City of Dearborn

INVITATION TO BID (ITB) FOR POOL CONSTRUCTION AT THE FORD WOODS PARK

CONTROL No. 122972
ADDENDUM No. 2

ISSUE DATE: 11/16/17

DUE DATE: 12/06/17 AT 3:00 p.m. Local Time

This addendum is being issued to modify some sections of the ITB, as well as to distribute additional plans/specifications and the sign-in sheet from the pre-bid meeting held on 11/13/17.

Refer to the attached sections and drawings:

- Addendum 2 document provided by TMP Architecture – 3 pages
- Section 012300 – Section Alternates – 2 pages
- Section 082250 – FRP Doors and Aluminum Frames for FRP Doors – 7 pages
- Section 105129 – Phenolic Lockers – 4 pages
- Section 221413 – Storm Drainage Piping – 7 pages
- Section 221429 – Sump Pumps – 5 pages
- Drawings – C1.3, S1.0, M2.0, M2.1, M6.2, M7.1, M7.2, E0.3, E2.1, E3.1, E5.1
- Sign-in sheet from the pre-bid meeting held on 11/13/17.

Reminders:

Pre-bid question deadline – November 29, 2017 at 12:00 p.m. local time. All questions are to be submitted in writing to the Buyer listed on the cover page of the solicitation.

Bid deadline – December 6, 2017 at 3:00 p.m. local time. All bids are to be uploaded to the MITN website.

All other terms and conditions remain unchanged.

Carrie Darkowski
Buyer
cdarkowski@ci.dearborn.mi.us

THIS ADDENDUM MUST BE ACKNOWLEDGED ON THE RESPONSE FORM IN THE ITB

TMP ARCHITECTURE

ADDENDUM

DATE: November 16, 2017

PROJECT: City of Dearborn - Ford Woods Park Pool

TMP PROJECT NO.: 17071

ADDENDUM NO.: Two

ADDENDUM NO. 1 WAS PREVIOUSLY ISSUED ON NOVEMBER 9, 2017.

The Bidding Documents are modified, supplemented or augmented as follows and this Addendum is hereby made a part of the proposed Contract Documents.

The following Drawings and attachments are issued with this Addendum.

Drawing No.: C1.3, S1.0, M2.0, M2.1, M6.2, M7.1, M7.2, E0.3, E2.1, E3.1, E5.1

Attachments: Specification Sections 012300, 082250, 105129, 221413, 221429

ITEM NO. SPECIFICATION CHANGES

SC-1 Refer to TABLE OF CONTENTS (not reissued):

A. Added specification sections “012300 Alternates,” “221413 Storm Drainage” and “221429 Sump Pumps” to the Table of Contents.

SC-2 Refer to Section 012300 – ALTERNATES (new):

A. Added specification section to project.

SC-3 Refer to Section 082250 – FRP DOORS AND ALUMINUM FRAMES FOR FRP DOORS (reissued):

A. Added paragraph 2.1.A.2 as indicated.

SC-4 Refer to Section 105129 – PHENOLIC LOCKERS (reissued):

A. Added paragraph 2.1.A.4 as indicated.

SC-5 Refer to Section 131100 – SWIMMING POOL (not reissued):

A. Deleted paragraphs 1.3.A.2 and 1.3.A.3.
B. Revised paragraph 2.2.A.5 to add the following sentence:

“All strainers shall be equipped with a bleed valve.”

TMP ARCHITECTURE INC
1191 WEST SQUARE LAKE ROAD · BLOOMFIELD HILLS · MICHIGAN · 48302
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SC-6 Refer to Section 221413 – STORM DRAINAGE PIPING (new):

A. Added specification section to project.

SC-7 Refer to Section 221429 – SUMP PUMPS (new):

A. Added specification section to project.

ITEM NO. CIVIL DRAWING CHANGES

CD-1 Refer to Drawing No. C1.3 (reissued):

A. Revised location and design of 8” sanitary lead on the north side of the proposed building as indicated.
B. Revised location and design of 6” sanitary lead on the northwest corner of the proposed building as indicated.
C. Added 6” storm lead to connect to INL A1.3 as indicated.
D. Revised storm system design from INL A1.3 to FCB A1 as indicated.
E. Revised utility crossings 6 and 7 as indicated.

ITEM NO. STRUCTURAL DRAWING CHANGES

SD-1 Refer to Drawing No. S1.0 (reissued):

A. Modified bottom of footings at north side of proposed building as indicated.

ITEM NO. MECHANICAL DRAWING CHANGES

MD-1 Refer to Drawing No. M2.0 (reissued):

A. Relocated 8” sanitary serving surge tank as indicated.
B. Revised the location of the 4” sanitary on the west side of the building as indicated.
C. Added drain tile and connections around surge tank as indicated.
D. Added drain tile and connections around pump pit as indicated.
E. Added sump pump basin as indicated.
F. Removed floor drains in pump pit as indicated.
G. Modified sanitary routing as indicated.
H. Revised the sanitary size from 3” to 4” serving floor drain (FD-3) as indicated.
I. Revised floor drain from FD-1 to FD-3 as indicated in Storage 106.
J. Revised floor drain from FD-1 to FD-2 as indicated in Storage 106
K. Added storm piping to five feet outside the building as indicated.

MD-2 Refer to Drawing No. M2.1 (reissued):

A. Removed two floor drains (FD-2) from the pump it as indicated.
B. Added Sump Pump (SP-1) and discharge piping as indicated.
C. Added Control Panel for SP-1 as indicated.
D. Added discharge piping routed south through Mechanical Room, Storage Room, and Janitors closet as indicated.
E. Added notes associated with sump pump discharge piping as indicated.

F. Added Construction Note #7 as indicated.
G. Added Construction Note #8 as indicated.

MD-3 Refer to Drawing No. M6.2 (reissued):

A. Added Sump Pump Detail as indicated.

MD-4 Refer to Drawing No. M7.1 (reissued):

A. Added Underground Storm Drainage to Plumbing Piping and Valve Schedule as indicated.
B. Added Aboveground Pumped Storm for corrosive and non-corrosive environments to the Piping to Plumbing Piping and Valve Schedule as indicated.

MD-5 Refer to Drawing No. M7.2 (reissued):

A. Added Sump Pump Schedule as indicated.
B. Modified Pump Schedule as indicated.

ITEM NO. ELECTRICAL DRAWING CHANGES

ED-1 Refer to Drawing No.E0.3 (reissued):

A. Added branch circuiting and controls for underwater lighting as indicated.
B. Added remote push button station for water slide pumps at top of water slide as indicated.

ED-2 Refer to Drawing No.E2.1 (reissued):

A. Added branch circuiting and controls for underwater lighting.

ED-3 Refer to Drawing No.E3.1 (reissued):

A. Added branch circuiting for sump pump SP-1.

ED-4 Refer to Drawing No. E5.1 (reissued):

A. Added GFI breakers for pump room equipment as indicated.
B. Added breaker for sump pump SP-1

END OF ADDENDUM NO. 2

ALTERNATES

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to work of this section.

1.2 DESCRIPTION OF REQUIREMENTS:

A. Definition: An alternate is an amount proposed by Bidders and stated on the Bid Form that will be added to or deducted from Base Bid amount if the Owner decides to accept a corresponding change in either scope of work or in products, materials, equipment, systems or installation methods described in Contract Documents.

B. Coordination: Coordinate related work and modify or adjust adjacent work as required to ensure that work affected by each accepted alternate is complete and fully integrated into the project.

C. Notification: Immediately following award of Contract, prepare and distribute to each party involved, notification of the status of each alternate. Indicate whether alternates have been accepted, rejected of deferred for consideration at a later date. Include a complete description of negotiated modifications to alternates, if any.

D. Schedule: A "Schedule of Alternates" is included at the end of this section. Specification sections referenced in the Schedule contain requirements for materials and methods necessary to achieve the work described under each alternate.

1. Include as part of each alternate, miscellaneous devices, appurtenances and similar items incidental to or required for a complete installation whether or not mentioned as part of the alternate.

PART 2 - PRODUCTS (not applicable)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

A. Alternate No. 1: Pool Slide

Base Bid: Fiberglass waterslides and tower structure detailed on drawings and specified in section 131413.

Alternate Bid:76’ Poolslide Waterslide, item #65-370. See specification section 131100 “SWIMMING POOL”, paragraph 1.6 for further information.

B. Alternate No. 2: Phenolic Lockers

Base Bid: Phenolic lockers in size, configuration, and layout detailed on drawings and specified in section 105129.

Alternate Bid: In lieu of Base Bid, provide pricing for stainless steel lockers in same footprint and similar height and tier configuration. Stainless steel lockers to be 304 grade with sloped

tops. Provide pricing based upon stainless steel lockers provided by one of the following manufacturers:

1. Art Metal Products – 304 Stainless Steel KD Wardrobe Lockers
2. List Industries Inc. – 304 Stainless Steel Lockers
3. Olympus Lockers – Poseidon Stainless Steel Lockers

END OF SECTION

FRP DOORS AND ALUMINUM FRAMES FOR FRP DOORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS/DESCRIPTION

A. Drawings and General provision of Contract, including General and Supplementary Conditions and Division 01 Specification sections, are a part of this Section for the Base Bid and applicable alternates.

B. This Section includes:

1. FRP doors - provide FRP doors as specified, shown or scheduled, with components and accessories for a complete and proper installation.

2. Factory glazing of FRP door lites.

3. Factory installation of finish hardware.

4. Aluminum frames for FRP doors.

C. The following sections contain requirements that relate to this Section:

1. Division 7 Section “Joint Sealants” for sealants and gaskets.

2. Division 8 Section “Glazing” for glass and glazing.

3. Division 8 Section “Door Hardware” for door hardware.

D. System Performance:

1. Provide exterior and interior doors assemblies that have been designed and fabricated to comply with requirements for system performance characteristics listed below as demonstrated by testing manufacturer's corresponding stock systems according to test methods designated.

a. Thermal Transmittance (exterior doors): U-value of not more than 0.09 Btu/(hr x sf x Degrees F.) per AAMA 1503.1.

1.2 QUALITY ASSURANCE

A. Comply with fire-resistance, flammability, regulations as interpreted by governing authorities and as follows:

1. Face Sheets tested in accordance with ASTM E84-79A shall have the following ratings; Standard Face sheets:

a. Smoke Developed: not greater than 345.
b. Flame Spread: not greater than 145.

2. Class A Face Sheets (Required on interior face of all exterior doors):

a. Smoke Developed not greater than 340.
b. Flame Spread: not greater than 15.

B. Manufacturer Qualifications: Shall have produced fiberglass reinforced doors for at least five years.

C. Field Measurement:

1. Take field measurements prior to fabrication of doors and frames to insure proper fitting of assemblies. Successful bidders are expected to field verify all dimensions, sizes, quantities and the material required to complete this project. Failure to do so will not relieve the successful contractor from the necessity of furnishing any and all materials that may be required, without any additional cost to the Owner.

1.3 COORDINATION

A. Door manufacturer shall be responsible for coordinating all necessary information from hardware supplier in order that doors shall be properly prepared to receive hardware and fit frames properly. Contractor shall provide manufacturer with copies of approved schedules necessary to complete manufacturing of doors. This information shall be in the possession of the door manufacturer 60 days prior to desired delivery date of doors.

1.4 SUBMITTALS

A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.

1. Substitutions for products as specified MUST be submitted in accordance with Division 1. Substitute products not submitted in accordance with Division 1 Section “Product Requirements” will NOT be considered.

B. Product Data: Submit manufacturer's specifications, standard details, and installation recommendations for components of FRP (fiberglass reinforced polyester) doors required for project, including test reports certifying that products have been tested and comply with performance requirements.

C. Shop Drawings: Submit shop drawings for fabrication and installation of FRP (fiberglass reinforced polyester) doors, including elevations, detail sections of typical composite members, hardware mounting heights, anchorages, reinforcement, expansion provisions, and glazing.

D. Samples: Submit 6" samples of each type and color of FRP (fiber reinforced polyester) finish, and 12" long sections of extrusions or formed shapes. Where normal color and texture variations are to be expected, include 2 or more units in each set of samples showing limits of such variations.

1.5 PRODUCT DELIVERY, HANDLING, AND STORAGE

A. All materials supplied shall be delivered to the jobsite in their original, unopened packages with labels intact. Materials shall be inspected for damage, and the manufacturer informed of any discrepancies. Unsatisfactory materials shall not be used.

B. All materials supplied shall be packaged in individual corrugated cartons. Doors shall "floated" within cartons, with no portion of door in contact with outer shell.

C. All doors to be marked with individual opening numbers to correlate with the designation system used on the shop drawings for doors, frames and hardware. Markings shall be temporary, removable, or concealed.

1.6 WARRANTY

A. Provide written warranty signed by Manufacturer, Installer, and Contractor, agreeing to replace FRP (fiberglass reinforced polyester) doors which fail in materials or workmanship within time period indicated below of acceptance. Failure of materials or workmanship includes excessive deflections, faulty operation of entrances, and deterioration of finish or construction in excess of normal weathering.

1. Time Period: 10 years from date of shipment. In addition, a limited lifetime (while the door is in its specified application in its original installation) warranty covering: failure of corner joinery, core deterioration, delamination or bubbling of door skin.

B. Provide written warranty signed by Manufacturer guaranteeing hardware attachment of factory installed finish hardware.
1. Time Period: 10 years from date of shipment.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Basis of Design Product: Subject to compliance with requirements, provide SL17 FRP Flush Doors as manufactured by Special-Lite, Inc., and Aluminum Frames for FRP Doors as specified herein. **Provide either the named product or a comparable product by one of the following:**

1. CORRIM Company **ADD01**

2. Vale Doors **ADD02**

2.2 MATERIALS AND ACCESSORIES

A. Aluminum Members: Alloy and temper recommended by manufacturer for strength, corrosion resistance, and application of required finish; ASTM B 221 for extrusions, ASTM B 209 for sheet/plate, minimum wall thickness of 1/8".

B. Fasteners: Aluminum, or other materials warranted by manufacturer to be non-corrosive and compatible with aluminum components.

1. For exposed fasteners, provide Phillips head flat head screws with finish matching item to be fastened.

C. Brackets and Reinforcements: Manufacturer's high-strength aluminum units where feasible; otherwise provide nonmagnetic stainless steel or hot-dip galvanized steel complying with ASTM A 386.

1. Provide manufacturer's standard reinforcement for each type of hardware required, not less than .125" thick.

2. Provide manufacturer's recommended fastener reinforcement.

D. Door Face Material: Fiberglass reinforced polyester, SpecLite 3, 0.120" minimum thickness, with pebble-like embossed finish.

1. Acceptable Product: Subject to compliance with the following requirements:

a. Impact Strength of Face Sheets: ASTM D256, Izod Impact Strength, 13.5 footpounds per inch of notch.
b. Abrasion Resistance of Face Sheets: ASTM D1242, 1000 cycles of Model 503 Taber Abraser with a 1000 gram load, not to exceed 0.23% weight loss.
c. Hardness of Face Sheets: ASTM D2583, Barcol Meter Hardness Test, not more than 50.
d. Humidity Resistance of Face Sheets: ASTM D570, water absorption not greater than 0.40% after 24 hour immersion.
e. Ultra-Violet Degradation: Only slight color change, and negligible change in surface gloss and other physical properties after exposure to 500,000 Langleys.

E. Weatherstripping: Provide manufacturer's standard replaceable weathering pile.

F. Sweep: Provide manufacturer's adjustable sweep.

G. Sealants and Gaskets: Provide sealants and gaskets in the fabrication, assembly and installation of the work, which are recommended by the manufacturer to remain permanently elastic, non-shrinking, non-migrating, and weatherproof.

2.3 FIBERGLASS REINFORCED POLYESTER (FRP) DOORS

A. FRP Doors are to be constructed as follows:

1. Doors are to be 1 3/4" thick.

2. Constructed of aluminum alloy rails and stiles, joined with steel tie rods, and have an inner core consisting of foamed-in-place Urethane.

3. Stiles to be tubular shape to accept hardware as specified.

4. Top and bottom rails to be extruded with internal legs for interlocking rigid weather bar.

5. Face Sheets to be secured with extruded interlocking edges. (No snap-on trim will be accepted).

6. Joinery to be 3/8" tie rods, top and bottom, bolted through an extruded spline and 3/16" riveted reinforcing angles, and secured with hex nuts.

7. Core to be of Urethane foam of 5 pounds per cubic ft. density. All doors are to be properly reinforced for hardware prior to Urethane core foaming in door.

8. Face Sheets:

a. Fiberglass Reinforced Plastic Sheets to be polyester SpecLite 3, 0.120" thick, with pebble-like finish.

9. Pairs of Doors: Meeting stiles to beveled.

10. All doors shall be machined for finish hardware at the factory in accordance with the templates from the hardware supplier and the Approved Hardware Schedule. For

surface applied hardware, doors shall have necessary reinforcement, including the attachment of RIVNUT blind bolt fasteners. With the exception of door holders, which require field application, doors are to be shipped with surface hardware factory applied.

11. Door Lites: Provide door lites factory glazed as indicated, with manufacturer's standard aluminum moldings and stops, with removable stops on inside only. Glass to be 1" insulated safety glass.

2.4 FLUSH INSULATED PANELS

A. Flush insulated panels shall be constructed as follows:

1. Panels shall be 1" thick.

2. Panel stiles shall be formed of hardwood.

3. Core to be Urethane of 5 pounds per cubic foot density.

4. Face Skins to be as follows:

a. Fiberglass Reinforced polyester panel faces to be SpecLite 3, 0.120" thick, with pebble-like embossed finish.

2.5 ALUMINUM DOOR FRAMING FOR FRP DOORS (Required for all immediate door frames with FRP doors).

A. Frame Members: Frame members to be one piece tubular extrusions of 6063 T5 aluminum alloy with minimum wall thickness of 1/8".

B. Reinforcement: Frames shall be internally reinforced and factory prepared for specified finish hardware.

C. Stops: Provide applied door stops at single acting doors. Stops to be caulked and weathertight by installer in field.

D. Fabrication: Fabricate tubular frame assemblies as shown. Vertical frame members are to be the full height of the entrance opening. Joints are to be reinforced with internal anchors so that vertical and horizontal frame members are physically interlocked.

E. Glazing: Provide glazing system for doors and frames to receive lites. Design system for replacement of glass/panel, but for non-removal of glass/panel from the exterior. Ship frame members to jobsite with glazing bead installed and caulked on secure side of frame.

2.6 ALUMINUM CAPPING SYSTEM

A. Where indicated, provide a Frame capping system fabricated of .062" Aluminum, as manufactured by Special-Lite, Inc. Finish capping to match finish as supplied on other framing sections.

2.7 INSERT FRAMING

A. Where indicated, provide insert frames fabricated of extruded 6063T5 Aluminum alloy fitted with .34 inch high by .36 inch wide wool-poly-propylene blend pile. Corner joints are to be mitered and secured with prefabricated aluminum clips. Framing as manufactured by Special-Lite, Inc., and finished to match other framing sections.

2.8 FINISH HARDWARE

A. Supplier: Refer to Section 08710 of these specifications for the Finish Hardware requirements for this project. Refer to approved Finish Hardware Schedule for items to be supplied to the door and frame manufacturer to install.

B. Receive Hardware supplied in accordance with Section 08710, and Hardware Schedule, and coordinate with the Hardware requirements of this section. Report discrepancies (in writing) to the Architect immediately.

C. Ship hardware, to be installed by manufacturer, to manufacturer with cartons marked with door numbers correlating with designation system used on shop drawings.

D. Install all Hardware, except door holders at the fabrication plant. Remove only Hardware as required for final finishing or delivery to jobsite. Package and identify such Hardware and ship with doors and frames for installation at the project site.

2.9 FINISHES AND COLORS

A. Fiberglass Reinforced Polyester Colors: As selected by Architect from manufacturer’s complete range.

B. Aluminum Framing:

1. High-Performance Organic Coating: AA-C12C42R1x (Chemical Finish: cleaned with inhibited chemicals; Chemical Finish: chemical conversion coating, acid chromate-fluoride-phosphate pretreatment; Organic Coating: as specified below). Prepare, pre-treat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturer’s instruction.

2. Fluorocarbon 3-Coat Coating System: Manufacturer’s standard 3-coat thermo-cured system, composed of specially formulated inhibitive primer and fluorocarbon color coat, and clear fluorocarbon topcoat, with both color coat and clear topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight; comply with AAMA 605.2.

3. Color and Gloss: Custom color to match Architect’s sample.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with manufacturer's recommendations and specifications for the installation of the doors and frames.

B. Set units plumb, level and true to line, without warp or rack of doors, frames or panels. Anchor securely in place. Separate aluminum, and other corrodible metal surfaces, from sources of

corrosion or electrolytic action at points of contact with other materials, with bituminous coatings, or other means as approved by Architect.

C. Set saddles in a bed of compound.

D. Clean Aluminum surfaces promptly after installation of doors and frames, exercising care to avoid damage to the protective coating (if any). Remove excess glazing and sealant compounds, dirt and other substances.

E. Provide protective treatment and other precautions required through the remainder of the construction period, to ensure that the doors and frames will be without damage or deterioration (other than normal weathering) at the time of acceptance.

F. Adjusting: Adjust operating hardware to function properly, for smooth operation without binding, and for weathertight seal.

G. Caulking: Refer to Section 07900 “Joint Sealants.”

END OF SECTION

PHENOLIC LOCKERS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes: Solid Phenolic Lockers, including custom Phone Lockers with integral USB charging ports.

B. Related Sections:

1. Division 06 Section “Rough Carpentry” for miscellaneous wood framing and blocking.

1.3 SUBMITTALS

A. Submittals: Comply with procedures and quantities as indicated in Division 1 Submittal Procedure Section.

B. Shop Drawings: Submit shop drawings indicating room sizes, layout, locker dimensions, material thickness, trim, hardware, finishes, locks, base, doors, accessories, and installation details.

C. Product Data: Submit manufacturer’s technical data for materials, fabrication, finishing, fastenings, hardware, and installation details.

D. Samples: Submit samples of edge details, colors, patterns, finishes, and textures.

E. Closeout Documents: Submit the following:

1. Operation and maintenance data

2. Warranty

1.4 QUALITY ASSURANCE

A. Qualifications:

1. Fabricator shall be capable of providing field service representation.

2. Installer shall be approved by the manufacturer and be experienced in performing work of similar size and scope.

B. Pre-installation Meeting: Conduct pre-installation meeting prior to installation to verify project requirements and conditions.

1.5 DELIVERY, STORAGE AND HANDLING

A. Ordering: Comply with supplier’s ordering and lead-time guidelines to avoid delays.

B. Delivery: Deliver materials in the manufacturer’s original protective packaging.

C. Storage and Handling: Store materials in an enclosed shelter providing protection from damage, temperature, humidity, and exposure to the elements.

