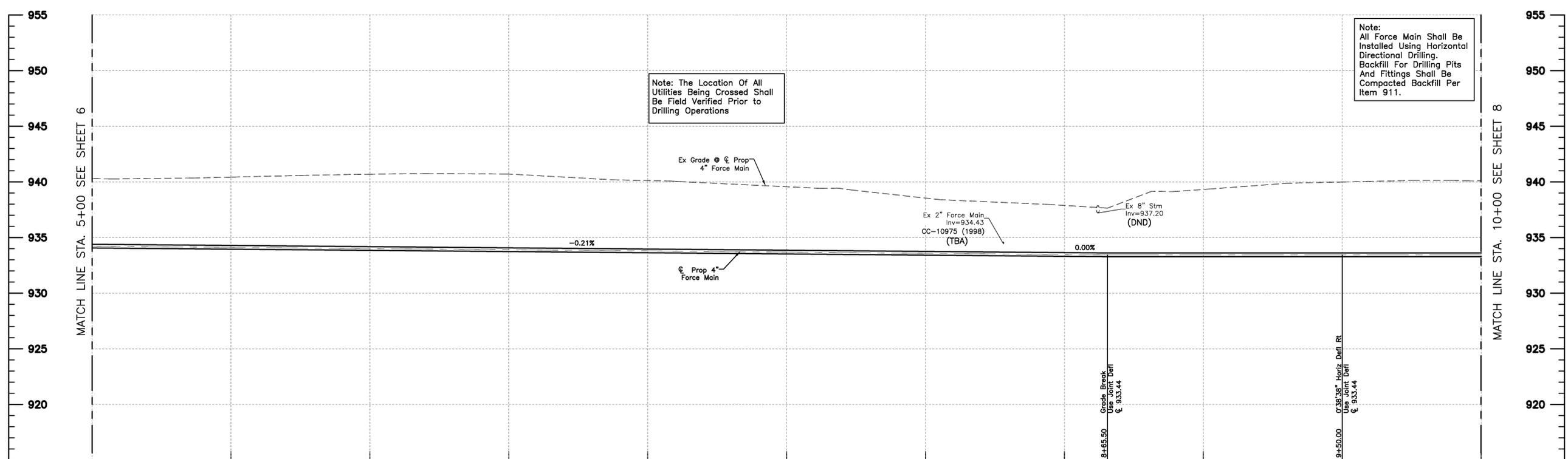


DATE	June 2015
SCALE	1" = 20'
JOB NO.	2015-0044
SHEET	6/11

CC-17050
DUBLIN PROJECT
15-018-CIP



* DRILLING/RECEIVING PIT LOCATIONS AS SHOWN ARE APPROXIMATE. FINAL LOCATIONS TO BE DETERMINED BY THE CONTRACTOR IN COORDINATION WITH THE OWNER.



Note: The Location Of All Utilities Being Crossed Shall Be Field Verified Prior to Drilling Operations

Note: All Force Main Shall Be Installed Using Horizontal Directional Drilling. Backfill For Drilling Pits And Fittings Shall Be Compacted Backfill Per Item 911.

STATION	5	6	7	8	9	10					
SURFACE	940.29	940.42	940.69	940.70	940.12	939.56	938.54	937.88	939.32	939.99	940.11
☉ OF PIPE	934.21	934.11	934.00	933.90	933.79	933.68	933.58	933.47	933.44	933.44	933.44
CUT	6.25	6.48	6.86	6.97	6.50	6.04	5.13	4.58	6.04	6.72	6.83

MARK	DATE	DESCRIPTION



CITY OF DUBLIN, OHIO
FOR
SANITARY SEWER IMPROVEMENT
**DARREE FIELDS
PUMP STATION UPGRADES
& 4-INCH FORCE MAIN
PLAN AND PROFILE**



DATE
June 2015

SCALE
1" = 20'

