FOSTORIA SPLASHPAD
ADA RESTROOM FACILITY
AND PUMP HOUSE

FOSTORIA, OHIO

KLEINFELDER JOB NO. 24001561.002A

ADDENDUM NO. 2

March 26, 2024

Bidders are responsible to review all the items noted in this addendum.

This addendum becomes a part of the plans and specifications for the indicated work and modifies them only to the extent herein set forth.

Attachments: Prebid meeting minutes, prebid sign-in sheet, Specification 00 0020, Specification 00 0311, Specification 01 2100, Specification 01 2200, Specification 09 9623, Specification 31 2000, C-01, C-02, C-09, E001, E002, E102, Rain Drop Preliminary Drawings, Exhibit A-Splash Pad Concrete.

GENERAL

1. Prebid Meeting minutes are attached.

2. Prebid sign-in sheet is attached.

3. A full set of the Preliminary Rain Drop drawings (13 pages) is attached as Reference Information.

CLARIFICATIONS

1. Question: Where is the BABAA information located and are there any BABAA forms to be submitted with the bid? *Response: The BABAA information and forms are right after the Davis-Bacon wage rates in the Spec. book. This information submitted as part of the submittal process after award. There are no BABAA forms to be submitted with the bid.*

2. Question: There is proposed shade structure indicated on the drawings. Is this structure provided as part of this bid and if so, is there a specification? *Response: The proposed shade structure noted on the drawings is intended for a future addition and not part of this project. The area beneath this structure, to the extents possible, should be kept clear of underground utilities to allow for future foundation installations. See revised C-02.*

3. Question: Is there a designated contact person for Rain Drop? *Response: Inquiries to Rain Drop Products should be directed to Jodi Holt, Regional Sales Director at* jholt@rain-drop.com *, 419-606-5288.*

4. Question: Is it correct to assume we are not limited to using Rain Drop as the supplier for the Splash Pad features? *Response: Rain Drop is not a sole source supplier for the Splash Pad features and equipment, however alternative providers/system designers must have 100% American made products in compliance with the BABAA requirements. Assembling of foreign Manufactured items in an American factory does not comply.*

5. Question: Confirm the design criteria for the Splash pad concrete slab. *Response: The splash pad concrete is furnished and installed by the General Contractor. Final design and sawcut layouts will be coordinated with the final Splash pad delegated design. See attached Exhibit A for additional information.*

6. Question: On the storm line, can you clarify if the piping will be SDR35 or corrugated HDPE? In the site notes on page C-08 it states Storm Sewer should be SDR35 for 12" and below, but on the profile page C-03 it states 12" corrugated HDPE pipe. Please clarify. *Response: The storm sewer specification on C-08 indicates that SDR-35 can be used for 12" and below. It also indicates that HDPE can be used for 36" can below. Either specified product is acceptable for 12" and below storm sewer piping.*
7. Question: On the 2" waterline for this project there is a proposed water meter vault. Do you have any details on this? *Response: The new water meter and setting is located in the new pump house building. The proposed water meter and vault noted on C-02 near N. Vine St. is not required. In its place, the existing waterline is to be reduced to connect to the new 2" water service line.*

DRAWINGS

1. Sheet G000 – Cover Sheet (drawing not reissued)

   A. DELETE Drawing C-06, Landscape Plan from Drawing List
   B. ADD Drawing C-09, Erosion and Sediment Control Details.

2. Sheet C-01 (reissued herein)

   A. ADDED note indication existing concession building is to be removed by Others.
   B. ADDED note indicating limits of existing parking lot closure for construction.
   C. ADDED note indicating existing drive area to be left open for public access to housing and existing driveways on north side of the project.

3. Sheet C-02 (reissued herein)

   A. ADDED erosion control notes and locations.
   B. ADDED note indicating sidewalk area to be kept clear of underground utilities for future shade structure.
   C. REVISED water service connection near N. Vine St.

4. Sheet C-09 (issued herein)

   A. ADDED new drawing.

5. Sheet E001 (reissued herein)

   A. REVISED Specifications.

6. Sheet E002 (reissued herein)

   A. ADDED details and specifications for Bid Alternate 1 site lighting.

7. Sheet E102 (reissued herein)

   A. REVISED sheet notes 11 and 12.
   B. ADDED sheet note 13 for Bid Alternate 1.
   C. ADDED Bid Alternate 1 site lighting and conduit.

SPECIFICATIONS

1. Specification 00 0020, Notice to Bidders: Revised specification included herein. Overall Engineer's Estimate was increased to $1,048,500.00. Engineered backfill was included with the splash pad cost breakdown. A site lighting bid alternate was included.

2. Specification 00 0311, Form of Proposal: A revised Form of Proposal is included.

3. Specification Section 01 3100, Item 1.6B: Delete item in its entirety. The prime contractor is responsible for construction progress meeting scheduling, agenda, conducting, and meeting minutes.

4. Specification Section 01 5000, Item 1.2D: Delete item in its entirety. The contractor is NOT to provide (2) additional office trailers for the Owner's use.

5. Specification Section 01 5000, Item 1.10A: Delete "Contractor's option." ADD "Contractor to provide temporary chain link fencing around construction area. Fence posts can be driven or portable, at the Contractor's option. Chain-Link Fencing: Minimum 2-inch, 0.148-inch thick, galvanized-steel, chain-link fabric fencing; minimum 6 feet high with galvanized-steel pipe posts; minimum 2-3/8-inch OD line posts and 2-7/8-inch OD corner and pull posts, with 1-5/8-inch OD top and bottom rails (bottom rails required if portable). Provide galvanized-steel bases for supporting portable posts."

6. ADDED Specification 01 2100, Allowances.

7. ADDED Specification 01 2200, Unit Prices.

8. Specification 07 4113.16 Standing Seam Sheet Metal Roofing: DMI Inter-lock IL20, 16" wide, 24 ga. Galvalume, DynaClad PVDF "Classic Bronze" finish, 20 yr. finish and watertight warranties is an acceptable substitution.

9. Specification 07 4113.16 Standing Seam Sheet Metal Roofing: Una-Clad UC-4 roofing panel, 12-3/8" panel width, 24 ga. Galvalume, smooth finish, Kynar 500/Hylar 5000 coating, "Medium Bronze" finish, 20 yr. finish and watertight warranties, is an acceptable substitution.

10. Specification 07 4293 Vented Soffit: DMI V-Groove VS05 soffit panel, 032 Aluminum, ASTM B 209, DynaClad PVDF "Sandstone" finish is an acceptable substitution.

11. Specification 10 2800 Toilet Accessories: ADD item f) Sanitary Napkin Disposal, Bobrick Model B-270, Satin stainless steel finish, provide 1 ea. in Women's 100.

12. ADDED Specification 09 9623, Anti-Graffiti Coating. Anti-graffiti coating is to be provided on exterior masonry surfaces of the new restroom/pumphouse building.

13. ADDED Specification 31 2000, Earth Moving.

*** * * END OF ADDENDUM * * ***

KLEINFELDER, INC.
1168 N. MAIN STREET, BOWLING GREEN, OHIO 43402
(419) 352-7537/FAX (419) 353-0187

PRE-BID MEETING MINUTES

PROJECT: Fostoria Splash Pad
Restroom Facility and Pump House

A/E JOB NO.: 24001561.002A
DATE: March 13, 2024

ATTENDEES: ***See Sign-in Sheet***

PREPARED BY: Eric Kern

A. INTRODUCTIONS

1. Owner: Sarah Stephens Krupp-FEDC
   Todd Jenkins-Peterman & Assoc.
2. A/E: Bill Steele-Architect
   Eric Kern-Construction Administrator

B. SIGN-IN SHEET -see attached.

C. PROJECT DESCRIPTION, SCOPE OF WORK, FRONT END REVIEW

1. Reviewed summary of Work included per Notice to Bidders. The Splash Pad equipment and its installation is to be included as part of the bid.
2. Reviewed summary of early demolition work and site condition.
   The current demolition contractor, All Demolition, will be fully removing concrete, pool, equipment, buildings, foundations, fencing, and existing utilities in the work area. Backfill is not included in their package. Backfill of this demolition is included in the bid for the Splash Pad, Restroom, and Pump House project. See drawing C-01 for hardscape removals by Others.
3. Low Bidder will be required to provide proof of experience.
4. Current Engineer's Estimate is $894,500.00
5. The project is exempted from sales tax on items incorporated into the structure.
6. The project is subject to Davis-Bacon wage rates and EEO requirements.
7. The project is subject to the Build America, Buy America Act (BABAA) requirements. Copies of the BABAA information and required submittal/certification forms are included in the Project Manual. Bidders should note that these requirements are over and above the Domestic Steel requirements. ALL construction materials must be manufactured in the U.S. ALL manufactured products used in the project are subject to domestic manufacturing guidelines.
8. The Contractor is to include temporary chain link construction fencing around work area.
9. Spec. 01 3100, Item 1.6B is deleted: The prime contractor, not the A/E, will be responsible for project meetings including scheduling, conducting, publishing of minutes.
10. Spec. 01 5000, Item 1.20D is deleted. The Contractor is NOT required to provide (2) additional office trailers for the Owner's use.
11. Confirming that per 01 4000, 1.7 and the Civil Drawings, third party testing is to be hired by the Contractor.
12. The project is permitted through the Seneca County Building Department and Erie County for Plumbing. The project has been submitted for permit. The Owner is paying for the general building, mechanical, electrical, and plumbing permits.
13. The City confirmed that they do NOT have a stockpile or source for backfill materials.

D. DELIVERY METHOD

1. General Contracting, Single Prime Contract, AIA A101-2017.

E. COMPLETION TIME & PROJECT SCHEDULE

1. Construction schedule is required as indicated in the project manual for review by the Owner and Architect/Engineer.

2. Subject to building permit approvals, the anticipated commencement of work is April 15, 2024.
3. Anticipated Substantial Completion is not later than October 31, 2024, with closeout completed with-in 30 days of Substantial Completion

F. ALTERNATES, ALLOWANCES, AND UNIT PRICES

1. There are no alternates, allowances or unit prices requested at this time.

G. QUESTIONS DURING BID

1. Submit questions and RFI's via email to Eric Kern at ekern@kleinfelder.com . No telephone calls. All RFI's to be sent to Kleinfelder at least 7 days prior to bid. This is currently Tuesday, March 26, 2024 by 2:00 pm.
2. All questions will be answered by Addendum.
3. Written requests for substitutions must be received by the A/E at least 10 days prior to the bid date, including the form provided in the project manual. This is date currently 3/23/24 at 2 pm.

H. BID ADDENDUM

1. Acknowledge receipt on Bid Form.
2. Addendum 1 was issued on March 6, 2024.
3. An addendum will be issued to include the prebid meeting minutes and any questions/RFI's submitted to date.
4. Addenda will be issued to known planholders, via the planroom, no later than 4 days prior to receipt of bids. (3/29/24 @ 2 pm)

I. BID OPENING

1. Bids will received until Tuesday, April 2, 2024 at 2:00 pm at the City of Fostoria Administrative Offices, 213 South Main Street, Fostoria, OH, and will be publicly opened at that time.

J. STAGING, ACCESS, PARKING, USE OF FACILITIES

1. Refer to Project Manual section 01 5000 for further information.
2. Equipment & Material Storage: Storage and safe keeping of materials is the contractor's responsibility.
3. Restroom Facilities: Temporary restrooms are provided by the Contractor.
4. Temporary Utilities: Services are provided by the Contractor. The Owner is covering the costs of temporary water, electric, and existing natural gas usage fees.
5. Telephones: Contractors are responsible for their own jobsite telephone service.
6. Trash: Disposal of refuse is the contractors' responsibility. Coordinate with Owner for dumpster location.
7. Temporary parking: The existing parking lot on the west side of the site can be used for parking and staging.

K. COMMON BIDDER PITFLLS (that will delay contracting process or possibly cause rejection)

1. Contractors are reminded to be consistent in the use of their company name when completing the bid documentation.
2. Attorney-in-fact signature should be included on the on bond and be legible.
3. The "Contract Description" should be legibly noted on the bond.
4. Company name on Bid Form or Bond should match the S.O.S. Business Filings.
5. Bidder should be responsive to the time sensitive nature of the Bidder's Qualifications Request or Notice of Intent to Award submittal requirements.
6. Bidder should sign the bid, provide the Guaranty, and include the requested bid supplements at bid time.

L. QUESTIONS TO DATE

1. Is the project subject to EDGE requirements? Answer: *The project is NOT subject to EDGE requirements.*
2. Is the project subject to DBE requirements? Answer: *The project is NOT subject to DBE/MBE/WBE requirements.*
3. Is there a quantity to include for backfill of excavation left by the previous demolition package?

Answer: This will be responded to as part of Addendum 2.

4. What is the size of the splash pad area? Answer: *The splash pad area is 3,038+/- s.f. as depicted on P204, not including walks and pathways outside of the splash pad.*
5. Is there a staging area/parking lot for Contractor use? *Answer: This will be responded to in Addendum 2.*

M. SITE TOUR

1. A site tour of the site followed directly after this meeting.

END OF MINUTES

KLEINFELDER
Bright People. Right Solutions.

KLEINFELDER, INC.
1168 N. MAIN STREET, BOWLING GREEN, OHIO 43402
(419) 352-7537/FAX (419) 353-0187

PRE-BID SIGN-IN SHEET

PROJECT: Fostoria Splash Pad
Restroom Facility and Pump House

A/E JOB #: 24001561.002A
DATE: March 13, 2024

Name	Eric Kern	Name	Bill Steele
Company	Kleinfelder, Inc.	Company	Kleinfelder, Inc.
Address	1168 North Main Street	Address	1168 North Main St.
City/State/Zip	Bowling Green, OH 43402	City/State/Zip	Bowling Green, OH 43402
Telephone	419-352-7537	Telephone	419-352-7537
Cell		Cell	
E-Mail	ekern@kleinfelder.com	E-Mail	wsteele@kleinfelder.com
Name	Gerald Reinhart	Name	Eric DeVanna
Company	Bodie mechanical	Company	ACI
Address		Address	16380 US-224 East
City/State/Zip	Findlay	City/State/Zip	Findlay, Oh
Telephone		Telephone	419-595-3113
Cell	567-207-8123	Cell	419-680-0066
E-Mail	g.reinhart@bodiesolv.com	E-Mail	e.devanna@alvadaconstruction.com
Name	Patrick Alfano	Name	Sarah Stephens Krupp
Company	Midwest Contracting	Company	FEDC
Address		Address	342 Perry St
City/State/Zip	Holland	City/State/Zip	Fostoria OH 44830
Telephone	419.601-7369	Telephone	419-435-7789
Cell		Cell	
E-Mail	Pat.Alfano@midwest-contracting.com	E-Mail	projects@fostoriaedc.org.
Name	Rich Southward	Name	Todd Jenkins
Company	Dimech Services	Company	Peterman
Address		Address	
City/State/Zip		City/State/Zip	
Telephone	419-727-0111	Telephone	
Cell		Cell	419-722-8585
E-Mail	RSouthward@Dimech.com	E-Mail	CSO@fostoriaohio.gov.

DOCUMENT 00 0020 - NOTICE TO BIDDERS (updated 03.26.24)

SEALED Bids for the furnishing of the necessary materials and construction of the:

Fostoria Splash Pad
Restroom Facility & Pump House
and Related Site Work
Fostoria, Ohio

Bids will be received by City of Fostoria at their Administrative offices, 213 South Main Street, Fostoria, Ohio until 2:00 p.m. on Tuesday April 2, 2024 and publicly opened.

The work is a new splash pad and restroom building project. Trades included are: site/civil, general, mechanical, plumbing and electrical.

The estimate of probable cost for this building project is $1,048,500.00 Bidders shall not be responsible for paying sales taxes on materials incorporated into the structure.

Probable Cost Breakdown is as follows:
New items noted in **bold.**

- Restroom Facility & Pump House: $345,000.00
  - Includes associated interior mechanical, plumbing & electrical
- Concrete Splash Pad, with Installation: $678,500.00
  - Includes Concrete Splash Pad, Concrete Deck, Sitework
  - **Includes Engineered backfill of Site Excavations**
  - Includes Water Features and Pump Equipment
    - Controls, Piping and Filtration

- **Bid Alternate No. 1 - Site Lighting: $25,000.00**

- **Bid Alternate No. 2 – Third Party & Special Inspections Testing (Cost included above)**

A bidders' conference has been scheduled for 3:00 PM March 13, 2024. at 213 South Main Street, Fostoria, Ohio. This is followed by a pre-bid walkthrough at 524 River Street, Fostoria, Ohio. The old Fostoria City Pool location.

The contract documents, including plans and specifications, are on file at the office of the Architect/Engineer -- Kleinfelder, Inc. (Kleinfelder). Documents may be viewed and ordered online or obtained from Becker Impressions, 4646 Angola Road, Toledo, Ohio 43615, telephone 419-385-5303, www.kleinfelderplanroom.com for the cost of printing to be paid to the printing company at the time the drawings are picked up. Shipping and tax charges are the bidder's responsibility and payable directly to Becker Impressions.

All Requests for Information (RFI) and questions must be e-mailed to ekern@kleinfelder.com. No telephone calls. A copy of our RFI form is included in the specification manual www.kleinfelderplanroom.com.

All bids must be signed and submitted on copies or originals of the blanks which are bound in the contract documents. Bids must state the prices in the blanks provided and be enclosed in a sealed envelope marked – Fostoria Splash Pad Restroom Facility & Pump House – and addressed C/O City of Fostoria, 213 South Main Street, Fostoria, Ohio 44830.

When a project is funded in whole or in part by State of Ohio Capital Funds, it is required that Domestic steel use requirements as specified in Section 153.001 of the revised code apply to this project. Copies of Section 153.001 of the revised code can be obtained from any of the offices of the Department of Administrative Services.

The bid guaranty may be of two forms:

1. A Bid Guaranty and Contract Bond using the form in the Contract Documents. (The amount of the bid does NOT have to appear on this form.)

2. A certified check, cashier's check or letter of credit in favor of City of Fostoria, in the amount of ten percent (10%) of the bid. If the contract is awarded a Contract Bond will be required, which is a one hundred percent (100%) payment and performance bond.

Bidders shall submit with their bid the affidavit required under the Ohio Revised Code, Section 5719.042 that the bidder was not charged with any delinquent personal property taxes in Wood County, Ohio.

Davis Bacon Wage Rates and Equal Employment Opportunity requirements are applicable to this project. Bids received after the scheduled bid opening date and time, or not accompanied by a satisfactory bid bond or check, will neither be read nor considered.

The Owner reserves the right to reject any and all bids and to waive any irregularity in any bid and to determine the lowest and best bidder. In no case will an award be made until all necessary investigations are made as to the qualifications of the bidder to whom it is proposed to award the contract.

No bidder may withdraw his bid for a period of sixty (60) days after the scheduled closing time for the receipt of bids.

By Order of City of Fostoria, Ohio City Council:

Advertise: Facebook and other possible social media for three weeks beginning March 1, 2024

Furnish Affidavit

DOCUMENT 00 0311 – FORM OF PROPOSAL (updated 03.26.2024)

Bidder's Firm Name: _____

Address: _____

_____

Telephone/Fax No. _____

E-mail Address: _____

Form of Proposal for the construction project entitled:

FOSTORIA SPLASH PAD RESTROOM FACILITY & PUMP HOUSE
524 RIVER STREET
FOSTORIA, OHIO 44830

The undersigned proposes to perform all work required and to provide and furnish all labor, material, tools, equipment, and transportation necessary for the proper completion of the above-named project, in accordance with plans and specifications prepared by KLEINFELDER, INC., 1168 North Main Street, Bowling Green, Ohio within the time set forth and for the sum of money specified below.

The undersigned agrees that if within sixty (60) days from the bid date named for receiving proposals by the Owner, a notice that his proposal will be accepted by the Owner (notice shall be mailed to the bidder at the business address given above or it shall be delivered to him personally), this bidder then shall within ten (10) days thereafter deliver to the Owner, where directed, a contract properly executed in duplicate on the forms supplied by the Architect/Engineer.

The undersigned has received the following **Addendum Numbers**: _____ and acknowledges the additions to, deductions from, or changes, in the original drawings or specifications.

ITEM NO. 1 – GENERAL TRADES CONTRACT – BASE BID

SUBTOTALS:
Splash Pad Equipment, for the sum of $_____
Site related Work, for the sum of $_____
Restroom Facility and Pump House, for the sum of $_____

TOTAL:
ALL LABOR AND MATERIALS, for the sum of $_____

ITEM NO. 2 – ALTERNATE NO. 1

Per updated drawing E002 provide alternate pricing for added conduit run & site lighting as indicated.

A) For the sum of $_____

ITEM NO. 3 – ALTERNATE NO. 2

General Contractor shall provide third party testing and special inspection testing for scope of work. Please note that Geotechnical engineer is hired by City of Fostoria.

A) For the sum of $_____

ITEM NO. 4 – UNIT PRICES

From Specification Section 01-2200

A) Unit Price No. 1: Addition of engineered fill components from Allowance.
For the sum per CY of $_____

B) Unit Price No. 2 Reduction of engineered fill components from Allowance.
For the sum per CY of $_____

Providing that the contract is awarded promptly, the undersigned proposes that all the work will be completed as herein noted within _____ (_____) calendar days following an Owner-issued Notice to Proceed. Not considering delays due to strikes, or circumstances unavoidable to the contractors.

Firm Name of Bidder: _____

Signature of Authorized Officer: _____

Date: _____

END OF DOCUMENT

SECTION 01-2100 - ALLOWANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements governing allowances.

B. Types of allowances include the following:
   1. Unit-quantity allowances.
   2. Inspecting for unit-quantity.

C. Related Requirements:

   1. Section 01-2200 "Unit Prices" for procedures for using unit prices, including adjustment of quantity allowances when applicable.
   2. Section 01-4000 "Quality Requirements" for procedures governing the use of allowances for field testing by an independent testing agency.
   3. Section 31-2000 Earth Moving

1.3 DEFINITIONS

A. Allowance: A quantity of work or dollar amount included in the Contract, established in lieu of additional requirements, used to defer selection of actual materials and equipment to a later date when direction will be provided to Contractor. If necessary, additional requirements will be issued by Change Order.

1.4 SELECTION AND PURCHASE

A. At the earliest practical date after award of the Contract, advise Architect of the date when final selection, or purchase and delivery, of each product or system described by an allowance must be completed by the Owner to avoid delaying the Work.

1.5 ACTION SUBMITTALS

A. Submit proposals for purchase of products or systems included in allowances in the form specified for Change Orders.

1.6 INFORMATIONAL SUBMITTALS

A. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.

B. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.7 QUANTITY ALLOWANCES

A. Allowance shall include cost to Contractor of specific materials under allowance and shall include freight, and delivery to Project site. (Project is tax exempt.

B. Unless otherwise indicated, Contractor's costs for receiving and handling at Project site, labor, installation, overhead and profit, and similar costs related to materials under allowance shall be included as part of the Contract Sum and not part of the allowance.

1.8 INSPECTIONS

A. Inspecting costs for verifying and confirming allowance quantities are born by General Contractor, and shall include the cost of engaging testing agencies, actual inspections, and reporting results.

B. Costs of testing and inspection services not specifically required by the Contract Documents are Contractor responsibilities and are not included in the allowance.

1.9 ADJUSTMENT OF ALLOWANCES

A. Allowance Adjustment: To adjust allowance amounts, prepare a Change Order proposal based on the difference between purchase amount and the allowance, multiplied by final measurement of work-in-place where applicable. If applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, required maintenance materials, and similar margins.

1. Include installation costs in purchase amount only where indicated as part of the allowance.
2. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other markups.
3. Submit substantiation of a change in scope of Work, if any, claimed in Change Orders related to unit-cost allowances.
4. Owner reserves the right to establish the quantity of work-in-place by independent quantity survey, measure, or count.

B. Submit claims for increased costs due to a change in the scope or nature of the allowance described in the Contract Documents, whether for the purchase order amount or Contractor's handling, labor, installation, overhead, and profit.

1. Do not include Contractor's or subcontractor's indirect expense in the Change Order cost amount unless it is clearly shown that the nature or extent of Work has changed from what could have been foreseen from information in the Contract Documents.
2. No change to Contractor's indirect expense is permitted for selection of higher- or lower-priced materials or systems of the same scope and nature as originally indicated.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 PREPARATION

A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.3 SCHEDULE OF ALLOWANCES

A. Allowance No. 1: Quantity Allowance: Include 5,500 cu. yd. of engineered or clay soil fill for infilling demolition excavations left by owner. Provide Import and Placement.

1. Coordinate quantity allowance adjustment with unit-price requirements in Section 01-2200 "Unit Prices."

2. Verify and confirm quantity allowance adjustment with Contractor and their third party Geo-technical engineer prior to importing materials to site. Any adjustments to quantity allowance are provided in Specification 01-220 Unit Price.

END OF SECTION 01-2100

SECTION 01-2200 - UNIT PRICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for unit prices.

B. Related Requirements:

1. Section 01-2100 "Allowances" for procedures for using unit prices to adjust quantity allowances.

1.3 DEFINITIONS

A. Unit price is an amount incorporated into the Agreement, applicable during the duration of the Work as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

1.4 PROCEDURES

A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, overhead, and profit. (This is a tax exempt project.)

B. Measurement and Payment: See individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.

C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.

D. List of Unit Prices: A schedule of unit prices is included in Part 3. Specification Sections referenced in the Part 3 "Schedule of Unit Prices" Article contain requirements for materials described under each unit price.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF UNIT PRICES

A. Unit Price No. 1: Addition of engineered fill components from Allowance.

1. Description: Provide additional engineered fill from off-site as required to achieve the (Site) Work per Civil Drawings. Provide prices for excavation, delivery and installation of off-site engineered fill material in accordance with Specification 31-2000 Earth Moving.
2. Unit of Measurement: cubic yard of engineered fill, based on in-place surveys of volume before and after installation.
3. Coordinate Allowance quantities with required actual quantities with General Contractor’s provide testing agency.
4. Quantity Allowance: Coordinate unit price with allowance adjustment requirements in Section 01- 2100 "Allowances."

B. Unit Price No. 2: Reduction of engineered fill components from Allowance.

1. Description: Removal of excessive engineered fill from Allowance quantity.
2. Unit of Measurement: cubic yard of engineered fill, based on in-place surveys of volume before and after installation.
3. Coordinate Allowance quantities with required actual quantities with General Contractor’s provide testing agency.
4. Quantity Allowance: Coordinate unit price with allowance adjustment requirements in Section 01- 2100 "Allowances."

END OF SECTION 01-2200

SECTION 09-9623 - ANTI-GRAFFITI COATING

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.

1.2 SUMMARY

A. Section Includes:

1. Permanent Anti-Graffiti Coating System.

1.3 RELATED SECTIONS

A. Section 04-2200 – Concrete Unit Masonry: Substrate for application of Anti-Graffiti Coating.

B. Section 07-1900 – Water Repellent for unpainted surfaces.

C. Section 09-9000 – Painting: Primer for masonry stain and elastomeric applications, if applicable.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include preparation requirements and application instructions.
2. Indicate VOC content.

1.5 QUALITY ASSURANCE

A. Contractor Qualifications: Installer shall be a firm with not less than three years of successful experience in application of coatings of type required on substrates similar to those of this project. The firm shall be approved by the manufacturer of the coating for installation of their product.

B. Manufacturer's representative shall inspect substrate conditions including alkalinity and moisture content. Obtain written approval from representative before proceeding with work.

C. Meets ASTM-D7089 with Cleanability at least Level 3.

D. Meets ASTM-D6578 with Cleanability at least Level 9.

1.6 SUBMITTALS

A. Submit in accordance with Section 01 33 00.

B. Instructions: Provide instructions bearing manufacturer's name, coating type, and recommended installation procedures. Provide methods and material instruction for graffiti removal. Include adhesive-backed graffiti removal instruction label suitable for application to interior surface.

C. Submit proof of purchase (Invoice of materials purchased) and proof of delivery of coating materials.

D. Manufacturer’s Warranty: Submit one copy of manufacturer's warranty for specified materials.

1.7 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Coat Products:
   a. Provide four containers of removal products as recommended by the manufacturer accompanied by removal instructions.

1.8 WARRANTY

A. Provide manufacturers written warranty guaranteeing effective graffiti removal for not less than 5 years and warrant that treated surfaces can be effectively and repeatedly cleaned of graffiti without damage or loss of effectiveness of the graffiti resistant coating. Manufacturer shall, for the duration of the warranty period, guarantee replacement of product to remove graffiti and replace graffiti resistant coating where graffiti removal has shown to be ineffective.

1.9 QUALITY ASSURANCE

A. Mockups: Apply mockups of each coat system indicated and each color and finish selected to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.

1. Architect will select one surface to represent surfaces and conditions for application of each coat system.

   a. Vertical Surfaces: Provide samples of at least 9 sq. ft. (3’ x 3’)

2. Field Sample: Apply graffiti resistant coating to field mock-up sample representing exterior wall surface to be coated. Apply coating system over a minimum 3 ft x 3 ft test area and test removal of applied spray paint in presence of Construction Manager for approval using removal methods recommended by the manufacturer.

3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.10 DELIVERY, STORAGE, AND HANDLING

A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.

1. Maintain containers in clean condition, free of foreign materials and residue.
2. Remove rags and waste from storage areas daily.

1.11 FIELD CONDITIONS

A. Apply coatings only when temperature of surfaces to be coated and ambient air temperatures are between 50 and 95 deg F.

B. Do not apply coatings in snow, rain, fog, or mist; when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

PART 2 - PRODUCTS

2.1 GRAFFITI RESISTANT COATING

A. Graffiti resistant coating shall be a clear, non-sacrificial graffiti resistant coating which provides protection for exterior vertical surfaces from permanent graffiti staining and damage caused by spray paint and marking pens. Coating shall be suitable for application to unpainted surfaces including masonry. Product shall be of type such that recoating with the underlying coating is possible without removal of the graffiti resistant coating. Product shall be a coating that dries clear, non-yellowing, with a low luster.

1. Manufacturer:

2. Blok-Lok W/Graffiti Control Non-Sacrificial Graffiti Coating (Two Coats) by Rainguard International, Newport Beach, CA 888-765-7070. Or Architect approved substitute during bidding process.

3. Graffiti Remover: VandlClean Super graffiti remover by Rainguard International, Newport Beach, CA 888-765-7070. Or Architect approved substitute during bidding process.

2.2 COATING PRODUCTS, GENERAL

A. Material Compatibility:

1. Provide materials for use within each coating system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer based on testing and field experience.
2. For each coat in a coating system, provide products recommended in writing by topcoat manufacturer for use in coat system and on substrate indicated.

B. Color: Clear.

2.3 FINISH COATINGS

A. Exterior Masonry Block Anti-Graffiti Coating:
1. Water-Based Silane Siloxane graffiti coating.
2. Manufacturers: Rainguard Blok-Lok or architect approved substitute during bidding.
3. Color: Clear.
4. Sheen: Flat (Low) Sheen.
5. Apply two coats to exterior of concrete masonry.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
   1. Masonry (Concrete Masonry Units): 12 percent.

C. Verify suitability of substrates, including surface conditions and compatibility, with finishes.

D. Proceed with coating application only after unsatisfactory conditions have been corrected.

   1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Comply with manufacturer's written instructions applicable to substrates and coat systems indicated.

B. Surface shall be free of dirt, dust, contaminants such as curing compounds, hardeners, bond breakers, and form release. Assure surfaces are clean and dry.

C. Mask or otherwise protect adjacent surfaces not scheduled to receive coating. If applied on un-scheduled surfaces such as glass, remove immediately, by approved method.

D. Protect landscaping, property, and vehicles from over spray and drift.

E. Clean substrates of substances that could impair bond of coating, including dust, dirt, oil, grease, and incompatible coats and encapsulants.

F. Masonry Substrates: Remove efflorescence and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces or mortar joints exceeds that permitted in manufacturer's written instructions.

3.3 INSTALLATION

A. Apply coating in accordance with manufacturer's written instructions.

   1. Use applicators and techniques suited for coating and substrate indicated.
   2. Coat surfaces behind movable items same as similar exposed surfaces. Before final installation, coat surfaces behind permanently fixed items with prime coat only.

3.4 SURFACES TO BE COATED

A. Apply graffiti resistant coating to all exterior exposed building surfaces visible from the ground level, including concrete, and masonry. Apply coating to unpainted surfaces. Exclude horizontal surfaces subject to wheel or foot traffic.

B. Apply to exterior non-building vertical surfaces including solid or semi-solid fencing, segmental block or concrete panel retaining walls, and masonry screening as applicable.

C. On building surfaces, apply coating system to first definitive continuous horizontal demarcation including change in color or surface material but not less than 12 feet above finish grade. Apply to full height of exterior overhead or coiling door surfaces. Apply to top of building if no definitive continuous horizontal demarcation lines exist.

3.5 MAINTENANCE

A. Deliver cleaning products to Owner for storage and subsequent use for graffiti removal. Apply cleaning instructions label to interior wall location as directed by the Construction Manager.

3.6 FIELD QUALITY CONTROL

A. Verify application rate by periodic on-site inspection and calculation of area covered compared to consumption of coating material used. Document inspections showing total area covered and number and volume of coating containers used.

B. Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test coat for dry film thickness.

1. Contractor shall touch up and restore coated surfaces damaged by testing.
2. If test results show that dry film thickness of applied coat does not comply with coat manufacturer's written instructions, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with coat manufacturer's written instructions.

3.7 CLEANING AND PROTECTION

A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

1. Do not clean equipment with free-draining water and prevent solvents, thinners, cleaners, and other contaminants from entering into waterways, sanitary and storm drain systems, and ground.
2. Dispose of contaminants in accordance with requirements of authorities having jurisdiction.
3. Allow empty coating cans to dry before disposal.
4. Collect waste coating by type and deliver to recycling or collection facility.