1.6 COORDINATION AND PROJECT CONDITIONS

A. Field Measurements: Before material fabrication, verify actual field measurements and show actual measurements on shop drawings.

B. Coordination: Coordinate field measurements with fabrication schedule and construction progress to avoid construction delays.

1.7 WARRANTY

A. Submit executed copy of the Summit Lockers 20-year warranty against defects in material signed by an authorized representative of Summit Lockers.

PART 2 – PRODUCTS

2.1 SOLID PHENOLIC LOCKERS

A. Basis of Design: Drawings and specifications are based on Summit Phenolic Lockers or approved equal from one of the following:

1. ASI Storage Solutions
2. Art Metal Products
3. Hollman
4. **Columbia Phenolic Lockers, a division of Partition Systems International of South Carolina **ADD 02****

B. Locker Models: Refer to drawings for Locker Schedules, Sizes, Configurations and Locations.

1. Lockers Single Tier Phenolic Locker, where scheduled and indicated.
2. Lockers Three Tier Phenolic Locker, where scheduled and indicated.

2.2 MATERIALS

A. Panel Material:

1. Decorative papers impregnated with a melamine resin on faces with a clear protective overcoat and integrally compression molded within a core consisting of solid phenolic impregnated kraft papers.
2. Fire Rating: Core or panel material shall meet fire Class B resistance per ASTM E84

B. Doors & Ancillary Panels:

1. Material: 1/2” (13mm) thick solid phenolic composite material.
2. Corners: Eased edges
3. Door Fastening: Blind fastening unless through bolts are requested
4. Colors: As selected by Architect from manufacturer’s full range of options. All phenolic panel edges are black.

C. Locker Bodies

1. Exposed edges: Straight profile; eased edges to remove sharpness; machine polished and free from tooling imperfections.

2. Tops, bottoms, and intermediate shelves: 3/8” (9.5mm) thick solid phenolic composite material with ventilation holes.

3. Locker sides: 5/16” (8mm) thick solid phenolic composite material.

4. Locker backs: 1/4”+ (6mm) thick solid phenolic composite material.

5. Colors: Locker bodies are white. All phenolic panel edges are black.

D. Hardware

1. Hinges:

a. 180° Stainless Steel continuous hinge

2. Interior Side hooks:

a. Material: Stainless steel. Plastic and nylon hooks are not acceptable.
b. Two per opening for all openings 30” tall or greater.

3. Fasteners: All fasteners shall be stainless steel.

4. Door Identification Plates:

a. Material: Black plastic with reverse engraved numbers and surface mounted with permanent adhesive.
b. Fonts to be a minimum 1/2” high and up to four characters.
c. Numbering sequence to be provided by architect.

5. Door Locks:

a. Stainless steel hasp bar for customer supplied padlock

E. Ventilation

1. Vertical ventilation: Provide six 5/16” (8mm) diameter ventilation holes on tops, bottoms, and intermediate shelves. Provide three 5/16” (8mm) diameter ventilation holes on “Z” type intermediary shelves.

2. Horizontal ventilation: Provide ventilation around the edge of the door equal to at least 1.43 square inches of ventilation surface area per linear foot of door perimeter.

2.3 ACCESSORIES AND OPTIONS

A. Finished Locker Top:

1. Sloped top: ½” solid phenolic top color matched with lockers and installed at a 20° rise from front to back, using an extruded aluminum channel across the front.

B. Coat Rod: Stainless steel coat rod installed in locker openings greater than 30” H and 18”D.

C. Additional Door Ventilation:

1. Standard ventilation: Refer to section 2.2.F.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Examine site conditions before locker installation. Notify architect of unacceptable areas. Do not install lockers until unacceptable conditions have been corrected.

3.2 INSTALLATION

A. Install lockers in locations as shown on shop drawings per manufacturer's instructions.

B. Install lockers installed secured, plumb, level, square, and flush. Base by others must be flat and level.

C. Install all required trim, fillers, end panels, and closures per manufacturer's instructions.

D. Use hardware supplied or recommended by the manufacturer.

E. Connect Phone Lockers USB charging ports to building electrical systems.

F. Attach number plates to doors as indicated on shop drawings.

G. Correct and/or replace damaged components as directed by architect.

3.3 ADJUSTMENT

A. Adjust doors and locks for smooth operation without binding.

B. Lubricate door hinges and locks per manufacturer's instructions.

3.4 CLEANING

A. Clean all surfaces in accordance with manufacturer's instructions.

B. Do not use abrasive cleaners.

END OF SECTION

STORM DRAINAGE PIPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Related Sections include the following:

1. Division 20 Section “Mechanical General Requirements.”
2. Division 20 Section “Basic Mechanical Materials and Methods.”
3. Division 22 Section “Drainage Piping Specialties.”
4. Division 22 Section "Sump Pumps."

1.2 PERFORMANCE REQUIREMENTS

1.3 SYSTEMS DESCRIPTIONS

A. Storm drainage piping system materials are scheduled on the Drawing.

1.4 SUBMITTALS

A. Product Data: For pipe, tube, fittings, and couplings.

B. Shop Drawings:

C. Field quality-control inspection and test reports.

1.5 QUALITY ASSURANCE

A. Piping materials shall bear label, stamp, or other markings of specified testing agency.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

2.2 HUBLESS CAST-IRON SOIL PIPE AND FITTINGS

A. Pipe and Fittings: ASTM A 888 or CISPI 301.

B. CISPI, Hubless-Piping Couplings:

1. Manufacturers:

a. ANACO-Husky; McWane Plumbing Group.
b. Ferguson Enterprises, Inc.; ProFlo (Private labeled IDEAL-TRIDON).
c. IDEAL-TRIDON.
d. Mission Rubber Company; a division of MCP Industries, Inc.
e. Tyler Pipe; McWane Plumbing Group.

2. Standards: CISPI 310.

3. Description: NSF certified for compliance with CISPI 310. Stainless-steel corrugated shield with stainless-steel bands and tightening devices; and ASTM C 564, rubber sleeve with integral, center pipe stop.

2.3 GALVANIZED STEEL PIPE AND FITTINGS

A. Galvanized Piping and fittings can be used in non-corrosive environments only.

B. Galvanized Steel Pipe: ASTM A 53/A 53M, Type E or S, Grade A or B, Standard Weight or Schedule 40. Include ends matching joining method.

C. Pressure Fittings:

1. Steel Pipe Nipples: ASTM A 733, made of ASTM A 53/A 53M or ASTM A 106, Schedule 40, galvanized, seamless steel pipe. Include ends matching joining method.

2. Malleable-Iron Unions: ASME B16.39; Class 150; hexagonal-stock body with ball-and-socket, metal-to-metal, bronze seating surface; and female threaded ends.

3. Gray-Iron, Threaded Fittings: ASME B16.4, Class 125, galvanized, standard pattern.

4. Cast-Iron Flanges: ASME B16.1, Class 125.

D. Flanges: ASME 16.1, Class 125, cast iron.

2.4 COPPER TUBE AND FITTINGS

A. Copper Tube and Fittings can be used in corrosive environments.

B. Copper DWV Tube: ASTM B 306, drainage tube, drawn temper.

1. Copper Drainage Fittings: ASME B16.23, cast-copper or ASME B16.29, wrought-copper, solder-joint fittings.

C. Hard Copper Tube: ASTM B 88, Type L , water tube, drawn temper.

1. Copper Pressure Fittings: ASME B16.18, cast-copper-alloy or ASME B16.22, wrought-copper, solder-joint fittings. Furnish wrought-copper fittings if indicated.

2. Copper Flanges: ASME B16.24, Class 150, cast copper with solder-joint end.

3. Copper Unions: MSS SP-123, copper-alloy, hexagonal-stock body with ball-and-socket, metal-to-metal seating surfaces, and solder-joint or threaded ends.

2.5 PVC PIPE AND FITTINGS

A. Solid-Wall PVC Pipe: Schedule 40, ASTM D 2665, drain, waste, and vent.

1. PVC Socket Fittings: ASTM D 2665, made to ASTM D 3311, drain, waste, and vent patterns and to fit Schedule 40 pipe.

2.6 SPECIAL PIPE FITTINGS

A. Flexible, Nonpressure Pipe Couplings: Comply with ASTM C 1173, elastomeric, sleeve-type, reducing or transition pattern. Include shear ring, ends of same sizes as piping to be joined, and corrosion-resistant-metal tension band and tightening mechanism on each end.

1. Manufacturers:

a. Dallas Specialty & Mfg. Co.
b. Fernco, Inc.
c. Logan Clay Products Company (The).
d. Mission Rubber Co.
e. NDS, Inc.
f. Plastic Oddities, Inc.

2. Sleeve Materials:

a. For Cast-Iron Soil Pipes: ASTM C 564, rubber.
b. For Plastic Pipes: ASTM F 477, elastomeric seal or ASTM D 5926, PVC.
c. For Dissimilar Pipes: ASTM D 5926, PVC or other material compatible with pipe materials being joined.

B. Shielded Nonpressure Pipe Couplings: ASTM C 1460, elastomeric or rubber sleeve with full-length, corrosion-resistant outer shield and corrosion-resistant-metal tension band and tightening mechanism on each end.

1. Manufacturers:

a. Cascade Waterworks Mfg. Co.
b. Mission Rubber Co.

C. Wall-Penetration Fittings: Compound, ductile-iron coupling fitting with sleeve and flexing sections for up to 20-degree deflection, gaskets, and restrained-joint ends complying with AWWA C110 or AWWA C153. Include AWWA C111, ductile-iron glands, rubber gaskets, and steel bolts.

1. Manufacturers:

a. SIGMA Corp.

PART 3 - EXECUTION

3.1 EXCAVATION

A. Refer to Division 31 Section "Earthwork" for excavating, trenching, and backfilling.

3.2 PIPING SYSTEM INSTALLATION

A. Basic piping installation requirements are specified in Division 20 Section "Basic Mechanical Materials and Methods."

B. Install cleanouts at grade and extend to where building storm drains connect to building storm sewers. Cleanouts are specified in Division 22 Section "Drainage Piping Specialties."

C. Install cleanout fitting with closure plug inside the building in storm drainage force-main piping.

D. Install cast-iron sleeve with water stop and mechanical sleeve seal at each service pipe penetration through foundation wall. Select number of interlocking rubber links required to make installation watertight. Sleeves and mechanical sleeve seals are specified in Division 20 Section "Basic Mechanical Materials and Methods."

E. Make changes in direction for storm piping using appropriate branches, bends, and long-sweep bends. Do not change direction of flow more than 90 degrees. Use proper size of standard increasers and reducers if pipes of different sizes are connected. Reducing size of drainage piping in direction of flow is prohibited.

F. Lay buried building drain piping beginning at low point of each system. Install true to grades and alignment indicated, with unbroken continuity of invert. Place hub ends of piping upstream. Install required gaskets according to manufacturer's written instructions for use of lubricants, cements, and other installation requirements. Maintain swab in piping and pull past each joint as completed.

G. Install storm drainage piping at the following minimum slopes, unless otherwise indicated:

1. Building Storm Drain: 1/8-inch per foot downward in direction of flow, unless otherwise noted.

2. Horizontal Storm-Drainage Piping: 1/8-inch per foot downward in direction of flow, unless otherwise noted.

H. Install force mains at elevations indicated.

I. Sleeves are not required for cast-iron soil piping passing through concrete slabs-on-grade if slab is without membrane waterproofing.

J. Do not enclose, cover, or put piping into operation until it is inspected and approved by authorities having jurisdiction.

K. Install PVC storm drainage piping according to ASTM D 2665.

L. Install underground PVC storm drainage piping according to ASTM D 2321.

3.3 JOINT CONSTRUCTION

A. Basic piping joint construction requirements are specified in Division 20 Section "Basic Mechanical Materials and Methods."

B. Hubless Cast-Iron Soil Piping Coupled Joints: Join according to CISPI 310 and CISPI's "Cast Iron Soil Pipe and Fittings Handbook" for hubless-coupling joints.

C. PVC Nonpressure Piping Joints: Join piping according to ASTM D 2665.

3.4 VALVE INSTALLATION

A. General valve installation requirements are specified in Division 20 Section "Valves."

B. Shutoff Valves: Install shutoff valve on each sump pump discharge.

1. Install gate or full-port ball valve for piping NPS 2 and smaller.

C. Check Valves: Install swing check valve, between pump and shutoff valve, on each sump pump discharge.

3.5 HANGER AND SUPPORT INSTALLATION

A. Pipe hangers and supports are specified in Division 20 Section "Hangers and Supports." Install the following:

1. Vertical Piping: MSS Type 8 or Type 42, clamps.

2. Individual, Straight, Horizontal Piping Runs: According to the following:

a. 100 Feet and Less: MSS Type 1, adjustable, steel clevis hangers.
b. Longer Than 100 Feet: MSS Type 43, adjustable roller hangers.
c. Longer Than 100 Feet, if Indicated: MSS Type 49, spring cushion rolls.

3. Multiple, Straight, Horizontal Piping Runs 100 Feet or Longer: MSS Type 44, pipe rolls. Support pipe rolls on trapeze.

4. Base of Vertical Piping: MSS Type 52, spring hangers.

B. Install supports according to Division 20 Section "Hangers and Supports."

C. Support vertical piping and tubing at base and at each floor.

D. Rod diameter may be reduced 1 size for double-rod hangers, with 3/8-inch minimum rods.

E. Install hangers for steel piping with the following maximum horizontal spacing and minimum rod diameters:

1. NPS 2: 10 feet with 3/8-inch rod.

F. Install supports for vertical steel piping every 15 feet.

G. Install hangers for copper tubing with the following maximum horizontal spacing and minimum rod diameters:

1. NPS 2: 96 inches with 3/8-inch rod.

H. Install supports for vertical copper tubing every 10 feet.

I. Support piping and tubing not listed above according to MSS SP-69 and manufacturer's written instructions.

3.6 CONNECTIONS

A. Drawings indicate general arrangement of piping, fittings, and specialties.

B. Connect interior storm drainage piping to exterior storm drainage piping. Use transition fitting to join dissimilar piping materials.

C. Connect force-main piping to the following:

1. Storm Sewer: To exterior force main or storm manhole.

2. Sump Pumps: To sump pump discharge.

3.7 FIELD QUALITY CONTROL

A. During installation, notify authorities having jurisdiction at least 24 hours before inspection must be made. Perform tests specified below in presence of authorities having jurisdiction.

1. Roughing-in Inspection: Arrange for inspection of piping before concealing or closing-in after roughing-in.

2. Final Inspection: Arrange for final inspection by authorities having jurisdiction to observe tests specified below and to ensure compliance with requirements.

B. Reinspection: If authorities having jurisdiction find that piping will not pass test or inspection, make required corrections and arrange for reinspection.

C. Reports: Prepare inspection reports and have them signed by authorities having jurisdiction.

D. Test force-main piping according to procedures of authorities having jurisdiction or, in absence of published procedures, as follows:

1. Leave uncovered and unconcealed new, altered, extended, or replaced force-main piping until it has been tested and approved. Expose work that was covered or concealed before it was tested.

2. Cap and subject piping to static-water pressure of 150 psig, without exceeding pressure rating of piping system materials. Isolate test source and allow to stand for four hours.

Leaks and loss in test pressure constitute defects that must be repaired.

3. Repair leaks and defects with new materials and retest piping, or portion thereof, until satisfactory results are obtained.

4. Prepare reports for tests and required corrective action.

3.8 CLEANING

A. Clean interior of piping. Remove dirt and debris as work progresses.

B. Protect drains during remainder of construction period to avoid clogging with dirt and debris and to prevent damage from traffic and construction work.

C. Place plugs in ends of uncompleted piping at end of day and when work stops.

END OF SECTION

SUMP PUMPS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Related Sections include the following:

1. Division 20 Section “Mechanical General Requirements.”

2. Division 20 Section “Basic Mechanical Materials and Methods.”

1.2 SUMMARY

A. This Section includes sump pumps and accessories, inside the building, for building storm drainage systems.

1.3 SUBMITTALS

A. Product Data: For each type and size of sump pump specified, include certified performance curves with operating points plotted on curves, rated capacities of selected models, furnished specialties, and accessories.

B. Shop Drawings: Diagram power, signal, and control wiring.

C. Operation and Maintenance Data: For each sump pump to include in operation and maintenance manuals.

1.4 QUALITY ASSURANCE

A. Product Options: Drawings indicate size, profiles, and dimensional requirements of sump pumps and are based on the specific system indicated. Refer to Division 01 Section "Product Requirements."

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by an NRTL acceptable to authorities having jurisdiction, and marked for intended use.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Retain shipping flange protective covers and protective coatings during storage.

B. Protect bearings and couplings against damage.

C. Comply with pump manufacturer's written rigging instructions for handling.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

2.2 SUBMERSIBLE SUMP PUMPS

A. Manufacturers:

1. ABS Pumps, Inc.

2. Bell & Gossett; Xylem Inc.

3. Crane Pumps and Systems; Barnes.

4. EBARA International Corporation; Standard Pump Division.

5. Goulds Pumps; Xylem Inc.

6. Gorman-Rupp Company (The).

7. Grundfos Pumps Corporation.

8. Hydromatic.

9. Little Giant Pump Co.

10. Metropolitan Industries, Inc.

11. Weil Pump Company, Inc.

12. Zoeller Company.

13. Liberty Pumps.

B. Description: Factory-assembled and -tested, simplex, single-stage, centrifugal, end-suction, submersible, direct-connected sump pumps complying with UL 778 and Hydraulic Institute

HI 1.1-1.2 and HI 1.3 for submersible sump pumps.

C. Casing: Stainless steel; with stainless-steel inlet strainer, legs that elevate pump to permit flow into impeller, and vertical discharge with companion flange suitable for piping connection.

D. Impeller: stainless steel; statically and dynamically balanced, semi-open non-clog design, overhung, single suction, keyed and secured to shaft.

E. Pump and Motor Shaft: Stainless steel, with factory-sealed, grease-lubricated ball bearings and double-mechanical seals.

F. Motor: Hermetically sealed, capacitor-start type, with built-in overload protection; three-conductor waterproof power cable of length required, and with grounding plug and cable-sealing assembly for connection at pump. Comply with requirements in Division 20 Section "Motors."

G. Pump Discharge Piping: Factory or field fabricated. Refer to Division 22 Section “Storm Drainage Piping.”

H. Basin Cover: Cast iron or steel with bituminous coating and strong enough to support controls. See Part 2 "Sump Pump Basins Article for other requirements.

I. Controls:

1. Mount controls in NEMA 250, Type 4X enclosure. Controls shall include: Fused disconnect switches and combination magnetic starters with overload protection for each phase to protect against single phasing. Three phase units shall include control transformer and control circuit fuse.

a. Minimum SCCR according to UL 508 shall be as required by electrical power distribution system, but not less than 10,000 A.

1) NEMA KS 1, heavy-duty, fusible switch with rejection-type fuse clips rated for fuses. Select and size fuses to provide Type 2 protection according to IEC 60947-4-1.

2. Station shall be furnished with three, single pole, normally-open NON-mercury mechanical float switches with 20 ft. cords, clamps, cord grips, and fasteners for pump off/pump on/high-water-alarm operation. The high-water-alarm switch shall be mounted as indicated on the Drawings. System shall be complete with cover mounting bracket. (1-inch diameter support pole by Contractor.)

3. Provide high water alarm switch, complete with actuating mechanism for operation on an electric circuit other than the motor circuit. The switch shall be designed to operate indicated alarm device(s) and one set of spare contacts whenever a predetermined high-water level is reached in the sump. Provide alarm pilot light and alarm bell with silence switch. Mount controls on pedestal on the sump cover plate.

2.3 SUMP PUMP BASINS

A. Manufacturer: Sump pump and basin are to be provided by the same manufacturer.

B. Description: Factory fabricated basin with sump, pipe connections, and separate cover.

C. Sump: Fabricate watertight, with sidewall openings for pipe connections.

1. Material: Fiberglass.

2. Reinforcement: Mounting plates for pumps, fittings, and accessories.

3. Anchor Flange: Same material as or compatible with sump, cast in or attached to sump, in location and of size required to anchor basin in concrete slab.

D. Cover: Fabricate with openings having gaskets, seals, and bushings, for access to pumps, pump shafts, control rods, discharge piping, vent connections, and power cables.

1. Material: Cast iron or steel with bituminous coating.

2. Reinforcement: Steel or cast iron, capable of supporting foot traffic for basins installed in foot-traffic areas.

E. Capacity and Characteristics:

1. Refer to Drawings for capacity and characteristics.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine roughing-in of plumbing piping to verify actual locations of storm drainage piping connections before sump pump installation.

3.2 SUMP PUMP INSTALLATION

A. Excavating, trenching, and backfilling are specified in Division 31 Section "Earthwork."

B. Install sump pumps according to applicable requirements in Hydraulic Institute HI 1.4.

C. Install pumps and arrange to provide access for maintenance including removal of motors, impellers, couplings, and accessories.

D. Set submersible sump pumps on basin floor. Make direct connections to storm drainage piping.

E. Install sump pump basins and connect to drainage piping. Brace interior of basins according to manufacturer's written instructions to prevent distortion or collapse during concrete placement. Set basin cover and fasten to basin top flange. Install cover so top surface is flush with finished floor.

F. Install submersible unit basins on floor or concrete base unless recessed installation is indicated. Make direct connections to storm drainage piping.

G. Support piping so weight of piping is not supported by pumps.

3.3 CONNECTIONS

A. Piping installation requirements are specified in Division 22 Section "Storm Drainage Piping." Drawings indicate general arrangement of piping, fittings, and specialties.

B. Install piping adjacent to sump pumps to allow service and maintenance.

C. Connect storm drainage piping to pumps. Install discharge piping equal to pump discharge connection size. If pump discharge connection size is different from storm drainage piping size, provide transition from pump discharge piping size to storm drainage piping size. Refer to Division 22 Section “Storm Drainage Piping.”

1. Install check and shutoff valves on discharge piping from each pump. Install unions on pumps having threaded pipe connections. Install valves same size as connected piping. Refer to Division 20 Section "Valves" for general-duty valves for drainage piping.

D. Ground equipment according to Division 26 Section "Grounding and Bonding."

E. Connect wiring according to Division 26 Section "Conductors and Cables."

3.4 STARTUP SERVICE

A. Engage a factory-authorized service representative to perform startup service.

1. Complete installation and startup checks according to manufacturer's written instructions.

2. Verify bearing lubrication.

3. Disconnect couplings and check motors for proper direction of rotation.

4. Verify that each pump is free to rotate by hand. If pump is bound or drags, do not operate until cause of trouble is determined and corrected.

