FOSTORIA SPLASHPAD
ADA RESTROOM FACILITY AND PUMP HOUSE

524 RIVER STREET
FOSTORIA, OHIO 44830

ARCHITECT & ENGINEER:

KLEINFELDER
Bright People. Right Solutions.
1168 North Main Street, Bowling Green, OH 43402
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LOCATION MAP

2017 OHIO BUILDING CODE REVIEW

SUMMARY:
Building is a public park restroom facility with two single use restrooms and a pump room for splash pad plumbing equipment. Building is designed for ADA accessibility using ICC A117.1 – 2009.

OBC RESEARCH

- •USE GROUP: U, Utility
- •BUILDING TYPE: V-B
  - o CMU walls and wood trusses, Combustible construction
- •SQUARE FEET: 388 s.f.
- •HEIGHT: 12'-0"
- •STORIES: ONE
- •FIRE SUPPRESSION: Building is NOT fire suppressed.
- •OCCUPANCY:
  - o Restrooms generally do not calculate occupancy loads.
  - o Restroom compartments are single use, and large enough for family style with 2 to 3 occupants.
  - o Pump room is off limits to general public and may have up to two maintenance personnel during splash pad equipment maintenance.
- •ACCESSIBILITY:
  - o Restrooms and designed for Accessibility per ICC A117.1 – 2009.
- •ATTIC ACCESS:
  - o Ceiling hatches are designed for each restroom ceiling for access above within trusses.
- •PLUMBING:
  - o MEN'S - One Water Closet, One Lavatory
  - o WOMEN'S - One Water Closet, One Lavatory
  - o Mop Sink included
  - o ADA Drinking Fountain included

DRAWING LIST

GENERAL

STRUCTURAL

PLUMBING

ELECTRICAL

CIVIL

ARCHITECTURAL

MECHANICAL

DATE	DESCRIPTION
12/05/2023	ISSUED FOR OWNER REVIEW
02/05/2024	ISSUED FOR ODNR REVIEW
02/23/2024	ISSUED FOR BUILDING PERMITS
03/01/2024	ISSUED FOR BIDDING

STATE OF OHIO
REGISTERED ARCHITECT
11770
02/07/24

ACCESSIBILITY & ROOM SIGNAGE

RAISED AND BRAILLED CHARACTERS AND PICTORIAL SYMBOL SIGNS (PICTOGRAMS):
- LETTERS AND NUMERALS SHALL BE RAISED 1/32" MIN. ABOVE THEIR BACKGROUND
- CHARACTERS SHALL BE UPPER CASE. (BRAILLE - THE INDICATION OF AN UPPERCASE LETTER OR LETTERS SHALL ONLY BE USED BEFORE THE FIRST WORD OF SENTENCES, PROPER NOUNS & NAMES, INDIVIDUAL LETTERS OF THE ALPHABET, INITIALS, OR ACRONYMS)
- CHARACTERS SHALL BE CONVENTIONAL FORM & SHALL NOT BE ITALIC, OBLIQUE, SCRIPT, HIGHLY DECORATIVE, OR OF OTHER UNUSUAL FORMS AND MUST BE ACCOMPANIED BY GRADE 2 BRAILLE.
- EQUIVALENT WRITTEN DESCRIPTION, IF ANY, MUST BE PLACED DIRECTLY BELOW PICTORGAM
- PICTOGRAM CAN BE ANY SIZE WITHIN A MINIMUM FIELD OF 6" IN HEIGHT. CHARACTERS OR BRAILLE SHALL NOT BE LOCATED IN THE PICTOGRAM FIELD.

FINISH AND CONTRAST:
- CHARACTERS AND BACKGROUND SHALL HAVE A MATTE OR OTHER NON-GLARE FINISH.
- CHARACTERS MUST CONTRAST WITH BACKGROUND (EITHER LIGHT ON DARK OR DARK ON LIGHT).
- PICTOGRAMS AND THEIR FIELDS SHALL HAVE A NON-GLARE FINISH & MUST CONTRAST WITH THEIR FIELDS (EITHER LIGHT ON DARK OR DARK ON LIGHT),

MOUNTING LOCATION AND HEIGHT:
- MUST BE MOUNTED ON WALL ADJACENT TO THE LATCH SIDE OF THE DOOR (IF AT ALL POSSIBLE) OTHERWISE SHALL COMPLY WITH SECTION 703.3.11.
- MUST BE LOCATED SO THAT A CLEAR FLOOR AREA 18" MIN. BY 18" MIN. CENTERED ON THE RAISED CHARACTERS IS PROVIDED BEYOND THE ARC OF ANY DOOR SWING BETWEEN THE CLOSED POSITION AND 45 DEGREE OPEN POSITION.
- VISUAL CHARACTERS SHALL BE 40" MIN. ABOVE THE FLOOR OF THE VIEWING POSITION, MEASURED TO THE BASELINE OF THE CHARACTER.
- RAISED CHARACTERS SHALL BE 48" MIN. ABOVE THE FLOOR, MEASURED TO THE BASELINE OF THE LOWEST RAISED CHARACTER AND 60" MAX. ABOVE THE FLOOR, MEASURED TO THE BASELINE OF THE HIGHEST RAISED CHARACTER.
- INSTALL SIGNAGE AT EACH ROOM ADJACENT TO ENTRY DOOR.

CHARACTER WIDTH:
- THE UPPERCASE LETTER "O" SHALL BE USED TO DETERMINE THE ALLOWABLE WIDTH OF ALL CHARACTERS OF A FONT.
- THE WIDTH OF THE UPPERCASE LETTER "O" SHALL BE 55% MIN. AND 110% MAXIMUM OF THE HEIGHT OF THE UPPERCASE LETTER "I" OF THE FONT.

CHARACTER STROKE WIDTH:
- THE UPPERCASE "I" SHALL BE USED TO DETERMINE THE ALLOWABLE STROKE WIDTH OF ALL CHARACTERS OF A FONT.
- THE STROKE WIDTH SHALL BE 10% MIN. AND 30& MAX. OF THE HEIGHT OF THE UPPERCASE LETTER "I" OF THE FONT.

CHARACTER HEIGHT:
- THE UPPERCASE LETTER "I" SHALL BE USED TO DETERMINE THE ALLOWABLE HEIGHT OF ALL CHARACTERS OF A FONT.
- THE HEIGHT IS ALSO DETERMINED FROM THE VIEWING DISTANCE OF THE SIGN BASED ON TABLE 703.2.4.
- THE HEIGHT OF THE UPPERCASE LETTER "I" OF THE FONT, MEASURED VERTICALLY FROM THE BASELINE OF THE CHARACTER, SHALL BE ⅝" MIN. AND 2" MAX.

SCHEDULE:
- INSTALL 'EXIT' SIGN AT EACH DOOR WHICH IS INDICATED ON THE ELECTRICAL DRAWINGS TO RECEIVE AN ILLUMINATED EXIT SIGN OR AS OTHERWISE INDICATED ON THE DRAWINGS
- INSTALL ANSI SIGNAGE AT EACH ACCESSIBLE MENS, WOMENS AND UNISEX TOILET ROOM

TOILET ROOM FIXTURE MOUNTING HEIGHTS AND NOTES

MK	DESCRIPTION	MNTG HGT	REMARKS		BASIS OF DESIGN
GB	STAINLESS STEEL GRAB BAR LENGTH NOTED ON DWG	33-36" 39-41"	TOP OF HORIZONTAL BAR	BTM. OF VERT. BAR	MFR. BOBRICK MODEL #: B-5806 x (REFER TO DWGS. FOR SIZE)
TP	SINGLE TOILET PAPER DISPENSER	--	SEE DISPENSER OUTLET LOCATION DETAILS		MFG. BOBRICK MODEL #: 7685
M	S.S. FRAMED MIRROR (SIZE AS NOTED ON DWGS.)	40" max	BTM. EDGE OF REFLECTION SURFACE		MFG. BOBRICK MODEL #: B-165
SD	SOAP DISPENSER	40"	TO OPERABLE PART		MFG. BOBRICK MODEL #: B-2111
BCS	BABY CHANGING STATION	34" max	TOP OF BED (OPEN POSITION)		MFG. KOALA KARE MODEL #: KB200
PT	PAPER TOWEL DISPENSER	48" max	TO DISPENSER OPENING		MFR. BOBRICK MODEL #: B-262
AT	ACCESSIBLE TOILET	17 - 19"	TOP OF SEAT		REFER TO PLUMBING DRAWINGS
LAV	LAVATORY	34" max	TOP OF RIM / PROTECT PIPES		REFER TO PLUMBING DRAWINGS
FE	FIRE EXTINGUISHER/CABINET	48"	TOP		

NOTES:
SIGNAGE FOR ACCESSIBLE TOILETS SHALL COMPLY WITH ICCI A117.1-2009 AND SHALL BE INSTALLED ON THE WALL ADJACENT TO THE LATCH SIDE OF THE DOOR AT 48" MIN. TO THE BASELINE OF THE LOWEST CHARACTER AND 60" MAX. ABOVE THE FINISH FLOOR TO THE BASELINE OF THE HIGHEST CHARACTER. SIGNAGE MUST BE LOCATED SO THAT A CLEAR FLOOR AREA 18" MIN. BY 18" MIN. CENTERED ON THE RAISED CHARACTERS IS PROVIDED BEYOND THE ARC OF ANY DOOR SWING BETWEEN THE CLOSED POSITION AND 45 DEGREE OPEN POSITION.

HOT WATER AND DRAIN PIPES UNDER LAVATORIES SHALL BE INSULATED OR OTHERWISE CONFIGURED TO PROTECT AGAINST CONTACT. THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER LAVATORY (REMOVE/ COVER/ PROTECT AS REQUIRED).

ACCESSIBLE WATER CLOSET FLUSH CONTROLS (FC) SHALL BE MOUNTED ON THE SIDE OPPOSITE THE SIDE WALL.

CLEAR FLOOR SPACE AND APPROACHES SHALL COMPLY WITH ICCI A117.1-2009.

MOUNTING HEIGHT OF 15" MIN. - 48" MAX. OF HIGHEST OPERABLE PART FOR CONTROLS, DISPENSERS AND RECEPTACLES FOR FORWARD REACH (UNOBSTRUCTED)

MOUNTING HEIGHT OF 15" MIN. - 48" MAX. OF HIGHEST OPERABLE PART FOR CONTROLS, DISPENSERS AND RECEPTACLES FOR SIDE REACH (UNOBSTRUCTED)

FIXED SIDE WALL GRAB BARS SHALL BE 42" MIN. IN LENGTH, LOCATED 12" MAX. FROM THE REAR WALL AND EXTENDING 54" MIN. FROM THE REAR WALL, IN ADDITION, A VERTICAL GRAB BAR 18" MIN. IN LENGTH SHALL BE MOUNTED WITH THE BOTTOM OF THE BAR LOCATED 39" MIN. AND 41" MAX. ABOVE THE FINISH FLOOR, AND WITH THE CENTERLINE OF THE BAR LOCATED 39" MIN. AND 41" MAX. FROM THE REAR WALL. FIXED REAR WALL GRAB BARS SHALL BE 36" MIN. IN LENGTH, AND EXTEND FROM THE CENTERLINE OF THE WATER CLOSET 12" MIN. ON THE SIDE CLOSEST TO THE WALL, AND 24" MIN. ON THE TRANSFER SIDE. GRAB BARS OVER 48" IN LENGTH TO HAVE CENTER SUPPORT

PROVIDE BLOCKING IN WALL BEHIND WALL MOUNTED FIXTURES AND ACCESSORIES AS REQUIRED

CHART IS NOT A MATERIAL LIST, DRAWINGS AND SPECIFICATIONS SHALL BE REFERENCED FOR REQUIRED MATERIALS

IF COVE CERAMIC TILE BASE IS NOT PROVIDED, USE COVED SCHLUTER STRIP STYLE DILEX-EHKS TO BE INSTALLED BETWEEN FLOOR AND WALL TILES IN ALL TOILET ROOMS.

MAXIMUM OFFSETS AT DOORWAY THRESHOLDS (INCLUDING THRESHOLD) SHALL NOT EXCEED 1/2"

DOOR CLOSERS SHALL BE ADJUSTED SO THAT FROM AN OPEN POSITION OF 90 DEGREES, THE TIME REQUIRED TO MOVE THE DOOR TO AN OPEN POSITION OF 12 DEGREES SHALL BE 5 SECONDS MINIMUM. DOOR SPRING HINGES SHALL BE ADJUSTED SO THAT FROM AN OPEN POSITION OF 70 DEGREES, THE DOOR SHALL MOVE TO THE CLOSED POSITION IN 1.5 SECONDS MINIMUM.

CIRCULAR HANDRAILS SHALL HAVE AN OUTSIDE DIAMETER OF 1¼" MIN. TO 2" MAX. NON CIRCULAR HANDRAILS SHALL HAVE A PERIMETER DIMENSION OF 4" MIN. TO 6¼" MAX. AND A CROSS SECTION DIMENSION OF 2¼" MAX. THE SPACE BETWEEN THE WALL AND THE GRAB BAR SHALL BE 1½" MIN. GRAB BARS SHALL NOT ROTATE WITHIN THEIR FITTINGS.

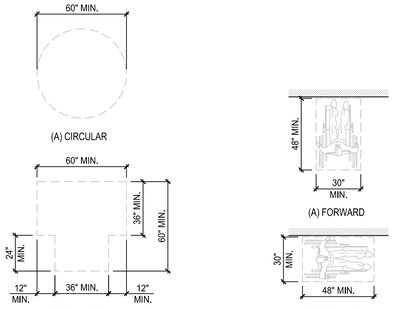
ALL GRAB BARS AND LAVATORIES SHALL BE ABLE TO WITHSTAND 250 LB.

ELECTRICAL SWITCHES SHALL BE MOUNTED 48" ABOVE THE FINISHED FLOOR AND COMMUNICATION SYSTEM RECEPTACLES, OUTLETS, ETC, SHALL BE MOUNTED 15" ABOVE THE FINISHED FLOOR

CONTROLS AND OPERATION MECHANISMS SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST. THE FORCE REQUIRED TO ACTIVATE CONTROLS SHALL BE NOT GREATER THAN 5 LB.

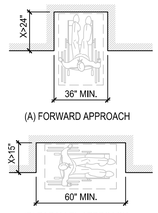
WHERE PROVIDED, AUDIBLE EMERGENCY ALARMS SHALL PRODUCE A SOUND THAT EXCEEDS THE PREVAILING EQUIVALENT SOUND LEVEL IN THE ROOM OR SPACE BY AT LEAST 15DBA OR EXCEED ANY MAXIMUM SOUND LEVEL WITH A DURATION OF 60 SECONDS BY 5DBA, WHICHEVER IS LOUDER. SOUND LEVELS FOR ALARM SIGNALS SHALL NOT EXCEED 120DBA.

VISUAL ALARM SIGNAL APPLIANCES SHALL BE INTEGRATED INTO THE BUILDING OR FACILITY PLACED 85 IN. ABOVE THE HIGHEST FLOOR LEVEL WITHIN THE SPACE OR 6 IN. BELOW THE CEILING, WHICHEVER IS LOWER.

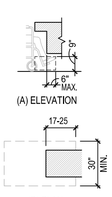


WHEELCHAIR TURNING SPACE

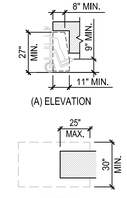
POSITION OF CLEAR FLOOR SPACE



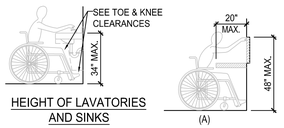
MANEUVERING CLEARANCE IN ALCOVE



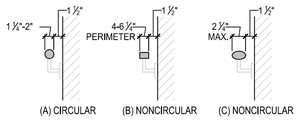
TOE CLEARANCE



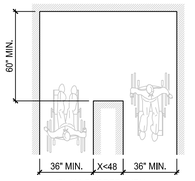
KNEE CLEARANCE

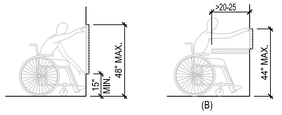


HEIGHT OF LAVATORIES AND SINKS



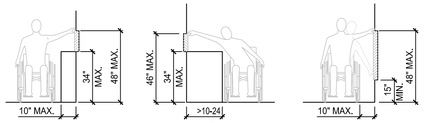
HANDRAIL CROSS SECTION





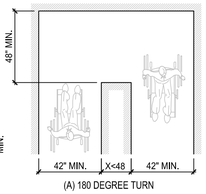
UNOBSTRUCTED FORWARD REACH

OBSTRUCTED HIGH FORWARD REACH

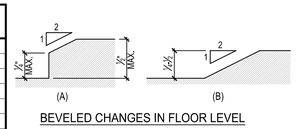


OBSTRUCTED HIGH SIDE REACH

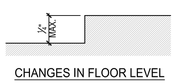
UNOBSTRUCTED SIDE REACH



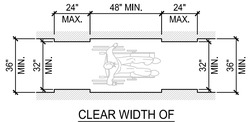
CLEAR WIDTH AT 180° TURN



BEVELED CHANGES IN FLOOR LEVEL

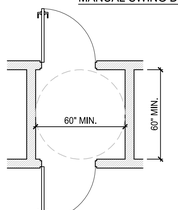


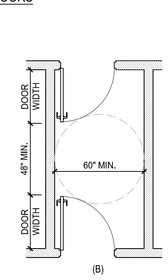
CHANGES IN FLOOR LEVEL

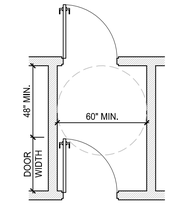


CLEAR WIDTH OF AN ACCESSIBLE ROUTE

MANEUVERING CLEARANCE AT MANUAL SWING DOORS

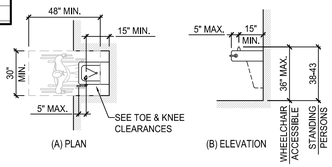




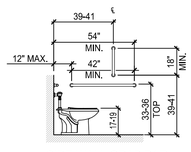


TWO DOORS IN A SERIES

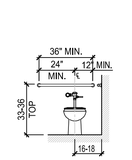
DRINKING FOUNTAIN AND WATER COOLERS



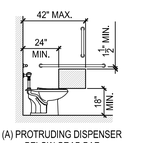
SIZE OF CLEARANCE FOR WATER CLOSET

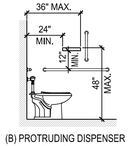


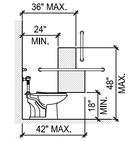
SIDE WALL GRAB BAR AND SEAT HEIGHT FOR WATER CLOSET



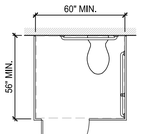
REAR WALL GRAB BAR FOR WATER CLOSET

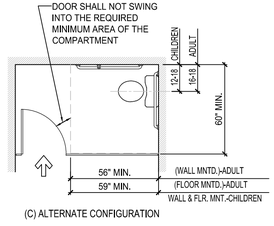




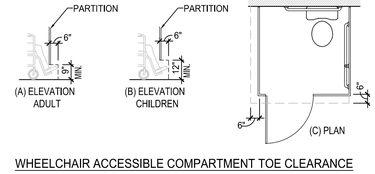


DISPENSER OUTLET LOCATION

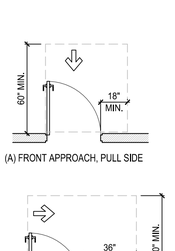


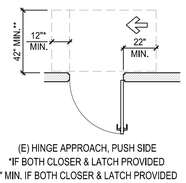


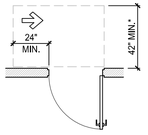
WHEELCHAIR ACCESSIBLE TOILET COMPARTMENTS

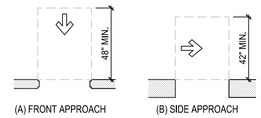


WHEELCHAIR ACCESSIBLE COMPARTMENT TOE CLEARANCE









MANEUVERING CLEARANCE AT DOORWAYS WITHOUT DOORS

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STATE OF OHIO
JAMES R. STEELE
11770
REGISTERED ARCHITECT

No.	Description	Date
1	OWNER REVIEW	12/04/2024
2	ISSUED FOR BUILDING PERMITS	02/25/2024
3	ISSUED FOR BIDDING	03/01/2024
4		

REVISIONS

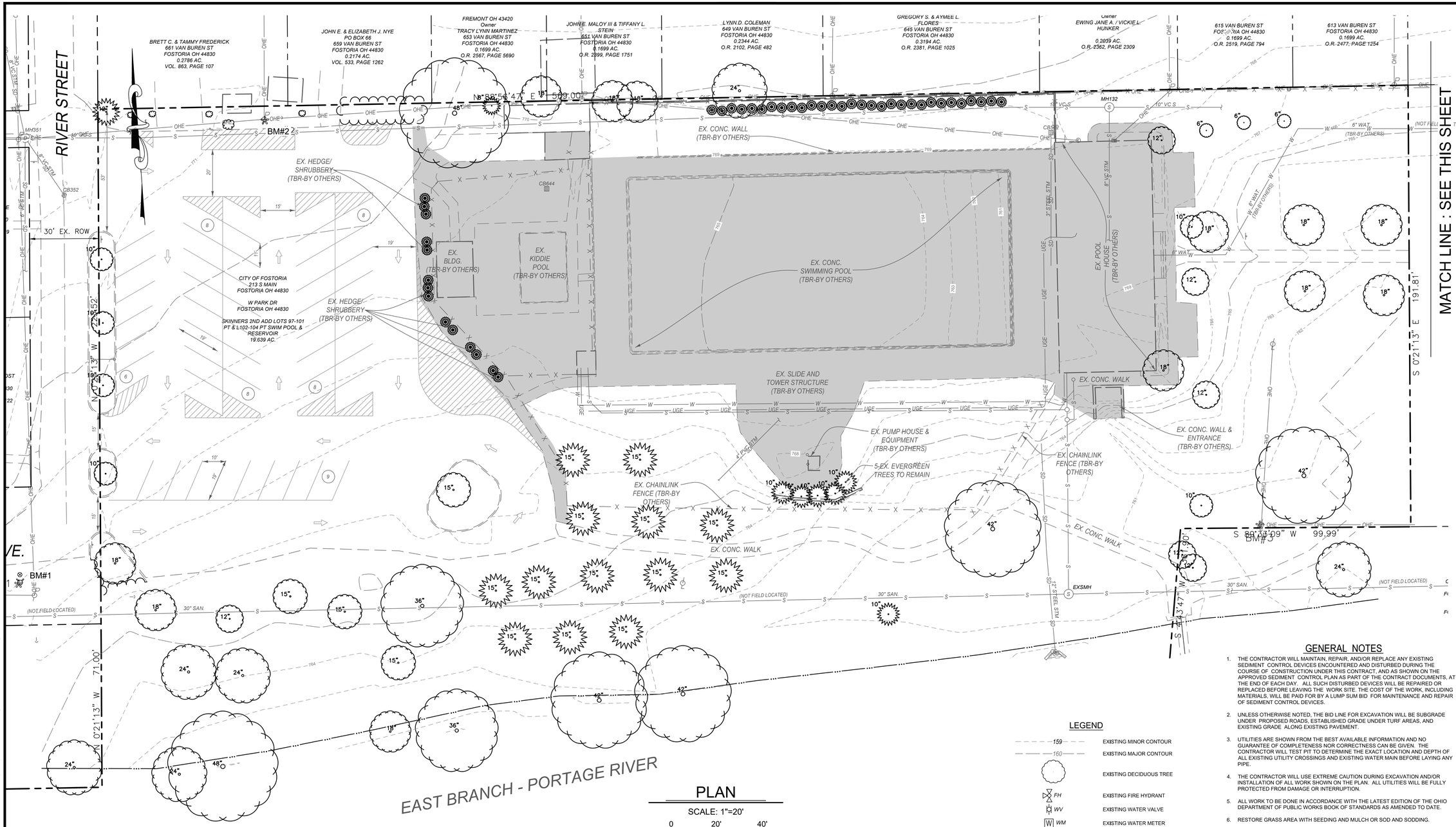
Scale	AS INDICATED
Date	03/01/2024
Job No.	24001561.002A
Designed by	WRS
Drawn by	AJM
Checked by	WRS
Approved by	WRS
Status	---

Client: CITY OF FOSTORIA, OH

Project: FOSTORIA SPLASHPAD

Drawing: TYPICAL ADA DETAILS, NOTES, AND LEGENDS

G001

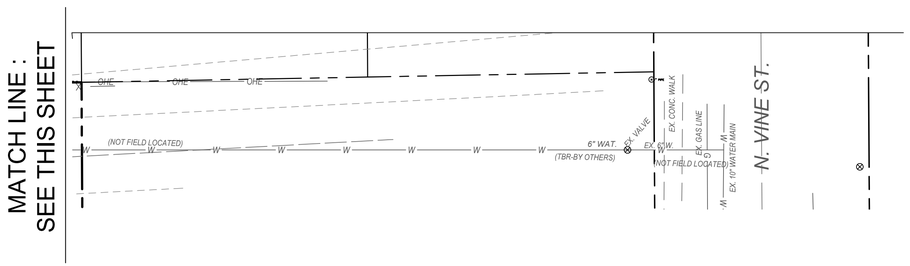


PLAN

SCALE: 1"=20'

0 20' 40'

MATCH LINE : SEE THIS SHEET



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
(TBR-BY OTHERS)	EXISTING UTILITY POLE
	"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 Feb 28, 2024 9:22am cgoodwin

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STATE OF OHIO
KENNETH A. MAAG
55216
REGISTERED PROFESSIONAL ENGINEER

No.	Description	Date
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 OD/NR REVIEW	02/05/24
-	REVISIONS	Date

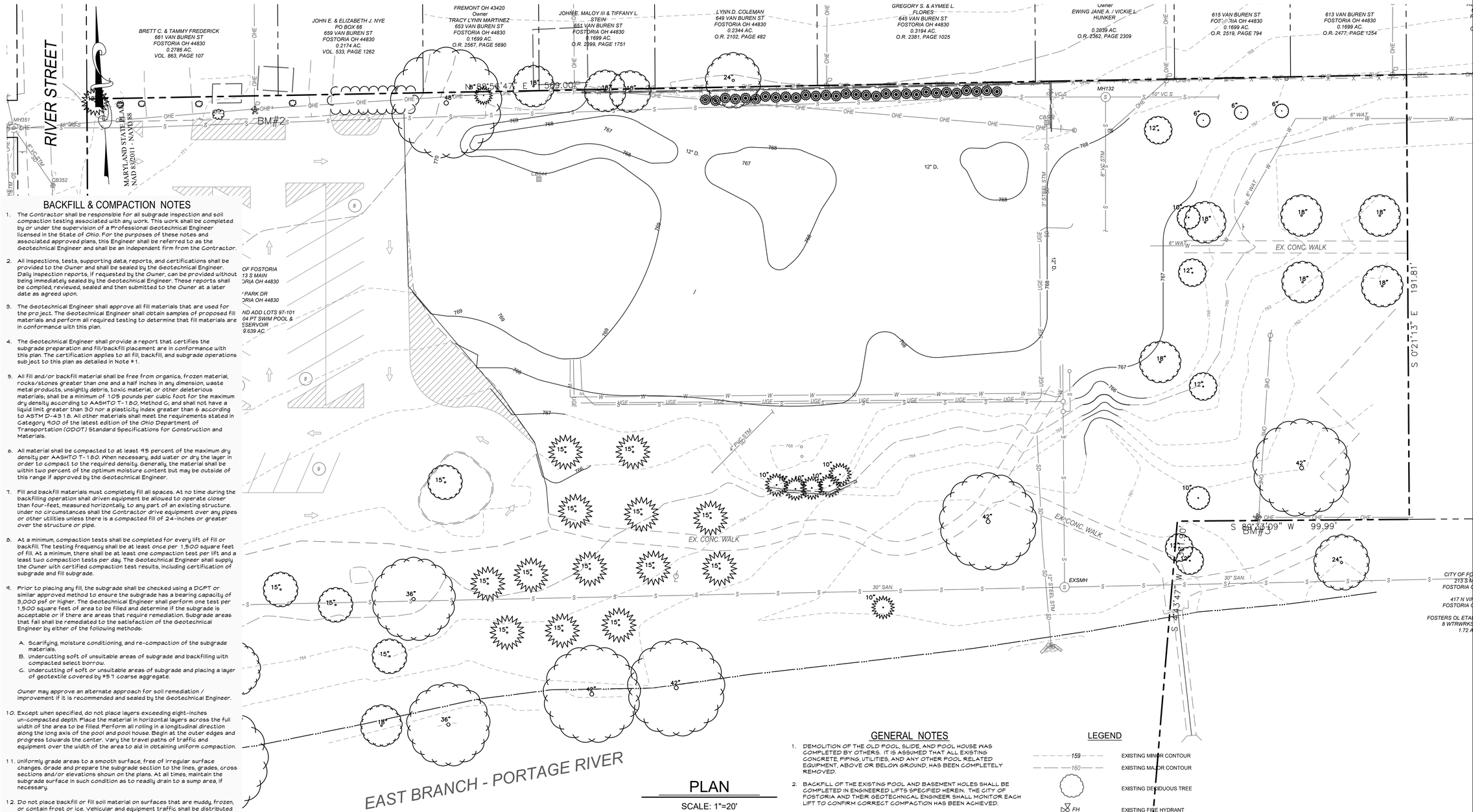
Scale: As Indicated
Date: 2/5/2023
Job No.: 24001561.002A
Designed by: RDT/CWG
Drawn by: RDT/CWG
Checked by: MJP/DRS
Approved by:
Status:

Client: CITY OF FOSTORIA, OH

Project: FOSTORIA SPLASHPAD

Drawing: 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 THEIR 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.
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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.
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STATE OF OHIO
KENNETH A. MAAG
55216
REGISTERED PROFESSIONAL ENGINEER

No.	REVISIONS	Date
1	ISSUED FOR CONR REVIEW	02/05/24
2	ISSUED FOR CONSTRUCTION	02/12/24
3	ISSUED FOR BUILDING PERMIT	02/23/24
4	ISSUED FOR BIDDING	03/01/24

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

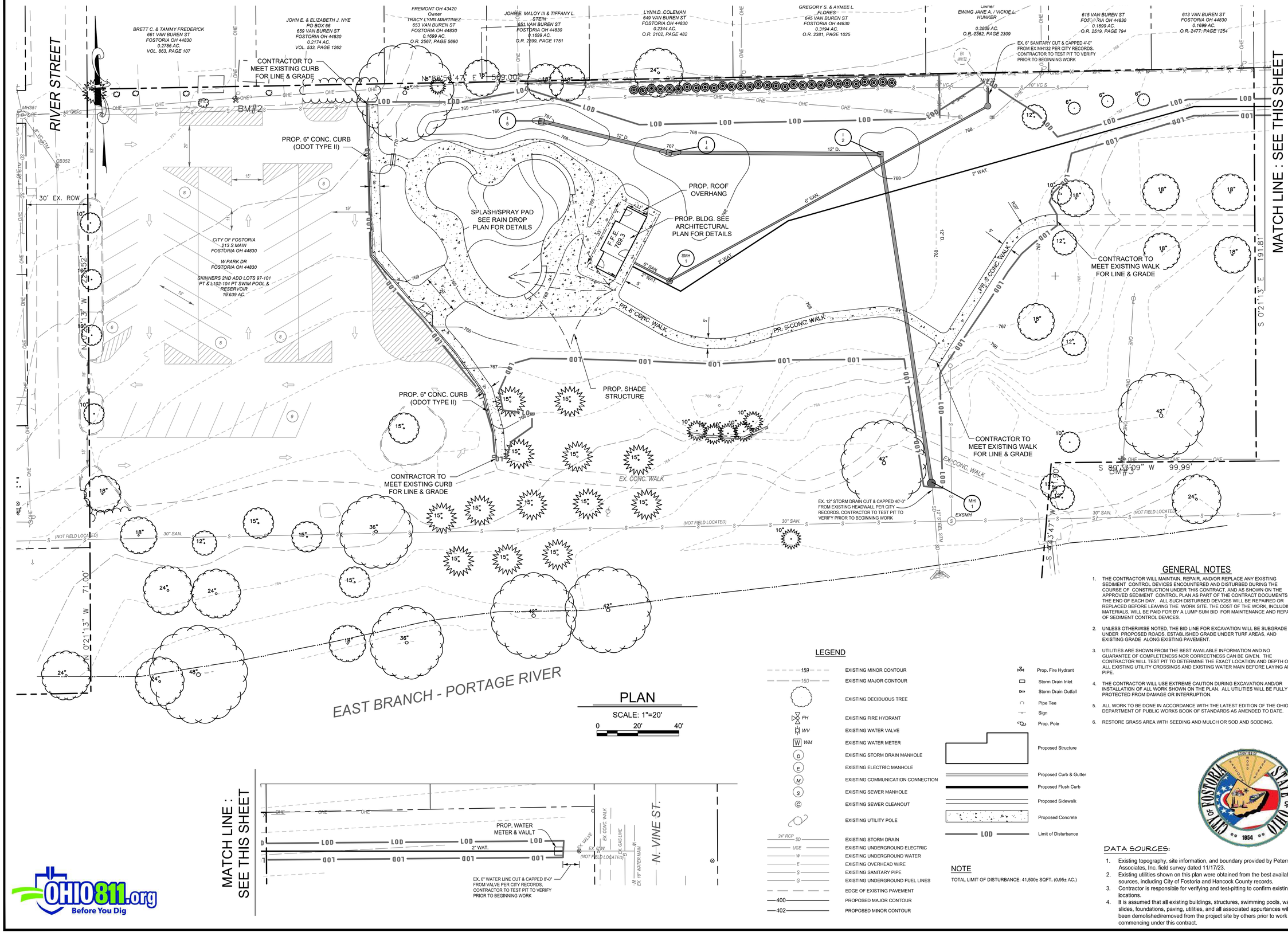
Client CITY OF FOSTORIA, OH

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



PLAN

SCALE: 1"=20'

0 20' 40'

LEGEND

- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- EXISTING DECIDUOUS TREE
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING WATER METER
- EXISTING STORM DRAIN MANHOLE
- EXISTING ELECTRIC MANHOLE
- EXISTING COMMUNICATION CONNECTION
- EXISTING SEWER MANHOLE
- EXISTING SEWER CLEANOUT
- EXISTING UTILITY POLE
- EXISTING STORM DRAIN
- EXISTING UNDERGROUND ELECTRIC
- EXISTING UNDERGROUND WATER
- EXISTING OVERHEAD WIRE
- EXISTING SANITARY PIPE
- EXISTING UNDERGROUND FUEL LINES
- EDGE OF EXISTING PAVEMENT
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- 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

NOTE

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

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.
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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.

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T:\2024\Facilities\24001561.002A Fostoria Splash Pad\CIVIL\CADD\Drawings\24001561.002A (C-02) SITE GRADING UTILITY.dwg Feb 28, 2024 9:23am cgoodwin

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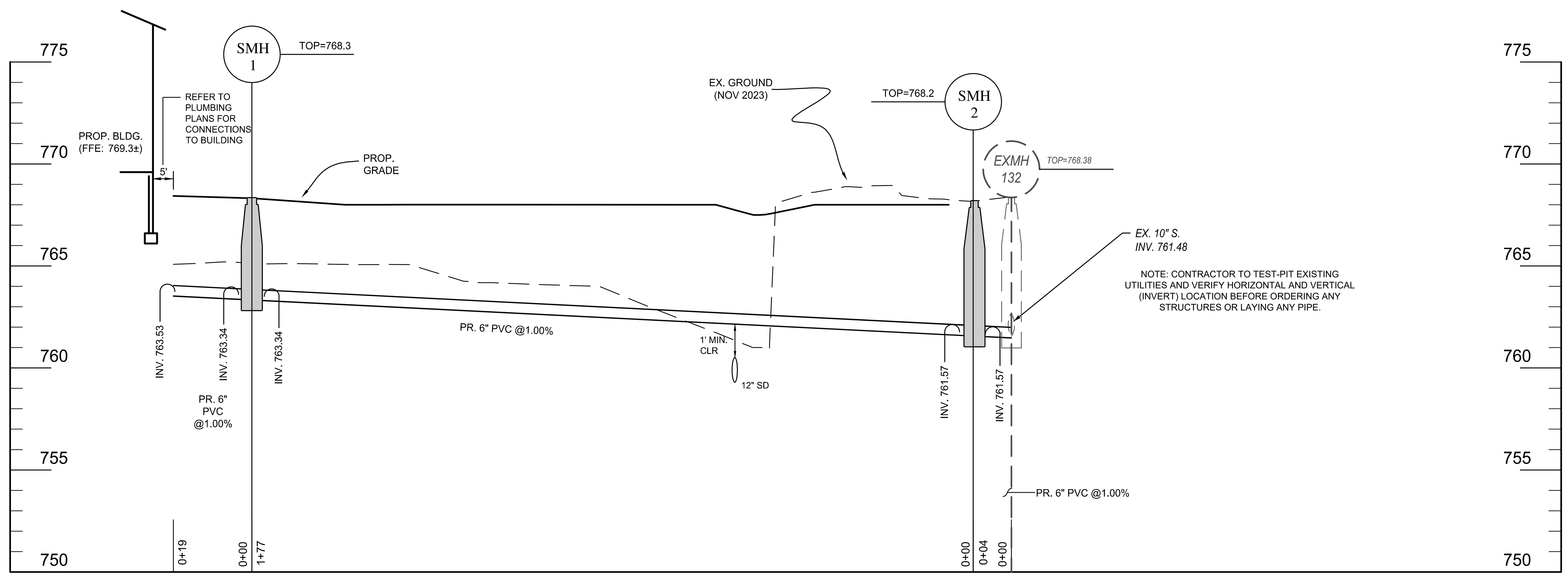
STATE OF OHIO
KENNETH A. MAAG
55216
REGISTERED PROFESSIONAL ENGINEER

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

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

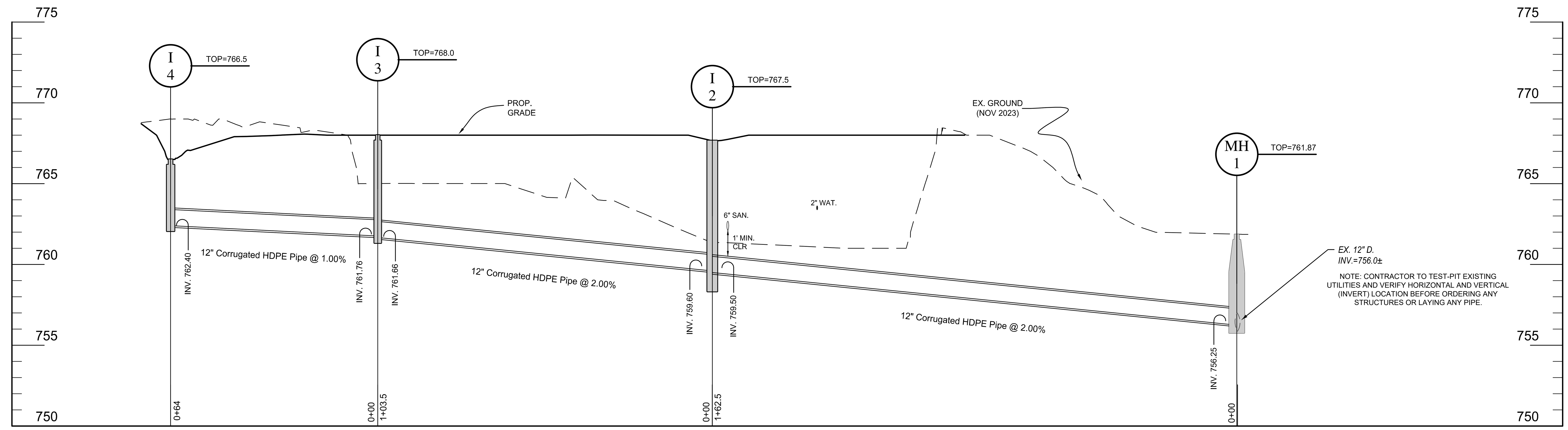
Client: CITY OF FOSTORIA, OH
Project: FOSTORIA SPLASHPAD
Drawing: Site, Utility, & Grading Plan

C-02



SANITARY SEWER PROFILE

SCALE: 1"=20' HORIZ.
1"=5' VERT.



STORM DRAIN PROFILE

SCALE: 1"=20' HORIZ.
1"=5' VERT.

NOTE: CONTRACTOR TO TEST-PIT EXISTING UTILITIES AND VERIFY HORIZONTAL AND VERTICAL (INVERT) LOCATION BEFORE ORDERING ANY STRUCTURES OR LAYING ANY PIPE.

OHIO811.org Before You Dig

DATA SOURCES:

1. Existing topography, site information, and boundary provided by Peterman Associates, Inc. field survey dated 11/17/23.
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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	--

REVISIONS

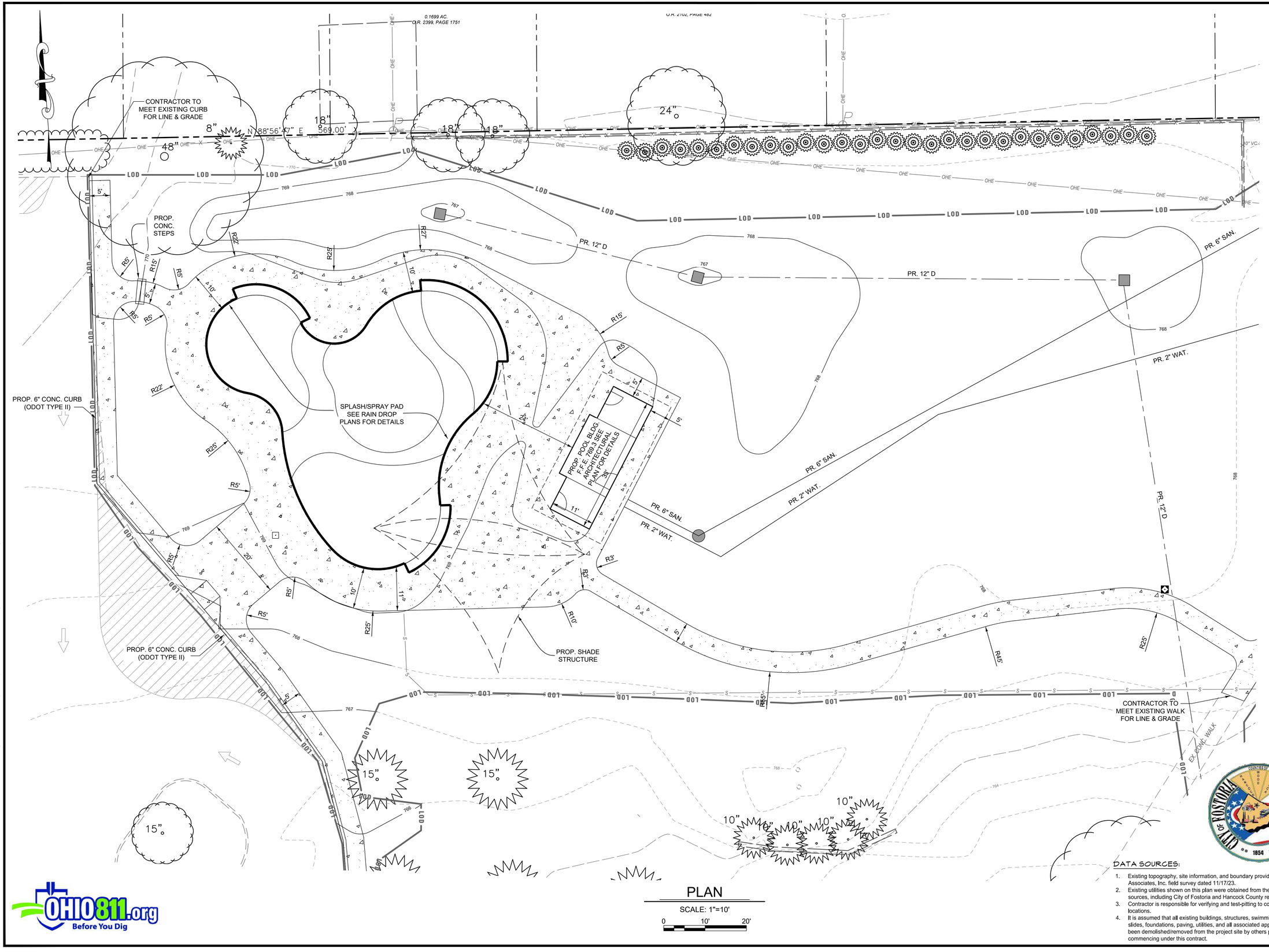
No.	Description	Date
4	ISSUED FOR BIDDING	03/01/24
3	ISSUED FOR BUILDING PERMIT	02/23/24
2	ISSUED FOR CONSTRUCTION	02/12/24
1	ISSUED FOR ODNR REVIEW	02/05/24

Client: CITY OF FOSTORIA, OH

Project: FOSTORIA SPLASHPAD

Drawing: Utility Profiles

C-03



PLAN

SCALE: 1"=10'

0 10' 20'

DATA SOURCES:

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OHIO811.org Before You Dig

T:\2024\Facilities\24001561.002A Fostoria Splash Pad\CIVIL\CADD\Drawings\24001561.002A (C-04-05) SPLASH PAD PLAN.dwg Feb 28, 2024 9:25am cgoodwin

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STATE OF OHIO
KENNETH A. MAAG
55316
REGISTERED PROFESSIONAL ENGINEER

No.	Description	Date
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 CONR REVIEW	02/05/24

REVISIONS

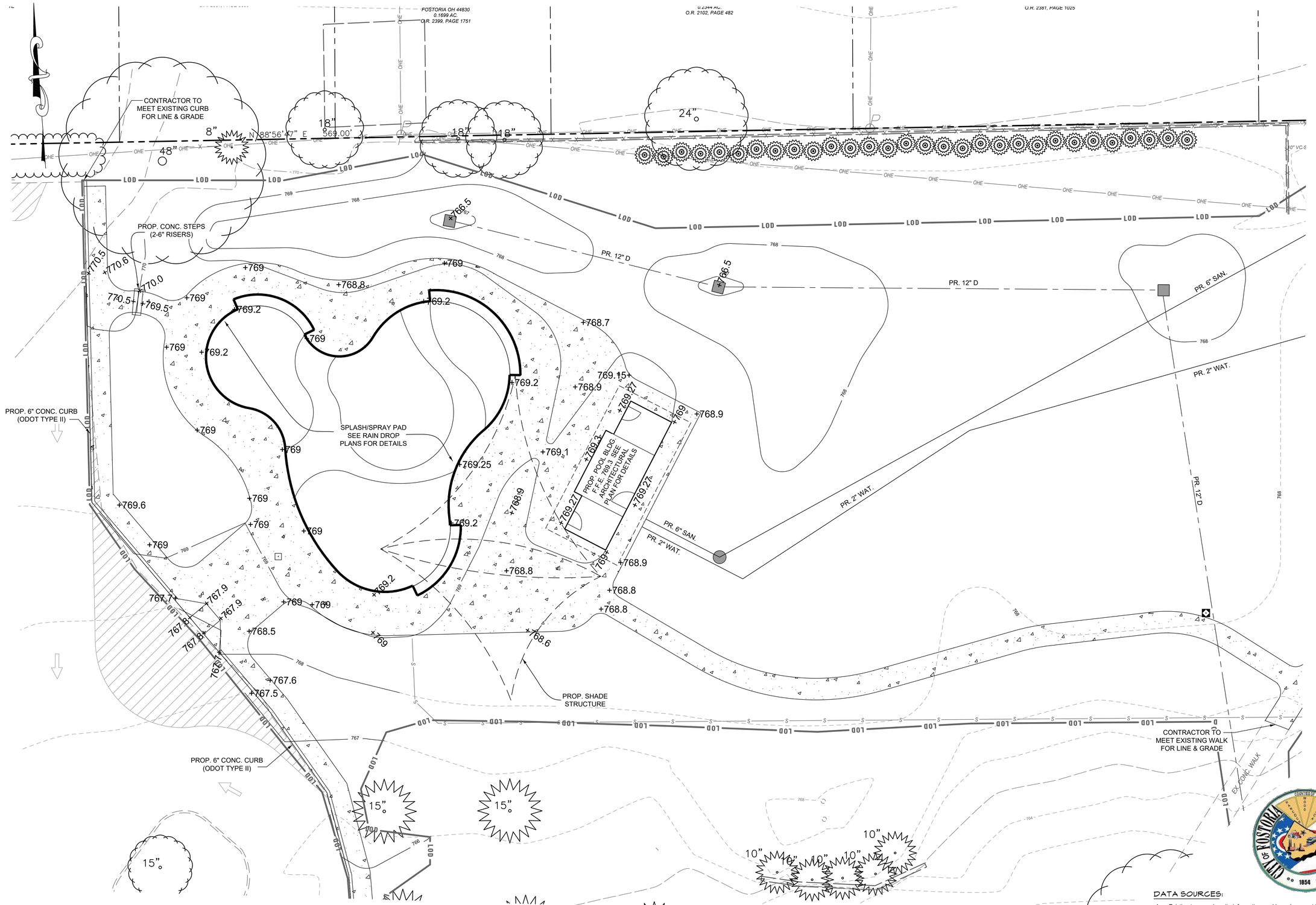
Scale	As Indicated
Date	2/5/2023
Job No.	24001561.002A
Designed by	RDT/CWG
Drawn by	RDT/CWG
Checked by	MJP/DRS
Approved by	
Status	-

Client: CITY OF FOSTORIA, OH

Project: FOSTORIA SPLASHPAD

Drawing: Splash Pad Details

C-04



DATA SOURCES:

1. Existing topography, site information, and boundary provided by Peterman Associates, Inc. field survey dated 11/17/23.
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OHIO811.org Before You Dig

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STATE OF OHIO
KENNETH A. MAAG
55716
REGISTERED PROFESSIONAL ENGINEER

No.	Description	Date
	REVISIONS	
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

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: Splash Pad Details

C-05

PLANTING NOTES

1. Plant material substitutions will not be accepted without approval of the Landscape Architect.
2. All Shrubs and groundcover areas shall be planted in continuous prepared planting beds.
3. All shrub beds shall be mulched with hardwood mulch as detailed and specified except where noted on plans.
4. Maintain positive drainage out of planting beds at a minimum of two percent slope.
5. Plant quantities are provided for the convenience of the contractor. If discrepancies exist between quantities shown on the plan and those shown on the plant list, the quantities on the plan shall take precedence.
6. All areas within contract limits disturbed during or prior to construction not designated to receive plantings and mulch shall be fine graded and seeded in accordance with planting and construction.
7. The contractor shall notify Ohio811, (800-362-2764) a minimum of three working days prior to planting and construction.
8. Contractor shall test pit prior to plant installation.