B. After completing coating application, clean spattered surfaces. Remove spattered coatings by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

C. Protect work of other trades against damage from coat application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

D. At completion of construction activities of other trades, touch up and restore damaged or defaced coated surfaces.

3.8 EXTERIOR COATING SCHEDULE

A. Concrete Masonry Unit Substrates:

1. Water-Based, Anti-Graffiti Coating System

a. Apply Block-Lok with Graffiti control over concrete masonry units per manufacturer’s recommended installation.

b. Prime Coat: Exterior per manufacturer's recommendations
c. Topcoat: Exterior, water-based, anti-graffiti coating, low sheen.

END OF SECTION 09-9623

SECTION 31-2000 - EARTH MOVING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Excavating and filling for rough grading the Site.
2. Preparing subgrades for slabs-on-grade, walks, pavements, turf and grasses and plants.
3. Excavating (by Owner) and backfilling for buildings and structures.
4. Drainage course for concrete slabs-on-grade.
5. Subbase course for concrete walks and pavements.
6. Subsurface drainage backfill for walls and trenches.
7. Excavating and backfilling trenches for utilities and pits for buried utility structures.

1.2 UNIT PRICES

A. Work of this Section is affected by unit prices for earth moving specified in Section 01-2200 "Unit Prices."

B. Quantity allowances for earth moving are included in Section 01-2100 "Allowances."

C. Earth and Rock Removal: By Owner.

1.3 DEFINITIONS

A. Backfill: Soil material or controlled low-strength material used to fill an excavation.

1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
2. Final Backfill: Backfill placed over initial backfill to fill a trench.

B. Base Course: Aggregate layer placed between the subbase course and hot-mix asphalt paving.

C. Bedding Course: Aggregate layer placed over the excavated subgrade in a trench before laying pipe.

D. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.

E. Drainage Course: Aggregate layer supporting the slab-on-grade that also minimizes upward capillary flow of pore water.

F. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.

1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Architect. Authorized additional excavation and replacement material will be paid for according to Contract provisions for unit prices.

G. Fill: Soil materials used to raise existing grades.

H. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other fabricated stationary features constructed above or below the ground surface.

I. Subbase Course: Aggregate layer placed between the subgrade and base course for hot-mix asphalt pavement, or aggregate layer placed between the subgrade and a cement concrete pavement or a cement concrete or hot-mix asphalt walk.

J. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, drainage course, or topsoil materials.

K. Utilities: On-site underground pipes, conduits, ducts, and cables as well as underground services within buildings.

1.4 PRE-INSTALLATION MEETINGS

A. Preinstallation Conference: Conduct pre-installation conference at Project site.

1. Review methods and procedures related to earthmoving, including, but not limited to, the following:

a. Personnel and equipment needed to make progress and avoid delays.
b. Coordination of Work with utility locator service.
c. Coordination of Work and equipment movement with the locations of tree- and plant-protection zones.
d. Extent of trenching by hand or with air spade.
e. Discuss observation and backfill quantities by third party testing agency provided by General Contractor prior to import of materials.
f. Field quality control.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of the following manufactured products as required:

1. Geotextiles.
2. Controlled low-strength material, including design mixture.
3. Geofoam.
4. Warning tapes.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified testing agency.

B. Material Test Reports: For each on-site and borrow soil material proposed for fill and backfill as follows:

1. Classification according to ASTM D2487.
2. Laboratory compaction curve according to ASTM D698, ASTM D1557.

C. Pre-Installation Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces that might be misconstrued as damage caused by earth-moving operations. Submit before earth moving begins.

1.7 QUALITY ASSURANCE

A. Geotechnical Testing Agency Qualifications: Qualified according to ASTM E329 and ASTM D3740 for testing indicated.

1.8 FIELD CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during earth-moving operations.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.

B. Utility Locator Service: Notify utility locator service for area where Project is located before beginning earth-moving operations.

C. Do not commence earth-moving operations until temporary site fencing and erosion- and sedimentation-control measures specified in Civil Drawings are in place.

D. The following practices are prohibited within protection zones:

1. Storage of construction materials, debris, or excavated material.
2. Parking vehicles or equipment.
3. Foot traffic.
4. Erection of sheds or structures.
5. Impoundment of water.
6. Excavation or other digging unless otherwise indicated.
7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.

E. Do not direct vehicle or equipment exhaust towards protection zones.

F. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.

B. Satisfactory Soils: Soil Classification [Groups GW, GP, GM, SW, SP, and SM according to ASTM D2487] [Groups A-1, A-2-4, A-2-5, and A-3 according to AASHTO M 145], or a combination of these groups; free of rock or gravel larger than [3 inches (75 mm)] <Insert

dimension> in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.

C. Unsatisfactory Soils: Soil Classification [Groups GC, SC, CL, ML, OL, CH, MH, OH, and PT according to ASTM D2487] [Groups A-2-6, A-2-7, A-4, A-5, A-6, and A-7 according to AASHTO M 145], or a combination of these groups.

1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.

D. Subbase Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D2940/D2940M; with at least 90 percent passing a 1-1/2-inch (37.5-mm) sieve and not more than 12 percent passing a No. 200 (0.075-mm) sieve.

E. Base Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D2940/D2940M; with at least 95 percent passing a 1-1/2-inch (37.5-mm) sieve and not more than 8 percent passing a No. 200 (0.075-mm) sieve.

F. Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D2940/D2940M; with at least 90 percent passing a 1-1/2-inch (37.5-mm) sieve and not more than 12 percent passing a No. 200 (0.075-mm) sieve.

G. Bedding Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D2940/D2940M; except with 100 percent passing a 1-inch (25-mm) sieve and not more than 8 percent passing a No. 200 (0.075-mm) sieve.

H. Drainage Course: Narrowly graded mixture of [washed]crushed stone, or crushed or uncrushed gravel; ASTM D448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2-inch (37.5-mm) sieve and zero to 5 percent passing a No. 8 (2.36-mm) sieve.

I. Filter Material: Narrowly graded mixture of natural or crushed gravel, or crushed stone and natural sand; ASTM D448; coarse-aggregate grading Size 67; with 100 percent passing a 1-inch (25-mm) sieve and zero to 5 percent passing a No. 4 (4.75-mm) sieve.

J. Sand: ASTM C33/C33M; fine aggregate.

K. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state.

2.2 CONTROLLED LOW-STRENGTH MATERIAL

A. Controlled Low-Strength Material: Self-compacting[, cellular, low-density], flowable concrete material produced from the following:

1. Portland Cement: ASTM C150/C150M, [Type I] [Type II] [or] [Type III].
2. Fly Ash: ASTM C618, Class C or F.
3. Normal-Weight Aggregate: ASTM C33/C33M, 3/4-inch nominal maximum aggregate size.
4. Foaming Agent: ASTM C869/C869M.
5. Water: ASTM C94/C94M.
6. Air-Entraining Admixture: ASTM C260/C260M.

B. Produce cellular, low-density, controlled low-strength material with the following physical properties:

1. As-Cast Unit Weight: 30 to 36 lb/cu. ft. point of placement, when tested according to ASTM C138/C138M.
2. Compressive Strength: 80 psi, when tested according to ASTM C495/C495M.

C. Produce conventional-weight, controlled low-strength material with 80-psi compressive strength when tested according to ASTM C495/C495M.

2.3 ACCESSORIES

A. Warning Tape: Acid- and alkali-resistant, polyethylene film warning tape manufactured for marking and identifying underground utilities, 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility; colored as follows:

1. Red: Electric.
2. Yellow: Gas, oil, steam, and dangerous materials.
3. Orange: Telephone and other communications.
4. Blue: Water systems.
5. Green: Sewer systems.

B. Detectable Warning Tape: Acid- and alkali-resistant, polyethylene film warning tape manufactured for marking and identifying underground utilities, a minimum of 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 30 inches deep; colored as follows:

1. Red: Electric.
2. Yellow: Gas, oil, steam, and dangerous materials.
3. Orange: Telephone and other communications.
4. Blue: Water systems.
5. Green: Sewer systems.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth-moving operations.

B. Protect and maintain erosion and sedimentation controls during earth-moving operations.

C. Protect subgrades and foundation soils from freezing temperatures and frost. Remove temporary protection before placing subsequent materials.

3.2 DEWATERING

A. Provide dewatering system of sufficient scope, size, and capacity to control hydrostatic pressures and to lower, control, remove, and dispose of ground water and permit excavation and construction to proceed on dry, stable subgrades.

B. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.

C. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.

1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.

D. Dispose of water removed by dewatering in a manner that avoids endangering public health, property, and portions of work under construction or completed. Dispose of water and sediment in a manner that avoids inconvenience to others.

3.3 EXCAVATION FOR STRUCTURES

A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch. If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.

1. Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.
2. Pile Foundations: Stop excavations 6 to 12 inches above bottom of pile cap before piles are placed. After piles have been driven, remove loose and displaced material. Excavate to final grade, leaving solid base to receive concrete pile caps.
3. Excavation for Underground Tanks, Basins, and Mechanical or Electrical Utility Structures: Excavate to elevations and dimensions indicated within a tolerance of plus or minus 1 inch. Do not disturb bottom of excavations intended as bearing surfaces.

3.4 EXCAVATION FOR WALKS AND PAVEMENTS

A. Excavate surfaces under walks and pavements to indicated lines, cross sections, elevations, and subgrades.

3.5 EXCAVATION FOR UTILITY TRENCHES

A. Excavate trenches to indicated gradients, lines, depths, and elevations.

1. Beyond building perimeter, excavate trenches to allow installation of top of pipe below frost line.

B. Excavate trenches to uniform widths to provide the following clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit unless otherwise indicated.

1. Clearance: 12 inches each side of pipe or conduit.

C. Trench Bottoms:

1. Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of

pipes and for joints, fittings, and bodies of conduits. Remove projecting stones and sharp objects along trench subgrade.

a. For pipes and conduit less than 6 inches in nominal diameter, hand-excavate trench bottoms and support pipe and conduit on an undisturbed subgrade.
b. For pipes and conduit 6 inches or larger in nominal diameter, shape bottom of trench to support bottom 90 degrees of pipe or conduit circumference. Fill depressions with tamped sand backfill.
c. For flat-bottomed, multiple-duct conduit units, hand-excavate trench bottoms and support conduit on an undisturbed subgrade.
d. Excavate trenches 6 inches deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.

2. Excavate trenches 4 inches deeper than bottom of pipe and conduit elevations to allow for bedding course. Hand-excavate deeper for bells of pipe.

a. Excavate trenches 6 inches deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.

3.6 SUBGRADE INSPECTION

A. Notify Architect when excavations have reached required subgrade.

B. If Architect determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.

C. Proof-roll subgrade below the building slabs and pavements with a pneumatic-tired and loaded 10-wheel, tandem-axle dump truck weighing not less than 15 tons to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.

1. Completely proof-roll subgrade in one direction, repeating proof-rolling in direction perpendicular to first direction. Limit vehicle speed to 3 mph.
2. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Architect, and replace with compacted backfill or fill as directed.

D. Authorized additional installation and replacement material will be paid for according to Contract provisions for unit prices.

E. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Architect, without additional compensation.

3.7 UNAUTHORIZED EXCAVATION

A. Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Lean concrete fill, with 28-day compressive strength of 2500 psi, may be used when approved by Architect.

1. Fill unauthorized excavations under other construction, pipe, or conduit as directed by Architect.

3.8 STORAGE OF SOIL MATERIALS

A. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.

1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

3.9 BACKFILL

A. Place and compact backfill in excavations promptly, but not before completing the following:

1. Construction below finish grade including, where applicable, subdrainage, and perimeter insulation.
2. Surveying locations of underground utilities for Record Documents.
3. Testing and inspecting underground utilities.
4. Removing concrete formwork.
5. Removing trash and debris.
6. Removing temporary shoring, bracing, and sheeting.
7. Installing permanent or temporary horizontal bracing on horizontally supported walls.

B. Place backfill on subgrades free of mud, frost, snow, or ice.

3.10 UTILITY TRENCH BACKFILL

A. Place backfill on subgrades free of mud, frost, snow, or ice.

B. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.

C. Trenches under Footings: Backfill trenches excavated under footings and within 18 inches of bottom of footings with satisfactory soil; fill with concrete to elevation of bottom of footings.

D. Backfill voids with satisfactory soil while removing shoring and bracing.

E. Initial Backfill:

1. Controlled Low-Strength Material: Place initial backfill of controlled low-strength material to a height of 12 inches over the pipe or conduit. Coordinate backfilling with utilities testing.

F. Final Backfill:
1. Controlled Low-Strength Material: Place final backfill of controlled low-strength material to final subgrade elevation.

G. Warning Tape: Install warning tape directly above utilities, 12 inches below finished grade, except 6 inches below subgrade under pavements and slabs.

3.11 SOIL FILL

A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.

B. Place and compact fill material in layers to required elevations as follows:

1. Under grass and planted areas, use satisfactory soil material.
2. Under walks and pavements, use satisfactory soil material.
3. Under building slabs, use engineered fill.
4. Under footings and foundations, use engineered fill.

C. Place soil fill on subgrades free of mud, frost, snow, or ice.

3.12 SOIL MOISTURE CONTROL

A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.

1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.
2. Remove and replace, or scarify and air dry, otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

3.13 COMPACTION OF SOIL BACKFILLS AND FILLS

A. Coordinate with information in Civil Drawings.

B. Place backfill and fill soil materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment and not more than 4 inches in loose depth for material compacted by hand-operated tampers.

C. Place backfill and fill soil materials evenly on all sides of structures to required elevations and uniformly along the full length of each structure.

D. Compact soil materials to not less than the following percentages of maximum dry unit weight according to ASTMcD698.

1. Coordinate with information in Civil Drawings.

2. Under structures, building slabs, steps, and pavements, scarify and recompact top 12 inches of existing subgrade and each layer of backfill or fill soil material at 95 percent.
3. Under walkways, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 92 percent.
4. Under turf or unpaved areas, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 85 percent.
5. For utility trenches, compact each layer of initial and final backfill soil material at 85 percent.

3.14 GRADING

A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.

1. Provide a smooth transition between adjacent existing grades and new grades.
2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.

B. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to elevations required to achieve indicated finish elevations, within the following subgrade tolerances:

1. Turf or Unpaved Areas: Plus or minus 1 inch.
2. Walks: Plus or minus 1 inch.
3. Pavements: Plus or minus [1/2 inch.

C. Grading inside Building Lines: Finish subgrade to a tolerance of [1/2 inch (13 mm)] <Insert dimension> when tested with a 10-foot (3-m) straightedge.

3.15 SUBBASE AND BASE COURSES UNDER PAVEMENTS AND WALKS

A. Place subbase course[and base course] on subgrades free of mud, frost, snow, or ice.

B. On prepared subgrade, place subbase course[and base course] under pavements and walks as follows:

1. Install separation geotextile on prepared subgrade according to manufacturer's written instructions, overlapping sides and ends.
2. Place base course material over subbase course under hot-mix asphalt pavement.
3. Shape subbase course and base course to required crown elevations and cross-slope grades.
4. Place subbase course and base course 6 inches or less in compacted thickness in a single layer.
5. Place subbase course and base course that exceeds 6 inches in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches thick or less than 3 inches thick.
6. Compact subbase course and base course at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 95 percent of maximum dry unit weight according to ASTM D698.

3.16 FIELD QUALITY CONTROL

A. Special Inspections: General Contractor will engage a qualified special inspector to perform the following special inspections:

1. Determine prior to placement of fill that site has been prepared in compliance with requirements.
2. Determine that fill material classification and maximum lift thickness comply with requirements.
3. Determine, during placement and compaction, that in-place density of compacted fill complies with requirements.

B. Testing Agency: General Contractor will engage a qualified geotechnical engineering testing agency to perform tests and inspections.

C. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.

D. Footing Subgrade: At footing subgrades, at least one test of each soil stratum will be performed to verify design bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of subgrade with tested subgrade when approved by Architect.

E. Testing agency will test compaction of soils in place according to ASTM D1556, ASTM D2167, ASTM D2937, and ASTM D6938, as applicable. Tests will be performed at the following locations and frequencies:

1. Paved and Building Slab Areas: At subgrade and at each compacted fill and backfill layer, at least one test for every 2000 sq. ft. or less of paved area or building slab but in no case fewer than three tests.
2. Foundation Wall Backfill: At each compacted backfill layer, at least one test for every 100 feet or less of wall length but no fewer than two tests.
3. Trench Backfill: At each compacted initial and final backfill layer, at least one test for every 150 feet or less of trench length but no fewer than two tests.

F. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil materials to depth required; recompact and retest until specified compaction is obtained.

3.17 PROTECTION

A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.

B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.

1. Scarify or remove and replace soil material to depth as directed by Architect; reshape and recompact.

C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.

1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.18 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Remove surplus satisfactory soil and waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.

B. Transport surplus satisfactory soil to designated storage areas on Owner's property. Stockpile or spread soil as directed by Architect.

1. Remove waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.

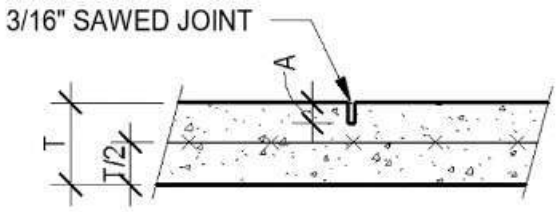
END OF SECTION 31-2000

EXHIBIT A- SPLASH PAD CONCRETE SPECIFICATION INFORMATION

ADDENDUM TWO

This information is for the amorphous shaped splash pad concrete area.

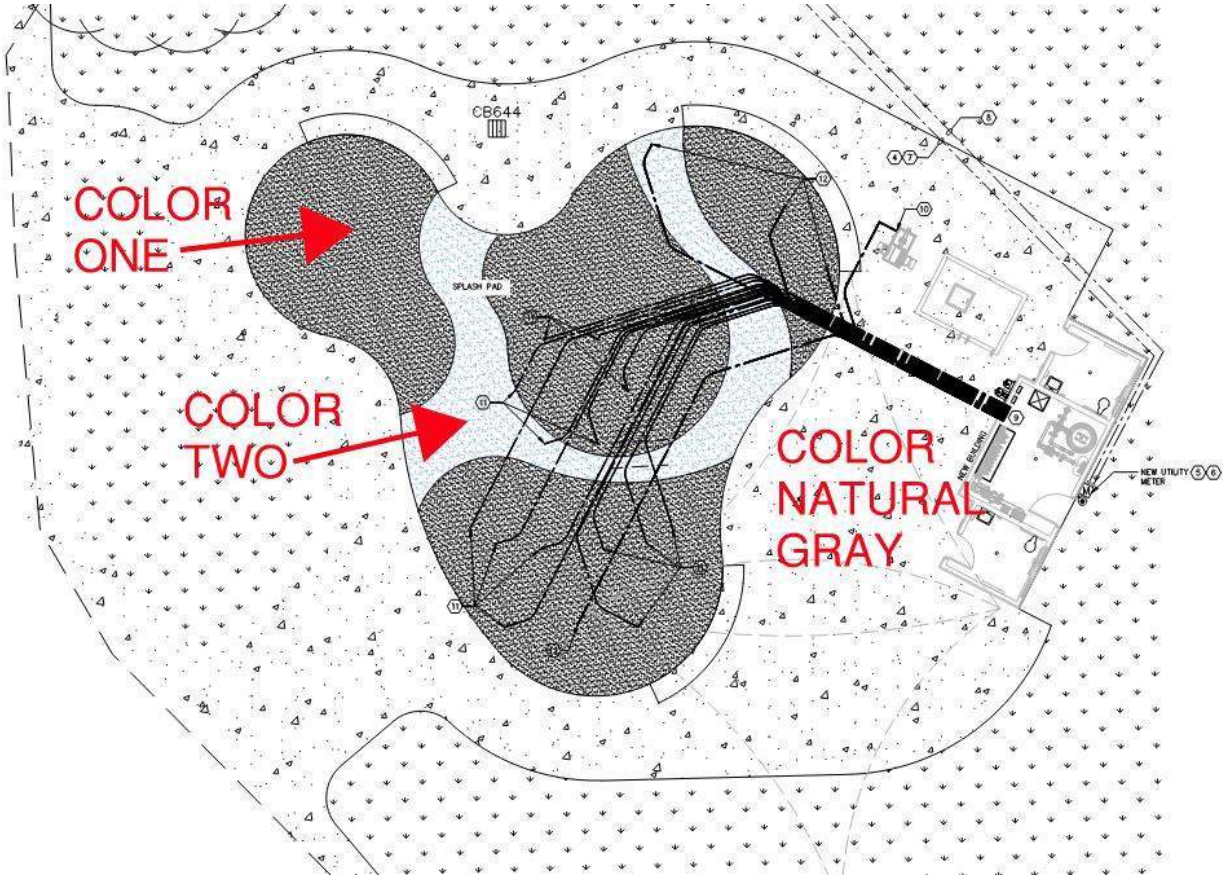
1. Concrete Strength: 3,500 PSF with 6% air entrainment, per Rain Drop.
2. Minimum Slab Depth: 6-inches of concrete on 8" of clean compacted aggregate base.
3. See Rain Drop drawing 13/13 for concrete slab edge detail and other important information.
4. Minimum Slope: From within splash pad, slope 2-percent (2%) to all drains. For concrete sidewalks at perimeter of splash pad slope 2-percent (2%) away from splash pad.
5. Minimum Slab Reinforcement: #5 reinforcing bars at 12" O.C., each way, bolster supported in the center of the slab.
6. Concrete Finish: A 'light' broomed finish.
7. Saw Cuts: 12' to 15' O.C. in two directions where applicable. Do not intersect water features.
    a. Coordinate locations with provider of active (the water play items) water equipment.
    b. Provide joint filler within all joints.
    c. Fill to level of adjoining surfaces. See detail below.
8. Cold Joints: Joints between colored concrete in splash pad and joints between splash pad and adjacent concrete sidewalks shall be filled with joint filler.
9. Concrete Color: Two integral concrete colors. Plant mixed concrete. See below detail for further information.
    a. Color selection by Owner from manufacture's standard color chart.
    b. Powdered Pigment Colors: Manufacturers: Direct Colors, Cement Colors or approved substitute.
10. Cold Applied Joint Fillers and Primers: Provide for water immersion application.
    a. Joint Primer: Provide W.R. Meadows REZI-WELD LV for wet (submerged) applications. Prime before applying final joint filler per manufacturer's instructions.
    b. Joint Fillers:
        i. Basis of Design: W.R. Meadows Deck-O-Seal HS-1 SL (self-leveling)
        ii. Type: hybrid silyl-modified polymer (SMP).
        iii. Color Options: Gray or Tan.
11. Provide foam backer rods in locations with joints wider than ¼-inch and depths greater than ½-inch.
12. Alternate joint filler types and manufacturers may be substituted during bidding phase with architect approval.

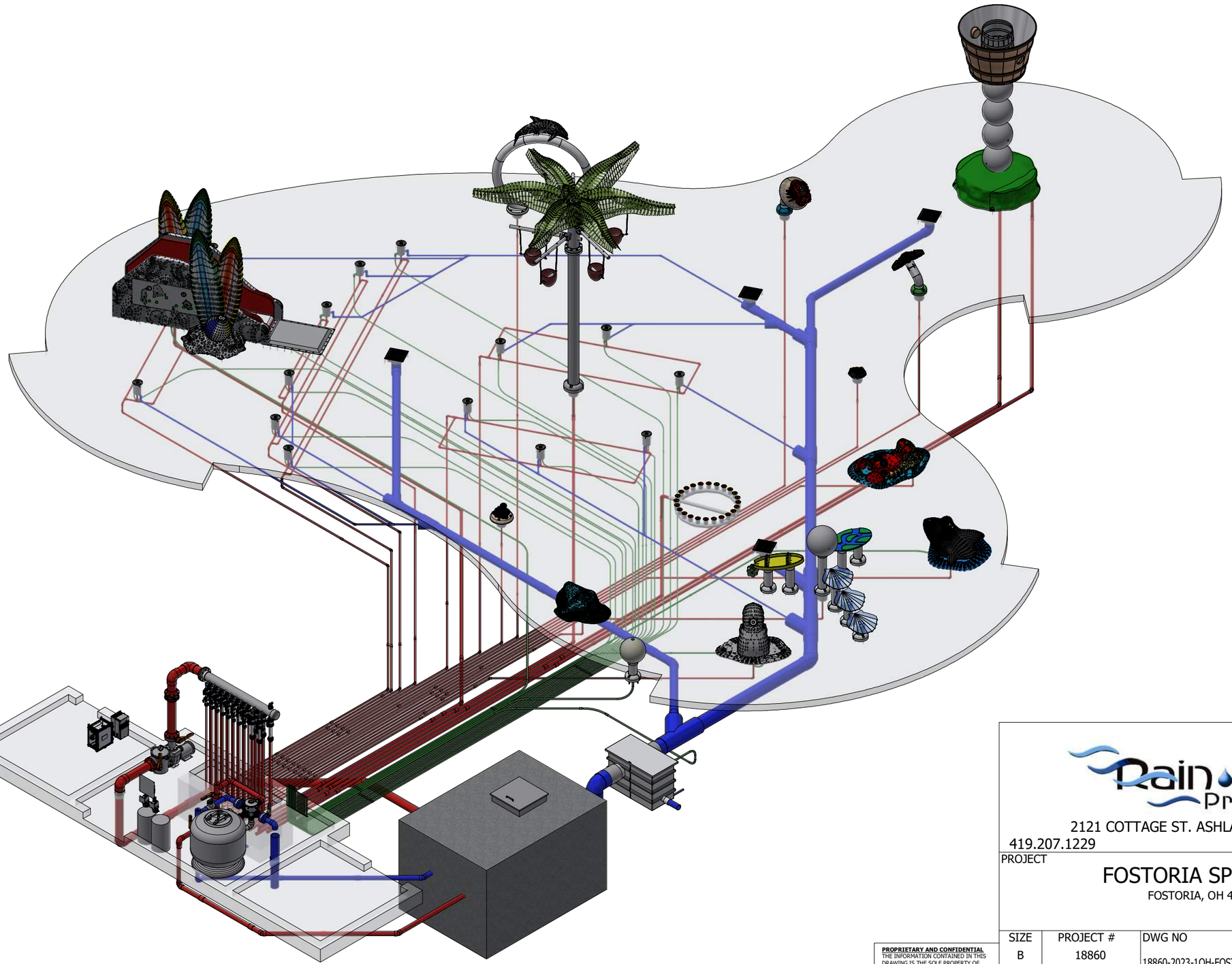


NON-TRAFFIC AREAS

NOTES:
- SAW-CUT JOINTS WITH EARLY-ENTRY SAWS AS SOON AS SLAB WILL ACCEPT CUTTING ACTION WITHOUT DAMAGE BUT NO LATER THAN 4 HOURS AFTER PLACEMENT
- PROVIDE JOINT SEALANT WHERE SLAB REMAINS EXPOSED TO WEATHER
- SLAB REINFORCING CONTINUOUS THRU JOINT

A: 1.5" DEPTH PER RAIN DROP DRAWING 13/13





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PROJECT

FOSTORIA SPRAYPARK

FOSTORIA, OH 44830 US

SIZE	PROJECT #	DWG NO	REV
B	18860	18860-2023-1OH-FOSTORIA-FOSTORIA-SPRAYPARK-31	1

DRAWN		
cebeling	12/11/2023	SHEET 1 OF 13

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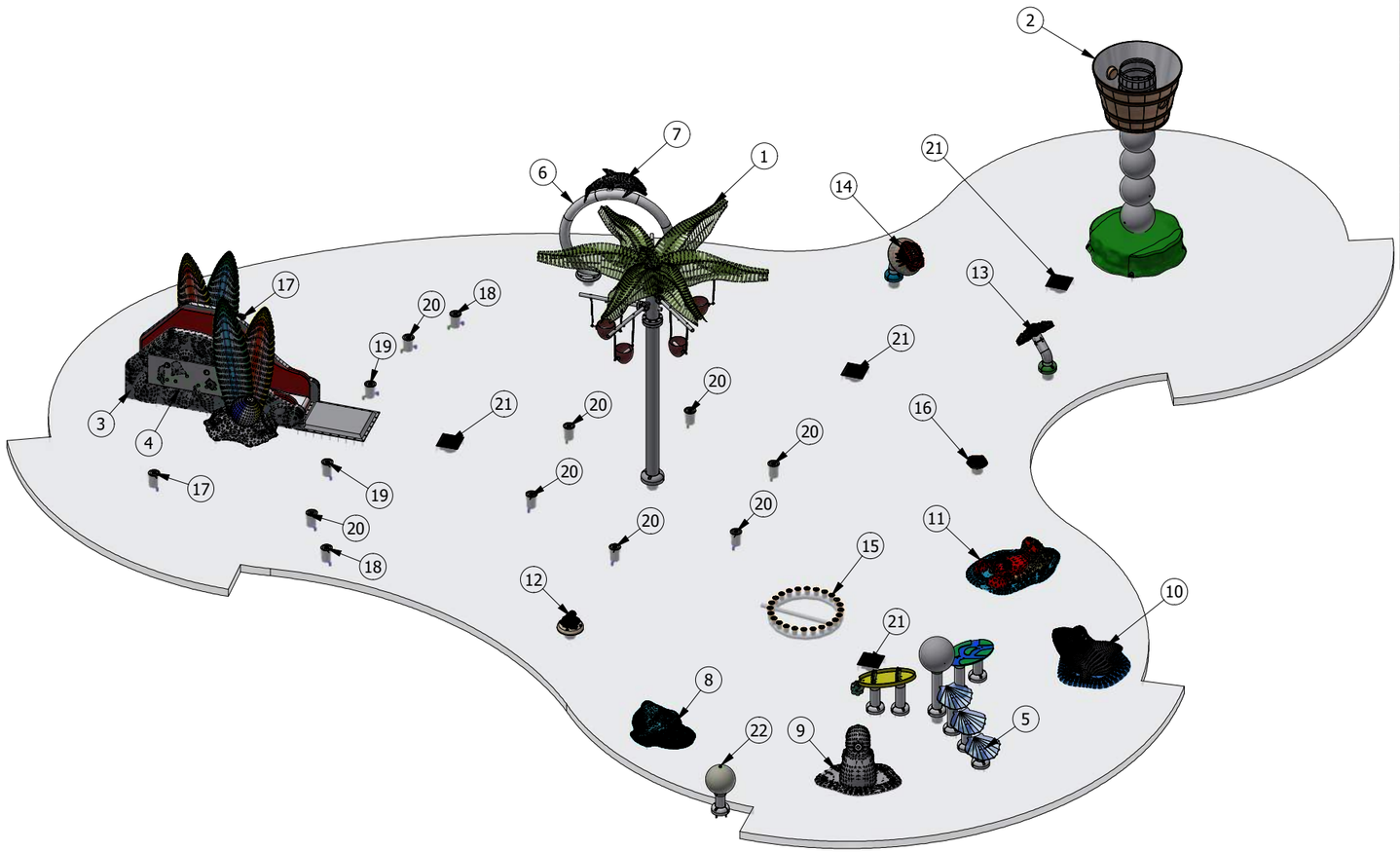

PARTS LIST				
ITEM	QTY	PART NUMBER	DESCRIPTION	GPM
1	1	TBKC-002-OM	TUMBLE BUCKET PALM W/ COCONUTS X5, OMNI	75.8
2	1	RADB-001-OM	RADIAL DUMP BUCKET W/ BEACH BALLS	62.1
3	1	SRFS-001-OM	AQUA RUN SURF BOARD SINGLE, OMNI	26.2
4	1	BOP-A-DROP ADDON	BOP-A-DROP ADDON	3.8
5	1	RDPC-016-OM	RAIN DROP PLAY CENTER, TROPICAL, OMNI	15.5
6	1	AQHP-004-OM	AQUA HOOP, OMNI	16.8
7	1	DLPT-001	DOLPHIN TOPPER	N/A
8	1	CFSR-001-OM	CREATURE FEATURE STINGRAY, OMNI	15.2
9	1	CFMT-001-ACT-OM	CREATURE FEATURE, MOLLY MANATEE, OMNI, W/ ACTIVATOR	6.3
10	1	CFSK-001-ACT-OM	CREATURE FEATURE AQUA SHARK, INCLUSIVE, OMNI	16.8
11	1	CFLB-001-OM	CREATURE FEATURE LARRY THE LOBSTER, OMNI	16.8
12	1	CFBO-001-OM	BABY INKY, OMNI	4.3
13	1	SPSF-001-OM	SPINNING STARFISH, OMNI	1.7
14	1	SPCR-001-OM	SPINNING CRAB OMNI	3.8
15	1	CIRT-005	CIRCLE TIME, 24 OUTLET	40.4
16	1	CFBS-001-OM	CREATURE FEATURE BABY STARRY, OMNI	18.9
17	2	RDPJ-LED-UPJT-001	LED LIGHT W/ UPSTREAM JET NOZZLE	3.8
18	2	RDPJ-LED-SFJT-001	LED LIGHT W/ SLANT FINGER JET	10.1
19	2	RDPJ-LED-TLJT-001	LED LIGHT W/ MINI TOOLIP JET	4.9
20	8	RDPJ-LED-SLJT-001	LED LIGHT W/ SLANT JET NOZZLE	3.8
21	4	DRN12-006B	12" DRAIN	135
22	1	BOL-BCBL-010	BASEBALL TOUCH ACTIVATOR	N/A

MAXIMUM INTENDED FLOW - 392.5 GPM

PLEASE NOTE:
ALL STAINLESS STEEL FEATURES TO BE GROUNDED
AND BONDED PER LOCAL CODE AND REGULATIONS.

