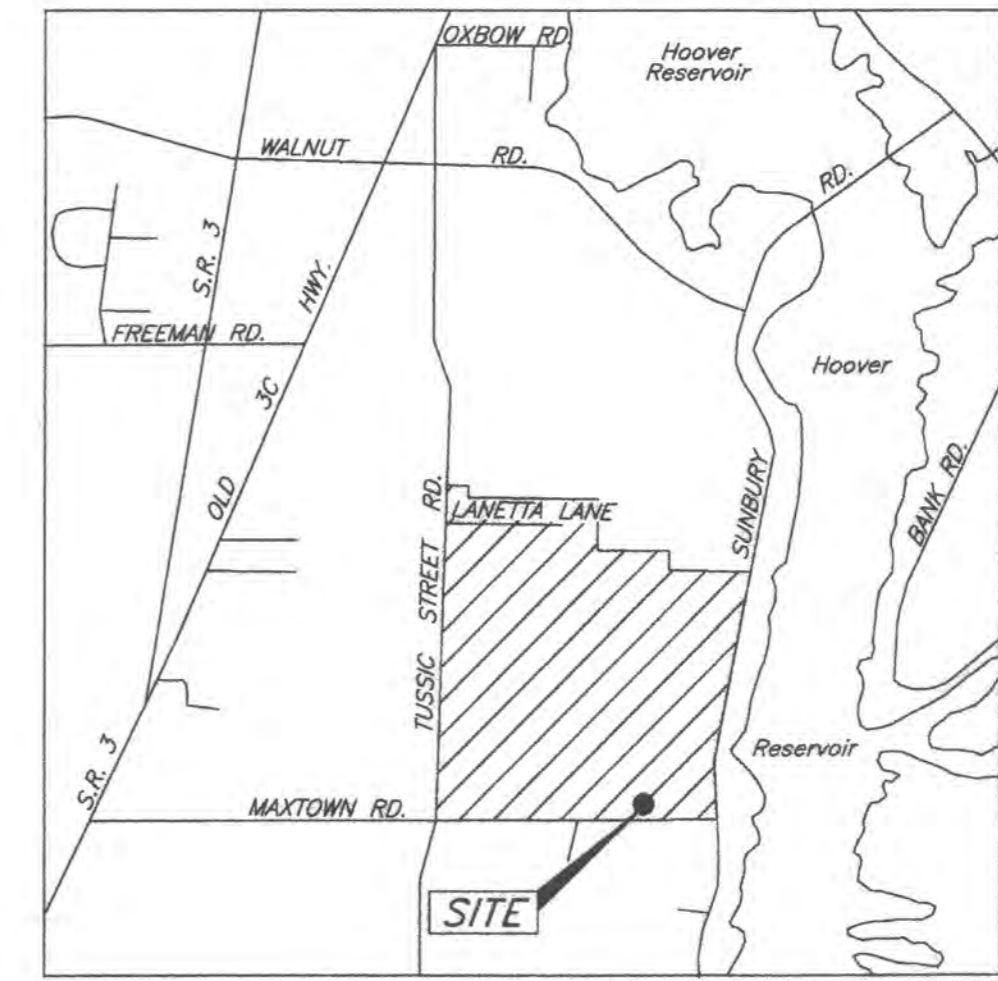


DELAWARE COUNTY, OHIO PUMP UPGRADE PLAN FOR MAXTOWN ROAD SANITARY PUMP STATION UPGRADE

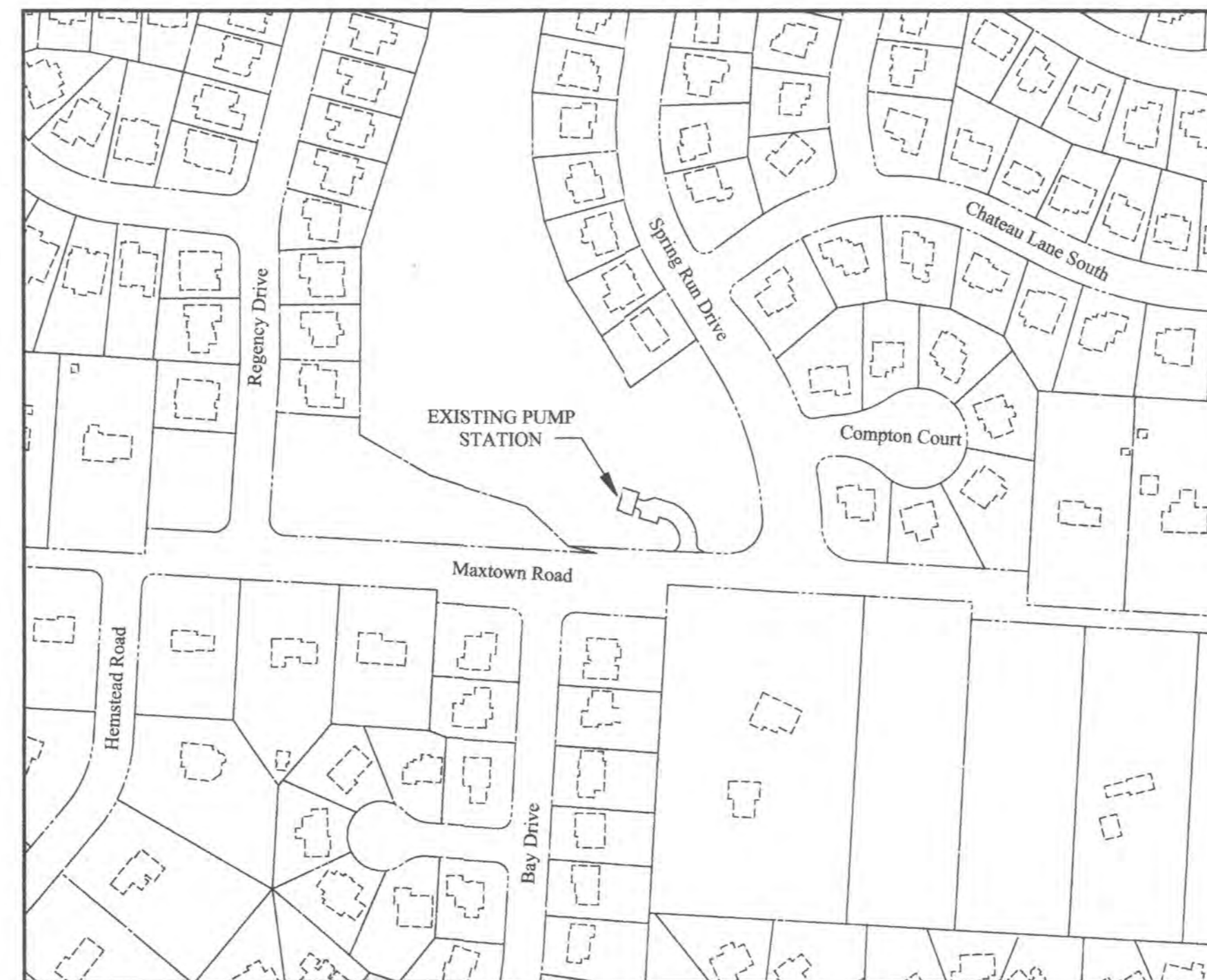
2015



INDEX MAP
Not To Scale

SHEET INDEX

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PAID 10/27/15
10/27/15
10/27/15

**SEWERAGE
APPROVED**
OHIO ENVIRONMENTAL PROTECTION AGENCY
AS EVIDENCED BY COPY OF
LETTER OF APPROVAL
HERETO ATTACHED

OWNER
Delaware County Regional
Sewer District
50 Channing Street
Delaware, OHIO 43015
Tel: (614) 833-2240

DEVELOPER/
Epcos Communities
Mr Todd Pomorski
500 Stonehenge Parkway
Dublin, Ohio 43017
Tel: (614) 761-1010

ENGINEER
EMHT Inc.
Marcia Bland, PE
5500 New Albany Road
Columbus, Ohio 43054
Tel: (614) 775-4385
Fax: (614) 775-4804

DELAWARE COUNTY APPROVAL

The Delaware County Engineer's signature on this plan signifies only concurrence with the general purpose and location of the proposed improvements with respect to improvements within the right-of-way, storm water management, erosion and sediment control. All technical details remain the responsibility of the Professional Engineer who prepared and certified these plans.