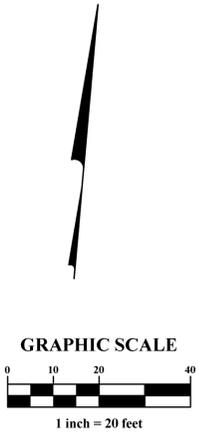
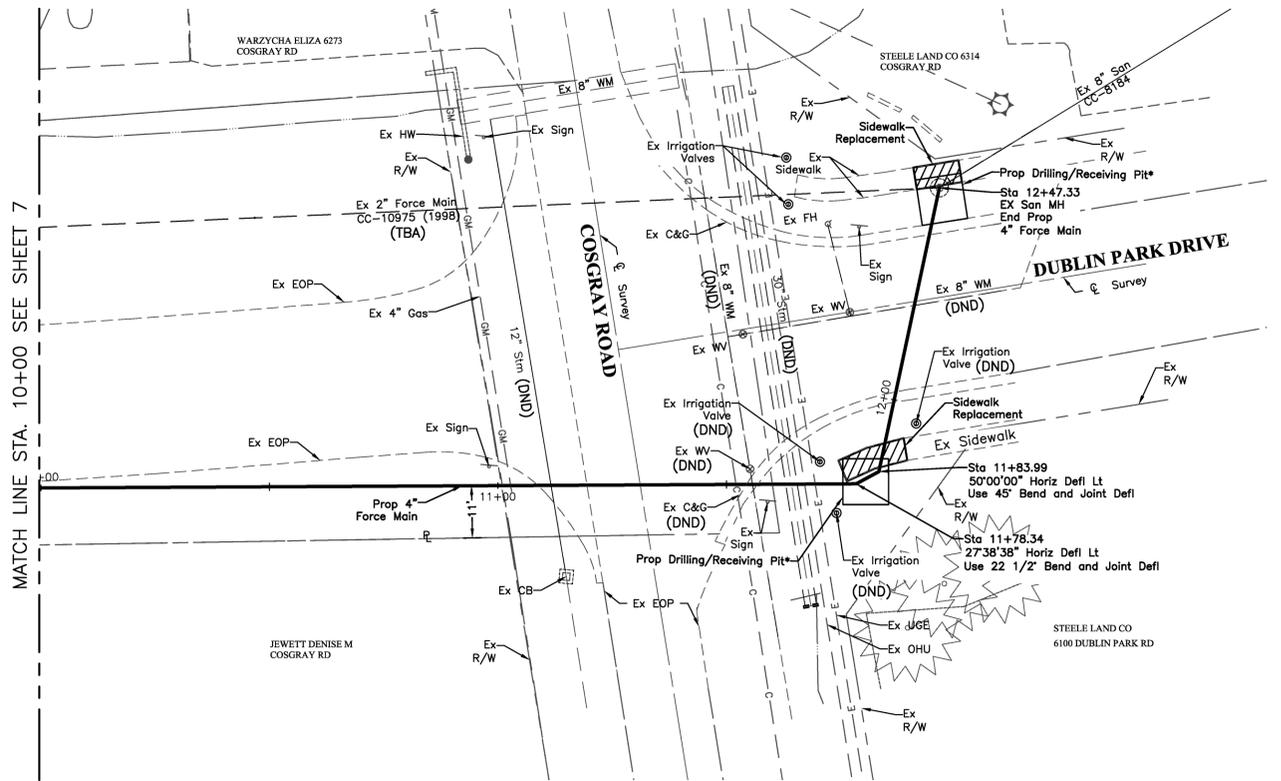
JOB NO.
2015-0044

SHEET
7/11

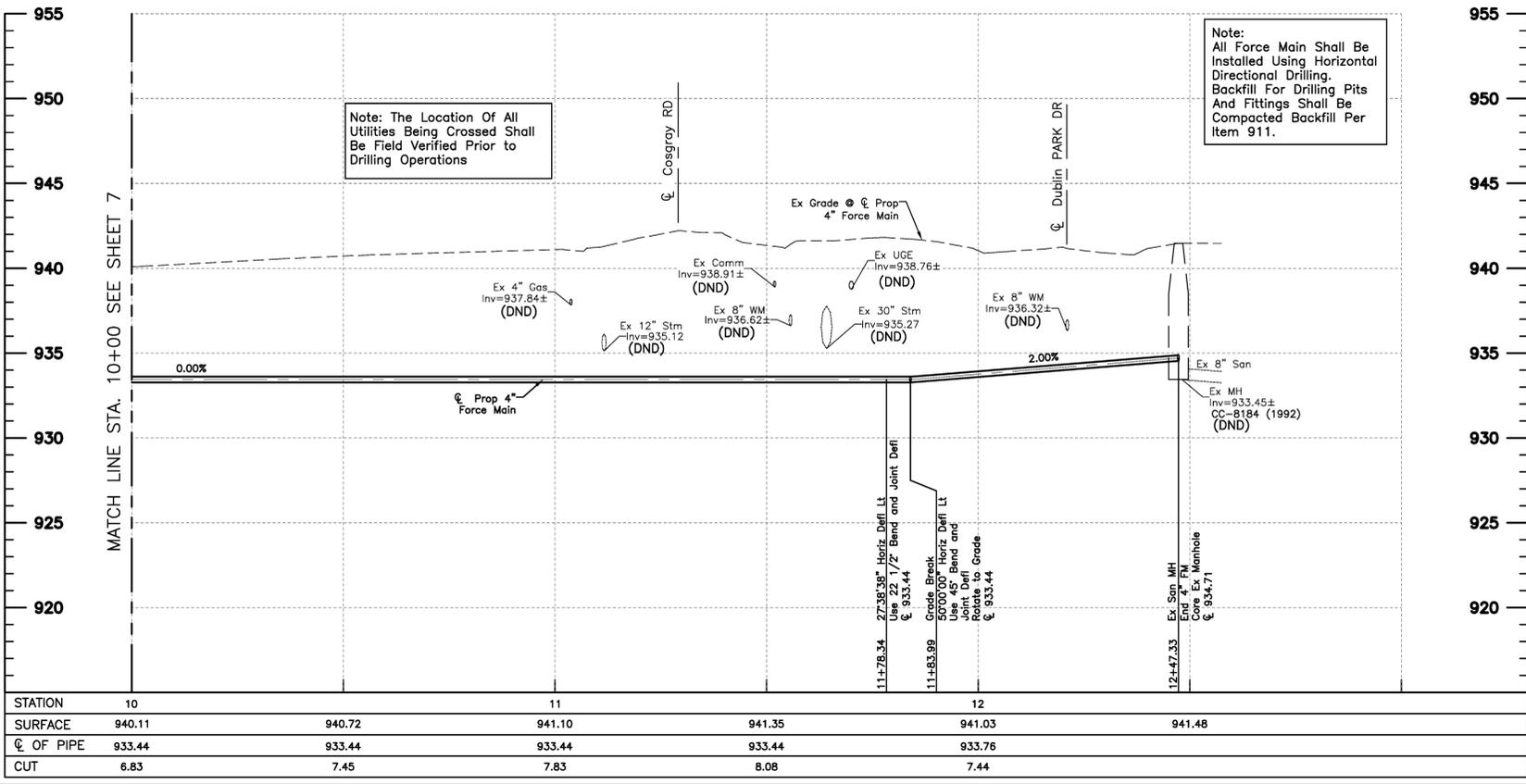
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DUBLIN PROJECT
15-018-CIP