NOTES -
1 - THIS DESIGN IS PREPARED FOR REVIEW PURPOSES AND IS NOT INTENDED FOR USE AS A CONSTRUCTION DOCUMENT.
2 - WATERPLAY CONCRETE PAD DIMENSIONS AND ORIENTATION ARE TO BE USED AS A REFERENCE. THEY MAY BE ALTERED TO ACCOMODATE EXISTING FIELD CONDITIONS.
3 - CONSTRUCTION SHALL CONFORM TO THE MOST RECENT STATE DEPARTMENT OF HEALTH STANDARDS AND SPECIFICATIONS.
4 - LOCAL SUPPLIMENTAL CODES AND SPECIFICATIONS TAKE PRECEDENCE OVER THOSE PROVIDED IN THIS DOCUMENT.
5 - CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL CONSTRUCTION MATERIAL AND LABOR REQUIRED TO PROPERLY INSTALL WATER FEATURES AND EQUIPMENT.
6 - AN APPROVED SET OF CONSTRUCTION PLANS SHALL BE MADE AVAILABLE ON THE JOBSITE AT ALL TIMES.

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FOSTORIA, OH 44830 US

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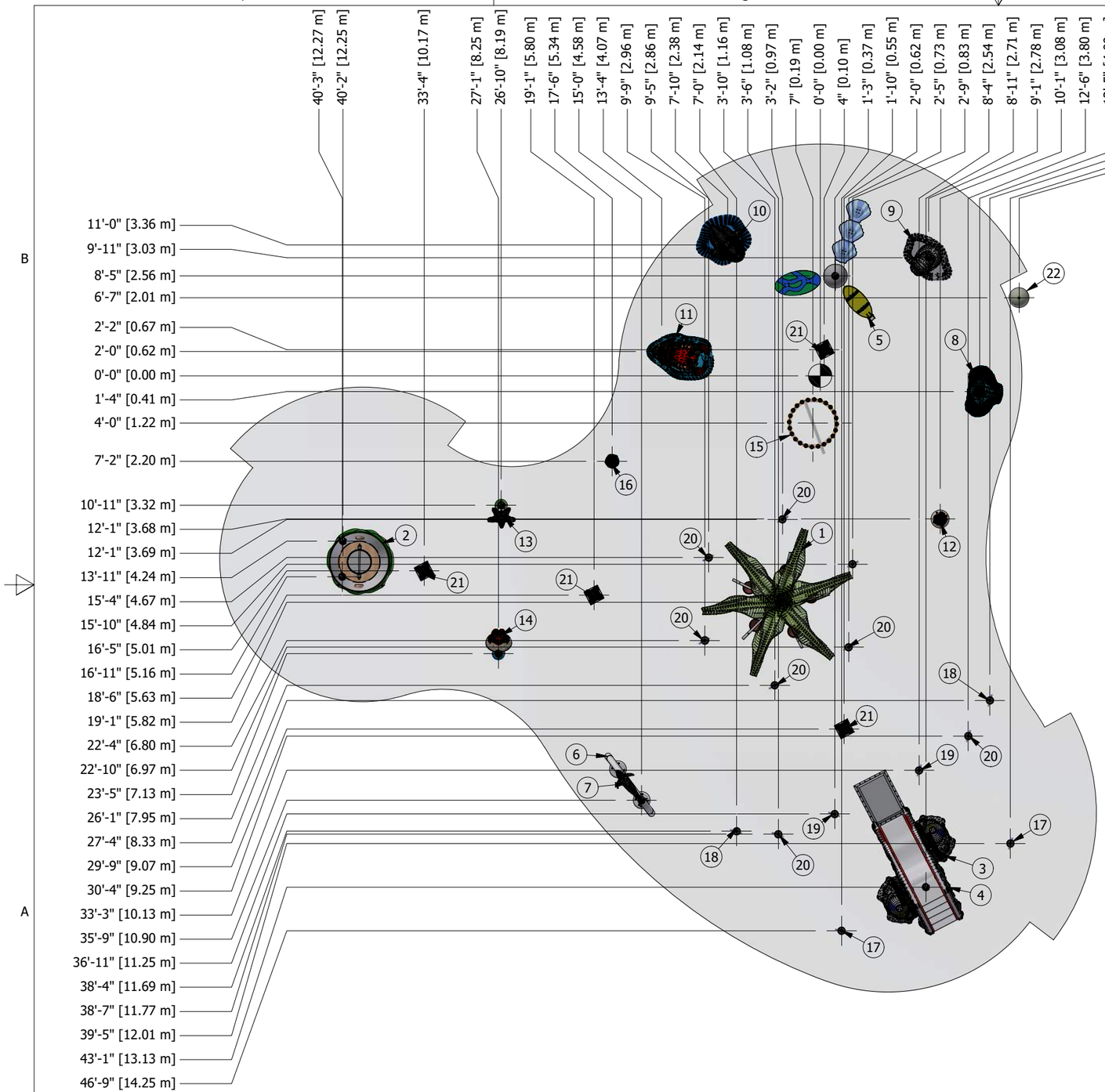

PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	TBKC-002-OM	TUMBLE BUCKET PALM W/ COCONUTS X5, OMNI
2	1	RADB-001-OM	RADIAL DUMP BUCKET W/ BEACH BALLS
3	1	SRFS-001-OM	AQUA RUN SURF BOARD SINGLE, OMNI
4	1	BOP-A-DROP ADDON	BOP-A-DROP ADDON
5	1	RDPC-016-OM	RAIN DROP PLAY CENTER, TROPICAL, OMNI
6	1	AQHP-004-OM	AQUA HOOP, OMNI
7	1	DLPT-001	DOLPHIN TOPPER
8	1	CFSR-001-OM	CREATURE FEATURE STINGRAY, OMNI
9	1	CFMT-001-ACT-OM	CREATURE FEATURE, MOLLY MANATEE, OMNI, W/ ACTIVATOR
10	1	CFSK-001-ACT-OM	CREATURE FEATURE AQUA SHARK, INCLUSIVE, OMNI
11	1	CFLB-001-OM	CREATURE FEATURE LARRY THE LOBSTER, OMNI
12	1	CFBO-001-OM	BABY INKY, OMNI
13	1	SPSF-001-OM	SPINNING STARFISH, OMNI
14	1	SPCR-001-OM	SPINNING CRAB OMNI
15	1	CIRT-005	CIRCLE TIME, 24 OUTLET
16	1	CFBS-001-OM	CREATURE FEATURE BABY STARRY, OMNI
17	2	RDPJ-LED-UPJT-001	LED LIGHT W/ UPSTREAM JET NOZZLE
18	2	RDPJ-LED-SFJT-001	LED LIGHT W/ SLANT FINGER JET
19	2	RDPJ-LED-TLJT-001	LED LIGHT W/ MINI TOOLIP JET
20	8	RDPJ-LED-SLJT-001	LED LIGHT W/ SLANT JET NOZZLE
21	4	DRN12-006B	12" DRAIN
22	1	BOL-BCBL-010	BASEBALL TOUCH ACTIVATOR

PLEASE NOTE:
ALL STAINLESS STEEL FEATURES TO BE GROUNDED
AND BONDED PER LOCAL CODE AND REGULATIONS.
CONCRETE -
1 - WATERPLAY CONCRETE PAD DIMENSIONS AND ORIENTATION ARE TO BE USED AS A REFERENCE. THEY MAY BE ALTERED TO ACCOMODATE EXISTING FIELD CONDITIONS.
2 - ALL CONCRETE SHALL BE 3500 PSI MINIMUM, 28 DAY COMPRESSIVE STRENGTH, WITH 6% AIR ENTRAPMENT.
3 - GRADE SHALL BE SLOPED 2% FROM THE WATERPLAY PAD PERIMETER TO THE MAIN DRAINS.
4 - A 5 FOOT OVERSPRAY BUFFER IS INCORPORATED BETWEEN THE WATERPLAY PAD PERIMETER AND THE INTENDED AREA OF INFLUENCE OF THE WATERPLAY FEATURES. THE BUFFER ZONE IS INCLUDED IN THE OVERALL DIMENSIONS OF THE WATERPLAY PAD.
5 - ALL REINFORCEMENT STEEL SHALL BE SUPPLIED AND PLACED IN ACCORDANCE WITH ACI 318, AND CRSI MSP-1.
6 - ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60.
7 - EACH WATER FEATURE SHALL BE LOCATED WITHIN A SINGLE PANEL OF CONCRETE, UNLESS OTHERWISE NOTED.
8 - OMNIPOD COVER MUST BE CAST FLUSH AND LEVEL WITH THE FINISHED CONCRETE SURFACE.
9 - SURFACE SPRAY NOZZLES SHALL BE CAST FLUSH AND LEVEL WITH THE FINISHED CONCRETE SURFACE.
10 - EARTHFORMS MAY BE USED UNDER THE WATERPLAY CONCRETE PAD.
11 - SPRAYGROUND AREA IS 2841.9 SQUARE FEET [264 SQUARE METERS]

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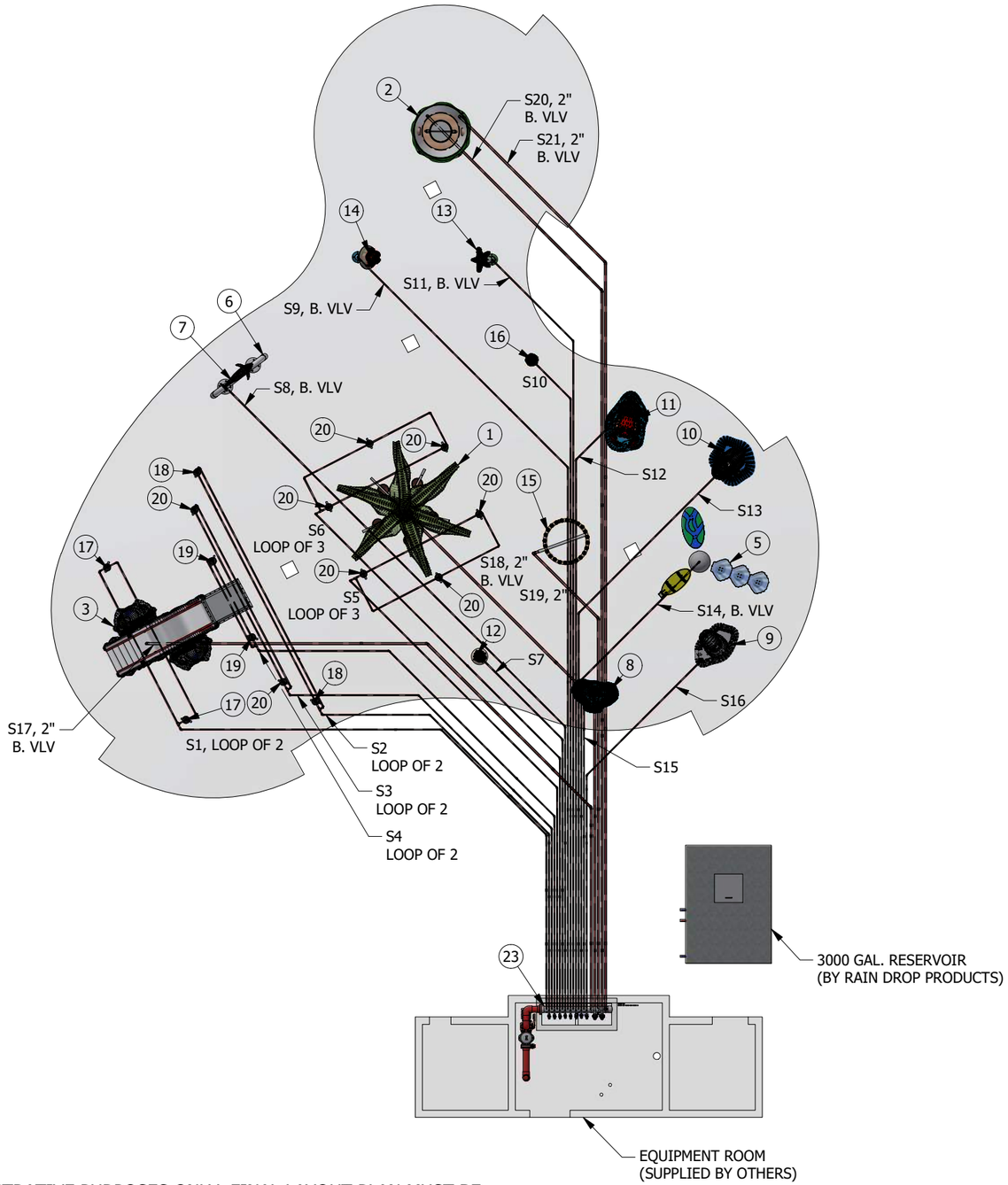

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ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	TBKC-002-OM	TUMBLE BUCKET PALM W/ COCONUTS X5, OMNI
2	1	RADB-001-OM	RADIAL DUMP BUCKET W/ BEACH BALLS
3	1	SRFS-001-OM	AQUA RUN SURF BOARD SINGLE, OMNI
4	1	BOP-A-DROP ADDON	BOP-A-DROP ADDON
5	1	RDPC-016-OM	RAIN DROP PLAY CENTER, TROPICAL, OMNI
6	1	AQHP-004-OM	AQUA HOOP, OMNI
7	1	DLPT-001	DOLPHIN TOPPER
8	1	CFSR-001-OM	CREATURE FEATURE STINGRAY, OMNI
9	1	CFMT-001-ACT-OM	CREATURE FEATURE, MOLLY MANATEE, OMNI, W/ ACTIVATOR
10	1	CFSK-001-ACT-OM	CREATURE FEATURE AQUA SHARK, INCLUSIVE, OMNI
11	1	CFLB-001-OM	CREATURE FEATURE LARRY THE LOBSTER, OMNI
12	1	CFBO-001-OM	BABY INKY, OMNI
13	1	SPSF-001-OM	SPINNING STARFISH, OMNI
14	1	SPCR-001-OM	SPINNING CRAB OMNI
15	1	CIRT-005	CIRCLE TIME, 24 OUTLET
16	1	CFBS-001-OM	CREATURE FEATURE BABY STARRY, OMNI
17	2	RDPJ-LED-UPJT-001	LED LIGHT W/ UPSTREAM JET NOZZLE
18	2	RDPJ-LED-SFJT-001	LED LIGHT W/ SLANT FINGER JET
19	2	RDPJ-LED-TLJT-001	LED LIGHT W/ MINI TOOLIP JET
20	8	RDPJ-LED-SLJT-001	LED LIGHT W/ SLANT JET NOZZLE
23	1	MANIFOLD-6-161-052-N02	MANIFOLD-6" W/ 16-1" AND 5-2" OUTLETS, TRUE UNION, SCH 80 PVC

PLEASE NOTE:
ALL PIPES AND FITTINGS TO BE SUPPLIED BY CONTRACTOR UNLESS OTHERWISE NOTED.

PVC PIPING -
1 - SCHEDULE 80 PVC PIPE AND SOCKET TYPE FITTINGS SHALL CONFORM TO ASTM D2467, ASTM D1785-12, AND ALL APPLICABLE LOCAL CODES.
2 - ALL PVC PIPING SHALL BE STAMPED WITH N.S.F. SEAL OF APPROVAL FOR POTABLE WATER.
3 - ALL PIPING SHALL BE LABELED WITH DIRECTIONAL FLOW ARROWS.
4 - ALL PIPING TO BE PRESSURE TESTED BEFORE POURING CONCRETE.
5 - PIPING DESIGNED TO CARRY THE REQUIRED QUANTITIES OF WATER AT VELOCITIES NOT TO EXCEED 10 FPS OR PER LOCAL CODES AND REGULATIONS.
6 - SUPPLY LINES TO BE CHEMICALLY WELDED TO OMNIPOD FEATURE RECIEVER.
7 - ALL PIPING TO BE 1" SCHEDULE 80 PVC UNLESS OTHERWISE SPECIFIED.
8 - DRAWINGS ARE INTENDED FOR SCHEMATIC USE ONLY. FINAL PIPE LOCATIONS SHALL BE FIELD VERIFIED AND COORDINATED WITH CONTRACTOR.

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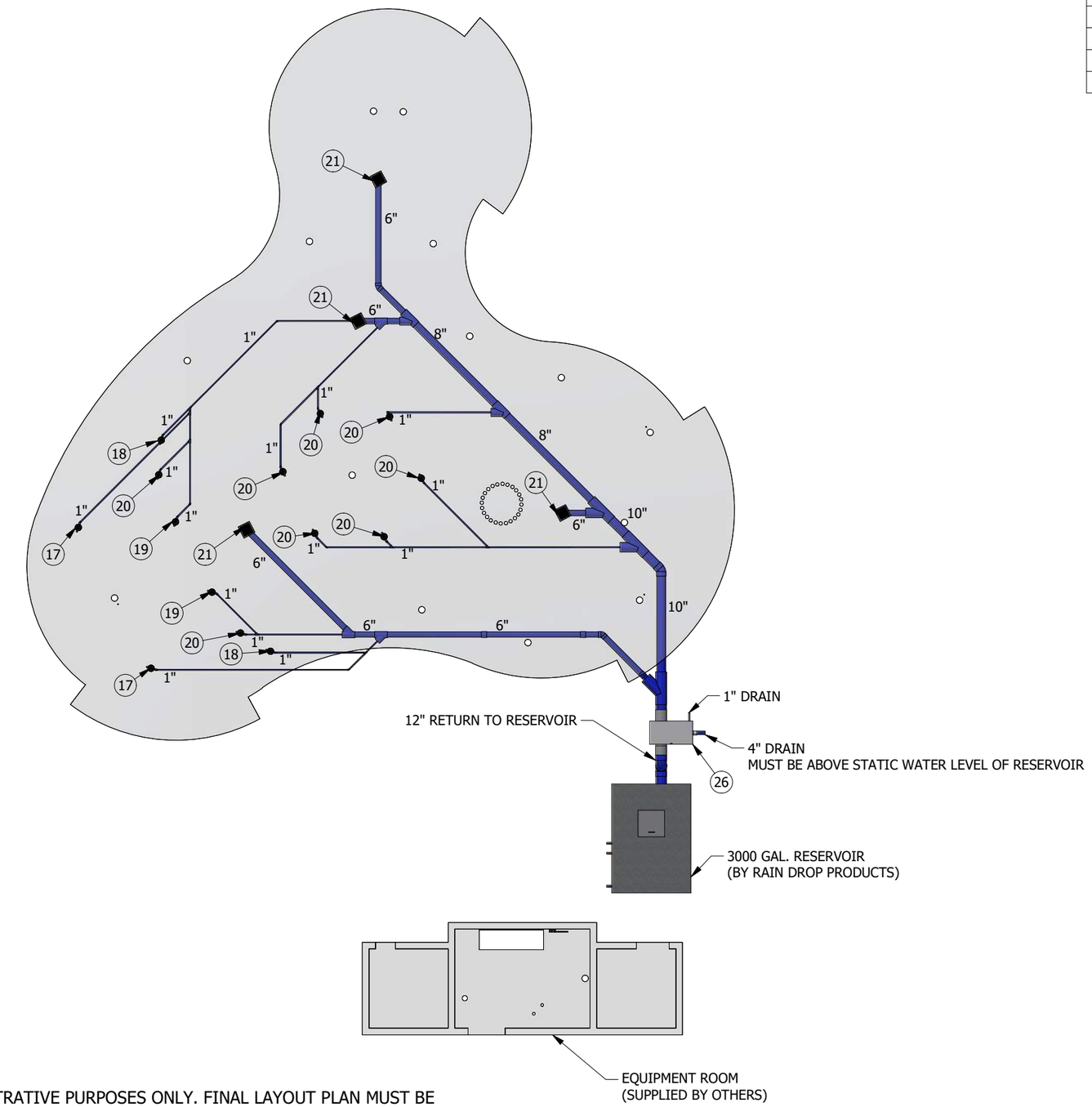
PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
17	2	RDPJ-LED-UPJT-001	LED LIGHT W/ UPSTREAM JET NOZZLE
18	2	RDPJ-LED-SFJT-001	LED LIGHT W/ SLANT FINGER JET
19	2	RDPJ-LED-TLJT-001	LED LIGHT W/ MINI TOOLIP JET
20	8	RDPJ-LED-SLJT-001	LED LIGHT W/ SLANT JET NOZZLE
21	4	DRN12-006B	12" DRAIN
26	1	BASN-DVTR-1204-E-SDMT	DIVERTER BASIN, 12" W/SEDIMENT TRAP W/4" STORM



PLEASE NOTE:
ALL PIPES AND FITTINGS TO BE SUPPLIED BY CONTRACTOR UNLESS OTHERWISE NOTED.
DRAINS -
1 - RETURN PIPE AND FITTINGS SHALL CONFORM TO ASTM D2665. CONNECTIONS SHALL BE A SOLVENT WELD, UNLESS OTHERWISE SPECIFIED.
2 - ALL PVC PIPING SHALL BE STAMPED WITH THE N.S.F. SEAL OF APPROVAL FOR POTABLE WATER.
3 - ALL PIPEWORK SHALL BE LABELED WITH ARROWS TO INDICATE THE DIRECTION OF FLOW.
4 - SOLVENT WELD CEMENT FOR SOCKET CONNECTIONS SHALL MEET THE REQUIREMENTS OF ASTM D2564.
5 - RETURN PIPING SHALL BE DESIGNED TO CARRY THE REQUIRED QUANTITIES OF WATER AT VELOCITIES NOT EXCEEDING 3 FPS IN A GRAVITY FED SYSTEM OR PER LOCAL CODE.
6 - ALL PIPING TO BE SLOPED A MINIMUM OF 2% FROM THE DRAIN TO THE RESERVOIR.
7 - DRAWINGS ARE INTENDED FOR SCHEMATIC USE ONLY. FINAL PIPE, RESERVOIR, AND SEDIMENT TRAP LOCATIONS SHALL BE FIELD VERIFIED AND COORDINATED WITH CONTRACTOR.

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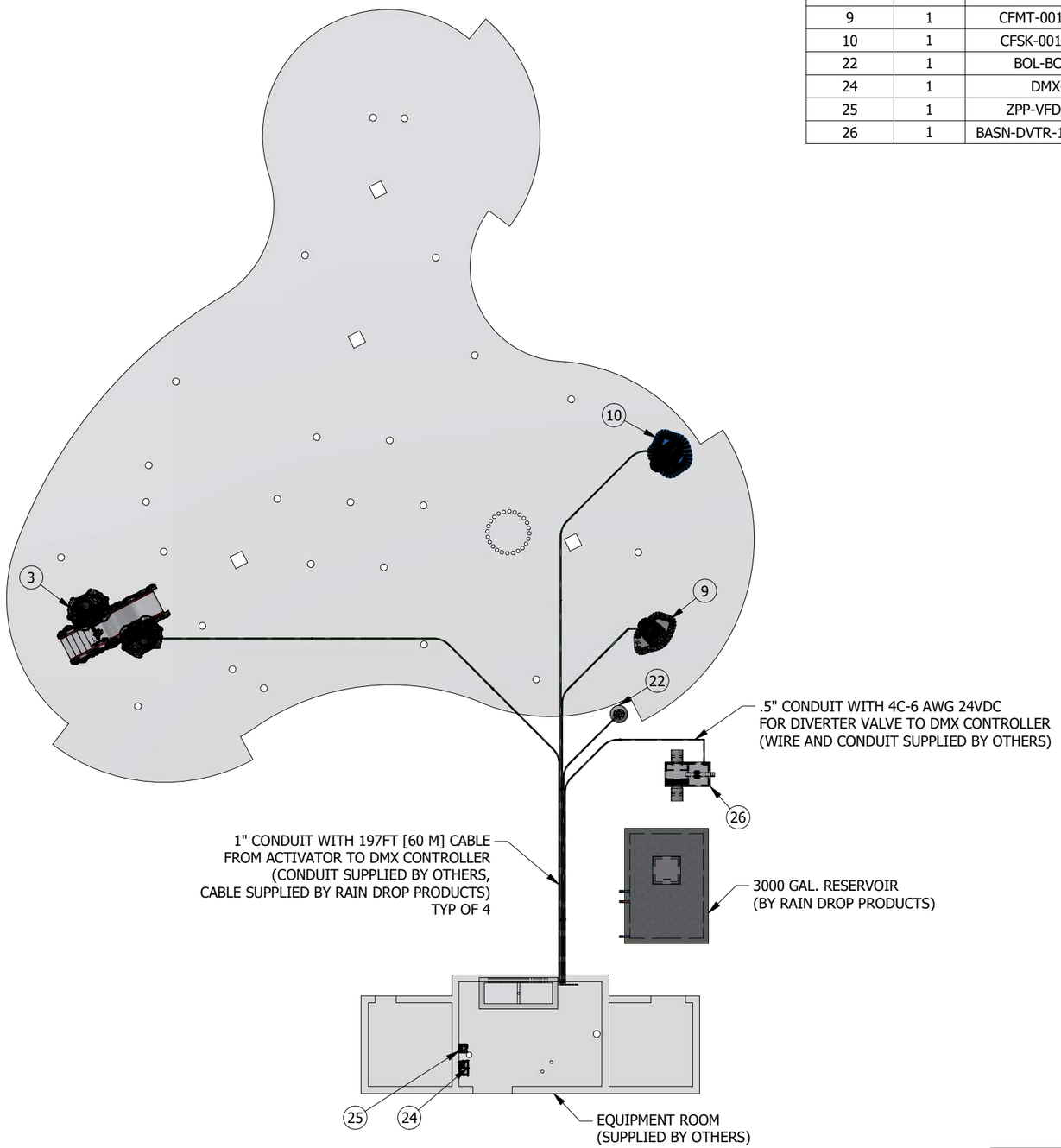
PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
3	1	SRFS-001-OM	AQUA RUN SURF BOARD SINGLE, OMNI
9	1	CFMT-001-ACT-OM	CREATURE FEATURE, MOLLY MANATEE, OMNI, W/ ACTIVATOR
10	1	CFSK-001-ACT-OM	CREATURE FEATURE AQUA SHARK, INCLUSIVE, OMNI
22	1	BOL-BCBL-010	BASEBALL TOUCH ACTIVATOR
24	1	DMX-001	DMX, 8 PWR
25	1	ZPP-VFD-151230	POLYSPEDE SERIES AC DRIVE, 15 HP, 240V 1-PHASE INPUT, 3-PHASE OUTPUT
26	1	BASN-DVTR-1204-E-SDMT	DIVERTER BASIN, 12" W/SEDIMENT TRAP W/4" STORM



ELECTRICAL -
1 - ALL ELECTRICAL SHALL BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND ALL APPLICABLE LOCAL CODES. IN ADDITION, ALL WORK SHALL BE IN ACCORDANCE WITH THE AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM).
2 - THE CONTRACTOR SHALL VERIFY THE SERVICE REQUIREMENTS FOR ALL PIECES OF EQUIPMENT.
3 - DRAWINGS ARE INTENDED FOR SCHEMATIC USE ONLY. FINAL CONDUIT AND CONTROLLER LOCATIONS SHALL BE FIELD VERIFIED AND COORDINATED WITH CONTRACTOR.

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PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
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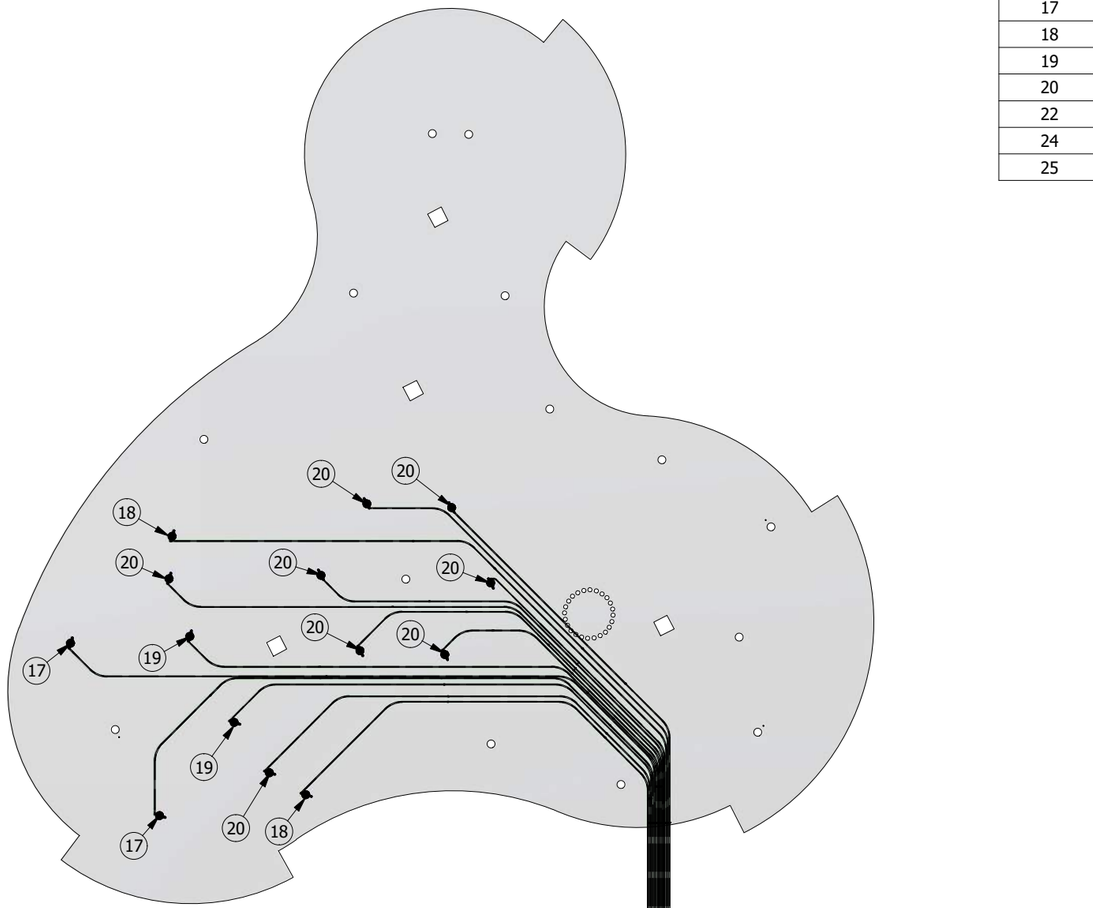
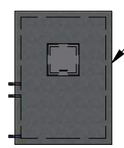
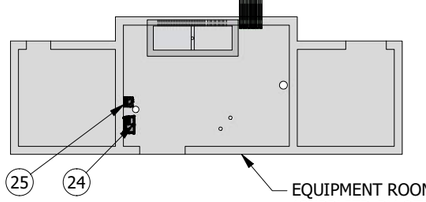
18	2	RDPJ-LED-SFJT-001	LED LIGHT W/ SLANT FINGER JET
19	2	RDPJ-LED-TLJT-001	LED LIGHT W/ MINI TOOLIP JET
20	8	RDPJ-LED-SLJT-001	LED LIGHT W/ SLANT JET NOZZLE
22	1	BOL-BCBL-010	BASEBALL TOUCH ACTIVATOR
24	1	DMX-001	DMX, 8 PWR
25	1	ZPP-VFD-151230	POLYSPEDE SERIES AC DRIVE, 15 HP, 240V 1-PHASE INPUT, 3-PHASE OUTPUT



.75" CONDUIT WITH 98FT [30 M] CABLE
FROM DMX CONTROLLER TO LED FEATURES
(CONDUIT SUPPLIED BY OTHERS,
CABLE SUPPLIED BY RAIN DROP PRODUCTS)
TYP OF 14



3000 GAL. RESERVOIR
(BY RAIN DROP PRODUCTS)



EQUIPMENT ROOM
(SUPPLIED BY OTHERS)

ELECTRICAL -
1 - ALL ELECTRICAL SHALL BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND ALL APPLICABLE LOCAL CODES. IN ADDITION, ALL WORK SHALL BE IN ACCORDANCE WITH THE AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM).
2 - THE CONTRACTOR SHALL VERIFY THE SERVICE REQUIREMENTS FOR ALL PIECES OF EQUIPMENT.
3 - DRAWINGS ARE INTENDED FOR SCHEMATIC USE ONLY. FINAL CONDUIT AND CONTROLLER LOCATIONS SHALL BE FIELD VERIFIED AND COORDINATED WITH CONTRACTOR.