Approved this 30th day of Sept., 2015 *Siffany A. Jenkins*
Delaware County Sanitary Engineer

Approved this _____ day of _____, 2015 *Larry Ward*
County Commissioner

Approved this 5th day of Oct, 2015 *Barb Lewis*
County Commissioner

Approved this 5th day of Oct, 2015 *Jeff Benton*
County Commissioner

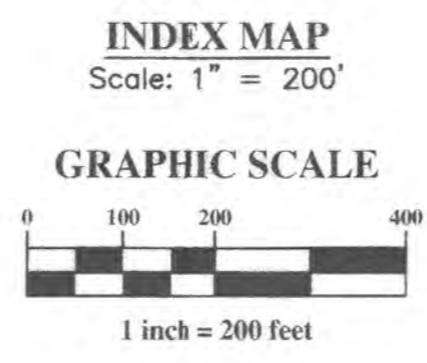
Approved this _____ day of _____, 2015 N/A
Delaware County Engineer

ENGINEER'S CERTIFICATION

This is to certify that good engineering practices have been utilized in the design of this project and that all of the minimum standards as delineated in the Delaware County Design, Construction and Surveying Standards Manual have been met, including those standards greater than minimum where, in my opinion, they are needed to protect the safety of the public. Any variances to the above standards are consistent with sound engineering practice and are not detrimental to the public safety and convenience. These variances have been listed herein and have been approved by the Delaware County Engineer.

Marcia M. Bland 9/25/15
Registered Engineer No. _____ Date

ESTIMATE OF QUANTITIES			
ITEM	QUANTITY	UNIT	DESCRIPTION
01	1	L.S.	PIPING, COMPLETE
02	3	EACH	PUMP (FLYGT NT 3171), INSTALLED COMPLETE
03	1	L.S.	ELECTRICAL UPGRADE, COMPLETE
04	1	EACH	PUMP (FLYGT NT 3171) SPARE

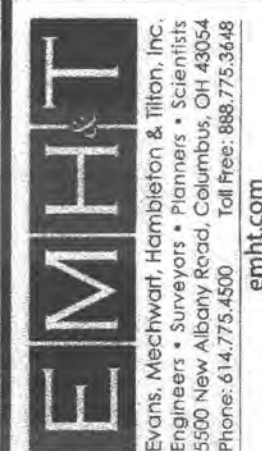


CHANGE ORDER SCHEDULE						
CHANGE	PREPARED	DATE OF CHANGE	DESCRIPTION OF CHANGE	SHEET NO.	APPROVED	DATE OF APPROVAL

MARK	DATE	DESCRIPTION

EPCOS COMMUNITIES

DELAWARE COUNTY, OHIO
PUMP UPGRADE PLAN
FOR
MAXTOWN ROAD
SANITARY PUMP STATION
UPGRADE



DATE
JUNE, 2015

SCALE
As Noted

JOB NO.
20150222

SHEET
1/4

GENERAL NOTES

THE COUNTY OF DELAWARE REQUIREMENTS, TOGETHER WITH THE SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING ALL SUPPLEMENTS THERETO, SHALL GOVERN ALL CONSTRUCTION ITEMS THAT ARE A PART OF THIS PLAN. THE CONTRACTOR SHALL REFER TO THE "STANDARD PLANS AND SPECIFICATIONS FOR CONSTRUCTION OF SANITARY FACILITIES IN DELAWARE COUNTY, OHIO" FOR ALL NECESSARY CONSTRUCTION DETAILS AND SPECIFICATIONS.

THE CONTRACTOR SHALL NOTIFY THE COUNTY SANITARY ENGINEER'S OFFICE FORTY EIGHT (48) HOURS PRIOR TO CONSTRUCTION.

ANY MODIFICATION TO THE WORK AS SHOWN ON THESE DRAWINGS MUST HAVE PRIOR WRITTEN APPROVAL BY THE COUNTY SANITARY ENGINEER.

THE CONTRACTOR AND SUBCONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE AND LOCAL SAFETY REQUIREMENTS, TOGETHER WITH EXERCISING PRECAUTIONS AT ALL TIMES FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT IS ALSO THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND SUBCONTRACTOR TO INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK.

ROOF DRAINS, FOUNDATION DRAINS AND OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWER SYSTEM ARE PROHIBITED ON THIS PROJECT.

THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS.

THE DELAWARE COUNTY SANITARY ENGINEER'S OFFICE SHALL HAVE AUTHORITY OVER ALL SANITARY SEWER ITEMS ASSOCIATED WITH THIS PLAN.

A PRE-CONSTRUCTION MEETING SHALL BE HELD 14 DAYS PRIOR TO CONSTRUCTION, AND DELAWARE COUNTY, AMONG OTHERS, SHALL BE CONTACTED.

SITE VISIT

THE CONTRACTOR SHALL PERFORM FIELD RECONNAISSANCE TO BECOME ACQUAINTED WITH THE EXISTING SITE CONDITIONS AND THE POTENTIAL AFFECTS UPON THE WORK SCOPE. ANY PERFORMANCE OF ADDITIONAL SITE SUBSURFACE INVESTIGATIONS (TEST HOLES) SHALL BE COORDINATED IN ADVANCE WITH THE OWNER AS WARRANTED. EXCAVATED MATERIAL SHALL BE REPLACED IN A CONTROLLED MANNER TO MINIMIZE IMPACT ON FIELD EARTHWORK OPERATIONS.

RIGHTS-OF-WAY

IN ADDITION TO DIRECT REQUIREMENTS OF THE CONTRACT SPECIFICATIONS, THE CONTRACTOR SHALL OBSERVE AND CONFORM TO THE SPECIFIC REQUIREMENTS OF ALL RIGHTS-OF-WAY INCLUDING EASEMENTS, COURT ENTRIES, RIGHTS-OF-ENTRY OR ACTION FILED IN COURT IN ACCORDANCE WITH THE CODE OF APPLICABLE GOVERNING AGENCY. THE COST OF THE OPERATIONS NECESSARY TO FULFILL SUCH REQUIREMENTS SHALL BE INCLUDED IN THE PRICE BID FOR THE SANITARY SEWER IMPROVEMENTS.

EXISTING UTILITIES

THE IDENTITY AND LOCATION OF THE EXISTING UNDERGROUND UTILITY FACILITIES KNOWN TO BE LOCATED IN THE CONSTRUCTION AREA, AS PROVIDED BY THE OWNER OF THE UNDERGROUND UTILITY, HAVE BEEN SHOWN ON THE PLANS AS ACCURATELY AS POSSIBLE. DELAWARE COUNTY AND/OR THE ENGINEER ASSUMES NO RESPONSIBILITY TO THE ACCURACY OR THE DEPTHS OF THE UNDERGROUND FACILITIES SHOWN ON THE PLANS.

INVESTIGATION, LOCATION, SUPPORT, PROTECTION AND RESTORATION OF ALL EXISTING UTILITIES AND APPURTENANCES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THIS WORK INCLUDES MAINTENANCE OF ADEQUATE DEPTH ON ALL EXISTING UTILITY FACILITIES. THE CONTRACTOR IS RESPONSIBLE TO IDENTIFY AND COORDINATE FIELD STAKEOUT OF ALL LOCATIONS OF POSSIBLE GRADE CONFLICTS WITH EXISTING UTILITIES PRIOR TO CONSTRUCTION. THE COST OF THIS WORK SHALL BE INCLUDED IN THE BID PRICE FOR THE SANITARY SEWER IMPROVEMENTS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE RELOCATION AND/OR PROTECTION OF ANY UTILITIES AS REQUIRED BY THE PLAN WITH THE OWNER OF THE AFFECTED UTILITY.