IRRIGATION METHODS

1. The use and maintenance of drip irrigation bags or rings around the trunks of newly-planted trees.
2. Hand watering, with water sources provided through either or both of the following methods:
   - 2.1. Exterior faucets on a building, located so that the farthest planting can be reached by a length of hose (100 feet recommended).
   - 2.2. A quick-coupling system, with connections located so that the farthest planting can be reached by a length of hose (100 feet recommended).
   - 2.3. A water tank or truck.
3. An automatic irrigation system with a moisture-sensing device and-or rain shut-off switch. If using an automatic irrigation system, the following requirements shall be met:
   - 3.1. All irrigation systems shall be designed to minimize vandalism.
   - 3.2. Sprinklers must not over-spray onto pavement. Sprinkler and spray heads are not permitted for planting areas less than eight (8) feet in width, to prevent overspray and run-off. Other irrigation methods shall be specified in such areas.
   - 3.3. Place lawn areas in a separate irrigation zone from shrub and groundcover beds so that each planting type can receive adequate irrigation without over-watering areas with lower irrigation needs.
   - 3.4. Drip irrigation is recommended for shrub and groundcover beds. Drip irrigation shall be used in areas smaller than five (5) feet in any direction.
4. The use of rainwater harvesting techniques combined with the use of harvested rainwater for landscape irrigation is encouraged.

NON-INVASIVE NOTE

1. Non-invasive vegetation that is native or regionally appropriate for local growing conditions has been selected to promote biodiversity.

MINIMUM LANDSCAPE MAINTENANCE REQUIREMENTS

1. A two year plant replacement warranty and two years of maintenance are required by the County.
2. Lawn areas shall be mowed to a height of 2 to 3 inches and not allowed to reach a height of 4 inches before mowing.
3. All curbs and walks shall be edged as needed.
4. All lawn areas adjacent to building faces or structures shall be trimmed.
5. A slow release nitrogen balanced fertilizer with a 2-1-1 ratio shall be applied at a rate of 2 pounds of nitrogen per 1000 square feet in September, October, and February.
6. Lime shall be applied at the rate determined by a soils report.
7. It is recommended that lawn areas be treated in mid-March to early April with pre-emergent herbicide (Betasan) or equal applied at the manufacturer's rate.
8. A post-emergent herbicide (Trimec) or equal is recommended to be sprayed on lawn areas in the late spring or early fall. Follow manufacturer's rates and recommendations.
9. Insecticides and fungicides are recommended for insect and disease contol.
10. Reseed bare areas of lawn as necessary. Yearly aeration is recommended.
11. All trash, litter, and debris shall be removed from lawn areas, parking lots, and shrub beds as needed.
12. Mulch all shrub and groundcover beds yearly with 3 inches of shredded hardwood bark.
13. Permit shrubs and trees to grow and enlarge to their design size. Consult project Landscape Architect for details.
14. Prune trees in accordance with Landscape Specification Guidelines from the Ohio Department of Naturimagal Resources.
15. Maintenance of landscape areas includes, but is not limited to weeding, mulching, mowing, trimming, pruning, edging, cultivation, seeding, fertilization, watering, pest control, and any other maintenance necessary to ensure healthy, vigorous plant growth and well-kept property condition.
16. Landscaping elements such as walls and fences shall be constructed in a sound workmanlike manner with adequate support or footings and must be repaired or replaced as needed to preserve an attractive appearance and to function as intended.
17. Any dead plants or plants which fail to show healthy growth must be removed and replaced within 60 days of identification of deteriorated health or notification by the County. Replacement may be delayed until the next growing season only if the 60 day period occurs during a time of year not suitable for planting.
18. All replacement plants must meet the size and other characteristics of newly planted material as required in the manual.
19. Trees and large shrubs must be adequately supported, when necessary to insure proper growth. Tree staking must be removed prior to final inspection, with the exception of plants replaced during the warranty period and not yet established.
20. It is desirable to avoid excessive use of fertilizers and pesticides to minimize impacts on water quality. It is recommended that fertilizer application be need-based rather than as an automatic component of maintenance schedules and when appropriate, slow-release or natural fertilizers be selected over highly-soluble chemical fertilizers.
21. The implementation of an Integrated Pest Management (IMP) program is recommended to prevent and treat pest problems.

STANDARDS & SPECIFICATIONS FOR PLANTING

TIMETABLE FOR PLANTING

ALL B&B AND CONTAINER PLANTING SHALL BE DONE BETWEEN MARCH 25 AND APRIL 30, FOR SPRING PLANTING, AND BETWEEN OCTOBER 15 AND DECEMBER 1 FOR FALL PLANTING.

PLANT MATERIAL

SEE PLANT LIST FOR EACH PLANTING AREA.

PLANTING SITE PREPARATION

CONTRACTOR SHALL ERADICATE ALL INVASIVE PLANT MATERIAL WITHIN PLANTING AREAS PRIOR TO PLANTING. ONCE THE PLANTING AREA IS CLEAR OF INVASIVES, PREPARE A PLANTING PIT FOR EACH TREE AND SHRUB. THE AREA DISTURBED FOR THE PIT IS TO BE MULCHED WITH A SHREDDED HARDWOOD PRODUCT. SOIL TESTING IS RECOMMENDED FOR MACRONUTRIENT DEFICIENCIES AND pH LEVELS. PROPER SOIL AMENDMENTS SHOULD BE MADE IF DEEMED NECESSARY.

PLANT MATERIAL STORAGE

IT IS RECOMMENDED THAT PLANTING OCCUR WITHIN 24 HOURS OF DELIVERY TO THE SITE. PLANT MATERIALS LEFT UNPLANTED FOR MORE THAN 24 HOURS SHALL BE PROTECTED FROM DIRECT SUN AND WEATHER AND KEPT MOIST. PLANT MATERIAL SHOULD NOT BE LEFT UNPLANTED FOR MORE THAN TWO WEEKS.

PLANTING METHOD

SEE PLANTING DETAILS FOR EACH TYPE OF PLANT MATERIAL USED .
ALL TREES SHALL BE INSTALLED WITH TREE SHELTERS.

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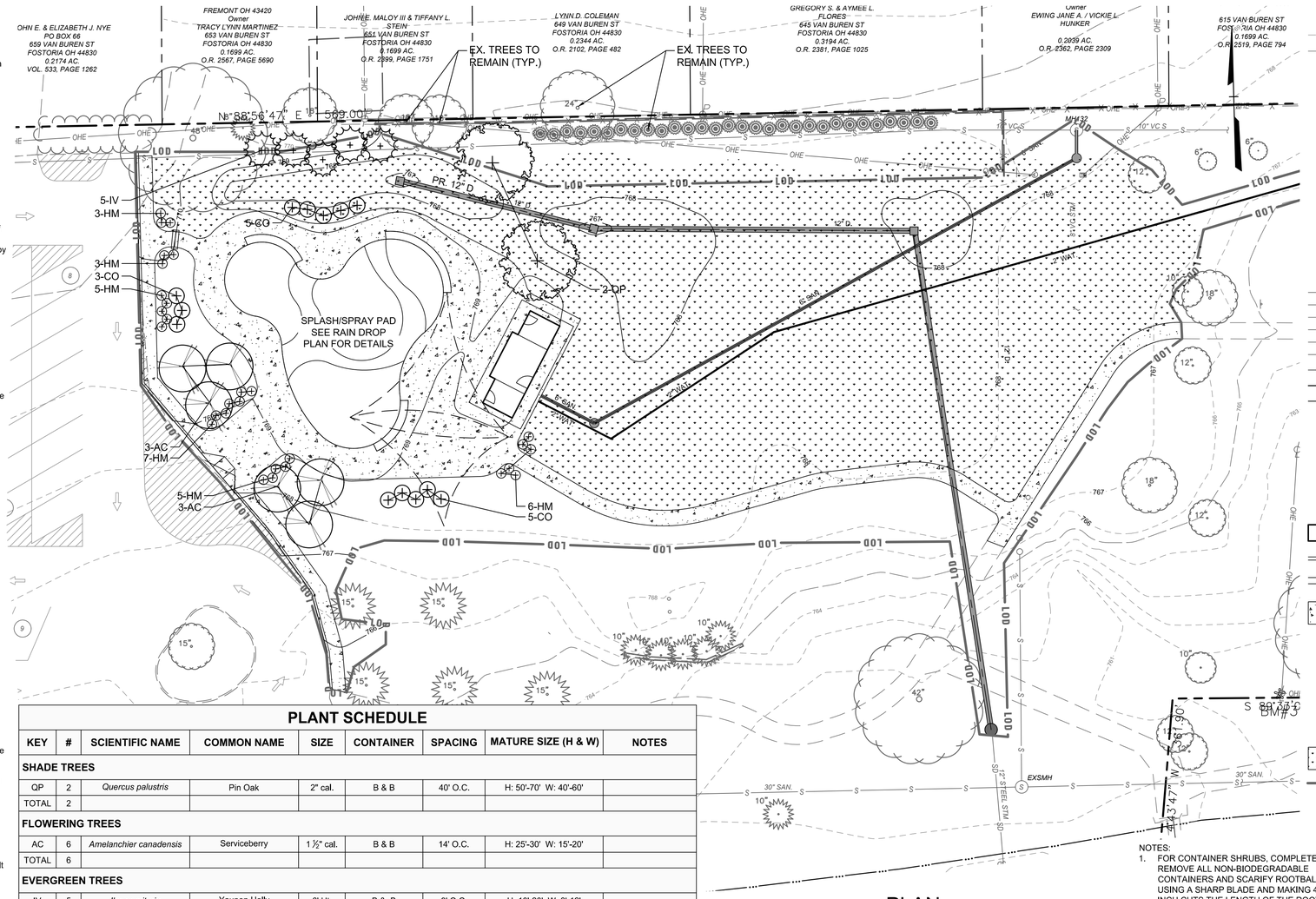


PLAN

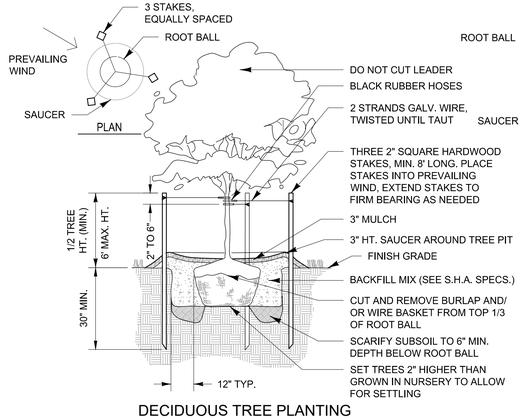
SCALE: 1"=20'

0 10' 20'

NOTES:
1. FOR CONTAINER SHRUBS, COMPLETELY REMOVE ALL NON-BIODEGRADABLE CONTAINERS AND SCARIFY ROOTBALL BY USING A SHARP BLADE AND MAKING 4 TO 5 ONE INCH CUTS THE LENGTH OF THE ROOTBALL.
2. FOR B&B SHRUBS, CUT AND REMOVE BURLAP FROM TOP 1/3 OF ROOTBALL.

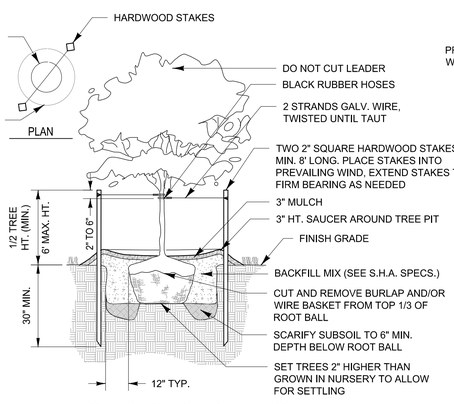
PLANT SCHEDULE

KEY	#	SCIENTIFIC NAME	COMMON NAME	SIZE	CONTAINER	SPACING	MATURE SIZE (H & W)	NOTES
SHADE TREES								
QP	2	*Quercus palustris*	Pin Oak	2" cal.	B & B	40' O.C.	H: 50'-70' W: 40'-60'	
TOTAL	2							
FLOWERING TREES								
AC	6	*Amelanchier canadensis*	Serviceberry	1 ½" cal.	B & B	14' O.C.	H: 25'-30' W: 15'-20'	
TOTAL	6							
EVERGREEN TREES								
IV	5	*Ilex vomitoria*	Yaupon Holly	6' Ht.	B & B	9' O.C.	H: 10'-20' W: 8'-12'	
TOTAL	5							
SHRUBS								
CO	13	*Cephalanthus occidentalis*	Buttonbush	5 Gallon	Container	7' O.C.	H: 5'-12' W: 4'-8"	
HM	29	*Hibiscus moscheutos*	Swamp Rose Mallow	5 Gallon	Container	30" O.C.	H: 3'-7' W: 2'-4'	
Total	42							



DECIDUOUS TREE PLANTING

Not To Scale



FLOWERING TREE PLANTING

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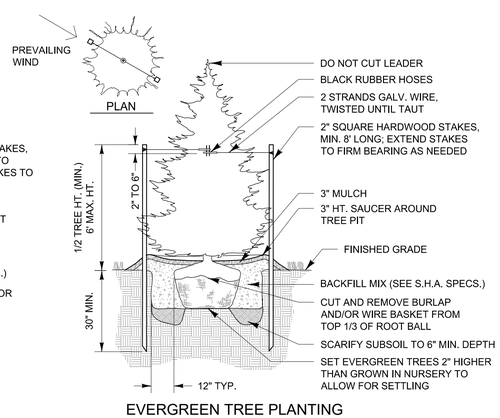

EVERGREEN TREE PLANTING

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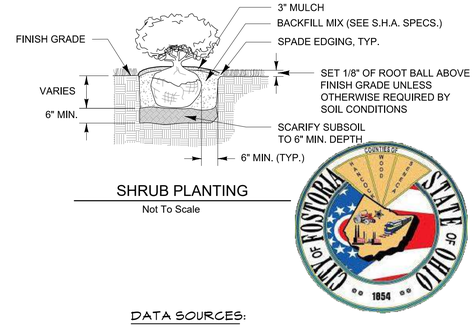

SHRUB PLANTING

Not To Scale

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.

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
- Prop. Fire Hydrant
- Storm Drain Inlet
- Storm Drain Outfall
- Pipe Tee
- Sign
- Prop. Pole
- Proposed Structure
- Proposed Curb & Gutter
- Proposed Sidewalk
- Proposed Concrete
- Proposed Shade Tree
- Proposed Flowering Tree
- Proposed Evergreen Tree
- Proposed Shrubs
- Proposed Turf Area
- LOD — Limit of Disturbance

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No.	Description	Date
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	-

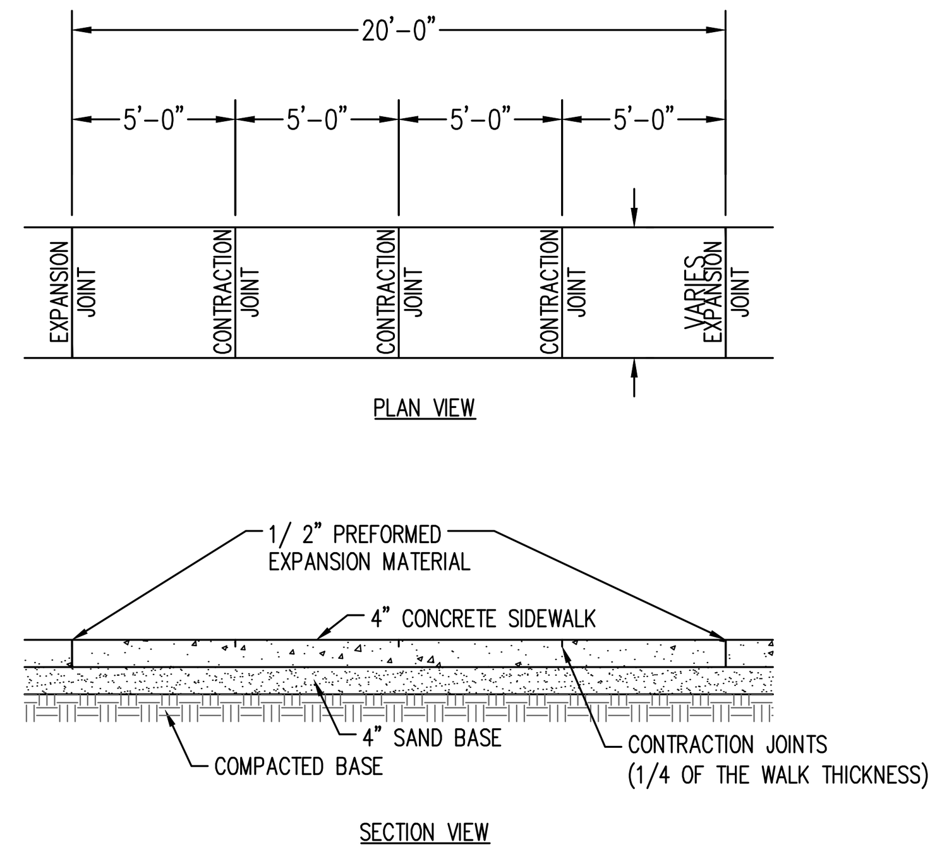
Client: CITY OF FOSTORIA, OH

Project: FOSTORIA SPLASHPAD

Drawing: Landscape Plan

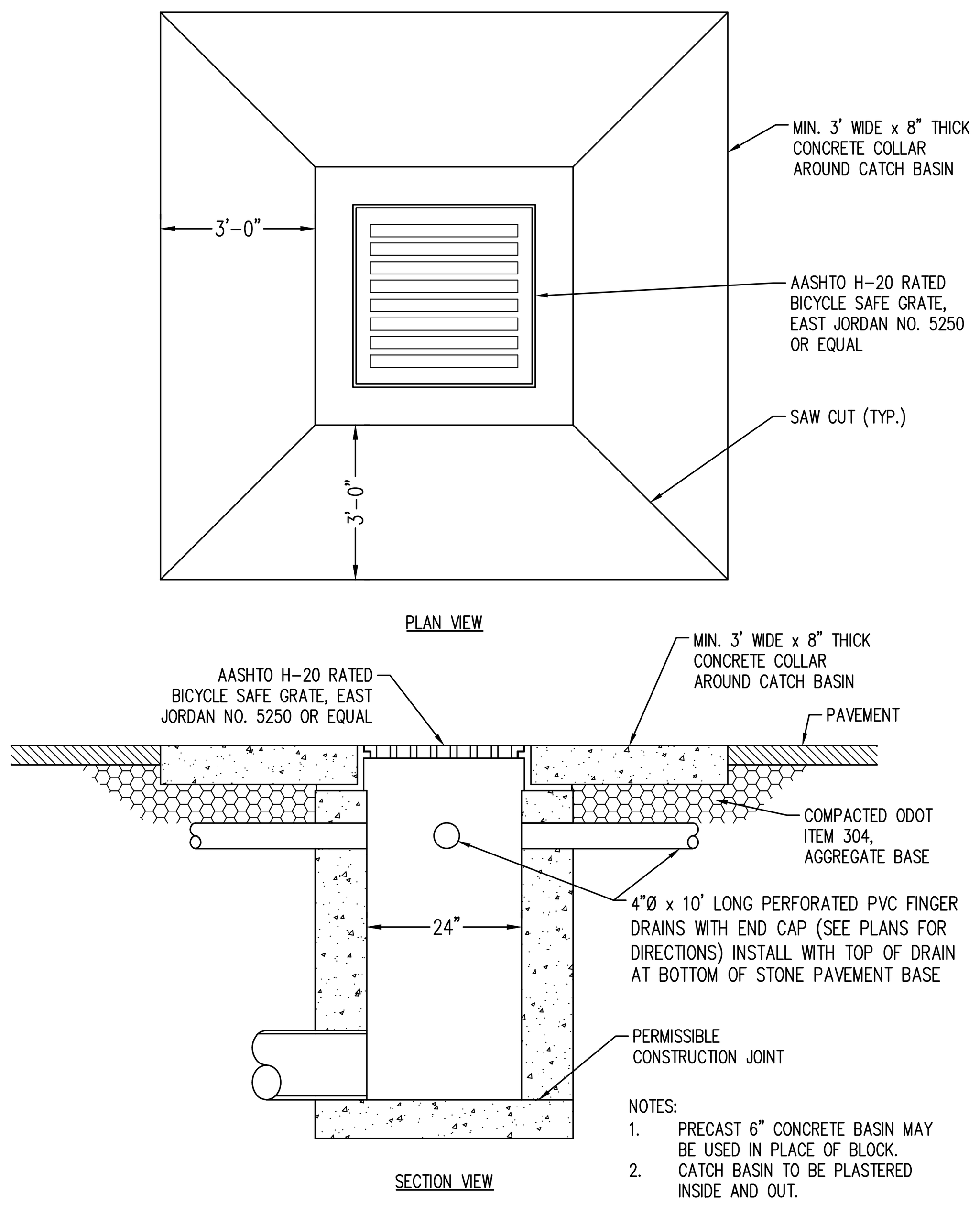
C-06

T:\2024\Facilities\24001561.002A Fostoria Splash Pad\CIVIL\CADD\Drawings\24001561.002A (C-06) LANDSCAPE PLAN.dwg Feb 28, 2024 9:26am cgoodwin



TYPICAL SIDEWALK DETAIL

NOT TO SCALE



CATCH BASIN DETAIL

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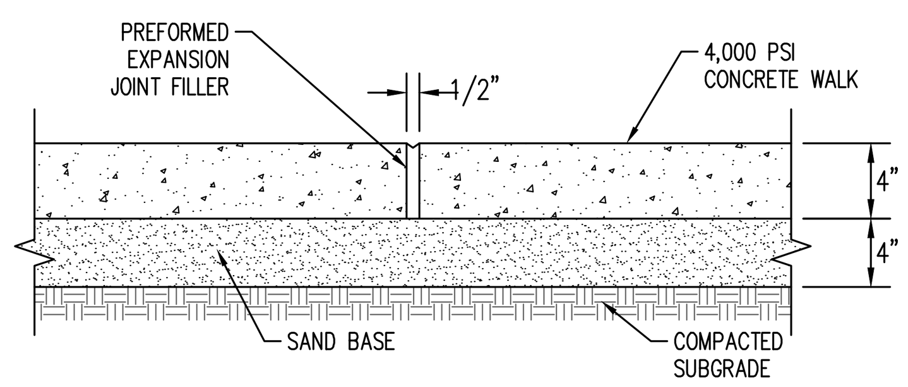

SIDEWALK EXPANSION JOINT

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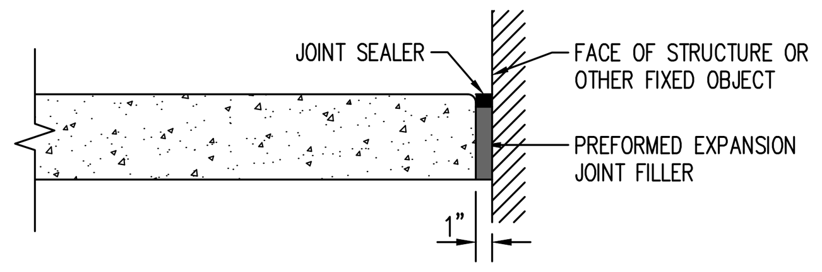
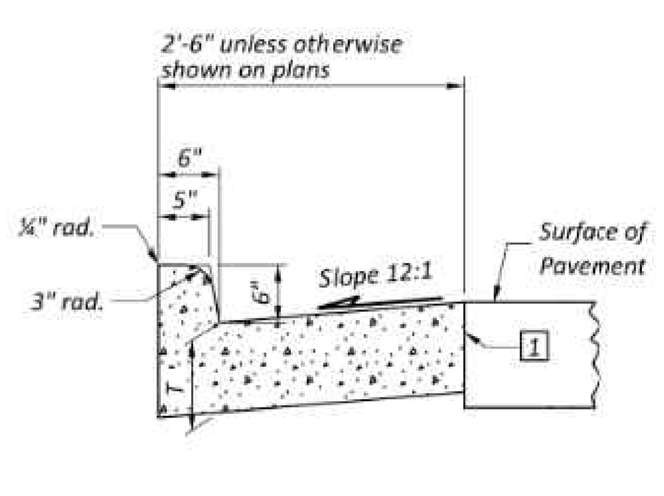


EXPANSION JOINT AT RIGID STRUCTURE DETAIL

NOT TO SCALE

NOTES:
1. THIS JOINT TO BE USED WHENEVER CONCRETE PAVEMENT ABUTS A RIGID STRUCTURE (RETAINING WALLS, BUILDINGS WALLS, ETC.)



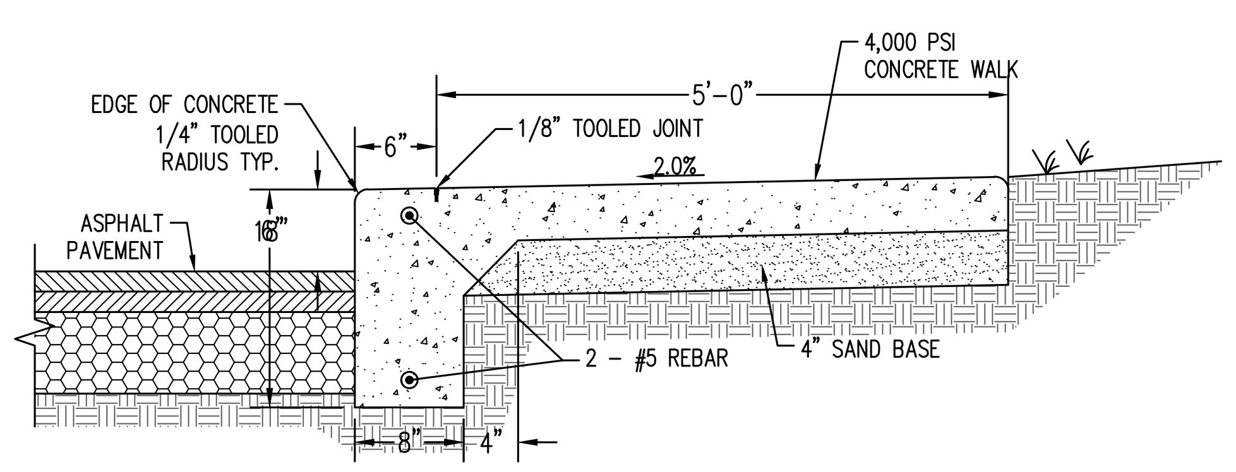
TYPE 2

1 *Butt joints shall be provided between combined curb-and-gutter and new or existing rigid pavements, with tie bars or hook bolts provided at intervals of 5'. See SCD BP-2.1 for details of tie bars and hook bolts.*

If the combined curb-and-gutter adjoins a new rigid base or an existing rigid base or pavement that is to be surfaced with asphalt concrete, a butt joint shall also be provided. However, tie bars or hook bolts shall be omitted when the vertical overlap ("V" in detail below) between the curb-and-gutter and rigid pavement is less than 7".

ODOT CURB TYPE 2

NOT TO SCALE



INTEGRAL CONCRETE CURB & WALK

NOT TO SCALE

SITE WORK SPECIFICATIONS

1. SUMMARY
   A. WORK INCLUDES CLEARING, GRUBBING, GRADING, EROSION CONTROL, UNDERGROUND UTILITIES, PAVING, SITE RESTORATION, AND INCIDENTAL ITEMS AS SHOWN AND AS SPECIFIED.

   B. CONSTRUCTION LIMITS SHALL BE WITHIN OWNERS PROPERTY BOUNDARIES AND CONSTRUCTION EASEMENTS AS SHOWN ON DRAWINGS.

2. REGULATIONS THE CONTRACTOR IS RESPONSIBLE FOR INITIATING, MAINTAINING, SUPERVISING, AND COMPLYING WITH ALL FEDERAL OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), STATE, AND LOCAL SAFETY REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND MAINTAINING SAFEGUARDS, SAFETY DEVICES, AND PROTECTIVE EQUIPMENT NECESSARY FOR THE PROTECTION OF PERSONS AND PROPERTY AFFECTED BY THE PROJECT AT ALL TIMES. SHEETING, BRACING, CRIBBING, ETC. MUST BE INSTALLED AS REQUIRED TO PROVIDE MAXIMUM SAFETY TO THE CONTRACTOR'S WORKERS IN FULL COMPLIANCE WITH OSHA REGULATIONS. IN ADDITION, THE CONTRACTOR IS RESPONSIBLE FOR SECURING THE PROJECT TO PREVENT UNAUTHORIZED PERSONNEL FROM HAZARDOUS OR DANGEROUS CONDITIONS.

3. SPECIFICATIONS: GENERAL NOTES
   A. ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CONSTRUCTION STANDARDS AND SPECIFICATIONS OF THE STATE LOCAL/MUNICIPAL/ TOWNSHIP AND/OR COUNTY DEPARTMENT OF TRANSPORTATION LATEST EDITION AND CONSTRUCTION STANDARDS, UNLESS OTHERWISE NOTED, AND TENANT REQUIREMENTS AS DEPICTED IN THESE PLANS. IN ADDITION, ALL WORK WILL BE IN COMPLIANCE WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AND REGULATIONS, UNLESS NOTED OTHERWISE.

   B. THE CONTRACTOR SHALL FURNISH SUPERVISION, LABOR, MATERIALS, AND EQUIPMENT, AND SHALL PERFORM ALL WORK AND SERVICES NECESSARY TO COMPLETE IN A SATISFACTORY MANNER THE SITE PREPARATION, EXCAVATION, FILLING, COMPACTION, AND GRADING, AS SHOWN ON THE APPROVED AND ISSUED FOR CONSTRUCTION PLANS; AS DESCRIBED THEREIN.

4. CONSTRUCTION SURVEYING
   A. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR LAYING OUT THE LOCATION, ALIGNMENT, ELEVATION, AND GRADE OF ALL WORK SHOWN ON THE DRAWINGS AND SPECIFICATIONS.

   B. THE CONTRACTOR SHALL USE COMPETENT PERSONNEL AND SUITABLE EQUIPMENT. IF NECESSARY, THE CONTRACTOR SHALL EMPLOY A REGISTERED ENGINEER OR SURVEYOR TO SUPERVISE THE WORK.

   C. VERIFICATION AND PROTECTION
      i VERIFY LOCATIONS OF SURVEY CONTROL POINTS PRIOR TO STARTING WORK. PROMPTLY NOTIFY OWNER OF ANY DISCREPANCIES DISCOVERED.
      ii PROTECT OR RELOCATE SURVEY CONTROL POINTS PRIOR TO STARTING SITE WORK; PRESERVE PERMANENT REFERENCE POINTS DURING CONSTRUCTION.

   D. ELEVATION DATUM: ALL ELEVATIONS ARE BASED ON U.S.G.S. DATUM. (ONLY IF NEEDED).

5. PROJECT RECORD DRAWINGS
   A. KEEP A CURRENT SET OF DRAWINGS AT JOB SITE THAT ARE MARKED TO SHOW LOCATION OF ITEMS CONCEALED UPON COMPLETION OF WORK AND ALL CHANGES MADE DURING CONSTRUCTION. DIMENSION UNDERGROUND AND CONCEALED WORK AND UTILITIES FROM PERMANENT REFERENCE POINTS; RECORD VERTICAL DISTANCES. SUBMIT PROJECT RECORD DRAWINGS TO OWNER UPON COMPLETION OF WORK IN THE FORM OF EITHER AUTOCAD OR MICROSTATION ELECTRONIC FILES.

6. COORDINATION
   A. THE CONTRACTOR SHALL COORDINATE THE STAGING AREA LOCATION FOR MATERIALS, EQUIPMENT, AND EMPLOYEE PARKING WITH THE OWNER.
   B. THE OWNER'S BUILDING OPERATIONS SHALL BE MAINTAINED AT ALL TIMES; CONSTRUCTION SCHEDULE AND TRAFFIC MAINTENANCE SHALL BE APPROVED BY THE OWNER.

7. UNDERGROUND UTILITIES
   A. THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS HAVE BEEN OBTAINED BY DILIGENT FIELD CHECKS, FROM THE RESPECTIVE UTILITY OWNERS, AND SEARCHES OF AVAILABLE RECORDS. IT IS BELIEVED THEY ARE ESSENTIALLY CORRECT BUT THE OWNER DOES NOT GUARANTEE THEIR ACCURACY OR COMPLETENESS.

   B. THE CONTRACTOR IS RESPONSIBLE FOR THE INVESTIGATION, LOCATION, TYPE & MATERIAL, SUPPORT, PROTECTION AND RESTORATION OF ALL EXISTING UTILITIES AND APPURTENANCES WHETHER SHOWN ON THESE PLANS OR NOT. THE CONTRACTOR SHALL EXPOSE ALL UTILITIES OR STRUCTURES PRIOR TO CONSTRUCTION TO VERIFY THE VERTICAL AND HORIZONTAL EFFECT ON THE PROPOSED IMPROVEMENTS.

   C. UTILITY NOTIFICATION: AT LEAST TWO WORKING DAYS PRIOR TO COMMENCING CONSTRUCTION OPERATIONS IN AN AREA WHICH MAY INVOLVE UNDERGROUND UTILITY FACILITIES, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER, THE UTILITY PROTECTION SERVICE AND THE OWNERS OF ANY UNDERGROUND UTILITY FACILITY SHOWN IN THE PLANS.

   D. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THE CONTINUITY OF SERVICE TO THE OVERALL UTILITY SYSTEMS AS ISOLATED REMOVALS OF SYSTEM COMPONENTS OCCURS AND AS NEW COMPONENTS ARE ADDED AND CONNECTED TO THE VARIOUS SYSTEMS.

   E. IF ACTIVE UTILITIES ARE ENCOUNTERED BUT NOT SHOWN ON THE DRAWINGS, THE OWNER SHALL BE ADVISED BEFORE WORK IS CONTINUED.

   F. INACTIVE AND ABANDONED UTILITIES ENCOUNTERED IN EXCAVATING AND GRADING OPERATIONS SHALL BE REPORTED TO THE OWNER. THEY SHALL BE REMOVED, PLUGGED OR CAPPED AS DIRECTED BY THE UTILITY COMPANY OR THE ENGINEER.

   G. CONNECTIONS TO EXISTING PIPE: WHERE THE PLANS PROVIDE FOR PROPOSED CONDUIT TO BE CONNECTED TO, OR TO CROSS OVER OR UNDER AN EXISTING SEWER, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE THE EXISTING PIPE BOTH AS TO LINE AND GRADE BEFORE HE STARTS TO LAY THE PROPOSED CONDUIT.

   H. MAINTENANCE OF SEWER FLOWS: THE CONTRACTOR SHALL SO CONDUCT HIS OPERATIONS SO AS TO MAINTAIN AT ALL TIMES SEWER FLOWS THROUGH EXISTING FACILITIES.

   I. ALL NEW CONDUITS, INLETS, CATCH BASINS, AND MANHOLES CONSTRUCTED AS A PART OF THE PROJECT SHALL BE FREE OF ALL FOREIGN MATTER AND IN A CLEAN CONDITION BEFORE THE PROJECT IS ACCEPTED.

8. REMOVALS
   A. REMOVAL OF EXISTING PAVEMENT SHALL BE ACCOMPLISHED BY SAW CUTTING IN A NEAT, STRAIGHT LINE TO PROVIDE A SMOOTH VERTICAL SURFACE. FOR ASPHALT PAVEMENT ENSURE THAT THE JUNCTURE BETWEEN NEW AND EXISTING PAVEMENT IS FLUSH AND MADE IN A MANNER TO ENSURE A CONTINUOUS BOND. CLEAN FACE AND APPLY A TACK COAT JUST PRIOR TO PLACING NEW ASPHALT PAVEMENT PER THE APPROPRIATE SECTION SHOWN ON THE PLANS. FOR CONCRETE PAVEMENT APPLY A BONDING AGENT JUST PRIOR TO PLACING NEW CONCRETE PAVEMENT PER THE SECTION ON THIS PLANS.

9. PROTECTION
   A. PROTECT IMPROVEMENTS ON SITE AND ON ADJOINING PROPERTIES. PROVIDE BARRICADES, COVERINGS, OR OTHER TYPES OF PROTECTION AS NECESSARY TO PREVENT DAMAGE AND TO SAFEGUARD AGAINST INJURY. RESTORE TO ORIGINAL CONDITION IMPROVEMENTS DAMAGED BY THE WORK OR IMPROVEMENTS WHICH REQUIRED TEMPORARY REMOVAL DURING CONSTRUCTION.
   B. THE CONTRACTOR SHALL PROVIDE SHORING, BRACING, LATERAL SUPPORTS, ETC. AND TAKE WHATEVER PRECAUTIONS NECESSARY TO PREVENT THE UNDERMINING OF ADJACENT EXISTING FOUNDATIONS AND MAINTAIN THE STRUCTURAL INTEGRITY OF EXISTING STRUCTURES.
   C. THE CONTRACTOR SHALL PROVIDE ADEQUATE PROTECTION AGAINST DAMAGE TO ALL EXISTING UTILITIES, STRUCTURES, AND COMPLETED PORTIONS OF THE WORK, AND TO PREVENT INJURIES TO PERSONS. IT SHALL BE THE CONTRACTORS SOLE RESPONSIBILITY TO MAINTAIN THE INTEGRITY OF ALL UTILITIES, STRUCTURES, AND ABUTTING PROPERTIES. THE COST OF ANY REPAIR OR REPLACEMENT OF DAMAGED ITEMS SHALL BE BORNE SOLELY BY THE CONTRACTOR. THE CONTRACTOR SHALL MAINTAIN FULL RESPONSIBILITY FOR ALL METHODS, MEANS AND PROCEDURES RELATED TO CONSTRUCTION.

10. TRENCHING FOR UTILITIES
   A. EXCAVATE TRENCHES SO THAT PIPE CAN BE LAID SAFELY AND ACCURATELY TO REQUIRED LINE AND GRADE. HAND EXCAVATE FOR BELLS, FITTINGS AND PROJECTIONS TO ALLOW FOR PROPER JOINTING AND TO INSURE THAT PIPE RESTS EVENLY ALONG BARREL AND IS NOT RESTING ON BELL.

   B. IF ROCK IS ENCOUNTERED DURING TRENCHING, CONTACT OWNER BEFORE PROCEEDING FURTHER WITH AFFECTED PIPELINE.

   C. DEWATER TRENCHES AS REQUIRED TO PROVIDE STABLE BEDDING FOR PIPE. DEWATERING WILL BE INCIDENTAL TO WORK; NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

   D. WHEN TRENCH BOTTOM IS UNSTABLE BECAUSE OF GROUND WATER, GEOTECHNICAL ENGINEER MAY REQUIRE EXTRA EXCAVATION TO REMOVE UNSTABLE MATERIAL AND REPLACE IT WITH CRUSHED STONE.

   E. IN SAND AND GRAVEL SOILS, BOTTOM OF TRENCH MAY BE SHAPED TO FIT BOTTOM 1/3 OF PIPE. IN SILT AND CLAY SOILS, BOTTOM OF TRENCH SHALL BE 4 INCHES BELOW PIPE BARREL AND 3 INCHES BELOW BELL. IN ROCK, BOTTOM OF TRENCH SHALL BE 6 INCHES BELOW PIPE BARREL. UNDER FOUNDATIONS AND FOOTINGS, BOTTOM OF TRENCH SHALL BE 8 INCHES BELOW PIPE BARREL.

   F. BEDDING, HAUNCHING, AND INITIAL BACKFILL FOR RIGID PIPES SHALL BE IN ACCORDANCE WITH ASTM C12, CLASS C OR BETTER. TRENCHES DUG-IN SANDY OR GRAVEL MATERIALS MAY USE UNDISTURBED EARTH FOR BEDDING PROVIDED SURFACE IS SHAPED TO CONFORM TO PIPE. PROVIDE GRANULAR BEDDING IN ALL OTHER TRENCHES FROM SUBGRADE TO A POINT SUPPORTING BOTTOM 1/3 OF PIPE FOR RIGID PIPE AND TO SPRINGLINE (MID-HEIGHT) FOR FLEXIBLE PIPE. PLACE AND COMPACT BEDDING SO THAT IT FILLS AND SUPPORTS PIPE HAUNCH AREA.

   G. PROVIDE TAMPED GRANULAR INITIAL BACKFILL UP TO A MINIMUM DEPTH OF 1 FOOT ABOVE PIPE. TAKE SPECIAL CARE IN PLACING AND TAMPING INITIAL BACKFILL MATERIAL SO ALIGNMENT AND GRADE OF PIPE IS NOT DISTURBED NOR PIPE DAMAGED.

   H. BACKFILL MORE THAN 1 FOOT OVER PIPE SHALL BE GRANULAR BACKFILL. COMPACT BACKFILL IN ACCORDANCE WITH REQUIREMENTS OF "SITE GRADING" ARTICLE.

   I. GRANULAR BEDDING SHALL BE PLACED WITH A MINIMUM THICKNESS OF 6 INCHES (6") BENEATH THE BARREL AND BELL OF THE PIPE. THE 6 INCH (6") GRANULAR BEDDING BENEATH THE PIPE SHALL BE TAMPERED PRIOR TO THE PIPE PLACEMENT. GRANULAR BEDDING SHALL EXTEND UP AND AROUND THE PIPE TO 12 INCHES (12") ABOVE THE PIPE AND SHALL BE COMPACTED IN GRAVEL AGGREGATE FOR PVC PIPE. BEDDING SHALL BE COMPACTED IN ACCORDANCE WITH STATE DOT STANDARD SPECIFICATIONS.

   J. PIPE BACKFILL SHALL INCLUDE THE MATERIAL PLACED OVER THE PIPE EMBEDMENT MATERIAL. TRENCHES COMING WITHIN FIVE FEET (5') OF PAVED OR STONED STREETS, ALLEYS, DRIVEWAYS, SIDEWALKS, AND PARKING AREAS SHALL BE BACK FILLED FOR THEIR FULL DEPTH WITH GRANULAR MATERIAL MEETING THE REQUIREMENT OF BACKFILL FOR TYPE "B" CONDUITS. THE TOP OF THE BACKFILL SHALL EXTEND FROM FIVE FEET (5') OUTSIDE CURB TO FIVE FEET (5') IF APPLICABLE. THE COST OF PROVIDING THE COMPACTED GRANULAR BACKFILL SHALL BE INCLUDED IN THE CONTRACTORS BID. GRANULAR BACKFILL SHALL BE MECHANICALLY COMPACTED 304 STONE AND SHALL BE COMPACTED TO 98% OF MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR TEST.

11. WATERLINE
   A. THE SPECIFICATIONS OF THE AMERICAN NATIONAL STANDARDS INSTITUTE, AMERICAN WATER WORKS ASSOCIATION AND THE AMERICAN SOCIETY OF TESTING AND MATERIALS HEREIN REFERRED TO FOR WATER SERVICE MAIN PIPE, GATE VALVES, FIRE HYDRANTS, AND OTHER APPURTENANCES, UNLESS OTHERWISE NOTED, SHALL BE THE LATEST SPECIFICATIONS AND STANDARDS OF THE RESPECTIVE ORGANIZATIONS.

   REFERENCE STANDARDS
   THE WORK SHALL CONFORM TO APPLICABLE PROVISIONS OF THE FOLLOWING REFERENCE STANDARDS, LATEST EDITION, EXCEPT AS MODIFIED HEREIN.

ASTM A356	STANDARD SPECIFICATIONS FOR DUCTILE IRON CASTINGS
AWWA C111	RUBBER-GASKET JOINTS FOR DUCTILE-IRON PRESSURE PIPE AND FITTINGS
AWWA C151	DUCTILE IRON CENTRIFUGALLY CAST
AWWA C153	DUCTILE IRON COMPACT FITTINGS FOR WATER SERVICE
AWWA C104	CEMENT-MORTAR LINING FOR DUCTILE-IRON PIPE AND FITTINGS
AWWA C502	DRY-BARREL FIRE HYDRANTS
AWWA C509	RESILIENT-SEATED GATE VALVES FOR WATER SUPPLY SERVICE
AWWA C600	INSTALLATION OF DUCTILE-IRON WATER MAINS AND THEIR APPURTENANCES
AWWA C605	UNDERGROUND INSTALLATION OF POLYVINYL CHLORIDE (PVC) PRESSURE PIPE AND FITTINGS FOR WATER
AWWA C651	DISINFECTING WATER MAINS
AWWA C800	UNDERGROUND SERVICE LINE VALVE AND FITTINGS
AWWA C901	POLYETHYLENE (PE) PRESSURE PIPE AND TUBING, ½ IN. THROUGH 3 IN. FOR WATER SERVICE.
AWWA C900	POLYVINYL CHLORIDE (PVC) PRESSURE PIE AND FABRICATED FITTINGS, 4 IN. THROUGH 12 IN. FOR WATER TRANSMISSION AND DISTRIBUTION.
AWWA C905	POLYVINYL CHLORIDE (PVC) PRESSURE PIPE AND FABRICATED FITTINGS, 14 IN. THROUGH 48 IN.
AWWA C909	MOLECULARLY ORIENTED POLYVINYL CHLORIDE (PVCO) PRESSURE PIPE 4 IN. THROUGH 24 IN. FOR WATER, WASTEWATER AND RECLAIMED WATER SERVICE.
ODOT CMS	OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION MATERIALS SPECIFICATIONS.

   TEN STATE STANDARDS - RECOMMENDED STANDARDS FOR WATER WORKS.

   CONFORMANCE TO THE TEN STATES STANDARDS SHALL BE EQUALED OR EXCEEDED FOR WATER LINES. PARTICULAR EMPHASIS SHALL BE PUT UPON THE FOLLOWING SECTIONS OF PART 8:

   8.0.1 MATERIALS CONFORM TO AWWA STANDARDS
   8.1.2 MINIMUM 6" DIAMETER FOR FIRE PROTECTION
   8.5.3 MINIMUM 4' GROUND COVER
   8.5.5 PRESSURE TESTING AWWA C-600*
   8.5.6 DISINFECTION AWWA C-651*
   8.6.2 VERTICAL SEPARATION MAIN/SEWER (18")
   8.6.3 HORIZONTAL SEPARATION MAIN/SEWER (10')
   8.6.6 NO ENTRY AND NO CONTACT WITH SEWER MANHOLES

   ANY DEVIATION FROM THE ABOVE WILL NOT BE PERMITTED. IN CASES WHERE ONE AND/OR MORE OF THE ABOVE MENTIONED STANDARDS FALL SHORT OF THE WATER DEPARTMENT STANDARDS, THE LATTER SHALL GOVERN.

12. WATER MAIN INSTALLATION WATER MAINS SHALL BE INSTALLED IN ACCORDANCE WITH THE RECOMMENDATION'S OF MANUFACTURER AND AWWA C600 AND AWWA C605.

   ALL WATERLINES SHALL BE INSTALLED WITH A MINIMUM OF 5 FEET OF GROUND COVER, AS MEASURED FROM THE TOP OF THE PIPE TO FINISHED GRADE OR AS MODIFIED ON THE PLANS. WATERLINE SERVICE CONNECTIONS SHALL BE INSTALLED WITH A MINIMUM OF 4 FEET OF COVER.

   PIPE SECTIONS LESS THAN 10-FEET IN LENGTH SHALL NOT BE USED WHERE A FULL PIPE SECTION CAN BE USED.

   ALL PIPES SHALL BE THOROUGHLY CLEANED INSIDE AND OUTSIDE BEFORE BEING LOWERED INTO THE TRENCH AND SHALL BE KEPT CLEAN DURING THE INSTALLATION. THE END OF THE PIPE SHALL BE PLUGGED TO EXCLUDE WATER, ANIMALS OR OTHER DEBRIS FROM ENTERING PIPE.

   GENERAL NOTES

   WATER MAINS SHALL BE TESTED AND STERILIZED UNDER THE DIRECT SUPERVISION OF WATER DEPARTMENT PERSONNEL. MATERIAL TO BE FURNISHED BY THE CONTRACTOR ACCORDING TO SPECIFICATIONS. ALL EXCAVATION AND BACKFILL TO BE PERFORMED BY THE CONTRACTOR, UNLESS OTHERWISE SPECIFIED.

   THE WATER DEPARTMENT SHALL BE NOTIFIED IN WRITING BY THE CONTRACTOR AT LEAST SEVEN (7) DAYS BEFORE BEGINNING ANY WATER MAIN CONSTRUCTION.

   ONLY WATER DEPARTMENT PERSONNEL ARE TO OPERATE WATER DEPARTMENT VALVES.

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No.	Description	Date
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: Site Notes & Details

C-07

LEAKAGE TESTING

THE CONTRACTOR SHALL MAKE PRESSURE AND LEAKAGE TESTS OF ALL PIPELINES IN ACCORDANCE WITH AWWA C600.

PRESSURE TEST SHALL BE MADE IN ALL PIPELINES OR VALVED SECTIONS. THE CONTRACTOR SHALL FURNISH THE PUMP, PIPE CONNECTIONS, TAPS, GAUGES, AND ALL OTHER APPURTENANCES FOR MAKING THE TEST. THE LINE, OR SECTION THEREOF TO BE TESTED, SHALL BE SLOWLY FILLED WITH WATER AND ALL AIR EXPELLED BEFORE MAKING THE TEST.