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2121 COTTAGE ST. ASHLAND, OHIO 44805
419.207.1229 WWW.RAIN-DROP.COM

PROJECT
FOSTORIA SPRAYPARK
FOSTORIA, OH 44830 US

SIZE	PROJECT #	DWG NO	REV
B	18860	18860-2023-1OH-FOSTORIA-FOSTORIA-SPRAYPARK-31	1
DRAWN			
cebeling	12/11/2023	SHEET 7 OF 13	

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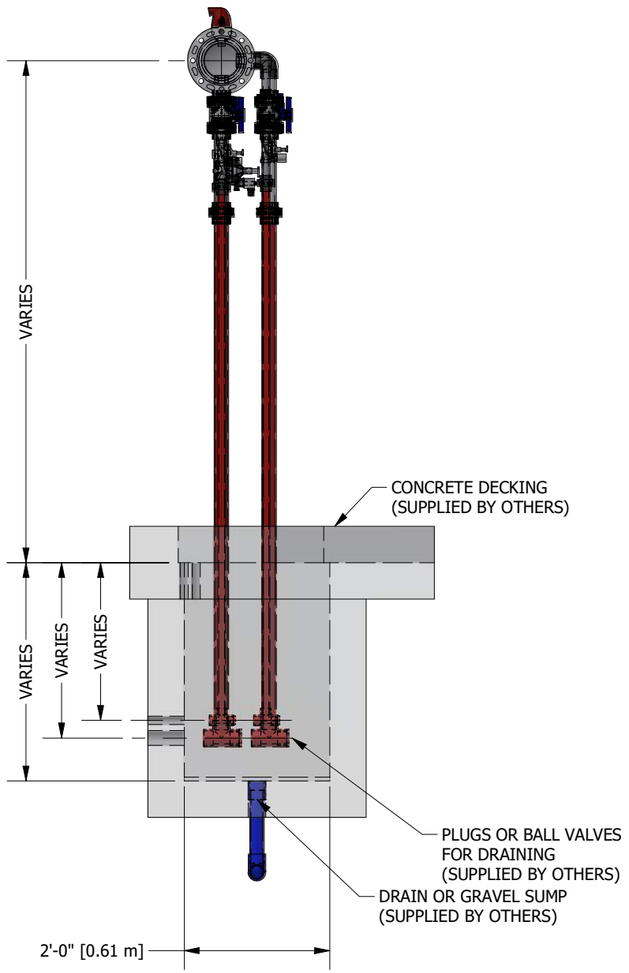

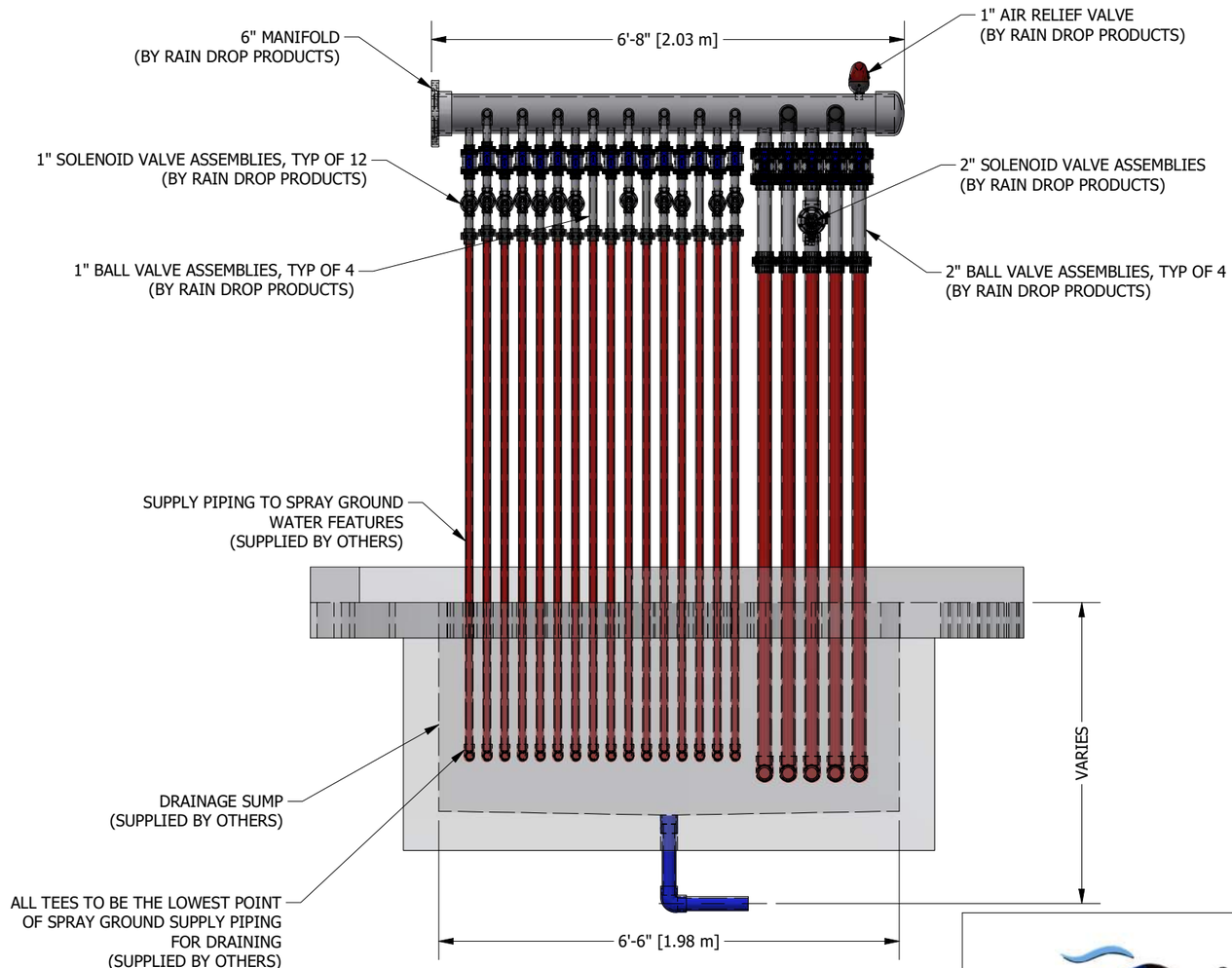

MANIFOLD NOTES -
1 - IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROPERLY SUPPORT THE WATER SUPPLY MANIFOLD.
2 - ALL PIPING SHALL BE SUPPORTED LATERALLY AS WELL AS VERTICALLY. USE OF PROPER HANGERS FOR THE CONDITIONS IS ESSENTIAL.
3 - ALL HANGERS, PIPE SUPPORTS, THREADED ROD, HARDWARE, ETC. SHALL BE SUPPLIED BY OTHERS.
4 - DRAWINGS ARE INTENDED FOR SCHEMATIC USE ONLY. FINAL MANIFOLD LOCATION SHALL BE FIELD VERIFIED AND COORDINATED WITH THE CONTRACTOR.

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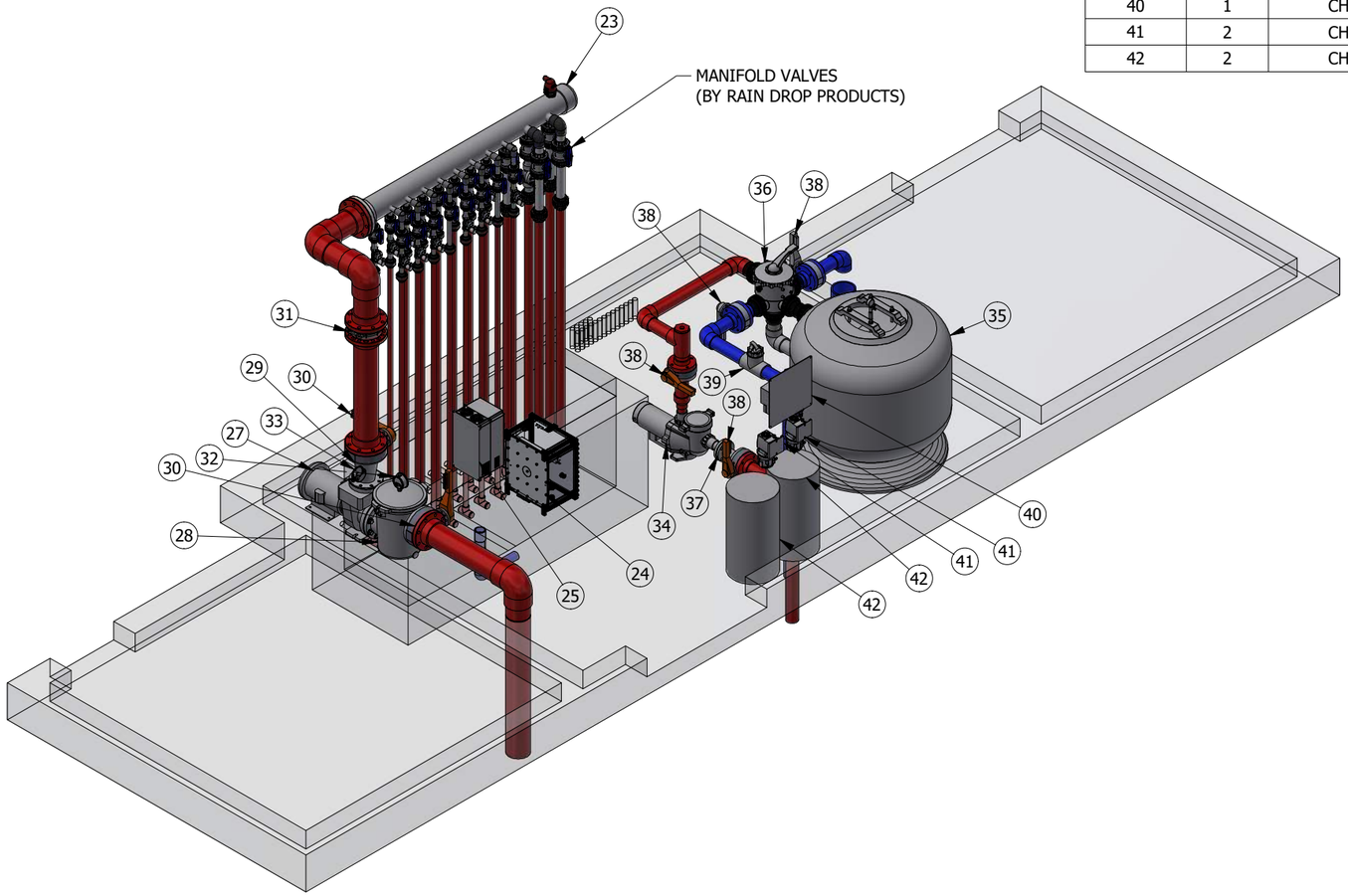
PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
23	1	MANIFOLD-6-161-052-N02	MANIFOLD-6" W/ 16-1" AND 5-2" OUTLETS, TRUE UNION, SCH 80 PVC
24	1	DMX-001	DMX, 8 PWR
25	1	ZPP-VFD-151230	POLYSPEDE SERIES AC DRIVE, 15 HP, 240V 1-PHASE INPUT, 3-PHASE OUTPUT
27	1	PMP6-450-PK3-01	PUMP, CSP SERIES 10HP/3PH/200-208VAC 60Hz, STA-RITE
28	1	PMP6-450-PK3-01	STRAINER, PKG 184 FOR CSP SERIES PUMP, STA-RITE
29	1	PMP6-450-PK3-01	CONCENTRIC REDUCER, 6" X 4", S.S.
30	2	PMP6-450-PK3-01	BUTTERFLY VALVE, 6" LEVER OPERATED (PUMP SUCTION/DISCHARGE)
31	1	PMP6-450-PK3-01	CHECK VALVE, 6" SCH 80 PVC
32	1	PMP6-450-PK3-01	GAUGE, PRESSURE/VACUUM COMBINATION, 30-60 PSI
33	1	PMP6-450-PK3-01	GAUGE, PRESSURE, 0-60 PSI
34	1	FLT-130PK1S	PUMP, 3HP/1PH/208-230VAC, W/STRAINER, TRI-STAR
35	1	FLT-130PK1S	42" SAND FILTER, WATERCO
36	1	FLT-130PK1S	MULTIPORT VALVE, 3" PORTS, WATERCO
37	1	FLT-130PK1S	ECCENTRIC REDUCER, 3" X 2", S.S.
38	4	FLT-130PK1S	BUTTERFLY VALVE, 3" LEVER OPERATED (PUMP SUCTION, DISCHARGE, BACKFLOW, RESTRICTION)
39	1	FLT-130PK1S	FLOW METER, 3" IN-LINE, FLOWVIS
40	1	CHL-750PK1L	CHEMICAL CONTROLLER, CAT 2000, 120VAC, 50/60Hz, HAYWARD
41	2	CHL-750PK1L	PUMP, 45 SERIES CHEMICAL FEED, 0-50 GPD, 120VAC, 60Hz, STENNER
42	2	CHL-750PK1L	15 GALLON CLOSED TOP TANK



NOTE:
ALL PARTS NOT BALLOONED OR LABELED
ARE NOT PROVIDED BY RAIN DROP PRODUCTS

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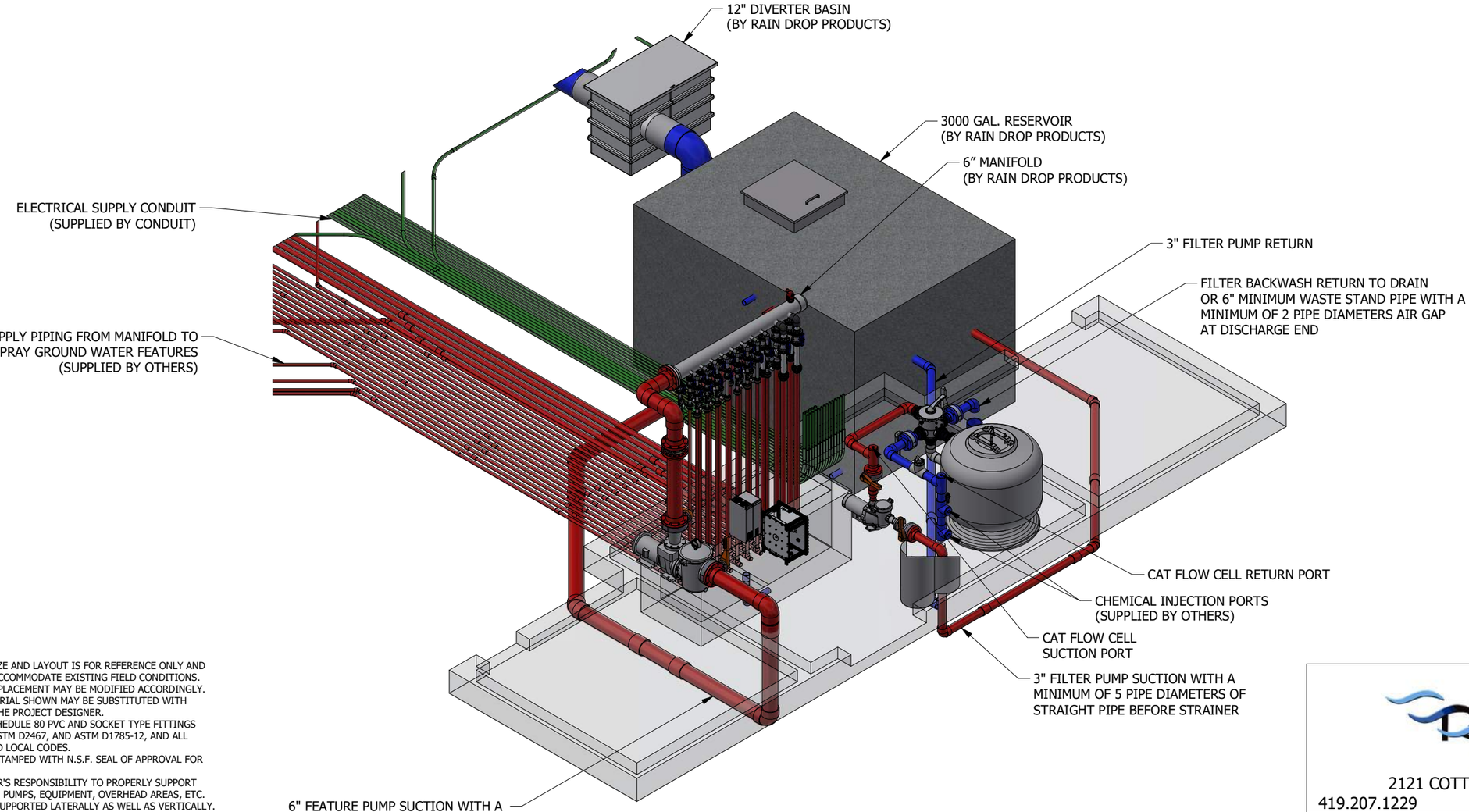
SPRAYGROUND SPECIFICATIONS -
RESERVOIR CAPACITY IS 3000 GALLONS WITH A TURNOVER RATE OF 20.8 MINUTES. FILTRATION FLOW RATE IS 144.3 GPM. WATERPLAY FLOW RATE IS DESIGNED AT A MAXIMUM OF 392.5 GPM. FOR DESIGNS THAT INCLUDE SEQUENCING, THE AVERAGE SEQUENCE FLOW RATE IS 305.4 GPM. PIPEWORK DESIGN IS BASED ON SCHEDULE 80 AND SCHEDULE 40 PVC PIPE AND SOCKET TYPE FITTINGS, CONFORMING TO ASTM D2467 AND ASTM D1785-12. PIPEWORK SHALL CONFORM TO ALL APPLICABLE STATE AND LOCAL CODES. PIPEWORK SHALL BE APPROVED FOR POTABLE WATER USAGE AND SHALL BE PRESSURE TESTED BEFORE POURING CONCRETE. PIPEWORK SHALL BE LABELED WITH ARROWS TO INDICATE DIRECTION OF FLOW.

RED PIPES = SUPPLY LINES
BLUE PIPES = RETURN LINES
GREEN PIPES = ELECTRICAL CONDUIT

PIPING SPECIFICATIONS -
DRAIN PIPING SIZED FOR 3 FPS VELOCITY IN GRAVITY SYSTEM.
PUMP SUCTION LINES SIZED FOR 6 FPS MAXIMUM VELOCITY.
PUMP DISCHARGE LINES SIZED FOR 10 FPS MAXIMUM VELOCITY.
PLEASE ADVISE RAIN DROP IF THIS EXCEEDS LOCAL CODES OR REGULATIONS FOR YOUR AREA.

FILTRATION SYSTEM -
RESERVOIR VOLUME - 3000 GALLONS
FILTER FLOW RATE - 144.3 GPM
RESERVOIR TURNOVER TIME - 20.8 MINUTES
FILTER AREA - 9.62 SQ. FT.
FILTRATION RATE - 15 GPM/SQ.FT.



MECHANICAL ROOM -
1 - MECHANICAL ROOM SIZE AND LAYOUT IS FOR REFERENCE ONLY AND MAY BE ALTERED TO ACCOMMODATE EXISTING FIELD CONDITIONS.
2 - PIPE AND EQUIPMENT PLACEMENT MAY BE MODIFIED ACCORDINGLY.
3 - PIPE AND OTHER MATERIAL SHOWN MAY BE SUBSTITUTED WITH PRIOR APPROVAL OF THE PROJECT DESIGNER.
4 - PVC PIPE SHALL BE SCHEDULE 80 PVC AND SOCKET TYPE FITTINGS SHALL CONFORM TO ASTM D2467, AND ASTM D1785-12, AND ALL APPLICABLE STATE AND LOCAL CODES.
5 - ALL PIPING SHALL BE STAMPED WITH N.S.F. SEAL OF APPROVAL FOR POTABLE WATER.
6 - IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROPERLY SUPPORT PIPING AT ALL VALVES, PUMPS, EQUIPMENT, OVERHEAD AREAS, ETC.
7 - ALL PIPING SHALL BE SUPPORTED LATERALLY AS WELL AS VERTICALLY. USE OF PROPER HANGERS FOR THE CONDITIONS IS ESSENTIAL.
8 - ALL HANGERS, PIPE SUPPORTS, THREADED ROD, HARDWARE, ETC. SHALL BE SUPPLIED BY OTHERS.
9 - PIPING SHALL BE DESIGNED TO CARRY THE REQUIRED QUANTITIES OF WATER AT VELOCITIES NOT TO EXCEED LOCAL CODE REQUIREMENTS.
10 - DRAWINGS ARE INTENDED FOR SCHEMATIC USE ONLY. FINAL LOCATION OF EQUIPMENT ROOM AND THE PLACEMENT OF EQUIPMENT AND PIPE SHALL BE FIELD VERIFIED AND COORDINATED WITH CONTRACTOR.

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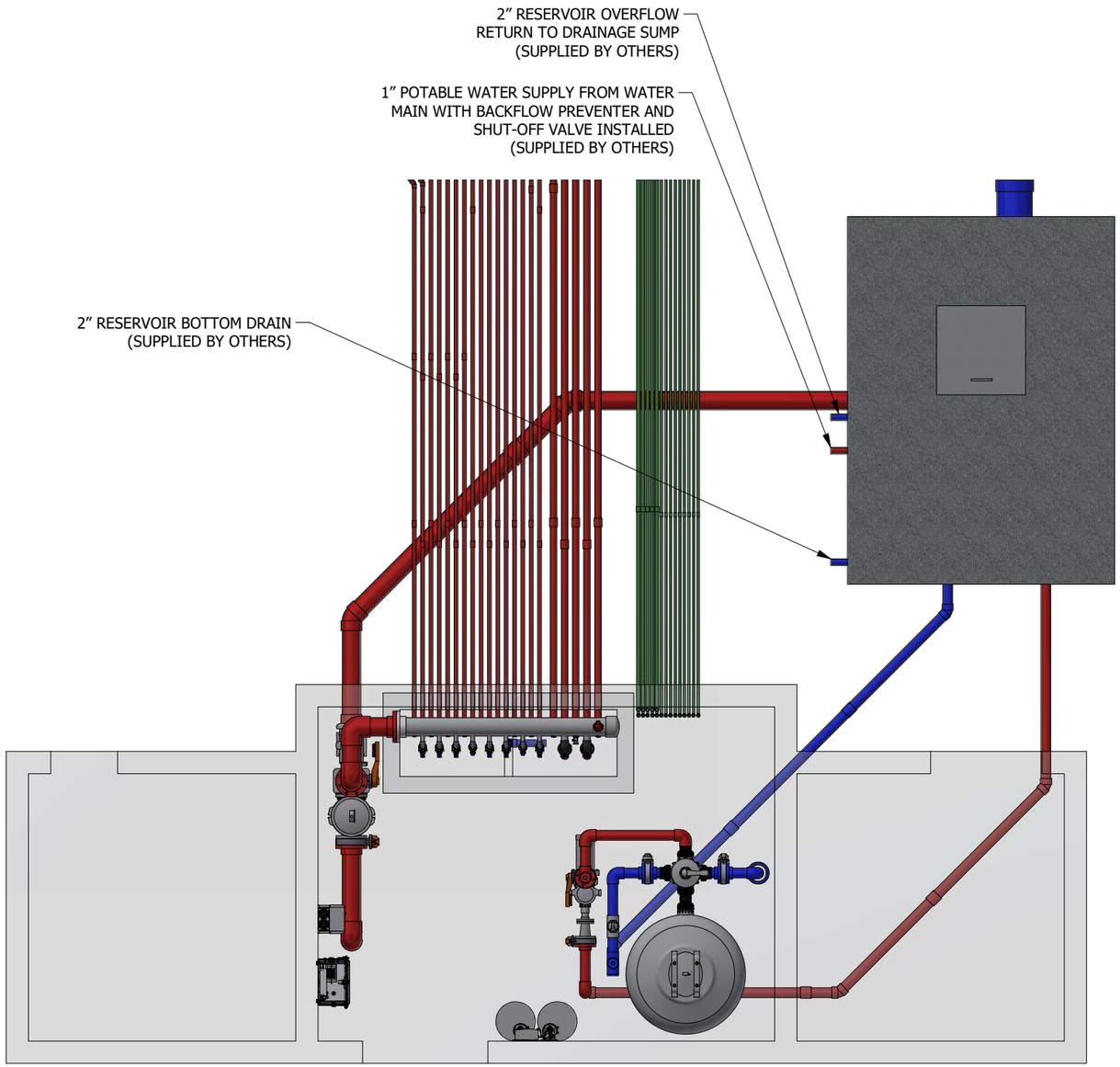

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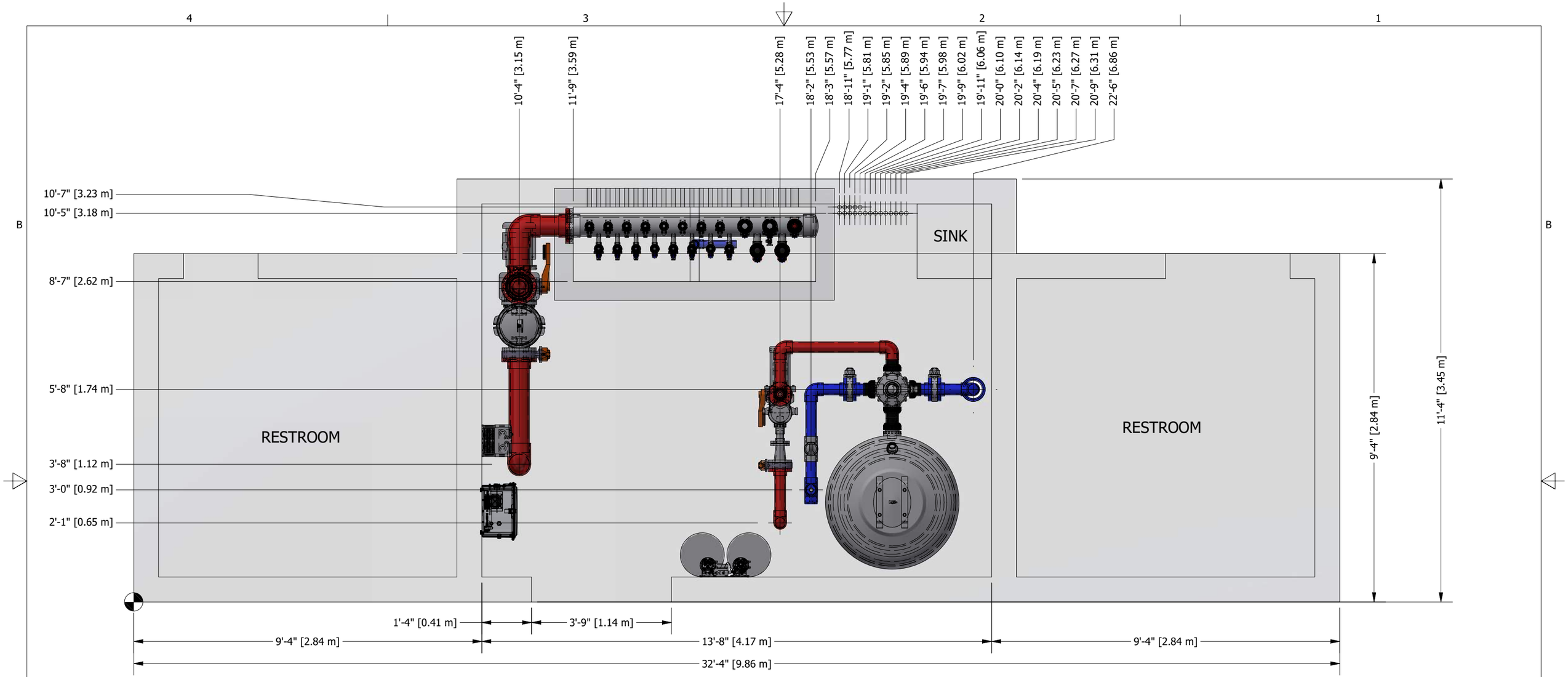

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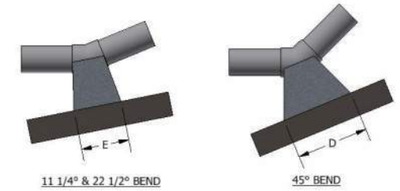
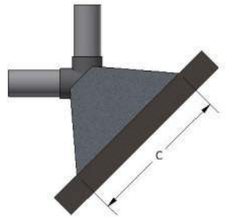


11 1/4° & 22 1/2° BEND

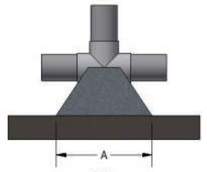
45° BEND

PIPE SIZE	A	B	C	D	E
4"	1'-6"	1'-0"	2'-6"	1'-0"	1'-0"
6"	2'-0"	1'-6"	3'-0"	1'-6"	1'-0"
8"	2'-6"	2'-0"	3'-6"	2'-0"	1'-0"
10"	3'-6"	2'-6"	4'-6"	2'-6"	1'-6"
12"	4'-0"	3'-0"	5'-6"	3'-0"	1'-6"

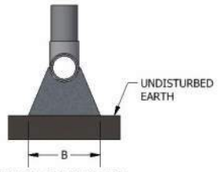
THRUST BLOCK NOTES:
1 - CONCRETE TO BE 3500 PSI.
2 - ALL FITTINGS TO BE GLUE JOINTS.
3 - THRUST BLOCK TO BE PLACED AGAINST UNDISTURBED EARTH. USE ADDITIONAL CONCRETE OF OVER-EXCAVATION.
4 - NO CONCRETE SHALL BE POURED ON ANY PART OF THE JOINT.
5 - THE CONSULTING ENGINEER SHALL BE RESPONSIBLE TO VERIFY THE TYPE AND SIZE OF ALL THRUST BLOCKS.



90° BEND

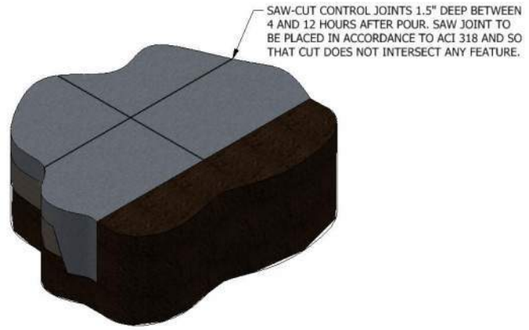


TEE

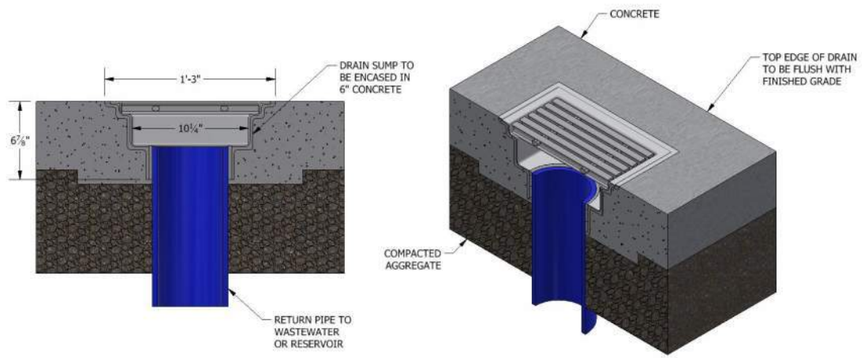


TYPICAL SIDE ELEVATION

THRUST BLOCK DETAILS
NOT TO SCALE



CONCRETE DETAIL
NOT TO SCALE



12" DRAIN DETAIL
NOT TO SCALE

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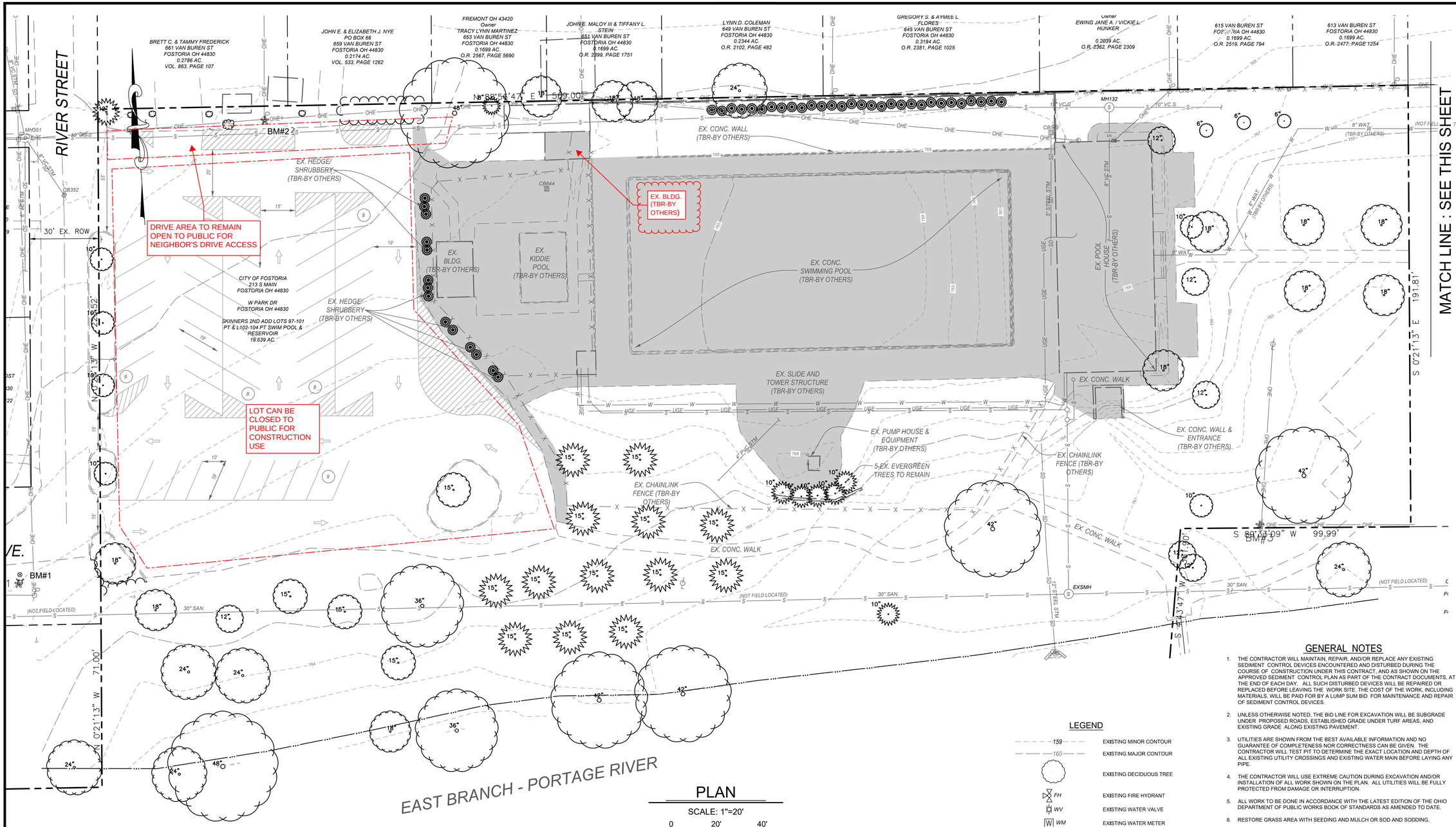

PLAN

SCALE: 1"=20'

0 20' 40'

LEGEND

- 159 — EXISTING MINOR CONTOUR
- 160 — EXISTING MAJOR CONTOUR
- EXISTING DECIDUOUS TREE
- FH — EXISTING FIRE HYDRANT
- WV — EXISTING WATER VALVE
- WM — EXISTING WATER METER
- D — EXISTING STORM DRAIN MANHOLE
- E — EXISTING ELECTRIC MANHOLE
- M — EXISTING COMMUNICATION CONNECTION
- S — EXISTING SEWER MANHOLE
- C — EXISTING SEWER CLEANOUT
- EXISTING UTILITY POLE
- (TBR-BY OTHERS) — "TO BE REMOVED-BY OTHERS"
- 24" RCP SD — EXISTING STORM DRAIN
- UGE — EXISTING UNDERGROUND ELECTRIC
- W — EXISTING UNDERGROUND WATER
- E — EXISTING OVERHEAD WIRE
- S — EXISTING SANITARY PIPE
- G — EXISTING UNDERGROUND FUEL LINES
- EDGE OF EXISTING PAVEMENT
- EXISTING HARDSCAPE AREA (REMOVED BY OTHERS PRIOR TO SPLASH PAD CONSTRUCTION)

GENERAL NOTES

1. THE CONTRACTOR WILL MAINTAIN, REPAIR, AND/OR REPLACE ANY EXISTING SEDIMENT CONTROL DEVICES ENCOUNTERED AND DISTURBED DURING THE COURSE OF CONSTRUCTION UNDER THIS CONTRACT, AND AS SHOWN ON THE APPROVED SEDIMENT CONTROL PLAN AS PART OF THE CONTRACT DOCUMENTS, AT THE END OF EACH DAY. ALL SUCH DISTURBED DEVICES WILL BE REPAIRED OR REPLACED BEFORE LEAVING THE WORK SITE. THE COST OF THE WORK, INCLUDING MATERIALS, WILL BE PAID FOR BY A LUMP SUM BID FOR MAINTENANCE AND REPAIR OF SEDIMENT CONTROL DEVICES.
2. UNLESS OTHERWISE NOTED, THE BID LINE FOR EXCAVATION WILL BE SUBGRADE UNDER PROPOSED ROADS, ESTABLISHED GRADE UNDER TURF AREAS, AND EXISTING GRADE ALONG EXISTING PAVEMENT.
3. UTILITIES ARE SHOWN FROM THE BEST AVAILABLE INFORMATION AND NO GUARANTEE OF COMPLETENESS NOR CORRECTNESS CAN BE GIVEN. THE CONTRACTOR WILL TEST PIT TO DETERMINE THE EXACT LOCATION AND DEPTH OF ALL EXISTING UTILITY CROSSINGS AND EXISTING WATER MAIN BEFORE LAYING ANY PIPE.
4. THE CONTRACTOR WILL USE EXTREME CAUTION DURING EXCAVATION AND/OR INSTALLATION OF ALL WORK SHOWN ON THE PLAN. ALL UTILITIES WILL BE FULLY PROTECTED FROM DAMAGE OR INTERRUPTION.
5. ALL WORK TO BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF THE OHIO DEPARTMENT OF PUBLIC WORKS BOOK OF STANDARDS AS AMENDED TO DATE.
6. RESTORE GRASS AREA WITH SEEDING AND MULCH OR SOD AND SODDING.