PRIVATE UTILITY MANHOLES WITHIN THE LIMITS OF THE WORK SHALL BE READJUSTED TO GRADE BY THE RESPECTIVE UTILITY.

UTILITY POLES WITHIN THE INFLUENCE OF THE UTILITY OPERATIONS SHALL BE REINFORCED BY THE UTILITY COMPANY PRIOR TO THESE CONSTRUCTION ACTIVITIES. NOTIFICATION OF THE UTILITY COMPANY PRIOR TO CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

THE CONTRACTOR SHALL CAUSE NOTICE TO BE GIVEN TO THE OHIO UTILITIES PROTECTION SERVICE (TELEPHONE 800-362-2764 TOLL-FREE) AND TO THE OWNERS OF THE UNDERGROUND UTILITIES WHO ARE NOT MEMBERS OF A REGISTERED UNDERGROUND PROTECTION SERVICE IN ACCORDANCE WITH SECTION 153.64 OF THE REVISED CODE. THE ABOVE MENTIONED NOTICE SHALL BE GIVEN AT LEAST FORTY EIGHT (48) HOURS PRIOR TO START OF CONSTRUCTION.

THE FOLLOWING UTILITIES AND OWNERS ARE LOCATED WITHIN THE WORK LIMITS OF THIS PROJECT AND DO NOT SUBSCRIBE TO A REGISTERED UNDERGROUND UTILITY PROTECTION SERVICE:

UTILITY	CONTACTING AGENT	TELEPHONE
Sanitary Sewer Facilities	Delaware County Sanitary Engineer 50 Channing Street Delaware, OH 43015	(740) 833-2240
Water Facilities	Del-Co Water Company 6773 Olentangy River Road Delaware, OH 43015	(740) 548-7746
Storm Sewer Facilities	Delaware County 50 Channing Street Delaware, OH 43015	(740) 833-2240
Electric:	American Electric Power Richard Kerns 850 Tech Center Drive Gahanna, OH 43230	(614) 883-6968
Gas:	Columbia Gas 920 W. Goodale Blvd. Columbus, OH 43215	(614) 460-2172
Telephone:	AT&T Ron Harrison	(614)-883-6862
Cable:	Time Warner Cable 1266 Dublin Road Columbus, OH 43215	(740) 363-9963

NON-RUBBER TIRED VEHICLES

NON-RUBBER TIRED VEHICLES SHALL NOT BE MOVED ON PUBLIC STREETS, PRIVATE ROADWAYS OR PARKING LOTS. NO EXCEPTIONS SHALL BE GRANTED.

STORAGE OF EQUIPMENT AND MATERIALS

NO MATERIALS OR EQUIPMENT SHALL BE STORED WITHIN THE RIGHT-OF-WAY OR WITHIN ONE

HUNDRED(100) FEET OF ANY INTERSECTING STREET OR DRIVEWAY. COMPLIANCE WITH THESE REQUIREMENTS ALONG WITH ADDITIONAL PROVISIONS OF THE CONTRACT SPECIFICATIONS SHALL NOT IN ANY WAY RELIEVE THE CONTRACTOR OF HIS LEGAL RESPONSIBILITIES OR LIABILITIES FOR THE SAFETY OF THE PUBLIC. THE CONTRACTOR SHALL INDICATE HIS INTENT WITH REGARD TO STORAGE OF MATERIAL AT THE PRE-CONSTRUCTION MEETING.

CONVENIENCE FACILITIES

THE CONTRACTOR SHALL FURNISH AND MAINTAIN SANITARY CONVENIENCE FACILITIES FOR THE WORKMEN AND INSPECTORS FOR THE DURATION OF THE WORK. COST SHALL BE INCLUDED IN THE PRICE BID FOR THE SANITARY SEWER IMPROVEMENTS.

PUMP STATION SPECIFICATIONS

WORK UNDER THIS SECTION INCLUDES FURNISHING AND INSTALLING THE PUMP STATION, COMPLETE AS SHOWN ON THE DRAWINGS, GENERAL SPECIFICATIONS AND AS SPECIFIED HEREIN.

PIPING

THE CONTRACTOR SHALL SUPPLY AND INSTALL ALL PIPING AND VALVES REQUIRED IN THE CONCRETE WET WELL FLANGED JOINT-DUCTILE IRON PIPE SHALL BE CLASS 53 CHAMBER AS SHOWN ON THE DRAWINGS. CONFORMING TO AWWA C-110, C-150 AND C-151 W/ RUBBER GASKETS PER C-111.

PUMPS

CONTRACTOR SHALL FURNISH AND INSTALL THE THREE PUMPS AS SHOWN ON THE FOLLOWING TABLE UNDER THIS CONTRACT.

PUMP DATA

TOTAL NO. OF FLYGT MANUFACTURED PUMPS	3
PUMP MODEL	NT 3171
PUMP DESIGN FLOW (1 PUMP IN OPERATION)	1150 gpm
TOTAL DYNAMIC HEAD	69
IMPELLER DIAMETER	454 mm

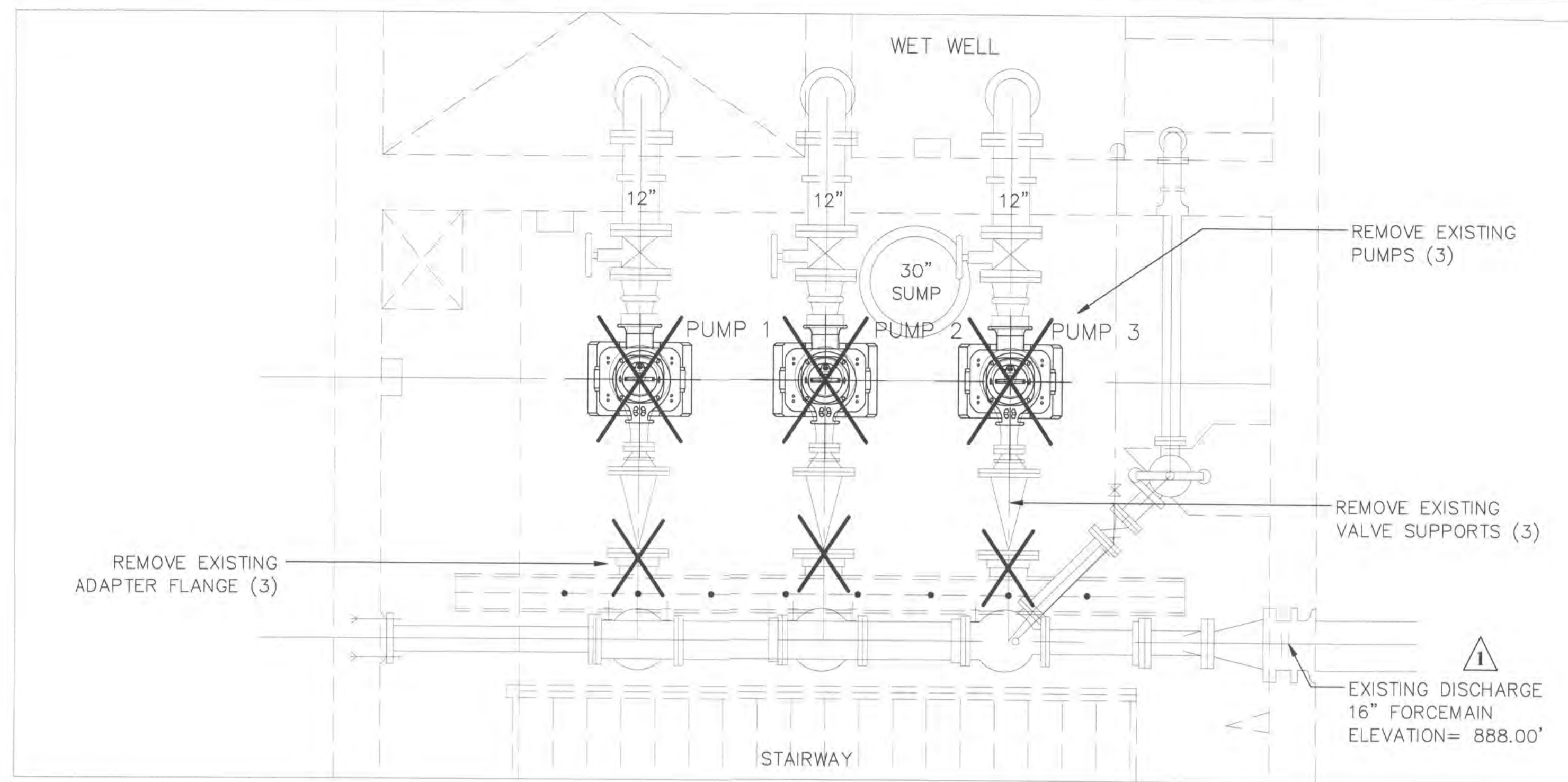
START-UP

THE CONTRACTOR SHALL ARRANGE AND CONDUCT A PUMP STATION START-UP MEETING WITH THE OWNER. ALL MANUFACTURERS REPRESENTATIVES SHALL BE PRESENT AT THE START-UP MEETING. THE PUMPS AND PIPING WILL NEED TO BE INSTALLED AND STARTED UP INDIVIDUALLY TO KEEP THE PUMP STATION IN SERVICE.