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* DRILLING/RECEIVING PIT LOCATIONS AS SHOWN ARE APPROXIMATE. FINAL LOCATIONS TO BE DETERMINED BY THE CONTRACTOR IN COORDINATION WITH THE OWNER.



STATION	10	11	12	12+48
SURFACE	940.11	940.72	941.03	941.48
☉ OF PIPE	933.44	933.44	933.76	933.76
CUT	6.83	7.45	7.44	

MARK	DATE	DESCRIPTION



CITY OF DUBLIN, OHIO
 SANITARY SEWER IMPROVEMENT
 FOR
DARRREE FIELDS
PUMP STATION UPGRADES
& 4-INCH FORCE MAIN
 PLAN AND PROFILE



DATE	June 2015
SCALE	Horiz: 1" = 20' Vert: 1" = 5'
JOB NO.	2015-0044

EROSION & SEDIMENT CONTROL NOTES

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.

The Contractor shall place inlet and channel protection for erosion control immediately after construction of the inlets or channels which are not tributary to a sediment basin or dam.

It may become necessary to remove portions of the barrier during construction to facilitate the grading operations in certain areas. However, the barrier shall be in place in the evening or during any inclement weather.

All soil stockpiles, including trench excavation stockpiles shall be protected from erosion by perimeter control devices such as silt fences. These perimeter control devices shall be maintained throughout the life of the project. Excavated materials shall not be stored on existing public roadway pavements. This includes excess or unusable excavated soil.

The limits of seeding and mulching are all areas within the grading limits. Those areas disturbed outside the seeding limits shall be seeded and mulched at the Contractor's expense.

CMSC Item 207 - Construction Seeding: Any area which will be left dormant (undisturbed) for more than 14 days shall be seeded within 7 days of terminated work. If permanent seeding is not applied at this time, construction seeding shall be done which shall consist of fertilizing, watering and seeding at the rates indicated under Items 207 and 659.

Seeding has been assumed to be 5'-0" outside the work limits or the right-of-way, whichever is greater. 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.

The Requirements of CMSC Item 659 shall govern the construction of this work, except as noted. This work shall consist of all labor, equipment and materials necessary to permanently seed disturbed areas.

MAINTENANCE: It is the Contractor's responsibility to maintain the sediment control features used on this project. The site shall be inspected at a minimum of every seven days and within 24 hours of a one-half inch (0.5") or greater rain event. 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 City. Not all details shown on this sheet may be required for this project.

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

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 and maintenance 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 General Permit and the "Plan".

EROSION & SEDIMENT CONTROL PRACTICES SUBJECT TO FIELD MODIFICATION AT THE DIRECTION OF THE CITY OF DUBLIN AND/OR OHIO EPA.

EROSION & SEDIMENT CONTROL NARRATIVE

PLAN DESIGNER: EMH&T, Inc.
Engineers, Surveyors, Planners, Scientists
5500 New Albany Road
Columbus, Ohio 43054
Tel: 614-775-4500 FAX: 614-775-4800

DEVELOPER: City of Dublin
5800 Shier Rings Road
Dublin, Ohio 43016
Tel: (614) 410-4600
Fax: (614) 410-4699

PROJECT DESCRIPTION: Pump station and 4" force main installation.

EXISTING SITE CONDITIONS: The site currently consists of existing park with sports fields, parking lots and access roads.

AREAS OF DISTURBANCE: The project limits will be disturbed for pump station and force main installation.

RECEIVING STREAM: The site runoff drains to storm sewers and over land flow to South Fork Indian Run.

ADJACENT AREAS: The project is bounded by agricultural fields and sports complex.

CRITICAL AREAS: None.

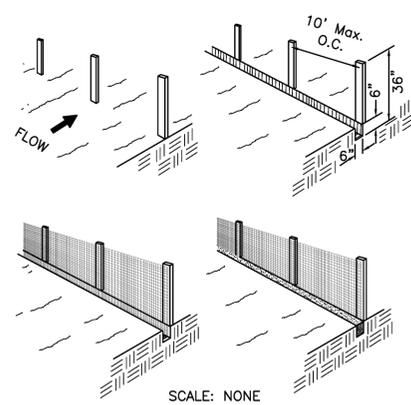
EROSION AND SEDIMENT MEASURES: Erosion and sediment will be controlled by the use of inlet protection at existing storm sewer structures and perimeter filter fabric fence.