B. Start pumps without exceeding safe motor power:

1. Start motors.

2. Open discharge valves slowly.

3. Check general mechanical operation of pumps and motors.

C. Test and adjust controls and safeties.

D. Remove and replace damaged and malfunctioning components.

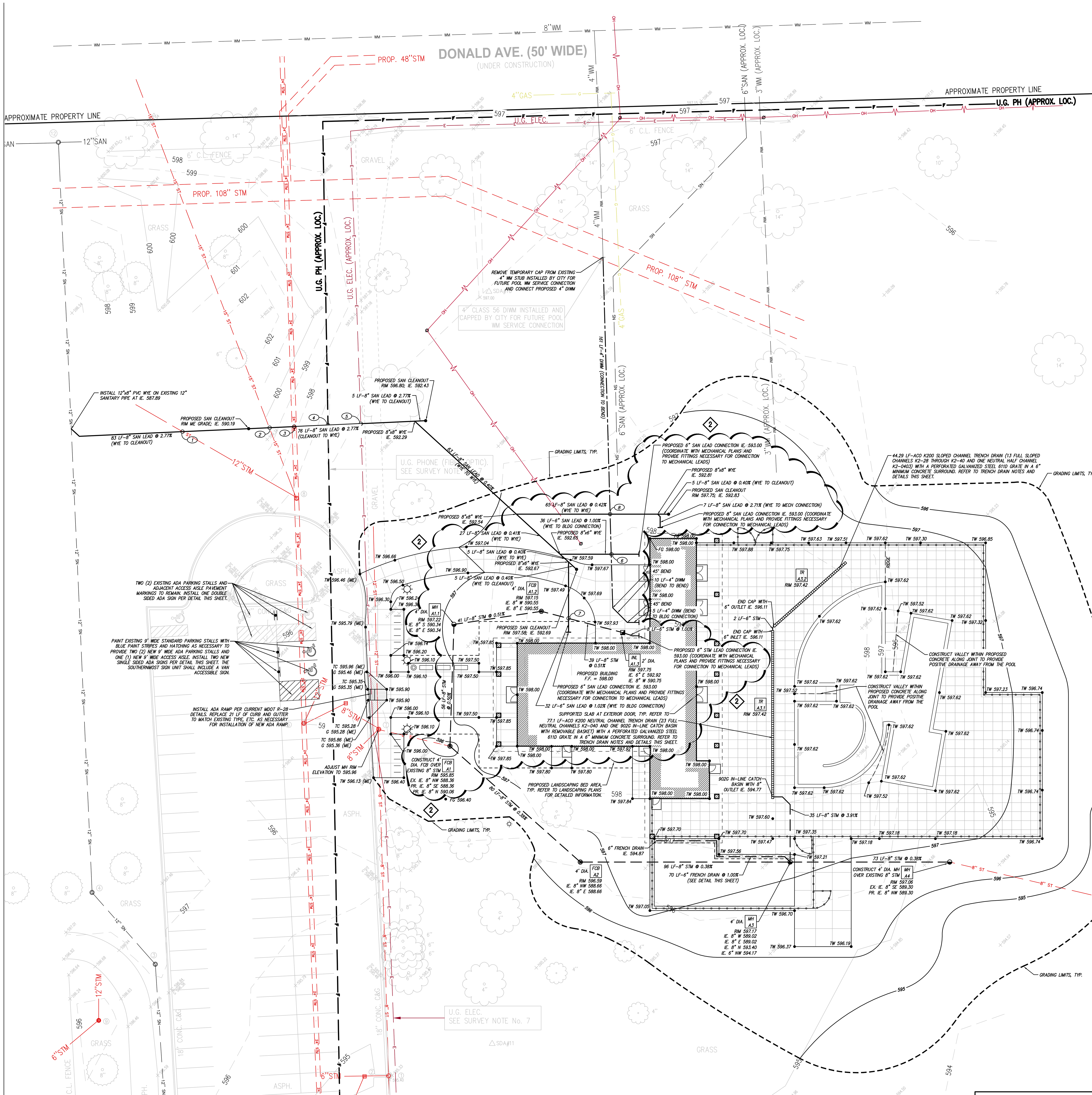
1. Pump Controls: Set pump controls for automatic start, stop, and alarm operation as required for system application.

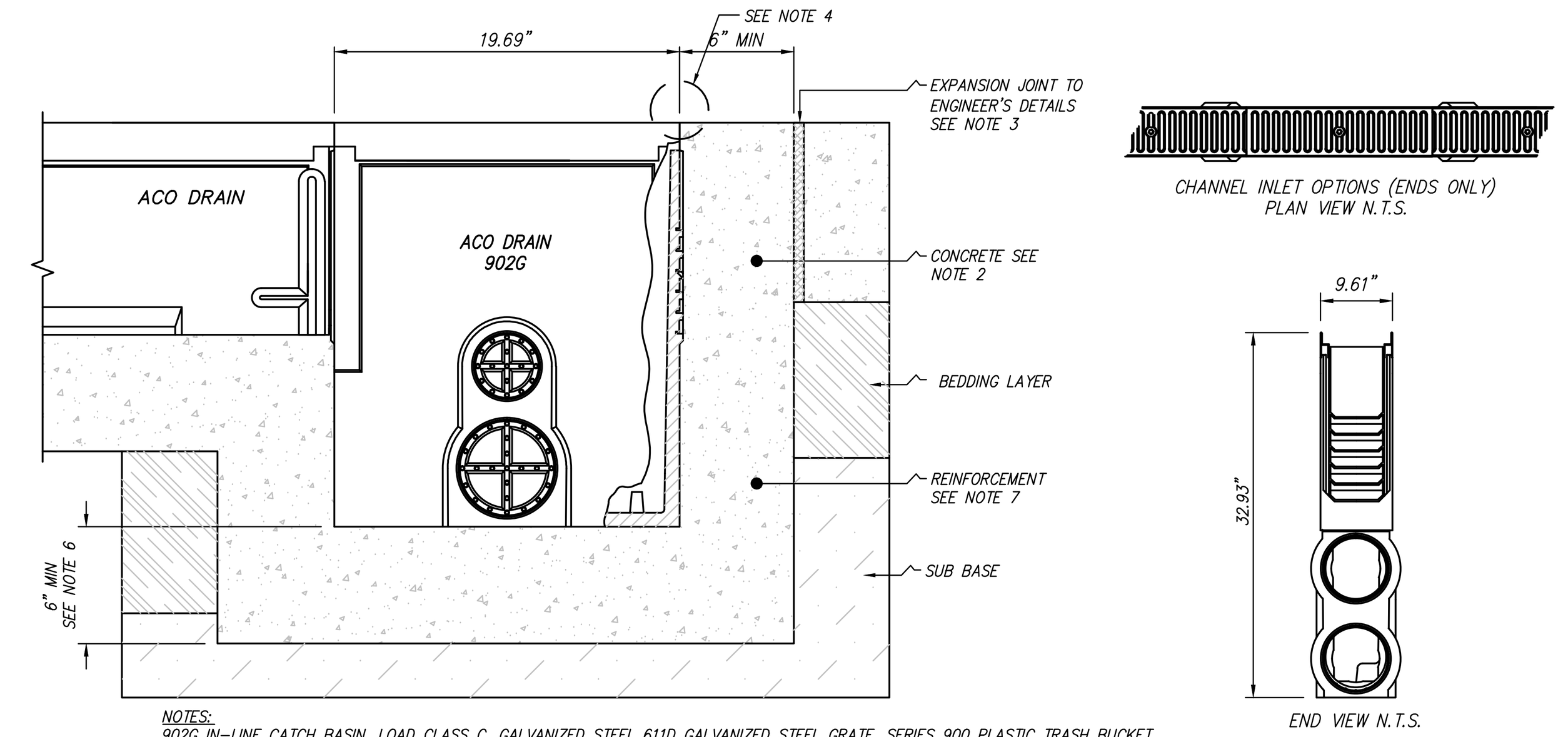
2. Set field-adjustable switches and circuit-breaker trip ranges as indicated, or if not indicated, for normal operation.

3.5 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain controls and pumps. Refer to Division 20 Section "Mechanical General Requirements."

END OF SECTION

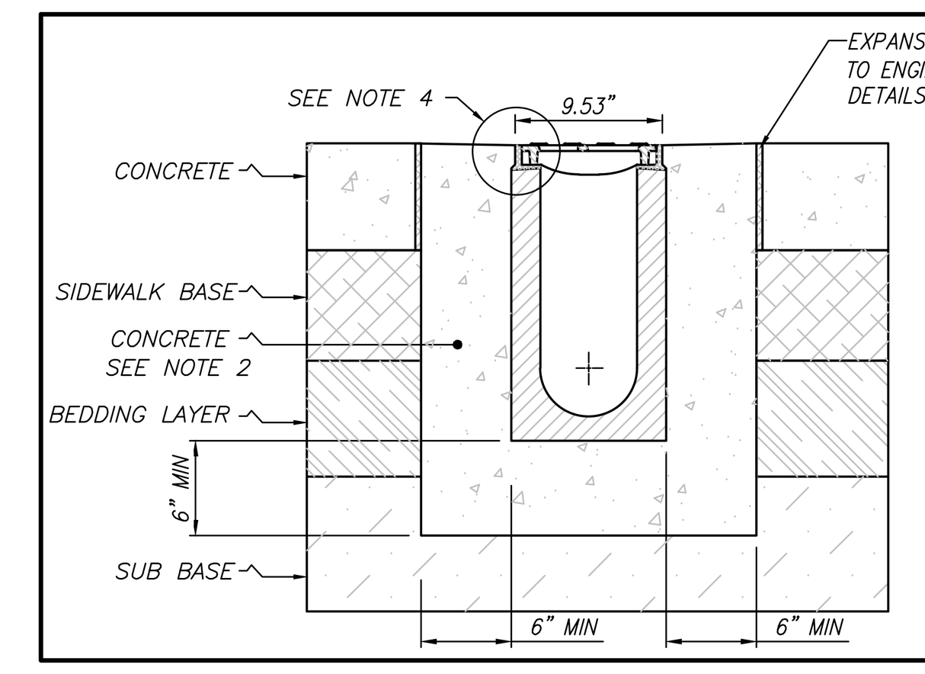




NOTES:
902G IN-LINE CATCH BASIN, LOAD CLASS C, GALVANIZED STEEL 611D GALVANIZED STEEL GRATE, SERIES 900 PLASTIC TRASH BUCKET.
1. IT IS NECESSARY TO ENSURE THE MINIMUM DIMENSIONS SHOWN ARE SUITABLE FOR THE EXISTING GROUND CONDITIONS. ENGINEERING ADVICE MAY BE REQUIRED.
2. A MINIMUM CONCRETE STRENGTH OF 3000 PSI IS RECOMMENDED. THE CONCRETE SHOULD BE VIBRATED TO ELIMINATE AIR POCKETS.
3. EXPANSION AND CRACK CONTROL JOINTS ARE RECOMMENDED TO PROTECT THE CATCH BASIN AND THE CONCRETE SURROUND. ENGINEERING ADVICE MAY BE REQUIRED.
4. THE FINISHED LEVEL OF THE CONCRETE SURROUND MUST BE APPROX. 1/8" ABOVE THE TOP OF THE CATCH BASIN EDGE.
5. REFER TO ACO'S LATEST INSTALLATION INSTRUCTIONS FOR COMPLETE DETAILS.
6. CONCRETE BASE THICKNESS SHOULD MATCH THE SLAB THICKNESS.
7. REBAR OR STEEL MESH REINFORCEMENT MAY BE REQUIRED. ENGINEERING ADVICE MAY BE REQUIRED.

ACO TRENCH DRAIN K902G IN-LINE CATCH BASIN DETAIL

NOT TO SCALE



NOTES:
MODEL NUMBER K200 SLOPED CHANNEL WITH TYPE 611D GALVANIZED STEEL GRATE LOAD CLASS C.
1. IT IS NECESSARY TO ENSURE THE MINIMUM DIMENSIONS SHOWN ARE SUITABLE FOR THE EXISTING GROUND CONDITIONS. ENGINEERING ADVICE MAY BE REQUIRED.
2. A MINIMUM CONCRETE STRENGTH OF 3000 PSI IS RECOMMENDED. THE CONCRETE SHOULD BE VIBRATED TO ELIMINATE AIR POCKETS.
3. THE FINISHED LEVEL OF THE CONCRETE SURROUND MUST BE APPROX. ⅛" ABOVE THE TOP OF THE CHANNEL EDGE.
4. REFER TO ACO'S LATEST INSTALLATION INSTRUCTIONS FOR COMPLETE DETAILS.

ACO TRENCH DRAIN K200 DETAIL

NOT TO SCALE

GRAPHIC SCALE
0 10 20 40
(IN FEET)
1 inch = 20 ft.

UTILITY NOTES

1. STORM SEWER NOTED AS 6" SHALL BE PVC SCHEDULE 40. STORM SEWER GREATER THAN 6" THROUGH 10" SHALL BE PVC SDR 26. STORM SEWER NOTED AS 6" FRENCH DRAIN SHALL BE PERFORATED HDPE IN A FILTER FABRIC SOCK.
2. SANITARY SEWER 8" AND LARGER SHALL BE PVC TRUSS PIPE. 6" SANITARY LEADS SHALL BE SOLID WALL, PVC, SDR 23.5.
3. WATER MAIN SHALL BE CLASS 56 DUCTILE IRON. WATER MAINS SHALL BE LEAKAGE AND PRESSURE TESTED IN ACCORDANCE WITH AWWA STANDARD C600. WATER MAINS SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA STANDARD C651 PRIOR TO BEING PUT INTO SERVICE
4. ALL UTILITY TRENCHES THAT FALL WITHIN A 1-ON-1 INFLUENCE OF PAVEMENT AREAS SHALL BE BACKFILLED WITH CLASS 2 SAND AND COMPACTED TO 95% OF MAXIMUM DENSITY.
5. ALL WATER MAIN SHALL BE BURIED WITH 5' OF COVER FROM PROPOSED GRADES. USE 22.5° BENDS TO LOWER WATER MAIN WHERE NOTED AT UTILITY CROSSING.
6. ALL UTILITIES SHALL BE INSTALLED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE CITY OF DEARBORN.
7. ALL UTILITIES SHALL BE INSTALLED ON CLASS "B" BEDDING OR BETTER.
8. SIZE OF STORM SEWER STRUCTURES SHALL BE AS NOTED ON THE PLANS.
9. ALL PROPOSED STORM SEWER CATCH BASINS AND INLET STRUCTURES SHALL HAVE A 2' MINIMUM SUMP.
10. UNLESS OTHERWISE NOTED, PROPOSED CASTINGS SHALL BE:
PVMT. CATCH BASINS – EJIW 5080 – "M1" (FRAMES WITH CURB BOXES WILL NOT BE ALLOWED)
FIELD CATCH BASINS – EJIW 1040 – "02"
STORM MANHOLES – EJIW 1040 – "C"
11. LOCATIONS OF LIGHT POLES, IF SHOWN ON THESE DRAWINGS, MAY BE APPROXIMATE. CONFIRM EXACT LOCATION (I.E. CURB OFFSETS, SIDEWALK OFFSETS, ETC.) PRIOR TO STAKING AND CONSTRUCTION. REFER TO SITE ELECTRICAL PLAN FOR DETAILS, AND COORDINATE WITH ELECTRICAL ENGINEER, ARCHITECT, AND CIVIL ENGINEER TO DETERMINE PROPER PLACEMENT.
12. WHERE THESE PLANS DIFFER FROM THE STANDARD DETAILS OR STANDARD SPECIFICATIONS OF THE COMMUNITY, THE COMMUNITY REQUIREMENTS SHALL GOVERN.

LEGEND

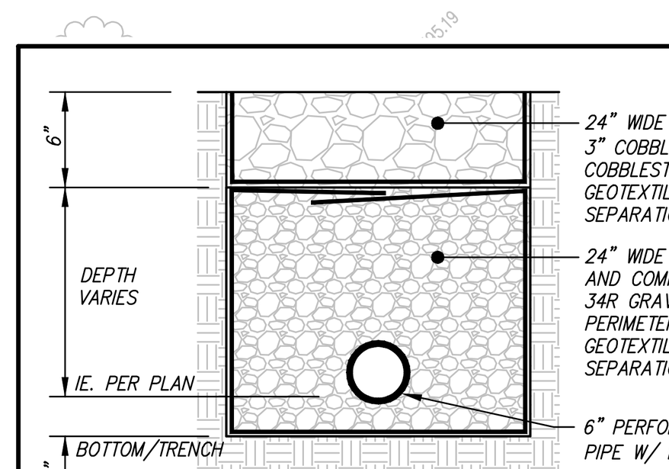
Symbol	Description	Symbol	Description
— · — · —	PROPOSED WATERMAIN	●	PROPOSED SAN MANHOLE (SAN)
———	PROPOSED SANITARY	◓	PROPOSED STORM MANHOLE (MH)
— — —	PROPOSED STORM SEWER	■	PROPOSED CATCH BASIN (CB)
— — · —	PROPOSED GAS MAIN	◪	PROPOSED INLET (INL)
— · — ·	PROPOSED ELECTRIC	►	PROPOSED END SECTION (ES)
	PROPOSED HYDRANT	⊕	PROPOSED FIELD CATCH BASIN (FCB) W/BEEHIVE COVER OR STANDPIPE (SP) W/ BAR GRATE COVER
⊗	PROPOSED GATE VALVE & WELL (GVW)	(2)	UTILITY CROSSING (SEE DATA TABLE)
⊗	PROPOSED TAPPING SLEEVE, VALVE & WELL (TSVW)	CB / 2	STORM SEWER STRUCTURE: STRUCT. TYPE / STRUCT. NO.
	CONCRETE SIDEWALK	(20)	SANITARY SEWER STRUCTURE
		10 / XXX	WATERMAIN STRUCTURE: STRUCT. NO. / STRUCT. TYPE

RESTORATION NOTE

RESTORE ALL DISTURBED LAWN AREAS WITH 4" OF CLEAN TOPSOIL AND SEED MIX (30% KENTUCKY BLUEGRASS, 20% PERENNIAL RYEGRASS, 50% CREEPING RED FESCUE). PLACE MULCH IN ALL SEEDED AREAS. ON SLOPES IN EXCESS OF 10 HORIZONTAL TO 1 VERTICAL PLACE NORTH AMERICAN GREEN DS150 MULCH BLANKET IMMEDIATELY AFTER SEEDING. USE METAL STAPLES PER MANUFACTURERS RECOMMENDATIONS TO HOLD MATTING IN PLACE.

RIM ADJUSTMENT NOTE:

REMOVE EXISTING CASTING, COVER AND ADJUSTMENT MATERIALS FROM DRAINAGE STRUCTURE. SALVAGE CASTING AND COVER FOR REINSTALLATION AND PROVIDE NEW ADJUSTMENT BRICK/BLOCK/RINGS. REINSTALL ACCORDING TO STANDARD DETAILS (IF INCLUDED). PROTECT EXISTING UTILITY STRUCTURE TO REMAIN.



FRENCH DRAIN DETAIL

NO SCALE

GRADING NOTE

1. PROPOSED GRADES ARE SOMETIMES BASED ON AN INTERPOLATION OF DATA SHOWN ON THE TOPOGRAPHIC SURVEY. THIS INTERPOLATED DATA IS APPROXIMATE AND COULD DIFFER SLIGHTLY BASED ON THE ACCURACY OF THE SURVEY. CONTRACTOR SHALL CONFIRM THAT THE PROPOSED GRADES SHOWN ON THIS PLAN WILL NOT CREATE A STANDING WATER CONDITION (I.E. A LOW SPOT OR PAVEMENT SLOPES LESS THAN 1%) OR AN UNSAFE CONDITION WITH SLOPES IN EXCESS OF 5%. CONTRACTOR SHALL ADVISE ENGINEER IMMEDIATELY IF THEY BELIEVE THAT ONE OF THESE SITUATIONS WILL OCCUR BASED ON THE PROPOSED GRADES.
2. CONTRACTOR IS RESPONSIBLE FOR CONTROLLING STORMWATER RUNOFF DURING CONSTRUCTION OPERATIONS. OF PARTICULAR CONCERN WILL BE THE TIME PERIOD AFTER THE SITE HAS BEEN STRIPPED AND NOT YET RESTORED, BUILT UPON, OR PAVED. CONTRACTOR MUST INSTALL OR CONSTRUCT APPROPRIATE TEMPORARY MEASURES TO PROTECT ADJACENT PROPERTIES.

PAVING CONSTRUCTION NOTES

REFER TO LANDSCAPING PLANS FOR DETAILED INFORMATION ON PROPOSED PAVING CROSS-SECTIONS, FENCING AND GATES, LANDSCAPING PLANTINGS, BENCHES, BICYCLE RACKS, TRASH RECEPTACLES, ETC.