HYDROSTATIC PRESSURE SHALL BE APPLIED BY MEANS OF A PUMP, TAKING WATER FROM AN AUXILIARY SUPPLY. THE TEST PRESSURE SHALL BE 150 PSI, OR TWO (2) TIMES THE NORMAL OPERATING PRESSURE OF THE SECTION UNDER TEST, WHICHEVER IS THE GREATER. THE PRESSURE SHALL BE MAINTAINED FOR A MINIMUM OF TWO (2) HOURS, OR FOR SUFFICIENT TIME FOR THOROUGH INSPECTION OF PIPING, FITTINGS, VALVES, HYDRANTS, ETC. BY MEANS OF A CONTINUOUS RUNNING PUMP. LEAKING JOINTS SHALL BE TIGHTENED, AND CRACKED OR OTHERWISE DEFECTIVE MATERIAL SHALL BE REMOVED AND REPLACED AND THE TEST SHALL BE REPEATED UNTIL SATISFACTORY RESULTS ARE OBTAINED.

LEAKAGE TESTS SHALL BE MADE SIMULTANEOUSLY WITH OR FOLLOWING COMPLETION OF PRESSURE TESTS OF ALL PIPE LINES OR VALVED SECTIONS THEREOF. THE CONTRACTOR SHALL FURNISH THE PUMPS, GAUGES, AND OTHER APPARATUS AS DEFINED ABOVE, INCLUDING A MEASURABLE AUXILIARY WATER CONTAINER.

LEAKAGE IS DEFINED AS THE QUANTITY OF WATER TO BE SUPPLIED NECESSARY TO MAINTAIN IN THE PIPING BEING TESTED THE LEAKAGE TEST PRESSURE IN SUCH PIPING FILLED WITH WATER AND FREE FROM AIR. THE LEAKAGE TEST PRESSURE SHALL BE NOT LESS THAN 150 PSI OR TWO (2) TIMES THE NORMAL OPERATING PRESSURE OF THE SECTION UNDER THE TEST. THE DURATION OF THE LEAKAGE TEST SHALL BE NOT LESS THAN TWO (2) HOURS. ALLOWABLE LEAKAGE FOR DUCTILE IRON PIPE SHALL NOT EXCEED THE RATE IN TABLE 6A OF AWWA C600-93. ALLOWABLE LEAKAGE FOR PVC PIPE SHALL NOT EXCEED THE RATE IN TABLE 3 OF AWWA C605-94.

13. PIPE MATERIALS
GENERAL

THE PIPE SHALL BE APPROPRIATELY MARKED TO ALLOW THE ENGINEER TO VERIFY THE PROVIDED PIPE MATERIAL MEETS THE REQUIREMENTS OF THESE SPECIFICATIONS.

MATERIALS NOT SPECIFICALLY MEETING THE REQUIREMENTS OF THESE SPECIFICATIONS MAY BE SUBMITTED FOR REVIEW AND APPROVAL BY THE ENGINEER. THE CONTRACTOR SHALL SUBMIT A BID UNIT PRICE FOR MATERIALS TO BE PROVIDED UNDER THIS SPECIFICATION UPON MATERIALS THAT MEET THE REQUIREMENTS OF THESE SPECIFICATIONS. IF ALTERNATE MATERIALS ARE APPROVED, THE ENGINEER MAY REQUEST A UNIT PRICE DEDUCT FROM THE CONTRACTOR.

THE ENGINEER RESERVES THE RIGHT TO SPECIFY MATERIALS WITH MORE STRINGENT OR CONSERVATIVE PERFORMANCE CHARACTERISTICS FOR PARTICULAR APPLICATIONS.

THE ENGINEER RESERVES THE RIGHT TO REQUIRE MANUFACTURER OR SUPPLIER CERTIFICATIONS OR TEST REPORTS THAT THE SUPPLIED MATERIAL MEETS THE REQUIREMENTS OF THESE SPECIFICATIONS.

14. DUCTILE IRON PIPE
DUCTILE IRON PIPE TO BE USED FOR WATER MAIN SHALL BE PROVIDED IN ACCORDANCE WITH AWWA C151.

DUCTILE IRON PIPE SHALL BE THICKNESS CLASS 50. DUCTILE IRON PIPE SHALL BE PROVIDED WITH A RUBBER-GASKET JOINT IN ACCORDANCE WITH AWWA C111.BRONZE WEDGES SHALL BE USED AT ALL PUSH-ON JOINTS (2 PER JOINT). THE WEDGE SHALL BE DRIVEN INTO THE PUSH-ON JOINT TO PROVIDE ELECTRICAL CONDUCTIVITY BETWEEN PIPES.

DUCTILE IRON PIPE SHALL BE COATED WITH A BITUMINOUS MATERIAL ON THE EXTERIOR OF THE PIPE IN ACCORDANCE WITH AWWA C151 AND THE INTERIOR OF THE PIPE SHALL BE CEMENT MORTAR LINED IN ACCORDANCE WITH AWWA C104.

DUCTILE IRON PIPE AND FITTINGS SHALL BE WRAPPED IN A MINIMUM 8 MIL. THICK POLYETHYLENE TUBE PER AWWA C-105, UNLESS THE REQUIREMENT IS WAIVED BY THE OWNER. FITTINGS SHALL BE WRAPPED FOR A DISTANCE OF 5 FEET ON EACH SIDE OF THE FITTING. RIPS, TEARS, PUNCTURES OR OTHER DAMAGE TO THE POLYETHYLENE TUBE SHALL BE REPAIRED PRIOR TO PLACEMENT OF BACKFILL.

15. POLYVINYL CHLORIDE (PVC) PIPE
PVC PIPE TO BE USED FOR WATER MAINS SHALL BE PROVIDED IN ACCORDANCE WITH AWWA C900, DR18, PC 235 FOR PIPE SIZES 4-INCH THROUGH 12-INCH DIAMETER AND AWWA C905, DR 18, PC 235 FOR PIPE SIZES 14-INCH THROUGH 24-INCH DIAMETER.

PVC PIPE SHALL BE DUCTILE IRON EQUIVALENT OUTSIDE DIAMETER. PIPE SHALL BE OF THE INTEGRAL WALL-THICKENED BELL END TYPE INCORPORATING ELASTOMERIC GASKETS TO AFFECT THE PRESSURE SEAL. PIPE SHALL HAVE A NOMINAL LAYING LENGTH OF 20-FEET. PIPE SHALL BE DESIGNED FOR DIRECT CONNECTION INTO DUCTILE IRON FITTINGS USING MECHANICAL JOINTS.

PIPE SHALL BE BLUE IN COLOR.

16. MOLECULARLY ORIENTED POLYVINYL CHLORIDE (PVCO) PIPE
PVCO PIPE TO BE USED FOR WATER MAINS SHALL BE PROVIDED IN ACCORDANCE WITH AWWA C909, PC235 FOR PIPE SIZES 4-INCH THROUGH 12-INCH.

PVCO PIPE SHALL BE DUCTILE IRON EQUIVALENT OUTSIDE DIAMETER. PIPE SHALL BE OF THE INTEGRAL WALL-THICKENED BELL END TYPE INCORPORATING ELASTOMERIC GASKETS TO AFFECT THE PRESSURE SEAL. PIPE SHALL HAVE A NOMINAL LAYING LENGTH OF 20-FEET. PIPE SHALL BE DESIGNED FOR DIRECT CONNECTION INTO DUCTILE IRON FITTINGS USING MECHANICAL JOINTS.

PIPE SHALL BE BLUE IN COLOR.

17. DUCTILE IRON FITTINGS
ALL FITTINGS SHALL BE DUCTILE IRON CONFORMING TO AWWA C153 AND AWWA C11 AND SHALL BE LINED AND COATED AS SPECIFIED ABOVE.

FITTINGS SHALL BE OF THE MECHANICAL JOINT OR PUSH-ON TYPE INCORPORATING RUBBER GASKETS. CAPS AND PLUG FITTINGS REQUIRED FOR TESTING OF THE WATER MAINS SHALL BE PROVIDED WITH STANDARD TAPPED CONNECTIONS. PIPE COUPLINGS SHALL REQUIRE THE PIPE TO BE FURNISHED WITH GROOVED OR SHOULDERED ENDS PROPERLY MACHINED TO RECEIVE THE COUPLING.

ALL FITTINGS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR WATERMAIN INSTALLED.

18. MECHANICAL JOINT RESTRAINTS

RESTRAINED JOINTS SHALL BE PROVIDED AT ALL FITTINGS AND TO THE LENGTHS, IN FEET, AS SHOWN ON THE DRAWINGS AND IN ACCORDANCE WITH LOCAL STANDARDS AND MANUFACTURERS RECOMMENDATIONS.

MECHANICAL JOINT RESTRAINTS SHALL BE PROVIDED IN ACCORDANCE WITH ASTM A536, AWWA C111 AND AWWA C153.

MECHANICAL JOINT RESTRAINTS SHALL INCLUDE A RESTRAINING MECHANISM THAT WHEN ACTUATED, IMPACTS MULTIPLE WEDGING ACTIONS AGAINST THE PIPE, INCREASING ITS RESISTANCE TO MOVEMENT AS INTERNAL PIPE PRESSURE INCREASES. THE JOINT SHALL MAINTAIN SOME FLEXIBILITY FOLLOWING PLACEMENT OF FINAL BEDDING AND BACKFILL. THE RESTRAINING DEVICE SHALL BE CONSTRUCTED OF DUCTILE IRON HEAT TREATED TO A HARDNESS OF 370 BHN WITH A MINIMUM WORKING PRESSURE OF 250 PSI AND AN SAFETY FACTOR OF 2:1.

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RESTRAINED JOINTS FOR FITTINGS SHALL BE MEGA-LUG SERIES 2000, AS MANUFACTURED BY EBAA IRON, INC., OR EQUAL. CONCRETE THRUST BLOCKING IS ALSO REQUIRED. BELL CLAMP RESTRAINT FOR DIP WITH PUSH-ON JOINTS, WHERE REQUIRED, SHALL BE SERIES 800 "COVERALL," AS MANUFACTURED BY EBAA IRON, INC., OR EQUAL.

ALL BOLTS AND NUTS SHALL BE COR-TEN. ALL OTHER HARDWARE SHALL BE DUCTILE IRON.

DIMENSIONS OF THE JOINT RESTRAIN SHALL BE SUCH THAT IT CAN BE USED WITH STANDARD MECHANICAL JOINT BELL AND TEE-HEAD BOLTS CONFORMING TO AWWA C111. TWIST-OFF NUTS SHALL BE USED TO INSURE PROPER ACTUATION OF THE RESTRAINING DEVICES.

THE CONTRACTOR SHALL PROVIDE THRUST BLOCKING AS SHOWN ON THE PLAN DETAIL SHEET.

WATERMAIN PIPE SHALL BE ANCHORED USING MECHANICAL JOINT RESTRAINTS AT ALL DEAD ENDS, BENDS, TEES, VALVES AND CHANGES IN DIRECTION OF THE PIPE IN ACCORDANCE WITH THE APPLICABLE TABLE AS SHOWN ON THE PLAN DETAIL SHEET.

ALL DETECTABLE TRACING WIRE SHALL BE INSTALLED WITH ALL WATER MAINS. THE WIRE SHALL BE INSULATED NO. 12 COPPER ELECTRICAL WIRE (THW). SPLICES IN TRACING WIRE SHALL BE MADE WITH SHRINK TYPE BUTT-END ELECTRICAL CONNECTORS.

THE TRACING WIRE SHALL BE CONNECTED TO EACH FIRE HYDRANT AND SHALL BE PLACED UNDER THE PIPE. IF THE WATERLINE ENDS AT A VALVE BOX, THE TRACING WIRE SHALL BE PLACED OUTSIDE OF THE VALVE BOX AND THEN ENTER THE VALVE BOX THROUGH A HOLE DRILLED BY THE CONTRACTOR APPROXIMATELY 8 INCHES BELOW THE TOP OF THE VALVE BOX.

19. GATE VALVES VALVES:
VALVES 4 INCHES THROUGH 16 INCHES SHALL BE OF RESILIENT-SEATED GATE VALVE DESIGN. THE VALVES SHALL BE CONSTRUCTED WITH IRON BODY, FUSION BONDED EPOXY COATING ON ALL INTERIOR AND EXTERIOR SURFACES, NON-RISING VALVE STEM, THE VALVE WEDGE SHALL BE DUCTILE IRON COMPLETELY ENCLOSED IN RUBBER. THE VALVE SHALL OPEN WHEN THE STEM WITH 2 INCH SQUARE NUT IS TURNED COUNTER CLOCKWISE. VALVES SHALL BE DESIGNED FOR A WORKING PRESSURE OF 200 PSI WHEN USED IN NON-SHOCK COLD WATER. SERVICE STEM SEA BE RUBBER-O-RING. VALVES SHALL CONFORM TO ANSI/AWWA STANDARD C509.

ALL BOLTS IN THE VALVE SHALL BE COR-TEN OR STAINLESS STEEL.

20. FIRE HYDRANTS
FIRE HYDRANTS MUST BE OF THE DRY BARREL DESIGN. THEY MUST BE NON-DRAINING, WITH A 5 1/4 INCH MAIN VALVE. HYDRANTS MUST MEET OR EXCEED THE AMERICAN WATER WORKS ASSOCIATIONS C502 SPECIFICATION.

HYDRANTS MUST CONSIST OF A ONE PIECE LOWER BARREL AND ONE PIECE UPPER BARREL. HYDRANT SHOES WILL BE 6" MECHANICAL JOINT WITH ACCESSORIES.

THE HYDRANT MUST EMPLOY A TRAFFIC DESIGN AND ALLOW FOR A 360-DEGREE FACING OF NOZZLES. THE NOZZLES SHOULD BE AT LEAST 18" FROM THE GROUND (TRAFFIC BREAK-AWAY) LINE.

HYDRANTS ARE TO HAVE 1 1/2" PENTAGON NUTS AND BE OPEN LEFT IN DESIGN. THERE WILL BE TWO (2) 2 1/2" NST HOSE NOZZLES AND ONE (1) 4" PUMPER NOZZLE 4 11/16 O.D. (THREADS TO BE VERIFIED WITH LOCAL CODES). FIRE HYDRANTS WILL BE PAINTED SAFETY YELLOW OR PER LOCAL CODES.

21. SANITARY SEWER MATERIAL
PVC
PVC PIPE 12" DIAMETER AND SMALLER SHALL MEET THE LATEST REQUIREMENTS OF ASTM F-794, WITH A MINIMUM PIPE STIFFNESS OF 60 PSI; MEET THE LATEST REQUIREMENTS OF ASTM F-949, WITH A MINIMUM PIPE STIFFNESS OF 50 PSI; MEET THE LATEST REQUIREMENTS OF ASTM D-3034, SDR 35 (TYPE PSM). PIPE SHALL HAVE A MINIMUM CELL CLASSIFICATION OF 12454-B, 12454-C OR 1236-A PER ASTM D-1784.

PVC PIPE 15" DIAMETER AND LARGER AND NOT OTHERWISE SPECIFIED; SHALL MEET THE LATEST REQUIREMENTS OF ASTM F-794, WITH A MINIMUM PIPE STIFFNESS OF 46 PSI; OR MEET THE LATEST REQUIREMENTS OF ASTM F-949, WITH A MINIMUM PIPE STIFFNESS OF 50 PSI. PIPE SHALL HAVE A MINIMUM CELL CLASSIFICATION OF 12454-B, 12454-C OR 12364-A PER ASTM D-1784.

ALL PVC PIPE SHALL BE APPROPRIATELY MARKED FOR THE PURPOSE OF IDENTIFICATION AND SHALL BE SUBJECT TO INSPECTION AND REJECTION AT THE FACTORY, TRENCH OR OTHER POINT OF DELIVERY.

ALL PIPE SHALL BE OF THE INTEGRAL BELL ELASTOMERIC GASKETED JOINT TYPE. THE JOINTS SHALL BE PUSH-ON TYPE MEETING THE REQUIREMENTS OF ASTM D-3212 AND THE JOINT SHALL BE DESIGNED TO PREVENT DISPLACEMENT OF THE GASKET WHEN ASSEMBLING THE JOINT.

THE PIPE SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D-2321 AND WITH THE REQUIREMENTS OF THESE SPECIFICATIONS. ANY REQUIREMENTS OF ASTM D-2321 WHICH MAY BE IN CONFLICT OR INCONSISTENT WITH THE REQUIREMENTS OF THESE SPECIFICATIONS SHALL BE VOID TO THE EXTENT OF SUCH CONFLICT OR INCONSISTENCY.

THE ENDS OF ALL RIBBED PVC PIPE THAT WILL BE INSTALLED IN MANHOLES SHALL BE PROVIDED WITH A FACTORY INSTALLED OVERSLEEVE. FIELD INSTALLED OVERSLEEVES WILL NOT BE PERMITTED.

REINFORCED CONCRETE PIPE
ALL SIZES OF REINFORCED CONCRETE PIPE SHALL MEET THE LATEST REQUIREMENTS OF ASTM C-76, CLASS III AND ASTM C-443.

REINFORCED CONCRETE SEWER PIPE (RCP) SHALL BE APPROPRIATELY MARKED FOR THE PURPOSE OF IDENTIFICATION NO PIPE SHALL BE DELIVERED UNTIL IT HAS REACHED THE APPROPRIATE STRENGTH REQUIREMENTS. ALL RCP SHALL SUBJECT TO INSPECTION AND REJECTION AT THE FACTORY, TRENCH OR OTHER POINT OF DELIVERY.

JOINTS FOR RCP SHALL BE OF THE RUBBER GASKET TYPE CONFORMING TO ASTM C-443. THE BASKET SHALL BE THE SOLE ELEMENT DEPENDED UPON TO MAKE THE JOINT WATERTIGHT.

REINFORCED CONCRETE ELLIPTICAL PIPE SHALL BE PROVIDED IN ACCORDANCE WITH ASTM C507.

HDPE PIPE
HIGH DENSITY POLYETHYLENE (HDPE) PIPE SHALL ONLY BE USED FOR GRAVITY STORM SEWER OR DRAINAGE TILE APPLICATION. IT SHALL BE MARKED FOR THE PURPOSE OF IDENTIFICATION AND SHALL BE SUBJECT TO INSPECTION AND REJECTION AT THE FACTORY, TRENCH OR OTHER POINT OF DELIVERY. ACCEPTABLE PIPE SIZE SHALL BE 36" OR LESS.

HDPE PIPE SHALL HAVE A SMOOTH INTERIOR AND ANNULAR EXTERIOR CORRUGATIONS. PIPE 10" AND SMALLER SHALL MEET AASHTO M252, TYPE S AND THE VIRGIN MATERIAL SHALL CONFORM WITH THE MINIMUM REQUIREMENTS OF CELL CLASSIFICATION 424420C. PIPE 12" AND LARGER SHALL MEET AASHTO M294, TYPE S OR ASTM F2306 AND THE VIRGIN MATERIAL SHALL CONFORM WITH THE MINIMUM REQUIREMENTS OF CELL CLASSIFICATION 435400C. CELL CLASSIFICATIONS SHALL BE PER ASTM D3350 EXCEPT CARBON BLACK CONTENT SHOULD NOT EXCEED 5%.

PIPE JOINTS SHALL MEET THE REQUIREMENTS OF AASHTO M252, M294 OR ASTM F2306. JOINTS SHALL BE WATERTIGHT MEETING THE REQUIREMENTS OF ASTM D3212. GASKETS SHALL BE POLYISOPRENE MEETING THE REQUIREMENTS OF ASTM F477 AND SHALL BE INSTALLED BY THE MANUFACTURER AND COVERED WITH A REMOVABLE WRAP. JOINT LUBRICANT PROVIDED BY THE PIPE MANUFACTURER SHALL BE USED ON THE GASKET AND BELL. TWELVE INCH (12") AND LARGER PIPE SHALL HAVE A REINFORCED BELL WITH A BELL TOLERANCE DEVICE INSTALLED BY THE MANUFACTURER.

PIPE SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321 AND THE MANUFACTURERS GUIDELINES. MINIMUM COVER IN TRAFFIC AREAS FOR 4" THROUGH 36" PIPE SHALL BE 12", HOWEVER PIPE FLOTATION SHALL ALSO BE CONSIDERED.

22. SERVICE CONNECTIONS
SERVICE CONNECTIONS IN ALL PIPE 15" DIAMETER AND SMALLER SHALL BE INSTALLED INTO FACTORY MADE TEES OF THE SAME MATERIAL AS THE MAIN SEWER.

SERVICE CONNECTIONS IN ALL PIPE 18" DIAMETER AND LARGER SHALL BE INSTALLED INTO THE MAIN SEWER BY ONE OF THE FOLLOWING METHODS. IN PVC OR HDPE SEWER MAINS, THE CONNECTIONS SHALL BE MADE WITH INSERTA-TEES AS MANUFACTURED BY FOWLER MANUFACTURING COMPANY OR APPROVED EQUAL. NO ALTERNATIVE INSERTA-TEES SHALL BE CONSIDERED EQUAL UNTIL APPROVED BY THE ENGINEER. IN RCP SEWER MAINS THE CONNECTIONS SHALL BE MADE BY CORING THE CONCRETE MAIN AND INSTALLING A FLEXIBLE WATERTIGHT KOR-N-SEAL BOOT AS MANUFACTURED BY NATIONAL POLLUTION CONTROL SYSTEMS, INC. OR APPROVED EQUAL. NO OTHER BOOT ASSEMBLY SHALL BE CONSIDERED EQUAL UNTIL APPROVED BY THE ENGINEER.

MATERIALS USED TO CONSTRUCT SEWER SERVICE CONNECTIONS SHALL BE ASTM 3034.

CONNECTION OF EXISTING SEWER SERVICES TO THE NEW SEWER SERVICES SHALL BE WITH A FERNCO OR APPROVED FLEXIBLE WATERTIGHT CONNECTIONS.

22. PLUGS
PLUGS SHALL BE PROVIDED AT THE FOLLOWING LOCATIONS:

PERMANENT PLUGS SHALL BE PROVIDED AT ALL LOCATIONS WHERE EXISTING SEWERS ARE CUT AND NOT RECONNECTED.

TEMPORARY PLUGS SHALL BE PROVIDED AT ALL LOCATIONS WHERE NEW PIPE STUBS ARE INSTALLED FOR FUTURE SEWER EXTENSIONS.

THE PLUGS SHALL BE DESIGNED SPECIFICALLY FOR USE WITH THE TYPE OF PIPE IN WHICH THEY ARE INSTALLED, SHALL BE WATERTIGHT, AND SHALL BE CAPABLE OF REMOVAL WITHOUT CAUSING DAMAGE TO THE PIPE IN WHICH THEY ARE INSTALLED.

THE COST OF ALL LABOR, EQUIPMENT, AND MATERIALS REQUIRED TO INSTALL PLUGS SHALL BE INCLUDED IN THE APPROPRIATE UNIT PRICE BID FOR THE PERTINENT SEWER ITEM.

23. SANITARY SEWER LEAKAGE TESTING
IN ALL REFERENCES TO TEST PRESSURES, A PRESSURE ADJUSTMENT SHALL BE MADE WHERE GROUND WATER IS ABOVE THE SEWER LINE BEING TESTED, BY ADDING 0.433 PSI PRESSURE FOR EACH FOOT THE GROUND WATER LEVEL IS ABOVE THE INVERT OF THE PIPE, BASED UPON MAXIMUM FOR THE TESTING SECTION. THE CONTRACTOR SHALL MAKE PROVISIONS FOR DETERMINING THE GROUND WATER LEVEL, AND THE LEVEL SHALL BE CONFIRMED BY THE ENGINEER.

AIR SHALL BE APPLIED SLOWLY TO THE TEST SECTION UNTIL THE PRESSURE REACHES 3 PSIG (POUNDS PER SQUARE INCH, GAUGE) PLUS ADJUSTMENT FOR GROUNDWATER. THE PRESSURE INSIDE THE PIPE SHALL NOT EXCEED 5 PSIG, PLUS ADJUSTMENT FOR GROUND WATER. WHEN THE PRESSURE INSIDE THE TEST SECTION REACHES 4.0 PSIG, THE AIR PRESSURE SHALL BE THROTTLED SO THAT THE INTERNAL PRESSURE IS MAINTAINED BETWEEN 4.0 AND 3.5 PSIG FOR AT LEAST TWO MINUTES, TO PERMIT TEMPERATURE STABILIZATION.

UPON EXPIRATION OF THE TWO-MINUTE PERIOD, THE AIR SUPPLY SHALL BE SHUT OFF OR DISCONNECTED AND THE PRESSURE ALLOWED TO DROP TO EXACTLY 3.5 PSIG. AT THE EXACT TIME 3.5 PSIG IS REACHED, A STOP WATCH SHALL BE STARTED AND THE TIME REQUIRED FOR THE PRESSURE TO DROP TO EXACTLY 2.5 PSIG SHALL BE DETERMINED.

NOTE: MAKE PROPER PRESSURE ADJUSTMENTS FOR GROUND WATER, WHERE APPLICABLE, IN DETERMINING THE BEGINNING AND END OF THE PERIOD FOR THE 1.0 PSIG PRESSURE DROP. TO AVOID OVER PRESSURIZING THE SEWER THE TEST PRESSURE SHALL NOT EXCEED 9 PSIG.

THE PERMISSIBLE TIME ALLOCATION FOR THE 10. PSIG PRESSURE DROP SHALL BE CALCULATED ON THE BASIS OF THE DIAMETER AND LENGTH OF MAIN SEWER TESTED AND NO ADJUSTMENT SHALL BE MADE FOR SERVICE CONNECTION INCLUDED IN THE TEST.

THE AIR TEST FOR THE TEST SECTION SHALL BE CONSIDERED ACCEPTABLE IF THE TIME ELAPSED FOR THE 1.0 PSIG PRESSURE DROP, AS PREVIOUSLY SPECIFIED, IS EQUAL OR GREATER THAN THE TIME SHOWN IN THE TABLE:

MINIMUM HOLDING TIME IN MINUTES: SECONDS FOR 1.0 PSI PRESSURE DROP

PIPE DIAMETER	LENGTH OF MAINLINE TESTED							
	100'	150'	200'	250'	300'	350'	400'	450'
4"	3:46	3:46	3:46	3:46	3:46	3:46	3:46	3:46
6"	5:40	5:40	5:40	5:40	5:40	5:40	5:42	6:24
8"	7:34	7:34	7:34	7:34	7:36	8:52	10:08	11:24
10"	9:26	9:26	9:26	9:53	11:52	13:51	15:49	17:48
12"	11:20	11:20	11:24	14:15	17:05	19:56	22:47	25:38
15"	14:10	14:10	17:48	22:15	26:42	31:09	35:36	40:04
18"	17:00	19:13	25:38	32:03	38:27	44:52	51:16	57:41

25. DEFLECTION TESTING
THE CONTRACTOR SHALL PERFORM DEFLECTION TESTS ON ALL FLEXIBLE PIPE. NO TESTS MAY BE CONDUCTED UNTIL AFTER THE FINAL BACKFILL HAS BEEN IN PLACE FOR AT LEAST 30 DAYS.

PRIOR TO PERFORMING THE DEFLECTION TEST, THE CONTRACTOR SHALL CLEAN ALL SEWERS WITH A JET TRUCK. ALL SEDIMENT, DIRT, DEBRIS, STONE, TRASH AND ANY OTHER FOREIGN ITEMS SHALL BE FLUSHED AND REMOVED FROM THE SEWER.

NO PIPE SHALL EXCEED A DEFLECTION OF 5%. WHERE POSSIBLE, ELECTRONIC EQUIPMENT SHALL BE USED TO MEASURE AND RECORD THE DEFLECTION IN FLEXIBLE PIPE. IF SUCH EQUIPMENT IS NOT AVAILABLE, DEFLECTION TESTS CAN BE RUN USING RIGID MANDRELS WITH DIAMETERS EQUAL TO 95% OF THE INSIDE DIAMETER OF THE PIPE. ALL DEFLECTION TESTS SHALL BE PERFORMED WITHOUT MECHANICAL PULLING DEVICES. THE SYSTEM WILL NOT BE CONDITIONALLY ACCEPTED UNTIL A SATISFACTORY DEFLECTION TEST, WITNESSED BY THE ENGINEER, IS OBTAINED.

THE CONTRACTOR SHALL INCLUDE IN THE BID ALL COSTS FOR LABOR AND MATERIALS NECESSARY TO COMPLETE THE DEFLECTION TESTING HEREIN SPECIFIED. ALL TESTS SHALL BE CONDUCTED IN THE PRESENCE OF THE ENGINEER OR HIS AGENT WHOSE JUDGEMENT SHALL BE FINAL AS TO ACCEPTANCE OF ANY TEST.

26. PRECAST MANHOLE STRUCTURES
ALL PRECAST MANHOLE STRUCTURES SHALL BE PROVIDED IN ACCORDANCE WITH ASTM C478, ASTM C443 AND MEETING THE REQUIREMENTS OF RECOMMENDED STANDARDS FOR WASTEWATER FACILITIES (TEN STATE STANDARDS).

PRECAST MANHOLE STRUCTURES SHALL BE PROVIDED UTILIZING CONCRETE WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 5000 PSI WITH AN AIR CONTENT BETWEEN 5% AND 7%.

ALL REINFORCING STEEL SHALL BE GRADE 60.

BASES FOR MANHOLES SHALL BE OF THE PRECAST REINFORCED CONCRETE TYPE WITH THE BOTTOM INTEGRALLY CAST WITH THE WALLS. BOTTOM REINFORCEMENT SHALL BE ADEQUATELY TIED TO WALL REINFORCEMENT.

IF NOT INTEGRALLY CAST WITH THE BASE, THE CONTRACTOR SHALL PROVIDE A CLASS II CONCRETE INVERT THROUGH THE MANHOLE. THE CAST-IN-PLACE INVERT SHALL BE PLACED FOLLOWING THE INSTALLATION OF ALL PIPE CONNECTIONS. THE INVERT SHALL HAVE A DEPTH THROUGH THE MANHOLE EQUAL TO THE RADIUS OF THE SEWER PIPE AND SHALL SLOPE UPWARD TOWARD THE MANHOLE WALLS FROM THE CENTERLINE OF THE SEWER PIPE APPROXIMATELY 3 INCHES, TROWELED SMOOTH.

ALL PIPE PENETRATIONS INTO THE MANHOLE SECTION SHALL BE SHOCK ABSORBENT AND SHEAR RESISTANT, DESIGNED TO PREVENT ANY DIRECT CONTACT BETWEEN THE PIPE AND MANHOLE AND SHALL PROVIDE A WATERTIGHT SEAL CONNECTION BETWEEN THE PIPE BARREL AND MANHOLE STRUCTURE WITH THE PIPE DEFLECTED P TO 12-DEGREES IN ANY DIRECTION. THE FLEXIBLE JOINTS SHALL BE A-LOCK, KOR-SEAL, PRESS WEDGE II OR APPROVED EQUAL.

RISER SECTIONS SHALL HAVE A MINIMUM INSIDE DIAMETER OF 48-INCHES.

TOP SECTIONS MAY BE EITHER FLAT TOP SLABS OR ECCENTRIC TRANSITIONS. TOP SECTIONS SHALL HAVE A 24-INCH DIAMETER OPENINGS SO AS TO ACCOMMODATE THE CAST IRON FRAME AND COVER. FLAT TOP SLABS SHALL BE A MINIMUM OF 8-INCHES THICK.

THE CAST IRON MANHOLE FRAME SHALL BE SET AT THE PROPER ELEVATION BY SUE OF PRECAST CONCRETE ADJUSTING RINGS PLACED ON THE TOP SECTION OF THE MANHOLE STRUCTURE. THE ADJUSTING RINGS SHALL BE A MINIMUM OF 4-INCHES IN HEIGHT AND SHALL NOT EXCEED 16-INCHES IN TOTAL HEIGHT. CONCRETE ADJUSTING RINGS SHALL BE HELD IN PLACE WITH MORTAR COMPOSED OF 1 PART, BY VOLUME, PORTLAND CEMENT AND 2 PARTS CLEAN, HARD SAND.

27. MANHOLE FRAMES AND COVERS
ALL MANHOLE FRAMES AND COVERS SHALL BE A GRAY IRON CASTING CONFORMING TO ASTM A48.

ALL MANHOLE FRAMES AND COVERS SHALL BE NEENAH FOUNDRY COMPANY R-1772 WITH TYPE B COVER, EAST JORDAN 1022-2 WITH TYPE A COVER OR APPROVED EQUAL.

BOTH THE UNDERSIDE OF THE LID AND THE UPPER SURFACE OF THE LEDGE UPON WHICH THE LID RESTS SHALL BE MACHINED SO AS TO PREVENT ROCKING OF THE LID ON ITS SUPPORTING SURFACE. CASTINGS SHALL BE CLEANED AND DIPPED IN COAL TAR PITCH VARNISH AT THE FACTORY.

MANHOLE COVERS SHALL BE MARKED TO INDICATE THE PROPOSED SEWER SERVICE. THE WORDS "SANITARY SEWER" CAST INTO THE TOP OF THE CASTING USED FOR SANITARY MANHOLES; "STORM SEWER" CAST INTO THE TOP OF CASTINGS USED FOR STORM MANHOLES; AND "SEWER" CAST INTO THE TOP OF CASTINGS USED FOR COMBINED SEWER MANHOLES. THE CONTRACTOR SHALL VERIFY WHICH COVER IS REQUIRED FOR EACH MANHOLE PRIOR TO ORDERING.

28. MANHOLE STEPS
MANHOLES SHALL BE PROVIDED WITHOUT STEPS UNLESS SPECIFIED OTHERWISE ON THE PLAN.

IF STEPS ARE SPECIFIED TO BE PROVIDED, THEY SHALL CONFORM TO THE FOLLOWING:

STEPS SHALL BE MODEL PS2-PF MANHOLE STEP AS MANUFACTURED BY M.A. INDUSTRIES, INC. OR APPROVED EQUAL.

THE VERTICAL SPACING OF STEPS SHALL BE NOT MORE THAN 16-INCHES. THE CONTRACTOR SHALL CAREFULLY SET EACH RISER SECTION TO ENSURE THAT THE STEPS ARE PROPERLY ALIGNED BETWEEN PRECAST SECTIONS. THE CONTRACTOR MAY BE REQUIRED TO RELOCATE THE STEPS AS DIRECTED BY THE ENGINEER TO ALIGN THE STEPS WITH THE TOP SECTION OF THE MANHOLE.

NEW CONNECTIONS TO EXISTING MANHOLES MAY REQUIRE THE CONTRACTOR TO RELOCATE THE EXISTING STEPS TO AVOID CONFLICT WITH AN INSIDE DROP PIPE CONNECTION.

29. SANITARY MANHOLE LEAKAGE TESTING
ALL SANITARY OR COMBINATION SEWER MANHOLES SHALL BE VACUUM TESTED IN ACCORDANCE WITH THE PROCEDURES DESCRIBED IN ASTM C1244 IN THE PRESENCE OF THE ENGINEER. THE PROCEDURE FOR MANHOLE TESTING IS SUMMARIZED AS FOLLOWS:

A. ALL PIPES ENTERING THE MANHOLE SHALL BE PLUGGED AND BRACED.
B. ONCE A VACUUM OF 10-INCHES OF MERCURY IS DRAWN INTO THE MANHOLE THE VACUUM EQUIPMENT SHALL BE SHUT OFF.
C. THE TIME FROM THE VACUUM TO DROP FROM 10-INCHES OF MERCURY TO 9-INCHES OF MERCURY SHALL BE MEASURED AND COMPARED TO THE FOLLOWING TABLE.

MINIMUM TEST TIME IN SECONDS

MANHOLE DEPTH	MANHOLE DIAMETER			
	48"	60"	72"	84"
10' & UNDER	20	26	41	50
12'	25	33	49	59
14'	30	39	57	68
16'	35	46	65	77
18'	40	52	73	87
20'	45	59	81	97
22'	50	65	89	106
24'	55	72	97	116

D. IF THE TIME OF THE VACUUM DROP IS LESS THAN THE SPECIFIED TIME, THE CONTRACTOR SHALL LOCATE AND CORRECT THE DEFECT AT NO ADDITIONAL COST TO THE OWNER. REPAIRS SHALL BE PERFORMED IN ACCORDANCE WITH ASTM C478.

THE CONTRACTOR SHALL INCLUDE ALL COSTS NECESSARY TO PERFORM THE AIR TESTS IN THE BID UNIT PRICE FOR MANHOLE INSTALLED.

PROHIBITED CONNECTIONS:

NO BUILDING SEWER WITH ANY OF THE FOLLOWING SOURCES OF CLEAR WATER SHALL BE CONNECTED TO THE CITY'S SEWER SYSTEM.

- -FOUNDATION OR FOOTING DRAINS, BY GRAVITY OR SUMP PUMP
- -YARD DRAINS
- -HEAT PUMP DISCHARGES
- -STORM DRAIN CONNECTIONS
- -ROOF DRAINS/DOWN SPOUTS
- -SUMP PUMP DISCHARGES
- -COOLING WATER DISCHARGES

30. STORM SEWER
PVC PIPE
PVC PIPE 12" DIAMETER AND SMALLER SHALL MEET THE LATEST REQUIREMENTS OF ASTM F-794, WITH A MINIMUM PIPE STIFFNESS OF 60 PSI; MEET THE LATEST REQUIREMENTS OF ASTM F-949, WITH A MINIMUM PIPE STIFFNESS OF 50 PSI; MEET THE LATEST REQUIREMENTS OF ASTM D-3034, SDR 35 (TYPE PSM). PIPE SHALL HAVE A MINIMUM CELL CLASSIFICATION OF 12454-B, 12454-C OR 1236-A PER ASTM D-1784.

PVC PIPE 15" DIAMETER AND LARGER AND NOT OTHERWISE SPECIFIED; SHALL MEET THE LATEST REQUIREMENTS OF ASTM F-794, WITH A MINIMUM PIPE STIFFNESS OF 46 PSI; OR MEET THE LATEST REQUIREMENTS OF ASTM F-949, WITH A MINIMUM PIPE STIFFNESS OF 50 PSI. PIPE SHALL HAVE A MINIMUM CELL CLASSIFICATION OF 12454-B, 12454-C OR 12364-A PER ASTM D-1784.

ALL PVC PIPE SHALL BE APPROPRIATELY MARKED FOR THE PURPOSE OF IDENTIFICATION AND SHALL BE SUBJECT TO INSPECTION AND REJECTION AT THE FACTORY, TRENCH OR OTHER POINT OF DELIVERY.

ALL PIPE SHALL BE OF THE INTEGRAL BELL ELASTOMERIC GASKETED JOINT TYPE. THE JOINTS SHALL BE PUSH-ON TYPE MEETING THE REQUIREMENTS OF ASTM D-3212 AND THE JOINT SHALL BE DESIGNED TO PREVENT DISPLACEMENT OF THE GASKET WHEN ASSEMBLING THE JOINT.

THE PIPE SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D-2321 AND WITH THE REQUIREMENTS OF THESE SPECIFICATIONS. ANY REQUIREMENTS OF ASTM D-2321 WHICH MAY BE IN CONFLICT OR INCONSISTENT WITH THE REQUIREMENTS OF THESE SPECIFICATIONS SHALL BE VOID TO THE EXTENT OF SUCH CONFLICT OR INCONSISTENCY.

THE ENDS OF ALL RIBBED PVC PIPE THAT WILL BE INSTALLED IN MANHOLES SHALL BE PROVIDED WITH A FACTORY INSTALLED OVERSLEEVE. FIELD INSTALLED OVERSLEEVES WILL NOT BE PERMITTED.

REINFORCED CONCRETE PIPE
ALL SIZES OF REINFORCED CONCRETE PIPE SHALL MEET THE LATEST REQUIREMENTS OF ASTM C-76, CLASS III AND ASTM C-443.

REINFORCED CONCRETE SEWER PIPE (RCP) SHALL BE APPROPRIATELY MARKED FOR THE PURPOSE OF IDENTIFICATION AND NO PIPE SHALL BE DELIVERED UNTIL IT HAS REACHED THE APPROPRIATE STRENGTH REQUIREMENTS. ALL RCP SHALL BE SUBJECT TO INSPECTION AND REJECTION AT THE FACTORY, TRENCH OR OTHER POINT OF DELIVERY.

JOINTS FOR RCP SHALL BE OF THE RUBBER GASKET TYPE CONFORMING TO ASTM C-443. THE GASKET SHALL BE THE SOLE ELEMENT DEPENDED UPON TO MAKE THE JOINT WATERTIGHT.

REINFORCED CONCRETE ELLIPTICAL PIPE SHALL BE PROVIDED IN ACCORDANCE WITH ASTM C507.

HDPE PIPE
HIGH DENSITY POLYETHYLENE (HDPE) PIPE SHALL ONLY BE USED FOR GRAVITY STORM SEWER OR DRAINAGE TILE APPLICATION. IT SHALL BE MARKED FOR THE PURPOSE OF IDENTIFICATION AND SHALL BE SUBJECT TO INSPECTION AND REJECTION AT THE FACTORY, TRENCH OR OTHER POINT OF DELIVERY. ACCEPTABLE PIPE SIZE SHALL BE 36" OR LESS.

HDPE PIPE SHALL HAVE A SMOOTH INTERIOR AND ANNULAR EXTERIOR CORRUGATIONS. PIPE 10" AND SMALLER SHALL MEET AASHTO M252, TYPE S AND THE VIRGIN MATERIAL SHALL CONFORM WITH THE MINIMUM REQUIREMENTS OF CELL CLASSIFICATION 424420C. PIPE 12" AND LARGER SHALL MEET AASHTO M294, TYPE S OR ASTM F2306 AND THE VIRGIN MATERIAL SHALL CONFORM WITH THE MINIMUM REQUIREMENTS OF CELL CLASSIFICATION 435400C. CELL CLASSIFICATIONS SHALL BE PER ASTM D3350 EXCEPT CARBON BLACK CONTENT SHOULD NOT EXCEED 5%.

PIPE JOINTS SHALL MEET THE REQUIREMENTS OF AASHTO M252, M294 OR ASTM F2306. JOINTS SHALL BE WATERTIGHT MEETING THE REQUIREMENTS OF ASTM D3212. GASKETS SHALL BE POLYISOPRENE MEETING THE REQUIREMENTS OF ASTM F477 AND SHALL BE INSTALLED BY THE MANUFACTURER AND COVERED WITH A REMOVABLE WRAP. JOINT LUBRICANT PROVIDED BY THE PIPE MANUFACTURER SHALL BE USED ON THE GASKET AND BELL. TWELVE INCH (12") AND LARGER PIPE SHALL HAVE A REINFORCED BELL WITH A BELL TOLERANCE DEVICE INSTALLED BY THE MANUFACTURER.

PIPE SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321 AND THE MANUFACTURERS GUIDELINES. MINIMUM COVER IN TRAFFIC AREAS FOR 4" THROUGH 36" PIPE SHALL BE 12", HOWEVER PIPE FLOTATION SHALL ALSO BE CONSIDERED.

FINGER DRAINS SHALL BE INSTALLED IN ALL CATCH BASINS. 10' LONG IN ALL FOUR DIRECTIONS.

THE STORM DRAINAGE SYSTEM SHALL BE CLEANED BY THE CONTRACTOR PRIOR TO ACCEPTANCE BY OWNERS . INSPECTION AND TESTING: CONTRACTOR SHALL PERFORM THE FOLLOWING INSPECTIONS AND TESTS IN PRESENCE OF ENGINEER:

A. LEAKAGE INSPECTION: STORM SEWERS SHALL BE INSPECTED FOR EXCESSIVE INFILTRATION AND SAND LEAKAGE. CONTRACTOR SHALL REPAIR ALL SAND LEAKS AND INFILTRATION LEAKS WHICH MAY CAUSE A CONTINUED MAINTENANCE PROBLEM.
B. POOR ALIGNMENT, OFFSET OR OPEN JOINTS, SAGS, OR KINKS, DEFECTS SHALL BE CORRECTED BY CONTRACTOR BEFORE FINAL ACCEPTANCE. PIPELINE SHALL BE RELAID IF LAMP CANNOT BE VIEWED BETWEEN ADJACENT MANHOLES.
C. OF NOMINAL PIPE DIAMETER. IF VISUAL INSPECTION INDICATES A GREATER DEFLECTION, CONTRACTOR SHALL SUPPLY AND PULL A BALL WITH A DIAMETER 5% PERCENT LESS THAN INTERNAL PIPE SIZE THROUGH SEWER; FAILURE TO FREELY PASS THROUGH SHALL BE CAUSE FOR REJECTION OF SEWER.

31. DOWN SPOUT LATERALS
A. PIPE: PVC DRAINS FROM DOWN SPOUTS TO STORM SEWER SHALL BE PVC PIPE, ASTM D2665, WITH SOLVENT WELD JOINTS.
B. STONE BACKFILL: WASHED, EVENLY GRADED GRAVEL OR CRUSHED STONE WITH 100% PASSING 1 INCH SIEVE AND NOT MORE THAN 5% PASSING NO. 8 SIEVE.

32. PAVEMENT AND RETAINING WALL DRAIN TILE
A. UNDER DRAIN PIPE: PERFORATED CORRUGATED POLYETHYLENE DRAINAGE PIPE COMPLYING WITH AASHTO M252.
B. PIPE WRAP: SYNTHETIC FABRIC WITH AN APPROXIMATE WEIGHT OF 3 OZ./SQ.YD; ADS SOCK, OR APPROVED EQUAL.
C. UNDERDRAIN AGGREGATE: CLEAN, WASHED 1/2 INCH STONE CHIPS OR PEA GRAVEL. 1/2 INCH STONE CHIPS SHALL BE GRADED IN ACCORDANCE WITH ASTM C33, SIZE NO 7. PEA GRAVEL SHALL CONSIST OF ROUNDED, FREE FLOWING AGGREGATE WITH PARTICLE SIZE NOT MORE THAN 3/4 INCH AND NOT LESS THAN 1/8 INCH IN DIAMETER.
D. GEOTEXTILE FABRIC: DRAINAGE FILTRATION FABRIC COMPLYING WITH STATE DOT STD. SPEC.

33. MANHOLES AND INLETS
A. MANHOLES: MANHOLES SHALL BE PRECAST REINFORCED CONCRETE RINGS, ASTM C478 OF SIZES SHOWN ON DRAWINGS. JOINT SHAPE SHALL BE COMPATIBLE WITH DESIGNATED JOINT MATERIALS. STEPS AND PIPE SEAL COMPONENTS SHALL BE CAST INTO RISER SECTIONS. JOINT MATERIALS SHALL BE RUBBER RING GASKETS OR PLASTIC GASKET MATERIAL. PIPE SEALS SHALL BE FLEXIBLE, WATER TIGHT, GASKETED SEALS FOR PIPE ENTRANCE HOLES, EXCEPT THAT MORTAR SEALS MAY BE USED FOR STORM SEWER PIPE. ALL INVERTS SHALL BE POURED OR PRECAST.
B. CASTINGS: FRAMES AND LIDS SHALL BE CAST IRON, ASTM A48, CLASS 30, OR UNIFORM QUALITY, FREE FROM BLOW HOLES, POROSITY, HARD SPOTS, SHRINKAGE DEFECTS, CRACKS OR OTHER SERIOUS DEFECTS. MANHOLE CASTINGS SHALL BE TRUE TO PATTERN WITH MACHINED BEARING FACES BETWEEN FRAME AND COVER. TYPE OF CASTINGS SHALL BE AS DESIGNATED ON DRAWINGS. LIDS FOR SANITARY MANHOLES SHALL HAVE SELF-SEALING NEOPRENE O-RING GASKETS AND CONCEALED PICK HOLES.
C. STEPS: ASTM C478; CAST IRON OR STEEL REINFORCED COPOLYMER POLYPROPYLENE.
D. CONCRETE: CONCRETE FOR INVERTS SHALL HAVE 3 TO 5 PERCENT AIR-ENTRAINMENT AND A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS.
E. INSTALLATION: MANHOLES WITH MORE THAN ONE ENTRANCE PIPE AND MANHOLES AT CHANGES IN ALIGNMENT OR GRADE SHALL HAVE FORMED FLOW CHANNELS WITH SMOOTH RADIUS TRANSITIONS. PIPE SEALS SHALL BE COMPLETED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS. PIPES WITH FLEXIBLE SEALS SHALL BE SUPPORTED OUTSIDE MANHOLES BY BEDDING AS SPECIFIED FOR TYPE OF PIPE INSTALLED.

34. OUTFALLS
A. END WALLS: APRON END WALLS SHALL BE PRE-FABRICATED FLARED END SECTIONS OF SAME MATERIAL AS SEWER PIPE OR OF REINFORCED CONCRETE. PROVIDE TRASH GUARDS AND PIPE TIES AS DETAILED ON DRAWINGS.
B. RIPRAP: RIPRAP SHALL BE IN ACCORDANCE WITH STATE DOT.
C. GEOTEXTILE FILTER FABRIC: FILTER FABRIC SHALL BE IN ACCORDANCE WITH STATE DOT.
D. INSTALLATION: INSTALL FILTER FABRIC AS SHOWN AND IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. SURFACE TO RECEIVE FABRIC SHALL BE SMOOTH AND FREE OF OBSTRUCTIONS, DEPRESSIONS, AND DEBRIS. LAY FABRIC PARALLEL TO DIRECTION OF WATER FLOW. IF LAPPING OF FABRIC IS REQUIRED, MINIMUM OVERLAP SHALL BE 2 FT. OVERLAPS MAY BE ELIMINATED IF FABRIC SECTIONS ARE EITHER FACTORY OR FIELD SEWN. SEAM STRENGTH SHALL BE AT LEAST 80% OF FABRIC TENSILE STRENGTH. SECURE FABRIC IN PLACE TO PREVENT SHIFTING BEFORE OR DURING PLACEMENT OF STONE OR RIPRAP. PLACE RIPRAP FROM BASE OF SLOPE UPWARD; HEIGHT OF RIPRAP FREE FALL SHALL BE NO MORE THAN 1FT. REPAIR OR REPLACE TORN OR PUNCTURED FABRIC IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS; NO EXTRA COMPENSATION WILL BE ALLOWED.