DATA SOURCES:

1. Existing topography, site information, and boundary provided by Peterman Associates, Inc. field survey dated 11/17/23.
2. Existing utilities shown on this plan were obtained from the best available sources, including City of Fostoria and Hancock County records.
3. Contractor is responsible for verifying and test-pitting to confirm existing utility locations.
4. It is assumed that all existing buildings, structures, swimming pools, water slides, foundations, paving, utilities, and all associated appurtances will have been demolished/removed from the project site by others prior to work commencing under this contract.

OHIO811.org Before You Dig

T:\2024\facilities\24001561.002a fostoria splash pad\CIVIL\CADD\Drawings\24001561.002A (C-01) X Conditions.dwg Mar 20, 2024 11:53am rtomcanin

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Bright People. Right Solutions.
1168 North Main Street, Bowling Green, OH 43402
8110 | PH: 419.352.7537 | www.kleinfelder.com

No.	Description	Date
-	REVISIONS	
5	ADDENDUM 2	03/26/24
4	ISSUED FOR BIDDING	03/01/24
3	ISSUED FOR BUILDING PERMIT	02/23/24
2	ISSUED FOR CONSTRUCTION	02/12/24
1	ISSUED FOR CO/NR REVIEW	02/05/24

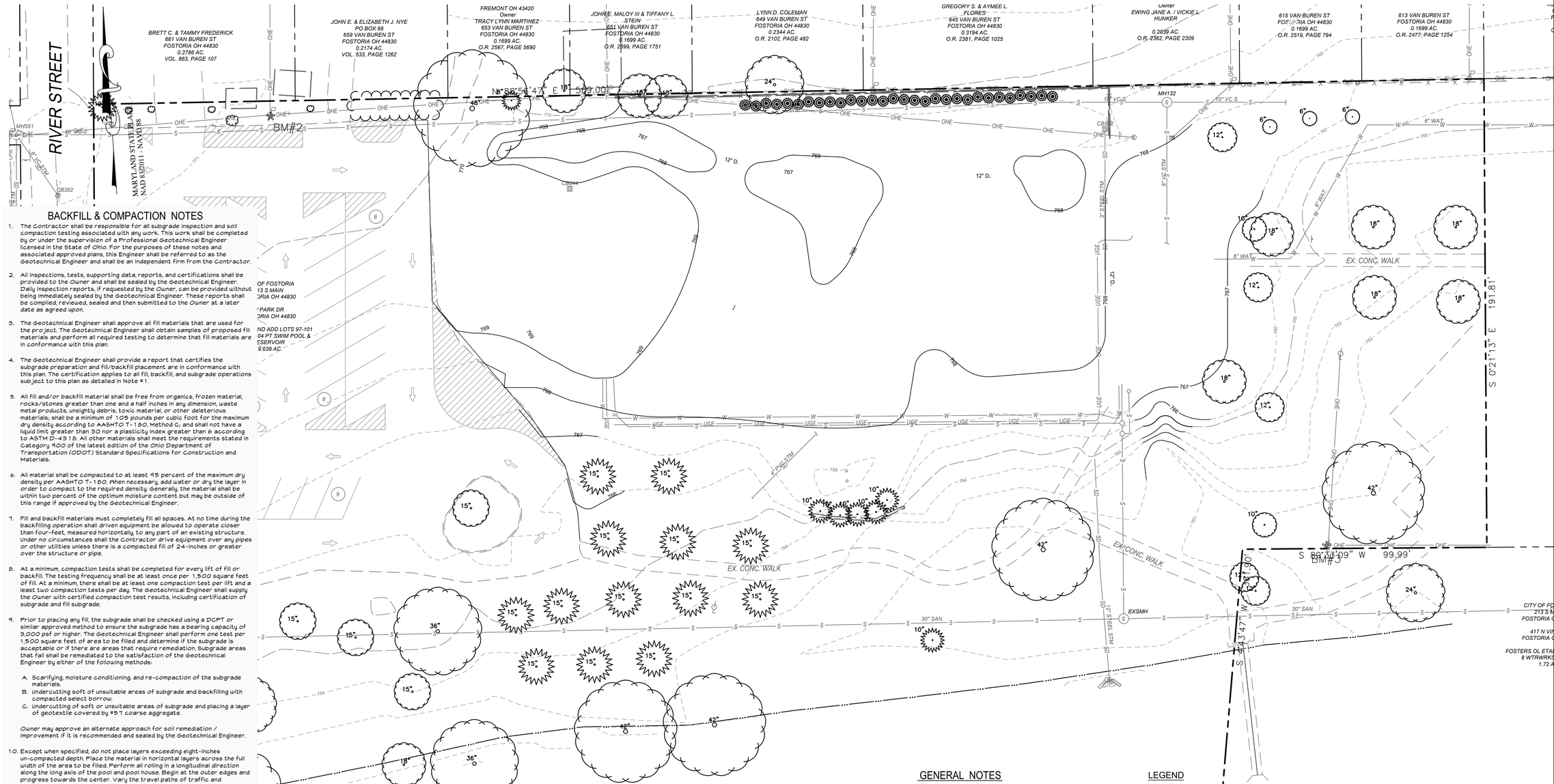
Scale	As Indicated
Date	2/5/2023
Job No.	24001561.002A
Designed by	RDT/CWG
Drawn by	RDT/CWG
Checked by	MJP/DRS
Approved by	MJP
Status	-

Client: CITY OF FOSTORIA, OH

Project: FOSTORIA SPLASHPAD

Drawing: Existing Conditions Plan

C-01



BACKFILL & COMPACTION NOTES

1. The Contractor shall be responsible for all subgrade inspection and soil compaction testing associated with any work. This work shall be completed by or under the supervision of a Professional Geotechnical Engineer licensed in the State of Ohio. For the purposes of these notes and associated approved plans, this Engineer shall be referred to as the Geotechnical Engineer and shall be an independent firm from the Contractor.
2. All inspections, tests, supporting data, reports, and certifications shall be provided to the Owner and shall be sealed by the Geotechnical Engineer. Daily inspection reports, if requested by the Owner, can be provided without being immediately sealed by the Geotechnical Engineer. These reports shall be compiled, reviewed, sealed and then submitted to the Owner at a later date as agreed upon.
3. The Geotechnical Engineer shall approve all fill materials that are used for the project. The Geotechnical Engineer shall obtain samples of proposed fill materials and perform all required testing to determine that fill materials are in conformance with this plan.
4. The Geotechnical Engineer shall provide a report that certifies the subgrade preparation and fill/backfill placement are in conformance with this plan. The certification applies to all fill, backfill, and subgrade operations subject to this plan as detailed in Note #1.
5. All fill and/or backfill material shall be free from organics, frozen material, rocks/stones greater than one and a half inches in any dimension, waste metal products, unsightly debris, toxic material, or other deleterious materials; shall be a minimum of 105 pounds per cubic foot for the maximum dry density according to AASHTO T-180, Method C; and shall not have a liquid limit greater than 30 nor a plasticity index greater than 6 according to ASTM D-4318. All other materials shall meet the requirements stated in Category 900 of the latest edition of the Ohio Department of Transportation (ODOT) Standard Specifications for Construction and Materials.
6. All material shall be compacted to at least 95 percent of the maximum dry density per AASHTO T-180. When necessary, add water or dry the layer in order to compact to the required density. Generally, the material shall be within two percent of the optimum moisture content but may be outside of this range if approved by the Geotechnical Engineer.
7. Fill and backfill materials must completely fill all spaces. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four-feet, measured horizontally, to any part of an existing structure. Under no circumstances shall the Contractor drive equipment over any pipes or other utilities unless there is a compacted fill of 24-inches or greater over the structure or pipe.
8. At a minimum, compaction tests shall be completed for every lift of fill or backfill. The testing frequency shall be at least once per 1,500 square feet of fill. At a minimum, there shall be at least one compaction test per lift and a least two compaction tests per day. The Geotechnical Engineer shall supply the Owner with certified compaction test results, including certification of subgrade and fill subgrade.
9. Prior to placing any fill, the subgrade shall be checked using a DCPT or similar approved method to ensure the subgrade has a bearing capacity of 3,000 psf or higher. The Geotechnical Engineer shall perform one test per 1,500 square feet of area to be filled and determine if the subgrade is acceptable or if there are areas that require remediation. Subgrade areas that fail shall be remediated to the satisfaction of the Geotechnical Engineer by either of the following methods:
   A. Scarifying, moisture conditioning, and re-compaction of the subgrade materials.
   B. Undercutting soft of unsuitable areas of subgrade and backfilling with compacted select borrow.
   C. Undercutting of soft or unsuitable areas of subgrade and placing a layer of geotextile covered by #57 coarse aggregate.

   Owner may approve an alternate approach for soil remediation / improvement if it is recommended and sealed by the Geotechnical Engineer.
10. Except when specified, do not place layers exceeding eight-inches un-compacted depth. Place the material in horizontal layers across the full width of the area to be filled. Perform all rolling in a longitudinal direction along the long axis of the pool and pool house. Begin at the outer edges and progress towards the center. Vary the travel paths of traffic and equipment over the width of the area to aid in obtaining uniform compaction.
11. Uniformly grade areas to a smooth surface, free of irregular surface changes. Grade and prepare the subgrade section to the lines, grades, cross sections and/or elevations shown on the plans. At all times, maintain the subgrade surface in such condition as to readily drain to a sump area, if necessary.
12. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice. Vehicular and equipment traffic shall be distributed across the prepared surface in such a manner as to prevent disturbance. Repair any damage to the prepared subgrade to the satisfaction of the Geotechnical Engineer.
13. Unsuitable existing fill, soft or loose natural soils, organic material, and rubble shall be stripped to approved grades as determined by the Geotechnical Engineer.
14. Protect all structures and utilities from any damage in the handling, processing or compacting of backfill material. Exercise caution near retaining walls, culverts and utility trenches to prevent undue strain or movement. The Geotechnical Engineer may require the use of specially selected material adjacent to structures to protect against damage. Do not use rock greater than one and a half inches in any dimension adjacent to structures.
15. When placing and compacting fill against the native soil outside of the pool area (existing embankment), continuously bench the slopes. Perform the benching operation as the fill is constructed in layers. Maintain a bench width of at least five-feet. Begin each horizontal cut at the intersection of the original ground and the vertical sides of the previous fill. If the material cut from the benches meets fill requirements, compact this material along with the new fill material.

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PLAN

SCALE: 1"=20'

0 20' 40'

GENERAL NOTES

1. DEMOLITION OF THE OLD POOL, SLIDE, AND POOL HOUSE WAS COMPLETED BY OTHERS. IT IS ASSUMED THAT ALL EXISTING CONCRETE, PIPING, UTILITIES, AND ANY OTHER POOL RELATED EQUIPMENT, ABOVE OR BELOW GROUND, HAS BEEN COMPLETELY REMOVED.
2. BACKFILL OF THE EXISTING POOL AND BASEMENT HOLES SHALL BE COMPLETED IN ENGINEERED LIFTS SPECIFIED HEREIN. THE CITY OF FOSTORIA AND THE GEOTECHNICAL ENGINEER SHALL MONITOR EACH LIFT TO CONFIRM CORRECT COMPACTION HAS BEEN ACHIEVED.
3. ROUGH GRADING BY OTHERS, IS EXPECTED TO BE PER THIS PLAN. CONTRACTOR TO VERIFY BEFORE STARTING ANY CONSTRUCTION ON THE NEW SPLASH PAD AND RESTROOM BUILDING.
4. THE CONTRACTOR WILL MAINTAIN, REPAIR, AND/OR REPLACE ANY EXISTING SEDIMENT CONTROL DEVICES ENCOUNTERED AND DISTURBED DURING THE COURSE OF CONSTRUCTION UNDER THIS CONTRACT, AND AS SHOWN ON THE APPROVED SEDIMENT CONTROL PLAN AS PART OF THE CONTRACT DOCUMENTS, AT THE END OF EACH DAY. ALL SUCH DISTURBED DEVICES WILL BE REPAIRED OR REPLACED BEFORE LEAVING THE WORK SITE. THE COST OF THE WORK, INCLUDING MATERIALS, WILL BE PAID FOR BY A LUMP SUM BID FOR MAINTENANCE AND REPAIR OF SEDIMENT CONTROL DEVICES.
5. UNLESS OTHERWISE NOTED, THE BID LINE FOR EXCAVATION WILL BE SUBGRADE UNDER PROPOSED ROADS, ESTABLISHED GRADE UNDER TURF AREAS, AND EXISTING GRADE ALONG EXISTING PAVEMENT.
6. UTILITIES ARE SHOWN FROM THE BEST AVAILABLE INFORMATION AND NO GUARANTEE OF COMPLETENESS NOR CORRECTNESS CAN BE GIVEN. THE CONTRACTOR WILL TEST PIT TO DETERMINE THE EXACT LOCATION AND DEPTH OF ALL EXISTING UTILITY CROSSINGS AND EXISTING WATER MAIN BEFORE LAYING ANY PIPE.
7. THE CONTRACTOR WILL USE EXTREME CAUTION DURING EXCAVATION AND/OR INSTALLATION OF ALL WORK SHOWN ON THE PLAN. ALL UTILITIES WILL BE FULLY PROTECTED FROM DAMAGE OR INTERRUPTION.
8. ALL WORK TO BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF THE OHIO DEPARTMENT OF PUBLIC WORKS BOOK OF STANDARDS AS AMENDED TO DATE.
9. RESTORE GRASS AREA WITH SEEDING AND MULCH OR SOD AND SODDING.

LEGEND

- 159 — EXISTING MINOR CONTOUR
- 160 — EXISTING MAJOR CONTOUR
- EXISTING DECIDUOUS TREE
- FH — EXISTING FIRE HYDRANT
- WV — EXISTING WATER VALVE
- WM — EXISTING WATER METER
- D — EXISTING STORM DRAIN MANHOLE
- E — EXISTING ELECTRIC MANHOLE
- M — EXISTING COMMUNICATION CONNECTION
- S — EXISTING SEWER MANHOLE
- C — EXISTING SEWER CLEANOUT
- EXISTING UTILITY POLE
- 24" RCP SD — EXISTING STORM DRAIN
- UGE — EXISTING UNDERGROUND ELECTRIC
- W — EXISTING UNDERGROUND WATER
- E — EXISTING OVERHEAD WIRE
- S — EXISTING SANITARY PIPE
- G — EXISTING UNDERGROUND FUEL LINES
- EDGE OF EXISTING PAVEMENT
- 400 — PROPOSED MAJOR CONTOUR
- 402 — PROPOSED MINOR CONTOUR

DATA SOURCES:

1. Existing topography, site information, and boundary provided by Peterman Associates, Inc. field survey dated 11/17/23.
2. Existing utilities shown on this plan were obtained from the best available sources, including City of Fostoria and Hancock County records.
3. Contractor is responsible for verifying and test-pitting to confirm existing utility locations.
4. It is assumed that all existing buildings, structures, swimming pools, water slides, foundations, paving, utilities, and all associated appurtenances will have been demolished/removed from the project site by others prior to work commencing under this contract.

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8110 | PH: 419.352.7537 | www.kleinfelder.com

KENNETH A. MAAG 55316 REGISTERED PROFESSIONAL ENGINEER STATE OF OHIO

No.	Description	Date
5	ADDENDUM 2	03/26/24
4	ISSUED FOR BIDDING	03/01/24
3	ISSUED FOR BUILDING PERMIT	02/23/24
2	ISSUED FOR CONSTRUCTION	02/12/24
1	ISSUED FOR OONR REVIEW	02/05/24

REVISIONS

Scale: As Indicated
Date: 2/5/2023
Job No.: 24001561.002A
Designed by: RDT/CWG
Drawn by: RDT/CWG
Checked by: MJP/DRS
Approved by:
Status: -

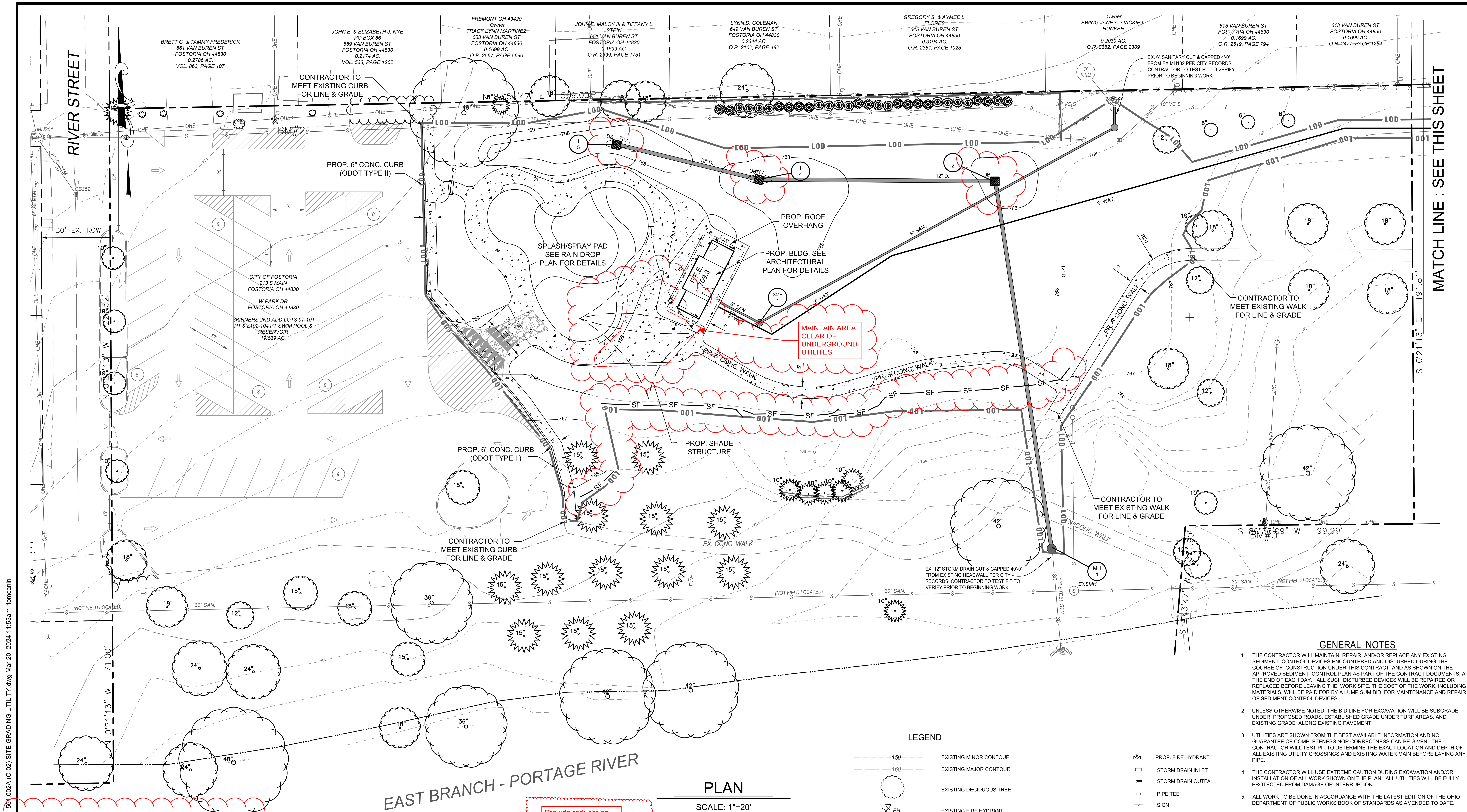
Client: CITY OF FOSTORIA, OH

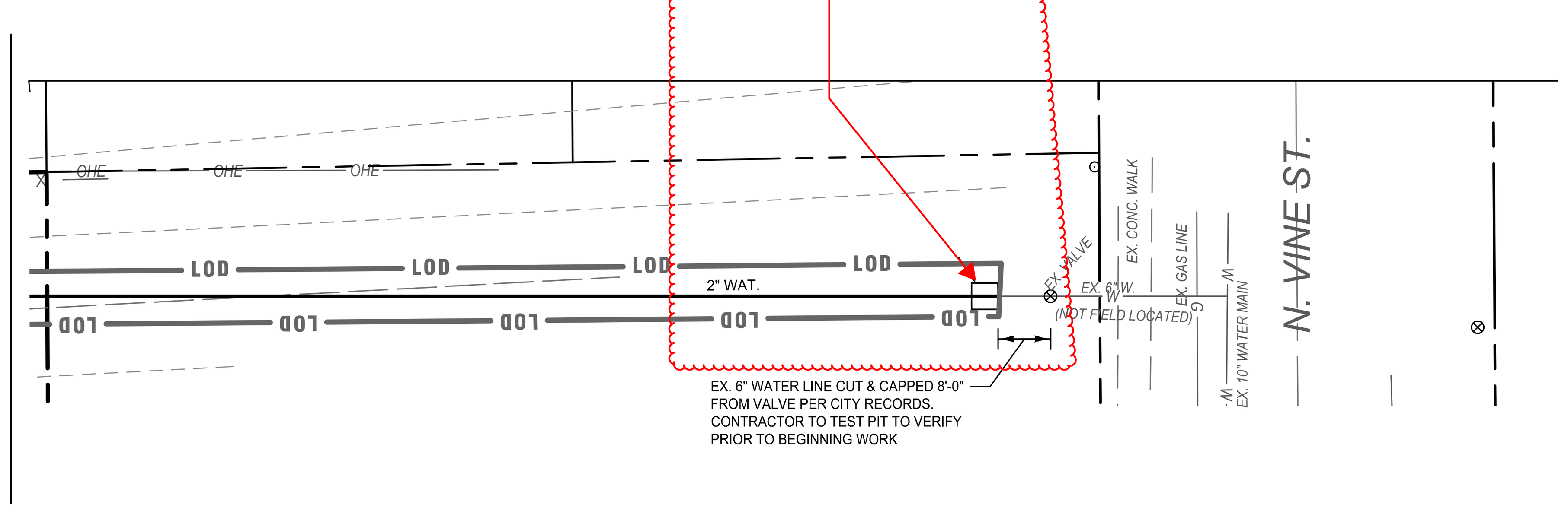
Project: FOSTORIA SPLASHPAD

Drawing: Preliminary Mass Grading Plan

C-01A

T:\2024\Facilities\24001561.002A Fostoria Splash Pad\CIVIL\CADD\Drawings\24001561.002A (C-01A) PRELIM MASS GRADING PLAN.dwg Feb 28, 2024 9:23am cgoodwin





DAILY STABILIZATION NOTE

Contractor shall only disturb that area which can be completed and stabilized by the end of each working day. Stabilization shall be as follows:

1) For areas to be paved, the application of stone base.
2) For areas to be vegetatively stabilized:
   a) Permanent seed and soil stabilization matting or sod for all steep slopes, channels or swales.
   b) Permanent seed and mulch for all other areas.

Any areas which can not be stabilized by the end of each working day must have silt fence installed on the downslope side.

LEGEND

- EXISTING MINOR CONTOUR (159)
- EXISTING MAJOR CONTOUR (160)
- EXISTING DECIDUOUS TREE
- EXISTING FIRE HYDRANT (FH)
- EXISTING WATER VALVE (WV)
- EXISTING WATER METER (WM)
- EXISTING STORM DRAIN MANHOLE
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- EDGE OF EXISTING PAVEMENT
- PROPOSED MAJOR CONTOUR (400)
- PROPOSED MINOR CONTOUR (402)
- PROP. FIRE HYDRANT
- STORM DRAIN INLET
- STORM DRAIN OUTFALL
- PIPE TEE
- SIGN
- PROP. POLE
- PROPOSED STRUCTURE
- PROPOSED CURB & GUTTER
- PROPOSED FLUSH CURB
- PROPOSED SIDEWALK
- PROPOSED CONCRETE
- LIMIT OF DISTURBANCE (LOD)
- SILT FENCE (SF)
- "DANDY BAG" INLET PROTECTION (DB)

NOTE
TOTAL LIMIT OF DISTURBANCE: 41,500± SQFT. (0.95± AC.)

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6. RESTORE GRASS AREA WITH SEEDING AND MULCH OR SOD AND SODDING.
7. ALL UTILITY LINE INSTALLATION SHALL BE PERFORMED VIA THE "DAILY STABILIZATION" NOTE ON THIS SHEET.

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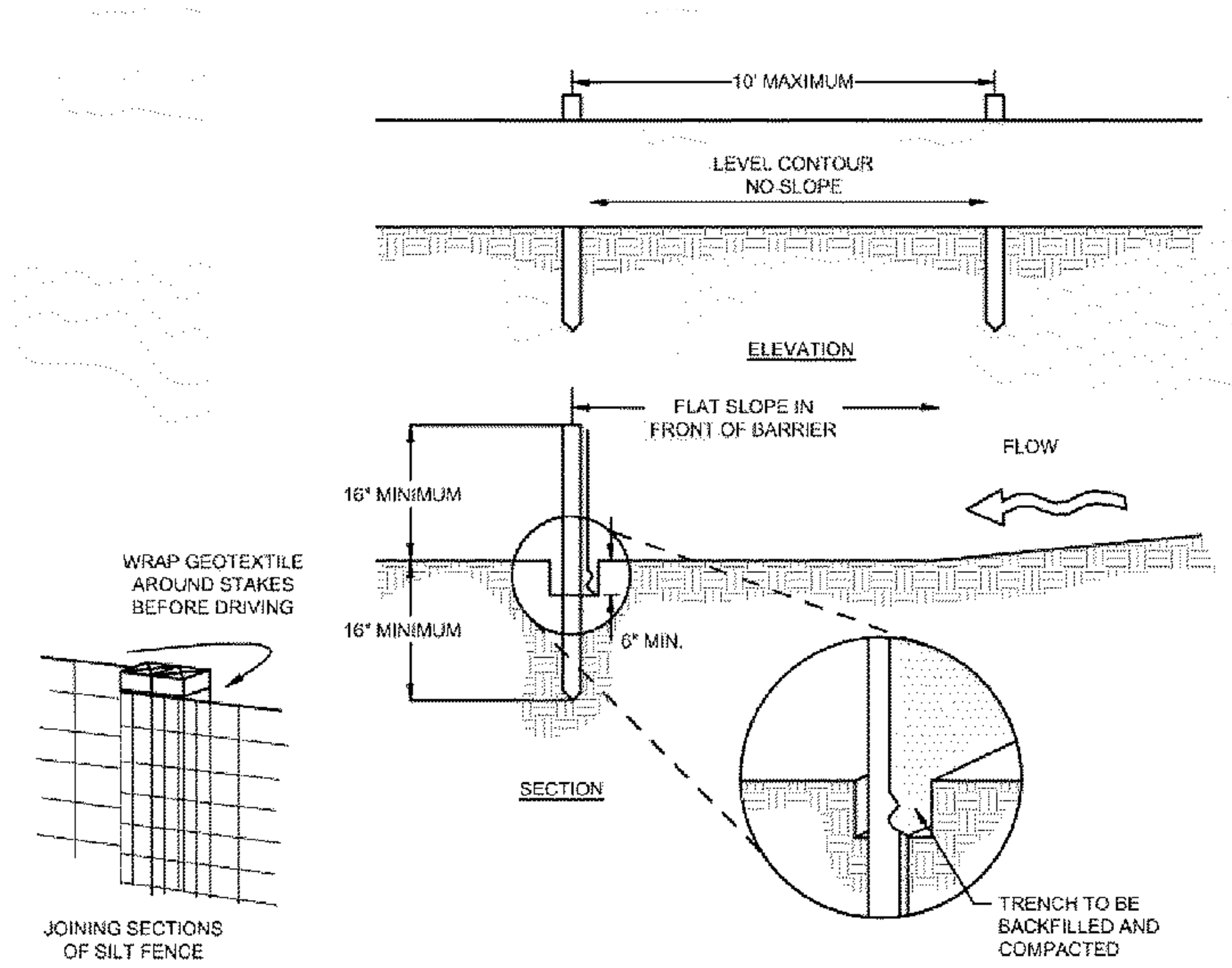
Checked by	MJP/DRS
Approved by	
Status	--

Client: CITY OF FOSTORIA, OH

Project: FOSTORIA SPLASHPAD

Drawing: Site, Utility, Grading, Erosion And Sediment Control Plan

C-02



NOTES:

1. SILT FENCE SHALL BE CONSTRUCTED BEFORE UPSLOPE LAND DISTURBANCE BEGINS.
2. ALL SILT FENCE SHALL BE PLACED AS CLOSE TO THE CONTOUR AS POSSIBLE SO THAT WATER WILL NOT CONCENTRATE AT LOW POINTS IN THE FENCE AND SO THAT SMALL SWALES OR DEPRESSIONS THAT MAY CARRY SMALL CONCENTRATED FLOWS TO THE SILT FENCE ARE DISSIPATED ALONG ITS LENGTH.
3. ENDS OF THE SILT FENCES SHALL BE BROUGHT UPSLOPE SLIGHTLY SO THAT WATER PONDED BY THE SILT FENCE WILL BE PREVENTED FROM FLOWING AROUND THE ENDS.
4. SILT FENCE SHALL BE PLACED ON THE FLATTEST AREA AVAILABLE.
5. WHERE POSSIBLE, VEGETATION SHALL BE PRESERVED FOR 5 FEET (OR AS MUCH AS POSSIBLE) UPSLOPE FROM THE SILT FENCE. IF VEGETATION IS REMOVED, IT SHALL BE REESTABLISHED WITHIN 7 DAYS FROM THE INSTALLATION OF THE SILT FENCE.
6. THE HEIGHT OF THE SILT FENCE SHALL BE A MINIMUM OF 16 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
7. THE SILT FENCE SHALL BE PLACED IN AN EXCAVATED OR SLICED TRENCH CUT A MINIMUM OF 6 INCHES DEEP. THE TRENCH SHALL BE MADE WITH A TRENCHER, CABLE LAYING MACHINE, SLICING MACHINE, OR OTHER SUITABLE DEVICE THAT WILL ENSURE AN ADEQUATELY UNIFORM TRENCH DEPTH.
8. THE SILT FENCE SHALL BE PLACED WITH THE STAKES ON THE DOWNSLOPE SIDE OF THE GEOTEXTILE. A MINIMUM OF 8 INCHES OF GEOTEXTILE MUST BE BELOW THE GROUND SURFACE. EXCESS MATERIAL SHALL LAY ON THE BOTTOM OF THE 6-INCH DEEP TRENCH. THE TRENCH SHALL BE BACKFILLED AND COMPACTED ON BOTH SIDES OF THE FABRIC.
9. SEAMS BETWEEN SECTIONS OF SILT FENCE SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST WITH A MINIMUM 6-IN. OVERLAP PRIOR TO DRIVING INTO THE GROUND.
10. MAINTENANCE—SILT FENCE SHALL ALLOW RUNOFF TO PASS ONLY AS DIFFUSE FLOW THROUGH THE GEOTEXTILE. IF RUNOFF OVERTOPS THE SILT FENCE, FLOWS UNDER THE FABRIC OR AROUND THE FENCE ENDS, OR IN ANY OTHER WAY ALLOWS A CONCENTRATED FLOW DISCHARGE, ONE OF THE FOLLOWING SHALL BE PERFORMED, AS APPROPRIATE: 1) THE LAYOUT OF THE SILT FENCE SHALL BE CHANGED, 2) ACCUMULATED SEDIMENT SHALL BE REMOVED, OR 3) OTHER PRACTICES SHALL BE INSTALLED.