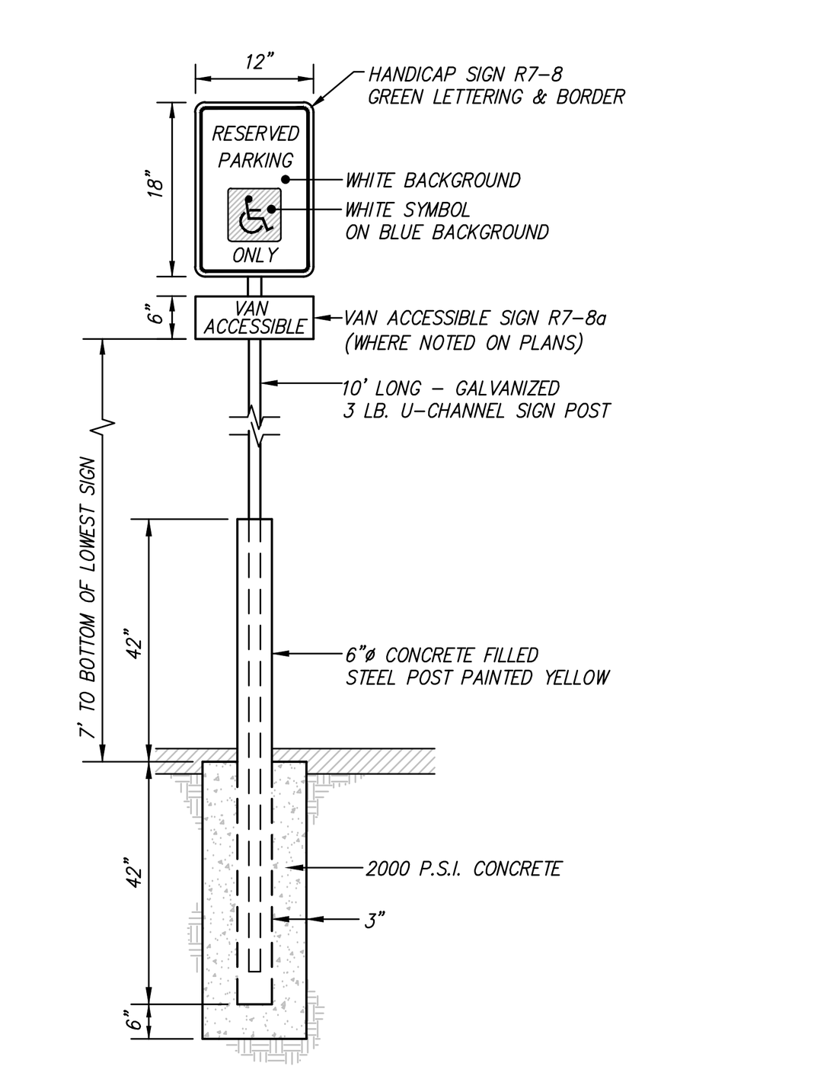
GRADING LEGEND

Symbol	Description
000.00	EXISTING ELEVATION
• TC 000.00 / G 000.00	PROPOSED TOP OF CURB ELEVATION / PROPOSED GUTTER ELEVATION
• OG 000.00	OUTSIDE GRADE ELEVATION
1130 / 1131	EXISTING CONTOURS
—1130—	PROPOSED CONTOURS
• TP 000.00	TOP OF PAVEMENT ELEVATION
• TW 000.00	TOP OF WALK ELEVATION
• FG 000.00	FINISH GRADE ELEVATION
• T/WALL 000.00	TOP OF WALL ELEVATION
• ME 000.00	MATCH EXISTING ELEVATION
⁓	FLOW ARROW

UTILITY CROSSING TABLE

1	SAN / STM X-ING PROP 8" SAN T/P 590.06 EX. 12" STM B/P 590.33 (FIELD VERIFY) CLEARANCE +/- 0.27' NOTIFY ENGINEER IF CONFLICT OCCURS	5	SAN / ELEC X-ING PROP 8" SAN T/P 592.33 EX. ELEC DEPTH UNKNOWN NOTIFY ENGINEER IF CONFLICT OCCURS
2	SAN / STM X-ING PROP 8" SAN B/P 590.38 EX. 15" STM T/P 588.97 (FIELD VERIFY) CLEARANCE +/- 1.41' NOTIFY ENGINEER IF CONFLICT OCCURS	6	SAN / WM X-ING PROP 6" SAN B/P 592.82 PROP 4" WM T/P 591.32 LOWER WM TO MAINTAIN 18" CLEARANCE WITH SAN NOTIFY ENGINEER IF CONFLICT OCCURS
3	SAN / STM X-ING PROP 8" SAN B/P 590.71 EX. 24" STM T/P 587.23 (FIELD VERIFY) CLEARANCE +/- 3.48' NOTIFY ENGINEER IF CONFLICT OCCURS	7	STM / SAN X-ING PROP 8" STM T/P 591.38 PROP 6" SAN B/P 592.88 CLEARANCE +/- 1.50' NOTIFY ENGINEER IF CONFLICT OCCURS
4	SAN / PHONE X-ING PROP 8" SAN T/P 591.91 EX. PHONE DEPTH UNKNOWN NOTIFY ENGINEER IF CONFLICT OCCURS	8	SAN / WM X-ING PROP 8" SAN B/P 592.63 PROP 4" WM T/P 591.13 LOWER WM TO MAINTAIN 18" CLEARANCE WITH SAN NOTIFY ENGINEER IF CONFLICT OCCURS

NOTE: EXISTING STORM SEWER INVERT ELEVATIONS ARE ASSUMED BASED ON ASSUMED PIPE SLOPES. CONTRACTOR SHALL CONFIRM EXACT DEPTHS PRIOR TO THE START OF ANY PROPOSED UNDERGROUND UTILITY INSTALLATION AND SHALL NOTIFY THE ENGINEER IF ANY CONFLICTS EXIST.



ADA SIGN IN PAVEMENT DETAIL

NOT TO SCALE

3 WORKING DAYS
BEFORE YOU DIG
CALL MISS DIG.
1-800-482-7171
For free location of public utility lines

TMP ARCHITECTURE

REGISTRATION SEAL

CONSULTANT

PROJECT TITLE
Ford Woods Park Pool

City of Dearborn

DRAWING TITLE
Site Engineering Plan

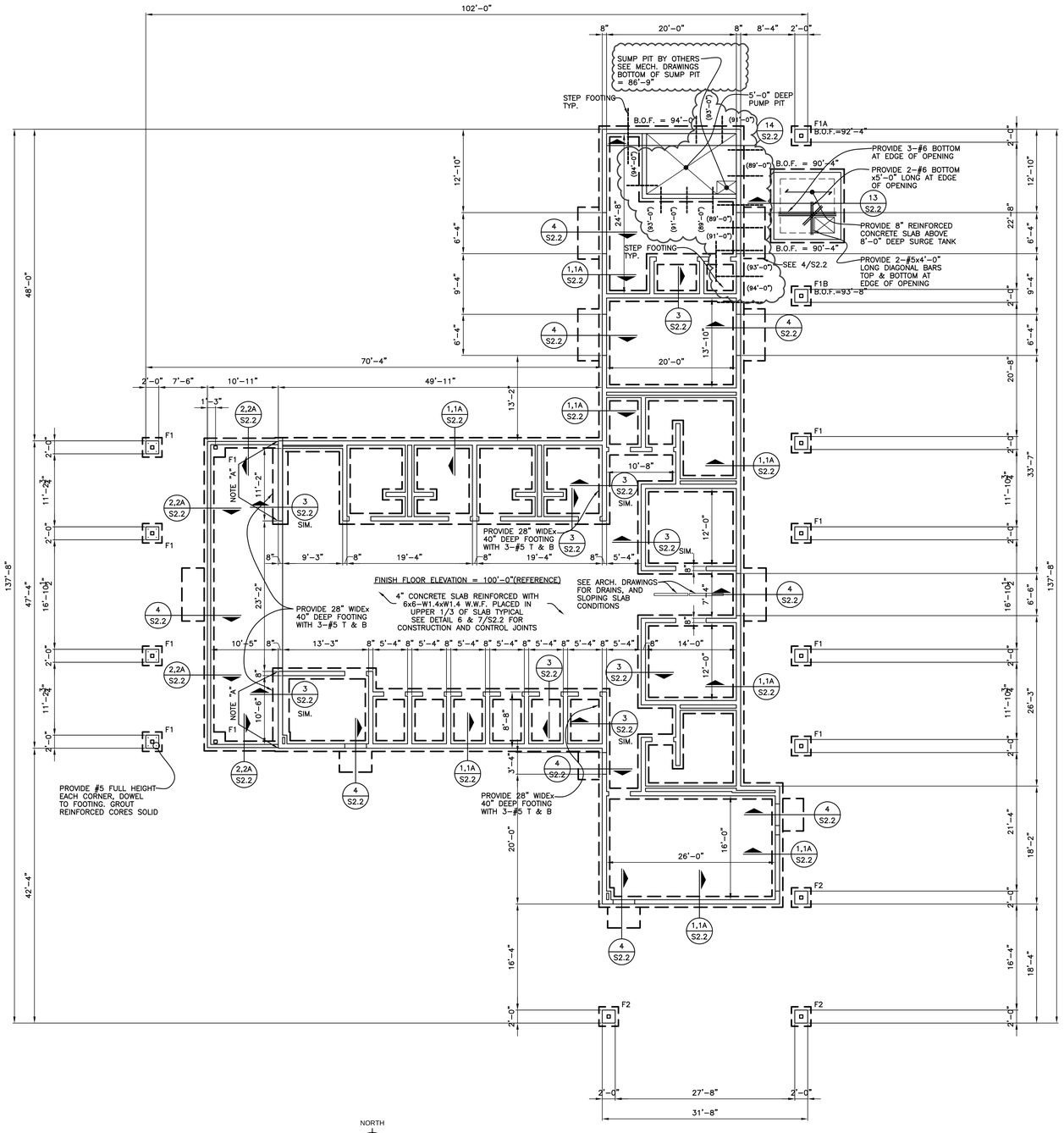
ISSUE DATES

DATE:	ISSUED FOR:
11-16-2017	ADDENDUM NO. 2
10-25-2017	BIDS
09-27-2017	OWNER REVIEW

DRAWN	JRE
CHECKED	TJS
APPROVED	TJS

PROJECT NO.
TMP - 17071
SDA - NP17041

DRAWING NO.
C1.3



NORTH

FOUNDATION PLAN

SCALE: 1/8" = 1'-0"

NOTE: REINFORCE ALL MASONRY WALLS WITH #5 @ 48" O.C. FULL HEIGHT VERTICAL UNLESS OTHERWISE NOTED, GROUT REINFORCED CORES SOLID, DOWEL TO FOOTING. PLACE BARS AT CORNERS AND FACE OF OPENINGS AND EACH SIDE OF CONTROL JOINTS. SEE DETAILS 8, 9, 10, 11, & 12/S2.2

SEE SHEET S2.1 FOR FOUNDATION SCHEDULE

BOTTOM OF FOOTING ELEVATION = 96'-0" U.O.N. (xx'-xx")

NOTE "A": REINFORCE MASONRY WALLS AT SHEAR WALL SW-1 WITH #5 @ 32" O.C. FULL HEIGHT VERTICAL UNLESS OTHERWISE NOTED, GROUT REINFORCED CORES SOLID, DOWEL TO FOOTING. PLACE BARS AT EACH END OF WALL. SEE DETAILS 8, 9, 10, 11, & 12/S2.2. PROVIDE BOND BEAM WITH 2-#5 CONT. ONE COURSE BELOW TOP OF WALL

TMP ARCHITECTURE

REGISTRATION SEAL

CONSULTANT

PROJECT TITLE
DEARBORN POOL

TMP Architecture
Bloomfield Hills, Michigan

DRAWING TITLE
FOUNDATION PLAN

ISSUE DATES

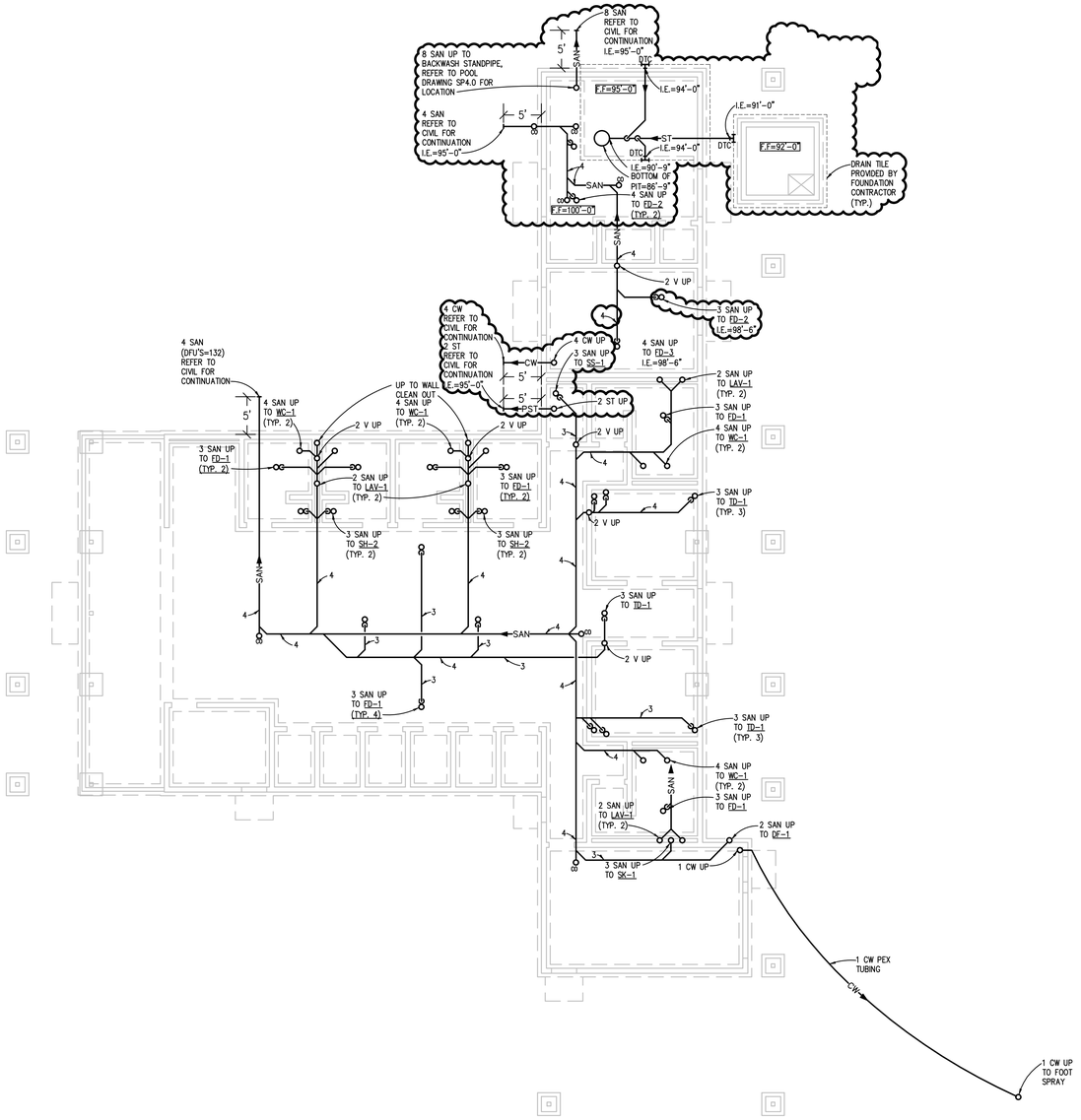
11-16-17	ADDENDUM #2
11-9-17	ADDENDUM #1
10-25-17	BIDS
09-27-17	OWNER REVIEW
DATE:	ISSUED FOR:

DRAWN	RC
CHECKED	TS
APPROVED	TS

PROJECT NO.
17071

DRAWING NO.
S1.0

THE FOLLOWING DIMENSION EQUALS ONE INCH WHEN PRINTED TO SCALE. 1"



UNDERGROUND PLUMBING PLAN
SCALE: 1/8" = 1' - 0"

PLUMBING GENERAL NOTES:

1. THESE DRAWINGS ARE DIAGRAMMATIC, AND REPRESENT THE GENERAL INTENT AND ARRANGEMENT OF SYSTEMS. THEY ARE NOT TO BE CONSIDERED FABRICATION/COORDINATION/SHOP DRAWINGS. COORDINATION WITH OTHER TRADES IS REQUIRED. PROVIDE THE ADDITIONAL FITTINGS AND OFFSETS THAT WILL BE REQUIRED TO COMPLETE EACH SYSTEM AND TO AVOID INTERFERENCES WITH ALL OTHER SYSTEMS INCLUDING THE STRUCTURE, SHEET METAL, OTHER PIPING SYSTEMS, ELECTRICAL CONDUITS, BUS DUCTS, CABLE TRAY, LIGHT FIXTURES, ETC. AND/OR OTHER SPACE CONSTRAINTS.
2. INSTALL SYSTEMS SUCH THAT REQUIRED CLEARANCE AND SERVICE ACCESS SPACE IS PROVIDED AROUND ALL MECHANICAL AND ELECTRICAL EQUIPMENT, AND AROUND ANY COMPONENTS WHICH REQUIRE SERVICE ACCESS.
3. PIPING SHALL NOT BE INSTALLED ABOVE ELECTRICAL TRANSFORMERS, SWITCHBOARDS, PANELBOARDS OR MOTOR CONTROL CENTERS.
4. COORDINATE AND PROVIDE ACCESS DOORS WITHIN INACCESSIBLE CEILING, SHAFT, AND CHASE AREAS FOR ALL COMPONENTS WHICH REQUIRE SERVICE ACCESS. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.
5. PROVIDE SUPPLEMENTARY STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL SYSTEMS.
6. REFER TO ARCHITECTURAL PLANS FOR DIMENSIONED LOCATIONS OF PLUMBING FIXTURES.
7. HOT AND COLD WATER PIPING RUN-OUTS TO LAVATORIES AND SINKS SHALL BE 1/2" UNLESS OTHERWISE NOTED.
8. PLUMBING VENT PIPING THROUGH ROOF SHALL BE LOCATED A MINIMUM OF 10'-0" FROM ANY FRESH AIR INTAKE LOCATION AND A MINIMUM OF 18" CLEAR FROM THE INSIDE FACE OF PARAPET.
9. PROVIDE CODE REQUIRED CLEARANCE FOR ALL CLEANOUTS INSTALLED IN SANITARY WASTE AND VENT PIPING.
10. MINIMUM UNDERGROUND PIPE SIZE SHALL BE 3".
11. WATER SERVICE ENTRANCE PIPING SHALL BE BURIED WITH DEPTH OF COVER OVER TOP OF PIPE OF AT LEAST , OR WITH TOP OF PIPE AT LEAST 12" BELOW LEVEL OF MAXIMUM FROST PENETRATION, OR AS REQUIRED BY AUTHORITIES HAVING JURISDICTION, WHICHEVER IS DEEPEST.

(P) CONSTRUCTION KEY NOTES:

1. SLOPE DOMESTIC WATER PIPING TO SERVICE SINK IN JANITOR CLOSET.
2. CONNECT HW, CW, AND VENT PIPING TO LAVS.
3. CONNECT HW, CW, AND VENT PIPING TO SINK.
4. PROVIDE WET PIPE SPRINKLER SYSTEM PER NFPA 13.
5. ROUTE 1 1/4 CW AND 1 1/4 HW TO MIXING VALVE LOCATED ON WALL ABOVE UNIT.
6. PROVIDE DOUBLE CHECK VALVE ASSEMBLY FOR FIRE PROTECTION SYSTEM. ROUTE F PIPING TO CHLORINE AND ACID ROOM AND PROVIDE SPRINKLER HEADS IN EACH.
7. ROUTE 2 1/2 CW TO FILL STATION LOCATED ON THE EAST WALL. PROVIDE PIPING CONFIGURATION AS OUTLINED ON SHEET SP4.2, DETAIL 10.
8. LOCATE SUMP PUMP CONTROL PANEL ON UNI-STRUT RACK, PROVIDE REQUIRED CLEARANCE IN FRONT AND TOP OF PANEL.

TMP ARCHITECTURE

REGISTRATION SEAL

CONSULTANT

PROJECT TITLE
Ford Woods Park Pool

City of Dearborn

DRAWING TITLE
UNDERGROUND PLUMBING PLAN

ISSUE DATES

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11-16-2017	ADDENDUM NO. 2
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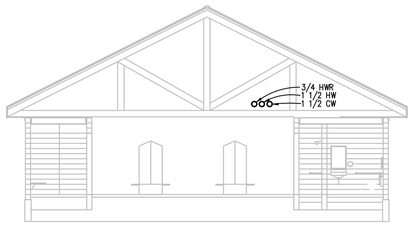
DRAWN	JTH
CHECKED	DAC
APPROVED	DAC

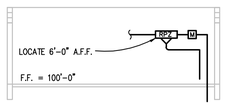
PROJECT NO.
17071

DRAWING NO.
M2.0

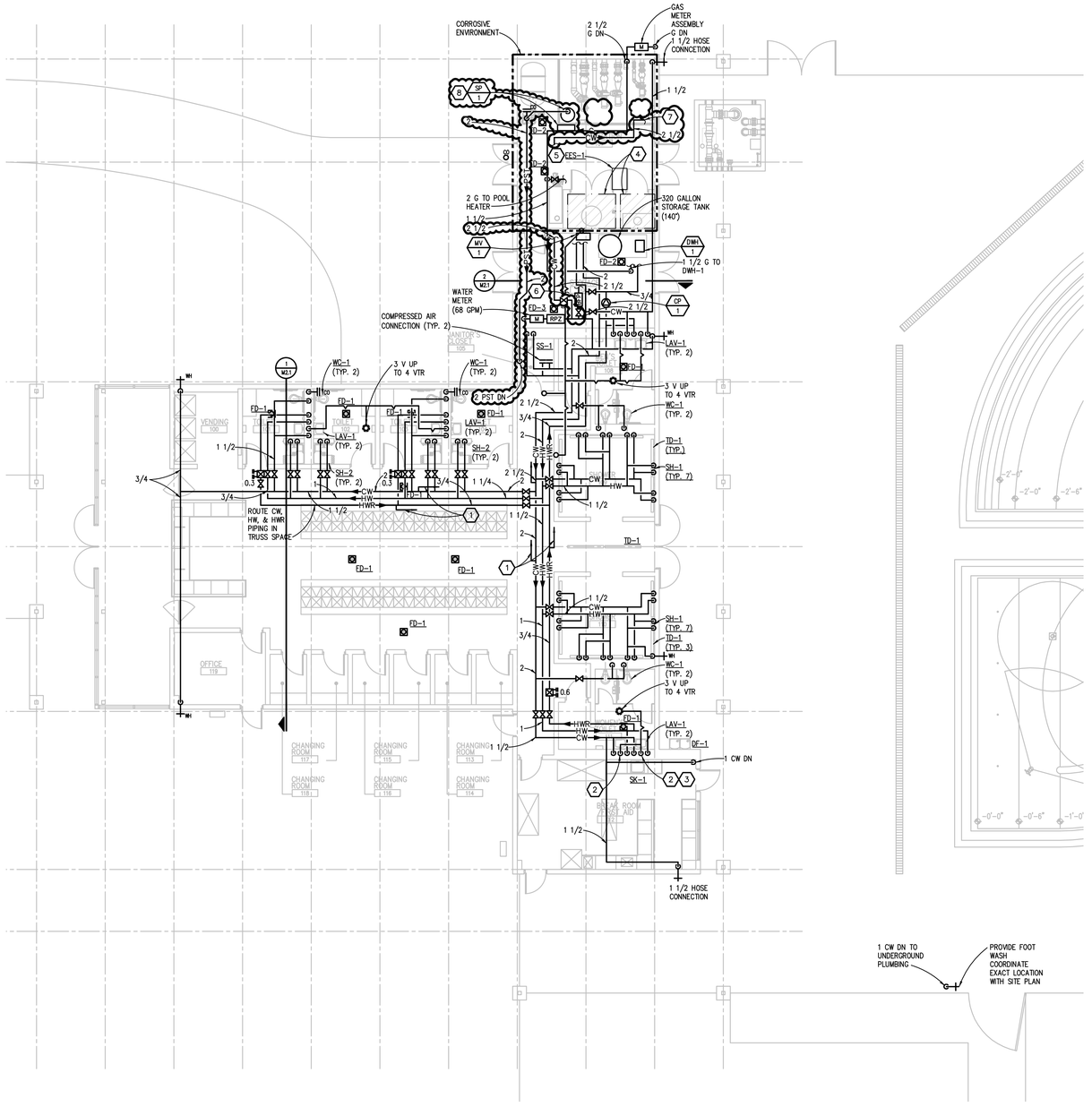
THE FOLLOWING DIMENSION EQUALS ONE INCH WHEN PRINTED TO SCALE. 1"



1 / M2.1 **LOCKER ROOM SECTION**
SCALE: 1/8" = 1' - 0"



2 / M2.1 **STORAGE ROOM SECTION**
SCALE: 1/8" = 1' - 0"



PLUMBING AND FIRE PROTECTION PLAN
SCALE: 1/8" = 1' - 0"

FIRE PROTECTION GENERAL NOTES:

1. THESE DRAWINGS ARE DIAGRAMMATIC, AND REPRESENT THE GENERAL INTENT AND ARRANGEMENT OF SYSTEMS. THEY ARE NOT TO BE CONSIDERED FABRICATION/COORDINATION/SHOP DRAWINGS. COORDINATION WITH OTHER TRADES IS REQUIRED. PROVIDE THE ADDITIONAL FITTINGS AND OFFSETS THAT WILL BE REQUIRED TO COMPLETE EACH SYSTEM AND TO AVOID INTERFERENCES WITH ALL OTHER SYSTEMS INCLUDING THE STRUCTURE, SHEET METAL, OTHER PIPING SYSTEMS, ELECTRICAL CONDUITS, BUS DUCTS, CABLE TRAY, LIGHT FIXTURES, ETC. AND/OR OTHER SPACE CONSTRAINTS.
2. INSTALL SYSTEMS SUCH THAT REQUIRED CLEARANCE AND SERVICE ACCESS SPACE IS PROVIDED AROUND ALL MECHANICAL AND ELECTRICAL EQUIPMENT, AND AROUND ANY COMPONENTS WHICH REQUIRE SERVICE ACCESS.
3. NO SPRINKLER PIPING SHALL BE ROUTED THROUGH ELECTRICAL EQUIPMENT ROOMS, TELECOMMUNICATION EQUIPMENT ROOMS, ELEVATOR EQUIPMENT ROOMS OR SIMILAR ROOMS. ONLY SPRINKLER PIPING SERVING SPRINKLERS HEADS IN THOSE ROOMS SHALL BE ALLOWED.
4. PIPING SHALL NOT BE INSTALLED ABOVE ELECTRICAL TRANSFORMERS, SWITCHBOARDS, PANELBOARDS OR MOTOR CONTROL CENTERS.
5. MINIMUM RUN-OUT PIPE SIZE TO SPRINKLER HEADS SHALL BE 1".