THE CONTRACTOR SHALL SUBMIT A SCHEDULE FOR START-UP TO THE COUNTY FOR REVIEW AND APPROVAL. EACH MANUFACTURER SHALL PROVIDE A MINIMUM OF FOUR (4) COPIES OF ALL APPLICABLE OPERATION AND MAINTENANCE MANUALS TO THE CITY AND ONE ELECTRONIC VERSION OF THESE DOCUMENTS DURING TRAINING.

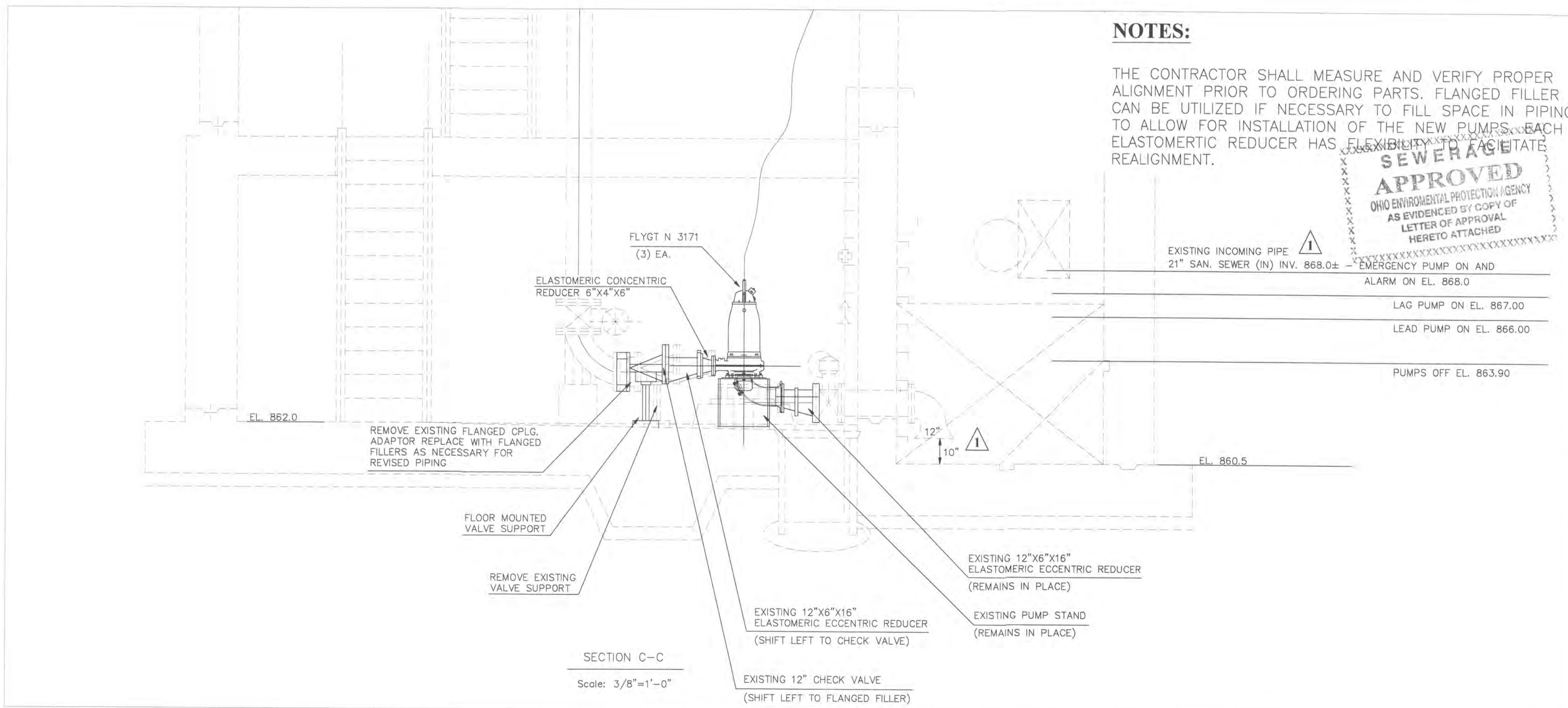
RECORD PLANS

THE DEVELOPER IS RESPONSIBLE FOR PROVIDING "RECORD PLAN" CONSTRUCTION DRAWINGS TO THE COUNTY AFTER THE PROJECT HAS BEEN COMPLETED. THE PLANS MUST INCLUDE "AS CONSTRUCTED" ELEVATIONS FOR THE ENTIRE STRUCTURE AND IDENTIFY ANY AND ALL FIELD MODIFICATIONS TO, AND DEVIATIONS FROM, THE APPROVED PLAN SET. PRIOR TO FINAL ACCEPTANCE, THE DEVELOPER SHALL SUBMIT FOUR COPIES OF RECORD PLANS AS WELL AS AN ELECTRONIC VERSION FOR THE COUNTY'S USE.



REMOVAL PLAN

REPLACEMENT PLAN



NOTES:

THE CONTRACTOR SHALL MEASURE AND VERIFY PROPER ALIGNMENT PRIOR TO ORDERING PARTS. FLANGED FILLER CAN BE UTILIZED IF NECESSARY TO FILL SPACE IN PIPING TO ALLOW FOR INSTALLATION OF THE NEW PUMPS. EACH ELASTOMERIC REDUCER HAS FLEXIBILITY TO FACILITATE REALIGNMENT.



- EXISTING INCOMING PIPE 21" SAN. SEWER (IN) INV. 868.0± - EMERGENCY PUMP ON AND ALARM ON EL. 868.0
- LAG PUMP ON EL. 867.00
- LEAD PUMP ON EL. 866.00
- PUMPS OFF EL. 863.90