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STATE OF OHIO
KENNETH A. MAAG
53[illegible]16
REGISTERED PROFESSIONAL ENGINEER

REVISIONS

No.	Description	Date
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

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: Site Notes & Details

C-08

T:\2024\Facilities\24001561.002A Fostoria Splash Pad\CIVIL\CADD\Drawings\24001561.002A (C-07-08) SITE NOTES & DETAILS.dwg Feb 28, 2024 9:27am cgoodwin

GENERAL CONDITIONS

1. THE CONTRACTOR SHALL EXAMINE THE STRUCTURAL DRAWINGS AND SHALL NOTIFY THE STRUCTURAL ENGINEER IN WRITING OF ANY DISCREPANCIES FOUND BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS AND SITE CONDITIONS BEFORE STARTING WORK.

2. ALL OMISSIONS OR CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE WORKING DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND THE STRUCTURAL ENGINEER BEFORE PROCEEDING WITH ANY WORK SO INVOLVED.

3. SPECIFIC NOTES AND DETAILS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE THE NOTES, DRAWINGS, AND/OR SPECIFICATIONS DIFFER, THE MORE STRINGENT REQUIREMENT SHALL APPLY.

4. IF A SPECIFIC DETAIL IS NOT SHOWN FOR ANY PART OF THE WORK, THE CONSTRUCTION SHALL BE THE SAME AS FOR SIMILAR WORK.

5. WORKING DIMENSIONS SHALL NOT BE SCALED FROM PLANS, SECTIONS, OR DETAILS ON THESE DRAWINGS.

6. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT AND THE STRUCTURAL ENGINEER OF ANY CONDITION THAT, IN HIS OPINION, MIGHT ENDANGER THE STABILITY OF THE STRUCTURE OR CAUSE DISTRESS TO THE STRUCTURE.

7. THE CONTRACTOR SHALL SUPERVISE AND DIRECT HIS WORK AND HE SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES. PROVIDE ADEQUATE SHORING AND BRACING OF ALL STRUCTURAL MEMBERS DURING CONSTRUCTION. NOTIFY ENGINEER OF ALL FIELD CHANGES PRIOR TO INSTALLATION.

8. REFER TO THE ARCHITECTURAL DRAWINGS FOR INFORMATION NOT COVERED BY THESE GENERAL NOTES OR THE STRUCTURAL DRAWINGS.

9. ALL CONSTRUCTION SHALL BE DONE WITH MATERIALS, METHODS, AND WORKMANSHIP ACCEPTED AS GOOD PRACTICE BY THE CONSTRUCTION INDUSTRY AND IN CONFORMANCE WITH THE PROVISIONS OF THE IBC AND/OR LOCAL CODES AND STANDARDS REFERENCED THEREIN.

10. PIPES, DUCTS, SLEEVES, OPENINGS, POCKETS, CHASES, BLOCK-OUTS, ETC., SHALL NOT BE PLACED IN SLABS, FOUNDATIONS, ETC., NOR SHALL ANY STRUCTURAL MEMBER BE CUT FOR SUCH ITEMS, UNLESS SPECIFICALLY DETAILED ON THESE STRUCTURAL DRAWINGS.

11. ALTERNATE ASSEMBLIES AND MATERIALS MAY BE CONSIDERED FOR REVIEW. ENGINEER MAY REQUEST PAYMENT, FROM CONTRACTOR FOR REVIEW. WHERE SPECIFIC MANUFACTURER'S ITEMS CALLED OUT, THIS SHOULD BE CONSIDERED A "BASIS OF DESIGN" FOR DESIGN PURPOSES ONLY.

JOB-SITE SAFETY

1. THE ENGINEER AND/OR ARCHITECT HAVE NOT BEEN RETAINED OR COMPENSATED TO PROVIDE DESIGN AND/OR CONSTRUCTION REVIEW SERVICES RELATED TO THE CONTRACTOR'S SAFETY PRECAUTIONS OR TO MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES FOR THE CONTRACTOR TO PERFORM HIS WORK. THE UNDERTAKING OF PERIODIC SITE VISITS BY THE ARCHITECT OR ENGINEER SHALL NOT BE CONSTRUED AS SUPERVISION OF ACTUAL CONSTRUCTION NOR MAKE HIM RESPONSIBLE FOR PROVIDING A SAFE PLACE FOR THE PERFORMANCE OF WORK BY THE CONTRACTOR, SUBCONTRACTORS, SUPPLIERS OR THEIR EMPLOYEES, OR FOR ACCESS, VISITS, USE, WORK, TRAVEL, OR OCCUPANCY BY ANY PERSON.

2. THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE WHEN COMPLETED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE PROCEDURES FOR ERECTION AND CONSTRUCTION SEQUENCES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF THE BUILDING AND ITS OCCUPANTS THROUGHOUT CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE ADEQUATE SHORING OR BRACING DURING CONSTRUCTION TO RESIST FORCES SUCH AS WIND AND UNBALANCED LOADING DUE TO CONSTRUCTION.

FOUNDATIONS

1. FOUNDATIONS SHALL BE ON UNDISTURBED SOIL OR ENGINEERED FILL PROVIDING A BEARING CAPACITY EQUAL OR GREATER THAN THE PRESUMPTIVE BEARING CAPACITIES PROVIDED IN THE OHIO BUILDING CODE TABLE 1806:
   - ALLOWABLE SHALLOW SOIL BEARING PRESSURE = 1,500 psf
   - SUBGRADE MODULUS OF REACTION = 100 pci
   - FROST DEPTH = 36" BELOW GRADE

MATERIAL AT BEARING ELEVATIONS WHICH DOES NOT CONFORM WITH THESE REQUIREMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE A/E OF FOR REVIEW AND DETERMINATION.

2. SUBGRADE PREPARATION, DRAINAGE PROVISIONS, AND OTHER RELEVANT SOIL CONSIDERATIONS ARE TO BE IN ACCORDANCE WITH SAID SOILS REPORT. ALL FOUNDATIONS SHALL BEAR ON 12" OF COMPACTED, APPROVED FILL.

3. A GEOTECHNICAL ENGINEER WILL BE RETAINED BY THE OWNER TO PROVIDE OBSERVATION AND TESTING SERVICES DURING FOUNDATION SOILS EXCAVATION, BACKFILL, GRADING, COMPACTION AND SUBGRADE PREPARATIONS. THE GEOTECHNICAL INSPECTION SHALL COMPLY WITH THE SPECIAL INSPECTIONS NOTED ELSEWHERE IN THESE DOCUMENTS. DO NOT COMMENCE CONSTRUCTION OF FOUNDATIONS UNTIL SITE IS IN CONFORMANCE.

4. FILL UNDER BUILDING SLABS SHALL BE MADE WITH CRUSHED STONE COMPACTED TO NOT LESS THAN 100% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-698 UNLESS NOTED OTHERWISE IN THE GEOTECHNICAL REPORT.

5. ALLOW FOR ADDITIONAL #6 BAR. TIE TO BOTTOM MAT OF REINFORCING FOR GROUNDING CONNECTION (SEE ELECTRICAL). VERIFY / COORDINATE LOCATION w/ ELECTRICAL ENGINEER.

6. FOUNDATION ELEMENTS BEARING ON SHALLOW FOUNDATIONS SHALL BEAR ON SUBGRADE WITH A MINIMUM BEARING PRESSURE AS SHOWN ABOVE AND SHALL BE TESTED TO ENSURE THIS BEARING PRESSURE IS MET. THESE EXISTING SOILS SHALL BE PREPARED FOLLOWING THE GEOTECHNICAL REPORT RECOMMENDATIONS.

POST-INSTALLED ANCHORS

1. ANCHORS SHOWN IN DETAILS AND SCHEDULES CONSTITUTE A BASIS OF DESIGN ANCHOR.

2. CONTRACTOR MAY SUBMIT ALTERNATIVE ANCHOR MANUFACTURERS THROUGH SHOP DRAWINGS. PROVIDE AN ICC REPORT VALIDATING THE PROPOSED ANCHOR PERFORMANCE IS EQUAL TO THE BASIS OF DESIGN ANCHOR.

3. CONTRACTOR SHALL INSTALL ALL POST-INSTALLED EPOXY AND MECHANICAL ANCHORS PER ALL MANUFACTURER INSTRUCTIONS, WITH ATTENTION TO TEMPERATURE AND HOLE PREPARATION REQUIREMENTS.

4. CONTRACTOR MAY NOT DEVIATE FROM THE ANCHOR DIAMETER, EMBEDMENT, EDGE DISTANCE AND SPACING CRITERIA NOTED ON THE DETAILS. IF NOT NOTED, PROVIDE THE MOST RESTRICTIVE SPACING AND EDGE DISTANCE DIMENSIONS THAT ALLOW FOR NO REDUCTION IN ANCHOR STRENGTH. ANY DEVIATION SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

5. NOTIFY THE ENGINEER IMMEDIATELY IF CONDITIONS ENCOUNTERED DIFFER FROM THE EXPECTED CONDITIONS. FOR EXAMPLE, IF THE MASONRY CELL IS HOLLOW INSTEAD OF GROUTED.

CONCRETE

1. CONCRETE SHALL CONFORM TO THE INDICATED REFERENCE CODES AND STANDARDS EXCEPT AS MODIFIED BELOW:

- ACI-301 - "STANDARD SPECIFICATIONS FOR STRUCTURAL CONCRETE"
- ACI-318 - "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE"
- ACI-305R - "HOT WEATHER CONCRETING"
- ACI-306R - "COLD WEATHER CONCRETING"
- ACI-304 - "GUIDE FOR MEASURING, MIXING, TRANSPORTING AND PLACING CONCRETE"

2. CONCRETE MIX SPECIFICATIONS

LOCATION	MIN f'_c (psi)	TEST AGE (DAYS)	W/C RATIO (a)	AIR (b)	EXPOSURE	MAX AGGREGATE (e)	NOTES
FOUNDATION WALLS	4,000	28	0.50	6.0%	F2, C1, W0, S0	1"	a, b, c
INTERIOR SLAB ON GRADE	4,000	28	0.50	- -	F0, C0, W0, S0	1"	a, c

a. FLY ASH / GGBFS MAY BE ADDED TO ANY OF THE MIX DESIGNS SPECIFIED AS LONG AS IT IS PERMITTED AT THE EXPOSURE CATEGORIES LISTED. ANY PERMISSIBLE FLY ASH ADDED SHALL BE LIMITED TO 25% OF THE TOTAL WEIGHT OF CEMENTITIOUS MATERIAL.

b. TOTAL AIR CONTENT IS SPECIFIED IN THE TABLE ABOVE. AIR CONTENT TOLERANCE SHALL BE +/- 1-1/2 % AND SHALL BE MEASURED AT THE POINT OF PLACEMENT.

c. WATER/CEMENT (W/C) RATIO SHALL BE BASED ON THE TOTAL CEMENTITIOUS MATERIAL. CEMENTITIOUS MATERIALS INCLUDE CEMENT, FLY ASH, SILICA FUME AND BLAST FURNACE SLAG.

3. ALL CONCRETE MIXES SHALL SATISFY THE MORE STRINGENT OF THE MIX SPECIFICATIONS REQUIREMENTS. FOR EXAMPLE: A MIX WITH THE SPECIFIED W/C RATIO MAY RESULT IN A STRENGTH GREATER THAN THE f'_c REQUIRED.

4. MIXING: COMPLY WITH ACI-301. DO NOT EXCEED THE AMOUNT OF WATER SPECIFIED IN THE APPROVED MIX. PROPORTIONS OF AGGREGATE TO CEMENT SHALL BE SUCH AS TO PRODUCE A DENSE, WORKABLE MIX, WHICH CAN BE PLACED WITHOUT SEGREGATION OR EXCESS FREE SURFACE WATER.

5. CONCRETE PROPORTIONS SHALL BE DETERMINED IN ACCORDANCE WITH THE PROVISIONS OF ACI 318. ESTABLISH PROPORTIONS ON THE BASIS OF FIELD EXPERIENCE OR TRIAL MIXTURES OR BOTH. THE CONCRETE PERFORMANCE MIX SHALL INCLUDE THE AMOUNTS OF CEMENT, FINE AND COARSE AGGREGATE, WATER AND ADMIXTURES AS WELL AS THE WATER CEMENT RATIO, SLUMP, CONCRETE YIELD AND SUBSTANTIATING STRENGTH DATA IN ACCORDANCE WITH LOCAL CODES.

6. PROVIDE A 3/4 INCH CHAMFER AT ALL EXPOSED CORNERS OF CONCRETE BEAMS, COLUMNS, AND WALLS UNLESS INDICATED OTHERWISE ON ARCHITECTURAL OR STRUCTURAL DRAWINGS.

7. SLUMP SHALL BE DETERMINED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER OF RECORD. THE MIX DESIGN SHALL INDICATE THE SLUMP AND IT SHALL BE MEASURED AT THE JOBSITE WITH A TOLERANCE OF +1" AND -2". GREATER SLUMP MAY BE ACHIEVED BY USING APPROVED ADMIXTURES. DO NOT ADD WATER TO THE MIX UNLESS SPECIFICALLY ALLOWED BY THE MIX DESIGN. TOTAL WATER (BATCH AND SITE ADDED) MAY NOT EXCEED THE WATER IN THE APPROVED MIX DESIGN.

8. ACCELERATED SET, OR HIGH EARLY STRENGTH MAY BE ACHIEVED BY USING APPROVED ADMIXTURES. ALL ADMIXTURES SHALL BE CHLORIDE FREE. AIR ENTRAINING ADMIXTURES SHALL CONFORM WITH ASTM C260, ALL OTHER ADMIXTURES SHALL CONFORM WITH ASTM C494.

9. CURING: REFERENCE ACI 308 - STANDARD PRACTICE FOR CURING CONCRETE AND ACI 301 - STANDARD SPECIFICATIONS FOR STRUCTURAL CONCRETE. THE CURING METHOD USED SHALL ENSURE THAT TEMPERATURE AND MOISTURE CONTENT ARE MAINTAINED AS REQUIRED TO DEVELOP THE DESIRED STRUCTURAL PROPERTIES AND DURABILITY OF THE CONCRETE. AT A MINIMUM, IT SHALL KEEP THE CONCRETE MOIST FOR SEVEN DAYS. IF CURING COMPOUNDS ARE TO BE USED, THEY SHALL BE COORDINATED WITH THE ARCHITECTURAL FINISH SCHEDULE AND CONCRETE SPECIFICATION TO ENSURE COMPATIBILITY WITH THE SPECIFIED FINISH.

SLABS ON GRADE - MOISTEN SURFACE AND COVER WITH PLASTIC IN DIRECT CONTACT WITH THE CONCRETE IMMEDIATELY AFTER FINISHING. ALTERNATIVELY, APPLY A LIQUID MEMBRANE-FORMING CURING COMPOUND.

LIQUID MEMBRANE - FORMING CURING COMPOUNDS SHALL BE COMPATIBLE WITH FUTURE FLOOR FINISHES OR BE REMOVED PRIOR TO APPLICATION OF THE FLOOR FINISHES. SLABS TO RECEIVE SUBSEQUENT FLOORING MATERIALS SHALL RECEIVE AN APPROVED DISSIPATING SEALER.

SPECIAL CURING PROCEDURES MAY BE ELIMINATED IF THE FORMS REMAIN IN CONTACT WITH THE CONCRETE FOR A MINIMUM OF 7 DAYS.

10. PROVIDE #3 HORIZONTAL DOWELS IN FLOOR & ELEVATED SLABS AT ALL RE-ENTRANT CORNERS. DOWELS SHALL EXTEND 15" EACH WAY PAST RE-ENTRANT CORNER.

CARPENTRY

1. ALL WOOD CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION OF THE "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION".

2. LUMBER AND WOOD FRAMING SHALL NOT HAVE A MOISTURE CONTENT GREATER THAN 19% BY WEIGHT WHEN PLACED INTO THE CONSTRUCTION.

3. LUMBER FOR FRAMING SHALL BE SPRUCE-PINE-FIR #2 OR BETTER U.N.O.

4. PRESERVATIVE OR FIRE RETARDANT TREATED LUMBER SHALL BE SOUTHERN PINE # 2 OR BETTER. PRESERVATIVE TREATMENT (ACQ) SHALL BE MINIMUM 0.4 RETENTION. POSTS AND OTHER MEMBERS BURIED IN CONCRETE OR SOIL SHALL BE 0.6 RETENTION. FASTENERS AND CONNECTORS SHALL BE STAINLESS STEEL OR APPROVED SUBSTITUTE.

5. PROVIDE WOOD FRAMING AS SHOWN AND AS REQUIRED TO COMPLETE THE PROJECT.
   A. STUDS SHALL BE OF SIZE AND SPACING AS SHOWN ON THE DRAWINGS, DOUBLED AROUND OPENINGS AND TRIPLED AT CORNERS.
   B. PROVIDE PLATES TOP AND BOTTOM OF STUD WALLS (DOUBLE TOP PLATES). SPLICES IN TOP PLATES SHALL BE MADE OVER STUDS AND STAGGERED.

6. JOIST, RAFTERS, AND OTHER FRAMING MEMBERS SHALL BE SECURELY ANCHORED TO THEIR SUPPORTING MEMBERS AND BLOCKED TO PREVENT ROTATION. PROVIDE GALVANIZED METAL CONNECTORS WHERE INDICATED.

7. ALL HEADERS SHALL BE MULTIPLE 2 X 10's (1 FOR EACH NOMINAL 2" OF WALL), UNLESS OTHERWISE NOTED.

8. ALL HEADERS SHALL BEAR ON MINIMUM 1 STUD, SISTERED TO 1 FULL HEIGHT STUD UNLESS OTHERWISE NOTED.

9. UNLESS OTHERWISE NOTED, ALL BEAMS BEARING ON WALLS SHALL BE SUPPORTED BY 1 STUD FOR EACH NOMINAL 2" OF BEAM, SISTERED TO 1 FULL HEIGHT STUD.

10. WALL SHEATHING SHALL BE SECURED TO WALLS PER LOCAL CODES. AS A MINIMUM PANELS SHALL BE ATTACHED WITH FASTENERS AT 6" ALONG EDGES AND 12" IN THE FIELD.

REINFORCING STEEL

1. DESIGN, DETAIL, FABRICATE, AND ERECT REINFORCING STEEL ACCORDING TO THE LATEST ACI AND CRSI SPECIFICATION, REFERENCE STANDARDS: ACI "DETAILING MANUAL" (SP-66); CRSI MANUAL OF STANDARD PRACTICE (MSP-1). SEE SCHEDULE FOR LAP SPLICES PER MATERIAL.

2. DO NOT WELD REBAR UNLESS OTHERWISE APPROVED BY ENGINEER

3. REINFORCING STEEL: ASTM A706 / A615, GRADE 60 (60 ksi), TYPICAL

CONCRETE REINFORCING PLACEMENT CONDITION	MIN. COVER (in)
CAST AGAINST EARTH	
FOOTINGS	3"
SLAB	2"
CAST AGAINST FORMED SURFACES	
NO. 5 BARS & SMALLER - WEATHER FACE	1 1/2"
NO. 6 BARS & LARGER - WEATHER FACE	2"
SLABS & WALLS - INTERIOR FACE	3/4"
BEAMS & COLUMNS - INTERIOR FACE	1 1/2"
EXPOSED SURFACES	
COLUMNS - TO TIES	1 1/2"
COLUMNS - TO MAIN REINFORCING	2"
COLUMNS - WALLS	3/4"
SLABS - INTERIOR	3/4"
SLABS - EXTERIOR	1"
MEMBERS IN CONTACT WITH OR OVER WATER	2"

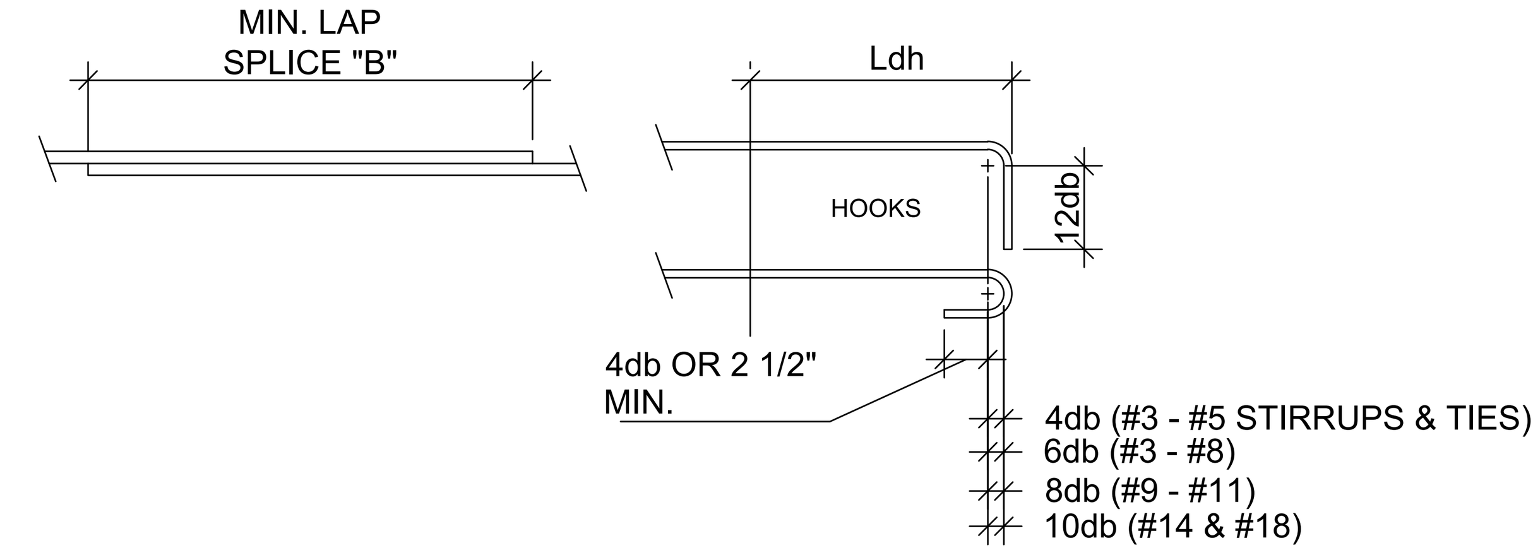
MINIMUM DEVELOPMENT LENGTH (Ld), CLASS "B" LAP SPLICE LENGTH & HOOK LENGTH (Ldh) (IN.) (U.N.O.)

CONCRETE:

f'_c	3,000 PSI			4,000 PSI			4,500 PSI		
BAR #	L_d	"B"	L_{dh}	L_d	"B"	L_{dh}	L_d	"B"	L_{dh}
3	16.5	21.5	8.5	14.5	18.5	7.5	13.5	17.5	7.0
4	22.0	28.5	11.0	19.0	25.0	9.5	18.0	23.5	9.0
5	16.5	36.0	14.0	24.0	31.0	12.0	22.5	29.0	11.5
6	33.0	43.0	16.5	28.5	37.0	14.5	27.0	35.0	13.5
7	48.0	62.5	19.5	41.5	54.0	17.0	39.5	51.0	16.0
8	55.0	71.5	22.0	47.5	62.0	19.0	45.0	58.5	18.0
9	62.0	80.5	25.0	53.5	69.5	21.5	50.5	66.0	20.5
10	70.0	90.5	28.0	60.5	78.5	24.5	57.0	74.0	23.0
11	16.5	100.5	31.0	67.0	87.0	27.0	63.0	82.0	25.5
14	93.0	NA	37.0	80.5	NA	32.5	76.0	NA	30.5
18	124.0	NA	49.5	107.0	NA	43.0	101.0	NA	40.5

MASONRY: NOTE LAP LENGTH = L_d

f'_m	1,500 PSI		2,000 PSI	
BAR #	L_d	L_{dh}	L_d	L_{dh}
3	12.0	7.5	12.0	7.5
4	14.5	8.0	12.5	6.0
5	22.5	14.5	19.5	11.5
6	43.0	33.5	37.5	27.5
7	59.5	48.0	51.5	40.0
8	91.5	78.5	79.0	66.0
9	118.5	104.0	102.5	88.0
10	153.5	137.0	133.0	116.5
11	193.5	175.0	167.5	149.5



CONCRETE MASONRY

1. CEMENT FOR MORTAR AND GROUT SHALL BE TYPE 1 PORTLAND CEMENT CONFORMING TO ASTM C150; AGGREGATE PER ASTM C144 FOR MORTAR, ASTM C404 FOR GROUT; HYDRATED LIME PER ASTM C207; QUICK LIME PER ASTM C5; WATER CLEAN AND POTABLE. NO ADMIXTURES WILL BE PERMITTED IN MORTAR AND GROUT, EXCEPT AS NOTED.

2. CONCRETE MASONRY UNITS SHALL BE TYPE 1, NORMAL WEIGHT AND HAVE A MIN. NET AREA COMPRESSIVE STRENGTH f'_{cmu} = 2,000 psi IN ACCORDANCE WITH ASTM C-90.

3. MORTAR SHALL BE MASONRY-CEMENT, TYPE S, FRESHLY PREPARED AND UNIFORMLY MIXED, IN ACCORDANCE WITH ASTM C91. MINIMUM COMPRESSIVE STRENGTH OF MORTAR IN 28 DAYS SHALL BE 2100 psi. THE MAXIMUM AIR CONTENT SHALL BE 19%.

4. GROUT FOR POURING SHALL BE A FLUID CONSISTENCY AND CONFORM TO IBC TABLE 2103.12 OR ASTM C476. A MINIMUM COMPRESSIVE STRENGTH f'_g = 2,000 psi AT 28 DAYS IS REQUIRED. GROUT MAY BE SPECIFIED BY PROPORTION AND SHALL CONTAIN PORTLAND CEMENT ONLY (NO LIME). FINE GROUT OR COARSE GROUT SHALL BE SELECTED BASED ON MINIMUM GROUT SPACING REQUIREMENTS OF ACI 530.1. MAX AGGREGATE SIZE IS ⅜" FOR COARSE GROUT. WATER REDUCING ADMIXTURES MAY BE ADDED TO ACHIEVE THE DESIRED SLUMP.

5. ALL CELLS CONTAINING REINFORCING OR EMBEDDED ITEMS AND ALL CELLS BELOW GRADE SHALL BE SOLID GROUTED. USE SIKA GROUT AID, OR EQUAL, AS GROUT ADDITIVE. GROUT SLUMP AT THE TIME OF GROUTING SHALL BE 8" TO 11". GROUT LIFTS SHALL BE LESS THAN 5'-0" UNLESS APPROVED BY THE BUILDING OFFICIAL CONSOLIDATE AND RECONSOLIDATE GROUT.

6. REINFORCING STEEL SHALL CONFORM TO ASTM A615 (INCLUDING SUPPLEMENT S1), GRADE 60, F_y = 60,000 psi. SHOP DRAWINGS SHALL BE SUBMITTED AND COMPLY WITH ACI 315, MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES. SHOP DRAWINGS SHALL INCLUDED PAR LISTS, SCHEDULES, BENDING DETAILS, PLACING PLANS AND ELEVATIONS. REINFORCING SHALL, WHEN WELDED, CONFORM TO ASTM A706, GRADE 60, F_y = 60,000 psi. UNLESS SHOWN OR NOTED OTHERWISE, BARS SHALL LAP A MINIMUM OF 48 BAR DIAMETERS.

7. PROVIDE NO. 5 VERT BARS FULL HEIGHT AT WALL CORNERS, DOORS, WINDOWS AND OTHER OPENINGS. PROVIDE CONTINUOUS HORIZONTAL BARS AT CORNERS. PROVIDE HORIZONTAL BARS ABOVE ALL DOOR OPENINGS, ABOVE AND BELOW ALL WINDOW AND OTHER OPENINGS, REINFORCING SHALL BE LOCATED TO CLEAR LINTELS AND SHALL EXTEND 2'-0" MINIMUM BEYOND EACH SIDE OF OPENING UNLESS OTHERWISE NOTED IN PLANS. PROVIDE A CONTINUOUS BOND BEAM WITH (1) NO. 5 BAR AT THE TOP OF WALLS UNLESS OTHERWISE SHOWN.

8. ALL UNITS TO BE CONSTRUCTED UP IN RUNNING BOND IN ACCORDANCE WITH THE CODE UNLESS NOTED OTHERWISE. THICKNESS OF BED JOINTS SHALL NOT EXCEED ⅝".

9. THREE COURSES (24" MIN.) OF SOLID BEARING, BUILT IN A PYRAMID FASHION SHALL BE PROVIDED BELOW ALL BOND BEAM AND JOIST BEARINGS AND LINTELS IN BEARING WALLS. OTHER LINTELS OR LOAD CONCENTRATIONS SHALL BE PROVIDED WITH 16" MIN. DEPTH OF SOLID MASONRY BEARING.

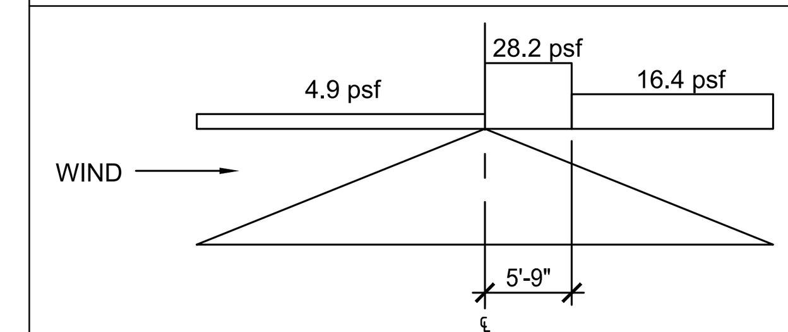
10. WHERE MASONRY WYTHES CHANGE THICKNESS, PROVIDE SOLID (OR GROUTED) COURSE IMMEDIATELY BELOW CHANGE.

11. SINGLE WYTHE WALLS SHALL HAVE LADDER DESIGN MASONRY WALL REINFORCEMENT IN EVERY OTHER HORIZONTAL JOINT (16" CENTERS) AND IN EACH JOINT (8" CENTERS) FOR TWO JOINTS ABOCE AND BELOW OPENINGS. REINFORCEMENT SHALL BE CONTINUOUS WITH 6" MIN. LAPS. REINFORCEMENT AT OPENINGS SHALL EXTEND 2'-0" BEYOND EACH SIDE OF THE OPENING. CAVITY WALLS SHALL HAVE ONE ROD FOR EACH BED JOINT. NO "LADDER" RODS SHALL EXTEND THROUGH THE CAVITY. MIN. LADDER WIRE SIZE IS W1.7 (9 ga).

12. MASONRY WALLS SHOWN IN THESE DRAWINGS ARE NOT DESIGNED AS CANTILEVER WALLS. THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARILY BRACING AND STABILIZING THE MASONRY WALLS DURING CONSTRUCTION UNTIL THE TRUSSES AND PLYWOOD DECKING IS FULLY INSTALLED. THE ENGINEER CAN PROVIDE AN ALTERNATE WALL REINFORCING SCHEME TO ALLEVIATE THE NEED FOR TEMPORARILY BRACING THE CMU WALLS BACK.

STRUCTURAL DESIGN CRITERIA

BUILDING INFORMATION	
STRUCTURE: GROUP U, RISK CATEGORY II, TYPE V-B CONSTRUCTION	
DESIGNED FOR: OHIO BUILDING CODE 2017 w/ IBC 2015 & ASCE 7-10 BASIS OF DESIGN	
LATERAL FORCE RESISTING SYSTEM: ORDINARY REINFORCED MASONRY SHEAR WALLS	
FLOOR LOADING (SERVICE)	
SLAB ON GRADE LIVE LOAD	100 psf
ROOF LOADING (SERVICE)	
UNIFORM LIVE	20 psf
UNIFORM DEAD	5 psf
SNOW LOADING (SERVICE)	
P_g	20 psf
P_s	16.4 psf
I_s	1.0
C_e	1.0
C_t	1.2



UNBALANCED SNOW LOAD

WIND LOADING (ULTIMATE)	
ULTIMATE DESIGN WIND SPEED (V_{ult})	115 mph
EXPOSURE	C
AVERAGE AIR DENSITY	0.0747 lbm/ft^3
K_{zt}	1.0
K_d	0.85
EDGE STRIP(a)	3'-0"
GC_{pi}	± 0.18

WIND COMPONENT AND CLADDING LOADS — ULTIMATE

	A_e	10 sf		50 sf		100 sf	
ROOF		(+)	(-)	(+)	(-)	(+)	(-)
ROOF	FIELD (ZONE 1)	16.2	25.8 psf	16.0	24.1 psf	16.0	23.4 psf
ROOF	EDGES (ZONE 2)	16.2	44.9 psf	16.0	36.5 psf	16.0	32.9 psf
ROOF	CORNERS (ZONE 3)	16.2	66.3 psf	16.0	56.3 psf	16.0	52.0 psf
WALLS		(+)	(-)	(+)	(-)	(+)	(-)
WALLS	FIELD (ZONE 4)	28.2	30.5 psf	28.2	27.6 psf	23.9	26.3 psf
WALLS	CORNERS (ZONE 5)	28.2	37.7 psf	28.2	31.8 psf	23.9	29.3 psf
PARAPETS	N/A	(+)	(-)	(+)	(-)	(+)	(-)
PARAPETS	EDGES (ZONE 2)	0	0 psf	0	0 psf	0	0 psf
PARAPETS	CORNERS (ZONE 3)	0	0 psf	0	0 psf	0	0 psf

SEISMIC DESIGN DATA (ULTIMATE)	
RISK CATEGORY	II
I_e	1.0
S_S	0.134 g
S_1	0.058 g
SITE CLASS	D
S_{DS}	0.148 g
S_{D1}	0.09 g
DESIGN CATEGORY	B
BASIC SEISMIC FORCE RESISTING SYSTEM	▼
R	2.0
C_S	0.071
V	2.366
ANALYSIS PROCEDURE	▼

CONSTRUCTION LOADS AND ERECTION STRESSES BY CONTRACTOR
TEMPORARY BRACING FOR CONSTRUCTION AS REQ'D BY CONTRACTOR

WOOD ROOF TRUSSES

1. ROOF TRUSSES SHALL BE DESIGNED AND FABRICATED IN ACCORDANCE WITH THE LATEST TRUSS PLATE INSTITUTE SPECIFICATIONS.

2. STRUCTURAL COMPUTATIONS AND DETAILS SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE LOCALITY OF THE PROJECT SHALL BE SUBMITTED FOR EACH TRUSS CONFIGURATION.

3. TRUSSES SHALL BE DESIGNED FOR 10 PSF DEAD LOAD AND 20 PSF LIVE LOAD ALL ON THE TOP CHORD, AND 10psf DEAD LOAD PLUS 5psf COLLATERAL ON THE BOTTOM CHORD, PLUS ANY ADDITIONAL LOADING SHOWN ON THE DRAWINGS. SNOW LOADS SHALL BE APPLIED ACCORDING TO APPLICABLE BUILDING CODE INCLUDING INCREASES DUE TO DRIFTING, SLIDE OFF FROM AND THE ADJACENT ROOF, AND UNBALANCED LOADS.

4. PROVIDE GALVANIZED METAL TRUSS CLIPS TO ANCHOR EACH END OF TRUSS. SIMPSON H2.5 (OR APPROVED SUBSTITUTE) MINIMUM UNLESS NOTED OTHERWISE.

5. ALL TRUSS HANGERS SHALL BE DESIGNED AND SUPPLIED BY THE TRUSS MANUFACTURER TO ACCOMMODATE TRUSSES SUPPLIED.

6. PROVIDE TRUSS BRACING CONFORMING TO TRUSS PLATE INSTITUTE STANDARDS. PROVIDE TEMPORARY BRACING DURING ERECTION. PROVIDE PERMANENT BRACING AS REQUIRED IN THE DESIGN OF THE TRUSS AS INDICATED. IN ADDITION TO THE ABOVE, PROVIDE PERMANENT BRACING AS FOLLOWS UNLESS OTHERWISE NOTED:
   a. UNLESS SHEATHED WITH APA RATED SHEATHING, PROVIDE CONTINUOUS LATERAL BRACING OF THE TOP CHORD AS INDICATED ON THE DRAWINGS. PROVIDE DIAGONAL BRACING ON BOTH SIDES OF THE RIDGE AT END BAYS AND AT 20' INTERVALS FOR BUILDINGS OVER 60' IN LENGTH.
   b. PROVIDE DIAGONAL BRACING IN THE PLANE OF WEB MEMBERS AT 12-16' INTERVALS ALONG THE LENGTH OF TRUSSES AT END BAYS AND AT 20' INTERVALS ALONG THE LENGTH OF THE BUILDING.
   c. UNLESS CONTINUOUSLY SHEATHED PROVIDE CONTINUOUS LATERAL BRACING OF THE BOTTOM CHORD AT 8-10' INTERVALS AT OR NEAR PANEL POINTS, OR AS INDICATED ON THE DRAWINGS. PROVIDE DIAGONAL BRACING ON BOTH SIDES OF THE RIDGE AT END BAYS AND AT 20'-0" INTERVALS FOR BUILDINGS OVER 60' IN LENGTH.

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8110 I PH: 419.352.7537 I www.kleinfelder.com

No.	Description	Date
3	ISSUED FOR BIDDING	03/01/2024
2	ISSUED FOR BUILDING PERMIT	02/23/2024
1	ISSUED FOR ODNR REVIEW	02/05/2024

REVISIONS

Scale	AS INDICATED
Date	11/10/2023
Job No.	24001561.001A
Designed by	WRS
Drawn by	BTS
Checked by	AMB
Approved by	WRS
Status	---

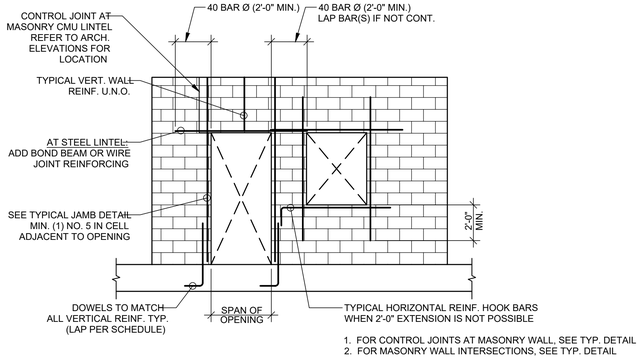
Client: CITY OF FOSTORIA, OH

Project: FOSTORIA SPLASHPAD

Drawing: STRUCTURAL NOTES

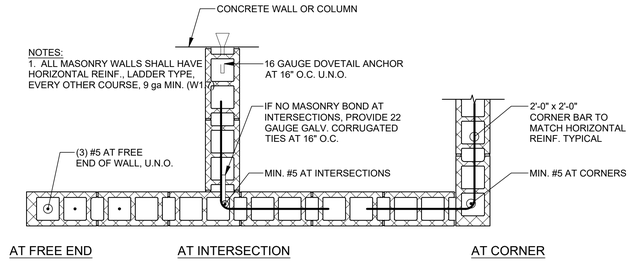
S001

FILE No. P:\000 KLF Projects\0_2024 Projects\24001561 - Fostoria Splash Pad - PH-01 and PH-02\WORK PRODUCT\STRUCT\S001 STRUCTURAL NOTES.dwg 02/27/24 12:53-BSturt

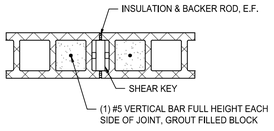


1. FOR CONTROL JOINTS AT MASONRY WALL, SEE TYP. DETAIL
2. FOR MASONRY WALL INTERSECTIONS, SEE TYP. DETAIL

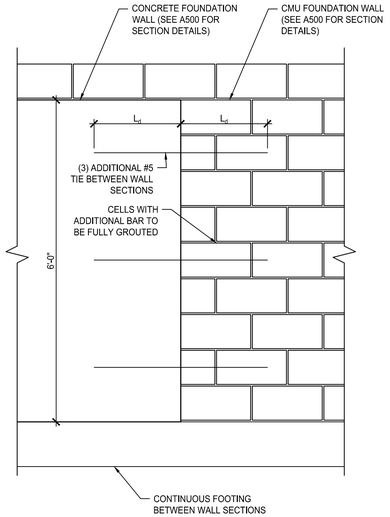
TYP. CMU OPENING REINF. DETAIL
SCALE: 1/4" = 1'-0"



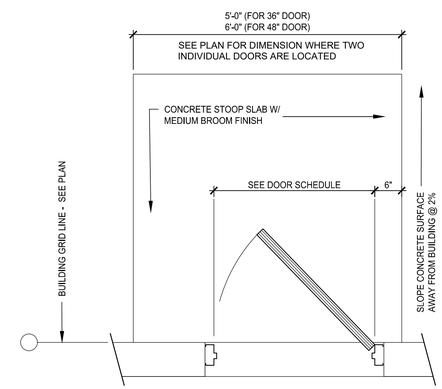
TYP. CMU CORNER DETAIL
SCALE: 3/4" = 1'-0"



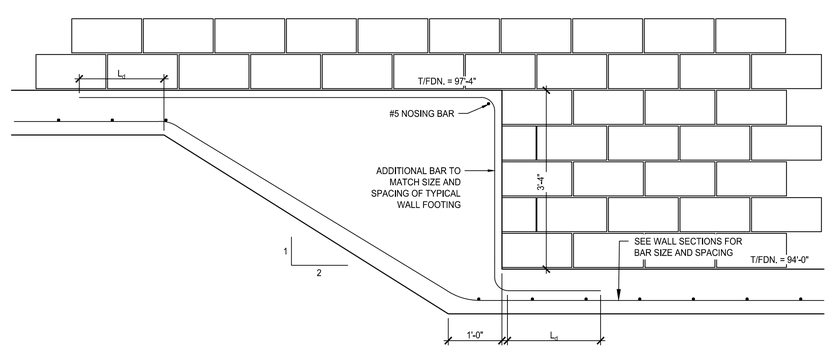
TYP. CONTROL JOINT DETAIL
1" = 1'-0"



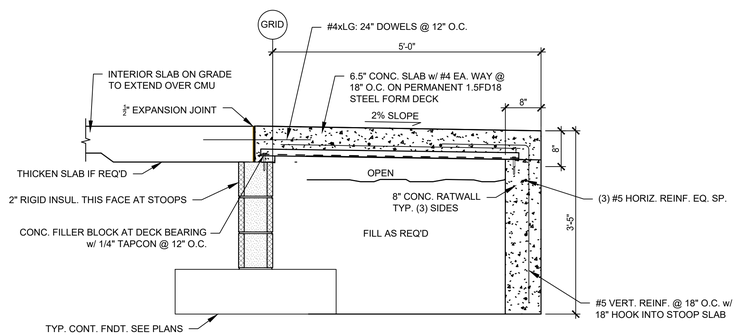
FOUNDATION WALL TRANSITION
SCALE: 3/4" = 1'-0"



TYP. STOOP PLAN
3/4" = 1'-0"



FOOTING STEP DETAIL
SCALE: 3/4" = 1'-0"



TYP. STOOP DETAIL
SCALE: 3/4" = 1'-0"

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Scale	AS INDICATED
Date	11/10/2023
Job No.	240015661.001A
Designed by	WRS
Drawn by	BTS
Checked by	AMB
Approved by	WRS
Status	---

Client: CITY OF FOSTORIA, OH

Project: FOSTORIA SPLASHPAD

Drawing: STRUCTURAL TYPICAL DETAILS

S501

ARCHITECTURAL PRODUCT SPECIFICATIONS:

NOTE: ALL EQUIVALENTS OR SUBSTITUTES SHALL BE APPROVED DURING BIDDING. COLOR SELECTIONS NOTED ARE FOR REFERENCE. COLORS MAY CHANGE DURING SHOP DRAWING PHASE. ANY CHANGE IN COLOR SELECTIONS WOULD FOLLOW MANUFACTURER'S STANDARDS, NOT PREMIUMS.

1) 04-2200 SPLIT FACE (ROCK FACE) CONCRETE MASONRY UNITS (CMU):
   a) MANUFACTURER: TRI-COUNTY BLOCK AND BRICK, SWANTON, OHIO OR APPROVED SUBSTITUTE
   b) STYLE: SPLIT (ROCK) FACE #88 SPLF
   c) COLOR: WALNUT
   d) INTEGRATE WATER-RESISTANT CHEMICALS INTO BATCH MIX FOR CMU AND MORTARS

2) 07-1326 SELF-ADHERING SHEET FLASHING:
   a) WINDOW AND DOOR HEAD FLASHING.
   b) MANUFACTURER: GCP (GRACE) VYCOR OR APPROVED SUBSTITUTE
   c) TYPE: CROSS LAMINATED HDPE WITH RUBBERIZED ASPHALT ADHESIVE.
   d) MODEL: VYCOR V40

3) 07-4113.16 STANDING SEAM METAL ROOFING:
   a) MANUFACTURER: ATAS INTERNATIONAL OR APPROVED SUBSTITUTE.
   b) MODEL: ECO-SEAM.
   c) COLOR: MEDIUM BRONZE (03)

4) 07-4293 VENTED SOFFIT:
   a) ALUMINUM VENTED SOFFIT.
   b) MANUFACTURER: AMERIMAX OR APPROVED SUBSTITUTE.
   c) STYLE: V-GROOVED,
   d) THICKNESS: T4 ALUMINUM 0.019"
   e) COLOR: SANDSTONE BEIGE.

5) CEMENT BOARD SIDING AND TRIM:
   a) FIBER CEMENT BOARD - BOARD AND MATTEN SIDING
      i) PRE-PAINTED SMOOTH FINISH FLAT VERTICAL PANELS
      ii) MANUFACTURER: JAMES HARDIE OR APPROVED EQUIVALENT SUBSTITUTE.
      iii) COLOR: SAIL CLOTH.
   b) EXTERIOR BATTEN STRIPS:
      i) SIZE: 5/4" X 2"
      ii) PRE-PAINTED. CUT TO SIZE IN FIELD, & PAINTED FIELD PAINT EXPOSED EDGES.
      iii) MANUFACTURER: JAMES HARDIE OR APPROVED EQUIVALENT SUBSTITUTE.
      iv) COLOR: SAIL CLOTH.
   c) EXTERIOR TRIM:
      i) 5/4" THICKNESS, WIDTHS VARY. COORDINATE WITH WALL SECTIONS ON SHEET A500.
      ii) PRE-PAINTED. CUT TO SIZE IN FIELD, & PAINTED FIELD PAINT EXPOSED EDGES.
      iii) COLOR: ARCTIC WHITE.
      iv) AT DOORS AND WINDOWS PROVIDE 'AZEK' WITH 'PAINTPRO' OR APPROVED SUBSTITUTE PAINTABLE PLASTIC (PVC) TRIM AND RETURNS, WHICH IS EASIER TO CUT IN SMALL PIECES VERSUS CEMENT BOARD. PAINT PER ARCHITECT INSTRUCTIONS. PROVIDE 'TRADITIONAL' FINISH.

6) 07-7253 SNOW GUARDS FOR METAL ROOFING:
   a) PROVIDE MINIMUM OF ONE ROW OF SNOW GUARDS ON EACH SIDE OF ROOF.
   b) MANUFACTURER: S-5! OR APPROVED SUBSTITUTE.
   c) MODEL: COLORGARD.
   d) INSTALLATION PER MANUFACTURER'S RECOMMENDATIONS.

7) 08-1113 EXTERIOR HOLLOW METAL DOORS AND FRAMES:
   a) WELDED FRAMES. GALVANIZED. NO KNOCK DOWN FRAMES.
   b) MANUFACTURERS: TRUDOOR, MASONITE OR APPROVED SUBSTITUTE.
   c) GAUGE: 14.
   d) FLAT SLAB FACE.
   e) FACTORY PRIMED, FIELD PAINT.
   f) GALVANIZED FRAMES AND DOORS.
   g) SEE DOOR SCHEDULE ON DRAWING SHEET A501 FOR DOOR SIZES.

8) 08-3113 ACCESS DOORS AND FRAMES:
   a) CEILING MOUNTED ACCESS HATCHES.
   b) PROVIDE METAL ACCESS HATCHES IN EACH RESTROOM CEILING TO COMPLY WITH OHIO BUILDING CODE CHAPTER 12.
   c) MANUFACTURER: BABCOCK-DAVIS OR APPROVED SUBSTITUTION.
   d) PAINTED METAL
   e) FIRE-RESISTANCE: NON-RATED.
   f) COLOR: WHITE.
   g) SIZE: 20" X 30" MINIMUM.
   h) FLUSH INSTALLATION WITH DRYWALL BEAD FLANGE.
   i) LOCATION: RESTROOM CEILINGS.
   j) LOCK: YES.

9) 08-5413 WINDOWS:
   a) MANUFACTURER: JELD-WEN OR APPROVED SUBSTITUTION.
   b) MODEL: EPICVUE VINYL, V-4500
   c) BLOCK FRAME CONSTRUCTION
   d) GRILLES: NO
   e) INSECT SCREENS: YES
   f) COLOR INTERIOR: WHITE
   g) GLASS: INSULATED, LOW-E, OBSCURE TEXTURED
   h) HARDWARE: LOCKS, SCISSOR-STYLE, STANDARD HANDLES
   i) HARDWARE COLOR: WHITE

10) 08-7100 DOOR HARDWARE:
   a) SEE DRAWING SHEET A501 FOR SCHEDULE

11) 08-8300 MIRROR:
   a) MANUFACTURER: BOBRICK OR APPROVED SUBSTITUTE
   b) MODEL: B-165-2436 CHANNEL FRAME
   c) SIZE: 24" X 36"
   d) NOTE: ADA VERTICAL DIMENSION IS TO GLASS NOT FRAME

12) 09-6513 RESILIENT BASE:
   a) MANUFACTURER: ROPPE OR JOHNSONITE
   b) MODEL: 700 SERIES
   c) MATERIAL: THERMOPLASTIC RUBBER AND VINYL
   d) COLOR: BLACK-BROWN #193
   e) HEIGHT: 6-INCHES
   f) COVE BASE
   g) COIL STOCK. NOT 4' SECTIONS
   h) PROVIDE PRE-MANUFACTURED CORNERS, NOT SITE MADE.