SEDIMENT DEPOSITS SHALL BE ROUTINELY REMOVED WHEN THE DEPOSIT REACHES APPROXIMATELY ONE-HALF OF THE HEIGHT OF THE SILT FENCE.

SILT FENCES SHALL BE INSPECTED AFTER EACH RAINFALL AND AT LEAST DAILY DURING A PROLONGED RAINFALL. THE LOCATION OF EXISTING SILT FENCE SHALL BE REVIEWED DAILY TO ENSURE ITS PROPER LOCATION AND EFFECTIVENESS. IF DAMAGED, THE SILT FENCE SHALL BE REPAIRED IMMEDIATELY.

CRITERIA FOR SILT FENCE MATERIALS

1. FENCE POST – THE LENGTH SHALL BE A MINIMUM OF 32 INCHES. WOOD POSTS WILL BE 2-BY-2-IN. NOMINAL DIMENSIONED HARDWOOD OF SOUND QUALITY. THEY SHALL BE FREE OF KNOTS, SPLITS AND OTHER VISIBLE IMPERFECTIONS, THAT WILL WEAKEN THE POSTS. THE MAXIMUM SPACING BETWEEN POSTS SHALL BE 10 FT. POSTS SHALL BE DRIVEN A MINIMUM 16 INCHES INTO THE GROUND, WHERE POSSIBLE. IF NOT POSSIBLE, THE POSTS SHALL BE ADEQUATELY SECURED TO PREVENT OVERTURNING OF THE FENCE DUE TO SEDIMENT/WATER LOADING.
2. SILT FENCE FABRIC – SEE CHART BELOW.

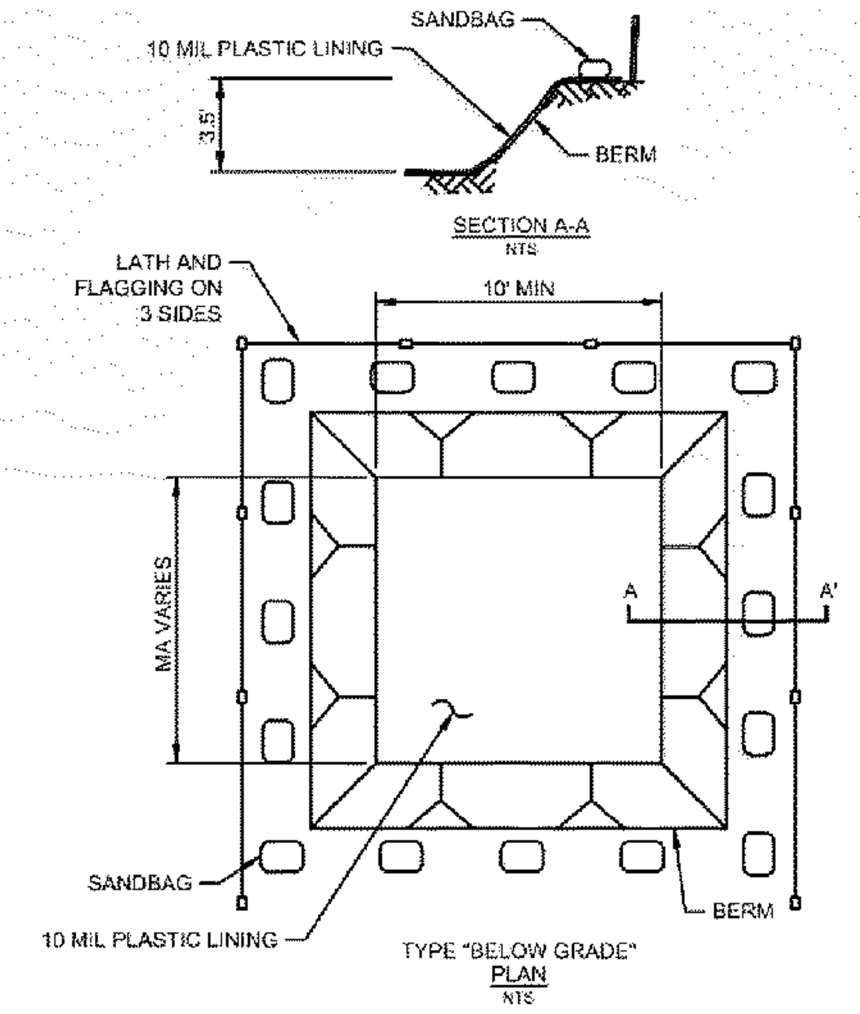
FABRIC PROPERTIES	VALUES	TEST METHOD
MINIMUM TENSILE STRENGTH	120 LBS. (535 N)	ASTM D 4632
MAXIMUM ELONGATION AT 60 LBS	50%	ASTM D 4632
MINIMUM PUNCTURE STRENGTH	50 LBS. (220 N)	ASTM D 4833
MINIMUM TEAR STRENGTH	40 LBS. (180 N)	ASTM D 4533
APPARENT OPENING SIZE	<0.84 MM	ASTM D 4751
MINIMUM PERMITTIVITY	1X10-2 SEC-1	ASTM D 4491
UV EXPOSURE STRENGTH RETENTION	70%	ASTM G 4355

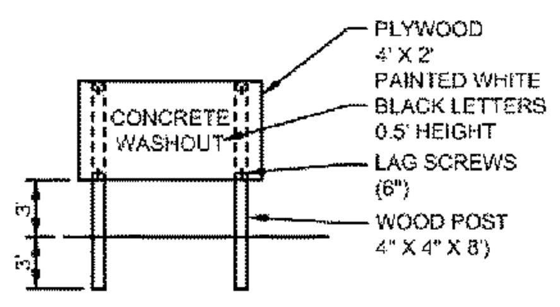
SILT FENCE DETAIL

N.T.S

* THE USE OF STRAW WATTLES HAS PROVEN TO BE A VERSATILE AND EFFECTIVE ESC BMP, ESPECIALLY IN RESIDENTIAL SETTINGS. STRAW WATTLES MAY BE SUBSTITUTED FOR SILT FENCE IN LINEAR INSTALLATIONS.

ADDITIONALLY: THE USE OF COMPOST FILTER SOCKS AND COMPOST BLANKETS ARE GAINING WIDER ACCEPTANCE NATIONWIDE. THEY ARE NOW APPROVED FOR USE ON ALL COLUMBUS SWP3 PLANS AND CONSTRUCTION SITES. STRAW WATTLES OR COMPOST ROLLS MUST BE A MINIMUM OF 12" IN DIAMETER.





CONCRETE WASHOUT
SIGN DETAIL
NTS

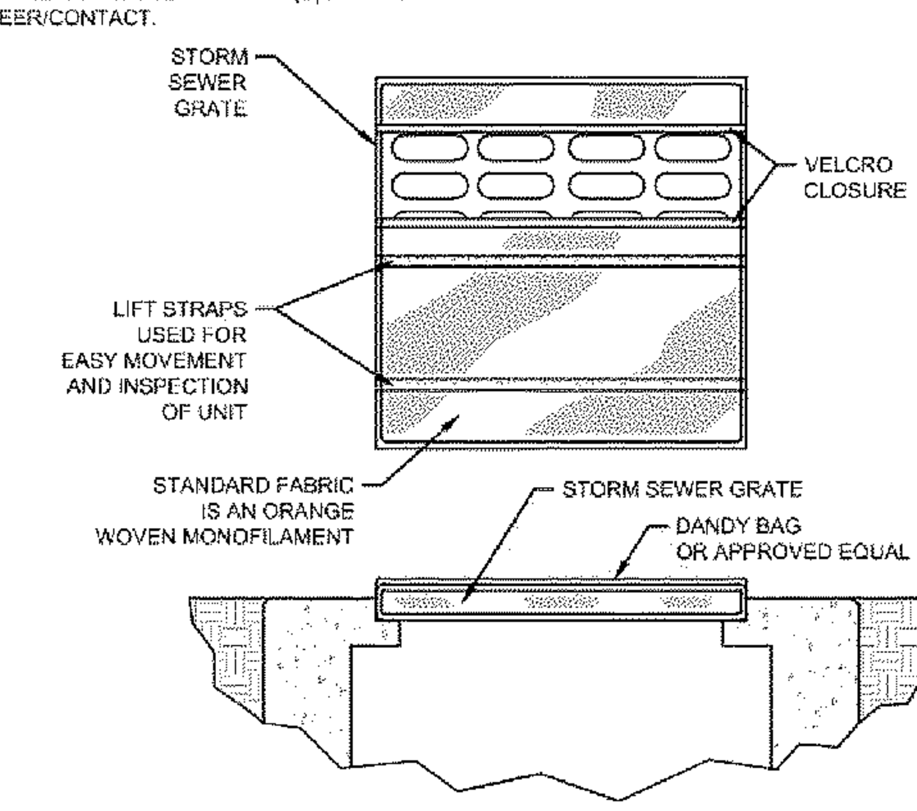
NOTES:
1. ACTUAL LAYOUT DETERMINED IN THE FIELD.
2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.

CONCRETE WASHOUT DETAIL

N.T.S.

THE USE OF PORTABLE CONCRETE WASHOUT UNITS IS APPROVED (AND ENCOURAGED) FOR ALL CONSTRUCTION AREAS IN THE CITY OF COLUMBUS

THE EXACT LOCATION OF THE CONCRETE WASHOUT(S) MAY BE FIELD LOCATED BY THE ON-SITE PROJECT ENGINEER/CONTACT.



SPECIFICATIONS

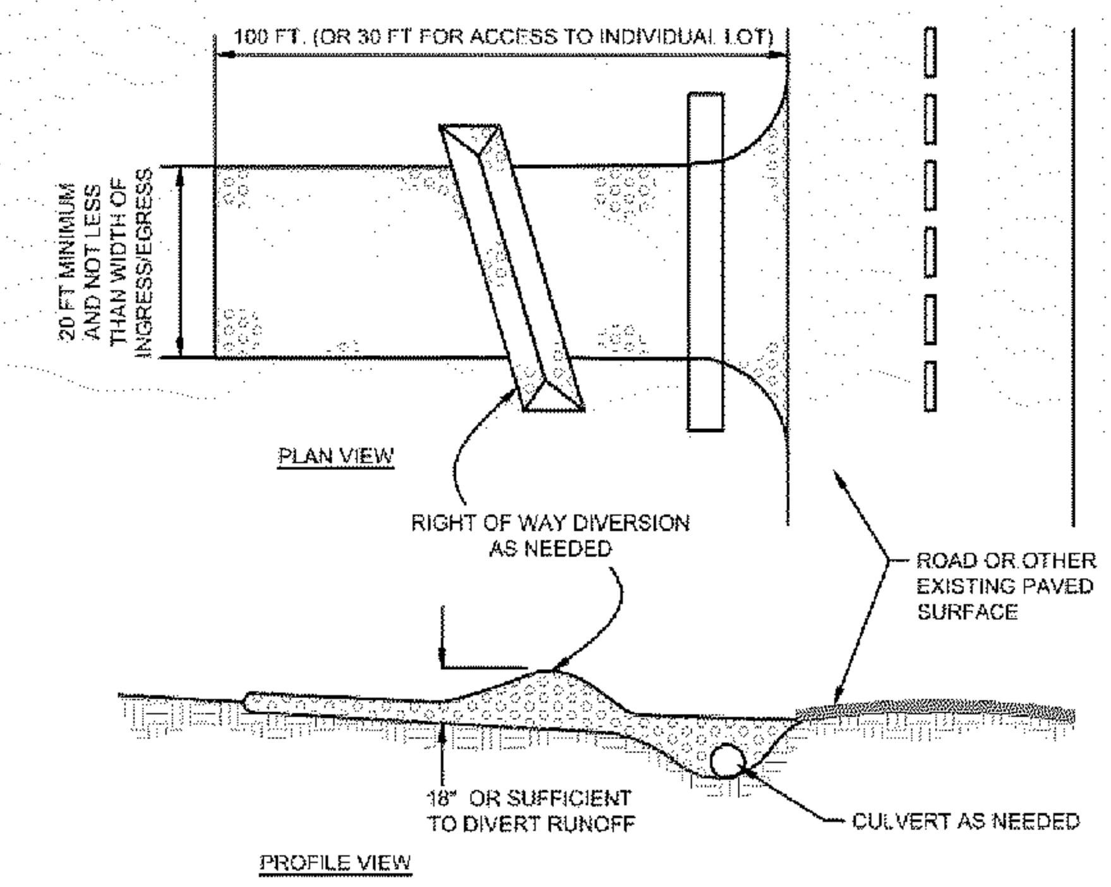
MECHANICAL PROPERTIES	TEST METHOD	UNITS	MARV
GRAB TENSILE STRENGTH	ASTM D 4632	KN (LBS)	1.62 (365) X 0.89 (200)
GRAB TENSILE ELONGATION	ASTM D 4632	%	24 X 10
PUNCTURE STRENGTH	ASTM D 4833	KN (LBS)	0.40 (90)
MULLEN BURST STRENGTH	ASTM D 3786	KPA (PSI)	3097 (450)
TRAPEZOID TEAR STRENGTH	ASTM D 4533	KN (LBS)	0.51 (115) X 0.33 (75)
UV RESISTENCE	ASTM D 4355	%	90
APPARENT OPENING SIZE	ASTM D 4751	MM (US STD SIEVE)	0.425 (40)
FLOW RATE	ASTM D 4491	$1/MIN/M^2 (GAL/MIN/FT^2)$	5907 (145)
PERMITTIVITY	ASTM D 4491	SEC^{-1}	2.1

INSTALLATION: THE EMPTY DANDY BAG SHOULD BE PLACED OVER THE GRATE AS THE GRATE STANDS ON END. IF USING OPTIONAL OIL ABSORBENTS: PLACE ABSORBENT PILLOW IN POUCH, ON THE BOTTOM (BELOW-GRADE SIDE) OF THE UNIT. ATTACH ABSORBENT PILLOW TO TETHER LOOP. TUCK THE ENCLOSURE FLAP INSIDE TO COMPLETELY ENCLOSE THE GRATE. HOLDING THE LIFTING DEVICES (DO NOT RELY ON LIFTING DEVICES TO SUPPORT THE ENTIRE WEIGHT OF THE GRATE), PLACE THE GRATE INTO ITS FRAME.

MAINTENANCE: REMOVE ALL ACCUMULATED SEDIMENT AND DEBRIS FROM SURFACE AND VICINITY OF UNIT AFTER EACH STORM EVENT. REMOVE SEDIMENT THAT HAS ACCUMULATED WITHIN THE CONTAINMENT AREA OF THE DANDY BAG AS NEEDED. IF USING OPTIONAL OIL ABSORBENTS; REMOVE AND REPLACE ABSORBENT PILLOW WHEN NEAR SATURATION.

DANDY BAG DETAIL

N.T.S.



NOTES

1. STONE SIZE - ODOT #2 (1.5-2.5 INCH) STONE SHALL BE USED, OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - THE CONSTRUCTION ENTRANCE SHALL BE AS LONG AS REQUIRED TO STABILIZE HIGH TRAFFIC AREAS BUT NOT LESS THAN 70 FT. (EXCEPTION: APPLY 30 FT. MINIMUM TO SINGLE RESIDENCE LOTS).
3. THICKNESS - THE STONE LAYER SHALL BE AT LEAST 6 INCHES THICK FOR LIGHT DUTY ENTRANCES OR AT LEAST 10 INCHES FOR HEAVY DUTY USE.
4. WIDTH - THE ENTRANCE SHALL BE AT LEAST 14 FEET WIDE, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
5. GEOTEXTILE - A GEOTEXTILE SHALL BE LAID OVER THE ENTIRE ARE PRIOR TO PLACING STONE. IT SHALL BE COMPOSED OF STRONG ROT-PROOF POLYMERIC FIBERS AND MEET THE FOLLOWING SPECIFICATIONS:

MINIMUM TENSILE STRENGTH	200 LBS
MINIMUM PUNCTURE STRENGTH	80 LBS
MINIMUM TEAR STRENGTH	50 LBS
MINIMUM BURST STRENGTH	320 PSI
MINIMUM ELONGATION	20%
EQUIVALENT OPENING SIZE	EOS< 0.6MM
PERMITTIVITY	$1X10^{-3}$ CM/SEC

6. TIMING - THE CONSTRUCTION ENTRANCE SHALL BE INSTALLED AS SOON AS IS PRACTICABLE BEFORE MAJOR GRADING ACTIVITIES.
7. CULVERT - A PIPE OR CULVERT SHALL BE CONSTRUCTED UNDER THE ENTRANCE IF NEED ED TO PREVENT SURFACE WATER FROM FLOWING ACROSS THE ENTRANCE OR TO PREVENT RUNOFF FROM BEING DIRECTED OUT ONTO PAVED SURFACES.
8. WATER BAR - A WATER BAR SHALL BE CONSTRUCTED AS PART OF THE CONSTRUCTION ENTRANCE IF NEEDED TO PREVENT SURFACE RUNOFF FROM FLOWING THE LENGTH OF THE CONSTRUCTION ENTRANCE AND OUT ONTO PAVED SURFACES.
9. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR THE WASHING AND REWORKING OF EXISTING STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY STRUCTURES USED TO TRAP SEDIMENT. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY. THE USE OF WATER TRUCKS TO REMOVE MATERIALS DROPPED, WASHED, OR TRACKED ONTO ROADWAYS WILL NOT BE PERMITTED UNDER ANY CIRCUMSTANCES. TOP DRESSING OF ADDITIONAL STONE SHALL BE APPLIED AS CONDITIONS DEMAND. MUD SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADS, OR ANY SURFACE WHERE RUNOFF IS NOT CHECKED BY SEDIMENT CONTROLS, SHALL BE REMOVE IMMEDIATELY. REMOVAL SHALL BE ACCOMPLISHED BY SCRAPING OR SWEEPING.
10. CONSTRUCTION ENTRANCES SHALL NOT BE RELIED UPON TO REMOVE MUD FROM VEHICLES AND PREVENT OFF-SITE TRACKING. VEHICLES THAT ENTER AND LEAVE THE CONSTRUCTION-SITE SHALL BE RESTRICTED FROM MUDDY AREAS.
11. REMOVAL - THE ENTRANCE SHALL REMAIN IN PLACE UNTIL THE DISTURBED AREA IS STABILIZED OR REPLACED WITH A PERMANENT ROADWAY OR ENTRANCE.

CONSTRUCTION ENTRANCE DETAIL

N.T.S.

MISCELLANEOUS SWPPP NOTES:

UPPER BANK ABOVE NORMAL WATER ELEVATION SHOULD BE STABILIZED QUICKLY WITH STRAW BLANKETS, JUTTE MATTING OR SIMILAR GEO-TEXTILE.

ALL EROSION AND SEDIMENT CONTROL PRACTICES ARE SUBJECT TO FIELD MODIFICATION AT THE DISCRETION OF THE CITY OF COLUMBUS AND/OR THE OHIO EPA.

ANY EXISTING STORM INLETS IMPACTED BY THE NEW CONSTRUCTION ACTIVITY WILL NEED THE APPROPRIATE INLET PROTECTION FOR SEDIMENT CONTROL.

STREET CLEANING (ON AN AS-NEEDED BASIS) IS REQUIRED THROUGH THE DURATION OF THIS CONSTRUCTION PROJECT. THIS INCLUDES SWEEPING, POWER CLEANING AND (IF NECESSARY) MANUAL REMOVAL OF DIRT OR MUD IN THE STREET GUTTERS.

THIS PLAN MUST BE POSTED ON-SITE. A COPY OF THE SWPPP PLAN AND THE APPROVED EPA STORMWATER PERMIT (WITH THE SITE-SPECIFIC NOI NUMBER) SHALL BE KEPT ON-SITE AT ALL TIMES.

CONSTRUCTION SEQUENCE

TO COMPLETE THE EXCAVATION AND CONSTRUCTION OF THE PROPOSED JOB IMPROVEMENTS, COORDINATION OF THE CONTRACTOR'S WORK CREWS WILL BE REQUIRED. THE GENERAL CONSTRUCTION SEQUENCE IS AS FOLLOWS:

A) INSTALL PERIMETER CONTROL AND INLET PROTECTION.
B) INLET PROTECTION TO ACT AS SEDIMENT CONTROL FOR THIS PROJECT. THE DRAINAGE AREA GOING TO EACH INLET PROTECTION IS LESS THAN 1.0 ACRES.
C) STRIP TOPSOIL AND ANY UNSUITABLE MATERIAL THROUGH THE INCREMENTAL WORK AREA.
D) INSTALL TEMPORARY SEDIMENT CONTROLS WITHIN 24 HOURS FOLLOWING THE STRIPPING OPERATION.
E) PERFORM MASS GRADING FOR FINAL PAVING.
F) INSTALL SITE UTILITIES, INSTALLING INLET PROTECTION ON NEW STORM STRUCTURES AS WORK PROGRESSES.
G) ANY DISTURBED OR EXPOSED AREAS SHALL BE STABILIZED PER OEPA TEMPORARY AND PERMANENT STABILIZATION REGULATIONS INCLUDING:
1. SEEDING
2. DITCH MATTING
3. INLET PROTECTION
4. MULCHING
5. WATERING
H) INSTALL UNDERGROUND DETENTION SYSTEM, PERFORM FINAL PAVING, FINE GRADE, AND PERMANENT SEEDING.
I) PROVIDE PERMANENT STABILIZATION FOR ANY DISTURBED AREAS AND REMOVE PERIMETER CONTROLS AND INLET PROTECTION.

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PROFESSIONAL ENGINEER

No.	Description	Date
5	ADDENDUM 2	03/26/24
4	ISSUED FOR BIDDING	03/01/24
3	ISSUED FOR BUILDING PERMIT	02/23/24
2	ISSUED FOR CONSTRUCTION	02/12/24
1	ISSUED FOR ODNR REVIEW	02/05/24

REVISIONS

Scale	As Indicated
Date	2/5/2023
Job No.	24001561.002A
Designed by	RDT/CWG
Drawn by	RDT/CWG
Checked by	MJP/DRS
Approved by	
Status	--

Client: CITY OF FOSTORIA, OH

Project: FOSTORIA SPLASHPAD

Drawing: Erosion And Sediment Control Details

C-09

ELECTRICAL OUTLINE SPECIFICATIONS

PART 1 GENERAL

1.1. **SCOPE OF WORK:** FURNISH AND INSTALL ALL LABOR, MATERIALS, TOOLS, ETC., TO PROVIDE A COMPLETE AND OPERATIONAL ELECTRICAL INSTALLATION, AS INDICATED ON THE PLANS. CONTRACTOR SHALL REFER TO THE WORK INDICATED ON THE ASSOCIATED MECHANICAL, ARCHITECTURAL, STRUCTURAL PLANS, ETC., AS WORK SHOWN THEREON MAY AFFECT OR INCLUDE ADDITIONAL ELECTRICAL WORK. ALL MATERIALS INCLUDED IN THE WORK SHALL BE NEW UNLESS SPECIFICALLY NOTED OTHERWISE; EACH ITEM SHALL BE LISTED OR LABELED BY A U.S.A. NATIONALLY RECOGNIZED TESTING LABORATORY, TO ASSURE ITS SUITABILITY AND APPROVAL FOR THE PURPOSE SHOWN. ALL LABOR SHALL BE PERFORMED BY QUALIFIED AND SKILLED WORKERS, IN A NEAT AND WORKMANLIKE MANNER, AND IN ACCORDANCE WITH INDUSTRY STANDARDS AND PRACTICES.

1.2. **CONTRACT DRAWINGS:** IN GENERAL, DRAWINGS ARE SCHEMATIC IN NATURE AND ARE INTENDED AS A GUIDE TO THE CONTRACTOR, BUT DO NOT NECESSARILY SHOW ALL DETAILS, ETC. ALL DRAWINGS SHALL BE THOROUGHLY INSPECTED BY THE CONTRACTOR. THE CONTRACTOR'S WORK SHALL CONFORM TO THE INFORMATION CONTAINED IN THIS SPECIFICATION AND/OR AS INDICATED IN THE LATEST REVISION OF THE DRAWINGS REFERRED TO THEREIN. THE CONTRACTOR SHALL CONSULT WITH THE ENGINEER REGARDING ALL QUESTIONS, UPON WHICH HE MAY BE IN DOUBT, BEFORE PROCEEDING WITH FABRICATION OF PARTS AFFECTED. AT HIS OWN EXPENSE, THE CONTRACTOR SHALL PREPARE ALL ADDITIONAL DETAIL OR FIELD INSTALLATION DRAWINGS NECESSARY. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS INDICATED ON THE ENGINEER'S LAYOUT DRAWINGS AND DETERMINE IF ANY CHANGES ARE REQUIRED TO AVOID INTERFERENCE. MAJOR CHANGES SHALL NOT BE MADE WITHOUT THE APPROVAL OF THE ENGINEER. WHILE THE DRAWINGS SHALL BE ADHERED TO AS CLOSELY AS POSSIBLE, THE CONTRACTOR HAS THE RIGHT TO VARY THE RUN OF CONDUITS, LOCATION OF EQUIPMENT, ETC. DURING PROGRESS OF THE WORK AS MAY BE FOUND NECESSARY OR DESIRABLE TO AVOID INTERFERENCES OR CLEARANCE ISSUES. MAJOR REVISIONS SHALL BE VERIFIED WITH THE ENGINEER.

1.3. **VERIFICATION:**

A. BEFORE INSTALLING EQUIPMENT OR RUNNING ANY CONDUITS, WIRING, ETC., WITHIN THE BUILDING, THIS CONTRACTOR SHALL ASSURE HIMSELF THAT THESE ITEMS AND MATERIALS CAN BE INSTALLED AS CONTEMPLATED, WITHOUT INTERFERING WITH ITEMS IN ROOM/AREA, COLUMNS, BEAMS, PIPING, FIXTURES, ETC. ANY NECESSARY MAJOR DEVIATION SHALL BE REFERRED TO THE ENGINEER FOR ADJUSTMENT BEFORE MATERIALS ARE INSTALLED. WHEN THE CONTRACTOR DETERMINES THE MAKE OF EQUIPMENT TO BE PROVIDED FOR THE JOB, IT SHALL BE HIS RESPONSIBILITY TO VERIFY AND COORDINATE UNIT DIMENSIONS WITH THE GENERAL CONTRACTOR AND ALL OTHER INTERESTED CONTRACTORS ON THE JOB. IT SHALL ALSO BECOME THE CONTRACTOR'S RESPONSIBILITY TO CHANGE AS NECESSARY, THROUGH THE ENGINEER, ALL REQUIRED COMPONENTS WITH WORK TOGETHER FOR THE EQUIPMENT SUPPLIED. ANY ADDITIONAL COST WILL BE THE SOLE RESPONSIBILITY OF THIS CONTRACTOR.

B. LOCATIONS OF EXISTING EQUIPMENT IN PLACE AS SHOWN ON THE DRAWINGS, ARE TAKEN FROM SITE INVESTIGATIONS OR FROM AS-BUILT AND RECORD DRAWINGS AND ARE DEEMED RELIABLE ONLY IN SO FAR AS GENERAL LAYOUT IS CONCERNED. THE RESPONSIBILITY FOR CHECKING IN PLACE ITEMS SHALL BE THE CONTRACTOR'S.

1.1. **SITE VISIT:** ALL CONTRACTORS, BIDDING THE WORK INDICATED THROUGHOUT THE CONTRACT DOCUMENTS, ARE REQUIRED TO VISIT, AND THOROUGHLY EXAMINE THE PROJECT SITE AND ITS ASSOCIATED CONDITIONS. THE CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH ALL EXISTING CONDITIONS UNDER WHICH THIS WORK MUST BE PERFORMED. ALL CONTRACTORS SHALL REPORT ANY DISCREPANCIES TO THE ARCHITECT AND/OR ENGINEER PRIOR TO SUBMITTING A BID PROPOSAL. FAILURE TO DO SO SHALL BE DEEMED AS ACCEPTANCE OF EXISTING CONDITIONS. NO ADDITIONAL COMPENSATION WILL BE CONSIDERED FOR ANY DEVIATIONS OR DISCREPANCIES TO THESE PLANS AFTER A CONTRACTOR HAS BEEN SELECTED.

1.2. **GUARANTEE:** THE CONTRACTOR GUARANTEES, BY THEIR ACCEPTANCE OF THE CONTRACT, THAT ALL WORK WILL BE FREE FROM DEFECTS IN WORKMANSHIP AND/OR MATERIALS, FOR A PERIOD OF ONE YEAR FOLLOWING PROJECT COMPLETION UNLESS NOTED OTHERWISE, AND THAT ALL APPARATUS WILL DEVELOP CAPACITIES AND CHARACTERISTICS SPECIFIED. SHOULD ANY DEFECTS IN WORKMANSHIP AND/OR MATERIALS REQUIRE REDESIGN OF ANY PART OF THE ELECTRICAL, MECHANICAL, PLUMBING OR ARCHITECTURAL LAYOUT, ALL SUCH REDESIGN AND ALL NEW DRAWINGS AND DETAILING REQUIRED THEREOF, CALCULATIONS, SUBMITTALS, ETC., AS WELL AS REPAIRS (TO MATCH EXISTING ADJACENT CONDITIONS) SHALL WITH THE APPROVAL OF THE ARCHITECT AND/OR ENGINEER, BE PREPARED BY THE CONTRACTOR AT THEIR OWN EXPENSE. WHERE SUCH APPROVED DEVIATION REQUIRES A DIFFERENT QUANTITY AND ARRANGEMENT OF CONDUIT, WIRING, STARTERS, PANELS, ETC., AND/OR EQUIPMENT FROM THAT SPECIFIED OR DETAILED ON THE DRAWINGS, WITH THE APPROVAL OF THE ARCHITECT AND/OR ENGINEER, THE CONTRACTOR SHALL FURNISH AND INSTALL ALL SUCH MATERIALS AND/OR EQUIPMENT REQUIRED BY THE SYSTEM AT NO ADDITIONAL COST TO THE OWNER.

1.3. **SUBMITTALS:** PRIOR TO RELEASING ANY ORDER FOR MATERIAL FOR THIS PROJECT, THE CONTRACTOR SHALL SUBMIT FOR REVIEW, DETAILED DRAWINGS AND/OR EQUIPMENT CUT SHEETS, SHOWING DIMENSIONS, SIZES, WEIGHTS, ELECTRICAL RATINGS AND OPERATING CHARACTERISTICS, CAPACITIES, MATERIALS, COLORS, AND ROUGH-IN REQUIREMENTS, FOR ALL LIGHTING FIXTURES, FLOOR BOXES, DISTRIBUTION EQUIPMENT, MOTOR CONTROL, ALARM AND COMMUNICATION SYSTEMS AND COMPONENTS, AND POWER GENERATION SYSTEMS. PRIOR TO SUBMITTING, CONTRACTOR SHALL THOROUGHLY REVIEW EACH SUBMITTAL AND CHECK FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS, AND MARK EACH SUBMITTAL WITH APPROVAL STAMP TO SHOW THAT SUBMITTALS HAVE BEEN REVIEWED AND APPROVED BY THE CONTRACTOR. FAILURE OF CONTRACTOR TO COMPLY FULLY WITH THIS SECTION WILL RESULT IN REJECTION OF SUBMITTAL. SUBMITTALS SHALL BE MADE SUFFICIENTLY IN ADVANCE OF THE REQUIRED ORDER RELEASE DATE, TO ALLOW THE ENGINEER AMPLE TIME TO REVIEW SUCH INFORMATION. MULTIPLE COMPONENTS INTENDED TO FUNCTION TOGETHER, SHALL BE COORDINATED AND SUBMITTED AS A UNIT. SUBMITTALS SHALL CLEARLY HIGHLIGHT, ENCIRCLE OR OTHERWISE IDENTIFY COMPONENTS SELECTED.

A. APPROVAL STAMP: STAMP EACH SUBMITTAL WITH A UNIFORM, APPROVAL STAMP. STAMP SHALL INCLUDE PROJECT NAME, LOCATION, SPECIFICATION SECTION, NAME OF REVIEWER, DATE OF CONTRACTOR'S APPROVAL, AND STATEMENT CERTIFYING THAT SUBMITTAL HAS BEEN REVIEWED, CHECKED, AND APPROVED FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS.