PLUMBING GENERAL NOTES:

1. THESE DRAWINGS ARE DIAGRAMMATIC, AND REPRESENT THE GENERAL INTENT AND ARRANGEMENT OF SYSTEMS. THEY ARE NOT TO BE CONSIDERED FABRICATION/COORDINATION/SHOP DRAWINGS. COORDINATION WITH OTHER TRADES IS REQUIRED. PROVIDE THE ADDITIONAL FITTINGS AND OFFSETS THAT WILL BE REQUIRED TO COMPLETE EACH SYSTEM AND TO AVOID INTERFERENCES WITH ALL OTHER SYSTEMS INCLUDING THE STRUCTURE, SHEET METAL, OTHER PIPING SYSTEMS, ELECTRICAL CONDUITS, BUS DUCTS, CABLE TRAY, LIGHT FIXTURES, ETC. AND/OR OTHER SPACE CONSTRAINTS.
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5. PROVIDE SUPPLEMENTARY STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL SYSTEMS.
6. REFER TO ARCHITECTURAL PLANS FOR DIMENSIONED LOCATIONS OF PLUMBING FIXTURES.
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9. PROVIDE CODE REQUIRED CLEARANCE FOR ALL CLEANOUTS INSTALLED IN SANITARY WASTE AND VENT PIPING.
10. MINIMUM UNDERGROUND PIPE SIZE SHALL BE 3".
11. WATER SERVICE ENTRANCE PIPING SHALL BE BURIED WITH DEPTH OF COVER OVER TOP OF PIPE OF AT LEAST __, OR WITH TOP OF PIPE AT LEAST 12" BELOW LEVEL OF MAXIMUM FROST PENETRATION, OR AS REQUIRED BY AUTHORITIES HAVING JURISDICTION, WHICHEVER IS DEEPEST.

CONSTRUCTION KEY NOTES:

1. SLOPE DOMESTIC WATER PIPING TO SERVICE SINK IN JANITOR CLOSET.
2. CONNECT HW, CW, AND VENT PIPING TO LAVS.
3. CONNECT HW, CW, AND VENT PIPING TO SINK.
4. PROVIDE WET PIPE SPRINKLER SYSTEM PER NFPA 13.
5. ROUTE 1 1/4 CW AND 1 1/4 HW TO MIXING VALVE LOCATED ON WALL ABOVE UNIT.
6. PROVIDE DOUBLE CHECK VALVE ASSEMBLY FOR FIRE PROTECTION SYSTEM. ROUTE F PIPING TO CHLORINE AND ACID ROOM AND PROVIDE SPRINKLER HEADS IN EACH.
7. ROUTE 2 1/2 CW TO FILL STATION LOCATED ON THE EAST WALL. PROVIDE PIPING CONFIGURATION AS OUTLINED ON SHEET SP4.2, DETAIL 10.
8. LOCATE SUMP PUMP CONTROL PANEL ON UNI-STRUT RACK, PROVIDE REQUIRED CLEARANCE IN FRONT AND TOP OF PANEL.

TMP ARCHITECTURE

REGISTRATION SEAL

CONSULTANT

PROJECT TITLE
Ford Woods Park Pool

City of Dearborn

DRAWING TITLE
PLUMBING PLAN

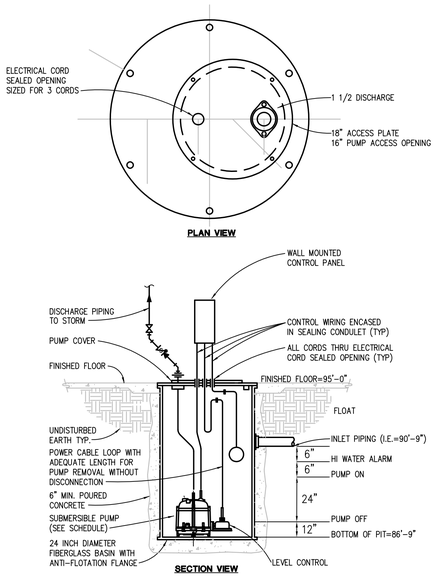
ISSUE DATES

DATE:	ISSUED FOR:
11-16-2017	ADDENDUM NO. 2
10-25-2017	BIDS
09-27-2017	OWNER REVIEW

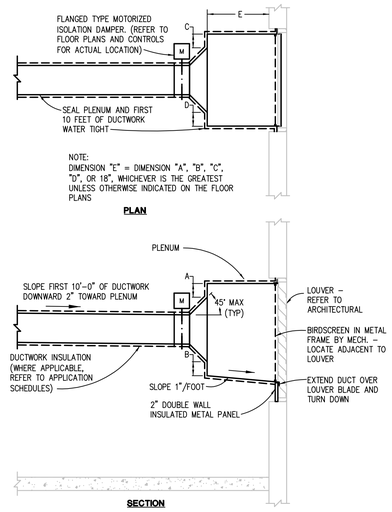
DRAWN JTH
CHECKED DAC
APPROVED DAC

PROJECT NO.
17071

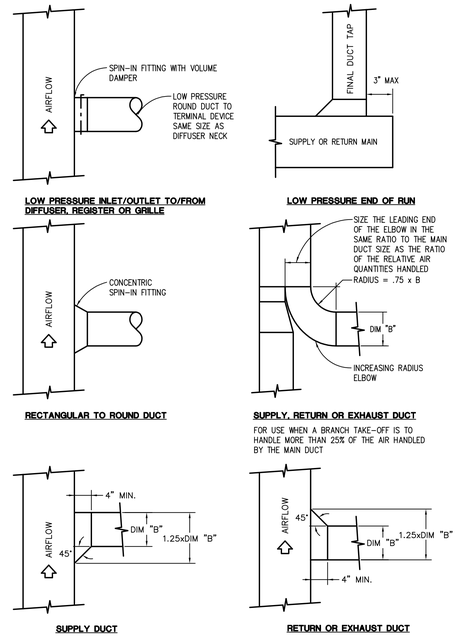
DRAWING NO.
M2.1



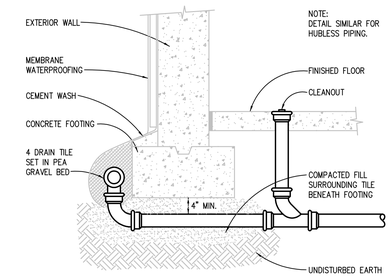
SIMPLEX SUMP PUMP PIPING DIAGRAM
NO SCALE



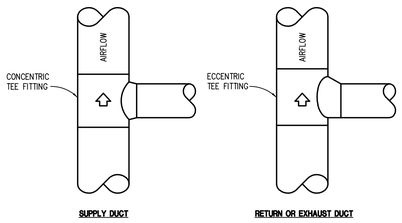
OUTDOOR AIR INTAKE OR EXHAUST/RELIEF PLENUM DETAIL
NO SCALE



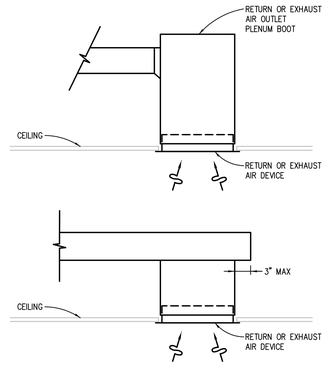
RECTANGULAR DUCT BRANCH TAKE-OFF DETAILS
NO SCALE



DRAIN TILE CONNECTION DETAIL
NO SCALE

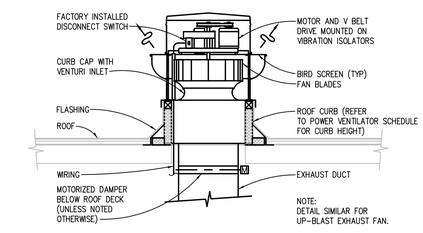


SPIRAL DUCT BRANCH TAKE-OFF DETAILS
NO SCALE (ROUND AND FLAT OVAL SIMILAR)

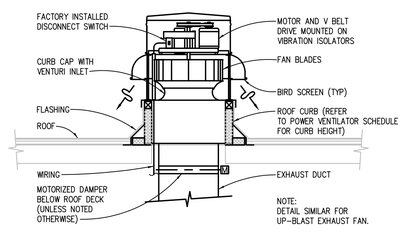


RETURN OR EXHAUST AIR DEVICE INSTALLATION DETAIL
NO SCALE

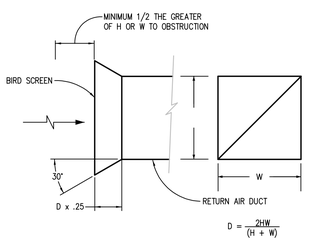
NOTE: PAINT INTERIOR SURFACE OF PLENUM BOX FLAT BLACK.



ROOF MOUNTED UP-BLAST POWER VENTILATOR EXHAUST FAN DETAIL
NO SCALE



ROOF MOUNTED POWER VENTILATOR EXHAUST FAN DETAIL
NO SCALE



BELLMOUTH DETAIL
NO SCALE

TMP ARCHITECTURE

REGISTRATION SEAL

CONSULTANT

PROJECT TITLE
Ford Woods Park Pool

City of Dearborn

DRAWING TITLE
MECHANICAL DETAILS

ISSUE DATES

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DRAWN	JTH
CHECKED	DAC
APPROVED	DAC

PROJECT NO.
17071

DRAWING NO.
M6.2

DUCT SYSTEM APPLICATION SCHEDULE

AIR SYSTEMS	DUCT MATERIAL: G90 GALV. SHEET METAL	DOUBLE-WALL LINED G90 GALV. SHEET METAL (OUTER WALL)	DOUBLE-WALL LINED G90 GALV. SHEET METAL (PERF. INNER WALL)	G90 GALV. SHEET METAL WITH 1-INCH LINING	GALVANNEALED SHEET METAL	ALUMINUM	TYPE 304 STAINLESS STEEL	TYPE 316 STAINLESS STEEL	PVC COATED GALV. SHEET METAL (4X)	PVC COATED GALV. SHEET METAL (1X4)	PVC COATED GALV. SHEET METAL (4X4)	16 GA. CARBON STEEL	ZERO-CLEARANCE PREFABRICATED RANGE HOOD EXHAUST DUCT	FABRIC	DESIGN PRESSURE CLASS (INCHES WG)	SEAL CLASS	MAX. ALLOWABLE LEAKAGE RATE (PERCENT)	KEYED NOTES
SUPPLY AIR IN CORROSIVE ENVIROMENT						X					X				+2	A	5	
RETURN OR EXHAUST AIR IN CORROSIVE ENVIROMENT						X					X				−2	A	5	
LOCKER ROOM AND WET AREA EXHAUST						X									−2	A	5	
AIR TRANSFER DUCT				X											+2	A	5	
RELIEF AIR DOWNSTREAM OF FANS	X														+2	A	5	
OUTSIDE AIR AND MIXED AIR DUCT	X														−2	A	5	
OUTSIDE AIR, RELIEF AIR AND EXHAUST AIR PLENUMS ADJACENT TO EXTERIOR LOUVERS	X														+/−6	A	5	

GENERAL NOTES

1. 'X' INDICATES ACCEPTABLE SELECTION. IF MORE THAN ONE SELECTION IS INDICATED FOR A DUCT SYSTEM, CONTRACTOR MAY SELECT FROM THOSE INDICATED SELECTIONS.
2. 4 X 1 PVC-COATED GALVANIZED STEEL: FACTORY-APPLIED PVC COATINGS SHALL BE 4 MILS (0.10 MM) THICK ON EXTERIOR SHEET METAL SURFACES OF DUCTS AND FITTINGS EXPOSED TO CORROSIVE CONDITIONS AND MINIMUM 1 MIL (0.025 MM) THICK ON INTERIOR SURFACES.
3. 1 X 4 (4 X 1 REVERSE COATED) PVC-COATED GALVANIZED STEEL: FACTORY-APPLIED PVC COATINGS SHALL BE 4 MILS (0.10 MM) THICK ON INTERIOR SHEET METAL SURFACES OF DUCTS AND FITTINGS EXPOSED TO CORROSIVE CONDITIONS AND MINIMUM 1 MIL (0.025 MM) THICK ON EXTERIOR SURFACES.
4. 4 X 4 PVC-COATED GALVANIZED STEEL: FACTORY-APPLIED PVC COATINGS SHALL BE 4 MILS (0.10 MM) THICK ON SHEET METAL SURFACES OF DUCTS AND FITTINGS EXPOSED TO CORROSIVE CONDITIONS AND 4 MILS (0.10 MM) THICK ON OPPOSITE SURFACES.

KEYED NOTES

A. SCREWS, DAMPERS, OR PROJECTIONS OF ANY TYPE ON INTERIOR OF DUCT SURFACE ARE PROHIBITED.
B. DUCT SHALL BE LINED WITHIN 25 FEET UPSTREAM OF FANS.
C. ALL WELDED CONSTRUCTION.

VIBRATION ISOLATOR APPLICATION SCHEDULE

EQUIPMENT TYPE	EQUIPMENT CATEGORY	HORSEPOWER AND OTHER	RPM	EQUIPMENT LOCATION: SLAB ON GRADE: BASE TYPE	SLAB ON GRADE: ISOLATOR TYPE	SLAB ON GRADE: MIN. DEFL., IN. (MM)	UP TO 40 FT (12 M) FLOOR SPAN: BASE TYPE	UP TO 40 FT (12 M) FLOOR SPAN: ISOLATOR TYPE	UP TO 40 FT (12 M) FLOOR SPAN: MIN. DEFL., IN. (MM)	KEYED NOTES
PUMPS	INLINE	5 TO 25	ALL	A	3	0.75 (19)	A	3, 8a OR 8b	1.50 (38)	
		≥30	ALL	A	3	1.50 (38)	A	3, 8a OR 8b	2.50 (64)	
BOILERS	FIRE-TUBE	ALL	ALL	A	1a OR 1b	0.25 (6)	B	4	2.50 (64)	NOTE 3
	WATER-TUBE, COPPER FIN	ALL	ALL	A	1a OR 1b	0.12 (3)	B	4	0.25 (6)	
SUSPENDED DUCTED ROTATING EQUIPMENT	SMALL FANS, FAN-POWERED BOXES	≤600 CFM	ALL				A	8a OR 8b	0.50 (13)	NOTES 3, 4
		>600 CFM	ALL				A	8a OR 8b	0.75 (19)	

NOTES:

1. THRUST RESTRAINTS: PROVIDE THRUST RESTRAINTS BETWEEN FAN DISCHARGE AND DUCT (IN PAIRS, LOCATED ON THE CENTERLINE OF THE DISCHARGE OUTLET OF THE FAN, BRIDGING THE FLEXIBLE DUCT CONNECTOR) FOR ALL FAN HEADS, FOR AXIAL AND CENTRIFUGAL FANS UNITS OPERATING AT 2 INCHES OR GREATER TOTAL STATIC PRESSURE AND AS SHOWN ON DRAWINGS. SPRING DEFLECTION SHALL BE SAME AS THE SUPPORT ISOLATORS.
2. PIPING RISER ISOLATION: PROVIDE PIPE RISER RESILIENT ANCHORS, SPRING MOUNTS AND RESILIENT PIPE GUIDES CAPABLE OF DISTRIBUTING THE LOADS WITHIN THE BUILDING DESIGN LIMITS AT THE SUPPORT POINTS.
3. HORIZONTAL PIPING VIBRATION ISOLATION: PROVIDE TYPE 8a OR 8b SPRING HANGERS FOR PIPING CONNECTED TO VIBRATION ISOLATED EQUIPMENT FOR ALL PIPING IN MECHANICAL ROOMS OR THE FOLLOWING MINIMUM HORIZONTAL DISTANCES FROM THE ISOLATED EQUIPMENT: UP TO 6" – 50 FEET (1 1/2" MINIMUM DEFLECTION), 8" AND LARGER – 100 FEET (2 1/2" MINIMUM DEFLECTION), WHICHEVER IS GREATER, AND AS SHOWN ON DRAWINGS. THE FIRST 4 HANGERS FROM THE ISOLATED EQUIPMENT SHALL BE TYPE 8b.
4. DUCTWORK VIBRATION ISOLATION: PROVIDE TYPE 8a OR 8b SPRING HANGERS FOR DUCTWORK WITH A CROSS SECTION OF 2 SQUARE FEET OR GREATER CONNECTED TO AIR HANDLING UNITS, RETURN OR RELIEF FANS, AND VIBRATION ISOLATED EQUIPMENT FOR ALL SUCH DUCTWORK IN MECHANICAL ROOMS OR FOR A MINIMUM HORIZONTAL DISTANCE OF 100 FEET FROM THE ISOLATED EQUIPMENT, WHICHEVER IS GREATER, AND AS SHOWN ON DRAWINGS (3/4" MINIMUM DEFLECTION).
5. IF SPAN DOES NOT EXCEED 20 FT, SPRING DEFLECTION MAY BE 1.0 IN AND TYPE D BASE MAY BE USED. FOR SPANS GREATER THAN 20 FT, USE SPRING DEFLECTION INDICATED AND TYPE E BASE.

BASE TYPES:

BASE TYPE A – NO BASE, ISOLATORS ATTACHED DIRECTLY TO EQUIPMENT.
BASE TYPE B – STRUCTURAL, STEEL RAILS OR BASE.
BASE TYPE C – CONCRETE INERTIA BASE.
BASE TYPE D – CURB – MOUNTED ALUMINUM BASE WITH 1" DEFL. SPRING ISOLATORS
BASE TYPE E – CURB – MOUNTED STEEL BASE WITH ADJUSTABLE 1", 2" OR 3" DEFL. SPRING ISOLATORS

ISOLATOR TYPES:

ISOLATOR TYPE 1a – ELASTOMERIC ISOLATION PAD.
ISOLATOR TYPE 1b – ELASTOMERIC ISOLATION PAD WITH STEEL LOAD BEARING PLATE.
ISOLATOR TYPE 2 – ELASTOMERIC FLOOR ISOLATOR.
ISOLATOR TYPE 3 – FREE STANDING SPRING FLOOR ISOLATOR.
ISOLATOR TYPE 4 – RESTRAINED SPRING ISOLATOR.
ISOLATOR TYPE 5 – THRUST RESTRAINT.
ISOLATOR TYPE 6 – AIR SPRING.
ISOLATOR TYPE 7 – ELASTOMERIC HANGERS.
ISOLATOR TYPE 8a – SPRING HANGERS.
ISOLATOR TYPE 8b – SPRING HANGERS WITH VERTICAL-LIMIT STOP.