13) 09-9113 EXTERIOR PAINT:
   a) PRIMER:
      i) PROVIDE AT LEAST ONE (1) COAT OF PRIMER FOR ALL VARIOUS SURFACES BEFORE FINAL COAT.
   b) EXTERIOR GRADE COATING:
      i) MANUFACTURER: SHERWIN-WILLIAMS OR APPROVED SUBSTITUTE.
      ii) FINISH: SEMI-GLOSS
   c) HOLLOW METAL DOORS AND FRAMES COLOR: SW2827 COLONIAL REVIVAL STONE.
   d) WOOD OR CEMENT BOARD COLOR: FOR TOUCH UP OR MATCHING MATCH JAMES HARDIE COLORS SAILCLOTH FOR FLAT PANELS AND BATTEN STRIPS, AND ARTIC WHITE FOR EXTERIOR TRIM.

14) 09-9123 INTERIOR PAINT AND COATINGS:
   a) PRIMER:
      i) PROVIDE AT LEAST ONE (1) COAT OF PRIMER (SHERWIN-WILLIAMS OR APPROVED SUBSTITUTE) FOR ALL VARIOUS SURFACES BEFORE FINAL COAT.
      ii) ON INTERIOR CONCRETE MASONRY PROVIDE BLOCK FILLER PRIOR TO FINISH COATS.
      iii) MANUFACTURER: SHERWIN-WILLIAMS PREPRITE BLOCK FILLER OR APPROVED SUBSTITUTE.
   b) INTERIOR WALL SURFACES:
      i) INTERMEDIATE AND FINISH WALL AND CEILING COATS:
      ii) PROVIDE MINIMUM TWO COATS WITH A TOTAL DRY FILM THICKNESS OF 16 TO 18 MILS. EPOXY PAINT OVER CONCRETE MASONRY UNIT SUBSTRATE.
      iii) MANUFACTURER: SHERWIN-WILLIAMS PRO INDUSTRIES HIGH PERFORMANCE EPOXY, OR APPROVED SUBSTITUTE.
      iv) FINISH: GLOSS.
      v) COLOR: SW7512 PAVILION BEIGE.
   c) INTERIOR CEILING SURFACES:
      i) MANUFACTURER: SHERWIN-WILLIAMS OR APPROVED SUBSTITUTE.
      ii) FINISH: SEMI-GLOSS. (NOT EPOXY)
      iii) COLOR: WHITE.
   d) INTERIOR PUMP HOUSE SUMP PIT RESINOUS (EPOXY) COATING:
      i) FOLLOW INSTRUCTIONS IN ITEM 'E' BELOW.
      ii) SUBMERGED IN CHLORINATED WATER - POLYAMINE EPOXY
         (1) PRIMER: COROBOND 100 AT 4.0 - 6.0 MILS DFT OR APPROVED SUBSTITUTE.
         (2) FIRST COAT: SHER GLASS FF POLYAMINE EPOXY AT 8.0 - 12.0 MILS DFT OR APPROVED SUBSTITUTE.
         (3) SECOND COAT SHER GLASS FF POLYAMINE EPOXY AT 8.0 - 12.0 MILS DFT OR APPROVED SUBSTITUTE.
   e) INTERIOR FLOOR RESINOUS (EPOXY) COATING:
      i) FOLLOW STANDARD METHODS LISTED BELOW WHEN APPLICABLE.
         (1) ASTM D4258, CLEANING CONCRETE
         (2) ASTM D4259 ABRADING CONCRETE
         (3) ASTM D4260 ETCHING CONCRETE
         (4) ASTM F1869 MEASURING MOISTURE VAPOR EMISSION RATE OF CONCRETE
         (5) SSPC-SP 13/NACE 6 SURFACE PREPARATION OF CONCRETE
         (6) ICRI NO. 310.2R CONCRETE SURFACE PREPARATION
      ii) PREPARE CONCRETE FLOOR SURFACE FOR RESINOUS FLOOR SYSTEM. MAKE SURE CONCRETE SURFACE IS CLEAN, DRY AND IN SOUND CONDITION. REMOVE ALL OIL, DUST, GREASE, DIRT, LOOSE RUST AND OTHER FOREIGN MATERIAL TO ENSURE ADEQUATE ADHESION. SURFACES MUST BE FREE OF LAITANCE, CONCRETE DUST, DIRT, FORM RELEASE AGENTS, MOISTURE CURING MEMBRANES, LOOSE CEMENT AND HARDENERS. FILL BUG HOLES, AIR POCKETS AND OTHER VOIDS WITH STEEL-SEAM FT910. PRIMER REQUIRED.
      iii) PROVIDE CURED CONCRETE FLOOR. CONCRETE AND MORTAR MUST BE CURED AT LEAST 28 DAYS AT 75 DEGREES FAHRENHEIT. FOLLOW MANUFACTURE'S RECOMMENDATIONS FOR MOISTURE CONTENT BEFORE APPLYING COATING. BEGIN COATING ONLY WHEN MOISTURE CONTENT OF SUBSTRATE IS 12 PERCENT OR LESS USING AN ELECTRONIC MOISTURE METER PER MANUFACTURER'S RECOMMENDATIONS. FILL ALL CRACKS PRIOR TO PRIME COAT. PROVIDE PRIME, INTERMEDIATE AND FINISH COATS PER MANUFACTURER'S INSTRUCTIONS.
      iv) PRIMER AND TOP-COAT: SHERWIN-WILLIAMS MACROPOXY 646 OR APPROVED SUBSTITUTE. PROVIDE MINIMUM TWO COATS (PRIMER AND TOP) WITH A TOTAL DRY FILM THICKNESS OF 18 TO 20 MILS, 10 MILS MAXIMUM PER COAT. PIGMENTED BASE COAT. COORDINATE PIGMENT COLOR WITH ARCHITECT.
      v) BROADCAST SILICA SAND: APPLY SILICA SAND WITH BROADCAST METHOD ON WET TOP COAT. COORDINATE PROCEDURE WITH SHERWIN-WILLIAMS REPRESENTATIVES. PROVIDE S-W 40/60 SAND TEXTURE.
      vi) SEALER COAT: APPLY 'CLEAR' SEALER OVER SAND AND TOP-COAT. PROVIDE SHERWIN-WILLIAMS ARMORSEAL REXTHANE I IN 'CLEAR' COAT, OR APPROVED SUBSTITUTE. DRY MILS 3.0 MAXIMUM., MEET ADA SLIP-RESISTANCE ALONG WITH URINE RESISTANCE.

15) 10-1423.16 RESTROOM ADA TACTILE SIGN:
   a) MANUFACTURER: ALPINE INDUSTRIES OR APPROVED SUBSTITUTE
   b) OPTIONAL BRANDS: LYLE, PALMER FIXTURE, OR TOUGH GUY
   c) MODEL: ALPSGN-2
   d) BRAILLE: YES
   e) ADA: YES
   f) COLOR: BLACK BACKGROUND WITH WHITE LETTERING AND FIGURES

16) 10-2800 TOILET ACCESSORIES:
   a) TOILET PAPER HOLDER
      i) MANUFACTURER: BOBRICK OR APPROVED SUBSTITUTE
      ii) MODEL: B-2888
      ii) STAINLESS STEEL
   b) LIQUID SOAP DISPENSER:
      i) MANUFACTURER: BOBRICK OR APPROVED SUBSTITUTE
      ii) MODEL: B-2111
      iii) STAINLESS STEEL
   c) GRAB BARS
      i) MANUFACTURER: BOBRICK OR APPROVED SUBSTITUTE
      ii) MODEL: 6806
      iii) LENGTHS: 18", 36" AND 42"
      iv) FINISH: SATIN
      v) MATERIAL: STAINLESS STEEL, SLIP-RESISTANT SURFACE
   d) ELECTRIC HAND DRYER
      i) MANUFACTURER: BOBRICK/XLERATOR OR APPROVED SUBSTITUTE
      ii) MODEL: XL-GR-ECO
   e) BABY CHANGING STATION:
      i) MANUFACTURER: KOALA KARE OR APPROVED SUBSTITUTE
      ii) MODEL: KB200
      iii) COLOR: BEIGE

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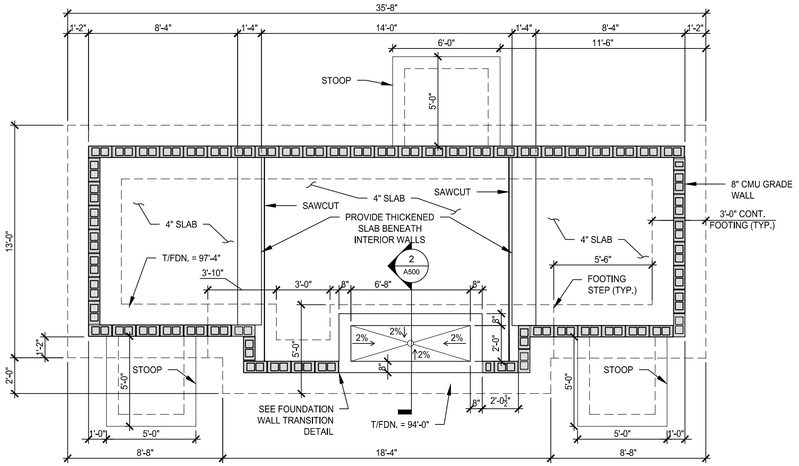
STATE OF OHIO
WILLIAM R. STEELE
11770
REGISTERED ARCHITECT

No.	Description	Date
	REVISIONS	
4	ISSUED FOR BIDDING	03/01/2024
3	ISSUED FOR BUILDING PERMITS	02/23/2024
2	OWNER REVIEW	12/20/2023
1	OWNER REVIEW	12/04/2023

Scale AS INDICATED
Date 03/01/2024
Job No. 240015561.002A
Designed by WRS
Drawn by AKH
Checked by WRS
Approved by WRS
Status ---

Client CITY OF FOSTORIA, OH
Project FOSTORIA SPLASHPAD
Drawing SPECIFICATIONS

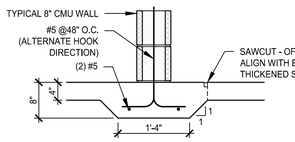
A001



FOUNDATION PLAN

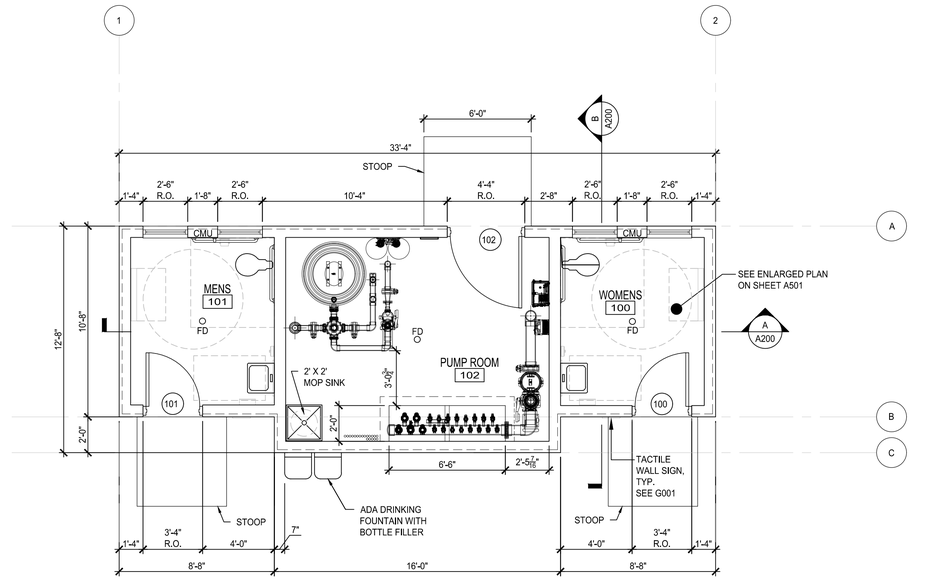
SCALE: 1/4" = 1'-0"

NOTE:
- 4" FLOOR SLAB TO HAVE W2.9xW2.9 WWF ON 6" MIN. COMPACTED GRANULAR BASE
- SEE SHEET S501 FOR STOOP DETAIL
- SAW CUT FLOOR TO INSIDE OF CMU LOCATION AT PUMP ROOM 102. INFILL SAW CUTS WITH SHERWIN-WILLIAMS STEEL-SEAM FT910 BEFORE APPLYING COATING



TYP. THICKENED SLAB

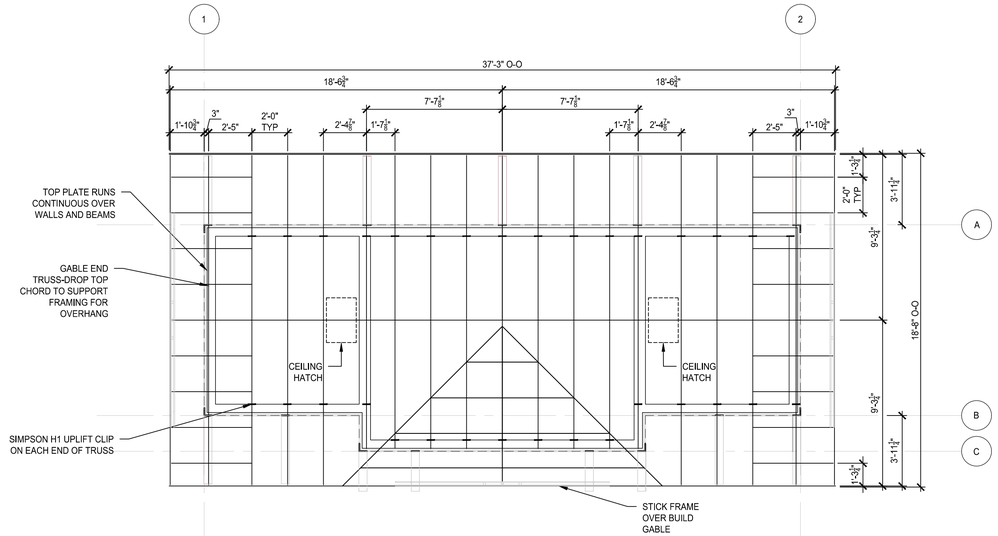
SCALE: 3/4" = 1'-0"



FLOOR PLAN

SCALE: 1/4" = 1'-0"

UN-INSULATED WASHROOMS NO HEATING OR COOLING.
SEE MECHANICAL FOR VENTILATION.
SEE ELECTRICAL FOR LIGHTING AND POWER.
FOR SCHEDULES, SEE SHEET A501.



ROOF FRAMING PLAN

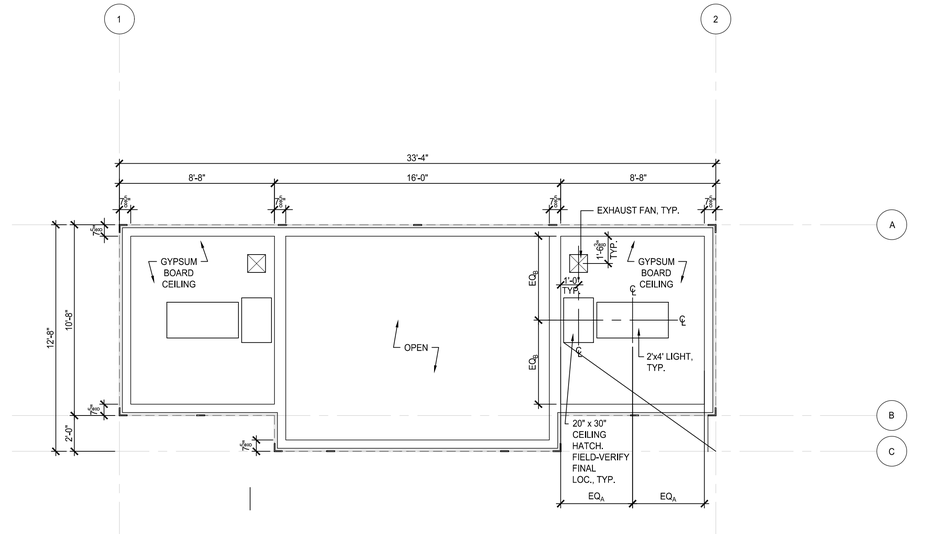
SCALE: 1/4" = 1'-0"

NOTE:

GENERAL CONTRACTOR TO SUPPLY TRUSS DRAWINGS TO BUILDING INSPECTION DEPT. FOR PERMIT APPROVAL.

PROVIDE TRUSS BRACING CONFORMING TO TRUSS PLATE INSTITUTE STANDARDS. PROVIDE TEMPORARY BRACING DURING ERECTION. PROVIDE PERMANENT BRACING AS REQUIRED IN THE DESIGN OF THE TRUSS AS INDICATED. IN ADDITION TO THE ABOVE, PROVIDE PERMANENT BRACING AS FOLLOWS UNLESS OTHERWISE NOTED:

- PROVIDE DIAGONAL BRACING IN THE PLANE OF WEB MEMBERS AT 3 EQUAL INTERVALS ALONG THE LENGTH OF TRUSSES AT END BAYS AND INTERVALS ALONG THE LENGTH OF THE BUILDING.
- UNLESS CONTINUOUSLY SHEATHED PROVIDE CONTINUOUS LATERAL BRACING OF THE BOTTOM CHORD AT OR NEAR PANEL POINTS, OR AS INDICATED ON THE DRAWINGS.



REFLECTED CEILING PLAN

SCALE: 1/4" = 1'-0"

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STATE OF OHIO
WILLIAM R. STEELE
11770
REGISTERED ARCHITECT

No.	Description	Date
	REVISIONS	
---	100% CONSTRUCTION DOCUMENTS	12/04/2023
1	OWNER REVIEW	02/02/2024
2	ISSUED FOR OWNER REVIEW	02/20/2024
3	ISSUED FOR BUILDING PERMITS	03/01/2024
4	ISSUED FOR BIDDING	

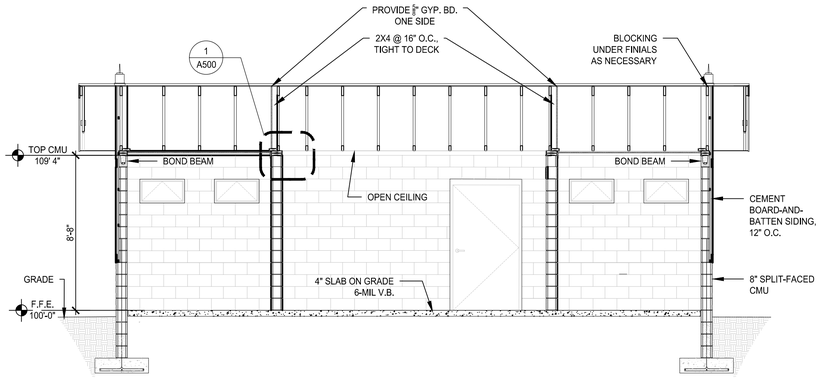
Scale	AS INDICATED
Date	03/01/2024
Job No.	240015661.001A
Designed by	WRS
Drawn by	AJM
Checked by	SSH
Approved by	WRS
Status	---

Client: CITY OF FOSTORIA, OH

Project: FOSTORIA SPLASHPAD

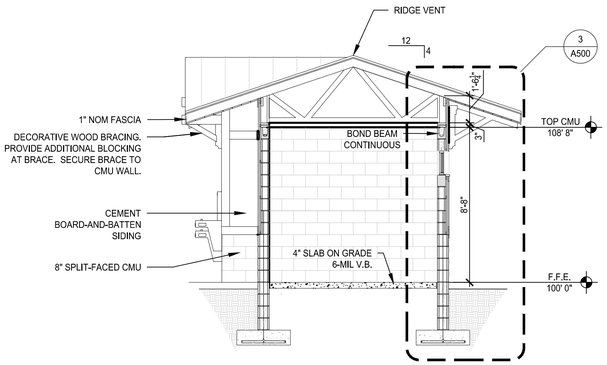
Drawing: PLANS

A100



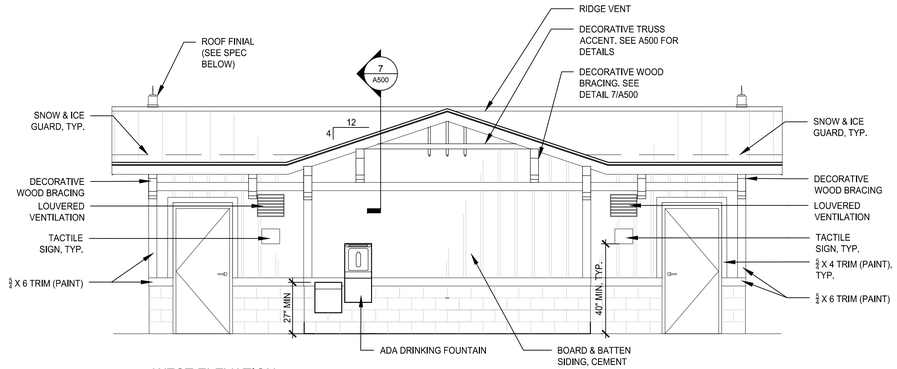
A SECTION
SCALE: 1/4" = 1'-0"

NOTE:
GENERAL CONTRACTOR TO SUPPLY TRUSS DRAWINGS TO BUILDING INSPECTION DEPT. FOR PERMIT APPROVAL.

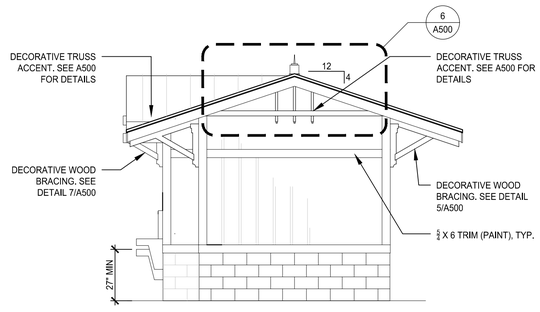


B SECTION
SCALE: 1/4" = 1'-0"

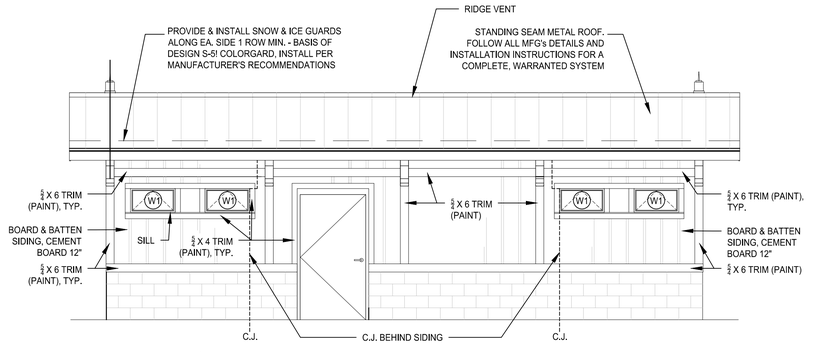
NOTES:
GENERAL CONTRACTOR TO SUPPLY TRUSS DRAWINGS TO BUILDING INSPECTION DEPT. FOR PERMIT APPROVAL.
PROVIDE BLOCKING AS NECESSARY FOR SUPPORT OF DECORATIVE WOOD BRACING.



WEST ELEVATION
SCALE: 1/4" = 1'-0"



SOUTH ELEVATION
SCALE: 1/4" = 1'-0"



EAST ELEVATION
SCALE: 1/4" = 1'-0"

ROOF FINIAL SPEC:
www.architecturaldepot.com
by Dalvento, LLC
Item No.: DV103SWG
SMALL ROMAN FINIAL - WHITE GLOSS METAL
SIZE: 5"W x 5"D x 24"H
OR APPROVED EQUAL

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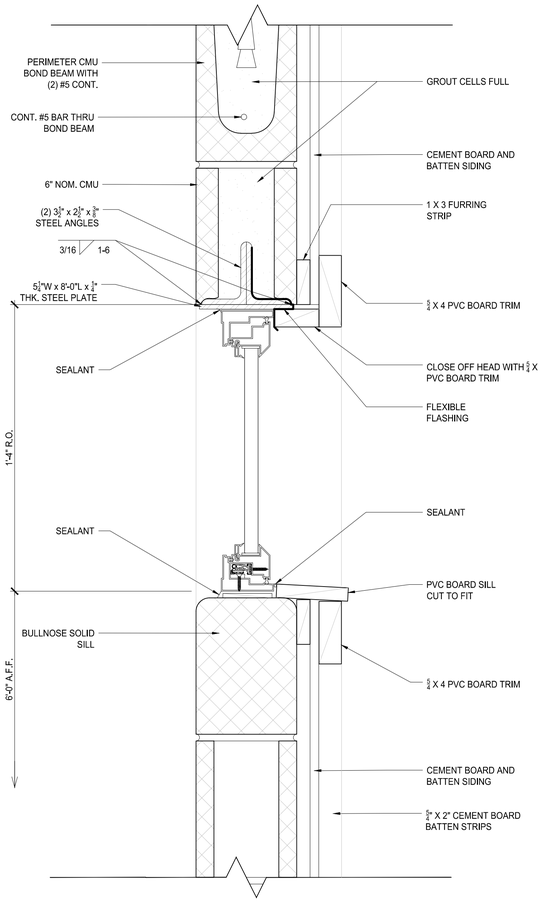
STATE OF OHIO
WILLIAM R. STEELE
11770
REGISTERED ARCHITECT

No.	Description	Date
	REVISIONS	
1	OWNER REVIEW	12/04/2023
2	ISSUED FOR OWNER REVIEW	02/05/2024
3	ISSUED FOR BUILDING PERMITS	02/23/2024
4	ISSUED FOR BIDDING	03/01/2024

Scale: AS INDICATED
Date: 03/01/2024
Job No.: 240015610.002A
Designed by: WRS
Drawn by: AJM
Checked by: WRS
Approved by: WRS
Status: ---

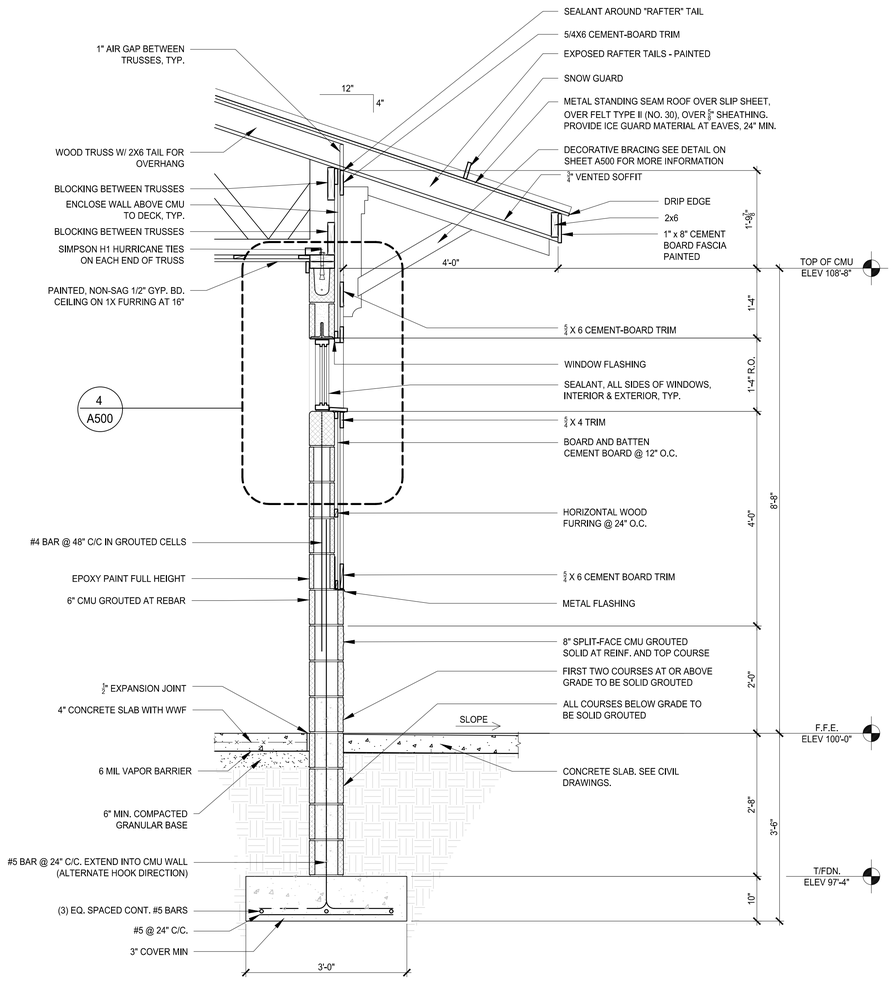
Client: CITY OF FOSTORIA, OH
Project: FOSTORIA SPLASHPAD
Drawing: SECTIONS AND EXTERIOR ELEVATIONS

A200



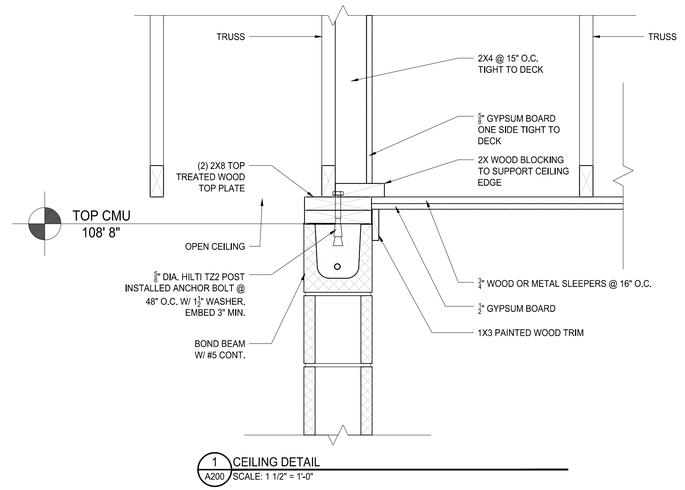
4 A500 WINDOW SECTION
SCALE: 3" = 1'-0"

NOTE: TO MAKE IT EASIER TO TRIM AROUND WINDOWS AND DOORS, USE PVC (AZEK) TRIM. SEE SPECS SHEET A001 FOR PAINTABLE PVC TRIM.

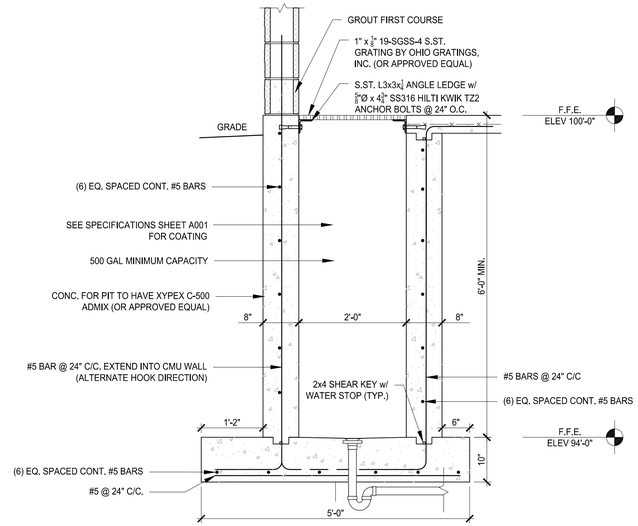


3 A200 TYP. WALL SECTION
SCALE: 3/4" = 1'-0"

NOTES:
- ALL TRIM IS CEMENT BOARD PRODUCT UNLESS NOTED OTHERWISE
- ALL SIDING IS CEMENT BOARD PRODUCT
- MATERIAL SPECIFICATIONS, SEE SHEET A-001
- EXTERIOR CONCRETE SLAB AROUND PERIMETER OF BUILDING, SEE CIVIL DRAWINGS, SLOPE AWAY FROM BUILDING, AT DOORS, DROP EXTERIOR SLAB ¾" MAX FROM FINISH FLOOR FOR ADA CLEARANCE.

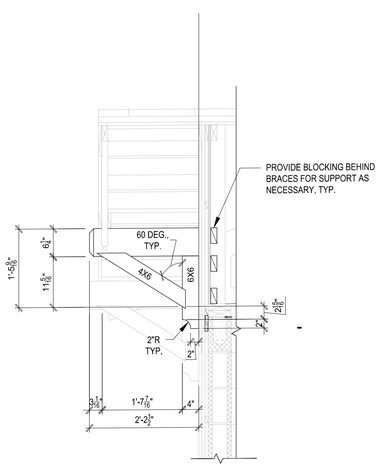


1 A200 CEILING DETAIL
SCALE: 1 1/2" = 1'-0"

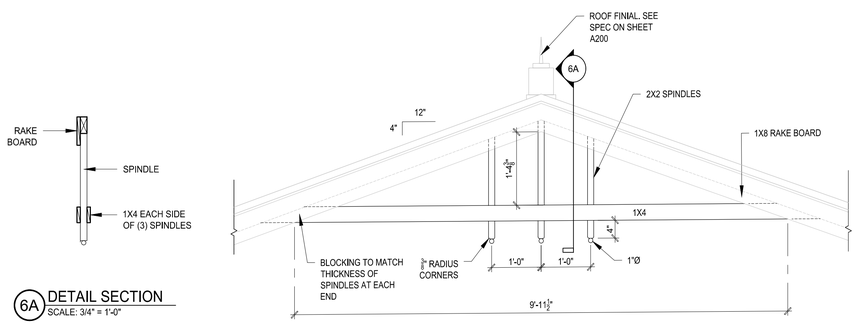


2 A100 CONCRETE PIT SECTION
SCALE: 3/4" = 1'-0"

NOTES:
- CUT S. ST. GRATING AROUND PIPING.
- PROVIDE BITUMINOUS EXPANSIVE WATER STOP AT ALL SHEAR KEYS HENRY SYNKO FLEX WATER STOP.

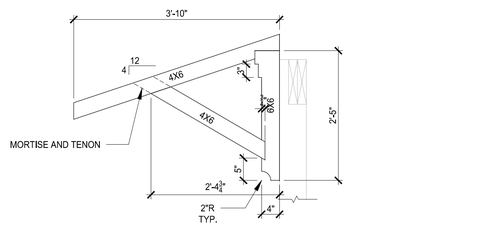


5 DECORATIVE BRACING - WEST FACADE GABLE
SCALE: 3/4" = 1'-0"



6A DETAIL SECTION
SCALE: 3/4" = 1'-0"

6 GABLE RAKE DECORATION
SCALE: 3/4" = 1'-0"



NOTE: DETAIL PIECE TO BE CONSTRUCTED FROM NOMINAL 6X LUMBER AND PAINTED.

5 DECORATIVE BRACING
SCALE: 3/4" = 1'-0"

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STATE OF OHIO
WILLIAM R. STEELE
11770
REGISTERED ARCHITECT

No.	Description	Date
1	OWNER REVIEW	12/04/2023
2	ISSUED FOR BUILDING PERMITS	02/23/2024
3	ISSUED FOR BIDDING	03/01/2024
4		

REVISIONS

Scale	AS INDICATED
Date	03/01/2024
Job No.	24001561.002A
Designed by	WRS
Drawn by	AJM
Checked by	WRS
Approved by	WRS
Status	---

Client: CITY OF FOSTORIA, OH
Project: FOSTORIA SPLASHPAD
Drawing: DETAILS

A500

ROOM FINISH SCHEDULE										
ROOM NUMBER	ROOM NAME	FLOOR FINISH	BASE FINISH	NORTH WALL	SOUTH WALL	EAST WALL	WEST WALL	CEILING HEIGHT	CEILING FINISH	COMMENTS
100	WOMENS	EPOXY	RB	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	8'-8"	PAINT	6": BASE
101	MENS	EPOXY	RB	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	8'-8"	PAINT	6": BASE
102	PUMP ROOM	EPOXY	---	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	---	---	

1. ALL FINISH MATERIALS SHALL MEET THE REQUIREMENTS OF SECTION 803 OF THE OBC.
2. FOLLOW MANUFACTURES RECOMMENDATIONS FOR SURFACE PREP AND INSTALLATION OF ALL MATERIALS.
3. PAINT CMU W/ EPOXY PAINT FOR PUMP ROOM AND BOTH WASHROOMS
4. PAINT MOISTURE RESISTANT DRYWALL WITH PAINT FOR ALL CEILINGS

ABBREVIATIONS
RB = RESILIENT BASE

FOSTORIA SPLASH PAD DOOR HARDWARE

EQUIVALENT HARDWARE MUST BE SELECTED AT TIME OF BIDDING.

HINGES:
MCKINNEY/ASSA ABLOY OR APPROVED EQUIVALENT
5-KNUCKLE, FULL MORTISE
HEAVY DUTY WEIGHT
SIZE: 4-1/2" X 4-1/2"
MODEL: T4A3386 STAINLESS STEEL
FINISH: 32D
N.R.P. - NON-REMOVABLE PIN

HANDLE LEVERS:
SARGENT/ASSA ABLOY OR APPROVED EQUIVALENT
CYLINDRICAL LEVER L LOCK
SERIES 10X LINE,
TYPE: 10XU65 PRIVACY/BATHROOM AND
TYPE: 10XG13 EXIT LATCH LOCKSET (7 PIN) (STORAGE RM)
LEVER - L
ROSE - L
FINISH: 26D SATIN CHROME

CLOSERS:
SARGENT/ASSA ABLOY OR APPROVED EQUIVALENT
SARGENT 351 SERIES POWER GLIDE
SARGENT CPS HEAVY DUTY PARALLEL ARM WITH COMPRESSION STOP
UO PACKAGE
FINISH: 689, ALUMINUM POWDER COATED

THRESHOLD:
NGP OR APPROVED EQUIVALENT
NGP SADDLE ADA #425
FINISH: ALUMINUM

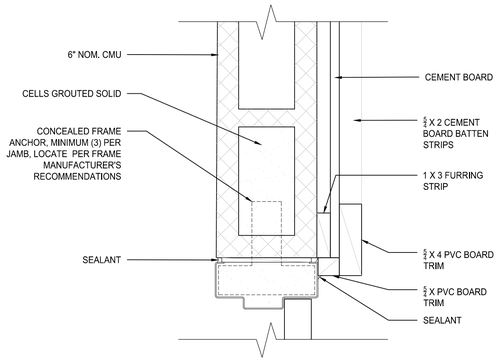
DOOR SWEEPS:
NGP VINYL DOOR SWEEPS OR APPROVED EQUIVALENT
NGP #102VA

DOOR SEALS:
NGP DOOR SEALS OR APPROVED EQUIVALENT
NGP #16OS

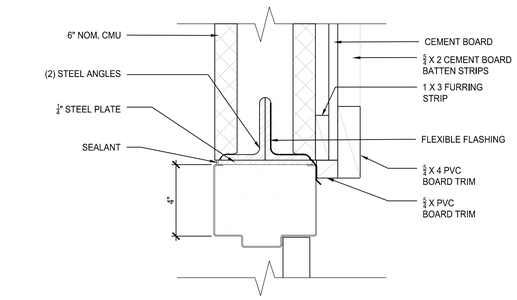
WALL STOP:
ROCKWOOD/ASSA ABLOY OR APPROVED EQUIVALENT
ROCKWOOD #409
CONCAVE BUMPER

KICKPLATE:
ROCKWOOD/ASSA ABLOY OR APPROVED EQUIVALENT
ROCKWOOD #K1050
FINISH: US32D
STAINLESS STEEL

RAIN DRIPS
NGP OR APPROVED EQUIVALENT
MODEL: I6A, LENGTH 40--INCH
FINISH: ANODIZED ALUMINUM



J1



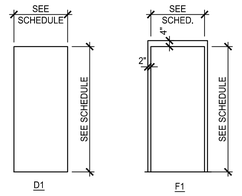
H1

JAMB & HEAD DETAILS

NOTE: TO MAKE IT EASIER TO TRIM AROUND WINDOWS AND DOORS, USE PVC (AZEK) TRIM. SEE SPECS SHEET A001 FOR PAINTABLE PVC TRIM.

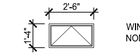
DOOR SCHEDULE														
	DOOR							FRAME				DETAILS		
	DIMENSIONS													
NUMBER	WIDTH	HEIGHT	THICKNESS	TYPE	MATERIAL	FINISH	HARDWARE SET	TYPE	MATERIAL	FINISH	JAMB	HEAD	REMARKS
100	3' - 0"	7' - 0"	1 3/4"	D1	H.M.	PAINT	1	F1	H.M.	PAINT	J1	H1	CLOSER
101	3' - 0"	7' - 0"	1 3/4"	D1	H.M.	PAINT	1	F1	H.M.	PAINT	J1	H1	CLOSER
102	4' - 0"	7' - 0"	1 3/4"	D1	H.M.	PAINT	2	F1	H.M.	PAINT	J1	H1	CLOSER

1. ALL DOOR HARDWARE SHALL MEET ADA REQUIREMENTS.
2. DOOR HARDWARE FINISH SHALL BE SELECTED BY THE OWNER.
3. FOLLOW MANUFACTURERS RECOMENDATIONS FOR INSTALLATION OF DOORS AND HARDWARE.
4. ALL DOOR HANDLES SHALL BE LEVER TYPE. CONTROLS AND OPERATION MECHANISMS SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST. THE FORCE REQUIRED TO ACTIVATE CONTROLS SHALL BE NOT GREATER THAN 5 LBS.



DOOR & FRAME TYPES

SCALE: 1/4" = 1'-0"



WINDOW SIZES ARE NOMINAL, NOT ACTUAL.

SEE SPECIFICATION ON SHEET A001 FOR WINDOW INFORMATION

WINDOW TYPE

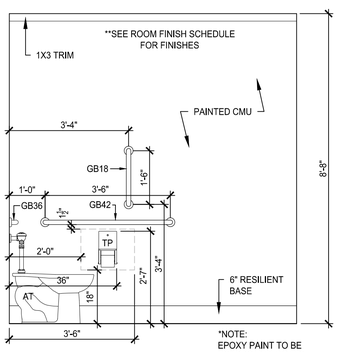
SCALE: 1/4" = 1'-0"

HARDWARE SCHEDULE

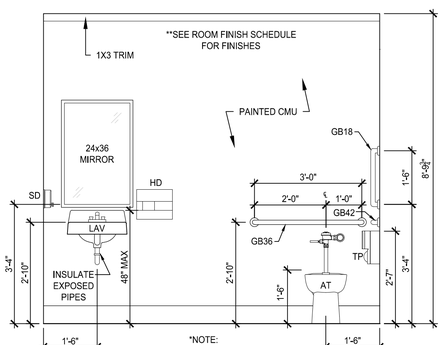
1. PRIVACY SET
   - 3 HINGES
   - ADA LEVER STYLE HANDLE W/ PUSH BUTTON LOCK
   - CLOSER
   - KEYED DEADBOLT FOR WINTERIZATION ONLY
   - THRESHOLD - ADA
   - DOOR SWEEP
   - DOOR SEAL
   - WALL STOP
   - KICKPLATE
   - RAIN DRIP

2. LOCK SET - STORAGE ROOM
   - 4 HINGES
   - ADA LEVER STYLE HANDLE
   - CLOSER
   - KEYED DEADBOLT FOR WINTERIZATION ONLY
   - THRESHOLD - ADA
   - DOOR SWEEP
   - DOOR SEAL
   - WALL STOP
   - KICKPLATE
   - RAIN DRIP

NOTES:
- COORDINATE DOOR KEYING WITH OWNER.
- KEYED DEADBOLTS ARE FOR WINTERIZATION ONLY. KEY IS ON EXTERIOR. NO THUMB LATCH ON INTERIOR. NOT ABLE TO LOCK DEADBOLT FROM INSIDE.

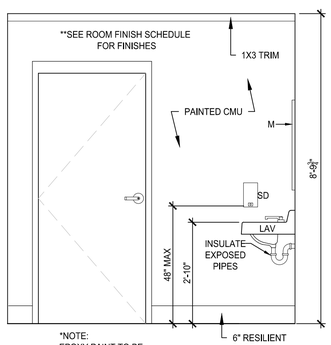


5 A501 SOUTH WALL AT WOMENS 100
SCALE: 1/2" = 1'-0" (MENS 101 SIM. OPPOSITE)

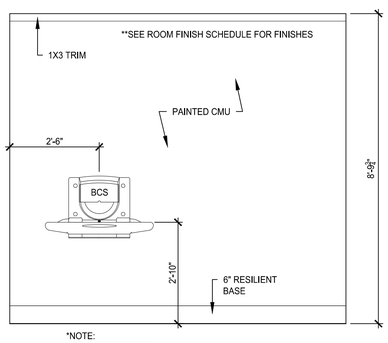


4 A501 EAST WALL AT WOMENS 100
SCALE: 1/2" = 1'-0" (WEST MENS 101 SIM. OPPOSITE)

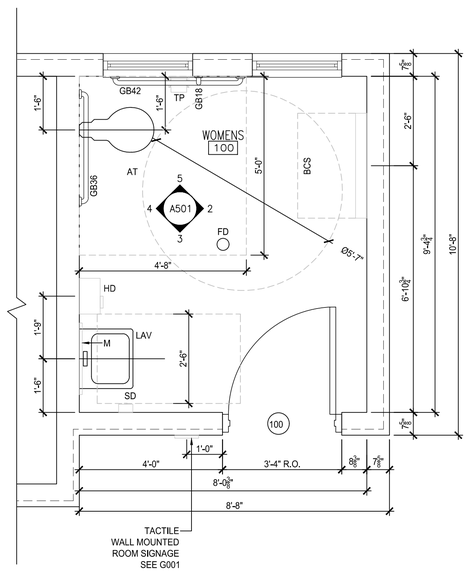
NOTE:
MIRROR VERTICAL DIMENSION IS TO GLASS, NOT TO FRAME.



3 A501 NORTH WALL AT WOMENS 100
SCALE: 1/2" = 1'-0" (MENS 101 SIM. OPPOSITE)



2 A501 WEST WALL AT WOMENS 100
SCALE: 1/2" = 1'-0" (EAST MENS 101 SIM. OPPOSITE)



1 A100 ENLARGED FLOOR PLAN - WOMENS 100
SCALE: 1/2" = 1'-0" (MENS 101 SIMILAR OPPOSITE)

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STATE OF OHIO
WILLIAM R. STEELE
11770
REGISTERED ARCHITECT

No.	Description	Date
	REVISIONS	
1	OWNER REVIEW	12/04/2023
2	ISSUED FOR OWNER REVIEW	02/09/2024
3	ISSUED FOR BUILDING PERMITS	02/23/2024
4	ISSUED FOR BIDDING	03/01/2024

Scale	AS INDICATED
Date	03/01/2024
Job No.	240011561.002A
Designed by	WRS
Drawn by	AJM
Checked by	WRS
Approved by	WRS
Status	---

Client: CITY OF FOSTORIA, OH
Project: FOSTORIA SPLASHPAD
Drawing: DOORS, WINDOWS, AND ROOM FINISHES

A501

PLUMBING SPECIFICATIONS

PART 1 GENERAL

1.01 PURPOSE
THESE OUTLINE SPECIFICATIONS ARE NOT INTENDED TO COVER ALL NECESSARY ITEMS, BUT TO SERVE AS A GUIDE TO FURNISH AND INSTALL A COMPLETE PLUMBING SYSTEM AS DESCRIBED HEREIN.

1.02 SCOPE OF WORK
FURNISH AND INSTALL THE PLUMBING SYSTEMS AS SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN. THIS SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING.

A. EXCAVATION AND BACKFILL REQUIRED FOR THE INSTALLATION OF THE PLUMBING SYSTEMS.
B. CUTTING AND PATCHING REQUIRED FOR THE INSTALLATION OF THE PLUMBING SYSTEMS.
C. REMOVALS AS REQUIRED AND/OR AS INDICATED.
D. DOMESTIC WATER SYSTEM INCLUDING PIPING TO ALL FIXTURES OR EQUIPMENT, VALVES, TAP, WATER SERVICE, CURB BOX OR MANHOLE, WATER METER SETTING, BACKFLOW PREVENTER, WATER HEATER, HEATING CABLE, CIRCULATING PUMPS, ETC.
E. INSULATION FOR PIPING.
F. SANITARY WASTE AND VENT PIPING SYSTEM INCLUDING PIPING TO ALL FIXTURES OR EQUIPMENT TO A POINT 5'-0" OUTSIDE THE BUILDING AS INDICATED.
G. SPLASH PAD FEATURE AND EQUIPMENT ROOM SUPPLY AND RETURN WATER PIPING, INCLUDING PIPING BETWEEN ALL PIECES OF EQUIPMENT.
H. FIRE STOP INCLUDING SLEEVES THRU RATED WALLS AND FLOORS.
I. ALL VALVES, FITTINGS, HANGERS, SLEEVES, ESCUTCHEON PLATES, ANCHORS, GUIDES, ETC., REQUIRED FOR THE PLUMBING SYSTEM INSTALLATION.
J. CHLORINATION, TESTING, ADJUSTMENT AND CLEANING OF ALL SYSTEMS AND EQUIPMENT.
K. TEST THE SANITARY, VENT, STORM PIPING SYSTEM HYDROSTATICALLY AFTER INSTALLATION TO 10 FT. OF HEAD (4.3 PSI MAXIMUM). TESTING WITH COMPRESSED AIR OR GAS MAY RESULT IN INJURY OR DEATH.
L. INSTRUCTION OF OWNERS' PERSONNEL AND OPERATING MANUALS FOR ALL EQUIPMENT.
M. PERMITS, APPLICATIONS, TESTS AND ANY OTHER FEES RELATED TO THIS WORK.