1.1. **PRODUCT SUBSTITUTIONS:** THE MANUFACTURERS LISTED ARE INCLUDED AS A BASIS OF DESIGN. SUBMISSION OF ALTERNATE MANUFACTURERS OF SIMILAR EQUIPMENT IS SUBJECT TO ENGINEER APPROVAL. UNITS OF EQUIPMENT, OTHER THAN THOSE LISTED AS THE BASIS OF DESIGN, MUST BE PROVEN TO BE PHYSICALLY ACCEPTABLE, IN ADDITION TO MEETING ALL PERFORMANCE AND EQUIPMENT SPECIFICATIONS. LIABILITY OF NON-CONFORMANCE SHALL LIE WITH THE CONTRACTOR/SUBMITTER. BIDDERS DESIRING CONSIDERATION FOR THE USE OF MATERIAL, EQUIPMENT, ETC. NOT NAMED IN THE SPECIFICATIONS MAY SUBMIT THE CHANGE IN WRITING AT LEAST TEN (10) DAYS PRIOR TO BID OPENING, INCLUDING THE SPECIFICATIONS AND DESCRIPTION TO THE ARCHITECT FOR REVIEW. IF APPROVED, THE CHANGE WILL BE ISSUED IN AN ADDENDUM AT LEAST FIVE (5) DAYS PRIOR TO THE OPENING OF BIDS.

1.8 **PERMITS AND CODES:** CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH PERMITS, PLAN APPROVALS, TAXES & INSURANCE. ALL WORK SHALL CONFORM TO ALL LOCAL CODES AND ORDINANCES, AS WELL AS THE LATEST ADOPTED EDITION OF THE FOLLOWING: 1) NATIONAL ELECTRICAL CODE; 2) NATIONAL ELECTRICAL SAFETY CODE; 3) STATE BUILDING CODE; 4) ANSI STANDARDS; 5) IEEE STANDARDS; 6) UNDERWRITERS LABORATORY LISTINGS; 7) ASTM STANDARDS; 8) NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION STANDARDS; 9)STATE FIRE CODE; 10) APPLICABLE NFPA CODES. COPY OF THE FINAL ELECTRICAL INSPECTION DOCUMENT, FROM THE AUTHORITY HAVING JURISDICTION, SHALL BE SUBMITTED TO THE OWNER AND ENGINEER AT PROJECT COMPLETION.

1.9 **COORDINATION:** CONTRACTOR SHALL COORDINATE THEIR PORTION OF THE WORK WITH THAT OF OTHER CONTRACTORS, ALL AFFECTED UTILITY COMPANIES, THE OWNER, AND THE OPERATIONS OF THE OWNER. (PROVIDE ADEQUATE AND TIMELY INPUT TO THE CONTRACTOR PREPARING "COORDINATION DRAWINGS" WHERE SPECIFIED ELSEWHERE.) COORDINATE WITH POWER UTILITY COMPANY PRIOR TO BEGINNING ANY SERVICE WORK. ALL CONFLICTS, SCHEDULING, AND PROCEDURES SHALL BE RESOLVED IN THE BEST INTEREST OF THE OWNER AND THE SUCCESSFUL COMPLETION OF THE PROJECT. AT PROJECT COMMENCEMENT, SUBMIT A TIME SCHEDULE OF PROPOSED WORK, INCLUDING SIGNIFICANT EQUIPMENT DELIVERY DATES, SEQUENCE OF WORK AREAS, PROPOSED SHUTDOWNS, CUT-OVERS AND UTILITY TIE-INS. UPDATE SCHEDULE AS WORK PROGRESSES. ALL SHUTDOWN WORK SHALL BE PERFORMED AT TIMES WHICH WILL NOT INTERFERE WITH THE REGULAR OPERATION OF THE FACILITY AND THE OWNER. CONTRACTOR SHALL NOTIFY ALL AFFECTED PARTIES IN WRITING AT LEAST SEVEN DAYS PRIOR TO SHUTDOWNS AND CUT-OVERS. UTILITY COMPANY BACKCHARGES WILL BE PAID DIRECTLY BY THE OWNER.

1.10 **CUTTING & PATCHING:** PROVIDE CUTTING AND PATCHING OF ALL MATERIALS NECESSARY FOR THE INSTALLATION AS INDICATED OR SPECIFIED. NEATLY REMOVE AND LEGALLY DISPOSE OF ELECTRICAL COMPONENTS AND ITEMS NO LONGER IN USE. PROTECT THE STRUCTURE, FURNISHINGS, FINISHES AND MATERIALS ADJACENT TO THE AREA OF CUTTING AND PATCHING. PATCH AND REPAIR SHALL MATCH EXISTING FIRE RATED CONSTRUCTION MATERIALS AND METHODS AND RE-FINISH EXISTING INTERIOR AND EXTERIOR SURFACES AND EQUIPMENT USING NEW MATERIALS AND METHODS, TO MATCH ADJACENT WORK, UTILIZING EXPERIENCED INSTALLERS. PATCHING OF FIRE RATED PARTITIONS, CEILINGS AND OTHER ASSEMBLIES, SHALL MATCH THE RATING OF THE RATED BARRIER WITH MATERIALS LISTED AND IDENTIFIED FOR SUCH USE, AND SHALL COMPLY WITH APPLICABLE REQUIREMENTS OF THE GENERAL TRADES SPECIFICATIONS.

1.11 **NEW WORK:** UNLESS OTHERWISE NOTED, ALL WORK INDICATED THROUGHOUT THESE DRAWINGS SHALL BE CONSIDERED AS NEW WORK AND SHALL BE INCLUDED AS AN INTEGRAL PART OF THIS CONTRACT.

1.12 **AS-BUILT DRAWINGS:** CONTRACTOR SHALL ACCURATELY AND NEATLY RECORD ANY DEVIATIONS FROM THE PLANS AND SPECIFICATIONS, INCLUDING FINAL CONDUIT ROUTING, BRANCH CIRCUIT NUMBERING, EQUIPMENT SIZES, SINGLE LINE DIAGRAM, ETC. UNDERGROUND FEEDERS AND DUCTBANKS SHALL BE LOCATED BY DIMENSION TO ASSIST IN FUTURE EXCAVATIONS. AS-BUILTS SHALL BE REGULARLY UPDATED DURING THE COURSE OF CONSTRUCTION, AND DELIVERED TO THE OWNER WITHIN 30 DAYS OF PROJECT ACCEPTANCE, WITH A COPY TO THE ENGINEER.

1.13 **CLOSE-OUT:** CONTRACTOR SHALL PROVIDE FIELD TESTING, CHECK-OUT AND SYSTEM DEMONSTRATIONS TO OWNER TO ASSURE PROPER PERFORMANCE AND ADJUSTMENT OF ITEMS PROVIDED UNDER THE CONTRACT. REMOVE ALL DEBRIS CREATED BY THE ELECTRICAL WORK AND CLEAN ALL FIXTURES, PANELS, BOXES, ETC., INSIDE AND OUTSIDE. PROVIDE A HARDBOUND BINDER WHICH INCLUDES: COPIES OF EACH SHOP DRAWING, FIELD TEST REPORT, PREVENTATIVE MAINTENANCE PROCEDURES FOR EACH ITEM REQUIRING MAINTENANCE, OPERATION & INSTRUCTION MANUALS, LITERATURE SUPPLIED WITH ELECTRICAL EQUIPMENT, AND A LIST OF ALL CONTRACTOR'S PURCHASE ORDERS WITH SUPPLIERS NAMES, ADDRESSES AND PHONE NUMBERS, FOR ALL MATERIALS. INCLUDE NAME AND ADDRESS OF A QUALIFIED SERVICE AGENCY FOR EACH SYSTEM. PROVIDE AT LEAST 4 HOURS OF INSTRUCTION TO PERSONNEL SELECTED BY THE OWNER, TO FAMILIARIZE THEM WITH THE LOCATION OF SIGNIFICANT EQUIPMENT, TRAIN THEM ON EQUIPMENT FUNCTIONS, REVIEW MAINTENANCE PROCEDURES AND COORDINATE INFORMATION AVAILABLE IN THE CLOSE-OUT BINDER.

PART 2 PRODUCTS

2.1. **FIRE-RATING:** OPENINGS AROUND CONDUITS OR IN SLEEVES FOR CONDUITS PENETRATING FIRE-RATED FLOOR SLABS, WALLS, PARTITIONS, CEILINGS, OR SMOKE PARTITIONS, SHALL BE SEALED AT BOTH SIDES OF THE PENETRATION. INSULATION SHALL NOT EXTEND THROUGH SLEEVES. PACK OPENINGS WITH CALCIUM SILICATE BLOCK, 3M BARRIER PILLOWS (3M PUTTY IN VOIDS), 3M FIP FOAM, DOW CORNING 3-6548 RTV SILICON FOAM, 3M CP25 CAULK, OR 303 PUTTY FIRE BARRIER SYSTEM OR MATERIAL HAVING THE SAME FIRE-RATING AS THE FLOOR OR WALL PENETRATED. FIBERGLASS IS NOT ACCEPTABLE..

2.2. **LABELS:** PROVIDE ENGRAVED PLASTIC LAMINATE NAMEPLATES, SECURELY FASTENED TO EQUIPMENT, FOR ALL NEW PANELS, STARTERS, TERMINAL CABINETS, DISCONNECTS, CONTROL PANELS, LARGE PULL BOXES, AND OTHER MAJOR COMPONENTS. NAMEPLATES SHALL BE 1 BY 3 INCHES, MINIMUM, BLACK LETTERS ON WHITE FIELD. EMERGENCY AND STANDBY POWER EQUIPMENT NAMEPLATES SHALL HAVE WHITE LETTERS ON RED FIELD. LETTERING SHALL INCLUDE ITEM NAME, VOLTAGE AND PHASE. ALL PANELBOARD AND SWITCHBOARD NAMEPLATES SHALL INDICATE THE SOURCE OF SUPPLY PER NEC 408.4. SEE NEC 110.21B FOR FIELD INSTALLED WARNING LABEL REQUIREMENTS.

2.3. GROUNDING, WIRE, RACEWAYS, BOXES AND SUPPORTS:

A. **GROUNDING:** GROUND AND BOND ALL METAL RACEWAYS, BOXES, FIXTURES, ENCLOSURES, ETC., PER NEC ARTICLE 250. NEW SERVICES AND SEPARATELY DERIVED SYSTEMS SHALL BE BONDED TO THE GROUNDING ELECTRODE SYSTEM, INCLUDING THE CONCRETE ENCASED REINFORCING STEEL ON GRADE WHERE AT LEAST 20 FEET OF #4 BAR IS INSTALLED. GROUNDING CONDUCTORS IN PVC RACEWAY SHALL BE EXTENDED TO THE BUILDING STRUCTURAL STEEL, INCOMING POINT OF THE INTERIOR METAL WATER LINE, AND SUPPLEMENTAL GROUND ROD(S). GROUNDING ELECTRODE CONDUCTOR SPLICES, TAPS AND CONNECTIONS SHALL BE MADE VIA AN EXOTHERMIC WELD PROCESS (CADWELD OR EQUAL) OR IRREVERSIBLE CIRCUMFERENTIAL CRIMP TYPE FITTINGS (BURNDY HYPRESS OR EQUAL). BONDING CONDUCTORS SHALL ALSO BE EXTENDED TO THE INTERIOR METAL GAS PIPING SYSTEM, INTERIOR WATER LINES, AND MAIN TELEPHONE BACKBOARD, WHERE INSTALLED. ALL FEEDERS AND BRANCH CIRCUITS SHALL INCLUDE AN INSULATED EQUIPMENT GROUNDING CONDUCTOR, ROUTED WITH THE CIRCUIT, SIZED PER NEC 250.122. WHERE NOTED, GROUND BARS SHALL BE 1/4" BY 1" BY 12" LONG (MINIMUM) SOLID COPPER BAR, COMPLETE WITH PRE-DRILLED HOLES AND STANDOFF FITTINGS, AS MANUFACTURED BY ERICO, CHATSWORTH OR STORM COPPER. PROVIDE A SEPARATE LUG FOR EACH GROUNDING OR BONDING CONDUCTOR. AT PROJECT COMPLETION, CONTRACTOR SHALL VERIFY COMPLETE GROUND/NEUTRAL SEPARATION FOR THE NEW 480/277 AND 120/208 VOLT SERVICE, EXCEPT AT THE MAIN SERVICE BONDING JUMPER AND EXTERIOR TRANSFORMER BONDING JUMPER, AND SHALL CLEAR AND CORRECT ALL OTHER INTERIOR GROUNDED NEUTRALS WITHIN HIS SCOPE OF WORK.

B. **WIRE:** FURNISH AND INSTALL ALL WIRE, TERMINATIONS AND CONNECTION DEVICES AS SHOWN OR REQUIRED. UNLESS OTHERWISE NOTED, ALL LINE VOLTAGE CIRCUITS SHALL BE STRANDED, COPPER, 600 VOLT INSULATED: (75 DEGREES C THHN/THWN FOR CIRCUITS #14 AWG THRU #2 AWG; 90 DEGREES C XHHW-2 FOR CIRCUITS #1 AWG AND LARGER). CONDUCTORS #3/0 AWG AND LARGER MAY BE STRANDED ELECTRICAL GRADE STANDARD OR COMPACT STRANDED ALUMINUM CONDUCTORS WITH 90 DEGREES C RATED XHHW-2 INSULATION, PROPERLY UPSIZED FOR THE AMPACITY EQUIVALENT TO THE COPPER CONDUCTORS SHOWN; CONDUIT SHALL ALSO BE UPSIZED FOR ALUMINUM CONDUCTORS. ALL CONNECTIONS AND TERMINATIONS SHALL MEET THE SPECIFICATIONS OF MATERIAL USED PER NEC 110.14.BRANCH CIRCUIT WIRING SHALL BE #12 AWG MINIMUM. WHERE THE 120 VOLT CIRCUIT LENGTH EXCEEDS 100 FEET, OR THE 277 VOLT CIRCUIT LENGTH EXCEEDS 250 FEET, FROM THE PANEL TO THE FARTHEST DEVICE, UTILIZE #10 AWG MINIMUM. SEE CHART THIS SHEET FOR MINIMUM CONDUCTOR SIZES FOR LONGER BRANCH CIRCUITS. PHASE CONDUCTORS FOR 240 VOLT (AND LOWER) SYSTEMS SHALL BE BLACK, RED & BLUE RESPECTIVELY FOR PHASES A, B & C; ASSOCIATED NEUTRALS WHITE. PHASE CONDUCTORS FOR 480 VOLT SYSTEMS SHALL BE BROWN, ORANGE & YELLOW RESPECTIVELY FOR PHASES A, B & C; ASSOCIATED NEUTRALS GRAY. CONNECTIONS AND TAPS FOR WIRE #4 AWG AND LARGER SHALL BE MADE WITH SOLDERLESS PRESSURE TYPE CONNECTORS AND LUGS. PROVIDE AN ENGRAVED NAMEPLATE OR PLAQUE DOCUMENTING THE WIRING SYSTEM COLOR CODING AT EACH NEW PANELBOARD. ALL LOW VOLTAGE CABLE SHALL BE MULTI-CONDUCTOR, COPPER, WITH WIRE SIZE, SHIELD, JACKET, COLOR-CODED INSULATION, TERMINATIONS, ETC. AS RECOMMENDED BY THE SYSTEM SUPPLIER. INSULATING AND JACKET MATERIALS SHALL BE SUITABLE FOR THE INSTALLATION ENVIRONMENT (I.E. UNDERGROUND, PLENUM, HIGH AMBIENT TEMPERATURE, ETC.).

C. **BRANCH CIRCUITS:** BRANCH CIRCUIT WIRING SHALL CORRESPOND TO THE CIRCUIT NUMBERING SHOWN ON THE PLANS, BUT THE CONTRACTOR WILL BE PERMITTED MINOR CHANGES TO OPTIMIZE THE PIPING REQUIRED. THE QUANTITY OF CIRCUITS SHALL NOT BE REDUCED, NOR SHALL SEPARATE CIRCUITS BE COMBINED. ROUTING SHALL BE AT THE DISCRETION OF THE CONTRACTOR BUT THE INSTALLATION SHALL MEET ALL OTHER SPECIFIED CRITERIA. PROVIDE A NEUTRAL CONDUCTOR TO EACH LOCAL SWITCH OUTLET WHETHER OR NOT REQUIRED FOR THE PRESENT INSTALLATION. IN GENERAL, 1-POLE 120V AND 277V BRANCH CIRCUITS SHALL BE PROVIDED WITH INDIVIDUAL NEUTRALS, TO ELIMINATE THE REQUIREMENT FOR MULTI-POLE BREAKERS OR HANDLE TIES (SEE NEC 210.4B). THE QUANTITY OF CURRENT CARRYING CONDUCTORS IN A CONDUIT SHALL BE LIMITED TO NINE. THE AMPACITY OF BRANCH CIRCUITS ROUTED ACROSS ROOFS OR OTHERWISE EXPOSED TO SUNLIGHT, SHALL BE PROPERLY UPSIZED AS REQUIRED TO MEET THE DERATING FACTORS OF NEC 310.15(B)(2). WHERE "HOME RUNS" ARE SHOWN ON PLAN, THE QUANTITY OF THESE RUNS SHALL BE MAINTAINED AS A MINIMUM. 120/208 VOLT BRANCH CIRCUITS AND 277/480 VOLT BRANCH CIRCUITS SHALL NOT BE ROUTED THROUGH COMMON RACEWAYS, UNLESS SPECIFICALLY NOTED ON THE PLANS.

D. **EQUIPMENT WIRING:** PROVIDE POWER WIRING CONNECTIONS AND TERMINATIONS TO EQUIPMENT PROVIDED BY OTHERS. ALL NECESSARY STARTERS AND CONTROLS WILL BE FURNISHED WITH THE EQUIPMENT UNLESS NOTED OTHERWISE. WIRING AND CONNECTIONS SHALL BE AS REQUIRED BY THE EQUIPMENT MANUFACTURER AND SHALL NOT BE PERFORMED IN A MANNER WHICH MODIFIES THE EQUIPMENT, OR DEGRADES IT'S FUNCTION OR WARRANTY. WHERE NOT FURNISHED WITH EQUIPMENT, PROVIDE A LOCAL DISCONNECT WITHIN SIGHT OF EACH MOTOR AND APPLIANCE. ALL CONTROL WIRING, DEVICES, SYSTEMS AND REQUIRED INTERLOCKS WILL BE PROVIDED BY OTHERS. ELECTRICAL REQUIREMENTS OF THE ELECTRIC HEAT TRACING (FURNISHED AND INSTALLED BY OTHERS) SHALL BE FIELD VERIFIED AND SHALL BE PROVIDED WITH A 30MILLIAMP GFCI TYPE BREAKER FOR THE BRANCH CIRCUIT SERVING THE HEAT TRACING.

E. **RACEWAYS:** UNLESS NOTED OTHERWISE, ALL NEW LINE VOLTAGE WIRING SHALL BE INSTALLED IN SPECIFIED RACEWAYS. RACEWAYS SHALL BE INSTALLED, CONCEALED WITHIN NEW AND EXISTING CONSTRUCTION, UNLESS NOTED OTHERWISE. RACEWAYS INSTALLED UNDERGROUND, CAST IN CONCRETE, WITHIN EXTERIOR WALLS, EXPOSED OUTDOORS OR EXPOSED IN UNFINISHED SPACES BELOW 6 FEET AFF, SHALL BE RIGID, METAL CONDUIT, SCHEDULE 40, HOT-DIPPED GALVANIZED, 3/4 INCH TRADE SIZE MINIMUM, INSTALLED PER NEC 344, COMPLETE WITH THREADED FITTINGS, DOUBLE LOCK-NUTS AND BUSHINGS AT BOXES AND CABINETS. IN DRY INTERIOR LOCATIONS, CONDUIT IN TRADE SIZES 2 INCH THRU 4 INCH DIA., MAY BE INTERMEDIATE METAL CONDUIT, INSTALLED PER NEC 342, COMPLETE WITH THREADED FITTINGS, DOUBLE LOCK-NUTS AND BUSHINGS AT BOXES AND CABINETS. FIELD CUT THREADS SHALL BE COATED WITH Z.R.C. COLD GALVANIZING SPRAY OR OTHER RUST-INHIBITING MATERIAL AFTER INSTALLATION. INTERIOR CONDUIT WITHIN WALLS AND ABOVE SUSPENDED CEILINGS, IN TRADE SIZES 1/2 INCH THRU 2 INCH DIA., SHALL BE ELECTRICAL METALLIC TUBING, INSTALLED PER NEC 358, COMPLETE WITH STEEL COMPRESSION OR SET-SCREW FITTINGS. UNDERGROUND EXTERIOR RACEWAYS IN TRADE SIZES 2 INCH DIA. AND LARGER, MAY BE SCHEDULE 40 PVC PER NEC 352, COMPLETE WITH 3 INCH MIN. CONCRETE ENVELOPE (ON ALL SIDES), TWO-INCH SPACERS BETWEEN ADJACENT DUCTS, INSULATED GROUND WIRE, AND RGS ELBOWS AND RISERS. INTERIOR, UNDER-SLAB CONDUIT MAY BE SCHEDULE 40 PVC PER NEC 352, IN TRADE SIZES 3/4 INCH THRU 4 INCH DIA., COMPLETE WITH INSULATED GROUND WIRE, AND RGS ELBOWS WHERE RISER IS EXPOSED. UTILIZE SCHEDULE 80 WHERE SUBJECT TO ABUSE. CONNECTIONS TO RECESSED FIXTURES, AND OTHER ITEMS SUBJECT TO VIBRATION OR OCCASIONAL MOTION, SHALL BE MADE WITH FLEXIBLE METAL, ZINC-COATED STEEL CONDUIT OR MC CABLE, COMPLETE WITH STEEL FITTINGS, IN LENGTHS NOT TO EXCEED 6 FEET, INSTALLED PER NEC. FOR PUMPS, KITCHEN EQUIPMENT, OR WHERE SUBJECT TO DAMPNESS OR OILY ENVIRONMENTS, FLEXIBLE CONDUIT SHALL BE NEOPRENE JACKETED, COMPLETE WITH APPROVED FITTINGS. RACEWAYS ENTERING REFRIGERATED SPACES, PENETRATING EXTERIOR WALLS, OR ENTERING BELOW GRADE SHALL BE SEALED TO PREVENT THE PASSAGE OF MOISTURE AND CONDENSATION.

F. **BOXES:** FLUSH DEVICE BOXES SHALL BE DEEP, GALVANIZED, STAMPED STEEL BOXES, WITH PLASTER RINGS WHERE REQUIRED. EXPOSED DEVICE BOXES SHALL BE CAST MALLEABLE IRON TYPE FD WITH THREADED HUBS. INTERIOR PULL AND JUNCTION BOXES SHALL BE NEMA 1 GALVANIZED OR PAINTED STAMPED STEEL WITH SCREW COVERS. IN FIRE RATED WALLS AND CEILINGS, BOXES SHALL BE TWO-GANG MAXIMUM, AND CAREFULLY LOCATED TO MAINTAIN FIRE RATINGS; I.E. NO MORE THAN 100 SQUARE INCHES OF BOXES IN 100 SQUARE FEET OF WALL/CEILING WITH BOXES ON OPPOSITE SIDES OF WALL SEPARATED BY 24 HORIZONTAL INCHES MINIMUM, UNLESS WRAPPED WITH FIRE PROOFING PUTTY. SMALL EXTERIOR BOXES SHALL BE CAST TYPE WITH GASKETED COVERS, OR NEMA 4X STAINLESS STEEL FOR LARGER BOXES. FLUSH-IN-GRADE EXTERIOR BOXES SHALL BE NON-METALLIC, 12 BY 12 BY 12 INCH MINIMUM, WITH MATCHING COVER, QUAZITE PC SERIES, SYNERTECH S SERIES, OR EQUAL.

G. **FLEXIBLE CABLE:** WHERE APPROVED BY THE LOCAL INSPECTION AUTHORITY HAVING JURISDICTION, CONCEALED, BRANCH CIRCUIT WIRING FOR LIGHTING CIRCUITS #14 AWG THRU #10 AWG, MAY BE INSTALLED USING TYPE "MC" CABLE, INSTALLED PER NEC 330, COMPLETE WITH INTEGRAL GROUND WIRE. TERMINATIONS OF FLEXIBLE CABLE SHALL INCLUDE PROPERLY LISTED FITTINGS AT EACH ENCLOSURE. DROPS TO PANELS OR LOCAL SWITCHES SHALL BE CONCEALED. (***WHERE TWO VOLTAGE SYSTEMS ARE USED:) MC CABLE CONDUCTORS SHALL BE TAGGED OR TAPED OR OTHERWISE IDENTIFIED AT EVERY TERMINATION TO INDICATE WHICH PHASE AND VOLTAGE SYSTEM TO WHICH EACH IS CONNECTED PER NEC 210.5C (WHEN VARIOUS CONDUCTOR COLORS ARE NOT SUPPLIED).

H. **SUPPORTS:** FURNISH AND INSTALL ALL REQUIRED MISCELLANEOUS STEEL SUPPORTS FOR MOUNTING OF PANELS, RACEWAYS, FIXTURES, CABINETS, BOXES, ETC. ALL EQUIPMENT SHALL BE RIGIDLY SUPPORTED FROM THE BUILDING STRUCTURE, WITH COMPONENTS RATED FOR TWICE THE ACTUAL LOAD OR WEIGHT. ALL INTERIOR SUPPORTS SHALL BE PAINTED STEEL STRUT WITH MATCHING FITTINGS AND HARDWARE, PLATED THREADED ROD, AND AUXILIARY STRUCTURAL STEEL. EXTERIOR SUPPORTS SHALL BE GALVANIZED STRUT WITH MATCHING FITTINGS AND STAINLESS STEEL HARDWARE. FIELD CUT GALVANIZED SUPPORTS SHALL BE COATED WITH Z.R.C. COLD GALVANIZING SPRAY OR OTHER RUST-INHIBITING MATERIAL AFTER INSTALLATION. PROVIDE A 4 INCH HIGH CONCRETE HOUSEKEEPING PAD FOR ALL FLOOR MOUNTED EQUIPMENT.

2.4. EQUIPMENT, GEAR AND WIRING DEVICES

A. **DISCONNECTS:** SAFETY SWITCHES SHALL BE HEAVY DUTY, H.P. RATED, 250 OR 600 VOLTS AC RATED TO MATCH THE CIRCUIT SHOWN, WITH GROUND LUG, REJECTION STYLE FUSE CLIPS AND NEMA 1 ENCLOSURE INDOORS OR NEMA 3R ENCLOSURE OUTDOORS; AS MANUFACTURED BY SQUARE D, SIEMENS, GENERAL ELECTRIC, OR CUTLER-HAMMER.

B. **FUSES:** FUSES SHALL BE DUAL-ELEMENT, TIME-DELAY, REJECTION STYLE, CLASS RK-5 FOR FUSES UP TO 600 AMPERES; BUSSMANN TYPE "FRN" (250 VOLT) OR TYPE "FRS" (600 VOLT). LARGER FUSES SHALL BE CLASS L, BOLT-IN STYLE; BUSSMANN "HI-CAP". EQUAL FUSES MANUFACTURED BY MERSEN OR LITTLEFUSE, WILL BE ACCEPTABLE. PROVIDE ONE SET OF THREE SPARE FUSES FOR EACH SIZE AND TYPE INSTALLED.

C. **STARTERS:** PROVIDE A MANUAL STARTER, WITH OVERLOAD, PILOT LIGHT, TOGGLE SWITCH OPERATOR, AND NEMA 1 ENCLOSURE (FLUSH MOUNTED WHEREVER POSSIBLE), FOR EACH FRACTIONAL HORSEPOWER, SINGLE PHASE, MOTOR LARGER THAN 1/10 HP. LOCATE STARTERS WHERE SHOWN, OR ADJACENT TO MOTOR. MANUAL STARTERS SHALL BE SQUARE D CLASS 2510, OR EQUAL BY ALLEN-BRADLEY, SIEMENS, GENERAL ELECTRIC, OR CUTLER-HAMMER. PROVIDE A COMBINATION FUSIBLE SWITCH & NEMA RATED MAGNETIC STARTER, COMPLETE WITH NEMA 1 ENCLOSURE, PILOT LIGHT, H-O-A CONTROL AND FUSED C.P.T., FOR EACH THREE PHASE MOTOR LARGER THAN 1/2 H.P. COMBINATION STARTERS SHALL BE SQUARE D CLASS 8538, OR EQUAL BY ALLEN-BRADLEY, SIEMENS, GENERAL ELECTRIC, OR CUTLER-HAMMER.

D. **CONTACTORS:** PROVIDE THE LIGHTING CONTACTORS AS INDICATED. CONTACTORS SHALL BE ELECTRICALLY HELD, MULTI-POLE, AMPERE RATED AS NOTED, COMPLETE WITH 120 VOLT FUSED CONTROL, NEMA 1 ENCLOSURE AND H-O-A SELECTOR SWITCH IN COVER. PROVIDE FLUSH OR SURFACE MOUNTED ENCLOSURE AS INDICATED OR REQUIRED. CONTACTORS SHALL BE SQUARE D CO. 8903 OR EQUAL BY SIEMENS, CUTLER-HAMMER, GENERAL ELECTRIC, OR ASCO.

E. **WIRING DEVICES:** DEVICES SHALL BE COMMERCIAL GRADE, COMPLETE WITH THERMOPLASTIC FACE OR HANDLE, OF THE TYPE, RATING, AND CONFIGURATION AS INDICATED ON THE PLANS. DEVICES SHALL BE SUPPLIED FROM A SINGLE MANUFACTURER, WHEREVER POSSIBLE, TO STANDARDIZE ON COLOR AND REPLACEMENTS. DEVICE COLOR SHALL BE WHITE (USED WITH PLASTIC CP) OR GRAY (USED WITH BRUSH S.S. CP), OR AS SELECTED BY THE ARCHITECT/OWNER, TO MATCH THE BUILDING FINISHES. COVER PLATES SHALL BE SMOOTH HIGH IMPACT MATCHING PLASTIC OR BRUSHED STAINLESS STEEL IN FINISHED AREAS (COORDINATE WITH DEVICE COLOR), COORDINATE WITH THE ARCHITECT/OWNER, GALVANIZED IN INDUSTRIAL AREAS, AND GASKETED, FLAP-TYPE "EXTRA DUTY WEATHERPROOF-IN-USE" TYPE IN OUTDOOR AREAS. COVER PLATE COLOR SHALL MATCH OR COORDINATE WITH DEVICE OR AS SELECTED BY THE ARCHITECT/OWNER. WIRING DEVICES AND COVER PLATES SHALL BE AS MANUFACTURED BY HUBBELL, PASS & SEYMOUR, LEVITON, COOPER, OR SLATER.

F. **PANELBOARDS:** PANELS SHALL BE DEAD FRONT, AND EQUIPPED WITH BOLTED TYPE, THERMAL-MAGNETIC MOLDED CASE CIRCUIT BREAKERS AS INDICATED. UNLESS NOTED OTHERWISE, ENCLOSURES SHALL BE OF CODE GAUGE STEEL, WITH GALVANIZED TUB, NOMINAL 5 3/4 IN. DEEP BY 20 IN. WIDE, NEMA 1, WITH CONCEALED TRIM CLAMP DESIGN, SURFACE OR FLUSH TRIM AS INDICATED, HINGED AND LOCKING DOOR, AND COPPER OR ALUMINUM BUS, AMPERE RATING AS INDICATED. PANELS SHALL BE BEAR A U.L. RATING INDICATING THE MAXIMUM NUMBER OF BREAKER POLES PERMITTED. PANELS EXCEEDING 42 USEABLE POLES SHALL BE PERMITTED ONLY WHERE THE MANUFACTURER'S NAMEPLATE REFLECTS THIS LISTING. PROVIDE A TYPEWRITTEN GLAZED CIRCUIT DIRECTORY INDICATING "AS INSTALLED" LOAD DESCRIPTIONS. PROVIDE GROUPING OF MULTI-WIRE BRANCH CIRCUITS AS REQUIRED BY NEC 210.4(D), WHERE LIGHTING CIRCUITS ARE CONTROLLED ONLY FROM THE PANEL BREAKERS, PROVIDE "SWITCHING DUTY" RATED BREAKERS. PROVIDE HACR, GFP AND SHUNT TRIP RATED BREAKERS WHERE NOTED OR REQUIRED. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE REQUIRED MINIMUM INTERRUPT RATING OF THE PANELBOARD AND BREAKERS AND DEMONSTRATE THE EFFECTIVENESS OF THE PROTECTION PROVIDED. THE ELECTRICAL CONTRACTOR SHALL EMPLOY THE SERVICES OF HIS SUPPLIER OR THE PANELBOARD MANUFACTURER TO PROVIDE THE NECESSARY SHORT CIRCUIT CALCULATIONS. RECEPTACLE PANELS SHALL BE RATED FOR 120/208 OR 120/240 VOLTS, WITH BREAKERS RATED FOR 10 KAIC MINIMUM; SQUARE D CO. NQ SERIES OR EQUAL BY SIEMENS, GENERAL ELECTRIC, OR CUTLER-HAMMER. LIGHTING/POWER PANELS SHALL BE RATED FOR 480/277 VOLTS, WITH BREAKERS RATED FOR 18 KAIC MINIMUM; SQUARE D CO. NF SERIES OR EQUAL BY SIEMENS, GENERAL ELECTRIC, OR CUTLER-HAMMER.THE USE OF PRODUCTS WITH SERIES RATINGS IS ACCEPTABLE WHERE PERMANENTLY LABELED AS A WARNING TO FUTURE USERS.