PLUMBING PIPING & VALVE APPLICATION SCHEDULE

PIPE SIZE (INCHES)	MATERIAL: SOFT COPPER TYPE K	HARD COPPER TYPE L	HARD COPPER TYPE M	CARBON STEEL (SCHED. 40)	CARBON STEEL (STD.)	GALV. STEEL (SCHED. 40)	PEX	PE PIPE	PE SHEATHED CARBON STEEL PIPE	CSST	NO-HUB CISP	PVC TYPE DWV	PP DRAINAGE PIPE	COPPER TYPE DWV	DUCTILE IRON PIPE	PRESSURE CONNECTIONS: SOLDERED	BRAZED	WELDED	THREADED	FLANGED	GROOVED	INSERT & CRIMP	FUSION	PRESSURE-SEAL	MECHANICALLY-FORMED TEE	MECHANICAL JOINT	PUSH-ON-JOINT	GRAVITY DWV CONNECTIONS: SOLVENT WELDED	SOLDERED	FUSION	CISPI HUBLESS	HEAVY-DUTY HUBLESS	ISOLATION VALVES: BALL	AGA BALL	GENERAL SERVICE BUTTERFLY	LUBRICATED PLUG	GATE	KEYED NOTES
ABOVEGROUND DOMESTIC WATER (POTABLE AND NON-POTABLE) ON DISTRIBUTION SIDE OF METER - MIN. WORKING PRESS. & TEMP., 125 PSIG AT 200 DEG F																																						
UP TO 4		X														X								X									X		X			A
UNDERGROUND DOMESTIC WATER (POTABLE AND NON-POTABLE) ON DISTRIBUTION SIDE OF METER - MIN. WORKING PRESS. & TEMP., 125 PSIG AT 200 DEG F																																						
UP TO 1-1/2	X						X																															B
ABOVEGROUND SANITARY WASTE & VENT - MIN. WORKING PRESS., 10-FOOT HEAD OF WATER																																						
1-1/2 TO 15											X																				X							
ABOVEGROUND INDIRECT SANITARY WASTE - MIN. WORKING PRESS., 10-FOOT HEAD OF WATER																																						
UP TO 8			X											X															X									
UNDERGROUND SANITARY WASTE & VENT - MIN. WORKING PRESS., 10-FOOT HEAD OF WATER																																						
3 TO 12											X																					X						
UNDERGROUND STORM DRAINAGE - MIN. WORKING PRESS., 10-FOOT HEAD OF WATER																																						
2 TO 12											X	X																X				X						
ABOVEGROUND PUMPED STORM DRAINAGE - MIN. WORKING PRESS., 125 PSIG (NON-CORROSIVE)																																						
UP TO 2		X			X											X			X															X				
ABOVEGROUND PUMPED STORM DRAINAGE - MIN. WORKING PRESS., 125 PSIG (CORROSIVE)																																						
UP TO 2		X														X																		X				
ABOVEGROUND COLD CONDENSATE DRAIN - MIN. WORKING PRESSURE 10 FT. HEAD OF WATER																																						
ALL SIZES			X											X		X																							
ABOVEGROUND FUEL GAS - MIN. WORKING PRESS., 100 PSIG																																						
UP TO 2				X														X		X														X				E
2-1/2 TO 3				X														X			X													X				E

GENERAL NOTES

1. 'X' INDICATES ACCEPTABLE SELECTION. IF MORE THAN ONE SELECTION IS INDICATED FOR A PIPING SYSTEM, CONTRACTOR MAY SELECT FROM THOSE INDICATED SELECTIONS.
2. DISSIMILAR-METAL PIPING JOINTS: CONSTRUCT JOINTS USING DIELECTRIC FITTINGS COMPATIBLE WITH BOTH PIPING MATERIALS.
   a. NPS 2 AND SMALLER: USE DIELECTRIC NIPPLE/WATERWAY.
   b. NPS 2-1/2 AND LARGER: USE DIELECTRIC FLANGE KITS.
3. USE UNIONS OR FLANGES AT VALVE AND EQUIPMENT CONNECTIONS.
4. PLUMBING EQUIPMENT DRAINS, VENTS, SAFETY VALVE PIPING, BLOWDOWN PIPING AND THE LIKE SHALL BE SAME PIPING MATERIAL AS ASSOCIATED PIPING SYSTEM.
5. GROOVED END VALVES MAY BE USED WITH GROOVED PIPING.

KEYED NOTES

A. GROOVED AND PRESSURE SEALED FITTINGS, JOINTS, AND COUPLINGS, IF INDICATED AS AN ACCEPTABLE SELECTION, MAY BE USED IN ACCESSIBLE LOCATIONS ONLY FOR THIS PIPING SYSTEM.
B. JOINTS ARE NOT PERMITTED ON UNDERGROUND WATER PIPING.
C. USE CAST IRON DRAINAGE PATTERN (DURHAM) FITTINGS.
D. INSTALL IN CONTAINMENT JACKET, REFER TO SPECIFICATIONS.
E. USE STEEL WELDING FITTINGS AND WELDED JOINTS IN PLENUM CEILINGS. VALVES, FLANGES, OR UNIONS ARE PROHIBITED.
F. NO JOINTS ALLOWED UNDERGROUND.

HORIZONTAL PIPING AND SUPPORT APPLICATION SCHEDULE

METAL PIPE TYPE & SIZE	HANGER OR SUPPORT TYPE: MSS TYPE 1 CLEVIS HANGER	MSS TYPE 10 SWIVEL RING BAND HANGER	MSS TYPE 41 DOUBLE ROD PIPE ROLLER	MSS TYPE 43 SINGLE ROD ROLLER HANGER	MSS TYPE 44 PIPE ROLLER & STAND	MSS TYPE 46 ADJUSTABLE PIPE ROLL STAND	SHIELD TYPE: MSS TYPE 39 PROTECTION SADDLE	MSS TYPE 40 INSULATION PROTECTION SHIELD	THERMAL-HANGER SHIELD	KEYED NOTES
UNINSULATED SINGLE PIPE										
UP TO 2 INCH	X	X								
2-1/2 INCH TO 4 INCH	X	X								
INSULATED SINGLE COLD PIPES										
UP TO 2 INCH	X	X						X	X	A
2-1/2 INCH TO 4 INCH	X								X	
INSULATED SINGLE HOT PIPES										
UP TO 2 INCH	X	X					X	X	X	A, C
2-1/2 INCH TO 4 INCH			X	X	X	X	X		X	B, C

GENERAL NOTES

1. "X" INDICATES APPROVED HANGER OR SUPPORT ELEMENTS. IF MORE THAN ONE HANGER OR SUPPORT ELEMENT IS INDICATED, SELECTION FROM APPROVED ELEMENTS IS CONTRACTOR'S OPTION.
2. REFER TO HANGER AND SUPPORT SECTION FOR APPROVED MANUFACTURERS.
3. HANGERS AND SUPPORTS USED FOR FIRE PROTECTION SERVICES SHALL BE UL LISTED OR FMG APPROVED.
4. HANGER ELEMENTS IN CONTACT WITH BARE COPPER PIPE SHALL BE COPPER PLATED, PLASTIC COATED, FELT LINED, OR USE MANUFACTURED COPPER TUBE ISOLATORS.
5. REFER TO INDIVIDUAL PIPING SPECIFICATION SECTIONS FOR HANGER SPACING.
6. MULTIPLE PARALLEL COLD PIPES MAY BE TRAPEZE SUPPORTED FROM BELOW USING U-BOLTS OR STRUT CLAMPS AND THERMAL HANGER SHIELDS. REFER TO KEYED NOTE A.
7. MULTIPLE PARALLEL COLD PIPES MAY BE TRAPEZE SUPPORTED FROM ABOVE USING STANDARD HANGER ELEMENTS INDICATED FOR SINGLE COLD PIPES.
8. MULTIPLE PARALLEL HOT PIPES MAY BE TRAPEZE SUPPORTED FROM BELOW USING ROLLER ELEMENTS AND THERMAL HANGER SHIELD OR INSULATION PROTECTION SADDLE. REFER TO KEYED NOTES B AND C.
9. MULTIPLE PARALLEL HOT PIPES MAY BE TRAPEZE SUPPORTED FROM ABOVE USING STANDARD ROLLER HANGERS INDICATED AND THERMAL HANGER SHIELD OR INSULATION PROTECTION SADDLE. REFER TO KEY NOTES B AND C.
10. REFER TO INDIVIDUAL PIPING SPECIFICATION SECTIONS FOR ADDITIONAL SYSTEM SPECIFIC HANGER APPLICATIONS.

KEYED NOTES

A. USE THERMAL HANGER SHIELD ON TRAPEZE SUPPORTED INSULATED PIPE TO PREVENT CRUSHING OF INSULATION.
B. USE THERMAL HANGER SHIELD DESIGNED FOR USE ON ROLLER SUPPORTS FOR INSULATED HOT PIPE .
C. USE TYPE 39 PROTECTION SADDLES IF INSULATION WITHOUT VAPOR BARRIER IS INDICATED. FILL INTERIOR VOIDS WITH INSULATION MATCHING ADJOINING INSULATION.

ABOVEGROUND PLUMBING PIPE & ACCESSORY INSULATION APPLICATION SCHEDULE

	INSULATION MATERIAL & THICKNESS (INCHES): FLEXIBLE ELASTOMERIC	FIBERGLASS	MINERAL WOOL	POLYISOCYANURATE	PHENOLIC	CELLULAR GLASS	CALCIUM SILICATE	FIELD-APPLIED JACKET MATERIAL: ALUMINUM	STAINLESS STEEL	PVC	SELF-ADHESIVE (FOR OUTDOOR APPLICATIONS)	PVDC (INDOOR)	PVDC (OUTDOOR)	KEYED NOTES
INDOOR PIPE SYSTEM AND SIZE (INCHES)														
DOMESTIC COLD WATER	1	1						X		X				A
DOMESTIC HOT WATER SUPPLY & RETURN	1	1						X		X				A
CONDENSATE AND EQUIPMENT DRAIN PIPING BELOW 60 DEG F	0.75	1												
FLOOR DRAINS, TRAPS AND SANITARY DRAIN PIPING WITHIN 10 FEET OF DRAIN RECEIVING CONDENSATE AND EQUIPMENT DRAIN WATER BELOW 60 DEG F	0.75	1						X		X				A

UNLESS OTHERWISE INDICATED OR SCHEDULED, DO NOT INSULATE THE FOLLOWING:
- FIRE SUPPRESSION PIPING
- UNDERGROUND PIPING
- LABORATORY GAS AND VACUUM PIPING
- MEDICAL GAS AND VACUUM PIPING
- FUEL GAS PIPING
- FUEL OIL PIPING

GENERAL NOTES

1. 'X' OR THICKNESS IN INCHES INDICATES ACCEPTABLE SELECTION. IF MORE THAN ONE SELECTION IS INDICATED FOR A SYSTEM, CONTRACTOR MAY SELECT FROM THOSE INDICATED SELECTIONS.
2. INSULATE PIPING WITHIN AIR HANDLING EQUIPMENT THE SAME AS INDOOR PIPING. PROVIDE ALUMINUM OR STAINLESS STEEL JACKET.

KEYED NOTES

A. PROVIDE FIELD APPLIED JACKET FOR PIPING EXPOSED IN EQUIPMENT ROOMS, STORAGE ROOMS, JANITORS CLOSETS, RECEIVING ROOMS, TEST AREAS, CIRCULATION AREAS AND SUCH AREAS SUBJECT TO DAMAGE, WITHIN 10 FEET (3 METERS) OF FINISHED FLOOR.
B. PROVIDE MANUFACTURER'S RECOMMENDED PROTECTIVE COATING FOR FLEXIBLE ELASTOMERIC THERMAL INSULATION.

TMP ARCHITECTURE

REGISTRATION SEAL

CONSULTANT

PROJECT TITLE
Ford Woods Park Pool

City of Dearborn

DRAWING TITLE
MECHANICAL SCHEDULES

ISSUE DATES

11-16-2017	ADDENDUM NO. 2
10-25-2017	BIDS
09-27-2017	OWNER REVIEW
DATE:	ISSUED FOR:

DRAWN JTH
CHECKED DAC
APPROVED DAC

PROJECT NO.
17071

DRAWING NO.
M7.1

FAN SCHEDULE

UNIT IDENTIFICATION	SYSTEM SERVED	TYPE	AIRFLOW CFM	T.S.P. IN. W.G.	MINIMUM WHEEL DIAMETER INCHES	RPM	CLASS	ARRANGEMENT	OUTLET VELOCITY FPM	MOTOR				MODULATION/ CONTROL TYPE	ELECTRICAL			MAXIMUM SOUND POWER LEVELS													MODEL NUMBER	REMARKS
										BHP	HP	RPM	DRIVE TYPE		VOLTS	PHASE	OPTIONS/ ACCESSORIES	UNIT DISCHARGE Lw BY OCTAVE BAND								UNIT INLET Lw BY OCTAVE BAND									
																		63 HZ (DB)	125 HZ (DB)	250 HZ (DB)	500 HZ (DB)	1000 HZ (DB)	2000 HZ (DB)	4000 HZ (DB)	8000 HZ (DB)	63 HZ (DB)	125 HZ (DB)	250 HZ (DB)	500 HZ (DB)	1000 HZ (DB)	2000 HZ (DB)	4000 HZ (DB)	8000 HZ (DB)		
VF-1	SUPPLY	CENTRIFUGAL	11,000	0.4	30.5	777	---	INLINE	909	3.94	5	1725	BELT	VFC	460	3	---	89	93	82	72	69	59	51	49	86	92	86	78	77	74	69	65	BSQ-300-50	NOTE 3
VF-2	EXHAUST	CENTRIFUGAL	4,000	0.4	16.625	1420	---	INLINE	1142	0.92	1	1725	BELT	VFC	460	3	---	84	84	82	75	64	57	52	48	81	83	86	81	72	72	70	64	BSQ-160-10	

NOTE:
1. REFER TO SCHEDULES GENERAL NOTES.
2. MODEL NUMBERS ARE GREENHECK UNLESS OTHERWISE NOTED.
3. PROVIDE MANUFACTURED FILTER BOX ASSEMBLY WITH FAN.

POWER VENTILATOR SCHEDULE

UNIT IDENTIFICATION	SYSTEM SERVED	TYPE	AIRFLOW CFM	T.S.P. IN. W.G.	TIP SPEED FPM	FAN RPM	MOTOR				CURB HEIGHT INCHES	MODULATION/ CONTROL TYPE	ELECTRICAL										MODEL NUMBER	REMARKS
							BHP	HP	RPM	DRIVE TYPE			VOLTS	PHASE	OPTIONS/ ACCESSORIES	UNIT INLET Lw BY OCTAVE BAND								
																63 HZ (DB)	125 HZ (DB)	250 HZ (DB)	500 HZ (DB)	1000 HZ (DB)	2000 HZ (DB)	4000 HZ (DB)	8000 HZ (DB)	
EF-1	EXHAUST	CENTRIFUGAL	6,700	0.4	7263	1156	2.36	3	1725	BELT	18	VFC	460	3	A	82	83	91	84	80	77	75	70	GB-220HP-30	
EF-2	FILTRATION	CENTRIFUGAL	1,600	0.2	2988	67	0.12	1/2	1000	DIRECT	18	ECM	120	1	A	68	73	67	62	62	58	52	47	CUE-161-VG	NOTE 3
EF-3	CHLORINE	CENTRIFUGAL	235	.15	2746	1291	0.01	1/10	1725	DIRECT	18	ECM	120	1	A	65	63	58	47	41	40	33	29	CUE-70-VG	NOTE 3
EF-4	ACID	CENTRIFUGAL	165	.15	2853	1341	0.02	1/10	1725	DIRECT	18	ECM	120	1	A	61	61	58	50	47	45	36	31	CUE-65-VG	NOTE 3

NOTE:
1. REFER TO SCHEDULES GENERAL NOTES.
2. MODEL NUMBERS ARE GREENHECK UNLESS OTHERWISE NOTED.
3. PROVIDE HI-PRO POLYESTER COATING.

SPLIT SYSTEM AIR CONDITIONING UNIT SCHEDULE

INDOOR UNIT														OUTDOOR UNIT											REMARKS
UNIT IDENTIFICATION	TOTAL CAPACITY MBH	EVAPORATOR FAN			COOLING COIL			FILTER		ELECTRICAL				MODEL NUMBER	UNIT IDENTIFICATION	CONDENSING SECTION					MODULATION/ CONTROL TYPE	ELECTRICAL				MODEL NUMBER	
		AIRFLOW CFM	NUMBER FANS	WATTS EACH	E.D.B. °F	E.W.B. °F	MINIMUM FACE AREA SQ. FT.	EFF. %	AREA SQ. FT.	VOLTS	PHASE	FLA	MOP			NUMBER OF COMPRESSORS	NUMBER OF CONTROL STAGES	AMBIENT TEMPERTURE °F	AIRFLOW CFM	FAN WATTS		VOLTS	PHASE	FLA	MOP		
ACU-1	22.0	530	1	43	72	60	---	25-30	---	208	1	–	–	FTXS24DVJYU	ACCU-601	1	MODULATING	95	1752	53	AUTO	208	1	5.3	20	RX24FVJU	NOTES 3 & 4
ACU-2	22.0	530	1	43	72	60	---	25-30	---	208	1	–	–	FTXS24DVJYU	ACCU-602	1	MODULATING	95	1752	53	AUTO	208	1	5.3	20	RX24FVJU	NOTES 3 & 4

NOTE:
1. REFER TO SCHEDULES GENERAL NOTES.
2. MODEL NUMBERS DAIKIN UNLESS OTHERWISE NOTED.
3. UNITS SHALL BE CAPABLE OF OPERATING DOWN TO 0 DEG. F.
4. INDOOR UNIT POWER FEED THROUGH OUTDOOR UNIT.

PUMP SCHEDULE

UNIT IDENTIFICATION	SYSTEM SERVED	LOCATION	TYPE	COUPLING TYPE	WATERFLOW GPM	FLUID TYPE	COLDEST SYSTEM OPERATING TEMP. °F FOR PUMP SELECTION	PUMP HEAD FT.	OVERLOAD GPM	MINIMUM EFFICIENCY %	MOTOR			MODULATION/ CONTROL TYPE	ELECTRICAL			MODEL NUMBER	REMARKS
											BHP	HP	RPM		VOLTS	PHASE	OPTIONS/ ACCESSORIES		
CP-1	DHW RETURN	STORAGE-106	INLINE	CLOSE	1.2	WATER	40	7	NON-OVERLOADING	---	---	1/6	3300	AUTO	120	1	---	PL-35	

NOTE:
1. REFER TO SCHEDULES GENERAL NOTES.
2. MODEL NUMBER ARE BELL & GOSSETT UNLESS OTHERWISE NOTED.
3. FLUID TYPE: W = WATER.

FUEL FIRED DOMESTIC WATER HEATER SCHEDULE

UNIT IDENTIFICATION	STORAGE CAPACITY GALLONS	FUEL TYPE	FIRING RATE MBH	RECOVERY GPH	E.W.T. °F	L.W.T. °F	MODULATION/ CONTROL TYPE	ELECTRICAL					MODEL NUMBER	REMARKS
								VOLTS	PHASE	FLA	MOP	OPTIONS/ ACCESSORIES		
DWH-1	320	NATURAL GAS	285	332	40	140	AUTO	120	1	6.7	15	B	AWN286PM	NOTE 3

NOTE:
1. REFER TO SCHEDULES GENERAL NOTES.
2. MODEL NUMBERS ARE LOCHINVAR UNLESS OTHERWISE NOTED.
3. PROVIDE LOCHINVAR RGA0318 STORAGE TANK.

THERMOSTATIC MIXING VALVE SCHEDULE

UNIT IDENTIFICATION	MINIMUM FLOW GPM	MAXIMUM FLOW GPM	PRESSURE DROP AT MAXIMUM FLOW PSIG	MODEL NUMBER	REMARKS
MV-1	2	85	4	S59-3080	

NOTE:
1. MODEL NUMBERS ARE BRADLEY UNLESS OTHERWISE NOTED.

EXPANSION TANK SCHEDULE

UNIT IDENTIFICATION	SYSTEM SERVED	ESTIMATED TOTAL SYSTEM VOLUME GALLON	TYPE	OPERATING PRESSURE		OPERATING TEMPERATURE		TANK VOLUME GALLON	ACCEPTANCE VOLUME GALLON	DIMENSIONS		MODEL NUMBER	REMARKS
				MINIMUM PSIG	MAXIMUM PSIG	MINIMUM °F	MAXIMUM °F			DIAMETER INCHES	HEIGHT INCHES		
ET-1	DOMESTIC WATER	345	DIAPHRAGM	---	150	40	130	6.4	3	12	15-5/8	PTA-12	

NOTE:
1. MODEL NUMBERS ARE BELL & GOSSETT UNLESS OTHERWISE NOTED.

GRILLE, REGISTER, AND DIFFUSER SCHEDULE

UNIT IDENTIFICATION	TYPE	FACE SIZE	NECK SIZE	FRAME TYPE	ACCESSORY	CONSTRUCTION	FINISH	MODEL NUMBER	REMARKS
S-1	GRILLE	NK + 1-3/4	SEE PLANS	NOTE 2	---	ALUMINUM	WHITE	S300FL	
E-1	REGISTER	24x12	SEE PLANS	NOTE 2	OPPOSED BLADE DAMPER	ALUMINUM	WHITE	PAR-AA	
E-2	GRILLE	NK + 1-3/4	SEE PLANS	NOTE 2	---	ALUMINUM	WHITE	33RL	
T-1	GRILLE	NK + 1-3/4	SEE PLANS	NOTE 2	---	ALUMINUM	WHITE	33RL	

NOTE:
1. MODEL NUMBERS ARE TITUS UNLESS OTHERWISE NOTED.
2. COORDINATE FRAME TYPE WITH ARCHITECTURAL TRADES, PROVIDE PLASTER FRAME TRAP WHERE REQUIRED.

PLUMBING CONNECTION SCHEDULE

UNIT IDENTIFICATION	CW INCHES	HW INCHES	SAN INCHES	VENT INCHES	REMARKS
UR-1	3/4	–	2	1 1/2	
WC-1	1 1/2	–	4	2	
LAV-1	1/2	1/2	1 1/2	1 1/2	
SK-1	3/4	3/4	1 1/2	1 1/2	
SS-1	3/4	3/4	3	–	
SH-1	3/4	3/4	–	–	PROVIDE MIXING VALVE
SH-2	3/4	3/4	–	–	PROVIDE MIXING VALVE
FD-1	–	–	3	–	
FD-2	–	–	4	–	

NOTE: INDIVIDUAL WATER LINE BRANCHES, WASTE LINES, VENTS, AND TRAPS FOR CONNECTION TO INDIVIDUAL FIXTURES, FIXTURE FITTINGS, AND SPECIALTIES SHALL BE IN ACCORDANCE WITH THE FOLLOWING SCHEDULE OR AS INDICATED ON DRAWINGS, WHICHEVER IS GREATER.

SEWAGE PUMP AND SUMP PUMP SCHEDULE

UNIT IDENTIFICATION	SYSTEM SERVED	SIMPLEX OR DUPLEX	PUMP					BASIN				MODULATION/ CONTROL TYPE	ELECTRICAL			MODEL NUMBER	REMARKS
			QUANTITY	FLOW EACH GPM	W.P.D. FT. HEAD	HP EACH	RPM	CONSTRUCTION	DIAMETER INCHES	DEPTH INCHES	COVER TYPE		VOLTS	PHASE	OPTIONS/ ACCESSORIES		
SP-1	DRAIN TILE	SIMPLEX	1	30	28	1	1750	FIBERGLASS	24	105	cov type	AUTO	208	3	B	1601	

NOTE:
1. REFER TO SCHEDULES GENERAL NOTES.
2. MODEL NUMBERS ARE WEIL UNLESS OTHERWISE NOTED.