1.03 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, OFFSETS, ETC. ALL DRAWINGS ARE TO BE THOROUGHLY INSPECTED. 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 ON WHICH HE MAY BE IN DOUBT BEFORE PROCEEDING WITH FABRICATION OF PARTS AFFECTED. THE CONTRACTOR SHALL PREPARE ALL ADDITIONAL DETAIL OR FIELD INSTALLATION DRAWINGS NECESSARY AT HIS OWN EXPENSE. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS INDICATED ON THE ENGINEER'S LAYOUT DRAWINGS AND DETERMINE IF ANY CHANGES ARE REQUIRED IN PIPING RUNS, DRAINS, ETC., TO AVOID INTERFERENCE. MAJOR CHANGES SHALL NOT BE MADE WITHOUT THE APPROVAL OF THE ENGINEER. WHILE THE DRAWINGS ARE TO BE ADHERED TO AS CLOSELY AS POSSIBLE, THE CONTRACTOR HAS THE RIGHT TO VARY THE RUN OF CONDUITS, PIPING AND/OR DUCTS DURING PROGRESS OF THE WORK AS MAY BE FOUND NECESSARY OR DESIRABLE TO AVOID INTERFERENCES. MAJOR REVISIONS SHALL BE VERIFIED WITH THE ENGINEER.

1.04 VERIFICATION
BEFORE RUNNING ANY PIPING, ETC., WITHIN THE BUILDING, THIS CONTRACTOR SHALL ASSURE HIMSELF THAT THEY CAN BE INSTALLED AS CONTEMPLATED WITHOUT TRAPPING OR INTERFERING WITH COLUMNS, BEAMS, PIPING, FIXTURES, ETC. ANY NECESSARY MAJOR DEVIATION SHALL BE REFERRED TO THE ENGINEER FOR ADJUSTMENT BEFORE LINES ARE RUN, AT NO INCREASE IN CONTRACT PRICE. OF NECESSITY, OPENINGS, SUPPORTING STEEL, FIELD-BUILT CURBS, SPACE REQUIREMENTS, ETC., WERE DESIGNED AROUND SPECIFIC PARAMETERS. 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 DIMENSIONS SO THAT OPENINGS, SUPPORTING STEEL, CURBS, ELECTRICAL DATA, ETC., WILL FIT THE EQUIPMENT SUPPLIED. ANY ADDITIONAL COST WILL BE THE SOLE RESPONSIBILITY OF THIS CONTRACTOR. IN ADDITION, ELECTRICAL POWER, INTERLOCK AND CONTROL DIAGRAMS AND PIPING ARRANGEMENTS WERE DESIGNED AROUND ONE SPECIFIC MANUFACTURER. IF ADDITIONAL WIRING, PIPING CONTROLS, ETC., IS REQUIRED FOR OTHER EQUIPMENT, THIS CONTRACTOR SHALL INCLUDE THE COST OF THE SAME IN HIS PRICE. DIMENSIONS, ELEVATIONS AND RELATIVE LOCATIONS OF EXISTING EQUIPMENT, SEWERS, PIPES, DUCTS, CONDUITS, ETC., IN PLACE AS SHOWN ON THE DRAWINGS, ARE TAKEN FROM AS-BUILT AND RECORD DRAWINGS AND ARE DEEMED RELIABLE ONLY INSOFAR AS GENERAL LAYOUT IS CONCERNED. SUCH DIMENSIONS SHALL NOT BE USED FOR LAYOUT DRAWINGS OR DETAILING OF COMPONENTS. THE RESPONSIBILITY FOR CHECKING IN PLACE ITEMS WILL BE THE CONTRACTORS. ALL MEASUREMENTS, THE EXACT DETERMINATION OF RELATIVE ELEVATIONS OR LOCATIONS, THE ASCERTAINING OF ACCURACY OF ALL GIVEN ELEVATIONS AND DIMENSIONS AND THE OBTAINING OF ALL NECESSARY ADDITIONAL INFORMATION TO INSURE THE PROPER FIT AND COORDINATION OF ALL CONDUIT EQUIPMENT, DUCTS, AND PIPING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

1.05 SITE VISIT
ALL CONTRACTORS BIDDING THE WORK INDICATED THROUGHOUT THESE CONTRACT DOCUMENTS ARE REQUIRED TO VISIT, AND THOROUGHLY EXAMINE THE PROJECT SITE AND ITS ASSOCIATED CONDITIONS. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH ALL EXISTING CONDITIONS UNDER WHICH THIS WORK MUST BE PERFORMED. ALL CONTRACTORS SHALL REPORT ANY DISCREPANCIES TO THE ARCHITECT 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.

1.06 GUARANTEE
THE CONTRACTOR GUARANTEES BY HIS ACCEPTANCE OF THE CONTRACT THAT ALL WORK WILL BE FREE FROM DEFECTS IN WORKMANSHIP AND/OR MATERIALS 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 HEREOF SHALL, WITH THE APPROVAL OF THE ARCHITECT, BE PREPARED BY THE CONTRACTOR AT HIS OWN EXPENSE. WHERE SUCH APPROVED DEVIATION REQUIRES A DIFFERENT QUALITY AND ARRANGEMENT OF DUCTWORK, PIPING, WIRING, CONDUIT AND/OR EQUIPMENT FROM THAT SPECIFIED OF DETAILED ON THE DRAWINGS WITH THAT APPROVAL OF THE ARCHITECT, THE CONTRACTOR SHALL FURNISH AND INSTALL ALL SUCH MATERIAL AND/OR EQUIPMENT REQUIRED BY THE SYSTEM AT NO ADDITIONAL COST TO THE OWNER.

1.07 SUBMITTALS
AFTER RECEIVING APPROVAL OF EQUIPMENT MANUFACTURERS AND PRIOR TO DELIVERY OF ANY MATERIAL TO JOB SITE AND SUFFICIENTLY IN ADVANCE OF THE REQUIREMENTS TO ALLOW ARCHITECT AMPLE TIME FOR CHECKING, SUBMIT FOR REVIEW DETAILED DIMENSIONED DRAWINGS AND/OR EQUIPMENT CUT SHEETS SHOWING CONSTRUCTION SIZE, ARRANGEMENT, OPERATING CLEARANCES, PERFORMANCE CHARACTERISTICS AND CAPACITY OF MATERIAL AND EQUIPMENT. SHOP DRAWINGS SHALL SHOW THE RATINGS OF ITEMS AND SYSTEMS AND HOW THE COMPONENTS OF AN ITEM AND SYSTEM ARE ASSEMBLED, FUNCTION TOGETHER AND HOW THEY WILL BE INSTALLED ON THE PROJECT. DATA AND SHOP DRAWINGS FOR COMPONENT PARTS OF AN ITEM OR SYSTEM SHALL BE COORDINATED AND SUBMITTED AS A UNIT. IT IS THE INTENT OF THESE CONTRACT DRAWINGS TO HAVE THE MECHANICAL CONTRACTOR PREPARE "AS-BUILT" RECORD DRAWINGS IN ACCORDANCE WITH THESE CONTRACT DOCUMENTS.

1.08 CUTTING, PATCHING & FINISHING
PROVIDE CUTTING AND PATCHING OF ALL MATERIALS NECESSARY FOR THE INSTALLATION AS INDICATED OR SPECIFIED. NEATLY REMOVE AND LEGALLY DISPOSE OF PLUMBING COMPONENTS AND ITEMS NO LONGER IN USE. PROTECT THE STRUCTURE, FURNISHINGS, FINISHES AND MATERIALS ADJACENT TO THE AREA OF CUTTING AND PATCHING. PATCH EXISTING FINISHED 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. IN AREAS WHERE NEW FINISH WORK BY THE GENERAL CONTRACTOR IS NOT INCLUDED IN THE PROJECT, THIS CONTRACTOR SHALL REPAIR AND/OR RESTORE FINISHES TO MATCH ADJACENT FINISHES. OPENINGS AROUND PIPING OR IN SLEEVES FOR PIPING 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, 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.

1.09 CONNECTIONS TO EXISTING WORK
PLAN THE INSTALLATION OF NEW WORK AND CONNECTIONS TO EXISTING WORK TO ENSURE MINIMUM INTERFERENCE WITH THE REGULAR OPERATION OF THE EXISTING FACILITIES. SUBMIT TO THE ARCHITECT, FOR HIS APPROVAL, A PROGRESS SCHEDULE INDICATING ALL NECESSARY TEMPORARY SHUTDOWNS OF EXISTING SERVICES. ALL SHUTDOWNS SHALL BE MADE AT SUCH TIMES AS WILL NOT INTERFERE WITH REGULAR OPERATION OF THE EXISTING FACILITIES AND ONLY AFTER WRITTEN APPROVAL FROM THE ARCHITECT.

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

1.11 CLOSE-OUT
CONTRACTOR SHALL PROVIDE FIELD-TESTING, CHECKOUT AND SYSTEM DEMONSTRATIONS TO OWNER TO ASSURE PROPER PERFORMANCE AND ADJUSTMENT OF ITEMS PROVIDED UNDER THE CONTRACT. REMOVE ALL DEBRIS CREATED BY THE CONSTRUCTION WORK AND CLEAN ALL EQUIPMENT, AIR DEVICES, ETC., INSIDE AND OUTSIDE. PROVIDE HARDBOUND BINDER WHICH INCLUDES: COPIES OF EACH SHOP DRAWING, PREVENTATIVE MAINTENANCE PROCEDURES, OPERATION AND INSTRUCTION MANUALS, LITERATURE SUPPLIED WITH PLUMBING EQUIPMENT, AND A LIST OF ALL CONTRACTOR'S PURCHASE ORDERS WITH SUPPLIERS, NAMES, ADDRESSES AND PHONE NUMBERS, FOR ALL MATERIALS. PROVIDE AT LEAST 2 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.

1.12 REFERENCED STANDARDS
2017 OHIO PLUMBING CODE
2017 OHIO BUILDING CODE

PART 2 PRODUCTS

2.01 GENERAL
THE MANUFACTURERS REFERENCED THROUGHOUT THIS OUTLINE SPECIFICATION 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.

2.02 PIPING
A. SANITARY WASTE – INSIDE BUILDING UNDERGROUND

1. PVC PLASTIC PIPE, SCHEDULE 40 DWV WITH SOLVENT WELDED SOCKET JOINTS. PIPE SHALL CONFORM TO ASTM D2665, D2564, D3311. (PLASTIC PVC SHALL NOT BE USED IN AREAS WHERE DISCHARGE TEMPERATURES ARE EXPECTED TO EXCEED 140F).

B. SANITARY WASTE & VENT – INSIDE BUILDING ABOVEGROUND

1. PVC PLASTIC PIPE, SCHEDULE 40 DWV WITH SOLVENT WELDED SOCKET JOINTS. PIPE SHALL CONFORM TO ASTM D2665, D2564. (NOT PERMITTED IN RETURN AIR PLENUMS).

C. DOMESTIC WATER – INSIDE BUILDING ABOVEGROUND

1. 2" AND SMALLER: CROSS-LINKED POLYETHELENE (PEX-A) TUBING AND ASTM F1960 COLD EXPANSION FITTINGS. THE USE OF PEX-B OR PEX-C IS NOT PERMISSIBLE.
2. ALL SIZES: CHLORINATED POLYVINYL CHLORIDE (CPVC) PLASTIC PIPE, SCHEDULE 80 WITH SOLVENT WELDED SOCKET JOINTS. PIPE AND FITTINGS SHALL CONFORM TO ASTM D2846, F441, F438, F439.

D. RELIEF VALVE DISCHARGE

1. CHLORINATED POLYVINYL CHLORIDE (CPVC) PLASTIC PIPE, SCHEDULE 80 WITH SOLVENT WELDED SOCKET JOINTS. PIPE AND FITTINGS SHALL CONFORM TO ASTM D2846, F441, F438, F439.

E. SPLASH PAD FEATURE AND EQUIPMENT SUPPLY AND RETURN WATER

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 AND SHALL BE LABELED WITH DIRECTIONAL FLOW ARROWS.

2.03 VALVES
A. DOMESTIC WATER PIPING

1. BALL: 125 PSI, LEAD-FREE BRONZE BODY, TEFLON TRIM, 2-PIECE, FULL PORT, APOLLO #77CLF-A WITH EXTENDED HANDLE SLEEVE FOR INSULATION.
2. CHECK: 125 PSI, LEAD-FREE BRONZE BODY AND TRIM, APOLLO #161T-LF.
3. GATE: 125 PSI, LEAD-FREE BRONZE BODY AND TRIM, APOLLO #101T-LF.
4. BUTTERFLY: 150 PSI, CAST IRON BODY WITH TAPPED LUGS, EDPM TRIM, GRINNELL SERIES 8000.
5. SPLASH PAD EQUIPMENT SUPPLY AND RETURN WATER VALVES SHALL BE PROVIDED BY RAIN DROP.

B. APPROVED MANUFACTURERS

1. WATTS, APOLLO, CRANE, GRINNELL, NORDSTROM, NIBCO, STOCKHAM, SMITH, MILWAUKEE.

2.04 PLUMBING SPECIALTIES
A. WATER HAMMER ARRESTER (WHA)

1. WATER HAMMER ARRESTER SHALL BE OF LEAD FREE CONSTRUCTION AND SHALL BE EQUIVALENT TO WATTS #LF15M2. SIZE TO CORRESPOND WITH PLUMBING AND DRAINAGE INSTITUTE STANDARD PDI – WH201 AND ASSE #1010 STANDARD.
2. APPROVED MANUFACTURERS: PRECISION PLUMBING PRODUCTS, ZURN, WATTS, WADE.

B. REDUCED PRESSURE BACKFLOW PREVENTION DEVICE

1. BACKFLOW PREVENTION DEVICE SHALL BE OF LEAD-FREE CONSTRUCTION AND SHALL BE TESTED AND CERTIFIED UNDER ASSE STANDARD #1013 USCFCC MANUAL, AWWA STANDARD C511 AND BE APPROVED BY EPA, LOCAL AND STATE CODES.
2. REDUCED PRESSURE ZONE PRINCIPLE BACKFLOW PREVENTION DEVICE SHALL INCLUDE SHUTOFF VALVES, STRAINER, TEST COCKS, AND FULL SIZE DRAIN WITH AIR GAP CONNECTION DEVICE. WATTS #LF909QTS.

C. THERMOMETER

1. PLUMBING CONTRACTOR SHALL FURNISH AND INSTALL DIGITAL THERMOMETER WITH VARIABLE ANGLE DISPLAY SIMILAR TO WEISS MODEL SERIES "DVBM".

2.05 PLUMBING FIXTURES
A. GENERAL: THE CONTRACTOR SHALL FURNISH, INSTALL, AND CONNECT ALL PLUMBING FIXTURES, SPECIALTIES AND TRIM AS SHOWN ON THE DRAWINGS AND AS HEREINAFTER DESCRIBED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION, ROUGH-IN DIMENSIONS, MOUNTING HEIGHTS, ETC., OF FIXTURES WITH THE PLUMBING DRAWINGS, ARCHITECTURAL DRAWINGS AND THE MANUFACTURER'S SPECIFICATIONS.

B. ACCESSORIES AND TRIM: PLUMBING FIXTURES SHALL BE COMPLETE, WITH ALL REQUIRED TRIM, INCLUDING FAUCETS, WASTE PLUGS, TRAPS, SUPPLIES, STOP VALVES, ESCUTCHEONS, BOLT CAPS AND ALL NECESSARY HANGERS, CARRIERS, PLATES, BRACKETS, ANCHORS AND SUPPORTS.

C. FIXTURE SETTING: FIXTURES SHALL BE SET IN A NEAT, FINISHED, AND UNIFORM MANNER. MAKE THE CONNECTIONS TO ALL FIXTURES AT RIGHT ANGLES TO THE WALL, UNLESS OTHERWISE DIRECTED.

D. TRAPS: ALL FIXTURES REQUIRING TRAPS SHALL BE FURNISHED WITH HEAVY-DUTY CHROME PLATED CAST BRASS TRAPS, TAILPIECES AND TUBING DRAINS.

E. STOPS AND RISERS: ALL FIXTURES SHALL BE FURNISHED WITH HEAVY-DUTY COMMERCIAL GRADE SUPPLY STOPS, LOOSE KEY TYPE WITH CHROME PLATED FLEXIBLE RISERS.

F. FIXTURE SCHEDULE: REFER TO THE FIXTURE SCHEDULE ON DRAWINGS FOR ADDITIONAL REQUIREMENTS.

G. APPROVED MANUFACTURERS:

1. WATER CLOSET; ZURN, TOTO, KOHLER, AMERICAN STANDARD, CRANE
2. FLUSHOMETERS; ZURN, SLOAN, KOHLER
4. LAVATORIES; ZURN, KOHLER, AMERICAN STANDARD, CRANE
5. FAUCETS; ZURN, KOHLER, CHICAGO, AMERICAN STANDARD, CRANE, ELKAY, DELTA, MOEN, SPEAKMAN, ENCORE by CHG
6. DRINKING FOUNTAINS: ELKAY, OASIS, HAWS
7. MIXING VALVES; LAWLER, BRADLEY, POWERS, LEONARD, WATTS
8. MOP BASINS; FIAT, MUSTEE, CRANE, ZURN
9. WALL HYDRANTS; WOODFORD, ZURN, J.R. SMITH
10. CLEANOUTS; ZURN, J.R. SMITH, MIFAB
11. FLOOR DRAINS; ZURN, J.R. SMITH, MIFAB

2.06 PIPE INSULATION
A. GENERAL:

1. ALL INSULATION, UNLESS OTHERWISE NOTED, SHALL HAVE A COMPOSITE RATING INCLUDING INSULATION ADHESIVES, JACKET, ETC., AS FOLLOWS. THE COMPOSITE ASSEMBLY SHALL HAVE A FLAME SPREAD RATING NOT OVER 25 AND A SMOKE DEVELOPED RATING NOT HIGHER THAN 50.

2. INSULATION SHALL BE MANUFACTURED BY OWENS-CORNING, KNAUF OR ARMSTRONG AND THERMALLY EQUIVALENT TO THE OWENS-CORNING MATERIALS SPECIFIED.

3. THE PIPING INSTALLATION MATERIAL SHALL BE AN UL-RATED, NON-COMBUSTIBLE PIPE INSULATION RECOMMENDED FOR BOTH HOT AND COLD PIPING. INSULATION SHALL BE HEAVY DENSITY SECTIONAL PIPE INSULATION JACKETED WITH AN EMBOSSED VAPOR BARRIER LAMINATED ALL-SERVICE JACKET WITH SELF-SEALING LAP ADHESIVE. LAP AND SEAL ALL JOINTS TO INSURE VAPOR BARRIER. THERMAL CONDUCTIVITY (K) SHALL NOT EXCEED 0.24 BTUH SQUARE FOOT F°/INCH. INSULATION SHALL EQUAL OWENS-CORNING FIBERGLASS 25 ASJ/SSL. THICKNESS AS PER TABLES IN OTHER SECTIONS OF THESE SPECIFICATIONS. IF STAPLES ARE USED ON COLD WATER LINES, APPLY WHITE VAPOR BARRIER MASTIC OVER STAPLES. AT HANGERS, PROVIDE GALVANIZED SHIELD EXTENDING 12" ON EACH SIDE OF HANGER.

4. WHERE FIBERGLASS INSULATION ON PIPING IS USED, PIPE FITTINGS SHALL BE COVERED WITH INSULATING CEMENT OF A THICKNESS EQUAL TO ADJACENT PIPE INSULATION AND WRAPPED WITH GLASS CLOTH.

5. IN LIEU OF BUILDING UP A FITTING WITH INSULATING CEMENT, A PREFORMED INSULATING FITTING COVER SUCH AS ZESTON 25/50 RATED PVC INSULATED FITTING COVER WITH FIBERGLASS INSERT MAY BE USED. ONLY INSULATING MATERIALS MEETING THE 25/50 FLAME SPREAD AND SMOKE DEVELOPED RATINGS ARE ALLOWABLE IN AIR DUCTS, AIR CHASES OR AIR PLENUMS.

B. PIPING INSULATION THICKNESS

1. DOMESTIC COLD WATER:
   a. 1-1/4" AND BELOW – 1/2" THICK.
   b. 1-1/2" AND ABOVE – 1" THICK.

2. DOMESTIC HOT WATER AND RECIRCULATION:
   a. 1-1/4" AND BELOW – 1" THICK

C. ALL LAVATORIES: EXPOSED PIPING SUCH AS P-TRAPS, HOT AND COLD WATER SUPPLIES AND STOP VALVES SHALL BE PROVIDED WITH A PRE-FABRICATED INSULATION KIT HAVING A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE DEVELOPED INDEX OF NOT MORE THAN 450 (CLASS A MATERIAL) WHEN TESTED IN ACCORDANCE WITH ASTM E-84. SIMILAR TO PLUMBEREX TRAP-GEAR.

2.07 IDENTIFICATION:
A. EQUIPMENT: ENGRAVED, COLOR-CODED LAMINATED PLASTIC. INCLUDE CONTACT-TYPE, PERMANENT ADHESIVE. TAGS SHALL BE ADHERED SECURELY AND APPROPRIATELY TO EQUIPMENT AND BE ABLE TO STAY ADHERED DURING ALL CLIMATE CHANGES.
1. SIZE: 4-1/2" HIGH, WITH 1" TALL LETTERING.
2. TERMINOLOGY: MATCH SPECIFICATIONS AS CLOSELY AS POSSIBLE.
3. EQUIPMENT: ALL MAJOR PLUMBING EQUIPMENT (WATER HEATERS, STORAGE TANKS, ETC.) SHALL BE TAGGED.

B. PIPING:
1. INTERIOR INSTALLED PIPING: STENCILED MARKERS, SHOWING SERVICE AND DIRECTION OF FLOW ON ALL PIPE MAINS.
2. LETTER SIZE: 1" HIGH LETTERS.
3. COLOR CODES: COMPLY WITH ASME A13.1, UNLESS OTHERWISE INDICATED.
4. LOCATIONS: LOCATE MARKERS AND COLOR BANDS WHERE PIPING IS EXPOSED IN FINISHED SPACES; MACHINE ROOMS; ACCESSIBLE MAINTENANCE SPACES SUCH AS SHAFTS, TUNNELS, AND PLENUMS; AND OWNER-APPROVED NON CONCEALED LOCATIONS. LOCATE MARKERS WHERE PIPES ENTER INTO CONCEALED SPACES AND AT A MAXIMUM INTERVALS OF 50 FEET IN EACH SPACE WHERE PIPES ARE EXPOSED OR CONCEALED BY REMOVABLE CEILING SYSTEM.

PART 3 EXECUTION
A. ALL EQUIPMENT INSTALLATION PROCEDURES SHALL BE BASED ON FUNDAMENTAL ENGINEERING AND CONSTRUCTION PRINCIPLES IN CONFORMANCE WITH ALL APPLICABLE CODES, STANDARDS AND ORDINANCES.
B. THE PLUMBING CONTRACTOR SHALL INSTALL ALL PLUMBING EQUIPMENT IN CONFORMANCE WITH MANUFACTURER ISSUED INSTRUCTIONS AND RECOMMENDATIONS.
C. THE PLUMBING CONTRACTOR SHALL NOT KNOWINGLY INSTALL WORK THAT IS IN ERROR.
D. PROVIDE ONE (1) YEAR WARRANTY ON ALL LABOR AND MATERIALS UNLESS NOTED OTHERWISE.
E. THE PLUMBING CONTRACTOR IS RESPONSIBLE FOR ALL PERMITS AND FEES REQUIRED FOR HIS WORK.
F. THE PLUMBING CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS OF HIS COMPLETED WORK.
G. THE SYSTEMS REPRESENTED IN THESE CONTRACT DOCUMENTS HAVE THE INTENT OF PROVIDING ENERGY-EFFICIENT, SAFETY AND COMFORT FOR THE PROPOSED FACILITY.
H. THE PLUMBING CONTRACTOR SHALL COORDINATE HIS WORK WITH ALL OTHER TRADES ON THE PROJECT.
I. ALL MATERIALS AND EQUIPMENT INSTALLED SHALL FULLY COMPLY WITH THE SAFE DRINKING WATER ACT OF 1974, INCLUDING PUBLIC LAW 111-380, COMMONLY REFERRED TO AS THE "NO LEAD LAW".
J. PROCEDURES FOR FLUSHING AND DISINFECTION
1. PROCEDURES SHALL MEET THE REQUIREMENTS OF AWWA C651 AND C652 AS WELL AS ALL APPLICABLE LOCAL REGULATIONS.
2. DISINFECTION AND FLUSHING SHALL BE COMPLETED WITHIN THREE WEEKS PRIOR TO WHOLE OR PARTIAL BENEFICIAL OCCUPANCY. IF BENEFICIAL OCCUPANCY OF ANY PART OF THE BUILDING IS DELAYED MORE THAN TWO WEEKS BUT LESS THAN FOUR WEEKS AFTER DISINFECTION, FLUSHING OF ALL FIXTURES SHALL AGAIN BE COMPLETED. IF BENEFICIAL OCCUPANCY OF ANY PART OF THE BUILDING IS DELAYED FOUR WEEKS OR MORE AFTER DISINFECTION, THE NEED FOR DISINFECTION AND FLUSHING SHALL BE DETERMINED BY A RISK ASSESSMENT CONDUCTED BY THE WATER PROGRAM TEAM / OWNER.
3. CONFIRMATION THAT THE BUILDING WATER SYSTEM PERFORMANCE MEETS DESIGN PERFORMANCE PARAMETERS INDICATED IN THE CONTRACT DOCUMENTS.
K. COORDINATE ALL PIPING TO AVOID REQUIRED OVERHEAD CLEARANCES PERTAINING TO ELECTRICAL PANELS AND EQUIPMENT.
L. ALL UNDERGROUND OUTDOOR DOMESTIC WATER PIPING SHALL BE BURIED A MINIMUM 60" TOP OF PIPE BELOW GRADE AND ALL UNDERGROUND OUTDOOR SANITARY DRAINAGE PIPING SHALL BE BURIED A MINIMUM 42" TOP OF PIPE BELOW GRADE.
M. PIPING SHALL BE SUPPORTED AT THE FOLLOWING MAXIMUM INTERVAL SPACING:

MATERIAL	HORIZONTAL (FT.)	VERTICAL (FT.)
CAST IRON	5	15
CAST IRON (10 FT. LENGTHS)	10	15
CPVC (1" AND SMALLER)	3	10
CPVC (1-1/4" AND LARGER)	4	10
COPPER PIPE	12	10
PEX	2.67	10
PVC	4	10

PLUMBING FIXTURE SCHEDULE

DESCRIPTION	SYMBOL	CW	HW	WASTE	VENT	SPECIFICATIONS
WATER CLOSET FLOOR SET-FLUSH VALVE ADA	WC-1	1-1/2"	---	4"	2"	ZURN #Z5665-BWL, WHITE VITREOUS CHINA, SIPHON JET, 16-3/4" HIGH ELONGATED BOWL, 1.6 GALLON FLUSH AND 1-1/2" BRASS TOP SPUD. SEAT; ZURN #Z5955SS-EL. FLUSH VALVE; ZURN #Z6000AV-WS1 WITH VACUUM BREAKER AND FLUSH HANDLE TOWARDS THE OPEN SIDE OF THE ROOM. WATER HAMMER ARRESTOR, SIZE PDI 'A'.
LAVATORY-WALL HUNG ADA	LAV-1	3/4"	3/4""	2"	1-1/2"	ZURN #Z5344, WHITE VITREOUS CHINA, 20"x18" WALL HUNG LAVATORY WITH 4" FAUCET CENTERS AND DRILLED FOR CONCEALED ARM CARRIER. CARRIER; ZURN #Z1231. FAUCET; ZURN #Z81000-XL-3M, SINGLE LEVER, 0.5 GPM AERATOR. THERMOSTATIC MIXING VALVE; LAWLER MODEL 570 (ASSE 1070). STRAINER; ZURN #Z8743-PC GRID STRAINER. TRAP; ZURN #8700 SERIES CHROME PLATED CAST BODY 'P' TRAP w/TUBULAR WALL BEND & ESCUTCHEON. SUPPLIES; ZURN #ZH8824, SOLID BRASS ANGLE STOPS w/LOOSE KEYS. INSULATE ALL PIPING BELOW SINK WITH ZURN #Z8946-1-NT.
MOP SINK	MS-1	3/4""	3/4"	3"	1-1/2"	ZURN #Z1996-24, 24"x24"x10" DEEP MOP SERVICE BASIN, MOLDED HIGH DENSITY COMPOSITE, PVC DRAIN BODY, STAINLESS STEEL DOME STRAINER AND GASKETED OUTLET CONNECTION. FURNISH COMPLETE WITH ZURN #Z843M1 QUARTER TURN CERAMIC DISC CARTRIDGES, CAST BRASS VACUUM BREAKER SPOUT w/THREADED HOSE CONNECTION, PAIL HOOK AND WALL BRACE, 2-1/2" COLOR-CODED LEVER HANDLES, HOSE & HOSE BRACKET, MOP HANGER AND STAINLESS STEEL BUMPER GUARDS.
DRINKING FOUNTAIN WITH BOTTLE FILLER WALL HUNG, BI-LEVEL ADA	EWC-1	3/4"	---	2"	1-1/2"	HAWS #1119-1920, VANDAL-RESISTANT, ADA DRINKING FOUNTAIN AND BOTTLE FILLER, TYPE 304 STAINLESS STEEL CONSTRUCTION WITH SATIN FINISH, CHROME-PLATED BRASS BUBBLER HEADS AND VANDAL RESISTANT BOTTOM PLATE. PROVIDE VANDAL-RESISTANT ON-WALL MOUNTING PLATES FOR DRINKING FOUNTAINS AND BOTTLE FILLER, CHROME PLATED, CAST BRASS "P" TRAP AND CHROME-PLATED, SOLID BRASS ANGLE STOP.
WALL HYDRANT FREEZE PROOF	FWH-1	3/4"	---	---	---	WOODFORD #67 "ANTI-SIPHON" AUTOMATIC DRAINING WALL HYDRANT FOR FLUSH INSTALLATION. FURNISH COMPLETE WITH INTEGRAL BACKFLOW PREVENTER, LOOSE KEY, NON-TURNING OPERATING ROD WITH COMPRESSION CLOSURE VALVE. BRONZE SEAT AND SEAT WASHER, 3/4" INLET & HOSE CONNECTION.
FLOOR DRAIN	FD-1	---	---	3"	---	ZURN #ZN415B, COATED CAST IRON BODY, BOTTOM OUTLET, COMBINATION INVERTIBLE MEMBRANE CLAMP AND ADJUSTABLE COLLAR, AND 6" ROUND "TYPE B" POLISHED NICKEL BRONZE STRAINER. PROVIDE ZURN #Z1072 ASSE 1072 BARRIER TYPE TRAP SEAL PROTECTION DEVICE.
FLOOR DRAIN	FD-2	---	---	REFER TO DWGS	---	ZURN #Z550, COATED CAST IRON BODY, BOTTOM OUTLET, 9" MEDIUM DUTY, PRIMER CONNECTION, DURA-COATED CAST IRON SLOTTED GRATE. PROVIDE ZURN #Z1072 ASSE 1072 BARRIER TYPE TRAP SEAL PROTECTION DEVICE.
FLOOR CLEANOUT	FCO-1	---	---	REFER TO DWGS	---	ZURN #ZN1400, "LEVEL-TROL" ADJUSTABLE FLOOR CLEANOUT, DURA-COATED CAST IRON BODY WITH GAS AND WATERTIGHT ABS TAPERED THREAD PLUG AND 6" ROUND POLISHED NICKEL BRONZE LIGHT-DUTY SECURED TOP ADJUSTABLE TO FINISHED FLOOR.
CLEANOUT TO GRADE	COTG-1	---	---	REFER TO DWGS	---	ZURN #Z1406-HD-VP, EXTERIOR CLEANOUT, HEAVY DUTY WITH VANDAL PROOF SCREWED TOP.

COMcheck Software Version 4.1.5.5

Mechanical Compliance Certificate

Project Information

Energy Code:	90.1 (2010) Standard
Project Title:	Fostoria Splashpad and Restroom
Location:	Fostoria, Ohio
Climate Zone:	5a
Project Type:	New Construction

Construction Site:
524 River Street
Fostoria, OH 44830

Owner/Agent:
City of Fostoria
Fostoria, OH 44830

Designer/Contractor:
Michael White
Kleinfelder
415 Conant Street
Maumee, OH 43537
(419) 891-0022
mwhite@kleinfelder.com

Mechanical Systems List

Quantity	System Type & Description
1	Water Heater DWH-1: Electric Storage Water Heater, Capacity: 20 gallons. No minimum efficiency requirement applies

Mechanical Compliance Statement

Compliance Statement: The proposed mechanical design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 90.1 (2010) Standard requirements in COM*check* Version 4.1.5.5 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Michael P. White - Plumbing Designer — Name - Title
Signature
02/07/2024 — Date

PLUMBING LEGEND

SYMBOL	DESCRIPTION
CW	DOMESTIC COLD WATER PIPING
HW	DOMESTIC HOT WATER PIPING
V	SANITARY VENT PIPING
SAN	SANITARY PIPING BELOW FLOOR
SAN	SANITARY PIPING ABOVE FLOOR
	FLOW DIRECTION
FCO	FLOOR CLEANOUT
COTG	CLEANOUT TO GRADE
WCO	WALL CLEANOUT
A.F.F.	ABOVE FINISHED FLOOR
F.F.E.	FINISHED FLOOR ELEVATION
I.E.	INVERT ELEVATION
P.C.	PLUMBING CONTRACTOR
G.C.	GENERAL CONTRACTOR
	UNION
	SHUTOFF VALVE
	CHECK VALVE
	3-WAY MIXING VALVE
	BACKFLOW PREVENTER
	STRAINER
	PIPING ELBOW DOWN
	PIPING ELBOW UP
	PIPING TEE DOWN
	PIPING TEE UP
	FREEZEPROOF WALL HYDRANT
	VENT THRU ROOF
	THERMOMETER w/RANGE

PLUMBING DRAWING LIST

DWG NO.	TITLE	FILE NO.
P001	PLUMBING SPECIFICATIONS	24001561P001.dwg
P101	PLUMBING PLANS AND DETAILS	24001561P101.dwg
P201	OVERALL SPLASH PAD ISOMETRIC	24001561P201.dwg
P202	SPLASH PAD FEATURE IDENTIFICATION	24001561P202.dwg
P203	SPLASH PAD FEATURE LOCATION DIMENSIONS	24001561P203.dwg
P204	SPLASH PAD FEATURE SUPPLY PIPING	24001561P204.dwg
P205	SPLASH PAD FEATURE RETURN PIPING	24001561P205.dwg
P206	SPLASH PAD FEATURE PIPING DETAILS	24001561P206.dwg
P207	SPLASH PAD FEATURE PIPING DETAILS	24001561P207.dwg
P208	SPLASH PAD FEATURE PIPING DETAILS	24001561P208.dwg
P209	SPLASH PAD FEATURE PIPING DETAILS	24001561P209.dwg

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02/23/2024
STATE OF OHIO
ROBERT T. BRANNAN
E-54100
REGISTERED PROFESSIONAL ENGINEER

REVISIONS

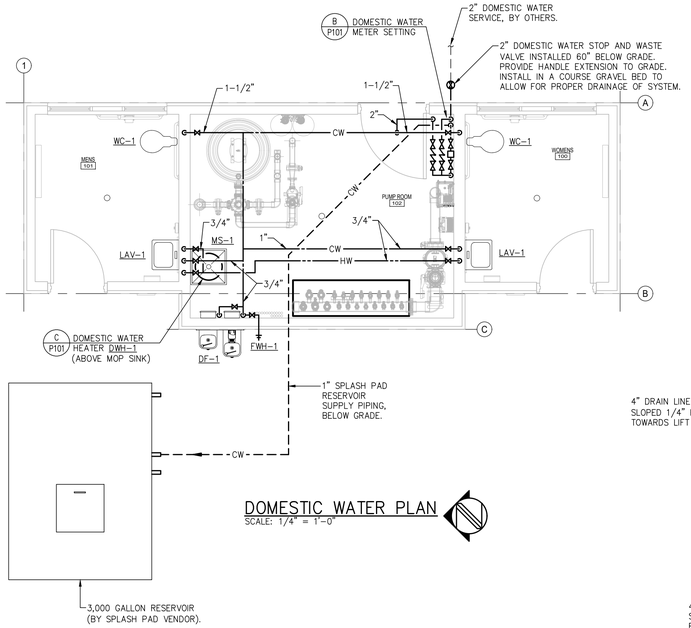
No.	Description	Date
4	ISSUED FOR BIDDING	03/01/2024
3	ISSUED FOR BUILDING PERMITS	02/23/2024
2	ISSUED FOR CONSTRUCTION	02/12/2024
1	ISSUED FOR ODNR REVIEW	02/05/2024

Scale	AS INDICATED
Date	
Job No.	24001561
Designed by	MPW
Drawn by	WNR
Checked by	MPW
Approved by	
Status	

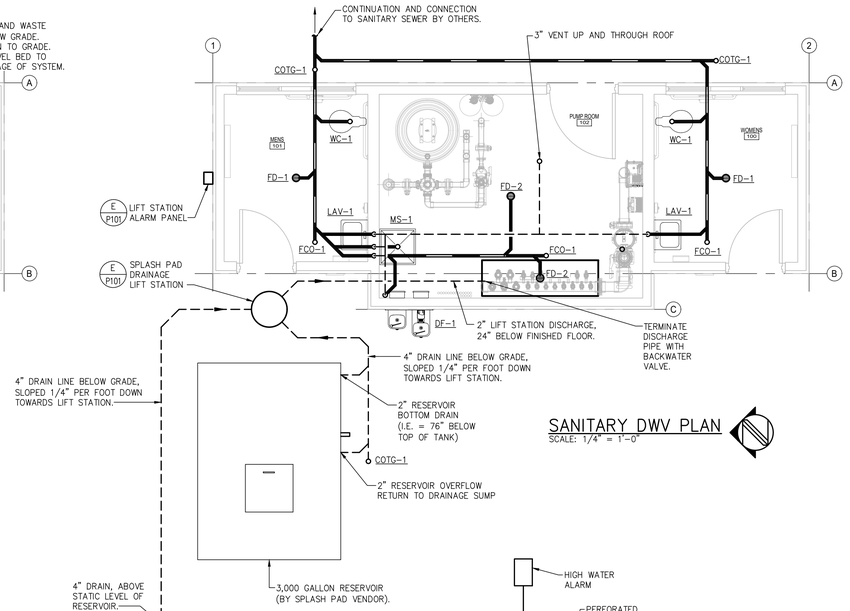
Client: CITY OF FOSTORIA
Project: FOSTORIA SPLASH PAD RESTROOM ADDITIONS
Drawing: PLUMBING SPECIFICATIONS

P001

FILE No. S:\24\Projects\24001561.001A - Fostoria Splash Pad\Dwg\24001561P001.dwg 02/27/24 07:15-MWyke



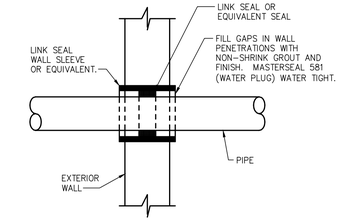
DOMESTIC WATER PLAN
SCALE: 1/4" = 1'-0"



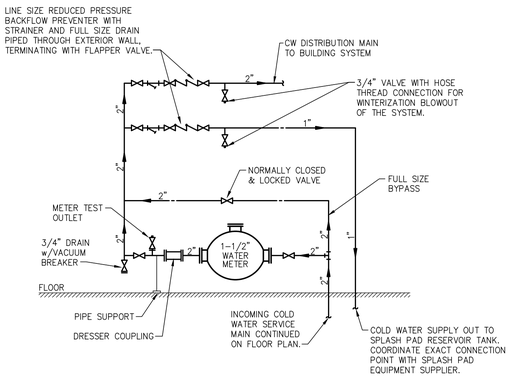
SANITARY DWV PLAN
SCALE: 1/4" = 1'-0"

SPLASH PAD FEATURE AND EQUIPMENT ROOM SUPPLY AND RETURN PIPNG:

1. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL SUPPLY AND RETURN WATER PIPING SERVING THE SPLASH PAD FEATURES AND ALL SUPPLY AND RETURN WATER PIPING SERVING THE ASSOCIATED EQUIPMENT ON THE SITE AND IN THE PUMP ROOM.
2. REFER TO THE 200 SERIES DRAWINGS IN THIS SET FOR THE SPLASH PAD SUPPLY AND RETURN WATER PIPING LAYOUTS AND SIZING. SUPPLY AND RETURN WATER PIPING THAT IS INDICATED TO BE "BY OTHERS" SHALL BE PROVIDED BY THIS CONTRACTOR.
3. THE SPLASH PAD VENDOR WILL BE RESPONSIBLE FOR PROVIDING ALL FEATURES AND ASSOCIATED WATER SYSTEM EQUIPMENT.

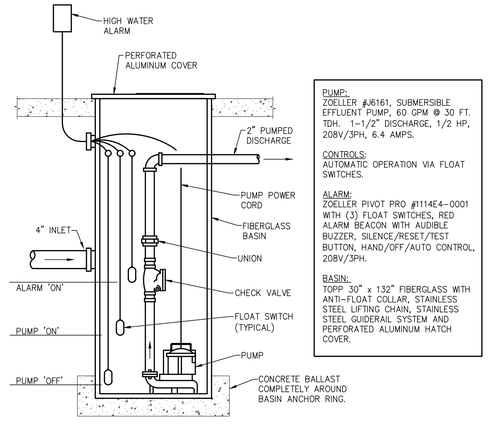


A P101 EXTERIOR WALL SLEEVE DETAIL
NO SCALE



B P101 WATER METER PIPING DETAIL
NO SCALE

NOTE: METER IS REQUIRED TO HAVE REMOTE METER READER, INCLUDING CONDUIT AND WIRING. APPROVED LOCATION BY WATER UTILITY.



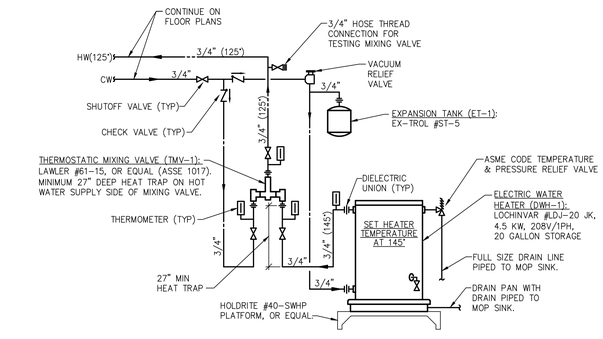
PUMP:
ZOELLER #J6161, SUBMERSIBLE EFFLUENT PUMP, 60 GPM @ 30 FT. TDH. 1-1/2" DISCHARGE, 1/2 HP, 208V/3PH, 6.4 AMPS.

CONTROLS:
AUTOMATIC OPERATION VIA FLOAT SWITCHES.

ALARM:
ZOELLER PIVOT PRO #1114E4-0001 WITH (3) FLOAT SWITCHES, RED ALARM BEACON WITH AUDIBLE BUZZER, SILENCE/RESET/TEST BUTTON, HAND/OFF/AUTO CONTROL, 208V/3PH.

BASIN:
TOPP 30" x 132" FIBERGLASS WITH ANTI-FLOAT COLLAR, STAINLESS STEEL LIFTING CHAIN, STAINLESS STEEL GUIDERAIL SYSTEM AND PERFORATED ALUMINUM HATCH COVER.

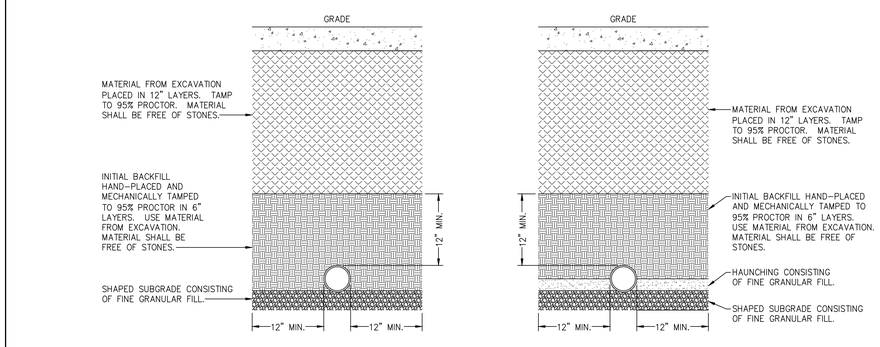
E P101 SIMPLEX LIFT STATION
NO SCALE



C P101 ELECTRIC DOMESTIC WATER HEATER DETAIL
NO SCALE DWH-1

GENERAL NOTES:

1. DOMESTIC WATER FIXTURE SUPPLY PIPING, SIZED AS NOTED ON THE DRAWINGS, SHALL EXTEND UNDIMINISHED IN SIZE TO WITHIN 30" FROM THE POINT OF CONNECTION TO THE PLUMBING FIXTURE.
2. EXTEND INDIVIDUAL DOMESTIC WATER DISTRIBUTION LINES TO FIXTURES AS REQUIRED. LINES SHALL BE SIZED AS INDICATED IN THE PLUMBING FIXTURE SCHEDULE.
3. INSTALL SHUT-OFF VALVES AT ALL DOMESTIC WATER FIXTURE SUPPLY CONNECTIONS.
4. PLUMBING VENTS AND FLUES SHALL BE LOCATED A MINIMUM OF 10'-0" FROM ANY FRESH AIR INTAKE. COORDINATE VENT AND FLUE LOCATIONS WITH MECHANICAL CONTRACTOR.
5. PIPE PENETRATIONS THRU ALL FIRE RATED WALLS SHALL BE SEALED BY THE PLUMBING CONTRACTOR, TO PREVENT SPREAD OF FIRE AND SMOKE AND INGRESS OF MOISTURE.
6. PROVIDE ALL HANGERS, SUPPORTS AND MISCELLANEOUS STEEL REQUIRED FOR THE PROPER INSTALLATION OF ALL PIPING AND EQUIPMENT.
7. COORDINATE PIPING AND EQUIPMENT LOCATIONS WITH ALL OTHER TRADES.
8. MAINTAIN REQUIRED MANUFACTURERS' CLEARANCES ON ALL EQUIPMENT.
9. CONTRACTOR SHALL VERIFY CLEARANCES ABOVE CEILING PRIOR TO INITIATING CONSTRUCTION. COORDINATE EXACT LOCATION OF PIPING WITH ELECTRICAL, MECHANICAL AND GENERAL CONTRACTORS.



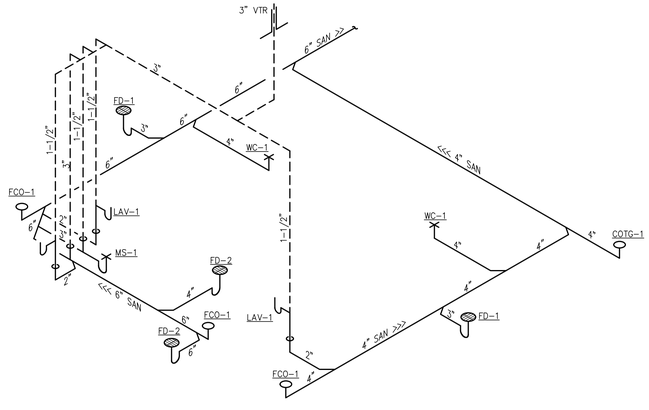
BEDDING FOR METALLIC PIPE

BEDDING FOR PLASTIC PIPE

NOTES:

1. BURIED PIPING SHALL BE SUPPORTED THROUGHOUT ITS ENTIRE LENGTH. IF BELL OR HUB PIPE IS INSTALLED, THE BOTTOM OF THE TRENCH MUST BE DUG OUT AROUND THE HUB TO MAINTAIN CONTINUOUS SUPPORT OF THE PIPE.
2. WHERE TRENCHES ARE EXCAVATED SUCH THAT THE BOTTOM OF THE TRENCH FORMS THE BED FOR THE PIPE, SOLID AND CONTINUOUS LOAD-BEARING SUPPORT SHALL BE PROVIDED BETWEEN JOINTS. BELL HOLES, HUB HOLES AND COUPLING HOLES SHALL BE PROVIDED AT POINTS WHERE THE PIPE IS JOINED. SUCH PIPE SHALL NOT BE SUPPORTED ON BLOCKS TO GRADE. IN INSTANCES WHERE THE MATERIALS MANUFACTURER'S INSTALLATION INSTRUCTIONS ARE MORE RESTRICTIVE THAN THOSE PRESCRIBED BY THE CODE, THE MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH THE MORE RESTRICTIVE REQUIREMENT.
3. WHERE TRENCHES ARE EXCAVATED BELOW THE INSTALLATION LEVEL OF THE PIPE SUCH THAT THE BOTTOM OF THE TRENCH DOES NOT FORM THE BED FOR THE PIPE, THE TRENCH SHALL BE BACKFILLED TO THE INSTALLATION LEVEL OF THE BOTTOM OF THE PIPE WITH SAND OR FINE GRAVEL PLACED IN LAYERS NOT GREATER THAN 6 INCHES IN DEPTH AND SUCH BACKFILL SHALL BE COMPACTED AFTER EACH PLACEMENT.
4. WHERE ROCK IS ENCOUNTERED IN TRENCHING, THE ROCK SHALL BE REMOVED TO NOT LESS THAN 3 INCHES BELOW THE INSTALLATION LEVEL OF THE BOTTOM OF THE PIPE, AND THE TRENCH SHALL BE BACKFILLED TO THE INSTALLATION LEVEL OF THE BOTTOM OF THE PIPE WITH SAND TAMPED IN PLACE SO AS TO PROVIDE UNIFORM LOAD-BEARING SUPPORT FOR THE PIPE BETWEEN JOINTS. THE PIPE, INCLUDING THE JOINTS, SHALL NOT REST ON ROCK AT ANY POINT.
5. IF SOFT MATERIALS OF POOR LOAD-BEARING QUALITY ARE FOUND AT THE BOTTOM OF THE TRENCH, STABILIZATION SHALL BE ACHIEVED BY OVER-EXCAVATING NOT LESS THAN TWO PIPE DIAMETERS AND BACKFILLING TO THE INSTALLATION LEVEL OF THE BOTTOM OF THE PIPE WITH FINE GRAVEL, CRUSHED STONE OR A CONCRETE FOUNDATION. THE CONCRETE FOUNDATION SHALL BE BEDDED WITH SAND TAMPED INTO PLACE SO AS TO PROVIDE UNIFORM LOAD-BEARING SUPPORT FOR THE PIPE BETWEEN JOINTS.
6. BACKFILL SHALL BE FREE FROM DISCARDED CONSTRUCTION MATERIAL AND DEBRIS. LOOSE EARTH FREE FROM ROCKS, BROKEN CONCRETE AND FROZEN CHUNKS SHALL BE PLACED IN THE TRENCH IN 6-INCH LAYERS AND TAMPED IN PLACE UNTIL THE CROWN OF THE PIPE IS COVERED BY 12 INCHES OF TAMPED EARTH. THE BACKFILL UNDER AND BESIDE THE PIPE SHALL BE COMPACTED FOR PIPE SUPPORT. BACKFILL SHALL BE BROUGHT UP EVENLY ON BOTH SIDES OF THE PIPE SO THAT THE PIPE REMAINS ALIGNED. IN INSTANCES WHERE THE MANUFACTURER'S INSTRUCTIONS FOR MATERIALS ARE MORE RESTRICTIVE THAN THOSE PRESCRIBED BY THE CODE, THE MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH THE MORE RESTRICTIVE REQUIREMENT.