REVISIONS	MARK	DATE	DESCRIPTION

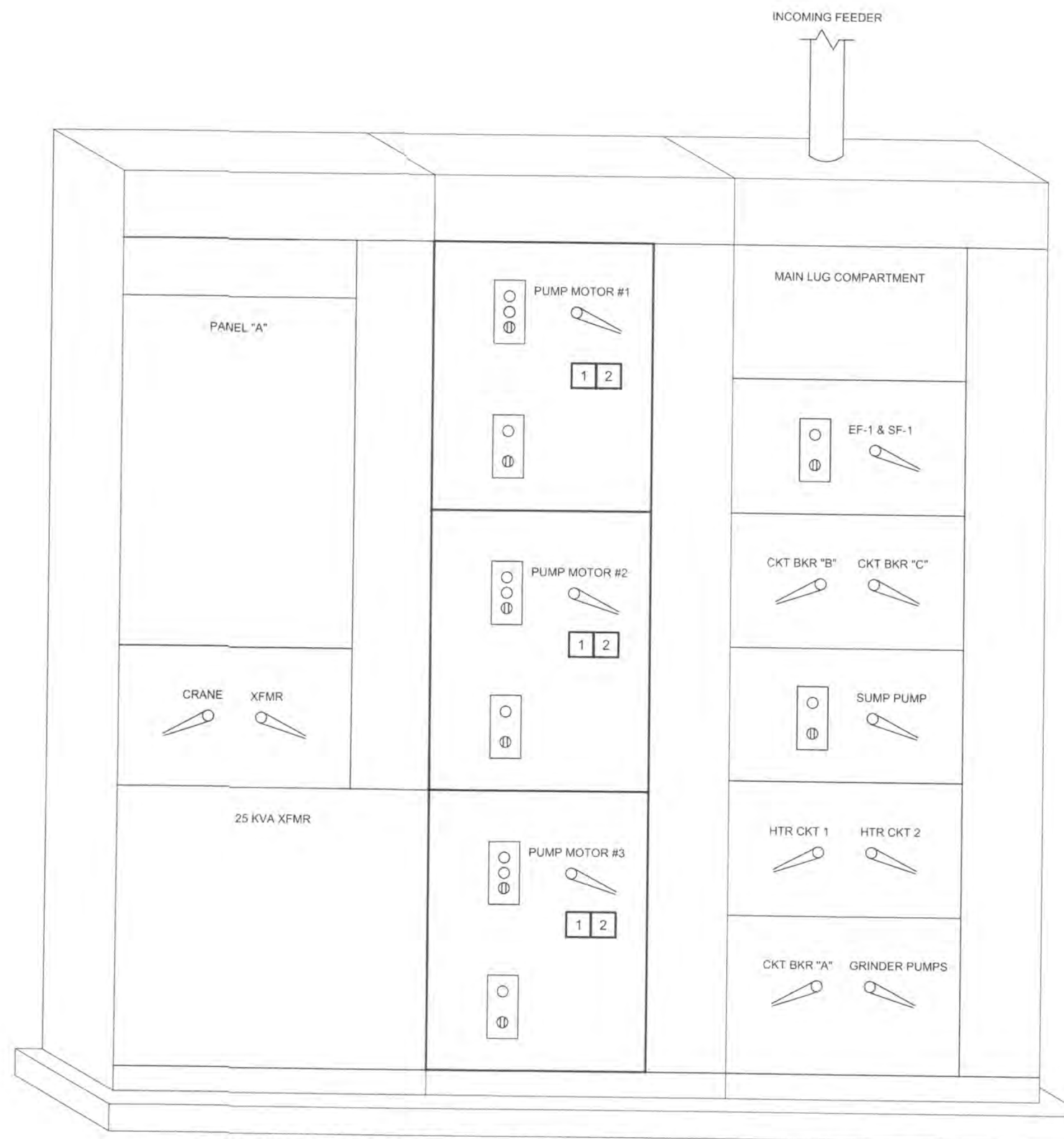
DELAWARE COUNTY, OHIO
PUMP STATION UPGRADE PLAN
FOR
MAXTOWN ROAD SANITARY
PUMP STATION UPGRADE
GENERAL NOTES, PUMP REMOVAL &
REPLACEMENT PLAN

EMHT
ENGINEERS, MECHANICAL, HOBBELSON & TILTON, INC.
Engineers • Surveyors • Planners • Scientists
5800 New Albany Road, Columbus, OH 43254
Phone: 614/752-3644
www.emht.com

DATE	JUNE, 2015
SCALE	As Noted
JOB NO.	20150222
SHEET	2/4

GENERAL ELECTRICAL NOTES:

1. ELECTRICAL CONTRACTOR SHALL SECURE ALL ELECTRICAL PERMITS AS REQUIRED, MAKE ALL NECESSARY APPLICATIONS AND COORDINATE WORK WITH THE LOCAL ELECTRICAL UTILITY COMPANY, INCLUDING METER INSTALLATION, SERVICE ENTRANCE, ETC. FOR A COMPLETE ELECTRICAL INSTALLATION.
2. ALL WORK SHALL BE DONE IN ACCORDANCE WITH ALL LOCAL, STATE AND NATIONAL CODES. WHERE THERE IS A CONFLICT, THE MOST STRINGENT SHALL APPLY.
3. ELECTRICAL CONTRACTOR SHALL VISIT SITE AND FAMILIARIZE HIMSELF WITH THE EXISTING CONDITIONS AND WORK TO BE DONE. ELECTRICAL CONTRACTOR SHALL CAREFULLY CHECK PLANS OF ALL DISCIPLINES; THESE ELECTRICAL DRAWINGS ARE TO BE USED AS A GUIDE. ELECTRICAL CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR A COMPLETE AND FUNCTIONING SYSTEM.
4. ALL ITEMS SHALL BE NEW UNLESS OTHERWISE NOTED. PROVIDE PRODUCTS LISTED AND LABELED BY UNDERWRITERS LABORATORIES INC. AS SUITABLE FOR THE PURPOSE INDICATED.
5. INSTALL ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS, DETAILS AND DESIGN. EQUIPMENT CALLED OUT BY CERTAIN MANUFACTURERS IS INTENDED TO CREATE A STANDARD. EQUALS WILL BE ACCEPTED UPON APPROVAL.
6. THE CONTRACTOR SHALL PREPARE OR OBTAIN FROM THE MANUFACTURER SHOP DRAWINGS OF ALL ITEMS OF EQUIPMENT TO BE FURNISHED AND SUBMIT SIX (6) COPIES TO THE ARCHITECT AND/OR ENGINEER FOR APPROVAL BEFORE PROCEEDING WITH INSTALLATION OR CONSTRUCTION. THESE DRAWINGS SHALL BE COMPLETE IN EVERY RESPECT SHOWING PERTINENT DETAILS OF SIZE, CAPACITIES, ARRANGEMENTS, FITTINGS, PIPING, KINDS AND THICKNESS OF MATERIALS, WEIGHT, LOADING REQUIRED, CLEARANCES FOR SERVICE, MAINTENANCE, ETC. AS A MINIMUM, THE SHOP DRAWINGS EXPECTED ARE AS FOLLOWS:
 - 6.1. MOTOR CONTROL CENTER COMPONENTS
 - 6.2. INDUSTRIAL CONTROL DEVICES
7. CONDUCTORS:
 - 7.1. COORDINATE SIZES OF RACEWAYS, BOXES, AND EQUIPMENT ENCLOSURES WITH THE ACTUAL CONDUCTORS TO BE INSTALLED, INCLUDING ADJUSTMENTS FOR CONDUCTOR SIZES INCREASED FOR VOLTAGE DROP.
 - 7.2. UNLESS DIMENSIONED, CIRCUIT ROUTING INDICATED IS DIAGRAMMATIC. WHEN CIRCUIT DESTINATION IS INDICATED AND ROUTING IS NOT SHOWN, DETERMINE EXACT ROUTING REQUIRED.
 - 7.3. SECURE AND SUPPORT CONDUCTORS AND CABLES IN ACCORDANCE WITH NFPA 70 USING SUITABLE SUPPORTS AND METHODS APPROVED BY THE AUTHORITY HAVING JURISDICTION. PROVIDE INDEPENDENT SUPPORT FROM BUILDING STRUCTURE. DO NOT PROVIDE SUPPORT FROM RACEWAYS, PIPING, DUCTWORK, OR OTHER SYSTEMS.
 - 7.4. UNLESS SPECIFICALLY INDICATED TO BE EXCLUDED, PROVIDE FINAL CONNECTIONS TO ALL EQUIPMENT AND DEVICES, INCLUDING THOSE FURNISHED BY OTHERS, AS REQUIRED FOR A COMPLETE OPERATING SYSTEM.
 - 7.5. PROVIDE COPPER CONDUCTORS ONLY. SUBSTITUTION OF ALUMINUM CONDUCTORS FOR COPPER IS NOT PERMITTED.
 - 7.6. MINIMUM CONDUCTOR SIZE FOR BRANCH CIRCUITS IS 12 AWG.
 - 7.6.1. EXCEPTIONS:
 - 7.6.1.1. 20 A, 120 V CIRCUITS LONGER THAN 75 FEET (23 M): 10 AWG, FOR VOLTAGE DROP.
 - 7.6.1.2. 20 A, 120 V CIRCUITS LONGER THAN 150 FEET (46 M): 8 AWG, FOR VOLTAGE DROP.
 - 7.6.1.3. 20 A, 277 V CIRCUITS LONGER THAN 150 FEET (46 M): 10 AWG, FOR VOLTAGE DROP.
 - 7.7. WHERE CONDUCTOR SIZE IS NOT INDICATED, SIZE TO COMPLY WITH NFPA 70 BUT NOT LESS THAN APPLICABLE MINIMUM SIZE REQUIREMENTS SPECIFIED.
 - 7.8. COLOR CODE CONDUCTORS AS INDICATED UNLESS OTHERWISE REQUIRED BY THE AUTHORITY HAVING JURISDICTION. MAINTAIN CONSISTENT COLOR CODING THROUGHOUT PROJECT.
 - 7.8.1. COLOR CODE:
 - 7.8.1.1. EQUIPMENT GROUND, ALL SYSTEMS: GREEN
 - 7.8.1.2. FOR MODIFICATIONS OR ADDITIONS TO EXISTING WIRING SYSTEMS, COMPLY WITH EXISTING COLOR CODE WHEN EXISTING CODE COMPLIES WITH NFPA 70 AND IS APPROVED BY THE AUTHORITY HAVING JURISDICTION.
 8. GROUNDING:
 - 8.1. CONFORM TO REQUIREMENTS OF NFPA 70.
 - 8.2. UNLESS SPECIFICALLY INDICATED TO BE EXCLUDED, PROVIDE ALL REQUIRED COMPONENTS, CONDUCTORS, CONNECTORS, CONDUIT, BOXES, FITTINGS, SUPPORTS, ACCESSORIES, ETC. AS NECESSARY FOR A COMPLETE GROUNDING AND BONDING SYSTEM.
 - 8.3. WHERE CONDUCTOR SIZE IS NOT INDICATED, SIZE TO COMPLY WITH NFPA 70 BUT NOT LESS THAN APPLICABLE MINIMUM SIZE REQUIREMENTS SPECIFIED.
 - 8.4. PROVIDE BONDING FOR EQUIPMENT GROUNDING CONDUCTORS, EQUIPMENT GROUND BUSES, METALLIC EQUIPMENT ENCLOSURES, METALLIC RACEWAYS AND BOXES, DEVICE GROUNDING TERMINALS, AND OTHER NORMALLY NON-CURRENT-CARRYING CONDUCTIVE MATERIALS ENCLOSING ELECTRICAL CONDUCTORS/EQUIPMENT OR LIKELY TO BECOME ENERGIZED AS INDICATED AND IN ACCORDANCE WITH NFPA 70.
 - 8.5. PROVIDE INSULATED EQUIPMENT GROUNDING CONDUCTOR IN EACH FEEDER AND BRANCH CIRCUIT RACEWAY. DO NOT USE RACEWAYS AS SOLE EQUIPMENT GROUNDING CONDUCTOR.
 - 8.6. WHERE CIRCUIT CONDUCTOR SIZES ARE INCREASED FOR VOLTAGE DROP, INCREASE SIZE OF EQUIPMENT GROUNDING CONDUCTOR PROPORTIONALLY IN ACCORDANCE WITH NFPA 70.
 - 8.7. TERMINATE BRANCH CIRCUIT EQUIPMENT GROUNDING CONDUCTORS ON SOLIDLY BONDED EQUIPMENT GROUND BUS ONLY. DO NOT TERMINATE ON NEUTRAL (GROUNDED) OR ISOLATED/INSULATED GROUND BUS.
 9. CONDUIT:
 - 9.1. COORDINATE THE ARRANGEMENT OF CONDUITS WITH STRUCTURAL MEMBERS, DUCTWORK, PIPING, EQUIPMENT AND OTHER POTENTIAL CONFLICTS INSTALLED BY OTHERS.
 - 9.2. DO NOT USE CONDUIT AND ASSOCIATED FITTINGS FOR APPLICATIONS OTHER THAN AS PERMITTED BY NFPA 70 AND PRODUCT LISTING.
 - 9.3. UNLESS OTHERWISE INDICATED AND WHERE NOT OTHERWISE RESTRICTED, USE THE CONDUIT TYPES INDICATED FOR THE SPECIFIED APPLICATIONS.
 - 9.3.1. EXTERIOR, EXPOSED: USE STAINLESS STEEL RIGID METAL CONDUIT OR INTERMEDIATE METAL CONDUIT (IMC).
 - 9.3.2. EXTERIOR, DIRECT-BURIED: USE STAINLESS STEEL RIGID METAL CONDUIT, INTERMEDIATE METALLIC CONDUIT (IMC), OR RIGID PVC CONDUIT.
 - 9.3.3. WHERE RIGID POLYVINYL (PVC) CONDUIT IS PROVIDED, TRANSITION TO STAINLESS STEEL RIGID METAL CONDUIT WHERE EMERGING FROM UNDERGROUND. WHERE LARGER THAN 2", USE STAINLESS STEEL RIGID METAL CONDUIT ELBOWS FOR BENDS.
 - 9.3.4. INTERIOR, CONCEALED: USE ELECTRICAL METALLIC TUBING (EMT).
 - 9.3.5. INTERIOR, DAMP OR WET LOCATIONS: USE STAINLESS STEEL RIGID CONDUIT, ALUMINUM RIGID METAL CONDUIT, INTERMEDIATE METAL CONDUIT (IMC).
 - 9.3.6. HAZARDOUS (CLASSIFIED) LOCATIONS: USE GALVANIZED STEEL RIGID METAL CONDUIT, INTERMEDIATE METAL CONDUIT (IMC), ALUMINUM RIGID METAL CONDUIT, OR PVC-COATED GALVANIZED STEEL RIGID METAL CONDUIT.
 - 9.3.7. CONNECTIONS TO VIBRATING EQUIPMENT: USE LIQUIDTIGHT FLEXIBLE METAL CONDUIT.
 - 9.4. ALL NEW CONDUITS SHALL BE 3/4" MINIMUM. UTILIZE COMPRESSION FITTINGS FOR EMT.
 - 9.5. UNLESS DIMENSIONED, CONDUIT ROUTING IS DIAGRAMMATIC.
 - 9.6. CONCEAL ALL CONDUITS UNLESS SPECIFICALLY INDICATED TO BE EXPOSED.
 - 9.7. RUN ALL CONDUIT AND WIRE TIGHT TO BUILDING STRUCTURE WHERE POSSIBLE. ALL RUNS SHALL BE SQUARE AND TRUE WITH BUILDING LINES.
 - 9.8. SECURE AND SUPPORT CONDUCTORS AND CABLES IN ACCORDANCE WITH NFPA 70 USING SUITABLE SUPPORTS AND METHODS APPROVED BY THE AUTHORITY HAVING JURISDICTION. PROVIDE INDEPENDENT SUPPORT FROM BUILDING STRUCTURE. DO NOT PROVIDE SUPPORT FROM RACEWAYS, PIPING, DUCTWORK, OR OTHER SYSTEMS.
 - 9.9. HAZARDOUS (CLASSIFIED) LOCATIONS: WHERE CONDUITS CROSS BOUNDARIES OF HAZARDOUS (CLASSIFIED) LOCATIONS, PROVIDE SEALING FITTINGS LOCATED AS INDICATED OR IN ACCORDANCE WITH NFPA 70.
 - 9.10. CONDUIT MOVEMENT PROVISIONS: WHERE CONDUITS ARE SUBJECT TO MOVEMENT, PROVIDE EXPANSION AND EXPANSION/DEFLECTION FITTINGS TO PREVENT DAMAGE TO ENCLOSED CONDUCTORS OR CONNECTED EQUIPMENT.
 - 9.11. PROVIDE PULL STRING IN ALL EMPTY CONDUITS AND IN CONDUITS WHERE CONDUCTORS AND CABLES ARE TO BE INSTALLED BY OTHERS.
 - 9.12. CLEAN INTERIOR OF CONDUITS TO REMOVE MOISTURE AND FOREIGN MATTER. IMMEDIATELY AFTER INSTALLATION OF CONDUIT, USE SUITABLE MANUFACTURED PLUGS TO PROVIDE PROTECTION FROM ENTRY OF MOISTURE AND FOREIGN MATERIAL AND DO NOT REMOVE UNTIL READY FOR INSTALLATION OF CONDUCTORS.
 10. BOXES:
 - 10.1. COORDINATE MINIMUM SIZES OF BOXES WITH THE ACTUAL INSTALLED ARRANGEMENT OF CONDUCTORS, CLAMPS, SUPPORT FITTINGS, AND DEVICES, CALCULATED ACCORDING TO NFPA 70.
 - 10.2. COORDINATE THE PLACEMENT OF BOXES WITH MILLWORK, FURNITURE, DEVICES, EQUIPMENT, ETC.
 - 10.3. DO NOT USE BOXES AND ASSOCIATED ACCESSORIES FOR APPLICATIONS OTHER THAN AS PERMITTED BY NFPA 70 AND PRODUCT LISTING.
 - 10.4. PROVIDE ALL BOXES, FITTINGS, SUPPORTS, AND ACCESSORIES REQUIRED FOR A COMPLETE RACEWAY SYSTEM AND TO ACCOMMODATE DEVICES AND EQUIPMENT TO BE INSTALLED.
 - 10.5. WHERE BOX SIZE IS NOT INDICATED, SIZE TO COMPLY WITH NFPA 70 BUT NOT LESS THAN APPLICABLE MINIMUM SIZE REQUIREMENTS SPECIFIED.
 - 10.6. FLUSH-MOUNT BOXES IN FINISHED AREAS UNLESS SPECIFICALLY INDICATED TO BE SURFACE-MOUNTED. UNLESS OTHERWISE INDICATED, BOXES MAY BE SURFACE-MOUNTED WHERE EXPOSED CONDUITS ARE INDICATED OR PERMITTED.
 - 10.7. LOCATE JUNCTION AND PULL BOXES AS INDICATED, AND AS REQUIRED TO FACILITATE INSTALLATION OF CONDUCTORS, AND TO LIMIT CONDUIT LENGTH AND/OR NUMBER OF BENDS BETWEEN PULLING POINTS. LOCATE BOXES TO BE ACCESSIBLE. PROVIDE ACCESS PANELS AS REQUIRED WHERE APPROVED BY THE ARCHITECT.
 - 10.8. CLEAN INTERIOR OF BOXES TO REMOVE DIRT, DEBRIS, PLASTER AND OTHER FOREIGN MATERIAL. IMMEDIATELY AFTER INSTALLATION, PROTECT BOXES FROM ENTRY OF MOISTURE AND FOREIGN MATERIAL UNTIL READY FOR INSTALLATION OF CONDUCTORS.
 11. PROVIDE AND INSTALL ELECTRICAL DISCONNECTS, CIRCUIT BREAKERS, ETC. SPECIFIED OR REQUIRED.
 12. ELECTRICAL CONTRACTOR SHALL DEMO, PATCH AND REPAIR EXISTING WALLS AS REQUIRED FOR ELECTRICAL BOXES, CONDUIT, WALL PENETRATIONS, ETC. SEAL PENETRATIONS IN FIREWALLS WITH APPROVED FRESTOP MATERIALS AND METHODS. PATCH WEATHER-TIGHT ALL NEW PENETRATIONS IN EXTERIOR WALLS, ROOFS, FLOORS, ETC.
 13. LABEL ALL NEW DEVICES WITH WHITE PHENOLIC TAG WITH BLACK CORE LETTERING INDICATING SOURCE PANEL AND CIRCUIT. DO NOT COVER SCREWS OF COVERPLATE.
 14. PROVIDE UPDATED TYPED PANEL DIRECTORIES IN ALL AFFECTED PANELS.