SCHEDULES GENERAL NOTES:

TYPICAL FOR ALL SCHEDULE SHEETS:

1. REFER TO ELECTRICAL STANDARD SCHEDULES, ONE LINE DIAGRAM AND PANEL SCHEDULES FOR ADDITIONAL ELECTRICAL INFORMATION
2. PROVIDE THE FOLLOWING FACTORY-WIRED ELECTRICAL OPTIONS/ACCESSORIES WHERE INDICATED IN SCHEDULE:
   - A – NON-FUSED DISCONNECT SWITCH
   - B – UNIT SHALL BE SINGLE POINT ELECTRICAL CONNECTION WITH FACTORY INSTALLED DISCONNECTING MEANS AND ALL REQUIRED STARTERS AND CONTROLS
   - C – SERVICE RECEPTACLE
   - D – FUSED DISCONNECT SWITCH
   - E – COMBINATION STARTER
   - F – UNIT SHALL HAVE (2) SINGLE POINT CONNECTIONS WITH FACTORY INSTALLED DISCONNECTING MEANS AND ALL REQUIRED STARTERS AND CONTROLS. (1) CONNECTION SHALL BE FOR CONDENSING SECTION AND (1) CONNECTION SHALL BE FOR THE REMAINDER OF THE UNIT.
3. FOR MODULATION/CONTROL TYPE COLUMN, "VFC" INDICATES VARIABLE FREQUENCY CONTROLLERS, "AUTO" INDICATES AUTOMATIC OPERATION (CONTROLLED BY TEMPERATURE CONTROLS OR SELF CONTAINED CONTROLS), "MANUAL" INDICATES HAND OPERATION.
4. IF VARIABLE FREQUENCY CONTROLLERS ARE INDICATED TO BE PROVIDED AND ARE NOT INSTALLED INTEGRAL TO THE UNIT, VARIABLE FREQUENCY CONTROLLERS SHALL BE SUPPLIED BY THE MECHANICAL CONTRACTOR (UNLESS OTHERWISE NOTED) AND INSTALLED BY THE ELECTRICAL CONTRACTOR INCLUDING THE LINE SIDE AND LOAD SIDE WIRING TO THE MOTOR AND INCLUDING MISCELLANEOUS STEEL REQUIRED FOR THE SUPPORT AND MOUNTING OF THE VFC. REFER TO FLOOR PLANS FOR LOCATION.
5. WHERE EQUIPMENT IS INDICATED TO HAVE A SINGLE POINT ELECTRICAL CONNECTION, THAT EQUIPMENT SHALL COME COMPLETE WITH FACTORY INSTALLED STARTERS, MOTOR OVERLOAD PROTECTION, CONTACTORS, FUSING AND ALL NECESSARY INTERNAL WIRING AND CONTROLS. PROVIDE A FACTORY MOUNTED UNIT DISCONNECTING MEANS WHERE THE ELECTRICAL CONTRACTOR SHALL MAKE SINGLE POINT CONNECTION. INSTALL PACKAGED EQUIPMENT SUCH THAT THE ELECTRICAL CONNECTION AND CONTROLS ARE ACCESSIBLE AND HAVE CLEARANCES MEETING THE NATIONAL ELECTRICAL CODE.
6. WHERE PACKAGED EQUIPMENT IS PROVIDED, NAMEPLATE MUST INDICATE MAXIMUM OVERCURRENT PROTECTION BY HACR RATED CIRCUIT BREAKERS OR FUSES. IF FUSE PROTECTION ONLY IS INDICATED, PROVIDE A FUSIBLE DISCONNECT AND FUSES WITH THE UNIT.
7. WHERE EQUIPMENT IS DESIGNATED BY MANUFACTURER AND MODEL NUMBER, THIS IS THE BASIS OF DESIGN. IF THE CONTRACTOR ELECTS TO PROVIDE EQUIPMENT BY OTHER SPECIFIED MANUFACTURERS OR PROPOSED ALTERNATE EQUIPMENT BY THE BASIS OF DESIGN MANUFACTURER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY REVISIONS TO ELECTRICAL REQUIREMENTS, STRUCTURAL LOADING, OR ARCHITECTURAL APPURTENANCES AND SHALL INCLUDE THE COST OF SUCH REVISIONS IN HIS BID.
8. WHERE EQUIPMENT IS SCHEDULED TO INCLUDE A SERVICE RECEPTACLE, PROVIDE A FACTORY MOUNTED SERVICE RECEPTACLE WITH APPROPRIATE FUSES AND TRANSFORMERS CONNECTED ON THE LINE SIDE OF THE UNIT DISCONNECT. PROVIDE A NAMEPLATE ON THE DISCONNECT SWITCH INDICATING THE PRESENCE OF LIVE POWER TO THE SERVICE RECEPTACLE WHEN HE UNIT DISCONNECT IS IN THE OFF POSITION.
9. SIZE ALL EQUIPMENT FEEDERS BASED ON THE LISTED MOP (MAXIMUM OVERCURRENT PROTECTION). REFER TO THE FEEDER AND BRANCH CIRCUIT SIZING SCHEDULE ON THE ELECTRICAL STANDARD SCHEDULES SHEET.

TMP ARCHITECTURE

REGISTRATION SEAL

CONSULTANT

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DRAWING TITLE
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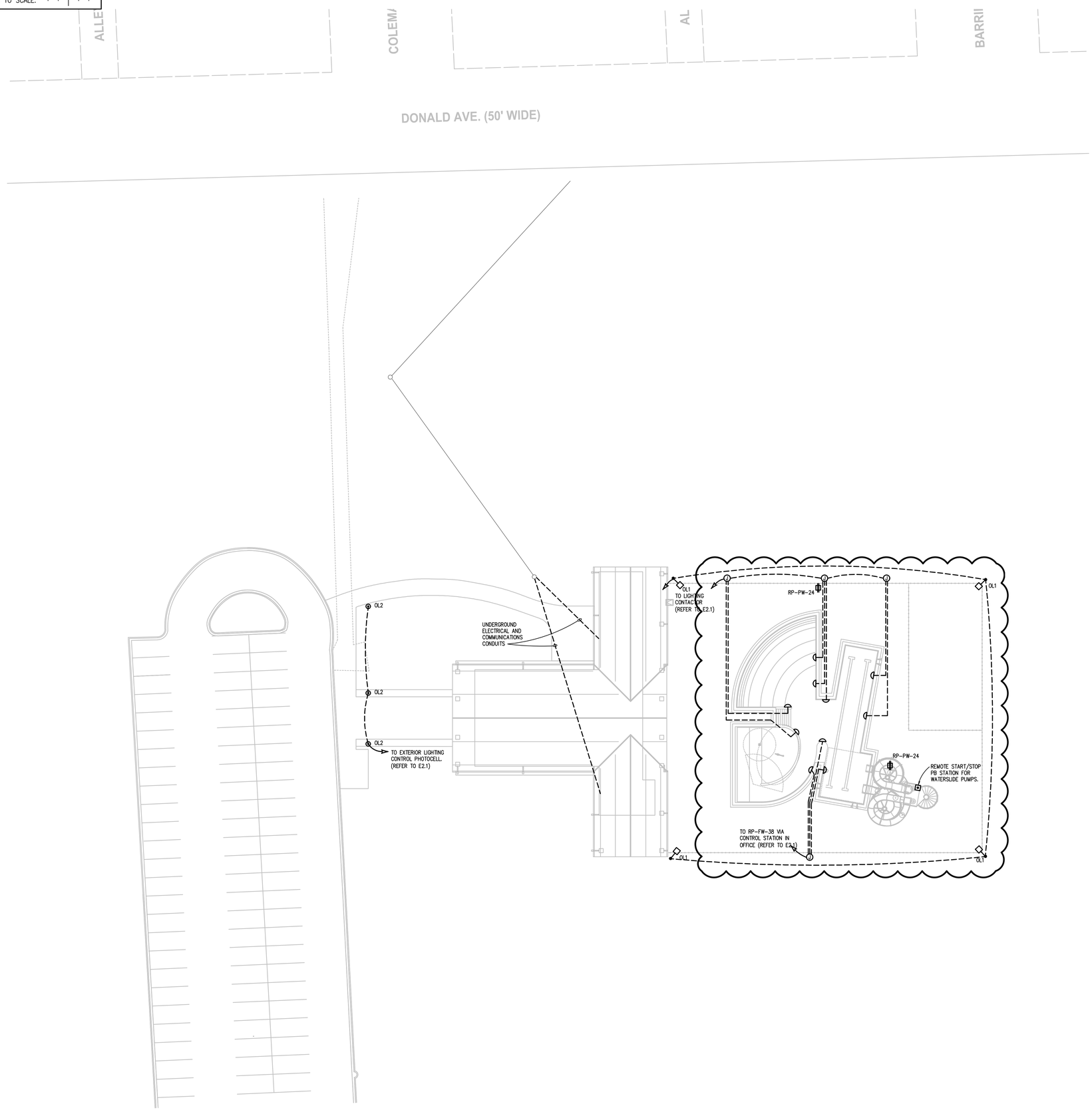
DRAWN JTH
CHECKED DAC
APPROVED DAC

PROJECT NO.
17071

DRAWING NO.
M7.2

THE FOLLOWING DIMENSION EQUALS ONE INCH WHEN PRINTED TO SCALE. 1"



SITE PLAN GENERAL NOTES:

1. THESE NOTES ARE GENERIC GUIDELINES ONLY. ELECTRICAL CONTRACTOR'S PERSONNEL ON SITE SHALL BE THOROUGHLY FAMILIAR WITH THE PUBLISHED SPECIFICATIONS FOR EXACT DESCRIPTIONS OF SCOPE, METHODS, AND MATERIAL.
2. THESE DRAWINGS REPRESENT THE GENERAL EXTENT AND ARRANGEMENT OF SYSTEMS, BUT ARE NOT TO BE CONSIDERED FABRICATION DRAWINGS. COORDINATE WITH OTHER TRADES, AND PROVIDE EACH SYSTEM COMPLETE, INCLUDING ALL NECESSARY COMPONENTS, FITTINGS, AND OFFSETS.
3. CONDUCT A SURVEY TO IDENTIFY ALL UNDERGROUND UTILITIES. CALL 811 PRIOR TO EXCAVATION.
4. UTILITIES SHOWN ON THESE DRAWINGS ARE FOR REFERENCE ONLY. COORDINATE EXACT LOCATION OF ALL EXISTING UTILITIES, AND ROUTING OF ALL NEW UNDERGROUND UTILITIES PRIOR TO EXCAVATION.
5. DEWATER TRENCHES PRIOR TO INSTALLATION OF CONDUITS. PROVIDE WATER TIGHT FITTINGS ON ALL UNDERGROUND CONDUITS.
6. COORDINATE DEMOLITION WORK, AND ELECTRICAL AND TELEPHONE SERVICES TO THE SITE, WITH THE RESPECTIVE LOCAL UTILITY COMPANY REPRESENTATIVES PRIOR TO COMMENCEMENT OF WORK. INCLUDE ALL ASSOCIATED COST/FEES BY THE UTILITY COMPANIES IN THE BID PRICE.
7. INSTALL UNDERGROUND CONDUITS 42" BELOW FINISHED GRADE, MINIMUM, UNLESS NOTED OTHERWISE.
8. COORDINATE SERVICE SHUT-DOWNS WITH ALL TRADES INVOLVED ON SITE AND OBTAIN WRITTEN AUTHORIZATION FROM OWNER 72 HOURS PRIOR TO ANY ELECTRICAL AND/OR TELEPHONE SHUT-DOWN.
9. REMOVE ALL DE-ENERGIZED CONDUCTORS FROM SITE AT COMPLETION OF THE PROJECT.
10. OUTDOOR LIGHTING BRANCH CIRCUIT WIRING SHALL BE MINIMUM #8 AWG CONDUCTORS (XHHW-2), IN MINIMUM 1" DIA. CONDUIT, UNLESS NOTED OTHERWISE.
11. SPARE CONDUITS SHALL INCLUDE PULL STRING AND SHALL BE TERMINATED WITH A CAP.
12. EXCAVATE THE ENTIRE LENGTH OF TRENCH TO PROPERLY SET DUCT ELEVATIONS.

(#) CONSTRUCTION KEY NOTES:

1. xxx
2. xxx

ELECTRICAL SITE PLAN
SCALE: 1" = 20'

811 Know what's **below.** **Call** before you dig.

TMP ARCHITECTURE

REGISTRATION SEAL

CONSULTANT

PROJECT TITLE
Ford Woods Park Pool

City of Dearborn

DRAWING TITLE
ELECTRICAL SITE PLAN

ISSUE DATES

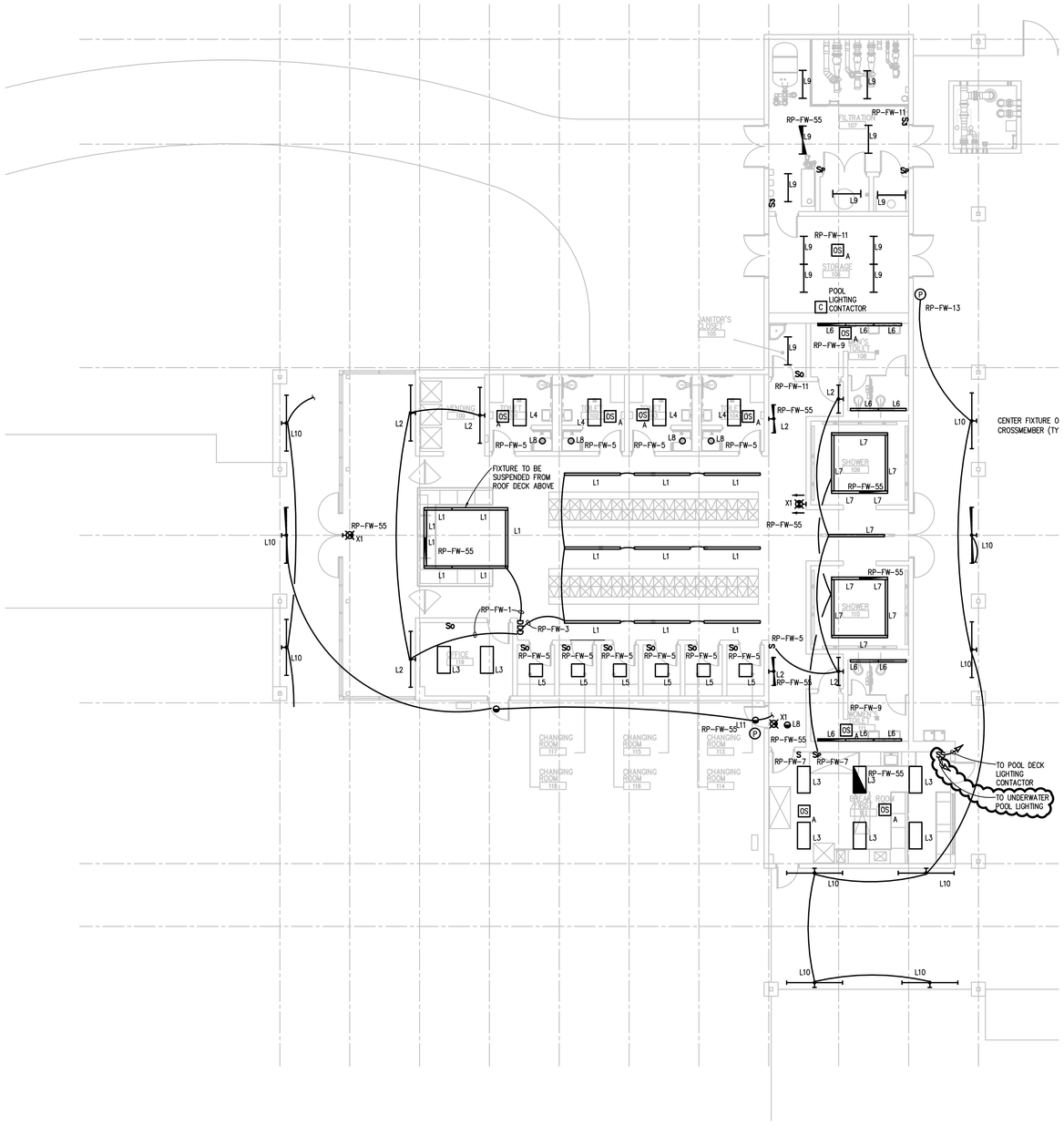
DATE:	ISSUED FOR:
11-16-2017	ADDENDUM NO. 2
10-25-2017	BIDS
09-27-2017	OWNER REVIEW

DRAWN ECD
CHECKED ECD
APPROVED SAG

PROJECT NO.
17071

DRAWING NO.
E0.3

THE FOLLOWING DIMENSION EQUALS ONE INCH WHEN PRINTED TO SCALE. 1"



LIGHTING PLAN
SCALE: 1/8" = 1' - 0"

ELECTRICAL GENERAL NOTES:

1. THESE DRAWINGS REPRESENT THE GENERAL EXTENT AND ARRANGEMENT OF SYSTEMS, BUT ARE NOT TO BE CONSIDERED FABRICATION DRAWINGS. COORDINATE WITH OTHER TRADES, AND PROVIDE EACH SYSTEM COMPLETE, INCLUDING ALL NECESSARY COMPONENTS, FITTINGS, AND OFFSETS.
2. INSTALL SYSTEMS SUCH THAT REQUIRED CLEARANCE AND SERVICE ACCESS SPACE IS PROVIDED AROUND ALL MECHANICAL AND ELECTRICAL EQUIPMENT, AND AROUND ANY COMPONENTS WHICH REQUIRE SERVICE ACCESS.
3. COORDINATE AND PROVIDE ACCESS DOORS WITHIN INACCESSIBLE CEILING, SHAFT, AND CHASE AREAS FOR ALL COMPONENTS WHICH REQUIRE SERVICE ACCESS. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.
4. PROVIDE SUPPLEMENTARY STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL SYSTEMS.
5. TRANSFORMER SECONDARY CONDUCTORS SHALL BE SIZED IN ACCORDANCE WITH TRANSFORMER CIRCUIT SIZING SCHEDULE SHOWN ON "ELECTRICAL STANDARD SCHEDULES DRAWING" UNLESS OTHERWISE NOTED.
6. MOTOR CIRCUIT PROTECTION SHALL BE SIZED IN ACCORDANCE WITH MOTOR CIRCUIT SIZING SCHEDULES SHOWN ON "ELECTRICAL STANDARD SCHEDULES DRAWING" UNLESS OTHERWISE NOTED.
7. COORDINATE THE MOUNTING HEIGHTS OF DEVICES WITH ARCHITECTURAL ELEVATIONS AND THE TRADES INSTALLING THE WORK.
8. REFER TO MECHANICAL SCHEDULE SHEETS FOR ELECTRICAL REQUIREMENTS FOR MECHANICAL EQUIPMENT. PROVIDE ALL CONNECTIONS, STARTERS, DISCONNECTS, ETC. AS REQUIRED BY SCHEDULES AND WHERE NOTED ELSEWHERE. VERIFY REQUIREMENTS OF ALL MECHANICAL EQUIPMENT WITH SHOP DRAWINGS SUBMITTALS. NOTIFY ENGINEER OF ANY CONFLICTS BETWEEN EQUIPMENT SUBMITTALS AND ELECTRICAL DRAWINGS. WHERE CIRCUIT SIZES ARE SHOWN ON THE ELECTRICAL DRAWINGS THAT DIFFER FROM WHAT IS INDICATED ON THE MECHANICAL SCHEDULES, PROVIDE THE CIRCUIT OF HIGHER AMPACITY.
9. REFER TO TEMPERATURE CONTROLS SHEETS FOR REQUIRED MOTOR CONTROLLERS. PROVIDE ALL ACCESSORIES INDICATED.
10. PROVIDE THE DESIGN AND INSTALLATION FOR A COMPLETE AND FUNCTIONAL FIRE ALARM SYSTEM IN ACCORDANCE WITH SPECIFICATIONS, DRAWINGS, AND ALL APPLICABLE CODES. THE FIRE ALARM VENDOR SHALL PROVIDE LAYOUT DRAWINGS INDICATING THE REQUIRED QUANTITIES AND LOCATIONS OF MANUAL PULL STATIONS, NOTIFICATION APPLIANCES, SMOKE AND HEAT DETECTORS, CONTROL MODULES, INTERFACE MODULES, MODULES FOR SPRINKLER FLOW AND TAMPER SWITCHES, ALL CONTROL PANELS, POWER SUPPLIES, ADDITIONAL DEVICES AND EQUIPMENT REQUIRED. COORDINATE LOCATIONS OF DEVICES WITH ARCHITECTURAL FINISHES AND REFLECTED CEILING PLANS, INCLUDING ADDITIONAL SMOKE AND HEAT DETECTORS REQUIRED FOR NON-SMOOTH CEILING APPLICATIONS. INCLUDE ALLOWANCES FOR ADJUSTMENT OF DEVICES BY THE ARCHITECT AT THE TIME OF SUBMITTAL TO COORDINATE WITH BUILDING FINISHES AND OTHER CEILING ELEMENTS.