D P20x BURIED PIPE BEDDING DETAIL
NO SCALE



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SCALE: NO SCALE

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02/23/2024

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

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

REVISIONS

Scale: AS INDICATED
Date:
Job No.: 24001561
Designed by: MPW
Drawn by: WNR
Checked by: MPW
Approved by:
Status:

Client: CITY OF FOSTORIA
Project: FOSTORIA SPLASH PAD RESTROOM ADDITIONS
Drawing: PLUMBING PLAN

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.

P101

FILE No. S:\24Projects\24001561.001A - Fostoria Splash Pad\Dwg\24001561P101.dwg 02/27/24 07:18:MWYke

THE SPLASH PAD SYSTEM IS A DELEGATED DESIGN. THIS DRAWING IS INCLUDED FOR REFERENCE ONLY, SUCH THAT THE PLUMBING CONTRACTOR CAN FORMULATE A PRICE FOR BIDDING TO PROVIDE THE SPLASH PAD SUPPLY AND RETURN WATER AND DRAIN PIPING. THE FINAL SPLASH PAD SYSTEM DESIGN AND SEALED ENGINEERING DRAWINGS SHALL BE PROVIDED AT A LATER DATE BY THE CONTRACTED SPLASH PAD VENDOR. THIS CONTRACTOR SHALL COORDINATE PIPING WITH FINAL DESIGN ONCE IT HAS BEEN MADE AVAILABLE.

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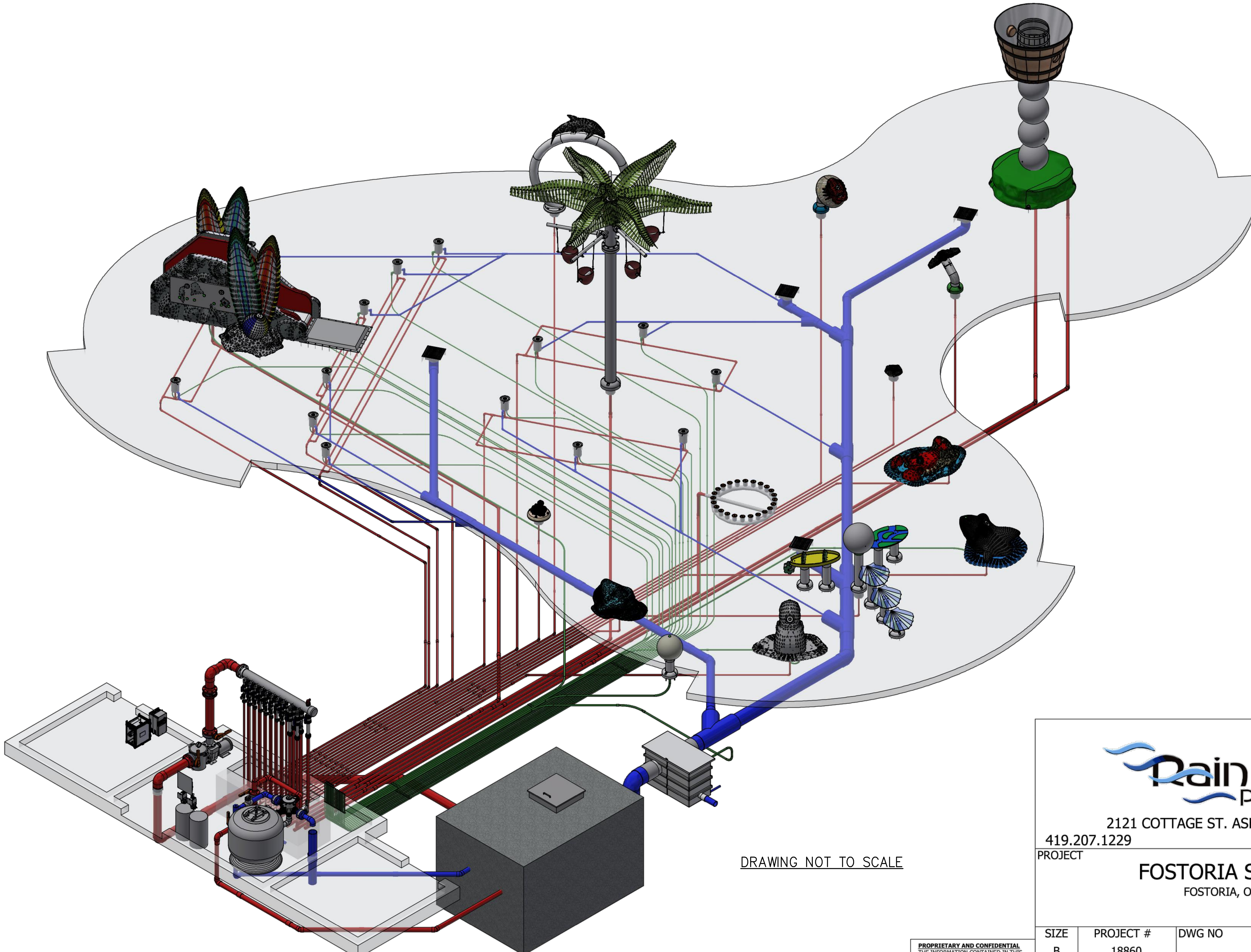
B



A

DRAWING NOT TO SCALE

IMPORTANT NOTICE:
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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 1 OF 13	

4 3 2 1

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FILE No. S:\24\Projects\24001561.001A - Fostoria Splash Pad\Dwg\24001561P201.dwg 02/27/24 07:21-MWyke

No.	Description	Date
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

REVISIONS

Scale	AS INDICATED
Date	
Job No.	24001561
Designed by	RAIN DROP
Drawn by	RAIN DROP
Checked by	RAIN DROP
Approved by	
Status	

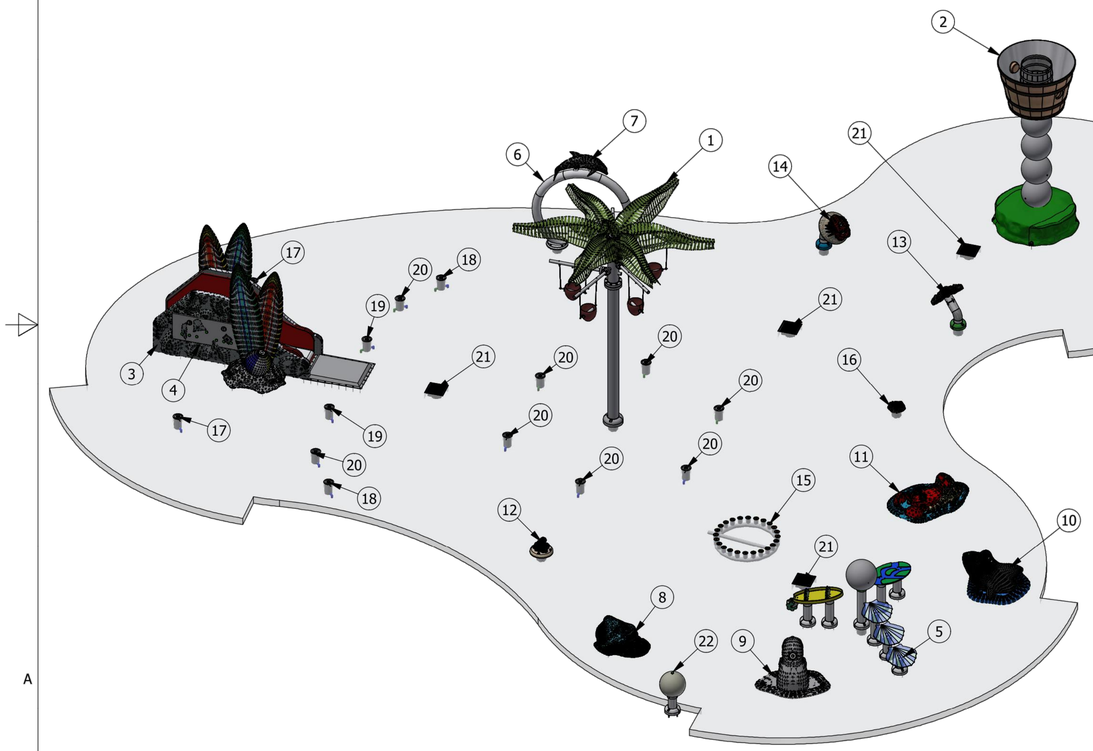
Client: CITY OF FOSTORIA

Project: FOSTORIA SPLASH PAD RESTROOM ADDITIONS

Drawing: OVERALL SPLASH PAD ISOMETRIC

P201

THE SPLASH PAD SYSTEM IS A DELEGATED DESIGN. THIS DRAWING IS INCLUDED FOR REFERENCE ONLY, SUCH THAT THE PLUMBING CONTRACTOR CAN FORMULATE A PRICE FOR BIDDING TO PROVIDE THE SPLASH PAD SUPPLY AND RETURN WATER AND DRAIN PIPING. THE FINAL SPLASH PAD SYSTEM DESIGN AND SEALED ENGINEERING DRAWINGS SHALL BE PROVIDED AT A LATER DATE BY THE CONTRACTED SPLASH PAD VENDOR. THIS CONTRACTOR SHALL COORDINATE PIPING WITH FINAL DESIGN ONCE IT HAS BEEN MADE AVAILABLE.



DRAWING NOT TO SCALE

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.

IMPORTANT NOTICE:
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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 2 OF 13

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REVISIONS		
No.	Description	Date
4	ISSUED FOR BIDDING	03/01/2024
3	ISSUED FOR BUILDING PERMITS	02/23/2024
2	ISSUED FOR CONSTRUCTION REVIEW	02/15/2024
1	ISSUED FOR ODNR REVIEW	02/05/2024

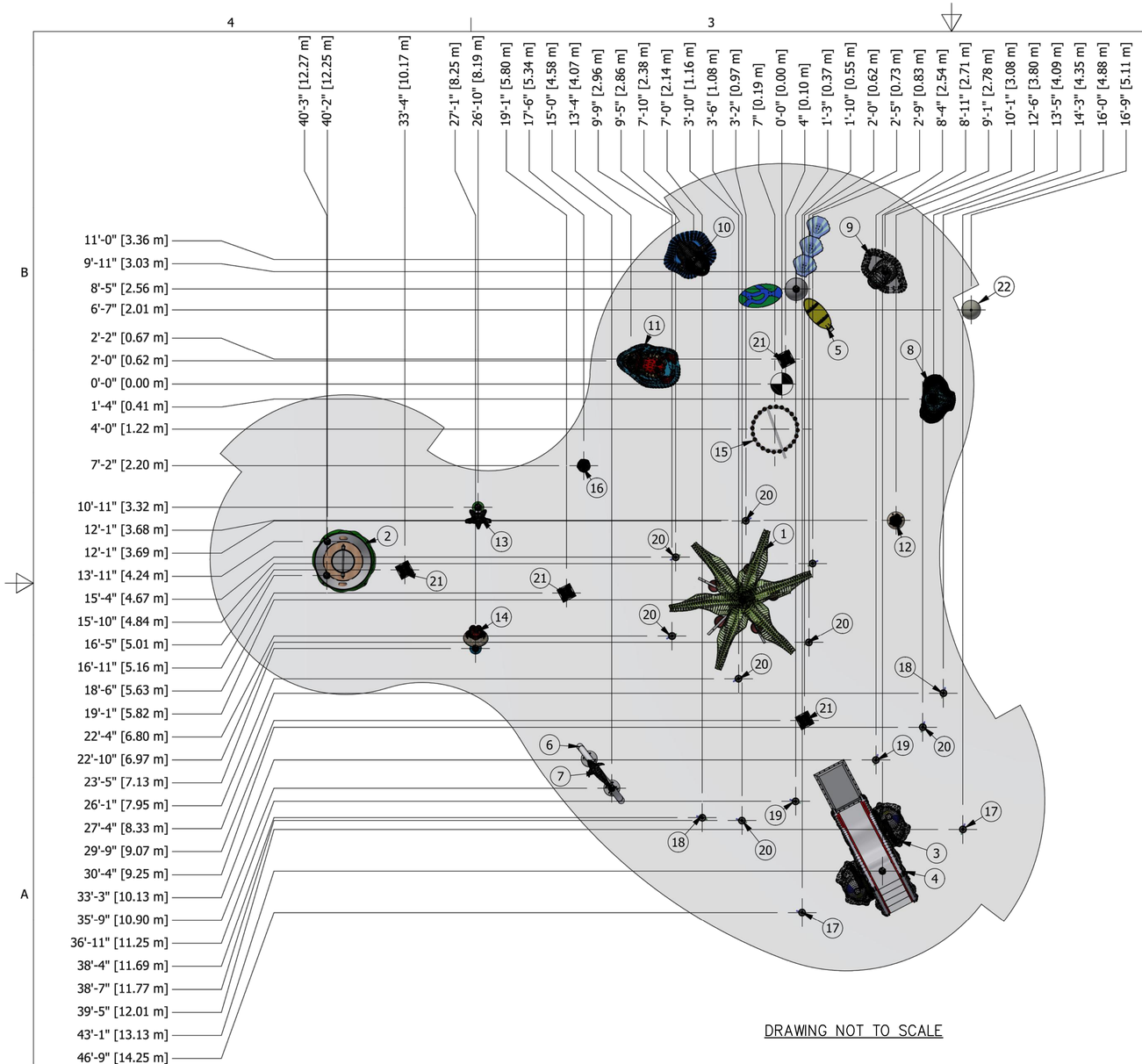
Scale AS INDICATED
Date
Job No. 24001561
Designed by RAIN DROP
Drawn by RAIN DROP
Checked by RAIN DROP
Approved by
Status

Client CITY OF FOSTORIA
Project FOSTORIA SPLASH PAD RESTROOM ADDITIONS
Drawing SPLASH PAD FEATURE IDENTIFICATION

P202

FILE No. S:\24\Projects\24001561.001A - Fostoria Splash Pad\Dwg\24001561P201.dwg 02/27/24 07:23-MWyke

THE SPLASH PAD SYSTEM IS A DELEGATED DESIGN. THIS DRAWING IS INCLUDED FOR REFERENCE ONLY, SUCH THAT THE PLUMBING CONTRACTOR CAN FORMULATE A PRICE FOR BIDDING TO PROVIDE THE SPLASH PAD SUPPLY AND RETURN WATER AND DRAIN PIPING. THE FINAL SPLASH PAD SYSTEM DESIGN AND SEALED ENGINEERING DRAWINGS SHALL BE PROVIDED AT A LATER DATE BY THE CONTRACTED SPLASH PAD VENDOR. THIS CONTRACTOR SHALL COORDINATE PIPING WITH FINAL DESIGN ONCE IT HAS BEEN MADE AVAILABLE.



DRAWING NOT TO SCALE

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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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 3 OF 13	

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No.	Description	Date
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

REVISIONS

Scale AS INDICATED
Date
Job No. 24001561
Designed by RAIN DROP
Drawn by RAIN DROP
Checked by RAIN DROP
Approved by
Status

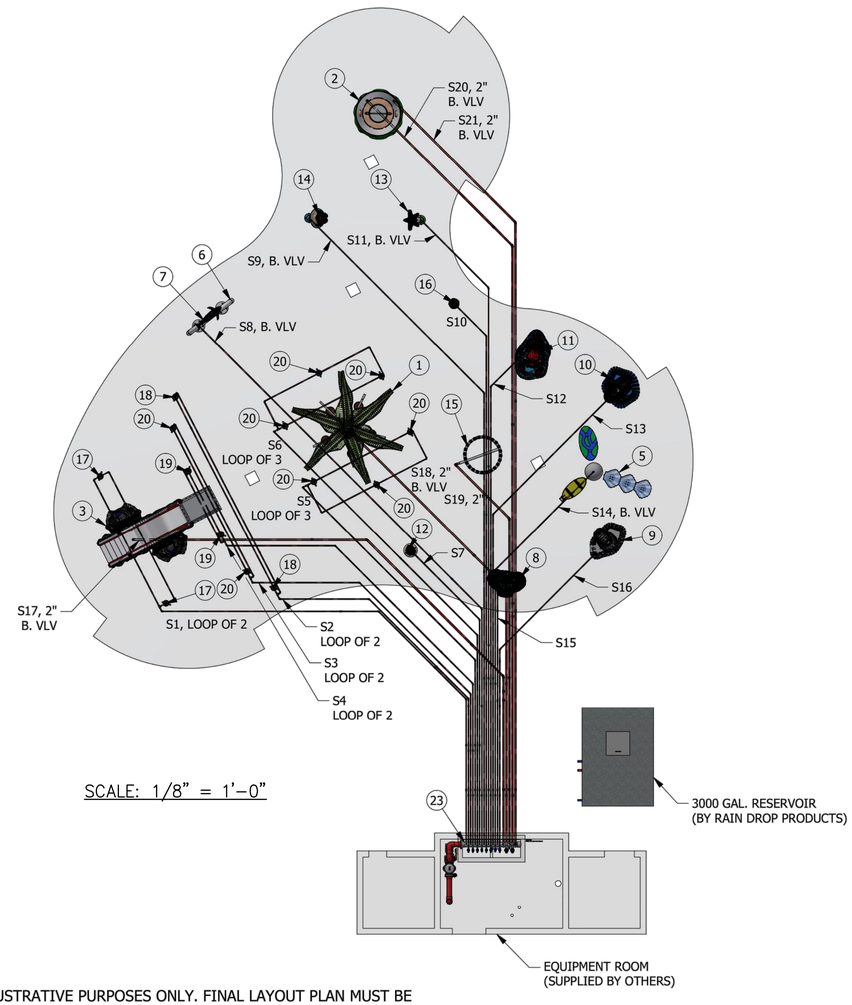
Client CITY OF FOSTORIA
Project FOSTORIA SPLASH PAD RESTROOM ADDITIONS
Drawing SPLASH PAD FEATURE LOCATION DIMENSIONS

P203

FILE No. S:\24\Projects\24001561.001A - Fostoria Splash Pad\Dwg\24001561P201.dwg 02/27/24 07:24-MWyke

THE SPLASH PAD SYSTEM IS A DELEGATED DESIGN. THIS DRAWING IS INCLUDED FOR REFERENCE ONLY, SUCH THAT THE PLUMBING CONTRACTOR CAN FORMULATE A PRICE FOR BIDDING TO PROVIDE THE SPLASH PAD SUPPLY AND RETURN WATER AND DRAIN PIPING. THE FINAL SPLASH PAD SYSTEM DESIGN AND SEALED ENGINEERING DRAWINGS SHALL BE PROVIDED AT A LATER DATE BY THE CONTRACTED SPLASH PAD VENDOR. THIS CONTRACTOR SHALL COORDINATE PIPING WITH FINAL DESIGN ONCE IT HAS BEEN MADE AVAILABLE.

COORDINATE EXACT CONNECTION POINTS WITH RAIN DROP



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

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
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.

IMPORTANT NOTICE:
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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 4 OF 13

C:\Vault workspace\Designs\2023\18860-2023-1OH-FOSTORIA-FOSTORIA-SPRAYPARK\18860-2023-1OH-FOSTORIA-FOSTORIA-SPRAYPARK-31.idw

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No.	Description	Date
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

REVISIONS

Scale AS INDICATED
Date
Job No. 24001561
Designed by RAIN DROP
Drawn by RAIN DROP
Checked by RAIN DROP
Approved by
Status

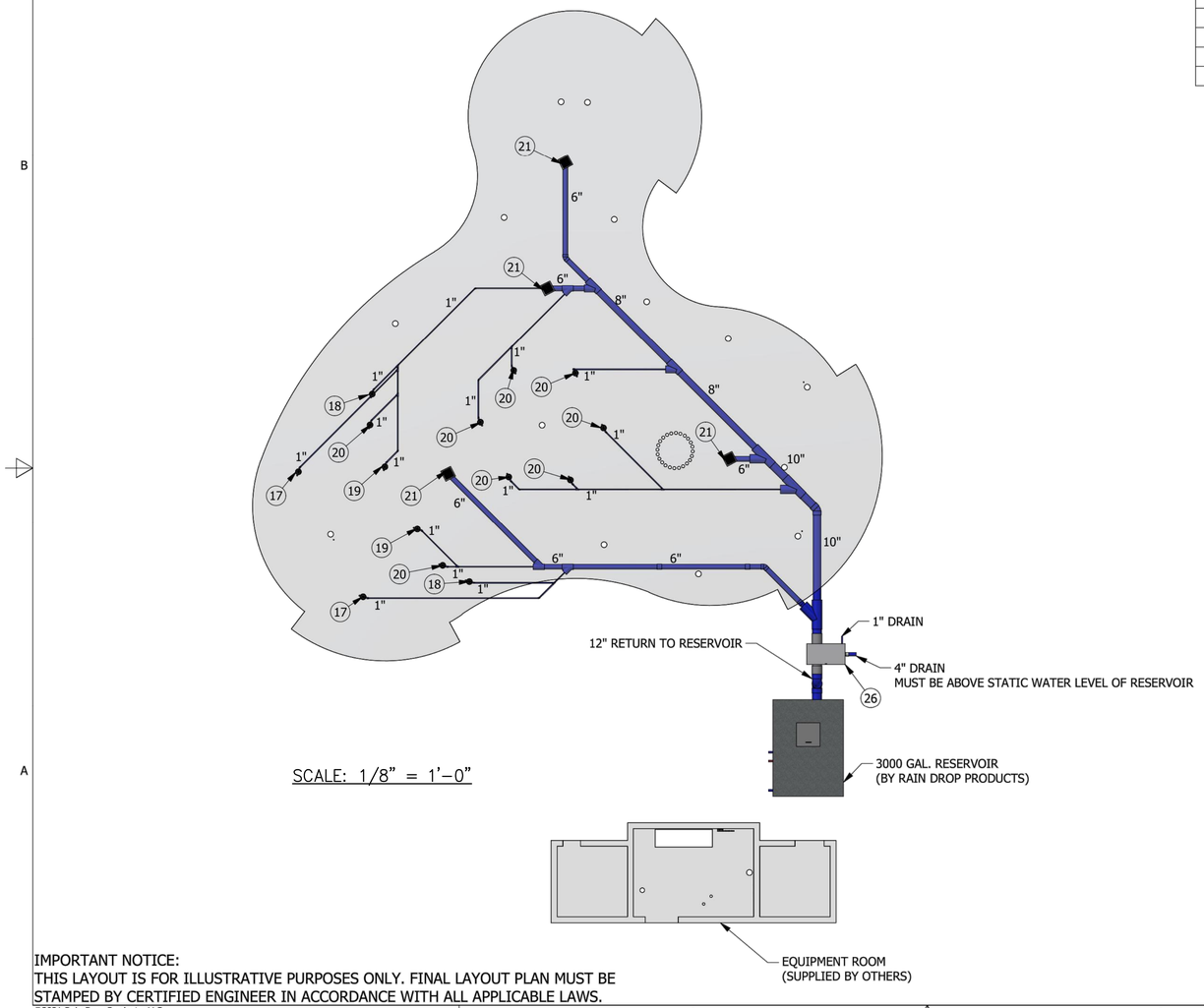
Client CITY OF FOSTORIA
Project FOSTORIA SPLASH PAD RESTROOM ADDITIONS
Drawing SPLASH PAD FEATURE SUPPLY PIPING

P204

FILE No. S:\24\Projects\24001561.001A - Fostoria Splash Pad\Dwg\24001561P201.dwg 02/27/24 07:26:MWyke

THE SPLASH PAD SYSTEM IS A DELEGATED DESIGN. THIS DRAWING IS INCLUDED FOR REFERENCE ONLY, SUCH THAT THE PLUMBING CONTRACTOR CAN FORMULATE A PRICE FOR BIDDING TO PROVIDE THE SPLASH PAD SUPPLY AND RETURN WATER AND DRAIN PIPING. THE FINAL SPLASH PAD SYSTEM DESIGN AND SEALED ENGINEERING DRAWINGS SHALL BE PROVIDED AT A LATER DATE BY THE CONTRACTED SPLASH PAD VENDOR. THIS CONTRACTOR SHALL COORDINATE PIPING WITH FINAL DESIGN ONCE IT HAS BEEN MADE AVAILABLE.

COORDINATE EXACT CONNECTION POINTS WITH RAIN DROP



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

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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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 5 OF 13

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No.	Description	Date
4	ISSUED FOR BIDDING	03/01/2024
3	ISSUED FOR BUILDING PERMITS	02/23/2024
2	ISSUED FOR OWNER REVIEW	02/21/2024
1	ISSUED FOR ODNR REVIEW	02/05/2024

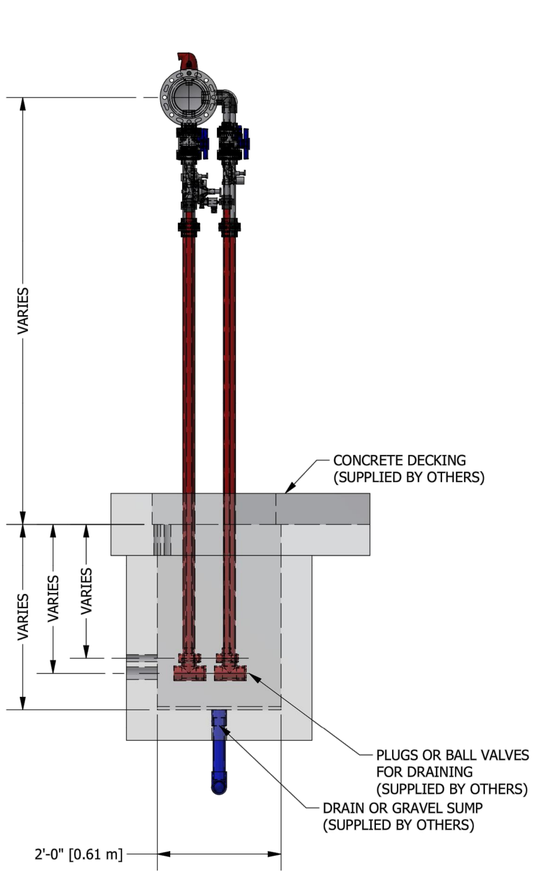
Scale AS INDICATED
Date
Job No. 24001561
Designed by RAIN DROP
Drawn by RAIN DROP
Checked by RAIN DROP
Approved by
Status

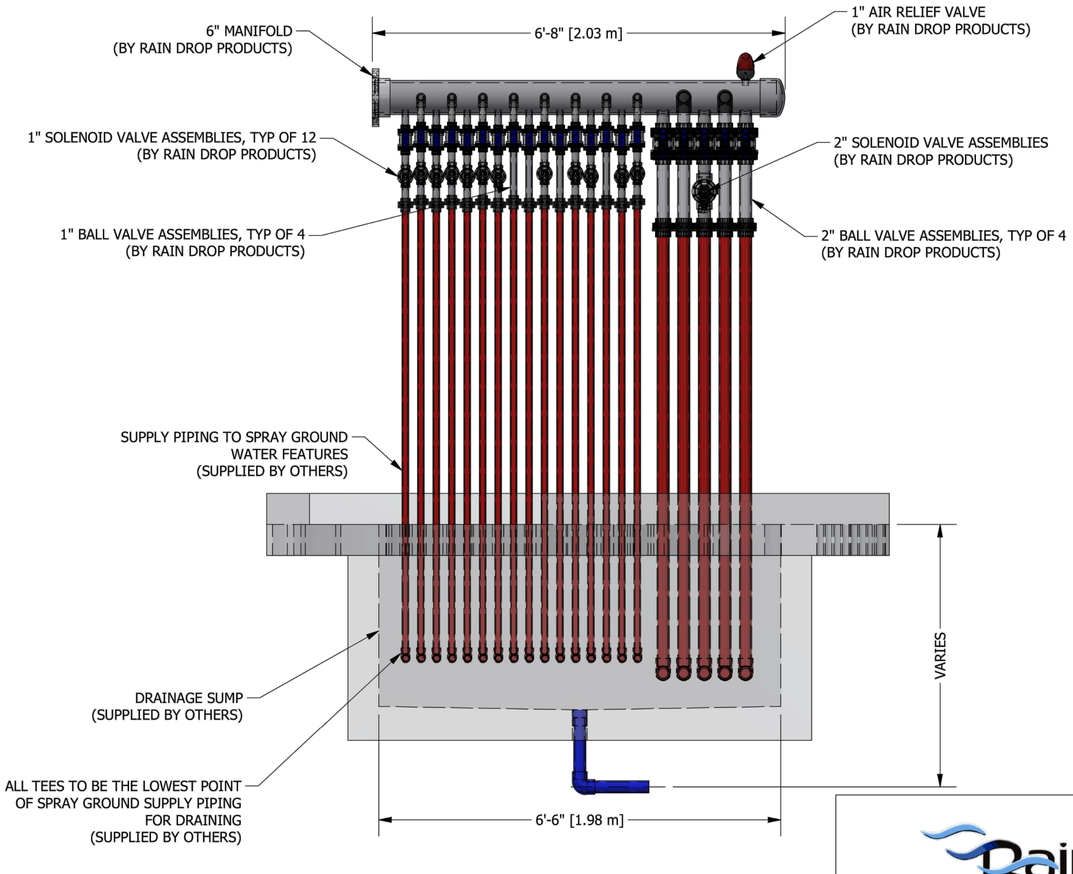
Client CITY OF FOSTORIA
Project FOSTORIA SPLASH PAD RESTROOM ADDITIONS
Drawing SPLASH PAD FEATURE RETURN PIPING

P205

FILE No. S:\24\Projects\24001561.001A - Fostoria Splash Pad\Dwg\24001561P201.dwg 02/27/24 07:27-MWyke

THE SPLASH PAD SYSTEM IS A DELEGATED DESIGN. THIS DRAWING IS INCLUDED FOR REFERENCE ONLY, SUCH THAT THE PLUMBING CONTRACTOR CAN FORMULATE A PRICE FOR BIDDING TO PROVIDE THE SPLASH PAD SUPPLY AND RETURN WATER AND DRAIN PIPING. THE FINAL SPLASH PAD SYSTEM DESIGN AND SEALED ENGINEERING DRAWINGS SHALL BE PROVIDED AT A LATER DATE BY THE CONTRACTED SPLASH PAD VENDOR. THIS CONTRACTOR SHALL COORDINATE PIPING WITH FINAL DESIGN ONCE IT HAS BEEN MADE AVAILABLE.





DRAWING NOT TO SCALE

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.

IMPORTANT NOTICE:
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Rain Drop Products, LLC
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 8 OF 13

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REVISIONS

Approved by
Status
Checked by RAIN DROP
Designed by RAIN DROP
Drawn by RAIN DROP
Job No. 24001561
Date
Scale AS INDICATED

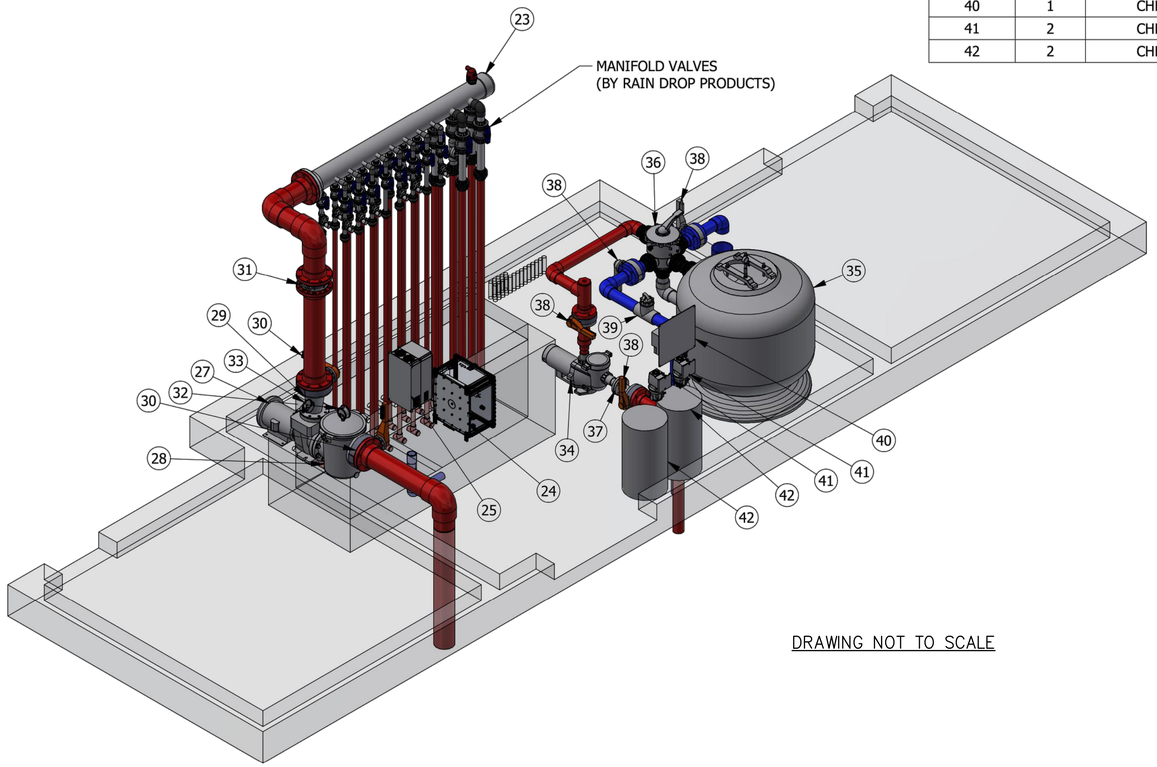
Client CITY OF FOSTORIA
Project FOSTORIA SPLASH PAD RESTROOM ADDITIONS
Drawing SPLASH PAD FEATURE PIPING DETAILS

P206

FILE No. S:\24\Projects\24001561.001A - Fostoria Splash Pad\Dwg\24001561P201.dwg 02/27/24 07:28-MWyke

THE SPLASH PAD SYSTEM IS A DELEGATED DESIGN. THIS DRAWING IS INCLUDED FOR REFERENCE ONLY, SUCH THAT THE PLUMBING CONTRACTOR CAN FORMULATE A PRICE FOR BIDDING TO PROVIDE THE SPLASH PAD SUPPLY AND RETURN WATER AND DRAIN PIPING. THE FINAL SPLASH PAD SYSTEM DESIGN AND SEALED ENGINEERING DRAWINGS SHALL BE PROVIDED AT A LATER DATE BY THE CONTRACTED SPLASH PAD VENDOR. THIS CONTRACTOR SHALL COORDINATE PIPING WITH FINAL DESIGN ONCE IT HAS BEEN MADE AVAILABLE.

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



DRAWING NOT TO SCALE

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

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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 9 OF 13	

C:\Vault workspace\Designs\2023\18860-2023-1OH-FOSTORIA-FOSTORIA-SPRAYPARK\18860-2023-1OH-FOSTORIA-FOSTORIA-SPRAYPARK-31.idw

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Approved by
Status

Client CITY OF FOSTORIA
Project FOSTORIA SPLASH PAD RESTROOM ADDITIONS
Drawing SPLASH PAD FEATURE PIPING DETAILS

P207

FILE No. S:\24\Projects\24001561.001A - Fostoria Splash Pad\Dwg\24001561P201.dwg 02/27/24 07:29-MWyke

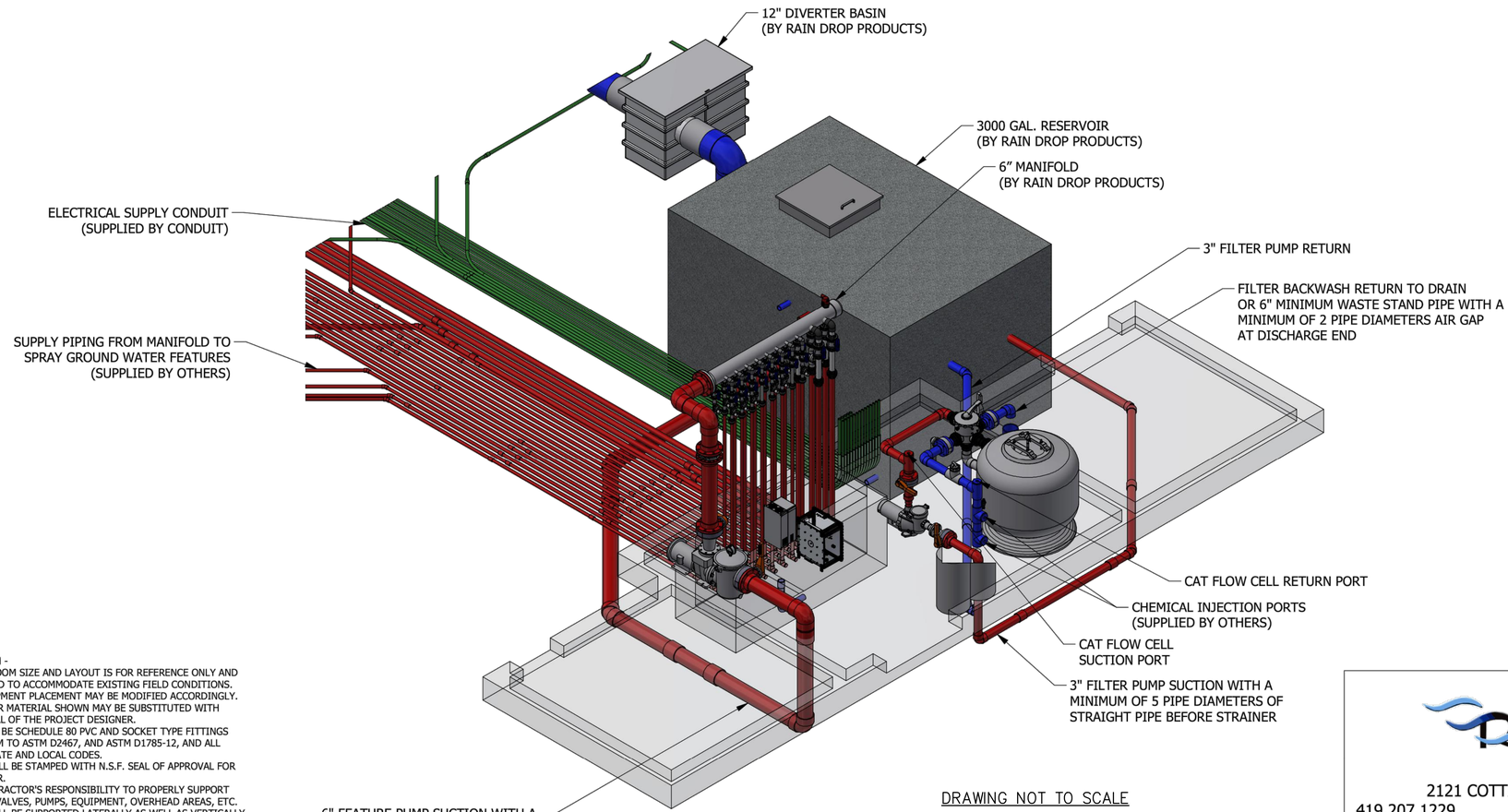
THE SPLASH PAD SYSTEM IS A DELEGATED DESIGN. THIS DRAWING IS INCLUDED FOR REFERENCE ONLY, SUCH THAT THE PLUMBING CONTRACTOR CAN FORMULATE A PRICE FOR BIDDING TO PROVIDE THE SPLASH PAD SUPPLY AND RETURN WATER AND DRAIN PIPING. THE FINAL SPLASH PAD SYSTEM DESIGN AND SEALED ENGINEERING DRAWINGS SHALL BE PROVIDED AT A LATER DATE BY THE CONTRACTED SPLASH PAD VENDOR. THIS CONTRACTOR SHALL COORDINATE PIPING WITH FINAL DESIGN ONCE IT HAS BEEN MADE AVAILABLE.

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.



DRAWING NOT TO SCALE

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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FOSTORIA, OH 44830 US

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DRAWN		SHEET 10 OF 13
cebeling	12/11/2023	

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3	ISSUED FOR BUILDING PERMITS	02/23/2024
2	ISSUED FOR OWNER REVIEW	02/16/2024
1	ISSUED FOR ODNR REVIEW	12/15/2024

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Date
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Drawn by RAIN DROP
Checked by RAIN DROP
Approved by
Status

Client CITY OF FOSTORIA
Project FOSTORIA SPLASH PAD RESTROOM ADDITIONS
Drawing SPLASH PAD FEATURE PIPING DETAILS

P208

FILE No. S:\24\Projects\24001561.001A - Fostoria Splash Pad\Dwg\24001561P201.dwg 02/27/24 07:30:MWyke

THE SPLASH PAD SYSTEM IS A DELEGATED DESIGN. THIS DRAWING IS INCLUDED FOR REFERENCE ONLY, SUCH THAT THE PLUMBING CONTRACTOR CAN FORMULATE A PRICE FOR BIDDING TO PROVIDE THE SPLASH PAD SUPPLY AND RETURN WATER AND DRAIN PIPING. THE FINAL SPLASH PAD SYSTEM DESIGN AND SEALED ENGINEERING DRAWINGS SHALL BE PROVIDED AT A LATER DATE BY THE CONTRACTED SPLASH PAD VENDOR. THIS CONTRACTOR SHALL COORDINATE PIPING WITH FINAL DESIGN ONCE IT HAS BEEN MADE AVAILABLE.

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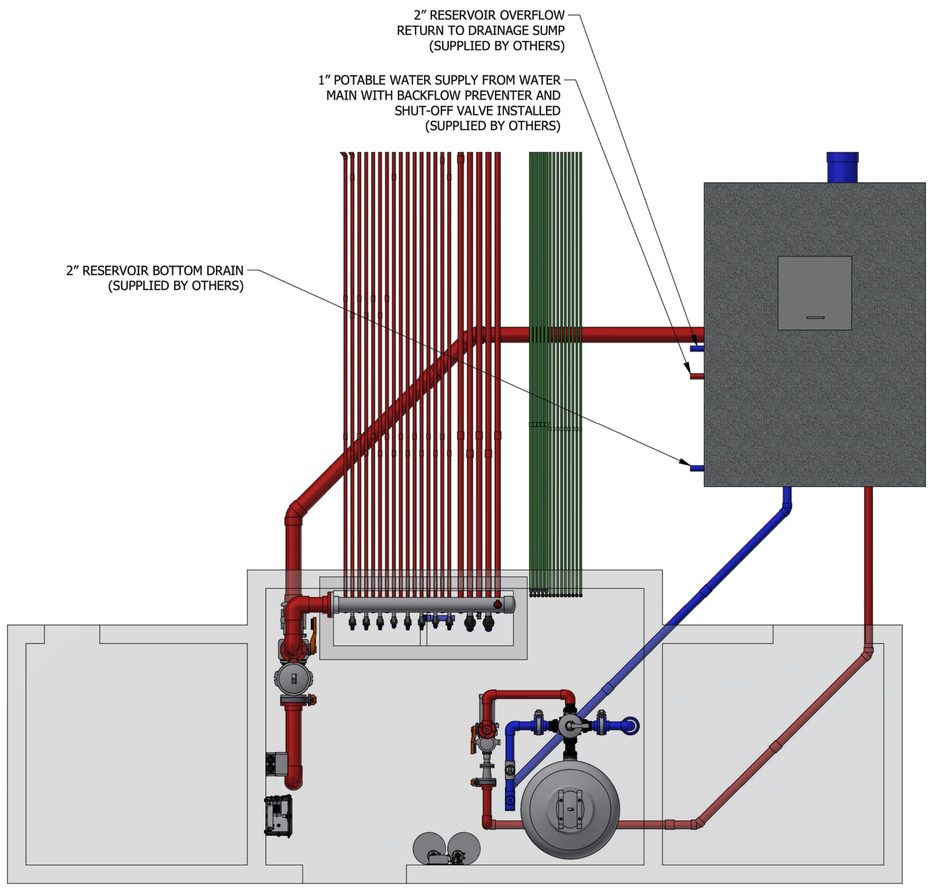

SCALE: 3/8" = 1'-0"

MECHANICAL ROOM -
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DRAWN cebeling | 12/11/2023 | SHEET 11 OF 13

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No.	Description	Approved by	Date
1	ISSUED FOR ODNR REVIEW	RAIN DROP	02/05/2024
2	ISSUED FOR CONSTRUCTION	RAIN DROP	02/23/2024
3	ISSUED FOR BIDDING & PERMITS	RAIN DROP	03/01/2024
4	ISSUED FOR BIDDING		

REVISIONS

Scale: AS INDICATED
Date:
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Designed by: RAIN DROP
Drawn by: RAIN DROP
Checked by: RAIN DROP
Approved by:
Status:

Client: CITY OF FOSTORIA
Project: FOSTORIA SPLASH PAD RESTROOM ADDITIONS
Drawing: SPLASH PAD FEATURE PIPING DETAILS

P209

FILE No. S:\24\Projects\24001561.001A - Fostoria Splash Pad\Dwg\24001561P201.dwg 02/27/24 07:31 MWyke

HVAC SYSTEM SPECIFICATIONS

PART 1 GENERAL

1.01. 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, OFFSETS, 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 IN CONDUITS, PIPING RUNS, DRAINS, ETC., 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, PIPING AND/OR DUCTS DURING PROGRESS OF THE WORK AS MAY BE FOUND NECESSARY OR DESIRABLE TO AVOID INTERFERENCES. MAJOR REVISIONS SHALL BE VERIFIED WITH THE ENGINEER.

1.02. VERIFICATION:

A. BEFORE RUNNING ANY CONDUITS, DUCTS, PIPING, ETC., WITHIN THE BUILDING, THIS CONTRACTOR SHALL ASSURE HIMSELF THAT THESE MATERIALS CAN BE INSTALLED AS CONTEMPLATED, WITHOUT TRAPPING OR INTERFERING WITH COLUMNS, BEAMS, PIPING, FIXTURES, ETC. ANY NECESSARY MAJOR DEVIATION SHALL BE REFERRED TO THE ENGINEER FOR ADJUSTMENT BEFORE MATERIALS ARE INSTALLED. OF NECESSITY, OPENINGS, SUPPORTING STEEL, FIELD BUILT CURBS, ELECTRICAL DATA, SPACE REQUIREMENTS, ETC., WERE DESIGNED AROUND SPECIFIC PARAMETERS. 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 DIMENSIONS SO THAT OPENINGS, SUPPORTING STEEL, CURBS, ELECTRICAL DATA, ETC. WILL FIT THE EQUIPMENT SUPPLIED. ANY ADDITIONAL COST WILL BE THE SOLE RESPONSIBILITY OF THIS CONTRACTOR. IN ADDITION, ELECTRICAL POWER, INTERLOCK AND CONTROL DIAGRAMS AND PIPING ARRANGEMENTS WERE DESIGNED AROUND ONE SPECIFIC MANUFACTURER. IF ADDITIONAL WIRING, PIPING CONTROLS, ETC., ARE REQUIRED FOR OTHER EQUIPMENT, THIS CONTRACTOR SHALL INCLUDE THE COST OF THE SAME IN HIS PRICE.

B. ALL MEASUREMENTS, THE EXACT DETERMINATION OF RELATIVE ELEVATIONS OR LOCATIONS, THE ASCERTAINING OF ACCURACY OF ALL GIVEN ELEVATIONS AND DIMENSIONS AND THE ASCERTAINING OF ALL NECESSARY ADDITIONAL INFORMATION TO INSURE THE PROPER FIT AND COORDINATION OF ALL CONDUIT EQUIPMENT, DUCTS, AND PIPING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

1.03. GUARANTEE: THE CONTRACTOR GUARANTEES, BY HIS 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 SHALL, WITH THE APPROVAL OF THE ARCHITECT, BE PREPARED BY THE CONTRACTOR AT HIS OWN EXPENSE. WHERE SUCH APPROVED DEVIATION REQUIRES A DIFFERENT QUANTITY AND ARRANGEMENT OF DUCTWORK, PIPING, WIRING, CONDUIT AND/OR EQUIPMENT FROM THAT SPECIFIED OR DETAILED ON THE DRAWINGS, WITH THE APPROVAL OF THE ARCHITECT, THE CONTRACTOR SHALL FURNISH AND INSTALL ALL SUCH MATERIALS AND/OR EQUIPMENT REQUIRED BY THE SYSTEM AT NO ADDITIONAL COST TO THE OWNER.