PERMANENT STABILIZATION MAINTENANCE: All disturbed areas shall be seeded and mulched. All erosion control devices are to be inspected by the construction superintendent daily and after rainfalls. Any damaged facilities are to be replaced/repaid immediately as may be necessary.

SITE CONTACT: Same as Developer.

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

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.



SCALE: NONE

Maintenance Sediment fences and filter barriers shall be inspected immediately after each rainfall and at least daily during prolonged rainfall. Any required repairs shall be made immediately.

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

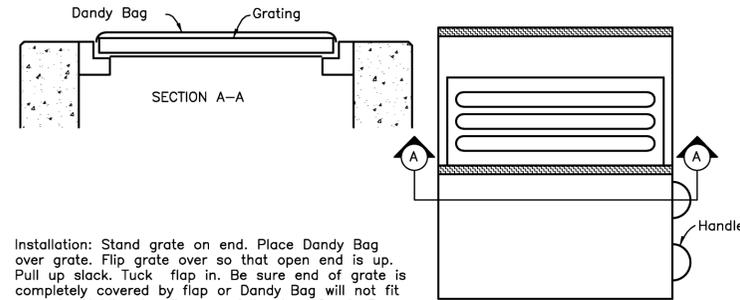
Sediment deposits should be removed after each storm event. They must be removed when deposits reach approximately one-half the height of the barrier.

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

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

- The height of a sediment fence shall not exceed 36-inches (higher fences may impound volumes of water sufficient to cause failure of the structure).

COC ITEM 207 - PERIMETER FILTER FABRIC FENCE - F1



Installation: Stand grate on end. Place Dandy Bag over grate. Flip 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.

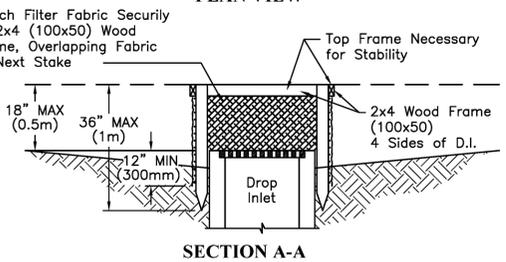
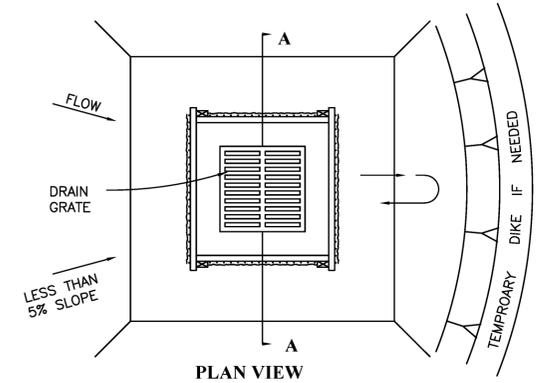
Maintenance: After silt has dried, remove it from the surface of Dandy Bag with broom.

ITEM 207 - INLET PROTECTION (DANDY BAG)

SCALE: NONE

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.

- Posts shall be spaced a maximum of 10 feet apart at the barrier location and driven securely into the ground (minimum of 16 inches). When extra strength fabric is used without the wire support fence, post spacing shall not exceed 6 feet.
- A trench shall be excavated approximately 6 inches wide and 6 inches deep along the line of posts and upslope from the barrier.
- When standard strength filter fabric is used, a wire mesh support fence shall be fastened securely to the upslope side of the posts using heavy duty wire staples at least 1-inch long, tie wires or hog rings. The wire shall extend into the trench a minimum of 2-inches and shall not extend more than 36-inches above the original ground surface.
- The standard strength 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 36-inches above the original ground surface. Filter fabric shall not be stapled to existing trees.
- When extra strength filter fabric and closer post spacing are used, the wire mesh support fence may be eliminated. In such a case, the filter fabric is stapled or wired directly to the posts with all other provisions of Item No. 6 applying.
- The trench shall be backfilled and soil compacted over the filter fabric.
- Sediment fences shall be removed when they have served their useful purpose, but not before the upslope area has been permanently stabilized.



- NOTES:**
- Drop Inlet Sediment Barriers are to be used for Small, Nearly Level Drainage Areas. (Less Than 5%)
 - Use 2"x4" (100x50mm) Wood or Equivalent Metal Stakes, 3' (1m) Minimum Length.
 - Install 2"x4" (100x50mm) Wood Top Frame to Insure Stability.
 - The Top of the Frame (Ponding Height) must be well Below the Ground Elevation Downslope to Prevent Runoff from by-passing the Inlet. A Temporary Dike may be Necessary on the Downslope Side of the Structure.