G. **SERVICE ENTRANCE:** SELECTED SWITCHBOARDS, PANELBOARDS OR SAFETY SWITCHES, AS INDICATED, SHALL BE UTILIZED AND BE U.L. RATED AS SERVICE ENTRANCE EQUIPMENT. THESE SHALL BE COMPLETE WITH AN INSULATED SOLID NEUTRAL ASSEMBLY, REMOVABLE BONDING LINK, AND INTERNAL GROUND LUGS FOR THE BONDING AND GROUNDING CONDUCTORS SHOWN OR REQUIRED. PROVIDE EXTERNAL GROUND LUGS FOR INTERSYSTEM BONDING CONNECTIONS OR A GROUNDING ASSEMBLY AT THE COMMUNICATIONS SERVICE LOCATIONS FOR BONDING THERETO. PROVIDE GROUNDING BUSHINGS AS REQUIRED, AND ADDITIONAL LABELING TO DENOTE SERVICE ENTRANCE USAGE. PROVIDE AN ENGRAVED LABEL DENOTING THE AVAILABLE SHORT CIRCUIT CURRENT, DATE OF CALCULATION, AND ANY ASSUMPTIONS INDICATED ON THE PLANS FOR THAT CALCULATION. SEE NEC 110.24A.

H. **SPD:** FURNISH AND INSTALL A HEAVY DUTY SURGE SUPPRESSION DEVICE RATED FOR PARALLEL CONNECTION TO A 120/208 VOLT, THREE PHASE, FOUR WIRE GROUNDED WYE SYSTEM, COMPLETE WITH COVER MOUNTED FAULT INDICATORS, REMOTE ALARM CONTACT, AND HINGED COVER ENCLOSURE. INSTALLATION SHALL CONFORM TO NEC 285. SPD SHALL COMPLY WITH UL 1449 THIRD EDITION FOR SINGLE AND REPETATIVE TESTING AT 6KV, 3KA TESTING. TYPE 1 SPD's (SERVICE ENTRANCE) FOR 120/208 VOLT SYSTEMS SHALL HAVE A VPR NOT EXCEEDING 850 VOLTS FOR L-N, L-G AND N-G, AND NOT EXCEEDING 1300 VOLTS FOR L-L. (TYPE 1 SPD's (SERVICE ENTRANCE) FOR 277/480 VOLT SYSTEMS SHALL HAVE A VPR NOT EXCEEDING 1300 VOLTS FOR L-N, L-G AND N-G, AND NOT EXCEEDING 2100 VOLTS FOR L-L) WITH A PEAK SINGLE SURGE CURRENT RATING OF AT LEAST 150 KILOAMPERES PER MODE. TYPE 2 SPD's (INTERNAL DISTRIBUTION) FOR 120/208 VOLT SYSTEMS SHALL VPR RATINGS TO MATCH THE TYPE 1 SPD, BUT WITH A PEAK SINGLE SURGE CURRENT RATING OF AT LEAST 75 KILOAMPERES PER MODE. SPD SHALL HAVE A SINE WAVE TRACKING SUPPRESSION NETWORK WITH SEPARATE MODULES FOR LINE-LINE, LINE-NEUTRAL, LINE-GROUND AND NEUTRAL TO GROUND MODES. SPD SHALL BE AS MANUFACTURED BY LIEBERT, CURRENT TECHNOLOGY, L.E.A., SQUARE D., CUTLER-HAMMER, OR A.P.T.. SUBMIT COMPLETE CATALOG AND TEST DATA VERIFYING SPECIFICATION COMPLIANCE. ABOVE MANUFACTURERS MAY NOT HAVE UNITS MEETING THIS SPECIFICATION.

2.5. LIGHTING AND CONTROLS

A. **LIGHT FIXTURES:** FURNISH AND INSTALL THE LIGHT FIXTURES AS INDICATED ON THE PLANS AND SCHEDULES. FIXTURES SHALL BE COMPLETE WITH LAMPS, SOCKETS, CANOPIES, SUSPENSION ACCESSORIES, REFLECTORS, BALLASTS, DRIVERS, LENSES, LOUVERS, PLASTER FRAMES, ETC. PRISMATIC LENSES SHALL BE 100% ACRYLIC, ONE-EIGHTH INCH NOMINAL THICKNESS. ELECTRONIC LED DRIVERS AND POWER SUPPLIES SHALL BE RATED FOR LONG LIFE AND MATCHED TO THE LED ARRAY SUPPLIED. SELF-CONTAINED EMERGENCY LIGHTING UNITS SHALL INCLUDE BUILT-IN BATTERIES, CHARGER, TRANSFER RELAY, (LOW BATTERY DISCONNECT, AND SELF-DIAGNOSTIC/TEST CIRCUITRY); SUCH UNIT EQUIPMENT SHALL BE CONNECTED TO THE NORMAL OR NIGHT LIGHT CIRCUIT IN THE SPACE, BUT AHEAD OF ANY LOCAL SWITCHES, LIGHTING CONTACTORS OR RELAYS. FIXTURES SHALL NOT RELY ENTIRELY ON THE CEILING SUSPENSION SYSTEM FOR MOUNTING, BUT SHALL ALSO BE SUPPORTED FROM THE STRUCTURE. PROVIDE A SEPARATE POWER CONNECTION FOR EACH FIXTURE OR CONTINUOUS AND CONTIGUOUS FIXTURE ROW (THROUGH-WIRING NOT PERMITTED). EXTERIOR FIXTURES SHALL ALSO BE PROVIDED WITH THE POLES, CONCRETE FOUNDATIONS, ANCHOR BOLTS, GROUNDING, LOW TEMPERATURE BALLASTS, ETC., AS NOTED OR REQUIRED.

PART 3 EXECUTION

3.1. GENERAL:

A. ALL EQUIPMENT INSTALLATION PROCEDURES SHALL BE BASE ON FUNDAMENTAL ENGINEERING AND CONSTRUCTION PRINCIPLES IN CONFORMANCE WITH ALL APPLICABLE CODES, STANDARDS AND ORDINANCES.

B. THE ELECTRICAL CONTRACTOR SHALL INSTALL ALL ELECTRICAL EQUIPMENT IN CONFORMANCE WITH MANUFACTURER ISSUED INSTRUCTIONS AND RECOMMENDATIONS.

C. PROVIDE ONE (1) YEAR WARRANTY ON ALL LABOR AND MATERIAL UNLESS NOTED OTHERWISE.

D. COORDINATE LOCATIONS OF ALL ELECTRICAL PANELS AND EQUIPMENT WITH NEW OR EXISTING OVERHEAD PIPING AND DUCT WORK TO AVOID INTERFERENCES AND MEET REQUIRED DEDICATED ELECTRICAL SPACE AND CLEARANCES.

3.2. **ELECTRICAL SITE WORK:** COORDINATE ALL EXTERIOR WORK WITH AFFECTED UTILITIES AND THE OWNER. PROVIDE THE EXCAVATION, BACKFILL, COMPACTION AND TESTING, NECESSARY TO INSTALL THE UNDERGROUND RACEWAYS, HANDHOLES, MANHOLES AND EQUIPMENT FOUNDATIONS SHOWN ON THE PLANS. CONCRETE FOR PAVING AND EQUIPMENT PADS SHALL BE 3000 PSI, FORMED, LEVELED, TROWELLED AND FINISHED PER INDUSTRY STANDARDS. CONCRETE BACKFILL FOR DUCT BANKS MAY BE "K"-CRETE. ALL PAVING SHALL BE SAWCUT PRIOR TO REMOVAL. UNDERGROUND SERVICE CONDUITS SHALL BE ENCASED IN CONCRETE OR BE PROVIDED WITH A PLASTIC WARNING TAPE IN THE TRENCH ABOVE THE CONDUITS PER NEC 300.5. UTILIZE HEAVY WALL HDPE CONTINUOUS PLASTIC CONDUIT RATED FOR DIRECT BORING APPLICATIONS WHERE INSTALLED VIA DIRECT BORE. REPAIR ALL LAWNS, PLANTINGS, PAVEMENT, AND OTHER EXTERIOR FINISHES TO MATCH THE ADJACENT AREAS AT THE COMPLETION OF THE PROJECT.

ELECTRICAL DRAWING LIST

DWG NO.	TITLE	FILE NO.
E001	ELECTRICAL SPECIFICATIONS AND DRAWING LIST	22056E001.dwg
E002	ELECTRICAL LEGEND, SCHEDULE, SINGLE LINE AND PANEL SCHEDULE	22056E002.dwg
E101	LIGHTING AND POWER PLAN	22056E101.dwg
E201	SITE PLAN	22056E201.dwg

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02/23/2024

ROBERT T. BRANNAN
E-54100

Scale	AS INDICATED
Date	10/27/2023
Job No.	24001561
Designed by	TRD
Drawn by	TRD
Checked by	JTH
Approved by	RTB
Status	

REVISIONS

No.	Description	Date
5	ISSUED FOR ADDENDUM 2	03/22/2024
4	ISSUED FOR BIDDING	03/01/2024
3	ISSUED FOR BUILDING PERMITS	02/23/2024
2	ISSUED FOR CONSTRUCTION	02/12/2024
1	ISSUED FOR ODNR REVIEW	02/05/2024

Client
CITY OF FOSTORIA

Project
FOSTORIA SPLASH PAD
RESTROOM ADDITIONS

Drawing
ELECTRICAL SPECIFICATION AND LEGEND

E001

ELECTRICAL LEGEND

ABBREVIATIONS

A12	ALPHANUMERIC LABEL INDICATES PANEL AND CIRCUIT TO WHICH ITEM IS CONNECTED (I.E. PANEL A, CIRCUIT 12)
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
CCT	CIRCUIT
C.P.	COVER PLATE
E.C.	ELECTRICAL (SUB) CONTRACTOR
F.B.O.	FURNISHED BY OTHERS, INSTALLED AND/OR WIRED BY ELECTRICAL CONTRACTOR
HP	HORSEPOWER
L.D.	LOCATE AS DIRECTED
M.C.	MECHANICAL (HVAC, PLBG, FP, OR TC) (SUB) CONTRACTOR
MH	MOUNTING HEIGHT TO BOTTOM OF DEVICE, BOX, OR FIXTURE, UNO
MIN	MINIMUM
OREQ	OR EQUAL
UNO	UNLESS NOTED OTHERWISE
W/	COMPLETE WITH
WP	WEATHERPROOF DEVICE, ENCLOSURE OR COVER PLATE.

(2) INDICATES NOTE–SEE TABULATION ON SAME SHEET

INDICATES MECHANICAL OR HEATING EQUIPMENT ITEM, SEE MECHANICAL EQUIPMENT SCHEDULE

LED/FLUORESCENT FIXTURE–SEE SCHEDULE–SHOWN TO SCALE (APPROX.)

SINGLE LAMP STRIP–SEE SCHEDULE–SHOWN TO SCALE (APPROX.)

INDICATES FIXTURE WITH ONE NORMAL DRIVER & ONE EMERGENCY DRIVER.

WALL MOUNTED FIXTURE–SEE SCHEDULE

$M OCCUPANCY SWITCH–800 VA–120/277V–LINEVOLTAGE–W/C.P.–ADJUSTABLE TIMEOUT– 15 MINUTE MINIMUM, W/ON & OFF OVERRIDE SWITCH–DUAL TECHNOLOGY (IR/US) SENSING–M.H. 44". SENSORSWITCH #WSX–PDT–WH OREQ. COLOR TO MATCH OTHER DEVICES.

DUPLEX RECEPT.–20A–120V–NEMA 5–20R W/C.P.– COLOR SELECTED BY HUBBELL #HBL5352W OREQ.

DUPLEX GFCI RECEPT.–20A–125V–NEMA 5–20R W/C.P.– COLOR SELECTED BY ARCHITECT – M.H.16" IN READILY ACCESSIBLE LOCATION. HUBBELL #GFRST20W OREQ.

WP DUPLEX GFCI RECEPT.–WEATHER AND TAMPER RESISTANT DEVICE TO MATCH ABOVE–W/"EXTRA DUTY W.P. IN USE" METAL FLAP C.P.–M.H. 24" IN READILY ACCESSIBLE LOCATION. HUBBELL #GF5362SGW/WP26E OREQ.

(1) OUTLET SHALL BE A DUPLEX OR MATCHING RECEPTACLE IF EQUIPMENT IS FURNISHED WITH CORD AND PLUG, OR JUNCTION BOX AND DISCONNECT SWITCH WITH SEALTITE CONNECTION IF EQUIPMENT IS TO BE WIRED DIRECT. IT SHALL BE THE ELECTRICAL CONTRACTORS RESPONSIBILITY TO VERIFY THE REQUIRED OUTLET AND TO WIRE ALL EQUIPMENT COMPLETE.

RECEPT. PANEL–CIRCUIT BREAKER TYPE–MH 6'0" TO TOP

MOTOR–FRACTIONAL H.P.–120 VOLT (EF=EXH. FAN; UH=UNIT HEATER; MD=MOTORIZED DAMPER)

(3) MOTOR–SIZE AND FUNCTION AS NOTED–3 PHASE

MANUAL MOTOR SWITCH–120V–1 PHASE–W/ PILOT LT.– MH 44" (2P= TWO POLE)

COMBINATION FUSED SWITCH & MAGNETIC STARTER W/FUSED C.P.T. + PILOT DEVICE AS REQUIRED–NEMA 1 ENCLOSURE UNO–FURNISHED AND INSTALLED BY E.C. – MH 6'0" TO TOP UNO (NF=NON–FUSED; 3R=NEMA 3R ENCL; GK=NEMA 12 GASKETED ENCL; 4X=NEMA 4X STAINLESS STEEL ENCL)

WIRE TICKS INDICATE BRANCH CIRCUIT PHASE, NEUTRAL, & GROUND WIRES, RESPECTIVELY

JUNCTION BOX–REQUIRED WHERE SHOWN

CONDUIT–CONCEALED IN CEILING, WALL OR FLOOR OF NEW CONSTRUCTION. CONCEALED WHEREVER POSSIBLE IN EXISTING CONSTRUCTION (1/2" OR 3/4" DIA. MIN.)

HOMERUN TO PANEL OR LOCATION NOTED

INDICATES CONCEALED CONDUIT UNDERGROUND/UNDERFLOOR – 3/4" MIN.

INDICATES LOCAL SWITCHING OR CONTROL FUNCTION

C CONNECT TO EQUIPMENT NOTED–PROVIDE BONDING PLATE OR ATTACHMENT LUG AS REQUIRED

GROUND ROD–COPPERWELD–3/4" x 10 FT.–TOP AT 6" BELOW GRADE–COMPLETE WITH CADWELD CONNECTION TO BUILDING STEEL OR EQUIPMENT.

WP DUPLEX GFCI RECEPT.–WEATHER AND TAMPER RESISTANT DEVICE–20A–120V–NEMA 5–20R. HUBBELL #GF5362SGW/WP26E OREQ.

30 SINGLE TWLK RECEPT. 30A–208V–1 PH.–3W+GRD–NEMA L14–30R. HUBBELL #HBL2710 OREQ.

TS SEVEN–DAY TIME SWITCH, 2 POLE, 2–CHANNEL PROGRAMMABLE TIMER, BATTERY BACK–UP, NEMA 1 ENCLOSURE, TORK MODEL DG200A OREQ.

CP PRE–WIRED CONTROL PANEL WITH MAGNETIC STARTERS, CONTACTORS, ETC., PROVIDED WITH EQUIPMENT. WITH OR WITHOUT DISCONNECT AS SHOWN. POWER FEED WIRING BY E.C.

PANELBOARD SCHEDULE

PANEL: RP–A
MAINS: 200A M.C.B.
VOLTS: 120/208Y–3ø–4W–SN
MOUNTING: SURFACE

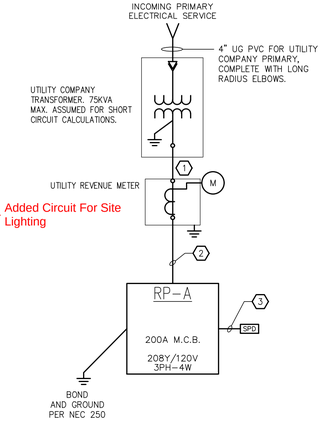
NOTES:
1 GFCI BREAKER
2 30 MILLIAMP EQUIPMENT GROUND FAULT TRIP
3 SHUNT TRIP
4 ARC FAULT
5 SWITCHED NEUTRAL
6 MOTOR OPERATED
7 NON–CONSEQUENT LOAD
8 RELAY CONTROLLED
22 KAIC RATING

	LOAD DESCRIPTION	NOTES	VOLT AMPS	C.B. AMP	P	A	B	C	P	C.B. AMP	VOLT AMPS	NOTES	LOAD DESCRIPTION	
1	DWH–1		2250	30	2	2345			1	20	95		INTERIOR LTS	2
3	.		2250	30	2		2610		1	20	360		EXTERIOR LTS	4
5	PMP–1		3314	70	3			3518	1	20	204		PMP–2	6
7	.		3314	70	3	3314			1	20	0		SPARE	8
9	.		3314	70	3		3374		1	20	60		EF–1	10
11	SPARE		0	70	3			60	1	20	60		EF–2	12
13	.		0	70	3	2400			1	25	2400		HAND DRYER	14
15	.		0	70	3		2400		1	25	2400		HAND DRYER	16
17	RECPT MEN,WOMENS R.R.		360	20	1			2360	2	30	2000		RECPT PUMP ROOM	18
19	RECPT EXTERIOR		360	20	1	2360			2	30	2000		–	20
21	RECPT PUMP ROOM		360	20	1		360		1	20	0		EXTERIOR LTS TIMER	22
23	SPARE		0	20	2			0	1	20	0		SPARE	24
25	–		0	20	2	1500			1	20	1500		SPLASH PAD CONTROLLER	26
27	SPARE		0	20	2		165		1	20	165		SPLASH PAD AREA LTS.	28
29	–		0	20	2			0	1	20	0		SPARE	30
31	SPACE		0			0			1	20	0		SPARE	32
33	SPACE		0				0				0		SPACE	34
35	SPACE		0					0			0		SPACE	36
37	SPACE		0			0			3	30	0		SPD	38
39	SPACE		0				0		3	30	0		–	40
41	SPACE		0					0	3	30	0		–	42
	☐ HANDLE TIE					11919	8909	5938						
	◯ HANDLE LOCK					134%	BALANCE 100%	67%						

TOTAL LOAD: 26766 TOTAL AMPS: 74.4

Added Circuit For Site Lighting

PAD MOUNTED TRANSFORMER BY UTILITY COMPANY. MAXIMUM S.C. AVAILABLE 6939 SYM. RMS. AMPERES AT SECONDARY BUSHINGS BASED ON ASSUMED 3% Z. CONTRACTOR SHALL FIELD VERIFY MAX. FAULT INFORMATION WITH UTILITY COMPANY, AND POST SUCH AT PROJECT CONCLUSION, PER REQUIREMENTS OF THE NEC 110.24.

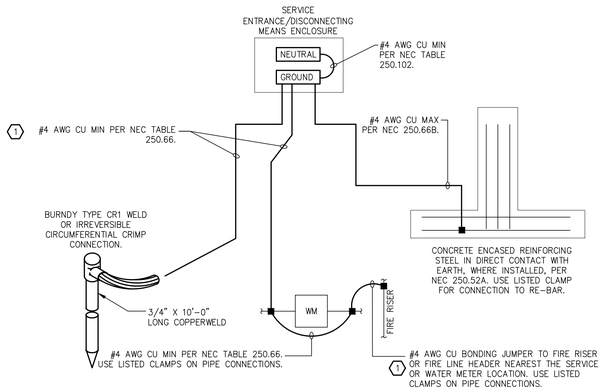


SINGLE LINE GIAGRAM

N.T.S.

SINGLE LINE NOTES

1. 4#3/0–2"C
2. 4#3/0+#4G–2"C
3. 4#10+#4G–3/4"C–SHORT AND STRAIGHT AS POSSIBLE.

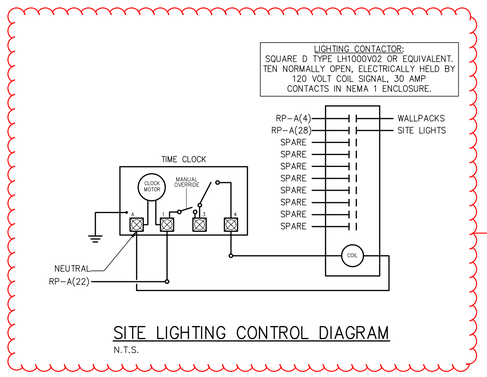


GROUNDING ELECTRODE SYSTEM

N.T.S.

(ALSO PROVIDE #12 AWG BONDING CONNECTION TO INTERIOR GAS LINE PER NEC 250.104, AT AN ACCESSIBLE LOCATION NEAR GAS WATER HEATER IF INSTALLED, WHERE PERMITTED BY THE LOCAL AUTHORITY HAVING JURISDICTION.)

1 GROUNDING ELECTRODE CONDUCTOR MAY BE ROUTED TO THE CLOSEST POINT OF THE GROUNDING ELECTRODE SYSTEM AND BONDED THERETO. BUILDING STEEL STRUCTURE IS A GROUNDING ELECTRODE IN THIS FACILITY.



Added Time Clock Detail

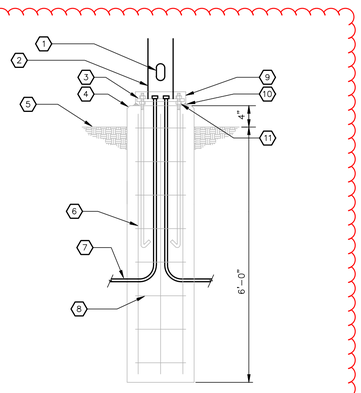
SITE LIGHTING CONTROL DIAGRAM

N.T.S.

FIXTURE SCHEDULE

MARK	LAMP CATEGORY	LAMP QTY/TYPE	VOLTS	DESCRIPTION	MFR. AND CATALOG SERIES	VA
A	LED	NOM 25W 3,146 LUMENS 3500K	120	2'X4' LED SURFACE MOUNTED, FROSTED ACRYLIC LENS, REGRESSED DOOR FRAME, WHITE TRIM, ELECTRONIC 0–10V DIMMING DRIVER, WITH EMERGENCY BATTERY PACK.	LITHONIA 2ACLX4–30L–EZ1–LP835–REV OR APPROVED EQUAL BY EATON, CREE, ETC.	30
B	LED	31.8W 5,000 LUMENS 3500K	120	LED LINEAR STRIP, ALUMINUM HOUSING, FLAT DIFFUSE LENS, WHITE FINISH, WITH EMERGENCY BATTERY PACK, CHAIN SUPENDED, 9' AFF.	LITHONIA CLX–L48–5000LM–SEF–L/LENS–MVOLT–GZ1–35K–80CRI–WH–REV OR APPROVED EQUAL BY EATON, CREE, ETC.	35
C	LED	40W 1,165 LUMENS 3500K	120	EXTERIOR LED WALLPACK, CAST ALUMINUM HOUSING, TEMPERED GLASS LENS, BLACK FINISH, ELECTRONIC DRIVER, SURFACE MOUNTING BRACKET, MOUNTED AT NOMINAL 7'–0" A.F.G.	LITHONIA VG05C–40LED–MVOLT–DBLB–BAA–LPI–REV OR APPROVED EQUAL BY EATON, CREE, ETC.	45
D	LED	50W 6128 LUMENS 3000K	120	GLASWERKS PRISMATIC LED HALLBROOK, P30 PERFORMANCE PACKAGE, SAG GLASS TYPE 3, MOUNTED ON A SINGLE ARM AND POLE BASE AT NOMINAL 20'–0" A.F.G, BLACK FINISH, DESIGN FOR 90MPH CONSTANT WIND VELOCITY, FINISH TO MATCH LUMINARIES.	LITHONIA GSLB3–P30–40K–MVOLT–SG3–QSM–BK BASE/ARM DAA–12–F4J–150–C06–BK–GRD–TMP–72 BCR–30IN–1A–TN–QSM–BK	55

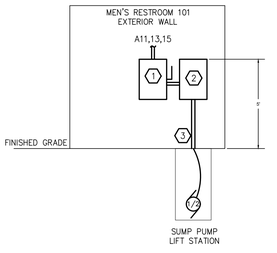
Added Site Fixtures



Added Site Pole Detail

POLE BASE DETAIL

N.T.S.



SUMP PUMP DETAIL

N.T.S.

DETAIL NOTES

1. 30 AMP–240V–3ø FUSES @ 15A NEMA 3R SWITCH. BOND AND GROUND PER NEC 250.
2. ALARM CONTROL PANEL
3. 3 #12 + #12G – 2" RMC CONDUIT FOR FLOAT SWITCH AND PUMP
4. COORDINATE WITH PLUMPING CONTRACTOR BEFORE ROUGH–IN.

KLEINFELDER
Bright People. Right Solutions.
1168 North Main Street, Bowling Green, OH 43402
8110 | PH: 419.352.5642 | www.kleinfelder.com

02/23/2024

STATE OF OHIO
ROBERT T. BRANNAN
E-54100
REGISTERED PROFESSIONAL ENGINEER

No.	Description	Date
5	ISSUED FOR ADDENDUM 2	03/22/2024
4	ISSUED FOR BIDDING	03/01/2024
3	ISSUED FOR BUILDING PERMITS	02/23/2024
2	ISSUED FOR CITY REVIEW	02/07/2024
1	ISSUED FOR ODNR REVIEW	02/05/2024

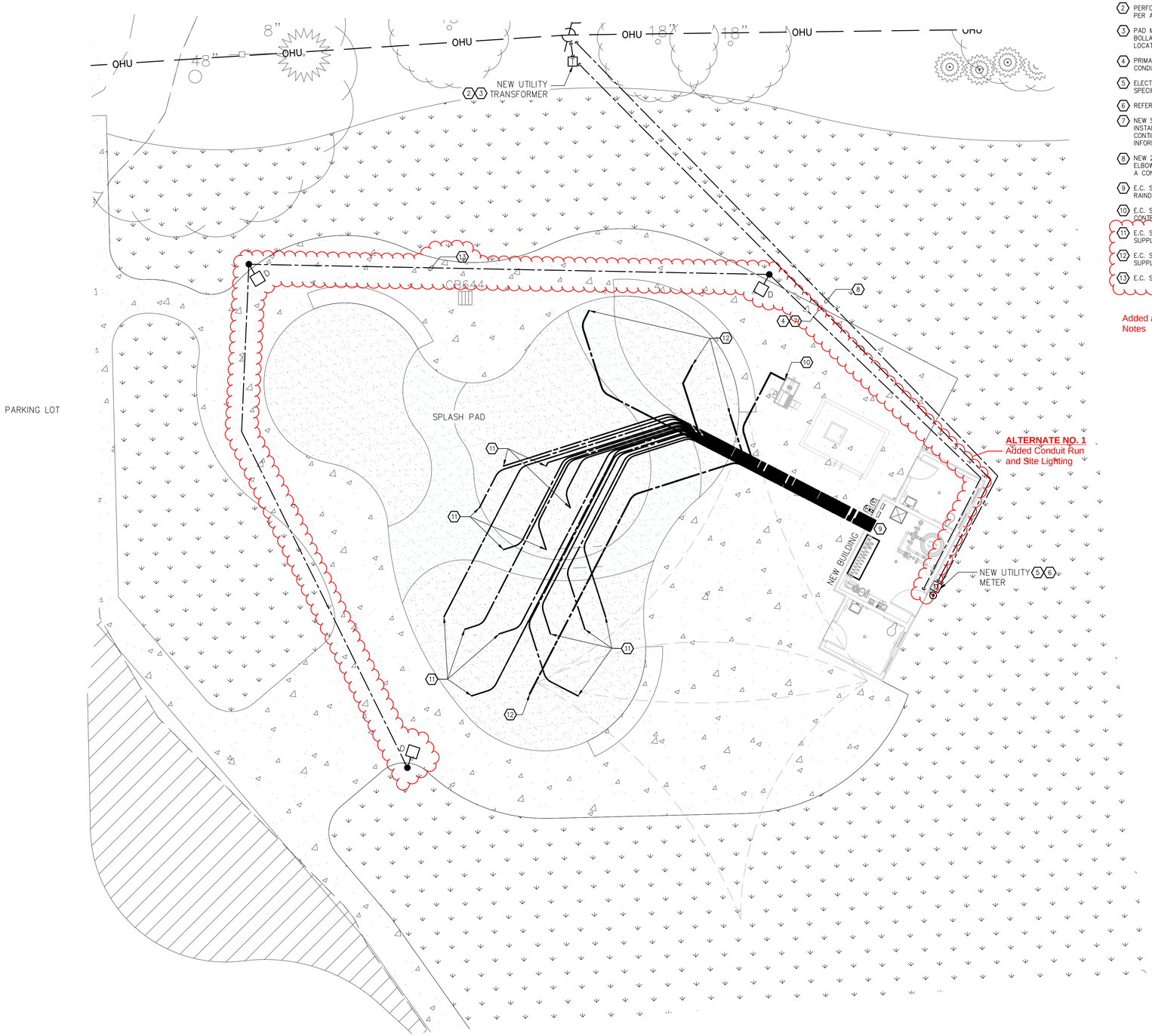
REVISIONS

Scale: AS INDICATED
Date: 10/27/2023
Job No.: 24001561
Designed by: TRD
Drawn by: TRD
Checked by: JTH
Approved by: RTB
Status:

Client: CITY OF FOSTORIA
Project: FOSTORIA SPLASH PAD RESTROOM ADDITIONS
Drawing: ELECTRICAL LEGEND, SCHED, DIAGRAMS, DETAILS

THIS ITEM HAS BEEN ELECTRONICALLY SIGNED AND SEALED BY ROBERT TIMOTHY BRANNAN, PE USING A DIGITAL SIGNATURE AND DATE. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

E002



ELECTRICAL SITE POWER AND LIGHTING PLAN
SCALE: 1/8" = 1'-0"

SHEET NOTES

1. FINAL EQUIPMENT CONNECTION REQUIREMENTS SHALL BE VERIFIED BY ELECTRICAL CONTRACTOR PRIOR TO ELECTRICAL ROUGH-IN. REFER TO MANUFACTURERS DRAWINGS AND SPECIFICATIONS FOR INSTALLATION. PROVIDE WIRING AND GROUNDING PER NEC 250, 680 AND MANUFACTURERS REQUIREMENTS.
2. PERFORM ALL SERVICE WORK IN ACCORDANCE WITH LOCAL ELECTRICAL UTILITY COMPANY SPECIFICATIONS AND PER APPROVED UTILITY COMPANY ENGINEERED WORK ORDERS.
3. PAD MOUNTED TRANSFORMER BY ELECTRICAL UTILITY COMPANY, CONCRETE PAD, GROUNDING AND PROTECTION BOLLARDS BY ELECTRICAL CONTRACTOR PER UTILITY COMPANY SPECIFICATIONS AND WORK ORDER FOR FINAL LOCATION AND PAD DESIGN.
4. PRIMARY SERVICE CABLES SUPPLIED AND INSTALLED BY ELECTRICAL UTILITY COMPANY. PRIMARY SERVICE CONDUITS, SECONDARY SERVICE CABLES, AND SECONDARY CONDUITS SUPPLIED AND INSTALLED BY E.C.
5. ELECTRICAL CONTRACTOR TO INSTALL METER BASE AND CONDUIT PER ELECTRICAL UTILITY COMPANY SPECIFICATIONS.
6. REFER TO SINGLE LINE DIAGRAM ON SHEET E002 FOR MORE INFORMATION.
7. NEW SECONDARY 4" PVC CONDUITS. LOCATE 24 INCHES BELOW GRADE MINIMUM. USE LONG SWEEP ELBOWS. INSTALL VIA DIRECT BORE OR HAND DUG TRENCH AND BACKFILL AS NOTED. WHERE HAND DUG BURY A CONTINUOUS PLASTIC WARNING TAPE 12" DIRECTLY ABOVE CONDUIT. REFERENCE SINGLE LINE FOR MORE INFORMATION.
8. NEW 2" PVC CONDUIT FOR DATA/TELEPHONE. LOCATE 12 INCHES BELOW GRADE MINIMUM. USE LONG SWEEP ELBOWS. INSTALL VIA DIRECT BORE OR HAND DUG TRENCH AND BACKFILL AS NOTED. WHERE HAND DUG BURY A CONTINUOUS PLASTIC MARKING TAPE 6" DIRECTLY ABOVE CONDUIT.
9. E.C. SHALL REFER TO RAINDROP DRAWINGS FOR DIMENSIONAL LOCATIONS FOR PLACEMENT. COORDINATE WITH RAINDROP FOR ADDITIONAL CONDUIT ROUGH-IN INSTALLATION OF CONDUITS FOR INTERIOR INSTALLATION.
10. E.C. SHALL PROVIDE 1"(PER NEC 40% FILL) CONDUIT WITH WITH 4C-6AWG FOR DIVER VALVE TO DMX CONTROLLER. COORDINATE TERMINATIONS OF CABLE WITH RAINDROP. INSTALL CONDUIT 12" BELOW GRADE.
11. E.C. SHALL PROVIDE 1" CONDUIT FROM DMX CONTROLLER TO LED FEATURES. TYPICAL 14 PLACES. CABLE IS SUPPLIED BY RAINDROP AND INSTALLED BY E.C. INSTALL CONDUIT 12" BELOW GRADE.
12. E.C. SHALL PROVIDE 1" CONDUIT FROM ACTIVATOR TO DMX CONTROLLER. TYPICAL 4 PLACES. CABLE IS SUPPLIED BY RAINDROP AND INSTALLED BY E.C. INSTALL CONDUIT 12" BELOW GRADE.
13. E.C. SHALL PROVIDE 2#12+#12G-1" CONDUIT 12" BELOW GRADE SPLASH PAD AREA LIGHTING.

Added and Revised Notes

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Date	10/27/2023
Job No.	240015611
Designed by	TRD
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Checked by	JTH
Approved by	RTB
Status	

Client: CITY OF FOSTORIA

Project: FOSTORIA SPLASH PAD RESTROOM ADDITIONS

Drawing: ELECTRICAL POWER AND LIGHTING SITE PLAN

E102

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