1.04. SUBMITTALS: AFTER RECEIVING APPROVAL OF EQUIPMENT MANUFACTURERS, AND PRIOR TO DELIVERY OF ANY MATERIAL TO THE JOB SITE AND SUFFICIENTLY IN ADVANCE OF THE REQUIREMENTS TO ALLOW ARCHITECT AMPLE TIME FOR CHECKING, SUBMIT FOR REVIEW DETAILED DIMENSIONED DRAWINGS AND/OR EQUIPMENT CUT SHEETS SHOWING CONSTRUCTION SIZE, ARRANGEMENT, OPERATING CLEARANCES, ALL SCHEDULED PERFORMANCE CHARACTERISTICS AND CAPACITIES OF MATERIAL AND EQUIPMENT. SHOP DRAWINGS SHALL SHOW THE RATINGS OF ITEMS AND SYSTEMS AND HOW THE COMPONENTS OF ITEMS AND SYSTEMS ARE ASSEMBLED, FUNCTION TOGETHER AND HOW THEY WILL BE INSTALLED ON THE PROJECT. DATA AND SHOP DRAWINGS FOR COMPONENT PARTS OF AN ITEM OR SYSTEM SHALL BE COORDINATED AND SUBMITTED AS A UNIT. SHOP DRAWINGS SHALL CLEARLY HIGHLIGHT, ENCIRCLE, OR OTHERWISE CLEARLY IDENTIFY ALL DEVIATIONS FROM THE CONTRACT DOCUMENTS. 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.

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.

1.05. PRODUCT SUBSTITUTIONS: THE MANUFACTURERS LISTED IN THE EQUIPMENT SCHEDULES 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.

1.06. PERMITS AND CODES: CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH PERMITS, TAXES AND INSURANCE. ALL WORK SHALL BE INSTALLED IN COMPLETE CONFORMITY WITH LOCAL CODES AND ORDINANCES AS WELL AS THE FOLLOWING:

A. NFPA 90
B. OBC 2017
C. OMC 2017
D. LOCAL CODES & ORDINANCES
E. ASHRAE
F. ANSI
G. ASTM
H. UL
I. NEC
J. AMCA
K. SMACNA

1.07. 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.

1.08. SYSTEM INSTALLATION: MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETE INSTALLATION OF ALL SYSTEMS SHOWN OR NOTED WITHIN CONTRACT DOCUMENTS. INSTALLATION SHALL BE COMPLETED PER ALL EQUIPMENT MANUFACTURERS WRITTEN INSTRUCTIONS. DEVIATIONS OF THIS SHALL NOT BE ACCEPTED UNLESS SPECIFIC WRITTEN CONSENT IS GIVEN BY PROJECTS ENGINEER. ALL POTENTIAL INSTALLATION CONCERNS SHALL BE SUBMITTED TO ARCHITECT PRIOR TO BID SUBMISSION.

PART 2 MISCELLANEOUS PRODUCTS

2.01. MECHANICAL IDENTIFICATION:

A. EQUIPMENT: ENGRAVED, COLOR-CODED LAMINATED PLASTIC. INCLUDE CONTACT-TYPE, PERMANENT ADHESIVE. EXTERIOR LOCATED EQUIPMENT TAGS SHALL BE ADHERED SECURELY AND APPROPRIATELY TO EQUIPMENT AND ABLE TO STAY ADHERED DURING ALL CLIMATE CHANGES.
  1. SIZE: 4-1/2" HIGH, WITH 1" TALL LETTERING.
  2. TERMINOLOGY: MATCH SCHEDULES AS CLOSELY AS POSSIBLE.
  3. EQUIPMENT: ALL SCHEDULED POWERED EQUIPMENT (EX. AIR HANDLING UNITS, EXHAUST FANS...) SHALL BE TAGGED.

B. DUCTWORK:
  1. INTERIOR INSTALLED DUCTWORK: STENCILED MARKERS, SHOWING SERVICE AND DIRECTION OF FLOW ON ALL DUCT MAINS.
  2. EXTERIOR INSTALLED DUCTWORK: LAMINATED PLASTIC. INCLUDE CONTACT-TYPE, PERMANENT ADHESIVE. EXTERIOR LOCATED DUCTWORK TAGS SHALL BE ADHERED SECURELY AND APPROPRIATELY TO DUCTWORK AND ABLE TO STAY ADHERED DURING ALL CLIMATE CHANGES.
  3. LETTER SIZE: 1" HIGH LETTERS.
  4. COLOR CODES: USE THE FOLLOWING BACKGROUND COLORS WITH WHITE LETTERING.
     a. GREEN: FOR EXHAUST AIR DUCT MAINS.
  5. LOCATIONS: LOCATE MARKERS NEAR POINTS WHERE DUCTS ENTER INTO CONCEALED SPACES AND AT A MAXIMUM INTERVALS OF 50 FEET IN EACH SPACE WHERE DUCTS ARE EXPOSED OR CONCEALED BY REMOVABLE CEILING SYSTEM.

2.02. ELECTRIC MOTORS: ALL ELECTRIC MOTORS WITH A POWER RATING OF ONE (1) HORSEPOWER OR GREATER, BUT NOT GREATER THAN TWO HUNDRED (200) HORSEPOWER, MANUFACTURED (ALONE OR AS A COMPONENT OF ANOTHER PIECE OF EQUIPMENT) SHALL HAVE A NOMINAL FULL LOAD EFFICIENCY THAT IS NOT LESS THAN AS DEFINED IN NEMA MG-1 (2006) TABLE 12-12.

PART 3 SHEETMETAL PRODUCTS

3.01. FLEXIBLE CONNECTIONS:

A. GENERAL: FURNISH AND INSTALL FLEXIBLE CONNECTIONS AT THE INLET AND DISCHARGE OF ALL DUCTED FAN-POWERED EQUIPMENT, UNLESS NOTED OTHERWISE. FABRICS, COATINGS AND ADHESIVES SHALL COMPLY WITH UL STANDARD 181, CLASS 1 AND NFPA STANDARDS 90A AND 90B.
B. CONSTRUCTION: CONNECTORS SHALL BE PREASSEMBLED "METAL-FABRIC-METAL" CONSTRUCTION. METAL SHALL BE COMPATIBLE WITH CONNECTED DUCT SYSTEM.
C. INDOOR CONNECTORS: 26 OZ./SQ. YD. WOVEN FIBERGLASS WITH NEOPRENE COATING.

3.02. DUCT ACCESSORIES:

A. MANUAL VOLUME DAMPERS:
  1. GENERAL: FACTORY FABRICATED WITH REQUIRED HARDWARE AND ACCESSORIES. STIFFEN DAMPER BLADES FOR STABILITY. INCLUDE LOCKING DEVICE TO HOLD SINGLE BLADE DAMPERS IN A FIXED POSITION WITHOUT VIBRATION. CLOSE DUCT PENETRATIONS FOR DAMPER COMPONENTS TO SEAL DUCT CONSISTENT WITH PRESSURE CLASS.
  2. STANDARD VOLUME DAMPERS: MULTIPLE OR SINGLE BLADE, PARALLEL OR OPPOSED BLADE DESIGN AS INDICATED, STANDARD LEAKAGE RATING, WITH LINKAGE OUTSIDE AIR STREAM, AND SUITABLE FOR HORIZONTAL OR VERTICAL APPLICATIONS.
  3. DAMPER HARDWARE: ZINC PLATED, DIE CAST CORE WITH DIAL AND HANDLE MADE OF 3/32 INCH THICK ZINC PLATED STEEL, AND A 3/4 INCH HEXAGON LOCKING NUT. INCLUDE CENTER HOLE TO SUIT DAMPER OPERATING ROD SIZE. INCLUDE ELEVATED PLATFORM FOR INSULATED DUCT MOUNTING.

B. TURNING VANES:
  1. FABRICATE TO COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS METAL AND FLEXIBLE."
  2. MANUFACTURED TURNING VANES (DUCT HEIGHT 18" OR LESS): FABRICATE OF 1-1/2 INCH WIDE, CURVED BLADES SET 3 TO 4 INCH O.C.; SUPPORT WITH BARS PERPENDICULAR TO BLADES SET 2 INCHES O.C.; AND SET INTO SIDE STRIPS SUITABLE FOR MOUNTING IN DUCTS.

C. MOTORIZED DAMPERS: MAXIMUM PANEL SIZE SHALL NOT EXCEED 48" WIDE x 72" HIGH. EACH PANEL 48"x72" OR SMALLER SHALL BE FURNISHED WITH A DAMPER ACTUATOR. DAMPER SHALL BE LOW LEAK, PARALLEL BLADE OPERATION WITH HEAVY GALVANIZED STEEL HAT CHANNEL. DAMPER SHALL BE LOW LEAK CONSTRUCTION WITH COMPRESSION TYPE JAMB SEALS AND VINYL BLADE EDGE SEALS. LEAKAGE SHALL NOT EXCEED 6 CFM PER SQ.FT. AT 2" DIFFERENTIAL PRESSURE (BASED ON 36"x36" DAMPER).

3.03. DUCTWORK CONSTRUCTION:

A. GENERAL: ALL DUCTWORK SHALL BE CONSTRUCTED OF MATERIALS AND FOR THE STATIC PRESSURE CLASSIFICATION INDICATED ON THE "DUCTWORK MATERIAL CONSTRUCTION & INSULATION SCHEDULE". FURNISH TURNING VANES IN ALL RECTANGULAR DUCTWORK ELBOWS AND T-SPLITS. THE GENERAL ROUTING OF DUCTWORK IS INDICATED ON THE PLANS. THE EXACT ROUTING SHALL BE DETERMINED BY THE JOB SITE CONDITIONS AND SHALL BE COORDINATED WITH ALL OTHER CONSTRUCTION TRADES. ALL DIMENSIONS INDICATED REPRESENT INTERNAL NET.
B. INSULATION/SOUNDLINING: REFER TO "DUCTWORK MATERIAL CONSTRUCTION AND INSULATION SCHEDULE" FOR ALL DUCTWORK INSULATION REQUIREMENTS.
C. RECTANGULAR DUCT FABRICATION:
  1. GENERAL: FABRICATE DUCTS, ELBOWS, TRANSITIONS, OFFSETS, BRANCH CONNECTIONS, AND OTHER CONSTRUCTION ACCORDING TO SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS-METAL AND FLEXIBLE" AND THE "DUCTWORK MATERIAL CONSTRUCTION & INSULATION SCHEDULE". COMPLY WITH REQUIREMENTS FOR METAL THICKNESS, REINFORCING TYPES AND INTERVALS, TIE-ROD APPLICATIONS, AND JOINT TYPES AND INTERVALS. ALL DUCTWORK SHALL BE SEALED PER SMACNA STANDARDS.
     a. LENGTHS: FABRICATE RECTANGULAR DUCTS IN LENGTHS APPROPRIATE TO REINFORCEMENT AND RIGIDITY CLASS REQUIRED FOR PRESSURE CLASSIFICATION.
     b. MATERIALS: FREE FROM VISUAL IMPERFECTIONS SUCH AS PITTING, SEAM MARKS, ROLLER MARKS, STAINS, AND DISCOLORATIONS.
D. ROUND DUCT FABRICATION: FABRICATE SUPPLY DUCTS OF GALVANIZED STEEL ACCORDING TO SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS- METAL AND FLEXIBLE."
E. DUCT HANDLING AND CLEANLINESS: SMACNA DUCT CLEANLINESS FOR NEW CONSTRUCTION GUIDELINES SHALL BE FOLLOWED AT THE "ADVANCED LEVEL". TRANSPORTING DUCTWORK TO THE JOB SITE IN ENCLOSED TRUCKS WILL SUFFICE AS OPPOSED TO SEALING THE DUCTWORK.

3.04. AIR DEVICES:

A. MANUFACTURER: SUBJECT TO COMPLIANCE WITH REQUIREMENTS IN THE AIR DEVICE SCHEDULE PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
  1. PRICE
  2. TITUS
  3. TUTTLE & BAILEY
B. THE MECHANICAL CONTRACTOR SHALL REFER TO THE ARCHITECTURAL CEILING PLAN AND THE ELECTRICAL LIGHTING PLAN FOR ALL AIR DEVICE LOCATIONS. THE LOCATIONS INDICATED ON THE HVAC FLOOR PLAN ARE INTENDED FOR GENERAL POSITIONING PURPOSES ONLY.

PART 4 VENTILATOR PRODUCTS

4.01. CEILING MOUNTED & IN-LINE CABINET FANS:

A. MANUFACTURER: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
  1. ACME ENGINEERING & MANUFACTURING CORP.
  2. COOK (LOREN) CO.
  3. GREENHECK FAN CORP.
  4. PENN AND BARRY
B. DESCRIPTION: CENTRIFUGAL FANS DESIGNED FOR INSTALLATION IN CEILING, OR FOR CONCEALED IN-LINE CABINET APPLICATIONS.
C. HOUSING: GALVANIZED STEEL LINED WITH ACOUSTICAL INSULATION.
D. FAN WHEEL: CENTRIFUGAL WHEELS DIRECTLY MOUNTED ON MOTOR SHAFT. FAN SHROUDS, MOTOR, AND FAN WHEEL SHALL BE REMOVABLE FOR SERVICE.
E. GRILLE: LOUVERED GRILLE WITH FLANGE ON INTAKE AND THUMBSCREW ATTACHMENT TO FAN HOUSING (AS REQUIRED).
F. ELECTRICAL REQUIREMENTS: JUNCTION BOX FOR ELECTRICAL CONNECTION ON HOUSING AND RECEPTACLE FOR MOTOR PLUG IN.
G. VARIABLE SPEED CONTROLLER: SOLID STATE SPEED CONTROL SHIPPED LOOSE AND FIELD INSTALLED BY MECHANICAL CONTRACTOR; USED TO REDUCE SPEED FROM 100 PERCENT TO LESS THAN 50 PERCENT, FOR FAN BALANCING.
H. ACCESSORIES: MANUFACTURER'S STANDARD ROOF JACK OR WALL VENT TRANSITION FITTINGS AND INTEGRAL CHATTER PROOF BACK DRAFT DAMPER.

4.02 FIXED BLADE LOUVERS:

A. MANUFACTURER: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS MANUFACTURED BY ONE OF THE FOLLOWING:
  1. AIR BALANCE
  2. AIROLITE
  3. AMERICAN WARMING AND VENTILATING
  4. GREENHECK
  5. RUSKIN
B. DESCRIPTION: FACTORY FABRICATED LOUVER, TO FIT IN OPENINGS OF SIZES INDICATED, WITH ALLOWANCES MADE FOR FABRICATION AND INSTALLATION TOLERANCES, ADJOINING MATERIALS' TOLERANCES, AND PERIMETER SEALANT JOINTS. INCLUDE SUPPORTS, ANCHORAGES, AND ACCESSORIES REQUIRED FOR COMPLETE ASSEMBLY.
C. CONSTRUCTION: FIXED-BLADE LOUVERS WITH EXTRUDED-ALUMINUM FRAMES AND BLADES.
D. HORIZONTAL LOUVERS: DRAINABLE BLADE TYPE COMPLYING WITH THE REQUIREMENTS LISTED IN THE LOUVER SCHEDULE.
E. FINISH & ACCESSORIES: REFER TO EQUIPMENT SCHEDULE FOR REQUIRED FINISH & ACCESSORIES.

PART 5 TEMPERATURE CONTROLS

5.01. TEMPERATURE CONTROL WIRING: MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPERATURE CONTROL AND INTERLOCK WIRING REQUIRED FOR THE PROJECT. ALL EXPOSED TO VIEW 24V AND ALL 120V TEMPERATURE CONTROL WIRING SHALL BE ROUTED IN ITS OWN SEPARATE CONDUIT FOR ENTIRE ROUTING; REFER TO THE ELECTRICAL SPECIFICATIONS FOR CONDUIT MATERIAL AND INSTALLATION REQUIREMENTS.

5.02. TEMPERATURE CONTROL SYSTEM AND SEQUENCE OF OPERATION:

A. EXHAUST FAN (EF-1): THE EXHAUST FANS SHALL OPERATE IN ACCORDANCE WITH THE SEQUENCE INDICATED ON THE FAN SCHEDULE.
B. EXHAUST FAN (EF-2): THE EXHAUST FAN SHALL ENERGIZE WHEN SPACE TEMPERATURE REACHES 90 DEGREES F. LOUVER L-1 DAMPER SHALL BE ELECTRICALLY INTERLOCKED TO OPERATE WHEN EF-2 IS ACTIVATED. WHEN EF-2 DE-ENERGIZES, LOUVER L-1 DAMPER SHALL CLOSE.

PART 6 TESTING & BALANCING

6.01. TESTING, ADJUSTING & BALANCING: PRIOR TO THE FINAL INSPECTION OF THE BUILDING, ALL AIR HANDLING AND DISTRIBUTION SYSTEMS SHALL BE ADJUSTED AS NECESSARY TO PROVIDE THE REQUIRED DESIGN SUPPLY, RETURN AND EXHAUST AIR QUANTITIES FOR EACH COMPONENT. BALANCING OF ALL SYSTEMS SHALL BE CONDUCTED UNDER CONDITIONS APPROXIMATING ACTUAL OPERATION. AIR QUANTITY MEASUREMENTS IN DUCTS SHALL BE ASSOCIATED WITH PITOT TUBE TRAVERSES OF THE ENTIRE CROSS SECTIONAL AREA OF THE DUCTS AND INCLUDE LOCATIONS FOR CONFIRMING READINGS TAKEN. TEMPERATURE AND STATIC PRESSURE EXISTING AT THE POINT OF TRAVERSE SHALL BE INDICATED. VOLUME CONTROL DEVICES SHALL BE USED TO REGULATE AIR QUANTITIES OF SUPPLY AND EXHAUST ONLY TO THE EXTENT THAT ADJUSTMENTS DO NOT CREATE OBJECTIONABLE AIR MOTION OR SOUND LEVELS IN EXCESS OF SPECIFIED LIMITS. VOLUME CONTROL BY MEANS OF AIR TERMINAL ADJUSTMENT OR DUCT INTERNAL DEVICES OTHER THAN DAMPERS OR SPLITTERS IS NOT PERMITTED. FINAL MEASUREMENT OF AIR QUANTITIES SHALL BE VARIED BY ADJUSTMENT OF FAN SPEED OR FAN BLADE PITCH. BRANCH DUCT AIR QUANTITIES SHALL BE ADJUSTED BY BRANCH DAMPER REGULATION. FURNISH SIX (6) CERTIFIED REPORTS.

PART 7 CLOSE OUT

7.01. 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 CONSTRUCTION WORK AND CLEAN ALL EQUIPMENT, AIR DEVICES ETC., INSIDE AND OUTSIDE. PROVIDE A HARDBOUND BINDER WHICH INCLUDES: COPIES OF EACH APPROVED SHOP DRAWING, PREVENTATIVE MAINTENANCE PROCEDURES FOR EACH ITEM, OPERATION AND INSTRUCTION MANUALS, LITERATURE SUPPLIED WITH HVAC 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 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. CLOSE OUT BINDER SHALL BE FURNISHED TO OWNER WITHIN 60 DAYS OF PROJECT COMPLETION.

7.02. AS-BUILT DRAWINGS: CONTRACTOR SHALL ACCURATELY AND NEATLY RECORD ANY DEVIATIONS FROM THE PLANS AND SPECIFICATIONS. AS-BUILTS SHALL BE REGULARLY UPDATED DURING THE COURSE OF CONSTRUCTION, AND DELIVERED TO THE OWNER WITHIN 30 DAYS OF PROJECT ACCEPTANCE.

HVAC LEGEND

- NEW DUCTWORK/EQUIPMENT
- NEW DUCTWORK/EQUIPMENT
- FLEXIBLE CONNECTION
- MOTOR OPERATED DAMPER
- (X) DRAWING KEY NOTE
- (X) AIR DEVICE TAG NUMBER
- X — DETAIL TAG NUMBER; M-X — DRAWING REFERENCE NUMBER
- E.C. — ELECTRICAL CONTRACTOR
- G.C. — GENERAL CONTRACTOR
- M.C. — MECHANICAL CONTRACTOR
- P.C. — PLUMBING CONTRACTOR
- T.C.C. — TEMPERATURE CONTROL CONTRACTOR
- cfm — CUBIC FEET PER MINUTE
- E.A. — EXHAUST AIR
- DUCT UNDER NEGATIVE PRESSURE TURNING INTO THE DRAWING

LOUVER SCHEDULE

(REFER TO SPECIFICATIONS PARAGRAPH "4.02" ON THIS DRAWING FOR ADDITIONAL REQUIREMENTS.)

TAG #	AREA SERVED	SERVICE	OVERALL SIZE ("Wx"H)	CFM	MAX. VELOCITY (FPM)	MIN. FREE AREA (SQ. FT.)	MAX PRESS. DROP (IN. W.C.)	DEPTH (IN.)	BLADE STYLE	FRAME/BLADE THICKNESS (IN.)	APPROX. MOUNTING ELEVATION TO BOTTOM (A.F.F.)	REMARKS
L-1	PUMP ROOM 102	INTAKE	14x12	150	551	0.3	0.038	4	FIXED DRAINABLE	0.081/0.081	8'-0" A.F.F.	1 THRU 4

REMARKS:
1. BASIS OF DESIGN – 4" GREENHECK MODEL ESD-403.
2. FURNISH LOUVER WITH BIRD SCREEN INSTALLED ON INTERIOR SIDE OF LOUVER.
3. FURNISH LOUVER WITH KYNAR FINISH. COLOR SHALL BE SELECTED BY THE ARCHITECT FROM MANUFACTURER'S STANDARD COLOR CHART.
4. FURNISH LOUVER WITH MOTORIZED DAMPER.

DUCTWORK MATERIAL CONSTRUCTION & INSULATION SCHEDULE

(REFER TO SPECIFICATIONS PARAGRAPHS "3.03" ON THIS DRAWING FOR ADDITIONAL REQUIREMENTS.)

SYSTEM EQUIPMENT	DUCTWORK SERVICE	DUCTWORK PRESSURE CLASS ("W.C.)	SMACNA SEAL CLASS	DUCTWORK CONSTRUCTION	INSULATION	REMARKS
TOILET EXHAUST SYSTEM	TOILET EXHAUST AIR	+/- 2.0	C	RECTANGULAR DUCT: GALVANIZED SHEET METAL RIGID ROUND BRANCHES: LONGITUDINAL OR SPIRAL SEAMS FLEXIBLE BRANCHES: **NOT PERMITTED**	BETWEEN BACK-DRAFT DAMPER AND TERMINATION USE 2 INCH RIGID FIBERGLASS BOARD INSULATION.	1 & 2
LOUVER	VENTILATION	+/- 2.0	C	RECTANGULAR DUCT: GALVANIZED SHEET METAL		

REMARKS:
1. DUCTWORK CONSTRUCTION, INCLUDING SHEET METAL GAUGES AND SEAM CONSTRUCTION METHODS, SHALL BE IN ACCORDANCE WITH SMACNA STANDARDS.
2. DUCTWORK ELBOWS, TRANSITIONS, ETC. SHALL BE FABRICATED IN ACCORDANCE WITH DETAIL "A" ON DRAWING M101.

FAN SCHEDULE

(REFER TO SPECIFICATIONS PARAGRAPH "4.01" ON THIS DRAWING FOR ADDITIONAL REQUIREMENTS.)

TAG #	AREA SERVED	SERVICE	CFM	ESP (IN. W.C.)	FAN RPM	DISC'T BY FAN MANF'T	BIRD SCREEN BY FAN MANF'T	BACK DRAFT DMPR BY FAN MANF'T	MAX. SOUND LEVEL (SONES)	FAN ELECT DATA		MEANS OF CONTROL	APPROX. WEIGHT (LBS)	MAKE/ MODEL	REMARKS:
										HP (WATTS)	VOLTS/ PHASE				
EF-1	TOILET ROOMS	EXHAUST	200	0.375	986	YES	YES	YES	5.0	(58)	115/1	A	30	GREENHECK CSP-A250	1 THRU 5
EF-2	PUMP ROOM	EXHAUST	150	0.375	836	YES	YES	YES	1.4	0.02	115/1	B	30	GREENHECK CSP-A250	1 THRU 5

MEANS OF CONTROL: FAN SHALL SEQUENCE IN CONJUNCTION WITH...
A ...ROOM LIGHT SWITCH(ES) (SWITCHES FURNISHED & WIRED BY ELECTRICAL CONTRACTOR)
B. ...WALL MOUNTED THERMOSTAT (T-STAT & CONTROL WIRING BY TEMPERATURE CONTROL CONTRACTOR; POWER WIRING BY ELECTRICAL CONTRACTOR)

REMARKS:
1. FURNISH FAN WITH ROOF VENT CAP. VENT CAP SHALL BE FURNISHED WITH BIRD SCREEN & BACK DRAFT DAMPER.
2. FURNISH DUCTWORK CONNECTING TO FAN IN ACCORDANCE WITH THE "DUCTWORK MATERIAL CONSTRUCTION SCHEDULE" FOUND ON THIS DRAWING.
3. FURNISH FAN WITH ADJUSTABLE SPEED CONTROLLER SHIPPED LOOSE AND FIELD INSTALLED BY MECHANICAL CONTRACTOR.
4. FURNISH FAN WITH MOTORIZED BACKDRAFT DAMPER.
5. FURNISH FAN MOTOR WITH THERMAL OVERLOADS.

AIR DEVICE SCHEDULE

(REFER TO SPECIFICATIONS PARAGRAPH "3.04" ON THIS DRAWING FOR ADDITIONAL REQUIREMENTS.)

TAG #	TYPE OF AIR SERVICE	NECK SIZE	MAXIMUM AIR FLOW (CFM)	AIR FLOW DISCHARGE PATTERN	PRESSURE DROP (" WC)	BRANCH DUCT DIAMETER (INCHES ø)	FACE FINISH	REMARKS
ER	EXHAUST REGISTER	REFER TO PLAN VIEW DRAWINGS	-----	-----	-----	-----	WHITE ENAMEL	1 & 2

REMARKS:
1. THE AIR DEVICES SHALL SERVE THE SPACES INDICATED. THE CONTRACTOR SHALL FURNISH ALL AIR DEVICES WITH MEANS OF MOUNTING WHICH SHALL BE COMPATIBLE WITH THE ADJACENT CEILING CONSTRUCTION. THE MECHANICAL CONTRACTOR SHALL FURNISH EACH AIR DEVICE WITH VOLUME BALANCING CAPABILITIES AT THE BRANCH DUCT CONNECTION. DO NOT FURNISH DAMPERS AT THE AIR DEVICES UNLESS OTHERWISE NOTED ON THE DRAWINGS. DUCTWORK VISIBLE THROUGH THE FACE OF ANY AIR DEVICE SHALL BE PAINTED FLAT BLACK.
2. EXHAUST REGISTER (ER): PRICE MODEL "530" OR EQUIVALENT ALUMINUM GRILLE AND FRAME WITH 35° DEFLECTION ON HORIZONTAL FACE BARS. FURNISH REGISTER WITH MANUAL BALANCING DAMPER AS AN INTEGRAL PART OF THE AIR DEVICE.

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02/23/2024
STATE OF OHIO
ROBERT T. BRANNAN
E-54100
REGISTERED PROFESSIONAL ENGINEER

No.	Description	Date
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

REVISIONS

Scale	AS INDICATED
Date	
Job No.	24001561
Designed by	MEW
Drawn by	MEW
Checked by	ERS
Approved by	RTB
Status	

Client: CITY OF FOSTORIA

Project: FOSTORIA SPLASH PAD RESTROOM ADDITIONS

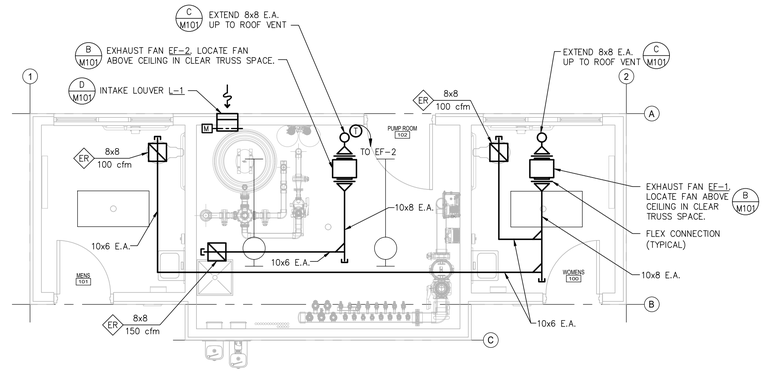
Drawing: HVAC SPECIFICATIONS & SCHEDULES

M001

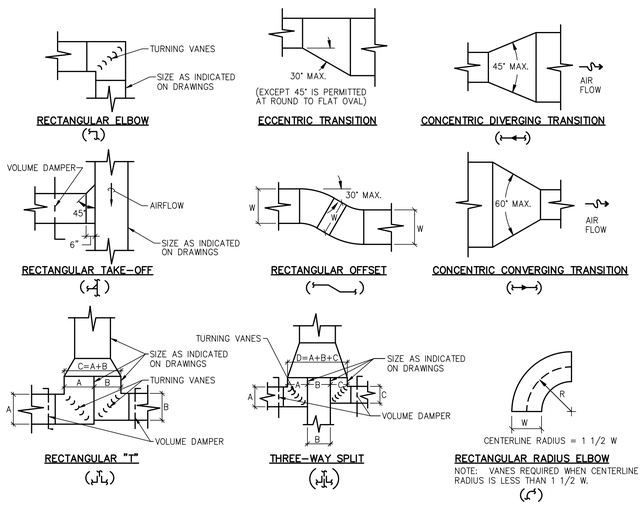
FILE No. S:\24\Projects\24001561.001A - Fostoria Splash Pad\Dwg\24001561M001.dwg 02/26/24 17:05-MWyke

GENERAL NOTES:

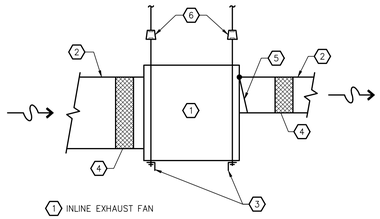
1. PROVIDE ALL HANGERS, SUPPORTS AND MISCELLANEOUS STEEL REQUIRED FOR THE PROPER INSTALLATION OF ALL PIPE, DUCTWORK AND EQUIPMENT.
2. COORDINATE DUCTWORK, PIPING AND EQUIPMENT LOCATIONS WITH ALL OTHER TRADES.
3. ALL CEILING MOUNTED AIR DEVICES SHALL BE COMPATIBLE WITH CEILING TYPES SHOWN ON ARCHITECTURAL PLANS.
4. MAINTAIN REQUIRED MANUFACTURERS' CLEARANCES ON ALL EQUIPMENT.
5. ALL DUCTWORK SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH SMACNA STANDARDS AND DETAIL "A" ON THIS DRAWING.
6. CONTRACTOR SHALL VERIFY CLEARANCES ABOVE CEILING PRIOR TO FABRICATION OF DUCTWORK. COORDINATE EXACT LOCATION OF DUCTWORK WITH ELECTRICAL, PLUMBING AND GENERAL CONTRACTORS.
7. THIS BUILDING IS SEASONAL AND IS NOT HEATED. DURING COLD WEATHER MONTHS, ALL PLUMBING FIXTURES AND PIPING SHALL BE DRAINED AND BUILDING SHALL BE CLOSED.
8. THE MECHANICAL CONTRACTOR SHALL TAKE INTO CONSIDERATION THE FACT THAT THE DUCTWORK ROUTED WITHIN THE CONFINES OF THE ATTIC WILL NEED TO BE ROUTED AMONGST THE WEB MEMBERS OF THE PRE-ENGINEERED JOISTS. NO DUCTWORK SHALL BE FABRICATED UNTIL THE CONTRACTOR HAS VERIFIED THE PRECISE ROUTING OF ALL DUCTWORK THROUGHOUT THE PROJECT.



HVAC FLOOR PLAN
SCALE: 1/4" = 1'-0"

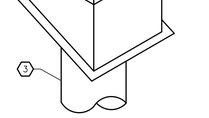


A M101 DUCTWORK TRANSITION DETAILS
NO SCALE (SINGLE LINE, AS SHOWN ON DRAWING.)



1. INLINE EXHAUST FAN
2. EXHAUST DUCTWORK. REFER TO FLOOR PLAN(S) FOR SIZE & CONFIGURATION
3. SUPPORT ANGLE AND HANGING RODS. HANGING RODS SHALL BE SIZED BY THE CONTRACTOR AND SUFFICIENT TO SUPPORT LOAD.
4. FLEXIBLE CONNECTION
5. BACKDRAFT DAMPER
6. VIBRATION ISOLATION HANGER.

B M101 INLINE EXHAUST FAN
NO SCALE

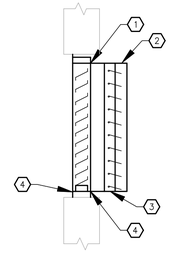


NOTES:

1. CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR WATER-PROOFING ALL CONNECTIONS AND PENETRATIONS.
2. CONTRACTOR SHALL FURNISH EACH VENT CAP FOR EITHER THE FREE AREA INDICATED OR THE AIR FLOW RATE INDICATED AND A STATIC PRESSURE DROP NOT IN EXCESS OF 0.10" W.G.

1. BIRD SCREEN.
2. SPUN ALUMINUM DISCHARGE CAP.
3. EXHAUST DUCTWORK. REFER TO FLOOR PLAN(S) FOR SIZE & CONFIGURATION
4. ROOF CURB: GALVANIZED STEEL; MITERED AND WELDED CORNERS; 2-INCH THICK, RIGID, FIBERGLASS INSULATION ADHERED TO INSIDE WALLS; AND 2-INCH WOOD NAILER. SIZE AS REQUIRED TO SUIT ROOF OPENING AND FAN BASE, WITH OVERALL HEIGHT OF 18 INCHES. CURB SHALL BE ANGLED AS REQUIRED TO MATCH ROOF PITCH.

C M101 ROOF - VENT CAP DETAIL
NO SCALE



1. 1/2" BIRDSCREEN
2. INSULATE 12" DEEP LOUVER PLENUM WITH 2 IN. RIGID FIBERGLASS BOARD INSULATION. MATCH LOUVER SIZE
3. MOTORIZED DAMPER
4. SEAL AND CAULK AROUND PERIMETER OF LOUVER

D M101 LOUVER DETAIL
NO SCALE

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02/23/2024

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

No.	Description	Date
1	ISSUED FOR ODNR REVIEW	02/05/2024
2	ISSUED FOR CONSTRUCTION	02/21/2024
3	ISSUED FOR BUILDING PERMITS	02/23/2024
4	ISSUED FOR BIDDING	03/01/2024

REVISIONS

Scale AS INDICATED
Date
Job No. 240015611
Designed by MEW
Drawn by MEW
Checked by ERS
Approved by RTB
Status

Client CITY OF FOSTORIA
Project FOSTORIA SPLASH PAD RESTROOM ADDITIONS
Drawing HVAC FLOOR PLAN

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.

M101

FILE No. S:\24\Projects\24001561.001A - Fostoria Splash Pad\Dwg\24001561M101.dwg 02/27/24 07:14-MWyke

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

No.	Description	Date
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

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 SPECIFICATION AND LEGEND

E001

FILE No. S:\24\Projects\24001561.001A - Fostoria Splash Pad\Dwg\24001561E001.dwg 02/27/24 07:07-MWyke

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/TEXTRA 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

(J) 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

G 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.

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, RECESSED 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

PANELBOARD SCHEDULE

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

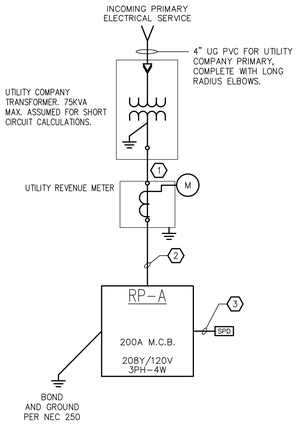
NOTES:
1. GFCI BREAKER
2. 30 MILLIAMP EQUIPMENT GROUND FAULT TRIP
3. SHUNT TRIP
4. ARC FAULT
5. SWITCHED NEUTRAL
6. MOTOR OPERATED
7. NON–CONSEQUENT LOAD
8. RELAY CONTROLLED

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 AND TS	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		SPARE	22
23	SPARE		0	20	2			0	1	20	0		SPARE	24
25	–		0	20	2	1500			1	20	1500		SPLASH PAD CONTRLER	26
27	SPARE		0	20	2		0		1	20	0		SPARE	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	8744	5938						
	HANDLE LOCK					134%	BALANCE 99%	67%						

TOTAL LOAD: 26601 TOTAL AMPS: 73.9

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

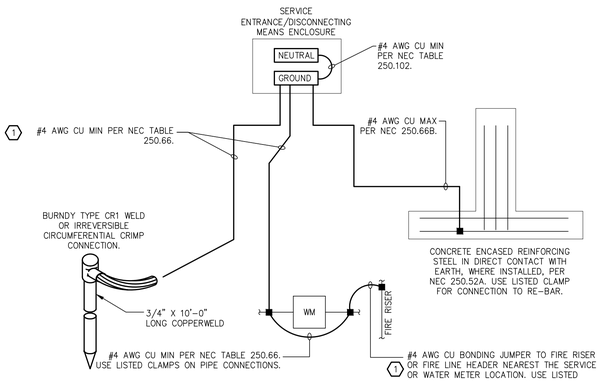
N.T.S.

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.

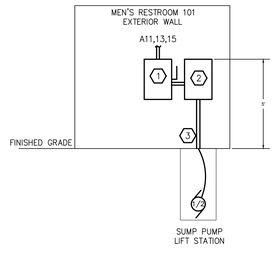


GROUNDING ELECTRODE SYSTEM

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.



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.

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02/23/2024

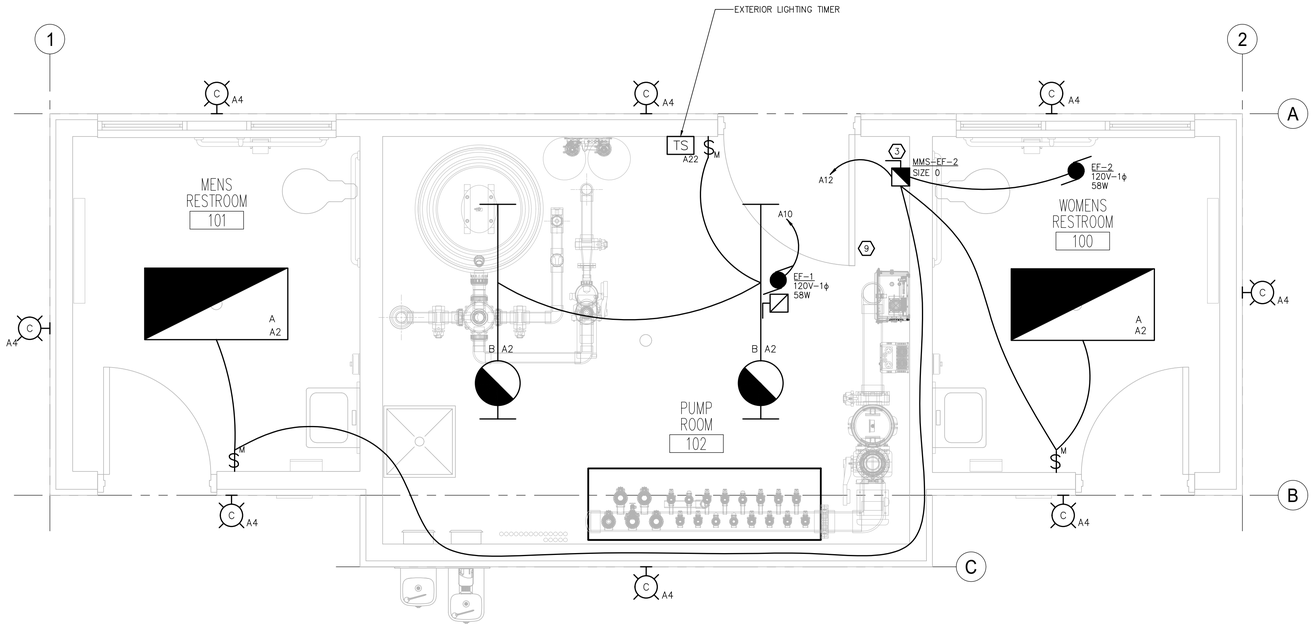
STATE OF OHIO
ROBERT T. BRANNAN
E-54100
REGISTERED PROFESSIONAL ENGINEER

No.	Description	Date
	REVISIONS	
4	ISSUED FOR BIDDING	03/01/2024
3	ISSUED FOR BUILDING PERMITS	02/23/2024
2	ISSUED FOR CONSTRUCTION	02/07/2024
1	ISSUED FOR ODNR REVIEW	02/05/2024

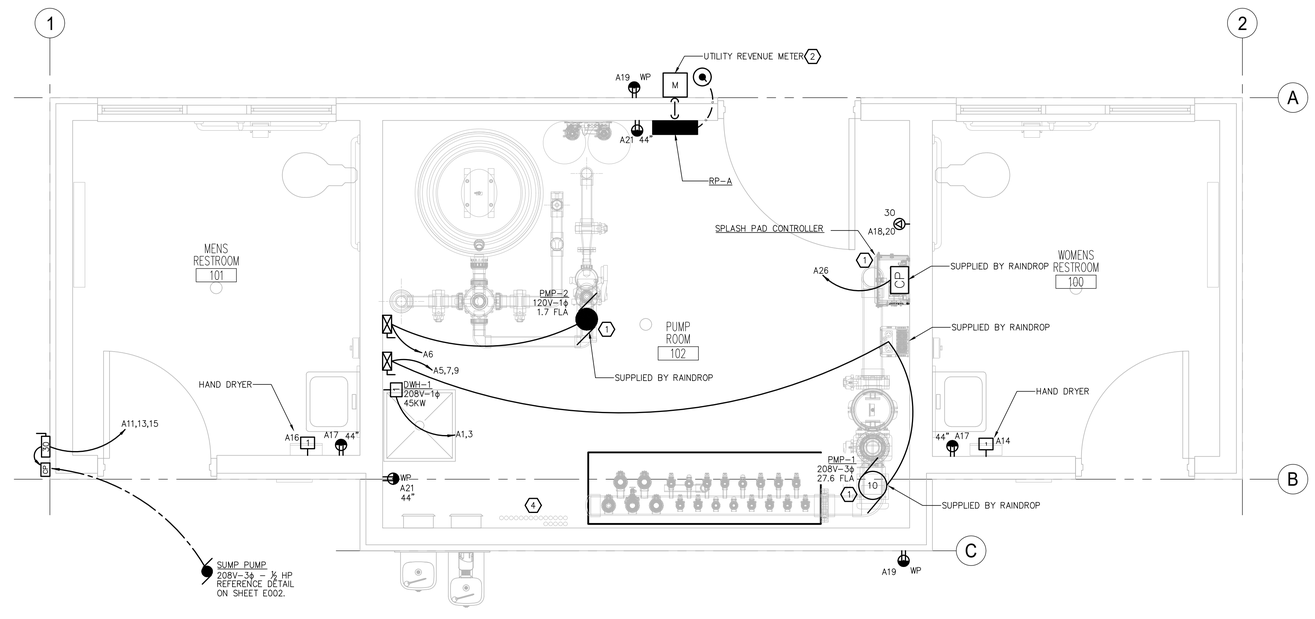
Scale: AS INDICATED
Date: 10/27/2023
Job No.: 24001561
Designed by: TRD
Drawn by: TRD
Checked by: JTH
Approved by: RTB
Status:

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

E002



ELECTRICAL LIGHTING FLOOR PLAN
SCALE: 1/2" = 1'-0"



ELECTRICAL POWER FLOOR PLAN
SCALE: 1/2" = 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. REFER TO SINGLE LINE DIAGRAM ON SHEET E002 FOR MORE INFORMATION.
3. E.C. SHALL PROVIDE A NEMA SIZE 0 (230V 2 POLE 1ϕ) MOTOR CONTACTOR SWITCH WITH 120V COIL THAT IS CONTROLLED FROM BOTH RESTROOM LIGHT SWITCHES. SQUARE D CAT# 8502SBO1V02C OREQ.
4. E.C. SHALL REFER TO RAINDROP DRAWINGS AND COORDINATE FOR ADDITIONAL CONDUIT ROUGH-IN INSTALLATION.

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ROBERT T. BRANNAN
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PROFESSIONAL ENGINEER

No.	Description	Date
	REVISIONS	
1	ISSUED FOR CONSTRUCTION REVIEW	02/05/2024
2	ISSUED FOR CONR REVIEW	02/27/2024
3	ISSUED FOR BUILDING PERMITS	02/23/2024
4	ISSUED FOR BIDDING	03/01/2024

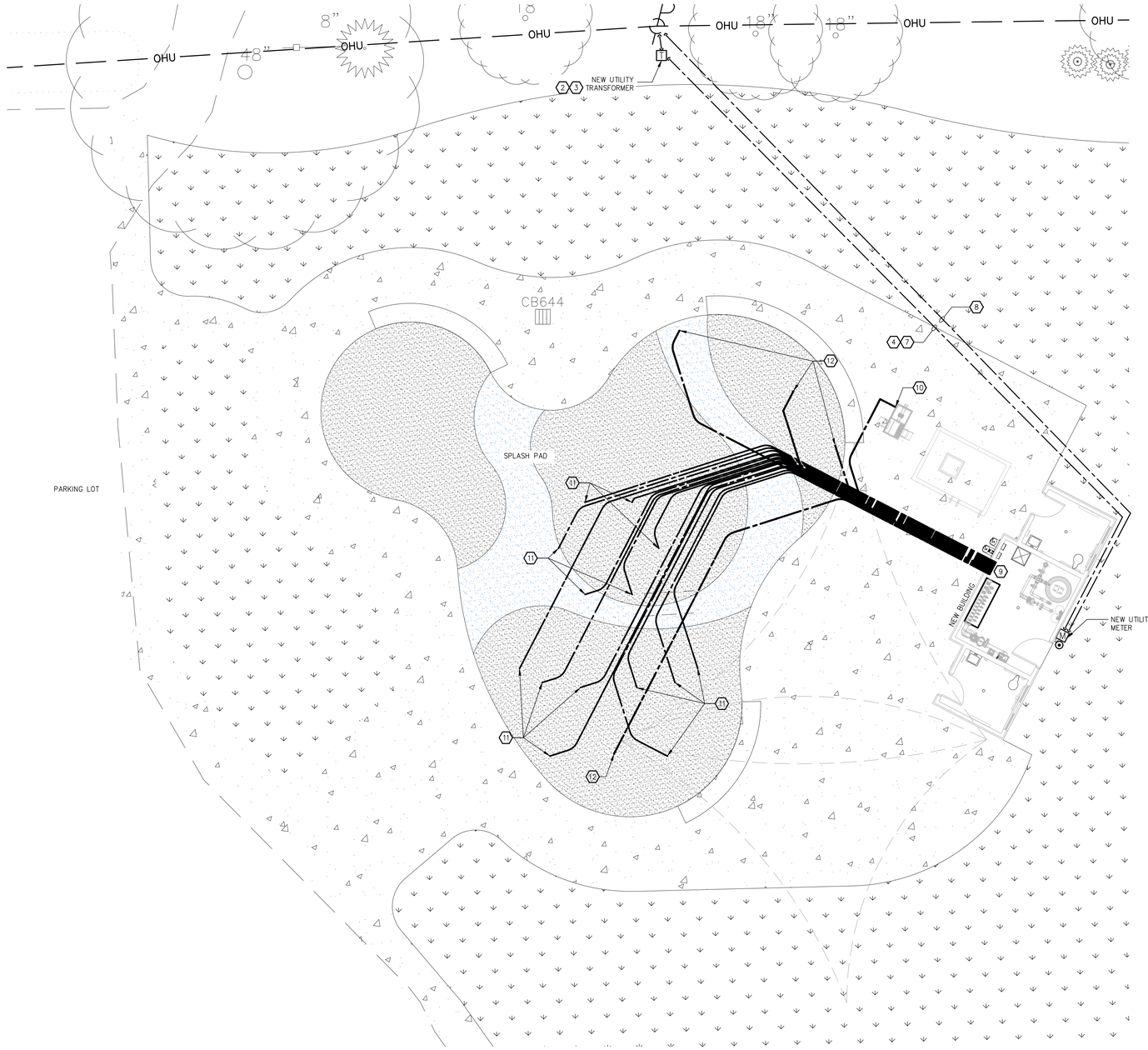
Scale	AS INDICATED
Date	10/27/2023
Job No.	24001561
Designed by	TRD
Drawn by	TRD
Checked by	JTH
Approved by	RTB
Status	

Client: CITY OF FOSTORIA

Project: FOSTORIA SPLASH PAD RESTROOM ADDITIONS

Drawing: ELECTRICAL POWER AND LIGHTING FLOOR PLAN

E101



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 ¾" CONDUIT FROM DMX CONTROLLER TO LED FEATURES. TYPICAL 14 PLACES. CABLE IS SUPPLIED AND INSTALLED BY RAINDROP. PROVIDE PULL STRING IN CONDUITS FOR OTHERS. INSTALL CONDUIT 12" BELOW GRADE.
12. E.C. SHALL PROVIDE 1" CONDUIT FROM ACTIVATOR TO DMX CONTROLLER. TYPICAL 4 PLACES. CABLE IS SUPPLIED AND INSTALLED BY RAINDROP. PROVIDE PULL STRING IN CONDUITS FOR OTHERS INSTALL CONDUIT 12" BELOW GRADE.

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Scale	AS INDICATED
Date	10/27/2023
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Approved by	RTB
Status	

Client: CITY OF FOSTORIA

Project: FOSTORIA SPLASH PAD RESTROOM ADDITIONS

Drawing: ELECTRICAL POWER AND LIGHTING SITE PLAN

E102

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.

FILE No. S:\24\Projects\24001561.001A - Fostoria Splash Pad\Dwg\24001561E102.dwg 02/27/24 07:10-MWyke