SILT FENCE DROP INLET PROTECTION

SCALE: NONE
PROVIDE FOR INLETS AS
ALTERNATE TO DANDY BAG

MARK	DATE	DESCRIPTION



CITY OF DUBLIN, OHIO
FOR
SANITARY SEWER IMPROVEMENT
DARRREE FIELDS
PUMP STATION UPGRADES
& 4-INCH FORCE MAIN
SEDIMENT & EROSION CONTROL

EMH&T
Evans, Mechwart, Hemberton & Tilton, Inc.
5500 New Albany Road, Columbus, OH 43254
Phone: 614.775.4500 Toll Free: 888.775.3448
emh.com

DATE
June 2015

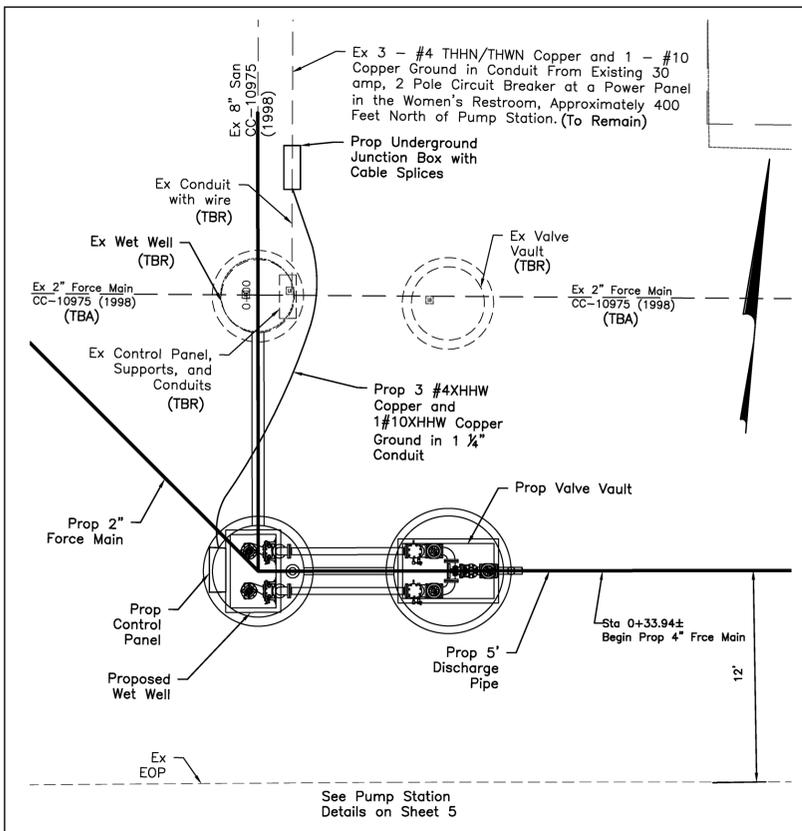
SCALE
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JOB NO.
2015-0044

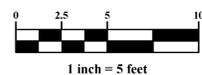
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CC-17050
DUBLIN PROJECT
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**SITE PLAN
GRAPHIC SCALE**