TMP ARCHITECTURE

REGISTRATION SEAL

CONSULTANT

PROJECT TITLE
Ford Woods Park Pool

City of Dearborn

DRAWING TITLE
LIGHTING PLAN

ISSUE DATES

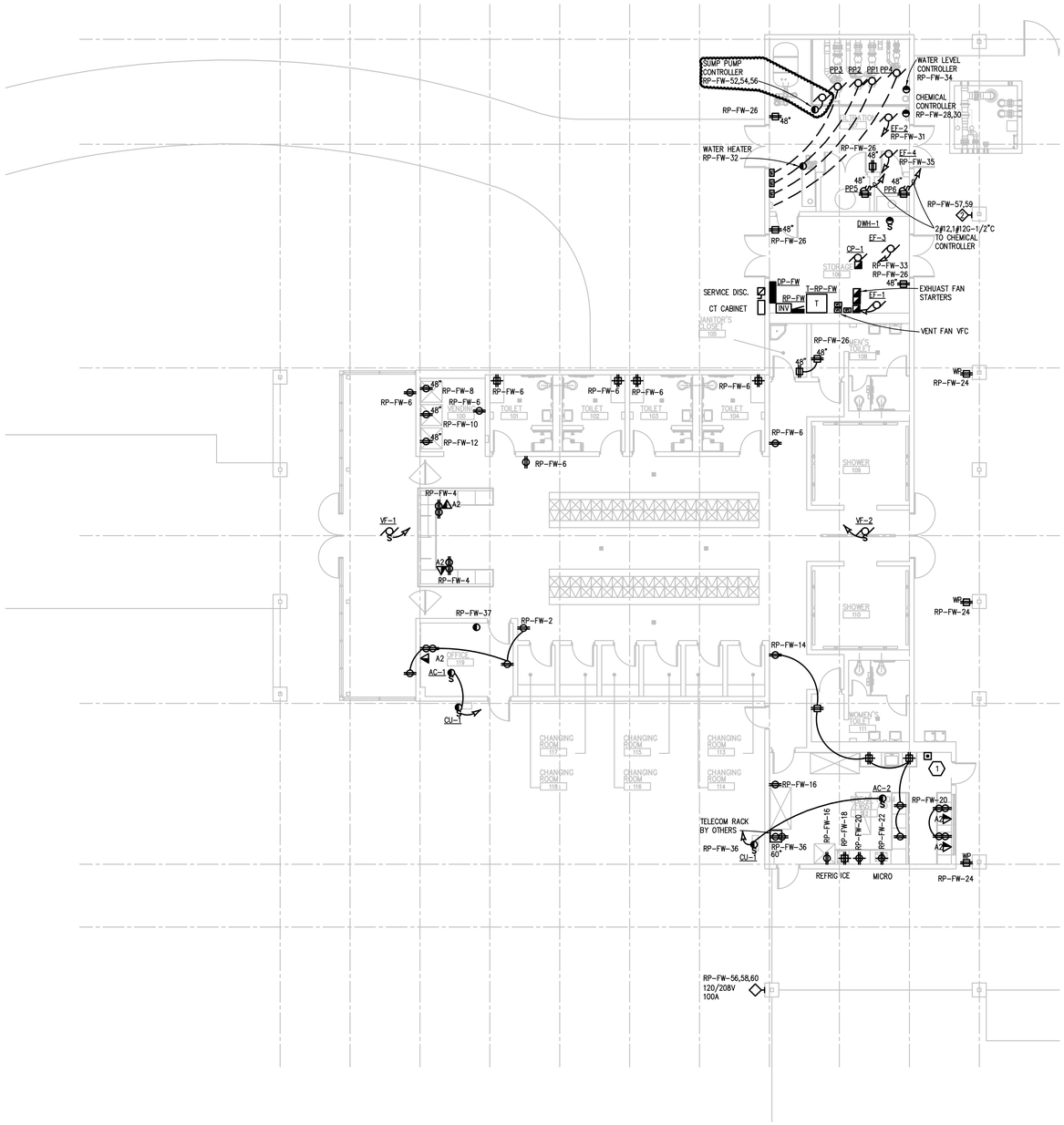
DATE:	ISSUED FOR:
11-16-2017	ADDENDUM NO. 2
10-25-2017	BIDS
09-27-2017	OWNER REVIEW

DRAWN	ECD
CHECKED	ECD
APPROVED	SAG

PROJECT NO.
17071

DRAWING NO.
E2.1

THE FOLLOWING DIMENSION EQUALS ONE INCH WHEN PRINTED TO SCALE. 1"



POWER AND AUXILIARY SYSTEMS PLAN
SCALE: 1/8" = 1' - 0"

ELECTRICAL GENERAL NOTES:

1. THESE DRAWINGS REPRESENT THE GENERAL EXTENT AND ARRANGEMENT OF SYSTEMS, BUT ARE NOT TO BE CONSIDERED FABRICATION DRAWINGS. COORDINATE WITH OTHER TRADES, AND PROVIDE EACH SYSTEM COMPLETE, INCLUDING ALL NECESSARY COMPONENTS, FITTINGS, AND OFFSETS.
2. INSTALL SYSTEMS SUCH THAT REQUIRED CLEARANCE AND SERVICE ACCESS SPACE IS PROVIDED AROUND ALL MECHANICAL AND ELECTRICAL EQUIPMENT, AND AROUND ANY COMPONENTS WHICH REQUIRE SERVICE ACCESS.
3. COORDINATE AND PROVIDE ACCESS DOORS WITHIN INACCESSIBLE CEILING, SHAFT, AND CHASE AREAS FOR ALL COMPONENTS WHICH REQUIRE SERVICE ACCESS. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.
4. PROVIDE SUPPLEMENTARY STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL SYSTEMS.
5. TRANSFORMER SECONDARY CONDUCTORS SHALL BE SIZED IN ACCORDANCE WITH TRANSFORMER CIRCUIT SIZING SCHEDULE SHOWN ON "ELECTRICAL STANDARD SCHEDULES DRAWING" UNLESS OTHERWISE NOTED.
6. MOTOR CIRCUIT PROTECTION SHALL BE SIZED IN ACCORDANCE WITH MOTOR CIRCUIT SIZING SCHEDULES SHOWN ON "ELECTRICAL STANDARD SCHEDULES DRAWING" UNLESS OTHERWISE NOTED.
7. COORDINATE THE MOUNTING HEIGHTS OF DEVICES WITH ARCHITECTURAL ELEVATIONS AND THE TRADES INSTALLING THE WORK.
8. REFER TO MECHANICAL SCHEDULE SHEETS FOR ELECTRICAL REQUIREMENTS FOR MECHANICAL EQUIPMENT. PROVIDE ALL CONNECTIONS, STARTERS, DISCONNECTS, ETC. AS REQUIRED BY SCHEDULES AND WHERE NOTED ELSEWHERE. VERIFY REQUIREMENTS OF ALL MECHANICAL EQUIPMENT WITH SHOP DRAWINGS SUBMITTALS. NOTIFY ENGINEER OF ANY CONFLICTS BETWEEN EQUIPMENT SUBMITTALS AND ELECTRICAL DRAWINGS. WHERE CIRCUIT SIZES ARE SHOWN ON THE ELECTRICAL DRAWINGS THAT DIFFER FROM WHAT IS INDICATED ON THE MECHANICAL SCHEDULES, PROVIDE THE CIRCUIT OF HIGHER AMPACITY.
9. REFER TO TEMPERATURE CONTROLS SHEETS FOR REQUIRED MOTOR CONTROLLERS. PROVIDE ALL ACCESSORIES INDICATED.
10. PROVIDE THE DESIGN AND INSTALLATION FOR A COMPLETE AND FUNCTIONAL FIRE ALARM SYSTEM IN ACCORDANCE WITH SPECIFICATIONS, DRAWINGS, AND ALL APPLICABLE CODES. THE FIRE ALARM VENDOR SHALL PROVIDE LAYOUT DRAWINGS INDICATING THE REQUIRED QUANTITIES AND LOCATIONS OF MANUAL PULL STATIONS, NOTIFICATION APPLIANCES, SMOKE AND HEAT DETECTORS, CONTROL MODULES, INTERFACE MODULES, MODULES FOR SPRINKLER FLOW AND TAMPER SWITCHES, ALL CONTROL PANELS, POWER SUPPLIES, ADDITIONAL DEVICES AND EQUIPMENT REQUIRED. COORDINATE LOCATIONS OF DEVICES WITH ARCHITECTURAL FINISHES AND REFLECTED CEILING PLANS, INCLUDING ADDITIONAL SMOKE AND HEAT DETECTORS REQUIRED FOR NON-SMOOTH CEILING APPLICATIONS. INCLUDE ALLOWANCES FOR ADJUSTMENT OF DEVICES BY THE ARCHITECT AT THE TIME OF SUBMITTAL TO COORDINATE WITH BUILDING FINISHES AND OTHER CEILING ELEMENTS.

(#) CONSTRUCTION KEY NOTES:

1. PROVIDE 6 POSITION ON/OFF SELECTOR SWITCH STATION FOR POOL PUMPS PP1, PP2, PP3, PP4, POOL DECK LIGHTING AND IN-WATER LIGHTING.

TMP ARCHITECTURE

REGISTRATION SEAL

CONSULTANT

PROJECT TITLE
Ford Woods Park Pool

City of Dearborn

DRAWING TITLE
POWER AND AUXILIARY SYSTEMS PLAN

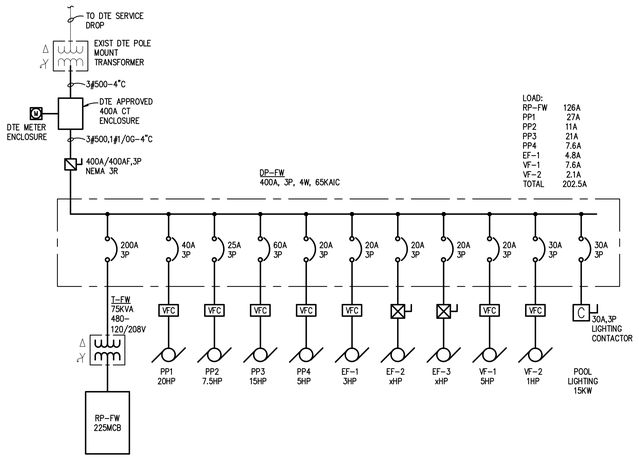
ISSUE DATES

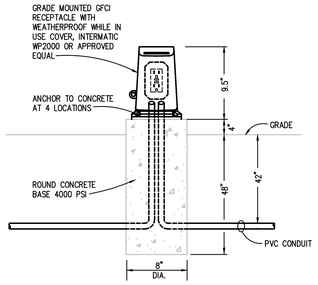
DATE:	ISSUED FOR:
11-16-2017	ADDENDUM NO. 2
10-25-2017	BIDS
09-27-2017	OWNER REVIEW

DRAWN ECD
CHECKED ECD
APPROVED SAG

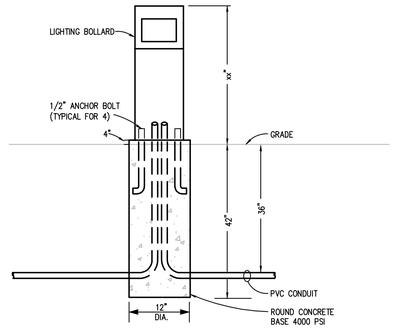
PROJECT NO.
17071

DRAWING NO.
E3.1





GRADE RECEPTACLE DETAIL
NO SCALE



BOLLARD BASE DETAIL
NO SCALE

GENERAL NOTES:

1. THESE DRAWINGS REPRESENT THE GENERAL EXTENT AND ARRANGEMENT OF SYSTEMS, BUT ARE NOT TO BE CONSIDERED FABRICATION DRAWINGS. COORDINATE WITH OTHER TRADES, AND PROVIDE EACH SYSTEM COMPLETE, INCLUDING ALL NECESSARY COMPONENTS, FITTINGS, AND OFFSETS.
2. FEEDER AND BRANCH CIRCUIT CONDUCTORS SHALL BE SIZED IN ACCORDANCE WITH THE "FEEDER AND BRANCH CIRCUIT SIZING SCHEDULE–GENERAL PURPOSE" ON THE "ELECTRICAL STANDARD SCHEDULES DRAWING" UNLESS SPECIFICALLY NOTED OTHERWISE.
3. TRANSFORMER SECONDARY CONDUCTORS SHALL BE SIZED IN ACCORDANCE WITH THE "TRANSFORMER CIRCUIT SIZING SCHEDULE–GENERAL PURPOSE" ON THE "ELECTRICAL STANDARD SCHEDULES DRAWING" UNLESS SPECIFICALLY NOTED OTHERWISE.
4. MOTOR CIRCUIT PROTECTION SHALL BE SIZED IN ACCORDANCE WITH THE MOTOR CIRCUIT SIZING SCHEDULES ON THE "ELECTRICAL STANDARD SCHEDULES DRAWING" UNLESS SPECIFICALLY NOTED OTHERWISE.
5. BRANCH CIRCUIT CONDUCTORS, FEEDERS, AND BRANCH CIRCUIT OVERCURRENT PROTECTION ARE SIZED AT 125% OF THE TOTAL CONTINUOUS AND NON CONTINUOUS LOAD FOR LIGHTING AND MOTOR LOADS THAT RUN CONTINUOUSLY FOR THREE HOURS OR MORE (NEC 210.19 A, 210.20 A, AND 215.2 A). DEMAND AND CONNECTED LOADS ARE CALCULATED PER NEC 220.
6. VARIABLE FREQUENCY CONTROLLERS (VFC) FURNISHED BY MECHANICAL TRADES. ELECTRICAL CONTRACTOR SHALL INSTALL VFC, PROVIDE POWER FEEDER FROM DISTRIBUTION EQUIPMENT TO VFC AND PROVIDE POWER FEEDER FROM VFC TO MOTOR. REFER TO SPECIFICATIONS FOR APPLICATION OF VFC POWER CABLE FROM VFC TO MOTOR.

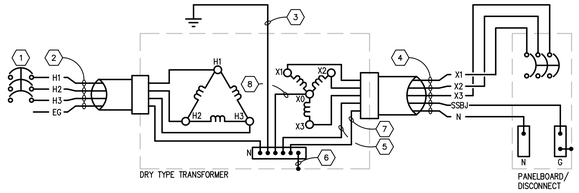
PANELBOARD RP-FW

#	LOAD TYPE	DESCRIPTION	CB	CB	VA	BA	BB	BC	VA	CB	CB TYPE	DESCRIPTION	LOAD TYPE	#
1	L	LIGHTING – LOBBY		20	1250	2150			900	20		RECEPT – OFFICE, LOBBY	R	2
3	L	LIGHTING – LOCKER		20	1600		2320		720	20		RECEPT – RECEPTION	R	4
5	L	LIGHTING – TOILET, LOCKER, CORRIDOR		20	1110			2370	1260	20		RECEPT – LOBBY, TOILET	R	6
7	L	LIGHTING – OFFICE, SHOWER		20	1080	2080			1000	20		RECEPT – VENDING	R	8
9	L	LIGHTING – MEN'S, WOMEN'S		20	1080		2080		1000	20		RECEPT – VENDING	R	10
11	L	LIGHTING – JC, STORAGE FILTRATION		20	315			1315	1000	20		RECEPT – VENDING	R	12
13	L	LIGHTING – EXTERIOR		20	165	1245			1080	20		RECEPT – WOMENS, FIRST AID	R	14
15	L	SPARE			2520		2520			20		RECEPT – FIRST AID, REFRIGERATOR	R	16
17	W	OP-1		20	500			500		20		RECEPT – FIRST AID, ICE	R	18
19	W				500	500				20		RECEPT – FIRST AID	R	20
21	NC	DOMESTIC WATER HEATER DWH-1		20	500		500			20		RECEPT – FIRST AID, MICROWAVE	R	22
23	NC	AC-1/OU-1		20	550			1450	900	20		RECEPT – EXTERIOR	R	24
25	NC				550	550				20		RECEPT – JC, STORAGE, FILTRATION	R	26
27	NC	AC-1/OU-1		20	550		550			20	GFI	CHEMICAL PUMP		28
29	NC				550			550		20	GFI	CHEMICAL PUMP		30
31	W	EF-2		20	1176	1176				20	GFI	POOL HEATER		32
33	W	EF-3		20	250		250			20	GFI	WATER LEVEL CONTROLLER		34
35	W	EF-4		20	250			250		20		RECEPT – IT RACK		36
37	NC	CONTROL PANEL		20		700			700	20	GFI	POOL COVERED		38
39		SPARE		20						20		SPARE		40
41		SPARE		20						20		SPARE		42
43		SPARE		20						20		SPARE		44
45		SPARE		20						20		SPARE		46
47		SPARE		20						20		SPARE		48
49		SPARE		20		575			575				W	50
51		SPARE		20			575		575	20		SUMP PUMP SP-1	W	52
53		SPARE		20				575	575				W	54
55	L	LIGHTING – EMERGENCY		20	850	8050			7200				NC	56
57	NC	POOL DECK RECEPTACLE		30	1800		9000		7200	100		7200 TRUCK RECEPTACLE	NC	58
59	NC				1800			9000	7200				NC	60
						17038	17795	16010						
						BA	BB	BC						

PANELBOARD INFORMATION
VOLTAGE: 208Y/120
BUS AMPACITY: 225A
MAIN TYPE: 225A MCB
MINIMUM A.I.C.: 35,000
MOUNTING: SURFACE

PANELBOARD LOCATION

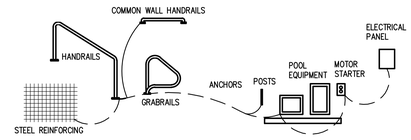
BRANCH CIRCUIT CONNECTED LOAD:		FEEDER DEMAND LOAD:		OVERCURRENT LOAD:		NOTES:
CONTINUOUS LOAD (C):		X 125%		X 100%		
NON-CONTINUOUS LOAD (NC):	27900	X 100%	27900	X 100%	27900	
KITCHEN LOAD (K):		X 100%		X 100%		
RECEPTACLE BASE LOAD (R):	7860	X 100%	7860	X 100%	7860	
RECEPTACLE DEMAND LOAD (R):		X 50%		X 100%		
LIGHTING LOAD (L):	10680	X 100%	10680	X 125%	13350	
TRACK LIGHTING (T):		(150VA/2FT)		X 125%		
MOTORS, HIGHEST LOAD (MH):		X 125%		X 100%		
MOTORS, REMAINING LOAD (M):	4401	X 100%	4401	X 100%	4401	
TOTAL(KVA):	50.84	TOTAL(KVA):	50.84	TOTAL(KVA):	53.51	
TOTAL (AMPS):	141.12	TOTAL (AMPS):	141.12	TOTAL (AMPS):	148.54	



DRY TYPE DISTRIBUTION TRANSFORMER GROUNDING ARRANGEMENT
NO SCALE

KEYED NOTES:

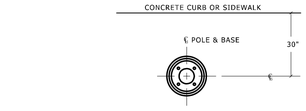
1. 480V, 3ϕ PRIMARY CIRCUIT BREAKER BASED ON DRY TYPE DISTRIBUTION TRANSFORMER CIRCUIT SIZING SCHEDULE ON ELECTRICAL STANDARD SCHEDULE DRAWING UNLESS OTHERWISE NOTED.
2. PRIMARY FEEDER BASED ON FEEDER AND BRANCH CIRCUIT SIZING TABLE ON ELECTRICAL STANDARD SCHEDULE DRAWING UNLESS OTHERWISE NOTED.
3. GROUNDING ELECTRODE CONDUCTOR TO NEAREST GROUNDING ELECTRODE (i.e. BUILDING STEEL, METAL WATER PIPE, GROUND RING, OR GROUND BUS). SEE DRY TYPE DISTRIBUTION TRANSFORMER CIRCUIT SIZING SCHEDULE ON ELECTRICAL STANDARD SCHEDULE DRAWING FOR SIZE UNLESS OTHERWISE NOTED.
4. 208Y/120V, 3ϕ, 4W SECONDARY FEEDER BASED ON DRY TYPE DISTRIBUTION TRANSFORMER CIRCUIT SIZING SCHEDULE ON ELECTRICAL STANDARD SCHEDULE DRAWING UNLESS OTHERWISE NOTED.
5. SUPPLY SIDE BONDING JUMPER.
6. SYSTEM BONDING JUMPER.
7. GROUNDED CONDUCTOR (NEUTRAL).
8. NEUTRAL CONDUCTOR PROVIDED WITH EQUIPMENT.



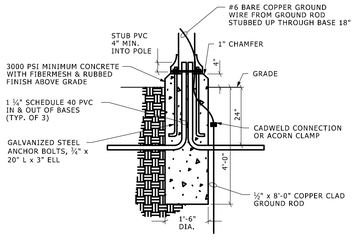
POOL ENVIRONMENT SCHEMATIC BONDING DETAIL
NO SCALE

NOTES:

1. EQUIPOTENTIAL BONDING OF ENTIRE POOL ENVIRONMENT SHALL COMPLY WITH PARTS I, II, AND VI OF ARTICLE 680 OF THE NEC.
2. BOND CONDUCTIVE POOL SHELLS, STRUCTURAL REINFORCING STEEL IN ENTIRE POOL ENVIRONMENT, ALL METALLIC PARTS OF THE POOL STRUCTURES, ALL METAL FITTINGS, ALL POOL EQUIPMENT, AND ALL FIXED METAL PARTS IN POOL ENVIRONMENT WITH #8 SOLID COPPER GROUND CONDUCTOR TO THE GROUND IN ELECTRICAL PANEL FEEDING AREA.
3. BONDING CONDUCTORS AND CONNECTIONS TO BE CONCEALED IN FINISHED SPACES. COORDINATE EXACT LOCATIONS AND REQUIREMENTS WITH ARCHITECTURAL DRAWINGS, TRADES, EQUIPMENT MANUFACTURER, AND INSTALLING TRADES.
4. PROVIDE GROUND FAULT INTERRUPTER IN ALL CIRCUITS SERVING ADAPTERS OR OTHER EQUIPMENT WITHIN 5 FEET OF POOL.



BASE PLAN VIEW
NO SCALE



TYPICAL PEDESTRIAN LIGHT POLE BASE IN LAWN
NO SCALE

TMP ARCHITECTURE

REGISTRATION SEAL

CONSULTANT

PROJECT TITLE
Ford Woods Park Pool

City of Dearborn

DRAWING TITLE
ONE LINE DIAGRAM AND PANEL SCHEDULES

ISSUE DATES

DATE:	ISSUED FOR:
11-16-2017	ADDENDUM NO. 2
10-25-2017	BIDS
09-27-2017	OWNER REVIEW

DRAWN ECD
CHECKED ECD
APPROVED SAG

PROJECT NO.
17071

DRAWING NO.
E5.1

City of Dearborn
Recreation & Parks Department

Sign-In Sheet

Meeting Date and Time: Monday, November 13, 2017

Purpose: Fault Woods Pool Replacement Project

NAME (Please print clearly.)	AFFILIATION (If City employee, please list Department.)	EMAIL ADDRESS (Please print clearly.)	TELEPHONE
ERIC PETERSON	CITY OF DEARBORN	epeterson@ci.dearborn.mi.us	313-943-2411
DOD FARLEY	TMP ARCHITECTURE	RFARLEY@TMP-ARCHITECTURE.COM	248-338-4961
DANIELLE O'NEAL	TMP ARCHITECTURE	doneal@tmp-architecture.com	248-338-4561
Tony Baruzzini	Baruzzini Contracting	tony@baruzzini.com	810 229-8996
DANE FREDERIKSEN	B & B POOLS AND SPAS	DANE@BANDBPOOLS.COM	734.427.3242
Danny Chee	Brix Corporation	dchee@brixcorporation.com	313-965-0000
Robert Lentz	Antler Construction	lentzdale@yahoo.com	734-404-6459
KENT BROUGHMAN	BERNCO INC	KBROUGHMAN@BERNCOINC.COM	586 445 3700
Jacob Alexander	Cross Renovation	Jake@Stark-EnterprisesLLC.com	(248) 914-1402
Mike Turri	Brencal Contractors	mturri@brencal.net	(586) 758-6000
Corey Orrow	Rec Dept	gorrow@	313-943-2804

pg. 2 of 2

City of Dearborn
Recreation & Parks Department

Sign-In Sheet

Meeting Date and Time: Monday, November 13, 2017

Purpose: Ford Woods Pool Replacement Project

NAME (Please print clearly.)	**AFFILIATION** (If City employee, please list Department.)	**EMAIL ADDRESS** (Please print clearly.)	**TELEPHONE**
Carrie Darkowski	Purchasing	—	X2147
CARL NYLANDER	COUNSILMAN · HUNSAKER	CARLNYLANDER@CH2O.COM	314-416-2087