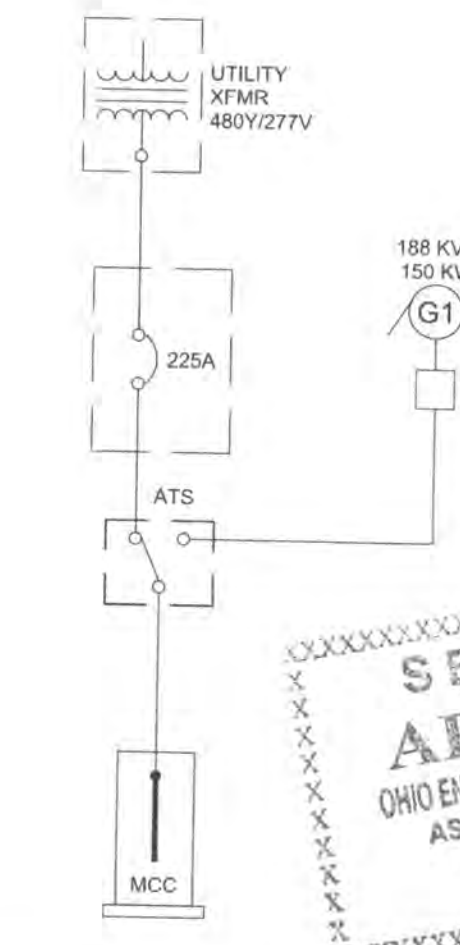


ALLEN BRADLEY "CENTERLINE" MOTOR CONTROL CENTER
225A, 480Y/277V-3PH-4W

EXISTING MCC ELEVATION
NO SCALE

INSTALLATION NOTES:

1. REMOVE EXISTING BUCKET FROM MCC AND REPLACE WITH NEW BUCKET FOR 30HP PUMP FOR A COMPLETE AND FUNCTIONING SYSTEM. REPLACE EXISTING STARTER AND CONTROLS WITH FUSIBLE DISCONNECT AND NEW ALLEN-BRADLEY SMC SOFT-STARTER (VERIFY ALL OPTIONS AND ACCESSORIES NECESSARY WITH OWNER PRIOR TO ORDERING). CONTRACTOR SHALL VERIFY NEW CONTROLLER CAN BE MOUNTED WITHIN EXISTING MCC; CONTRACTOR IS RESPONSIBLE TO LOCATE CONTROLLER WITHIN THE ROOM (LOCATION TO BE APPROVED BY ENGINEER AND OWNER) IF THE CONTROLLER IS UNABLE TO BE MOUNTED WITHIN THE MCC. CONTRACTOR SHALL COORDINATE OPERATION OF THE SYSTEM AND PROGRAMMING OF THE NEW CONTROLLER WITH THE OWNER PRIOR TO ROUGH-IN TO ENSURE PROPER OPERATION. CONTRACTOR IS RESPONSIBLE FOR ALL INTERCONNECTING WIRING BETWEEN PUMP, CONTROLLER, AND ALL NECESSARY AUXILIARY DEVICES REQUIRED BY THE OWNER.
 - 2.1. (1) N.O. BELL OR TRIP ALARM
 - 2.2. (2) N.O. AUX CONTACTS ON OPERATOR HANDLE
 - 2.3. FVNR STARTER
 - 2.4. (3) N.O. AUX CONTACTS ON STARTER CONTACTOR
 - 2.5. (1) N.C. AUX CONTACT ON STARTER CONTACTOR
 - 2.6. (1) N.O. ALARM CONTACT ON OVERLOAD RELAY
 - 2.7. (2) H.V. PRI FUSES, 120 VAC, SEC. CONTROL POWER TRANSFORMER, (1) L.V. FUSE, SIZE OPT FOR ALL CONNECTED LOADS
 - 2.8. H-O-A SELECTOR SWITCH
 - 2.9. AMBER P.T.T. PILOT LIGHT - RUNNING PILOT LIGHT
 - 2.10. RUNNING TIME METER
 - 2.11. STARTS COUNTER
 - 2.12. RELAY CR1 TO DETECT LOSS OF CONTROL POWER, HOA SWITCH NOT IN AUTO POSITION, OR LOSS OF L1-L2 POWER
 - 2.13. STARTER OL RELAY TRIP
 - 2.14. LEAK DETECTOR RELAY AND CONNECTION WITH LEAK DETECTOR (PROVIDED WITH PUMP)
2. FOR REFERENCE, EXISTING CONTROLS EQUIPMENT INCLUDES (BUT MAY NOT BE LIMITED TO):