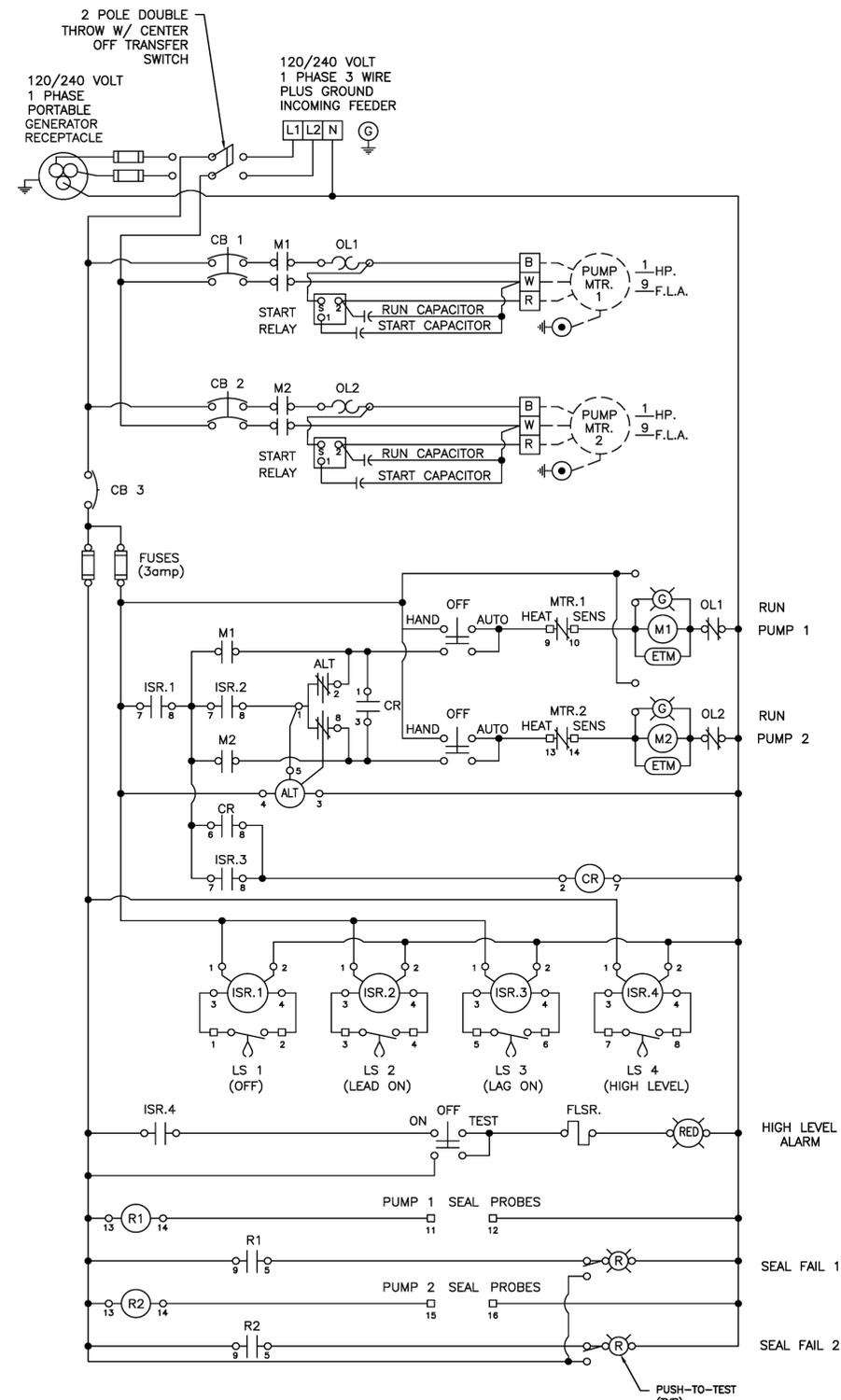


See Pump Station
Details on Sheet 5

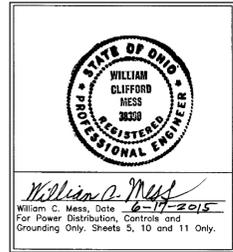
CONTROL PANEL DESCRIPTION

A control panel, as manufactured by Ohio Electric Control, Inc. or equal, shall be provided with the following features:

- A. Enclosure**
The pump controls shall be contained in an enclosure manufactured of 14 gauge stainless steel (NEMA type 4X rated). The enclosure shall have padlocking provisions and a piano hinge. A painted steel back panel shall be provided in the control enclosure to mount circuit breakers, starters, relays and other control equipment. The enclosure shall contain a full aluminum inner-door with lift off hinges for mounting lights and switches and to protect the operator from high voltage.
- B. Electrical Power**
The incoming power shall be 120/240 volts, 1 phase, 60 hertz. The control voltage shall be 120 volts, 1 phase, 60 hertz.
- C. Power Terminal Blocks**
The control panel shall contain terminals for field wiring of the normal power, pump motor(s), pump sensors and level control equipment. They shall be sized per NEC requirements and shall be as manufactured by Marathon Products, Inc. or equal.
- D. Emergency Power Connection**
A manual transfer switch and generator receptacle shall be supplied to operate the station under loss of normal power. The switch and receptacle shall be sized accordingly to operate all controls, pumps and accessories for the lift station. The transfer switch shall be mounted inside the control panel with the operator handle through the inner door. The generator receptacle shall be mounted to the exterior side of the enclosure. Provide a matching plug for the generator receptacle.
- E. Circuit Breakers/Fuses**
Circuit breakers shall be provided for each pump. A separate circuit breaker shall be provided for the control circuit. All circuit breakers shall be thermal magnetic type and be sized per NEC requirements. Separate control and alarm fuses must be provided in the control panel.
- F. Starters**
A properly sized NEMA rated starter shall be provided for each pump. Definite purpose contactors with overload shall not be acceptable. The overload shall be Class 10 ambient compensated type rated and shall be capable of being manually reset. The starters shall be as manufactured by Eaton Cutler-Hammer or equal.
- G. Start Components**
Properly rated start components for 1 phase motors shall be provided inside the control panel. Start components shall comprise of a start relay, start capacitor and run capacitor for each pump as required.
- H. Controller**
A solid-state alternator, as manufactured by Ohio Electric Control, Inc., shall be provided to alternate pumps on each pumping cycle. The control shall include circuitry that will start the second or lag pump if the inflow is greater than one pump can handle. In this instance, both pumps shall run until the level drops below the "off" float.
- I. Lights and Switches**
A separate run light and hand-off-auto switch shall be provided for each pump. The lights and switches must be mounted to the full inner-door. A separate on-off-test switch shall be provided to test the high level alarm. The run lights shall be green. All lights and switches shall be 30mm heavy-duty oil-tight. Pilot lights shall be full voltage push-to-test type with LED lamps.
- J. Elapsed Time Meters**
A separate elapsed time meter shall be provided for each pump and must be mounted to the full inner-door. The meters shall display pump run time in hours and tenths of hours and shall be as manufactured by Grasslin, Redington or equal.
- K. Pump Sensors**
Each pump shall contain sensors for over-temperature (heat sensor) and seal failure (probe). The heat sensor shall stop the corresponding pump based upon the pump manufacturer's temperature requirements. The pump shall restart automatically when it cools. A probe in the pump shall detect moisture leakage through the pump seal. Relays in the control panel shall work in conjunction with the probes to detect moisture in the pump. Upon occurrence of moisture in the pump seal, an indicator light mounted on the full inner-door of the control panel shall be illuminated. The seal fail lights shall be red 30mm heavy-duty oil-tight. The probe sensing relays shall be as required by the pump manufacturer.
- L. Alarm**
A visual flashing alarm shall be mounted to the top, exterior of the control panel. The alarm shall contain a lexan lens and provide bulb replacement without removal of the lens from the control panel. The visual alarm must be rated NEMA 4X and shall be one as manufactured by Ohio Electric Control, Inc. The visual alarm shall be initiated by high level.
- M. Level Control**
The pumps control panel shall be operated by four (4) float switches located in the wet well. Each float switch shall be connected to an intrinsically safe relay (ISR) located in the control panel. The ISRs shall be UL 913 listed and labeled and shall be Model #ISO-120-AFA as manufactured by Diversified Electronics. The levels shall correspond as follows:
 1. Both Pumps Off
 2. Lead Pump On
 3. High Level
 4. Lag Pump On
- N. Labeling**
Each component mounted on the inner-door shall be labeled with a plastic engraved nameplate of black letters on a white background. The back panel shall be labeled with laminated paper labels.
- O. Wiring**
All wiring shall be sized according to NEC/UL and shall be placed in plastic wireway or similar devices.
- P. Spare Parts**
Spare fuses shall be provided for each type and quantity provided in the control panel.
- Q. Shop Drawings and Submittal Information:**
The submitted information shall include the following:
 1. Electrical Schematics with:
 - a. Sequence of Operations
 2. Dimensioned Component Layout of Inner-Door and Back Panel
 3. Bill of Materials
 4. Manufacturers Component Catalog Sheets
- R. Compliance**
The control panel must comply with the National Electrical Code and be "UL 698A" listed and labeled.
- S. Installation**
All equipment shall be installed, configured, interconnected, and commissioned by qualified persons, in accordance with the manufacturer's instructions and guidelines, and in compliance with all governing regulations and accepted engineering practices.



CONTROL PANEL SCHEMATIC DIAGRAM
Not to Scale



MARK	DATE	DESCRIPTION



CITY OF DUBLIN, OHIO
FOR
SANITARY SEWER IMPROVEMENT
**DARREE FIELDS
PUMP STATION UPGRADES & 4-INCH
FORCE MAIN**
SITE PLAN & CONTROL PANEL DIAGRAM AND NOTES



DATE	June 2015
SCALE	As Noted
JOB NO.	2015-0044
SHEET	10/11

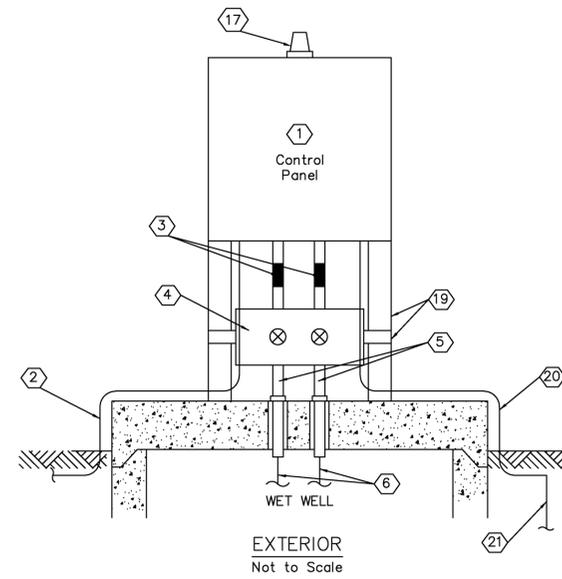
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DUBLIN PROJECT
15-018-CIP

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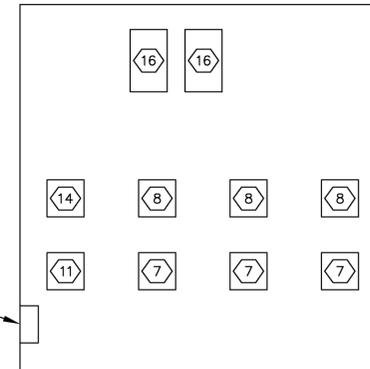
ELECTRICAL SPECIFICATIONS