EXISTING SINGLE LINE DIAGRAM
NO SCALE

SERVICE LOADS			
	CONNECTED	CALCULATED	NOTES
EXISTING	128.16 KVA	135.77 KVA	-
DEMO	(67.35 KVA)	(72.96 KVA)	1
NEW	89.79 KVA	97.27 KVA	2
TOTAL	150.60 KVA	160.08 KVA	-

NOTES: 1. DEMO LOAD ACCOUNTS FOR REMOVAL OF (3) 20HP MOTORS
2. NEW LOAD ACCOUNTS FOR ADDITION OF (3) 30HP MOTORS

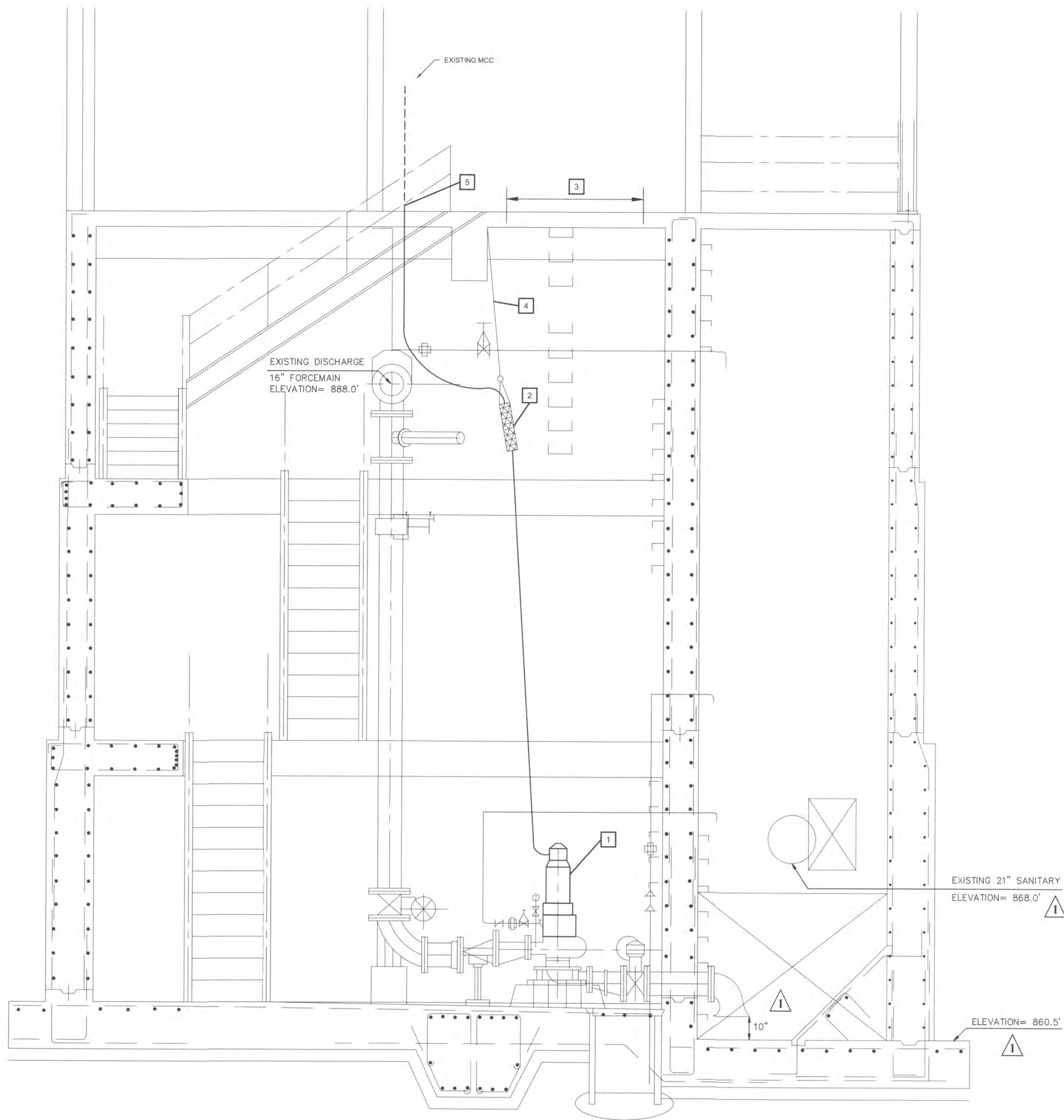


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ENGINEERING AND PROJECT MANAGEMENT
4076 E. PATTERSON ROAD BEAVERCREEK, OH 45430
937.306.1630 800.334.1630
WWW.TRI-TECH.US TRI-TECH PROJECT NO. 15222

REVISIONS	MARK	DATE	DESCRIPTION
EPCON COMMUNITIES			
DELAWARE COUNTY, OHIO PUMP UPGRADE PLAN FOR MAXTOWN ROAD SANITARY PUMP STATION UPGRADE ELECTRICAL PLAN			
EMHT Elliott, Melchior, Hamilton & Tilton, Inc. 5500 New Albany Road, Columbus, OH 43254 Phone: 614.775.4500 Fax: 614.775.3448 emht.com			
DATE	JUNE, 2015		
SCALE	As Noted		
JOB NO.	20150222		
SHEET	3/4		

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PUMP STATION SECTION
SCALE: 3/8"=1'-0"

INSTALLATION NOTES:

1. THREE (3) EXISTING 20HP PUMPS TO BE REMOVED. CONTRACTOR SHALL DISCONNECT ALL ELECTRICAL CONNECTIONS INCLUDING ALL POWER AND CONTROLS WIRING. THREE (3) NEW 30HP PUMPS TO BE INSTALLED. CONTRACTOR SHALL PROVIDE ALL ELECTRICAL CONNECTIONS FOR NEW PUMPS INCLUDING ALL POWER AND CONTROLS WIRING.
2. SUSPEND NEW MOTOR CABLES AND PROVIDE STRAIN RELIEF AS SHOWN. STRAIN RELIEF SHALL BE STAINLESS STEEL, SPLIT ROD, BASKET WEAVE, OFF SET KELLUM GRIP. SIZE TO BE SELECTED FOR PUMP CABLES ACTUALLY SUPPLIED TO JOB.
3. DO NOT OBSTRUCT GRATE OPENINGS WITH CONDUIT, LIGHTS, OR OTHER ELECTRICAL EQUIPMENT. DO PLACE HOOK KELLUM GRIP IN CORNER OF OPENING SO THAT CABLE SUPPORT CAN BE LIFTED OFF HOOK FROM ABOVE.
4. EXTENSION LINK, STAINLESS STEEL, LENGTH AS REQUIRED TO TRAIN POWER CABLES.
5. ROUTE CABLES THROUGH EXISTING CONDUIT PENETRATIONS INTO MCC AS SHOWN. PUMP CABLES TO EXTEND DIRECTLY TO STARTERS. KEEP ALL PUMP CABLES THE SAME LENGTH AND JACKET TRIMMED THE SAME



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MARK	DATE	DESCRIPTION

REVISIONS

**DELAWARE COUNTY, OHIO
PUMP UPGRADE PLAN
FOR
MAXTOWN ROAD SANITARY
PUMP STATION UPGRADE
ELECTRICAL PLAN**

EMHT
Ernst, McInerney, Heisler & Tipton, Inc.
 Engineers • Surveyors • Planners • Scientists
 5500 New Albany Road, Columbus, OH 43054
 Phone: 614.775.6500 Fax: 614.775.3448
 emht.com

DATE: JUNE, 2015

SCALE: As Noted

JOB NO.: 20150222

SHEET: 4/4