1. Refer to all details, notes, specifications, and schedules on drawings for a complete description of the requirements for electrical work associated with the project.
2. All electrical work and wiring in strict accordance with latest edition of National Electrical Code, OSHA, and relevant city and state codes. All wiring shall be run in full - weight rigid steel conduit, galvanized or sheradized inside and out or schedule 40 PVC. Joints in No. 10 and smaller wire - "Scotchlok" and "Scotch No. 33 Plus" electrical tape; No. 8 and larger wire - pressure - type mechanical connectors and "Scotch No. 33 Plus" tape. Provide properly sized terminal blocks for all connections in junction box below control panel. Provide hazardous location wiring in wet well, Class 1, Division 1, Group D. All Cutting in control panel to be such that panel is still weatherproof. Schedule 40 PVC conduit may be used underground.
3. Underground junction box shall be 13" x 24" Quazite PG style, stackable with open bottom and depth as required. Provide gasketed heavy duty cover with two bolts. install on 6" deep stone.
4. Provide a permanent water resistant cable splicing kit for cable connections below ground line in junction box. Use kits that provide splices in compliance with ANSI C119.1 when applied in accordance with the manufacturer's instructions.
5. Wiring layout is schematic. Electrical Contractor shall make minor adjustments to coordinate with other work.
6. All materials and equipment installed under this contract shall be new and underwritered. Materials for which examination service is provided shall bear the Underwriter's Label.
7. The electrical Contractor shall pay for all permits and fees required for the execution of his work.
8. The electrical Contractor shall provide all temporary wiring for other Contractors upon demand. The Contractor requiring the service shall pay the electrical Contractor a reasonable price for the work.
9. The electrical Contractor shall guarantee his entire electrical installation against defects in workmanship and material for a period of one year after the date of acceptance by the Owner.
10. All cutting and patching that is required to install the work of this contract is the responsibility of the electrical Contractor. No cutting shall be done which will in any way reduce structural strength.
11. Ground all piping in wet well with Thermoweld Ground Connection. Ground Control panel and raceways leaving or entering control panel. Install separate ground conductors in all conduit and raceways.
12. Startup, demonstration, and instruction - the Contractor shall adjust all devices and controls (including float levels) for proper operation. The Contractor shall place the system in operation and shall demonstrate the operation to the designated representative(s). Instruction shall be given to the representative(s) regarding all features and proper maintenance. At the representative(s) discretion, a portable emergency generator may be brought to the site (by the representative(s)) for a live demonstration by the Contractor that the system will function properly under emergency conditions.

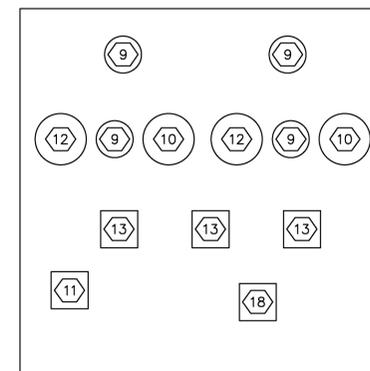
CONTROL PANEL DETAILS



EXTERIOR
Not to Scale



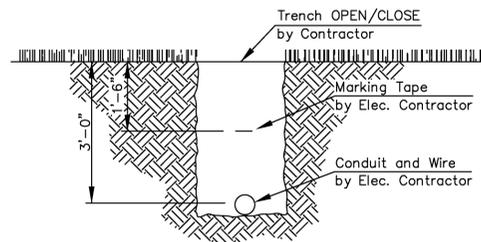
INTERIOR BACK PANEL
Not to Scale



INNER DOOR
Not to Scale

DETAIL NOTES

1. Control Panel, NEMA 4X stainless steel enclosure. Refer to the Control Panel Description on Sheet 10. Mount alarm beacon on top of enclosure with water tight hubs. Provide an Arc Flash Hazard warning sign on the outside front door of the panel enclosure in accordance with the National Electrical Code paragraph 110.16.
2. Underground electrical conduit from underground junction box. 3-#4 XHHW copper and 1 - #10 XHHW copper ground in 1 1/4" conduit. Use rigid steel conduits above grade and PVC conduits below grade.
3. Seal offs in 1" conduits with 8 - #12 XHHW copper in 1 - 1" conduit and 16 - #14 XHHW copper in 1 - 1" conduit.
4. 12" x 12" x 24" stainless steel junction box with the following features:
 - a. 12" x 24" door with piano hinge and hasp with lock
 - b. Terminal strips
 - c. Divider between power and control compartments
 - d. 4 - 2" diameter ventilation openings with stainless wire mesh opening covers
5. 2 - 2" conduits, one for power, one for control. Seal junction box from wet well with duct sealer.
6. Pump power and control cords furnished with pump motors. Float cords furnished with pump station. Provide insulated cord grips and slack for all cords at top of wet well.
7. Relays (as required).
8. Circuit breakers.
9. Pilot lights.
10. Elapsed time meters.
11. 30 ampere double-pole double throw transfer switch three position normal-off-generator with pad lockable handle through inner door. Protect emergency power feed with 30 amp fuses.
12. Pump selector switches.
13. Circuit breaker handles.
14. Pump alternator.
15. 60 amp 3 wire 4 pole reverse service NEMA 4X generator receptacle. Provide a matching plug for the generator receptacle and give it to the Owner. The Contractor shall verify amperage, configuration and model with Owner.
16. Motor starters.
17. Alarm beacon.
18. Alarm test switch.
19. Galvanized Unistrut support channels. Provide double channels for vertical supports and single channels for horizontal supports. Provide end caps on all supports.
20. 1 - #6 copper ground in 3/4" PVC conduit.
21. 3/4" x 10' copper clad steel ground rod with Cadweld connection.



SECONDARY TRENCH DETAIL
Not to Scale
All Work by Electrical Contractor

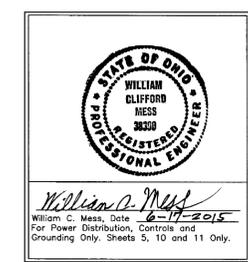
MARK	DATE	DESCRIPTION



CITY OF DUBLIN, OHIO
SANITARY SEWER IMPROVEMENT
FOR
DARREE FIELDS
PUMP STATION UPGRADES
ELECTRICAL NOTES AND DETAILS



DATE	June 2015
SCALE	None
JOB NO.	2015-0044
SHEET	11/11



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